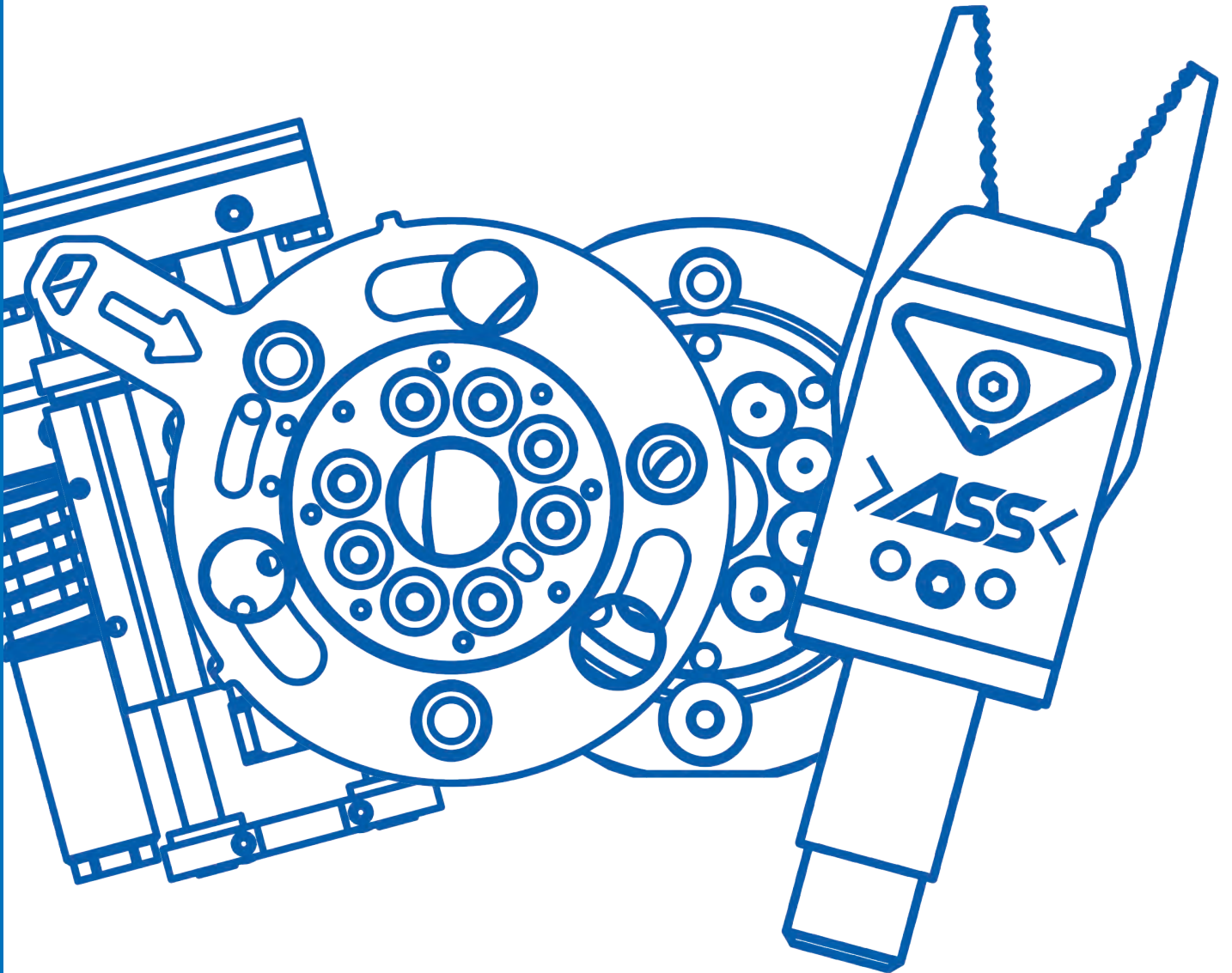


CO₂ NEUTRAL
PRODUCTION

ASSK
Automations-Systeme



Robot Hand Kit (EOAT)

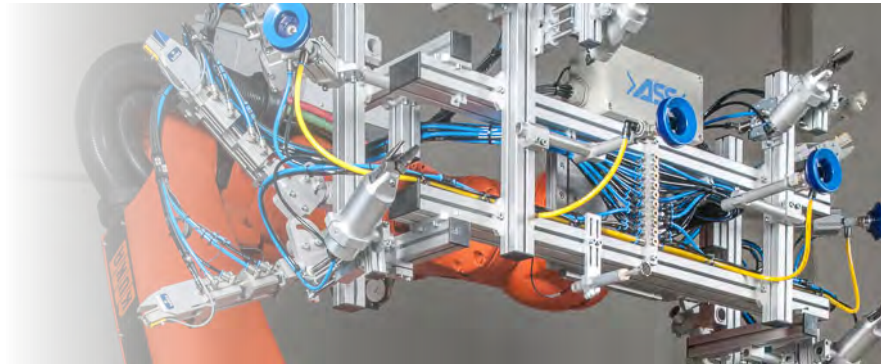
EOAT COMPONENTS

The ASS Robot Hand Kit (EOAT) consists of over 2,000 standardized gripper parts that are constantly being expanded and supplemented. The comprehensive ASS modular system offers tailor-made solutions for your application. Various mutually compatible size series allow you to build your own EOAT or customize them.



END-OF-ARM-TOOLING

We design, construct and manufacture robotic hands according to your requirements. From our standardized gripper parts and, if required, specially manufactured special parts, we manufacture your specially tailored robotic hand solution. The EC machine directive is taken into account accordingly for each gripper and delivered with a declaration of conformity or declaration of incorporation.



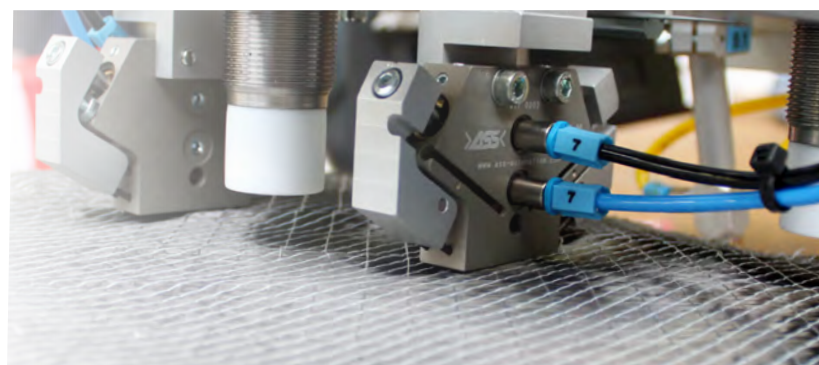
AUTOMATION SYSTEMS

The requirements in production for highly automated production processes with short set-up and maintenance times are increasing. Our automation systems enable our customers to increase production efficiency and process reliability while saving costs and continuing to guarantee high processing quality.



LIGHTWEIGHT CONSTRUCTION

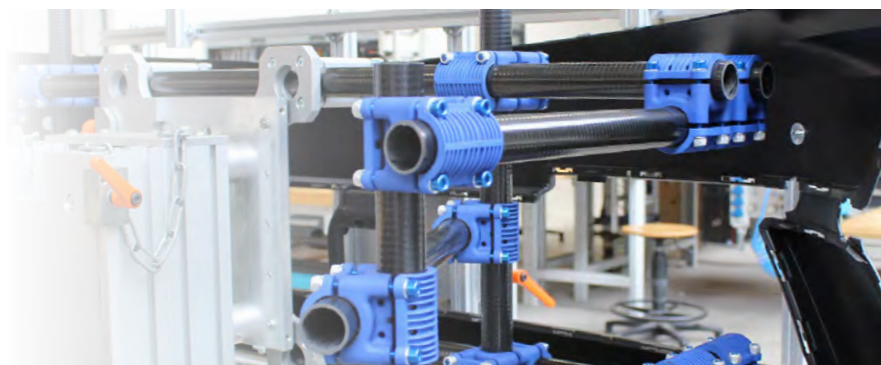
Increasingly lighter construction methods and materials require the ever-increasing use of components made of fiber composites as well as the handling of all kinds of limp parts. Temperature or material properties hardly play a role. We at ASS offer you the right and process-reliable solution for your requirements.



SPECIAL SOLUTIONS

Non-marking coatings, gripper base frame made of carbon round tube, individual contours in 3D printing or specially manufactured gripper parts:

The process-reliable solution of your handling task is always in the foreground, regardless of whether it is a single gripper part, a robot hand or a turnkey solution.



EXPERIENCE

Around 120 employees have been developing intelligent solutions for a wide variety of tasks in the fields of automation and robotics for almost 40 years.

We are represented by our subsidiary ASS End of Arm Tooling, Inc. from Plymouth, MI in the USA, Canada and Mexico and our sales partners worldwide.



QUALITY

ASS components are developed, designed and produced at the certified climate-neutral site in Overath.

The technically high-quality and durable products offer you efficient and economical use.

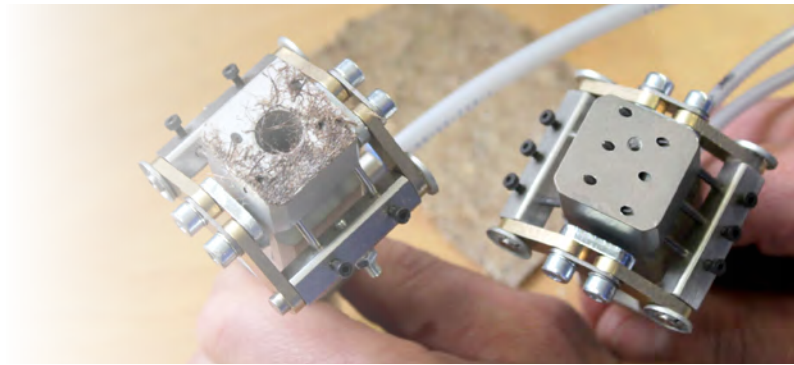
Of course we are certified according to ISO 9001:2015.



TESTING & FIELD TRIALS

Our technical team will be happy to advise you on site. With the help of various demonstrators, various products can be tested in your area directly on site.

Material tests in Overath are part of the normal procedure. These are particularly in demand for limp or adhesive materials and for sprue separation.



CLIMATE NEUTRALITY

Since January 2021, we at ASS Maschinenbau in Overath have been a certified climate-neutral location.

All employees contribute to increasing quality and sustainability in their respective areas of expertise in order to cover all areas of the Greenhouse Gas Protocol.

The ASS products thus make a positive contribution to reducing your carbon footprint.



ABILITY TO DELIVER

The development and production in Overath enables quick reactions to your wishes.

The very high proportion of in-house production paired with our warehouse is a guarantee for high availability and ability to deliver.



Application Examples

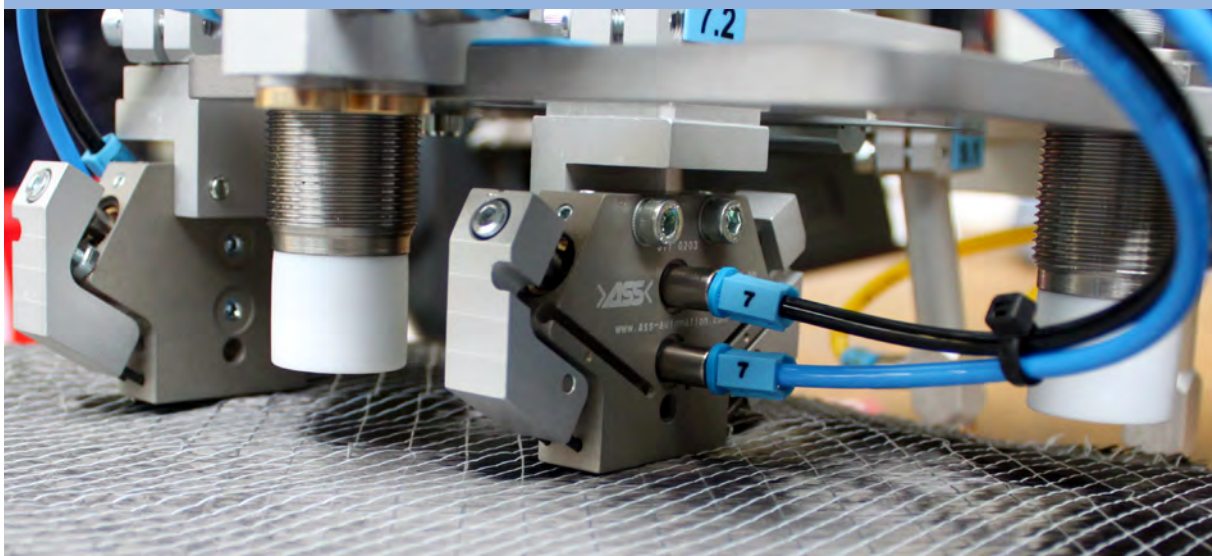
The following application examples show a small excerpt of the most diverse handling and automation solutions. The modular system makes it possible to adapt gripping solutions to all product areas and production processes. Therefore, the mechatronic components, robot hands (EOAT), processing stations, devices and automation systems can be found in plastic injection molding, lightweight automotive construction, e-mobility, white goods and numerous special solutions.

The spectrum ranges from small robot hands made of standard components to highly individual special solutions. As a contact person for your individual tasks, we are at your disposal for a non-binding consultation.

Automated production of brake fluid reservoirs



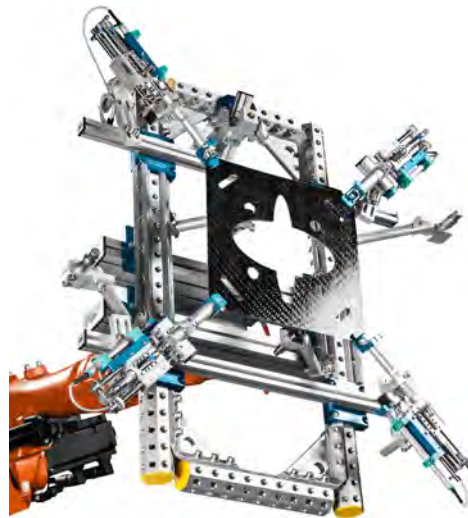
Handling of CFRP for E-Mobility



Handling of CFRP



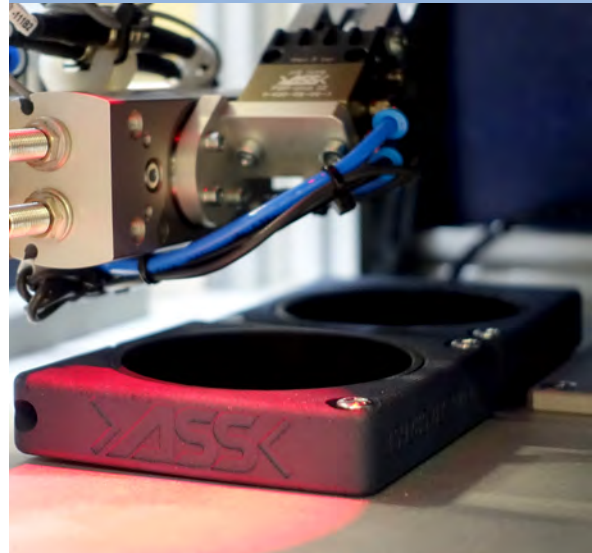
Handling of Organosheet



Feeding machine



Optical query



Bumper demoulding



Automated assembling + testing



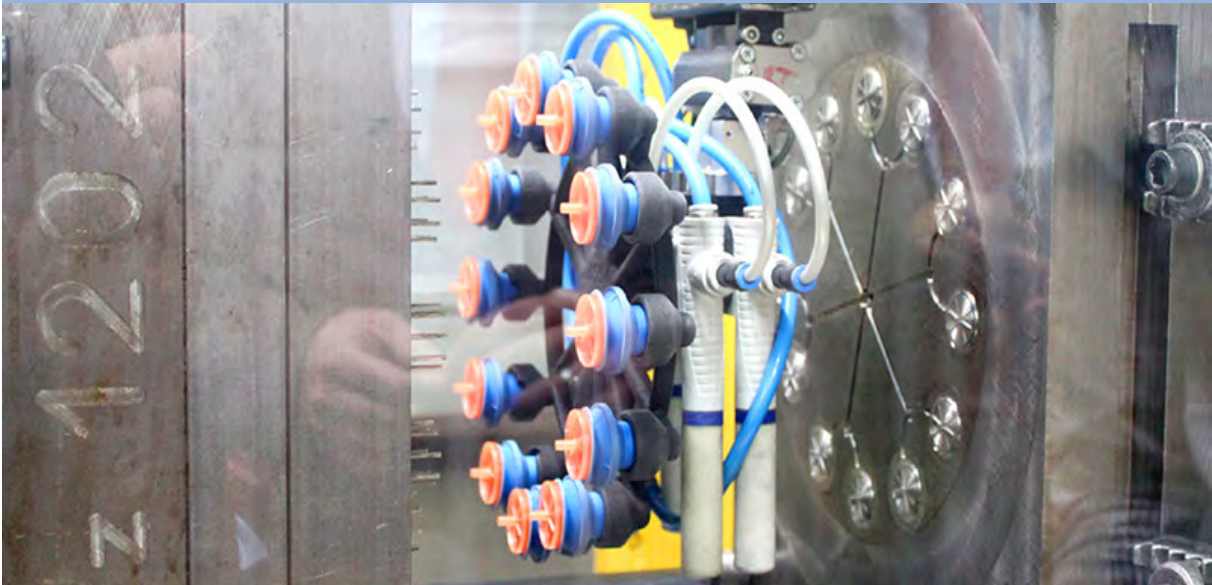
Bin-Picking



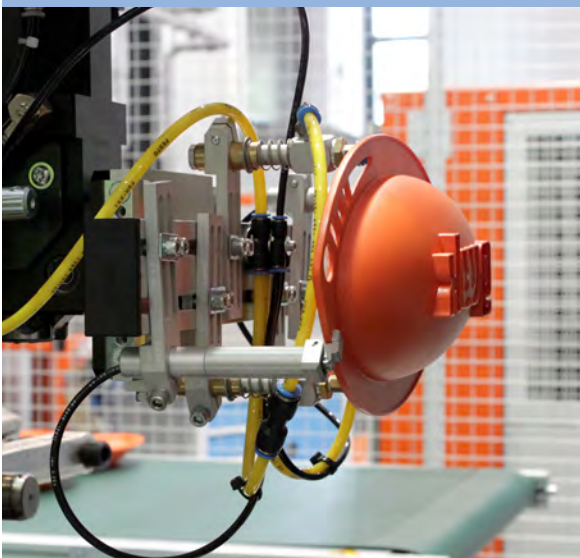
Automation system around the plastics injection moulding machine



3D printed robot hand



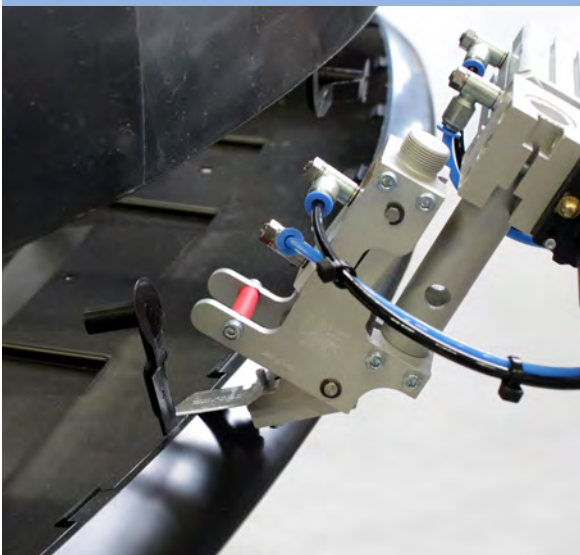
Demoulding gripper



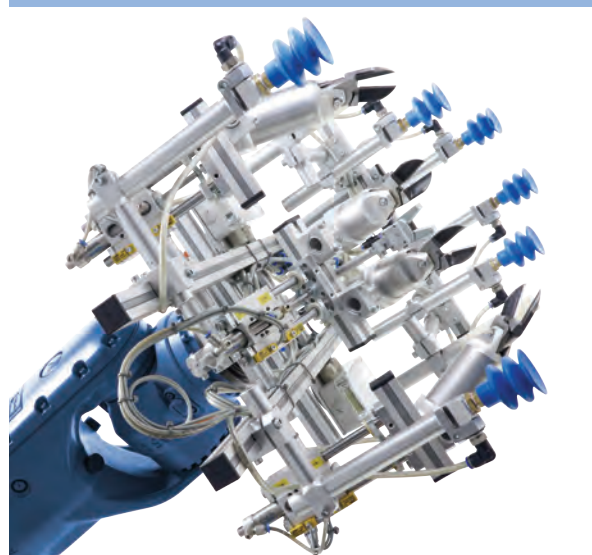
De-gating Station



De-gating



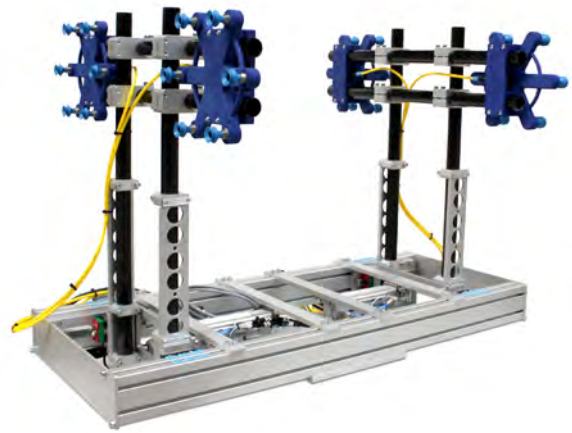
Combined Demoulding + De-Gating



Zuführtechnik



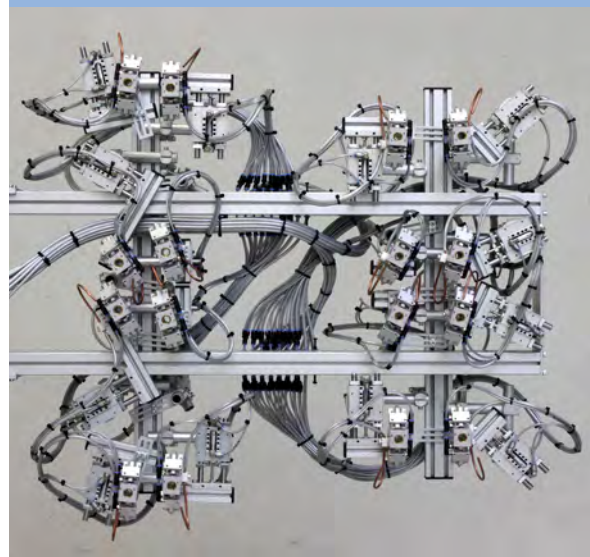
Lightweight EOAT



EOAT for limp materials



EOAT for limp materials



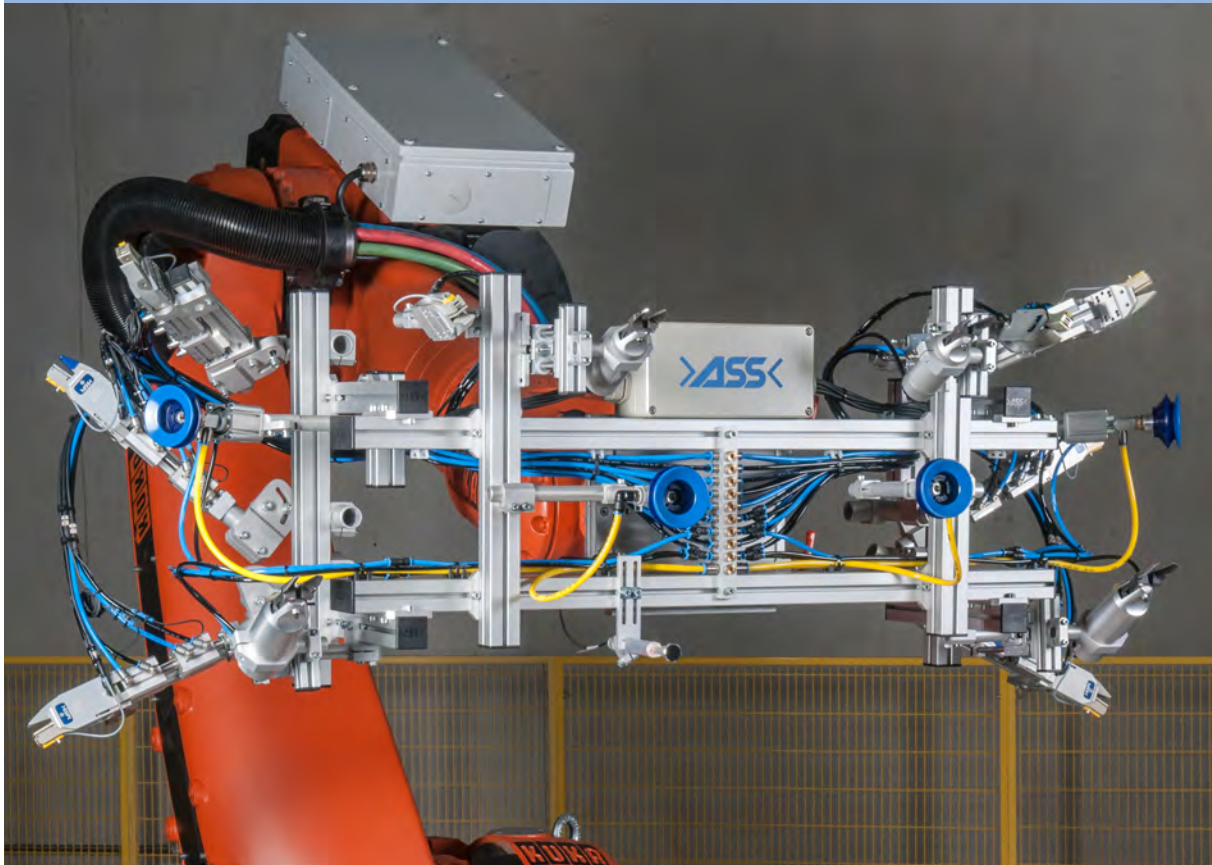
EOAT for large plates



Special robot hand



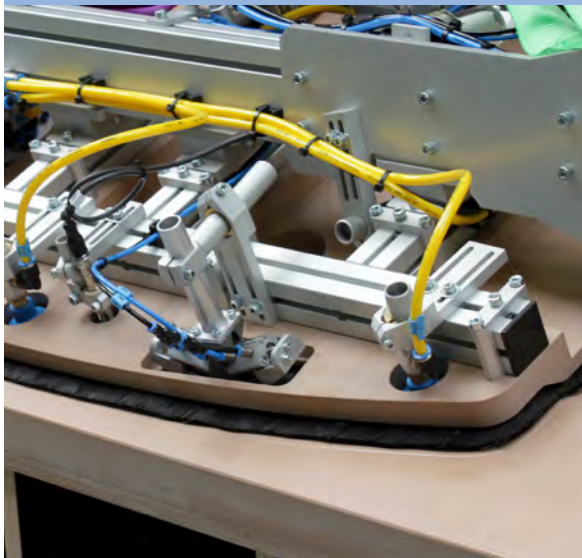
Bumper demoulding with integrated de-gating



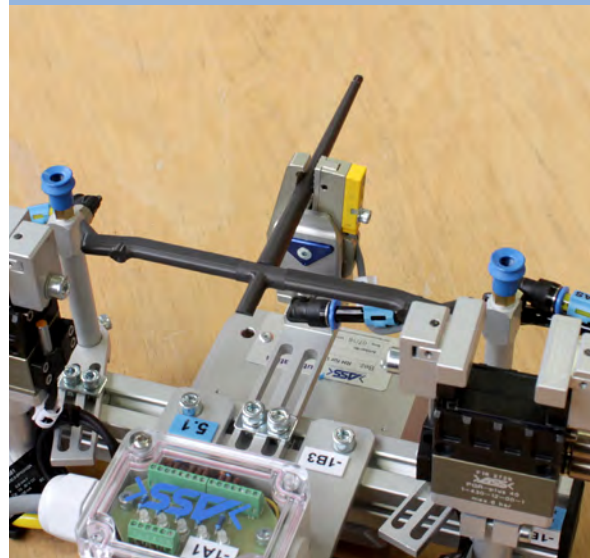
Automation system with processing, assembly and testing tasks



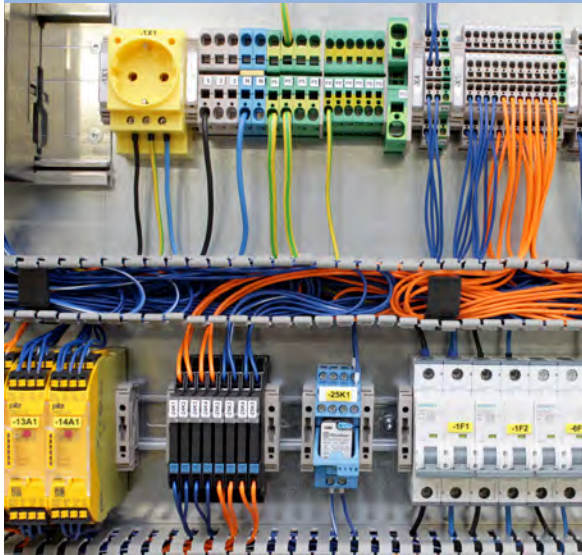
Contour nest



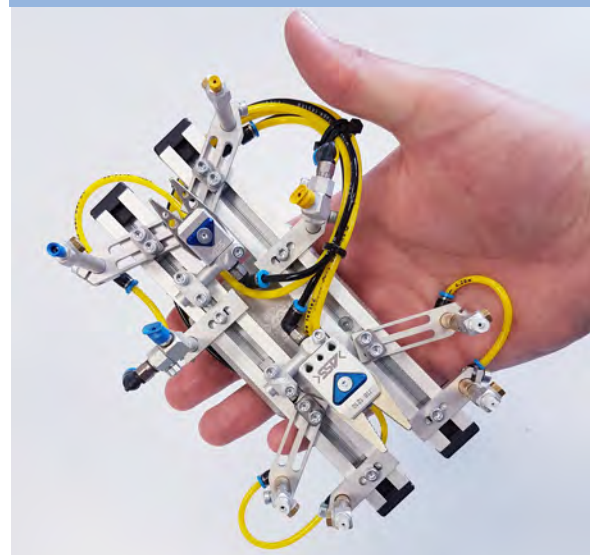
Secure sprue gripping



Control technology



Micro System



Tubular System



EP Coating



Automation system with assembly and testing tasks



Advice to catalogue´s content:

The contents of this catalog were created with the greatest possible care. All information is based on empirically determined values and careful calculations or the information provided by the respective manufacturer. All information is as of 10/2022.

However, should information be incomplete or incorrect, ASS Maschinenbau GmbH assumes no liability for this.

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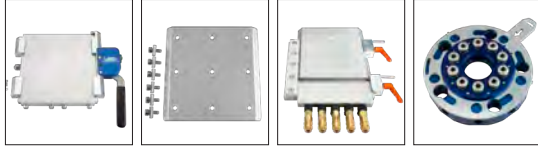
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<https://shop.ass-automation.com/>



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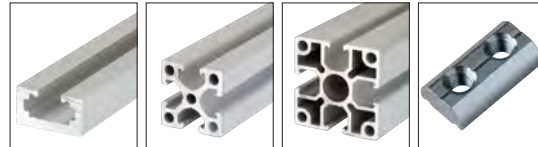
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050 Profile-Channel Nut



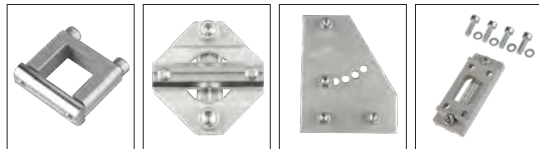
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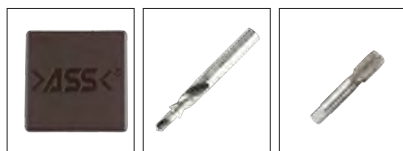
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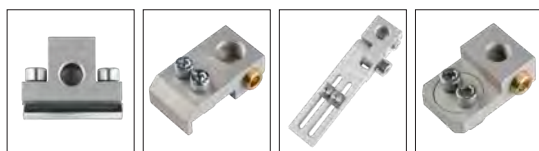
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600 Nipper Bodies



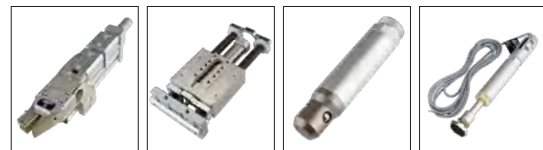
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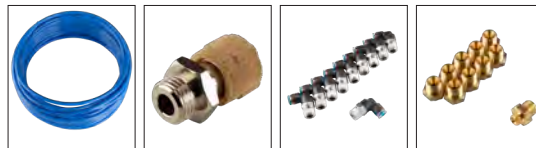
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990 3D Printing / EP Coating / Others



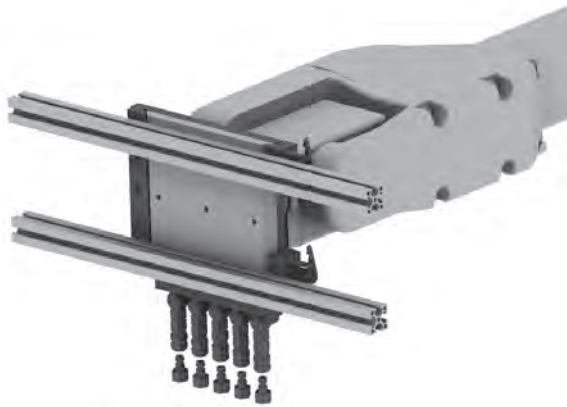
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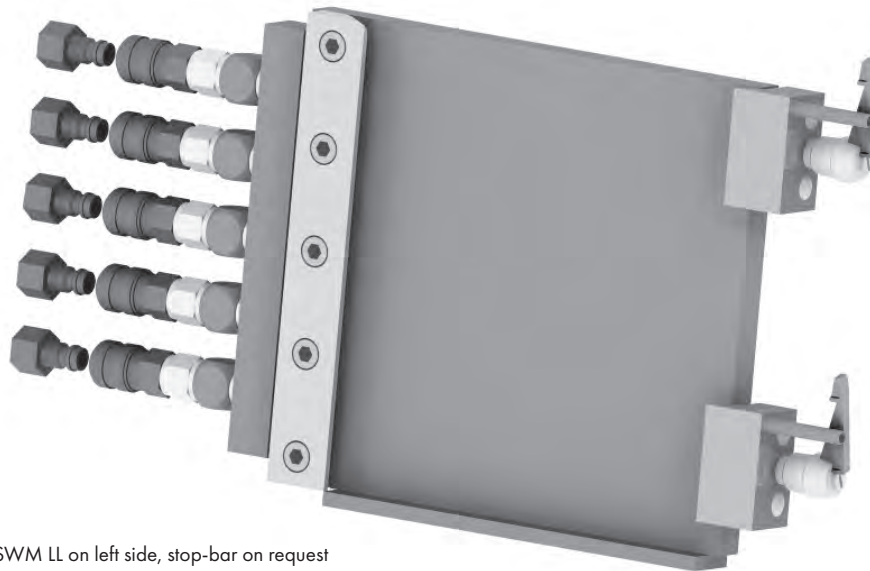
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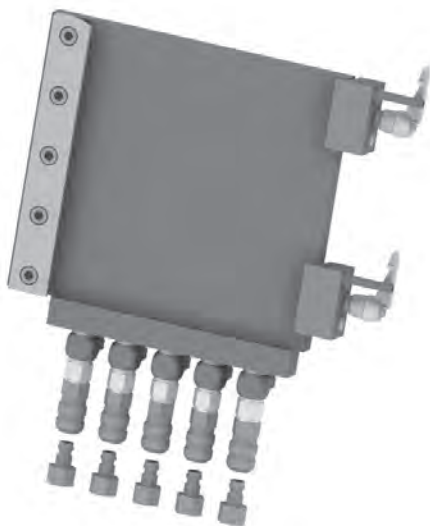
Application examples SWM



Special GPM, only on request



For mounting SWM LL on left side, stop-bar on request



Handling Weight SWM

Recommended maximum handling weights of the various SWM sizes:

Description	Handling Weight [kg]
SWM 01	1
SWM 0	5
SWM 1	10
SWM 2	20
SWM 3	40
SWM 3S	60
SWM 0 E	3
SWM 1 E	6,5
SWM 2 E	12

Handling weights depending on center of gravity distance, hole pattern, acceleration values of the robot etc.

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

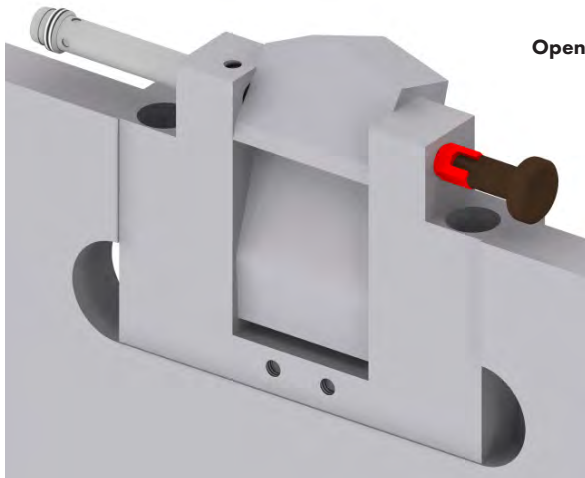
850
Pneumatics

990
Tubular System
Micro System

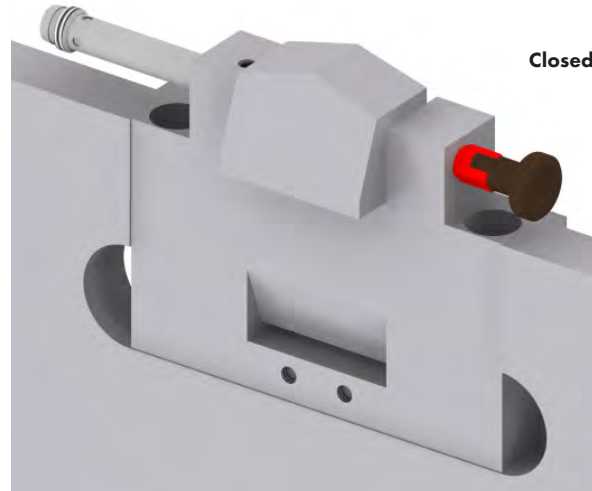
990
PA-Forming
Others

Application examples SWM Safety-Lock

Only SWM 3, SWM 3-S, SWM 3-OSK and SWM 3-S-OSK.

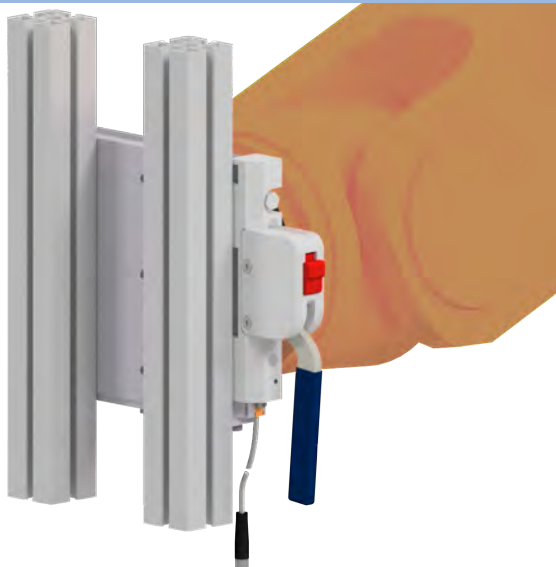


Open

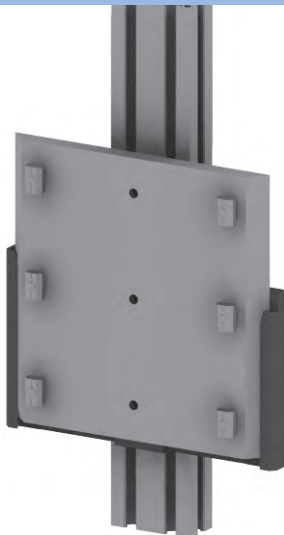


Closed

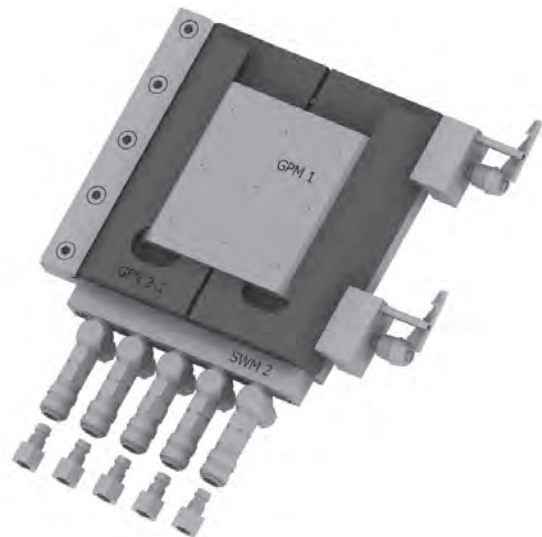
Application example SWM KH



Application example GHV



Application example GPR



Application examples GPG



050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
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190
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Nipper Bodies

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Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000 | Quick Change Systems

Application example SWH



Application example GHV-SWH and GP SWH G



050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

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Vacuum Cups

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Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

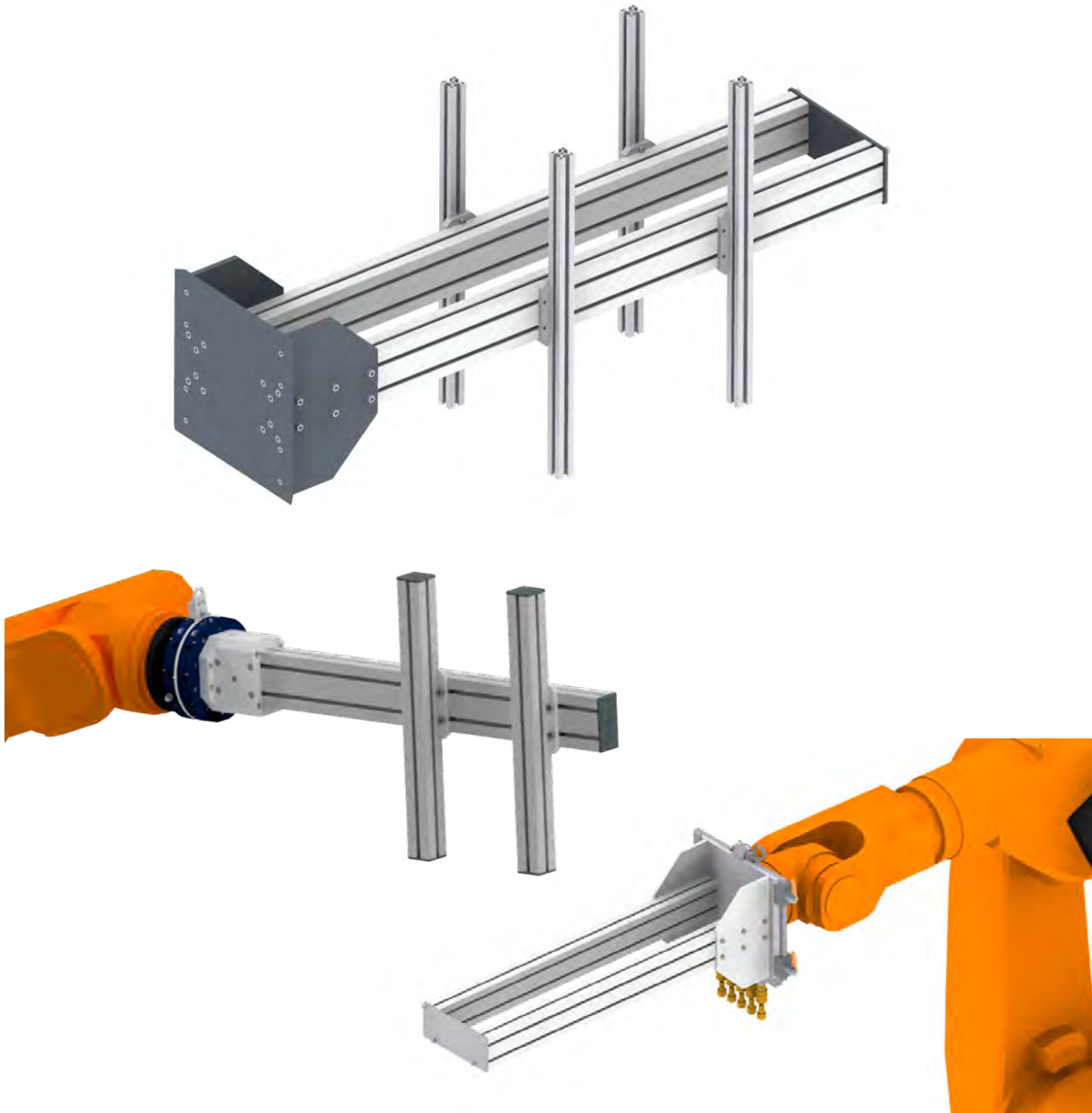
Application example SWH-PG and SWH-PR



With the SWH-PG/PG 4, a spacer is installed in the SWH 50 (far left) and SWH 150 (third from left). The figure on the right shows the SWH-PG/PR 2.

The SWH-PG/PR 2 90 is suitable for the SWH 90 series.

Application examples G6A



000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

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Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000 | Quick Change Systems

SWM / Quick Change System

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

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Vacuum Cups

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300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

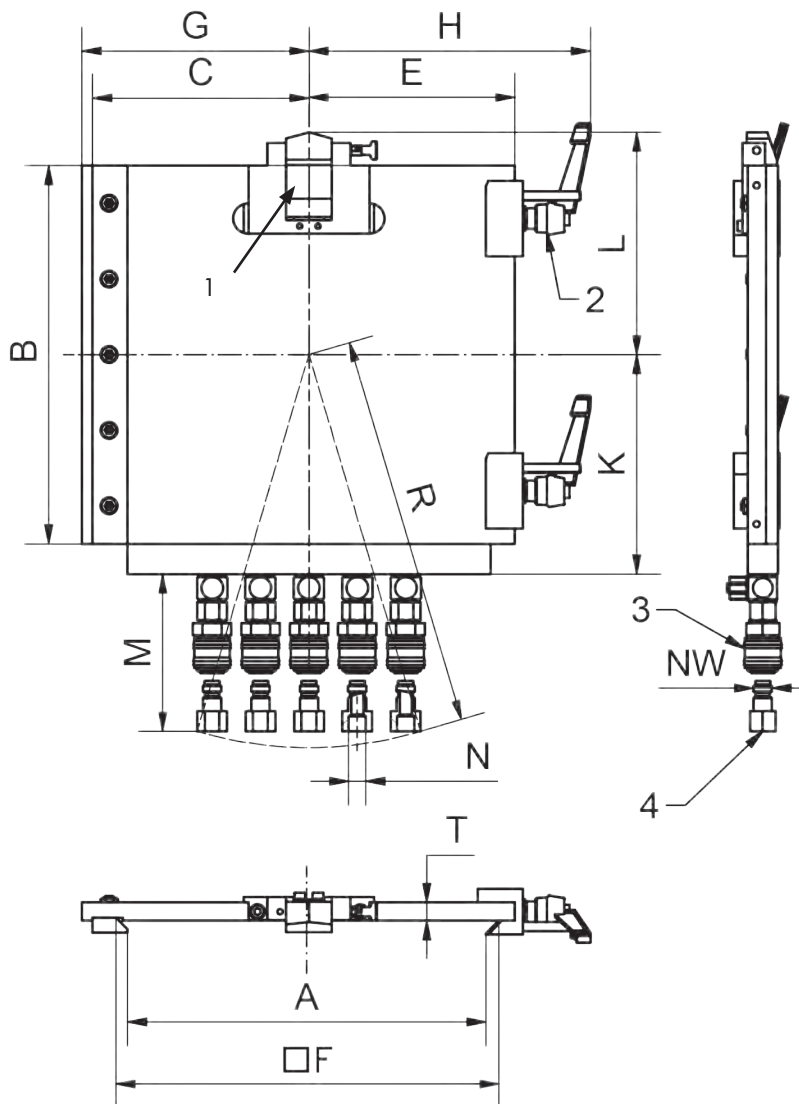
700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others



SWM / Quick Change System (Continuation)

Remarks:

Application: complete quick change system to set up robot hands and mount them to the robot

- easy exchange of the EOAT (Robot Hand)
- extremely short EOAT (Robot Hand) change over times
- minimizes machine down time
- no need for demounting the robot hand
- to preserve position of robot hand
- integrated pneumatic
- quick release couplings
- **SWM 3-S: made of galvanized steel, GPM also made of steel**
- **safety latch only for SWM 3 and SMW 3-S**
- **indictive monitoring possible (sensor on demand)**

Drawing:

1	security latch system only with SWM 3 and 3-S
3	air connections
4	STN plug in nipple
NW	plug in nipple size

Scope of delivery:

- Quick change system
- 2 base plates (GPM)
- pneumatic connection
- 1 set of plug in nipples (STN)

Customized hole pattern for individual robot systems on request.

Sensor for security latch (SWM 3 and 3-S) on request.

Dimensions

Part No.	Description	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	K [mm]	L [mm]	M [mm]	N [mm] ["]
1-000-05-00	SWM 01	29	40	25	22	40	28	32	26	20		
1-000-10-00	SWM 0	45	60	38	33	60	37,5	43	38	30	27	M5
1-000-15-00	SWM 1	85	100	58	54	100	57,5	63	58	50	27	M5
1-000-20-00	SWM 2	141	160	101	79	160	101	130	96	80	60	G1/8
1-000-25-00	SWM 3	231	250	150	136	250	150	186	145	147,5	65	G1/4
1-000-26-00	SWM 3-S	231	250	150	136	250	150	186	145	147,5	65	G1/4

Pneumatic Features

Part No.	Description	NW [mm]	R [mm]	T [mm]	No. of plugs	STN connector	number of hand levers	Safety latch	Material	Weight [g]
1-000-05-00	SWM 01			13.5			1		Aluminum	198
1-000-10-00	SWM 0	2.5	75	10	5	M5	2		Aluminum	559
1-000-15-00	SWM 1	2.5	100	10	5	M5	2		Aluminum	1037
1-000-20-00	SWM 2	5	200	12	5	G 1/8	2		Aluminum	3039
1-000-25-00	SWM 3	8	265	12	5	G 1/4	2	X	Aluminum	7212
1-000-26-00	SWM 3-S	8	265	12	5	G 1/4	2	X	Steel	12856

050
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300
Gripper Arms

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Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

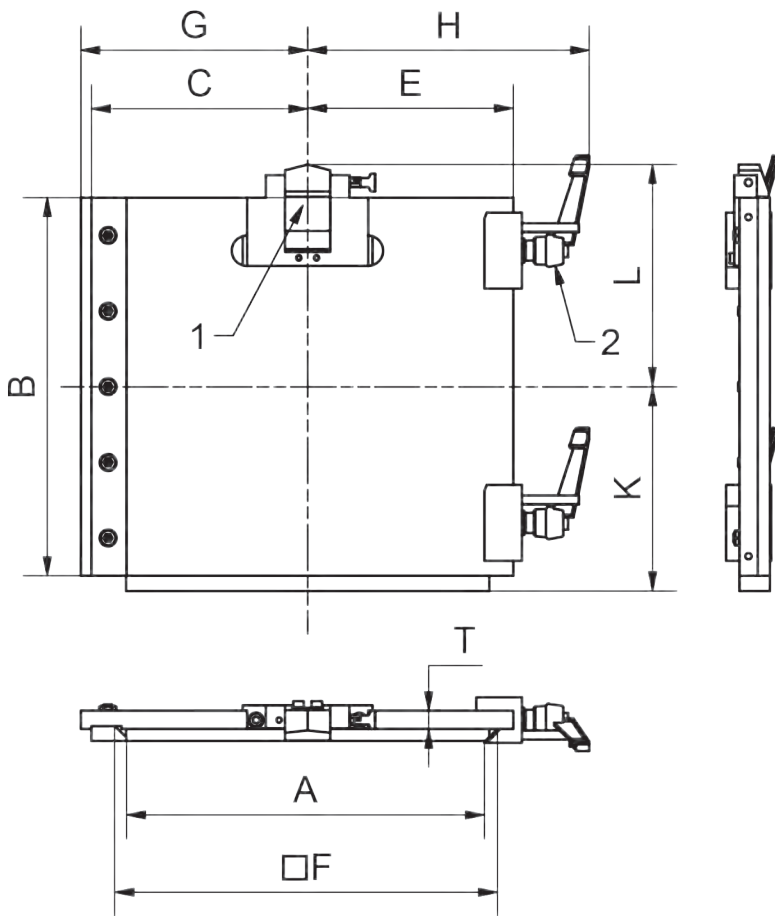
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000 | Quick Change Systems

SWM OSK / EOAT (Robot Hand) Quick Change Chuck



Remarks:

- easy exchange of the EOAT (Robot Hand)
- extremely short EOAT (Robot Hand) change over times
- minimizes machine down time
- no need for demounting the robot hand
- to preserve position of robot hand
- quick release couplings
- chuck mechanism made of steel
- SWM 3-S-OSK made of steel for higher payloads
- straight pin for avoiding unwanted loosening of hand lever
- safety latch only for SWM 3 OSK and SMW 3-S OSK
- **inductive monitoring possible (sensor on demand)**

Drawing:

1 security latch only on SWM 3 OSK

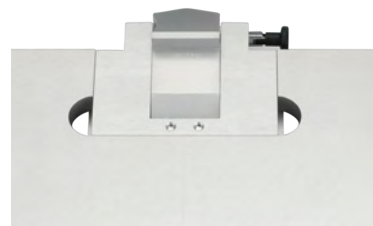
Scope of delivery:

- SWM without pneumatic connections and base plates

Customized hole pattern for individual robot systems on request.

Sensor for security latch (SWM 3/3-S OSK) on request.

Detail: Security Latch



Part No.	Description	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	K [mm]	L [mm]	T [mm]
1-000-40-00	SWM 0 - OSK	45	60	38	33	60	37.5	43	35	30	10
1-000-43-00	SWM 1 - OSK	85	100	58	54	100	57.5	63	55	50	10
1-000-46-00	SWM 2 - OSK	141	160	101	79	160	101	130	85	80	12
1-000-49-00	SWM 3 - OSK	237	250	150	136	250	150	186	135	147.5	12
1-000-53-00	SWM 3-S - OSK	237	250	150	136	250	150	186	135	147.5	12

Part No.	Description	number of hand levers	Safety latch	Material	Weight [g]
1-000-40-00	SWM 0 - OSK	2		Aluminum	274
1-000-43-00	SWM 1 - OSK	2		Aluminum	492
1-000-46-00	SWM 2 - OSK	2		Aluminum	1391
1-000-49-00	SWM 3 - OSK	2	X	Aluminum	3210
1-000-53-00	SWM 3-S - OSK	2	X	Steel	7507

SWM LL / Pneumatic Connection for Quick Change System



Remarks:

- dimensions for pneumatic connection see SWM

Drawing:

Ø A quick connect EOAT (Robot Hand) side
 Ø B pneumatic connector to robot

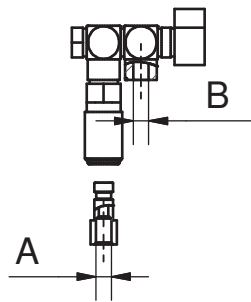
Scope of delivery:

- set of Plug-In Nipple (STN) and screws

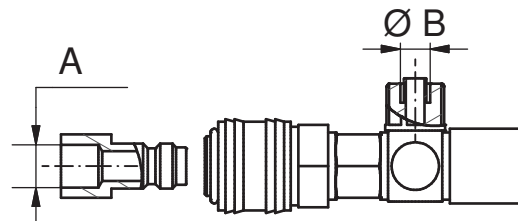
Accessories e.g.:

- Straight Quick Hose Connector STA
- Pneumatic Hose PSS

SWM LL 0 / SWM LL 1



SWM LL 2 / SWM LL 3



Part No.	Description	Number of connectors	A [mm]	B [mm] for hose	Weight [g]
1-000-10-04	SWM 0 LL 5	5	M5	M5	156
1-000-10-07	SWM 0 LL 7	7	M5	M5	220
1-000-15-04	SWM 1 LL 5	5	M5	M5	166
1-000-15-07	SWM 1 LL 7	7	M5	M5	226
1-000-20-04	SWM 2 LL 5	5	G1/8	4x 6/4 - 1x 8/6	418
1-000-20-07	SWM 2 LL 7	7	G1/8	6x 6/4 - 1x 8/6	565
1-000-20-09	SWM 2 LL 9	9	G1/8	8x 6/4 - 1x 8/6	717
1-000-25-05	SWM 3 LL 5	5	G1/4	5x 8/6	891
1-000-25-11	SWM 3 LL 7	7	G1/4	7x 6/4	1153
1-000-25-13	SWM 3 LL 9	9	G1/4	9x 6/4	1,836

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

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Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000 | Quick Change Systems

GPM / EOAT (Robot Hand) Base Plate

050
Profiles
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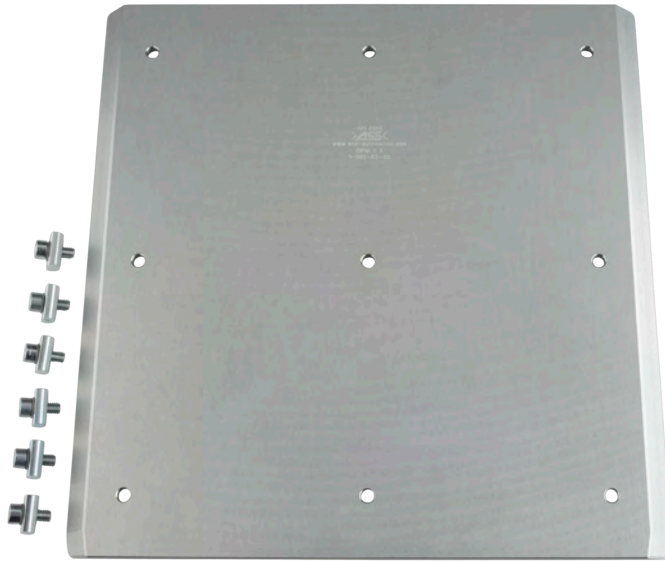
700
Special Elements

800
Electrics and
Sensors

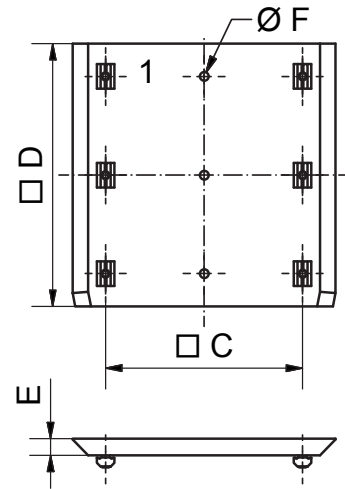
850
Pneumatics

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Tubular System
Micro System

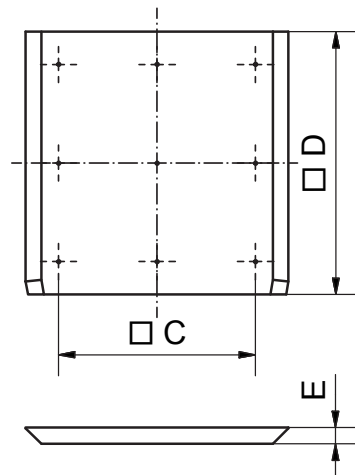
990
PA-Forming
Others



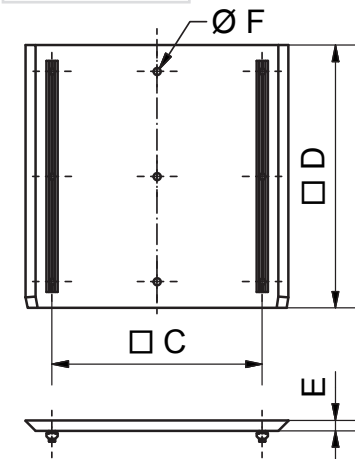
Version 1



Version 2



Version 3



GPM / EOAT (Robot Hand) Base Plate

Remarks:

Version 1:

- with channel nuts respectively sunk screw and bore holes

Version 2:

- without channel nuts
- GPM are marked (dimension C)
- GPM 1 V: thicker plate for higher payloads, reinforced version of GPM 1 for better countersinking of screws
- GPM 3 S (Steel): for higher payloads

Version 3:

- with end-to-end channel nut and bore holes
- easy mounting, strong connection
- profiles can be mounted length- or crosswise

Customized hole pattern for individual robot systems on request.

Remarks for scope of delivery:

- SK = sunk screw (DIN 6912)
- GWP = channel nut with one bore hole and screw (DIN 912)
- GWP3 = long channel nut with three bore holes and screws (DIN 912)

Part No.	Description	Version/Scope of delivery	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-005-05-00	GPM 01	Version 2, without GWP, without marking	-	40	8	-	Al	29
1-005-10-00	GPM 0	Version 2, without GWP, with marking	35	60	8	-	Al	71
1-005-15-00	GPM 0 L	Version 1, 4x SK, M4, for L 18-10 and X 25-10 Profile	35	60	8	-	Al	74
1-005-17-00	GPM 0 L/X	Version 1, 4x GWP, M4, optimal for L 18-18 and X-Profile	35	60	8	-	Al	96
1-005-25-00	GPM 1	Version 2, without GWP, with marking	70	100	8	-	Al	198
1-005-27-00	GPM 1 L	Version 1, 4x SK, M4, for L 18-10 and X 25-10 Profile	70	100	8	-	Al	202
1-005-28-00	GPM 1 V	Version 2, without GWP, with marking	70	100	10	-	Al	241
1-005-31-00	GPM 1 L/X V	Version 1, 4x GWP, M5, optimal for L 18-18 and X-Profile	70	100	10	-	Al	268
1-005-30-00	GPM 1 L/X	Version 1, 4x GWP, M5, optimal for L 18-18 and X-Profile	70	100	8	-	Al	225
1-005-40-00	GPM 2	Version 2, without GWP, with marking	120	160	10	-	Al	652
1-005-45-00	GPM 2 X	Version 1, 6x GWP, M5, optimal for X-Profile	120	160	10	5,5	Al	688
1-005-50-00	GPM 2 JU	Version 1, 6x GWP, M6, optimal for JU-Profile	120	160	10	6,6	Al	688
1-005-60-00	GPM 3	Version 2, without GWP, with marking	200	250	10	-	Al	1603
1-005-65-00	GPM 3 X	Version 1, 6x GWP, M5, optimal for X-Profile	200	250	10	5,5	Al	1644
1-005-66-00	GPM 3 X DN	Version 3, 2x GWP3, M5, optimal for X-Profile	200	250	10	5,5	Al	1778
1-005-70-00	GPM 3 JU	Version 1, 6x GWP, M6, optimal for JU-Profile	200	250	10	6,6	Al	1663
1-005-71-00	GPM 3 JU DN	Version 3, 2x GWP3, M6, optimal for JU-Profile	200	250	10	6,6	Al	1787
1-005-62-00	GPM 3 S	Version 2, without GWP, with marking	200	250	10	-	Stahl	4695

050
Profiles
Channel Nuts

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Clamps

120
Profile
Connectors

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Gripper Fingers

460
Needle Gripper

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Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000 | Quick Change Systems

GPM BP / EOAT Base Plate with Adapter



050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

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Vacuum Cup
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Electrics and
Sensors

850
Pneumatics

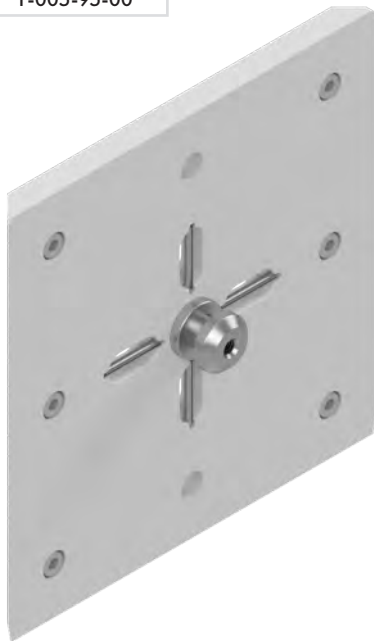
990
Tubular System
Micro System

990
PA-Forming
Others

1-005-93-00



1-005-95-00

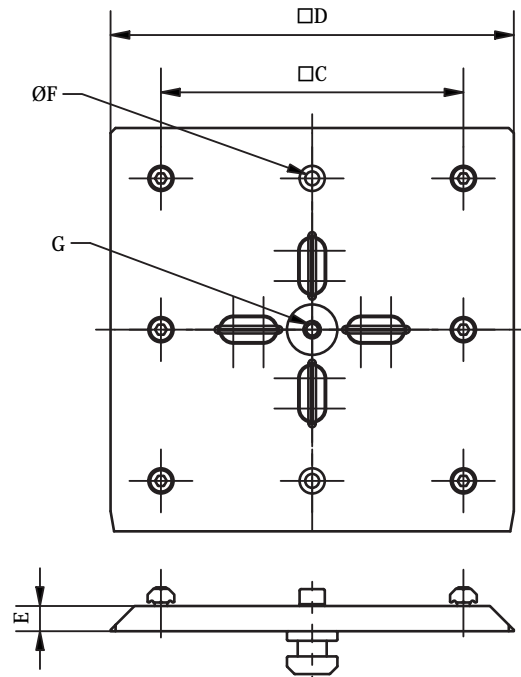


Remarks:

- special EOAT base plate for the appropriate quick-change system

Scope of delivery:

- includes mounting material



Part No.	Description	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-005-93-00	GPM 1 X BP	70	100	8	-	M6	243
1-005-95-00	GPM 2 X BP	120	160	10	5,5	M6	686

GPM-SWH / EOAT Base Plate for SWH



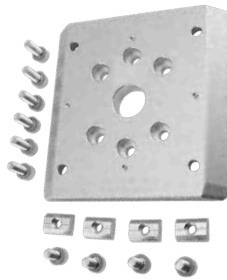
Remarks:

- special EOAT base plate for SWH Quick Change System
- SWH can be mounted directly on this base plate.
- for all profile systems: L, X, JU
- possibility to be mounted directly on SWM

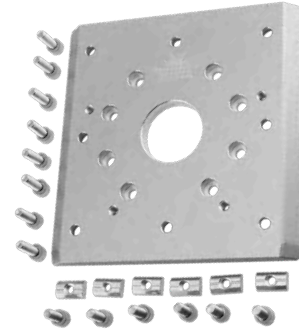
Scope of delivery:

- includes mounting material

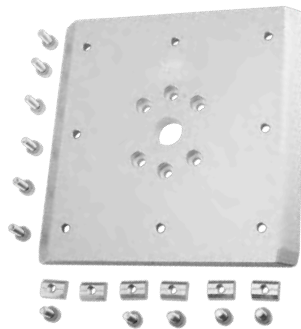
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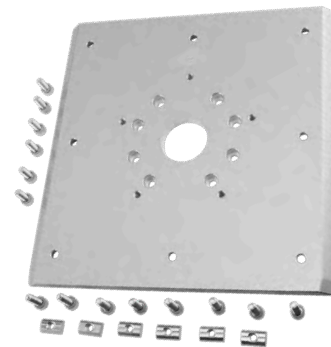
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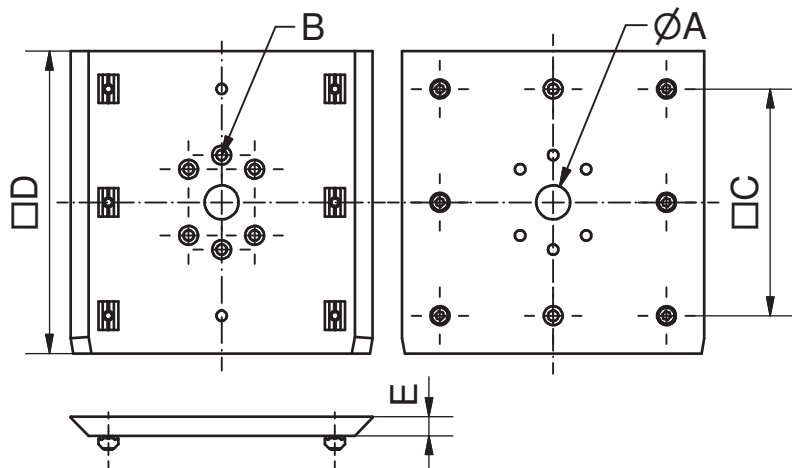
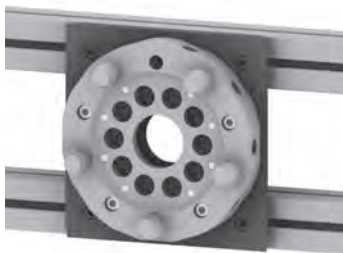
9-07-005-052-0



9-07-005-056-0



Application example



Part No.	Description	A [mm]	B Hole pattern	C [mm]	D [mm]	E [mm]	Compatible with profile	Weight [g]
9-07-005-050-0	GPM-1-SWH- G90	18	SWH-G90	70	100	10	L, X	251
9-07-005-052-0	GPM-2-SWH-G90	18	SWH-G90	120	160	10	L, X	661
9-07-005-054-0	GPM-2-SWH-G150	40	SWH-G150	120	160	10	X, JU	636
9-07-005-056-0	GPM-3-SWH-G150	40	SWH-G150	200	250	10	X, JU	1,562

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

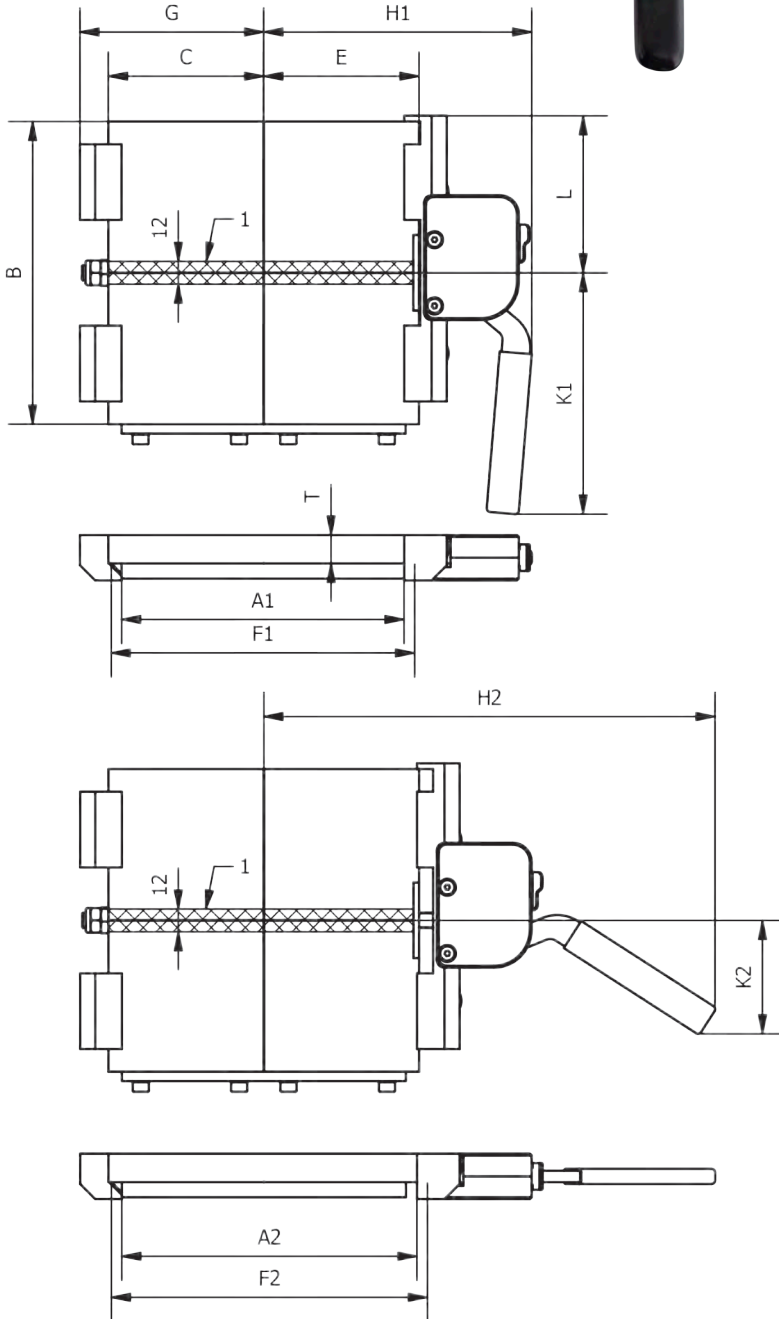
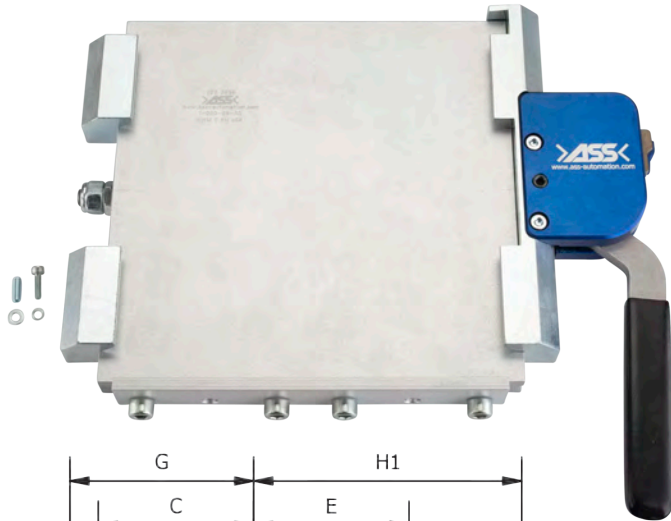
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000 | Quick Change Systems

SWM KH / Quick Change System with Lever Locking Device



Remarks:

- with integrated safety lock against unwanted opening of the lever locking device
- easy exchange of the EOAT (Robot Hand)
- extremely short EOAT (Robot Hand) change over times
- minimizes machine down time
- no need for demounting the robot hand
- to preserve position of robot hand
- Material: Aluminium, clamps made of steel
- **inductive monitoring possible (sensor on demand)**

Drawing:

- 1 hatched area:
no machining allowed!

Scope of delivery:

- SWM KH without pneumatic connections and base plates

Accessories e.g.:

- Sensor IEK 8 or IES 8
- Pneumatic Connection SWM LL
- Base Plate GPM

Customized hole pattern for individual robot systems on request.

050 Profiles Channel Nuts

100/115 Clamps

120 Profile Connectors

190 Profile Accessories

200 Vacuum Cup Connectors

220 Vacuum Cups

224 Special Vacuum Cups

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290 Adapters for Vacuum Cups

300 Gripper Arms

400 Gripper Parallel Gripper

450 Gripper Fingers

460 Needle Gripper

600 Nipper Bodies

610 Nipper Blades

700 Special Elements

800 Electrics and Sensors

850 Pneumatics

990 Tubular System Micro System

990 PA-Forming Others

Part No.	Description	A1 [mm]	A2 [mm]	B [mm]	C [mm]	E [mm]	F1 [mm]	F2 [mm]	G [mm]	H1 [mm]	H2 [mm]	K1 [mm]	K2 [mm]	L [mm]	T [mm]	Weight [g]
1-000-66-00	SWM 2 KH OSK	149	156	160	82	82	160	167	97	142	240	130	60	83	15	1900

SWM E / EOAT (Robot Hand) Quick Change System, Extruded

Remarks:

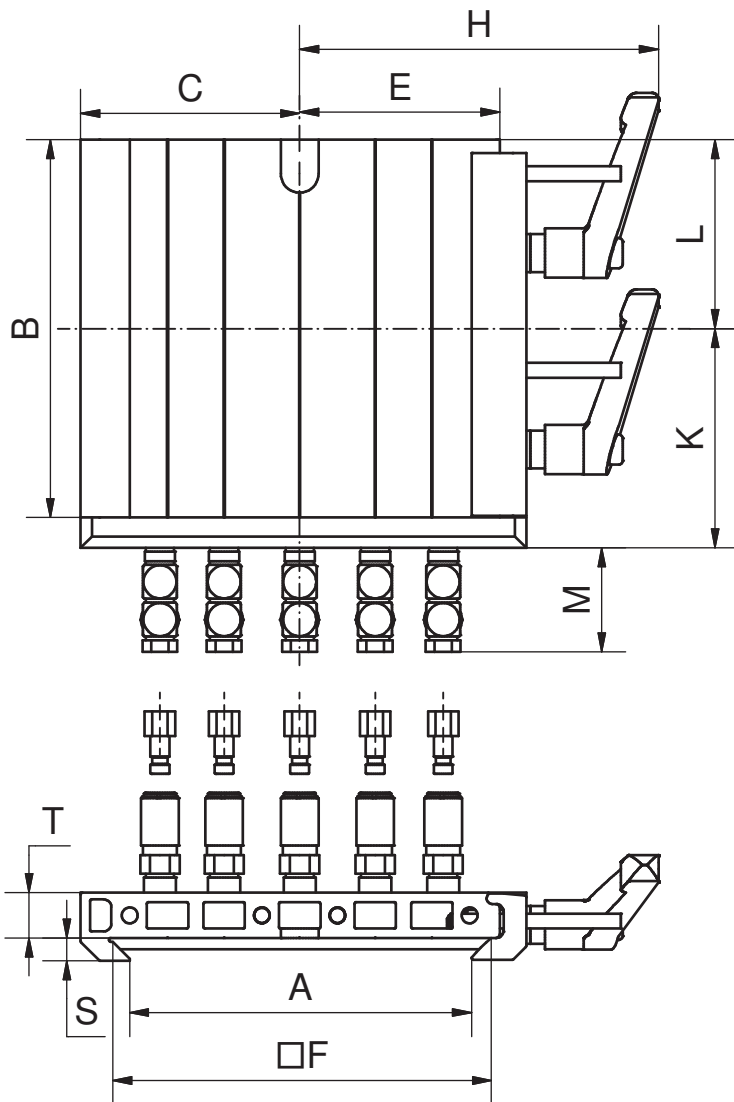
Application: complete extruded quick change system to set up robot hands and mount them to the robot

- extreme weight reduction compared to quick change system SWM
- EOAT (Robot Hand) base plate only fits in one direction
- all SWM E with toggle nut
- straight pin for avoiding unwanted loosening of hand lever
- easy exchange of the EOAT (Robot Hand)
- extremely short EOAT (Robot Hand) change over times
- minimizes machine down time
- no need for demounting the robot hand

Scope of delivery:

- Quick change system
- 2 base plates (GPM E)
- pneumatic connection
- 1 set of plug in nipples (STN)

Customized hole pattern for individual robot systems on request.



Part No.	Description	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	H [mm]	K [mm]	L [mm]	M [mm]	S [mm]	T [mm]	Material	Weight [g]
1-002-05-00	SWM 0 E	51	60	38	33	60	75	38	39	27.5	6	12	Al	422
1-002-10-00	SWM 1 E	90.5	100	58	53	100	95	58	62.5	27.5	6	12	Al	815
1-002-15-00	SWM 2 E	150.5	160	90	83	160	122.6	92	90	59.5	5.7	14	Al	2199

050
Profile
Channel Nuts

100/115
Clamps

120
Profile
Connectors

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Profile
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Vacuum Cup
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Special
Vacuum Cups

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Manifold

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Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000 | Quick Change Systems

SWM E OSK / EOAT (Robot Hand) Quick Change Chuck, Extruded

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

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Profile
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Pneumatics

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Micro System

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PA-Forming
Others



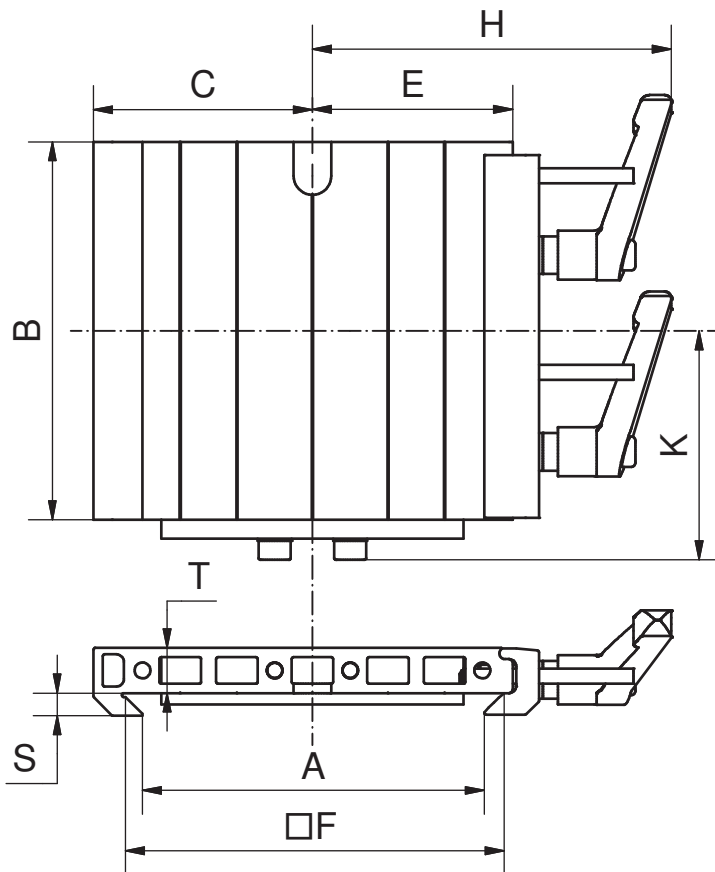
Remarks:

- extreme weight compared to standard quick changer
- EOAT (robot hand) base plate only fits in one direction
- all SWM E OSK with toggle nut
- straight pin for avoiding unwanted loosening of hand lever
- easy exchange of the EOAT (Robot Hand)
- extremely short EOAT (Robot Hand) change over times
- minimizes machine down time
- no need for demounting the robot hand

Scope of delivery:

- Quick change system without base plates and pneumatic connection

Customized hole pattern for individual robot systems on request.



Part No.	Description	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	H [mm]	K [mm]	S [mm]	T [mm]	Material	Weight [g]
1-002-40-00	SWM 0 E-OSK	51	60	38	33	60	75	37.6	6	12	Aluminum	173
1-002-43-00	SWM 1 E-OSK	90.5	100	58	53	100	95	60.6	6	12	Aluminum	371
1-002-46-00	SWM 2 E-OSK	150.5	160	90	83	160	122.6	91.6	6	14	Aluminum	905

SWM E LL / Pneumatic Connection for Quick Change System, Extruded



Remarks:

- dimensions for pneumatic connection see SWM

Drawing:

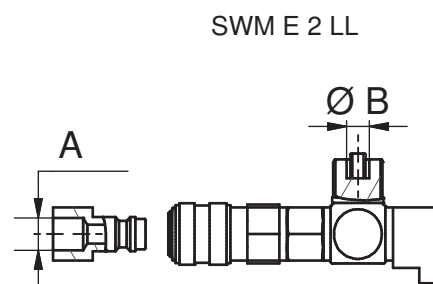
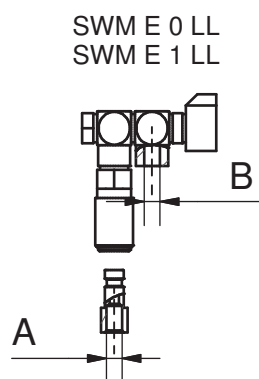
- Ø A quick connect EOAT (Robot Hand) side
- Ø B pneumatic connector to robot

Scope of delivery:

- set of Plug-In Nipple (STN) and screws

Accessories:

- Straight Quick Hose Connector STA
- Pneumatic Hose PSS



Part No.	Description	Number of connectors	A [mm] ["]	B [mm] for hose	Weight [g]
1-002-05-03	SWM E 0 LL 5	5	M5	M5	157
1-002-10-03	SWM E 1 LL 5	5	M5	M5	169
1-002-10-06	SWM E 1 LL 7	7	M5	M5	224
1-002-15-03	SWM E 2 LL 5	5	1/8	4x6/4-1x8/6	422
1-002-15-06	SWM E 2 LL 7	7	1/8	6x6/4-1x8/6	559

000
Quick Change Systems

050
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Needle Gripper

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Nipper Bodies

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Nipper Blades

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Special Elements

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Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

GPM E / EOAT (Robot Hand) Base Plate, Extruded

050
Profiles
Channel Nuts

100/115
Clamps

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Tubular System
Micro System

990
PA-Forming
Others

Version 1



Version 2



Remarks:

- suitable for SWM E
- extreme weight reduction
- anti-rotation of the robot hand base plates by additional positive locking (dimension B)

Version 1:

- with channel nuts respectively sunk screw and bore holes

Version 2:

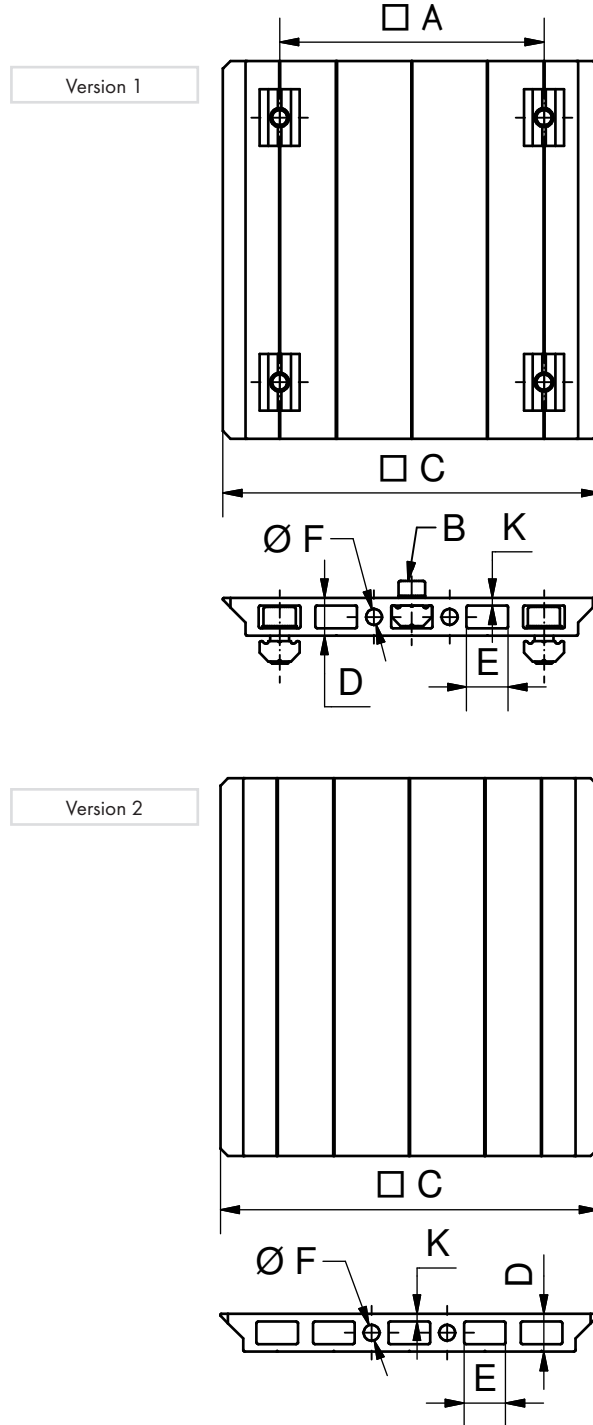
- without channel nuts

Customized hole pattern for individual robot systems on request.

Remarks for scope of delivery:

- SK = sunk screw (DIN 10642)
- GWP = channel nut with one bore hole and screw (DIN 4762)

GPM E / EOAT (Robot Hand) Base Plate, Extruded



Part No.	Description	Version/Scope of delivery	A	C	D	E	F	K	Material	Weight [g]
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
1-007-05-00	GPM 0 E	Version 2, without GWP		60	10	11		2	Al	52
1-007-13-00	GPM 0 E L/X	Version 1, 4x GWP, M4, with anti-rotation, optimal for L 18-18 and X-Profile	30	60	10	11		2	Al	82
1-007-20-00	GPM 1 E	Version 2, without GWP		100	10	11	4,2	2	Al	147
1-007-23-00	GPM 1 E L	Version 1, 4x SK, M4, with anti-rotation, for L 18-10 and X 25-10 Profile	70	100	10	11	4,2	2	Al	178
1-007-25-00	GPM 1 E L/X	Version 1, 4x GWP, M5, with anti-rotation, optimal for L 18-18 and X-Profile	70	100	10	11	4,2	2	Al	185
1-007-35-00	GPM 2 E	Version 2, without GWP, with anti-rotation		160	12	11	4,2	2,5	Al	467
1-007-40-00	GPM 2 E X	Version 1, 4x GWP, M5, with anti-rotation, optimal for L 18-18 and X-Profile	130	160	12	11	4,2	2,5	Al	500

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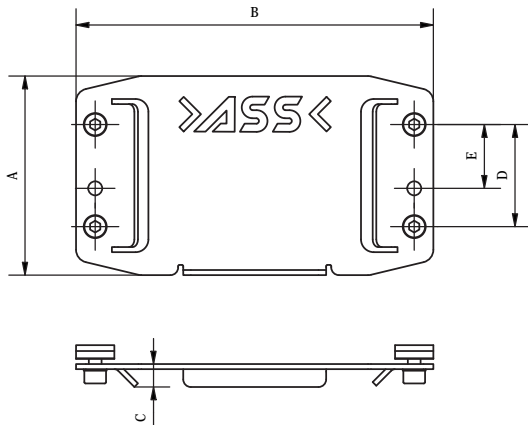
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000 | Quick Change Systems

GHV ND / EOAT (Robot Hand) Holding Fixture, new design



Remarks:

Application: e.g. for storing EOAT at racks walls

- made of stainless steel

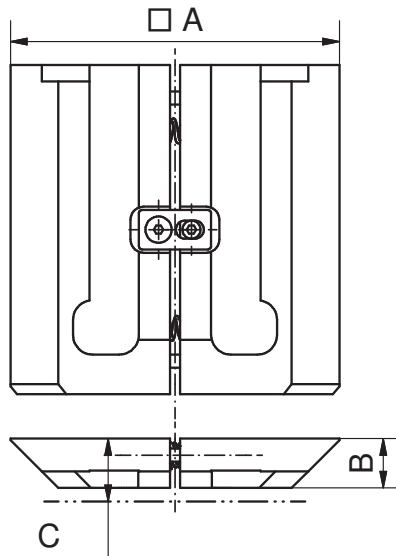
Scope of Delivery:

- mounting material for X- and JU-profile



Part No.	Description	Suitable for	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material
1-006-04-00	GHV 01 ND	GPM 01	50	80	9	25	12,5	Stainl. Steel
1-006-07-00	GHV 0 ND	GPM 0, GPM 0 E	50	100	9	25	12,5	Stainl. Steel
1-006-10-00	GHV 1 ND	GPM 1, GPM 1 E	80	140	9	40	25	Stainl. Steel
1-006-13-00	GHV 2 ND	GPM 2, GPM 2 E	115	210	11	40	25	Stainl. Steel
1-006-16-00	GHV 3 ND	GPM 3	135	300	11	40	25	Stainl. Steel

GPR / Adapter GPM to SWM



Remarks:

Application: adapter plate allows a smaller GPM size in a larger SWM

- no need to convert the robots side
- see application examples

Drawing:

C height of GPM installed in GPR

Part No.	Description	A [mm]	B [mm]	C [mm]	Adaption	Material	Weight [g]
1-005-81-00-1	GPR 1-0	100	15	18	GPM 0 to SWM 1	Aluminum	269
1-005-83-00-1	GPR 2-1	160	15	17	GPM 1 to SWM 2	Aluminum	712
1-005-85-00	GPR 3-1	250	20	22	GPM 1 to SWM 3	Aluminum	2858
1-005-86-00-1	GPR 3-2	250	20	23	GPM 2 to SWM 3	Aluminum	2377

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

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Special Elements

800
Electrics and
Sensors

850
Pneumatics

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Tubular System
Micro System

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PA-Forming
Others

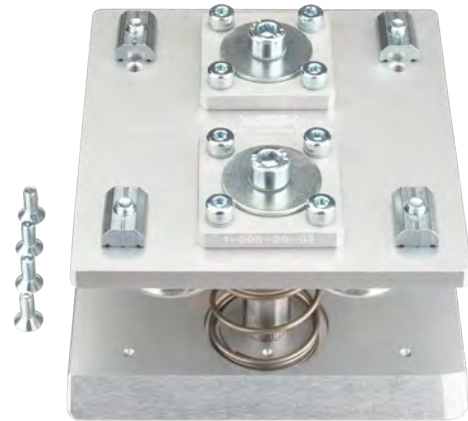
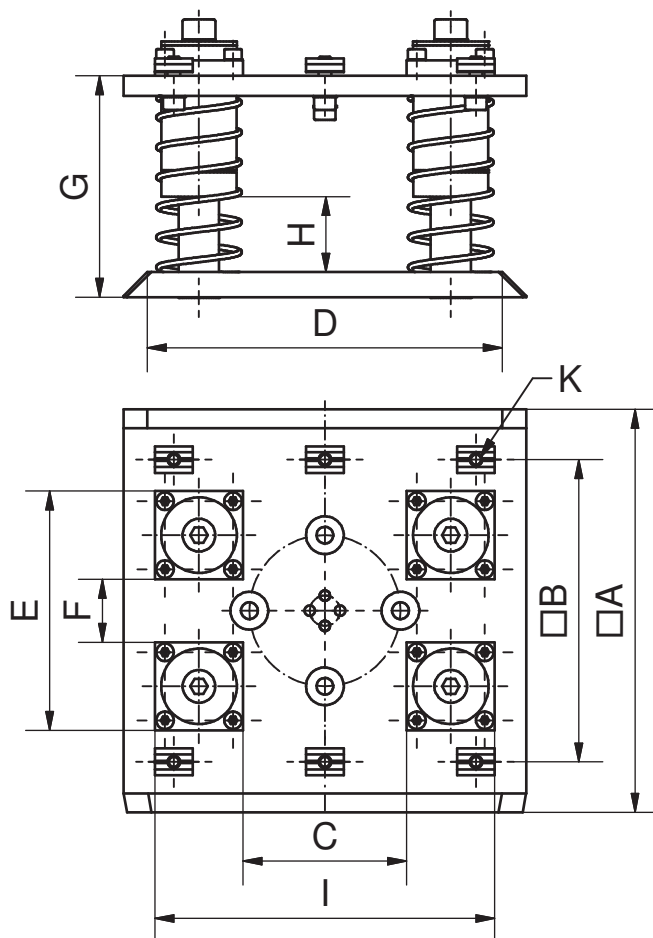
GPG / EOAT (Robot Hand) Base Plate features Ball Bushings

Remarks:

- robot hand base plate with bore holes and channel nuts respectively sunk screws
- moving plate can be rotated 90°
- spring tension can be reduced by removing springs

Remarks for scope of delivery:

- SK = sunk screw
- GWP = channel nut



Part No.	Description	Version/Scope of delivery	A [mm]	B [mm]	C [mm]	D [mm]
1-006-20-00	GPG 1-20 L/X	2x ball bushings, 4x GWP, 4x SK, optimal for L- and X-Profil	100	70		85
1-006-26-00	GPG 2-30 X	4x ball bushings, 6x GWP, optimal for X-Profil	160	120	25	141
1-006-29-00	GPG 3-30 X	4x ball bushings, 10x GWP, optimal for X-Profil	250	200	105	231
1-006-30-00	GPG 3-30 JU	4x ball bushings, 10x GWP, optimal for JU-Profil	250	215	105	231

Part No.	Description	E [mm]	F [mm]	G [mm]	Stroke H [mm]	I [mm]	K [mm]	Weight [g]
1-006-20-00	GPG 1-20 L/X	85	15	51,5	20		M5	579
1-006-26-00	GPG 2-30 X	135	65	88	30	95	M5	2211
1-006-29-00	GPG 3-30 X	215	145	88	30	175	M5	3687
1-006-30-00	GPG 3-30 JU	215	145	88	30	175	M6	3872

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000 | Quick Change Systems

GPG-P / EOAT (Robot Hand) Base Plate, pneumatic

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Clamps

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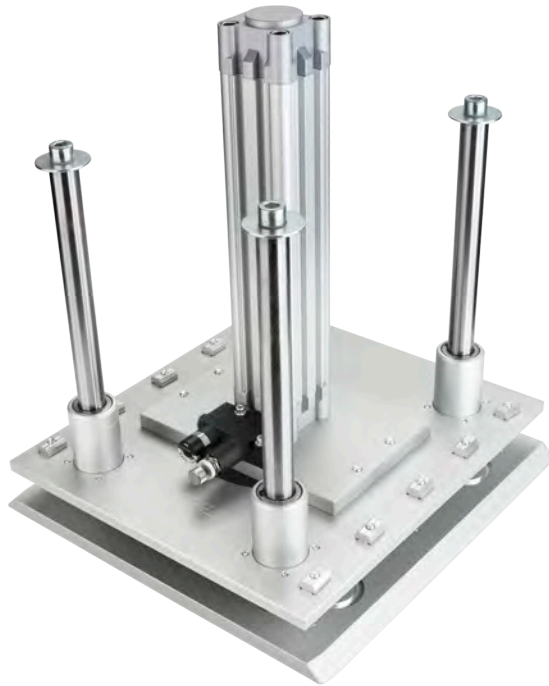
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Micro System

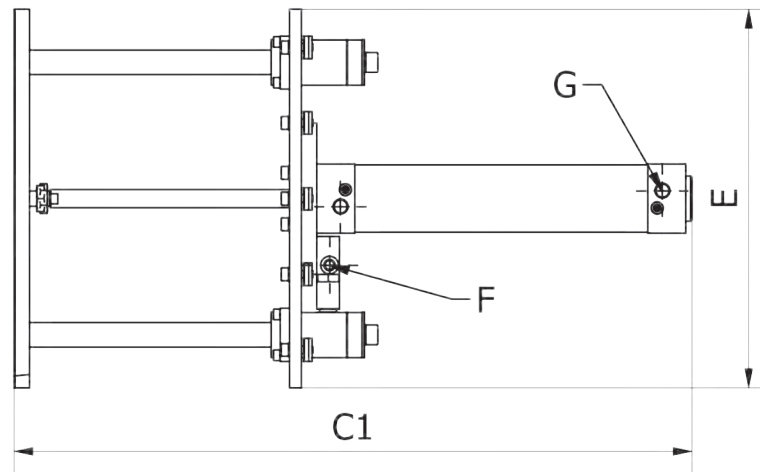
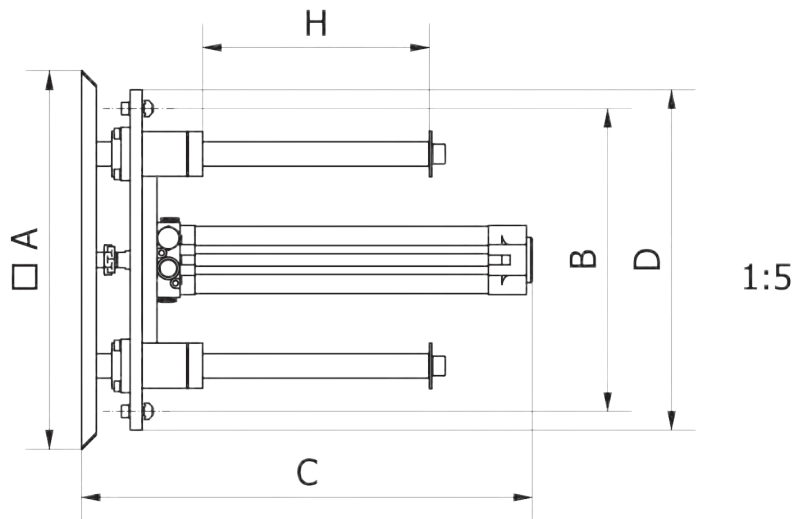
990
PA-Forming
Others



Remarks:

Application: for extraction of falling items

- spring force of standard GPG raises proportionately with the translation
- counterforce of this version is constantly during the translation
- counterforce is adjustable by the integrated press-control valve
- produced air cushion dumps by the press-control valve
- **variants on demand**



Part No.	Description	A [mm]	B [mm]	C [mm]	C1 [mm]	D [mm]	E [mm]	F \varnothing [mm]	G ["]	H [mm]	Piston \varnothing [mm]	Weight [g]
9-07-006-060-0	GPG-P-3-150 X	250	200	298	448	225	250	6/4	1/8	150	32	5857

SWH / Quick Change System, Semi-Automatic



Remarks:

Application:

Semi-automatic quick-change system for the fast, positionally accurate exchange of grippers on robots.

- body made of high strength aluminum
- body of high quality blue anodized
- 6, 8 or 10 pneumatic interfaces
- suitable for compressed air and vacuum
- we recommend querying the locking
- sensor holder SWH SH is included in the scope of delivery
- gripper and robot sides supplied separately
- maximum air pressure is 6 bar, use dry and filtered air only

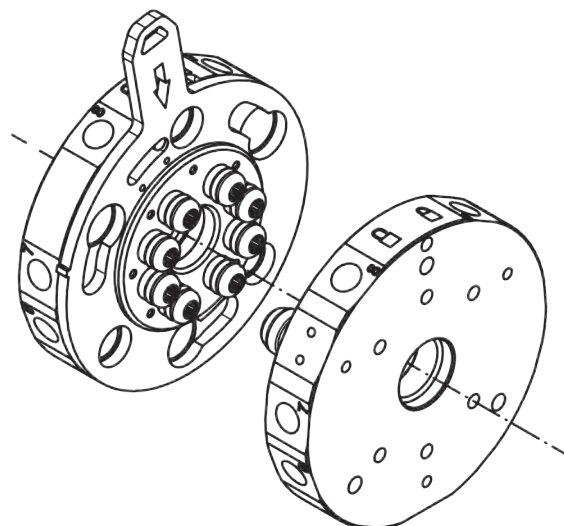
Accessories e.g.:

- EOAT Base Plate GPM-SWH
- Base Plate GP SWH G
- Centering Pin RHZ SWH R
- Holding Fixture GHV SWH
- pneumatic interface extensions SWH-PG and SWH-PR
- electrical interface extension SWH ES (D-SUB 15-pin)
- Sensor Bracket SWH SH

Recommended maximum handling weights of the various SWH sizes:

Description	Handling Weight [kg]
SWH 50	5
SWH 90	20
SWH 150	40

Handling weights depending on center of gravity distance, hole pattern, acceleration values of the robot etc.



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Quick Change Systems

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Clamps

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Nipper Blades

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Sensors

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Pneumatics

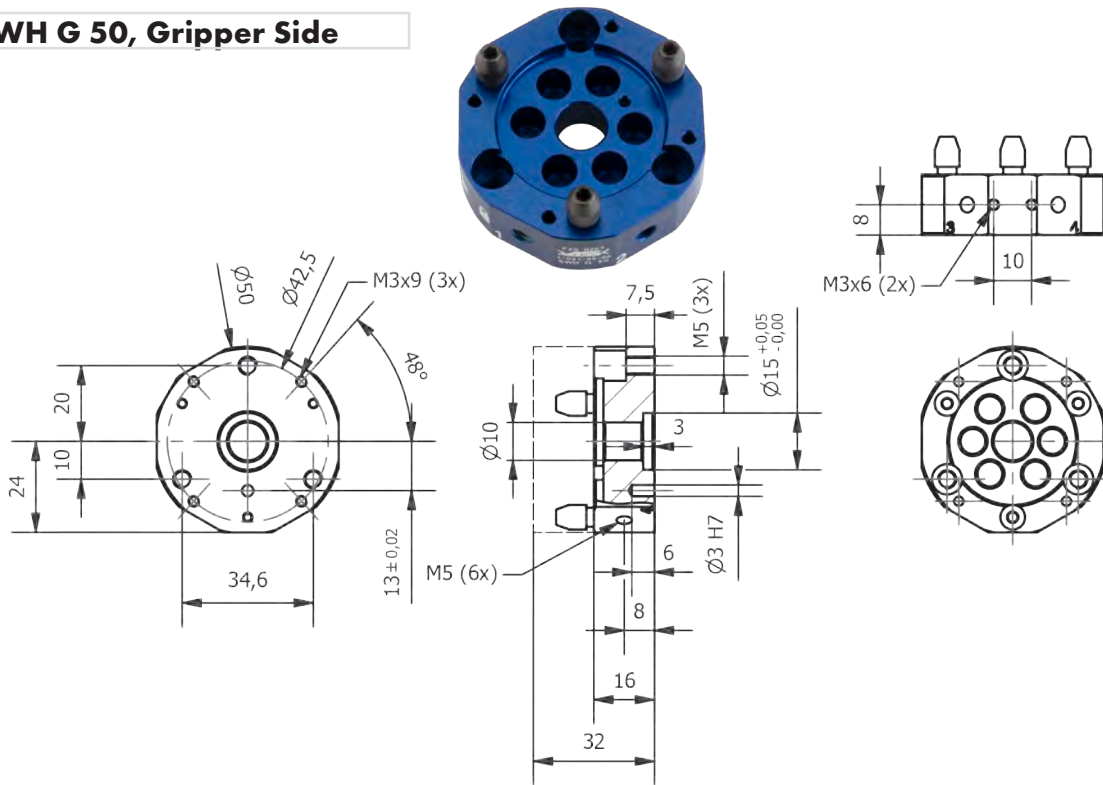
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Tubular System
Micro System

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PA-Forming
Others

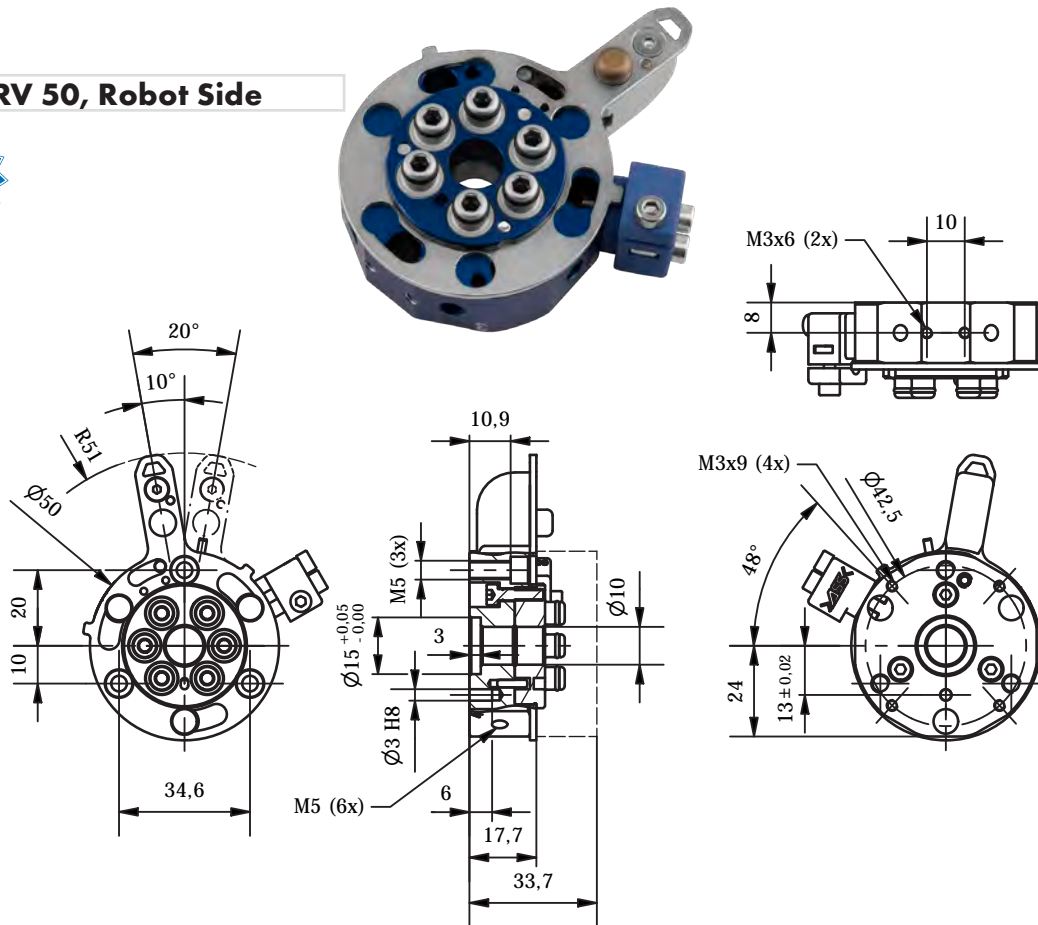
000 | Quick Change Systems

SWH 50 / Quick Change System, Semi-Automatic, Ø50mm

SWH G 50, Gripper Side



SWH RV 50, Robot Side



Part No.	Description	Ø [mm]	Version	Air Connection	Weight [g]
1-021-05-00	SWH G 50	50	Gripper (EOAT) Side	6x M5	68
1-020-04-00	SWH RV 50	50	Robot Side with locking	6x M5	105

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Clamps

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Electrics and
Sensors

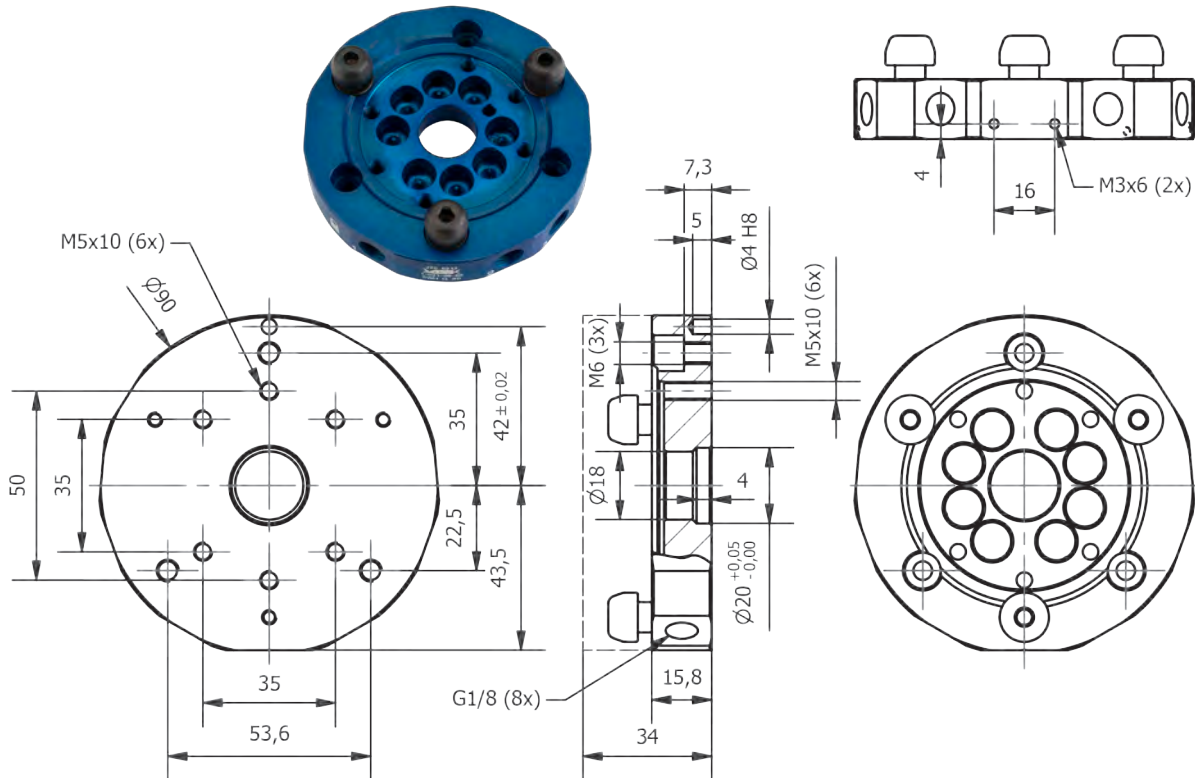
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Pneumatics

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Tubular System
Micro System

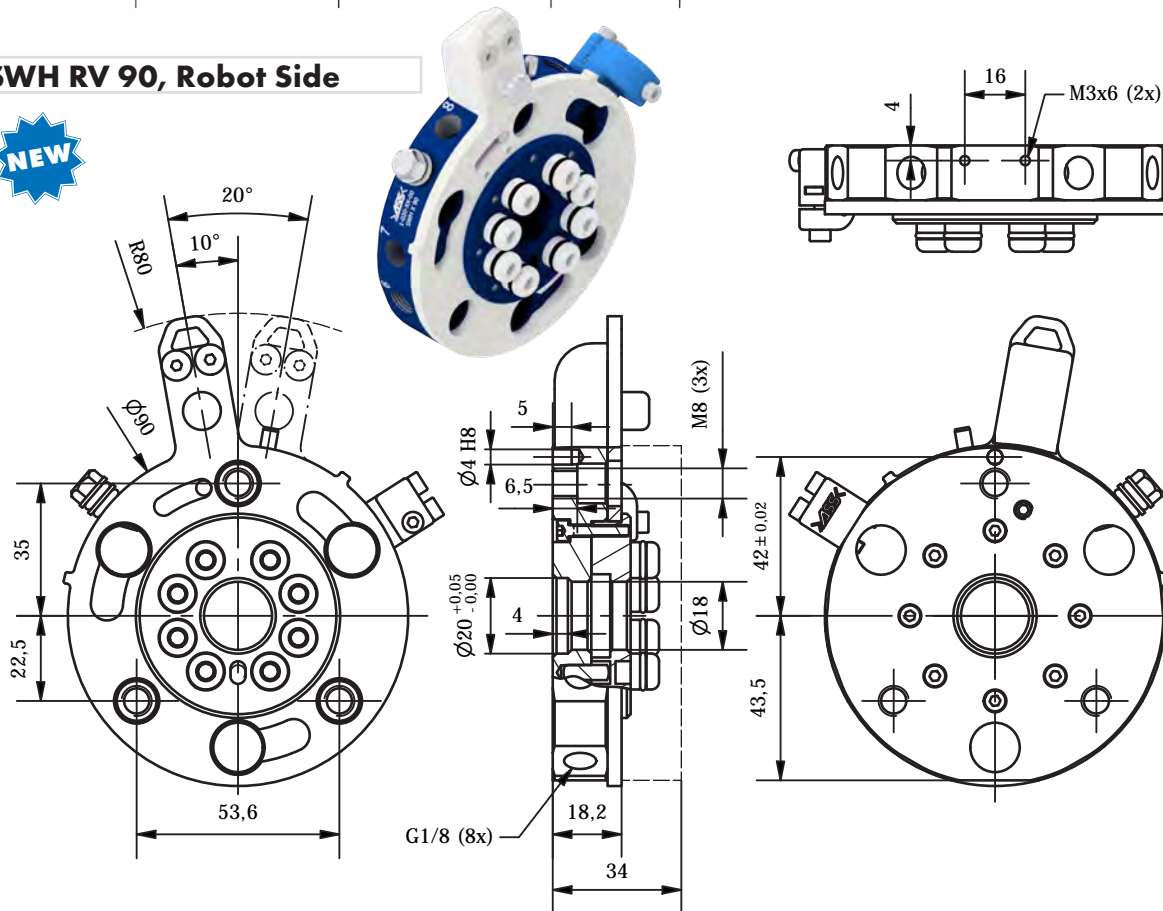
990
PA-Forming
Others

SWH 90 / Quick Change System, Semi-Automatic, Ø90 mm

SWH G 90, Gripper Side



SWH RV 90, Robot Side



Part No.	Description	Ø [mm]	Version	Air Connection	Weight [g]
1-021-09-00	SWH G 90	90	Gripper (EOAT) Side	8x G1/8	212
1-020-07-00	SWH RV 90	90	Robot Side with locking	8x G1/8	357

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Profiles
Channel Nuts

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Clamps

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Profile
Connectors

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Profile
Accessories

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Vacuum Cup
Connectors

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Vacuum Cups

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Special
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Manifold

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Adapters for
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Gripper
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Special Elements

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Pneumatics

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Tubular System
Micro System

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PA-Forming
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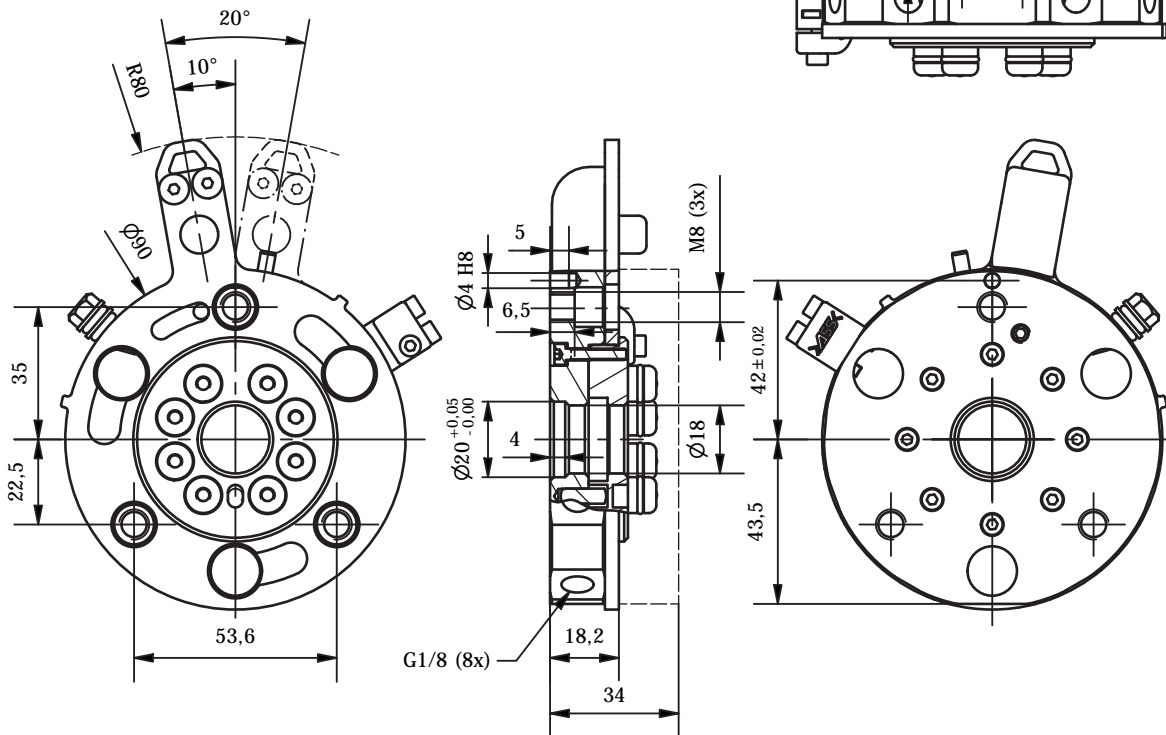
000 | Quick Change Systems

SWH RVR 90 / Quick Change System, Semi-Automatic, with locking and check valve, Ø90 mm

SWH RVR 90, Robot Side



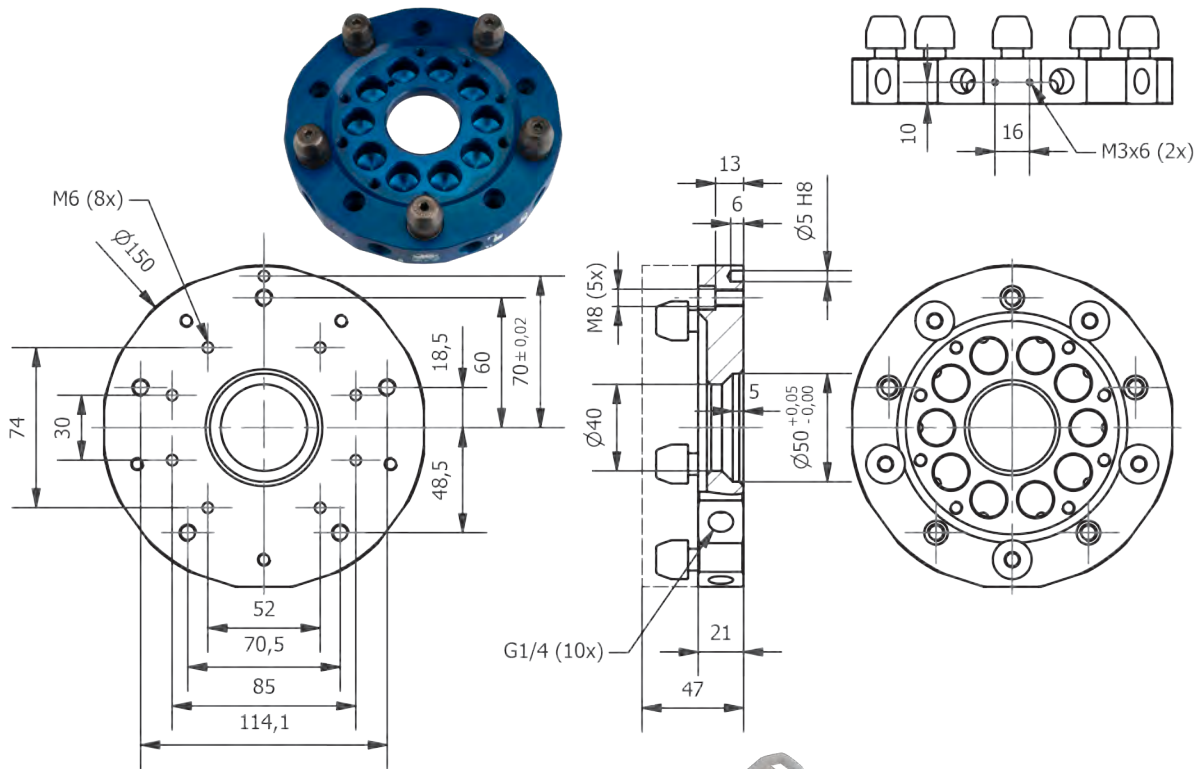
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Connectors
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Vacuum Cups
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Vacuum Cups
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Manifold
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Adapters for
Vacuum Cups
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Gripper Arms
- 400**
Gripper
Parallel Gripper
- 450**
Gripper Fingers
- 460**
Needle Gripper
- 600**
Nipper Bodies
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Nipper Blades
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Special Elements
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Sensors
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Micro System
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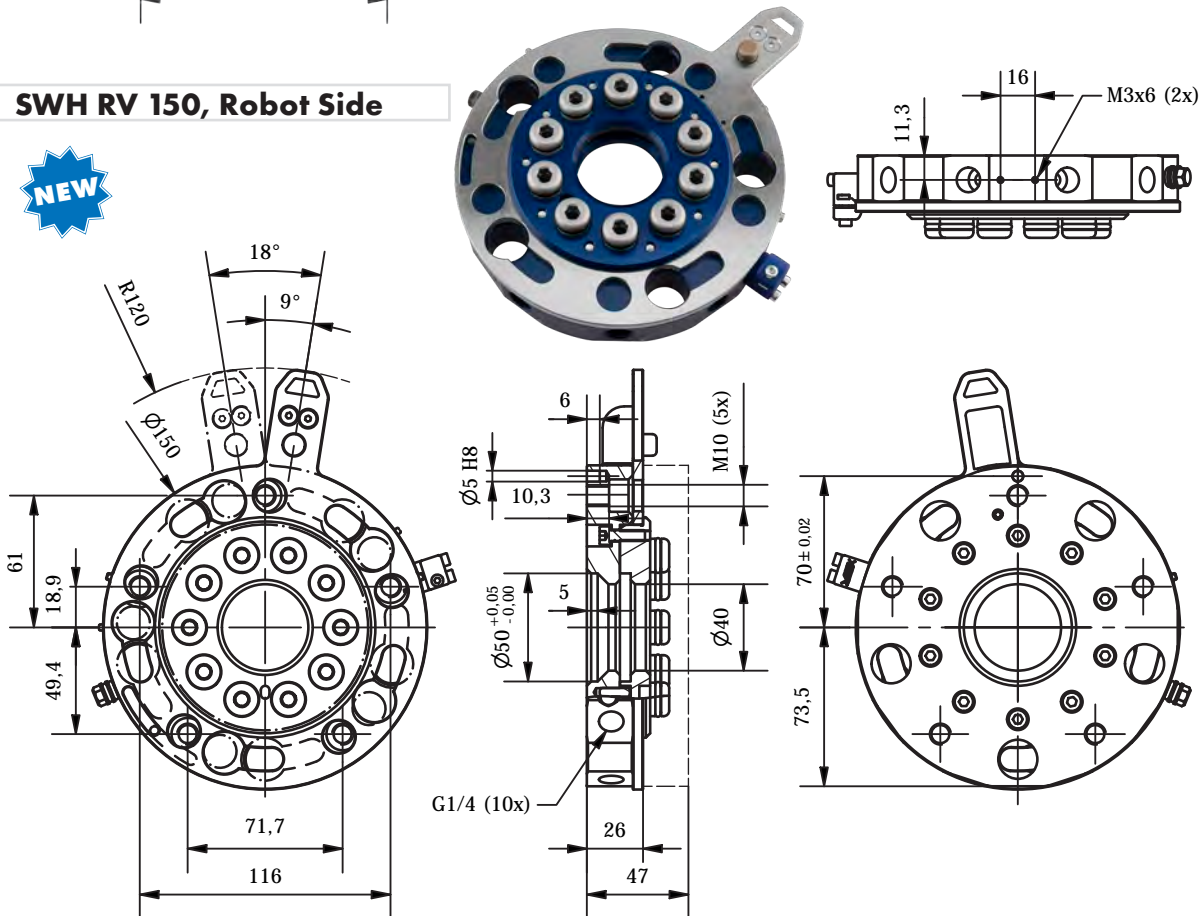
Part No.	Description	Ø [mm]	Version	Air Connection	Weight [g]
1-020-08-00	SWH RVR 90	90	Robot Side with locking + check valve	8x G1/8	365

SWH 150 / Quick Change System, Semi-Automatic, Ø150 mm

SWH G 150, Gripper Side



SWH RV 150, Robot Side



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Profiles
Channel Nuts

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Clamps

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Connectors

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Pneumatics

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Tubular System
Micro System

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PA-Forming
Others

Part No.	Description	Ø [mm]	Version	Air Connection	Weight [g]
1-021-15-00	SWH G 150	150	Gripper (EOAT) Side	10x G1/4	810
1-020-14-00	SWH RV 150	150	Robot Side	10x G1/4	1215

GP SWH G / EOAT Base Plate for SWH

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Profiles
Channel Nuts

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Clamps

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Connectors

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Pneumatics

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Tubular System
Micro System

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PA-Forming
Others



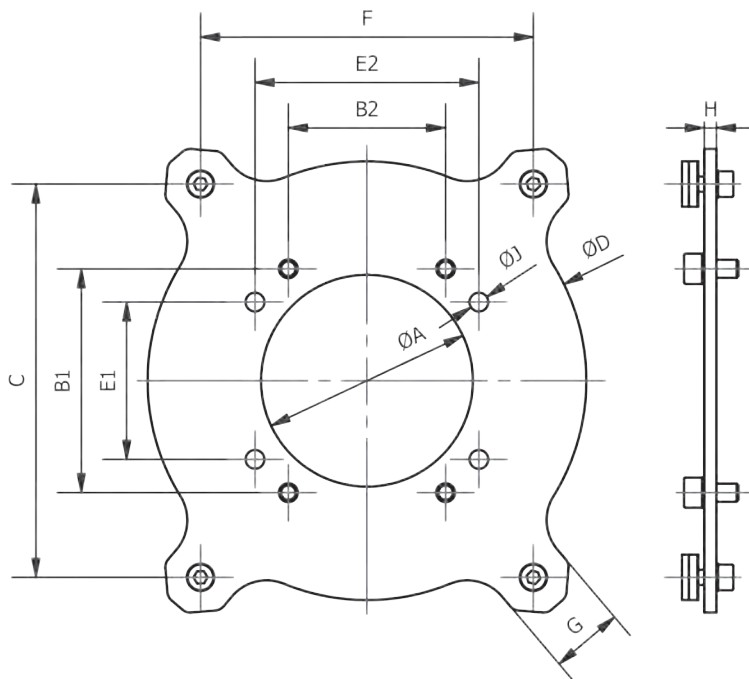
Remarks:

Application: Gripper Base Plate allows mounting profiles at the SWH quick change system

- base plate for SWH quick change system
- flat and lightweight design
- SWH G (grripper side) can be mounted directly on this base plate
- profiles can be mounted directly on the base plate
- **see application example**

Scope of delivery:

- mounting material



Part No.	Description	ØA [mm]	B1 [mm]	B2 [mm]	C [mm]	ØD [mm]	E1 [mm]	E2 [mm]	F [mm]	G [mm]	H [mm]	ØJ [mm]	Material	Weight [g]
1-023-05-00	GP SWH G 50	25	30	34.6	46.8	52	-	-	43.7	16	4	5.2	Aluminium	54
1-023-09-00	GP SWH G 90	37	35	35	76	87	50	-	76	16	3	5.2	Steel.	180
1-023-15-00	GP SWH G 150	70	74	52	130	145	52	74	110	24	4	6.2	Steel.	512

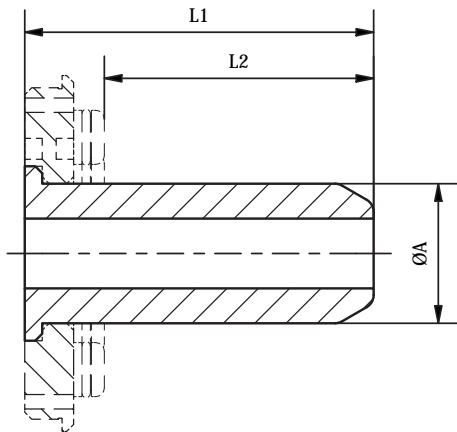
RHZ SWH R / SWH Centering Pin



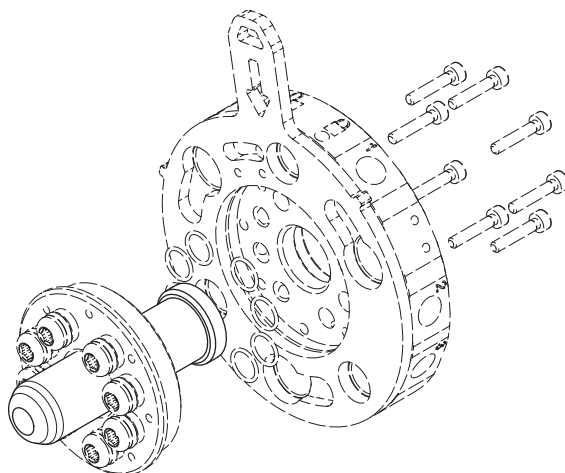
Remarks:

Application: Centering Pin for easy mounting SWH R to SWH G

- is mounted to the robot side
- makes adding heavy EOAT to the robot easier



Application example



Application example



Part No.	Description	A Ø [mm]	L1 [mm]	L2 [mm]	suitable for	Material	Weight [g]
1-026-09-00	RHZ SWH R 90	18	60	47	SWH R 90 / SWH RVR 90	Aluminium	37
1-026-15-00	RHZ SWH R 150	40	100	77	SWH R 150 / SWH RV 150	Aluminium	263

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Profiles
Channel Nuts

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Clamps

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Connectors

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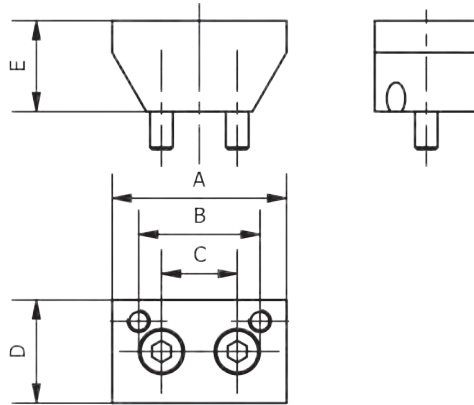
000 | Quick Change Systems

SWH DS / Spacer for SWH

1-025-05-00



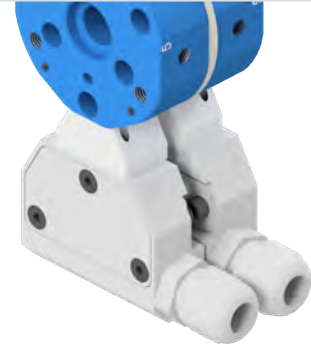
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Remarks:

- is required for connecting the electrical and pneumatic interface to the SWH quick-change system
- for SWH 90 no spacer is needed

Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	suitable for	Weight [g]
1-025-05-00	SWH DS 50	23	16	10	13.6	12	SWH 50	6
1-025-15-00	SWH DS 150	28	16	-	15	8	SWH 150	7

SWH SH / Sensor Bracket for Quick Change System SWH

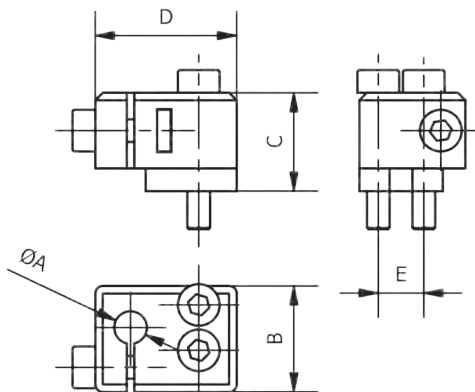


Remarks:

- holding bracket for an inductive sensor
- to monitor the positions SWH locked / unlocked
- to assemble on the gripper and robot side

Accessories e.g.:

- Sensor IRK 4



Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	suitable for	Material	Weight [g]
1-024-05-00	SWH SH G 50	4	14	13	18.7	6	SWH G 50	PA	6
1-024-09-00	SWH SH G 90150	4	14	13	21.3	8	SWH G 90 + G 150	PA	7

SWH ES / Electrical Interface D-SUB for SWH

Remarks:

- D-SUB interface
- electrical interface for the SWH quick-change system
- suitable for SWH 50, 90 and 150
- for SWH 50 and 150 a spacer SWH DS is required
- 15 pin

Scope of delivery:

- incl. cable

1-025-01-00



Mounted condition

1-025-01-00



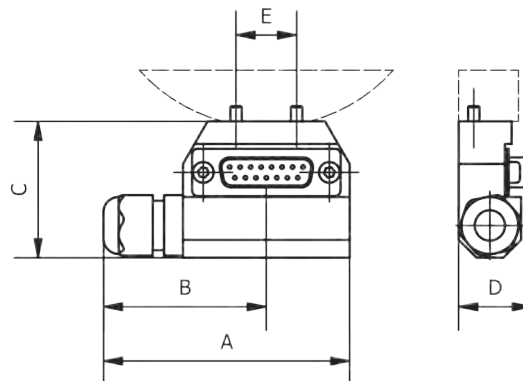
1-025-02-00



1-025-02-00



Application example



Part No.	Description	Version	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Cable length [mm]	Material	Weight [g]
1-025-01-00	SWH ES R	Robot side	67,2	43	36	19,2	16	2000	Aluminium	52
1-025-02-00	SWH ES G	EOAT side	67,2	43	36	19,2	16	1000	Aluminium	45

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000 | Quick Change Systems

SWH-PG 4 / Pneumatic Interface Expansion, 4-times, Gripper Side

SWH-PR 4 / Pneumatic Interface Expansion, 4-times, Robot Side

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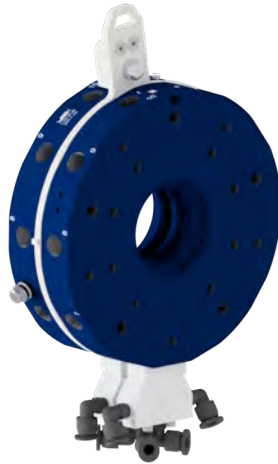
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Application example



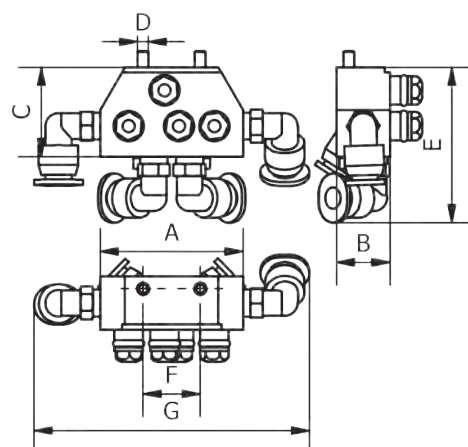
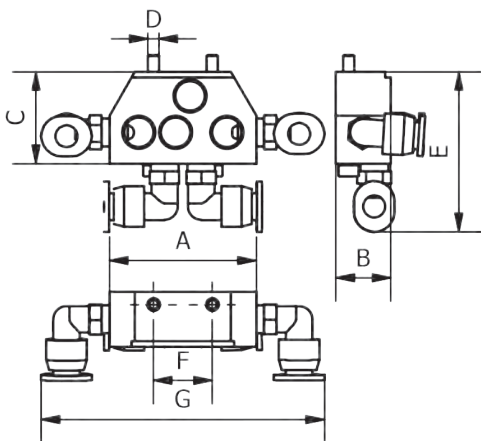
Remarks:

- for SMH 50 and 150 a spacer SWH DS is required
- 4 additional air-circuits
- tube diameter 6/4 mm
- suitable for vacuum
- **regularly grease O-Ring with lubricant**
- easy backfitting, no need for modifications on WGS
- **maximum air pressure is 6 bar, use dry and filtered air only**

1-023-20-00



1-023-25-00



Part No.	Description	Variant	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-023-20-00	SWH-PG 4	EOAT side	40	15	25	M3	44	16	77	50
1-023-25-00	SWH-PR 4	Robot side	40	15	25	M3	44	16	77	63

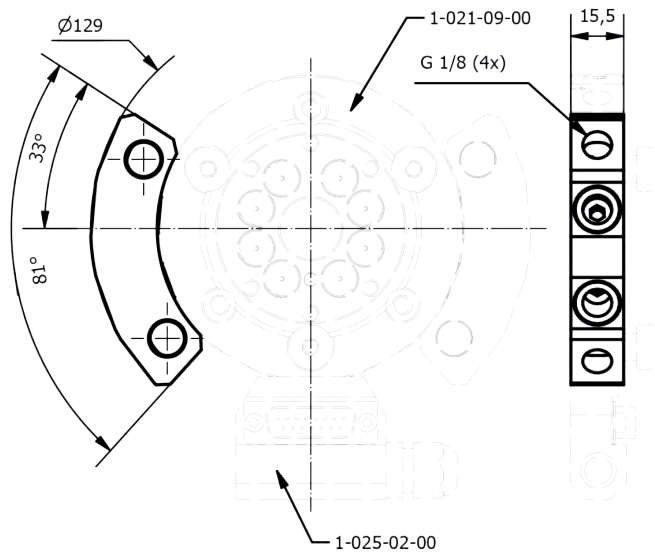
SWH-PG 2 90 / Pneumatic Interface Expansion, 2-times, Gripper Side

SWH-PR 2 90 / Pneumatic Interface Expansion, 2-times, Robot Side

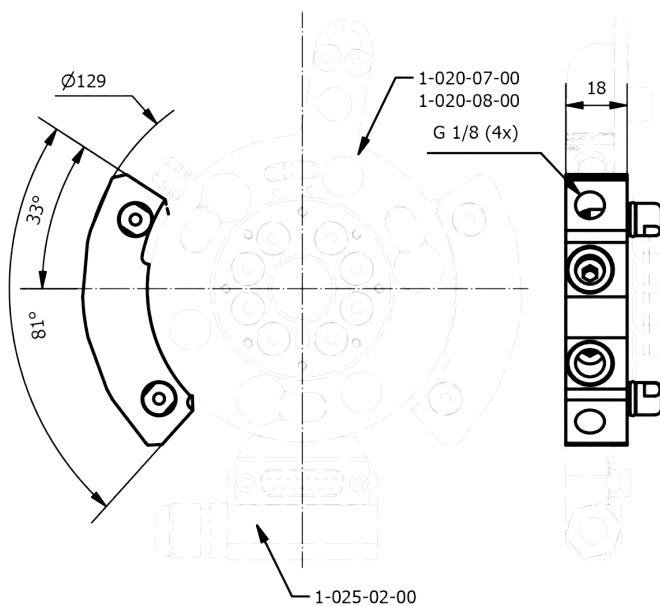
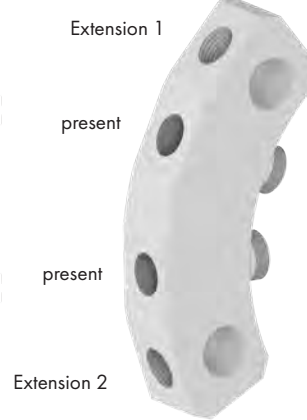
Remarks:

- extension by 2 air connections
- suitable for compressed air and vacuum
- can be mounted on the left, right or on both sides (extension by 4 air connections)
- side mounting enables the attachment of an electrical interface (SWH ES)
- gripper side and robot side must be ordered separately

Application example



1-023-30-00



1-023-35-00



Part No.	Description	Variant	Air Connection	Material	Weight [g]
1-023-30-00	SWH-PG 2 90	EOAT side	4x G1/8	Aluminium	55
1-023-35-00	SWH-PR 2 90	Robot side	4x G1/8	Aluminium	70

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Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

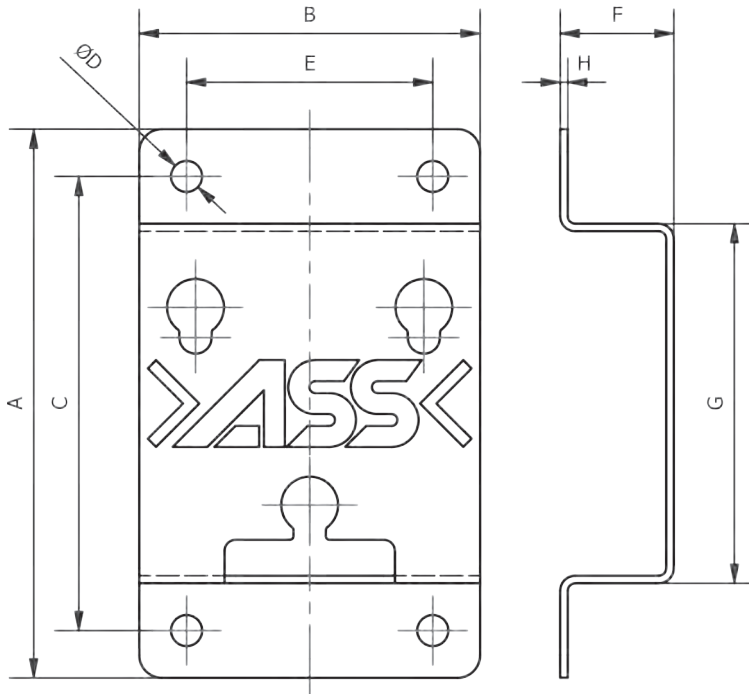
990
Tubular System
Micro System

990
PA-Forming
Others

GHV SWH / Holding Fixture for SWH

Remarks:

- for storing EOATs with SWH quick change system



Part No.	Description	A [mm]	B [mm]	C [mm]	ØD [mm]	E [mm]	F [mm]	G [mm]	H [mm]	suitable for	Material	Weight [g]
1-022-05-00	GHV SWH G 50	95	50	75	6.3	30	30	55	1.5	SWH G 50	Steel	76
1-022-09-00	GHV SWH G 90	145	90	120	8.2	65	30	95	2	SWH G 90	Steel	225
1-022-15-00	GHV SWH G 150	205	150	180	8.2	125	30	155	2	SWH G 150	Steel	518

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

SWS / Automatic Quick Change System

Remarks:

- automatic, pneumatic, double-acting quick change system
- in case of pressure lost the locking device remains in position by pressure lost
- interface: mechanic, pneumatic, electric
- **max. moments Mxy:**
 - SWS 011: 75 Nm
 - SWS 040: 471 Nm
 - SWS 040Q: 471 Nm
 - SWS 071: 1,185 Nm
- **electric plug is sold separately (picture shows SWS and plug)**
- **SWS 040Q has an integrated piston stroke control SIP (proximity switch included)**

Accessories e.g.:

- SWO-E
- other accessories on demand

1-003-60-00



1-003-61-00



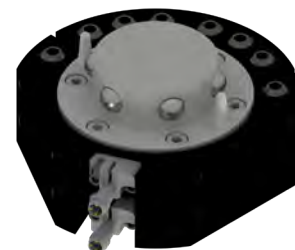
1-003-71-00



1-003-80-00



1-003-72-00



1-003-81-00



050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

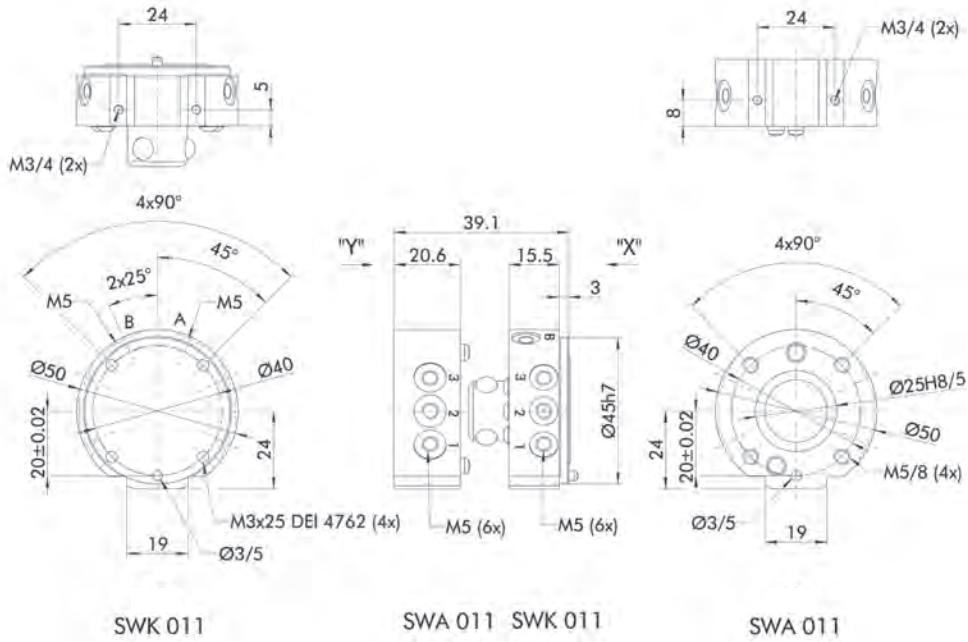
990
Tubular System
Micro System

990
PA-Forming
Others

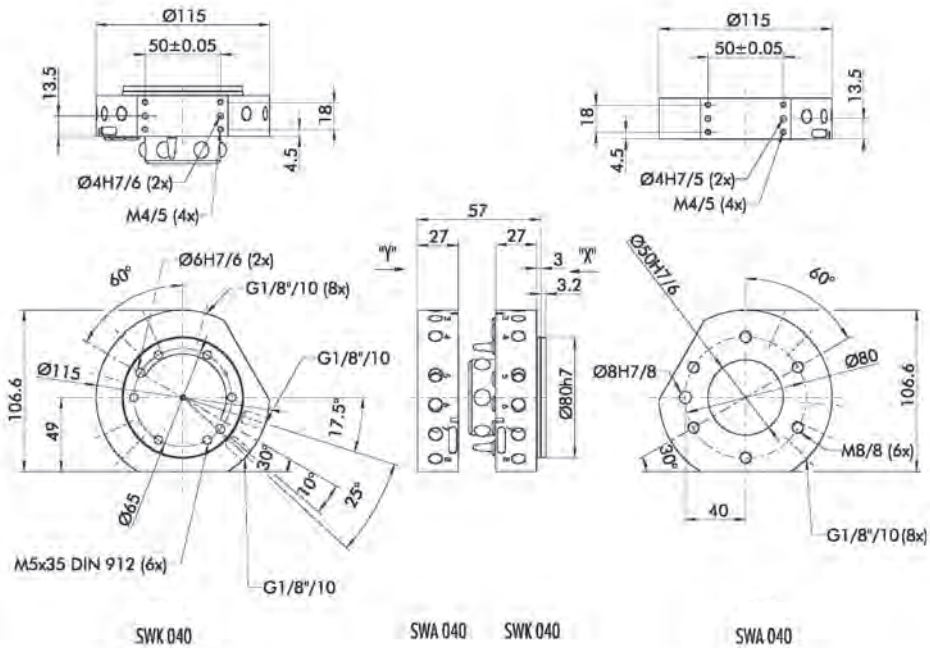
Part No.	Description	Type	compatible to
1-003-60-00	SWK-011 Quick Change Head	Robot side	SWA-011
1-003-61-00	SWA-011 Quick Change Adapter	EOAT side	SWK-011
1-003-71-00	SWA-040 Quick Change Adapter	EOAT side	SWK-040
1-003-72-00	SWK-040Q Quick Change Head	Robot side	SWA-040
1-003-80-00	SWK-071 Quick Change Head	Robot side	SWA-071
1-003-81-00	SWA-071 Quick Change Adapter	EOAT side	SWK-071

000 | Quick Change Systems

SWS 011 / Automatic Quick Change System



SWS 040 / Automatic Quick Change System



SWO / Electric Connection for SWS 011 KAS / Cable Plug for SWS 011

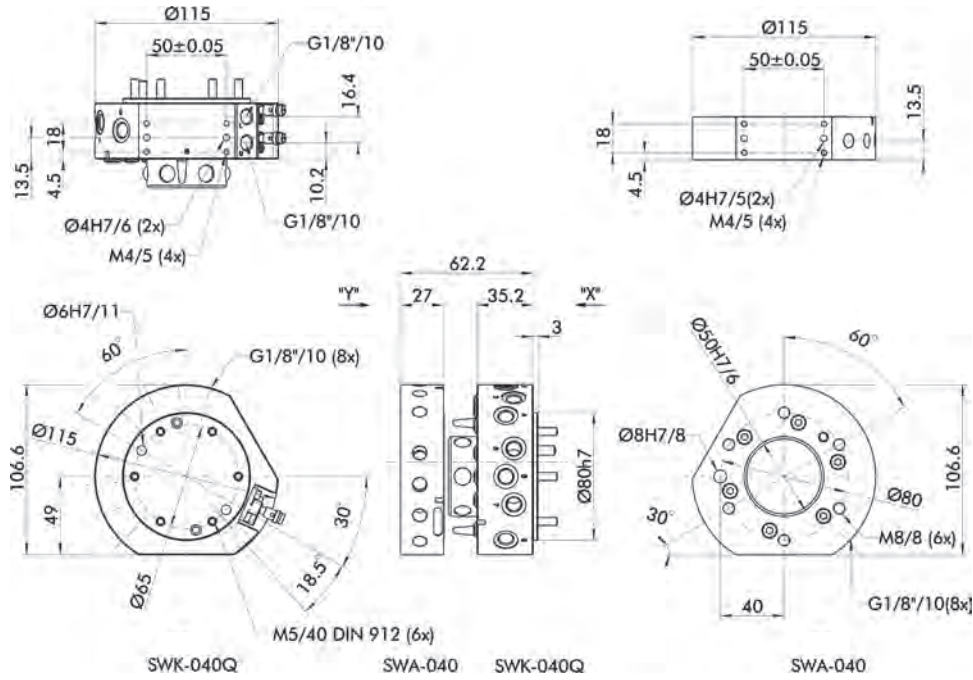


Remarks:

- electric connection for SWS 011
- 15 spring-loaded pins each 3A/50V

Part No.	Description	Type	compatible to
1-003-90-00	SWO-A15-K Electric Connection	Robot side	SWK-011
1-003-91-00	SWO-A15-A Electric Connection	EOAT side	SWA-011
1-003-92-00	KAS-A15-K-0 Cable Plug	Robot side	SWO-A15-K
1-003-93-00	KAS-A15-A-0 Cable Plug	EOAT side	SWO-A15-A

SWS 040Q / Automatic Quick Change System



050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

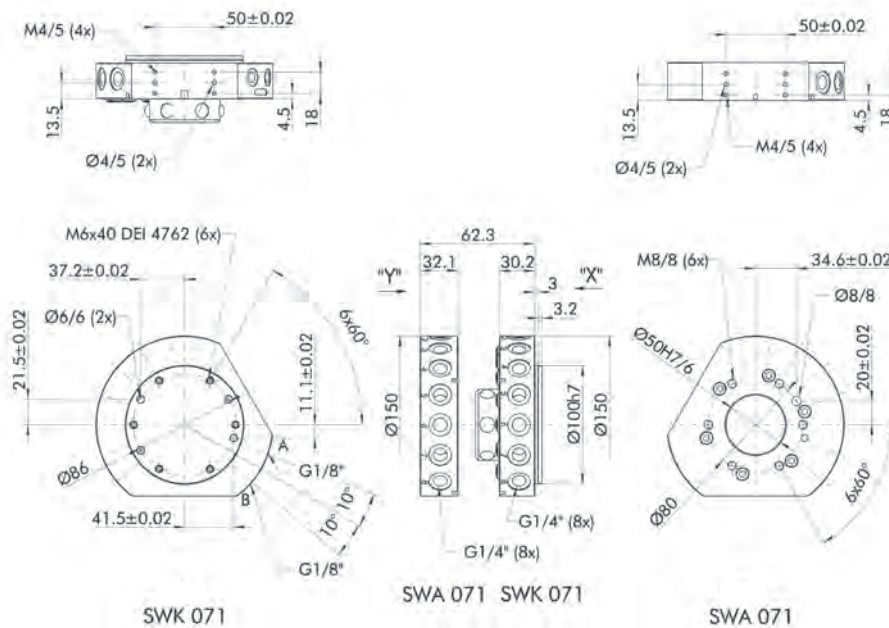
200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

SWS 071 / Automatic Quick Change System



290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

SWO / Electric Connection for SWS 040, 040Q, 071 KV / Cable Plug for SWS 040, 040Q, 071

SWO



KV

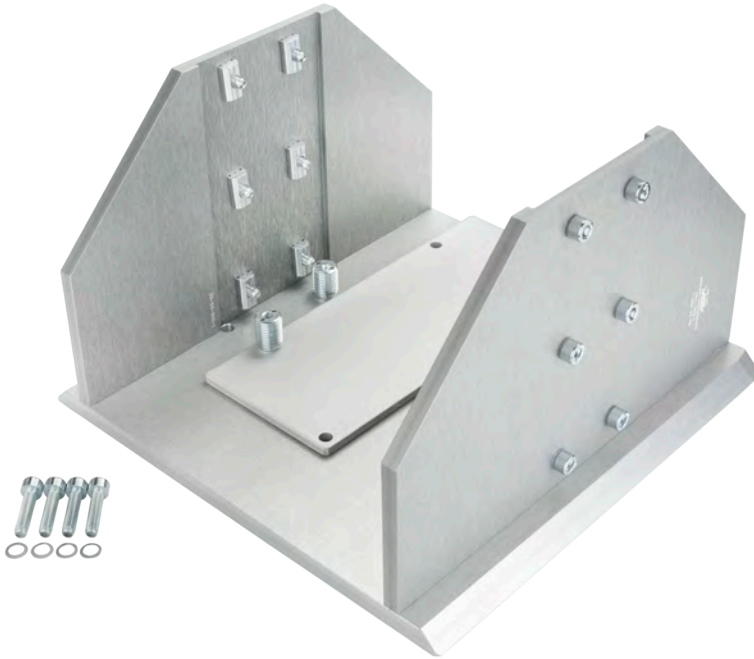


Bemerkungen:

- electric connection for SWS 040, SWS 040Q and SWS 071
- 15 spring-loaded pins each 3A/50V
- cable length: Robot side: 5 m, EOAT side: 3 m

Part No.	Description	Type	compatible to
1-003-94-00	SWO-R26-K	Electric Connection	Robot side SWK-040, SWK-040Q, SWK-071
1-003-95-00	SWO-R26-A	Electric Connection	EOAT side SWA-040, SWA-071
1-003-96-00	KV-5-SWK-26/25-90	Cable Plug	Robot side SWO-R26-K
1-003-97-00	KV-3-SWA-26B-90	Cable Plug	EOAT side SWO-R26-A

G6A-GPM 3 / Robot Hand Base Frame based on GPM

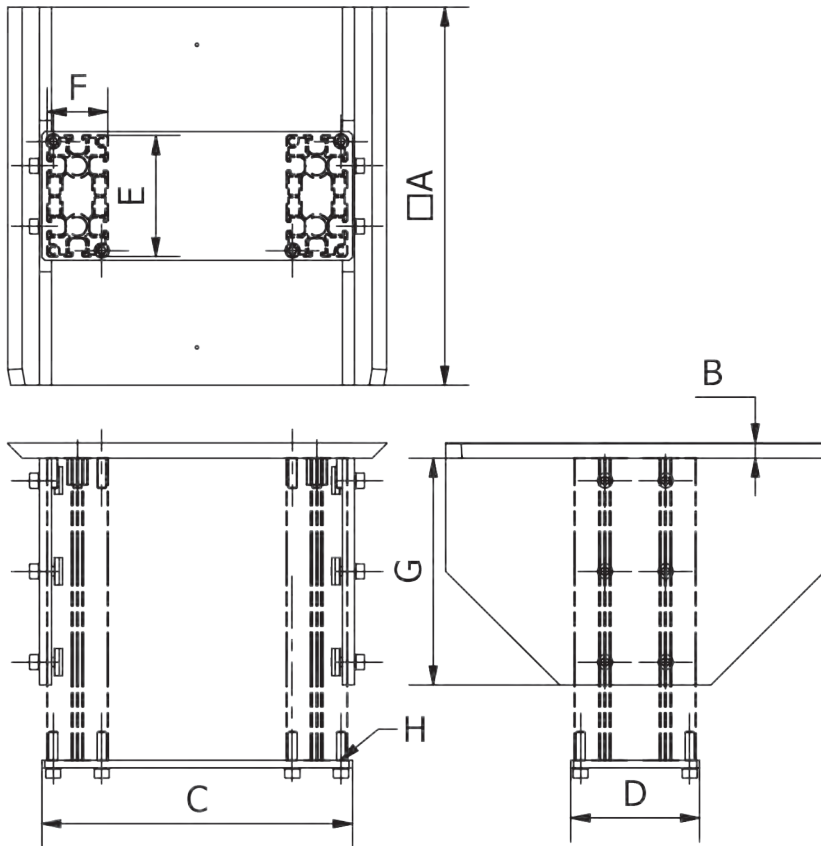


Remarks:

- Robot Hand Base Frame especially for 6 axis robots
- the 6th axis can be placed beside the tool during the demolding process
- robot hand can be built double sided, e.g. insert side and demolding side
- based on GPM 3
- compatible to JU Profile 80/40
- see **application example**

Scope of delivery:

- incl. screws thread insert
- without JU Profile



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H	Material	Weight [g]
1-009-03-00	G6A-GPM 3	250	10	205	85	80	40	150	M6	Aluminium	3232

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

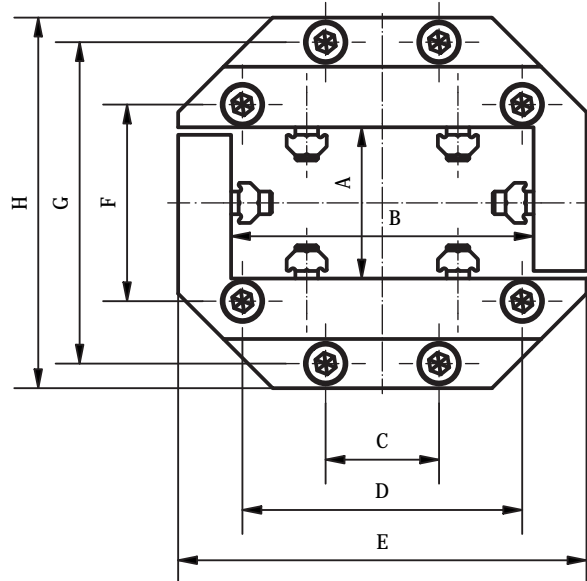
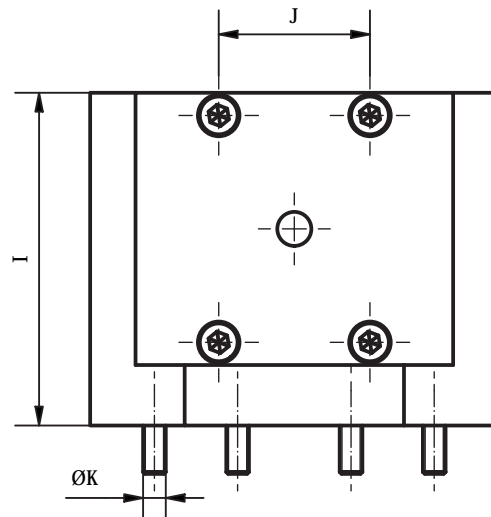
G6A-SWH G / Robot Hand Base Frame based für SWH

Remarks:

- Robot Hand Base Frame especially for 6 axis robots
- the 6th axis can be placed beside the tool during the demolding process
- for connecting JU-Profile 80x40 to SWH G
- pre-drilled through hole for pinning
- **see application example**

Scope of delivery:

- incl. mounting material
- without profile and without SWH



Part No.	Description	A	B	C	D	E	F	G	H	I	J	K	Material	Weight [g]
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
1-028-15-00	G6A-SWH G 150	40	80	30	74	108	52	85	98	88	40	M6	Aluminium	1240

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

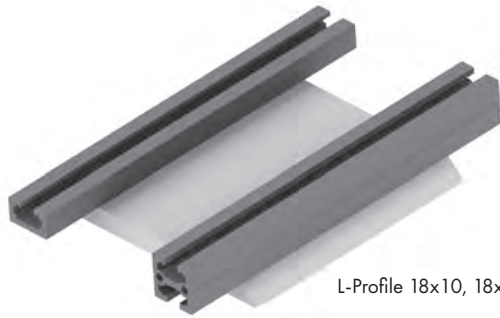
850
Pneumatics

990
Tubular System
Micro System

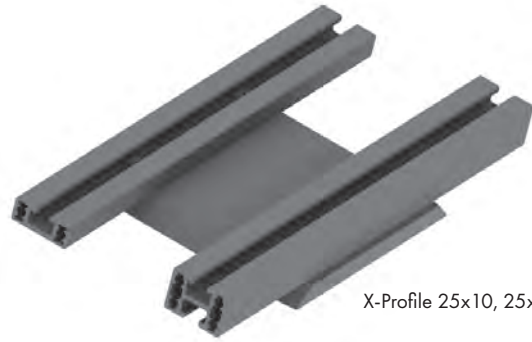
990
PA-Forming
Others

050 | Profile-Channel Nut

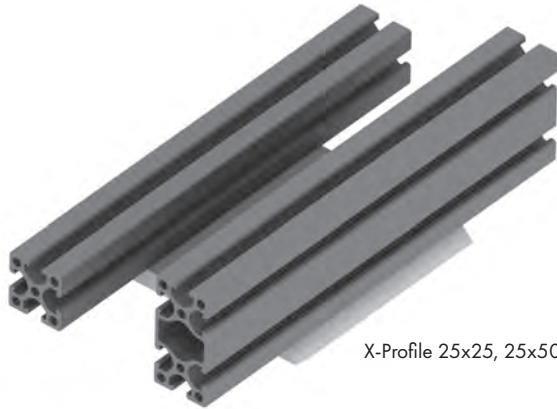
Application examples profile L - X - JU on GPM



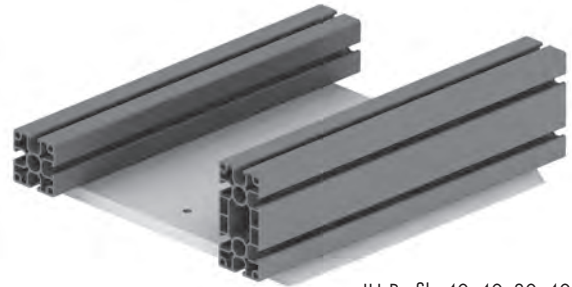
L-Profile 18x10, 18x18



X-Profile 25x10, 25x18

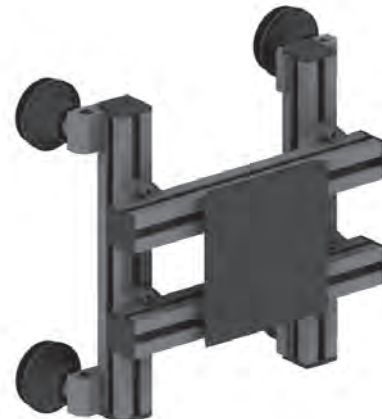
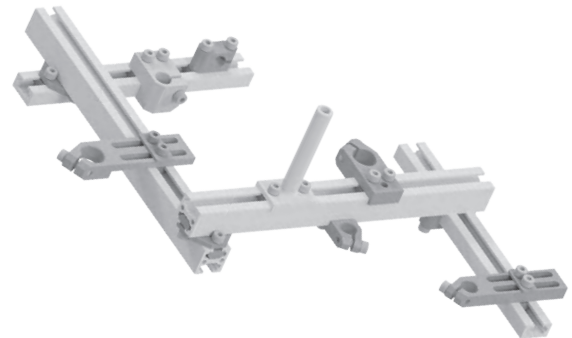
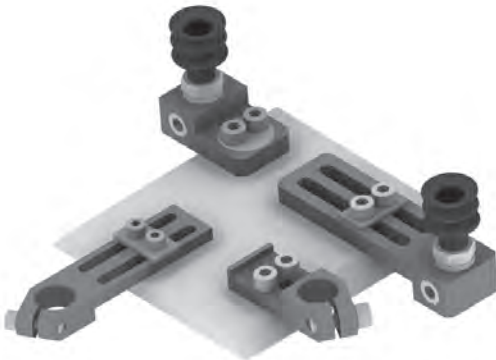


X-Profile 25x25, 25x50

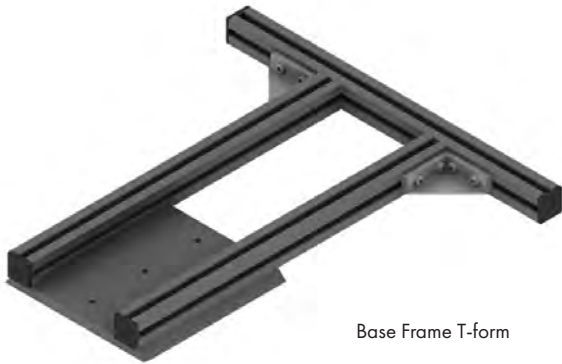


JU-Profile 40x40, 80x40

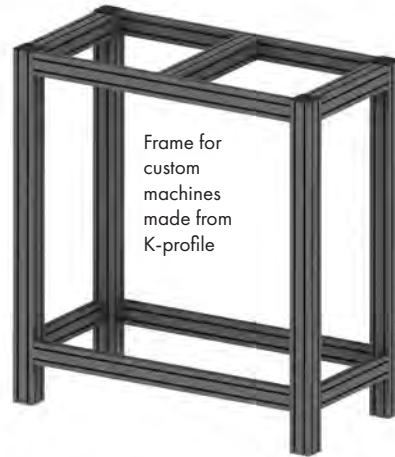
Application examples base frame construction



Application examples base frame construction



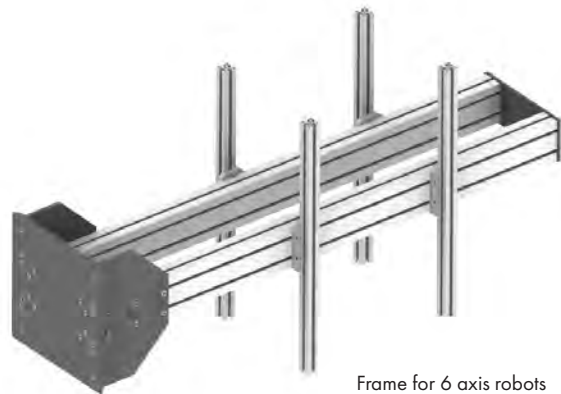
Base Frame T-form



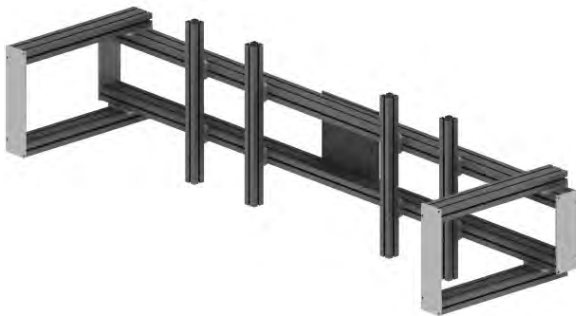
Frame for custom machines made from K-profile



H-frame for gantry style robots



Frame for 6 axis robots



Frame for bumper coat core site de-molding



Frame for bumper coat cavity site de-molding

Application examples channel nuts



GWP in X-profile



GWP in K-profile

000
Quick Change Systems

050
Profiles Channel Nuts

100/115
Clamps

120
Profile Connectors

190
Profile Accessories

200
Vacuum Cup Connectors

220
Vacuum Cups

224
Special Vacuum Cups

230
Manifold

290
Adapters for Vacuum Cups

300
Gripper Arms

400
Gripper Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and Sensors

850
Pneumatics

990
Tubular System Micro System

990
PA-Forming Others

050 | Profile-Channel Nut

L-Profile / „Light System“ 18x10 and 18x18

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others



Remarks:

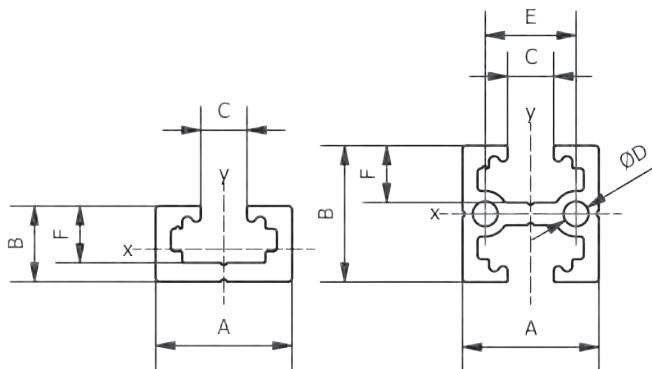
- best suited for part weight of up to 1 kg
- custom length upon request – see ordering example
- profile length min. 50 mm
- channel nuts are compatible to X and JU profiles
- special profile length larger than 2000 mm on request
- ØF = ready to be tapped for M4

Drawing:

Ø D core hole for M4

Ordering example for custom length 1520 mm of L 18-10 profile:

Order text :
1-051-26-00, L 18x10x1520



Measures

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Length [mm]	Weight [g]
1-051-22-00	L 18-10-2000	18	10	6.1			7.5	2000	494
1-051-26-00	L 18-10-0001	18	10	6.1			7.5	1	0.3
1-051-42-00	L 18-18-2000	18	18	6.1	3.3	12	7.5	2000	750
1-051-46-00	L 18-18-0001	18	18	6.1	3.3	12	7.5	1	0.9

Properties

Part No.	Description	Material	Cross section area [mm ²]	Weight/Meter [kg]	Center point ex [mm]	Center point ey [mm]	Axial moment of inertia Ix [mm ⁴]	Axial moment of inertia Iy [mm ⁴]	Axial torque resistance Wx [mm ³]	Axial torque resistance Wy [mm ³]
1-051-22-00	L 18-10-2000	Aluminium	96.603	0.247	9	5.7	1057	3817	185	424
1-051-26-00	L 18-10-0001	Aluminium	96.603	0.247	9	5.7	1057	3817	185	424
1-051-42-00	L 18-18-2000	Aluminium	148.185	0.284	9	9	4182	6206	465	690
1-051-46-00	L 18-18-0001	Aluminium	148.185	0.284	9	9	4182	6206	465	690

X-Profile / „X-System“ X 25x10 and X 25x18 Profile

Remarks:

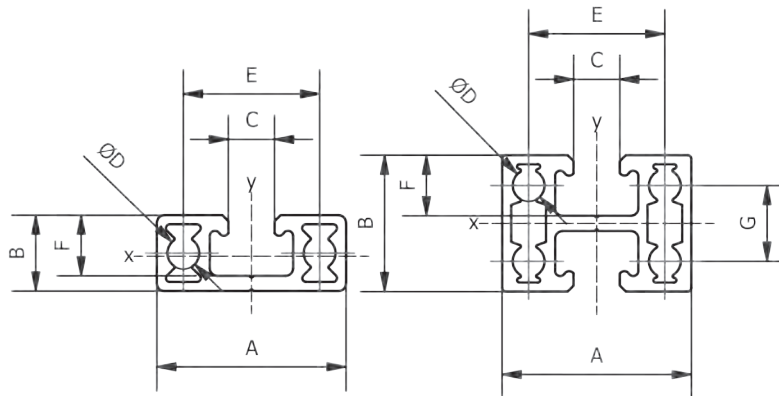
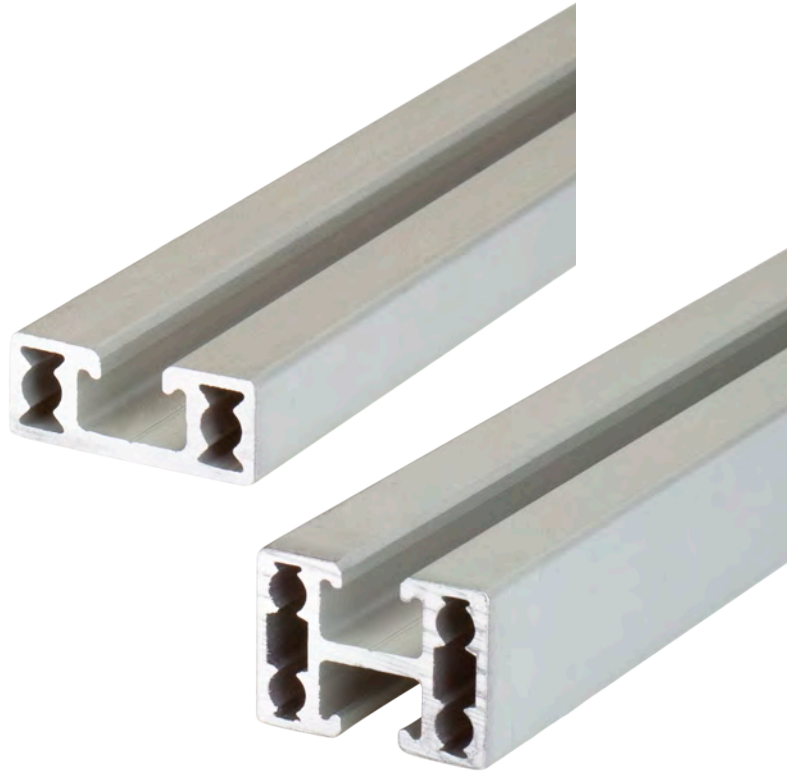
- best suited for part weight of up to 2 kg
- custom length upon request – see ordering example
- profile length min. 50 mm
- channel nuts are compatible to X and JU profiles
- special profile length larger than 2000 mm on request
- ØF = ready for M5

Drawing:

Ø D core hole for M5

Ordering example for custom length 1520 mm of X 25-18 profile:

Order text :
1-052-86-00, X 25x18x1520



Measures

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Length [mm]	Weight [g]
1-052-62-00	X 25-10-2000	25	10	6.2	4.2	18	8		2000	588
1-052-66-00	X 25-10-0001	25	10	6.2	4.2	18	8		1	0.3
1-052-82-00	X 25-18-2000	25	18	6.2	4.2	18	8	10	2000	908
1-052-86-00	X 25-18-0001	25	18	6.2	4.2	18	8	10	1	0.5

Properties

Part No.	Description	Material	Cross section area [mm ²]	Weight/Meter [kg]	Center point x [mm]	Center point y [mm]	Axial moment of inertia I _x [mm ⁴]	Axial moment of inertia I _y [mm ⁴]	Axial torque resistance W _x [mm ³]	Axial torque resistance W _y [mm ³]
1-052-62-00	X 25-10-2000	Aluminium	115.421	0.294	12.5	4.58	1357	7636	296.3	611
1-052-66-00	X 25-10-0001	Aluminium	115.421	0.294	12.5	4.58	1357	7636	296.3	611
1-052-82-00	X 25-18-2000	Aluminium	166.641	0.454	12.5	9	5969	12350	663.2	988
1-052-86-00	X 25-18-0001	Aluminium	166.641	0.454	12.5	9	5969	12350	663.2	988

000
Quick Change Systems

050
Profiles Channel Nuts

100/115
Clamps

120
Profile Connectors

190
Profile Accessories

200
Vacuum Cup Connectors

220
Vacuum Cups

224
Special Vacuum Cups

230
Manifold

290
Adapters for Vacuum Cups

300
Gripper Arms

400
Gripper Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and Sensors

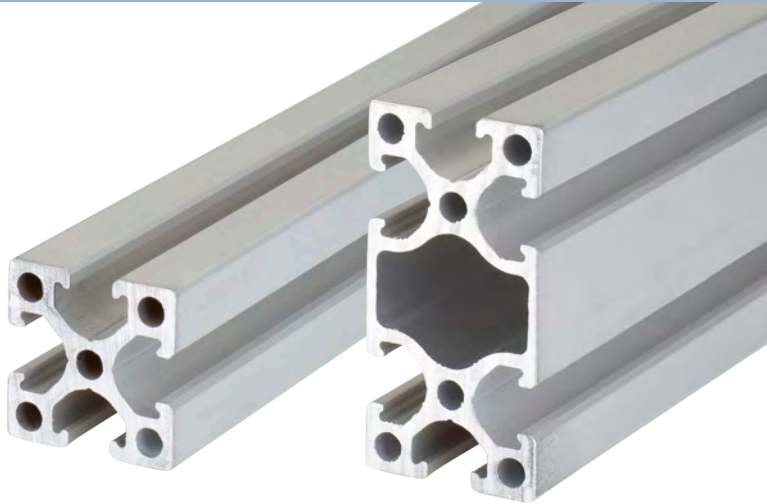
850
Pneumatics

990
Tubular System Micro System

990
PA-Forming Others

050 | Profile-Channel Nut

X-Profile / „X-System“ 25x25 and 50x25



Remarks:

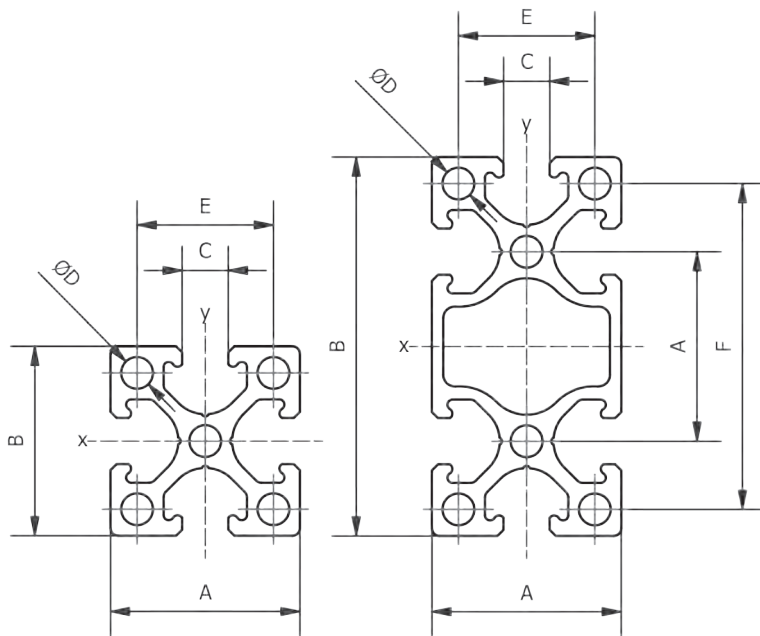
- for parts up to 10 kg
- custom length on request – see ordering example
- special profile length larger than 2000 mm on request

Drawing:

∅ D core hole for M5

Ordering example for custom length 1520 mm of X 25-25 profile:

Order text :
1-052-26-00, X 25x25x1520



Measures

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Length [mm]	Weight [g]
1-052-21-00	X 25-25-1000	25	25	6	4.2	18		1000	620
1-052-22-00	X 25-25-2000	25	25	6	4.2	18		2000	1240
1-052-26-00	X 25-25-0001	25	25	6	4.2	18		1	0.6
1-052-41-00	X 50-25-1000	25	50	6	4.2	18	43	1000	1026
1-052-42-00	X 50-25-2000	25	50	6	4.2	18	43	2000	2052
1-052-46-00	X 50-25-0001	25	50	6	4.2	18	43	1	1.0

Properties

Part No.	Description	Material	Cross section area [mm²]	Weight/Meter [kg]	Center point ex [mm]	Center point ey [mm]	Axial moment of inertia Ix [mm⁴]	Axial moment of inertia Iy [mm⁴]	Axial torque resistance Wx [mm³]	Axial torque resistance Wy [mm³]
1-052-21-00	X 25-25-1000	Aluminium	254.929	0.62	12.5	12.5	16073	16073	1286	1286
1-052-22-00	X 25-25-2000	Aluminium	254.929	0.62	12.5	12.5	16073	16073	1286	1286
1-052-26-00	X 25-25-0001	Aluminium	254.929	0.62	12.5	12.5	16073	16073	1286	1286
1-052-41-00	X 50-25-1000	Aluminium	423.309	1.026	25	12.5	111319	28244	4453	2260
1-052-42-00	X 50-25-2000	Aluminium	423.309	1.026	25	12.5	111319	28244	4453	2260
1-052-46-00	X 50-25-0001	Aluminium	423.309	1.026	25	12.5	111319	28244	4453	2260

JU-Profile / „JU-System“

Remarks:

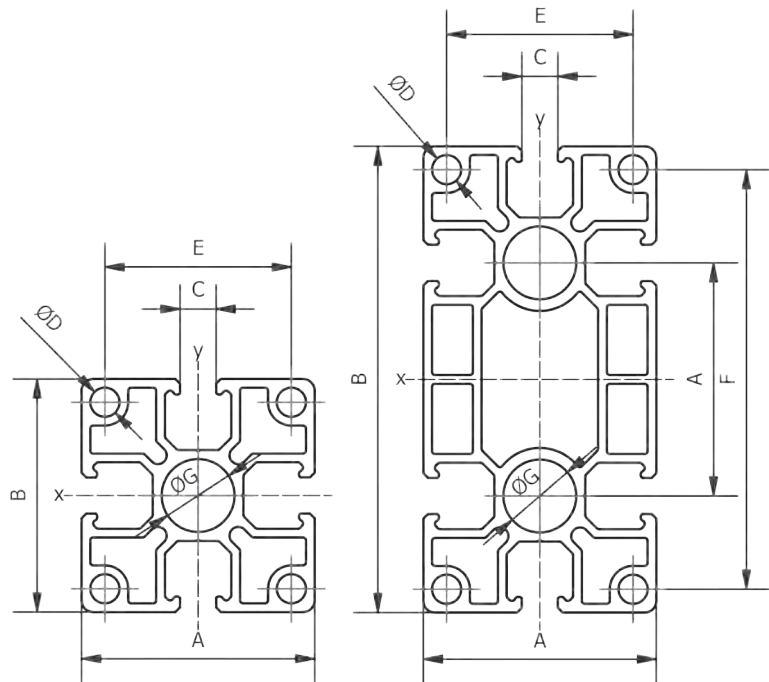
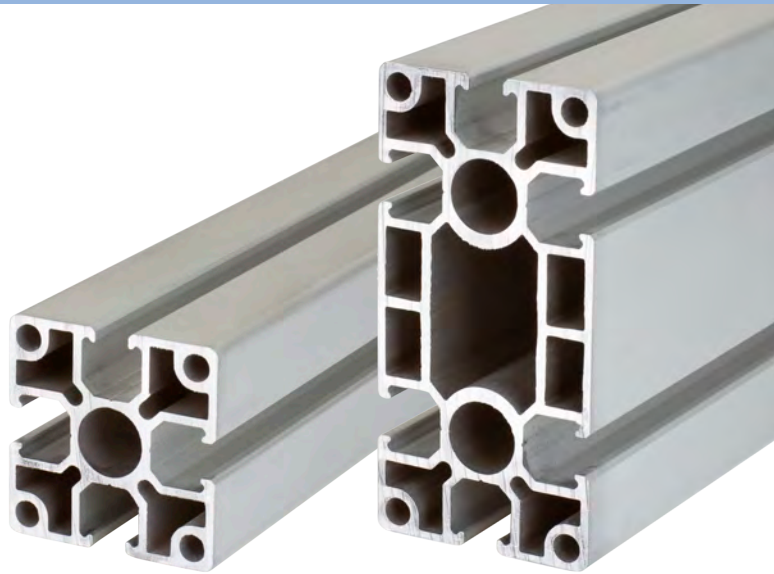
- Jumbo Universal, the industry's first and only large profile which accommodates the same channel nut as the Light and X profiles
- specifically developed profile for part weight > 10 kg
- custom length on request – see ordering example
- special profile length larger than 2000 mm on request
- channel nut can be dropped in

Drawing:

- ∅ D core hole for M6
- ∅ G core hole for M14x1,5,

Ordering example for custom length 1520 mm of JU 80-40 profile:

Order text :
1-055-46-00, JU 80x40x1520



Measures

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Length [mm]	Weight [g]
1-055-23-00	JU 40-40-2000	40	40	6.2	5	32		12.5	2000	2678
1-055-26-00	JU 40-40-0001	40	40	6.2	5	32		12.5	1	1.3
1-055-42-00	JU 80-40-2000	40	80	6.2	5	32	72	12.5	2000	4634
1-055-46-00	JU 80-40-0001	40	80	6.2	5	32	72	12.5	1	2.3

Properties

Part No.	Description	Material	Cross section area [mm ²]	Weight/Meter [kg]	Center point ex [mm]	Center point ey [mm]	Axial moment of inertia Ix [mm ⁴]	Axial moment of inertia Iy [mm ⁴]	Axial torque resistance Wx [mm ³]	Axial torque resistance Wy [mm ³]
1-055-23-00	JU 40-40-2000	Aluminium	521.3	1339	20	20	86629	86629	4331	4331
1-055-26-00	JU 40-40-0001	Aluminium	521.3	1339	20	20	86629	86629	4331	4331
1-055-42-00	JU 80-40-2000	Aluminium	891.9	2317	40	20	586369	155268	14660	7764
1-055-46-00	JU 80-40-0001	Aluminium	891.9	2317	40	20	586369	155268	14660	7764

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Quick Change Systems

050
Profiles Channel Nuts

100/115
Clamps

120
Profile Connectors

190
Profile Accessories

200
Vacuum Cup Connectors

220
Vacuum Cups

224
Special Vacuum Cups

230
Manifold

290
Adapters for Vacuum Cups

300
Gripper Arms

400
Gripper Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and Sensors

850
Pneumatics

990
Tubular System Micro System

990
PA-Forming Others

050 | Profile-Channel Nut

K-Profile / Construction Profile

100/115
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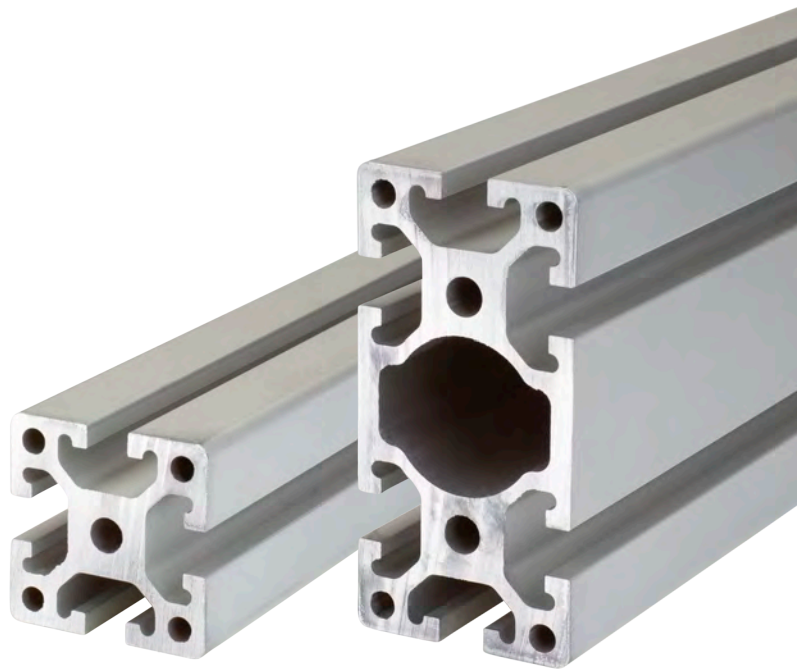
700
Special Elements

800
Electrics and
Sensors

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Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others



Remarks:

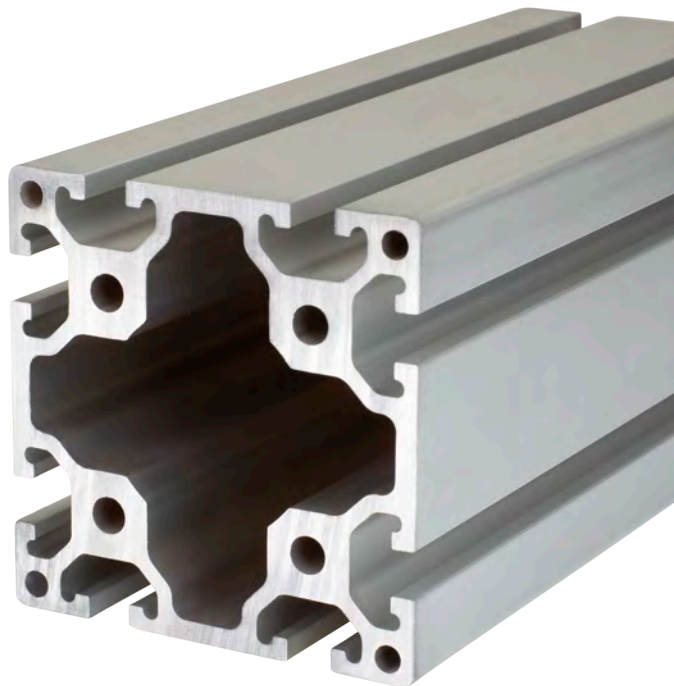
- construction profile best suited for secondary machinery and fixtures
- standard channel nuts do not fit, but most connectors are available for this profile
- custom length on request – see ordering example
- special profile length larger than 2000 mm on request

Drawing:

∅ D core hole for M6
∅ G core hole for M8

Ordering example for custom length 1520 mm of K 80-40 profile:

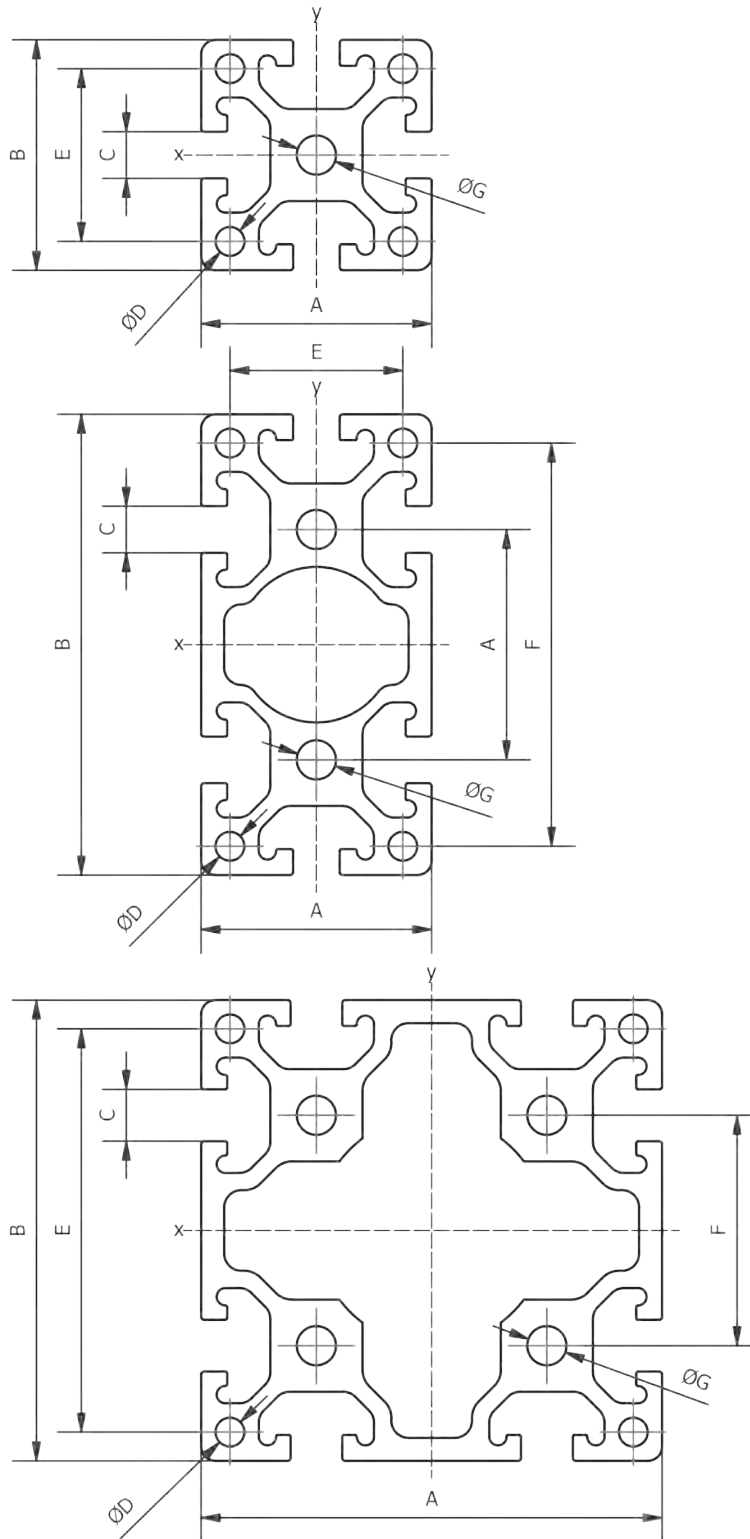
Order text : 1-054-46-00, K 80x40x1520



Measures

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Length [mm]	Weight [g]
1-054-27-00	K 40-40-2000	40	40	8.1	5	30		6.8	2000	4200
1-054-26-00	K 40-40-0001	40	40	8.1	5	30		6.8	1	2.1
1-054-46-00	K 80-40-0001	40	80	8.1	5	30	70	6.8	1	3.6
1-054-66-00	K 80-80-0001	80	80	8.1	5	70	40	6.8	1	5.8

K-Profile / Construction Profile (Continuation)



Properties

Part No.	Description	Material	Cross section area [cm ²]	Weight/Meter [kg/m]	Center point ex [mm]	Center point ey [mm]	Axial moment of inertia Ix [cm ⁴]	Axial moment of inertia Iy [cm ⁴]	Axial torque resistance Wx [cm ³]	Axial torque resistance Wy [cm ³]
1-054-27-00	K 40-40-2000	Aluminium	780	2.09	20	20	118500	118500	5920	5920
1-054-26-00	K 40-40-0001	Aluminium	780	2.09	20	20	118500	118500	5920	5920
1-054-46-00	K 80-40-0001	Aluminium	1340	3.60	40	20	854100	222700	21350	11130
1-054-66-00	K 80-80-0001	Aluminium	2150	5.80	40	40	1516500	1516500	37910	37910

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Pneumatics

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Tubular System
Micro System

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PA-Forming
Others

050 | Profile-Channel Nut

GWP1 / GPF / Channel Nut with one Thread



Part No.	Description	Compatible with profile	A [mm]	B [mm]	Ø M [mm]	Spring ball	Pass fit	Material	Weight [g]
1-058-31-15	GWP 3 U	L, X, JU	15	7.5	M3		x	Steel/zinc coated	5
1-058-41-15	GWP 4 U	L, X, JU	15	7.5	M4		x	Steel/zinc coated	5
1-058-51-15	GWP 5 U	L, X, JU	15	7.5	M5		x	Steel/zinc coated	5
1-058-61-18	GWP 6 U	L, X, JU	18	9	M6		x	Steel/zinc coated	6
1-059-41-22	GWP 4 K	K	22	11	M4	x		Steel/zinc coated	11
1-059-51-22	GWP 5 K	K	22	11	M5	x		Steel/zinc coated	10
1-059-61-22	GWP 6 K	K	22	11	M6	x		Steel/zinc coated	10
1-059-81-22	GWP 8 K	K	22	11	M8	x		Steel/zinc coated	9
1-061-81-00	GPF 8 K	K	22	7	M8	x	x	Steel/zinc coated	9
1-061-61-00	GPF 6 K	K	22	7	M6	x	x	Steel/zinc coated	18
1-061-51-00	GPF 5 K	K	22	7	M5	x	x	Steel/zinc coated	18

GWP2 / Channel Nut with two Threads



Part No.	Description	Compatible with profile	A [mm]	B [mm]	Ø M [mm]	Material	Weight [g]
1-058-42-08	GWP 4-8 U	L, X, JU	16	8	M4	Steel/zinc coated	5
1-058-42-17	GWP 4-17 U	L, X, JU	25	17	M4	Steel/zinc coated	5
1-058-42-25	GWP 4-25 U	L, X, JU	33	25	M4	Steel/zinc coated	5
1-058-42-31	GWP 4-31 U	L, X, JU	39	31	M4	Steel/zinc coated	11
1-058-52-10	GWP 5-10 U	L, X, JU	20	10	M5	Steel/zinc coated	11
1-058-52-15	GWP 5-15 U	L, X, JU	25	15	M5	Steel/zinc coated	11
1-058-52-16	GWP 5-16 U	L, X, JU	26	16	M5	Steel/zinc coated	10
1-058-52-18	GWP 5-18 U	L, X, JU	28	18	M5	Steel/zinc coated	12
1-058-52-20	GWP 5-20 U	L, X, JU	30	20	M5	Steel/zinc coated	12
1-058-52-22	GWP 5-22 U	L, X, JU	32	22	M5	Steel/zinc coated	12
1-058-52-25	GWP 5-25 U	L, X, JU	35	25	M5	Steel/zinc coated	12
1-058-52-28	GWP 5-28 U	L, X, JU	38	28	M5	Steel/zinc coated	14

GWP2 / Channel Nut with two Threads (Continuation)

Part No.	Description	Compatible with profile	A [mm]	B [mm]	Ø M [mm]	Material	Weight [g]
1-058-52-30	GWP 5-30 U	L, X, JU	40	30	M5	Steel/zinc coated	14
1-058-52-35	GWP 5-35 U	L, X, JU	45	35	M5	Steel/zinc coated	16
1-058-52-38	GWP 5-38 U	L, X, JU	48	38	M5	Steel/zinc coated	17
1-058-52-40	GWP 5-40 U	L, X, JU	50	40	M5	Steel/zinc coated	18
1-058-52-42	GWP 5-42 U	L, X, JU	52	42	M5	Steel/zinc coated	20
1-058-52-45	GWP 5-45 U	L, X, JU	55	45	M5	Steel/zinc coated	20
1-058-52-50	GWP 5-50 U	L, X, JU	60	50	M5	Steel/zinc coated	22
1-058-52-58	GWP 5-58 U	L, X, JU	68	58	M5	Steel/zinc coated	26
1-058-52-60	GWP 5-60 U	L, X, JU	70	60	M5	Steel/zinc coated	26
1-058-52-63	GWP 5-63 U	L, X, JU	73	63	M5	Steel/zinc coated	27
1-058-52-65	GWP 5-65 U	L, X, JU	75	65	M5	Steel/zinc coated	28
1-058-52-70	GWP 5-70 U	L, X, JU	80	70	M5	Steel/zinc coated	29
1-058-52-80	GWP 5-80 U	L, X, JU	90	80	M5	Steel/zinc coated	33
1-058-52-90	GWP 5-90 U	L, X, JU	100	90	M5	Steel/zinc coated	37
1-058-52-00	GWP 5-100 U	L, X, JU	110	100	M5	Steel/zinc coated	41
1-058-62-10	GWP 6-10 U	L, X, JU	22	10	M6	Steel/zinc coated	6
1-058-62-15	GWP 6-15 U	L, X, JU	27	15	M6	Steel/zinc coated	8
1-058-62-20	GWP 6-20 U	L, X, JU	30	20	M6	Steel/zinc coated	10
1-058-62-25	GWP 6-25 U	L, X, JU	37	25	M6	Steel/zinc coated	11
1-058-62-30	GWP 6-30 U	L, X, JU	42	30	M6	Steel/zinc coated	14
1-058-62-35	GWP 6-35 U	L, X, JU	47	35	M6	Steel/zinc coated	15
1-058-62-40	GWP 6-40 U	L, X, JU	52	40	M6	Steel/zinc coated	18
1-058-62-45	GWP 6-45 U	L, X, JU	57	45	M6	Steel/zinc coated	19
1-058-62-50	GWP 6-50 U	L, X, JU	62	50	M6	Steel/zinc coated	22
1-058-62-51	GWP 6-51 U	L, X, JU	60	51	M6	Steel/zinc coated	21
1-058-62-60	GWP 6-60 U	L, X, JU	72	60	M6	Steel/zinc coated	25
1-058-62-70	GWP 6-70 U	L, X, JU	82	70	M6	Steel/zinc coated	29
1-058-62-80	GWP 6-80 U	L, X, JU	92	80	M6	Steel/zinc coated	33
1-058-62-90	GWP 6-90 U	L, X, JU	102	90	M6	Steel/zinc coated	36
1-058-62-91	GWP 6-91 U	L, X, JU	100	91	M6	Steel/zinc coated	36
1-058-62-00	GWP 6-100 U	L, X, JU	112	100	M6	Steel/zinc coated	40
1-059-52-10	GWP 5-10 K	K	20	10	M5	Steel/zinc coated	9
1-059-62-15	GWP 6-15 K	K	27	15	M6	Steel/zinc coated	12
1-059-62-20	GWP 6-20 K	K	32	20	M6	Steel/zinc coated	14
1-059-62-25	GWP 6-25 K	K	37	25	M6	Steel/zinc coated	18
1-059-62-30	GWP 6-30 K	K	42	30	M6	Steel/zinc coated	19
1-059-62-40	GWP 6-40 K	K	52	40	M6	Steel/zinc coated	25
1-059-62-50	GWP 6-50 K	K	62	50	M6	Steel/zinc coated	30
1-059-62-90	GWP 6-90 K	K	102	90	M6	Steel/zinc coated	51
1-059-82-00	GWP 8-100 K	K	116	100	M8	Steel/zinc coated	57
1-059-82-30	GWP 8-30 K	K	46	30	M8	Steel/zinc coated	20
1-059-82-40	GWP 8-40 K	K	56	40	M8	Steel/zinc coated	25

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Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
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Accessories

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Vacuum Cup
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220
Vacuum Cups

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Special
Vacuum Cups

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Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

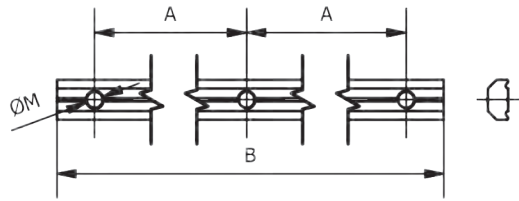
050 | Profile-Channel Nut

GWP3 / Channel Nut with three Threads



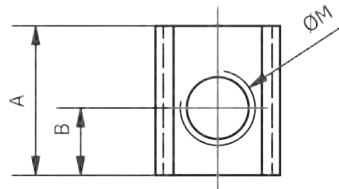
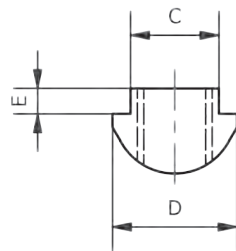
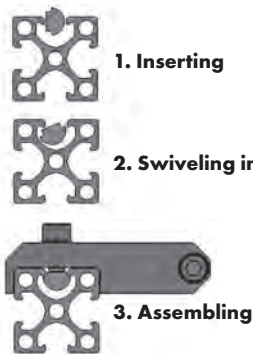
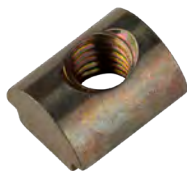
Remarks:

- channel nut with 3 bore holes
- compatible to GPM 3



Part No.	Description	Compatible with profile	A [mm]	B [mm]	Ø M [mm]	Material	Weight [g]
1-058-53-01	GWP 5-100-100 U	L,X,JU	100	220	M5	Steel/zinc coated	83
1-058-63-01	GWP 6-100-100 U	L,X,JU	100	220	M6	Steel/zinc coated	82

GWP EX U / Channel Nut with Swivel-in-Function



Remarks:

Application: for adding components belated to the EOAT

- easy to handle
- high flexibility
- no demounting of the EOAT necessary, other components stay in their original position
- compatible to X-system components
- locks against rotation, form closure

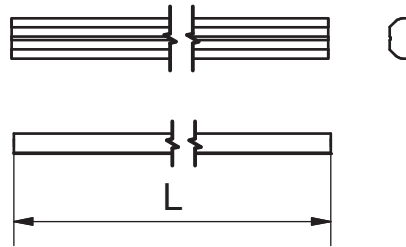
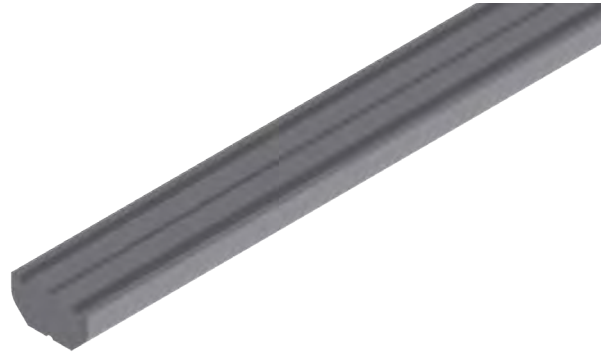
Part No.	Description	Compatible with profile	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	ØM [mm]	Material	Weight [g]
1-056-32-01	GWP EX 3 U	L, X, JU	10	2,5	5,9	8,3	1,7	M3	Steel chromated	2
1-056-42-01	GWP EX 4 U	L, X, JU	10	3,5	5,9	8,3	1,7	M4	Steel chromated	2
1-056-52-01	GWP EX 5 U	L, X, JU	10	4,5	5,9	8,3	1,7	M5	Steel chromated	2

PLU / Channel Nut

Remarks:

Application: for making customized channel nuts

- channel nut without bore holes



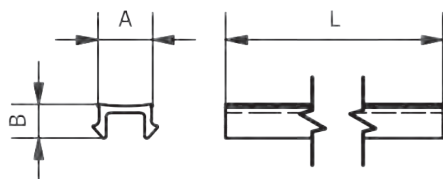
Part No.	Description	Compatible with profile	L [mm]	Material	Weight [g]
1-090-02-00	PL-U	L, X, JU	2000	Steel, zinc coded	769

ADP / Profile Channel Cover

Remarks:

Application: e.g. to avoid cuttings falling into profiles in cutting stations

- cover snaps into the profile channel
- closes the profile channel and protects it against debris
- fits in L, X and JU profile



Part No.	Description	A [mm]	B [mm]	Length [mm]	Sold in	Material
1-090-10-00	ADP 2000	6.8	4	2000	10x2000 mm	Plastic
1-090-11-00	ADP 1000	6.8	4	1000	20x1000 mm	Plastic

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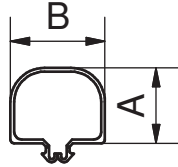
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

050 | Profile-Channel Nut

KKP / Cable and Hose Channel



Remarks:

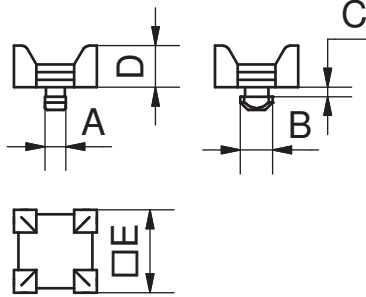
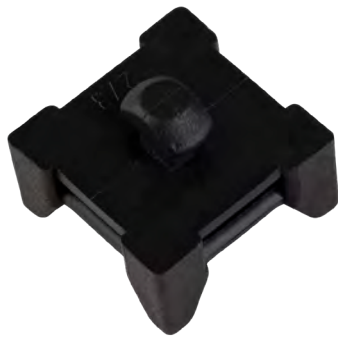
Application: for installing and hiding pneumatics and electrics at profiles

- hose channel can be clipped easily to the profiles
- compatible to L-, X- and JU-Profiles
- only for stationary machines like cutting stations

Attention: not for usage with EOAT (robot hand) due to acceleration

Part No.	Description	A [mm]	B [mm]	Length [mm]	Material
1-090-13-00	KKP 25-20	20	25	2000	Plastic
1-090-16-00	KKP 25-35	35	25	2000	Plastic

KKB / X-JU: Twist on Cable and Hose Saddle



Remarks:

Application: allows easy attachment of hoses and cables to the Aluminium profile

- no tools needed
- easy to swivel into profiles
- quick installation without screw
- subsequent insertion into the profiles possible
- cables can be mounted in longitudinal and transverse direction

Part No.	Description	Compatible with profile	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-790-41-00	KKB-X-JU	X, JU	5.5	8.6	2.5	11	22	PA	3
1-790-44-00	KKB-K	K	8	15.8	4.3	11	22	PA	4

KLB / Hook-and-Loop Tape



Remarks:

- versatile usage
- reusable
- can be used for all cables, pneumatic hoses and others
- easy to cut to the required length with scissors
- compatible with KKB Twist-on-Cable/Hose Saddle
- delivered without KKB

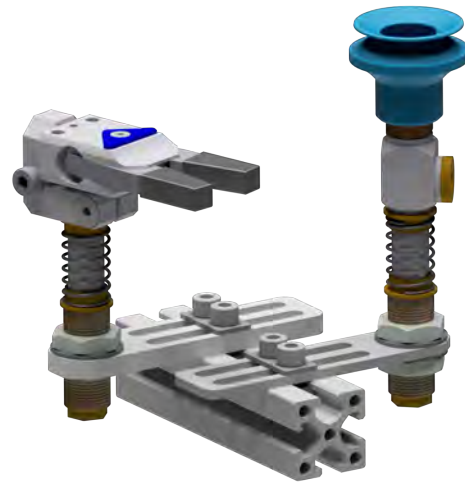
Part No.	Description	Length [m]
1-790-45-00	KLB	15

Application example Blue Scale

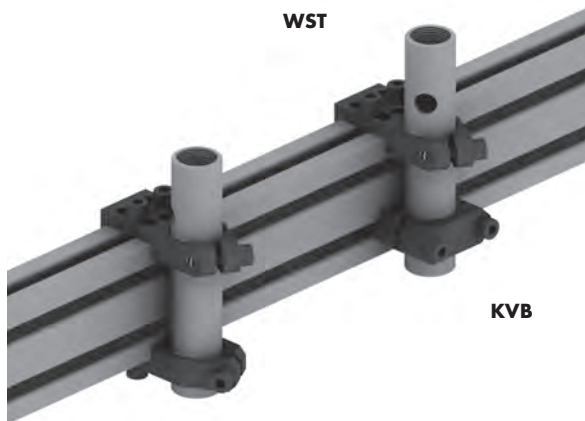
The combination of several Blue Scale elements (here WST BS and GLA-V BS) enables the most exact settings on the profile and e.g. is particularly suitable when using sensors.



Application examples WSF



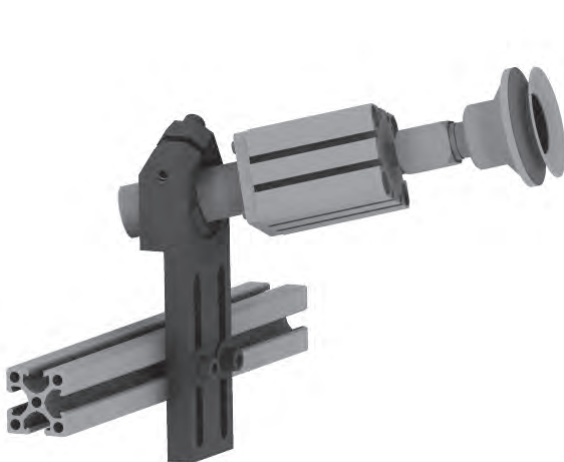
Application examples WST



Application examples WSL



Application examples WSL-G



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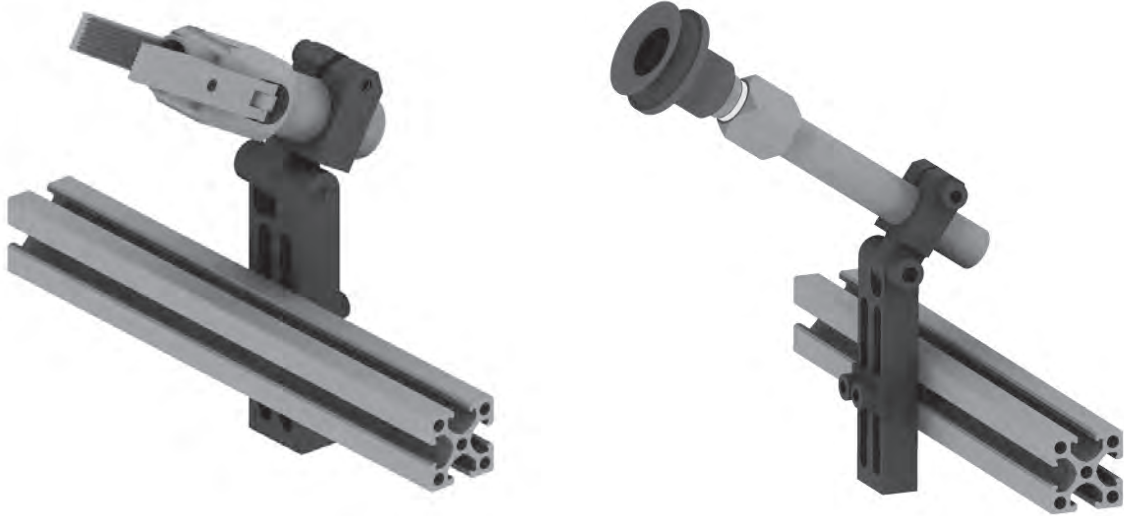
850
Pneumatics

990
Tubular System
Micro System

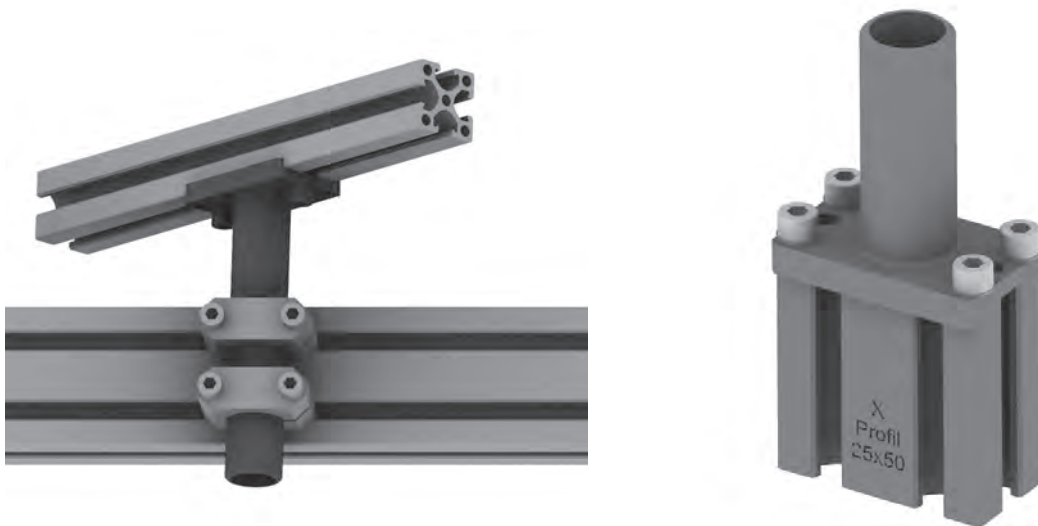
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PA-Forming
Others

100/115 | Clamps

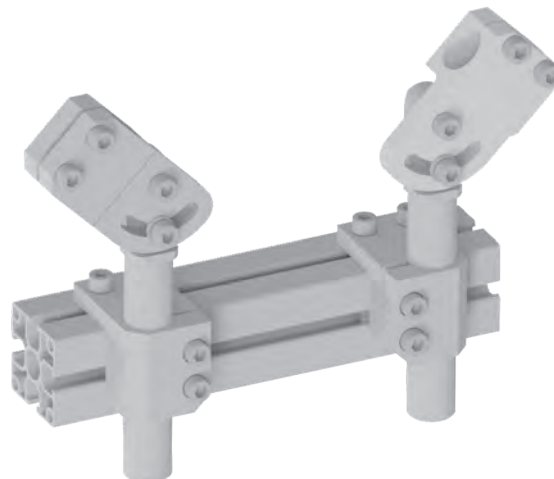
Application examples WSL GA



Application examples DKS

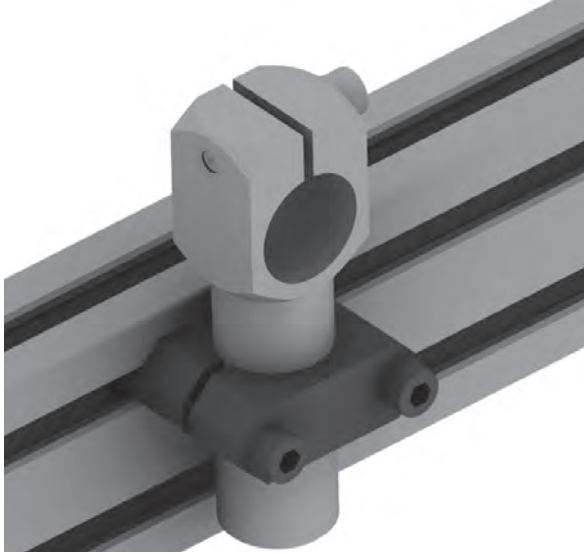


Application example WSW / WSW M

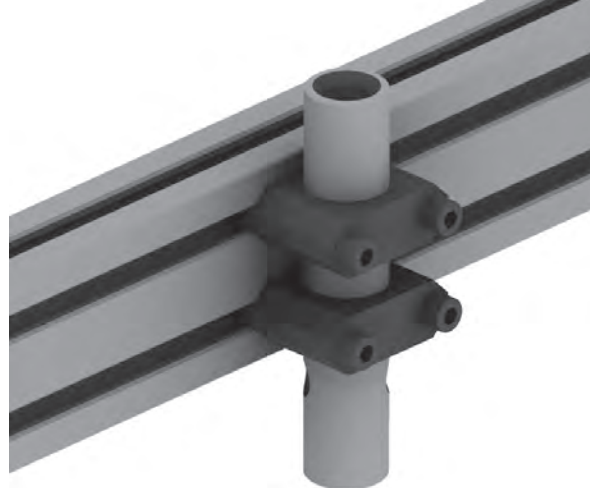


WSW combined with WSW M allow better setting options. In combination with the gripper arms GLA V and GLA VM assembly is more user friendly e.g. in complex robotic hands, such as the area of the bumper removal.

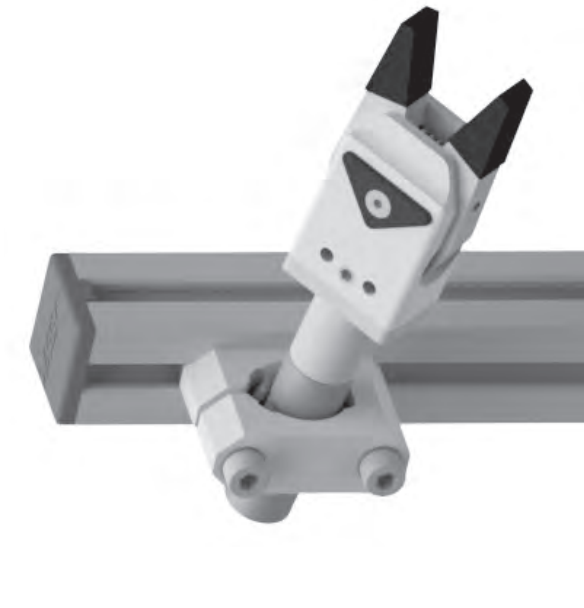
Application examples KVB



Application example KVB G



Application example KVB S



Application example KKS



Application example PKS

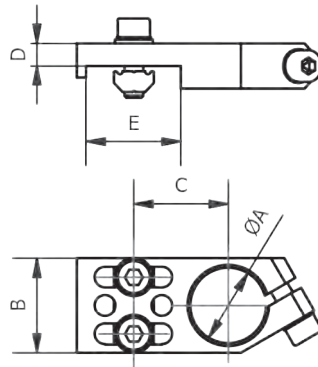


000	Quick Change Systems
050	Profiles Channel Nuts
100/115	Clamps
120	Profile Connectors
190	Profile Accessories
200	Vacuum Cup Connectors
220	Vacuum Cups
224	Special Vacuum Cups
230	Manifold
290	Adapters for Vacuum Cups
300	Gripper Arms
400	Gripper Parallel Gripper
450	Gripper Fingers
460	Needle Gripper
600	Nipper Bodies
610	Nipper Blades
700	Special Elements
800	Electrics and Sensors
850	Pneumatics
990	Tubular System Micro System
990	PA-Forming Others

100/115 | Clamps

WST / Universal Angle Clamp

WST BS / Universal Angle Clamp, Blue Scale



Remarks:

Type WST

Application: has the advantage of many possible applications: can be mounted form fit or adjustable (see application examples

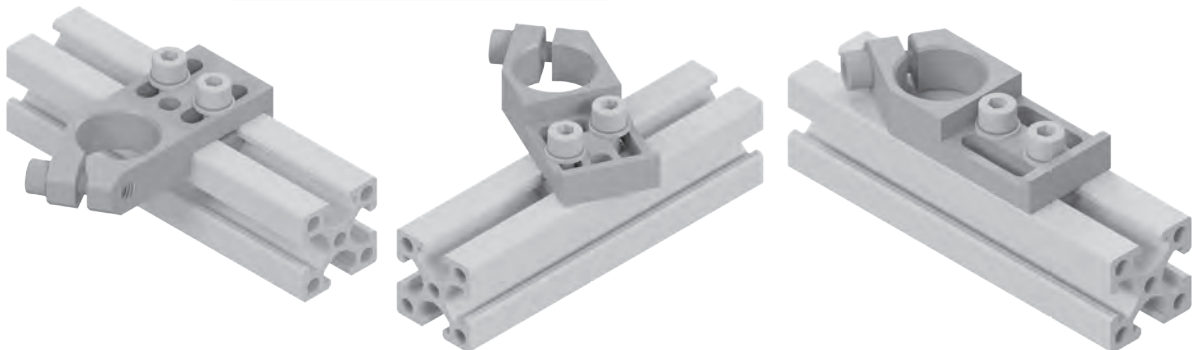
- just one tool needed: hexagon socket screw key
- mounted directly on profile
- allows compact gripper design

Type WST BS „Blue Scale“

Application: for exact mounting and replicable positioning of angles etc.

- as above
- blue anodized
- with marking for exact positioning
- more Blue Scale parts are available for WKA, GLA, GLA V and ASZ KS

Application examples



Part No.	Description	With long hole	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-103-00-00	WST L 10 U		10	16	16	4	18	Aluminium	18
1-103-03-00	WST L 14 U		14	20	18	6	18	Aluminium	26
1-103-06-00	WST X 10 U		10	16	19,5	4	25	Aluminium	19
1-103-09-00	WST X 14 U		14	20	21,5	6	25	Aluminium	33
1-119-00-00	WST SL 10	X	10	16	17-19,5	4	27	Aluminium	16
1-103-12-00	WST X 20 U	X	20	25	17,5-32,5	6	25	Aluminium	40
1-103-13-00	WST X 20 U BS	X	20	25	17,5-32,5	6	25	Aluminium	40
1-103-15-00	WST X 30 U	X	30	35	22,5-37,5	10	25	Aluminium	75
1-103-18-00	WST JU 20 U		20	25	32	7,5	40	Aluminium	60
1-103-19-00	WST JU 20 U BS		20	25	32	7,5	40	Aluminium	60
1-103-21-00	WST JU 30 U	X	30	40	27-47	10	40	Aluminium	116
1-103-27-00	WST K 20 U		20	25	32,5	7,5	40	Aluminium	63
1-103-28-00	WST K 20 U BS		20	25	32,5	7,5	40	Aluminium	63
1-103-30-00	WST K 30 U	X	30	40	27-47	10	40	Aluminium	125

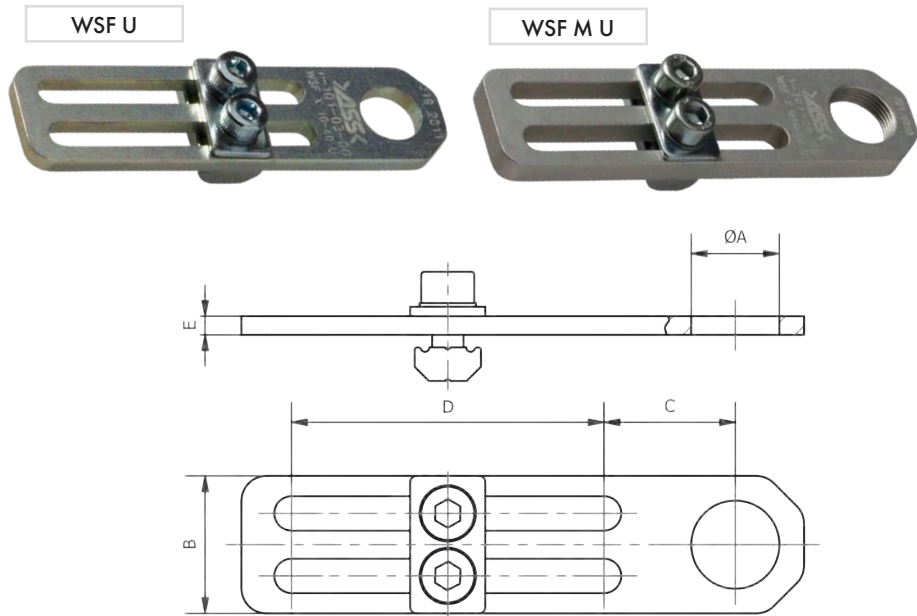
New

WSF U / WSF M U / Flat Angle Clamp

Remarks:

Application: universal Angle Clamp for mounting gripper arms with thread (such as GAF M)

- **Version WSF U** without thread:
Gripper Arms can be put through and counter-tightened
- **Version WSF M U** with thread:
Gripper Arms can be screwed in
- same allen screw size for clamping and channel nuts
- can be mounted directly on profiles
- allows compact gripper design



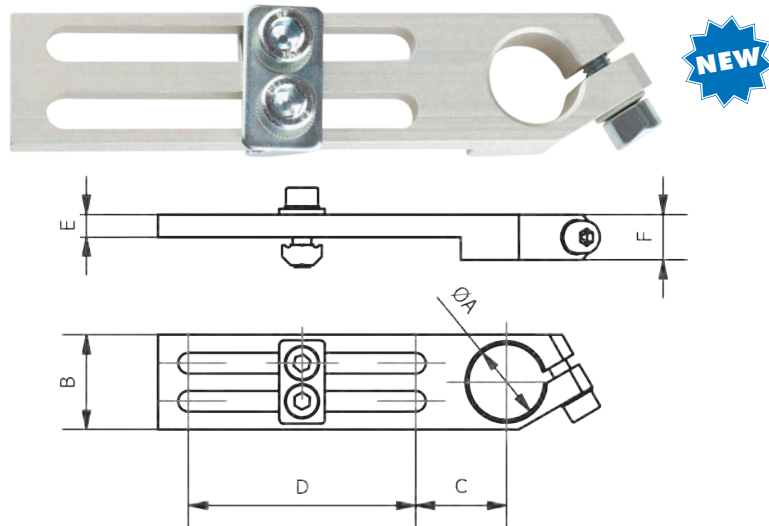
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-101-03-00	WSF X 10-40 U	10	18	16	40	3	stainless Steel	29
1-101-06-00	WSF X 14-50 U	14	22	21	50	3	stainless Steel	43
1-101-09-00	WSF X 20-60 U	20	30	24	60	3	stainless Steel	65
1-101-23-00	WSF X M10-40 U	M10x1	18	16	40	6	Aluminium	25
1-101-26-00	WSF X M14-50 U	M14x1	22	21	50	6	Aluminium	38
1-101-29-00	WSF X M20-60 U	M20x1.5	30	24	60	6	Aluminium	53

WSL U / Universal Long Angle Clamp

Remarks:

Application: universal Long Angle Clamp e.g. for mounting Gripper GRZ or other components with round connection to profiles

- same allen screw size for clamping and channel nuts
- can be mounted directly on profiles
- allows compact gripper design



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-105-07-00	WSL L 10-40 U	10	16	16	40	4	8	Aluminium	21
1-105-12-00	WSL L 14-40 U	14	20	18	40	5	10	Aluminium	31
New 1-119-10-00	WSL SL 10-40	10	16	16	40	4	8	Aluminium	21
1-105-17-00	WSL X 14-50 U	14	20	21	50	6	12	Aluminium	42
1-105-22-00	WSL X 20-60 U	20	25	24	60	6	12	Aluminium	53
1-105-37-00	WSL X 30-60 U	30	35	30	60	10	20	Aluminium	114
1-105-32-00	WSL JU 20-70 U	20	30	31	70	7.5	15	Aluminium	95
1-105-42-00	WSL JU 30-70 U	30	35	30	70	10	20	Aluminium	133

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190
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200
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220
Vacuum Cups

224
Special Vacuum Cups

230
Manifold

290
Adapters for Vacuum Cups

300
Gripper Arms

400
Gripper Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and Sensors

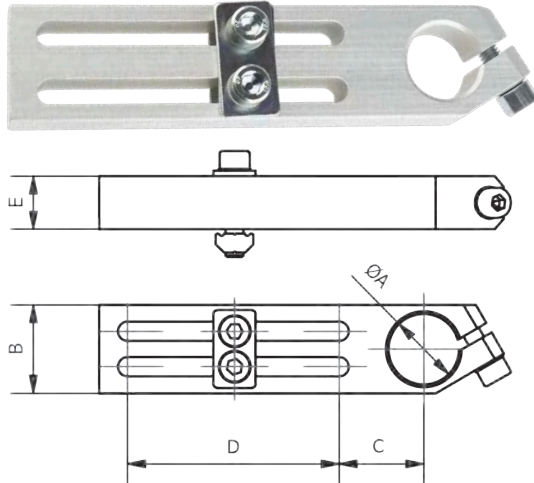
850
Pneumatics

990
Tubular System Micro System

990
PA-Forming Others

100/115 | Clamps

WSL VU / Universal Long Angle Clamp - Heavy Duty Version



Remarks:

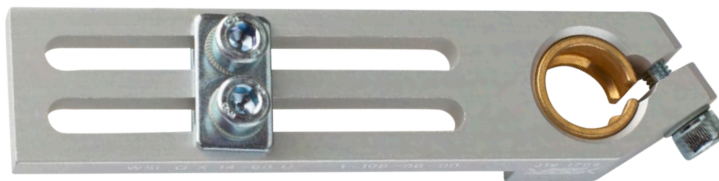
Application: reinforced universal Long Angle Clamp e.g. for mounting Gripper GRZ or other components with round connection to profiles

- same allen screw size for clamping and channel nuts
- can be mounted directly on profiles
- allows compact gripper design

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-105-09-00	WSL L+X 10-40 VU	10	16	16	40	8	Aluminium	27
1-119-60-00	WSL SL 10-40 VU	10	16	16	40	8	Aluminium	27
1-105-19-00	WSL X 14-50 VU	14	20	21	50	12	Aluminium	57
1-105-27-00	WSL X 20-60 VU	20	25	24	60	15	Aluminium	91
1-105-29-00	WSL K 14-50 VU	14	20	21	50	12	Aluminium	60
1-105-30-00	WSL K 20-70 VU	20	30	32	70	15	Aluminium	150
1-105-39-00	WSL X 30-60 VU	30	35	30	60	20	Aluminium	175
1-105-35-00	WSL JU 20-70 VU	20	30	31	70	15	Aluminium	141
1-105-40-00	WSL K 30-70 VU	30	40	27	70	20	Aluminium	247
1-105-45-00	WSL JU 30-70 VU	30	35	30	70	20	Aluminium	199

New

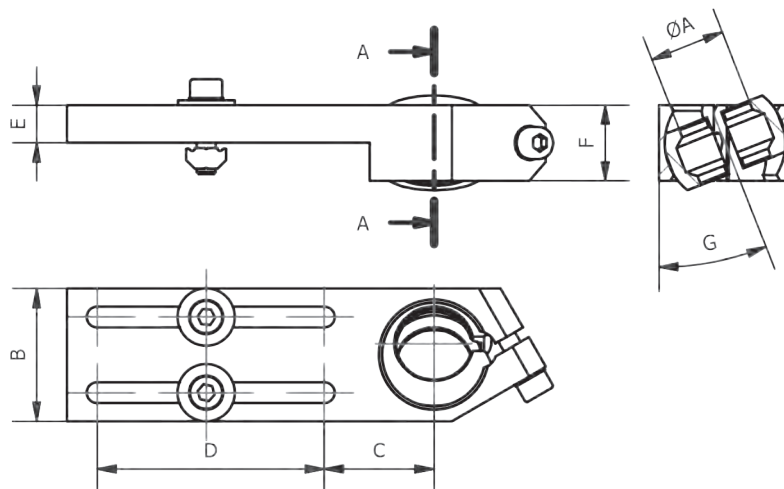
WSL G / Long Angle Clamp with Ball Joint



Remarks:

Application: features an integrated ball joint that allows flexible angle adjustments for components

- degrees of freedom can be adjusted stepless
- can be mounted directly on profiles
- allows compact gripper design



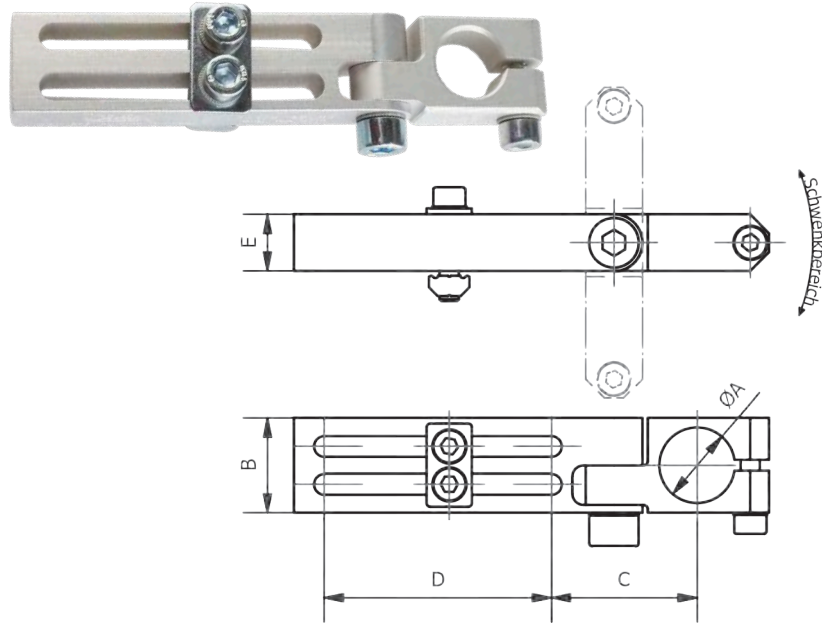
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [°]	Material	Weight [g]
1-106-03-00	WSL G X 10-50 U	10	20	20	50	6	12	0-13	Aluminium	46
1-106-06-00	WSL G X 14-60 U	14	25	24	60	6	12	0-17	Aluminium	62
1-106-09-00	WSL G X 20-60 U	20	35	29	60	10	20	0-19	Aluminium	156

WSL GA / Long Angle Clamp with Swivel Head

Remarks:

Application: e.g. for mounting Gripper GRZ, vacuum cups etc. in an angle

- degrees of freedom can be adjusted stepless
- both directions non-rotating
- can be mounted directly on profiles
- allows compact gripper design



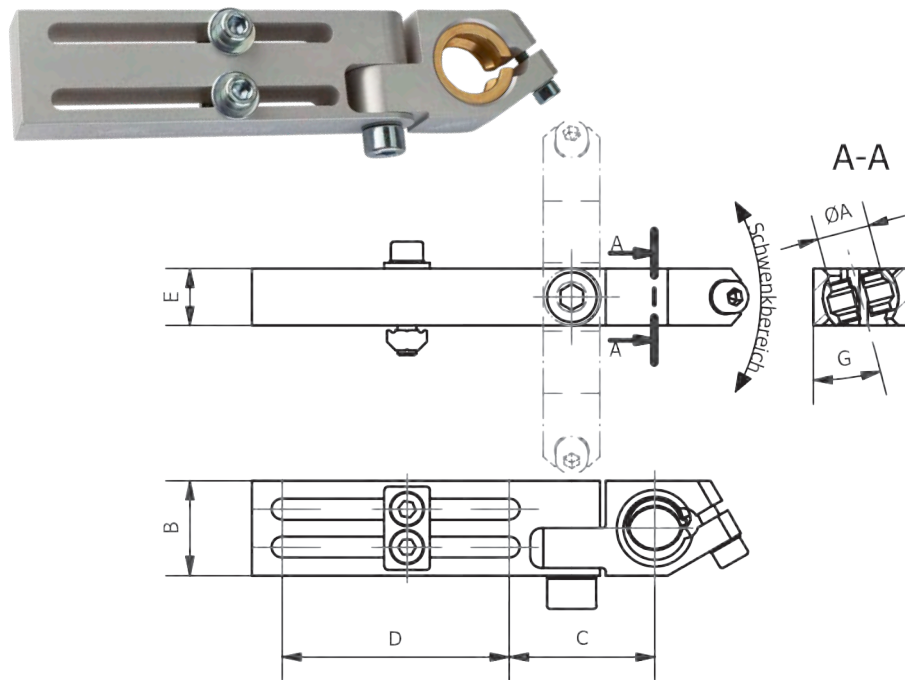
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Swivel Area [°]	Material	Weight [g]
1-106-33-00	WSL GA X 10	10	16	27	40	10	+/-90	Aluminium	39
1-106-36-00	WSL GA X 14	14	20	32.5	50	12	+/-90	Aluminium	69
1-106-39-00	WSL GA X 20	20	25	38.5	60	15	+/-90	Aluminium	116
1-106-42-00	WSL GA JU 30	30	35	52	82	20	+/-90	Aluminium	265

WSL KG / Long Angle Clamp with Swivel and Ball Joint

Remarks:

Application: allows positioning of Gripper GRZ etc. in free angle

- three-dimensional adjustability for stepless adjustment
- three movable axes by angle arm and ball joint
- maximum flexibility through freely adjustable angles
- protection against misalignment
- improved fixing
- can be mounted directly on profiles
- allows compact gripper design



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Swivel Area Ball Joint G [°]	Swivel Area [°]	Material	Weight [g]
1-106-53-00	WSL KG X 10	10	20	32,5	50	12	0-13	+/-90	Aluminium	74
1-106-56-00	WSL KG X 14	14	25	38,5	60	15	0-17	+/-90	Aluminium	123
1-106-59-00	WSL KG JU 20	20	35	50	82	20	0-19	+/-90	Aluminium	294

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Quick Change Systems

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Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

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Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

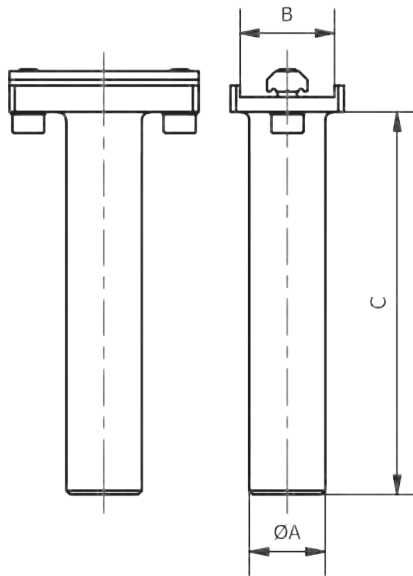
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

100/115 | Clamps

DKS / 90° Mounting Bar



Remarks:

- can be mounted form locking to profiles
- clamping diameter fits to EOAT Robot Hand Kit and offers various adjustment options



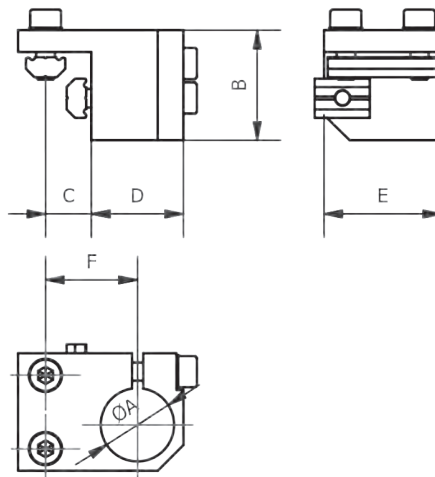
Part No.	Description	A [mm]	B [mm]	Dimension B form locking to profile	C [mm]	Material	Weight [g]
1-110-10-00	DKS L 10-60	10	18	L 18-10 or L 18-18	60	Aluminium	26
1-110-20-00	DKS X 14-80	14	25	X 25-25 or X 50-25	80	Aluminium	55
1-110-25-00	DKS X 20-50	20	25	X 25-25 or X 50-25	50	Aluminium	58
1-110-30-00	DKS X 20-100	20	25	X 25-25 or X 50-25	100	Aluminium	77

WSW / WSW M / Angle Clamp and Angle Clamp, mirrored

WSW



WSW M



Remarks:

Application: for a very stable connection between profiles and components

- extra strong clamp
- utilizes 2 channel nuts and wraps around the profile to minimize deflection (exception: WSW L 10)

Type WSW M:

- mirrored design of WSW
- allows better setting options in a robot hand
- » see application example

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-102-00-00	WSW L 10	10	20	9	14	20	16	Aluminium	29
1-102-02-00	WSW X 10	10	25	12.5	14	25	19.5	Aluminium	36
1-102-03-00	WSW X 14	14	25	12.5	18	25	21.5	Aluminium	51
1-102-06-00	WSW X 20	20	30	12.5	25	32	24	Aluminium	74
1-102-07-00	WSW M X 20	20	30	12.5	25	32	24	Aluminium	74
1-102-09-00	WSW JU 20	20	38	20	25	35	32.5	Aluminium	115
1-102-08-00	WSW M JU 20	20	38	20	25	35	32.5	Aluminium	115
1-102-12-00	WSW JU 30	30	45	20	38	45	39	Aluminium	182
1-102-24-00	WSW K 20	20	38	20	25	35	32.5	Aluminium	124
1-102-27-00	WSW K 30	30	45	20	38	45	39	Aluminium	190

New

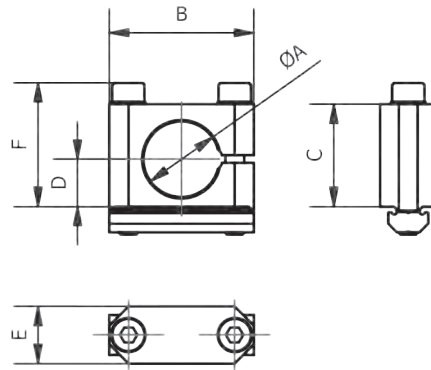
New

KVB / Cross Connector

Remarks:

Application: gripper arms, adapters, etc. can be clamped at an angle of 90° to the profile

- Cross Connector is mounted directly to the profile
- exact positioning through an additional positive connection
- by loosening a screw, various settings can be made without changing the position of the KVB



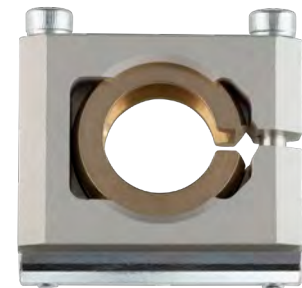
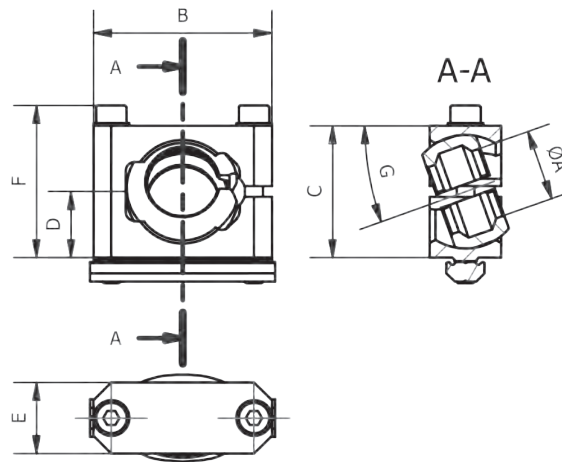
Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-115-05-00	KVB L+X 10	10	25	14	7	10	18.5	Aluminum	20
New 1-119-20-00	KVB SL 10	10	25	14	7	10	18,5	Aluminium	20
1-115-14-00	KVB L 14	14	32	18	9	12	22.5	Aluminium	21
1-115-15-00	KVB X 14	14	32	18	9	12	23.6	Aluminum	31
1-115-24-00	KVB K 14	14	40	28.5	13.5	20	35.2	Aluminum	86
1-115-20-00	KVB X 20	20	38	27	12.5	15	32.6	Aluminum	51
1-115-25-00	KVB K 20	20	40	28.5	12.5	20	35.2	Aluminum	75
1-115-27-00	KVB JU 20	20	40	28.5	12.5	15	35.2	Aluminum	72
1-115-30-00	KVB X 30	30	50	37	17	15	42.1	Aluminum	72
1-115-35-00	KVB K 30	30	50	34.5	17	20	41.2	Aluminum	93
1-115-37-00	KVB JU 30	30	50	34.5	17	20	41.2	Aluminum	85

KVB G / Cross Connector with Ball Joint

Remarks:

Application: flexible positioning of gripper arms, adapters, etc. through an additional ball joint

- Cross Connector is mounted directly to the profile
- by loosening a screw, various settings can be made without changing the position of the KVB G



Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [°]	Material	Weight [g]
1-116-46-00	KVB G X 10	10	35	23	11	12	30	0-13	Aluminium	44
1-116-48-00	KVB G K 10	10	37	22	9.5	12	29	0-13	Aluminium	54
1-116-56-00	KVB G X 14	14	40	27	13	15	33	0-17	Aluminium	60
1-116-58-00	KVB G JU 14	14	45	26.5	12.5	15	35	0-17	Aluminium	71
1-116-60-00	KVB G K 14	14	47	26.5	12.5	15	35	0-17	Aluminium	79
1-116-66-00	KVB G X 20	20	50	37	18.5	20	43	0-19	Aluminium	125
1-116-68-00	KVB G JU 20	20	55	36.5	17.5	20	45	0-19	Aluminium	142
1-116-70-00	KVB G K 20	20	55	36.5	18	20	45	0-19	Aluminium	153

000
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Connectors

190
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Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

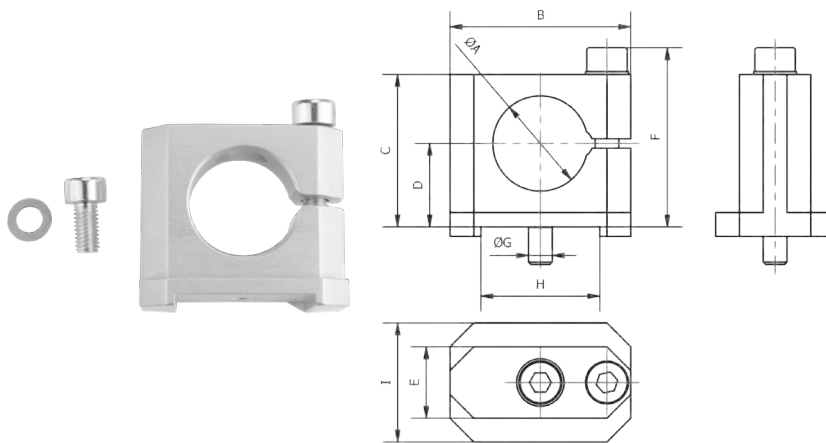
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

100/115 | Clamps

KVB S / Cross Connector, front side



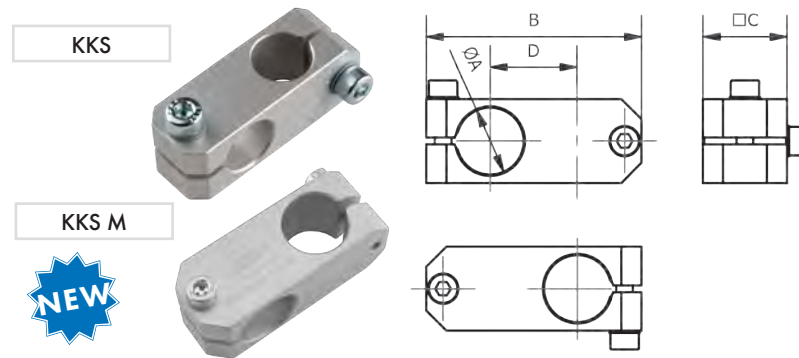
Remarks:

Application: e.g. for attaching supporting feet to the EOAT

- can be screwed to the front side of profiles in difficult space conditions

Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Material	Weight [g]
1-117-20-00	KVB S X 20	20	38	32	17.5	15	37.6	M5	25	25	Aluminium	44

KKS / Cross Clamp



Remarks:

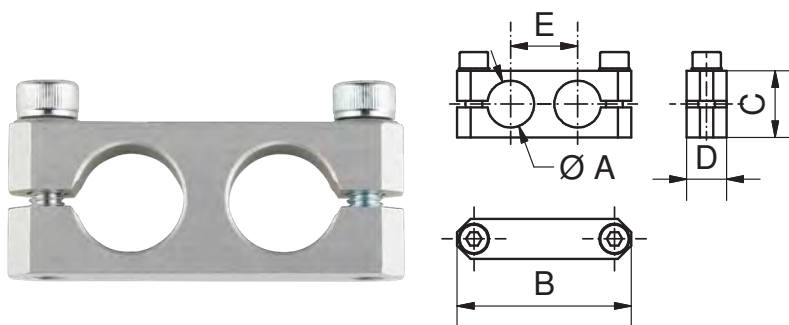
Application: connects two components with the same clamp diameter at a 90° angle

- both clamps can be set independently
- KKS M is the mirrored version

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-115-40-00	KKS 10-10-16	10	38	14	14	Aluminum	15
1-115-45-00	KKS 14-14-18	14	50	18	18	Aluminum	32
1-115-50-00	KKS 20-20-26	20	64	25	26	Aluminum	66
1-115-51-00	KKS-M 20-20-26	20	64	25	26	Aluminium	66

New

PKS / Parallel Clamp



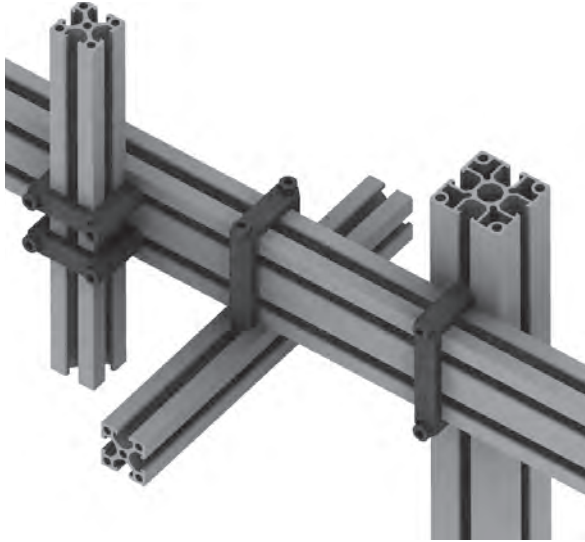
Remarks:

Application: connects two components with the same clamp diameter parallel

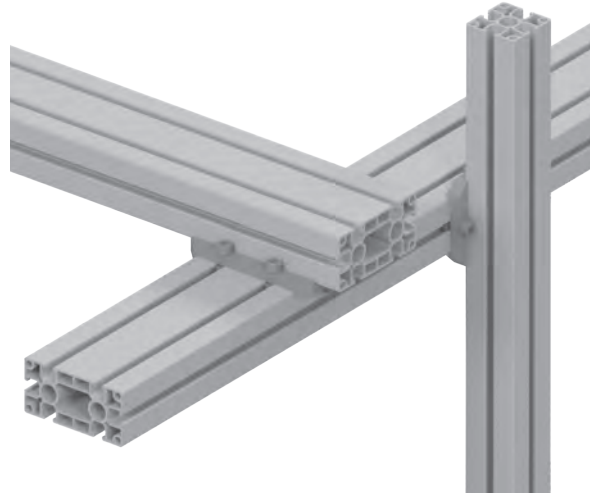
- both clamps can be set independently

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-115-60-00	PKS 10-10-15	10	38	15	8	15	Aluminum	11
1-115-65-00	PKS 14-14-20	14	52	20	10	20	Aluminum	29
1-115-70-00	PKS 20-20-26	20	64	25	15	26	Aluminum	42
1-115-75-00	PKS 30-30-38	30	88	35	20	38	Aluminum	98

Application example KBV



Application example KPL



Application example KPL D



Application example EVB



Application example WIV



000
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Profile
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Vacuum Cup
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Pneumatics

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Tubular System
Micro System

990
PA-Forming
Others

000
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Special Elements

800
Electrics and
Sensors

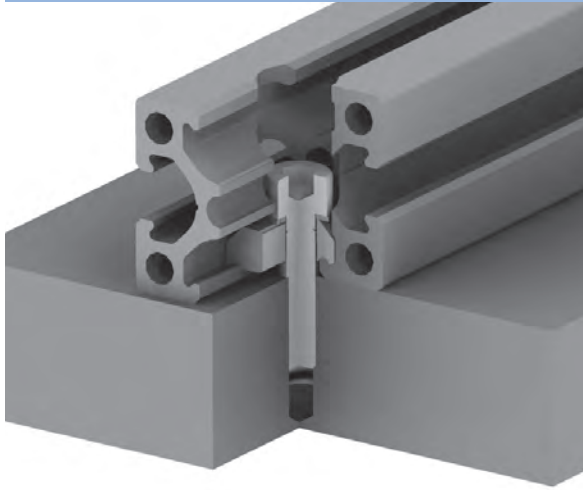
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

120 | Profile Connectors

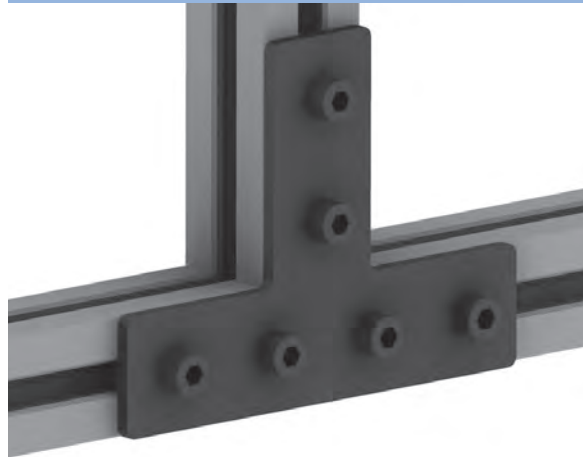
Application example SV



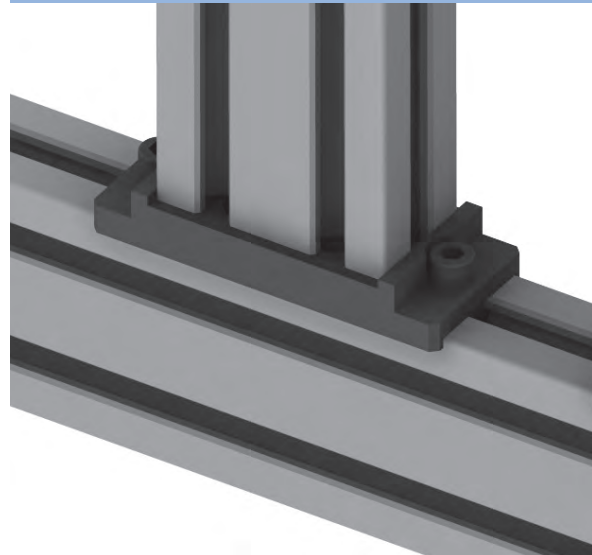
Application example EPL



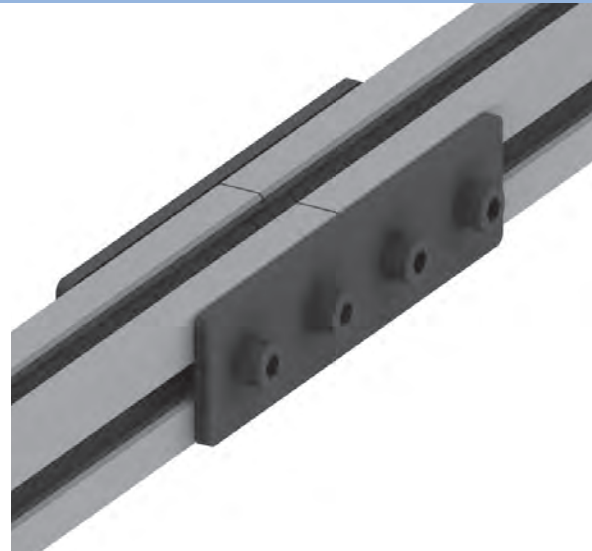
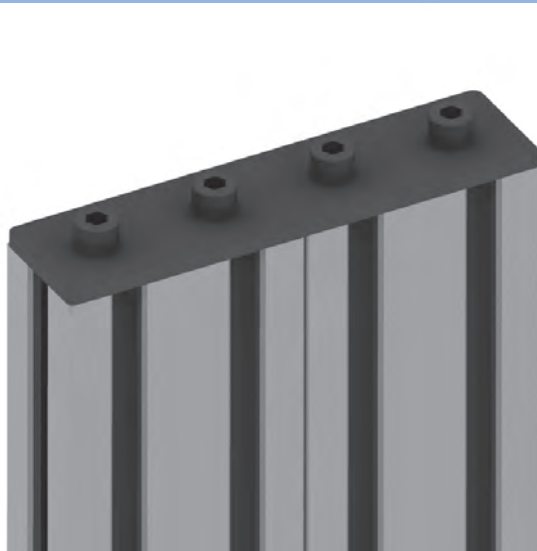
Application example VBT



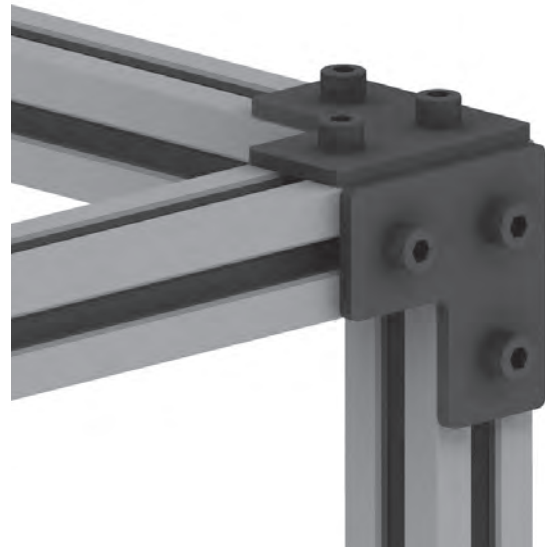
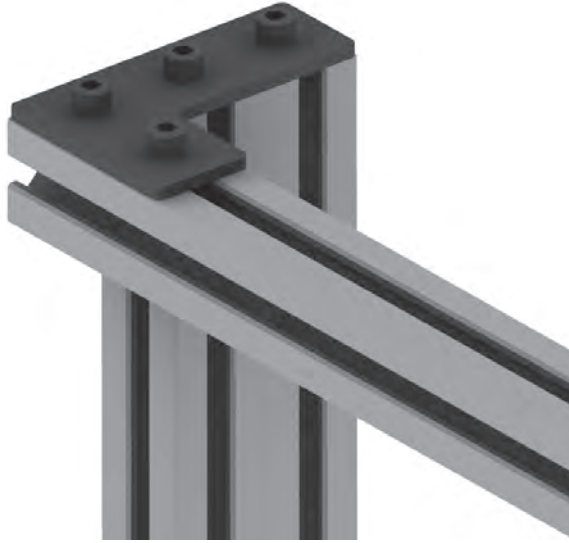
Application examples SVB



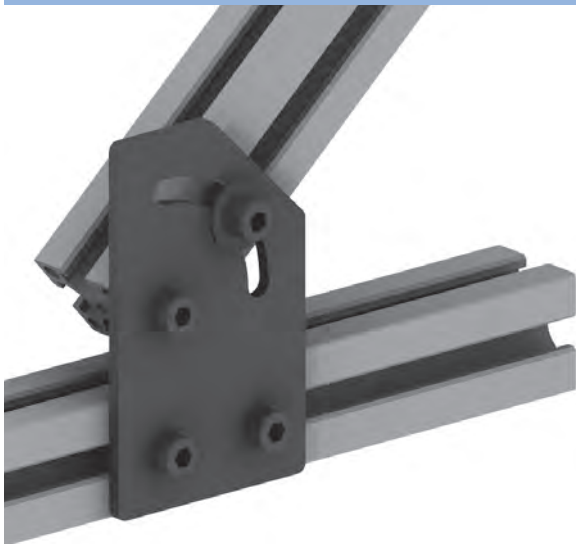
Application examples VBG



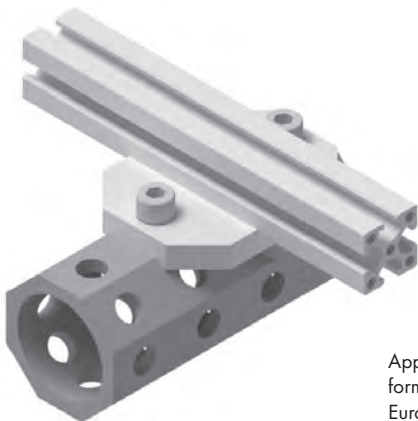
Application examples VBL



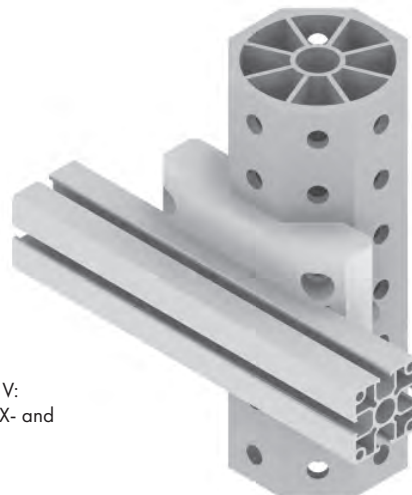
Application examples VBW 0-90° and 45°



Application examples adaption / KPL EU and KPL V EU



Application example KPL V:
form lock fixing between X- and
Europrofile form stability



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Gripper
Parallel Gripper

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Gripper Fingers

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Nipper Bodies

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Nipper Blades

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Electrics and
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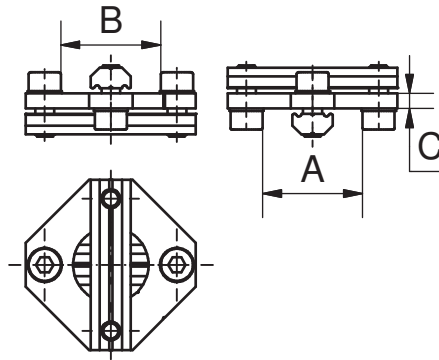
850
Pneumatics

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Tubular System
Micro System

990
PA-Forming
Others

120 | Profile Connectors

KPL F / Cross Joint Connector Flat



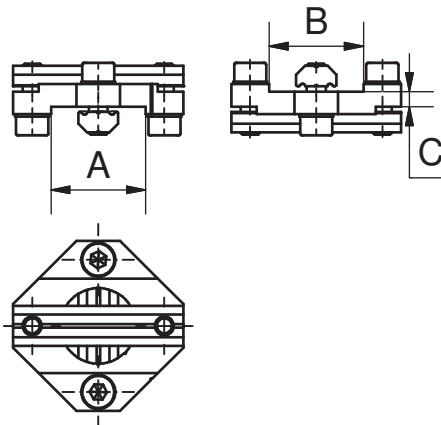
Remarks:

Application: connects profiles in 90° to each other

- flat design
- no leading edges (no positive locking)
- no drilling necessary
- after loosening two screws profile can be moved in one direction, after loosening all four screws profiles can be moved in both

Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
1-120-50-00	KPL L 18-18 F	18	18	3	Aluminium	35
1-120-60-00	KPL X 25-25 F	25	25	4	Aluminium	57

KPL / Cross Joint Connector



Remarks:

Application: connects profiles in 90° to each other

- with leading edges (positive locking)
- no drilling necessary
- after loosening two screws profile can be moved in one direction, after loosening all four screws profiles can be moved in both

Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
1-120-55-00	KPL L 18-18	18	18	3	Aluminium	38
1-119-30-00	KPL SL 20-20	20	20	3	Aluminium	61
1-120-57-00	KPL X 25-L 18	25	18	4	Aluminium	63
1-120-65-00	KPL X 25-25	25	25	4	Aluminium	61
1-120-70-00	KPL X 50-25	50	25	4	Aluminium	99
1-120-75-00	KPL X 50-50	50	50	4	Aluminium	180
1-120-76-00	KPL JU 40-X 25	40	25	4	Aluminium	117
1-120-80-00	KPL K 40-40	40	40	4	Aluminium	130
1-120-82-00	KPL JU 40-40	40	40	4	Aluminium	110
1-120-83-00	KPL JU 80-X 25	80	25	4	Aluminium	163
1-120-85-00	KPL K 80-40	80	40	4	Aluminium	219
1-120-87-00	KPL JU 80-40	80	40	4	Aluminium	184
1-120-90-00	KPL K 80-80	80	80	4	Aluminium	352
1-120-93-00	KPL JU 80-80	80	80	4	Aluminium	299
1-120-95-00	KPL JU 80-X 50	80	50	4	Aluminium	229
1-120-98-00	KPL JU 40-X 50	40	50	4	Aluminium	151

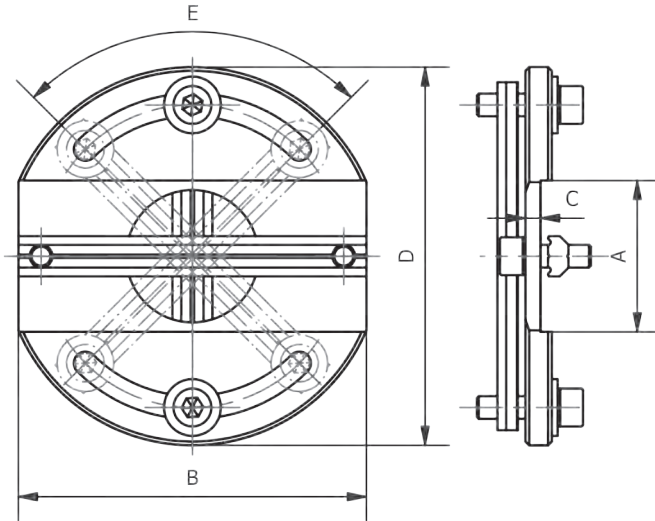
New

KPL D / Cross Joint Connector, form-locking, swiveling

Remarks:

Application: connects profiles steplessly +/- 90° to each other

- profile is connected on one side with positive locking
- opposite side +/- 90° steplessly adjustable



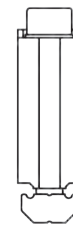
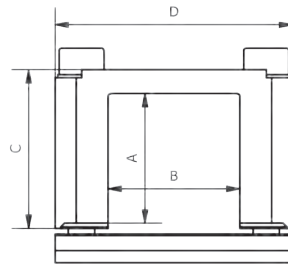
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [°]	Material	Weight [g]
1-120-45-00	KPL D JU 40	40	92	4	100	90	Aluminium	194

KBV / Square Joint Connector

Remarks:

Application: connects profiles in 90° to each other

- no drilling necessary
- after loosening two screws profiles can be moved in all directions



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-120-05-00	KBV L 10-18	9.5	18	15	32	Aluminium	23
1-120-10-00	KBV L 18-18	17.5	18	23	32	Aluminium	27
1-120-13-00	KBV X 10-25	9.5	25	15	45	Aluminium	34
1-120-14-00	KBV X 18-25	17.5	25	23	45	Aluminium	40
1-120-15-00	KBV X 25-25	24.5	25	30	45	Aluminium	46
1-120-20-00	KBV X 50-25	49.5	25	55	45	Aluminium	65
1-120-25-00	KBV X 25-50	24.5	50	30	70	Aluminium	59
1-120-30-00	KBV K 40-40	39.5	40	48.5	60	Aluminium	97
1-120-35-00	KBV K 40-80	39.5	80	50	100	Aluminium	136
1-120-32-00	KBV JU 40-40	39.5	40	50	60	Aluminium	88
1-120-37-00	KBV JU 40-80	39.5	80	50	100	Aluminium	118
1-120-40-00	KBV K 80-40	79.5	40	90	60	Aluminium	138
1-120-42-00	KBV JU 80-40	79.5	40	90	60	Aluminium	132

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224
Special Vacuum Cups

230
Manifold

290
Adapters for Vacuum Cups

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Gripper Arms

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Gripper Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and Sensors

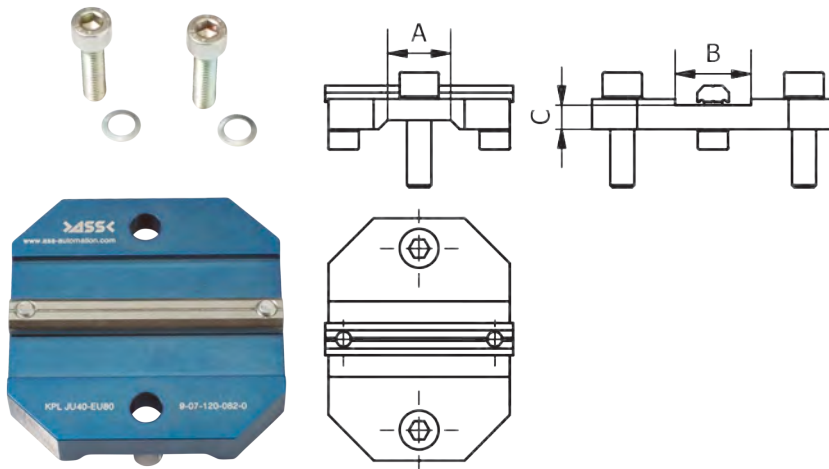
850
Pneumatics

990
Tubular System Micro System

990
PA-Forming Others

120 | Profile Connectors

KPL / Cross Joint Connector X/JU to Europrofile



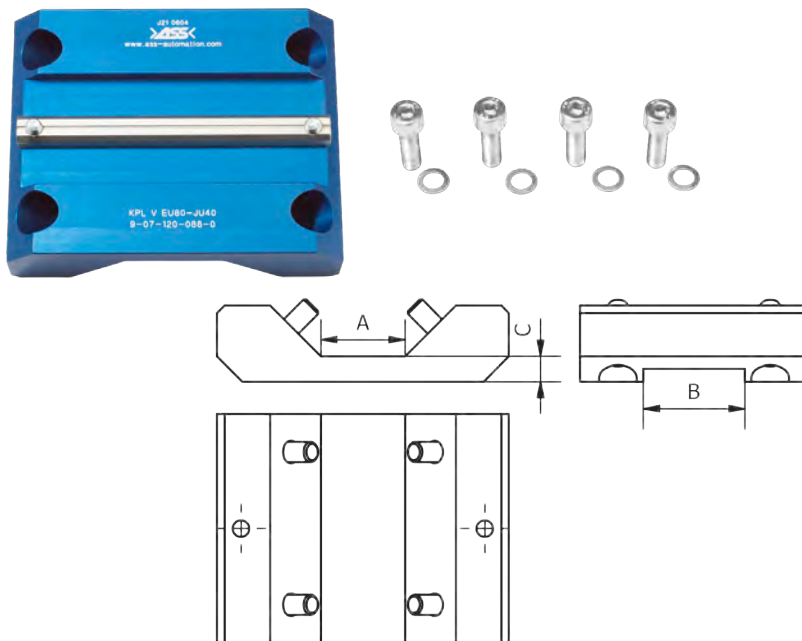
Remarks:

Application: Clamp for combining X profile with Euro profile for small, light parts i.e. sensors

- no drilling required
- easy to use
- form locking for X- and Europrofiles
- enhances the capabilities of both profiles
- » bushing for Europrofil has to be added by customer

Part No.	Description	A [mm]	B [mm]	C [mm]	X System	Euro System	Screws	Material	Weight [g]
9-07-120-065-0	KPL X25-EU50	21	25	8	X 25	EU 50	2	Aluminium	135
9-07-120-082-0	KPL JU40-EU80	33	40	8	JU 40	EU 80	2	Aluminium	237

KPL V / Cross Joint Connector X/JU to Europrofile, Strong Version



Remarks:

Application: Clamp for combining X profile with Euro profile securely and safely by opposing screw

- no drilling required
- easy to use
- enhanced connectivity with 4 screw connections
- form locking for X- and Europrofiles
- enhances the capabilities of both profiles
- » bushing for Europrofil has to be added by customer

Part No.	Description	A [mm]	B [mm]	C [mm]	X System	Euro System	Screws	Material	Weight [g]
9-07-120-090-0	KPL V EU50-X25	21	25	10	X 25	EU 50	4	Aluminium	485
9-07-120-092-0	KPL V EU50-JU40	21	40	10	JU 40	EU 50	4	Aluminium	285
9-07-120-088-0	KPL V EU80-JU40	33	40	10	JU 40	EU 80	4	Aluminium	525

EVB / Corner Joint Plate

Remarks:

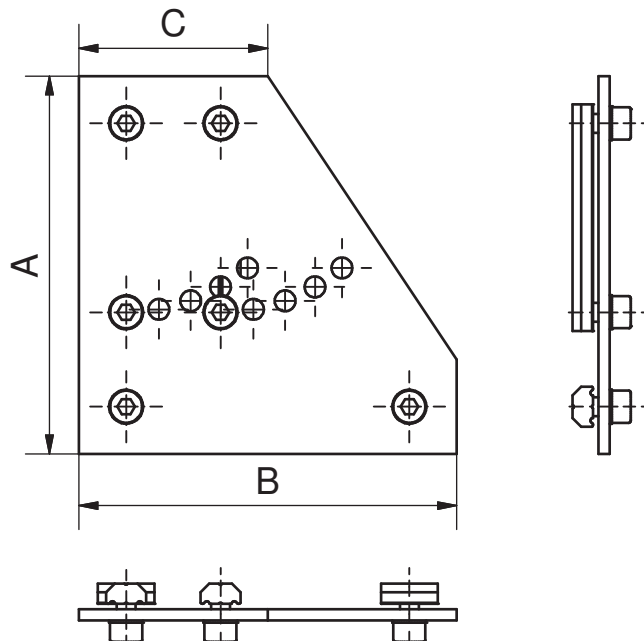
Application: allows to connect profiles in angles of 90° / 100° / 110° / 120° or 130°

- exception: EVB X 100 allows 90° or 100° connections
- no need for additional work like drilling or thread cutting
- stable connection to expose profiles at an angle
- » see application examples

Scope of delivery:

- screws and channel nuts included

EVB X 100



Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
1-121-85-00	EVB X 75	100	75	25	Aluminium	99
1-121-90-00	EVB X 100	100	100	50	Aluminium	136
1-121-97-00	EVBJU 100	100	80	40	Aluminium	127
1-121-95-00	EVBK 100	100	80	40	Aluminium	130

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Nipper Blades

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Special Elements

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Electrics and
Sensors

850
Pneumatics

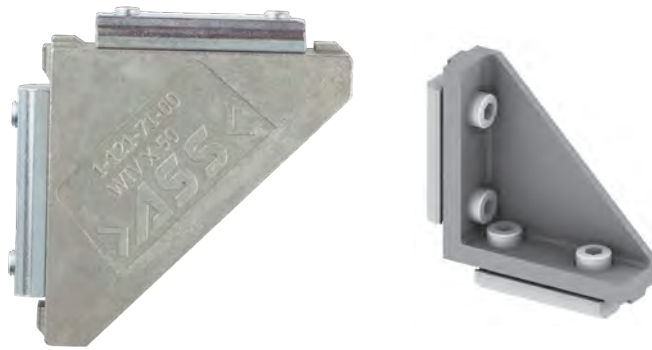
990
Tubular System
Micro System

990
PA-Forming
Others

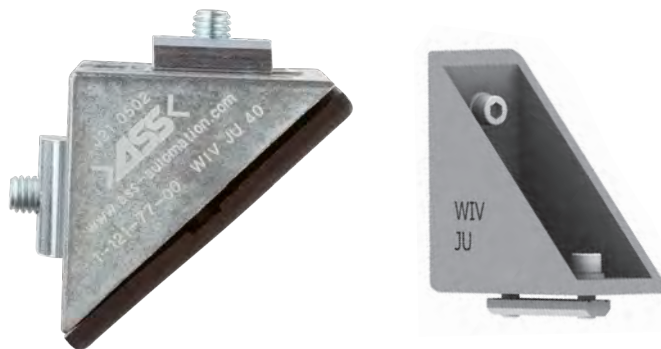
120 | Profile Connectors

WIV / Corner Reinforcement Connector 90°

WIV...X



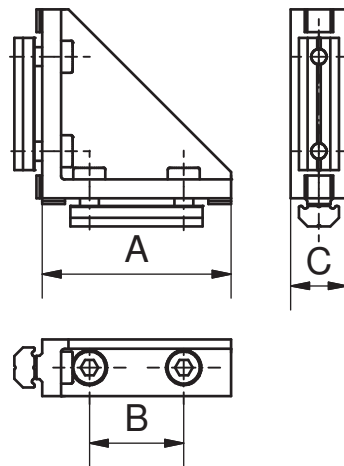
WIV...JU/K



Remarks:

Application: reinforces profile connections in 90°

- no need for additional works such as drilling or thread cutting
- » different models for X-, JU- and K-System, see product name



Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
1-121-66-00	WIV X 25	25		15	Zinc-die-casting	41
1-121-71-00	WIV X 50	50	25	15	Zinc-die-casting	97
1-121-77-00	WIV JU 40	40		40	Zinc-die-casting	120
1-121-82-00	WIV JU 80	80	40	40	Zinc-die-casting	389
1-121-75-00	WIV K 40	40		40	Zinc-die-casting	146
1-121-80-00	WIV K 80	80	40	40	Zinc-die-casting	407

UVV / Universal Joint Connector, adjustable

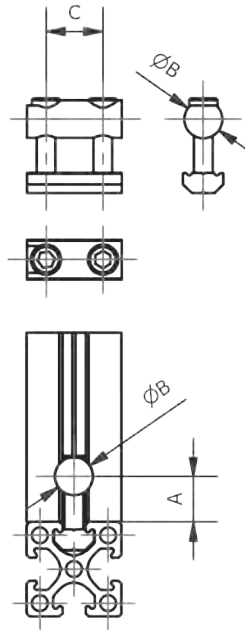
Remarks:

Application: for butt connecting profiles

- one profile must be drilled
- can be postponed
- see drilling pattern

Accessories e.g.:

- Step Drill STB



Part No.	Description	A [mm]	B [mm]	C [mm]	Weight [g]
1-121-15-00-1	UVV X 25	12	10	15	20
1-121-20-00-1	UVV X 50	12	10	40	35

UVF / Universal Joint Connector, fixed

Remarks:

Application: for connecting profiles

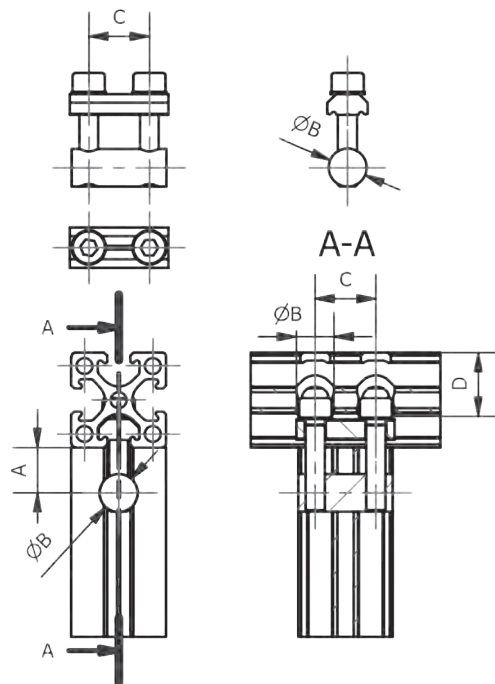
- both profiles must be drilled
- can not be moved anymore
- » see drilling pattern

Drawing:

D hole depth

Accessories e.g.:

- Step Drill STB



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Weight [g]
1-121-25-00	UVF X 25	12	10	16	21	22
1-121-30-00	UVF X 50	12	10	41	46	26

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Pneumatics

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Tubular System
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Others

120 | Profile Connectors

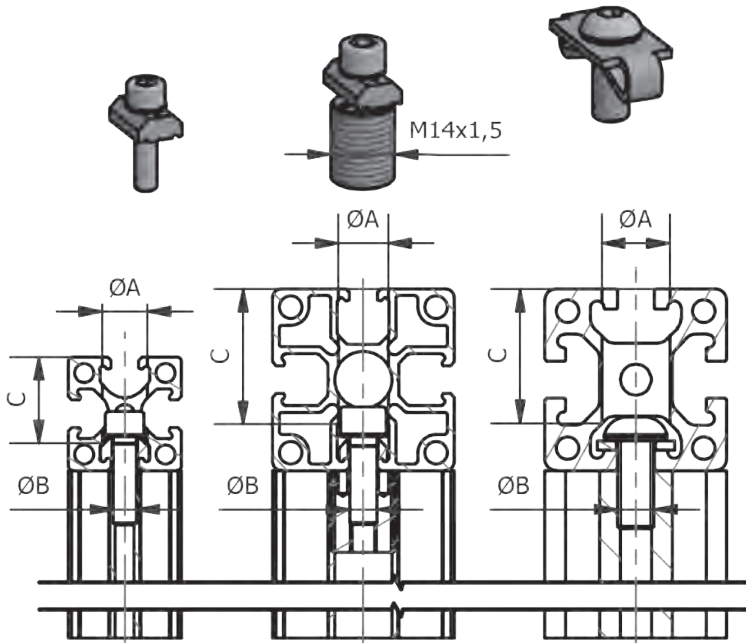
SV / Butt Connector



SV X 5

SV JU 6

SV K 8



Remarks:

Application: for connecting profiles

- packing unit: 10 pieces
- » one profile must be drilled
- » in the other profile a thread must be cut frontally
- » see table
- » Butt Connector SV K is non-rotating by form locking

Drawing:

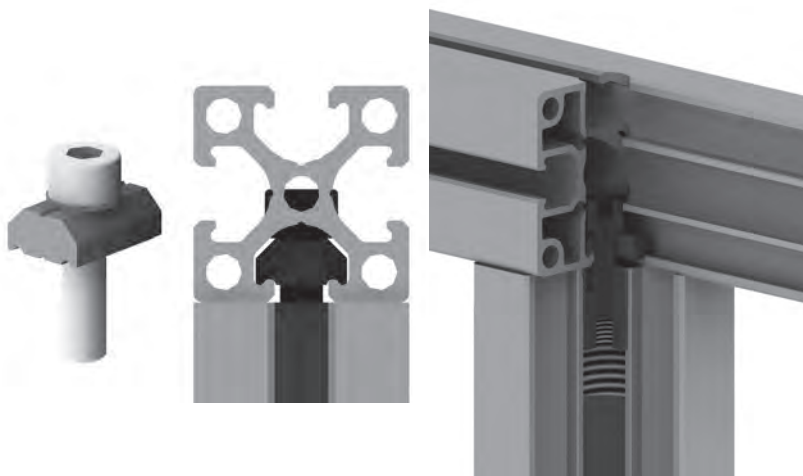
- A bore diameter
- B thread
- C drill depth

Scope of delivery:

- SV-JU 6: there is a additional thread insert included

Accessories e.g.:

- Step Drill STB
- Tap Drill GB



Part No.	Description	B [mm]	C [mm]	A [mm]	Accessories	Weight [g]	Sold in pc.
1-121-55-00	SV X 5	M 5	21	10	STB M5	9	10
1-121-57-00	SV JU 6	M 6	33	11	STB M6	26	10
1-121-60-00	SV K 8	M 8	33	15	STB M8	20	10

KV / Clinch Nut

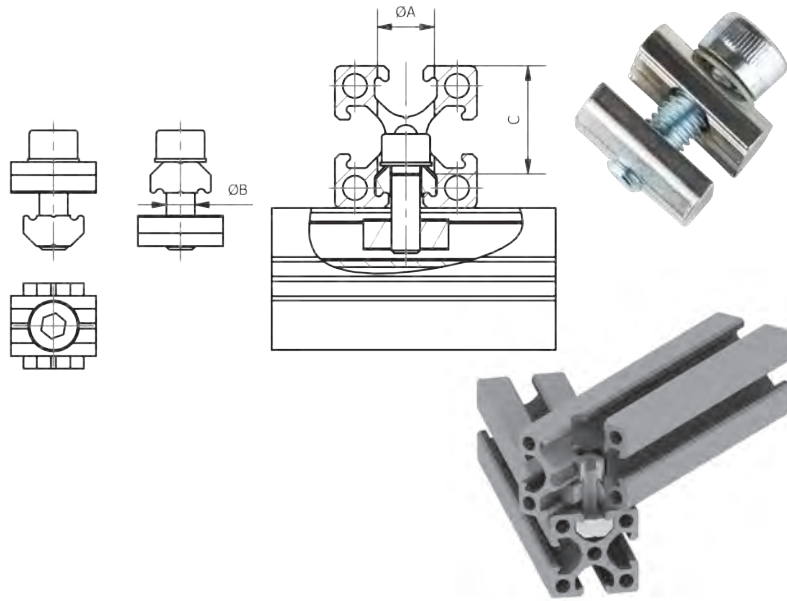
Remarks:

Application: Profiles can be screwed at a 90° angle or at any other angle

- one profile must be drilled (Ø A, depth C)
- packing unit: 10 pieces
- » KV L 4 S
"S" = counter sunk screw M4x8 for L-profile 18x10 mm

Accessories e.g.:

- Step Drill STB



Part No.	Description	A [mm]	B [mm]	C [mm]	Connection	Weight [g]	Sold in pc.
1-121-35-00	KV L 4 S	8	M 4	10/90°	L18/10 on L or X Profile	6	10
1-121-40-00	KV L 4	8 (STB M4)	M 4	13.5	L 18/18 Profil on L or X Profile	12	10
1-121-45-00	KV X 5	10 (STB M5)	M 5	21	X Profile on X or JU Profile	14	10
1-121-47-00	KV JU 6	11 (STB M6)	M 6	33	JU Profile on JU Profile	17	10
1-121-50-00	KV K 8	15 (STB M8)	M 8	33	K Profile on K-Profile	26	10

EPL / End Plate for Profiles

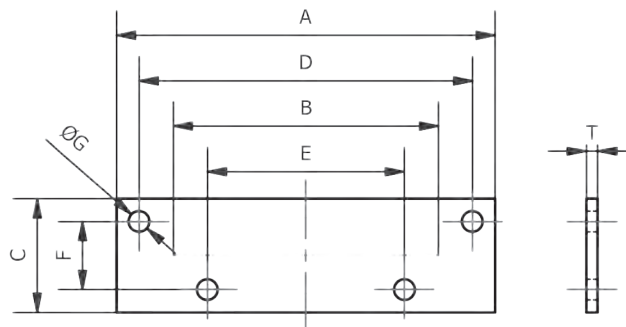
Remarks:

Application: for connecting profiles

- two frontally aligned profiles can terminate with the EPL in a stable connection
- two threads have to be cut for each profile

Drawing:

- B profile center distance (suitable for all GPM)



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	T [mm]	for profile	compatible with	Material	Weight [g]
1-122-81-00	EPL X 1-25-25	100	70	30	88	52	18	5.5	3	X 25-25	GPM 1 X	Aluminium	22
1-122-83-00	EPL X 1-50-25	95	70	50	70	70	25	5.5	3	X 50-25	GPM 1 X	Aluminium	37
1-122-85-00	EPL X 2-25-25	150	120	30	138	102	18	5.5	3	X 25-25	GPM 2 X	Aluminium	36
1-122-87-00	EPL X 2-50-25	145	120	50	120	120	25	5.5	3	X 50-25	GPM 2 X	Aluminium	57
1-122-89-00	EPL X 3-25-25	230	200	30	218	182	18	5.5	3	X 25-25	GPM 3 X	Aluminium	55
1-122-91-00	EPL X 3-50-25	225	200	50	200	200	25	5.5	3	X 50-25	GPM 3 X	Aluminium	86
New 1-122-92-00	EPL JU 2-40-40	165	120	45	152	88	32	6,6	5	JU 40-40	GPM 2 JU	Aluminium	97
1-122-94-00	EPL JU 3-40-40	245	200	45	232	168	32	6,6	5	JU 40-40	GPM 3 JU	Aluminium	142
1-122-96-00	EPL JU 3-80-40	245	200	85	232	168	72	6,6	5	JU 80-40	GPM 3 JU	Aluminium	271

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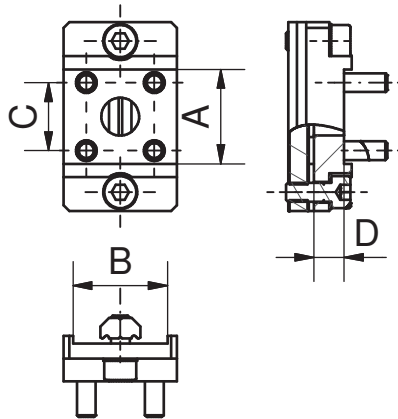
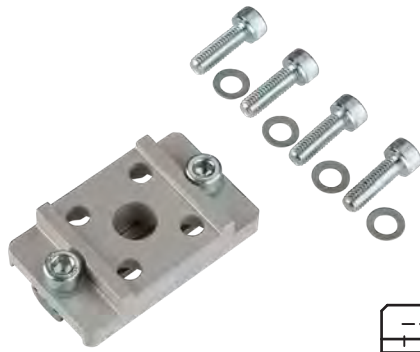
850
Pneumatics

990
Tubular System Micro System

990
PA-Forming Others

120 | Profile Connectors

SVB / Butt Connector SVB X 25-25



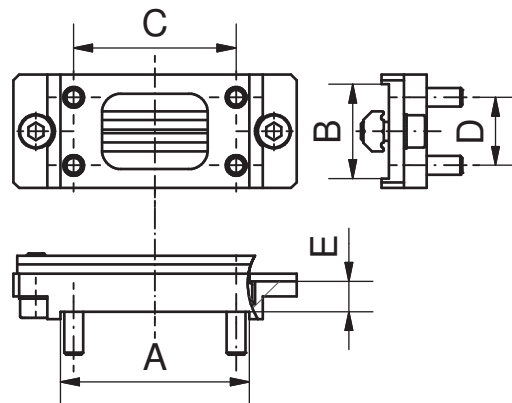
Remarks:

Application: for connecting profiles in 90 °

- four M5 threads have to be cut in the profile
- butt connector is screwed to the front side of the profile to be connected, this unit is screwed into the groove of the other profile and can be adjusted
- » see application examples

Part No.	Description	Dimension	Dimension	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-122-05-00	SVB X 25-25	X 25-25	X25-25 or X50-25	25	25	18	8	Aluminium	61

SVB / Butt Connector SVB X 25-50-25



Remarks:

Application: for connecting profiles in 90 °

- four M5 threads have to be cut in the profile
- butt connector is screwed to the front side of the profile to be connected, this unit is screwed into the groove of the other profile and can be adjusted
- » see application examples

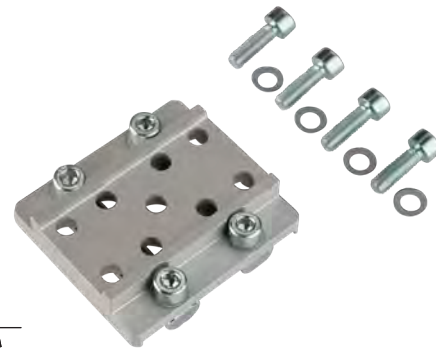
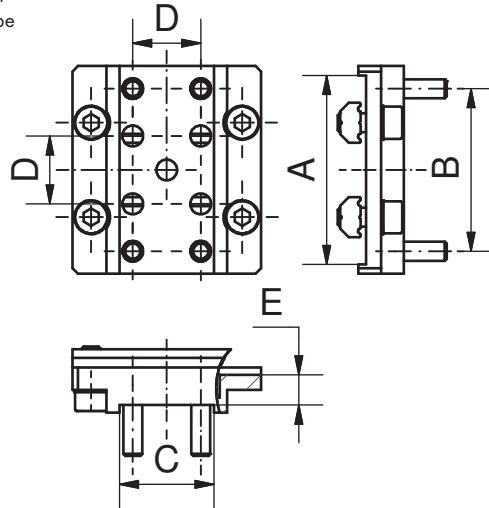
Part No.	Description	Measure A/C/D for profile	Measure B for profile	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-122-10-00	SVB X 25-50-25	X 50-25	X 25-25 or X 50-25	50	25	43	18	8	Al	76

SVB / Butt Connector SVB X 50-25-U

Remarks:

Application: for connecting profiles in 90 °

- four M5 threads have to be cut in the profile
- butt connector is screwed to the front side of the profile to be connected, this unit is screwed into the groove of the other profile and can be adjusted
- » see application examples



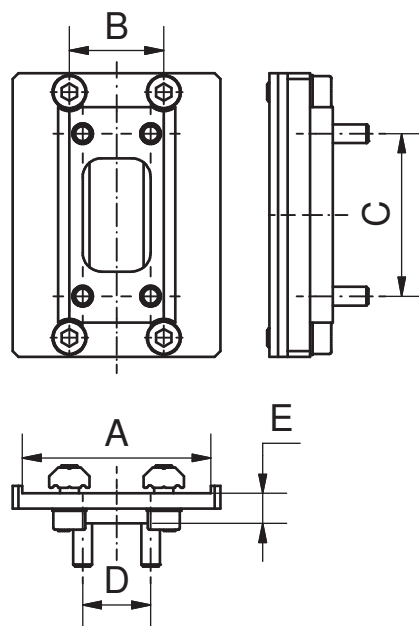
Part No.	Description	Dimension	Dimension	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-122-15-00	SVB X 50-25-U	X 50-25	X 25-25	50	43	25	18	8	Aluminium	110

SVB / Butt Connector SVB X 50-25-50-25

Remarks:

Application: for connecting profiles in 90 °

- four M5 threads have to be cut in the profile
- butt connector is screwed to the front side of the profile to be connected, this unit is screwed into the groove of the other profile and can be adjusted
- » see application examples



Part No.	Description	Dimension	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-122-20-00	SVB X 50-25-50-25	X 50-25	50	25	43	18	8	Aluminium	131

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

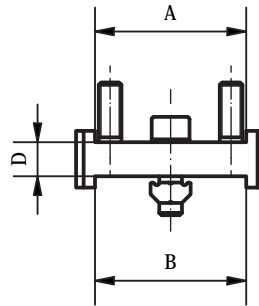
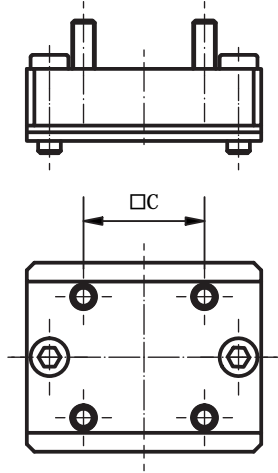
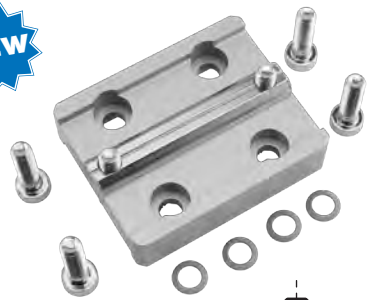
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

120 | Profile Connectors

SVB / Butt Connector SVB JU 40-40



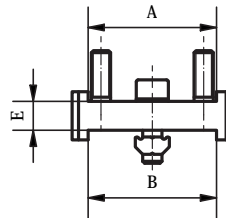
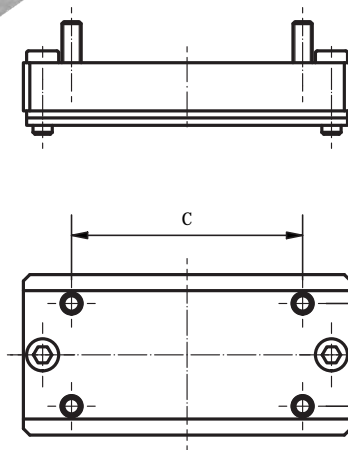
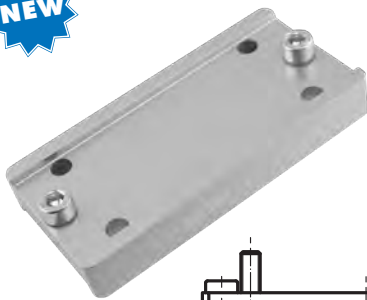
Remarks:

Application: for connecting JU-profiles in 90 °

- four M5 threads have to be cut in the profile
 - butt connector is screwed to the front side of the profile to be connected, this unit is screwed into the groove of the other profile and can be adjusted
- » see application examples

Part No.	Description	Measure C for profile	Maß B für Profil	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-122-21-00	SVB JU 40-40	JU 40x40	JU 40x40 oder JU 80x40	40	40	32	9	Aluminium	135

SVB / Butt Connector SVB JU 80-40-80-40



Remarks:

Application: for connecting JU-profiles in 90 °

- four M6 threads have to be cut in the profile
 - butt connector is screwed to the front side of the profile to be connected, this unit is screwed into the groove of the other profile and can be adjusted
- » see application examples

Part No.	Description	Measure C/D for profile	Maß B für Profil	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-122-23-00	SVB JU 80-40-80-40	JU 80x40	JU 40x40 oder JU 80x40	40	40	72	32	9	Al	206

VBG / Straight Support Joint Connector

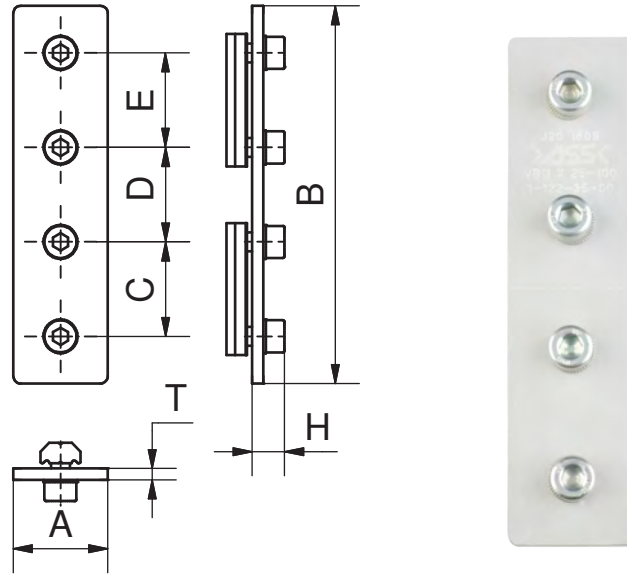
Remarks:

Application: for connecting profiles

- no drilling or tapping required
- with centered mark for customized separation into two halved VBG, see table

Scope of delivery:

- VBG X 25-50 and VBG X 25-75 with 1 channel nut
- other sizes with 2 channel nuts



Part No.	Description	A	B	C	D	E	H	T	with centering mark	Material	Weight [g]
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]			
1-122-25-00	VBG X 25-50	25	50	25			8.6	3		Aluminium	28
1-122-30-00	VBG X 25-75	25	75	25	25		8.6	3		Aluminium	44
1-122-35-00	VBG X 25-100	25	100	25	25	25	8.6	3	x	Aluminium	55
1-122-42-00	VBG JU 40-160	40	160	40	40	40	9.7	3	x	Steel/Zinc ctd.	208
1-122-40-00	VBG K 40-160	40	160	40	40	40	11.8	3	x	Steel/Zinc ctd.	239

VBL / L-Style Support Joint Connector

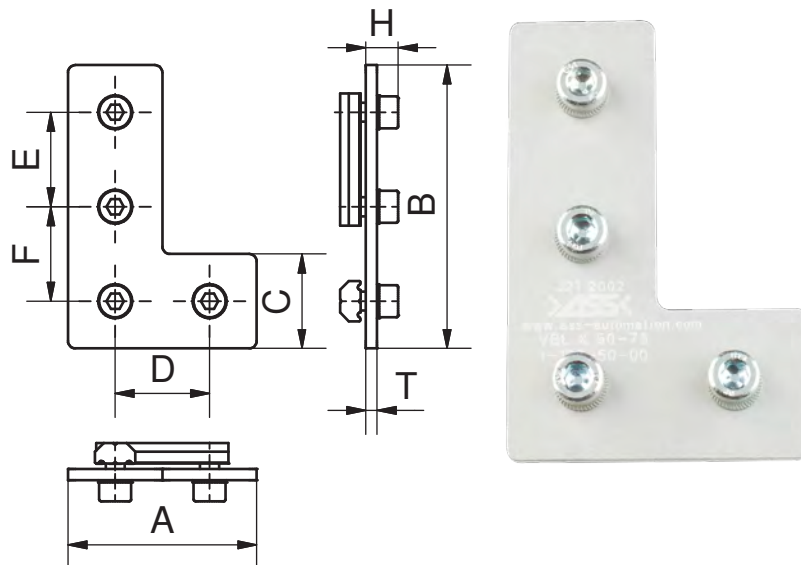
Remarks:

Application: for connecting profiles

- no drilling or tapping required

Scope of delivery:

- 2 channel nuts included



Part No.	Description	A	B	C	D	E	F	H	T	Material	Weight [g]
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
1-122-45-00	VBL X 50-50	50	50	25	25		25	8.6	3	Aluminium	42
1-122-50-00	VBL X 50-75	50	75	25	25	25	25	8.6	3	Aluminium	56
1-122-57-00	VBL JU 80-120	80	120	40	40	40	40	9.7	3	stainless Steel	205
1-122-55-00	VBL K 80-120	80	120	40	40	40	40	11.8	3	stainless Steel	241

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

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Profile
Accessories

200
Vacuum Cup
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220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

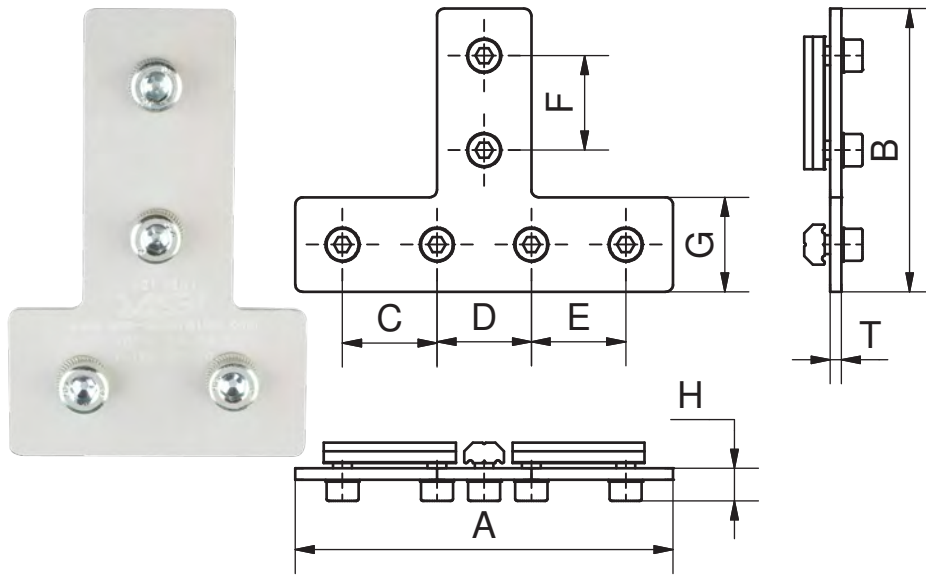
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

120 | Profile Connectors

VBT / T-Style Support Joint Connector



Remarks:
Application: for connecting profiles

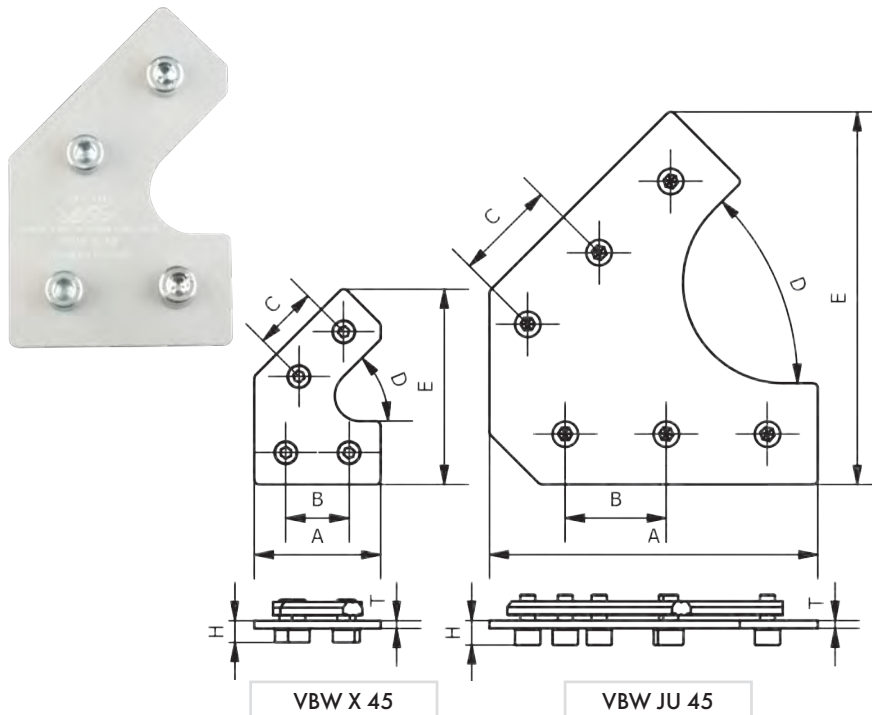
- no drilling or tapping required

Scope of delivery:

- 3 channel nuts included

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	T [mm]	Material	Weight [g]
1-122-60-00	VBT X 50-75	50	75		25	25	25	25	8.6	3	Aluminium	56
1-122-65-00	VBT X 100-75	100	75		25	25	25	25	8.6	3	Aluminium	83
1-122-72-00	VBT JU 120-120	120	120	40		40	40	40	9.7	3	Steel/Zinc ctd.	262
1-122-70-00	VBT K 120-120	120	120	40		40	40	40	11.8	3	Steel/Zinc ctd.	313

VBW 45 / 45 Degree Support Joint Connector



Remarks:
Application: for connecting profiles in 45°

- no drilling or tapping required
- no miter cut required

Scope of delivery:

- 2 channel nuts included

Part No.	Description	A [mm]	B [mm]	C [mm]	D [°]	E [mm]	H [mm]	T [mm]	Material	Weight [g]
1-122-75-00	VBW X 45	50	25	25	45	77	8.6	3	Aluminium	58
1-122-76-00	VBW JU 45	130	40	40	45	147	9.7	3	Steel/Zinc ctd.	363

VBW 0-90 / Adjustable Support Joint Connector

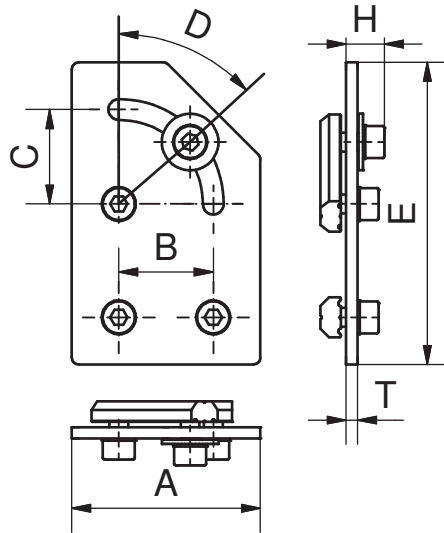
Remarks:

Application: for connecting profiles adjustable in 0-90°

- angle adjustable from 0-90°
- no drilling or tapping required
- no miter cut required

Scope of delivery:

- 2 channel nuts included



Part No.	Description	A [mm]	B [mm]	C [mm]	D [°]	E [mm]	H [mm]	T [mm]	Material	Weight [g]
1-122-80-00	VBW X 0-90	50	25	25	0-90	80	10	3	Aluminium	65

VBW 120 / 120 Degree Support Joint Connector

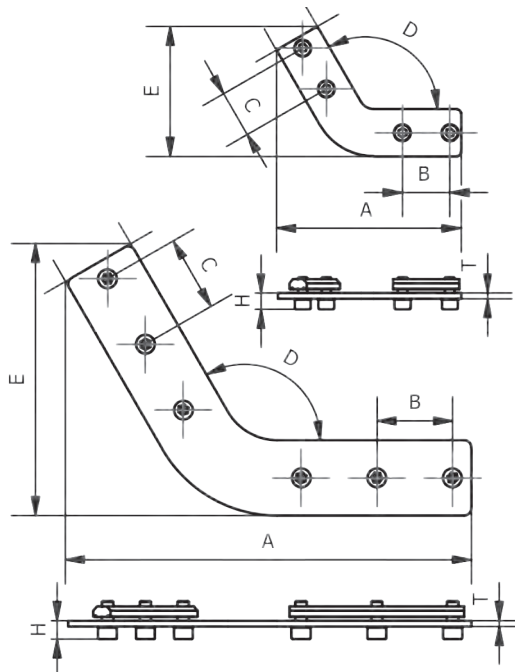
Remarks:

Application: for connecting profiles adjustable in 120°

- no drilling or tapping required
- no miter cut required

Scope of delivery:

- 2 channel nuts included



Part No.	Description	A [mm]	B [mm]	C [mm]	D [°]	E [mm]	H [mm]	T [mm]	Material	Weight [g]
1-122-77-00	VBW X 120	98	25	25	120	69	9	3	Aluminium	57
1-122-78-00	VBW JU 120	215	40	40	120	144	10	3	Stahl	320

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile Connectors

190
Profile Accessories

200
Vacuum Cup Connectors

220
Vacuum Cups

224
Special Vacuum Cups

230
Manifold

290
Adapters for Vacuum Cups

300
Gripper Arms

400
Gripper Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and Sensors

850
Pneumatics

990
Tubular System Micro System

990
PA-Forming Others

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

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Special
Vacuum Cups

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Vacuum Cups

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Parallel Gripper

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Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

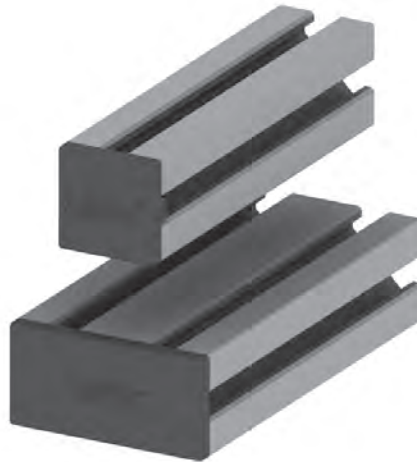
990
PA-Forming
Others

190 | Accessories-Profile

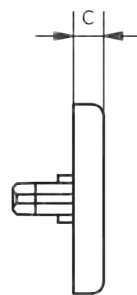
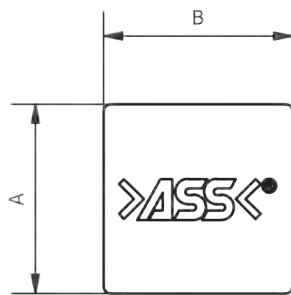
Application example STB



Application example ADK



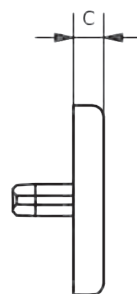
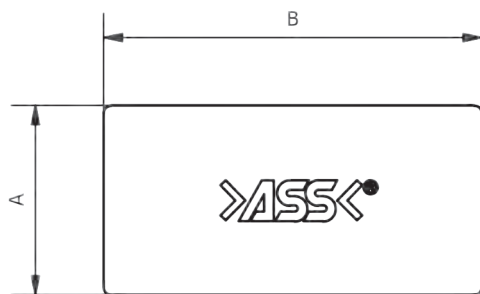
ADK / Profile End Caps



Remarks:

Application: for closing profile ends

- Holes for receiving the profile caps should be deburred
- Cover caps are simply opened with a rubber hammer



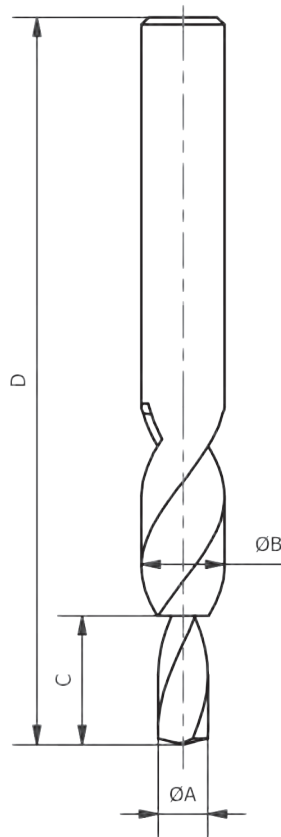
Part No.	Description	for profile	A [mm]	B [mm]	C [mm]	Weight [g]	Material
1-190-20-00	ADK L 18-10	L 18-10	18	10	4	1	ABS
1-190-22-00	ADK L 18-18	L 18-18	18	18	4	2	ABS
1-190-23-00	ADK X 25-10	X 25-10	25	10	4	1	ABS
1-190-24-00	ADK X 25-18	X 25-18	25	18	4	2	ABS
1-190-25-00	ADK X 25-25	X 25-25	25	25	4	2	ABS
1-190-30-00	ADK X 50-25	X 50-25	25	50	4	4	ABS
1-190-37-00	ADK JU 40-40	JU 40-40	40	40	4	5	ABS
1-190-42-00	ADK JU 80-40	JU 80-40	40	80	4	10	ABS
1-190-35-00	ADK 40-40 K	K 40-40	40	40	4	6	ABS
1-190-40-00	ADK 80-40 K	K 80-40	40	80	4	10	ABS
1-190-45-00	ADK 80-80 K	K 80-80	80	80	4	19	ABS

STB / Step Drill

Remarks:

Application: to screw components directly to profiles

- for use with e.g.:
 - Universal Connector UVV
 - Universal Joint Connector UVF
 - Cross Connector KV
 - Butt Connector SV



Part No.	Description	for profile	A [mm]	B [mm]	C [mm]	D [mm]
1-190-80-00	STB M 4	L	4.5	8	12	77.5
1-190-82-00	STB M 5	X	5.5	10	15	89.0
1-190-84-00	STB M 6	JU	6.5	11	16.5	95.5
1-190-88-00	STB M 8	K	9	15	21	111.5

GB / Tap Drill

Remarks:

Application: to screw components directly to profiles

- hand tap with cut
- cutter M14x1,5 (fine thread)



Part No.	Description	Accessory for
1-190-90-00	GB M14x1.5	SV JU 6

000
Quick Change Systems

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Profiles
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Clamps

120
Profile
Connectors

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Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000
Quick Change
Systems

050
Profiles
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Electrics and
Sensors

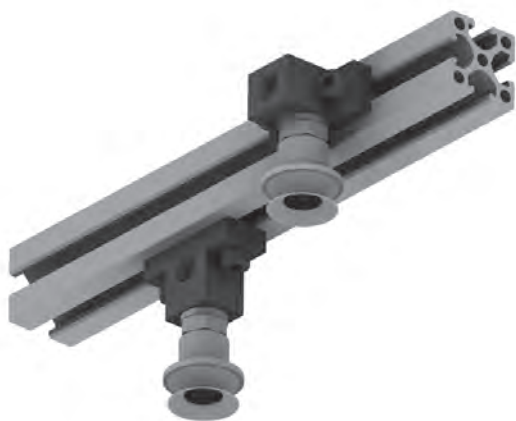
850
Pneumatics

990
Tubular System
Micro System

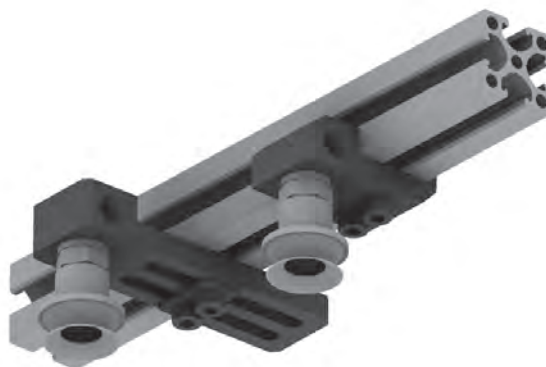
990
PA-Forming
Others

200 | Vacuum Cup-Connectors

Application example SAS



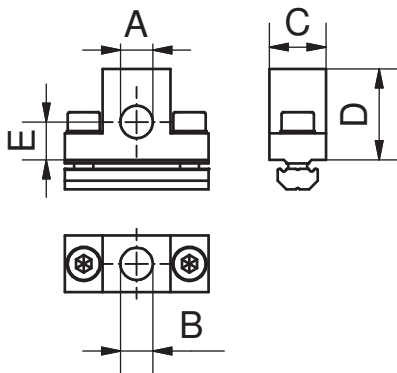
Application example WSS/WLS



Application example WSD



SAS / Vacuum Cup Connector, lateral



Remarks:

Application: to mount vacuum cups directly to the profile

- suction cup connection on the side
- allows very compact EOAT design

Part No.	Description	A [mm] ["]	B [mm] ["]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-200-70-00	SAS X 1/8-1/8	G1/8	G1/8	15	24	12	Aluminum	40
1-200-75-00	SAS X 1/4-1/8	G1/4	G1/8	15	24	10	Aluminum	39

WSS / Angle Connector for Vacuum Cups

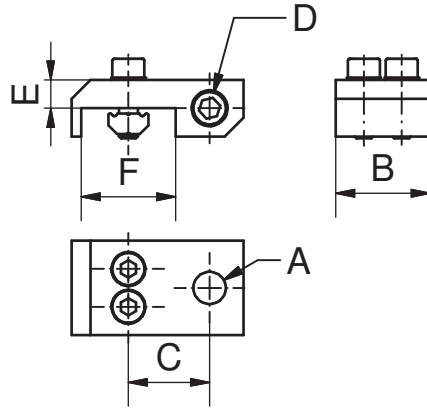
Remarks:

Application: to mount vacuum cups directly to the profile

- vacuum can be connected on the left or right
- connector is form locking to profiles

Scope of delivery:

- one sealing plug included



Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm] ["]	E [mm]	F [mm]	Material	Weight [g]
1-200-05-00	WSS L M5-M5	M5	16	13.5	M5	4	18	Aluminum	17
1-200-10-00	WSS X 1/8-1/8	G1/8	25	21.5	G1/8	7.5	25	Aluminum	42
1-200-15-00	WSS X 1/4-1/8	G1/4	25	21.5	G1/8	7.5	25	Aluminum	40
1-200-22-00	WSS JU 1/4-1/8	G1/4	30	30	G1/8	10	40	Aluminum	83

WLS / Long Angle Connector for Vacuum Cups

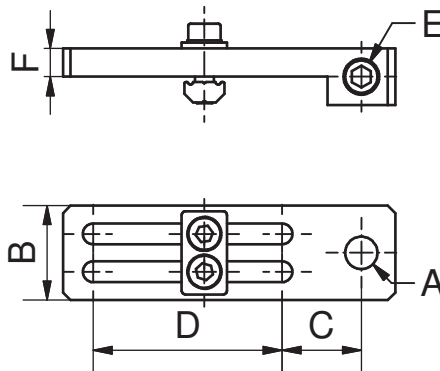
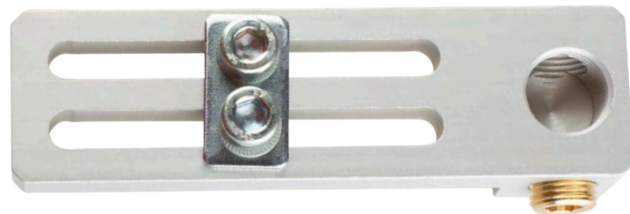
Remarks:

Application: to mount vacuum cups directly to the profile

- vacuum can be connected on the left or right
- flexible mounting options

Scope of delivery:

- one sealing plug included



Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm]	E [mm] ["]	F [mm]	Material	Weight [g]
1-200-30-00	WLS L M5-M5-40	M5	16	14	40	M5	4	Aluminum	21
1-200-35-00	WLS X 1/8-1/8-50	G1/8	25	21	50	G1/8	7.5	Aluminum	55
1-200-40-00	WLS X 1/4-1/8-50	G1/4	25	21	50	G1/8	7.5	Aluminum	54
1-200-47-00	WLS JU 1/4-1/8-60	G1/4	30	24	60	G1/8	10	Aluminum	103

000
Quick Change Systems

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Connectors

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Profile
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Vacuum Cups

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Parallel Gripper

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460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

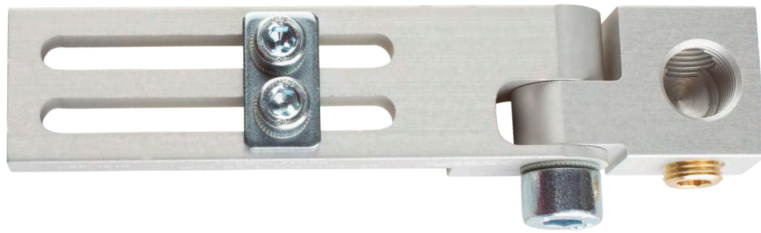
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

200 | Vacuum Cup-Connectors

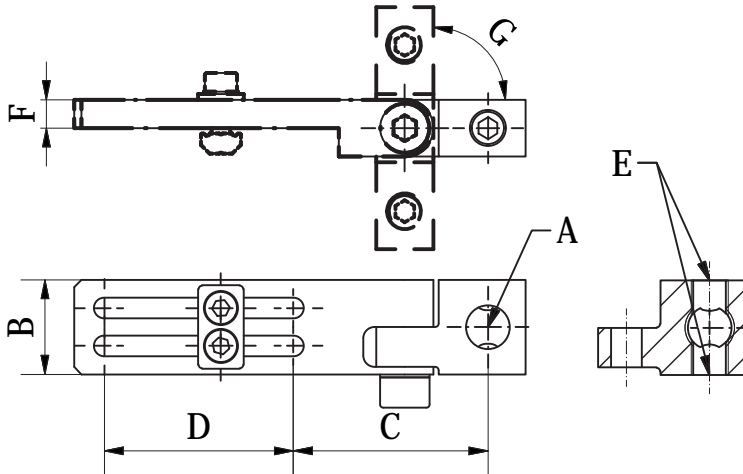
WLS GA X / Long Angle Clamp for Vacuum Cups with Swivel Head



Remarks:

Application: to mount vacuum cups directly to the profile

- all degrees of freedom adjustable
- compact design
- stable clamping of the swivel head
- vacuum can be connected on the left or right



Part No.	Description	A ["]	B [mm]	C [mm]	D [mm]	E ["]	F [mm]	G [°]	Weight [g]
1-200-41-00	WLS GA X 1/4-1/8-50	G1/4	25	51,5	50	G1/8	7,5	+/-90	95

WSD / 360° Swivel Connector for Vacuum Cups

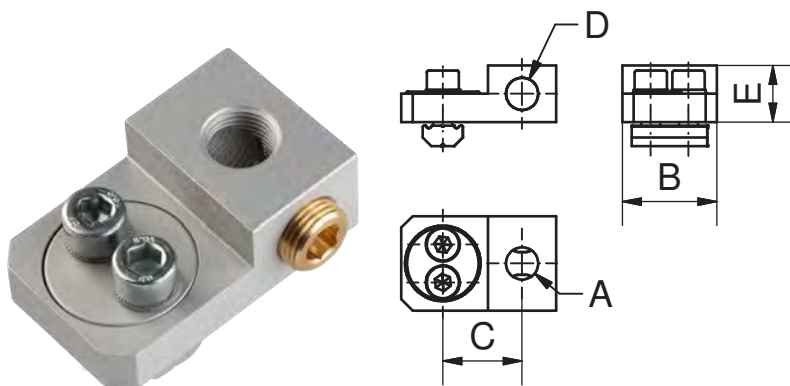
Remarks:

Application: to mount vacuum cups directly to the profile

- connector is turnable 360°
- vacuum can be connected on the left or right

Scope of delivery:

- one sealing plug included



Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm] ["]	E [mm]	Material	Weight [g]
1-200-55-00	WSD L M5-M5	M5	16	13	M5	10	Aluminum	18
1-200-60-00	WSD X 1/8-1/8	G1/8	25	21	G1/8	15	Aluminum	38
1-200-65-00	WSD X 1/4-1/8	G1/4	25	21	G1/8	15	Aluminum	37

Vacuum Cup properties

Vacuum Cup style recommendation:

- VS 0 oval vacuum cup – for of long parts
- VS 1 with 1 bellow – exact positioning
- VS 2 with 2 bellows – for uneven parts
- VS 3 with 3 bellows – for strong uneven parts

Formula to calculate the holding force:

Holding force = working area x vacuum pressure

$$F_s [N] = A [cm^2] \times p [N/cm^2]$$

Remarks:

- various materials in different diameters
- dimensionally stable variants and variants for curved surfaces
- each vacuum cup available with or without adapter
- exchangeable suction cups
- reusable adapters
- adapter with male and female hexagon
- for temperatures from -30° C to 200 °C
- nearly mark free (material HE)
- extra durable with high wear resistance (material PL)
- to clean the cups a commercial soap solution is recommended

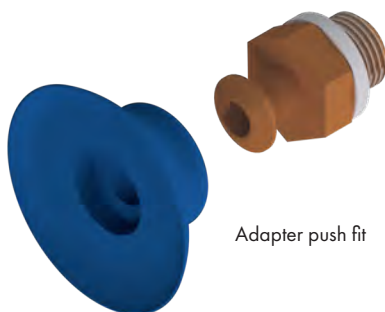
Material Properties	Nitrile (N)	Silicone (S)	High Temperature Polyurethane (HE)	Polyurethane (PU)	Viton (V)
Colour	black	translucence	blue	blue	black
Wear Resistance	• •	•	• • •	• • •	•
Resistance against permanent deformation	• •	• •	• •	•	• • •
Oil resistance	• • • •	•	• • • •	• • •	• • • •
Solvent resistance	• •	• •	• •	•	• • •
General resistance to acids	•	•	•	•	• • •
Tear resistance	• •	•	• •	• • •	• •
Temperature resistance C°	-10° to +70°	-30° to +180°	-10° to +140°	-30° to + 80°	-10° to +200°
Shore Hardness DIN 53505	40 to 90	30 to 85	60 +/-5	55	65 +/-5
Non Marking characteristics	•	• •	• • •	• •	•

• • • • = Excellent • • • = Very Good • • = Good • = Low to satisfactory

Material Data for PL Polyurethane Long Life Vacuum Cups

Material Properties	Norm	Value	Unit
Temperature		- 30 to +80	°C
Shore Hardness A	DIN 53505	78	
Tensile Strength	DIN 53504	30	N/mm ²
Tensile Elongation	DIN 53504	630	%
Tear Force	DIN 53515	750	N/cm
Abrasion Loss	DIN 53516	3.5	mm ³

Versions-Adapter



000
Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

220 | Vacuum Cups

VS O / Vacuum Cup - oval, with Adapter



HE Material

Nitrile Material

Remarks:

Application: for gripping long articles

- HE = High Temperature Polyurathane
- suction cups can be changed

Connection:

- suction cup/adapter

Scope of delivery:

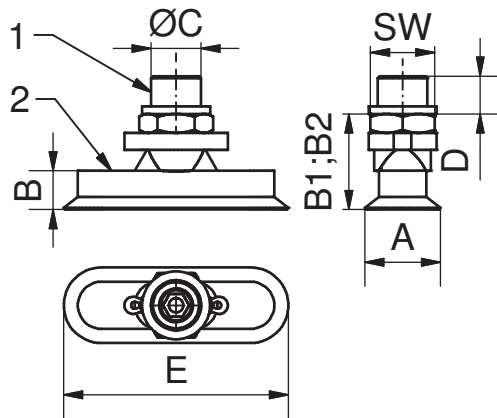
- every VS is delivered with sealing ring

Holding force:

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

Drawing:

- 1 adapter
- 2 suction cup
- B1 normal position
- B2 compressed position



Part No.	Description	Suction cup	Adapter	Material	Operating [cm ²]	Holding force [N]	Push fit	Clamp
1-220-05-00	VS O-2x4N3	VN O-2x4N	VSA 5	Nitrile	0.07	0.4	x	
1-220-06-00	VS O-2x4HE3	VN O-2x4HE	VSA 5	HE	0.07	0.4	x	
1-220-10-00	VS O-3.5x7N3	VN O-3.5x7N	VSA 5	Nitrile	0.22	1	x	
1-220-11-00	VS O-3.5x7HE3	VN O-3.5x7HE	VSA 5	HE	0.22	1	x	
1-220-15-00	VS O-5x15N5	VN O-5x15N	VSA 15	Nitrile	0.7	3.1	x	
1-220-16-00	VS O-5x15HE5	VN O-5x15HE	VSA 15	HE	0.7	3.1	x	
1-220-20-00	VS O-6x18N5	VN O-6x18N	VSA 15	Nitrile	1	4.4	x	
1-220-21-00	VS O-6x18HE5	VN O-6x18HE	VSA 15	HE	1	4.4	x	
1-220-25-00	VS O-8x24N8	VN O-8x24N	VSA 20	Nitrile	1.78	8.1		x
1-220-26-00	VS O-8x24HE8	VN O-8x24HE	VSA 20	HE	1.78	8.1		x
1-220-30-00	VS O-10x30N8	VN O-10x30N	VSA 20	Nitrile	2.79	12.3		x
1-220-31-00	VS O-10x30HE8	VN O-10x30HE	VSA 20	HE	2.79	12.3		x
1-220-35-00	VS O-15x45N4	VN O-15x45N	VSA 130	Nitrile	6.27	28.4		x
1-220-36-00	VS O-15x45HE4	VN O-15x45HE	VSA 130	HE	6.27	28.4		x
1-220-40-00	VS O-20x60N4	VN O-20x60N	VSA 130	Nitrile	11.14	50.2		x
1-220-41-00	VS O-20x60HE4	VN O-20x60HE	VSA 130	HE	11.14	50.2		x
1-220-45-00	VS O-25x75N4	VN O-25x75N	VSA 130	Nitrile	17.41	78.3		x
1-220-46-00	VS O-25x75HE4	VN O-25x75HE	VSA 130	HE	17.41	78.3		x
1-220-50-00	VS O-30x90N4	VN O-30x90N	VSA 130	Nitrile	25.07	112.9		x

VS O / Vacuum Cup - oval, with Adapter

Part No.	Description	A [mm]	E [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm]	SW [mm]	D [mm]	Weight [g]
1-220-05-00	VS O-2x4N3	2	4	6	7.8	7.5	M3	5	3	<1
1-220-06-00	VS O-2x4HE3	2	4	6	7.8	7.5	M3	5	3	3
1-220-10-00	VS O-3.5x7N3	3.5	7	6	8	7.5	M3	5	3	<1
1-220-11-00	VS O-3.5x7HE3	3.5	7	6	8	7.5	M3	5	3	<1
1-220-15-00	VS O-5x15N5	5	15	12	17	16.5	M5	8	5	2
1-220-16-00	VS O-5x15HE5	5	15	11	17	16.5	M5	8	5	2
1-220-20-00	VS O-6x18N5	6	18	12	17	16.5	M5	8	5	2
1-220-21-00	VS O-6x18HE5	6	18	11	17	16.5	M5	8	5	2
1-220-25-00	VS O-8x24N8	8	24	12	17	16.5	G1/8"	14	8	13
1-220-26-00	VS O-8x24HE8	8	24	13	17	16.5	G1/8"	14	8	13
1-220-30-00	VS O-10x30N8	10	30	12	17	16.5	G1/8"	14	8	13
1-220-31-00	VS O-10x30HE8	10	30	12	17	16.5	G1/8"	14	8	14
1-220-35-00	VS O-15x45N4	15	45	18	26	25	G1/4"	17	10	29
1-220-36-00	VS O-15x45HE4	15	45	20	26	24	G1/4"	17	10	29
1-220-40-00	VS O-20x60N4	20	60	21	26	25	G1/4"	17	10	32
1-220-41-00	VS O-20x60HE4	20	60	20	26	24	G1/4"	17	10	33
1-220-45-00	VS O-25x75N4	25	75	21	26	25	G1/4"	17	10	15
1-220-46-00	VS O-25x75HE4	25	75	21	26	24	G1/4"	17	10	41
1-220-50-00	VS O-30x90N4	30	90	21	26	25	G1/4"	17	10	49

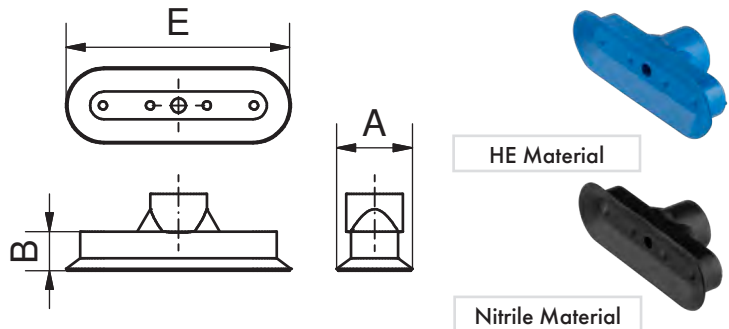
VN O / Suction Cup - oval, without Adapter

Remarks:

- with crimp connector
- for gripping long articles
- suction cup can be mounted on existing vacuum cups VS O or with adapters
- HE = High Temperature Polyurathane

Accessories e.g.:

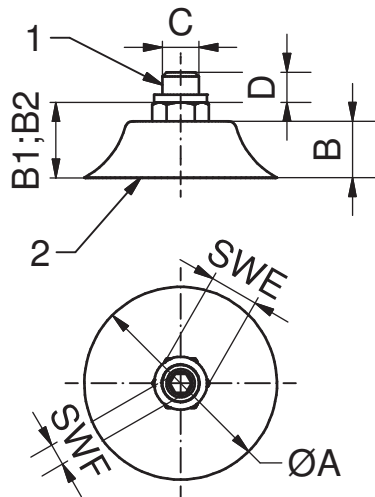
- suction cup adapter, see table and category 290



Part No.	Description	fits for Adapter	Material	A [mm]	E [mm]	B [mm]	Weight [g]
1-220-05-01	VN O-2x4N	VSA 5	Nitrile	2	4	6	<1
1-220-06-01	VN O-2x4HE	VSA 5	HE	2	4	6	<1
1-220-10-01	VN O-3.5x7N	VSA 5	Nitrile	3.5	7	6	<1
1-220-11-01	VN O-3.5x7HE	VSA 5	HE	3.5	7	6	<1
1-220-15-01	VN O-5x15N	VSA 15	Nitrile	5	15	12	<1
1-220-16-01	VN O-5x15HE	VSA 15	HE	5	15	12	<1
1-220-20-01	VN O-6x18N	VSA 15	Nitrile	6	18	12	1
1-220-21-01	VN O-6x18HE	VSA 15	HE	6	18	12	1
1-220-25-01	VN O-8x24N	VSA 20	Nitrile	8	24	12	1
1-220-26-01	VN O-8x24HE	VSA 20	HE	8	24	12	1
1-220-30-01	VN O-10x30N	VSA 20	Nitrile	10	30	12	1
1-220-31-01	VN O-10x30HE	VSA 20	HE	10	30	12	1
1-220-35-01	VN O-15x45N	VSA 130	Nitrile	15	45	18	4
1-220-36-01	VN O-15x45HE	VSA 130	HE	15	45	21	4
1-220-40-01	VN O-20x60N	VSA 130	Nitrile	20	60	21	7
1-220-41-01	VN O-20x60HE	VSA 130	HE	20	60	21	7
1-220-45-01	VN O-25x75N	VSA 130	Nitrile	25	75	21	15
1-220-46-01	VN O-25x75HE	VSA 130	HE	25	75	21	16
1-220-50-01	VN O-30x90N	VSA 130	Nitrile	30	90	21	23

220 | Vacuum Cups

VS 1 / Vacuum Cup - 1 Bellow, Adapter



Remarks:

Application: for gripping even articles

- exact positioning
- suction cup with adapter
- suction cups can be changed
- HE = High Temperature Polyurathane

Connection:

- suction cup/adapter

Scope of delivery:

- every VS is delivered with sealing ring

Holding force:

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

Drawing:

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

Part No.	Description	Suction cup	Adapter
1-221-02-12	VS 1-2-N5	VN 1-2-N	VSA 10
1-221-02-22	VS 1-2-S5	VN 1-2-S	VSA 10
1-221-02-32	VS 1-2-P5	VN 1-2-P	VSA 10
1-221-03-12	VS 1-3.5-N5	VN 1-3.5-N	VSA 10
1-221-03-22	VS 1-3.5-S5	VN 1-3.5-S	VSA 10
1-221-03-32	VS 1-3.5-P5	VN 1-3.5-P	VSA 10
1-221-05-12	VS 1-5-N5	VN 1-5-N	VSA 30
1-221-05-22	VS 1-5-S5	VN 1-5-S	VSA 30
1-221-05-32	VS 1-5-P5	VN 1-5-P	VSA 30
1-221-05-82	VS 1-5-HE5	VN 1-5-HE	VSA 30
1-221-08-12	VS 1-8-N5	VN 1-8-N	VSA 30
1-221-08-22	VS 1-8-S5	VN 1-8-S	VSA 30
1-221-08-32	VS 1-8-P5	VN 1-8-P	VSA 30
1-221-08-82	VS 1-8-HE5	VN 1-8-HE	VSA 30
1-221-08-42	VS 1-8-V5	VN 1-8-V	VSA 30
1-221-10-12	VS 1-10-N5	VN 1-10-N	VSA 30
1-221-10-22	VS 1-10-S5	VN 1-10-S	VSA 30
1-221-10-32	VS 1-10-P5	VN 1-10-P	VSA 30
1-221-10-82	VS 1-10-HE5	VN 1-10-HE	VSA 30
1-221-10-42	VS 1-10-V5	VN 1-10-V	VSA 30
1-221-15-12	VS 1-15-N5	VN 1-15-N	VSA 30
1-221-15-22	VS 1-15-S5	VN 1-15-S	VSA 30
1-221-15-32	VS 1-15-P5	VN 1-15-P	VSA 30
1-221-15-82	VS 1-15-HE5	VN 1-15-HE	VSA 30
1-221-20-13	VS 1-20-N8	VN 1-20-N	VSA 50
1-221-20-23	VS 1-20-S8	VN 1-20-S	VSA 50
1-221-20-33	VS 1-20-P8	VN 1-20-P	VSA 50
1-221-20-83	VS 1-20-HE8	VN 1-20-HE	VSA 50
1-221-20-43	VS 1-20-V8	VN 1-20-V	VSA 50
1-221-25-13	VS 1-25-N8	VN 1-25-N	VSA 60
1-221-25-23	VS 1-25-S8	VN 1-25-S	VSA 60
1-221-25-33	VS 1-25-P8	VN 1-25-P8	VSA 60
1-221-25-83	VS 1-25-HE8	VN 1-25-HE	VSA 60
1-221-25-43	VS 1-25-V8	VN 1-25-V	VSA 60
1-221-30-13	VS 1-30-N8	VN 1-30-N	VSA 60
1-221-30-23	VS 1-30-S8	VN 1-30-S	VSA 60
1-221-30-33	VS 1-30-P8	VN 1-30-P	VSA 60
1-221-30-83	VS 1-30-HE8	VN 1-30-HE	VSA 60
1-221-30-43	VS 1-30-V8	VN 1-30-V	VSA 60
1-221-40-13	VS 1-40-N8	VN 1-40-N	VSA 60
1-221-40-23	VS 1-40-S8	VN 1-40-S	VSA 60
1-221-40-33	VS 1-40-P8	VN 1-40-P	VSA 60
1-221-40-83	VS 1-40-HE8	VN 1-40-HE	VSA 60
1-221-40-43	VS 1-40-V8	VN 1-40-V	VSA 60
1-221-50-13	VS 1-50-N8	VN 1-50-N	VSA 80
1-221-50-23	VS 1-50-S8	VN 1-50-S	VSA 80
1-221-50-33	VS 1-50-P8	VN 1-50-P	VSA 80
1-221-50-83	VS 1-50-HE8	VN 1-50-HE	VSA 80
1-221-50-43	VS 1-50-V8	VN 1-50-V	VSA 80
1-221-60-14	VS 1-60-N4	VN 1-60-N	VSA 110
1-221-60-24	VS 1-60-S4	VN 1-60-S	VSA 110
1-221-60-34	VS 1-60-P4	VN 1-60-P	VSA 110
1-221-60-84	VS 1-60-HE4	VN 1-60-HE	VSA 110
1-221-80-14	VS 1-80-N4	VN 1-80-N	VSA 110
1-221-80-24	VS 1-80-S4	VN 1-80-S	VSA 110
1-221-80-34	VS 1-80-P4	VN 1-80-P	VSA 110
1-221-80-84	VS 1-80-HE4	VN 1-80-HE	VSA 110
1-221-95-14	VS 1-95-N4	VN 1-95-N	VSA 110
1-221-95-24	VS 1-95-S4	VN 1-95-S	VSA 110
1-221-95-34	VS 1-95-P4	VN 1-95-P	VSA 110

Material	Operating [cm ²]	Holding force [N]	Push fit	Tapped	A [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm] [°]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
Nitrile	0.02	0.1	x		2	4	9	8.5	M5	5	7		2
Silicone	0.02	0.1	x		2	4	9	8.5	M5	5	7		2
Polyurethane	0.02	0.1	x		2	4	9	8.5	M5	5	7		2
Nitrile	0.07	0.4	x		3.5	4	9	8.5	M5	5	7		2
Silicone	0.07	0.4	x		3.5	4	9	8.5	M5	5	7		2
Polyurethane	0.07	0.4	x		3.5	4	9	8.5	M5	5	7		2
Nitrile	0.13	0.7	x		5	6.5	11.5	11	M5	5	7	2	3
Silicone	0.13	0.7	x		5	6.5	11.5	11	M5	5	7	2	3
Polyurethane	0.13	0.7	x		5	6.5	11.5	11	M5	5	7	2	3
HE	0.13	0.7	x		5	6.5	11.5	11	M5	5	7	2	3
Nitrile	0.38	2.3	x		8	7	12	11	M5	5	7	2	3
Silicone	0.38	2.3	x		8	7	12	11	M5	5	7	2	3
Polyurethane	0.38	2.3	x		8	7	12	11	M5	5	7	2	3
HE	0.38	2.3	x		8	7	12	11	M5	5	7	2	3
Viton	0.38	2.3	x		8	7	12	11	M5	5	7	2	3
Nitrile	0.67	4	x		10	7.5	12.5	11	M5	5	7	2	3
Silicone	0.67	4	x		10	7.5	12.5	11	M5	5	7	2	3
Polyurethane	0.67	4	x		10	7.5	12.5	11	M5	5	7	2	3
HE	0.67	4	x		10	7.5	12.5	11	M5	5	7	2	3
Viton	0.67	4	x		10	7.5	12.5	11	M5	5	7	2	3
Nitrile	1.54	9.1	x		15	8	13	11.5	M5	5	7	2	3
Silicone	1.54	9.1	x		15	8	13	11.5	M5	5	7	2	3
Polyurethane	1.54	9.1	x		15	8	13	11.5	M5	5	7	2	3
HE	1.54	9.1	x		15	8	13	11.5	M5	5	7	2	3
Nitrile	2.63	15.5	x		20	10	15	13	G1/8	5	13	3	12
Silicone	2.63	15.5	x		20	10	15	13	G1/8	5	13	3	12
Polyurethane	2.63	15.5	x		20	10	15	13	G1/8	5	13	3	12
HE	2.63	15.5	x		20	10	15	13	G1/8	5	13	3	12
Viton	2.63	15.5	x		20	10	15	13	G1/8	5	13	3	13
Nitrile	4.52	26.6	x		25	14	18	16	G1/8	8	13	4	13
Silicone	4.52	26.6	x		25	14	19	16.5	G1/8	8	13	4	12
Polyurethane	4.52	26.6	x		25	14	19	16.5	G1/8	8	13	4	13
HE	4.52	26.6	x		25	14	18	16	G1/8	8	13	4	13
Viton	4.52	26.6	x		25	14	19	16.5	G1/8	8	13	4	14
Nitrile	5.73	33.7	x		30	12	17	15.5	G1/8	8	13	4	13
Silicone	5.73	33.7	x		30	12	17	15.5	G1/8	8	13	4	13
Polyurethane	5.73	33.7	x		30	12	17	15.5	G1/8	8	13	4	14
HE	5.73	33.7	x		30	12	17	15.5	G1/8	8	13	4	13
Viton	5.73	33.7	x		30	12	17	15.5	G1/8	8	13	4	16
Nitrile	9.76	57.4	x		40	14	18	15.5	G1/8	8	13	4	17
Silicone	9.76	57.4	x		40	14	18	15.5	G1/8	8	13	4	17
Polyurethane	9.76	57.4	x		40	14	18	15.5	G1/8	8	13	4	18
HE	9.76	57.4	x		40	14	18	15.5	G1/8	8	13	4	17
Viton	9.76	57.4	x		40	14	18	15.5	G1/8	8	13	4	22
Nitrile	15.55	91.5	x		50	15	20	16.5	G1/8	8	13	5	21
Silicone	15.55	91.5	x		50	15	20	16.5	G1/8	8	13	5	21
Polyurethane	15.55	91.5	x		50	15	20	16.5	G1/8	8	13	5	23
HE	15.55	91.5	x		50	15	20	16.5	G1/8	8	13	5	22
Viton	15.55	91.5	x		50	15	20	16.5	G1/8	8	13	5	29
Nitrile	21.24	125		x	60	16	23	18	G1/4	10	17	5	50
Silicone	21.24	125		x	60	16	23	18	G1/4	10	17	5	48
Polyurethane	21.24	125		x	60	16	23	18	G1/8	10	17	5	49
HE	21.24	125		x	60	16	23	18	G1/8	10	17	5	51
Nitrile	44.18	260		x	80	18	25.5	20	G1/4	10	17	5	78
Silicone	44.18	260		x	80	18	25.5	20	G1/4	10	17	5	75
Polyurethane	17.7	260		x	80	18	25.5	20	G1/4	10	17	5	76
HE	44.18	260		x	80	18	25.5	20	G1/4	10	17	5	78
Nitrile	59.45	349.9		x	95	19	26.5	21.5	G1/4	10	17	5	118
Silicone	59.45	349.9		x	95	19	26.5	21.5	G1/4	10	17	5	116
Polyurethane	59.45	349.9		x	95	19	26.5	21.5	G1/4	10	17	5	116

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

220 | Vacuum Cups

VN 1 / Suction Cup - 1 Bellow, without Adapter

HE Material



Nitrile Material



Silicone Material



Polyurethane Material



Viton Material



Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-221-02-10	VN 1-2-N	VSA 10	Nitrile	2	4	<1
1-221-02-20	VN 1-2-S	VSA 10	Silicone	2	4	<1
1-221-02-30	VN 1-2-P	VSA 10	PU	2	4	<1
1-221-03-10	VN 1-3.5-N	VSA 10	Nitrile	3.5	4	<1
1-221-03-20	VN 1-3.5-S	VSA 10	Silicone	3.5	4	<1
1-221-03-30	VN 1-3.5-P	VSA 10	PU	3.5	4	<1
1-221-05-10	VN 1-5-N	VSA 30	Nitrile	5	6.5	<1
1-221-05-20	VN 1-5-S	VSA 30	Silicone	5	6.5	<1
1-221-05-80	VN 1-5-HE	VSA 30	HE	5	6.5	<1
1-221-05-30	VN 1-5-P	VSA 30	PU	5	6.5	<1
1-221-08-10	VN 1-8-N	VSA 30	Nitrile	8	7	<1
1-221-08-20	VN 1-8-S	VSA 30	Silicone	8	7	<1
1-221-08-80	VN 1-8-HE	VSA 30	HE	8	7	<1
1-221-08-40	VN 1-8-V	VSA 30	Viton	8	7	<1
1-221-08-30	VN 1-8-P	VSA 30	PU	8	7	<1
1-221-10-10	VN 1-10-N	VSA 30	Nitrile	10	7.5	<1
1-221-10-20	VN 1-10-S	VSA 30	Silicone	10	7.5	<1
1-221-10-80	VN 1-10-HE	VSA 30	HE	10	7.5	<1
1-221-10-40	VN 1-10-V	VSA 30	Viton	10	7.5	<1
1-221-10-30	VN 1-10-P	VSA 30	PU	10	7.5	<1
1-221-15-10	VN 1-15-N	VSA 30	Nitrile	15	8	<1
1-221-15-20	VN 1-15-S	VSA 30	Silicone	15	8	<1
1-221-15-80	VN 1-15-HE	VSA 30	HE	15	8	1
1-221-15-30	VN 1-15-P	VSA 30	PU	15	8	<1
1-221-20-10	VN 1-20-N	VSA 50	Nitrile	20	10	1
1-221-20-20	VN 1-20-S	VSA 50	Silicone	20	10	1
1-221-20-80	VN 1-20-HE	VSA 50	HE	20	10	1
1-221-20-40	VN 1-20-V	VSA 50	Viton	20	10	2
1-221-20-30	VN 1-20-P	VSA 50	PU	20	10	2
1-221-25-10	VN 1-25-N	VSA 60	Nitrile	25	14	3

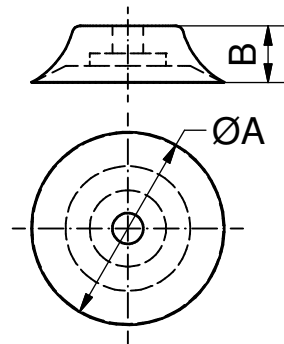
VN 1 / Suction Cup - 1 Bellow, without Adapter (Continuation)

Remarks:

- for gripping even articles
- suction cup can be mounted on existing vacuum cups VS 1 or with adapters
- HE = High Temperature Polyurathane
- PU = Polyurethane
- * = M10x1,25 connection

Accessories e.g.:

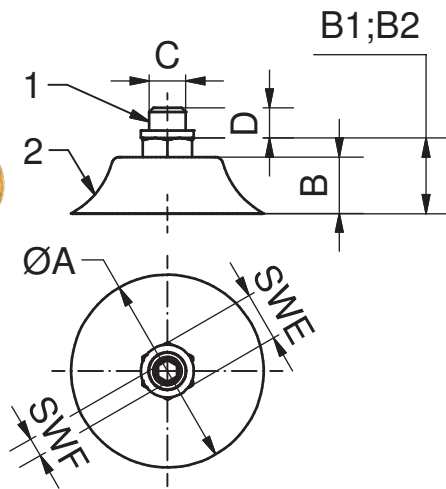
- suction cup adapter, see table and category 290



Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-221-25-20	VN 1-25-S	VSA 60	Silicone	25	14	2
1-221-25-80	VN 1-25-HE	VSA 60	HE	25	14	3
1-221-25-40	VN 1-25-V	VSA 60	Viton	25	14	4
1-221-25-30	VN 1-25-P	VSA 60	PU	25	14	3
1-221-30-10	VN 1-30-N	VSA 60	Nitrile	30	12	3
1-221-30-20	VN 1-30-S	VSA 60	Silicone	30	12	3
1-221-30-80	VN 1-30-HE	VSA 60	HE	30	12	3
1-221-30-40	VN 1-30-V	VSA 60	Viton	30	12	5
1-221-30-30	VN 1-30-P	VSA 60	PU	30	12	4
1-221-40-10	VN 1-40-N	VSA 60	Nitrile	40	14	7
1-221-40-20	VN 1-40-S	VSA 60	Silicone	40	14	7
1-221-40-80	VN 1-40-HE	VSA 60	HE	40	14	7
1-221-40-40	VN 1-40-V	VSA 60	Viton	40	14	12
1-221-40-30	VN 1-40-P	VSA 60	PU	40	14	8
1-221-50-10	VN 1-50-N	VSA 80	Nitrile	50	15	10
1-221-50-20	VN 1-50-S	VSA 80	Silicone	50	15	10
1-221-50-80	VN 1-50-HE	VSA 80	HE	50	15	11
1-221-50-40	VN 1-50-V	VSA 80	Viton	50	15	18
1-221-50-30	VN 1-50-P	VSA 80	PU	50	15	12
1-221-60-10*	VN 1-60-N	VSA 110	Nitrile	60	16	25
1-221-60-20*	VN 1-60-S	VSA 110	Silicone	60	16	23
1-221-60-80*	VN 1-60-HE	VSA 110	HE	60	16	24
1-221-60-30*	VN 1-60-P	VSA 110	PU	60	16	24
1-221-80-10*	VN 1-80-N	VSA 110	Nitrile	80	18	54
1-221-80-20*	VN 1-80-S	VSA 110	Silicone	80	18	50
1-221-80-80*	VN 1-80-HE	VSA 110	HE	80	20	52
1-221-80-30*	VN 1-80-P	VSA 110	PU	80	18	51
1-221-95-10*	VN 1-95-N	VSA 110	Nitrile	95	19	93
1-221-95-20*	VN 1-95-S	VSA 110	Silicone	95	19	88
1-221-95-30*	VN 1-95-P	VSA 110	PU	95	19	90

220 | Vacuum Cups

VS 1 PL / Vacuum Cup - 1 Bellow, Longlife, with Adapter



Drawing:

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

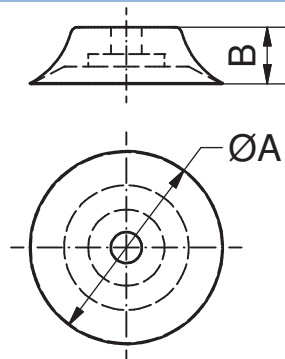
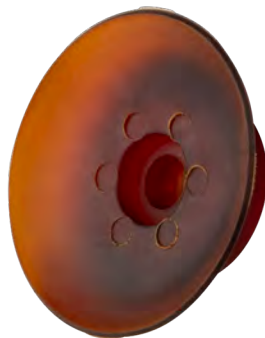
Data

Part No.	Description	Suction cup	Adapter	Material	Operating [cm ²]	Holding force [N]	Push fit
1-221-20-63	VS 1-20-PL8	VN 1-20-PL	VSA 50	PL	2.6	15.5	x
1-221-30-63	VS 1-30-PL8	VN 1-30-PL	VSA 60	PL	5.7	33.7	x
1-221-40-63	VS 1-40-PL8	VN 1-40-PL	VSA 60	PL	9.8	57.4	x
1-221-50-63	VS 1-50-PL8	VN 1-50-PL	VSA 80	PL	15.6	91.5	x

Dimensions

Part No.	Description	A [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
1-221-20-63	VS 1-20-PL8	20	10	14	12	G1/8"	5	13	3	11
1-221-30-63	VS 1-30-PL8	30	12	17	14	G1/8"	8	13	4	12
1-221-40-63	VS 1-40-PL8	40	14	18	15	G1/8"	8	13	4	16
1-221-50-63	VS 1-50-PL8	50	15	20	16	G1/8"	8	13	5	20

VN 1 PL / Suction Cup - 1 Bellow, Longlife, without Adapter



Remarks:

- for gripping even articles
- extra durable with high wear resistance
- PL = Polyurethane Long Life
- exact positioning
- suction cup can be mounted on existing vacuum cups VS 1 PL or with adapters

Accessories e.g.:

- suction cup adapter, see table and category 290

Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]
1-221-20-60	VN 1-20-PL	VSA 50	PL	20	10
1-221-30-60	VN 1-30-PL	VSA 60	PL	30	12
1-221-40-60	VN 1-40-PL	VSA 60	PL	40	14
1-221-50-60	VN 1-50-PL	VSA 80	PL	50	15

VS 2 / Vacuum Cup - 2 Bellows, with Adapter

Remarks:

Application: for gripping uneven, curved articles

- 2 bellows to compensate for unevenness
- suction cup with adapter
- suction cups can be changed
- HE = High Temperature Polyurathane

Connection:

- suction cup/adapter

Scope of delivery:

- every VS is delivered with sealing ring

Holding force:

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

Drawing:

- 1 adapter
- 2 suction cup
- 3 sealing ring
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

HE Material



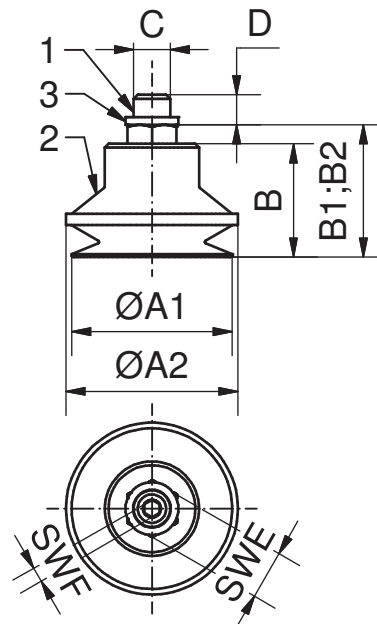
Nitrile Material



Polyurethane Material



Silicone Material



Dimensions and technical data on the following page

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Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

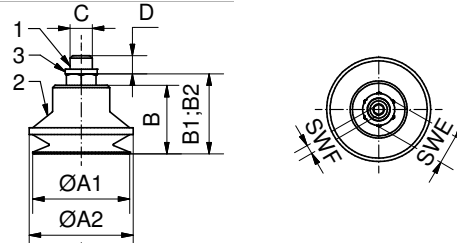
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

220 | Vacuum Cups

VS 2 / Vacuum Cup - 2 Bellows, with Adapter (Continuation)



Data

Part No.	Description	Suction cup	Adapter	Material	Working area [mm]	Operating [cm ²]	Holding force [N]	Push fit	Tapped
1-222-04-88	VS 2-4-HE3	VN 2-4-HE	VSA 5	HE	2.5	0.05	0.3	x	
1-222-04-18	VS 2-4-N3	VN 2-4-N	VSA 5	Nitril	2.5	0.05	0.3	x	
1-222-04-28	VS 2-4-S3	VN 2-4-S	VSA 5	Silikon	2.5	0.05	0.3	x	
1-222-06-88	VS 2-6-HE3	VN 2-6-HE	VSA 4	HE	3	0.07	0.4	x	
1-222-06-18	VS 2-6-N3	VN 2-6-N	VSA 4	Nitril	3	0.07	0.4	x	
1-222-06-28	VS 2-6-S3	VN 2-6-S	VSA 4	Silikon	3	0.07	0.4	x	
1-222-11-88	VS 2-11-HE3	VN 2-11-HE	VSA 16	HE	5.1	0.2	1.2	x	
1-222-11-18	VS 2-11-N3	VN 2-11-N	VSA 16	Nitril	5.1	0.2	1.2	x	
1-222-11-28	VS 2-11-S3	VN 2-11-S	VSA 16	Silikon	5.1	0.2	1.2	x	
1-222-10-12	VS 2-10-N5	VN 2-10-N	VSA 30	Nitrile	5.2	0.16	0.9	x	
1-222-10-22	VS 2-10-S5	VN 2-10-S	VSA 30	Silicone	5.2	0.16	0.9	x	
1-222-10-32	VS 2-10-P5	VN 2-10-P	VSA 30	Polyurethane	5.2	0.16	0.9	x	
1-222-10-82-1	VS 2-10-HE5	VN 2-10 HE	VSA 30	HE	5.2	0.16	0.9	x	
1-222-15-12	VS 2-15-N5	VN 2-15-N	VSA 30	Nitrile	7.5	0.4	2.3	x	
1-222-15-22	VS 2-15-S5	VN 2-15-S	VSA 30	Silicone	7.5	0.4	2.3	x	
1-222-15-32	VS 2-15-P5	VN 2-15-P	VSA 30	Polyurethane	7.5	0.4	2.3	x	
1-222-15-82-1	VS 2-15-HE5	VN 2-15 HE	VSA 40	HE	7.9	0.49	2.3	x	
1-222-15-83-1	VS 2-15-HE8	VN 2-15HE	VSA 70	HE	7.9	0.49	2.3	x	
1-222-20-13	VS 2-20-N8	VN 2-20-N	VSA 60	Nitrile	11	0.82	4.8	x	
1-222-20-22	VS 2-20-S5	VN 2-20-S	VSA 45	Silicone	11	0.82	4.8	x	
1-222-20-23	VS 2-20-S8	VN 2-20-S	VSA 60	Silicone	11	0.82	4.8	x	
1-222-20-33	VS 2-20-P8	VN 2-20-P	VSA 60	Polyurethane	11	0.82	4.8	x	
1-222-20-82	VS 2-20-HE5	VN 2-20-HE	VSA 45	HE	11	0.82	4.8	x	
1-222-20-83	VS 2-20-HE8	VN 2-20-HE8	VSA 70	HE	11	0.82	4.8	x	
1-222-30-13	VS 2-30-N8	VN 2-30-N	VSA 60	Nitrile	17	2.27	13.4	x	
1-222-30-23	VS 2-30-S8	VN 2-30-S	VSA 60	Silicone	17	2.27	13.4	x	
1-222-30-33	VS 2-30-P8	VN 2-30-P	VSA 60	Polyurethane	17	2.27	13.4	x	
1-222-30-83-1	VS 2-30-HE8	VN 2-30 HE	VSA 90	HE	17	2.27	13.6	x	
1-222-40-13	VS 2-40-N8	VN 2-40-N	VSA 60	Nitrile	22.5	3.8	22.4	x	
1-222-40-23	VS 2-40-S8	VN 2-40-S	VSA 60	Silicone	22.5	3.8	22.4	x	
1-222-40-33	VS 2-40-P8	VN 2-40-P	VSA 60	Polyurethane	22.5	3.8	22.4	x	
1-222-40-83-1	VS 2-40-HE8	VN 2-40 HE	VSA 90	HE	22	3.8	22.8	x	
1-222-50-13	VS 2-50-N8	VN 2-50-N	VSA 80	Nitrile	32	8.68	51.1	x	
1-222-50-23	VS 2-50-S8	VN 2-50-S	VSA 80	Silicone	32	8.68	51.1	x	
1-222-50-33	VS 2-50-P8	VN 2-50-P	VSA 80	Polyurethane	32	8.68	51.1	x	
1-222-50-83-1	VS 2-50-HE8	VN 2-50 HE	VSA 90	HE	33	8.55	51.3	x	
1-222-75-14	VS 2-75-N4	VN 2-75-N	VSA 110	Nitrile	55	23.76	139.8		x
1-222-75-24	VS 2-75-S4	VN 2-75-S	VSA 110	Silicone	55	23.76	139.8		x
1-222-75-34	VS 2-75-P4	VN 2-75-P	VSA 110	Polyurethane	55	23.76	139.8		x
1-222-75-84	VS 2-75-HE4	VN 2-75-HE	VSA 110	HE	55	23.76	139.8		x

Drawing:

- 1 adapter
- 2 suction cup
- 3 sealing ring
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

Dimensions

A1 [mm]	A2 [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm] ["]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
4	5	5.5	10.5	9	M3	3	5	-	2
4	5	5.5	10.5	9	M3	3	5	-	2
4	5	5.5	10.5	9	M3	3	5	-	2
6	8	9	14	12	M3	5	8	-	2
6	8	9	14	12	M3	5	8	-	2
6	8	9	14	12	M3	5	8	-	2
11	13	16	21	17	M3	5	7	-	2
11	13	16	21	17	M3	5	7	-	2
11	13	16	21	17	M3	5	7	-	2
11.5	12.5	14	19	13.5	M5	5	7	2	3
11.5	12.5	14	19	13.5	M5	5	7	2	3
11.5	12.5	14	19	13.5	M5	5	7	2	3
10	12	16	21	17	M5	5	7	2	3
16	17	16	21.5	13.5	M5	5	7	2	3
16	17	16	21.5	13.5	M5	5	7	2	3
16	17	16	21.5	13.5	M5	5	7	2	4
15	17	16	24.5	17.5	M5	5	7	2	3
15	17	16	24.5	17.5	G1/8	8	13	3	11
22	24	21	27	18.5	G1/8	8	13	4	13
22	24	21	27	18.5	M5	5	7	2	12
22	24	21	27	18.5	G1/8	8	13	4	13
22	24	21	27	18.5	G1/8	8	13	4	13
22	24	21	27	18.5	M5	5	7	2	12
22	24	21	27	18.5	G1/8	8	13	3	13
33	36	30	35	25	G1/8	8	13	4	19
33	36	30	35	25	G1/8	8	13	4	18
33	36	30	35	25	G1/8	8	13	4	20
30	36	27	32	23	G1/8	8	13	5	19
42.5	45.5	30	35	25	G1/8	8	13	4	24
42.5	45.5	30	35	25	G1/8	8	13	4	23
42.5	45.5	30	35	25	G1/8	8	13	4	26
40	46	27.6	32	22	G1/8	8	13	5	24
54	59	37	42	29	G1/8	8	13	5	35
54	59	37	42	29	G1/8	8	13	5	34
54	59	37	42	29	G1/8	8	13	5	38
50	58.5	27.6	32	27	G1/8	8	13	5	36
78	84	41.5	50	26.5	G1/4	10	17	5	111
78	84	41.5	50	26.5	G1/4	10	17	5	110
78	84	41.5	50	26.5	G1/4	10	17	5	118
78	84	41.5	50	26.5	G1/4	10	17	5	113

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400
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Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
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800
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Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

220 | Vacuum Cups

VN 2 / Suction Cup - 2 Bellows, without Adapter

HE Material



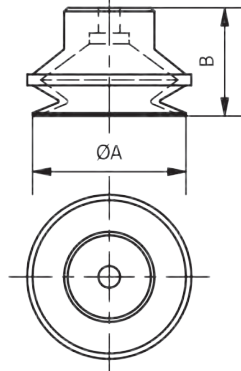
Nitrile Material



Polyurethane Material



Silicone Material



Remarks:

- for gripping uneven articles
- 2 bellows to compensate for unevenness
- suction cup can be mounted on existing vacuum cups VS 2 or with adapters
- HE = High Temperature Polyurathane

Accessories e.g.:

- suction cup adapter, see table and category 290

Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-222-04-87	VN 2-4-HE	VSA 5	HE	4	5.5	<1
1-222-04-17	VN 2-4-N	VSA 5	Nitril	4	5.5	<1
1-222-04-27	VN 2-4-S	VSA 5	Silikon	4	5.5	<1
1-222-06-87	VN 2-6-HE	VSA 4	HE	6	9	<1
1-222-06-17	VN 2-6-N	VSA 4	Nitril	6	9	<1
1-222-06-27	VN 2-6-S	VSA 4	Silikon	6	9	<1
1-222-11-87	VN 2-11-HE	VSA 16	HE	11	16	1
1-222-11-17	VN 2-11-N	VSA 16	Nitril	11	16	1
1-222-11-27	VN 2-11-S	VSA 16	Silikon	11	16	1
1-222-10-10	VN 2-10-N	VSA 30	Nitrile	11.5	14	1
1-222-10-20	VN 2-10-S	VSA 30	Silicone	11.5	14	1
1-222-10-30	VN 2-10-P	VSA 30	Polyurethane	11.5	14	1
1-222-10-80-1	VN 2-10-HE	VSA 30	HE	10	16	1
1-222-15-10	VN 2-15-N	VSA 30	Nitrile	16	16	2
1-222-15-20	VN 2-15-S	VSA 30	Silicone	16	16	<1
1-222-15-30	VN 2-15-P	VSA 30	Polyurethane	16	16	1
1-222-15-80-1	VN 2-15-HE	VSA 40	HE	15	16	1
1-222-20-10	VN 2-20-N	VSA 60	Nitrile	22	21	3
1-222-20-20	VN 2-20-S	VSA 45	Silicone	22	21	3
1-222-20-30	VN 2-20-P	VSA 60	Polyurethane	22	21	3
1-222-20-80	VN 2-20-HE	VSA 45	HE	22	21	3
1-222-30-10	VN 2-30-N	VSA 60	Nitrile	33	30	9
1-222-30-20	VN 2-30-S	VSA 60	Silicone	33	30	8
1-222-30-30	VN 2-30-P	VSA 60	Polyurethane	33	30	10
1-222-30-80-1	VN2-30-HE	VSA 90	HE	30	27	9
1-222-40-10	VN 2-40-N	VSA 60	Nitrile	42.5	30	14
1-222-40-20	VN 2-40-S	VSA 60	Silicone	42.5	30	13
1-222-40-30	VN 2-40-P	VSA 60	Polyurethane	42.5	30	16
1-222-40-80-1	VN 2-40-HE	VSA 90	HE	40	27.6	14
1-222-50-10	VN 2-50-N	VSA 80	Nitrile	54	37	24
1-222-50-20	VN 2-50-S	VSA 80	Silicone	54	37	23
1-222-50-30	VN 2-50-P	VSA 80	Polyurethane	54	37	27
1-222-50-80-1	VN 2-50-HE	VSA 90	HE	50	27.6	25
1-222-75-10	VN 2-75-N	VSA 110	Nitrile	78	41.5	86
1-222-75-20	VN 2-75-S	VSA 110	Silicone	78	41.5	85
1-222-75-30	VN 2-75-P	VSA 110	Polyurethane	78	41.5	92
1-222-75-80	VN 2-75-HE	VSA 110	HE	78	41.5	88

VS 2 PL / Vacuum Cup - 2 Bellows , Longlife, with Adapter

Remarks:

Application: for gripping uneven, curved articles

- 2 bellows to compensate for unevenness
- extra durable with high wear resistance
- PL = Polyurethane Long Life
- suction cup with adapter
- suction cups can be changed

Connection:

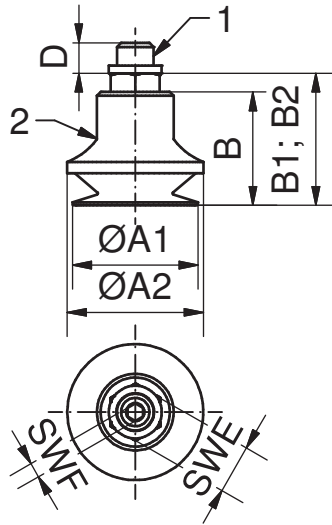
- suction cup/adapter

Scope of delivery:

- every VS is delivered with sealing ring

Holding force:

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.



Drawing:

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

Part No.	Description	Suction cup	Adapter	Material	Working area [mm]	Operating [cm ²]	Holding force [N]	Push fit
1-222-20-63	VS 2-20-PL8	VN 20 PL	VSA 60	PL	11	0.82	4.8	x
1-222-30-63	VS 2-30-PL8	VN 30 PL	VSA 60	PL	17	2.27	13.4	x
1-222-50-63	VS 2-50-PL8	VN 50 PL	VSA 80	PL	32	8.68	51.1	x

Part No.	Description	A1 [mm]	A2 [mm]	B [mm]	B1 [mm]	B2 [mm]	C ["]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
1-222-20-63	VS 2-20-PL8	20	24	21	27	18.5	G1/8	8	13	4	12
1-222-30-63	VS 2-30-PL8	30	36	30	35	25	G1/8	8	13	4	17
1-222-50-63	VS 2-50-PL8	50	59	37	42	29	G1/8	8	13	5	34

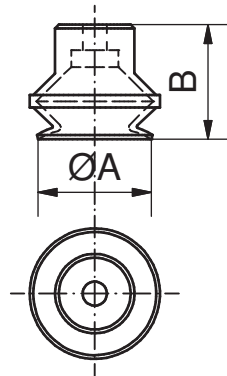
VN 2 PL / Suction Cup - 2 Bellows, Longlife, without Adapter

Remarks:

- for gripping uneven, curved articles
- 2 bellows to compensate for unevenness
- extra durable with high wear resistance
- PL = Polyurethane Long Life
- suction cup can be mounted on existing vacuum cups VS 2 PL or with adapters

Accessories e.g.:

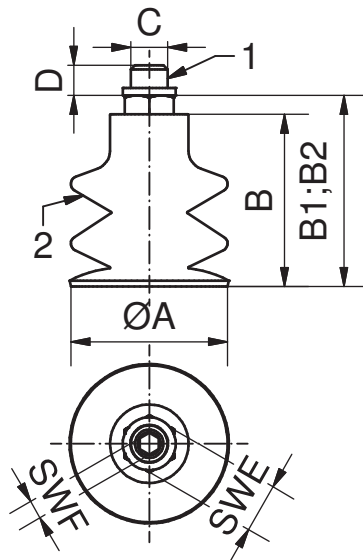
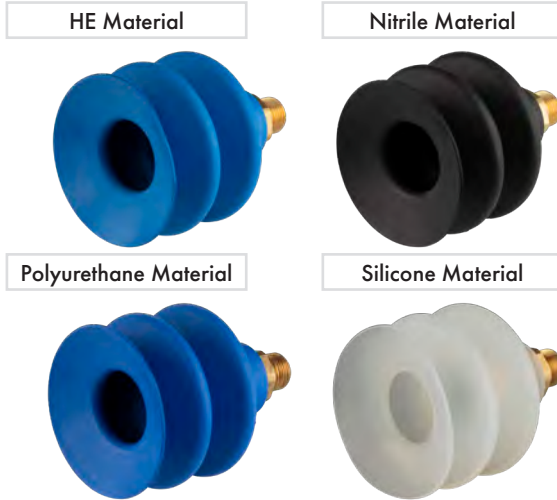
- suction cup adapter, see table and category 290



Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-222-20-60	VN 2-20-PL	VSA 60	PL	20	21	2.3
1-222-30-60	VN 2-30-PL	VSA 60	PL	30	21	6.8
1-222-50-60	VN 2-50-PL	VSA 80	PL	50	36	19.6

220 | Vacuum Cups

VS 3 / Vacuum Cup 3 Bellows, with Adapter



Remarks:

Application: for gripping strong uneven, curved articles

- 3 bellows to compensate for unevenness
- suction cup with adapter
- suction cups can be changed
- PU = Polyurethane
- HE = High Temperature Polyurathane

Connection:

- suction cup/adapter

Scope of delivery:

- every VS is delivered with sealing ring

Holding force:

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

Drawing:

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

Part No.	Description	Suction cup	Adapter
1-223-05-88	VS 3-5-HE3	VN 3-5-HE	VSA 17
1-223-05-18	VS 3-5-N3	VN 3-5-N	VSA 17
1-223-05-28	VS 3-5-S3	VN 3-5-S	VSA 17
1-223-07-88	VS 3-7-HE3	VN 3-7-HE	VSA 16
1-223-07-18	VS 3-7-N3	VN 3-7-N	VSA 16
1-223-07-28	VS 3-7-S3	VN 3-7-S	VSA 16
1-223-05-12	VS 3-5 N5	VN 3-5-N	VSA 30
1-223-05-22	VS 3-5-S5	VN 3-5-S	VSA 30
1-223-05-32	VS 3-5-P5	VN 3-5-P	VSA 30
1-223-05-82	VS 3-5-HE5	VN 3-5-HE	VSA 30
1-223-08-12	VS 3-8-N5	VN 3-8-N	VSA 30
1-223-08-22	VS 3-8-S5	VN 3-8-S	VSA 30
1-223-08-32	VS 3-8-P5	VN 3-8-P	VSA 30
1-223-08-82	VS 3-8-HE5	VN 3-8-HE	VSA 30
1-223-10-12	VS 3-10-N5	VN 3-10-N	VSA 40
1-223-10-22	VS 3-10-S5	VN 3-10-S	VSA 40
1-223-10-32	VS 3-10-P5	VN 3-10-P	VSA 40
1-223-10-82	VS 3-10-HE5	VN 3-10-HE	VSA 40
1-223-10-13	VS 3-10-N8	VN 3-10-N	VSA 70
1-223-10-23	VS 3-10-S8	VN 3-10-S	VSA 70
1-223-10-33	VS 3-10-P8	VN 3-10-P	VSA 70
1-223-10-83	VS 3-10-HE8	VN 3-10-HE	VSA70
1-223-12-82	VS 3-12-HE5	VN 3-12-HE	VSA 40
1-223-12-83	VS 3-12-HE8	VN 3-12-HE	VSA 70
1-223-15-12	VS 3-15-N5	VN 3-15-N	VSA 40
1-223-15-22	VS 3-15-S5	VN 3-15-S	VSA 40
1-223-15-32	VS 3-15-P5	VN 3-15-P	VSA 40
1-223-15-82	VS 3-15-HE5	VN 3-15-HE	VSA 40
1-223-15-13	VS 3-15-N8	VN 3-15-N	VSA 70
1-223-15-23	VS 3-15-S8	VN 3-15-S	VSA 70
1-223-15-33	VS 3-15-P8	VN 3-15-P	VSA 70
1-223-15-83	VS 3-15-HE8	VN 3-15-HE	VSA 70
1-223-18-12	VS 3-18-N5	VN 3-18-N	VSA 40
1-223-18-22	VS 3-18-S5	VN 3-18-S	VSA 40
1-223-18-32	VS 3-18-P5	VN 3-18-P	VSA 40
1-223-18-82	VS 3-18-HE5	VN 3-18-HE	VSA 40
1-223-18-13	VS 3-18-N8	VN 3-18-N	VSA 70
1-223-18-23	VS 3-18-S8	VN 3-18-S	VSA 70
1-223-18-33	VS 3-18-P8	VN 3-18-P	VSA 70
1-223-18-83	VS 3-18-HE8	VN 3-18-HE	VSA 70
1-223-20-12	VS 3-20-N5	VN 3-20-N	VSA 40
1-223-20-22	VS 3-20-S5	VN 3-20-S	VSA 40
1-223-20-32	VS 3-20-P5	VN 3-20-P	VSA 40
1-223-20-82	VS 3-20-HE5	VN 3-20-HE	VSA 40
1-223-20-13	VS 3-20-N8	VN 3-20-N	VSA 70
1-223-20-23	VS 3-20-S8	VN 3-20-S	VSA 70
1-223-20-33	VS 3-20-P8	VN 3-20-P	VSA 70
1-223-20-83	VS 3-20-HE8	VN 3-20-HE	VSA 70
1-223-25-82	VS 3-25-HE5	VN 3-25-HE	VSA 40
1-223-25-83	VS 3-25-HE8	VN 3-25-HE	VSA 60

Material	Working area diameter [mm]	Operating [cm²]	Holding force [N]	Push fit	A [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm] ["]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
HE	2.6	0.05	0,3	x	5	14	19	17	M3	5	7	-	2
Nitril	2.6	0.05	0,3	x	5	14	19	17	M3	5	7	-	2
Silikon	2.6	0.05	0,3	x	5	14	19	17	M3	5	7	-	2
HE	1,8	0,03	0,15	x	7	14	19	16	M3	5	7	-	2
Nitril	1,8	0,03	0,15	x	7	14	19	16	M3	5	7	-	2
Silikon	1,8	0,03	0,15	x	7	14	19	16	M3	5	7	-	2
Nitrile	2	0.03	0.2	x	5	9.5	14.5	10.5	M5	5	7	2	3
Silicone	2	0.03	0.2	x	5	9.5	14.5	10.5	M5	5	7	2	3
PU	2	0.03	0.2	x	5	9.5	14.5	10.5	M5	5	7	2	3
HE	2	0.03	0.2	x	5	9.5	14.5	10.5	M5	5	7	2	3
Nitrile	2.9	0.07	0.4	x	8	10	15	12	M5	5	7	2	3
Silicone	2.9	0.07	0.4	x	8	10	15	12	M5	5	7	2	3
PU	2.9	0.07	0.4	x	8	10	15	12	M5	5	7	2	3
HE	2.9	0.07	0.4	x	8	10	15	12	M5	5	7	2	3
Nitrile	4.5	0.14	0.8	x	10	15	20	16	M5	5.5	7	2	4
Silicone	4.5	0.14	0.8	x	10	15	20	16	M5	5.5	7	2	4
PU	4.5	0.14	0.8	x	10	15	20	16	M5	5.5	7	2	4
HE	4.5	0.14	0.8	x	10	15	20	16	M5	5.5	7	2	4
Nitrile	4.5	0.14	0.8	x	10	15	20	16	G1/8	8	13	3	11
Silicone	4.5	0.14	0.8	x	10	15	20	16	G1/8	8	13	3	11
PU	4.5	0.14	0.8	x	10	15	20	16	G1/8	8	13	3	11
HE	4.5	0.14	0.8	x	10	15	20	16	G1/8	8	13	3	11
HE	5	0,18	1,1	x	13	21	26	19	M5	5,5	7	2	5
HE	5	0,18	1,1	x	13	21	26	19	G1/8	8	13	3	11
Nitrile	5.2	0.18	1.1	x	15	23	28	20	M5	5.5	7	2	5
Silicone	5.2	0.18	1.1	x	15	23	28	20	M5	5.5	7	2	5
PU	5	0.18	1.1	x	15	23	28	20	M5	5.5	7	2	5
HE	5.2	0.07	0.4	x	15	23	28	20	M5	5.5	7	2	5
Nitrile	5.2	0.18	1.1	x	15	23	28	20	G1/8	8	13	3	12
Silicone	5.2	0.18	1.1	x	15	23	28	20	G1/8	8	13	3	12
PU	5.2	0.18	1.1	x	15	23	28	20	G1/8	8	13	3	12
HE	5.2	0.18	1.1	x	15	23	28	20	G1/8	8	13	3	12
Nitrile	8	0.49	2.9	x	18	23	28	20	M5	5.5	7	2	5
Silicone	8	0.49	2.9	x	18	23	28	20	M5	5.5	7	2	5
PU	8	0.49	2.9	x	18	23	28	20	M5	5.5	7	2	5
HE	8	0.49	2.9	x	18	23	28	20	M5	5.5	7	2	5
Nitrile	8	0.49	2.9	x	18	23	28	20	G1/8	8	13	3	12
Silicone	8	0.49	2.9	x	18	23	28	20	G1/8	8	13	3	12
PU	8	0.49	2.9	x	18	23	28	20	G1/8	8	13	3	12
HE	8	0.49	2.9	x	18	23	28	20	G1/8	5	13	3	12
Nitrile	9.6	0.65	3.8	x	20	23	28	20	M5	5	7	2	5
Silicone	9.6	0.65	3.8	x	20	23	28	20	M5	5	7	2	5
PU	9.6	0.65	3.8	x	20	23	28	20	M5	5	7	2	6
HE	9.6	0.65	3.8	x	20	23	28	20	M5	5	7	2	5
Nitrile	9.6	0.65	3.8	x	20	23	28	20	G1/8	8	13	3	12
Silicone	9.6	0.65	3.8	x	20	23	28	20	G1/8	8	13	3	12
PU	9.6	0.65	3.8	x	20	23	28	20	G1/8	8	13	3	12
HE	9.6	0.65	3.8	x	20	23	28	20	G1/8	8	13	3	12
HE	10	0.8	6.4	x	25	34	39	21	M5	5.5	7	2	7
HE	10	0.8	6.4	x	25	34	39	21	G1/8	8	13	3	14

Continuation on the following page

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800
Electrics and
Sensors

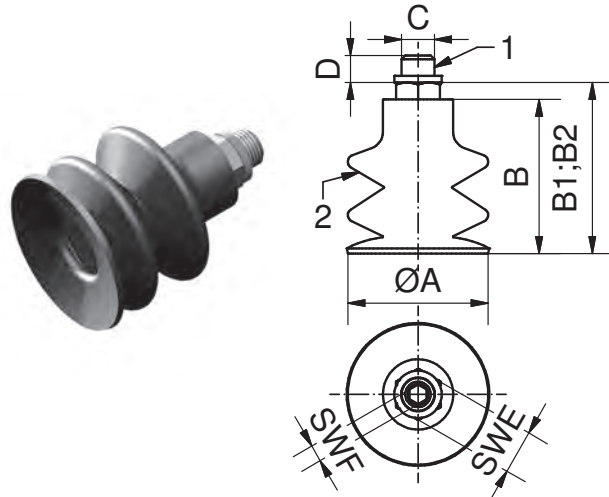
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

220 | Vacuum Cups

VS 3 / Vacuum Cup - 3 Bellows, with Adapter (Continuation)



Part No.	Description	Suction cup	Adapter
1-223-30-13	VS 3-30-N8	VN 3-30-N	VSA 90
1-223-30-23	VS 3-30-S8	VN 3-30-S	VSA 90
1-223-30-33	VS 3-30-P8	VN 3-30-P	VSA 90
1-223-30-83	VS 3-30-HE8	VN 3-30-HE	VSA 90
1-223-40-13	VS 3-40-N8	VN 3-40-N	VSA 90
1-223-40-23	VS 3-40-S8	VN 3-40-S	VSA 90
1-223-40-33	VS 3-40-P8	VN 3-40-P	VSA 90
1-223-40-83	VS 3-40-HE8	VN 3-40-HE	VSA 90
1-223-60-13	VS 3-60-N8	VN 3-60-N	VSA 90
1-223-60-23	VS 3-60-S8	VN 3-60-S	VSA 90
1-223-60-33	VS 3-60-P8	VN 3-60-P	VSA 90
1-223-60-83	VS 3-60-HE8	VN 3-60-HE	VSA 90
1-223-90-14	VS 3-90-N4	VN 3-90-N	VSA 100
1-223-90-24	VS 3-90-S4	VN 3-90-S	VSA 100

VN 3 / Suction Cup - 3 Bellows, without Adapter

HE Material



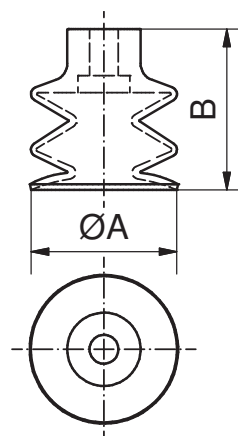
Nitrile Material



Polyurethane Material



Silicone Material



Remarks:

- for gripping strong uneven articles
- 3 bellows to compensate for unevenness
- suction cup can be mounted on existing vacuum cups VS 2 or with adapters
- HE = High Temperature Polyurethane

Accessories e.g.:

- suction cup adapter, see table and category 290

Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-223-05-87	VN 3-5-HE	VSA 17	HE	5	14	<1
1-223-05-17	VN 3-5-N-M	VSA 17	Nitril	5	14	<1
1-223-05-27	VN 3-5-S-M	VSA 17	Silikon	5	14	<1
1-223-07-87	VN 3-7-HE-M	VSA 16	HE	7	14	<1
1-223-07-17	VN 3-7-N	VSA 16	Nitril	7	14	<1
1-223-07-27	VN 3-7-S	VSA 16	Silikon	7	14	<1
1-223-05-10	VN 3-5-N	VSA 30	Nitrile	5	9.5	<1
1-223-05-20	VN 3-5-S	VSA 30	Silicone	5	9.5	<1
1-223-05-30	VN 3-5-P	VSA 30	Polyurethane	5	9.5	<1
1-223-05-80	VN 3-5-HE	VSA 30	HE	5	9.5	<1
1-223-08-10	VN 3-8-N	VSA 30	Nitrile	8	10	<1
1-223-08-20	VN 3-8-S	VSA 30	Silicone	8	10	<1
1-223-08-30	VN 3-8-P	VSA 30	Polyurethane	8	10	<1
1-223-08-80	VN 3-8-HE	VSA 30	HE	8	10	<1
1-223-10-10	VN 3-10-N	VSA 40	Nitrile	10	15	1
1-223-10-20	VN 3-10-S	VSA 40	Silicone	10	15	1
1-223-10-30	VN 3-10-P	VSA 40	Polyurethane	10	15	1

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Nipper Bodies

610
Nipper Blades

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Sensors

850
Pneumatics

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Tubular System
Micro System

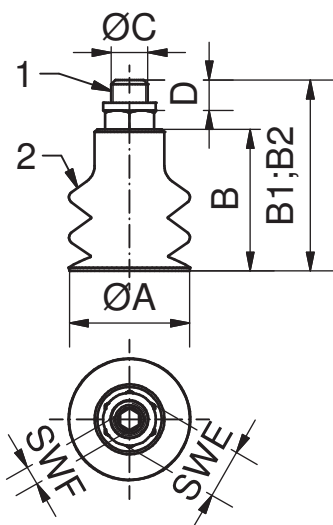
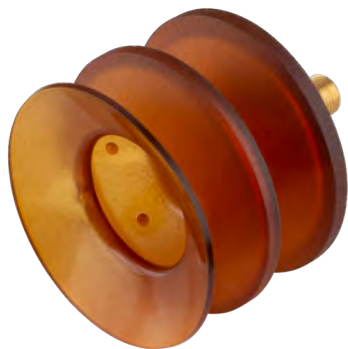
990
PA-Forming
Others

Material	Working area Ø [mm]	Operating [cm ²]	Holding force [N]	Push fit	A [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm] ["]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
Nitrile	17	2.01	11.8	x	30	37.5	42.5	30	G1/8	8	13	5	21
Silicone	17	2.01	11.8	x	30	37.5	42.5	30	G1/8	8	13	5	21
PU	17	2.01	11.8	x	30	37.5	42.5	30	G1/8	8	13	5	23
HE	17	2.01	11.8	x	30	37.5	42.5	30	G1/8	8	13	5	22
Nitrile	16	2.27	13.4	x	40	45.5	51.5	34	G1/8	8	13	5	33
Silicone	16	2.27	13.4	x	40	45.5	51.5	34	G1/8	8	13	5	33
PU	16	2.27	13.4	x	40	45.5	51.5	34	G1/8	8	13	5	36
HE	16	2.27	13.4	x	40	45.5	51.5	34	G1/8	8	13	5	34
Nitrile	29	6.72	39.6	x	60	56	61	37	G1/8	8	13	5	52
Silicone	29	6.72	39.6	x	60	56	61	37	G1/8	8	13	5	51
PU	29	6.72	39.6	x	60	56	61	37	G1/8	8	13	5	57
HE	29	6.72	39.6	x	60	56	61	37	G1/8	8	13	5	54
Nitrile	32	7.79	45.9	x	90	87	92	58	G1/4	10	17	6	195
Silicone	32	7.79	45.9	x	90	87	92	58	G1/4	10	17	6	189

Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-223-10-80	VN 3-10-HE	VSA 40	HE	10	15	1
1-223-12-80	VN 3-12-HE	VSA 40	HE	13	21	1
1-223-15-10	VN 3-15-N	VSA 40	Nitrile	15	23	1
1-223-15-20	VN 3-15-S	VSA 40	Silicone	15	23	1
1-223-15-30	VN 3-15-P	VSA 40	Polyurethane	15	23	2
1-223-15-80	VN 3-15-HE	VSA 40	HE	15	23	1
1-223-18-10	VN 3-18-N	VSA 40	Nitrile	18	23	2
1-223-18-20	VN 3-18-S	VSA 40	Silicone	18	23	2
1-223-18-30	VN 3-18-P	VSA 40	Polyurethane	18	23	2
1-223-18-80	VN 3-18-HE	VSA 40	HE	18	23	2
1-223-20-10	VN 3-20-N	VSA 40	Nitrile	20	23	2
1-223-20-20	VN 3-20-S	VSA 40	Silicone	20	23	2
1-223-20-30	VN 3-20-P	VSA 40	Polyurethane	20	23	2
1-223-20-80	VN 3-20-HE	VSA 40	HE	20	23	2
1-223-25-80	VN 3-25-HE	VSA 40 / 60	HE	25	34	6.1
1-223-30-10	VN 3-30-N	VSA 90	Nitrile	30	37.5	9
1-223-30-20	VN 3-30-S	VSA 90	Silicone	30	37.5	9
1-223-30-30	VN 3-30-P	VSA 90	Polyurethane	30	37.5	10
1-223-30-80	VN 3-30-HE	VSA 90	HE	30	37.5	9
1-223-40-10	VN 3-40-N	VSA 90	Nitrile	40	45.5	21
1-223-40-20	VN 3-40-S	VSA 90	Silicone	40	45.5	20
1-223-40-30	VN 3-40-P	VSA 90	Polyurethane	40	45.5	23
1-223-40-80	VN 3-40-HE	VSA 90	HE	40	45.5	21
1-223-60-10	VN 3-60-N	VSA 90	Nitrile	60	56	40
1-223-60-20	VN 3-60-S	VSA 90	Silicone	60	56	38
1-223-60-30	VN 3-60-P	VSA 90	Polyurethane	60	56	45
1-223-60-80	VN 3-60-HE	VSA 90	HE	60	56	41
1-223-90-10	VN 3-90-N	VSA100	Nitrile	90	87	162
1-223-90-20	VN 3-90-S	VSA100	Silicone	90	87	157

220 | Vacuum Cups

VS 3 PL / Vacuum Cup - 3 Bellows, Longlife, with Adapter



Drawing:

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

Remarks:

Application: for gripping strong uneven, curved articles

- 3 bellows to compensate for unevenness
- extra durable with high wear resistance
- PL = Polyurethane Long Life
- suction cup with adapter
- suction cups can be changed

Connection:

- suction cup/adapter

Scope of delivery:

- every VS is delivered with sealing ring

Holding force:

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

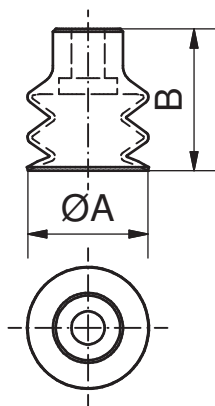
Data

Part No.	Description	Suction cup	Adapter	Material	Working area	Operating [cm ²]	Holding force [N]	Connection
1-223-20-62	VS 3-20-PL5	VN 3-20-PL	VSA 40	PL	10.2	0.82	4.9	push fit
1-223-20-63	VS 3-20-PL8	VN 3-20-PL	VSA 70	PL	10.2	0.82	4.9	push fit
1-223-30-63	VS 3-30-PL8	VN 3-30-PL	VSA 90	PL	17.8	2.01	11.8	push fit
1-223-60-63	VS 3-60-PL8	VN 3-60-PL	VSA 90	PL	30.8	6.72	39.6	push fit

Dimensions

Part No.	Description	A [mm]	B [mm]	B [mm]	B2 [mm]	C [mm] ["°]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
1-223-20-62	VS 3-20-PL5	20	23	28	20	M5	5	7	2	5
1-223-20-63	VS 3-20-PL8	20	23	28	20	G1/8	8	13	3	12
1-223-30-63	VS 3-30-PL8	30	37.5	42.5	30	G1/8	8	13	5	19
1-223-60-63	VS 3-60-PL8	60	56	61	37	G1/8	8	13	5	49

VN 3 PL / Suction Cup - 3 Bellows, Longlife, without Adapter



Remarks:

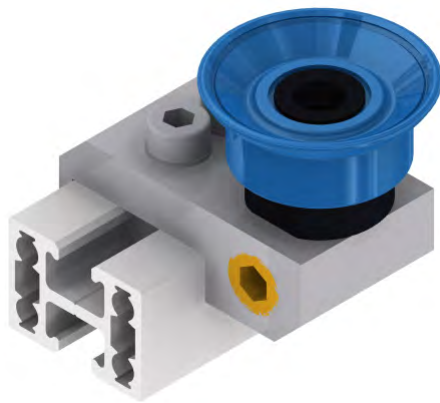
- for gripping strong uneven, curved articles
- 3 bellows to compensate for unevenness
- extra durable with high wear resistance
- PL = Polyurethane Long Life
- suction cup can be mounted on existing vacuum cups VS 3 PL or with adapters

Accessories e.g.:

- suction cup adapter, see table and category 290

Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-223-20-60	VN 3-20-PL	VSA 40 / VSA 70	PL	20	23	2
1-223-30-60	VN 3-30-PL	VSA 90	PL	30	37.5	6
1-223-60-60	VN 3-60-PL	VSA 90	PL	60	56	36

Application examples Vacuum Cups



Vacuum Cup properties

Advantages:

Different materials in different diameters for special applications, see product descriptions

Material specifications:

***** = very high
*** = high
* = low

Material: Natural Rubber (NK)

Colour:	Brown
Hardness:	40
Working Temperature:	-40 °C to 80 °C short term -50 to +120 °C
Tear Resistance:	**
Aging Properties:	**
Oil & Grease Resistance:	*
Application:	Low temperature

Material: Rubber (NBR)

Colour:	grey or red
Working Temperature:	-30 °C to 100 °C
Hardness:	45 +/- 5
Tear Resistance:	***
Aging Properties:	****
Oil & Grease Resistance:	***
Application:	Handling parts with grainy surfaces

Material: Perbunan (PN)

Colour:	blue
Hardness:	55 +/- 5
Working Temperature:	-30 °C to 100 °C
Tear Resistance:	****
Aging Properties:	*****
Abrasion Resistance:	****
Oil & Grease Resistance:	****
Application:	sheet metal

Material: Polyurethane (2K)

Colour:	lightblue (lip) blue (bellow)
Shore hardness:	lip: 30 A, soft bellow: 40 A, medium
Working Temperature:	+10 °C to +50 °C
Advantage:	very soft lip and high sealing
Application:	for very uneven and heavy textured surfaces

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

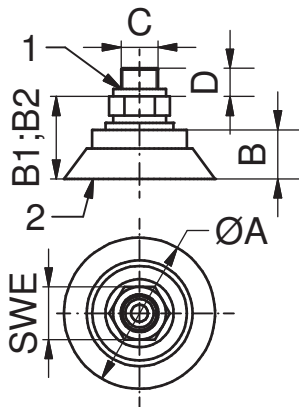
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

224 | Vacuum Cups-Special

VAS SBR / Special Vacuum Cup, for rough surfaces, with Adapter



Remarks:

Application: e.g. in the wood industry when handling raw chipboard

- material: natural rubber
- heat resistant up to 100 °C
- nearly mark free
- recommended for rough, grained surfaces
- suction cup with adapter
- suction cups can be changed

Connection:

- suction cup/adapter

Scope of delivery:

- every VS is delivered with sealing ring

Holding force:

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

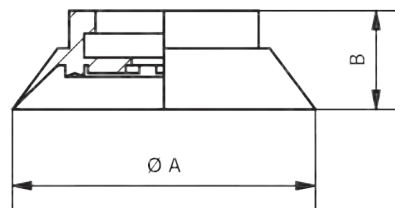
Drawing:

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position
- SWE external hexagon

Part No.	Description	Suction cup	Adapter	Material	Holding force [N]	Operating [cm ²]
1-224-82-00	VAS 40 SBR	VSN 40 SBR	AVS 40	NBR	36.2	6.16
1-224-85-00	VAS 70 SBR	VSN 70 SBR	AVS 70	NBR	81.5	13.85

Part No.	Description	A [mm]	B [mm]	B1 [mm]	B2 [mm]	C [°]	D [mm]	SWE [mm]	Weight [g]
1-224-82-00	VAS 40 SBR	40	13	22	17.5	G1/8	8	14	20
1-224-85-00	VAS 70 SBR	70	28	37	34	G1/4	10	17	96

VSN SBR / Special Suction Cup, without Adapter



Remarks:

- material: natural rubber
- heat resistant up to 100 °C
- recommended for rough, grained surfaces
- suction cup can be mounted on existing vacuum cups VAS SBR or with adapters

Accessories e.g.:

- suction cup adapter, see table and category 290

Part No.	Description	Adapter	Material	A [mm]	B [mm]	Weight [g]
1-224-82-01	VSN 40 SBR	AVS 40	NBR	40	13	6
1-224-85-01	VSN 70 SBR	AVS 70	NBR	70	28	45

VS 1 PN / Special Vacuum Cup for sheet metal, with Adapter

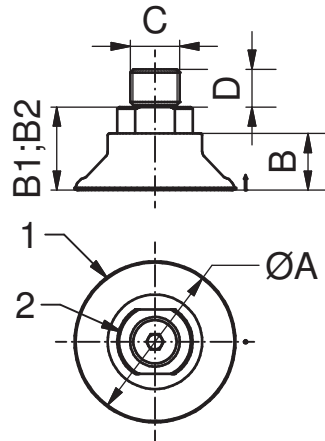
Remarks:

Application: specially adapted to the sheet metal handling

- special inner structure prevents buckling or deep drawing, even with thin sheets (up to approx. 0.5 mm thick) or aluminum sheets
- soft, conformable sealing lip especially suitable for flat or slightly curved workpieces with a smooth or slightly rough textured surface
- PN = Perbunan (color: blue)
- vulcanized nipple

Drawing:

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position



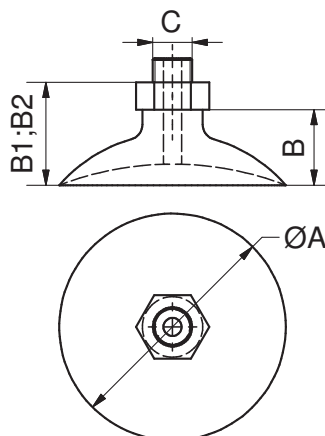
Part No.	Description	A [mm]	B [mm]	B1 [mm]	B2 [mm]	C ["]	D [mm]	SW [mm]	Material	Weight [g]
1-225-03-00	VS 1-30 PN 4	30	13	20	17	G1/4	10	17	PN	31
1-225-06-00	VS 1-40 PN 4	40	15	22	18	G1/4	10	17	PN	22
1-225-09-00	VS 1-50 PN 4	50	18	28	24	G1/4	10	22	PN	51
1-225-12-00	VS 1-60 PN 4	60	20	31	26	G1/4	10	22	PN	68
1-225-15-00	VS 1-80 PN 4	80	25	36	30	G1/4	10	22	PN	88
1-225-18-00	VS 1-100 PN 4	100	26	36	30	G1/4	10	22	PN	76
1-225-21-00	VS 1-125 PN 4	125	34	43	36	G1/4	10	22	PN	154

VS 1 NK / Vacuum Cup Natural Rubber - 1 Bellow, with Adapter

Remarks:

Application: e.g. suitable for very short cycle time

- NK = natural rubber
- exact positioning
- higher load capacity
- no twisting
- suction cups are vulcanised onto nipples



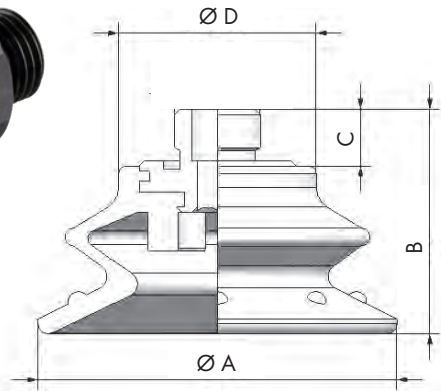
Part No.	Description	A [mm]	C [mm]	B [mm]	B1 [mm]	B2 [mm]	Material
1-229-04-00	VS 1 34 NK 4	34	G1/4	14	23	20	NK
1-229-05-00	VS 1 53 NK 4	53	G1/4	20	29	25	NK
1-229-06-00	VS 1 75 NK 4	75	G1/4	25	34	28	NK
1-229-07-00	VS 1 96 NK 4	96	G1/4	38	47	35	NK

224 | Vacuum Cups-Special

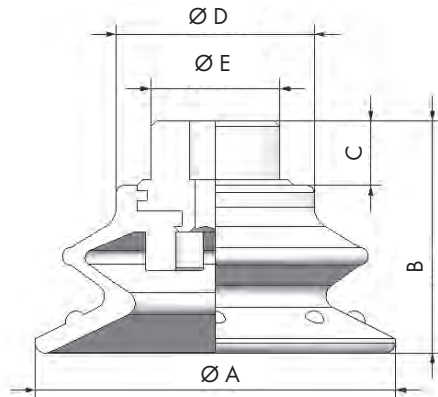
VS 2 2K / 2-Component Vacuum Cup - 2 Bellows, with Adapter



Picture: VS 2-15... to VS 2-40...



Picture: VS 2-50... to VS 2-70... (without PDN)



Remarks:

Application: for high sealing, e.g. on grained, rough, uneven surfaces

- 2 bellows to compensate for unevenness and textured surfaces
 - temperature range +10°C to +50°C (higher temperatures temporary possible)
 - suction cup with adapter
 - suction cups can be changed
- Note * 1:
Ø70: adapter is molded into the cup
- Note * 2:
Ø50 and Ø70:
with internal thread, adapters have to be reduced from 3/8 to 1/4 by using PDN 3/8-1/4 (Part No. 1-858-18-00)

Bellow and lip have different degrees of hardness:

- optimal suction stability
- very soft and flexible sealing lip
- Shore Hardness A
- 30 (lip very soft)
- 60 (bowl medium soft)

Holding force:

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

Scope of delivery:

- every VS is delivered with sealing ring

Part No.	Description	Suction Cup	Adapter	Connection	Material	Working Area [mm]	Operating [cm ²]	Holding Force [N]
1-228-15-00	VS 2-15-2K5	VN 2-15-2K	VSA 2K 15 M	M5	Polyurethane	7	0.33	2.0
1-228-20-00	VS 2-20-2K8	VN 2-20-2K	VSA 2K 20 M	G1/8	Polyurethane	11	0.87	5.2
1-228-30-00	VS 2-30-2K4	VN 2-30-2K	VSA 2K 40 M	G1/4	Polyurethane	19	2.69	16.1
1-228-40-00	VS 2-40-2K4	VN 2-40-2K	VSA 2K 40 M	G1/4	Polyurethane	25	4.71	28.3
1-228-50-00	VS 2-50-2K3-8	VN 2-50-2K	VSA 2K 50 F	G3/8*2	Polyurethane	32	7.79	46.8
1-228-70-00	VS 2-70-2K3-8	*1	*1	G3/8*2	Polyurethane	43	14.19	85.1

Part No.	Description	integrated filter screen	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	Ø E [mm]	Wrench Size [mm]	Weight [g]
1-228-15-00	VS 2-15-2K5		16	28	9	9		8	2
1-228-20-00	VS 2-20-2K8	x	21	28	10	12		12	4
1-228-30-00	VS 2-30-2K4	x	32	32	15	17		19	12
1-228-40-00	VS 2-40-2K4	x	42	37	15	22		19	18
1-228-50-00	VS 2-50-2K3-8	x	53	44	15	28	28	24	37
1-228-70-00	VS 2-70-2K3-8		73	60	13	50	28	22	68

VN 2 2K / 2-Component Suction Cup - 2 Bellows, without Adapter

Remarks:

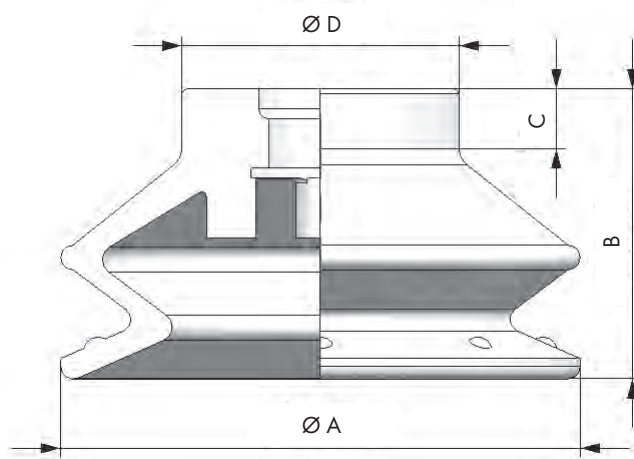
- high sealing on grained, rough, uneven surfaces
- 2 bellows to compensate for unevenness and textured surfaces
- temperature range +10°C to +50°C (higher temperatures temporary possible)
- suction cup can be mounted on existing vacuum cups VS 2 2K or with adapters

Bellow and lip have different degrees of hardness:

- optimal suction stability
- very soft and flexible sealing lip
- Shore Hardness A
- 30 (lip very soft)
- 60 (bowl medium soft)

Accessories e.g.:

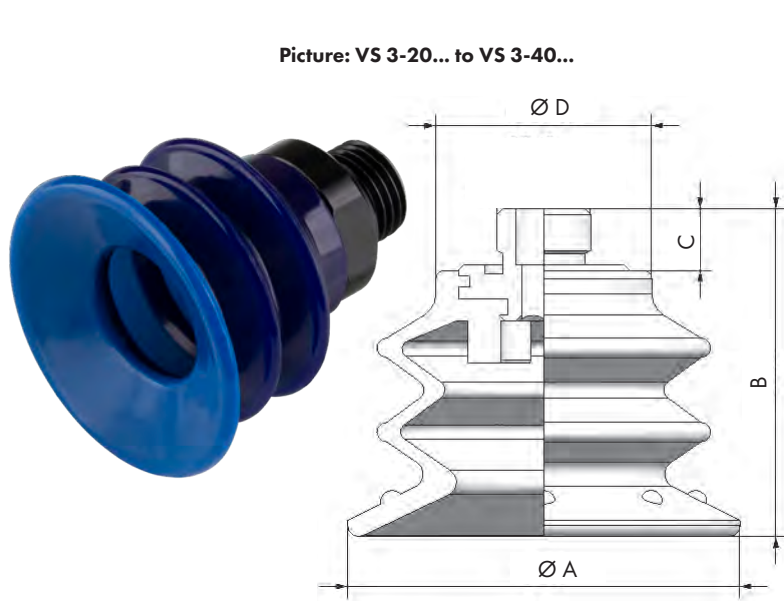
- suction cup adapter, see table and category 290



Part No.	Description	Adapter	Material	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	Weight [g]
1-228-15-01	VN 2-15-2K	VSA 2K 15 M	Polyurethane	16	19	8	9	1
1-228-20-01	VN 2-20-2K	VSA 2K 20 M	Polyurethane	21	18	5	12	2
1-228-30-01	VN 2-30-2K	VSA 2K 40 M	Polyurethane	32	17	3	17	4
1-228-40-01	VN 2-40-2K	VSA 2K 40 M	Polyurethane	42	22	4	22	11
1-228-50-01	VN 2-50-2K	VSA 2K 50 F	Polyurethane	53	29	6	28	20

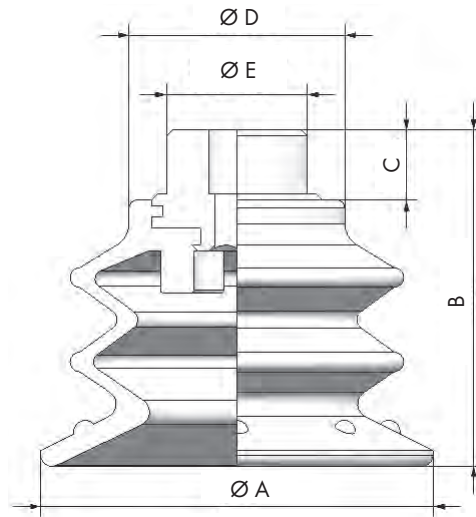
224 | Vacuum Cups-Special

VS 3 2K / 2-Component Vacuum Cup - 3 Bellows, with Adapter



Picture: VS 3-20... to VS 3-40...

Picture: VS 3-50... to VS 3-70... (without PDN)



Remarks:

Application: for high sealing, e.g. on grained, rough, strong uneven surfaces

- 3 bellows to compensate for strong unevenness and textured surfaces
 - temperature range +10°C to +50°C (higher temperatures temporary possible)
 - suction cup with adapter
 - suction cups can be changed
- Note * 1:
Ø70: adapter is molded into the cup
- Note * 2:
Ø50 and Ø70
with internal thread, adapters have to be reduced from 3/8 to 1/4 by using PDN 3/8-1/4 (Part No. 1-858-18-00)

Bellow and lip have different degrees of hardness:

- optimal suction stability
- very soft and flexible sealing lip
- Shore Hardness A
- 30 (lip very soft)
- 60 (bowl medium soft)

Holding force:

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

Scope of delivery:

- every VS is delivered with sealing ring

Part No.	Description	Suction Cup	Adapter	Connection	Material	Working Area [mm]	Operating [cm ²]	Holding Force [N]
1-228-22-00	VS 3-20-2K8	VN 3-20-2K	VSA 2K 20 M	G1/8	Polyurethane	12	1.04	6.2
1-228-33-00	VS 3-30-2K8	VN 3-30-2K	VSA 2K 20 M	G1/8	Polyurethane	13	1.33	8.0
1-228-44-00	VS 3-40-2K4	VN 3-40-2K	VSA 2K 40 M	G1/4	Polyurethane	18	2.41	14.4
1-228-55-00	VS 3-50-2K3-8	VN 3-50-2K	VSA 2K 50 F	G3/8*2	Polyurethane	22	3.80	22.8
1-228-77-00	VS 3-70-2K3-8	*1	*1	G3/8*2	Polyurethane	32	8.04	48.3
1-228-78-00	VS 3-70-2K3-8-M	*1	*1	G3/8	Polyurethan	32	8.04	48.3

Part No.	Description	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	Ø E [mm]	Wrench Size [mm]	Weight [g]
1-228-22-00	VS 3-20-2K8	21	25	10	12		12	2
1-228-33-00	VS 3-30-2K8	30	31	10	17		13	7
1-228-44-00	VS 3-40-2K4	40	43	15	22		19	18
1-228-55-00	VS 3-50-2K3-8	50	51	15	28	28	24	37
1-228-77-00	VS 3-70-2K3-8	70	60	13	39	28	22	66
1-228-78-00	VS 3-70-2K3-8-M	70	60	13	39	28	22	66

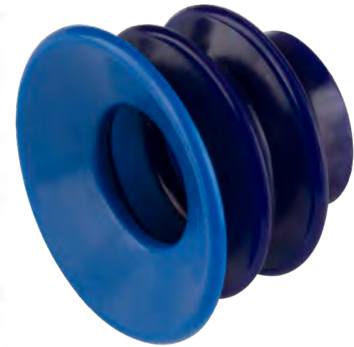
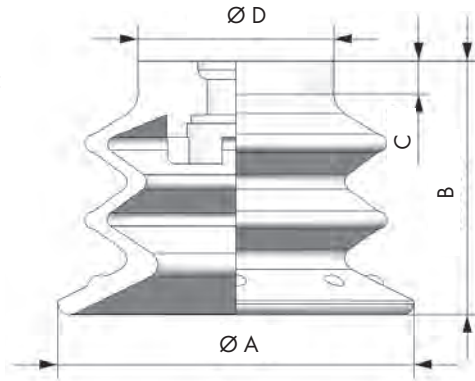
VN 3 2K / 2-Component Suction Cup - 3 Bellows, without Adapter

Remarks:

- high sealing on grained, rough, uneven surfaces
- 3 bellows to compensate for strong unevenness and textured surfaces
- temperature range +10°C to +50°C (higher temperatures temporary possible)
- suction cup can be mounted on existing vacuum cups VS 2 2K or with adapters
- see VS 3 2K

Accessories e.g.:

- suction cup adapter, see table and category 290



Part No.	Description	Adapter	Material	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	Weight [g]
1-228-22-01	VN 3-20-2K	VSA 2K 20 M	Polyurethane	21	15	2	12	2
1-228-33-01	VN 3-30-2K	VSA 2K 20 M	Polyurethane	30	21	3	17	4
1-228-44-01	VN 3-40-2K	VSA 2K 40 M	Polyurethane	40	28	4	22	10
1-228-55-01	VN 3-50-2K	VSA 2K 50 F	Polyurethane	50	36	5	28	19

VS 1 E / Vacuum Cup made of ED

Remarks:

Application: when good holding force and exact positioning are needed

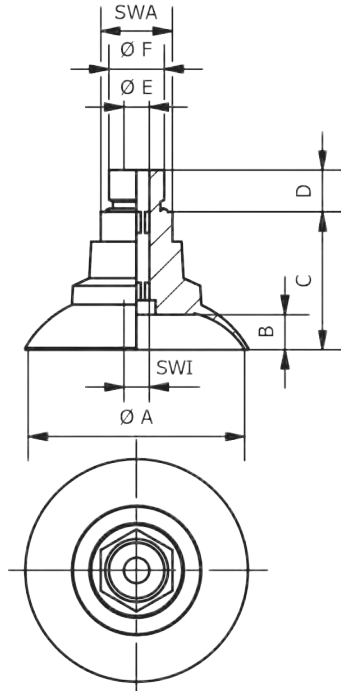
- applicable to curved surfaces
- suitable for sheet metal and oily surfaces
- prevents deep drawing and minimizes dents
- suction cup made of Elastodur
- shore hardness: 85 °Sh
- nipple made of Aluminium

Connection:

- suction cup and adapter are screwed together

Zeichnung:

- F vacuum connection
 SWI internal hexagon
 SWA external hexagon



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F ["]	SWA [mm]	SWI [mm]	Weight [g]
1-225-25-00	VS 1-40 E 4	41,3	6,9	27,6	10	5	G1/4	17	5	17
1-225-29-00	VS 1-50 E 4	51,5	8,4	32,8	10	6	G1/4	17	6	28
1-225-33-00	VS 1-60 E 4	61,5	10,9	35,3	10	6	G1/4	17	6	31
1-225-41-00	VS 1-80 E 4	81	13,9	38,3	10	6	G1/4	17	6	39
1-225-37-00	VS 1-100 E 4	99,7	17,1	47,2	10	6	G1/4	22	6	72

000
Quick Change Systems

050
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Profile
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200
Vacuum Cup
Connectors

220
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300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

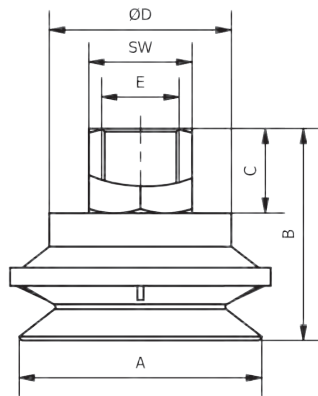
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

224 | Vacuum Cups-Special

VS HT+ / Vacuum Cup, heat-resistant up to 300°C, with Adapter



Remarks:

Application: special vacuum cup for demoulding at high temperatures

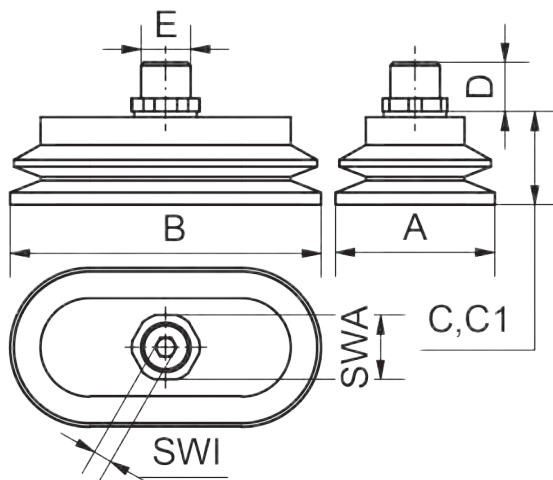
- 2 bellows for compensating uneven surfaces
- temperature range from -20°C to +300°C
- resistant to: chemicals, chloric solvents, lubrication solvents, aromatic/aliphatic hydrocarbons

Accessories e.g.:

- Adapter PDN

Part No.	Description	Material	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	SW [°]	Screw Thread, inside E [°]	Weight [g]
1-229-30-00	VS 2-40 HT+	Special-Viton	40	35	14	30	17	1/4	46
1-229-31-00	VS 2-50 HT+	Special-Viton	50	36	15	40	22	1/4	89

VS O 2 / Suction Cup - oval, 2 Bellows, with Adapter



Remarks:

Application: for demoulding tasks where high holding forces are needed

- for gripping long articles
- HE = High Temperature Polyurathane

Connection:

- suction cups are vulcanised to the nipple

Scope of delivery:

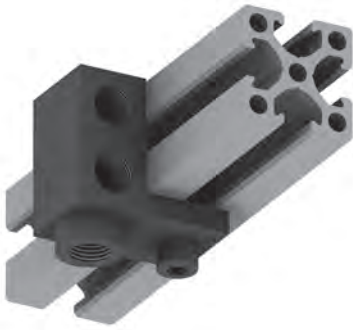
- every VS is delivered with sealing ring

Drawing:

- C normal position
- C1 compressed position
- SWI internal hexagon
- SWA external hexagon

Part No.	Description	A [mm]	B [mm]	C [mm]	C1 [mm]	D [mm]	E [°]	SWA [mm]	SWI [mm]	Weight [g]
1-224-90-00	VS 2 O-30x60 HE	32	62	22	16	13	G1/4	17	5	36
1-224-91-00	VS 2 O-40x80 HE	42	82	25	16	13	G1/4	17	5	44

Application example VTB1



Application example VTB2



Application example LVT

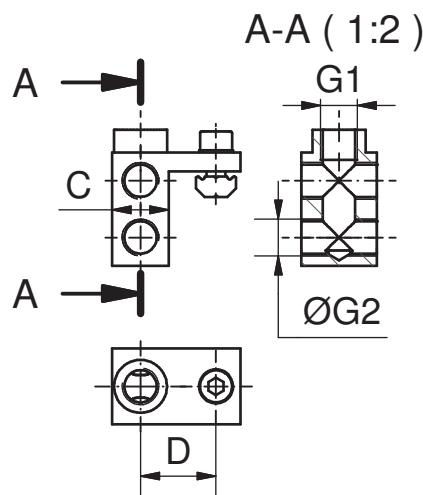


VTB 1 / Manifold Block 4 Ports

Remarks:

Application: for expanding air circuits

- can be mounted directly to profiles
- 1 circuit
- 1 inlet
- 4 ports



Part No.	Description	G1 ["]	G2 ["]	C [mm]	D [mm]	Input	Output	Material	Weight [g]
1-230-05-00	VTB X 1-4-1/8-1/8	G1/8	G1/8	15	20	1	4	Aluminum	31
1-230-12-00	VTB JU 1-4-1/8-1/8	G1/8	G1/8	15	27.5	1	4	Aluminum	36

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

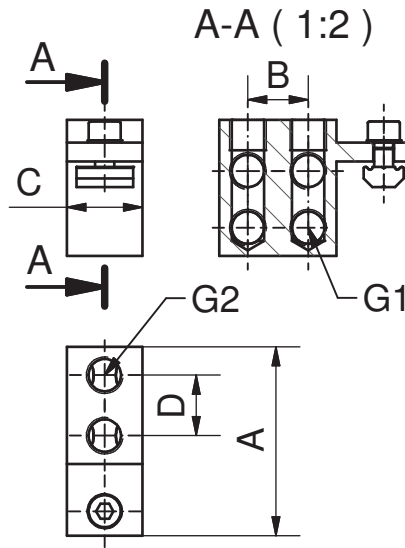
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

230 | Manifold

VTB 2 / Manifold Block 8 Ports



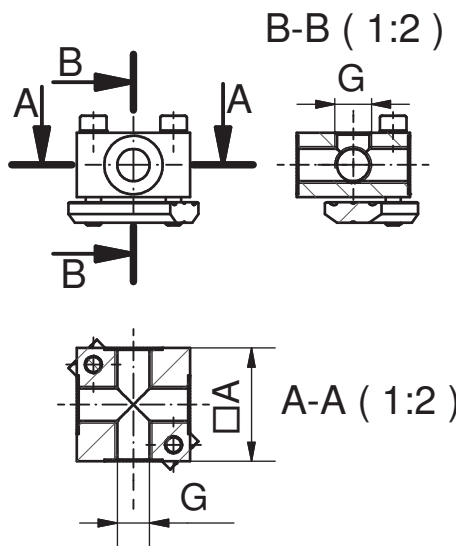
Remarks:

Application: for expanding air circuits

- can be mounted directly to profiles
- VTB X 1-8-1/8-1/8 and VTB JU 1-8-1/8-1/8:
 - 1 circuit
 - 8 ports
- VTB X 2-8-1/8-1/8 and VTB JU 2-8-1/8-1/8:
 - 2 circuits
 - 4 ports per circuit

Part No.	Description	A [mm]	B [mm]	C [mm]	G1 ["]	G2 ["]	D [mm]	Input	Output	Circuits	Weight [g]
1-230-15-00	VTB X 1-8-1/8-1/8	50	15	20	G1/8	G1/8	15	1	8	1	47
1-230-25-00	VTB X 2-8-1/8-1/8	50	15	20	G1/8	G1/8	15	2	8	2	56
1-230-22-00	VTB JU 1-8-1/8-1/8	60	15	20	G1/8	G1/8	15	1	8	1	53
1-230-32-00	VTB JU 2-8-1/8-1/8	60	16	20	G1/8	G1/8	15	2	8	2	56

LVT / Light Weight Manifold Block



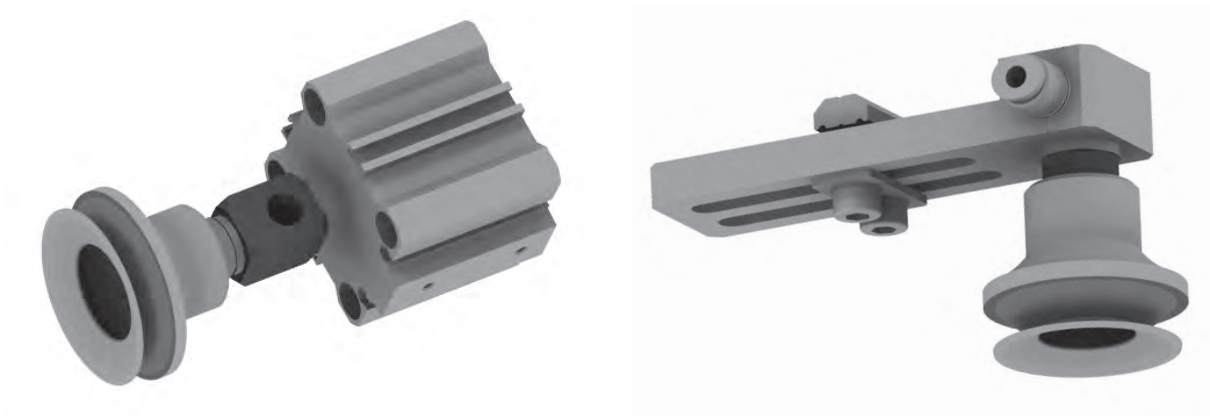
Remarks:

Application: for expanding air circuits

- can be mounted directly to profiles
- 1 circuit
- 1 inlet
- 4 ports

Part No.	Description	A [mm]	G [mm]	Input	Output	Material	Weight [g]
1-230-40-00	LVT L M5	14	5 x M5	1	4	Aluminum	13
1-230-45-00	LVT X 1/8	30	5 x G1/8	1	4	Aluminum	50
1-230-50-00	LVT X 1/4	40	5 x G1/4	1	4	Aluminum	99

Application examples AVI / VSA-VS2



000
Quick Change
Systems

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Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

VSA / Adapter for Suction Cups VN and Vacuum Cups VS

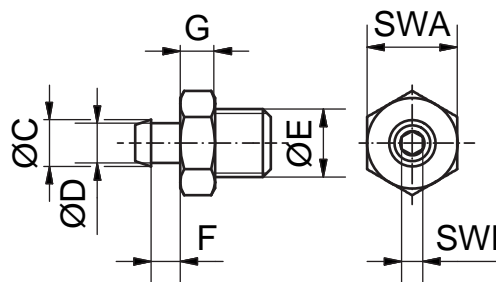
Remarks:

Application: adapter for Suction Cups VN and Vacuum Cups VS

- see table and category 220

Scope of delivery:

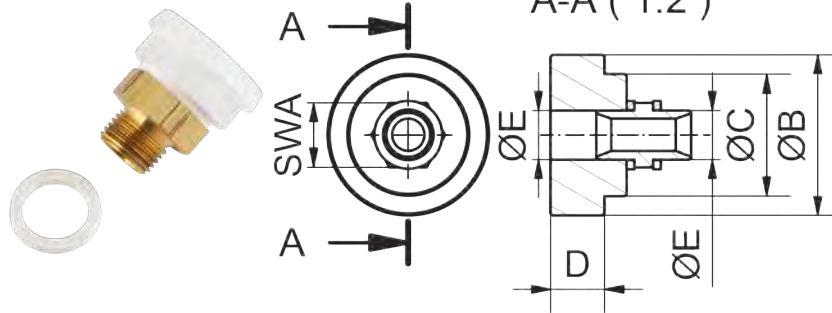
- does not include suction cup and clamp



Part No.	Description	suitable for Suction Cup	installed in Vacuum Cup	SWA [mm]	SWI [mm]	C [mm]	D [mm]	E [mm] ["°]	F [mm]	G [mm]	Material	Weight [g]
1-290-04-00	VSA 4	VN 2	VS 2	8	-	6	4	M3	2	5	Al	1
1-290-05-00	VSA 5	VN O / VN 2	VS O / VS 2	5		3	2	M3	1.5	2	Al	<1
1-290-10-00	VSA 10	VN 1	VS 1	7		3	2	M5	1.5	5	CuZn	2
1-290-15-00	VSA 15	VN O	VS O	8		6.5	5	M5	2	5	Al	1
1-290-16-00	VSA 16	VN 2 / VN 3	VS 2 / VS 3	7	-	6.5	5.8	M3	3.5	5	Al	1
1-290-17-00	VSA 17	VN 3	VS 3	8	-	4.5	4.2	M3	4	5	Al	1
1-290-20-00	VSA 20	VN O	VS O	13	3	7.5	6	G1/8	2	5	CuZn	10
1-290-25-00	VSA 30	VN 1 / VN 2 / VN 3	VS 1 / VS 2 / VS 3	7	2	6.2	4.2	M5	2	5	CuZn	3
1-290-30-00	VSA 40	VN 2 / VN 3	VS 2 / VS 3	7	2	6.6	5.7	M5	4.2	5	CuZn	3
1-290-35-00	VSA 50	VN 1	VS 1	13	3	9	5	G1/8	4.5	5	CuZn	36
1-290-40-00	VSA 60	VN 1 / VN 2	VS 1 / VS 2	13	4	10	6.5	G1/8	6.65	5	CuZn	10
1-290-45-00	VSA 70	VN 2 / VN 3	VS 2 / VS 3	13	3	6.7	5.7	G1/8	4.2	5	CuZn	10
1-290-50-00	VSA 80	VN 1 / VN 2	VS 1 / VS 2	13	5	14	9	G1/8	7	5	CuZn	11
1-290-55-00	VSA 90	VN 2 / VN 3	VS 2 / VS 3	13	5	13	9	G1/8	13	5	CuZn	13
1-290-60-00	VSA 100	VN 3	VS 3	17	6	18	13	G1/4	19	5	CuZn	33
1-290-65-00	VSA 110	VN 1 / VN 2	VS 1 / VS 2	17	5		M10x1.25	G1/4	10	5	CuZn	19
1-290-70-00	VSA 130	VN O	VS O	17	6	13.5	12	G1/4	7	5	CuZn	23

290 | Adapter

AVS / Adapter for VAS-SBR

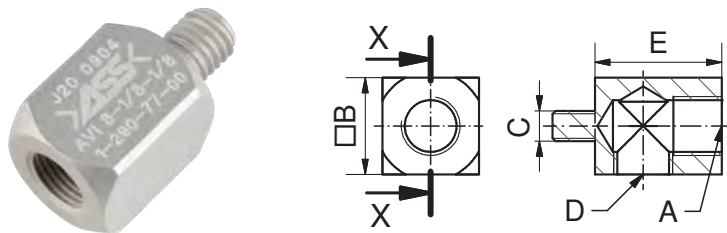


Remarks:

- adapter for suction cup VSN SBR
- installed in relative Vacuum Cups VAS SBR

Part No.	Description	SWA [mm]	B [mm]	C [mm]	D [mm]	E ["]	Material	Weight [g]
1-290-33-00	AVS 40	14	21	18	3.2	G1/8	CuZn/POM	14
1-290-47-00	AVS 70	17	42.5	32	14	G1/4	CuZn/POM	52

AVI / Adapter, female



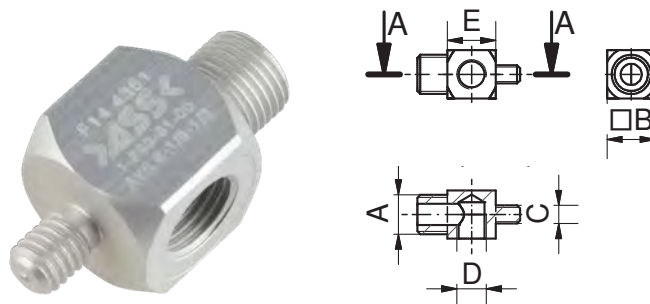
Remarks:

Drawing:

- A for mounting vacuum cups
- C for mounting on short stroke cylinder KHZ

Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-290-73-00	AVI 5-5-5	M5	8	M5	M5	12	Steel/zinc plated	5
1-290-75-00	AVI 3-5-5	M5	8	M3	M5	12	Steel/zinc plated	4
1-290-76-00	AVI M5-1/8-1/8	G1/8	16	M5	G1/8	21	Steel/zinc plated	30
1-290-77-00	AVI 8-1/8-1/8	G1/8	16	M8	G1/8	21	Aluminum	12
1-290-79-00	AVI 8-1/4-1/8	G1/4	16	M8	G1/8	26	Aluminum	12

AVA / Adapter, male



Remarks:

Drawing:

- A for mounting vacuum cups
- C for mounting on short stroke cylinder KHZ

Part No.	Description	A ["]	B [mm]	C [mm]	D ["]	E [mm]	Material	Weight [g]
1-290-81-00	AVA 6-1/8-1/8	G1/8	16	M6	G1/8	16	Aluminum	10
1-290-83-00	AVA 8-1/8-1/8	G1/8	16	M8	G1/8	16	Aluminum	10
1-290-85-00	AVA 6-1/4-1/8	G1/4	16	M6	G1/8	16	Aluminum	32
1-290-87-00	AVA 8-1/4-1/8	G1/4	16	M8	G1/8	16	Aluminum	11

VSA 2K / Adapter for 2-Component Suction and Vacuum Cups

Remarks:

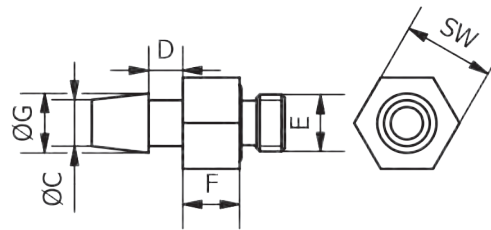
- adapter for suction cups VN 2K
- can be used with VN 2 2K and VN 3 2K (see table)

Scope of Delivery:

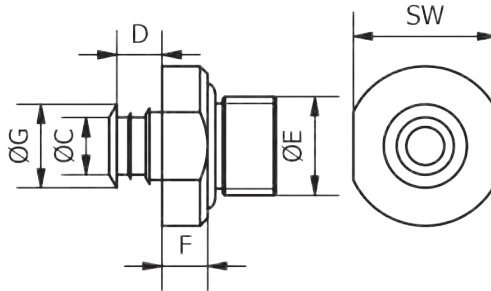
- every adapter comes with a seal ring

Note *1:

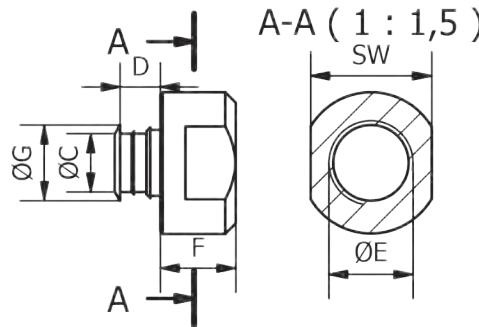
Adapters have to be reduced from G3/8 to G1/4 to work with ASS components. Use PDN 3/8-1/4, category 850.



1-290-90-00



1-290-91-00
1-290-92-00



1-290-93-00

Part No.	Description	SW [mm]	C [mm]	D [mm]	E [mm] ["]	F [mm]	G [mm]	Material
1-290-90-00	VSA 2K 15 M	8	4	3	M5	5	5.2	Aluminium
1-290-91-00	VSA 2K 20 M	13	7.5	4.5	G1/8	4	8	Aluminium
1-290-92-00	VSA 2K 40 M	19	9	6	G1/4	6	11	Aluminium
1-290-93-00	VSA 2K 50 F	24	11.5	8	G3/8	15	15	Aluminium

Part No.	Description	Connection	fits for Suction Cup	used in Vacuum Cup	Weight [g]
1-290-90-00	VSA 2K 15 M	M5	VN 2-15-2K	VS 2-15-2K5	1
1-290-91-00	VSA 2K 20 M	G 1/8	VN 2-20-2K VN 3-20-2K VN 3-30-2K	VS 2-20-2K8 VS 3-20-2K8 VS 3-30-2K8	2
1-290-92-00	VSA 2K 40 M	G 1/4	VN 2-30-2K VN 2-40-2K VN 3-40-2K	VS 2-30-2K4 VS 2-40-2K4 VS 3-40-2K4	7
1-290-93-00	VSA 2K 50 F	G 3/8*1	VN 2-50-2K VN 3-50-2K	VS 2-50-2K3-8 VS 3-50-2K3-8	17

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Quick Change Systems

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Connectors

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Profile
Accessories

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Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

290 | Adapter

VSE / Vacuum Cup Inserts



Remarks:

Application: prevents buckling, e.g. with warm plastic components or tempered FVK organo sheets

- insert for vacuum cups
- temperature range from -50° to +260° Celsius in long-term use
- PEEK = Polyetheretherketone
- temperature-resistant, thermoplastic material
- optimal in combination with our HE vacuum cups (HE = High Temperature Elastomer)
- easy to use
- easy to install in compatible vacuum cups
- pictures may differ

Application examples:

Left figure shows the application in the first bellow. If the application requires a stronger seal by the lip, the VSE also can be inserted into the second bellow (right figure).



Part No.	Description	compatible to Vacuum Cup/Suction Cup	Material	Weight [g]
1-291-10-00	VSE 2-10 PEEK	VN 2-10-HE VS 2-10-HE5	Polyetheretherketone	<1
1-291-20-00	VSE 3-10 PEEK	VN 3-10-HE VS 3-10-HE5 VS 3-10-HE8	Polyetheretherketone	<1
1-291-30-00	VSE 3-15 PEEK	VN 3-15-HE VS 3-15-HE5 VS 3-15-HE8	Polyetheretherketone	<1
1-291-40-00	VSE 2-15 PEEK	VN 2-15-HE VS 2-15-HE5 VS 2-15-HE8 VN 3-18-HE	Polyetheretherketone	<1
1-291-50-00	VSE 2-18 PEEK	VN 2-18-HE VS 2-18-HE5 VS 2-18-HE8	Polyetheretherketone	<1
1-291-60-00	VSE 3-20 PEEK	VN 3-20-HE VS 3-20-HE5 VS 3-20-HE8	Polyetheretherketone	1
1-291-70-00	VSE 2-23/3-25 PEEK	VN 2-23-HE VS 2-23-HE5 VS 2-23-HE8 VN 3-25-HE VS 3-25-HE5 VS 3-25-HE8	Polyetheretherketone	3
1-291-80-00	VSE 2/3-30 PEEK	VN 2-30-HE VS 2-30-HE8 VN 3-30-HE VS 3-30-HE8	Polyetheretherketone	5

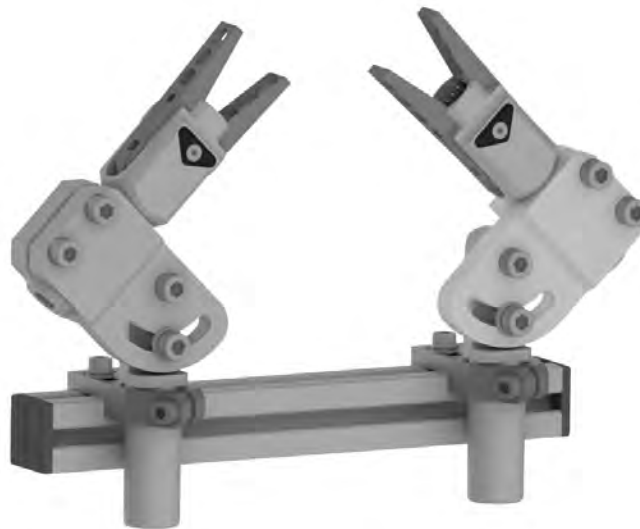
App. example WKA



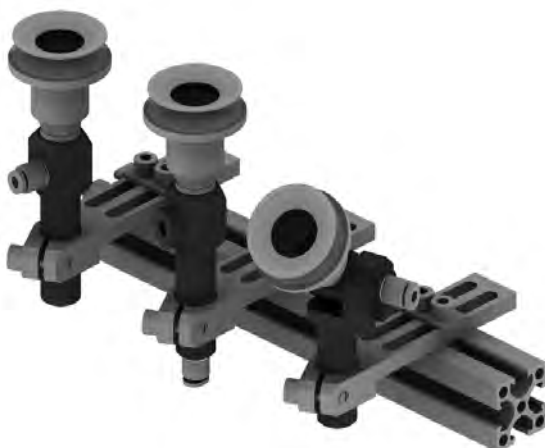
App. example GLA / GLA-V



Application example GLA-V / GLA-VM



App. ex. GSE / GSE-U / GGE



App. ex. GAF / GAF U / GGS



000
Quick Change
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Clamps

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Profile
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190
Profile
Accessories

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Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000
Quick Change
Systems

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Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

300 | Gripper Arms

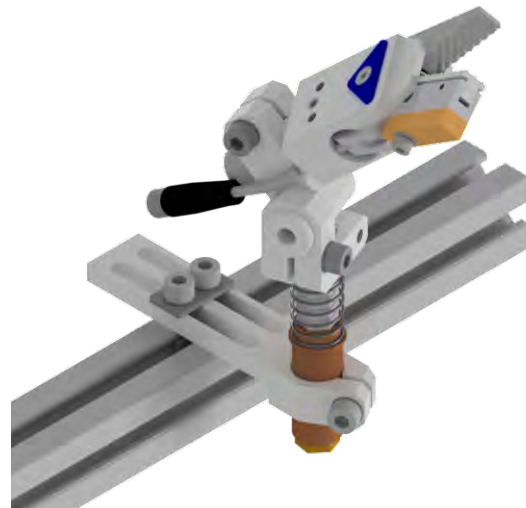
Application example GGK



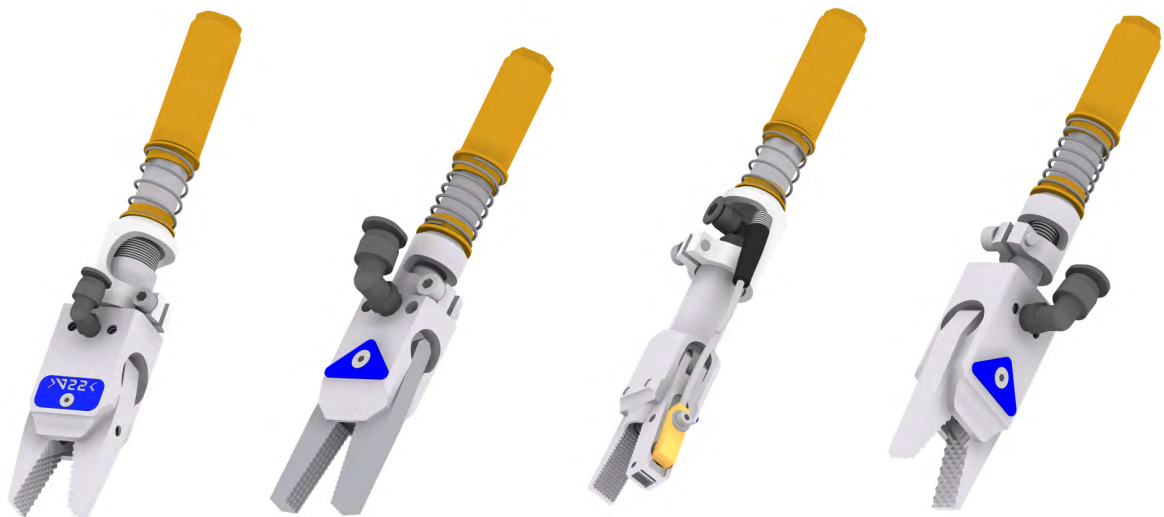
Application example GGG 90



Application example GGS W



Application examples GGG



Application example Blue Scale

The combination of several Blue Scale elements (here WST BS and GLA-V BS) enables the most exact settings on the profile and e.g. is particularly suitable when using sensors.



000
Quick Change Systems

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Profiles
Channel Nuts

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Clamps

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Profile
Connectors

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Profile
Accessories

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Connectors

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Vacuum Cups

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990
Tubular System
Micro System

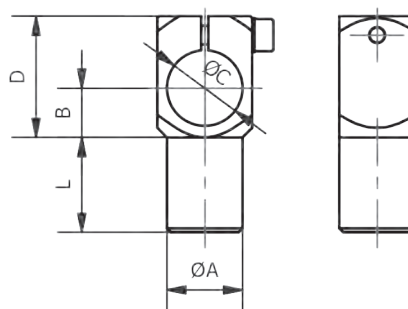
990
PA-Forming
Others

SKS / Short Angle Arm

Remarks:

Application: e.g. for easy mounting of cylindrical components of short distance

- easy to handle
- various mounting options
- secure connection by cylinder screw



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	L [mm]	Material	Weight [g]
1-320-39-00	SKS 10-10	10	7	10	19	15	Aluminium	8
1-320-42-00	SKS 14-14	14	10	14	26	20	Aluminium	19
1-320-45-00	SKS 20-20	20	13	20	32	25	Aluminium	36
1-320-46-00	SKS 20-30	20	18	30	44	34	Aluminium	72
1-320-48-00	SKS 30-30	30	19	30	44	40	Aluminium	130

000
Quick Change
Systems

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Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

300 | Gripper Arms

WKA / Angle Arm

WKA BS / Angle Arm, Blue Scale

WKA



WKA BS



Remarks:

Type WKA

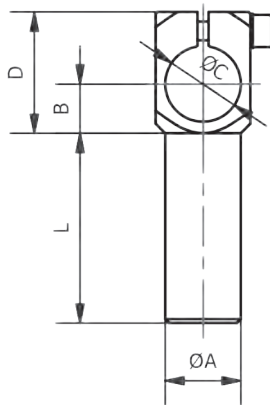
Application: e.g. for easy mounting of cylindrical components

- easy to handle
- various mounting options
- secure connection by cylinder screw
- WKA 20-14-100 including integrated set screw with tip for additional fixing

Type WKA BS „Blue Scale“

Application: for exact mounting and replicable positioning of angles etc.

- see above
- blue anodized
- with length- and angle-scales for exact positioning
- more Blue Scale parts are available for WST, GLA, GLA V and ASZ KS



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	L [mm]	Material	Weight [g]
1-320-03-00	WKA 10-10-30	10	7	10	19	30	Aluminium	10
1-320-06-00	WKA 10-10-60	10	7	10	19	60	Aluminium	13
1-320-09-00	WKA 10-10-90	10	7	10	19	90	Aluminium	16
1-320-12-00	WKA 14-14-40	14	10	14	26	40	Aluminium	22
1-320-15-00	WKA 14-14-80	14	10	14	26	80	Aluminium	31
1-320-18-00	WKA 14-14-120	14	10	14	26	120	Aluminium	41
1-320-19-00	WKA 20-14-100	20	13	14	32	100	Aluminium	68
1-320-21-00	WKA 20-20-50	20	13	20	32	50	Aluminium	46
1-320-22-00	WKA 20-20-50 BS	20	13	20	32	50	Aluminium	46
1-320-24-00	WKA 20-20-100	20	13	20	32	100	Aluminium	61
1-320-25-00	WKA 20-20-100 BS	20	13	20	32	100	Aluminium	61
1-320-27-00	WKA 20-20-150	20	13	20	32	150	Aluminium	80
1-320-28-00	WKA 20-20-150 BS	20	13	20	32	150	Aluminium	80
1-320-30-00	WKA 30-30-80	30	19	30	44	80	Aluminium	176
1-320-33-00	WKA 30-30-140	30	19	30	44	140	Aluminium	276
1-320-36-00	WKA 30-30-200	30	19	30	44	200	Aluminium	348

GLA / Elbow Gripper Arm

GLA BS / Elbow Gripper Arm, Blue Scale

Remarks:

Type GLA

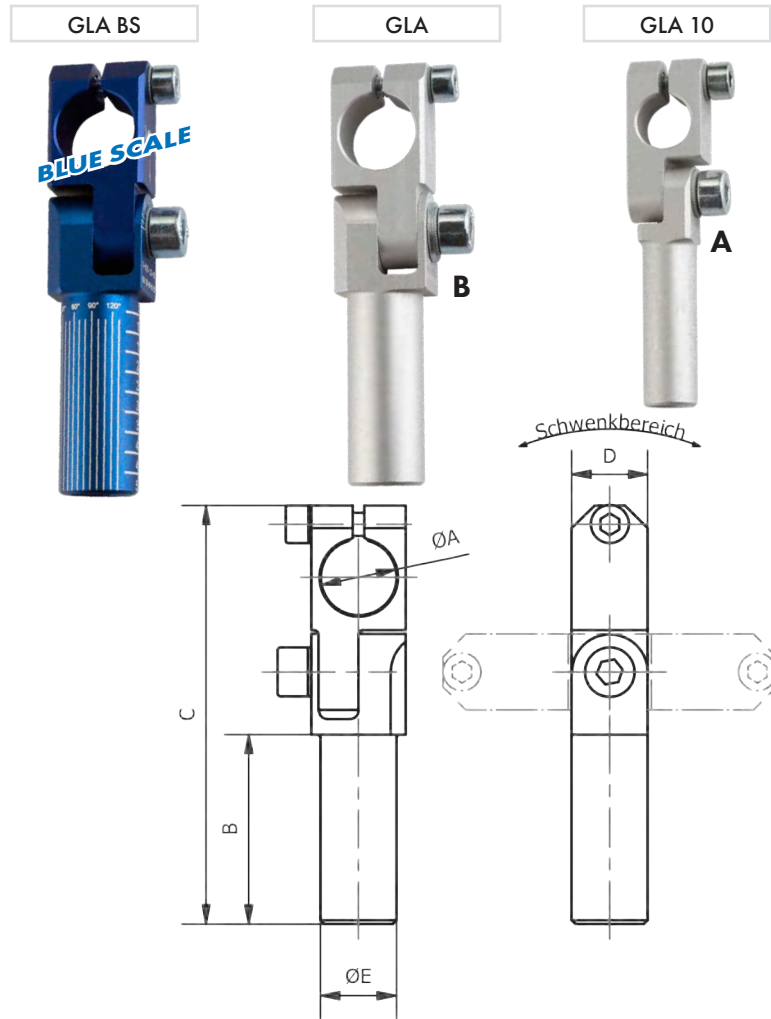
Application: e.g. for clamping grippers or vacuum cups at an angle

- swivel locking mechanism improved from on Ø 14
- swivel locking mechanism is stronger and holds the clamp head keeping in place
- gripper arm made of anodized aluminium
- high degree of flexibility +/- 90°
- » image A shows size 10 series
- » image B from on Ø 14 series

Type GLA BS „Blue Scale“

Application: for exact mounting and replicable positioning of angles etc.

- » see above
- » blue anodized
- » with length- and angle-scales for exact positioning
- » more Blue Scale parts are available for WST, WKA, GLA V and ASZ KS



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Swivel area [°]	Material	Weight [g]
1-325-03-00	GLA10-10-30	10	30	64	10	10	+/-90	Al	17
1-325-06-00	GLA10-10-60	10	60	94	10	10	+/-90	Al	20
1-325-09-00	GLA10-10-90	10	90	124	10	10	+/-90	Al	23
1-325-12-00	GLA14-14-40	14	40	86	14	14	+/-90	Al	39
1-325-15-00	GLA14-14-80	14	80	126	14	14	+/-90	Al	48
1-325-18-00	GLA14-14-120	14	120	166	14	14	+/-90	Al	58
1-325-21-00	GLA20-20-50	20	50	110,5	20	20	+/-90	Al	92
1-325-22-00	GLA 20-20-50 BS	20	50	110,5	20	20	+/-90	Al	92
1-325-24-00	GLA20-20-100	20	100	160,5	20	20	+/-90	Al	107
1-325-25-00	GLA 20-20-100 BS	20	100	160,5	20	20	+/-90	Al	107
1-325-27-00	GLA20-20-150	20	150	210,5	20	20	+/-90	Al	126
1-325-28-00	GLA 20-20-150 BS	20	150	210,5	20	20	+/-90	Al	126
1-325-30-00	GLA20-30-50	30	50	125,5	28	20	+/-90	Al	149
1-325-33-00	GLA20-30-100	30	100	175,5	28	20	+/-90	Al	163
1-325-36-00	GLA20-30-150	30	150	225,5	28	20	+/-90	Al	183
1-325-39-00	GLA30-30-80	30	80	161,5	30	30	+/-90	Al	295
1-325-42-00	GLA30-30-140	30	140	221,5	30	30	+/-90	Al	338
1-325-45-00	GLA30-30-200	30	200	281,5	30	30	+/-90	Al	432

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Quick Change Systems

050
Profiles
Channel Nuts

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Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

300 | Gripper Arms

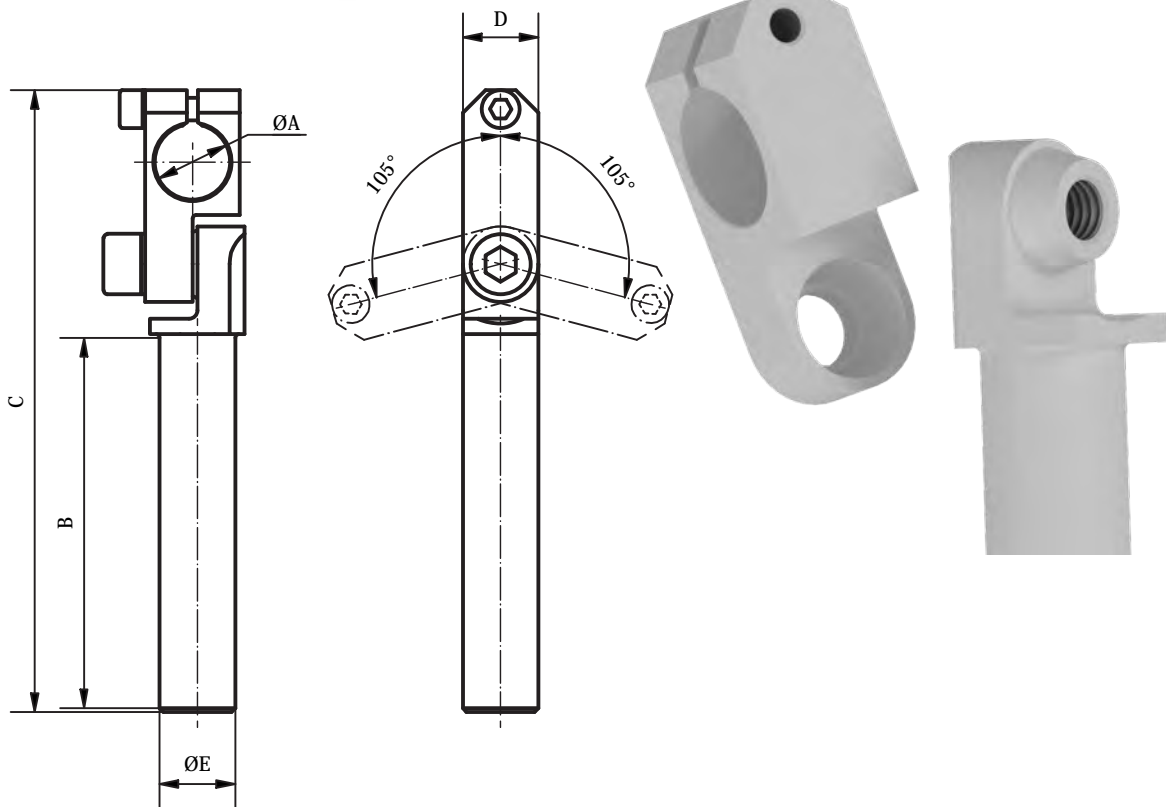
GLA K / Elbow Gripper Arm, conical clamping



Remarks:

Application: e.g. for clamping grippers or vacuum cups at an angle

- improved clamping force through conical clamping
- Anodized aluminum gripper arm
- high flexibility due to the swivel range of +/- 105°
- Various clamping diameters and lengths for the widest possible range of applications



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Swivel area [°]	Material	Weight [g]
1-324-21-00	GLA K 20-20-50	20	50	114.5	20	20	+/-105	Al	120
1-324-24-00	GLA K 20-20-100	20	100	164.5	20	20	+/-105	Al	135
1-324-27-00	GLA K 20-20-150	20	150	214.5	20	20	+/-105	Al	154
1-324-30-00	GLA K 20-30-50	20	50	129.5	28	20	+/-105	Al	177
1-324-33-00	GLA K 20-30-100	20	100	179.5	28	20	+/-105	Al	191
1-324-36-00	GLA K 20-30-150	20	150	229.5	28	20	+/-105	Al	211
1-324-39-00	GLA K 30-30-80	30	80	165.5	30	30	+/-105	Al	323
1-324-42-00	GLA K 30-30-140	30	140	225.5	30	30	+/-105	Al	366
1-324-45-00	GLA K 30-30-200	30	200	285.5	30	30	+/-105	Al	460

GLA V / Elbow Gripper Arm, heavy duty

GLA V BS / Elbow Gripper Arm, heavy duty, Blue Scale

Remarks:

Type GLA V

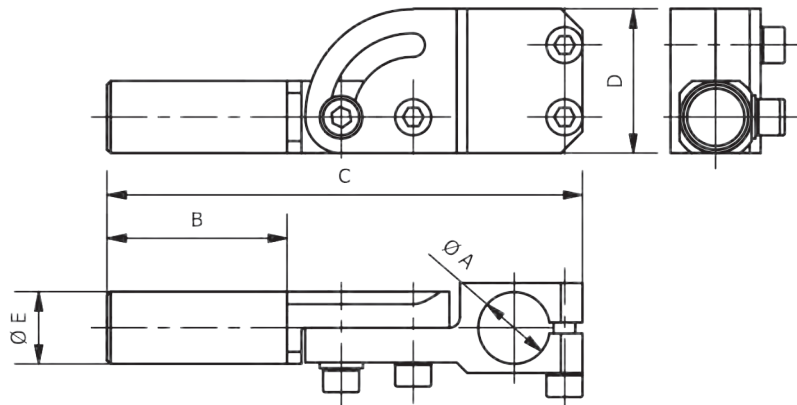
Application: e.g. for clamping grippers or vacuum cups at an angle

- reinforced version with extra high clamping force
- angle adjustment and clamping by 2 screws
- high flexibility: swivel range +/- 90°
- for high load

Type GLA V BS „Blue Scale“

Application: for exact mounting and replicable positioning of angles etc.

- » see above
- » blue anodized
- » with length- and angle-scales for exact positioning
- » more Blue Scale parts are available for WST, WKA, GLA and ASZ KS



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Swivel area [°]	Material	Weight [g]
1-325-53-00	GLA V 10-10-30	10	30	74	20	10	0-90	Aluminium	27
1-325-56-00	GLA V 10-10-60	10	60	104	20	10	0-90	Aluminium	30
1-325-59-00	GLA V 10-10-90	10	90	134	20	10	0-90	Aluminium	33
1-325-62-00	GLA V 14-14-40	14	40	99	28	14	0-90	Aluminium	63
1-325-65-00	GLA V 14-14-80	14	80	139	28	14	0-90	Aluminium	72
1-325-68-00	GLA V 14-14-120	14	120	179	28	14	0-90	Aluminium	82
1-325-71-00	GLA V 20-20-50	20	50	129	40	20	0-90	Aluminium	154
1-325-72-00	GLA V 20-20-50 BS	20	50	129	40	20	0-90	Aluminium	154
1-325-74-00	GLA V 20-20-100	20	100	179	40	20	0-90	Aluminium	169
1-325-75-00	GLA V 20-20-100 BS	20	100	179	40	20	0-90	Aluminium	169
1-325-77-00	GLA V 20-20-150	20	150	229	40	20	0-90	Aluminium	190
1-325-78-00	GLA V 20-20-150 BS	20	150	229	40	20	0-90	Aluminium	190
1-325-89-00	GLA V 30-30-80	30	80	190	60	30	0-90	Aluminium	493
1-325-92-00	GLA V 30-30-140	30	140	250	60	30	0-90	Aluminium	568
1-325-95-00	GLA V 30-30-200	30	200	310	60	30	0-90	Aluminium	627

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Quick Change Systems

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Profiles
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200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

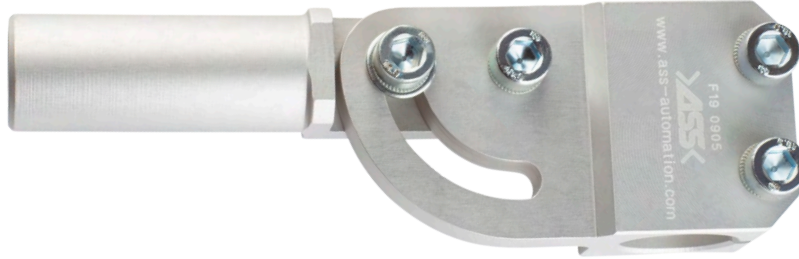
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

300 | Gripper Arms

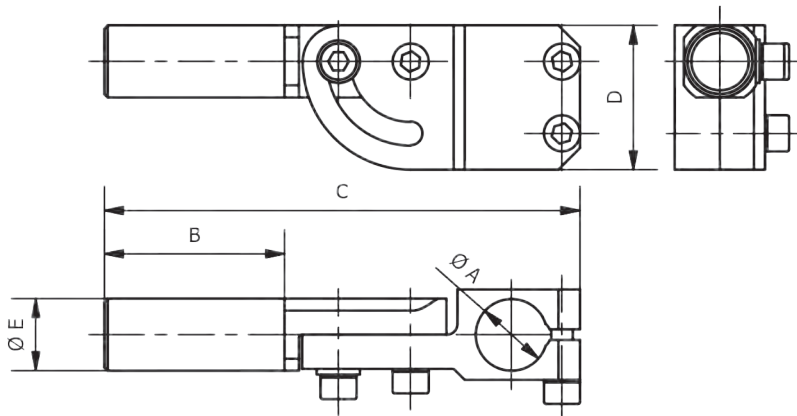
GLA VM/ Elbow Gripper Arm, heavy duty, mirrored



Remarks:

Application: In combination with the GLA V it is easily possible to build mirror-imaged robot hands.

- increases the ease of installation
- mirrored design of the GLA V
- allows better setting options in a robot hand
- clamping diameter as standard Elbow Gripper Arm
- angle adjustment and clamping by 2 screws
- for high load



Application example shows the combination of GLA V and the mirrored version, the GLA VM.

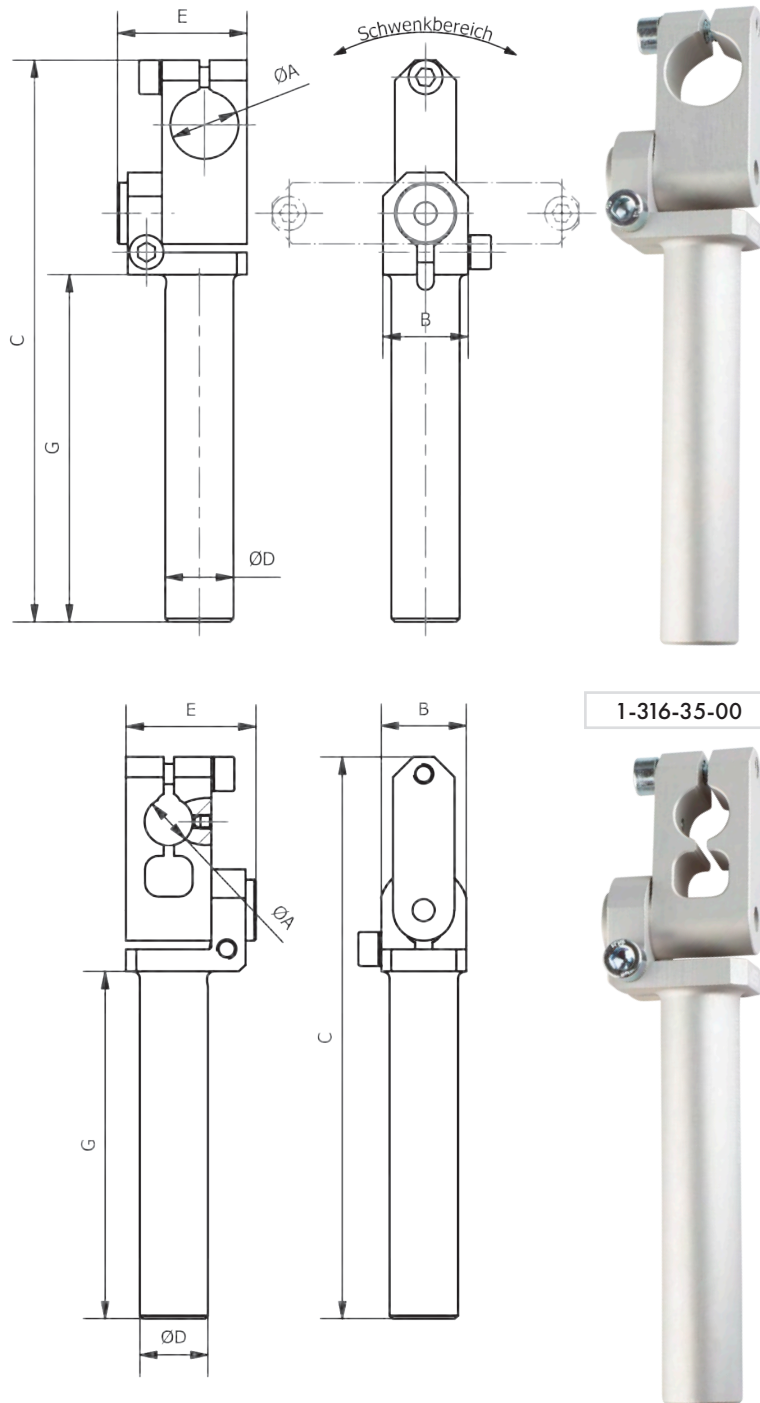
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Swivel area [°]	Material	Weight [g]
1-327-53-00	GLA VM 10-10-30	10	30	74	20	10	0-90	Aluminium	27
1-327-56-00	GLA VM 10-10-60	10	60	104	20	10	0-90	Aluminium	30
1-327-59-00	GLA VM 10-10-90	10	90	134	20	10	0-90	Aluminium	33
1-327-62-00	GLA VM 14-14-40	14	40	99	28	14	0-90	Aluminium	63
1-327-65-00	GLA VM 14-14-80	14	80	139	28	14	0-90	Aluminium	72
1-327-68-00	GLA VM 14-14-120	14	120	179	28	14	0-90	Aluminium	82
1-327-71-00	GLA VM 20-20-50	20	50	129	40	20	0-90	Aluminium	154
1-327-74-00	GLA VM 20-20-100	20	100	179	40	20	0-90	Aluminium	169
1-327-77-00	GLA VM 20-20-150	20	150	229	40	20	0-90	Aluminium	190
1-327-89-00	GLA VM 30-30-80	30	80	190	60	30	0-90	Aluminium	493
1-327-92-00	GLA VM 30-30-140	30	140	250	60	30	0-90	Aluminium	568
1-327-95-00	GLA VM 30-30-200	30	200	310	60	30	0-90	Aluminium	627

GGW / Gripper Arm, +/-90 degree

Remarks:

Application: e.g. for clamping grippers or vacuum cups at a special angle

- head can be swiveled by +/- 90°
- swivelable head can be tightened by a separated screw
- GGW 20-14-100 including integrated set screw with tip for additional fixing



Part No.	Description	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	E [mm]	G [mm]	Material	Weight [g]
1-316-03-00	GGW 10-10-30	10	15	67	10	23	30	Aluminium	20
1-316-06-00	GGW 10-10-60	10	15	97	10	23	60	Aluminium	24
1-316-09-00	GGW 10-10-90	10	15	127	10	23	90	Aluminium	27
1-316-21-00	GGW 14-14-40	14	20	88	14	30	40	Aluminium	46
1-316-24-00	GGW 14-14-80	14	20	130	14	30	80	Aluminium	55
1-316-27-00	GGW 14-14-120	14	20	168	14	30	120	Aluminium	63
1-316-35-00	GGW 20-14-100	14	25	165	20	38	100	Aluminium	111
1-316-39-00	GGW 20-20-50	20	25	114	20	38	50	Aluminium	96
1-316-42-00	GGW 20-20-100	20	25	165	20	38	100	Aluminium	112
1-316-45-00	GGW 20-20-150	20	25	214	20	38	150	Aluminium	127

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Quick Change Systems

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Connectors

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Profile
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Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

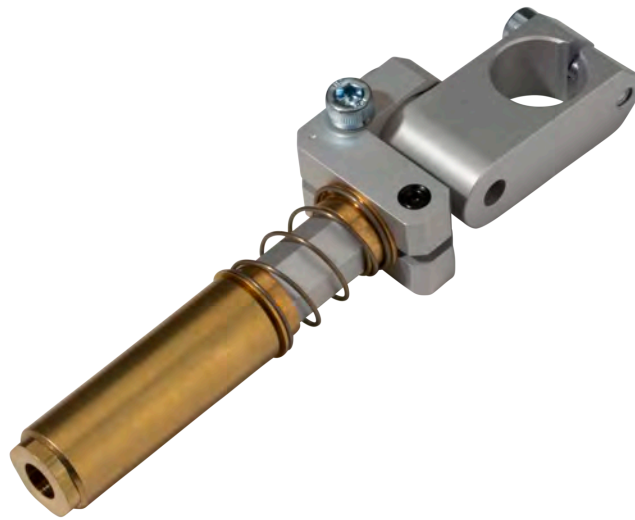
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

300 | Gripper Arms

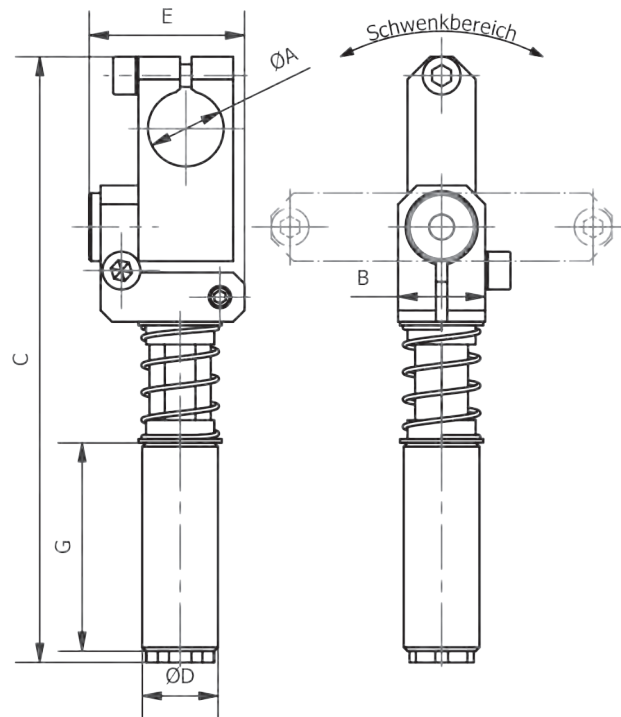
GGW / Gripper Arm, spring comp., lock. against rotation, +/-90°



Remarks:

Application: e.g. for clamping a grippers at a special angle

- head can be swiveled by +/- 90°
- swivelable head can be tightened by a separated screw
- spring loaded to compensate ejector travel
- locked against rotation



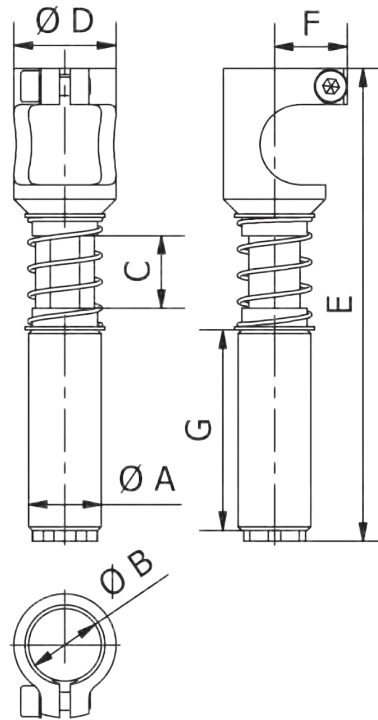
Part No.	Description	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	E [mm]	Spring travel F [mm]	G [mm]	Material	Weight [g]
1-362-03-00	GGW 10-10-10	10	14	87	10	24	10	25	Al/CuZn	44
1-362-09-00	GGW 14-14-15	14	18	114	14	33	15	32	Al/CuZn	79
1-362-15-00	GGW 14-14-40	14	18	139	14	33	40	32	Al/CuZn	83
1-362-21-00	GGW 20-20-20	20	23	160	20	41	20	55	Al/CuZn	193
1-362-22-00	GGW 20-10-20	10	23	160	20	41	20	55	Al/CuZn	204
1-362-27-00	GGW 20-20-50	20	23	190	20	41	50	55	Al/CuZn	200
1-362-28-00	GGW 20-10-50	10	23	190	20	41	50	55	Al/CuZn	234

GGG / Gripper Arm, spring comp., locked against rot., for GRZ

Remarks:

Application: e.g. for mounting grippers GRZ in x-axis (ejection direction)

- new: axial hose passage possible
- GGG 14 compatible to:
 - GRZ 10-12 series
 - GRZ 14 with adapter AD 10
 - GRZ 14
- GGG 20 compatible to:
 - GRZ 20-16 series
 - GRZ 20-20



1-363-09-00
1-363-21-00
1-363-27-00

1-363-12-00
1-363-24-00
1-363-30-00



Part No.	Description	A [mm]	B [mm]	C Spring travel [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-363-09-00	GGG 14-10-15	14	10	15	16	82,5	12,5	32	43
1-363-12-00	GGG M14-10-15	M14x1	10	15	16	82,5	12,5	32	54
1-363-21-00	GGG 20-20-20	20	20	20	28	130	20	55	134
1-363-24-00	GGG M20-20-20	M20x1,5	20	20	28	130	20	55	156
New 1-363-27-00	GGG 20-20-50	20	20	50	28	160	20	55	142
New 1-363-30-00	GGG M20-20-50	M20x1,5	20	50	28	160	20	55	186

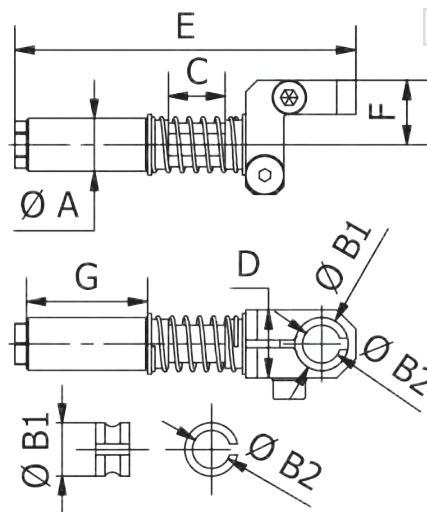
GGG 90 / Gripper Arm, spring comp., lock against rot., for GRZ, 90°

Remarks:

Application: e.g. for mounting grippers GRZ in an angle of 90°

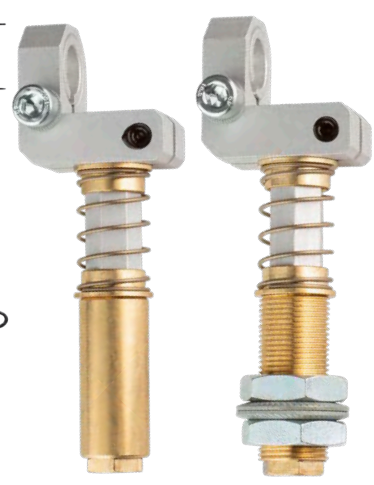
- GGG 90 14 compatible to:
 - GRZ 10-12 series
 - GRZ 14 with adapter AD 10
 - GRZ 14

Attention: GGK is needed for application with high moments of force!



1-364-09-00

1-364-12-00



Part No.	Description	A [mm]	B1 [mm]	B2 [mm]	C Spring travel [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-364-09-00	GGG 90 14-10-15	14	14	10	15	18	90	17	32	56
1-364-12-00	GGG 90 M14-10-15	M14x1	14	10	15	18	90	17	32	67

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Clamps

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Profile
Connectors

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Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

300 | Gripper Arms

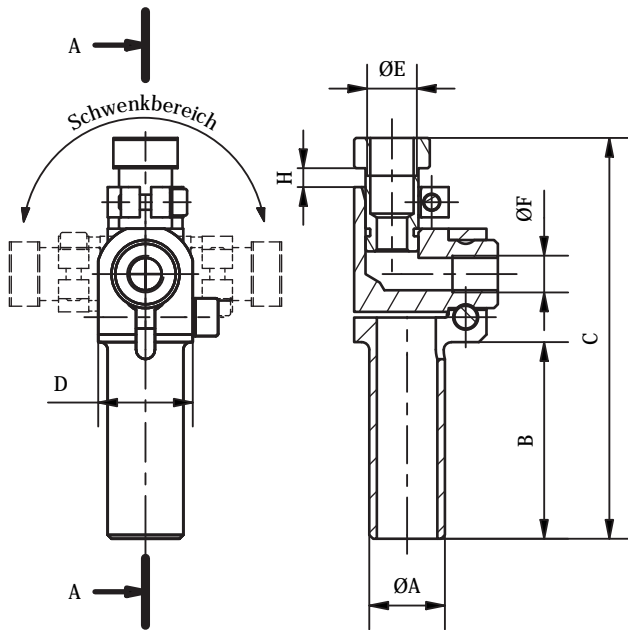
GGO / Gripper Arm for Oval Vacuum Cups



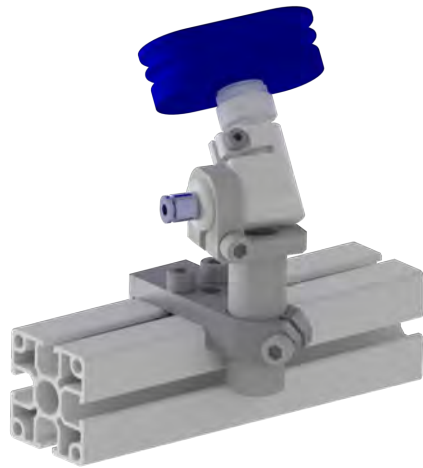
Remarks:

Application: e.g. for mounting vacuum cups in an angled position

- head can be swiveled by +/- 90°
- swivelable head can be tightened by a separated screw
- fine adjustment through the height-adjustable center piece
- the angle of the oval suction cup can be adjusted using a clamping screw



Application example



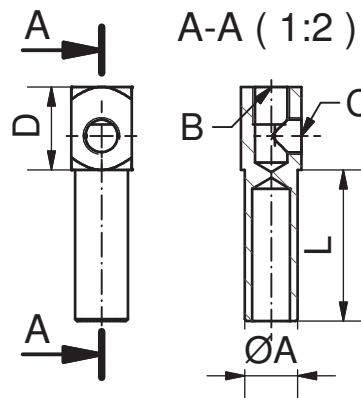
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [°]	F [°]	H [mm]	Weight [g]
1-314-39-00	GGO 20-1/4-1/8-50	20	50	101-106	25	G1/4	G1/8	0-5	80
1-314-42-00	GGO 20-1/4-1/8-100	20	100	151-156	25	G1/4	G1/8	0-5	95
1-314-45-00	GGO 20-1/4-1/8-150	20	150	201-206	25	G1/4	G1/8	0-5	111

GSE / Gripper Arm for Suction Cups with air connection

Remarks:

Application: for mounting vacuum cups to the robot hand

- vacuum connection sidewise
- position of the vacuum cup can be infinitely adjusted in depth
- also available with external thread on request



Part No.	Description	A [mm]	B [mm] ["]	C [mm] ["]	D [mm]	L [mm]	Weight [g]
1-310-03-00	GSE 10-M5-M5-30	10	M5	M5	16	30	7
1-310-06-00	GSE 10-M5-M5-60	10	M5	M5	16	60	10
1-310-09-00	GSE 10-M5-M5-90	10	M5	M5	16	90	14
1-310-21-00	GSE 10-1/8-M5-30	10	G1/8	M5	16	30	9
1-310-24-00	GSE 10-1/8-M5-60	10	G1/8	M5	16	60	12
1-310-27-00	GSE 10-1/8-M5-90	10	G1/8	M5	16	90	16
1-310-40-00	GSE 14-1/8-1/8-40	14	G1/8	G1/8	22	40	20
1-310-43-00	GSE 14-1/8-1/8-80	14	G1/8	G1/8	22	80	28
1-310-46-00	GSE 14-1/8-1/8-120	14	G1/8	G1/8	22	120	38
1-310-60-00	GSE 20-1/4-1/8-50	20	G1/4	G1/8	23	50	36
1-310-63-00	GSE 20-1/4-1/8-100	20	G1/4	G1/8	23	100	51
1-310-66-00	GSE 20-1/4-1/8-150	20	G1/4	G1/8	23	150	69
1-310-78-00	GSE 30-1/4-1/4-80	30	G1/4	G1/4	30	80	122
1-310-81-00	GSE 30-1/4-1/4-140	30	G1/4	G1/4	30	140	169
1-310-84-00	GSE 30-1/4-1/4-200	30	G1/4	G1/4	30	200	254

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Quick Change Systems

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100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

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Special
Vacuum Cups

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Manifold

290
Adapters for
Vacuum Cups

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Gripper Arms

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Gripper
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

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Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

300 | Gripper Arms

GSE U / Gripper Arm for Vacuum Cups, with air duct



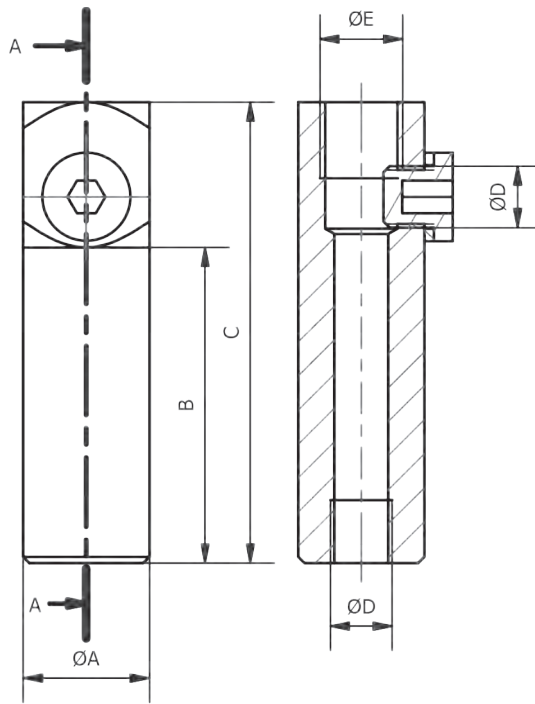
Remarks:

Application: for mounting vacuum cups to the robot hand

- vacuum connection sideways or air duct
- also available with external thread on request

Scope of delivery:

- sealing screw included



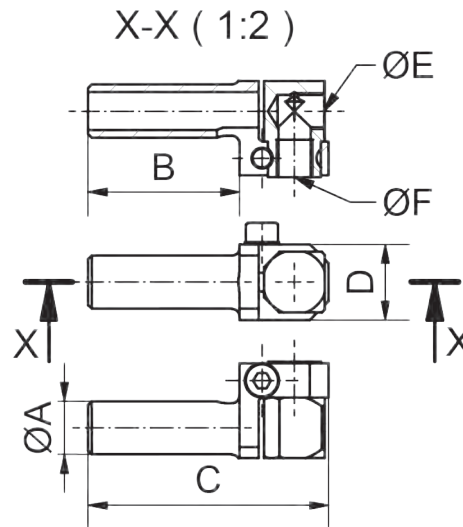
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-311-00-00	GSE U 10-M5-M5-30	10	30	46	M5	M5	Aluminum	11
1-311-01-00	GSE U 10-M5-M5-60	10	60	76	M5	M5	Aluminum	16
1-311-02-00	GSE U 10-M5-M5-90	10	90	106	M5	M5	Aluminum	21
1-311-03-00	GSE U 10-1/8-M5-30	10	30	45	M5	G1/8	Aluminum	13
1-311-04-00	GSE U 10-1/8-M5-60	10	60	75	M5	G1/8	Aluminum	18
1-311-05-00	GSE U 10-1/8-M5-90	10	90	105	M5	G1/8	Aluminum	23
1-311-06-00	GSE U 14-1/8-1/8-40	14	40	62	G1/8	G1/8	Aluminum	27
1-311-07-00	GSE U 14-1/8-1/8-80	14	80	102	G1/8	G1/8	Aluminum	37
1-311-08-00	GSE U 14-1/8-1/8-120	14	120	142	G1/8	G1/8	Aluminum	48
1-311-09-00	GSE U 20-1/4-1/8-50	20	50	73	G1/8	G1/4	Aluminum	59
1-311-10-00	GSE U 20-1/4-1/8-100	20	100	123	G1/8	G1/4	Aluminum	94
1-311-11-00	GSE U 20-1/4-1/8-150	20	150	173	G1/8	G1/4	Aluminum	130

GGE / Swivel Head Gripper Arm for Vacuum Cups

Remarks:

Application: for mounting vacuum cups at an angle

- swivel head can be clamped separately by cylinder screw
- air connection (F) on the side



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm] ["]	F [mm] ["]	Material	Weight [g]
1-315-03-00	GGE 10-M5-M5-30	10	30	48	15	M5	M5	Al	14
1-315-06-00	GGE 10-M5-M5-60	10	60	78	15	M5	M5	Al	17
1-315-09-00	GGE 10-M5-M5-90	10	90	108	15	M5	M5	Al	21
1-315-21-00	GGE 14-1/8-1/8-40	14	40	65	20	G1/8	G1/8	Al	30
1-315-24-00	GGE 14-1/8-1/8-80	14	80	105	20	G1/8	G1/8	Al	39
1-315-27-00	GGE 14-1/8-1/8-120	14	120	145	20	G1/8	G1/8	Al	47
1-315-39-00	GGE 20-1/4-1/4-50	20	50	82	25	G1/4	G1/4	Al	61
1-315-42-00	GGE 20-1/4-1/4-100	20	100	132	25	G1/4	G1/4	Al	76
1-315-45-00	GGE 20-1/4-1/4-150	20	150	182	25	G1/4	G1/4	Al	92

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

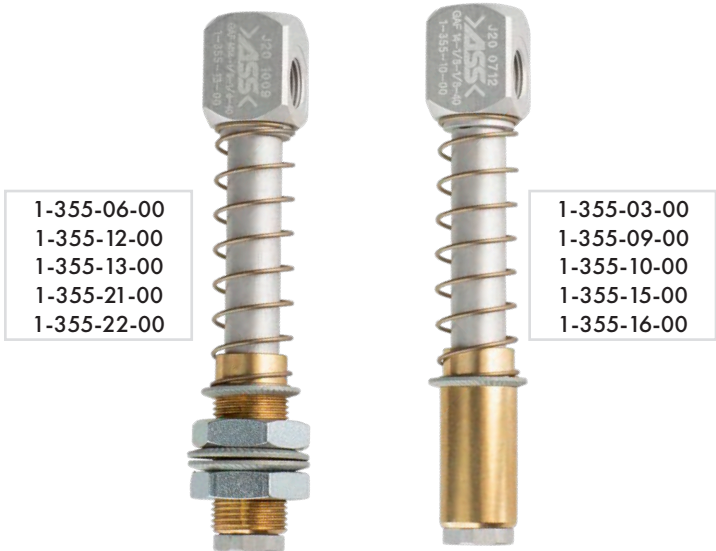
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

300 | Gripper Arms

GAF / Spring Compensated Gripper Arm for Vacuum Cups



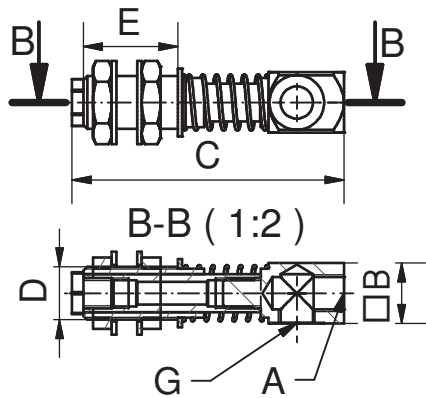
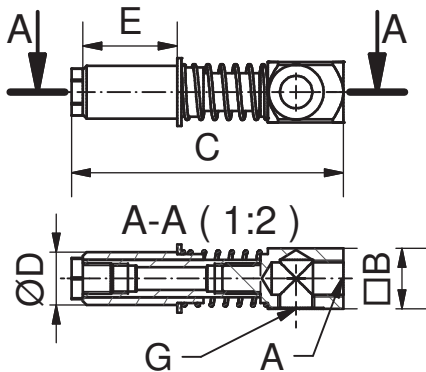
1-355-06-00
1-355-12-00
1-355-13-00
1-355-21-00
1-355-22-00

1-355-03-00
1-355-09-00
1-355-10-00
1-355-15-00
1-355-16-00

Remarks:

Application: for mounting vacuum cups in the robot hand

- vacuum connection can only be mounted sidewise
- for rotationally symmetrical vacuum cups
- vacuum cup can rotate relative to the clamping piece
- for best positioning of vacuum cups to the part to be removed
- spring travel to compensate for the ejector stroke
- gripper arm is guided with rotation enabled
- high quality stainless steel spring



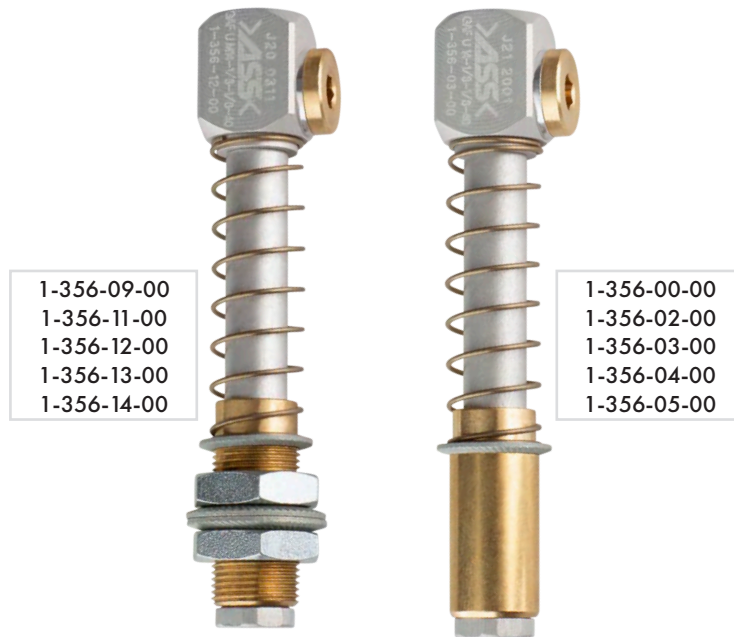
Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm] ["]	Spring travel [mm]	Material	Weight [g]
1-355-03-00	GAF 10-M5-M5-10	M5	10	58	10	25	M5	10	St/CuZn	18
1-355-06-00	GAF M10-M5-M5-10	M5	10	58	M10x1	25	M5	10	St/CuZn	23
1-355-09-00	GAF 14-1/8-1/8-15	G1/8	16	72	14	25	G1/8	15	Al/CuZn	38
1-355-10-00	GAF 14-1/8-1/8-40	G1/8	16	97	14	25	G1/8	40	Al/CuZn	42
1-355-12-00	GAF M14-1/8-1/8-15	G1/8	16	72	M14x1	25	G1/8	15	Al/CuZn	51
1-355-13-00	GAF M14-1/8-1/8-40	G1/8	16	97	M14x1	25	G1/8	40	Al/CuZn	54
1-355-15-00	GAF 20-1/4-1/8-20	G1/4	20	109	20	50	G1/8	20	Al/CuZn	111
1-355-16-00	GAF 20-1/4-1/8-50	G1/4	20	139	20	50	G1/8	50	Al/CuZn	115
1-355-21-00	GAF M20-1/4-1/8-20	G1/4	20	109	M20x1.5	50	G1/8	20	Al/CuZn	133
1-355-22-00	GAF M20-1/4-1/8-50	G1/4	20	139	M20x1.5	50	G1/8	50	Al/CuZn	140

GAF U / Spring Comp. Gripper Arm for Vacuum Cups, with air duct

Remarks:

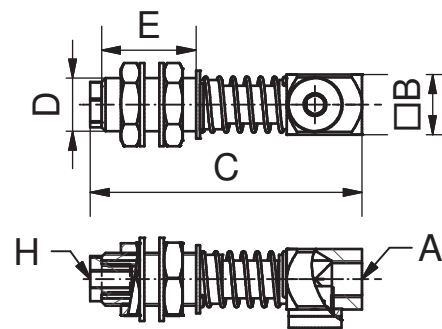
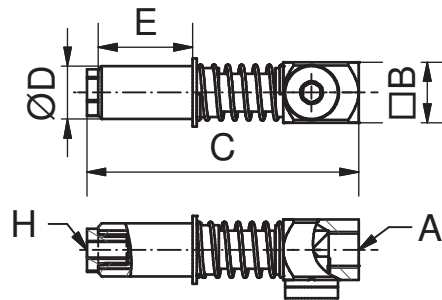
Application: for mounting vacuum cups in the gripper hand

- vacuum connection can be mounted sidewise or at the end of the gripper arm
- for rotationally symmetrical vacuum cups
- vacuum cup can rotate relative to the clamping piece
- for best positioning of vacuum cups to the part to be removed
- spring travel to compensate for the ejector stroke
- gripper arm is guided with rotation enabled
- high quality stainless steel spring



1-356-09-00
1-356-11-00
1-356-12-00
1-356-13-00
1-356-14-00

1-356-00-00
1-356-02-00
1-356-03-00
1-356-04-00
1-356-05-00



Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm]	E [mm]	H [mm]	Spring travel [mm]	Material	Weight [g]
1-356-00-00	GAF U 10-M5-M5-10	M5	10	63	10	25	M5	10	St/CuZn	21
1-356-09-00	GAF U M10-M5-M5-10	M5	10	63	M10x1	25	M5	10	St/CuZn	25
1-356-02-00	GAF U 14-1/8-1/8-15	G1/8	16	72	14	25	M5	15	Al/CuZn	44
1-356-03-00	GAF U 14-1/8-1/8-40	G1/8	16	97	14	25	M5	40	Al/CuZn	48
1-356-11-00	GAF U M 4-1/8-1/8-15	G1/8	16	72	M14x1	25	M5	15	Al/CuZn	57
1-356-12-00	GAF U M14-1/8-1/8-40	G1/8	16	97	M14x1	25	M5	40	Al/CuZn	62
1-356-04-00	GAF U 20-1/4-1/8-20	G1/4	20	109	20	50	G1/8	20	Al/CuZn	115
1-356-05-00	GAF U 20-1/4-1/8-50	G1/4	20	139	20	50	G1/8	50	Al/CuZn	123
1-356-13-00	GAF U M20-1/4-1/8-20	G1/4	20	109	M20x1,5	50	G1/8	20	Al/CuZn	138
1-356-14-00	GAF U M20-1/4-1/8-50	G1/4	20	139	M20x1,5	50	G1/8	50	Al/CuZn	145

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

300 | Gripper Arms

GFV U /Gripper Arm, spring comp., lock. ag. rotation, w. air duct

Image 1

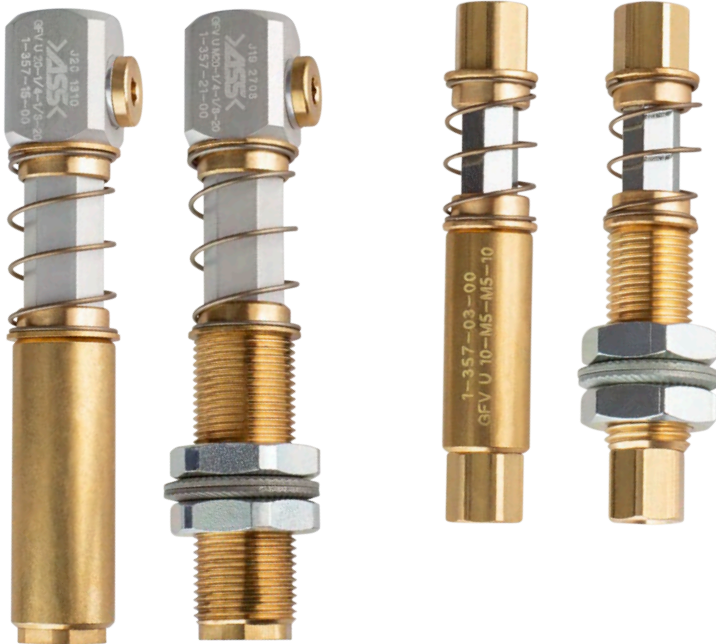
Image 2

1-357-09-00
1-357-15-00

1-357-12-00
1-357-21-00

1-357-03-00

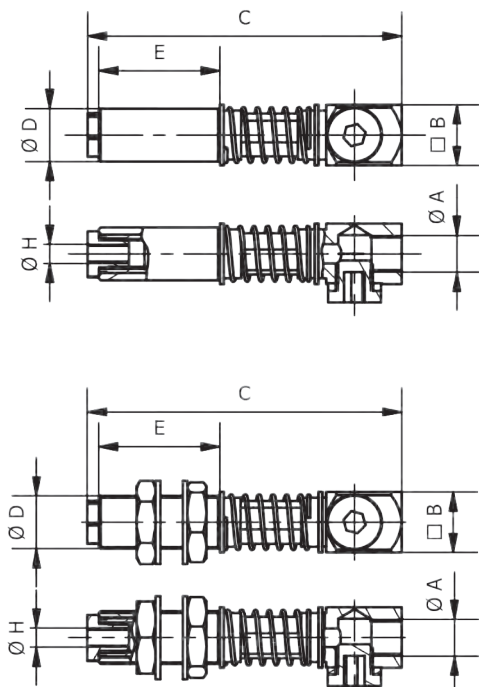
1-357-06-00



Remarks:

Application: for connecting vacuum cups in the robot hand

- suitable for oval vacuum cups
- locked against rotation by hexagonal guide
- high quality stainless steel spring
- vacuum connection can be mounted either on the side or at the end of the gripper arm
- » Exception:
GFV U 10 (both versions) only air feedthrough possible (Image 2)



Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm]	E [mm]	H [mm] ["]	Spring travel [mm]	Material	Weight [g]
1-357-03-00	GFV U 10-M5-M5-10	M5	10	59	10	25	M5	10	Al/St/CuZn	23
1-357-06-00	GFV U M10-M5-M5-10	M5	10	59	M10x1	25	M5	10	Al/St/CuZn	28
1-357-09-00	GFV U 14-1-8-1-8-15	G1/8	16	83	14	32	M5	15	Al/CuZn	50
1-357-12-00	GFV U M14-1-8-1-8-15	G1/8	16	83	M14x1	32	M5	15	Al/CuZn	62
1-357-15-00	GFV U 20-1-4-1-8-20	G1/4	20	121	20	55	G1/8	20	Al/CuZn	127
1-357-21-00	GFV U M20-1-4-1-8-20	G1/4	20	121	M20x1,5	55	G1/8	20	Al/CuZn	147

GIF U T / Gripper Arm, internal spring, telescope



Remarks:

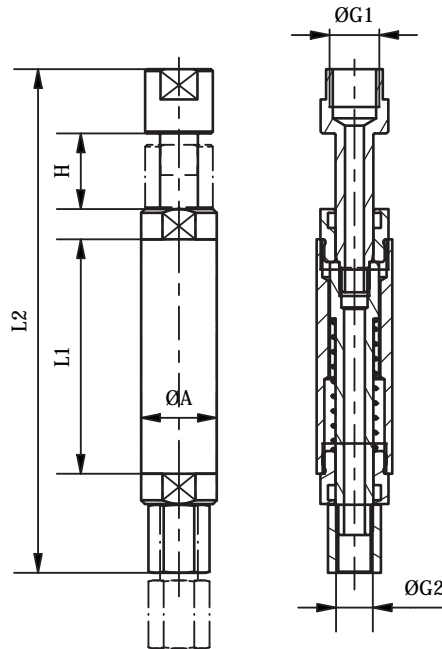
Application: e.g. for mounting vacuum cups in the robot hand

- Version U: dive trough
- Version U T: telescopic
- with internal spring
- the telescopic movement does not move the connections and hoses
- Body and lifting tube made of high-quality aluminum
- with air duct
- non-rotating
- Improved gliding properties thanks to a special anti-friction coating on the lifting tube

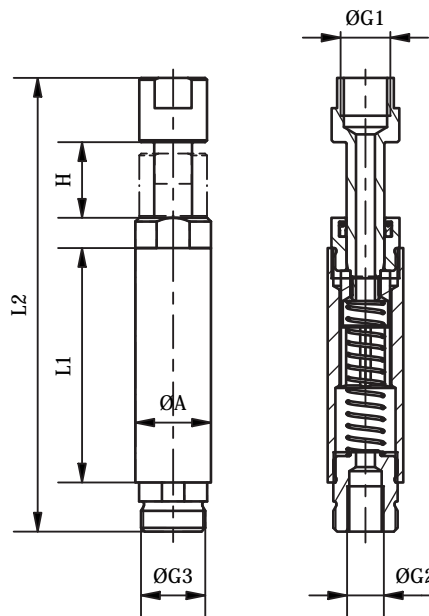
Application example



1-358-15-00



1-359-15-00



Part No.	Description	A [mm]	L1 [mm]	L2 [mm]	G1 ["]	G2 ["]	G3 [mm]	H [mm]	Weight [g]
1-358-15-00	GIF U 20-1/4-1/8-20	20	62	133	G1/4	G1/8	-	20	76
1-359-15-00	GIF U T 20-1/4-1/8-20	20	62	120	G 1/4	G 1/8	M17x1	20	55

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

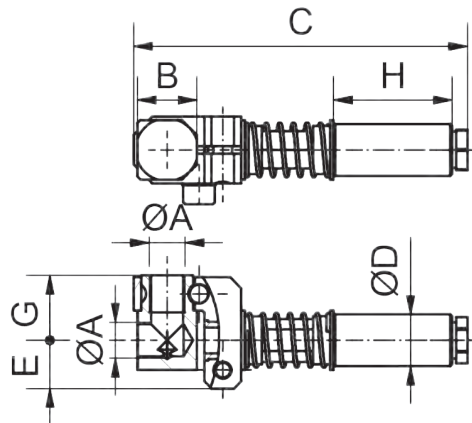
990
Tubular System
Micro System

990
PA-Forming
Others

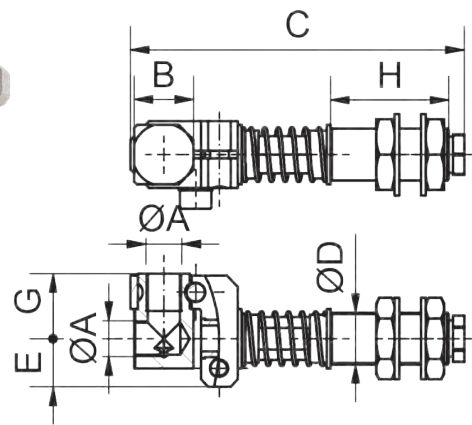
300 | Gripper Arms

GGs / Gripper Arm, spring comp., lock. ag. rot., for Vacuum Cups

- 1-360-03-00
- 1-360-09-00
- 1-360-15-00
- 1-360-21-00
- 1-360-27-00



- 1-360-06-00
- 1-360-12-00
- 1-360-18-00
- 1-360-24-00
- 1-360-30-00



Remarks:

Application: for connecting angled vacuum cups to the robot hand

- suitable for oval vacuum cups
- locked against rotation by hexagonal guide
- high quality stainless steel spring

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
1-360-03-00	GGs 10-M5-M5-10	M5	12	70	10	5.5
1-360-06-00	GGs M10-M5-M5-10	M5	12	70	M10x1	5.5
1-360-09-00	GGs 14-1/8-1/8-15	G1/8	16	90	14	8
1-360-12-00	GGs M14-1/8-1/8-15	G1/8	16	90	M14x1	8
1-360-15-00	GGs 14-1/8-1/8-40	G1/8	16	114	14	8
1-360-18-00	GGs M14-1/8-1/8-40	G1/8	16	114	M14x1	8
1-360-21-00	GGs 20-1/4-1/4-20	G1/4	20	126	20	10
1-360-24-00	GGs M20-1/4-1/4-20	G1/4	20	126	M20x1.5	10
1-360-27-00	GGs 20-1/4-1/4-50	G1/4	20	156	20	10
1-360-30-00	GGs M20-1/4-1/4-50	G1/4	20	156	M20x1.5	10

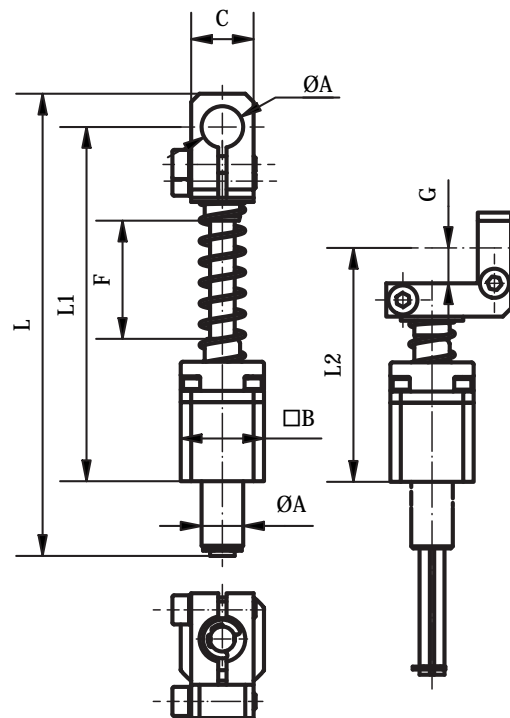
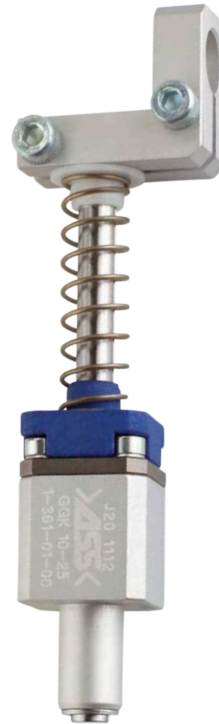
Part No.	Description	Suspension [mm]	G [mm]	H [mm]	Material	Weight [g]
1-360-03-00	GGs 10-M5-M5-10	10	13	25	Al/St/CuZn	38
1-360-06-00	GGs M10-M5-M5-10	10	13	25	Al/St/CuZn	43
1-360-09-00	GGs 14-1/8-1/8-15	15	17.5	32	Al/CuZn	63
1-360-12-00	GGs M14-1/8-1/8-15	15	17.5	32	Al/CuZn	75
1-360-15-00	GGs 14-1/8-1/8-40	40	17.5	32	Al/CuZn	67
1-360-18-00	GGs M14-1/8-1/8-40	40	17.5	32	Al/CuZn	78
1-360-21-00	GGs 20-1/4-1/4-20	20	21.5	55	Al/CuZn	158
1-360-24-00	GGs M20-1/4-1/4-20	20	21.5	55	Al/CuZn	179
1-360-27-00	GGs 20-1/4-1/4-50	50	21.5	55	Al/CuZn	165
1-360-30-00	GGs M20-1/4-1/4-50	50	21.5	55	Al/CuZn	186

GGK / Gripper Arm, spring compensated, with a Linear Guidance

Remarks:

- linear guidance locked against rotation
- extremely precise
- linear guidance can absorb lateral forces and moments
- ideal for mounting grippers
- suitable holder for vacuum cups with additional support by ZTB and gripper GRZ
- » see application examples

Current delivery time on request!



Part No.	Description	A	B	D	E	F	G	L	L1	L2	Weight [g]
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
1-361-01-00	GGK 10-25	10	20	15	25	9	111.5	85.1	56.7	72	72
1-361-03-00	GGK 10-50	10	20	15	50	9	159.3	131	79.7	97	97
1-361-21-00	GGK 20-30	20	30	25	30	16.5	160.5	112	79.6	217	217
1-361-22-00	GGK 20-60	20	30	25	60	16.5	221.5	173	109.6	312	312

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Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

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Special
Vacuum Cups

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Manifold

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Adapters for
Vacuum Cups

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Gripper Arms

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Gripper
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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610
Nipper Blades

700
Special Elements

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Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000
Quick Change
Systems

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Special Elements

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Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

300 | Gripper Arms

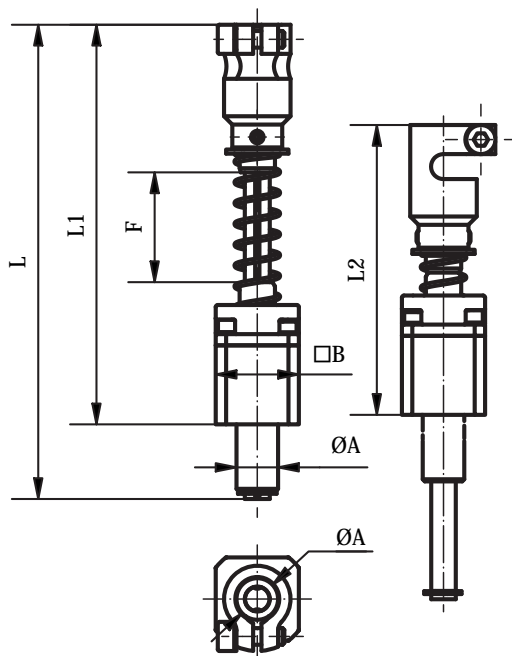
GGK A / Gripper Arm, linear guidance, spring comp., lock.ag.rot., axial



Remarks:

- clamping axial
- linear guidance locked against rotation
- extremely precise
- linear guidance can absorb lateral forces and moments
- ideal for mounting grippers
- » see application examples

Current delivery time on request!

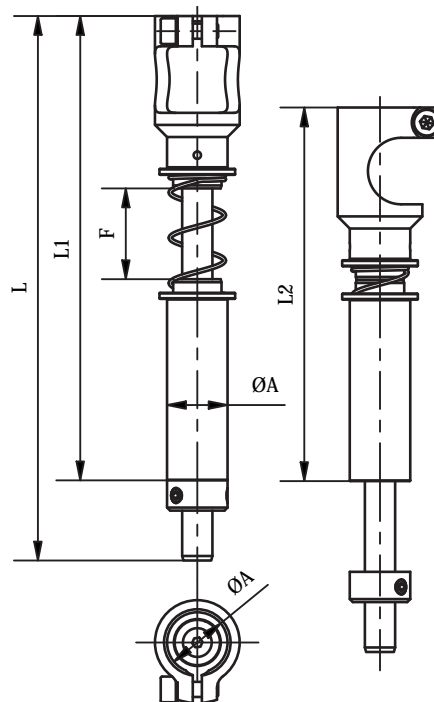


Part No.	Description	A [mm]	B [mm]	F [mm]	L [mm]	L1 [mm]	L2 [mm]	Weight [g]
1-361-31-00	GGK A 10-25	10	20	25	116	96.1	69.7	68
1-361-33-00	GGK A 10-50	10	20	50	164	144	92.7	93
1-361-35-00	GGK A 20-30	20	30	30	168	133	100.6	214
1-361-36-00	GGK A 20-60	20	30	60	229	194	130.6	305
1-361-37-00	GGK A 20-90	20	30	90	269	234	143.4	333

GGK A R / Gripper Arm, linear guidance, rotatable, axial

Remarks:

- particularly suitable for accommodating rotationally symmetrical centerings
- the design is rotation-free
- axial clamping
- ball guide of the gripper arm is extremely precise



Part No.	Description	A [mm]	F [mm]	L [mm]	L1 [mm]	L2 [mm]	Weight [g]
1-365-35-00	GGK A R 20-30 R	20	30	180	153.5	123.5	271
1-365-36-00	GGK A R 20-60 R	20	60	210	196.5	136.5	284
1-365-37-00	GGK A R 20-90 R	20	90	255	239.3	149.3	300

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

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Nipper Blades

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Special Elements

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Sensors

850
Pneumatics

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Tubular System
Micro System

990
PA-Forming
Others

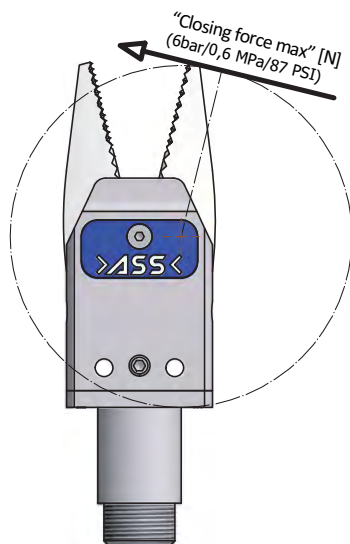
400 | Grippers

Application example Gripper Sizes



Comparison of sizes of different gripper lines.

Application example GRZ Closing Force



Overview Closing Force:

Standard gripper versions of the different sizes in comparison, measured at an operating pressure of 6 bar.

Gripper	Closing Force max. [N]
GRZ 06-06	6
GRZ 10-08 CM	19
GRZ 10-12	28
GRZ 14 R	75
GRZ 20-16	65
GRZ 20-20 R	100
GRZ 25 R	350
GRZ 32	350

Application example Easy to change Gripper Jaws

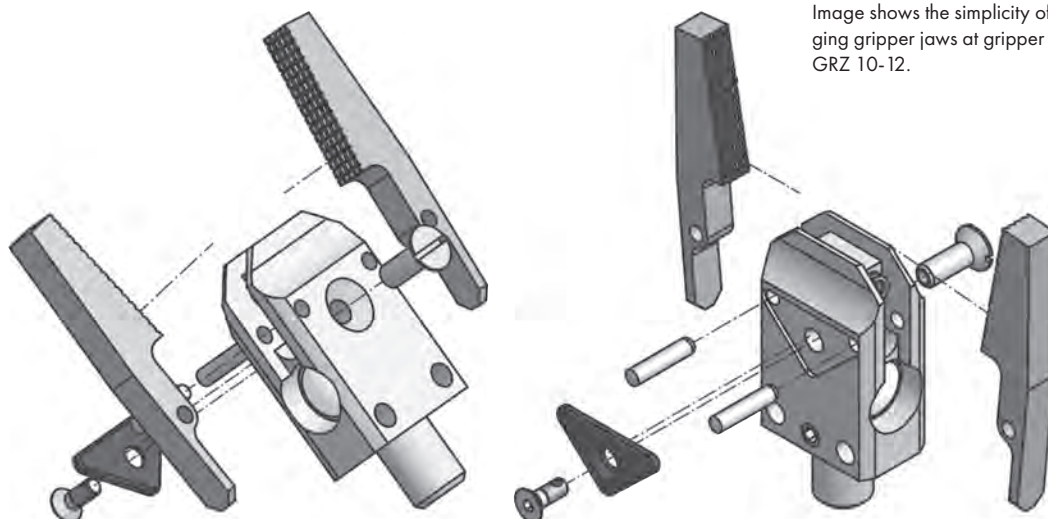
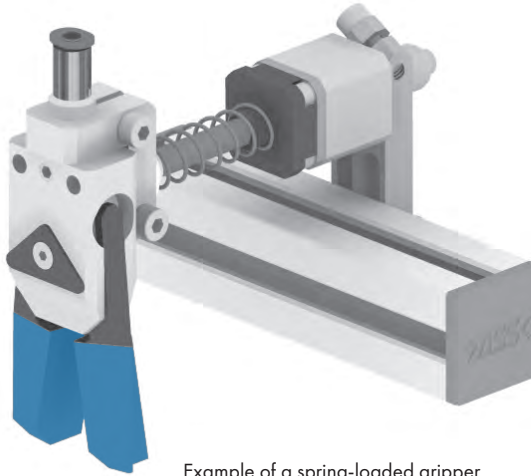
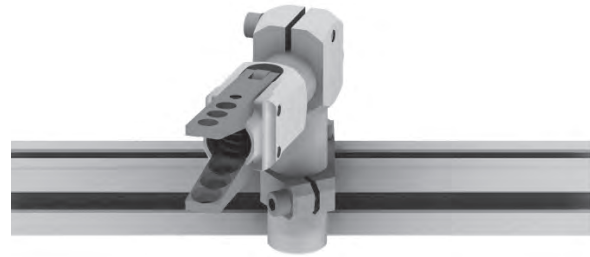


Image shows the simplicity of changing gripper jaws at gripper size GRZ 10-12.

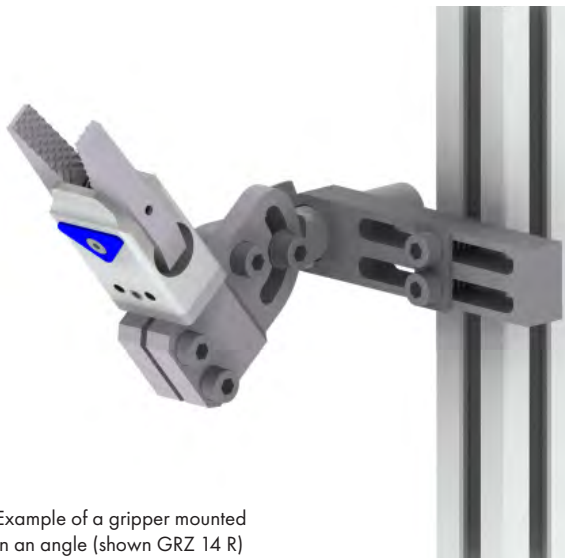
Application examples for mounting Grippers



Example of a spring-loaded gripper (shown GRZ 10-12 AH EP)



Example of a gripper mounted in 90° angle (shown GRZ 20-16)

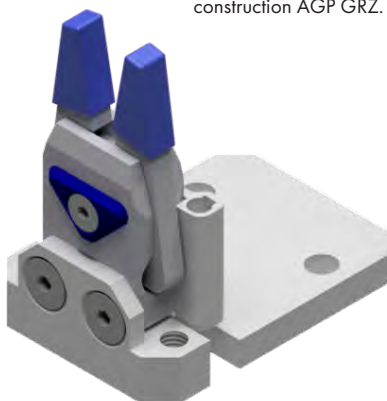


Example of a gripper mounted in an angle (shown GRZ 14 R)



Example of a gripper mounted with two clamps for a strong hold (shown GRZ 32 CS)

Connection of the GRZ 10-08 CMG EP with adapter for board construction AGP GRZ.



Example of a possible connection of a GRZ 10-12 RB CS to board construction via the AGP GRZ adapter.



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Quick Change Systems

050
Profiles
Channel Nuts

100/115
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Profile
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Vacuum Cups

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Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

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PA-Forming
Others

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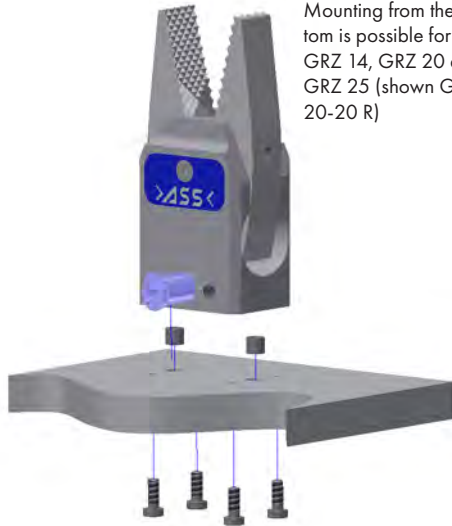
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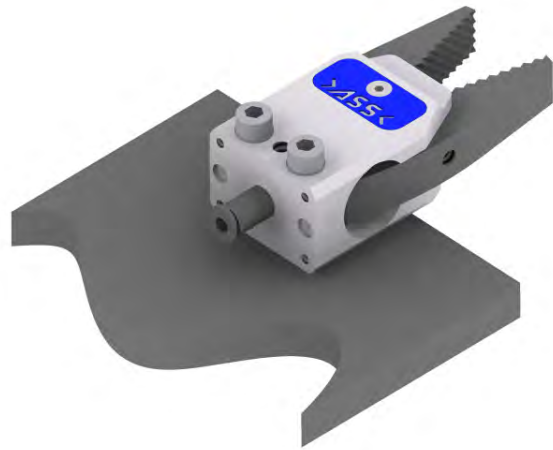
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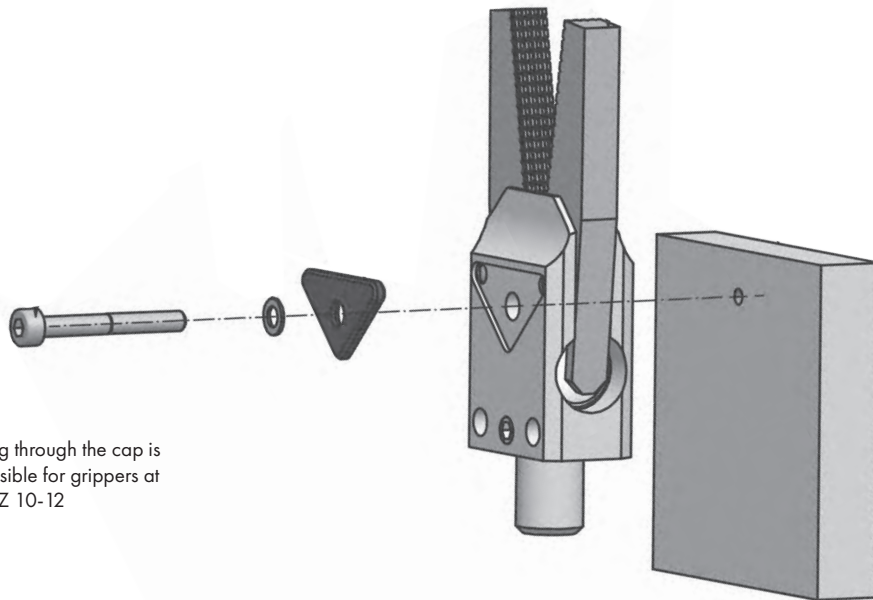
Application examples for mounting Grippers



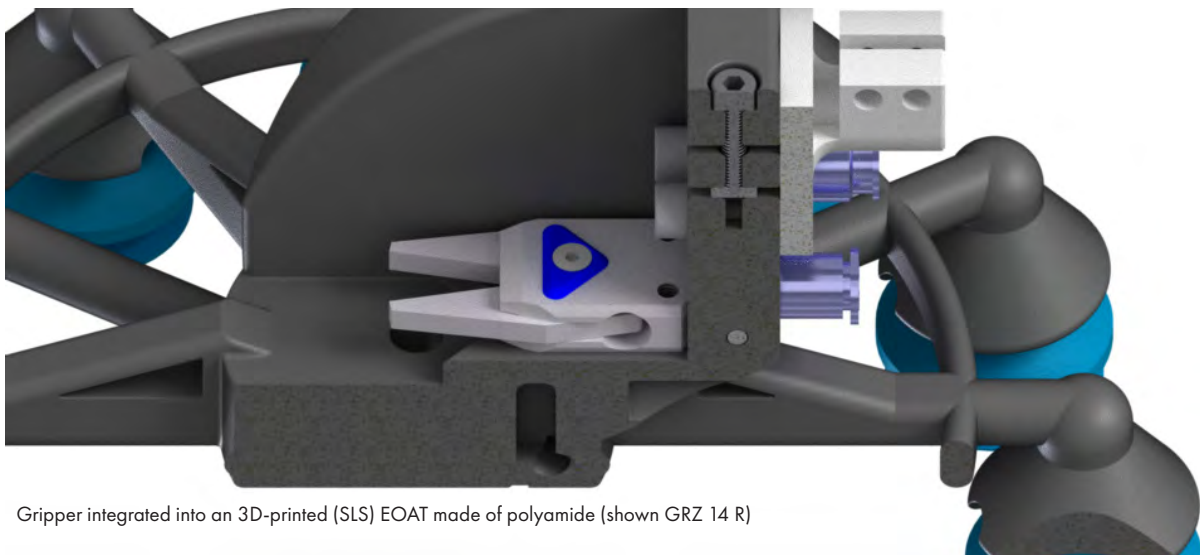
Mounting from the bottom is possible for series GRZ 14, GRZ 20 and GRZ 25 (shown GRZ 20-20 R)



Mounting through the gripper body is possible for all grippers up to series GRZ 25 (shown GRZ 20-20 R)



Mounting through the cap is only possible for grippers at type GRZ 10-12



Gripper integrated into an 3D-printed (SLS) EOAT made of polyamide (shown GRZ 14 R)

Application examples Air Connection

With VL U extended GRZ 10-08 with integrated air duct.



A direct air connection through the adapter AD-GRZ U is possible for gripper series GRZ 14 and GRZ 20 (shown GRZ 20 with saw jaws)



Air connection mounted sidewise (shown GRZ 10-08 CM)



An air connection indirectly through the adapter AD-GRZ U is possible for the gripper series GRZ 14, GRZ 20 and GRZ 25 (shown GRZ 14 R)

App. example GRZ 10-08 C WK



Grippers GRZ...WK with sensor are particularly suitable for gripping soft and rubber-like sprues (shown GRZ 10-08 C WK).

App. example GRZ PS,CS,I



Grippers GRZ...PS with parrot jaws are for gripping sprues (shown GRZ 14 PS,CS,I).

Application examples GRZ 14 D A



The double acting gripper GRZ 14 D A can be used for gripping from the inside (figure left) and gripping from the outside (figure right).

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Application example monitoring at GRZ 10-08

GRZ 10-08 CMG EP with attached Sensor Bracket
SH GRZ 10-08 and Sensor MFS T2

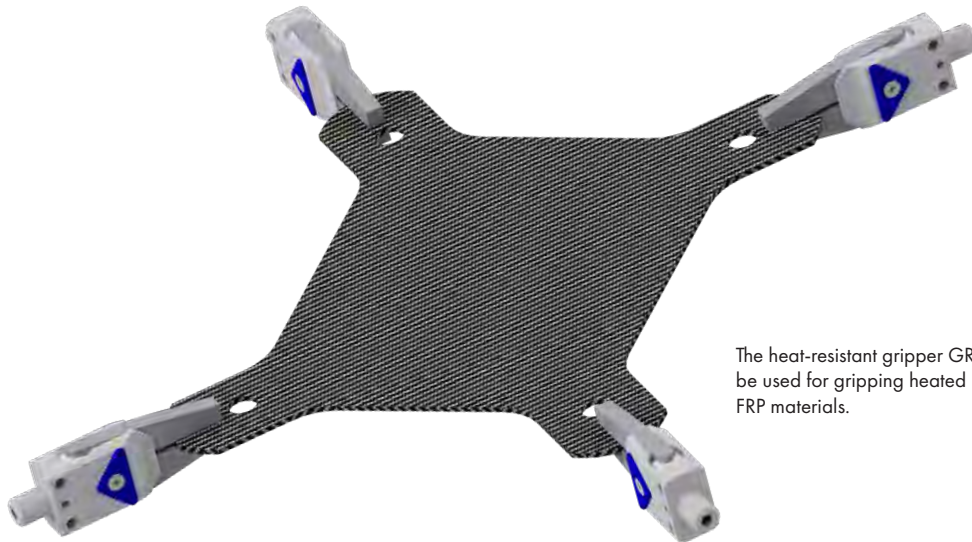


GRZ 14 R with mounted sensor holding bracket and sensor.



GRZ 25 with mounted sensor.

Application example GRZ 10-12 HT



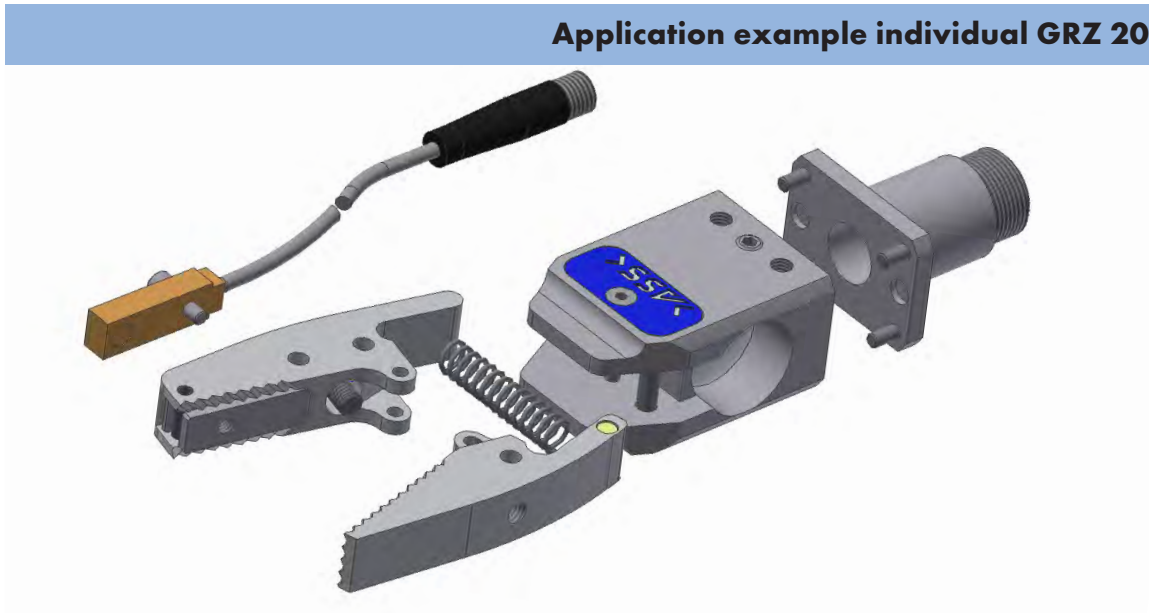
The heat-resistant gripper GRZ 10-12 HT can be used for gripping heated materials such as FRP materials.

Application example GRZ AD 20-16

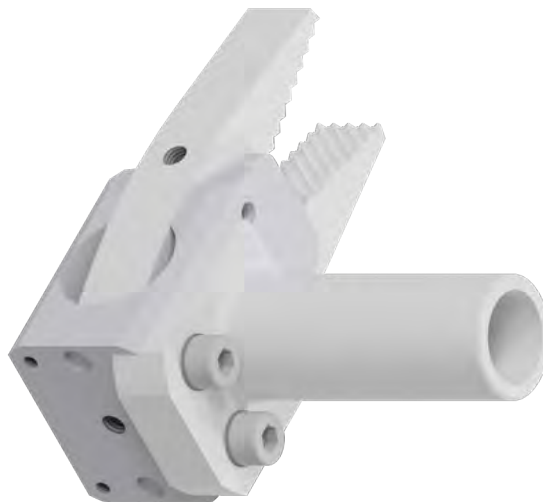


Extention tube VLR 20 mounted on gripper GRZ 20-16 by Adapter GRZ AD 20-16.

Application example individual GRZ 20-20



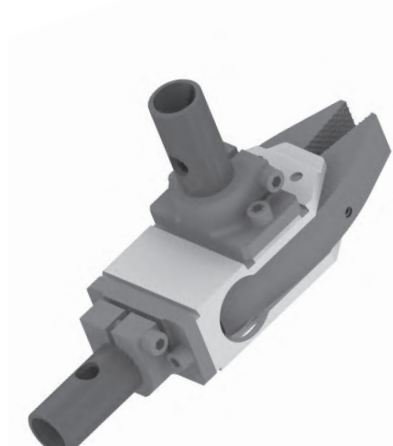
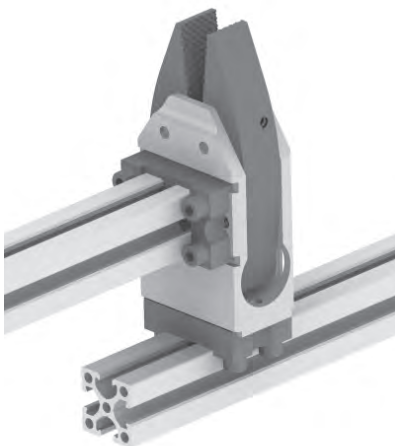
Application example AD 20 GRZ 20 S



GRZ 20-20 R mounted sidewise with adapter AD 20 GRZ 20 S

Application examples GRZ 25

Examples show various ways to connect gripper GRZ 25. Left side shows adaption by AP HEU, middle shows AP PGR and the figure on the right side shows AE HEU.



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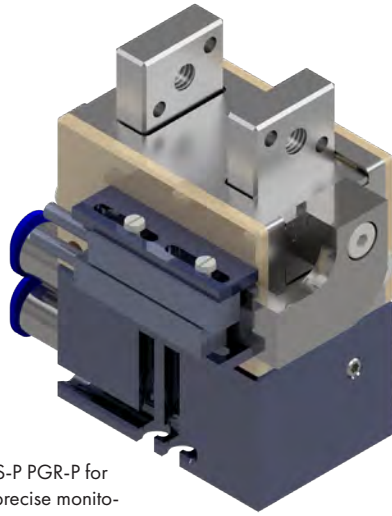
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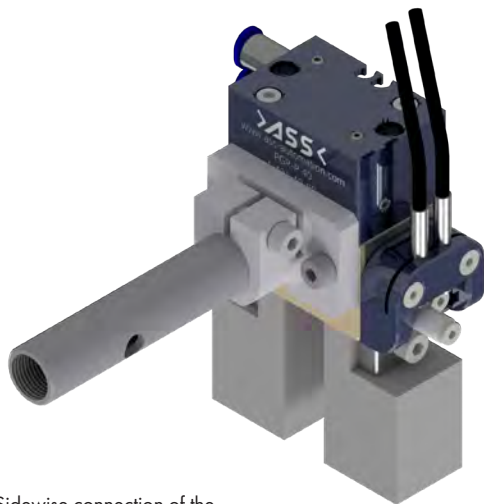
Application examples PGR-P



Add-on kit AS-P PGR-P for additionally precise monitoring tasks.

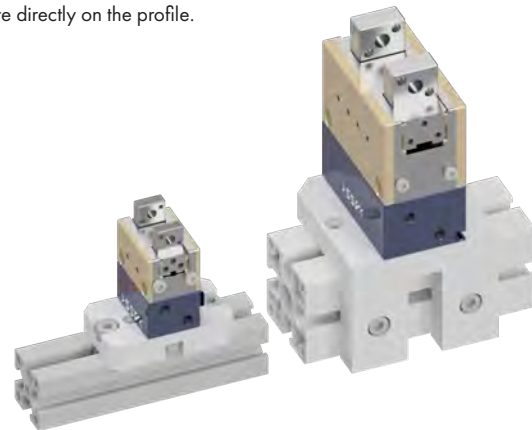


The direct connection is used for pressure supply without trouble-prone tubing. The pressure medium is instead guided through holes in the mounting plate.

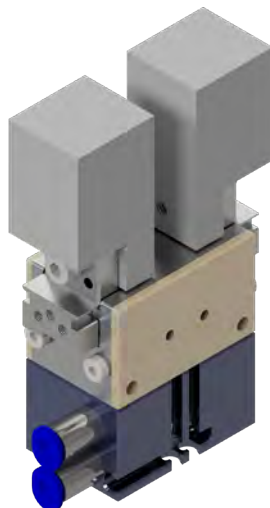


Sidewise connection of the parallel gripper PGR-P.

Connection using an adapter plate directly on the profile.

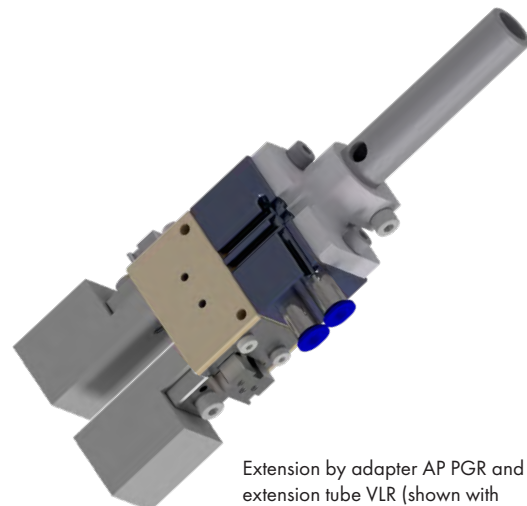


Application example GB PGR



Unmachined jaws attached to a parallel gripper (shown PGR-P).

Application example AP PGR



Extension by adapter AP PGR and extension tube VLR (shown with PGR-P).

App. example IGP / IGP EP

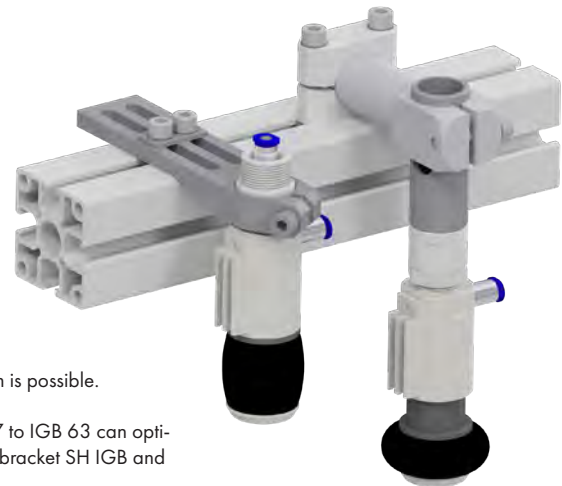
The ID Grippers IGP and IGP EP are characterized by their low weight. The IGP EP (shown here) additionally is provided with an EP coating and is particularly suitable for sensitive products.



Application example IGB and IGB H



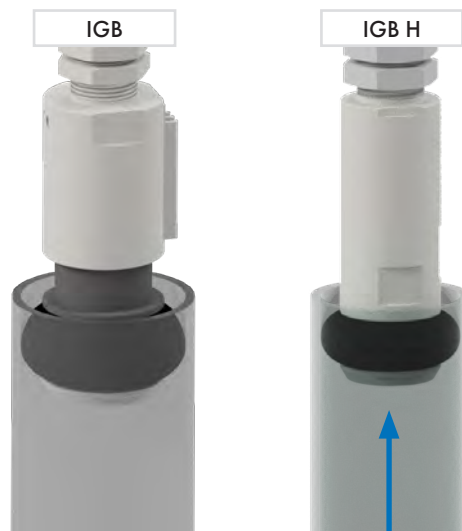
The left figure shows the IGB mounted directly to a plate, the lower figure shows the connection by using the adapter AD IGB and the right figure shows the practical application of the ID gripper IGB.



Partial present control by vacuum is possible.

The end positions of sizes IGB 27 to IGB 63 can optionally be monitored with sensor bracket SH IGB and magnetic field sensor MFS T2.

When gripping with the IGB H (right), in contrast to the IGB (left), the component is lifted. Depending on the application, this can replace a Z-axis in pick and place.



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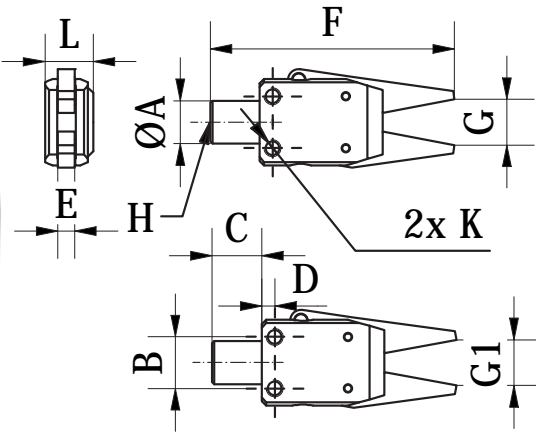
850
Pneumatics

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Tubular System
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PA-Forming
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GRZ 10-08 / Gripper Size 10-08



Remarks:

Application: miniature size gripper, see table for properties of the jaw geometries

- single-acting gripper
- two pistons, Ø 8mm
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories for example:

- Sensor Bracket SH GRZ 10-08
- extension with air duct VL U
- adapter for board mounting AGP GRZ

GRZ 10-08 CM



GRZ 10-08 CMG EP



GRZ 10-08 AH



GRZ 10-08 C WK
GRZ 10-08 C WK NPN



GRZ 10-08 C
GRZ 10-08 C NPN



GRZ 10-08 CF
GRZ 10-08 CF NPN



GRZ 10-08 CF EP
GRZ 10-08 CF EP NPN



GRZ 10-08 / Gripper Size 10-08 (Continuation)

Description	A [mm]	B [mm]	C [mm]	D [mm]	F [mm]	H	K	L [mm]	Closing force max. [N]
GRZ 10-08...	10	12	11.5	3	57	M5	M4	10	19

Part No.	Description	Jaw Type	Application / Remarks
1-408-14-00	GRZ 10-08 CM	chequered	• optionally equipped sensor mounting bracket and initiator
New 1-408-04-00	GRZ 10-08 AH	chequered, extra-wide	• for sprues undefined in position
1-408-30-00	GRZ 10-08 CMG EP	smooth, with EP coating Shore 90	• very smooth gripping • optionally equipped sensor mounting bracket and initiator
1-408-17-00	GRZ 10-08 C	with sensor PNP	• gripper with direct part-present-control • direct query, inductive, PNP, NO, 3-pole, 2m, cable
1-408-18-00	GRZ 10-08 C NPN	with sensor NPN	• gripper with direct part-present-control • direct query, inductive, NPN, NO, 3-pole, 2m, cable
1-408-19-00	GRZ 10-08 C WK	with sensor PNP / soft materials contour	• especially for part-present-control of soft materials • direct query, inductive, PNP, NO, 3-pole, 2m, cable
1-408-20-00	GRZ 10-08 C WK NPN	with sensor NPN / soft materials contour	• especially for part-present-control of soft materials • direct query, inductive, NPN, NO, 3-pole, 2m, cable
1-408-21-00	GRZ 10-08 CF EP	with sensor PNP / smooth, with EP coating Shore 90	• gripper with direct part-present-control • with flat shift fork • very smooth gripping • direct query, inductive, PNP, NO, 3-pole, 2m, cable
1-408-22-00	GRZ 10-08 CF EP NPN	with sensor NPN / smooth, with EP coating Shore 90	• gripper with direct part-present-control • with flat shift fork • very smooth gripping • direct query, inductive, NPN, NO, 3-pole, 2m, cable
1-408-25-00	GRZ 10-08 CF	chequered / with sensor PNP	• gripper with direct part-present-control • with flat shift fork • direct query, inductive, PNP, NO, 3-pole, 2m, cable
1-408-26-00	GRZ 10-08 CF NPN	chequered / with sensor NPN	• gripper with direct part-present-control • with flat shift fork • direct query, inductive, NPN, NO, 3-pole, 2m, cable

Part No.	Description	Jaws made of...	E [mm]	G [mm]	G1 [mm]	Weight [g]
1-408-14-00	GRZ 10-08 CM	hardcoated Aluminium	4	10	0	17
New 1-408-04-00	GRZ 10-08 AH	hardcoated Aluminium	12	10	0	17
1-408-30-00	GRZ 10-08 CMG EP	hardcoated Aluminium, EP coating Shore 90, colour blue	5	10	0	18
1-408-17-00	GRZ 10-08 C	hardcoated Aluminium	8	10	1	49
1-408-18-00	GRZ 10-08 C NPN	hardcoated Aluminium	8	10	1	44
1-408-19-00	GRZ 10-08 C WK	hardcoated Aluminium, Steel	9	7.5	0	51
1-408-20-00	GRZ 10-08 C WK NPN	hardcoated Aluminium, Steel	9	7.5	0	51
1-408-21-00	GRZ 10-08 CF EP	hardcoated Aluminium, EP coating Shore 90, colour blue	7	10	1	49
1-408-22-00	GRZ 10-08 CF EP NPN	hardcoated Aluminium, EP coating Shore 90, colour blue	7	10	1	49
1-408-25-00	GRZ 10-08 CF	hardcoated Aluminium	8	10	1	49
1-408-26-00	GRZ 10-08 CF NPN	hardcoated Aluminium	8	10	1	49

The EP-coating is an elastomer, so all dimensions are nominal.

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SH GRZ 10-08 / Sensor Bracket



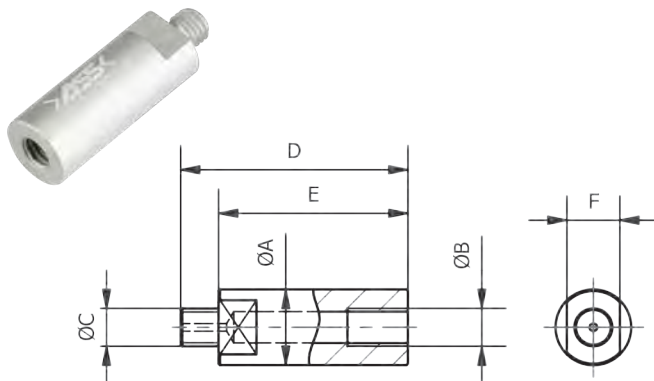
Remarks:

Application: allows easy installation of a sensor

- 1 or 2 switching points can be monitored in combination with the sensor
- gripping jaw area unchanged
- suitable for Sensor MFS T 2 3,7

Part No.	Description	Adaptable with	Material	Weight [g]
1-408-80-00	SH GRZ 10-08	GRZ 10-08 CMG / CMG EP	Polyamide	2

VL U / Extension with air duct for GRZ 10



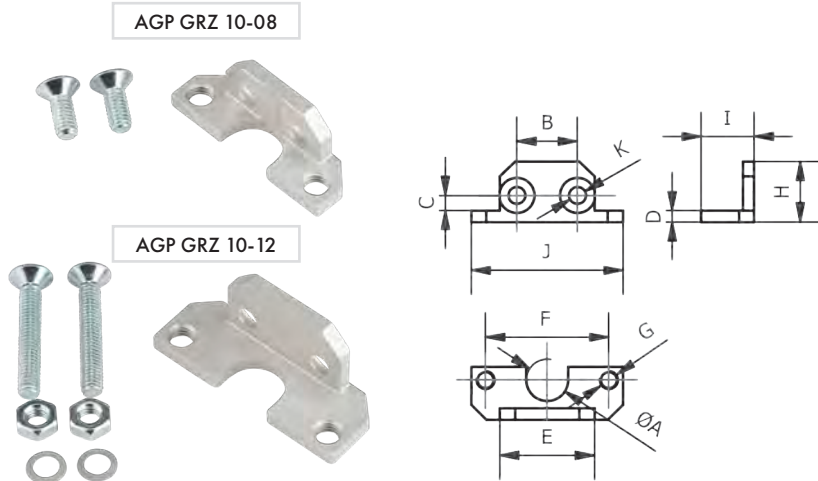
Remarks:

Application: Extension for all grippers GRZ 10-08 and GRZ 10-12

- easy to handle
- with air duct
- small and compact design
- » see application example

Part No.	Description	A [mm]	B	C	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-408-70-00	VL-U-25-GRZ-10	10	M5	M5	30	25	7	Aluminium	5

AGP GRZ / Adapter for GRZ Board Mounting



Remarks:

Application: Adapter for mounting GRZ grippers on boards

- » see application examples

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G	H [mm]
1-408-90-00	AGP GRZ 10-08	11	12	3	3	22,5	27,5	M5	12,5
1-412-90-00	AGP GRZ 10-12	11	16	4	3	25	32,5	M5	16

Part No.	Description	I [mm]	J [mm]	K [mm]	Material	Weight [g]	Price [€]
1-408-90-00	AGP GRZ 10-08	10	35	4,5	Aluminium	3	
1-412-90-00	AGP GRZ 10-12	14	40	4,5	Aluminium	13	

GRZ 10-12 / Gripper Size 10-12

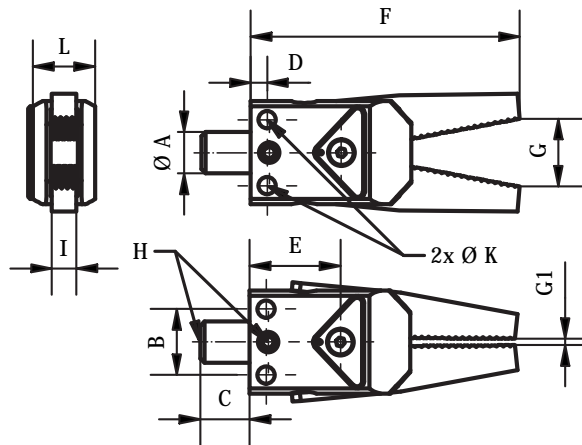
Remarks:

Application: single-acting, compact gripper, see table for properties of the jaw geometries

- parts can not get stuck behind jaws (except AH, AH EP, DB, A, A1, BSCS)
- two pistons \varnothing 12mm
 - » closing force measured at point of jaws at 6 bar
 - » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Sprue Shifter AAE (only suitable for GRZ 10-12...WK)



Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	H	K [mm]	L [mm]
GRZ 10-12...	10	16	12	4	22	M5	4.2	15



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GRZ 10-12 / Gripper Size 10-12 (Continuation)

Part No.	Description	Jaw Type	Application / Remarks
1-412-03-00	GRZ 10-12	chequered	<ul style="list-style-type: none"> standard version
1-412-05-00	GRZ 10-12 BG	chequered, hardened, shutting	<ul style="list-style-type: none"> for small diameters or plates shutting version
1-412-60-00	GRZ 10-12 G	smooth	<ul style="list-style-type: none"> for reducing marking
1-412-61-00	GRZ 10-12 G PTFE	smooth, with PTFE coating	<ul style="list-style-type: none"> for sticky sprues or materials
1-412-65-00	GRZ 10-12 EP	smooth, with EP coating Shore 90	<ul style="list-style-type: none"> very smooth gripping covers all applications of smooth jaws
1-412-66-00	GRZ 10-12 R HT	heat-resistant, chequered	<ul style="list-style-type: none"> long term usage up to 150°C air temperature higher temperatures have to be tested individually, please contact your responsible contact
1-412-35-00	GRZ 10-12 S	saw jaws	<ul style="list-style-type: none"> for demolding sticking sprues
1-412-46-00	GRZ 10-12 Z	toothed	<ul style="list-style-type: none"> for semicircular sprues or bridges
1-412-12-00	GRZ 10-12 PK	prism / v-groove	<ul style="list-style-type: none"> for cone-shaped sprues
1-412-13-00	GRZ 10-12 KK	v-groove	<ul style="list-style-type: none"> for gripping sprues axial
1-412-34-00	GRZ 10-12 AH	wide jaws	<ul style="list-style-type: none"> for large-area gripping
1-412-39-00	GRZ 10-12 AH EP	wide jaws, with EP coating Shore 90	<ul style="list-style-type: none"> for large-area gripping very smooth gripping
1-412-30-00	GRZ 10-12 DB	swiveling	<ul style="list-style-type: none"> for gripping conical sprues automatically fitting to the conicity due to swiveling jaws
1-412-06-00	GRZ 10-12 A	for customized jaws	<ul style="list-style-type: none"> for adapting customized jaws each jaw with 2 holes M4, hole pitch 8 mm angle open 15°, angle closed -6°
1-412-09-00	GRZ 10-12 A1	for customized jaws	<ul style="list-style-type: none"> for adapting customized jaws each jaw with 3 holes M4, hole pitch 8 mm angle open 15°, angle closed -6°
1-412-16-00	GRZ 10-12 CF	with sensor PNP / chequered	<ul style="list-style-type: none"> direct query, inductive, PNP, NO, 3-pole, 3m, cable
1-412-17-00	GRZ 10-12 CF NPN	with sensor NPN / chequered	<ul style="list-style-type: none"> direct query, inductive, NPN, NO, 3-pole, 3m, cable
1-412-20-00	GRZ 10-12 CFS	with sensor PNP / chequered	<ul style="list-style-type: none"> direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-412-23-00	GRZ 10-12 CFS NPN	with sensor NPN / chequered	<ul style="list-style-type: none"> direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-412-22-00	GRZ 10-12 CFS EP	with sensor PNP / with EP coating Shore 90	<ul style="list-style-type: none"> very smooth gripping direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-412-27-00	GRZ 10-12 CFS EP NPN	with sensor NPN / with EP coating Shore 90	<ul style="list-style-type: none"> very smooth gripping direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-412-25-00	GRZ 10-12 CFS WK	with sensor PNP / contour for soft materials	<ul style="list-style-type: none"> especially for part-present-control of soft materials and for gripping small diameters or straps direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-412-26-00	GRZ 10-12 CFS WK NPN	with sensor NPN / contour for soft materials	<ul style="list-style-type: none"> especially for part-present-control of soft materials and for gripping small diameters or straps direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-412-40-00	GRZ 10-12 SCFS	with sensor PNP / saw jaw	<ul style="list-style-type: none"> for demolding sticking sprues direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-412-45-00	GRZ 10-12 SCFS NPN	with sensor NPN / saw jaw	<ul style="list-style-type: none"> for demolding sticking sprues direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-412-43-00	GRZ 10-12 RB CS	with sensor PNP, extra wide / chequered, extra wide	<ul style="list-style-type: none"> extra wide jaws for large-area gripping direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-412-44-00	GRZ 10-12 RB CS NPN	with sensor NPN, extra wide / chequered, extra wide	<ul style="list-style-type: none"> extra wide jaws for large-area gripping direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable

Jaws made of...	F [mm]	l [mm]	G [mm]	G1 [mm]	Closing force max. [N]	Weight [g]
zinc-plated Steel	65	6	16.5	1.5	28	58
zinc-plated Steel, hardened	65	6	14.5	0	28	60
zinc-plated Steel	65	6	16.5	1.5	28	60
zinc-plated Steel	65	6	16.5	1.5	28	66
zinc-plated Steel, EP coating Shore 90, colour blue	65	6.5	16.5	1.5	28	60
zinc-plated Steel	65	6	16.5	1.5	28	68
zinc-plated Steel	65	6	16.5	1.5	28	58
zinc-plated Steel	65	6	16.5	1.5	28	63
zinc-plated Steel	65	6	16.5	2	28	56
zinc-plated Steel	65	6	16.5	2.5	28	56
zinc-plated Steel	70	14	17.5	1	25	68
zinc-plated Steel, EP coating Shore 90, colour blue	70	14.5	17.5	1	25	73
zinc-plated Steel	60/64	8	10.5	2.5	28	61
zinc-plated Steel	42	6	closing force and opening width depends on customized jaws			40
zinc-plated Steel	52	6	closing force and opening width depends on customized jaws			44
zinc-plated Steel	64	6	15	1	28	90
zinc-plated Steel	64	6	15	1	28	90
zinc-plated Steel	64	6	15	1	28	108
zinc-plated Steel	64	6	15	1	28	108
zinc-plated Steel, EP coating Shore 90, colour blue	65	6.5	15	1	28	122
zinc-plated Steel, EP coating Shore 90, colour blue	65	6.5	15	1	28	122
zinc-plated Steel	65	10	14	1	28	116
zinc-plated Steel	65	10	14	1	28	116
zinc-plated Steel	65	6	16.5	1	28	108
zinc-plated Steel	65	6	16.5	1	28	108
zinc-plated Steel, hardcoated Aluminium	70	22	16.5	1	28	75
zinc-plated Steel, hardcoated Aluminium	70	22	16.5	1	28	75

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Gripper Arms

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Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

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Nipper Blades

700
Special Elements

800
Electrics and
Sensors

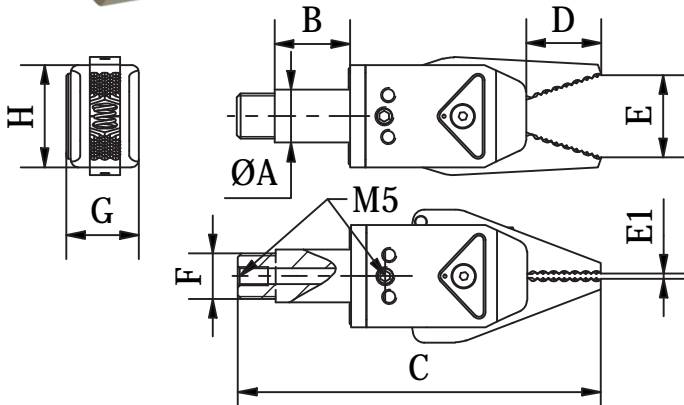
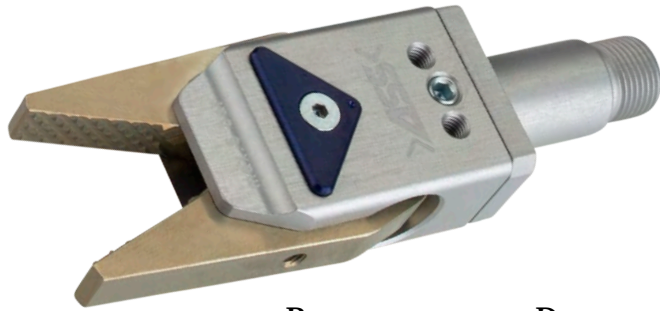
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GRZ 14 R / Gripper with Chequered Jaws



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	E1 [mm]	F [mm]	G [mm]	H [mm]	Closing force max. [N]	Weight [g]
1-414-00-00	GRZ 14 R	14	20	96	19.5	22	0	M12x1	19	27	75	64

Remarks:

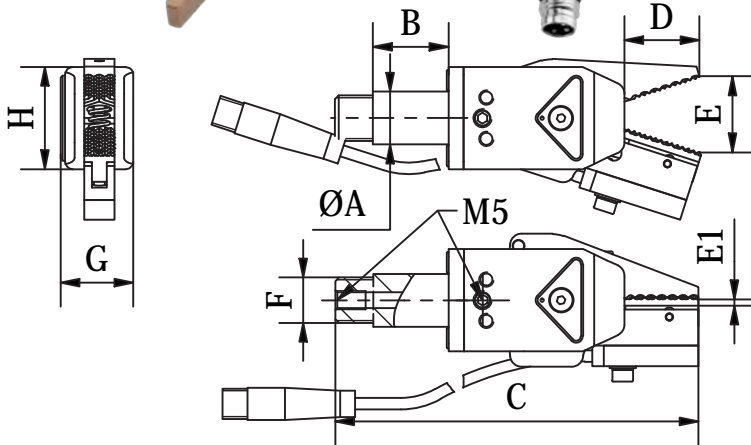
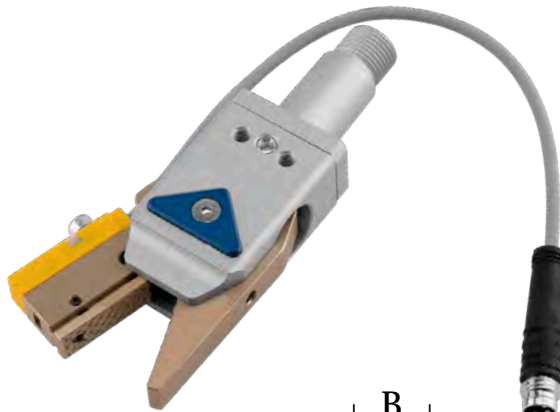
Application: smaller size with greater closing force

- jaws made of hardcoated Aluminium
- consistent development of the GRZ series
- optimized connections
- easy to change jaws
- air connection M5 optional at adapter or laterally
- single acting
- optionally equipped with a sensor bracket and initiator
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Extension Tube VLR
- Sensor Bracket SH GRZ 14
- all Gripper Jaws Size 14

GRZ 14 R,CS,I / Gripper with Chequered Jaws and Sensor with Plug



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	E1 [mm]	F [mm]	G [mm]	H [mm]	Closing force max. [N]	Weight [g]
1-414-20-00	GRZ 14 R,CS,I	14	20	96	19.5	22	2	M12x1	19	27	75	73

Remarks:

Application: smaller size with sensor and greater closing force

- jaws made of hardcoated Aluminium
- direct query, inductive, PNP, NO, 3-pole, 0.16m, M8 connector
- NPN version available as separate Gripper Jaws
- air connection M5 optional at adapter or laterally
- single acting
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Extension Tube VLR

GRZ 14 D A / Gripper, double acting

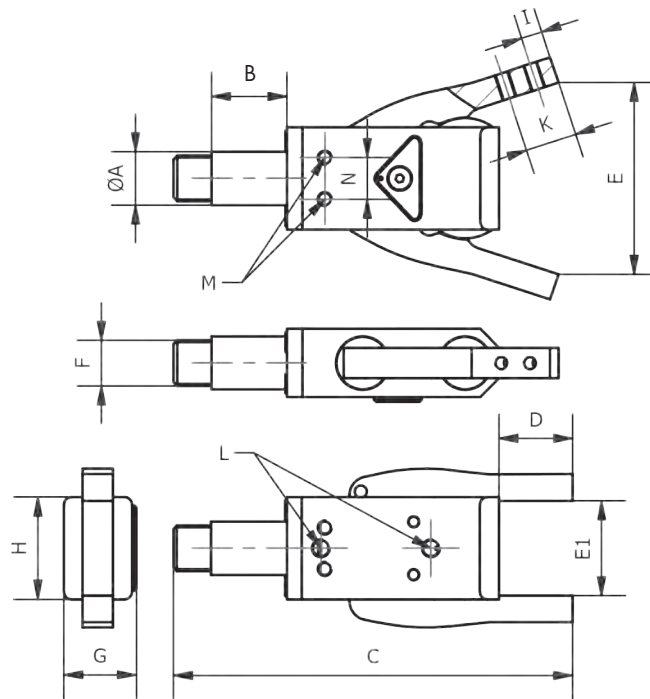
Remarks:

Application: for adapting workpiece-specific jaws and for individual applications can also be used as inner gripper

- double-acting gripper
- angle opened 36°, angle closed 0°
- optionally equipped with a sensor bracket and initiator
- » closing and opening force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Extension Tube VLR



Part No.	Description	Closing force max. [N]	Opening force max. [N]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	E1 [mm]
1-414-50-00	GRZ 14 D A	75	75	14	20	106	19.5	23	48

Part No.	Description	F [mm]	G [mm]	G1 [mm]	H [mm]	K [mm]	Air Connection	M [mm]	N [mm]	Weight [g]
1-414-50-00	GRZ 14 D A	M12x1	19	27	5,6	13,6	2xM5	2xM4	11	79

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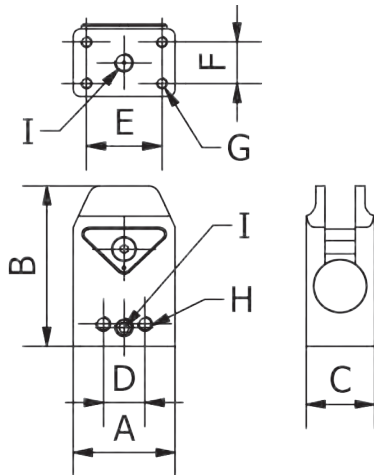
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GRZ 14 Body



Remarks:

Application: for creating individual grippers of the GRZ 14 series

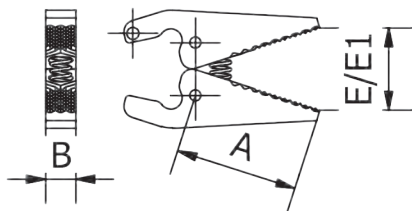
- made of anodized Aluminium
- 2 pistons, Ø 14
- choose gripper jaws and accessories to customize your GRZ gripper
- all components easy to assemble
- single-acting body
- optionally equipped with a sensor holder and initiator

Accessories e.g.:

- Sensor Bracket SH GRZ 14
- Adapter AS GRZ 14
- all Gripper Jaws Size 14

Part No.	Description	A	B	C	D	E	F	G	H	I	Weight [g]
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
1-414-80-00	GRZ 14 Body	27	42.5	19	11	20	11	M3	M4	M5	34

GRZ 14 Gripper Jaws / Gripper Jaws Size 14



Remarks:

Application: gripper jaws for creating individual GRZ 14, see table for properties of the jaw geometries

- Jaw pairs without integrated query can be optionally equipped with a sensor bracket and initiator
- gripper jaws made of hardcoated Aluminium

<p>GRZ 14 BP R</p>	<p>GRZ 14 BP S</p>	<p>GRZ 14 BP PU</p>	<p>GRZ 14 BP EP</p>
<p>GRZ 14 BP A</p>	<p>GRZ 14 BP R,CS,I GRZ 14 BP R,CS,I NPN</p>	<p>GRZ 14 BP EP,CS,I GRZ 14 BP EP,CS,I NPN</p>	<p>GRZ 14 BP PS,CS,I GRZ 14 BP PS,CS,I NPN</p>
<p>GRZ 14 BP S,CS,I GRZ 14 BP S,CS,I NPN</p>	<p>GRZ 14 BP EP,CS,I,EP</p>		

GRZ 14 Gripper Jaws / Gripper Jaws Size 14 (Continuation)

Part No.	Description	Application / Remarks
1-414-81-00	GRZ 14 Gripper Jaw R	<ul style="list-style-type: none"> standard version
1-414-86-00	GRZ 14 Gripper Jaw S	<ul style="list-style-type: none"> for demolding sticking sprues
1-414-90-00	GRZ 14 Gripper Jaw PU	<ul style="list-style-type: none"> 22 mm PU pads for avoiding marking very smooth gripping
1-414-91-00	GRZ 14 Gripper Jaw EP	<ul style="list-style-type: none"> for avoiding marking very smooth gripping for more information about EP coating, see category 990
1-414-84-00	GRZ 14 Gripper Jaw A	<ul style="list-style-type: none"> for adapting customized jaws hole pitch 8 mm angle opened 35.5 °, angle closed 0 ° closing force and opening width depends on customized jaws
1-414-82-00	GRZ 14 Gripper Jaw R,CS,I	<ul style="list-style-type: none"> direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-414-83-00	GRZ 14 Gripper Jaw R,CS,I NPN	<ul style="list-style-type: none"> direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
1-414-92-00	GRZ 14 Gripper Jaw EP,CS,I	<ul style="list-style-type: none"> very smooth gripping direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-414-97-00	GRZ 14 Gripper Jaw EP,CS,I NPN	<ul style="list-style-type: none"> very smooth gripping direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
1-414-95-00	GRZ 14 Gripper Jaw PS,CS,I	<ul style="list-style-type: none"> contour jaws for semi-circular and large sprues direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
New 1-414-98-00	GRZ 14 Gripper Jaws EP,CS,I,EP	<ul style="list-style-type: none"> very smooth gripping, EP coating on both sides, optimizes the adhesion for more information about EP coating, see category 990 direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-414-96-00	GRZ 14 Gripper Jaw PS,CS,I NPN	<ul style="list-style-type: none"> contour jaw for semi-circular and large sprues direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
1-414-94-00	GRZ 14 Gripper Jaw S,CS,I	<ul style="list-style-type: none"> for demolding sticking sprues direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-414-93-00	GRZ 14 Gripper Jaw S,CS,I NPN	<ul style="list-style-type: none"> for demolding sticking sprues direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8

Part No.	Description	Jaw Type	A [mm]	B [mm]	E [mm]	E1 [mm]	Weight [g]
1-414-81-00	GRZ 14 Gripper Jaw R	chequered	33	8	22	0	19
1-414-86-00	GRZ 14 Gripper Jaw S	saw jaws	33	8	22	0	18
1-414-90-00	GRZ 14 Gripper Jaw PU	with Polyurethane Pads	33	8	17	0	18
1-414-91-00	GRZ 14 Gripper Jaw EP	smooth, with EP coating Shore 90, colour blue	33	8	22	0	19
1-414-84-00	GRZ 14 Gripper Jaw A	for customized jaws, each jaw with 2 holes M5	32.5	8	-	-	17
1-414-82-00	GRZ 14 Gripper Jaw R,CS,I	with sensor PNP / chequered	32.5	8	22	2	27
1-414-83-00	GRZ 14 Gripper Jaw R,CS,I NPN	with sensor NPN / chequered	32.5	8	22	2	27
1-414-92-00	GRZ 14 Gripper Jaw EP,CS,I	with sensor PNP / with EP coating Shore 90, colour blue	32.5	8	22	2	30
1-414-97-00	GRZ 14 Gripper Jaw EP,CS,I NPN	with sensor NPN / with EP coating Shore 90, colour blue	32.5	8	22	2	30
1-414-95-00	GRZ 14 Gripper Jaw PS,CS,I	with sensor PNP / contour jaw	32.5	8	20	0	27
New 1-414-98-00	GRZ 14 Gripper Jaws EP,CS,I,EP	with sensor PNP with EP coating Shore 90, colour blue / with EP coating Shore 90, colour blue	32.5	8	22	2	30
1-414-96-00	GRZ 14 Gripper Jaw PS,CS,I NPN	with sensor NPN / contour jaw	32.5	8	20	0	27
1-414-94-00	GRZ 14 Gripper Jaw S,CS,I	with sensor PNP / saw jaw	32.5	8	22	2	27
1-414-93-00	GRZ 14 Gripper Jaw S,CS,I NPN	with sensor NPN / saw jaw	32.5	8	22	2	27

The EP-coating is an elastomer, so all dimensions are nominal.

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SH GRZ 14 / Sensor Mounting Bracket



Remarks:

Application: allows easy mounting of a sensor

- two positions can be monitored (open/closed)
- space saving
- gripping jaw area unchanged
- 2 switching points „teachable“

Part No.	Description	fits for Sensor	Material	Weight [g]
1-414-04-00	SH GRZ 14	MFS T2 3,7 (Part No. 1-808-30-00)	Polyamide	4

AD GRZ 14 U / Adapter with Air Duct



Remarks:

Application: adapts GRZ 14 to GRZ 14-14 or GRZ 14-10

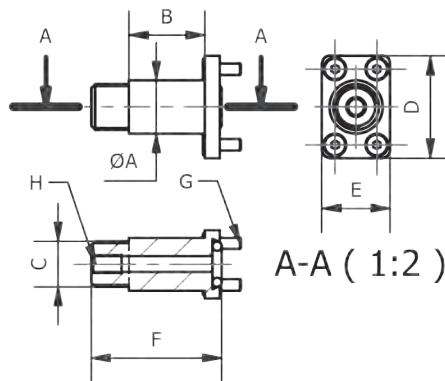
- with integrated air duct

Scope of Delivery:

- seal ring and screws included

Accessories e.g.:

- Extension Tube VLR



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Weight [g]
1-414-11-00	AD 14 GRZ 14 U	14	20	M12x1	27	18	34	M3	M5	14
1-414-13-00	AD 10 GRZ 14 U	10	15	M8x1	27	18	29	M3	M5	12

AAE / Sprue Shifter for gripper GRZ

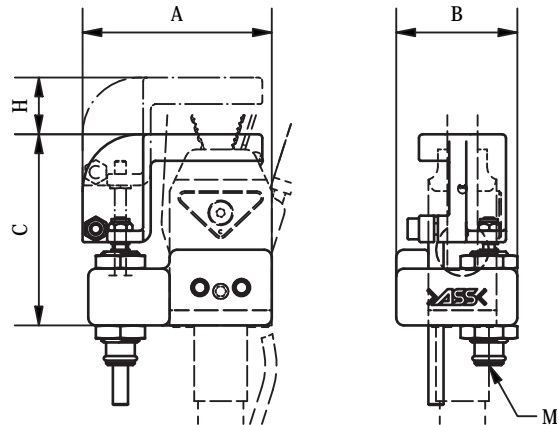
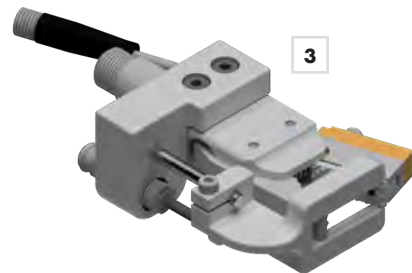
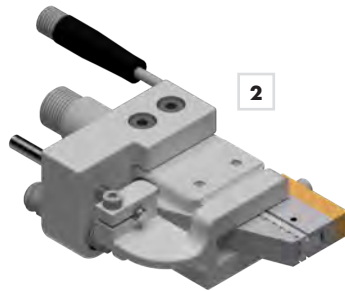
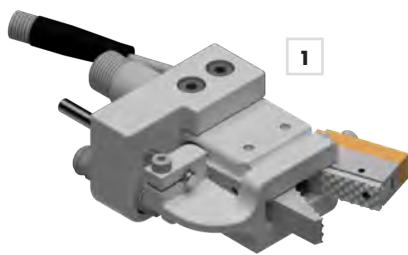
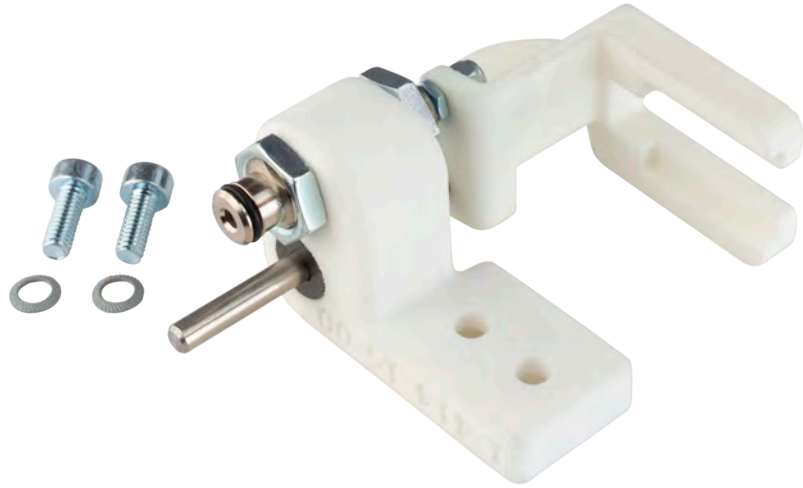


Remarks:

Application: Supports shifting of soft materials from the gripper

- easy to add
- stroke 15 mm
- single acting
- lightweight
- controlled separately
- available for various GRZ on demand
- not suitable for jaw types EP, A, AH, DB, RB and SL
- application example shows AAE with GRZ 14

- 1 GRZ open / AAE initial
- 2 GRZ closed / AAE initial
- 3 GRZ open / AAE moved



	Part No.	Description	A [mm]	B [mm]	C [mm]	H [mm]	suitable for	Material	Weight [g]
New	1-412-70-00	AAE GRZ 10-12 C WK	44.5	46	49.4	15	GRZ 10-12 C WK	Polyamide	32
	1-414-15-00	AAE GRZ 14	50	32	50	15	GRZ 14	Polyamide	47
New	1-417-15-00	AAE GRZ 20	62	37.3	65.6	15	GRZ 20	Polyamide	62

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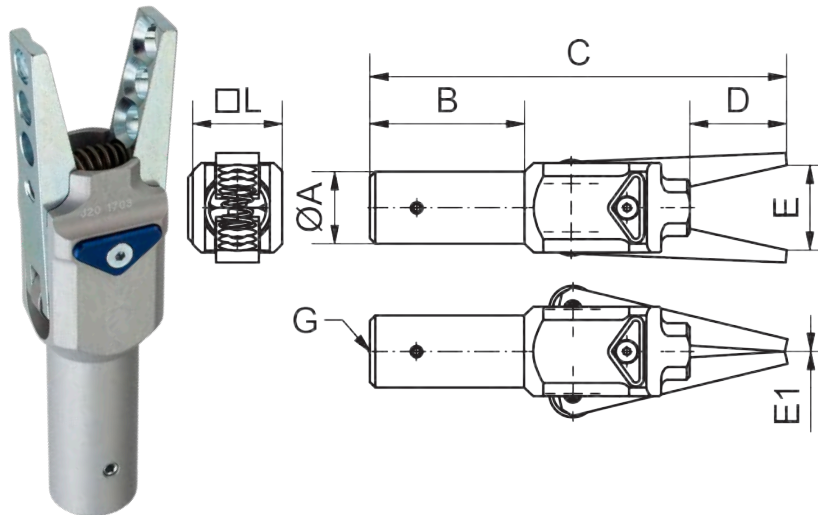
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GRZ 20-16 / Gripper Size 20-16



Remarks:

Application: single-acting gripper, see table for properties of the jaw geometries

- piston diameter 16 mm
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only
- * dimensions divergent for GRZ 20-16 DB: C=120; D=25
- GRZ 20-16 A: C=90; D= depending on used adapter

Accessories e.g.:

- Adapter AD 20-16

Description	A [mm]	B [mm]	C* [mm]	D* [mm]	G ["]	L [mm]	Closing Force max. [N]*
GRZ 20-16...	20	43	116	27	G1/8	25	65



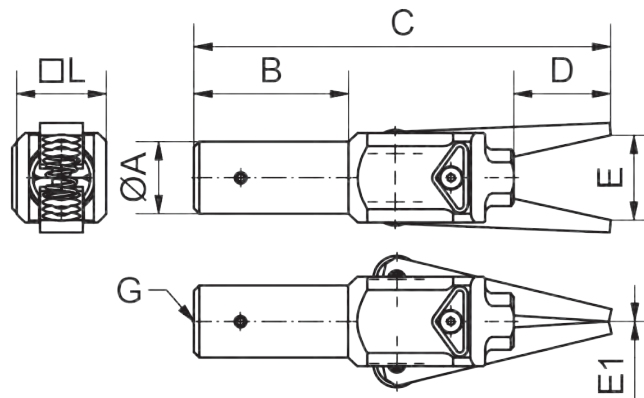
GRZ 20-16 / Gripper Size 20-16 (Continuation)

Part No.	Description	Jaw Type	Application / Remarks
1-415-03-00	GRZ 20-16	perforated	<ul style="list-style-type: none"> standard version
1-415-06-00	GRZ 20-16 R	chequered	<ul style="list-style-type: none"> for gripping small diameters or plates
1-415-60-00	GRZ 20-16 G	smooth	<ul style="list-style-type: none"> for avoiding marking
1-415-40-00	GRZ 20-16 S	saw jaws	<ul style="list-style-type: none"> for demolding sticking sprues
1-415-30-00	GRZ 20-16 PU	PU pads	<ul style="list-style-type: none"> very smooth gripping
1-415-61-00	GRZ 20-16 EP	smooth, with EP coating Shore 90	<ul style="list-style-type: none"> very smooth gripping covers all applications of smooth jaws
1-415-70-00	GRZ 20-16 K	chequered / chamfered	<ul style="list-style-type: none"> sprue centers in chamfered jaw
1-415-12-00	GRZ 20-16 PK	prism / v-groove	<ul style="list-style-type: none"> for cone-shaped sprues
1-415-50-00	GRZ 20-16 DB	swiveling	<ul style="list-style-type: none"> for gripping conical sprues automatically fitting to the conicity due to swiveling jaws
1-415-09-00	GRZ 20-16 A	for customized jaws, each jaw with 2 holes M5	<ul style="list-style-type: none"> for adapting customized jaws hole pitch 16 mm, angle open 4.8°, angle closed -27.3° closing force and opening width depends on customized jaws
1-415-15-00	GRZ 20-16 C	with sensor PNP / perforated	<ul style="list-style-type: none"> direct query, inductive, PNP, NO, 3-pole, 3m, cable
1-415-16-00	GRZ 20-16 C NPN	with sensor NPN / perforated	<ul style="list-style-type: none"> direct query, inductive, NPN, NO, 3-pole, 3m, cable
1-415-18-00	GRZ 20-16 CS	with sensor PNP / perforated	<ul style="list-style-type: none"> direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-415-24-00	GRZ 20-16 CS NPN	with sensor NPN / perforated	<ul style="list-style-type: none"> direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-415-07-00	GRZ 20-16 RC	with sensor PNP / chequered	<ul style="list-style-type: none"> weight reduced version optimized query direct query, inductive, PNP, NO, 3-pole, 3m, cable
1-415-21-00	GRZ 20-16 RC NPN	with sensor NPN / chequered	<ul style="list-style-type: none"> weight reduced version optimized query direct query, inductive, NPN, NO, 3-pole, 3m, cable
1-415-08-00	GRZ 20-16 RCS	with sensor PNP / chequered	<ul style="list-style-type: none"> weight reduced version optimized query direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-415-27-00	GRZ 20-16 RCS NPN	with sensor NPN / chequered	<ul style="list-style-type: none"> weight reduced version optimized query direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-415-41-00	GRZ 20-16 SC	with sensor PNP / saw jaw	<ul style="list-style-type: none"> for demolding sticking sprues direct query, inductive, PNP, NO, 3-pole, 3m, cable
1-415-43-00	GRZ 20-16 SC NPN	with sensor NPN / saw jaw	<ul style="list-style-type: none"> for demolding sticking sprues direct query, inductive, NPN, NO, 3-pole, 3m, cable
1-415-42-00	GRZ 20-16 SCS	with sensor PNP / saw jaw	<ul style="list-style-type: none"> for demolding sticking sprues direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable
1-415-44-00	GRZ 20-16 SCS NPN	with sensor NPN / saw jaw	<ul style="list-style-type: none"> for demolding sticking sprues direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable

Continuation on the following page

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GRZ 20-16 / Gripper Size 20-16 (Continuation)



Remarks:

- » closing force measured at point of jaws at 6 bar
- * dimensions divergent for
GRZ 20-16 DB: C=120; D=25
GRZ 20-16 A: C=90; D= depending on used adapter

Description	A [mm]	B [mm]	C* [mm]	D* [mm]	G ["]	L [mm]	Closing Force max. [N]*
GRZ 20-16...	20	43	116	27	G1/8	25	65

Part No.	Description	Jaws made of...	E [mm]	E1 [mm]	Weight [g]
1-415-03-00	GRZ 20-16	zinc-plated Steel	23.5	0	136
1-415-06-00	GRZ 20-16 R	hardcoated Aluminium	22.5	0	99
1-415-60-00	GRZ 20-16 G	zinc-plated Steel	23.5	0	149
1-415-40-00	GRZ 20-16 S	zinc-plated Steel	23	0	143
1-415-30-00	GRZ 20-16 PU	zinc-plated Steel, with PU Pads	20	0	143
1-415-61-00	GRZ 20-16 EP	zinc-plated Steel, with EP coating Shore 90, colour blue	23.5	0	151
1-415-70-00	GRZ 20-16 K	hardcoated Aluminium (chequered jaw) / zinc-plated Steel (contour jaw)	23.5	0	122
1-415-12-00	GRZ 20-16 PK	zinc-plated Steel	23.5	0	151
1-415-50-00	GRZ 20-16 DB	Steel, stainless	23	3,5	176
1-415-09-00	GRZ 20-16 A	zinc-plated Steel	27	-	122
1-415-15-00	GRZ 20-16 C	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (regular jaw)	22.5	3	160
1-415-16-00	GRZ 20-16 C NPN	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (regular jaw)	22.5	3	160
1-415-18-00	GRZ 20-16 CS	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (regular jaw)	22.5	3	178
1-415-24-00	GRZ 20-16 CS NPN	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (regular jaw)	22.5	3	178
1-415-07-00	GRZ 20-16 RC	hardcoated Aluminium	22.5	3	142
1-415-21-00	GRZ 20-16 RC NPN	hardcoated Aluminium	22.5	3	142
1-415-08-00	GRZ 20-16 RCS	hardcoated Aluminium	22.5	3	159
1-415-27-00	GRZ 20-16 RCS NPN	hardcoated Aluminium	22.5	3	159
1-415-41-00	GRZ 20-16 SC	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (saw jaw)	23	3	164
1-415-43-00	GRZ 20-16 SC NPN	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (saw jaw)	23	3	164
1-415-42-00	GRZ 20-16 SCS	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (saw jaw)	23	3	182
1-415-44-00	GRZ 20-16 SCS NPN	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (saw jaw)	23	3	182

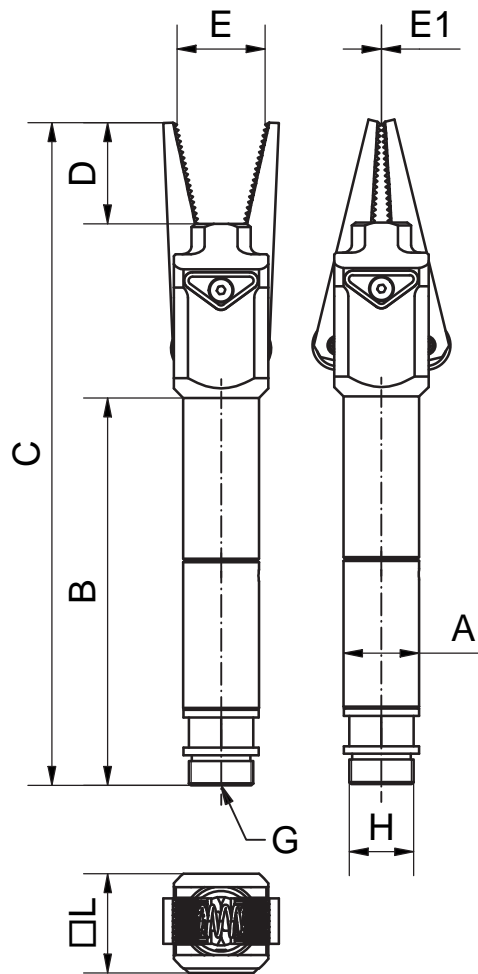
GRZ 20-16 K / Gripper Size 20-16, boosted



Remarks:

Application: single-acting gripper with enforced piston for even more holding force.

- holding force: 117 N
- piston diameter 16 mm
- enforced holding force, +80% compared to GRZ 20-16
- design similar GRZ 20-16
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only



Part No.	Description	Ø A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	E1 [mm]	G [°]	H* [mm]	Weight [g]
1-416-06-00	GRZ K 20-16 R	20	103	176	27	22,5	0	G1/8	M17x1	128

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Quick Change Systems

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Profiles
Channel Nuts

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120
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Connectors

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Profile
Accessories

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Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

400 | Grippers

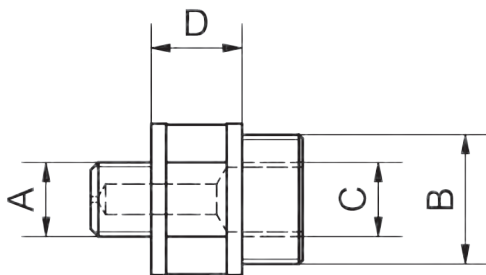
GRZ AD 20-16 / Gripper Extension Adapter



Remarks:

Application: allows coaxial connection of extension tube VLR 20 to grippers GRZ 20-16

- optimized version
- air connection is inside the VLR so that the hose can be routed inside
- easy to mount to any standard gripper GRZ 20-16
- air connection G1/8" female thread
- 1/8" thread on the gripper side must be sealed with liquid sealant



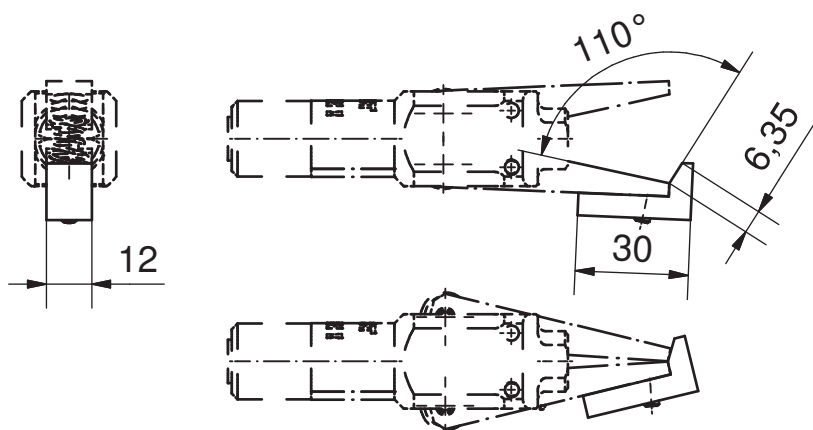
Part No.	Description	A ["]	B [mm]	C ["]	D [mm]	Weight [g]
1-415-03-04-1	GRZ AD 20-16	G1/8	M 17 X 1	G1/8	6	22

GRZ-20-16 HW / Jaw Hook for GRZ 20-16



Remarks:

- Jaw Hook for grippers GRZ 20-16 standard version
- can be mounted at any time
- for form locking gripping



Part No.	Description
1-415-14-00	GRZ 20-16 HW

GRZ 20-20 R / Gripper with hard coated Aluminium Jaws

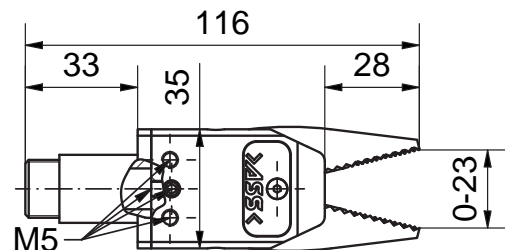
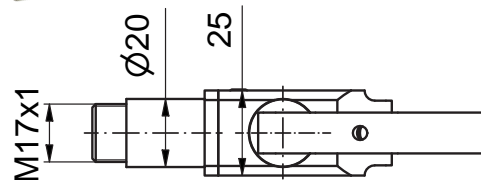
Remarks:

Application: universal gripper with highest closing force in its class (clamping Ø 20mm)

- 2 pistons with diameter 20mm
- gripper jaws close centric, synchronized jaw movement, no floating position
- great flexibility regarding mounting options
- optionally equipped with a sensor bracket and initiator
- indirect query via the gripper jaw position possible (magnet is embedded in gripper jaw)
- body made of anodized aluminum
- jaws made of hardcoated aluminum
- flexible in jaw selection (easy to change jaws)
- compatible with all gripper jaws GRZ 20
- single-acting
- air connection M5
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Sensor Bracket SH GRZ 20
- Sprue Shifter AAE



Part No.	Description	Closing force max. [N]	Condition of Jaws	Weight [g]
1-417-00-00	GRZ 20-20 R	100	chequered	132

GRZ 20-20 R,CS,I / Gripper with Sensor, inductive

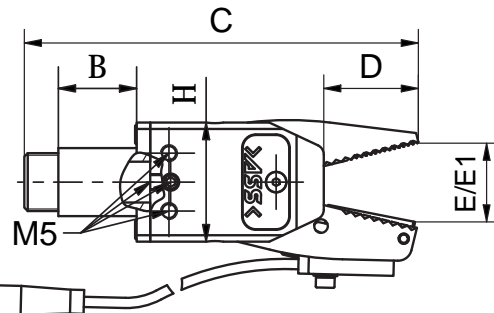
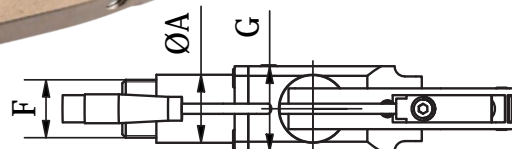
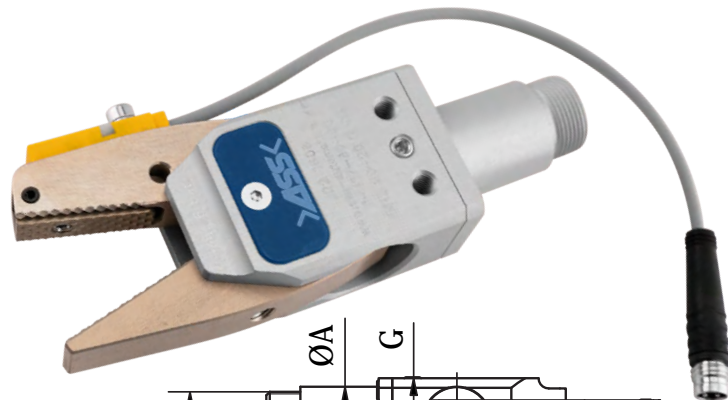
Remarks:

Application: universal gripper with sensor and with highest closing force in its class (clamping Ø 20mm)

- 2 pistons with diameter 20mm
- gripper jaws close centric, synchronized jaw movement, no floating position
- great flexibility regarding mounting options
- direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
- NPN version available as separate Gripper Jaws
- body made of anodized aluminum
- jaws made of hardcoated aluminum
- flexible in jaw selection (easy to change jaws)
- single-acting
- air connection M5
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Connector KG/KW
- Sprue Shifter AAE



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	E1 [mm]	F [mm]	G [mm]	H [mm]	Closing force max. [N]	Weight [g]
1-417-30-00	GRZ 20 R,CS,I	20	23	115	27	23	2	M17x1	25	35	100	146

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Gripper Arms

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Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

400 | Grippers

GRZ 20-20 AS / Gripper with adapted Scissors



Remarks:

Application: Gripper with adapted scissors for cutting tasks.

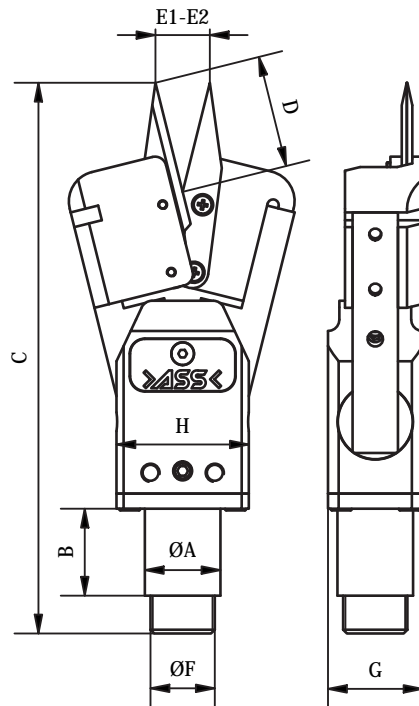
- closing force: 60 N
- sharp blades made of hardened steel
- 2 pistons with diameter 20mm
- gripper jaws close centric, synchronized jaw movement, no floating position
- great flexibility regarding mounting options
- body made of anodized aluminum
- single-acting gripper
- optionally equipped with a sensor bracket and initiator
- indirect query via the gripper jaw position possible (magnet is embedded in gripper jaw)
- air connection M5
 - » closing force measured at point of jaws at 6 bar
 - » maximum air pressure is 6 bar, use dry and filtered air only

Scope of delivery:

- 1 x screw
- 2 x spare blades

Accessories e.g.:

- Spare Blades (1-417-40-03)



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	E1 [mm]	F [mm]	G [mm]	Weight [g]
1-417-40-00	GRZ 20-20 AS	20	23	146	30	0	15	M17x1	25	190

GRZ 20 / Body

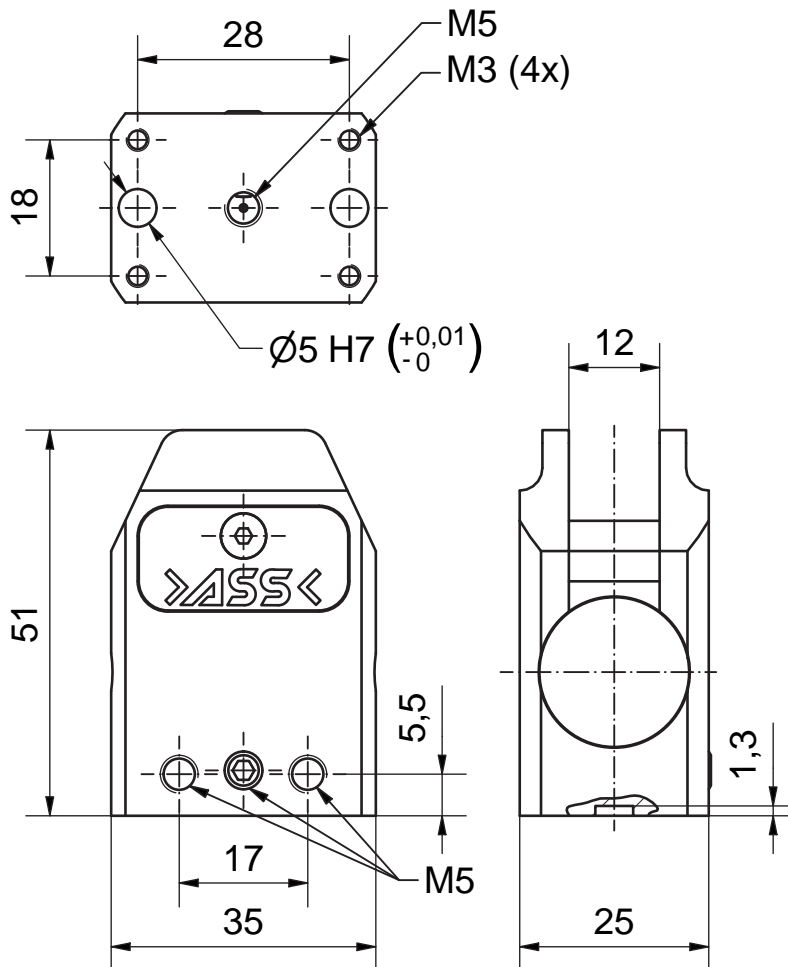
Remarks:

Application: for customizing gripper GRZ 20

- made of anodized Aluminium
- 2 pistons with diameter 20mm
- all components easy to assemble
- single-acting body

Accessories e.g.:

- Adapter GRZ AD 14
- Adapter GRZ AD 20
- Sensor Bracket SH GRZ 20
- all Gripper Jaws Size 20



Part No.	Description	Material	Weight [g]
1-417-80-00	GRZ 20 Body	Aluminium	68

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Quick Change Systems

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Sensors

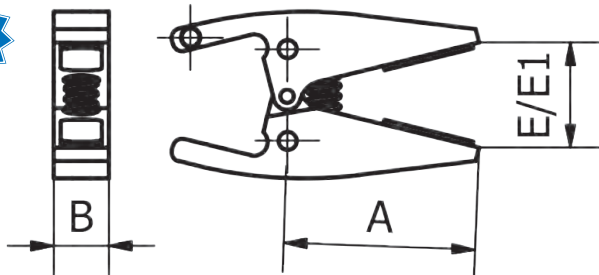
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

400 | Grippers

GRZ 20 Gripper Jaws / Gripper Jaws Size 20



Remarks:

Application: Gripper Jaws for creating individual GRZ 20-20, see table for properties of the jaw geometries

- gripper jaws without integrated query optionally can be equipped with a sensor bracket and initiator
- jaw material: hardcoated Aluminium

GRZ 20 BP R



GRZ 20 BP PU



GRZ 20 BP EP



GRZ 20 BP S



GRZ 20 BP SL



GRZ 20 BP Z



GRZ 20 BP A



GRZ 20 BP R,CS,I
GRZ 20 BP R,CS,I NPN



GRZ 20 BP PS,CS,I
GRZ 20 BP PS,CS,I NPN



GRZ 20 BP Z,CS,I
GRZ 20 BP Z,CS,I NPN



GRZ 20 BP S,CS,I
GRZ 20 BP S,CS,I NPN



GRZ 20 BP EP,CS,I
GRZ 20 BP EP,CS,I NPN



GRZ 20 BP EP,CS,I,EP



Part No.	Description	A [mm]	B [mm]	E [mm]	E1 [mm]	Weight [g]
1-417-81-00	GRZ 20 Gripper Jaws R	42	12	23	0	39
1-417-90-00	GRZ 20 Gripper Jaws PU	42	12	23	0	39
1-417-98-00	GRZ 20 Gripper Jaws EP	42	12	23	0	40
1-417-86-00	GRZ 20 Gripper Jaws S	42	12	22	0	38
1-417-87-00	GRZ 20 Gripper Jaws SL	70	12	41	3	61
1-417-85-00	GRZ 20 Gripper Jaws Z	42	12	21	0	36
1-417-84-00	GRZ 20 Gripper Jaws A	41	12	-	-	40
1-417-91-00	GRZ 20 Gripper Jaws R,CS,I	41	12	20	2	53
1-417-95-00	GRZ 20 Gripper Jaws R,CS,I NPN	41	12	20	2	53

GRZ 20 Gripper Jaws / Gripper Jaws Size 20 (Continuation)

Part No.	Description	A [mm]	B [mm]	E [mm]	E1 [mm]	Weight [g]
1-417-92-00	GRZ 20 Gripper Jaws PS,CS,I	42	12	26	1	53
1-417-99-00	GRZ 20 Gripper Jaws PS,CS,I NPN	42	12	26	1	53
1-417-93-00	GRZ 20 Gripper Jaws Z,CS,I	41	12	20	2	52
1-417-96-00	GRZ 20 Gripper Jaws Z,CS,I NPN	41	12	20	2	52
1-417-94-00	GRZ 20 Gripper Jaws S,CS,I	41	12	20	2	52
1-417-97-00	GRZ 20 Gripper Jaws S,CS,I NPN	41	12	20	2	52
1-417-79-00	GRZ 20 Gripper Jaws EP,CS,I	41	12	20	1	53
1-417-78-00	GRZ 20 Gripper Jaws EP,CS,I NPN	41	12	20	1	53
New 1-417-76-00	GRZ 20 Gripper Jaws EP,CS,I,EP	41	12	20	1	53

Part No.	Description	Jaw Type	Application / Remarks
1-417-81-00	GRZ 20 Gripper Jaws R	chequered	• standard version
1-417-90-00	GRZ 20 Gripper Jaws PU	Polyurethane pads	• very smooth gripping
1-417-98-00	GRZ 20 Gripper Jaws EP	smooth, with EP coating Shore 90, colour blue	• very smooth gripping • covers all applications of smooth jaws • for more about EP coating, see category 990
1-417-86-00	GRZ 20 Gripper Jaws S	saw jaws	• for demolding stinking sprues
1-417-87-00	GRZ 20 Gripper Jaws SL	saw jaws, long jaws	• for demolding stinking sprues • extra long jaws
1-417-85-00	GRZ 20 Gripper Jaws Z	teethed, chamfered	• for halfround sprues or stiffening ribs
1-417-84-00	GRZ 20 Gripper Jaws A	for customized jaws, each jaw with 2 holes M4	• for adapting customized jaws • hole pitch 15 mm • angle opened 27.6°, angle closed -4.5° • closing force and opening width depends on customized jaws
1-417-91-00	GRZ 20 Gripper Jaws R,CS,I	with sensor PNP / chequered	• direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-417-95-00	GRZ 20 Gripper Jaws R,CS,I NPN	with sensor NPN / chequered	• direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
1-417-92-00	GRZ 20 Gripper Jaws PS,CS,I	with sensor PNP / contour jaw	• contour jaw for semi-circular and large sprues • direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-417-99-00	GRZ 20 Gripper Jaws PS,CS,I NPN	with sensor NPN / contour jaw	• contour jaw for semi-circular and large sprues • direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
1-417-93-00	GRZ 20 Gripper Jaws Z,CS,I	with sensor PNP / teethed, chamfered	• for semicircular sprues or bridges • direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-417-96-00	GRZ 20 Gripper Jaws Z,CS,I NPN	with sensor NPN / teethed, chamfered	• for semicircular sprues or bridges • direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
1-417-94-00	GRZ 20 Gripper Jaws S,CS,I	with sensor PNP / saw jaw	• for demolding stinking sprues • direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-417-97-00	GRZ 20 Gripper Jaws S,CS,I NPN	with sensor NPN / saw jaw	• for demolding stinking sprues • direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
1-417-79-00	GRZ 20 Gripper Jaws EP,CS,I	with sensor PNP / with EP coating Shore 90, colour blue	• very smooth gripping • for more information about EP coating, see category 990 • direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-417-78-00	GRZ 20 Gripper Jaws EP,CS,I NPN	with sensor NPN / with EP coating Shore 90, colour blue	• very smooth gripping • for more information about EP coating, see category 990 • direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
New 1-417-76-00	GRZ 20 Gripper Jaws EP,CS,I,EP	with sensor PNP with EP coating Shore 90, colour blue / with EP coating Shore 90, colour blue	• very smooth gripping, EP coating on both sides, optimizes the adhesion • for more about EP coating, see category 990 • direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8

The EP-coating is an elastomer, so all dimensions are nominal.

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Quick Change
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Gripper Arms

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Gripper
Parallel Gripper

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Gripper Fingers

460
Needle Gripper

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Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

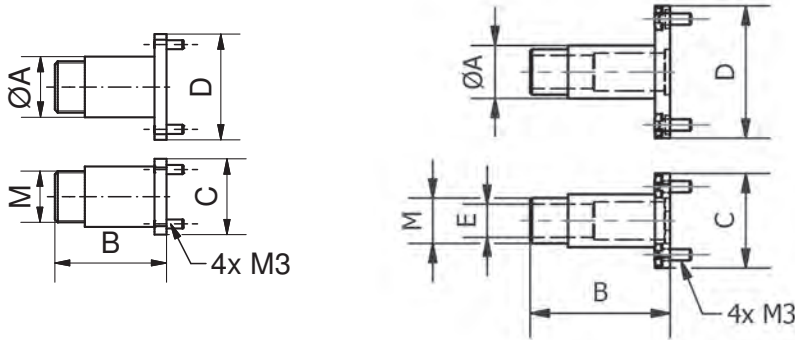
400 | Grippers

AD 20 GRZ 20 / AD 14 GRZ 20 U / Adapter

AD 20 GRZ 20



AD 14 GRZ 20 U



Remarks:

Application: adapts the GRZ 20 to GRZ 20-14 or GRZ 20-20

- AD 14 GRZ 20
 - with integrated air duct
 - compatible to all versions of VLR 14
 - Scope of Delivery: seal ring and screws included
- AD 20 GRZ 20
 - without air duct
 - compatible to all versions of VLR 20
 - Scope of Delivery: screws included

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E Air Connection	M	Material	Weight [g]
1-417-07-00	AD 14 GRZ 20 U	14	37	25	35	M5	M12x1	Aluminium	22
1-417-02-00	AD 20 GRZ 20	20	37	25	35	G1/8	M17x1	Aluminium	25

SH GRZ 20 / Sensor Bracket



Application example:
GRZ 20-20 R upgraded with sensor bracket and sensor



Remarks:

- every GRZ 20 Gripper Jaws contains magnets
- this Sensor Bracket is for mounting sensor MFS T2 3,7 for monitoring 2 basic positions

Accessories e.g.:

- Sensor MFS T2 3,7 (Part No. 1-808-30-00)

Part No.	Description	Material	Weight [g]
1-417-04-00	SH GRZ 20	Polyamide	7

AD GRZ 20 S / Adapter, sidwise connection



Remarks:

Application: for grippers of the GRZ 20 series sidwise

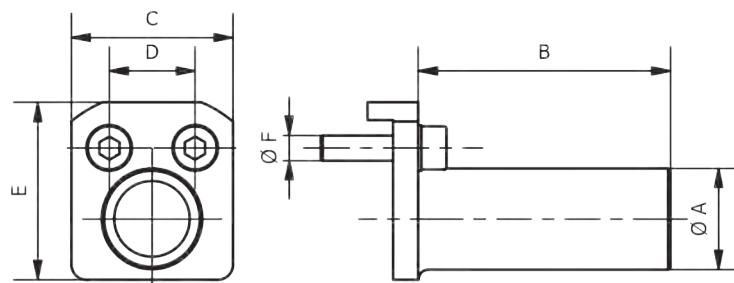
- allows various applications

Scope of delivery:

- incl. mounting material



Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-417-09-00	AD 20 GRZ 20 S	20	50	32	17	35	M5	Aluminium	41

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Quick Change Systems

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Nipper Bodies

610
Nipper Blades

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800
Electrics and
Sensors

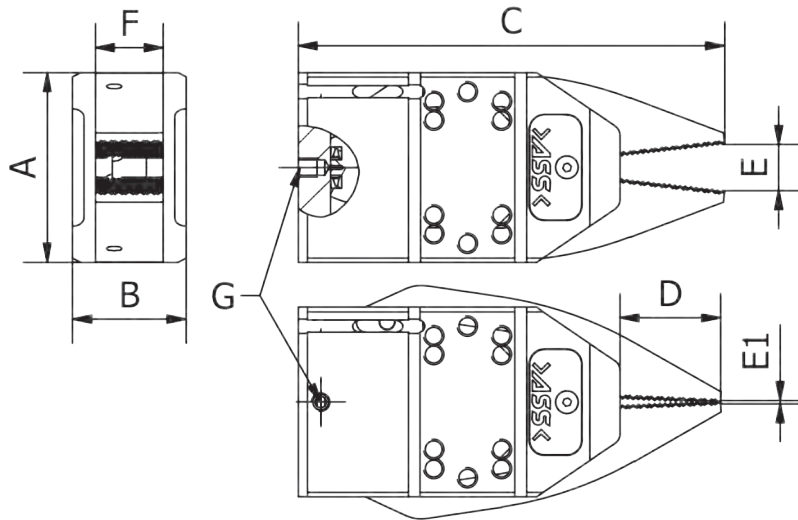
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

400 | Grippers

GRZ 25 / Grippers Size 25



Remarks:

Application: strong gripper with the same high closing force as GRZ 32 in a more compact design

- single-acting gripper
- C-groove is integrated in the gripper body
- 2 pistons, Ø 25 mm
- easy to change jaws
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Sensor MFS T2 3,7 (Part No. 1-808-30-00)
- Adapter AP PGR 50
- Adapter AP HEU 16

GRZ 25 R



GRZ 25 R,CS,I



Part No.	Description	Jaw Type	Application / Remarks	Jaws made of...
1-421-00-00	GRZ 25 R	chequered	<ul style="list-style-type: none"> • standard version • optional query, C-groove is integrated in the gripper body 	anodized Aluminium
1-421-30-00	GRZ 25 R,CS,I	with sensor PNP / chequered	<ul style="list-style-type: none"> • direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 • NPN version available as separate Gripper Jaws 	anodized Aluminium

Part No.	Description	A	B	C	D	E	E1	F	G	Closing force max. [N]	Weight [g]
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
1-421-00-00	GRZ 25 R	50	30	112	27	12	0	18	M5	350	290
1-421-30-00	GRZ 25 R,CS,I	50	30	112	27	11	1	18	M5	350	306

GRZ 25 Body

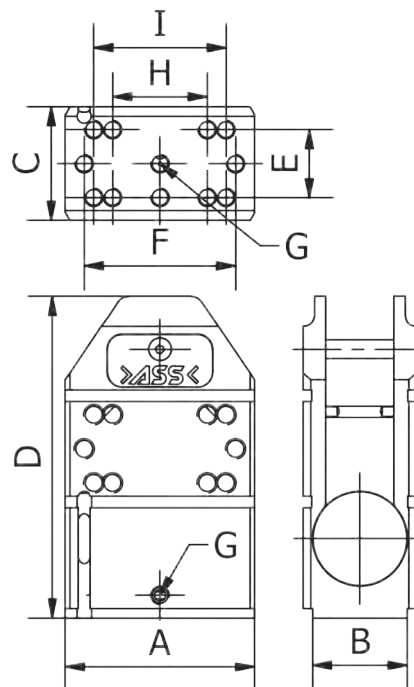
Remarks:

Application: for customizing gripper GRZ 25

- single-acting
- made of anodized Aluminium
- 2 pistons, Ø 25
- all components easy to assemble
- single-acting gripper body
- C-groove is integrated in the gripper body

Accessories e.g.:

- all GRZ 25 Gripper Jaws
- Sensor MFS T2 3,7 (Part No. 1-808-30-00)
- Adapter AP PGR 50
- Adapter AP HEU 16



Part No.	Description	A	B	C	D	E	F	G	H	I	Weight [g]
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
1-421-80-00	GRZ 25 Body	50	25	30	85	18	40	M5	25	25	177

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Gripper
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

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Nipper Blades

700
Special Elements

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Electrics and
Sensors

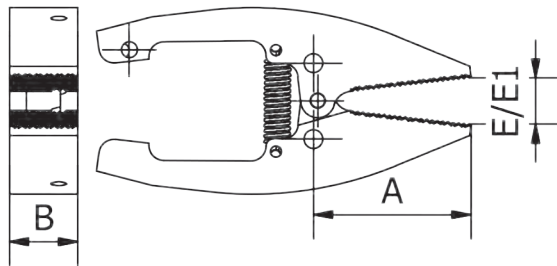
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

400 | Grippers

GRZ 25 Gripper Jaws / Gripper Jaws Size 25



Remarks:

Application: Gripper Jaws for creating individual GRZ 25, see table for properties of the jaw geometries

- jaws made of anodized Aluminium
- integrated permanent magnet
- indirect query of jaws possible

GRZ 25 BP R



GRZ 25 BP R,EP



GRZ 25 BP RL



GRZ 25 BP R,CS,I
GRZ 25 BP R,CS,I NPN



GRZ 25 BP EP,CS,I
GRZ 25 BP EP,CS,I NPN



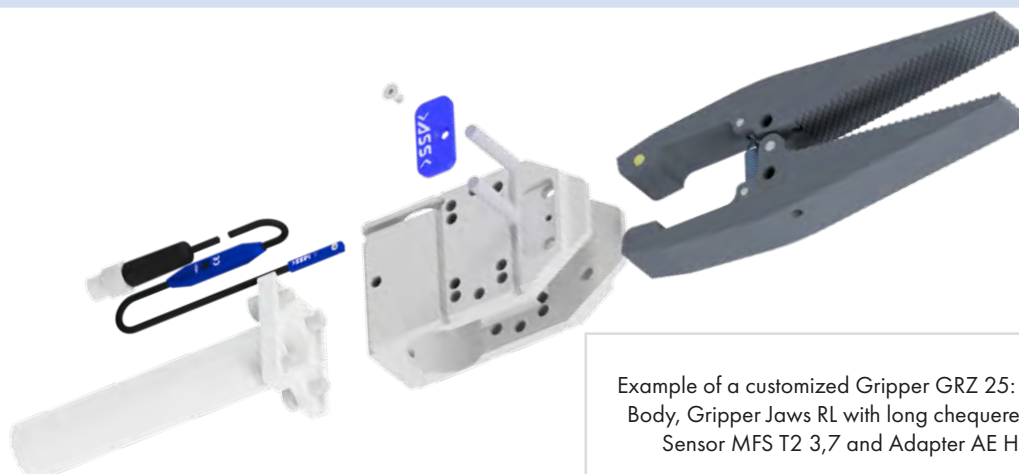
GRZ 25 BP EP,CS,I,EP



GRZ 25 Gripper Jaws / Gripper Jaws Size 25 (Continuation)

Part No.	Description	Application / Remarks
1-421-81-00	GRZ 25 Gripper Jaws R	<ul style="list-style-type: none"> standard version optional query, C-groove is integrated in the gripper body
1-421-84-00	GRZ 25 Gripper Jaws R,EP	<ul style="list-style-type: none"> very smooth gripping for more information about EP coating, see category 990 optional query, C-groove is integrated in the gripper body
1-421-90-00	GRZ 25 Gripper Jaws RL	<ul style="list-style-type: none"> standard version with extra long jaws optional query, C-groove is integrated in the gripper body
1-421-91-00	GRZ 25 Gripper Jaws R,CS,I	<ul style="list-style-type: none"> direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-421-94-00	GRZ 25 Gripper Jaws R,CS,I NPN	<ul style="list-style-type: none"> direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
1-421-93-00	GRZ 25 Gripper Jaws EP,CS,I	<ul style="list-style-type: none"> very smooth gripping for more information about EP coating, see category 990 direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-421-95-00	GRZ 25 Gripper Jaws EP,CS,I NPN	<ul style="list-style-type: none"> very smooth gripping for more information about EP coating, see category 990 direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
New 1-421-97-00	GRZ 25 Gripper Jaws EP,CS,I,EP	<ul style="list-style-type: none"> very smooth gripping, EP coating on both sides, optimizes the adhesion for more about EP coating, see category 990 direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8

Part No.	Description	Jaw Type	A [mm]	B [mm]	E [mm]	E1 [mm]	Weight [g]
1-421-81-00	GRZ 25 Gripper Jaws R	chequered	42	18	12	0	114
1-421-84-00	GRZ 25 Gripper Jaws R,EP	chequered / with EP coating Shore 90, colour blue	42	18	12	0	119
1-421-90-00	GRZ 25 Gripper Jaws RL	chequered, long jaws	89	18	28	0	174
1-421-91-00	GRZ 25 Gripper Jaws R,CS,I	with sensor PNP / chequered	42	18	11	1	130
1-421-94-00	GRZ 25 Gripper Jaws R,CS,I NPN	with sensor NPN / chequered	42	18	11	1	130
1-421-93-00	GRZ 25 Gripper Jaws EP,CS,I	with sensor PNP / with EP coating Shore 90, colour blue	41	18	11	1	131
1-421-95-00	GRZ 25 Gripper Jaws EP,CS,I NPN	with sensor NPN / with EP coating Shore 90, colour blue	41	18	11	1	131
New 1-421-97-00	GRZ 25 Gripper Jaws EP,CS,I,EP	with sensor PNP with EP coating Shore 90, colour blue / with EP coating Shore 90, colour blue	41	18	11	1	131



Example of a customized Gripper GRZ 25: GRZ 25 Body, Gripper Jaws RL with long chequered jaws, Sensor MFS T2 3,7 and Adapter AE HEU.

400 | Grippers

GRZ 32 / Grippers Size 32



Remarks:

Application: strong, double-acting gripper, see table for properties of the jaw geometries

- piston Ø 32 mm
- cylinder can be monitored, only at GRZ 32 PUA
- best usage with profiles X and JU
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories for example:

- Sensor ICS 8 (Part No. 1-808-36-00)

GRZ 32



GRZ 32 C



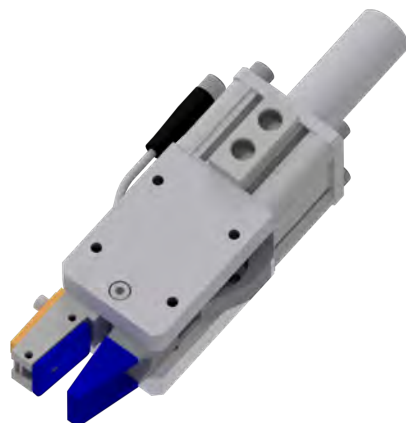
GRZ 32 CS



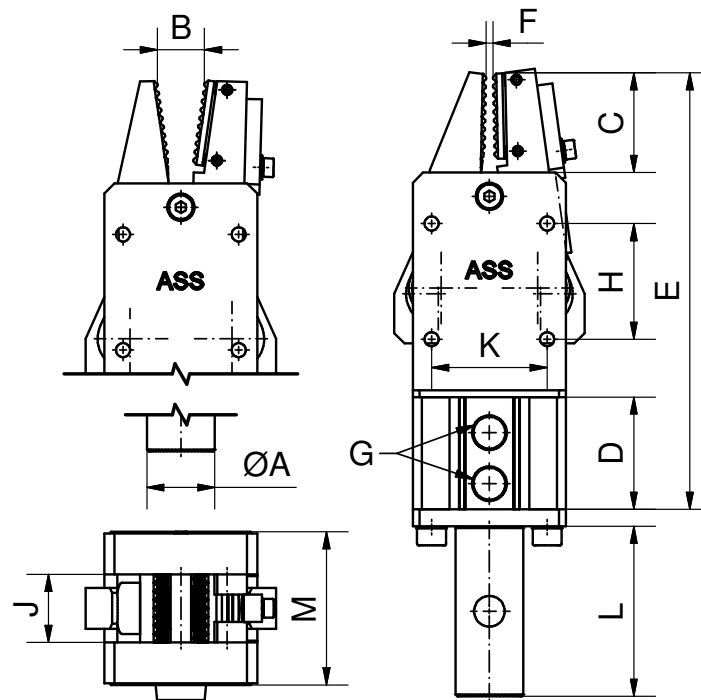
GRZ 32 PUA



GRZ 32 EP,CS,I,EP



GRZ 32 / Grippers Size 32 (Continuation)



Description	A [mm]	C [mm]	D [mm]	G ["]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	Closing force max. [N]
GRZ 32...	20	30	33	1/8	34	20	34	50	44	350

Part No.	Description	Jaw Type	Application / Remarks
1-420-03-00	GRZ 32	chequered	<ul style="list-style-type: none"> e.g. for gripping tasks where a high closing force is required optional query, C-groove is integrated
1-420-06-00	GRZ 32 C	with sensor PNP / chequered	<ul style="list-style-type: none"> direct query, inductive, PNP, NO, 3-pole, 3m, cable jaw with large-scale query
1-420-15-00	GRZ 32 C NPN	with sensor NPN / chequered	<ul style="list-style-type: none"> direct query, inductive, NPN, NO, 3-pole, 3m, cable jaw with large-scale query
1-420-09-00	GRZ 32 CS	with sensor PNP / chequered	<ul style="list-style-type: none"> direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable jaw with large-scale query
1-420-08-00	GRZ 32 CS NPN	with sensor NPN / chequered	<ul style="list-style-type: none"> direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable jaw with large-scale query
1-420-10-00	GRZ 32 PUA	Polyurethane pads	<ul style="list-style-type: none"> very smooth gripping optional query, C-groove is integrated
New 1-420-40-00	GRZ 32 EP,CS,I,EP	with sensor PNP with EP coating Shore 90, colour blue / with EP coating Shore 90, colour blue	<ul style="list-style-type: none"> very smooth gripping, EP coating on both sides, optimizes the adhesion for more about EP coating, see category 990 direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8

Part No.	Description	Jaws made of...	E [mm]	B [mm]	F [mm]	Weight [g]
1-420-03-00	GRZ 32	zinc-plated Steel	127	12	1	628
1-420-06-00	GRZ 32 C	zinc-plated Steel	129	11	1	686
1-420-15-00	GRZ 32 C NPN	zinc-plated Steel	129	11	1	686
1-420-09-00	GRZ 32 CS	zinc-plated Steel	127	11	1	705
1-420-08-00	GRZ 32 CS NPN	zinc-plated Steel	127	11	1	705
1-420-10-00	GRZ 32 PUA	zinc-plated Steel with PU Pads	137	9.3	0	670
New 1-420-40-00	GRZ 32 EP,CS,I,EP	zinc-plated Steel with EP coating	127	13	1	705

400 | Grippers

AD GRZ 32 S / Adapter for mounting GRZ 32 sidwise



Remarks:

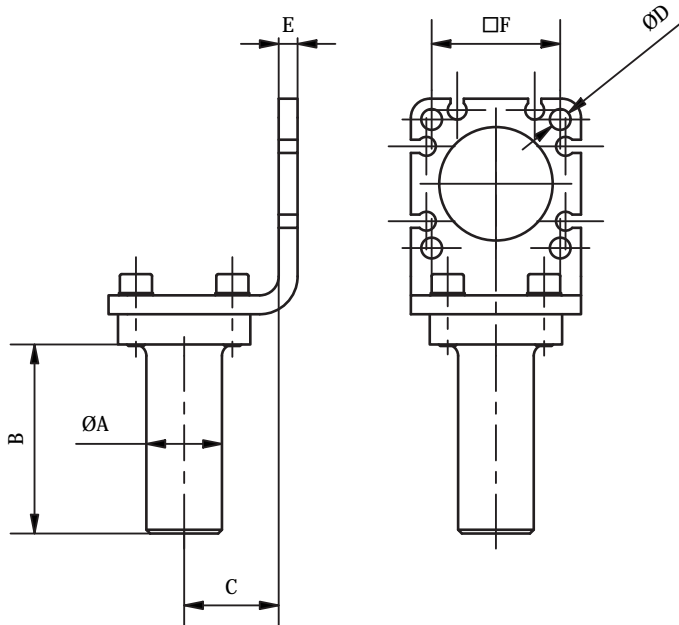
Application: for mounting grippers GRZ 32 sidwise

- offers various possible uses
- The drawing shows the adapter with the pin that is already attached to the GRZ 32

Scope of delivery:

- including screws
- exclusive cones

Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-420-20-00	AD GRZ 32 S	20	50	25	5,5	5	34	Aluminium	90

PGR-P / Parallel Gripper, pneumatic



Remarks:

Application: e.g. for precise gripping or inserting applications

- load-bearing and low-play T-slot guide for safe and precise handling with high load ratings
 - drive concept for maximum gripping force
 - housing made of high-strength aluminum alloy for minimum weight and high stiffness
 - double acting: can be used as external or internal gripper
 - small construction volume for minimal contours
 - centering possibilities on the gripping jaws
 - versatile adaptations for flexible assembling
 - power supply on two gripper sides possible; also hoseless direct connection possible
 - integrated permanent magnet for sensing end position (see accessories)
 - precise sensing of jaw position by adapting induction field sensors (see accessories)
- » maximum air pressure is 6 bar, use dry and filtered air only

Drawing:

PGR-P Opening:

A1 main connection

A2 direct connection M3

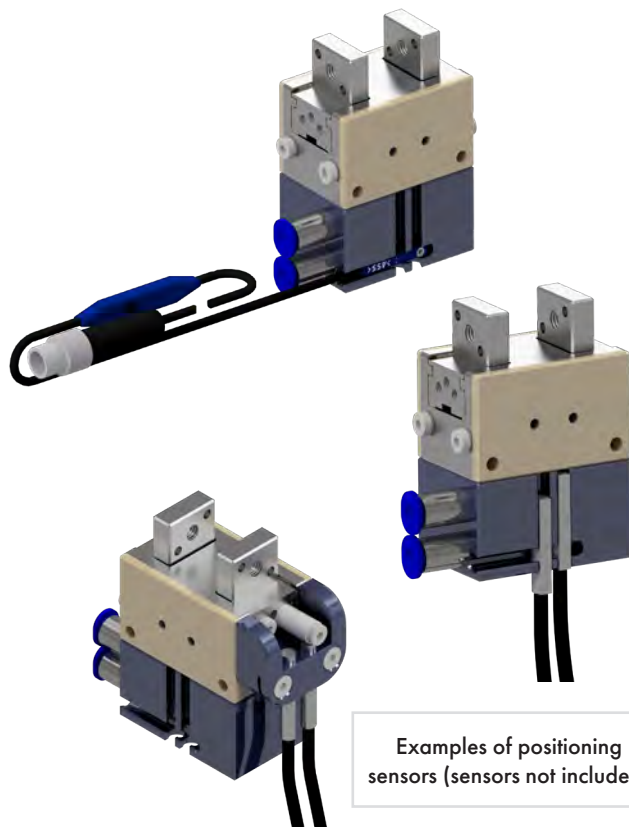
PGR-P Closing:

B1 main connection

B2 direct connection M3

Scope of Delivery:

- 1 x PGR-P
- 2x centering sleeve
- 2x air connections
- 2x plug
- 2x o-rings
- 1 x sensor bracket with mounting material (Sensor IRK 4 not included)



Examples of positioning sensors (sensors not included)

Accessories e.g.:

- GB-PGR - Unmachined Jaws (blanks) for Parallel Gripper
- KUG - Glue and Polyurethane Pad: PU on the gripping surface increases the friction (category 990)
- AP PGR - adaptation of the parallel gripper to the respective extension tube
- MFS T2 - magnetic field sensor with 2 switching points „teachable“ for the end position sensing of the piston rod, easy to mount via the integrated C-slots (Part No. 1-808-30-00)
- ICS 8 - 3-pole magnetic field sensor for end position sensing of the piston rod, easy to install via the integrated C-slots, basic and working position requires one sensor each (Part No. 1-808-36-00)
- IRK 4 - induction field sensors for the end position detection of the gripper jaws, basic and working position requires one sensor each, sensor bracket in the scope of delivery (Part No. 1-808-02-00)
- AS-P PGR-P - Sensor Bracket Precise mounting kit: complete set for querying the exact jaw position using induction field sensors

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Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

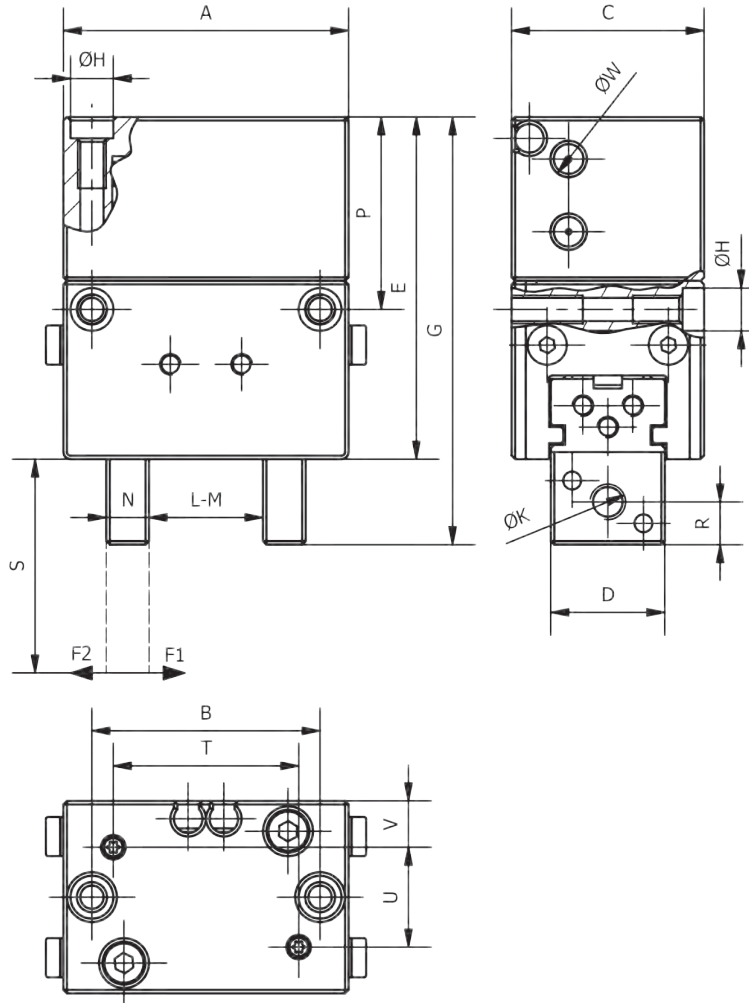
850
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Tubular System
Micro System

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PA-Forming
Others

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PGR-P / Parallel Gripper, pneumatic (Continuation)



Part No.	Description	Closing force F1 max. [N]	Opening force F2 max. [N]	Air connection	Stroke per jaw [mm]	Hose connection	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	
1-431-06-00	PGR-P 25	35	40	M3	3	3/0.5	26	20	19	10	35	43.2	New
1-431-09-00	PGR-P 32	70	80	M5	4	4/3	32	25	23	12	38.8	49	
1-431-12-00	PGR-P 40	140	155	M5	6	4/3	40	32	27	16	48	60	
1-431-15-00	PGR-P 50	180	210	M5	8	6/4	50	40	31	18	57.5	71.5	
1-431-18-00	PGR-P 64	310	340	M5	10	6/4	64	52	36	20	67	82.9	

Part No.	Description	H [mm]	K [mm]	L [mm]	M [mm]	N [mm]	P [mm]	R [mm]	S [mm]	T [mm]	U [mm]	V [mm]	W [mm]	Weight [g]	
1-431-06-00	PGR-P 25	M3/Ø5	M4	17	11	4	19.7	4	32	14.5	14.5	3.5	M3	60	New
1-431-09-00	PGR-P 32	M4	M5	22	14	5	22.5	5	40	20	8.5	3	M5	100	
1-431-12-00	PGR-P 40	M4	M5	28	16	6	27	6	50	26	14	6.5	M5	184	
1-431-15-00	PGR-P 50	M5	M6	34	18	8	31	7	64	33	16	7.5	M5	310	
1-431-18-00	PGR-P 64	M5	M8	44	24	10	32.5	8	80	47	16	10	M5	530	

AS-P PGR-P / Sensor Bracket Precise for PGR-P

Remarks:

- precise sensing of jaw position by adaptive induction field sensors

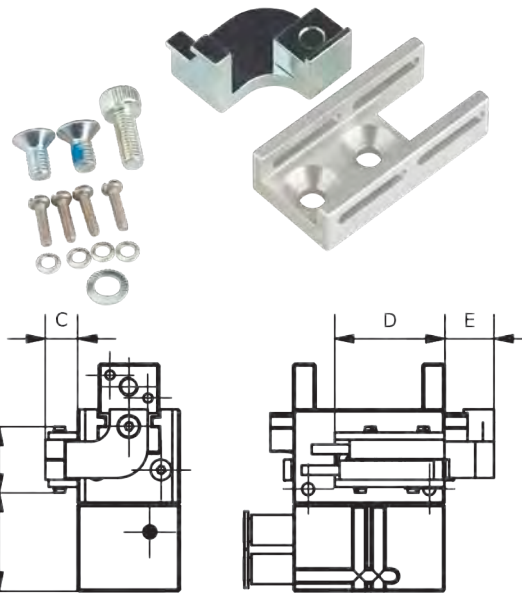
Scope of Delivery:

- 1 x sensor bracket
- 1 x cam switch
- screws

Accessories:

- Sensor IE AL K (Part No. 1-808-38-00)

Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Weight [g]
1-431-09-20	AS-P PGR-P 32	18.8	17.5	8.5	25	11	13
1-431-12-20	AS-P PGR-P 40	26	17.5	8.5	29	13	18
1-431-15-20	AS-P PGR-P 50	33.5	17.5	8.5	34	19	28
1-431-18-20	AS-P PGR-P 64	40.8	17.5	8.5	31	21	33

GB PGR / Unmachined Jaws for Parallel Gripper

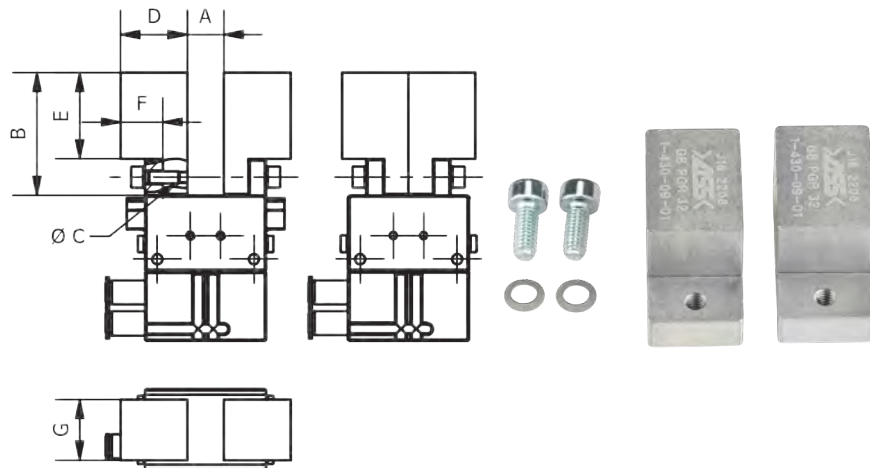
Remarks:

Application: blank jaws for customizing PGR-P jaws

- fits for PGR-P and PGR-plus
- made of Aluminium, smooth surface
- » sold in pairs

Accessories e.g.:

- PU Pad + Glue KUG



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Material	Weight [g]
1-430-03-01	GB PGR 20	4	20,5	M3	13	12,4	8,5	11	Aluminium	15
1-430-06-01	GB PGR 25	6	25,5	M3	15	17,4	9,5	12	Aluminium	24
1-430-09-01	GB PGR 32	8	32,5	M4	19	22,4	12	16	Aluminium	49
1-430-12-01	GB PGR 40	12	40,5	M4	22	28,4	14	20	Aluminium	85
1-430-15-01	GB PGR 50	16	50,5	M5	27	36,4	18	22	Aluminium	145
1-430-18-01	GB PGR 64	20	64,5	M6	34	48,4	22	24	Aluminium	261

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Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

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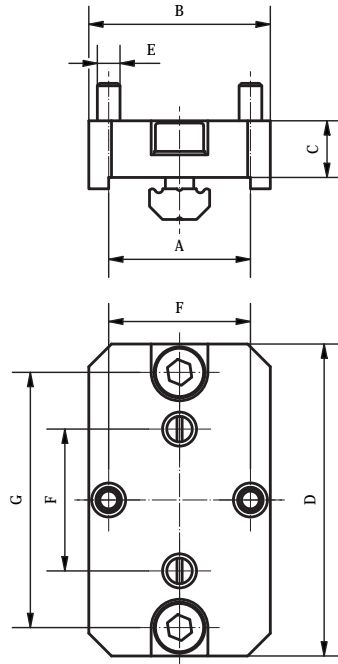
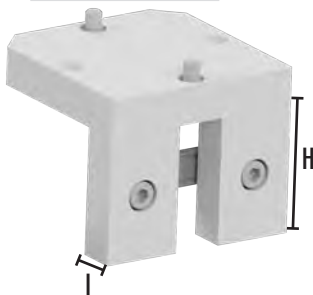
AP-P PGR / Adapter for PGR-P and PGR for mounting to profiles



AP-P PGR 20-50



AP-P PGR 64



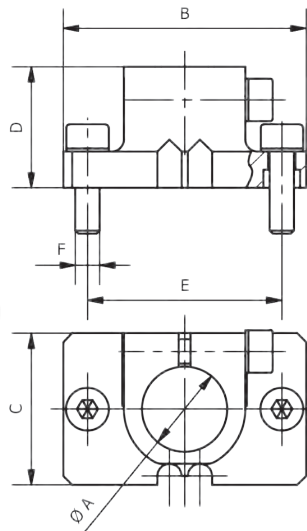
Remarks:

Application: direct adaptation of the PGR-P or PGR to a profile

- PGR-P and PGR can be mounted lengthwise and crosswise to the profile, always symmetrically to the profile
- the adapter plate enables a direct connection to the respective profile
- can be used with or without bushings
- suitable for PGR-P and PGR-plus
- » see application example

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	for profile	Material	Weight [g]
1-435-20-00	AP-P PGR 20	25	30	12	40	M3	15	31	-	-	X	Al	43
1-435-21-00	AP-P PGR 25	25	30	12	48	M3	20	38	-	-	X	Al	53
1-435-22-00	AP-P PGR 32	25	32	12	55	M4	25	45	-	-	X	Al	64
1-435-23-00	AP-P PGR 40	25	40	12	60	M4	32	50	-	-	X	Al	82
1-435-24-00	AP-P PGR 50	25	50	14	70	M5	40	60	-	-	X	Al	147
1-435-25-00	AP-P PGR 64	-	64	12	64	M5	52	40	40	12	JU	Al	213

AP PGR / Mounting Bracket for PGR-P and PGR



Remarks:

Application: adapts Parallel Gripper on VLR extension tubes

- can be used with or without bushings
- suitable for PGR-P and PGR-plus

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-435-03-00	AP PGR 20	10	20	18	15	15	M2,5	Aluminium	10
1-435-06-00	AP PGR 25	10	26	18	15	20	M3	Aluminium	11
1-435-09-00	AP PGR 32	14	32	22	17	25	M4	Aluminium	18
1-435-12-00	AP PGR 40	14	40	25	17	32	M4	Aluminium	28
1-435-15-00	AP PGR 50	20	50	30	20	40	M5	Aluminium	53
1-435-18-00	AP PGR 64	20	64	35	20	52	M5	Aluminium	94

PGR / Parallel Gripper

Remarks:

- for precise gripping or inserting applications
- PGR-plus: monitoring of two end-positions with MFS T2, not for PGR-plus 20
- double-acting
- Sensor IRK 4

Scope of Delivery:

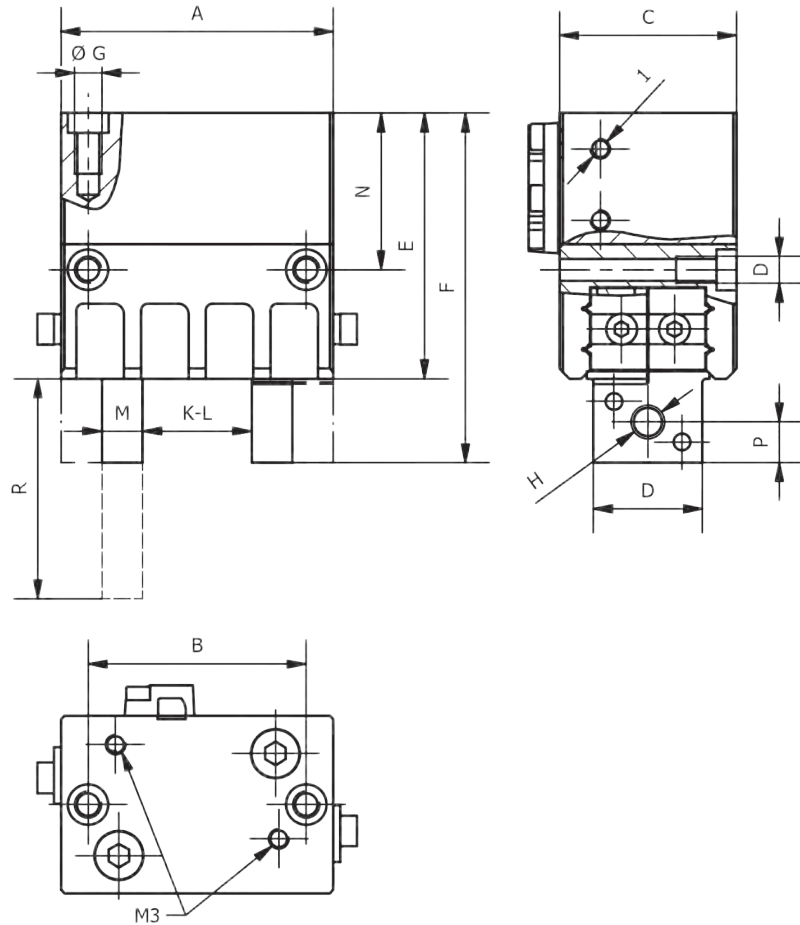
- PGR / parallel gripper without jaws
- incl. mounting material
- air connector (see table)

Drawing:

- 1 air port
R max. jaw length

Accessories:

- Blank Jaws AP-PGR
- PU Pad + Glue KUG
- Adapter AP PGR
- Sensor IRK 4
for PGR-plus 32/40/50/64
- Sensor IRK 4.4
for PGR-plus 20/25



Part No.	Description	Closing force max. [N]	Opening force max. [N]	Air connection	Stroke [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
1-430-03-00-1	PGR-plus 20	34	30	M3	2x2	20	15	16	9	25	33
1-430-06-00-1	PGR-plus 25	38	32	M3	2x3	26	20	18	10	26	34
1-430-09-00-1	PGR-plus 32	80	70	M5	2x4	32	25	22	12	33	43
1-430-12-00-1	PGR-plus 40	135	110	M5	2x6	40	32	26	16	39	51
1-430-15-00-1	PGR-plus 50	215	195	M5	2x8	50	40	30	18	46	60
1-430-18-00-1	PGR-plus 64	300	280	M5	2x10	64	52	35	20	54	70

Part No.	Description	G [mm]	H [mm]	K [mm]	L [mm]	M [mm]	N [mm]	P [mm]	R [mm]	Tube Connector	Weight [g]
1-430-03-00-1	PGR-plus 20	M2,5	M4	13	9	3,5	14,4	4	25	3/0.5	40
1-430-06-00-1	PGR-plus 25	M3	M4	17	11	4	16,2	4	32	3/0.5	61
1-430-09-00-1	PGR-plus 32	M4	M5	22	14	5	19,7	5	40	4/3	109
1-430-12-00-1	PGR-plus 40	M4	M5	28	16	6	23	6	50	4/3	189
1-430-15-00-1	PGR-plus 50	M5	M6	34	18	8	27,2	7	64	6/4	314
1-430-18-00-1	PGR-plus 64	M5	M8	44	24	10	30	8	80	6/4	544

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Parallel Gripper

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Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
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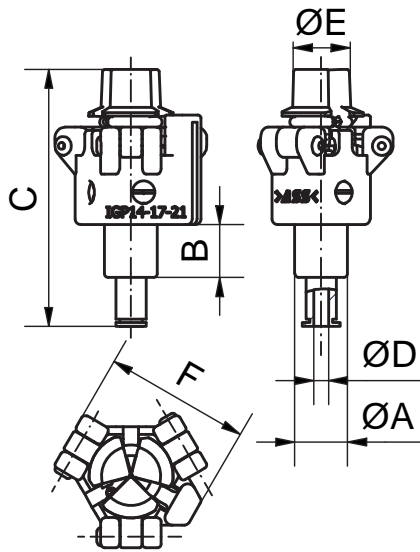
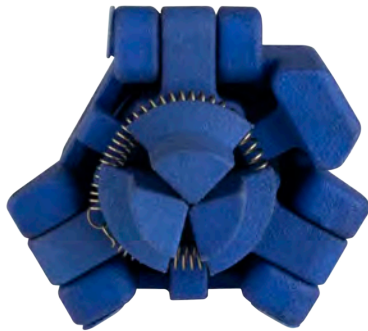
990
PA-Forming
Others

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IGP 14 / ID Gripper

IGP 14 EP

IGP 14



Remarks:

Application: e.g. for gripping in the interior of sensitive components, clamping diameter 14 mm

- compact design
- single-acting
- gentle gripping
- extreme light weight
- made of Polyamide
- optional monitoring of basic and/or working position
- operating Temperature -40 °C up to +80 °C
- air connection diameter 4/3
- » maximum air pressure is 6 bar, use dry and filtered air only

ID Gripper IGP 14 EP suitable for very sensible parts and covers all applications of the regular ID Gripper IGP 14

- » EP coated jaws:
 - EP: Elastomere Polyurethane
 - very gentle gripping
 - coating consists of a high strength, slip and abrasion resistant Elastomere Polyurethane
 - Shore A Hardness (+/- 5): 60
 - Colour Black
- » for more information about EP coating see category 990

Accessories e.g.:

- use only with filter FSL 4 (Part No. 1-852-26-00)
- sensor MFS T2 (Part No. 1-808-30-00)

Part No.	Description	EP Coating Shore 60 A	A [mm]	B [mm]	C [mm]	D [mm]	Ø E [mm] Grip Area	F [mm]	Suggested payload max. [g]	Weight [g]
1-472-00-00	IGP 14-8-12	-	14	14	68	4	8-12	37	100	20
1-472-01-00	IGP 14-11-15	-	14	14	68	4	11-15	37	100	19
1-472-02-00	IGP 14-14-18	-	14	14	68	4	14-18	37	100	21
1-472-03-00	IGP 14-17-21	-	14	14	68	4	17-21	37	100	22
1-472-04-00	IGP 14-20-24	-	14	14	68	4	20-24	37	100	22
1-472-05-00	IGP 14-23-27	-	14	14	68	4	23-27	37	100	23
1-473-00-00	IGP 14-10-14 EP	x	14	14	68	4	10-14	37	100	20
1-473-01-00	IGP 14-13-17 EP	x	14	14	68	4	13-17	37	100	20
1-473-02-00	IGP 14-16-20 EP	x	14	14	68	4	16-20	37	100	20
1-473-03-00	IGP 14-19-23 EP	x	14	14	68	4	19-23	37	100	22
1-473-04-00	IGP 14-22-26 EP	x	14	14	68	4	22-26	37	100	23
1-473-05-00	IGP 14-25-29 EP	x	14	14	68	4	25-29	37	100	23

IGP 20 / ID Gripper

Application: e.g. for gripping in the interior of sensitive components, clamping diameter 20 mm

- single-acting
- gentle gripping
- extreme light weight
- made of Polyamide
- optional monitoring of basic and/or working position
- operating Temperature -40 °C up to +80 °C
- air connection diameter 4/3
- » maximum air pressure is 6 bar, use dry and filtered air only

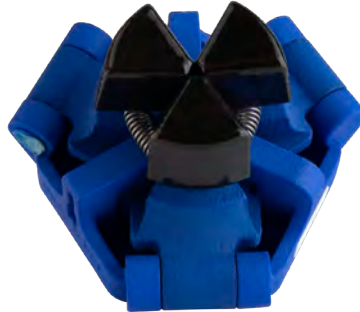
ID Gripper IGP 20 EP suitable for very sensible parts and covers all applications of the regular ID Gripper IGP 20

- » EP coated jaws:
 - EP: Elastomere Polyurethane
 - very gentle gripping
 - coating consists of a high strength, slip and abrasion resistant Elastomere Polyurethane
 - Shore A Hardness (+/- 5): 60
 - Colour Black
- » for more information about EP coating see category 990

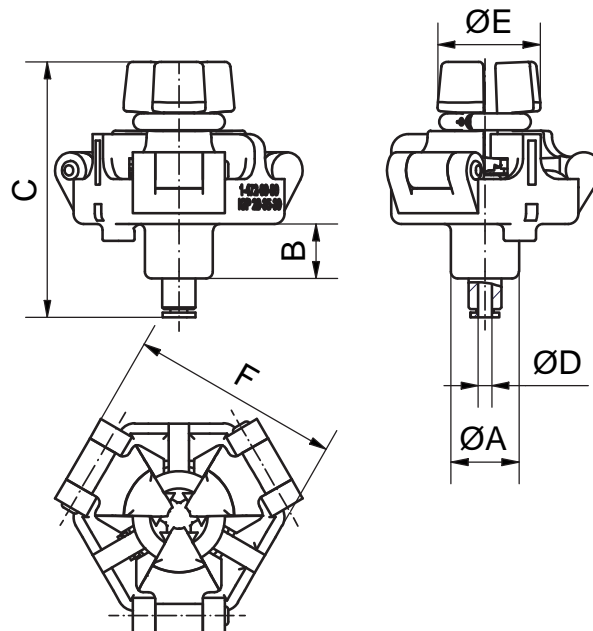
Accessories e.g.:

- use only with filter FSL 4 (Part No. 1-852-26-00)
- sensor MFS T2 (Part No. 1-808-30-00)

IGP 20 EP



IGP 20



Part No.	Description	EP Coating Shore 60 A	A [mm]	B [mm]	C [mm]	D [mm]	Ø E [mm] Grip Area	F [mm]	Suggested payload max. [g]	Weight [g]
1-472-06-00	IGP 20-26-30	-	20	16	72	4	26-30	58,5	100	58
1-472-07-00	IGP 20-29-33	-	20	16	72	4	29-33	58,5	100	58
1-472-08-00	IGP 20-32-36	-	20	16	72	4	32-36	58,5	100	60
1-472-09-00	IGP 20-35-39	-	20	16	72	4	35-39	58,5	100	61
1-472-10-00	IGP 20-38-42	-	20	16	72	4	38-42	58,5	100	62
1-472-11-00	IGP 20-41-45	-	20	16	72	4	41-45	58,5	100	61
1-472-12-00	IGP 20-44-48	x	20	16	72	4	44-48	58,5	100	65
1-473-06-00	IGP 20-28-32 EP	x	20	16	72	4	28-32	58,5	100	59
1-473-07-00	IGP 20-31-35 EP	x	20	16	72	4	31-35	58,5	100	60
1-473-08-00	IGP 20-34-38 EP	x	20	16	72	4	34-38	58,5	100	61
1-473-09-00	IGP 20-37-41 EP	x	20	16	72	4	37-41	58,5	100	62
1-473-10-00	IGP 20-40-44 EP	x	20	16	72	4	40-44	58,5	100	63
1-473-11-00	IGP 20-43-47 EP	x	20	16	72	4	43-47	58,5	100	63
1-473-12-00	IGP 20-46-50 EP	x	20	16	72	4	46-50	58,5	100	65

The EP-coating is an elastomer, so all dimensions are nominal.

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Quick Change Systems

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Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

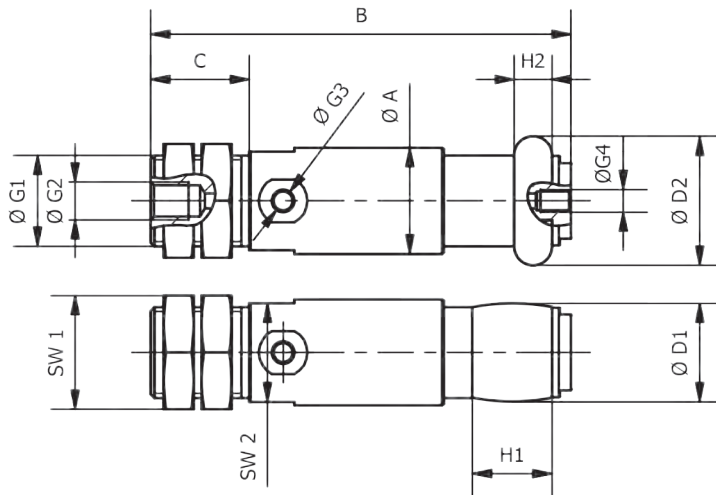
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

400 | Grippers

IGB / ID Gripper, Bellow



Remarks:

Application: for gripping from the inside

- adapted to the Robot-Hand-Kit by Adapter AD IGB
- compact size
- single-acting
- gripping diameters from 8 mm to 85 mm
- secure gripping
- » maximum air pressure is 6 bar, use dry and filtered air only

Drawing:

G2 part-present-control by vacuum possible
G3 air connection

Accessories:

- Adapter AD IGB
- Exchange Bellows
- Sensor Bracket SH IGB
- Sensor MFS T2 3,7 (Part No. 1-808-30-00)
- 3-pole sensor on demand

Part No.	Description	A [mm]	B [mm] +/-	C [mm]	D1 [mm] +/-	D2 [mm] +/-	G1 [mm]	G2 [mm] [°]	G3 [mm] [°]	G4 [mm] [°]
1-474-00-00	IGB 8 8-11	14	52.7	13	8	11	M10x1	M5	M3	M2
1-474-00-01	IGB 10 10,5-14	14	54.2	13	10.5	14	M10x1	M5	M3	M2
1-474-00-02	IGB 12 13-17	14	55.5	13	13	17	M12x1	M5	M3	M3
1-474-00-03	IGB 14 15-19,5	14	55.8	13	15	19.5	M12x1	M5	M3	M3
1-474-00-04	IGB 18 19,5-25	18	65	14	19.5	25	M12x1	M5	M5	M3
1-474-00-05	IGB 22 24-31,5	21.5	75.5	15	24	31.5	M14x1	M5	M5	M3
1-474-00-06	IGB 27 28-37	25	88	18	28	37	M16x1	M5	M5	M5
1-474-00-07	IGB 33 34-45	30	109	25	34	45	M22x1.5	G 1/8	M5	G 1/8
1-474-00-08	IGB 41 42-54	40	126.5	25	42	54	M22x1.5	G 1/8	M5	G 1/8
1-474-00-09	IGB 51 54-68	50	159	32	54	68	M26x1.5	G 1/8	G 1/8	G 1/8
1-474-00-10	IGB 63 66-85	60	189	32	66	85	M26x1.5	G 1/8	G 1/8	G 1/8

Part No.	Description	H1 [mm] +/-0.5	H2 [mm] +/-0.5	Handling Weight max. [g]	SW1 [mm]	SW2 [mm]	perm. Magnet	Material Bellow	Material Gripper	Weight [g]
1-474-00-00	IGB 8 8-11	7	3	80	13	13		EPDM	Aluminium	15
1-474-00-01	IGB 10 10,5-14	8.5	4	100	13	13		EPDM	Aluminium	16
1-474-00-02	IGB 12 13-17	10.5	5	120	15	13		EPDM	Aluminium	17
1-474-00-03	IGB 14 15-19,5	13	6	150	15	13		EPDM	Aluminium	17
1-474-00-04	IGB 18 19,5-25	16.5	9	210	15	16		EPDM	Aluminium	28
1-474-00-05	IGB 22 24-31,5	21	11	320	17	19		EPDM	Aluminium	43
1-474-00-06	IGB 27 28-37	26	14	450	19	22	x	EPDM	Aluminium	79
1-474-00-07	IGB 33 34-45	32.5	18	700	27	28	x	EPDM	Aluminium	118
1-474-00-08	IGB 41 42-54	39.5	24	1200	27	36	x	EPDM	Aluminium	280
1-474-00-09	IGB 51 54-68	48	30	2500	32	45	x	EPDM	Aluminium	490
1-474-00-10	IGB 63 66-85	61	36	5100	32	54	x	EPDM	Aluminium	800

IGB H / ID Gripper, Bellow, Lifting

Remarks:

Application: For gripping from the inside. When gripping, the component is lifted. Depending on the application, this can replace a Z-axis for pick and place.

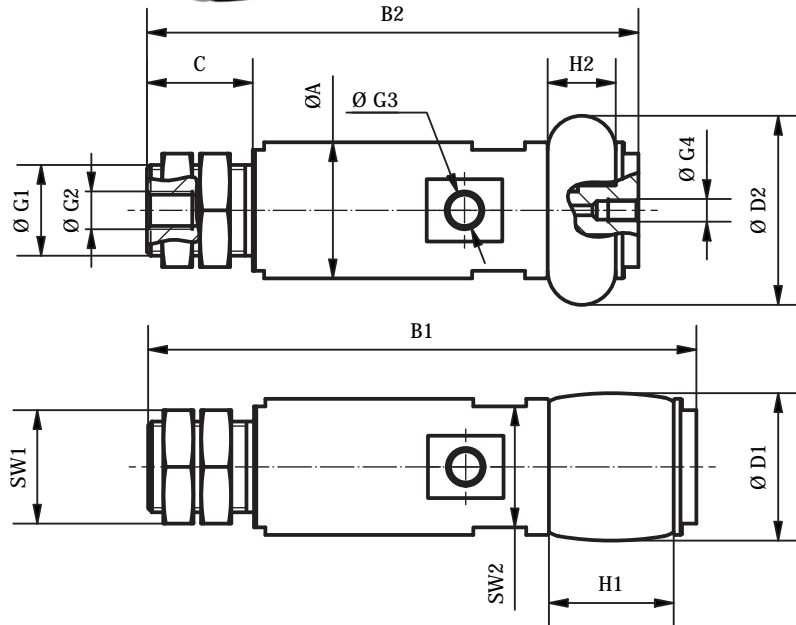
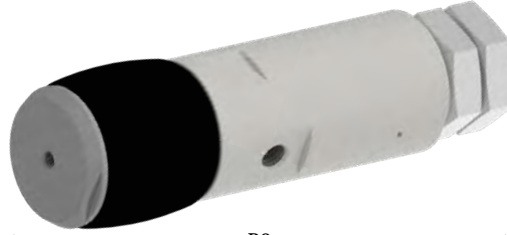
- adapted to the Robot-Hand-Kit by Adapter AD IGB
- compact size
- single-acting
- gripping diameters from 8 mm to 85 mm
- secure gripping
- » maximum air pressure is 6 bar, use dry and filtered air only

Drawing:

G2 part-present-control by vacuum possible
G3 air connection

Accessories:

- Adapter AD IGB
- Exchange Bellows
- Sensor Bracket SH IGB
- Sensor MFS T2 3,7 (Part No. 1-808-30-00)
- 3-pole sensor on demand



Part No.	Description	A [mm]	B1 [mm] +/-1	B2 [mm] +/-1	C [mm]	D1 [mm] +/-1	D2 [mm] +/-1	G1 [mm]	G2 [mm] ["]	G3 [mm] ["]	G4 [mm] ["]
1-474-01-00	IGB H 8 8-11	14	57.5	54	13	8	11	M10x1	M5	M3	M2
1-474-01-01	IGB H 10 10,5-14	14	58.8	54.5	13	10.5	14	M10x1	M5	M3	M2
1-474-01-02	IGB H 12 13-17	14	60.5	55	13	13	17	M10x1	M5	M3	M3
1-474-01-03	IGB H 14 15-19,5	14	64	57	13	15	19.5	M10x1	M5	M3	M3
1-474-01-04	IGB H 18 19,5-25	18	72.5	65	14	19.5	25	M12x1	M5	M5	M3
1-474-01-05	IGB H 22 24-31,5	21.5	82	70	15	24	31.5	M14x1	M5	M5	M3
1-474-01-06	IGB H 27 28-37	25	98	86	18	28	37	M16x1	M5	M5	M5
1-474-01-07	IGB H 33 34-45	30	116	101.5	25	34	45	M22x1.5	G1/8	M5	G1/8
1-474-01-08	IGB H 41 42-54	40	131	115.5	25	42	54	M22x1.5	G1/8	M5	G1/8
1-474-01-09	IGB H 51 54-68	50	160	142	32	54	68	M26x1.5	G1/8	G1/8	G1/8
1-474-01-10	IGB H 63 66-85	60	185	160	32	66	85	M26x1.5	G1/8	G1/8	G1/8

Part No.	Description	H1 [mm] +/-0.5	H2 [mm] +/-0.5	SW1 [mm]	SW2 [mm]	perm. Magnet	Material Bellow	Material Gripper	Weight [g]
1-474-01-00	IGB H 8 8-11	7	3.5	13	13		EPDM	Aluminium	16
1-474-01-01	IGB H 10 10,5-14	8.5	4.5	13	13		EPDM	Aluminium	17
1-474-01-02	IGB H 12 13-17	10.5	5	13	13		EPDM	Aluminium	18
1-474-01-03	IGB H 14 15-19,5	13	6	13	13		EPDM	Aluminium	20
1-474-01-04	IGB H 18 19,5-25	16.5	9	15	16		EPDM	Aluminium	35
1-474-01-05	IGB H 22 24-31,5	21	9	17	20		EPDM	Aluminium	50
1-474-01-06	IGB H 27 28-37	26	14	19	22	x	EPDM	Aluminium	100
1-474-01-07	IGB H 33 34-45	32.5	18	27	27	x	EPDM	Aluminium	130
1-474-01-08	IGB H 41 42-54	39.5	24	27	36	x	EPDM	Aluminium	300
1-474-01-09	IGB H 51 54-68	48	30	32	45	x	EPDM	Aluminium	500
1-474-01-10	IGB H 63 66-85	61	36	32	54	x	EPDM	Aluminium	785

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Parallel Gripper

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Gripper Fingers

460
Needle Gripper

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Nipper Bodies

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Nipper Blades

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Electrics and
Sensors

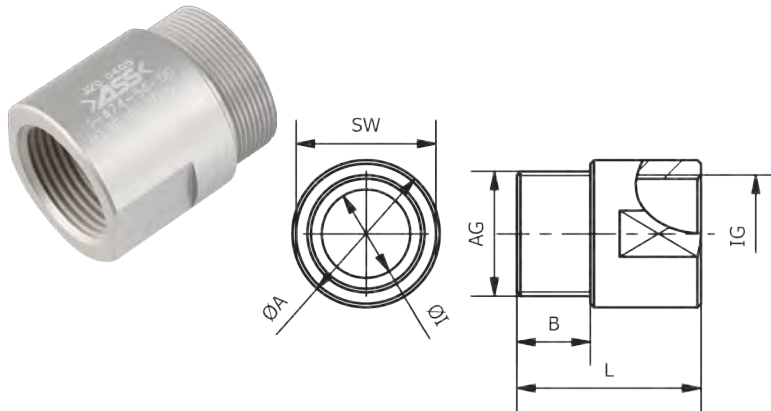
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

400 | Grippers

AD IGB / Adapter for IGB

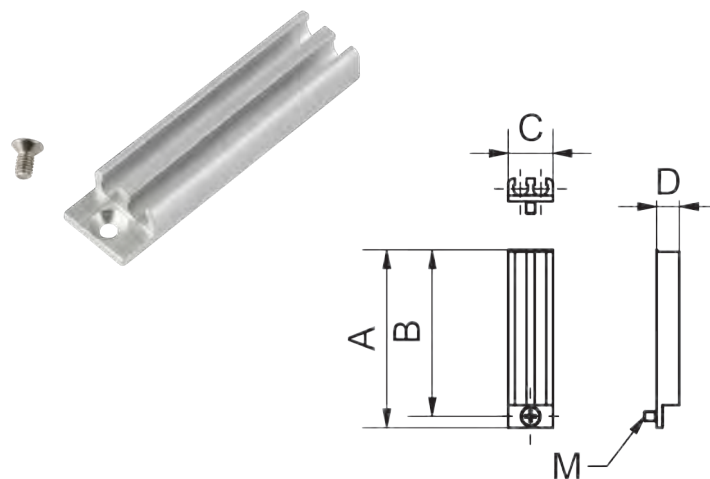


Remarks:

- adapts ID Gripper IGB to the robot-hand-kit
- clamping diameter suitable for Robot Hand Kit (EOAT)
- » see application examples

Part No.	Description	ØA [mm]	B [mm]	ØI [mm]	AG [mm]	IG [mm]	L [mm]	SW [mm]	suitable for	Material	Weight [g]
1-474-50-00	AD 14 IGB M10x1	14	10	8	M12x1	M10x1	35	13	IGB 8... IGB 10...	Al	7
1-474-51-00	AD 14 IGB M12x1	14	10	8	M12x1	M12x1	35	13	IGB 12... IGB 14... IGB 18...	Al	5
1-474-52-00	AD 20 IGB M14x1	20	10	13	M17x1	M14x1	25	17	IGB 22...	Al	9
1-474-53-00	AD 20 IGB M16x1	20	10	12	M17x1	M16x1	25	19	IGB 27...	Al	8
1-474-54-00	AD 30 IGB M22x1,5	30	10	20,5	M27x1	M22x1,5	35	27	IGB 33... IGB 41...	Al	29
1-474-55-00	AD 30 IGB M26x1,5	30	10	20	M27x1	M26x1,5	40	27	IGB 51... IGB 63...	Al	24

SH IGB / Sensor Bracket for IGB



Remarks:

- this Sensor Bracket is for mounting sensor MFS T2 3,7 for monitoring 2 positions
- » see application example

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	M [mm]	Weight [g]
1-474-16-00	SH IGB 27 28-37	34.5	31.5	12	6	2.5	4
1-474-17-00	SH IGB 33 34-45	41	38	12	6	2.5	5
1-474-18-00	SH IGB 41 42-54	47	44	12	6	2.5	5
1-474-19-00	SH IGB 51 54-68	55.5	52.5	12	6	2.5	6
1-474-20-00	SH IGB 63 66-85	61	58	12	6	2.5	7

Exchange Bellows for ID Gripper IGB

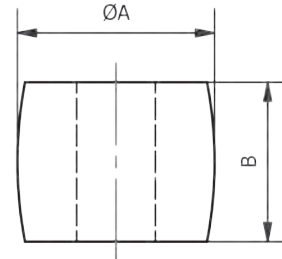
Remarks:

- Replacement bellows and material variants for ID Gripper IGB
- Temperature ranges:
 - EPDM -30 to +120 ° C
 - Silicone -40 to +150 ° C

EPDM



Silicone



Part No.	Description	ØA [mm]	B [mm]	suitable for	Material
1-474-70-00	Balg 8 EPDM	8	7	IGB 8 8-11	EPDM
1-474-70-01	Balg 10 EPDM	10.5	8.8	IGB 10 10,5-14	EPDM
1-474-70-02	Balg 12 EPDM	13	10.5	IGB 12 13-17	EPDM
1-474-70-03	Balg 14 EPDM	15	13	IGB 14 15-19,5	EPDM
1-474-70-04	Balg 18 EPDM	19.5	16.5	IGB 18 19,5-25	EPDM
1-474-70-05	Balg 22 EPDM	24	21	IGB 22 24-31,5	EPDM
1-474-70-06	Balg 27 EPDM	28	26	IGB 27 28-37	EPDM
1-474-70-07	Balg 33 EPDM	34	32.5	IGB 33 34-45	EPDM
1-474-70-08	Balg 41 EPDM	42	39.5	IGB 41 42-54	EPDM
1-474-70-09	Balg 51 EPDM	54	48	IGB 51 54-68	EPDM
1-474-70-10	Balg 63 EPDM	66	61	IGB 63 66-85	EPDM
1-474-71-00	Balg 8 Silikon	8	7	IGB 8 8-11	Silicone
1-474-71-01	Balg 10 Silikon	10.5	8.8	IGB 10 10,5-14	Silicone
1-474-71-02	Balg 12 Silikon	13	10.5	IGB 12 13-17	Silicone
1-474-71-03	Balg 14 Silikon	15	13	IGB 14 15-19,5	Silicone
1-474-71-04	Balg 18 Silikon	19.5	16.5	IGB 18 19,5-25	Silicone
1-474-71-05	Balg 22 Silikon	24	21	IGB 22 24-31,5	Silicone
1-474-71-06	Balg 27 Silikon	28	26	IGB 27 28-37	Silicone
1-474-71-07	Balg 33 Silikon	34	32.5	IGB 33 34-45	Silicone
1-474-71-08	Balg 41 Silikon	42	39.5	IGB 41 42-54	Silicone
1-474-71-09	Balg 51 Silikon	54	48	IGB 51 54-68	Silicone
1-474-71-10	Balg 63 Silikon	66	61	IGB 63 66-85	Silicone

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290
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PA-Forming
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PA-Forming
Others

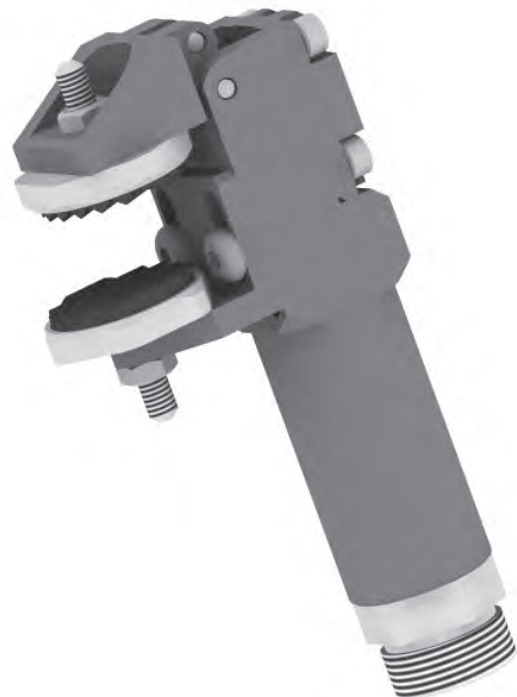
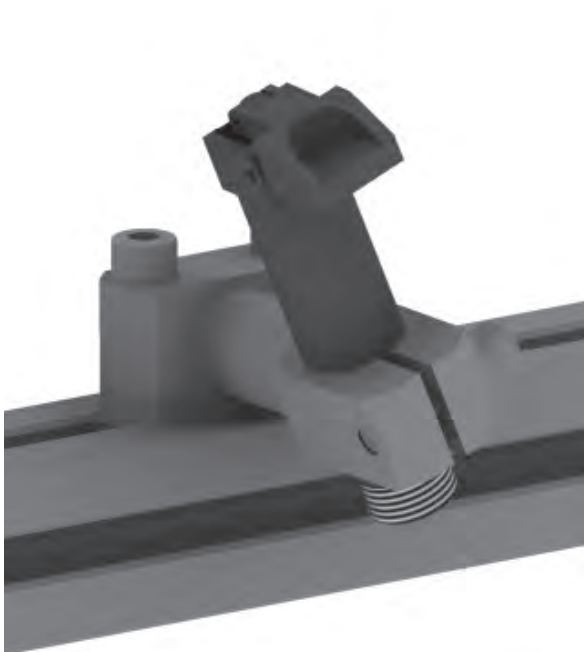
450 | Gripper Fingers

Application Example of Sizes and Variants of Gripper Fingers

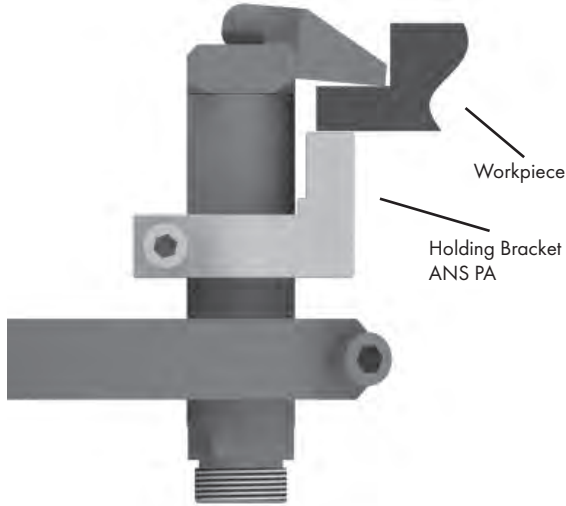


App. example GRF 14-95 VA

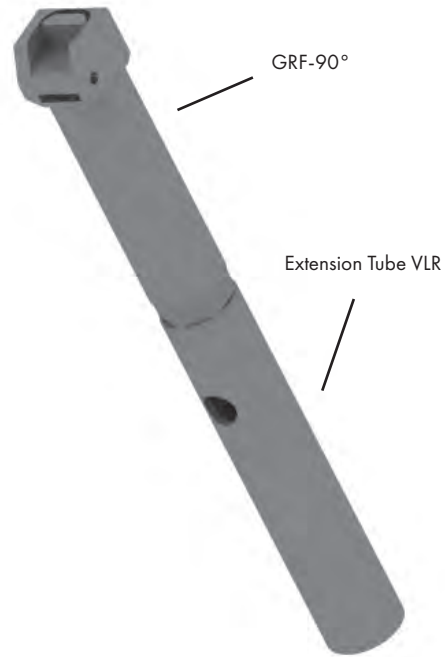
Application example GFD 90



Application example GRF 95°



Application example GRF 90°



Application example ZTS



Application example ANS AL EP CS



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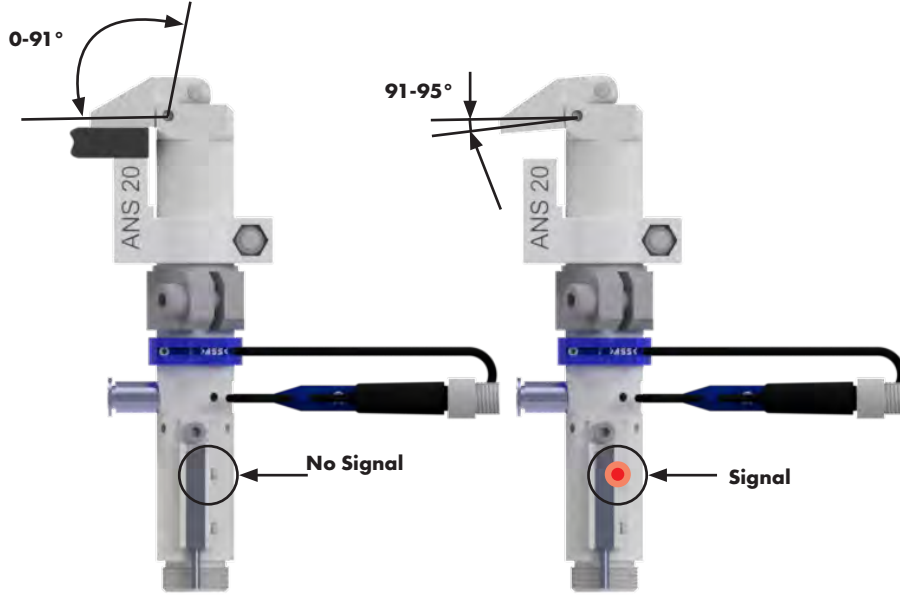
990
Tubular System
Micro System

990
PA-Forming
Others

450 | Gripper Fingers

Application example GRF P2 with Precision Monitoring

Example shows the application of the gripper fingers with precision monitoring GRF P (shown GRF 95° P).



Application examples Holding Brackets ANS



GRF 95° / Gripper Finger

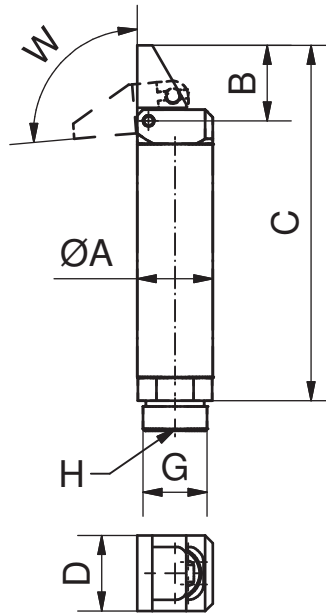
Remarks:

Application: e.g. recommended if parts stick

- 95° gripping angle
- end positions can be monitored optionally
- extendable with extension tube VLR
- single acting
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Holding Bracket ANS
- Sensor Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Sensor Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Art.-Nr. 1-808-36-00)
- Extension Tube VLR



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	H [°]	W [°]	Closing force max. [N]	Weight [g]
1-451-03-00	GRF 14-95 VA	14	15	64	14	M12x1	M5	95	12.5	23
1-450-06-00-1	GRF 20-95 VA	20	20	100	20	M17x1	G1/8	95	45	64
1-450-23-00-1	GRF 30-95 VA	30	29	137	30	M27x1	G1/8	95	140	204

GRF 95° EP / Gripper Finger with EP covering

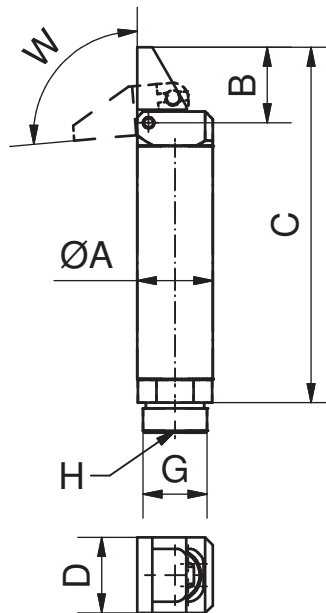
Remarks:

Application: e.g. recommended if parts stick and a gentle grip is needed

- 95° gripping angle
- for detailed information about the EP Coating please take a look at category 990
- more details see GRF 95° above
- table: H = air port
- end positions can be monitored optionally extendable with extension tube VLR
- single acting/spring return
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- see GRF 95° above



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	H [°]	W [°]	Closing force max. [N]	Weight [g]
1-451-04-00	GRF 14-95 VA EP	14	15	64	14	M12x1	M5	95	12,5	23
1-450-07-00-1	GRF 20-95 VA EP	20	20	100	20	M17x1	G1/8	95	45	65
1-450-22-00-1	GRF 30-95 VA EP	30	29	137	30	M27x1	G1/8	95	140	206

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224
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230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

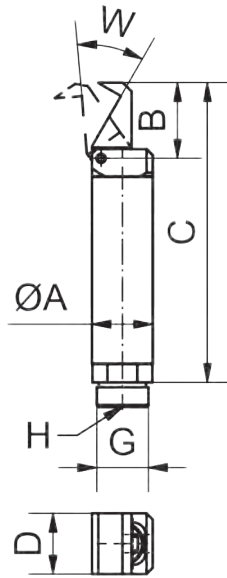
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

450 | Gripper Fingers

GRF 35° / Gripper Finger



Remarks:

Application: e.g. recommended if parts stick

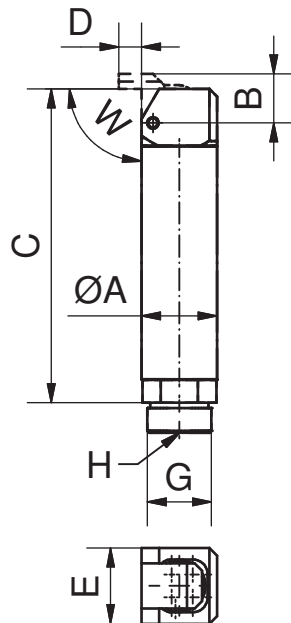
- 35° gripping angle
- end positions can be monitored optionally
- extendable with extension tube VLR
- single acting
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Holding Bracket ANS
- Sensor Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Sensor Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Art.-Nr. 1-808-36-00)
- Extension Tube VLR

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	W [°]	H ["]	Closing force max. [N]	Weight [g]
1-451-06-00	GRF 14-35 VA	14	15	64	14	M 12x1	35	M5	45	23
1-450-03-00-1	GRF 20-35 VA	20	25	105	20	M17x1	35	G1/8	120	65
1-450-20-00-1	GRF 30-35 VA	30	35	143	30	M27x1	35	G1/8	240	201

GRF 90° / Gripper Finger



Remarks:

Application: e.g. recommended if parts stick

- 90° gripping angle
- end positions can be monitored optionally
- extendable with extension tube VLR
- single acting
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Holding Bracket ANS
- Sensor Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Sensor Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Art.-Nr. 1-808-36-00)
- Extension Tube VLR

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	W min. [°]	H ["]	Closing force max. [N]	Weight [g]
1-451-09-00	GRF 14-90 VA	14	9	58	6	14	M 12x1	90	M5	40	21
1-450-15-00-1	GRF 20-90 VA	20	13	89	6	20	M17x1	90	G1/8	100	62
1-450-29-00-1	GRF 30-90 VA	30	20	123.5	11	30	M27x1	90	G1/8	230	202

GRF 95° / Gripper Finger with Precision Monitoring

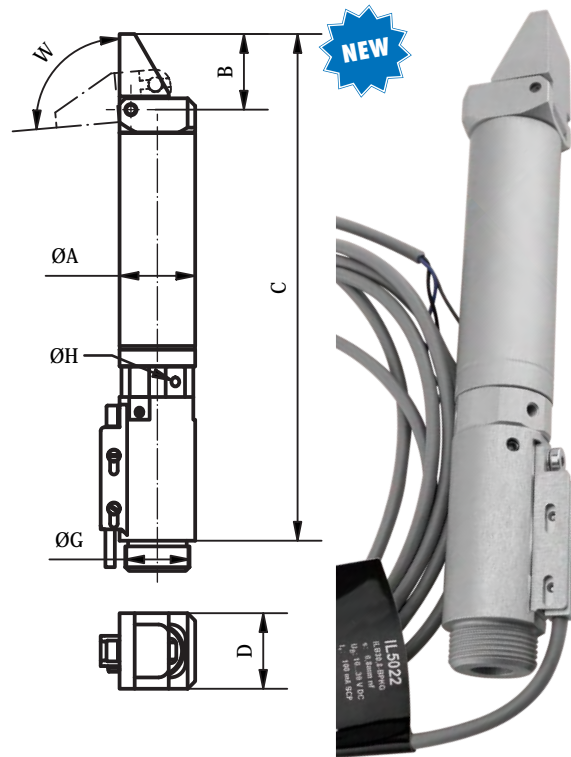
Remarks:

Application: e.g. recommended if parts stick and part-present monitoring to be possible at once

- 95° gripping angle
- inductive query allows part-present control
- sensor (3-pin, with 2m cable, PNP closing contact) included
- air connection sideways can be positioned in 3x120° steps
- switching point set at 91°, can be adjusted if necessary
- additional monitoring of end positions optionally
- single acting/spring return
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only
- » see application examples

Accessories e.g.:

- Holding Bracket ANS
- Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Part No. 1-808-36-00)
- Extension Tube VLR



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	H ["]	W [°]	Closing force max. [N]	Weight [g]
1-450-44-00	GRF 20-95 VA P2	20	20	134	20	M17x1	M3	95	45	102

GRF 95° EP / Gripper Finger w. EP covering and Precision Monitoring

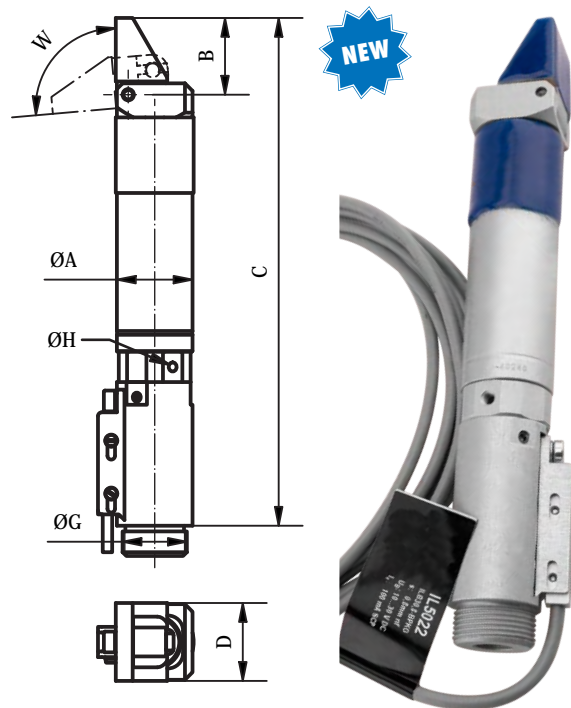
Remarks:

Application: e.g. recommended if parts stick, part-present monitoring to be possible at once and a gentle grip is needed

- 95° gripping angle
- for detailed information about the EP Coating please take a look at category 990
- inductive query allows part-present control
- sensor (3-pin, with 2m cable, PNP closing contact) included
- air connection sideways can be positioned in 3x120° steps
- switching point set at 91°, can be adjusted if necessary
- additional monitoring of end positions optionally
- single acting/spring return
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only
- » see application examples

Accessories e.g.:

- Holding Bracket ANS
- Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Part No. 1-808-36-00)
- Extension Tube VLR



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	H ["]	W [°]	Closing force max. [N]	Weight [g]
1-450-45-00	GRF 20-95 VA P2 EP	20	20	134	20	M17x1	M3	95	45	103

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Special
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230
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Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

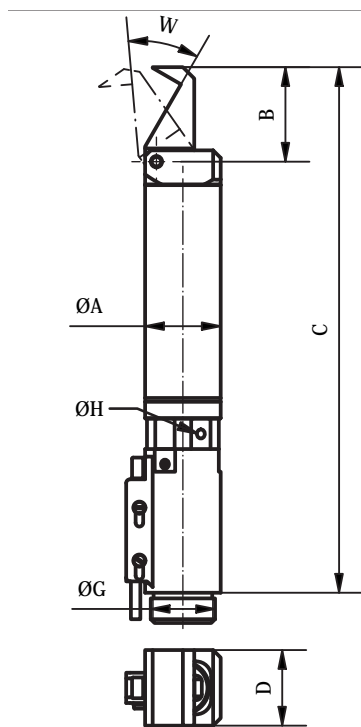
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

450 | Gripper Fingers

GRF 35° P / Gripper Finger with Precision Monitoring



Remarks:

Application: e.g. recommended if parts stick and part-present monitoring to be possible at once

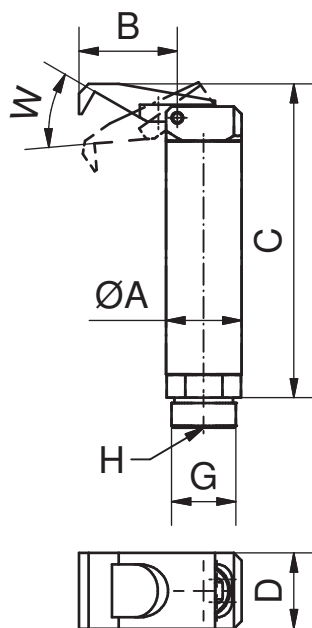
- 35° gripping angle
- inductive query allows part-present control
- sensor (3-pin, with 2m cable, PNP closing contact) included
- air connection sidewise can be positioned in 3x120° steps
- switching point set at 91°, can be adjusted if necessary
- additional monitoring of end positions optionally
- single acting/spring return
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only
- » see application examples

Accessories e.g.:

- Holding Bracket ANS
- Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Part No. 1-808-36-00)
- Extension Tube VLR

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	W [°]	H [°]	Closing force max. [N]	Weight [g]
1-450-43-00	GRF 20-35 VA P2	20	25	139	20	M17x1	35	M3	120	103

GRW 35° / Gripper Finger



Remarks:

Application: e.g. recommended if parts stick

- horizontal finger-design
- end positions can be monitored optionally
- extendable with extension tube VLR
- single acting
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Holding Bracket ANS
- Sensor Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Sensor Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Art.-Nr. 1-808-36-00)
- Extension Tube VLR

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	W [°]	H [°]	Closing force max. [N]	Weight [g]
1-450-12-00-1	GRW 20-35 VA	20	26	89	20	M17x1	35	G1/8	50	64
1-450-26-00-1	GRW 30-35 VA	30	34	123	30	M27x1	35	G1/8	160	199

GFD 90 / Double Action, Cam Locking Gripper Finger

Remarks:

Version GFD:

Integrated self-locking: gripper finger snaps into the closed position (90 °)

- double-acting gripper finger
- gripper finger opens when unlocking is subjected to air pressure
- end positions can be monitored
- adjustable holding bracket included
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Version GFD FS:

In case of complete pressure loss, a minimum closing force is mechanically ensured. The GFD FS automatically closes into self-propelled position by spring.

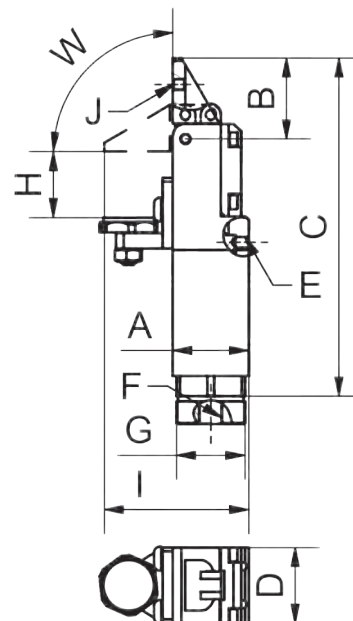
- FS = closing by spring
- gripper finger opens when unlocking is subjected to air pressure
- end positions can be monitored
- adjustable holding bracket included
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Drawing:

- E Gripper finger opening
- F Gripper finger closing

Accessories e.g.:

- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Extension Tube VLR



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [°]	G [mm]	H [mm]	I [mm]	J [mm]	W [°]	Closing force max. [N]	Weight [g]
1-450-10-00	GFD 20-90	20	23	105	20	M5	G1/8	M17x1	0-34	40	M4	90	110	112
1-450-24-00	GFD 30-90	30	32	134	30	M5	G1/8	M27x1	0-46	57	M5	90	160	286
1-450-31-00	GFD 20-90 FS	20	23	105	20	M5	G1/8	M17x1	0-34	40	M4	90	130	122
1-450-32-00	GFD 30-90 FS	30	32	134	30	M5	G1/8	M27x1	0-46	57	M5	90	185	299

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Gripper
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460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

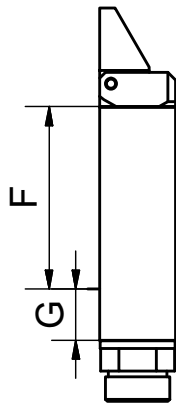
990
Tubular System
Micro System

990
PA-Forming
Others

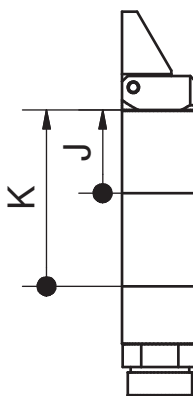
450 | Gripper Fingers

GRF SH AL and GRF SH ICS / Positioning of Sensor Clamp

GRF SH AL



GRF SH ICS



Remarks:

- for positioning of the sensor mounting brackets see table

GRF SH AL (Sensor MFS T2)

- F no mounting position
- G mounting position

» Basically, it is important to position the sensor holder as far as possible at the lower end of the range G.

GRF SH ICS (Sensor ICS)

- K basic position
- J operating position

Part No. (GRF)	Description	F [mm]	G [mm]	J [mm]	K [mm]
1-451-03-00	GRF 14-95 VA	37	7	28	38
1-451-06-00	GRF 14-35 VA	37	7	33	38
1-451-09-00	GRF 14-90 VA	37	7	28	38
1-450-03-00-1	GRF 20-35 VA	39	23	33	38
1-450-06-00-1	GRF 20-95 VA	39	23	34	47
1-450-12-00-1	GRW 20-35 VA	39	23	33	38
1-450-15-00-1	GRF 20-90 VA	48	14	34	47
1-450-20-00-1	GRF 30-35 VA	60	32	51	59
1-450-23-00-1	GRF 30-95 VA	75	17	52	74
1-450-26-00-1	GRW 30-35 VA	60	32	51	79
1-450-29-00-1	GRF 30-90 VA	75	17	52	74

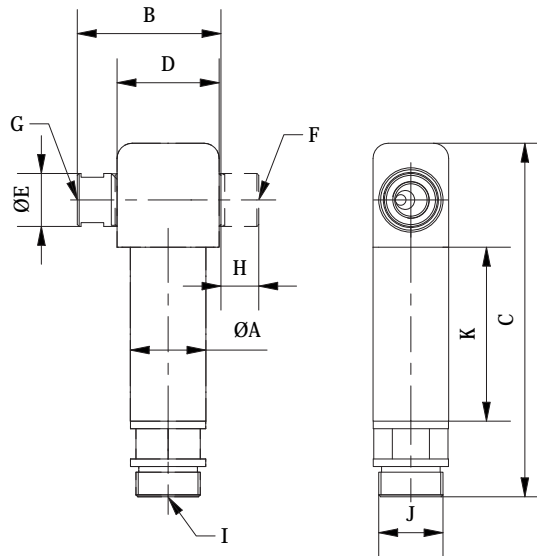
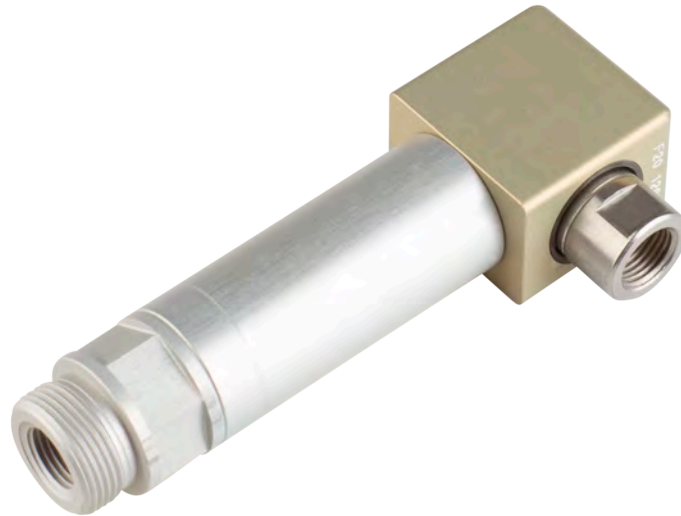
Remarks:

Application: e.g. for gripping or fixing sidewise

- Pressure Force: 80 N
- single acting
- in combination with pressure plates DPL for frictional gripping
- space-saving stroke for vacuum cups (see application example)
- threads can be reduced by reducing nipple RNK
- space-saving, compact design
- flexible usage
- small, compact design
- for farious applications
 - » maximum air pressure is 6 bar, use dry and filtered air only
 - » see application examples

Accessories e.g.:

- Pressure Plates DST
- Vacuum Cups VS
- Reducing Nipple RNK



Application examples with vacuum cup VS2 (left side) and pressure plate DST (right side).



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G ["]	Stroke H [mm]	I [mm]	J [mm]	K [mm]	Weight [g]
1-455-20-00	QGR 20	20	38	93,5	27	14	G1/8	G1/8	10	G1/8	M17x1	46	102

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Manifold

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Adapters for
Vacuum Cups

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Gripper
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

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Nipper Blades

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Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

450 | Gripper Fingers

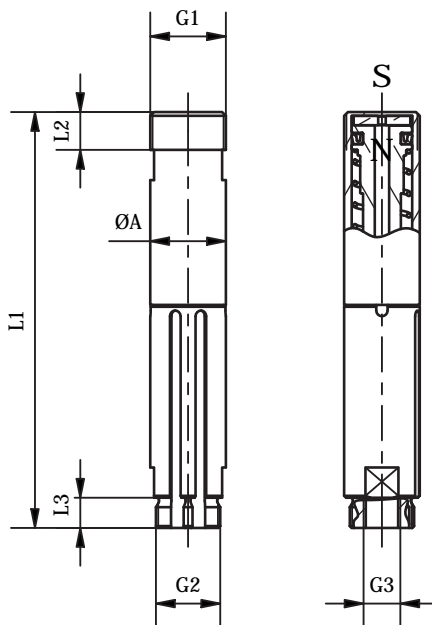
PMG / Pneumatic Magnetic Gripper



Remarks:

Application: e.g. for handling small ferromagnetic workpieces

- single-acting magnetic gripper
- end position can be monitored
- contour pieces for centering can simply be screwed on
- magnetic gripper is depressurized in the holding position
- if compressed air is applied, the held workpiece is braced
 - » maximum air pressure is 6 bar, use dry and filtered air only
 - » The information given on the adhesive force was determined by pulling the magnet vertically off a 20 mm thick, flat ground steel plate St37 at room temperature. A deviation of up to -10% compared to the specified value is possible in exceptional cases. In general, however, this value is exceeded.



Part No.	Description	A [mm]	L1 [mm]	L2 [mm]	L3 [mm]	G1 [mm]	G2 [mm]	G3 [mm]	Holding Force [N]	Weight [g]
1-480-20-00	PMG 20	20	110	10	8	M20x1,5	M17x1	G 1/8	10	70

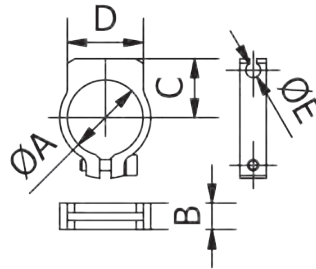
GRF SH AL / Sensor Mounting Bracket

Remarks:

- for mounting a magnetic field sensor MFS T2 on the gripper finger (2 switching points teachable)
- simple, robust clamping on the GRF
- compact design
- positioning in dimension G, see previous page

Accessories e.g.:

- Sensor MFS T2 3,7 (Part No. 1808-30-00)



Part No.	Description	fits for sensor	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-451-56-00	GRF SH 14 AL	MFS T2 3,7	14	7	12	18	4	Aluminium	4
1-450-57-00	GRF SH 20 AL	MFS T2 3,7	20	7	15,5	20	4	Aluminium	5
1-450-58-00	GRF SH 30 AL	MFS T2 3,7	30	7	20	20	4	Aluminium	7

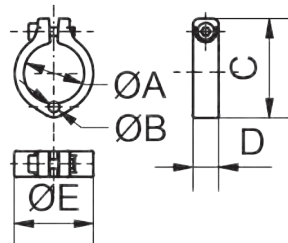
GRF SH MFS + ICS / Sensor Mounting Bracket

Remarks:

- for mounting a magnetic field sensor ICS on the gripper finger
- for querying one end position of the gripper finger
- by tightening the screw sensor mounting bracket and sensor itself are clamped on the finger
- positioning freely adjustable

Accessories e.g.:

- Sensor ICS 8 (Part No. 1-808-36-00)



Part No.	Description	for sensor	for gripper fingers	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-451-54-00	GRF-SH14-ICS	ICS 8	GRF...14	14	4,1	29	8,5	20	Polyamide	3
1-450-59-00	GRF-SH20-ICS	ICS 8	GRF20/GRW20	20	4,1	35	8,5	26	Polyamide	3
1-450-60-00	GRF-SH30-ICS	ICS 8	GRF30/GRW30	30	4,1	45	8,5	36	Polyamide	4

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Vacuum Cups

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Gripper
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

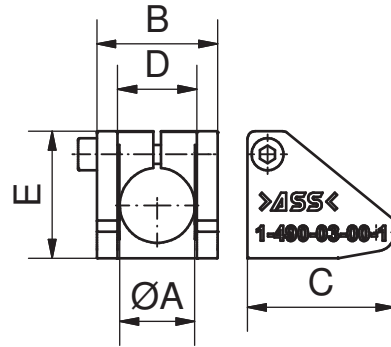
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

450 | Gripper Fingers

ZTS PA / Gripper Finger Guide (for GRF ...)



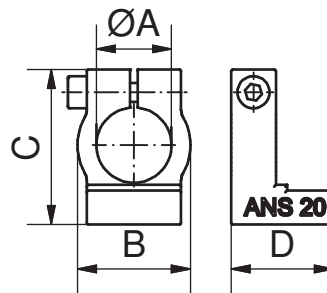
Remarks:

Application: the guide is placed over the gripper finger for protecting the part during retrieval

- suitable in combination with Gripper Finger GRF 95°
- not suitable for GRF...EP

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-490-03-00-1	ZTS 20 PA	20	32	39	21	34	Polyamide	20
1-490-06-00-1	ZTS 30 PA	30	45	65	32	45	Polyamide	60

ANS PA / Gripper Holding Bracket



Remarks:

Application: workpieces can be supported by holding bracket

ANS 10 PA

- for usage with Centering Pin ZTB
- centered article can be placed on the bracket

ANS 14/20/30 PA

- for usage with Gripper Fingers GRF
- GRF in working position pushes workpiece against the bracket and fixes it

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-490-02-00	ANS 10 PA	10	20	31	25.5	Polyamid	5
1-490-20-00-1	ANS 14 PA	14	20	33	18	Polyamide	5
1-490-09-00-1	ANS 20 PA	20	30	41	27	Polyamide	17
1-490-12-00-1	ANS 30 PA	30	40	45	27	Polyamide	20

ANS AL EP CS / Holding Bracket with EP coating and monitoring

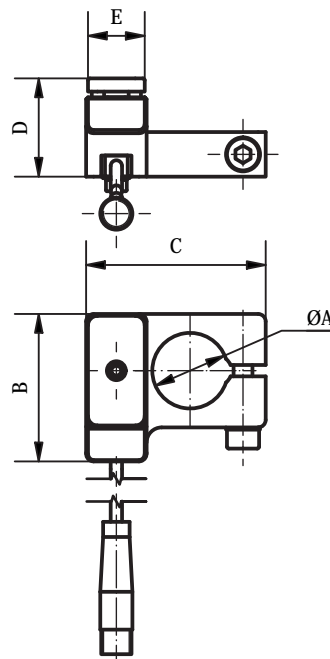
Remarks:

Application: Holding Bracket piece with integrated query for checking the presence of parts

- made of anodized aluminum
- the part that comes into contact with the article is EP-coated
- precision query using inductive initiator, with 3-pin plug.



Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-490-80-00	ANS 20 AL EP CS	20	39	47,5	26	15	Aluminium	65

The EP-coating is an elastomer, so all dimensions are nominal.

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Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

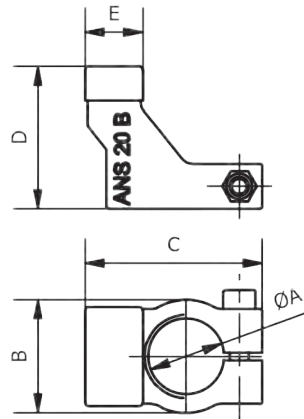
450 | Gripper Fingers

ANS 20 PA EP / Gripper Holding Bracket, with EP coating

ANS ... PA EP S



ANS ... PA EP B



Application: workpieces can be gently supported on the holding bracket

- maximizes the coated contact surfaces in combination with GRF 95 ° EP and GRF 95 ° EP P
- closed finger presses the article against the holding bracket
- allows gentle gripping of the workpiece
- with EP coating shore hardness 90, blue
- » for detailed information about the EP Coating please take a look at category 990
- » see application example

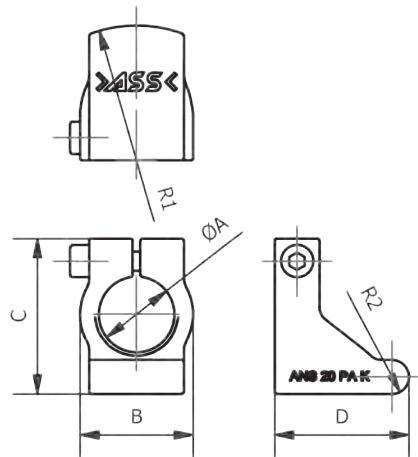
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-490-50-00	ANS 14 PA EP S	14	20	34	26	9	Polyamid/ EP	7
1-490-51-00	ANS 20 PA EP S	20	30	42	38	10	Polyamid/ EP	21
1-490-52-00	ANS 20 PA EP B	20	30	47	38	15	Polyamid/ EP	23
1-490-53-00	ANS 30 PA EP B	30	44	65	38	23	Polyamid/ EP	39

ANS PA K / Gripper Holding Bracket, convex

ANS ... PA K



ANS ... PA K EP



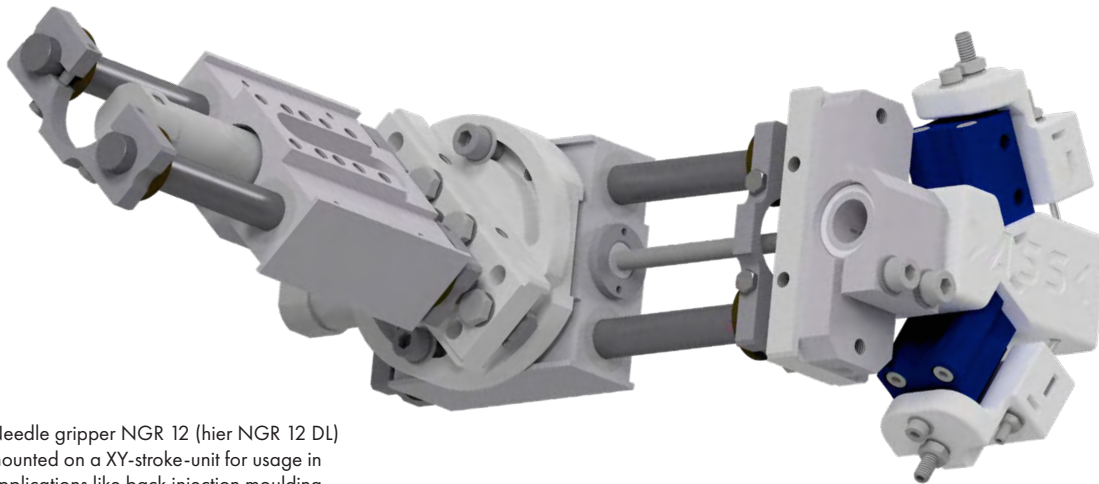
Remarks:

Anwendung: curved workpieces can be selectively supported on the holding bracket

- allows gentle gripping of the workpiece
- closed finger presses the article against the holding bracket
- » for detailed information about the EP Coating please take a look at category 990
- » see application example

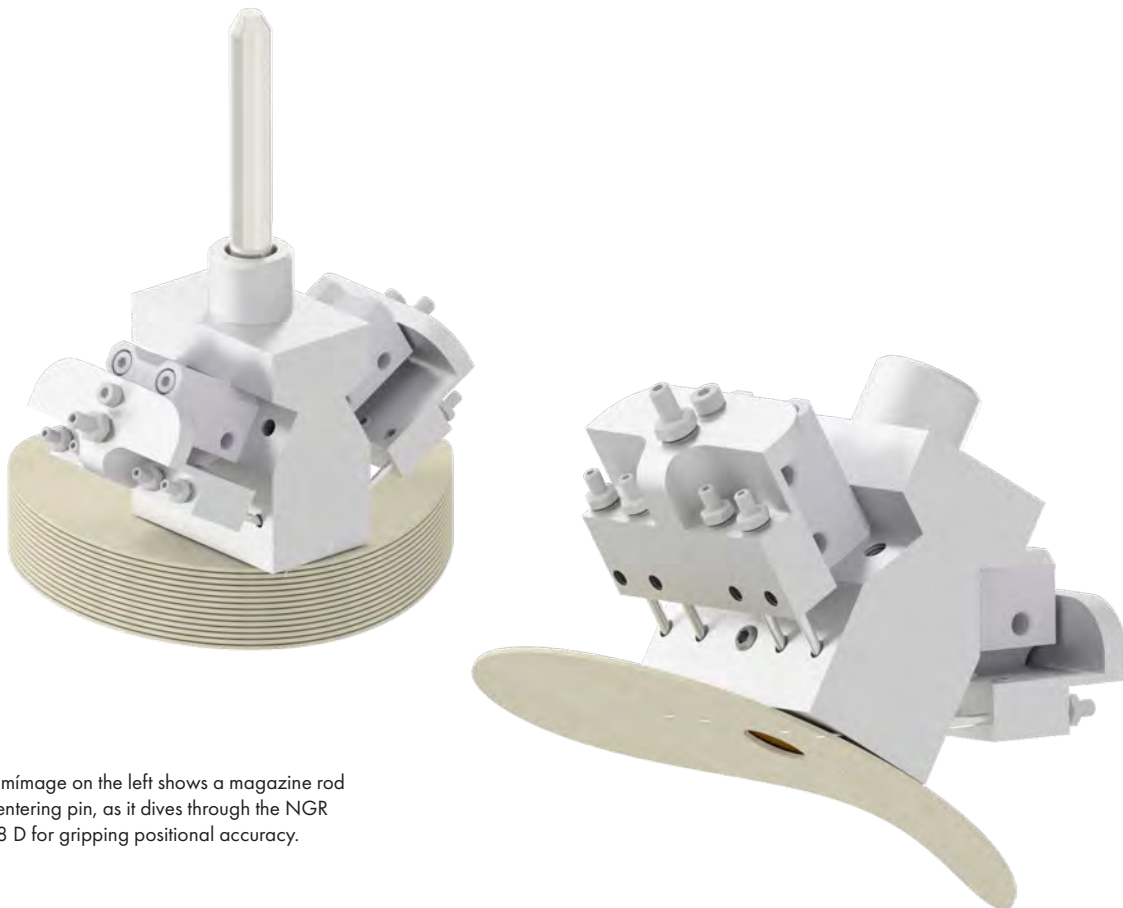
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	R1 [mm]	R2 [mm]	Material	Weight [g]
1-490-70-00	ANS 14 PA K	14	20	33	24,5	20	4	Polyamide	7
1-490-71-00	ANS 20 PA K	20	30	41	35,5	35,5	4,5	Polyamide	17
1-490-75-00	ANS 14 PA K EP	14	20	33	24,5	20	4	Polyamide / EP	7
1-490-76-00	ANS 20 PA K EP	20	30	41	35,5	35,5	4,5	Polyamide / EP	17

Anwendungsbeispiel NGR 12 D / NGR 12 DL



Needle gripper NGR 12 (hier NGR 12 DL) mounted on a XY-stroke-unit for usage in applications like back injection moulding.

Anwendungsbeispiel NGR 12-8 D



The image on the left shows a magazine rod / centering pin, as it dives through the NGR 12-8 D for gripping positional accuracy.

000
Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

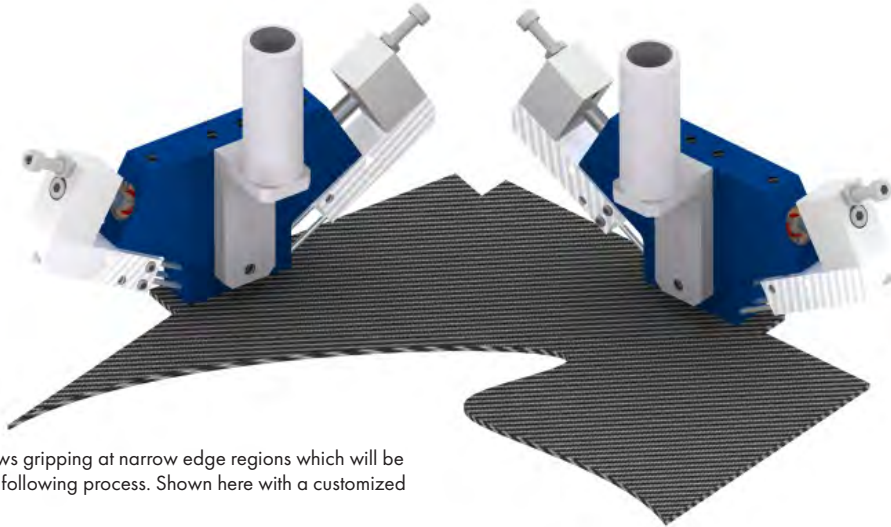
460 | Needle Grippers

Anwendungsbeispiel NGR 12-10 D



Example of a NGR 12-10 D mounted with two clamps for a strong hold.

Anwendungsbeispiel NGR 12-6 DS A

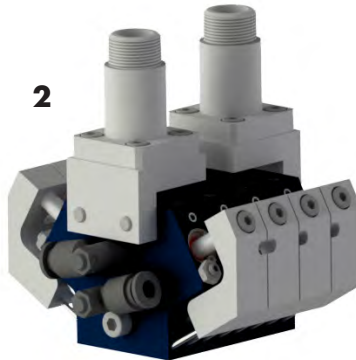


Slim design allows gripping at narrow edge regions which will be laminated in the following process. Shown here with a customized connection.

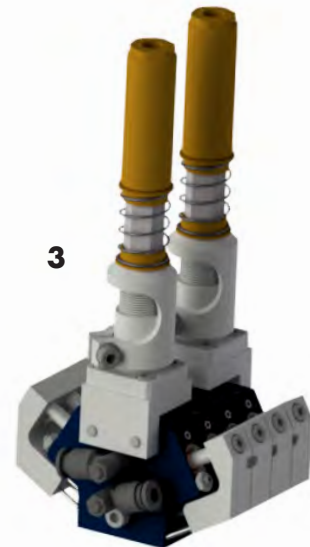
1



2

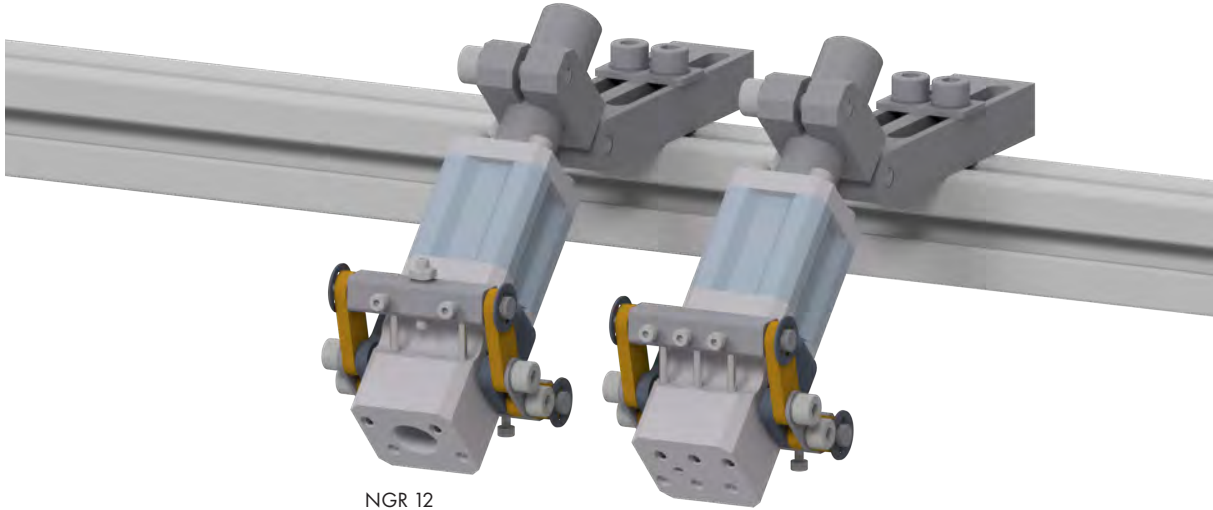


3



- 1: needle gripper package
- 2: needle gripper package with mounted connections for the Robot-Hand-Kit
- 3: combination of needle grippers with spring compensated grippers

Application examples NGR 12 and NGR 12-6

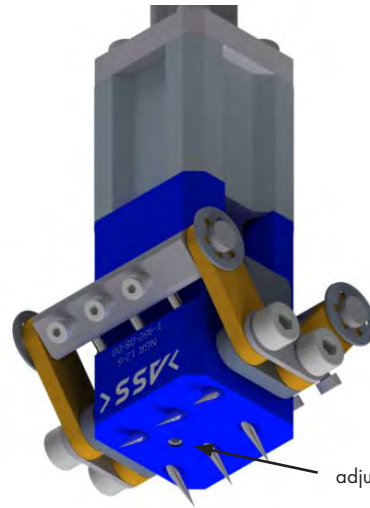


NGR 12

NGR 12-6



For centring tasks centring pin can dive in NGR 12.



adjusting screw

Penetration depth of needles can be continuously adjusted by adjusting screw.

Application examples NGR 16-18 EZ



Needle depth can be adjusted in steps of 0,025 mm easily.

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

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Vacuum Cups

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Gripper Fingers

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Nipper Bodies

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Nipper Blades

700
Special Elements

800
Electrics and
Sensors

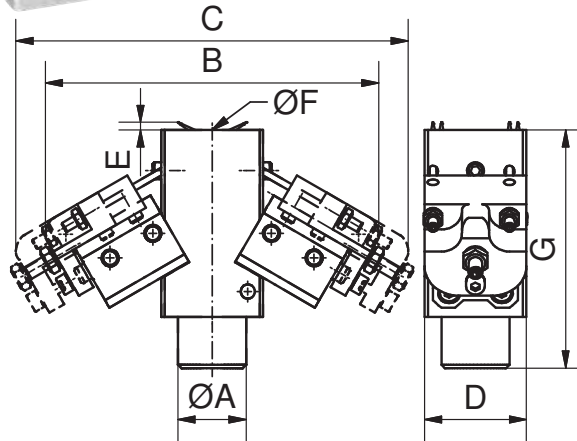
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

460 | Needle Grippers

NGR 12 D / Needle Gripper with Through Hole



Remarks:

Application: Standard Needle Gripper with 4 needles at which the magazine bar or centring pin can completely submerge

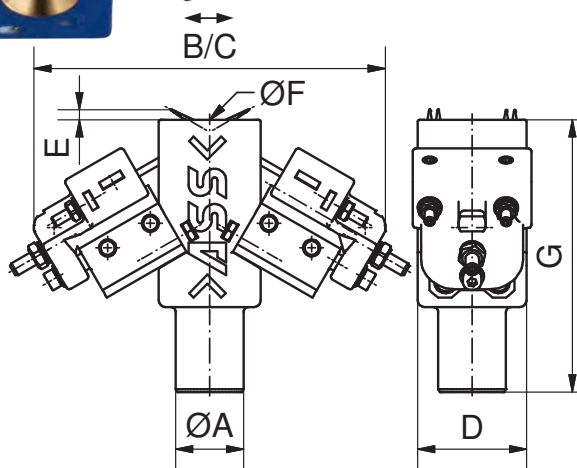
- **New: weight-optimized**
- suitable for handling textiles, fabrics or other limp materials that can be penetrated
- two double-acting cylinders
- piston diameter 12 mm
- body made of Aluminium
- » maximum air pressure is 6 bar, use dry and filtered air only

Drawing:

E penetration depth, the diameter of the needles is 2 mm
 B and C minimum dimension (cylinder retracted) and maximum dimension (cylinder extended)

Part No.	Description	Air connection	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-460-09-00	NGR 12 D	M5	20	98	116	30	0-2.5	11.5	70	202

NGR 12 DL / Needle Gripper with Through Hole, Light Weight Version



Remarks:

Application: Light Weight Needle Gripper with 4 needles at which the magazine bar or centring pin can completely submerge

- identical function as NGR 12 D
- 37% weight reduction compared to NGR 12 D
- partitions made of Polyamide
- suitable for handling textiles, fabrics or other limp materials that can be penetrated
- two double-acting cylinders
- piston diameter 12 mm
- body made of Aluminium
- » maximum air pressure is 6 bar, use dry and filtered air only

Drawing:

E penetration depth, the diameter of the needles is 2 mm
 B and C minimum dimension (cylinder retracted) and maximum dimension (cylinder extended)

Part No.	Description	Air connection	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-460-12-00	NGR 12 DL	M5	20	121	103	32	2.5	11.5	80	169

NGR 12-8 DK / Needle Gripper, 8 Needles, with Through Hole, compact design

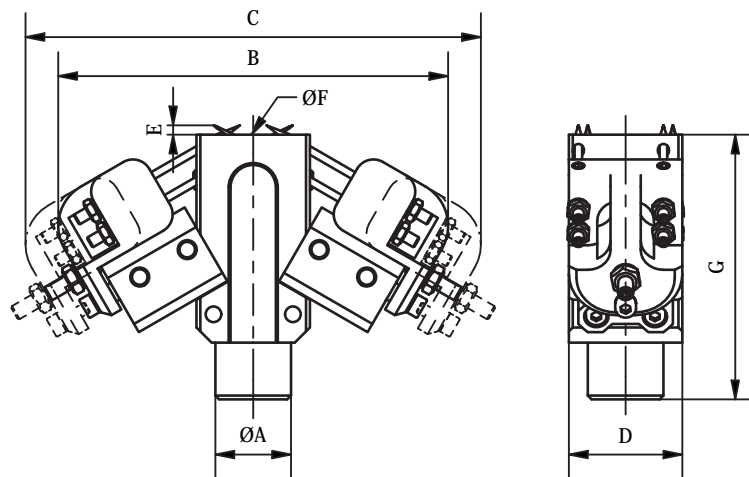
Remarks:

Application: Needle Gripper with 8 needles for more contact area at which the magazine bar or centring pin can completely submerge

- suitable for handling textiles, fabrics or other limp materials that can be penetrated
- two double-acting cylinders
- piston diameter 12 mm
- body made of Aluminium
- » maximum air pressure is 6 bar, use dry and filtered air only

Drawing:

- E penetration depth, the diameter of the needles is 2 mm
 B and C minimum dimension (cylinder retracted) and maximum dimension (cylinder extended)



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Air connection	Weight [g]
1-460-13-00	NGR 12-8 DK	20	103	120	30	0-2,5	11,5	70	M5	225

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

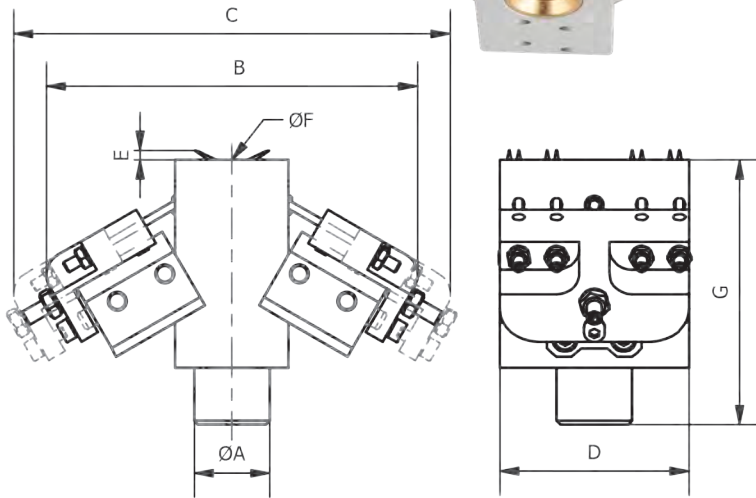
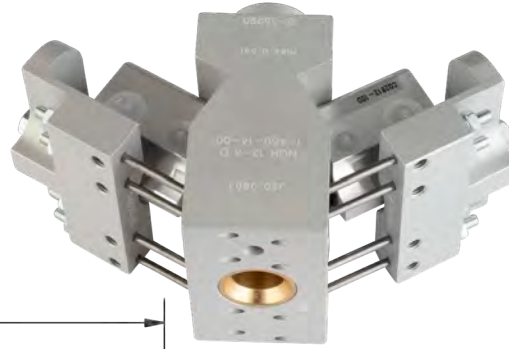
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

460 | Needle Grippers

NGR 12-8 D / Needle Gripper, 8 Needles, with Through Hole



Remarks:

Application: Needle Gripper with 8 needles for more contact area at which the magazine bar or centring pin can completely submerge

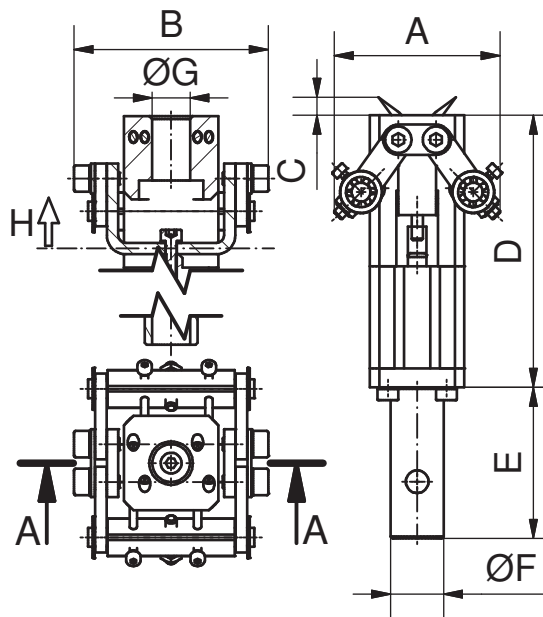
- suitable for handling textiles, fabrics or other limp materials that can be penetrated
- two double-acting cylinders
- piston diameter 12 mm
- body made of Aluminium
- » maximum air pressure is 6 bar, use dry and filtered air only

Drawing:

- E penetration depth, the diameter of the needles is 2 mm
- B and C minimum dimension (cylinder retracted) and maximum dimension (cylinder extended)

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Air connection	Weight [g]
1-460-14-00	NGR 12-8 D	20	98	116	50	0-2.5	11.5	70	M5	349

NGR 12 / Needle Gripper



Remarks:

Application: Needle Gripper with 4 needles at which the magazine bar or centring pin can immerse

- maximum immersion depth 20 mm
- suitable for handling textiles, fabrics or other limp materials that can be penetrated
- double-acting cylinder
- piston diameter 12 mm
- » maximum air pressure is 6 bar, use dry and filtered air only

Drawing:

- A extracted / retracted needles
- C penetration depth, the diameter of the needles is 2 mm

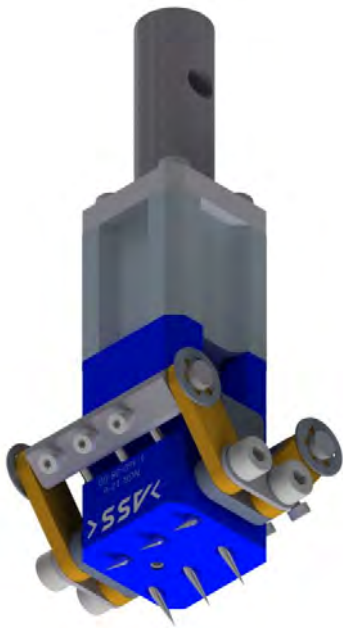
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Stroke H [mm]	Air connection	Weight [g]
1-460-06-00	NGR 12	48/58	52	0-4	72	40	14	10	10	M5	186

NGR 12-6 / Needle Gripper with 6 Needles, adjustable

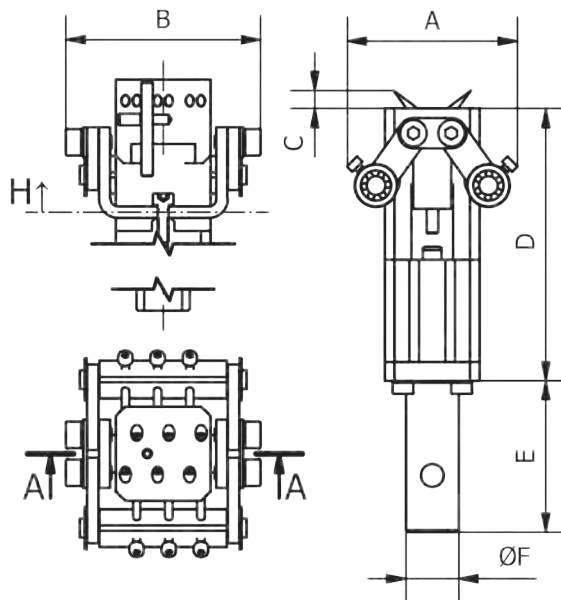
Remarks:

Application: infinitely adjustable Needle Gripper with 6 needles

- penetration depth infinitely adjustable via adjusting screw
- easy to use
- 6 needles for a secure hold
- double-acting cylinder
- » maximum air pressure is 6 bar, use dry and filtered air only



working position



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Stroke H [mm]	Air connection	Weight [g]
1-460-08-00	NGR 12-6	48/58	52	0-4	72	40	14	10	10	M5	190

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

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Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

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Vacuum Cups

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Special
Vacuum Cups

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Vacuum Cups

400
Gripper
Parallel Gripper

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Needle Gripper

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Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

460 | Needle Grippers

NGR 16-18 EZ / Needle Gripper, compact, adjustable



Remarks:

Application: suitable for separating thin and limp materials without forcing through or the needles to grip several layers

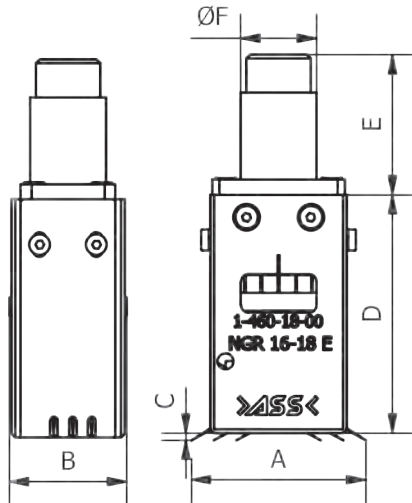
- 18 extra-thin needles with a diameter of 0.7 mm for a secure hold
- needle depth is adjustable from 0-1.8 mm (1.75 mm when using additional cover) in 0.025mm steps by thumb wheel
- successfully completed endurance test with more than 2 million cycles
- fitted for a blow-off tube to release cloth
- easy to change needle package
- single-acting
- » sensor option for needle position
- » maximum air pressure is 6 bar, use dry and filtered air only

Scope of Delivery:

- additional cover for thin and limp materials

Accessories.g.:

- Sensor MFS T2 3,7 (Art.-Nr. 1-808-30-00)



Part No.	Description	Needles	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Air connection	Weight [g]
1-460-19-00	NGR 16-18 EZ	18	36/46	31	0-2	63	37	20	M5	256

NGR 12-10 D / Needle Gripper with covered Contact Area

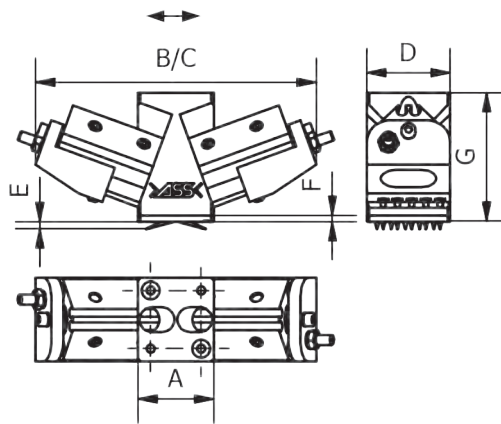
Remarks:

Application: special Needle Gripper with 10 needles designed for handling fibre-reinforced composites (Organo-Sheets) and similar adhesive materials

- specially designed contact surface for stripping off bonds
- contact surface made of PTFE
- easy exchangeable contact surface
- different connections possible
- double-acting
- stroke positions can be monitored
- stepless adjustment of the penetration depth
- 2x5 needles with 2mm diameter each
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Draw Tube 20x100 NGR 12-10 D
- Sensor ICS 8



Part No.	Description	Connection	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-460-10-00	NGR 12-10 D	M5	30	130	112	33	2.8	2.5	51	252

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

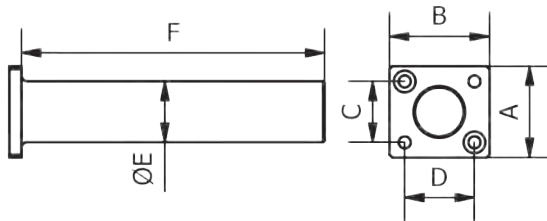
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

460 | Needle Grippers

Draw Tube 20x100 NGR 12-10 D



Remarks:

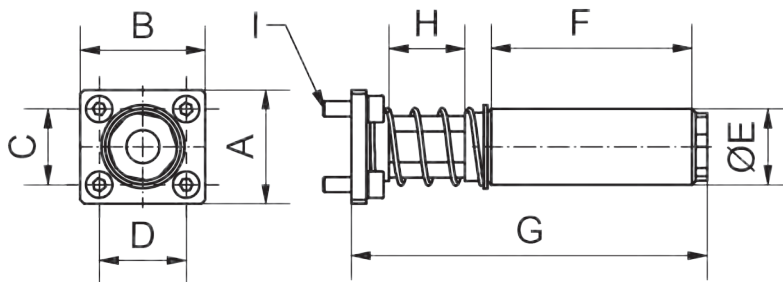
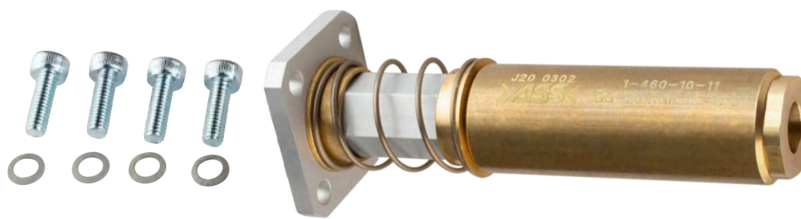
- special draw tube for NGR 12-10 D
- integrates NGR 12-10 D to the Robot Hand Kit (EOAT)

Scope of Delivery:

- incl. mounting material

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Weight [g]
1-460-10-10	Draw Tube 20x100 NGR 12-10 D	30	33	20	23	20	100	38

GG-20-NGR / Spring compensated Gripper Arm for NGR 12-10 D



Remarks:

- spring compensated gripper arm for NGR 12-10 D
- integrates NGR 12-10 D to the Robot Hand Kit (EOAT)

Scope of Delivery:

- incl. mounting material

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Weight [g]
1-460-10-11	GG-20-NGR 12-10 D	30	33	20	23	20	53	94	20	M4	118
1-460-10-12	GG-50-NGR 12-10 D	30	33	20	23	20	53	124	50	M4	125

NGR 12-6 DS A / Needle Gripper, slim, adjustable, PTFE coated needles

Remarks:

Application: special Needle Gripper for border areas or when needle packages are required

- slim design with only 15 mm
- Version DSA TP with changeable PTFE contact plate
- 2x 3 PTFE coated needles
- cohesive needle fixation
- seamless screwing to needle gripper packages with 6, 12, 18, 24 and more needles possible
- air connections can be summarized with needle gripper packages
- needle packages can be completely exchanged
- penetration depth infinitely adjustable
- fabrics are only penetrated in areas which are subsequently laminated
- basic and working position of the needle packages can be monitored
- double-acting
- air connection 2xM5
- » maximum air pressure is 6 bar, use dry and filtered air only
- » see application examples

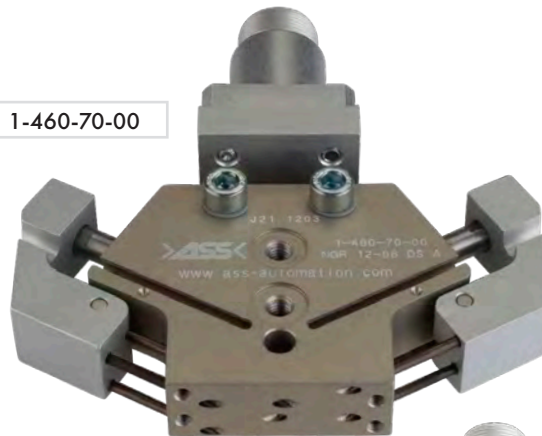
Scope of Delivery:

- thread connection
- adapter for linking to the Robot-Hand-Kit

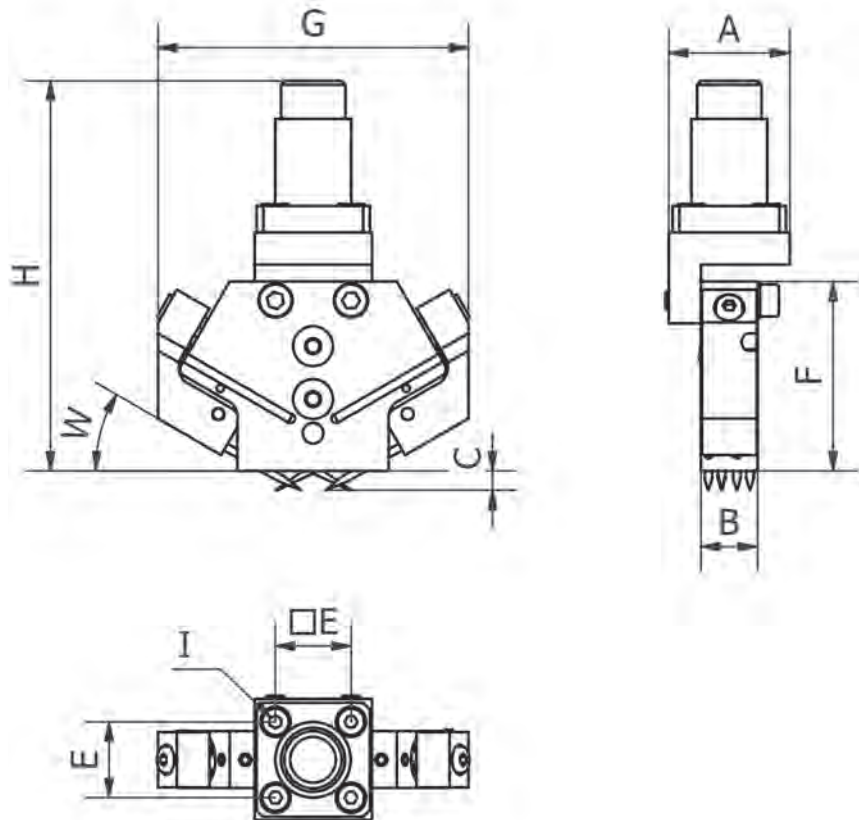
Accessories e.g.:

- Sensor MFS T2 3,7 (Part No. 1-808-30-00)

1-460-70-00



9-07-460-157-0



Part No.	Description	A	B	C	E	F	G	H	I	K	W	Weight [g]
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[°]	
1-460-70-00	NGR 12-6 DS A	31	15	0-5	20	50	82/100	103	M4	40	30	224
9-07-460-157-0	NGR 12-06 DS A TP	31	15	0-5	20	50	82/100	103	M4	40	30	222

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

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Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

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Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

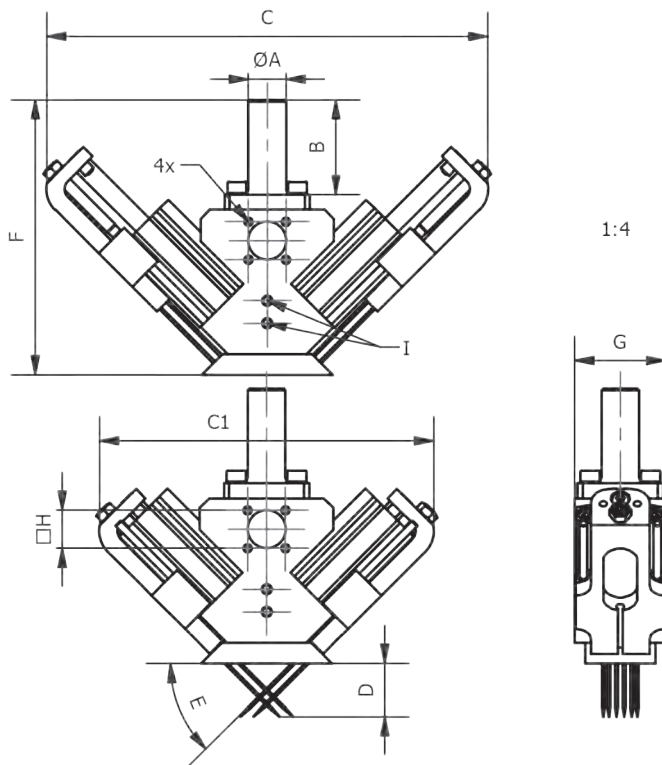
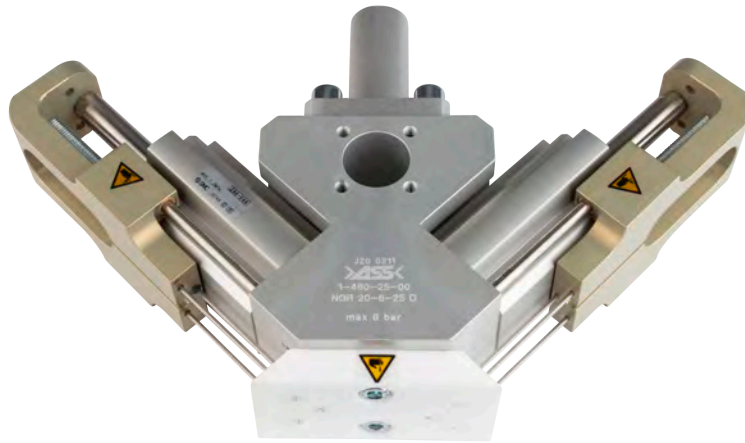
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

460 | Needle Grippers

NGR 20-6-25 D / NGR for SMC (Sheet Molding Compound) Parts



Application example with mounting with DKZ

Remarks:

Application: e.g. for gripping fleeces, several limp layers, voluminous or sticky materials

- piston diameter 20 mm
- 6 crossed needles with a diameter of 1.5 mm
- penetration depth up to 25 mm
- double-acting cylinders
- specially designed PTFE contact surface for stripping off bonds
- contact surface made of PTFE: non-sticky and insulating
- strokes can be adjusted continuously
- basic and working position can be monitored
- a cable suitable for the cable must be used
- body made of anodised Aluminium
- » maximum air pressure is 6 bar, use dry and filtered air only

Drawing:

E penetration depth of the needles
C and C1 minimum dimension (cylinder retracted) and maximum dimension (cylinder extended)

Accessories e.g.:

- Sensor MFS T2 3,7 (Part No. 1-808-30-00)

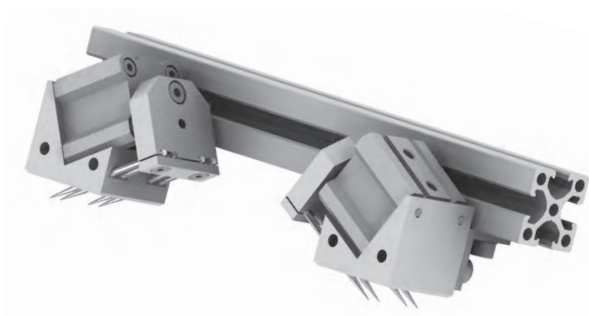
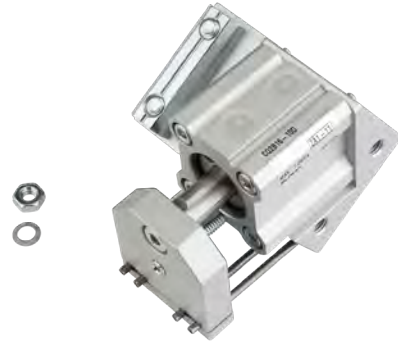
Part No.	Description	A [mm]	B [mm]	C [mm]	C1 [mm]	D [mm]	E [°]	F [mm]	G [mm]	H [mm]	I	Weight [g]
1-460-25-00	NGR 20-6-25 D	20	50	233	177	0-25	45	145	48	20	M5	1145

NGR X 16-10 / Needle Gripper for X-Profile

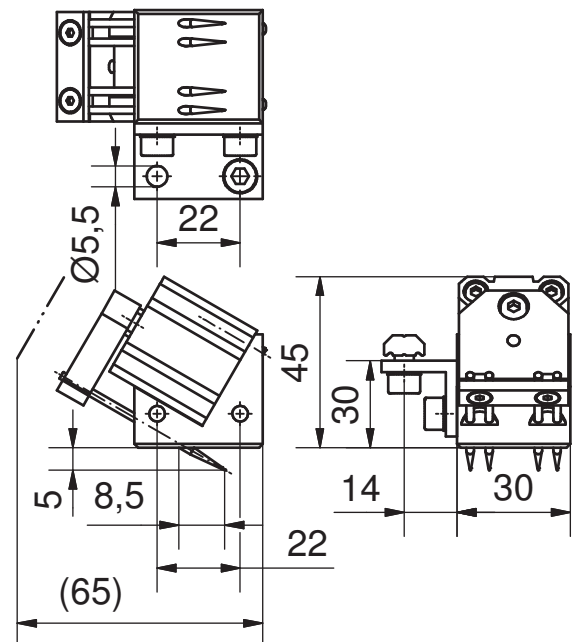
Remarks:

Application: Needle Gripper for mounting directly to the X-Profile

- double-acting cylinder
- piston diameter 16mm
- stroke 10mm
- for secure gripping of fabrics, two needle grippers should be used, working in the opposite direction
- » maximum air pressure is 6 bar, use dry and filtered air only



Contrarious mounted needle grippers NGR X 16-10 am X Profil for secure gripping of limp materials such as textiles.

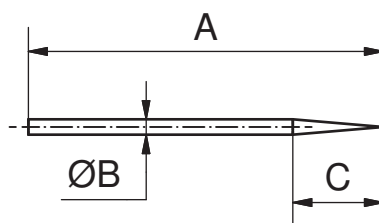


Part No.	Description	Air connection	Weight [g]	Compatible to profile
1-460-03-00	NGR X 16-10	M5	153	X

Spare Needles for Needle Gripper

Remarks:

- spare needles for needle grippers, see table
- sold in units of 10 pieces



Part No.	Description	A [mm]	B [mm]	C [mm]	use for	Weight [g]	Sold in pc.
1-460-06-09	Needle 37	37	2.0	10	NGR 12	1	10
1-460-03-06	Needle 50	50	2.0	10	NGR 12 D / -DL and NGR X 16-10	1	10

- 000** Quick Change Systems
- 050** Profiles Channel Nuts
- 100/115** Clamps
- 120** Profile Connectors
- 190** Profile Accessories
- 200** Vacuum Cup Connectors
- 220** Vacuum Cups
- 224** Special Vacuum Cups
- 230** Manifold
- 290** Adapters for Vacuum Cups
- 300** Gripper Arms
- 400** Gripper Parallel Gripper
- 450** Gripper Fingers
- 460** Needle Gripper
- 600** Nipper Bodies
- 610** Nipper Blades
- 700** Special Elements
- 800** Electrics and Sensors
- 850** Pneumatics
- 990** Tubular System Micro System
- 990** PA-Forming Others

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

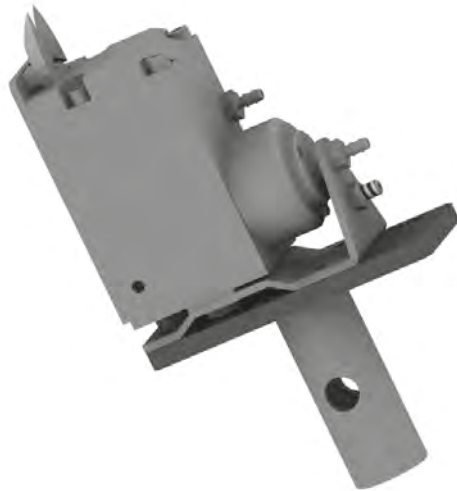
990
Tubular System
Micro System

990
PA-Forming
Others

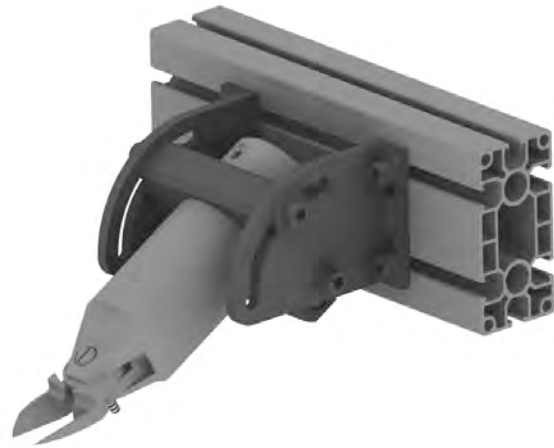
600 | Nipper Bodies



Application example ASN HP



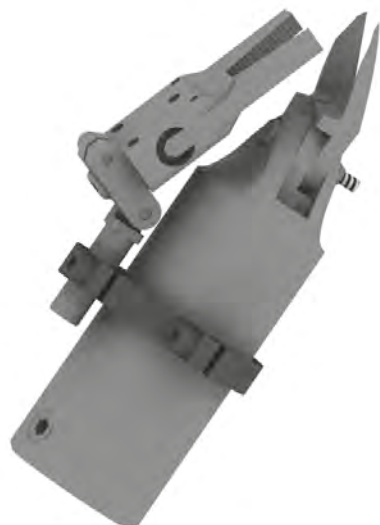
Application example ASN SB



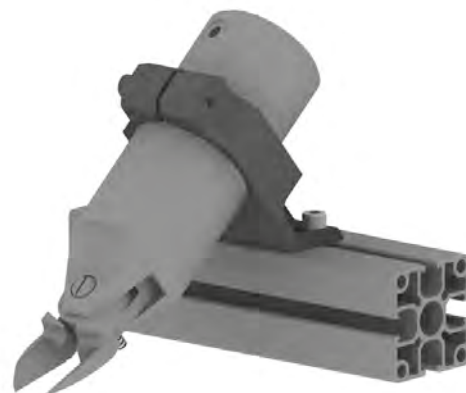
Application examples ASZ AH



Application example ASZ KA

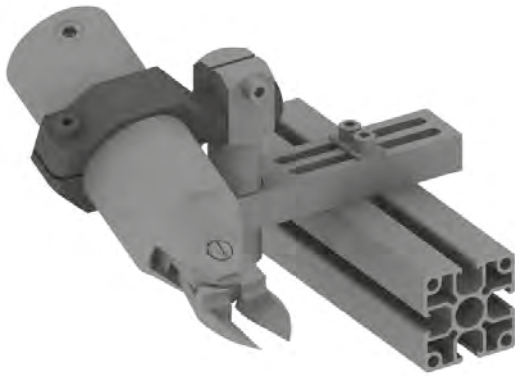


Application example ASZ HS



Nipper Bodies | 600

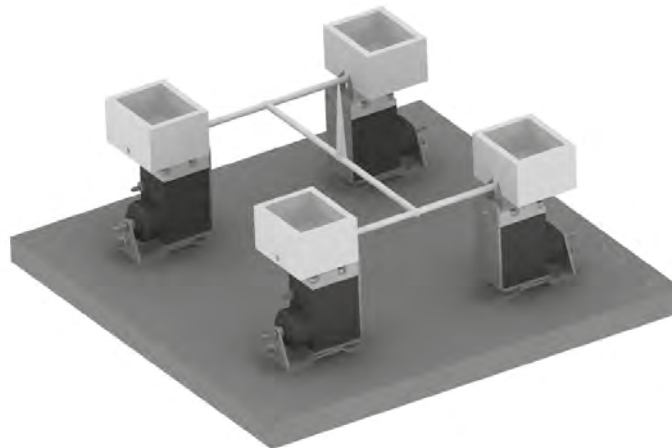
Application example ASN KS



Application example ASN KF



Application example ASN-SE



Application example ASN Sensor



For magnetic return blades only.

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
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Special
Vacuum Cups

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Manifold

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Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

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Needle Gripper

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Tubular System
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Tubular System
Micro System

990
PA-Forming
Others

600 | Nipper Bodies



Safety instructions for handling manually operated nippers ASN 10; 20; 30; 50; HR



Caution - Prevent anybody from touching the cutter and blade!

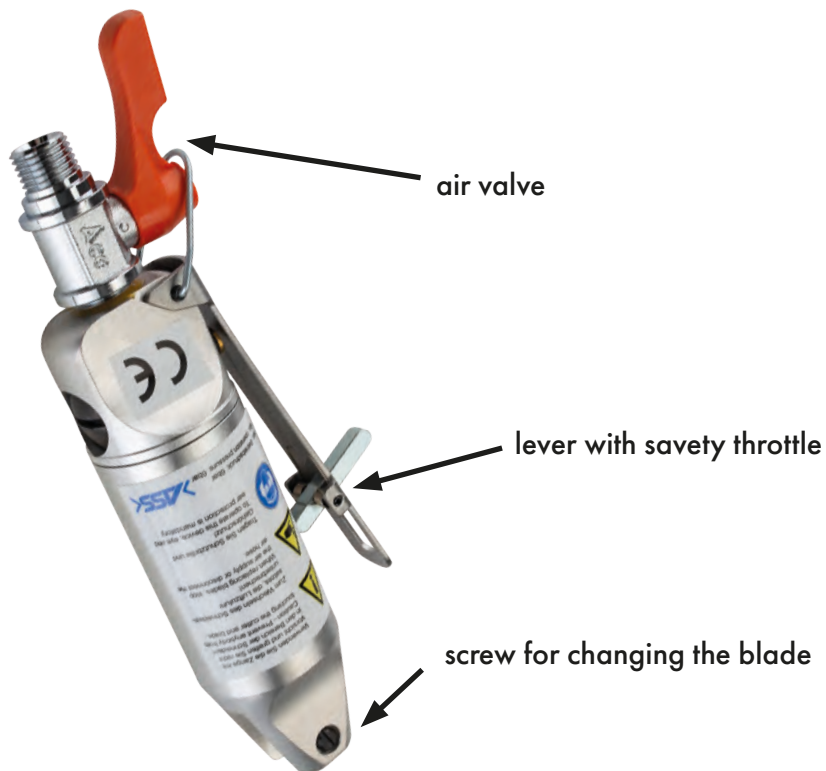


When replacing blades, stopp the air supply or diconnect the air hose!



To operate the device, eye and ear protection is mandatory.

Max. operating pressunre: 6 bar



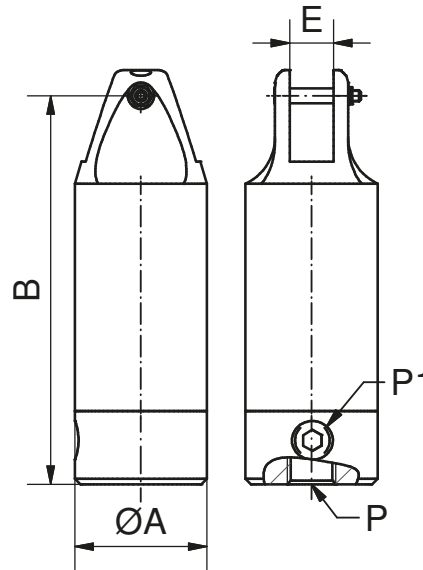
ASN AR / Automatic-Round-Single Action

Remarks:

- single action
- ASN ... AR
 - A automatic
 - R round
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

Scope of Delivery:

- sold without nipper blades
- ASN 50 AR without side air port



Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	E [mm]	P ["]	P1 ["]	Weight [g]
1-655-03-00	ASN 3 AR	294	23	103	7	Rc 1/8	Rc 1/8	70
1-655-10-00	ASN 10 AR	588	36	106	12	G1/4	G1/8	157
1-655-65-00	ASN 20 AR	1372	45	119.5	12	G1/4	G1/8	280
1-660-15-00	ASN 30 AR	2744	56	154.5	17	G1/4	G1/8	521
1-660-55-00	ASN 50 AR	4704	75	164	17	G1/4	-	1000

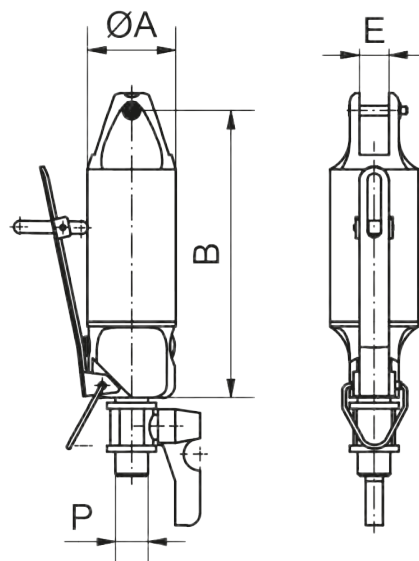
ASN HR / Manual-Round

Remarks:

- single action
- ASN ... HR
 - H manual
 - R round
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

Scope of Delivery:

- sold without nipper blades



Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	E [mm]	P ["]	Weight [g]
1-655-05-00	ASN 10 HR	588	36	117	12	G1/4	255
1-655-55-00	ASN 20 HR	1372	45	138.5	12	G1/4	427
1-660-05-00	ASN 30 HR	2744	56	174.5	17	G1/4	682
1-660-45-00	ASN 50 HR	4704	75	186	17	G1/4	1136

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Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

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Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

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Profile
Connectors

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Profile
Accessories

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Nipper Blades

700
Special Elements

800
Electrics and
Sensors

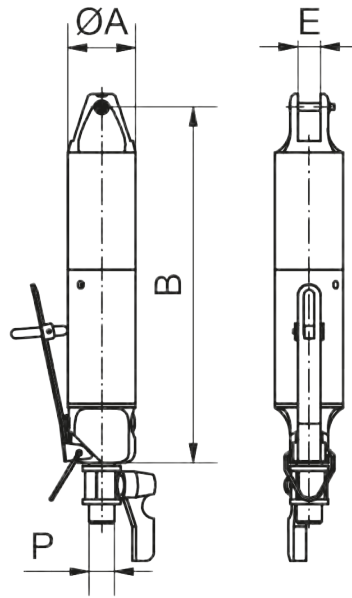
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

600 | Nipper Bodies

ASN HRK / Manual-Round with Power Booster



Remarks:

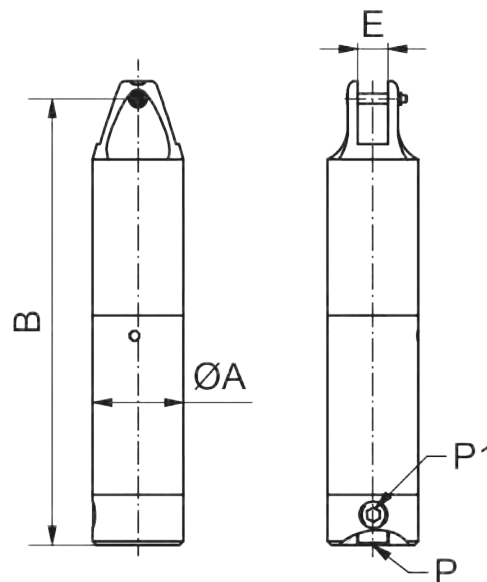
- ASN ... HRK
H manual
R round
K power booster
- single-acting
- nipper Body complete (housing with power booster)
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

Scope of Delivery:

- sold without nipper blades

Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	E [mm]	P ["]	Weight [g]
1-655-07-00	ASN 10 HRK	980	36	188	12	G1/4	364
1-655-60-00	ASN 20 HRK	2254	45	225.5	12	G1/4	641
1-660-10-00	ASN 30 HRK	4410	56	266.5	17	G1/4	1015
1-660-50-00	ASN 50 HRK	7742	75	319	17	G1/4	1909

ASN ARK / Automatic-Round-Power Booster



Remarks:

- ASN ... ARK
A automatic
R round
K power booster
- nipper Body complete (housing with power booster)
- single-acting
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

Scope of Delivery:

- sold without nipper blades

Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	E [mm]	P ["]	P1 ["]	Weight [g]
1-655-15-00	ASN 10 ARK	980	36	177	12	G1/4	G1/8	266
1-655-70-00	ASN 20 ARK	2254	45	206.5	12	G1/4	G1/8	490
1-660-20-00	ASN 30 ARK	4410	56	246.5	17	G1/4	G1/8	851
1-660-60-00	ASN 50 ARK	7742	75	297	17	G1/4	-	1810

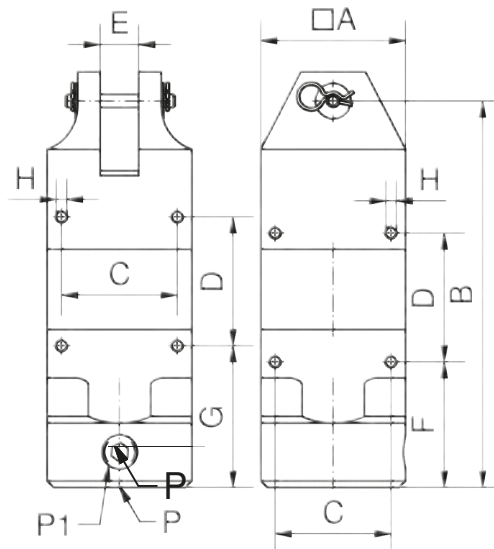
ASN AQ / Automatic - Square

Remarks:

- ASN ... AQ
- A automatic
- Q square
- single-acting
- body has threads for mounting (H)
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

Scope of Delivery:

- sold without nipper blades



Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	P ["]	P1 ["]	Weight [g]
1-650-15-00	ASN 3 AQ	294	23	103	19	40	7	40	45	M3	G1/8	G1/8	95
1-650-35-00	ASN 5 AQ	392	30	87	24	30	7	34	39	M3	G1/8	G1/8	138
1-650-55-00	ASN 7 AQ	490	36	106	28	30	9	38	43	M4	G1/8	G1/8	211
1-655-30-00	ASN 10 AQ	588	36	106	28	30	12	38	43	M4	G1/4	G1/8	208
1-655-80-00	ASN 20 AQ	1372	45	120	36	40	12	39	44	M4	G1/4	G1/8	370
1-660-30-00	ASN 30 AQ	2744	56	155	46	60	17	40	50	M5	G1/4	G1/8	687

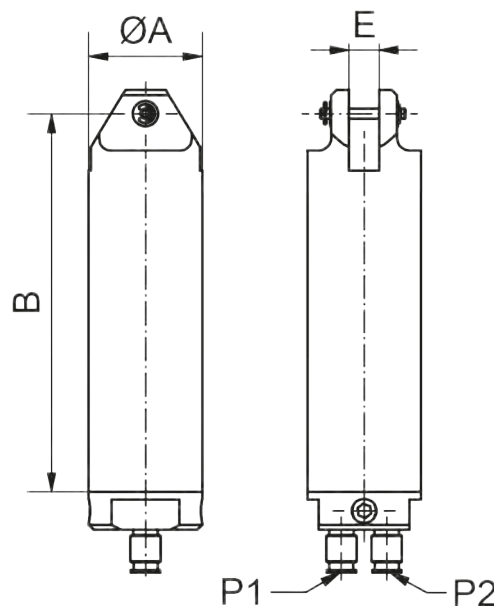
ASN ARD / Automatic-Round-Double Action

Remarks:

- ASN ... ARD
- A automatic
- R round
- D double action
- double-acting
- adjustable cutting speed when used with a flow control in exhaust port
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

Scope of Delivery:

- sold without nipper blades



Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	E [mm]	P1/P2 [Ømm]	Weight [g]
1-655-25-00	ASN 10 ARD	588	36	146	9	6	289
1-655-75-00	ASN 20 ARD	1372	45	165	12	6	480
1-660-25-00	ASN 30 ARD	2744	56	216	17	6	916

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

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Profile
Connectors

190
Profile
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Electrics and
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850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

600 | Nipper Bodies



ASN ARKS / Nipper Body Automatic-Round-Power Boost-Durable

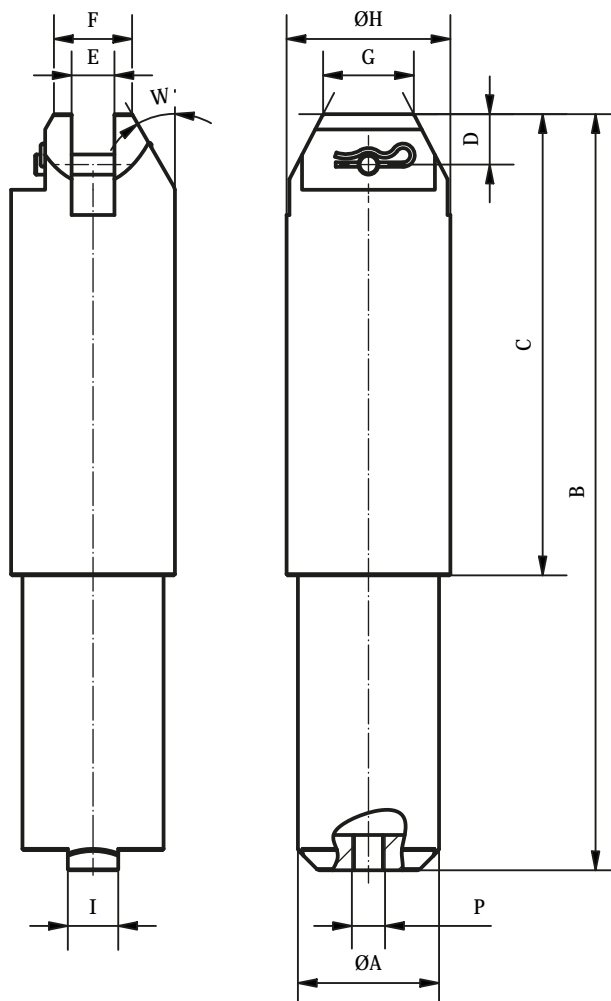


Remarks:

- ASN...ARKS
 - A automatic
 - R round
 - K power boost
 - S durable
- efficient design
- maximum power development
- cutting force of up to 6400 N
- operating pressure 0.6 MPa
- housing made of Aluminium
- for plastics and metal industry
- single-acting nipper body
- » Attention! Special nipper blades are required for this nipper body!
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

Scope of Delivery:

- sold without nipper blades



Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	P [°]	W [°]	Weight [g]
1-661-00-00	ASN ARKS	6400	56	300	183	20	17	31	36	65	20	G1/4	30	1141

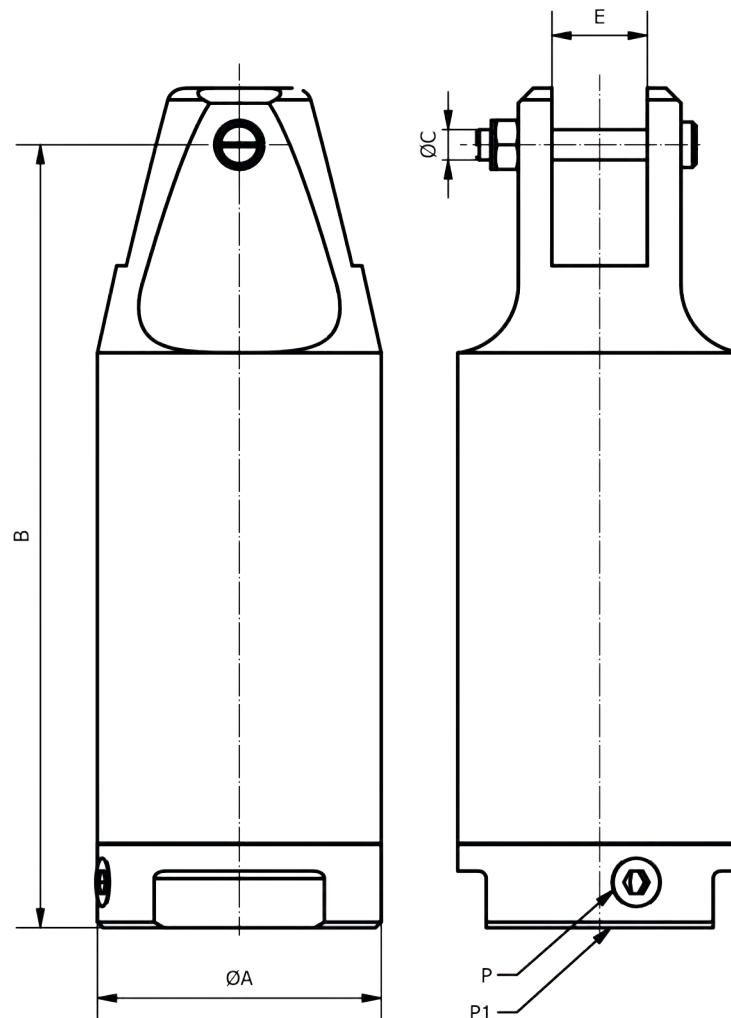
**ASN AR VS / Nipper Body
Automatic-Round-Strengthened**

Remarks:

- ASN...AR VS
 - A automatic
 - R round
 - S strengthened
- cutting force over 4700 N
- bolt diameter 8mm; in comparison ASN 50 AR has 5mm
- housing made of Aluminium
- for plastics and metal industry
- single-acting nipper body
 - » Attention! Special nipper blades are required for this nipper body!
 - » Attention! Observe operating instructions!
 - » The applied cutting force depends on the nipper blade!
 - » Maximum air pressure is 6 bar, use dry and filtered air only!

Scope of Delivery:

- sold without nipper blades



Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	C [mm]	E [mm]	P ["]	P1 ["]	Weight [g]
1-660-56-00	ASN 50 AR VS	4.704	75	207	8	25	G1/4	G1/4	1186

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

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Special
Vacuum Cups

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Manifold

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Gripper
Parallel Gripper

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460
Needle Gripper

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Special Elements

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Sensors

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Pneumatics

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Tubular System
Micro System

990
PA-Forming
Others

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Systems

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Nipper Blades

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Special Elements

800
Electrics and
Sensors

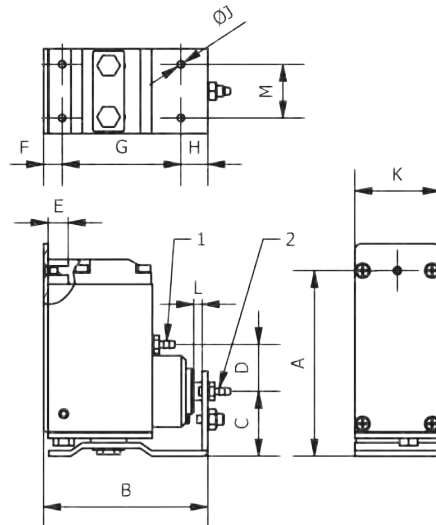
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

600 | Nipper Bodies

ASN SE / Nipper Bodies 90° with Stroke



Remarks:

- ASN...SE
S stationary
E single action
- with stroke
- continuous adjustment
- » Attention! Special nipper blades are required for this nipper body!
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

Drawing:

- 1 air connection nipper
- 2 air connection stroke

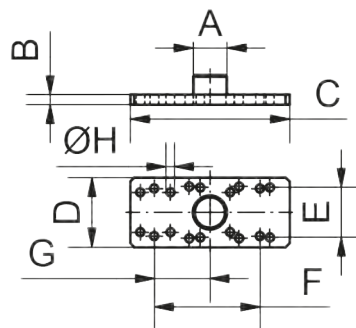
Scope of Delivery:

- sold without nipper blades

Part No.	Description	Closing force max. [N]	Pneuma. Hose Connection	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
1-662-05-00	ASN 3 SE	147	4/3	63	62	23	15	7	9.5
1-662-10-00	ASN 5 SE	196	4/3	66	64	25	20	7	7
1-662-25-00	ASN 10 SE	515	4/3	83	73	29	21	9	8
1-662-60-00	ASN 20 SE	930	6/4	96	103	33	22	12	10

Part No.	Description	G [mm]	H [mm]	J [mm]	K [mm]	Stroke L [mm]	M [mm]	Weight [g]
1-662-05-00	ASN 3 SE	43	10	M3	19	0-3	14	226
1-662-10-00	ASN 5 SE	45	12	M4	32	0-3	20	252
1-662-25-00	ASN 10 SE	53	12	M4	38	0-3	24	503
1-662-60-00	ASN 20 SE	80	13	M5	44	0-8	28	879

ASN HP / Mounting Bracket for ASN SE



Remarks:

- use with VLR extension tube
- » see application example

Accessories:

- Extension Tube VLR

Part No.	Description	for sprue cutter	Compatible to profile	A [mm]	Connection
1-640-58-00	ASN HP 14	ASN 3 SE	X	M12x1	VLR 14
1-640-61-00	ASN HP 20	ASN 5 SE/ASN 10 SE	X, JU	M17x1	VLR 20
1-640-64-00	ASN HP 30	ASN 20 SE	X, JU	M27x1	VLR 30

Part No.	Description	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Weight [g]
1-640-58-00	ASN HP 14	4	60	30	14	43	23.5	3.4	21
1-640-61-00	ASN HP 20	5	80	35	20/24	45/53	35/28	4.2	41
1-640-64-00	ASN HP 30	5	100	40	28	80	41.5	5.5	69

ASZ AH / Sprue Gripper for Nipper Bodies ASZ and ASN

Remarks:

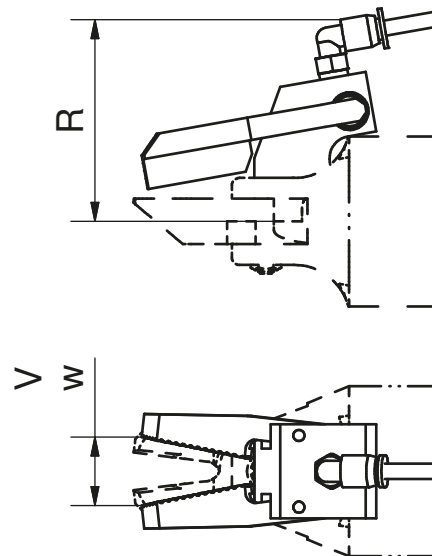
- for assembling with sprue cutters
- spring return/single action
- can be actuated from the same valve as the sprue cutter
- » Maximum air pressure is 6 bar, use dry and filtered air only!
- » see application example

Scope of Delivery:

- sold separately from sprue cutter ASZ... and ASN...
- for assembling with ASN HR a Thread Coupling PMM 1/4 is needed

Accessories:

- Thread Coupling PMM 1/4 (Part No. 1-858-42-00)



Assembled delivery condition

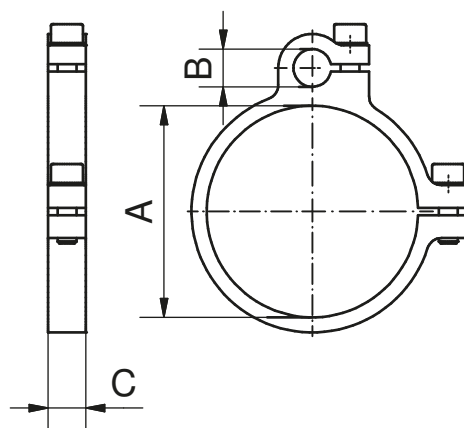


Part No.	Description	R [mm]	V max. [mm]	W min. [mm]	for sprue cutter	Weight [g]
1-640-03-00	ASZ 20 AH	54.6	18	1	ASN 20 AR or HR	128
1-640-06-00	ASZ 30-50 AH	48.3	20	1	ASN30/50 AR or HR	124

ASZ KA / Combination Clamp for Sprue Gripper + Nipper ASZ / ASN

Remarks:

- use in combination with GRZ 10-08 or GRZ 10-12 gripper
- various mounting options for gripper GRZ
- » see application example



Part No.	Description	for sprue cutter	A [mm]	B [mm]	C [mm]	Weight [g]
1-640-10-00	ASZ 10 KA	ASN 10	36	10	10	29
1-640-13-00	ASZ 20 KA	ASN 20	45	10	10	33
1-640-16-00	ASZ 30 KA	ASN 30	56	10	10	36
1-640-19-00	ASZ 50 KA	ASN 50	75	10	10	41

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Quick Change Systems

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800
Electrics and
Sensors

850
Pneumatics

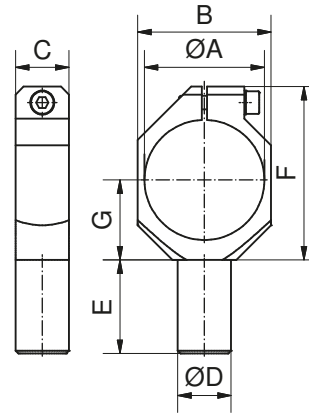
990
Tubular System
Micro System

990
PA-Forming
Others

600 | Nipper Bodies

ASZ KS / Mounting Bracket for Nipper Bodies ASN

ASZ KS BS / Mounting Bracket for Nipper Bodies ASN, Blue Scale



Remarks:

- for mounting round nipper bodies
- » see application example

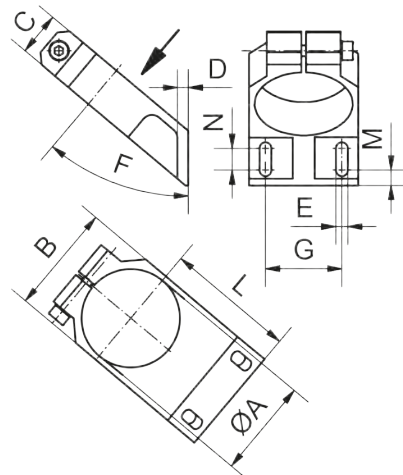
Type WST BS „Blue Scale“

Application: for exact mounting and replicable positioning of angles etc.

- as above
- blue anodized
- with marking for exact positioning
- more Blue Scale parts are available for WST, WKA, GLA and GLA V

Part No.	Description	for sprue cutter	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]	
1-640-30-00	ASZ 3 KS	ASN 3	23	27	8	6	15	33	15	8	
1-640-31-00	ASZ 10 KS	ASN 10	36	40	15	14	25	51	22	30	
1-640-32-00	ASZ 10 KS BS	ASN 10	36	40	15	14	25	51	22	30	New
1-640-34-00	ASZ 20 KS	ASN 20	45	50	20	20	35	65	30	74	
1-640-35-00	ASZ 20 KS BS	ASN 20	45	50	20	20	35	65	30	74	New
1-640-37-00	ASZ 30 KS	ASN 30	56	60	20	20	40	75	35	83	
1-640-39-00	ASZ 30 KS BS	ASN 30	56	60	20	20	40	75	35	83	New
1-640-40-00	ASZ 50 KS	ASN 50	75	85	20	20	55	95	45	153	
1-640-41-00	ASZ 50 KS BS	ASN 50	75	85	20	20	55	95	45	153	New

ASZ HS / Mounting Bracket for Nipper Body ASN



Remarks:

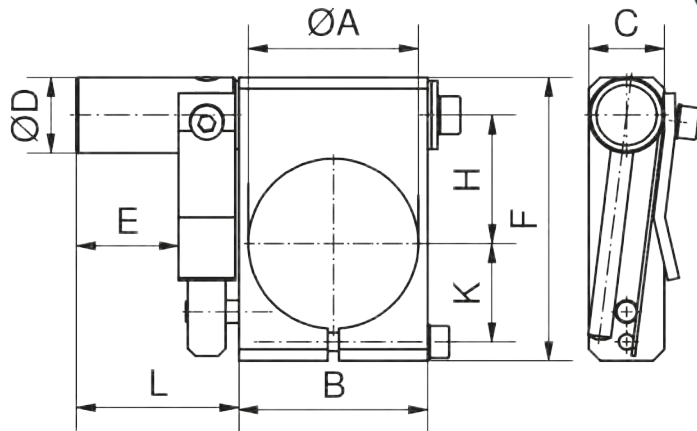
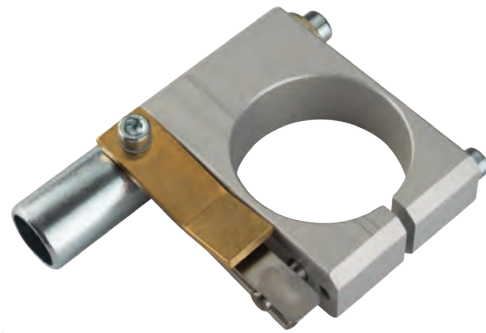
- for mounting a nipper body in an 40° respectively 30° angle
- fine adjustment is possible

Part No.	Description	for sprue cutter	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [°]	G [mm]	M [mm]	N [mm]	L [mm]	Weight [g]
1-640-22-00	ASZ 20 HS	ASN20	45	50	20	5	5.5	40	35	7	10	59	89
1-640-25-00	ASZ 30 HS	ASN30	56	60	25	5	5.5	30	45	6	12	84	161
1-640-28-00	ASZ 50 HS	ASN50	75	85	25	5	6.6	30	70	6	12	99	285

ASZ KF / Spring Loaded Mounting Bracket for ASN

Remarks:

- spring compensated mounting bracket
- allows robot to push part against the nipper (blade)

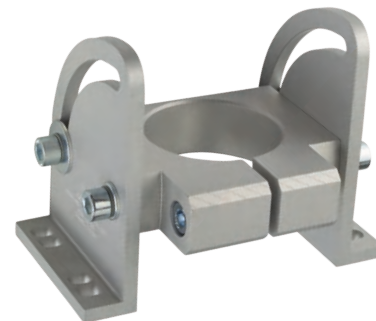
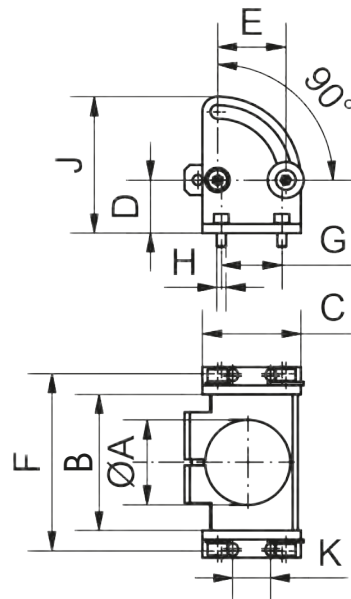


Part No.	Description	for sprue cutter	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	K [mm]	L [mm]	Weight [g]
1-640-43-00	ASZ 20 KF	ASN20	45	50	20	20	27	75	34	26	43	242
1-640-46-00	ASZ 30 KF	ASN30	56	60	20	20	35	86	38	33	50.5	361
1-640-49-00	ASZ 50 KF	ASN50	75	85	20	20	45	106	48	42	61	506

ASN SB / Swivel Bracket for Nipper Body

Remarks:

- directly screwed onto plate or profile
- nippers are clamped and can be steplessly swiveled in the range of 90°
- by turning the nipper 180° in the Swivel Bracket, the nipper blades can be positioned at any angle



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	K [mm]	J [mm]	Weight [g]
1-640-70-00	ASN SB 10	36	56	55	35	35	74	40	M5	25	80	237
1-640-71-00	ASN SB 20	45	73	60	35	40	95	40	M6	25	85	351
1-640-72-00	ASN SB 30	56	90	65	35	45	114	40	M6	25	90	487
1-640-73-00	ASN SB 50	75	100	85	47	65	85/135	40	M6	-	122	902

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Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

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Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

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Profile
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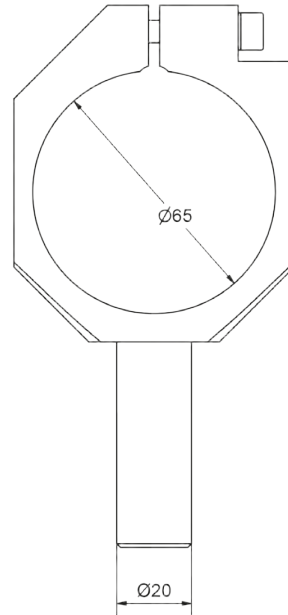
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

600 | Nipper Bodies

ASN ARKS KS / Mounting Bracket for Nipper Body ASN ARKS

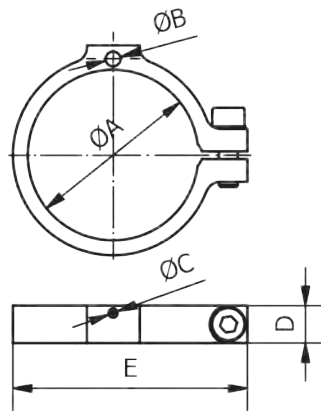


Remarks:

- mounting adapter for easy connecting and flexible usage of ASN ARKS

Part No.	Description	Compatible to	Material	Weight [g]
1-640-38-00	ASN ARKS KS	ASN ARKS	Aluminium	157

ASN SH / Sensor Mounting Bracket for Nipper Bodies



Remarks:

- enables the integration of sensors at nippers bodies with magnetic blades for sensing the open and closed position of the nipper blade
- more safety for degating
- sensors can be added easily

Accessories:

- Sensor MFS T2 3,7 (Part No. 1808-30-00)

Part No.	Description	compatible to	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Weight [g]
1-640-75-00	ASN SH 10	ASN 10	36	4	2,5	10	53	20
1-640-76-00	ASN SH 20	ASN 20	45	4	2,5	10	62	24
1-640-77-00	ASN SH 30	ASN 30	56	4	2,5	10	73	25
1-640-78-00	ASN SH 50	ASN 50	75	4	2,5	10	88	33

ASN G / Stationary Cutting Unit „Guillotine“

Remarks:

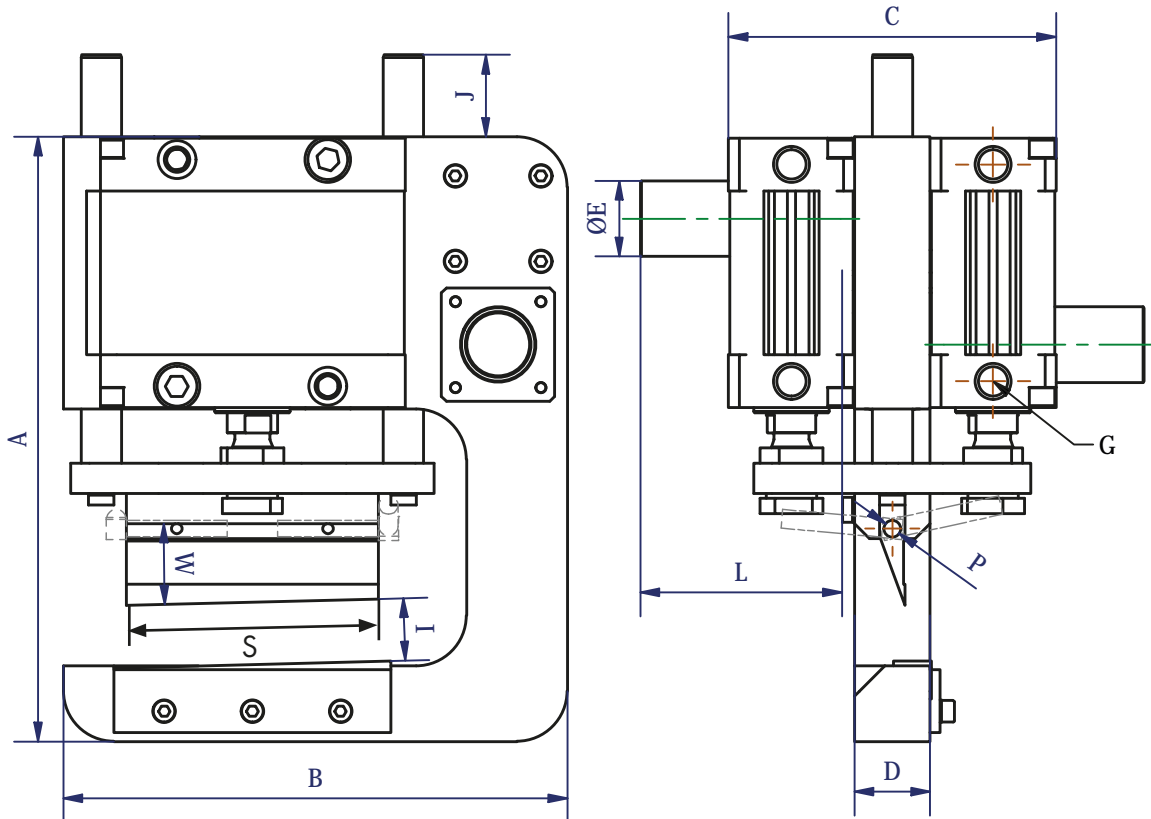
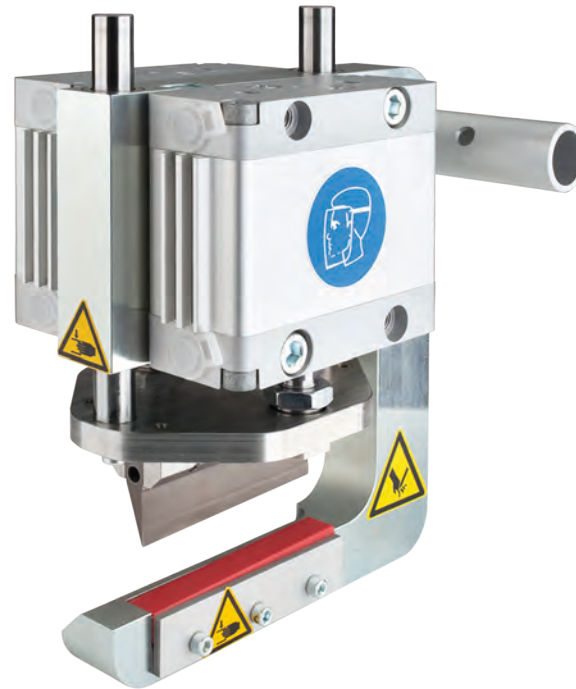
- cutting unit using the „Guillotine“ principle
- max. operating pressure 10 bar / 1,0 MPa
- max. closing force 6,234 N (at 10 bar)
- blade with teflon-coating
- heatable blade
- blade and anvil easy to change
- double-acting
- delivery time on demand

On demand:

- with direct and/or indirect sensing

Accessories:

- standard heating cartridge as available on the market (Ø 6,5)
- T-Nut Sensor



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [N] 6 bar	G ["]	Stroke [mm]	I [mm]	J [mm]
1-700-01-00	ASN G 63-25	240	210	130	30	30	3741	1/4	25	25	32.5

Part No.	Description	Blade S [mm]	Piston Ø [mm]	L [mm]	P Ø [mm]	W [°]	Weight [g]
1-700-01-00	ASN G 63-25	100	63	80	6,5	1.5	12580

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

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Adapters for
Vacuum Cups

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Gripper Arms

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Gripper
Parallel Gripper

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Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

610 | Nipper Blades

Cutting ability * Ø [mm]

Part No.	Description	W Ø [mm]	H Ø [mm]
1-671-03-00	SES 3-15-11-S	2	-
1-671-03-51	SES 3-15-11-H	2	-
1-671-05-00	SES5-15-11S	2	-
1-671-05-51	SES5-15-11-H	2	-
1-671-07-00	SES7-40-10S	3	2
1-671-07-01	SES7-30-11S	3	2
1-671-07-51	SES7-30-11H	3	2
1-671-10-01	SES10-15-16S	4	2,6
1-671-10-03	SES10-15-35S	3,5	2
1-671-10-05	SES10-40-13S	4	2,6
1-671-10-51	SES10-40-13 H	4	2,6
1-671-20-00	SES20-40-13S	7	5
1-671-20-01	SES20-23-25S	6,5	4,5
1-671-20-02	SES20-15-16S	7	5
1-671-20-03	SES20-15-35S	6,5	4,5
1-671-20-04	SES20-40-32S	6	4
1-671-20-51	SES20-40-13 H	7	5
1-671-30-01	SES30/50-30-25S	10	6,5
1-671-30-02	SES30/50-30-50S	8	5
1-671-30-03	SES30/50-15-38S	10	6,5
1-671-30-04	SES30/50-60-32S	8	5
1-671-30-05	SES30/50-30-44S	8	5
1-671-30-51	SES30/50-30-23H	10	6,5
1-672-20-00	SEW20-90-18-45S	6,5	4,5
1-672-20-01	SEW20-90-18-62S	5	3
1-672-20-02	SEW20-90-16-40S	6,5	4,5
1-672-20-03	SEW20-90-34-50S	5	3
1-672-30-00	SEW30/50-90-35-50S	8	5
1-672-30-01	SEW30/50-90-41-65S	8	5
1-672-30-51	SEW30/50-90-25-50H	8	5
1-673-03-00	SEG3-0-12S	2	-
1-673-05-00	SEG5-0-12S	2	-
1-673-20-00	SEG20-0-18S	7	5
1-673-30-00	SEG30/50-0-41S	8	5
1-673-30-01	SEG30/50-0-43S	7	4,5
1-673-30-03	SEG30/50-0-37S	8	5
1-673-91-00	SEG-ASNSE3-0-11S	1,5	1
1-673-91-01	SEG-ASNSE5-0-12S	2,5	1,5
1-673-91-02	SEG-ASNSE10-0-12S	3,5	2,3
1-673-91-03	SEG-ASNSE20-0-20S	5	3,4
1-674-07-00	SEK7-14-9S	3	2
1-674-10-00	SEK10-15-12S	4	3
1-674-20-00	SEK20-15-12S	7	5
1-674-30-00	SEK30/50-70-17S	5,5	3,5
1-674-30-01	SEK30/50-28-17S	10	6,5
1-675-30-00	SEZ30/50-0-32S	5	3

Explanation report

The cutting ability is affected by a lot of factors:

- the shear strength of the plastic
- the temperature of the plastic
- the geometry of the cutting area
- for fiber-reinforced plastics, the amount and the attitude of the fiber

All these factors also have an affect on the durability of the cutting edge!

All the datas of these scale are only bench marks.
Practically results can deviate positive and negative from this data.

*** = designed for sprues up to Ø (see table)**

- Column W:
Plastic (soft) Elastic modulus < 2500 N/mm²
- Column H:
Plastic (hard) Elastic modulus > 2500 N/mm²

Remark for Carbide Nippers:

Advantage: high wear resistance

Disadvantage: sensitive for shocks

SES / Nipper Blades Standard

Remarks:

„SES3-15-11S“

- SE cutter blade
- S standard
- 3 for sprue cutters ASN 3
- 15 angle
- 11 cutting length
- S steel alloy
- H carbide

All cutter blades' cutting edge is on the outside, with the exceptions of:

1-671-20-04, SES 20-40-32 S and 1-671-30-05, SES 30/50-30-44 S which feature an inverted cutting surface

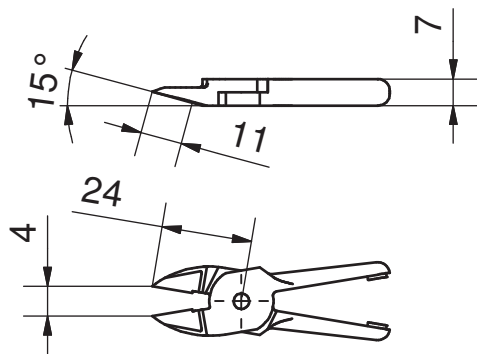
Remarks for the compatible types of Nipper Bodies ASN:

- HR hand operated round
- AR automatic round
- HRK hand operated round with power boost
- ARK automatic round with power boost
- AQ automatic square

Opening size of the Nipper Blades SES30/50...:

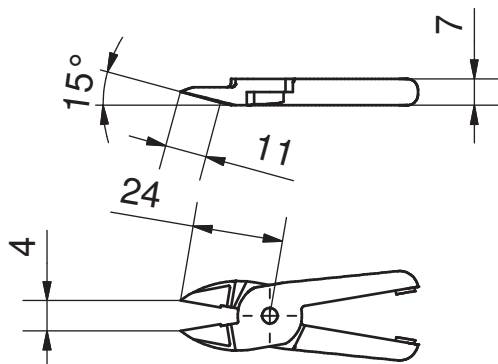
The first value is for use with an ASN 30 and the value in brackets for use with an ASN 50.

SES-3 / Nipper Blades Standard for ASN 3



Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-03-00	SES3-15-11S	ASN 3...	Steel alloy	28	1-690-90-00
1-671-03-51	SES3-15-11H	ASN 3...	Carbide	30	1-690-90-00

SES-5 / Nipper Blades Standard for ASN 5



Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-05-00	SES5-15-11S	ASN 5 AQ	Steel alloy	32	1-690-90-00
1-671-05-51	SES5-15-11H	ASN 5 AQ	Carbide	34	1-690-90-00

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
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Accessories

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Vacuum Cup
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Gripper
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Gripper Fingers

460
Needle Gripper

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Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

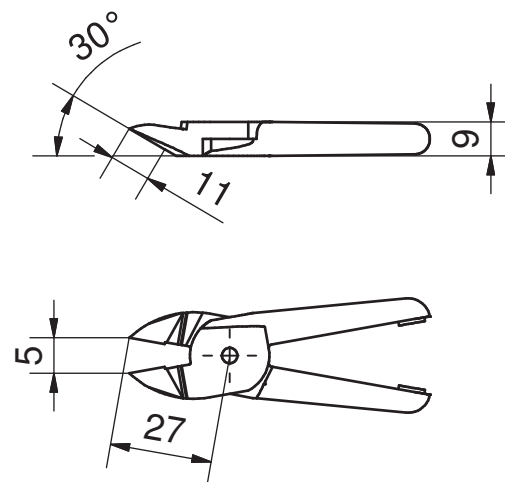
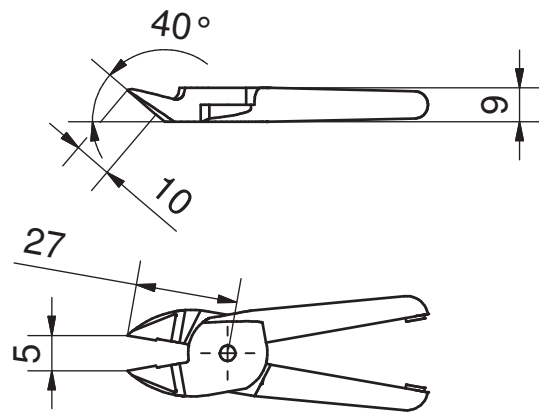
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

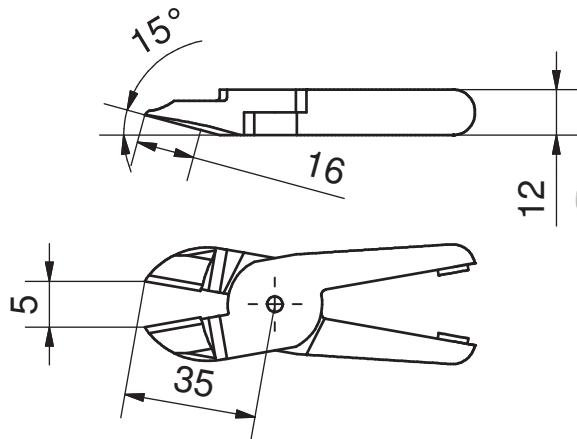
610 | Nipper Blades

SES-7 / Nipper Blades Standard for ASN 7



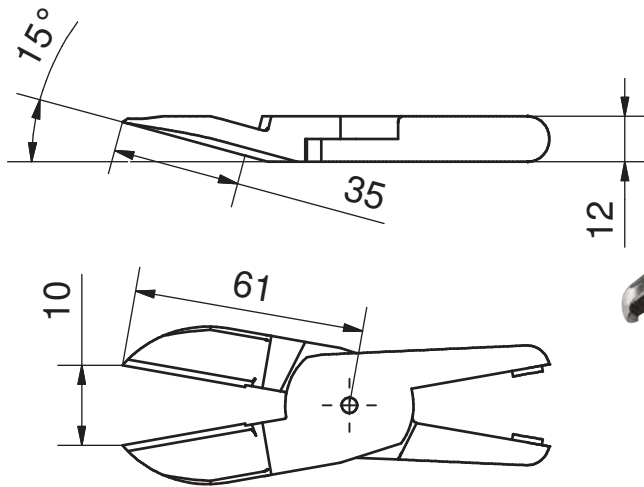
Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-07-00	SES7-40-10S	ASN 7 AQ	Steel alloy	72	1-690-90-01
1-671-07-01	SES7-30-11S	ASN 7 AQ	Steel alloy	71	1-690-90-01
1-671-07-51	SES7-30-11H	ASN 7 AQ	Carbide	73	1-690-90-01

SES-10 / Nipper Blades Standard for ASN 10



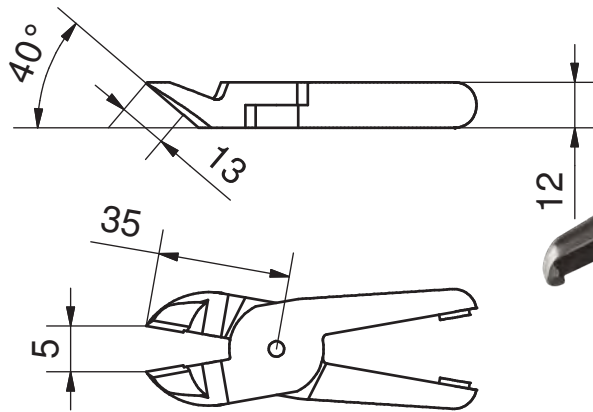
1-671-10-01

1-671-10-02



1-671-10-03

1-671-10-04



1-671-10-05
1-671-10-51

1-671-10-06

Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-10-01	SES10-15-16S	ASN 10...	Steel alloy	114	1-690-90-02
1-671-10-02	SES10-15-16S Magnet	ASN 10...	Steel alloy	114	Magnet return
1-671-10-03	SES10-15-35S	ASN 10...	Steel alloy	155	1-690-90-02
1-671-10-04	SES10-15-35S Magnet	ASN 10...	Steel alloy	155	Magnet return
1-671-10-05	SES10-40-13S	ASN 10...	Steel alloy	116	1-690-90-02
1-671-10-06	SES10-40-13S Magnet	ASN 10...	Steel alloy	116	Magnet return
1-671-10-51	SES10-40-13 H	ASN 10...	Carbide	121	1-690-90-02

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Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

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Special Elements

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Electrics and
Sensors

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Pneumatics

990
Tubular System
Micro System

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PA-Forming
Others

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

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Profile
Accessories

200
Vacuum Cup
Connectors

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Vacuum Cups

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Adapters for
Vacuum Cups

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Gripper Arms

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Gripper
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

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Nipper Blades

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Electrics and
Sensors

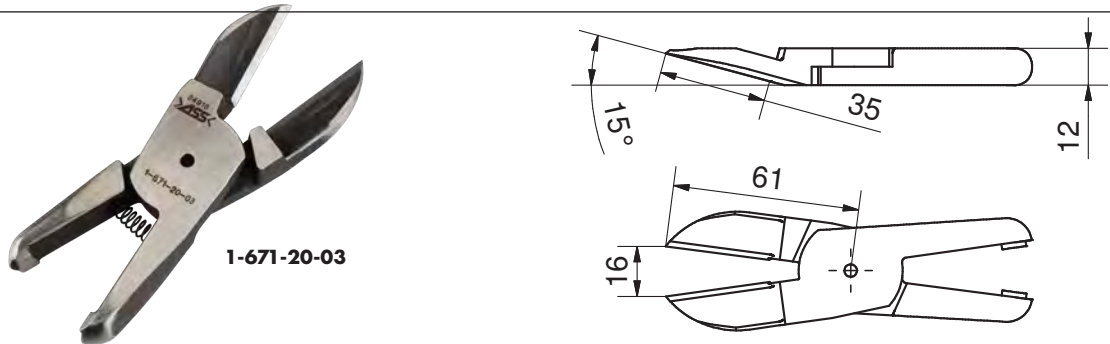
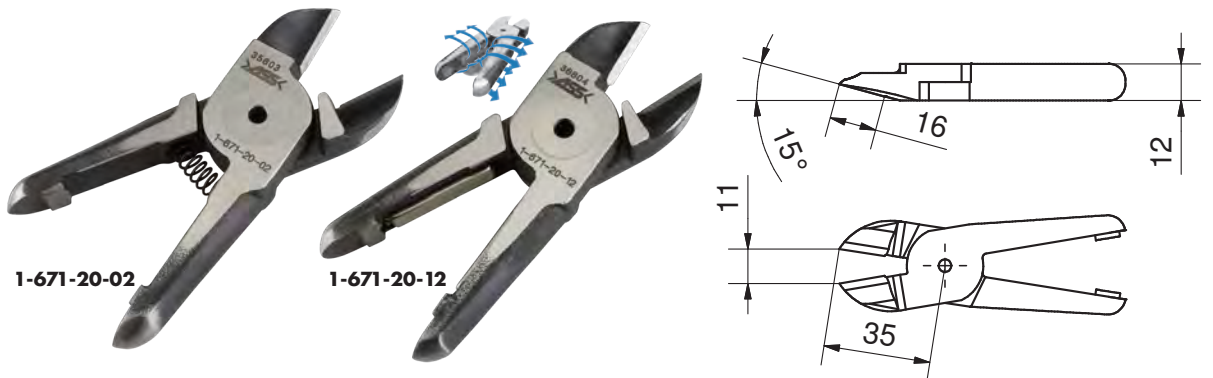
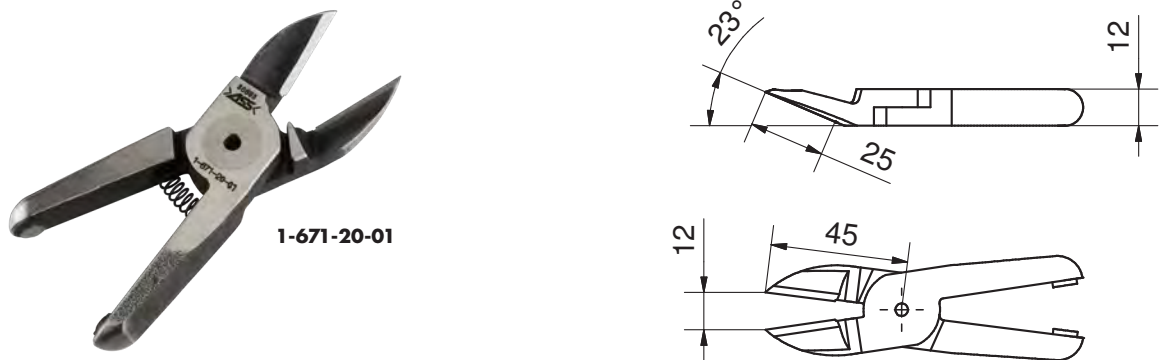
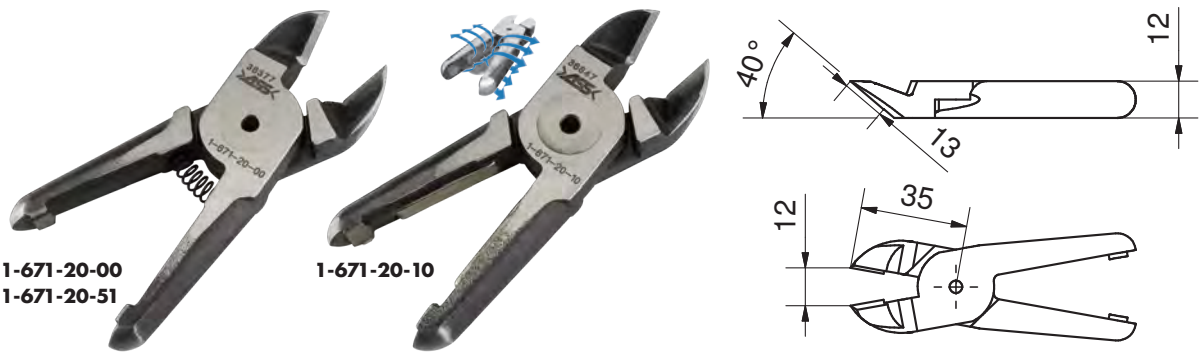
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

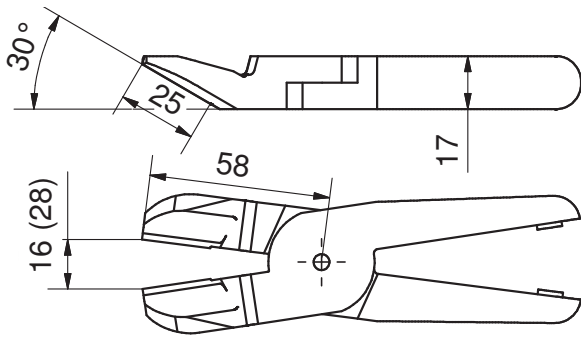
610 | Nipper Blades

SES-20 / Nipper Blades Standard for ASN 20



Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-20-00	SES20-40-13S	ASN 20...	Steel alloy	121	1-690-90-02
1-671-20-10	SES20-40-13S Magnet	ASN 20...	Steel alloy	121	Magnet return
1-671-20-01	SES20-23-25S	ASN 20...	Steel alloy	128	1-690-90-02
1-671-20-02	SES20-15-16S	ASN 20...	Steel alloy	121	1-690-90-02
1-671-20-12	SES20-15-16S Magnet	ASN 20...	Steel alloy	116	Magnet return
1-671-20-03	SES20-15-35S	ASN 20...	Steel alloy	182	1-690-90-02
1-671-20-51	SES20-40-13H	ASN 20...	Carbide	124	1-690-90-02

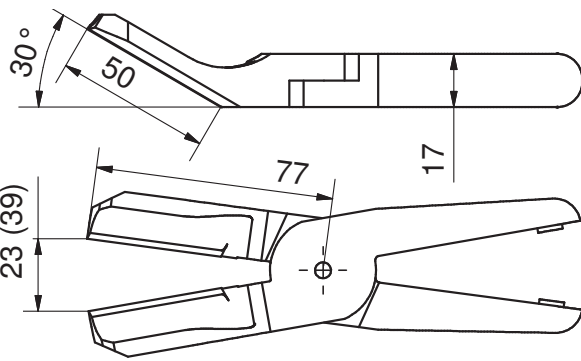
SES-30-50 / Nipper Blades Standard for ASN 30-50



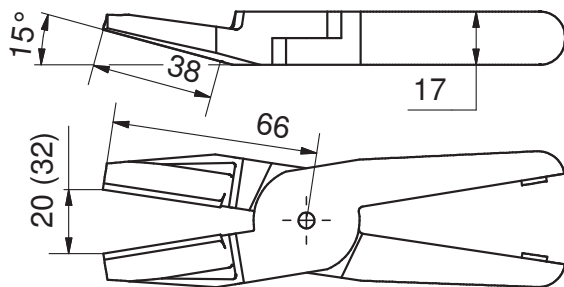
1-671-30-01
1-671-30-51



1-671-30-11



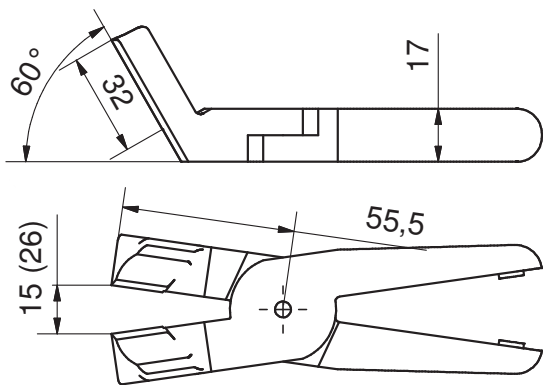
1-671-30-02



1-671-30-03



1-671-30-13



1-671-30-04



Part No.	Description	compatible with	Material	Weight [g]	Part No. exchange spring
1-671-30-01	SES30/50-30-25S	ASN 30/ASN 50...	Steel alloy	365	1-690-90-03
1-671-30-11	SES30/50-30-25S Magnet	ASN 30/ASN 50...	Steel alloy	369	Magnet return
1-671-30-02	SES30/50-30-50S	ASN 30/ASN 50...	Steel alloy	372	1-690-90-03
1-671-30-03	SES30/50-15-38S	ASN 30/ASN 50...	Steel alloy	355	1-690-90-03
1-671-30-13	SES30/50-15-38S Magnet	ASN 30/ASN 50...	Steel alloy	283	Magnet return
1-671-30-04	SES30/50-60-32S	ASN 30/ASN 50...	Steel alloy	355	1-690-90-03
1-671-30-51	SES30/50-30-23H	ASN 30/ASN 50...	Carbide	365	1-690-90-03

Due to fabrication tolerances the dimensions of technical images and weight in category 610 may vary up to +/- 5 %.

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

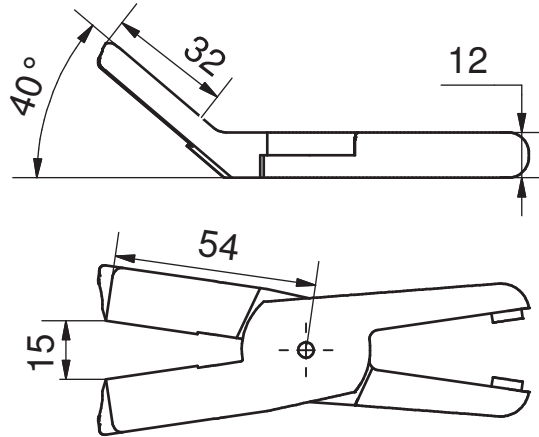
990
PA-Forming
Others

610 | Nipper Blades

SES 20 / Nipper Blades with Inverted Cutting Edge



1-671-20-04

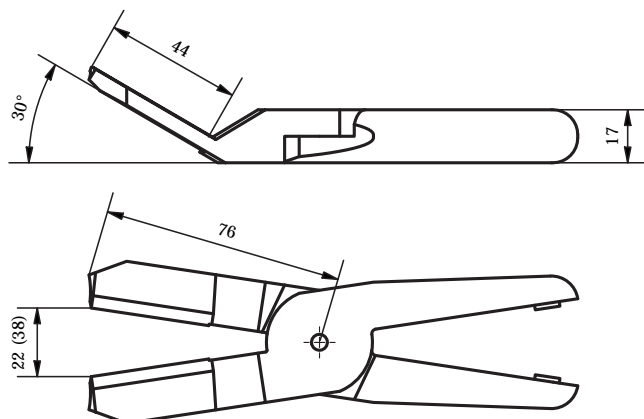


Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-20-04	SES 20-40-32 S	ASN 20...	Steel alloy	193	1-690-90-02

SES-30-50 / Nipper Blades with Inverted Cutting Edge



1-671-30-05



Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-30-05	SES30/50-30-44S	ASN 30/ASN 50...	Steel alloy	386	1-690-90-03

SEW / Nipper Blades, 90° Angle

Remarks:

„SEW20-90-18-45S“

- SE cutter blade
- W form W - angle
- 20 for sprue cutter ASN 20...
- 90 angle
- 18 cutting surface
- 45 extension
- S steel alloy
- H carbide

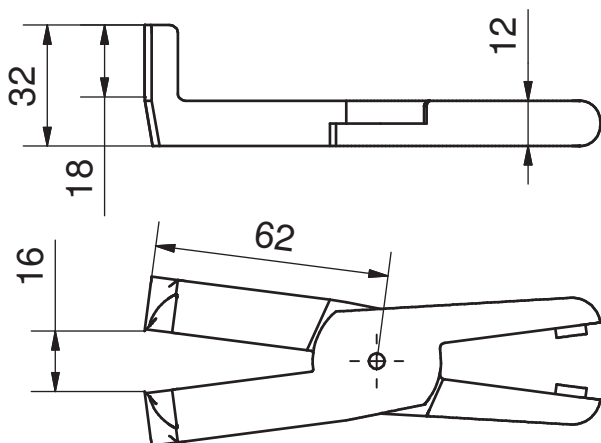
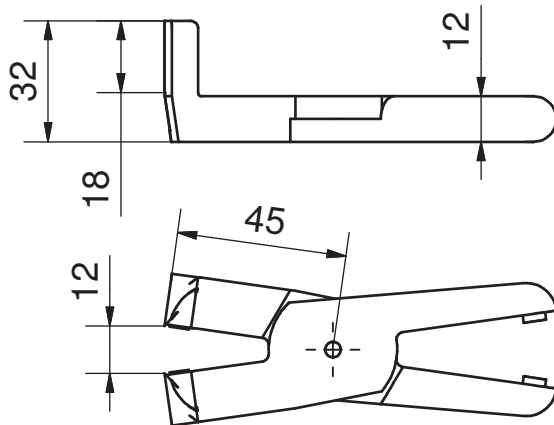
Remarks for the compatible types of Nipper Bodies ASN:

- HR hand operated round
- AR automatic round
- HRK hand operated round with power boost
- ARK automatic round with power boost
- AQ automatic square

Opening size of the Nipper Blades SEW30/50...:

The first value is for use with an ASN 30 and the value in brackets for use with an ASN 50.

SEW-20 / Nipper Blades with 90° Angle for ASN 20



000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

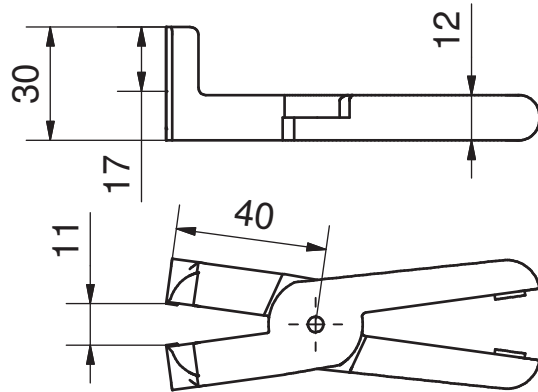
990
PA-Forming
Others

610 | Nipper Blades

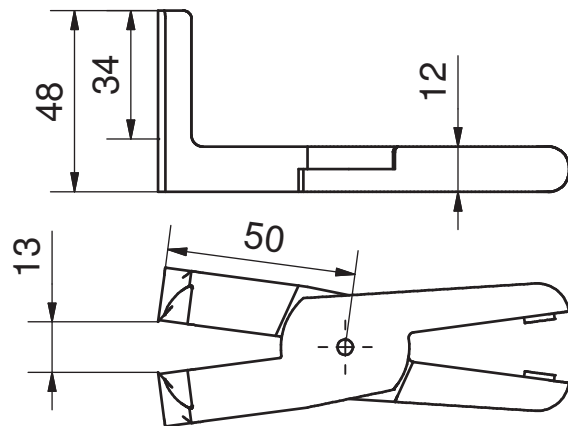
SEW-20 / Nipper Blades with 90° Angle for ASN 20 (Continuation)



1-672-20-02

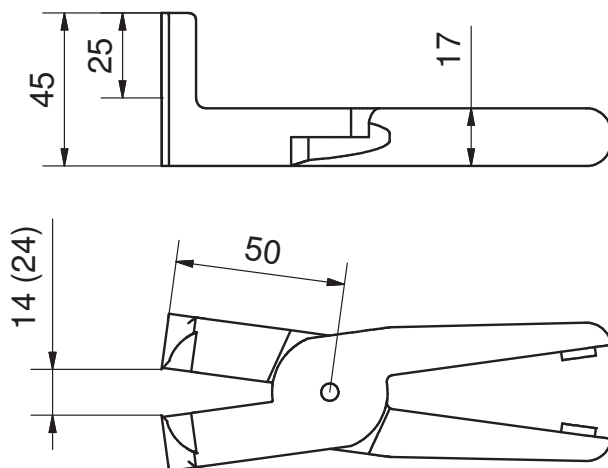
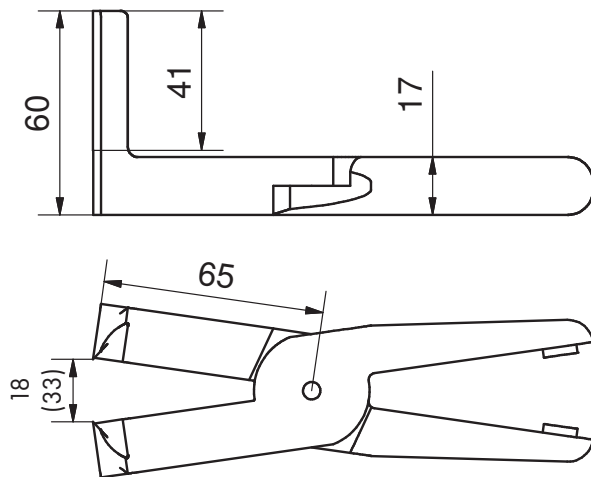
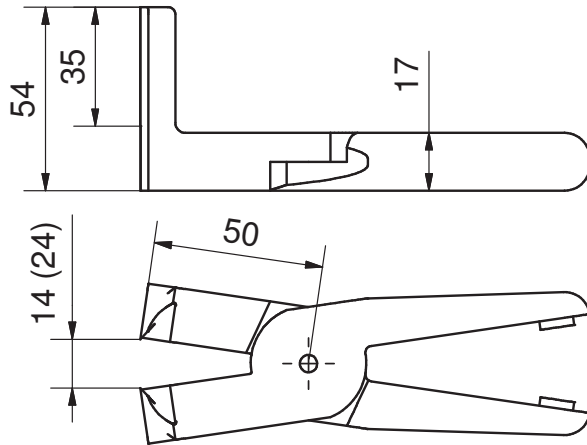


1-672-20-03



Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-672-20-00	SEW20-90-18-45S	ASN 20...	Steel alloy	224	1-690-90-02
1-672-20-01	SEW20-90-18-62S	ASN 20...	Steel alloy	271	1-690-90-02
1-672-20-02	SEW20-90-16-40S	ASN 20...	Steel alloy	184	1-690-90-02
1-672-20-03	SEW20-90-34-50S	ASN 20...	Steel alloy	257	1-690-90-02

SEW-30-50 / Nipper Blades with 90° Angle for ASN 30-50



Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-672-30-00	SEW30/50-90-35-50S	ASN 30/ASN 50...	1-690-90-03	Steel alloy	470
1-672-30-01	SEW30/50-90-41-65S	ASN 30/ASN 50...	1-690-90-03	Steel alloy	536
1-672-30-51	SEW30/50-90-25-50H	ASN 30/ASN 50...	1-690-90-03	Carbide	468

000
Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

610 | Nipper Blades

SEK / Nipper Blades, „Pinch“

Remarks:

„SEK7-14-9S“

- SE cutter blade
- K pinch
- 7 for sprue cutter ASN 07...
- 14 undercut
- 9 cutting surface (B)
- S steel alloy
- H Carbide

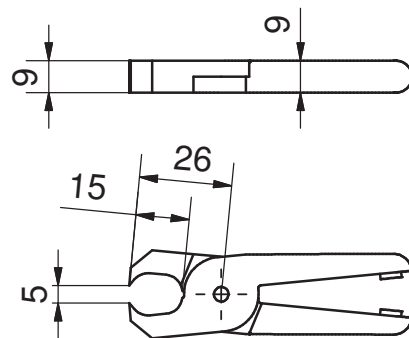
Remarks for the compatible types of Nipper Bodies ASN:

- HR hand operated round
- AR automatic round
- HRK hand operated round with power boost
- ARK automatic round with power boost
- AQ automatic square

Opening size of the Nipper Blades SESKO/50...:

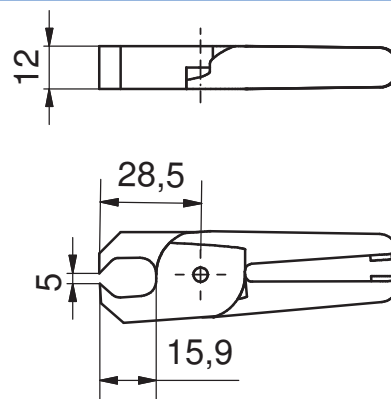
The first value is for use with an ASN 30 and the value in brackets for use with an ASN 50.

SEK-7 / Nipper Blades „Pinch“ for ASN 7



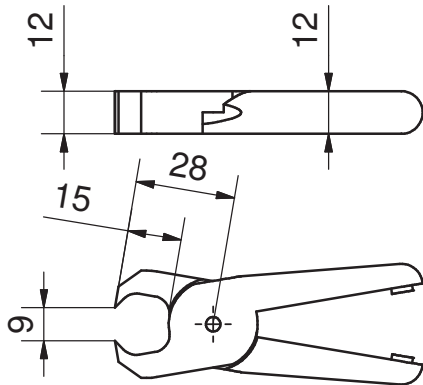
Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-674-07-00	SEK7-14-9S	ASN 7...	1-690-90-01	Steel alloy	75

SEK-10 / Nipper Blades „Pinch“ for ASN 10



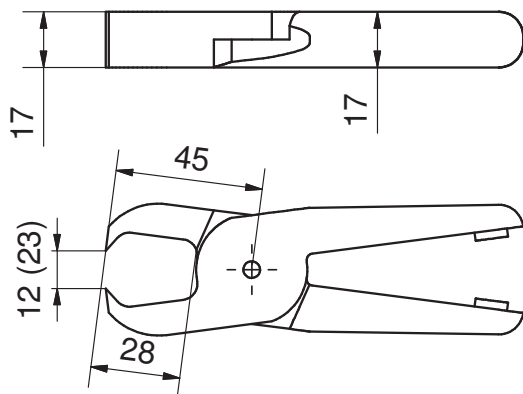
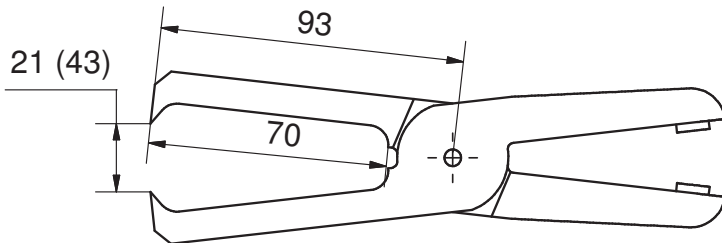
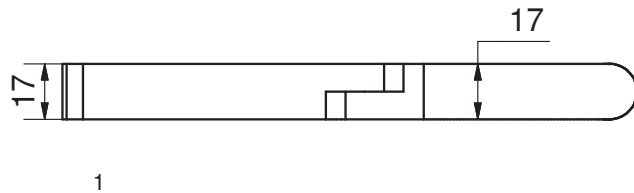
Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-674-10-00	SEK10-15-12S	ASN 10...	1-690-90-01	Steel alloy	115
1-674-10-02	SEK10-15-12S Magnet	ASN 10...	Magnet return	Steel alloy	115

SEK-20 / Nipper Blades „Pinch“ for ASN 20



Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-674-20-00	SEK20-15-12S	ASN 20...	1-690-90-02	Steel alloy	122
1-674-20-10	SEK20-15-12S Magnet	ASN 20...	Magnet return	Steel alloy	128

SEK-30-50 / Nipper Blades „Pinch“ for ASN 30-50



Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-674-30-00	SEK30/50-70-17S	ASN 30/ASN 50...	1-690-90-03	Steel alloy	508
1-674-30-10	SEK30/50-70-17S Magnet	ASN 30/ASN 50...	Magnet return	Steel alloy	509
1-674-30-01	SEK30/50-28-17S	ASN 30/ASN 50...	1-690-90-03	Steel alloy	333
1-674-30-11	SEK30/50-28-17S Magnet	ASN 30/ASN 50...	Magnet return	Steel alloy	335

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

610 | Nipper Blades

SEZ / Z-Form

Remarks:

„SEZ30/50-0-32S“

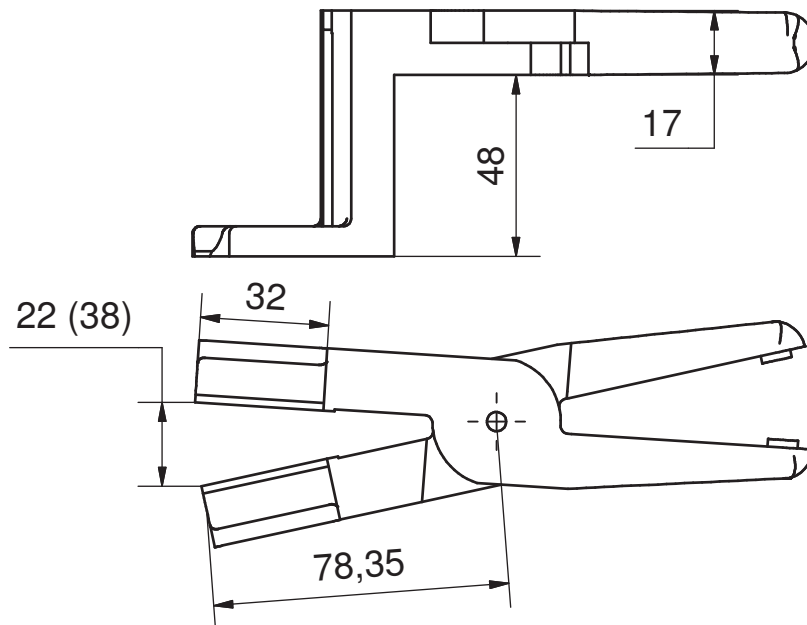
- SE cutter blade
- Z Z-form
- 30/50 for sprue cutter ASN 30/ASN 50...
- 0 angle
- 34 cutting surface
- S steel alloy
- H carbide

Remarks for the compatible types of Nipper Bodies ASN:

- HR hand operated round
- AR automatic round
- HRK hand operated round with power boost
- ARK automatic round with power boost
- AQ automatic square

Opening size of the Nipper Blades SEZ30/50...:

The first value is for use with an ASN 30 and the value in brackets for use with an ASN 50.



Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-675-30-00	SEZ30/50-0-32S	ASN 30/ASN 50...	1-690-90-03	Steel alloy	588

SEG / Nipper Blades, Straight Form

Remarks:

„SEG20-0-18S“

SE	cutter blade
G	straight form
20	for sprue cutter ASN 20...
0	angle
18	cutting surface (B)
S	steel alloy
H	carbide

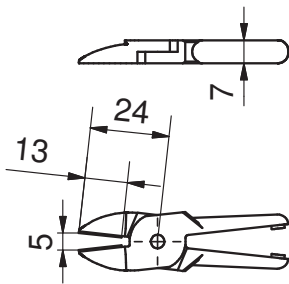
Remarks for the compatible types of Nipper Bodies ASN:

HR	hand operated round
AR	automatic round
HRK	hand operated round with power boost
ARK	automatic round with power boost
AQ	automatic square

Opening size of the Nipper Blades SEG30/50...:

The first value is for use with an ASN 30 and the value in brackets for use with an ASN 50.

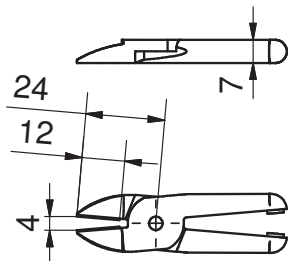
SEG-3 / Nipper Blades, Straight Form for ASN 3



1-673-03-00

Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-673-03-00	SEG3-0-12S	ASN 3...	1-690-90-00	Steel alloy	28

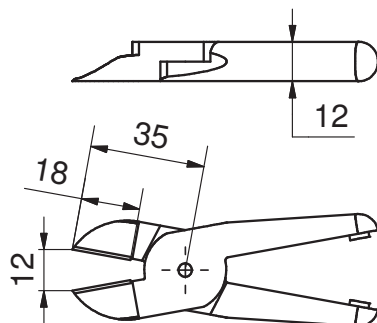
SEG-5 / Nipper Blades, Straight Form for ASN 5



1-673-05-00

Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-673-05-00	SEG5-0-12S	ASN 5 AQ	1-690-90-00	Steel alloy	32

SEG-20 / Nipper Blades, Straight Form for ASN 20



1-673-20-00

1-673-20-10

Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-673-20-00	SEG20-0-18S	ASN 20...	1-690-90-02	Steel alloy	118
1-673-20-10	SEG20-0-18S Magnet	ASN 20...	Magnet return	Steel alloy	116

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000
Quick Change
Systems

610 | Nipper Blades

050
Profiles
Channel Nuts

SEG-30-50 / Nipper Blades, Straight Form for ASN 30-50

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

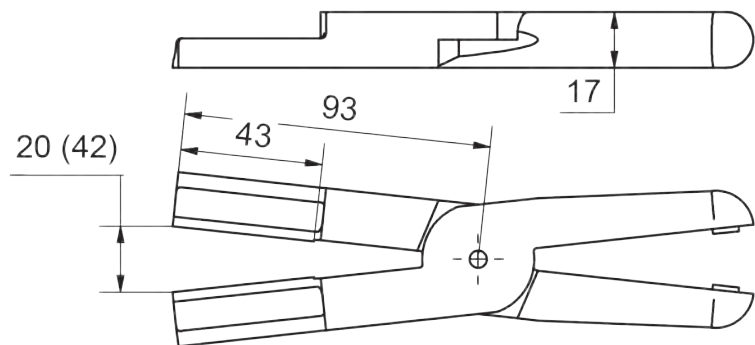
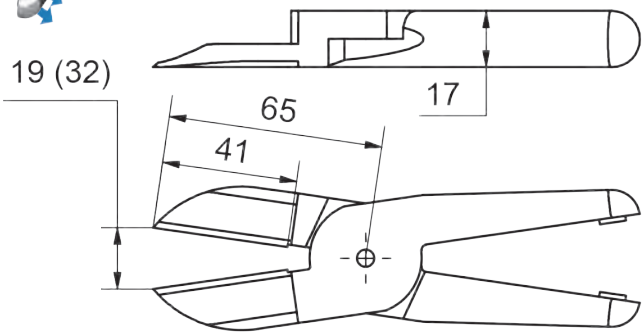
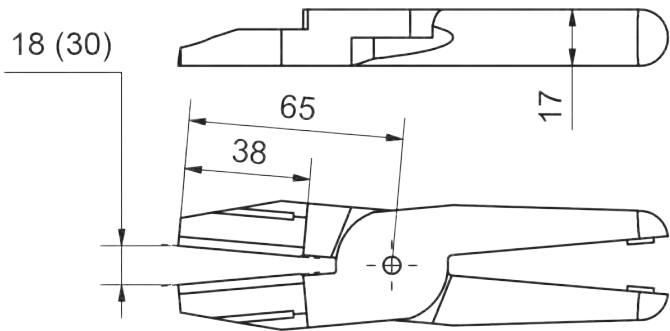
700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others



Part No.	Description	compatible with	Weight [g]	Part No. for exchange spring	Material
1-673-30-03	SEG30/50-0-37S	ASN 30/ASN 50...	395	1-690-90-03	Steel alloy
1-673-30-00	SEG30/50-0-41S	ASN 30/ASN 50...	338	1-690-90-03	Steel alloy
1-673-30-10	SEG30/50-0-41S Magnet	ASN 30/ASN 50...	338	Magnet return	Steel alloy
1-673-30-01	SEG30/50-0-43S	ASN 30/ASN 50...	497	1-690-90-03	Steel alloy

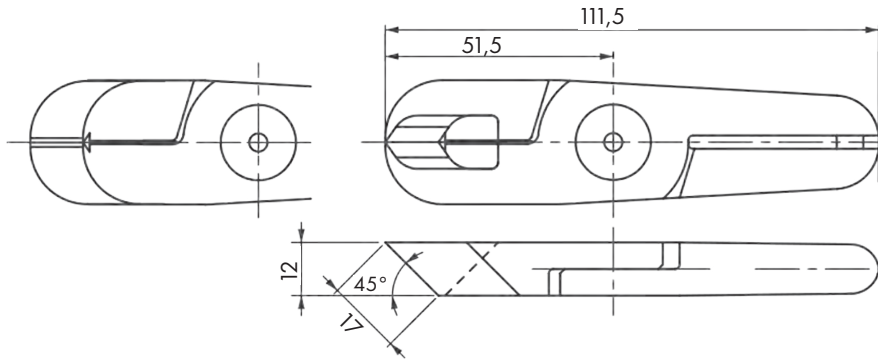
SEK 20-45-17 / Nipper Blade, Special Design, „Pinch“ 45°

Remarks:

Application: Special Nipper Blade e.g. for pinching tasks

- suitable for Nipper Body ASN 20

Delivery time and price on request!



Part No.	Description	compatible with	Material	Weight [g]
1-674-20-04	SEK20-45-17	ASN 20	Steel alloy	200

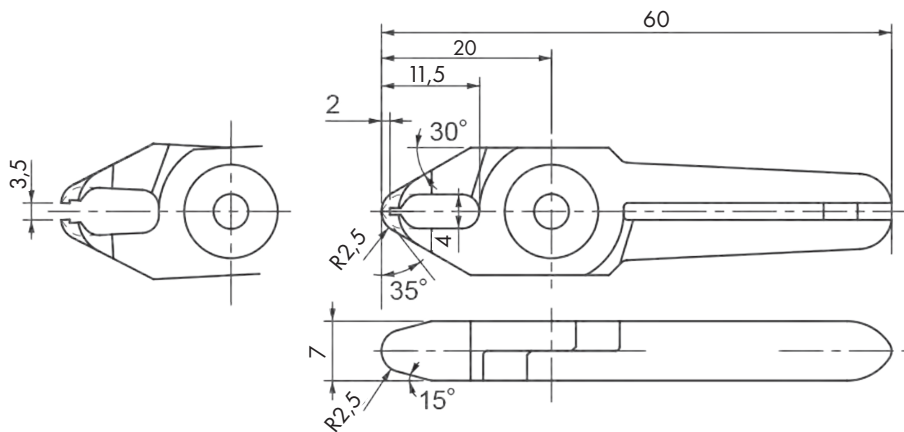
SER 3-11,5-R2,5 / Nipper Blade, Special Design, Radius

Remarks:

Application: Special Nipper Blade e.g. for marking products

- suitable for Nipper Body ASN 3

Delivery time and price on request!



Part No.	Description	compatible with	Material	Weight [g]
1-676-03-00	SER3-11,5-R2,5	ASN 3	Steel alloy	34

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

610 | Nipper Blades

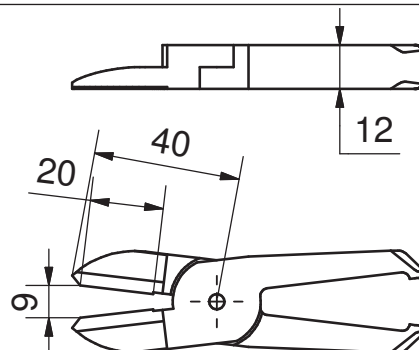
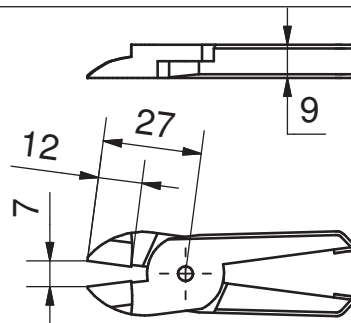
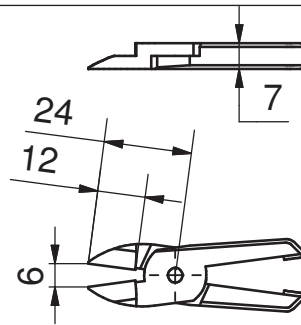
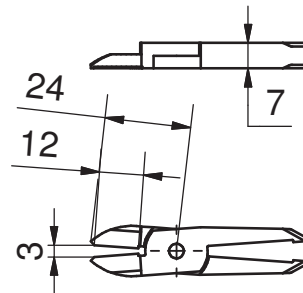
SEG ASN SE / Nipper Blades Straight for ASN SE

Remarks:

Nipper Blades only for usage with Nipper Bodies ASN SE!

"SEG-ASNSE3-0-11S"

SE	cutter blade
G	straight form
ASN SE	for sprue cutter ASN SE
3	size
0	angle
11	cutting surface (B)
S	steel alloy
H	carbide



Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-673-91-00	SEG-ASNSE3-0-11S	ASN SE 3	1-690-90-05	Steel alloy	21
1-673-91-01	SEG-ASNSE5-0-12S	ASN SE 5	1-690-90-00	Steel alloy	30
1-673-91-02	SEG-ASNSE10-0-12S	ASN SE 10	1-690-90-01	Steel alloy	62
1-673-91-03	SEG-ASNSE20-0-20S	ASN SE 20	1-690-90-06	Steel alloy	122

SEG-ASN-ARD / Nipper Blades Straight Form for ASN ARD

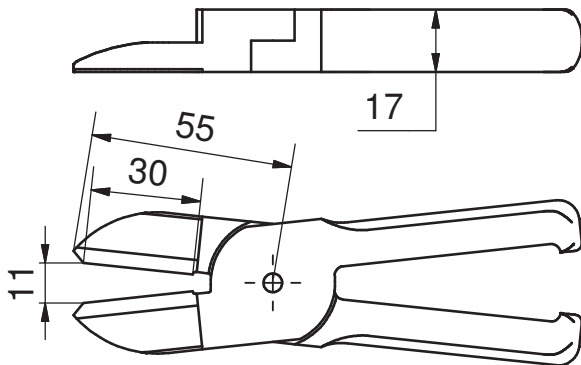
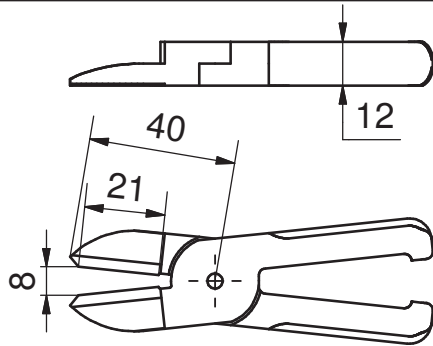
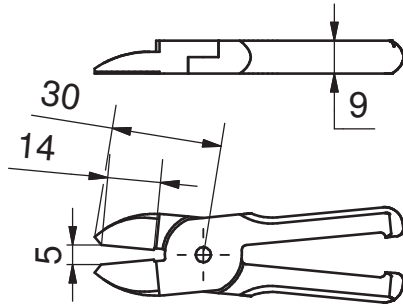
Remarks:

Nipper Blades only for usage with Nipper Bodies ASN-ARD!

Example „SEG-ASNARD10-0-14S“

SE cutter blade

G	straight form
ASN ARD	for Sprue Cutter ASN ARD
10	size
0	angle
14	cutting surface (B)
S	steel alloy
H	carbide



Part No.	Description	compatible with	Material	Weight [g]
1-673-92-01	SEG-ASNARD10-0-14S	ASN 10 ARD	Steel alloy	76
1-673-92-02	SEG-ASNARD20-0-21S	ASN 20 ARD	Steel alloy	140
1-673-92-03	SEG-ASNARD30-0-29S	ASN 30 ARD	Steel alloy	369

SEF / Spare Springs for Cutter Blades

Part No.	Description	Wire thickness [mm]	Length (non compressed) [mm]
1-690-90-00	SEF 0-45x3-7x13	0.45	13
1-690-90-01	SEF 0-7x5-1x18	0.7	18
1-690-90-02	SEF 0-7x5-6x22-05	0.7	22.5
1-690-90-03	SEF 1x8x28	1	28
1-690-90-04	SEF 1x8-6x31	1	31
1-690-90-05	SEF0-5x3-8x14	0.5	14
1-690-90-06	SEF 0-8x5-5x23	0.8	23
1-690-90-08	SEF 1-2x9x37	1.2	37

000
Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
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Vacuum Cups

224
Special
Vacuum Cups

230
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Parallel Gripper

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460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

610 | Nipper Blades

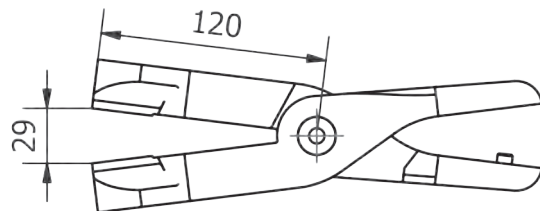
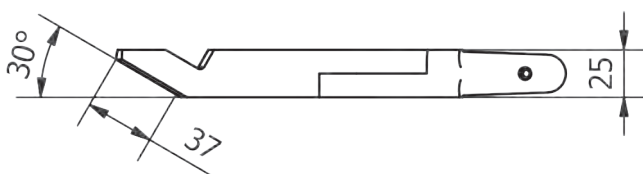
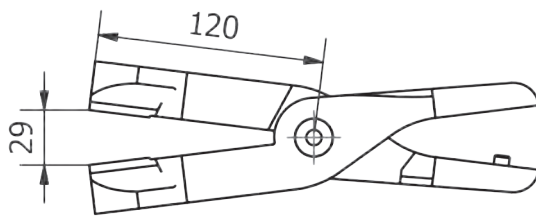
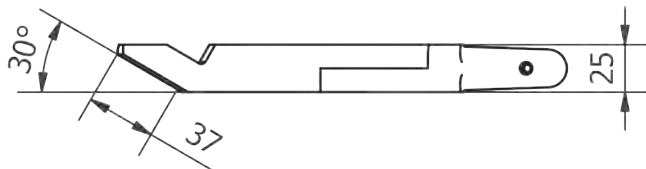
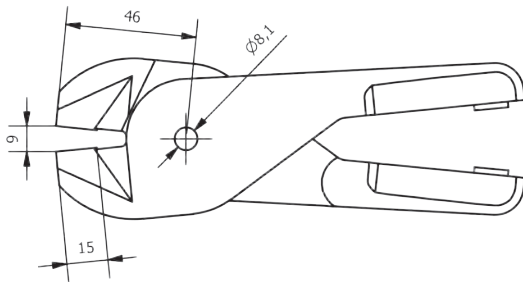
SEG-ASN-ARD / Nipper Blades for ASN 50 AR VS

Remarks: Nipper Blades only for Nipper Type ASN 50 AR VS! Part No. for exchange spring for blade type AR VS: 1-690-90-08

- SES 50-35-15H
Special nipper blade for metal wire
- Cutting ability:

Copper wire max. \varnothing 5,5mm
Steel wire (not hardened) max. \varnothing 4,5mm

- SES 50-30-37H and SES 50-30-37S
Nipper blade for Plastics or metal
- Cutting Ability:
Copper wire max. \varnothing 5,5mm
Steel wire (not hardened) max. \varnothing 4,5mm



Part No.	Description	compatible with	Material	Weight [g]
1-660-57-00	SES 50-35-15H	ASN 50 AR VS	Carbide	941
1-660-58-00	SES 50-30-37H	ASN 50 AR VS	Carbide	1548
1-660-59-00	SES 50-30-37S	ASN 50 AR VS	Steel alloy	1508

SE... ARKS / Nipper Blades for ASN ARKS

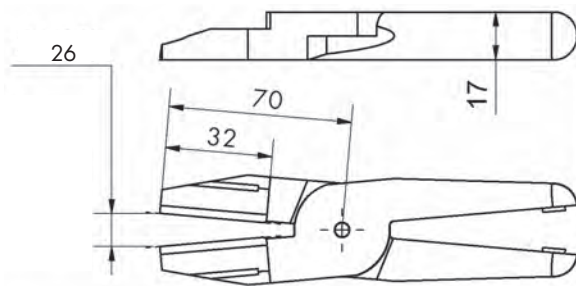
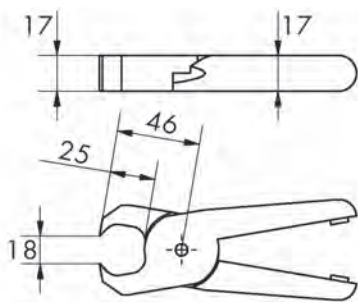
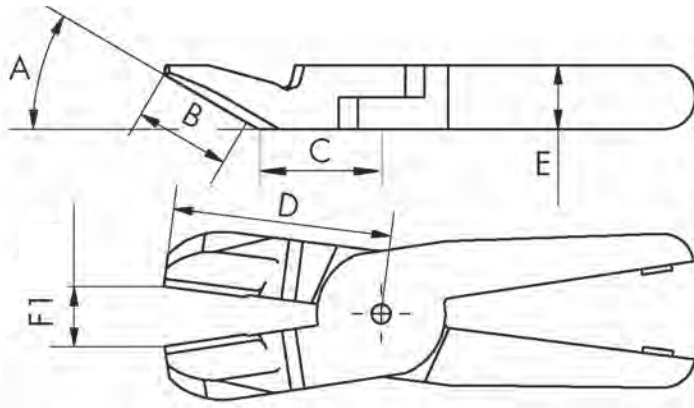
Remarks:

Nipper Blades only for usage with Nipper Bodies ASN ARKS

**Part No. for exchange spring for blade type ARKS:
1-690-90-07**

Example „SES-ARKS30-30-50S“

SE cutter blade
S/G/K standard / straight / pinch
ARKS for sprue cutter ASN ARKS
30 angle
30 length of cutter blade
S steel alloy



Part No.	Description	A [°]	B [mm]	C [mm]	D [mm]	E [mm]	Fl [mm]	compatible with	Material	Weight [g]
1-661-01-00	SES-ARKS-30-30-50S	30	30	50	74	17	30	ASN ARKS	Steel alloy	458
1-661-02-00	SES-ARKS-30-30-30S	30	30	34	58	17	22	ASN ARKS	Steel alloy	382
1-661-03-00	SEK-ARKS-25-17S			see drawing				ASN ARKS	Steel alloy	375
1-661-04-00	SEG-ARKS-0-32S			see drawing				ASN ARKS	Steel alloy	429

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

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Vacuum Cup
Connectors

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Vacuum Cups

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Special
Vacuum Cups

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Manifold

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Gripper Arms

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Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

610 | Nipper Blades

SK / Nipper Blade Protectors

Application example



Remarks:

Application: protects against injury during set up and maintenance

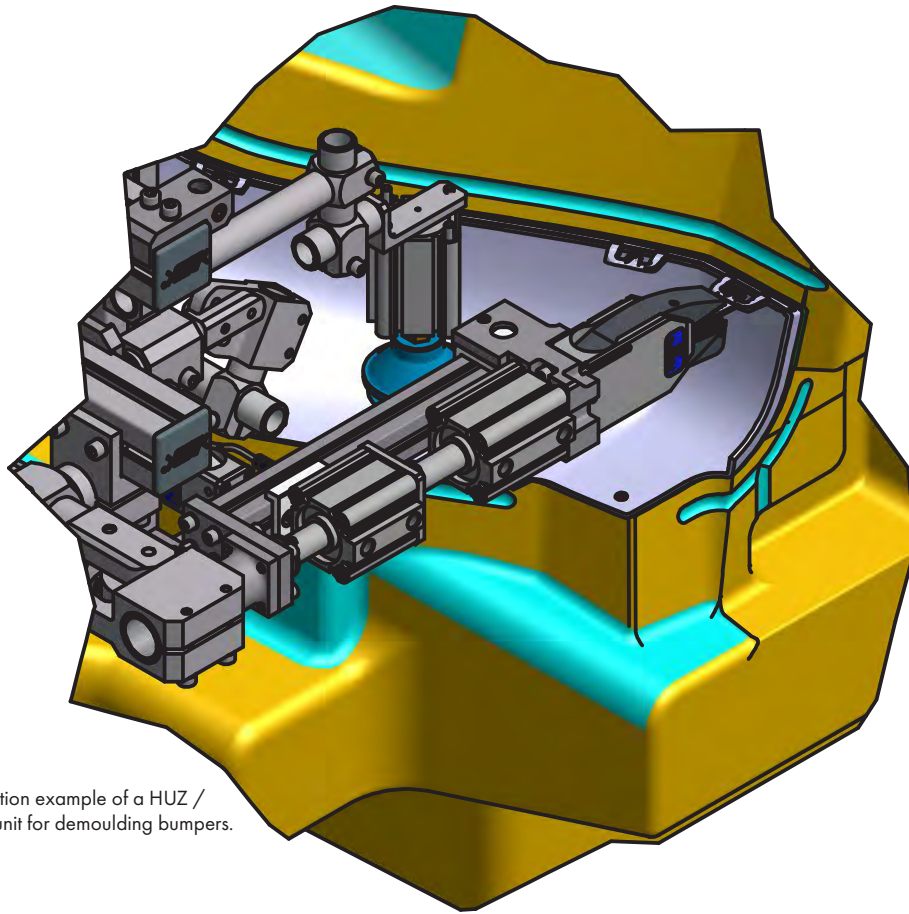
- fits easily on nipper blade
- material: Polyamide
- colour: Red
- » special or custom protectors on demand
- » production time: approx. 4 weeks
- » see application example, variants may differ from shown example

Nipper Blades		Suitable Blade Protectors SK
Part-No.	Description	Part-No.
1-671-03-00	SES3-15-11S	9-07-901-328-0
1-671-03-51	SES3-15-11H	9-07-901-328-0
1-671-10-01	SES10-15-16S	9-07-901-315-0
1-671-10-02	SES10-15-16S Magnet	9-07-901-315-0
1-671-10-03	SES10-15-35S	9-07-901-313-0
1-671-10-04	SES10-15-35S Magnet	9-07-901-313-0
1-671-10-05	SES10-40-13S	9-07-901-318-0
1-671-10-06	SES10-40-13S Magnet	9-07-901-318-0
1-671-10-51	SES10-40-13H	9-07-901-318-0
1-671-20-00	SES20-40-13S	9-07-901-219-0
1-671-20-10	SES20-40-13S Magnet	9-07-901-219-0
1-671-20-01	SES20-23-25S	9-07-901-315-0
1-671-20-03	SES20-15-35S	9-07-901-313-0
1-671-20-04	SES20-40-32S	9-07-901-326-0
1-672-20-01	SEW20-90-18-62S	9-07-901-319-0
1-672-20-03	SEW20-90-34-50S	9-07-901-326-0
1-672-30-00	SEW30/50-90-35-50S	9-07-901-321-0
1-672-30-01	SEW30/50-90-41-65S	9-07-901-322-0
1-672-30-51	SEW30/50-90-25-50H	9-07-901-317-0
1-674-07-00	SEK7-14-9S	9-07-901-330-0
1-674-10-00	SEK10-15-12S	9-07-901-315-0
1-674-10-02	SEK10-15-12S Magnet	9-07-901-315-0
1-674-20-00	SEK20-15-12S	9-07-901-315-0
1-674-20-10	SEK20-15-12S Magnet	9-07-901-315-0
1-674-30-00	SEK30/50-70-17S	9-07-901-329-0
1-674-30-10	SEK30/50-70-17S Magnet	9-07-901-329-0
1-674-30-01	SEK30/50-28-17S	9-07-901-329-0
1-674-30-11	SEK30/50-28-17S Magnet	9-07-901-329-0
1-673-20-00	SEG20-0-18S	9-07-901-219-0
1-673-20-10	SEG20-0-18S Magnet	9-07-901-219-0
1-673-30-00	SEG30/50-0-41S	9-07-901-323-0
1-673-30-10	SEG30/50-0-41S Magnet	9-07-901-323-0
1-671-30-01	SES30/50-30-25S	9-07-901-316-0
1-671-30-11	SES30/50-30-25S Magnet	9-07-901-316-0
1-671-30-03	SES30/50-15-38S	9-07-901-316-0
1-671-30-13	SES30/50-15-38S Magnet	9-07-901-316-0
1-671-30-51	SES30/50-30-23H	9-07-901-316-0
1-674-20-10	SEK20-15-12S Magnet	9-07-901-315-0
1-671-20-10	SES20-40-13S Magnet	9-07-901-219-0
1-671-20-51	SES20-40-13H	9-07-901-219-0

Blade Protectors SK on demand for following Nipper Blades:

Part-No.	Description
1-671-05-00	SES5-15-11S
1-671-05-51	SES5-15-11H
1-671-07-00	SES7-40-10S
1-671-07-01	SES7-30-11S
1-671-07-51	SES7-30-11H
1-671-20-02	SES20-15-16S
1-671-20-12	SES20-15-16S Magnet
1-671-20-51	SES20-40-13H
1-671-30-02	SES30/50-30-50S
1-671-30-04	SES30/50-60-32S
1-671-30-05	SES30/50-30-44S
1-672-20-00	SEW20-90-18-45S
1-672-20-02	SEW20-90-16-40S
1-675-30-00	SEZ30/50-0-32S
1-673-03-00	SEG3-0-12S
1-673-05-00	SEG5-0-12S
1-673-30-03	SEG30/50-0-37S
1-673-30-01	SEG30/50-0-43S
1-676-03-00	SER3-11,5-R2,5
1-674-20-04	SEK20-45-17
1-673-91-00	SEG-ASNSE3-0-11S
1-673-91-01	SEG-ASNSE5-0-12S
1-673-91-02	SEG-ASNSE10-0-12S
1-673-91-03	SEG-ASNSE20-0-20S
1-673-92-01	SEG-ASN-ARD10-0-14S
1-673-92-02	SEG-ASN-ARD20-0-21S
1-673-92-03	SEG-ASN-ARD30-0-29S
1-661-01-00	SES-ARKE3-30-30-50S
1-661-02-00	SES-ARKE3-30-30-30S
1-661-03-00	SEK-ARKE3-25-17S
1-661-04-00	SEG-ARKE3-0-32S
1-660-57-00	SES 50-35-15H
1-660-58-00	SES 50-30-37H
1-660-59-00	SES 50-30-37S

Application examples HUZ / HUZ-P / ZSM-HUZ PZ



Application example of a HUZ / HUZ P unit for demoulding bumpers.



Different versions and sizes of HUZ units (from the left): HUZ 25 D with double stroke, HUZ-P 25 CS with single stroke and monitoring, Stopover ZSM-HUS PZ mounted on HUZ-P 25 CS

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
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220
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230
Manifold

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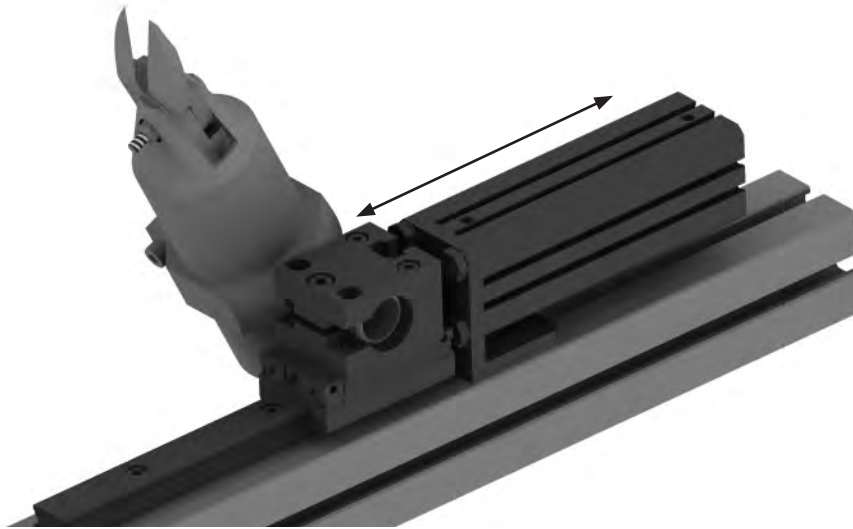
850
Pneumatics

990
Tubular System
Micro System

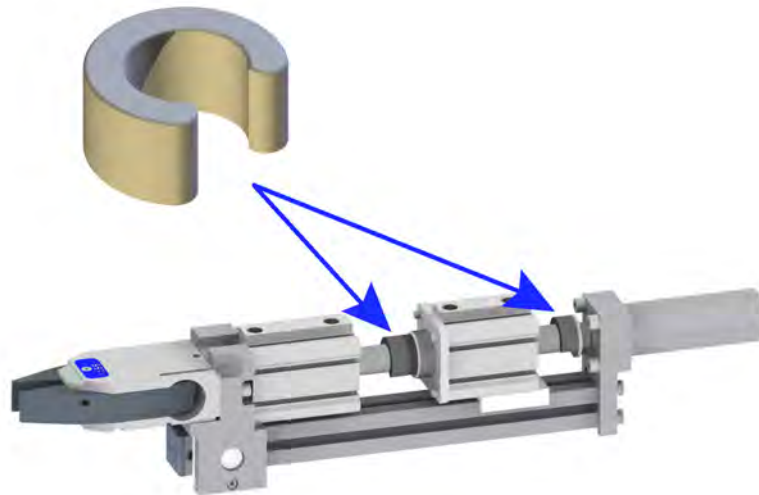
990
PA-Forming
Others

700 | Special Elements

Application example HUE

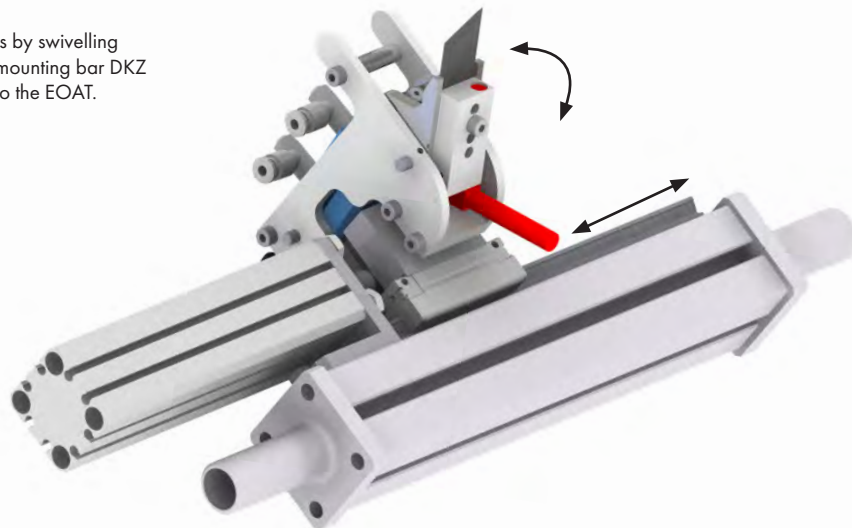


Application example DB

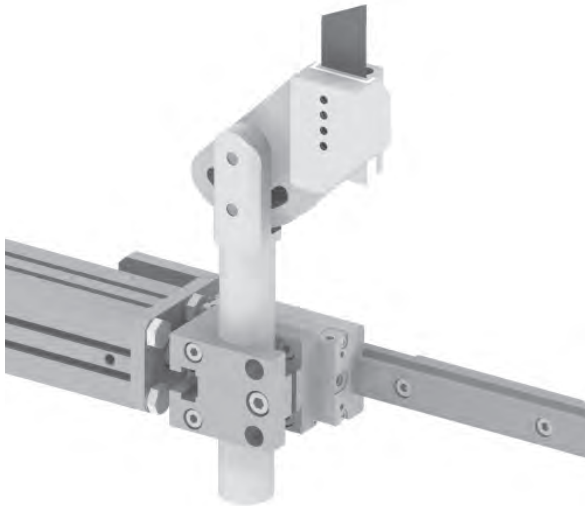


Application example KHR-S and DKZ JU

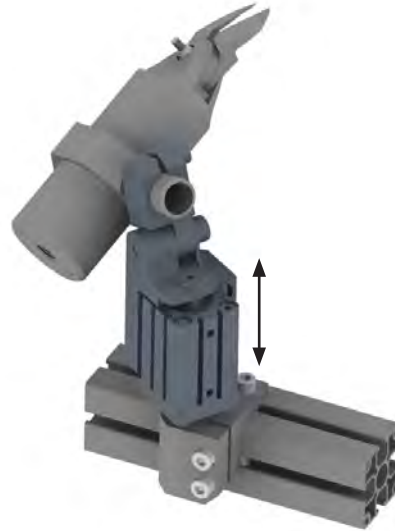
Precise cutting of film gates by swivelling the blade to the part. The mounting bar DKZ allows an easy mounting to the EOAT.



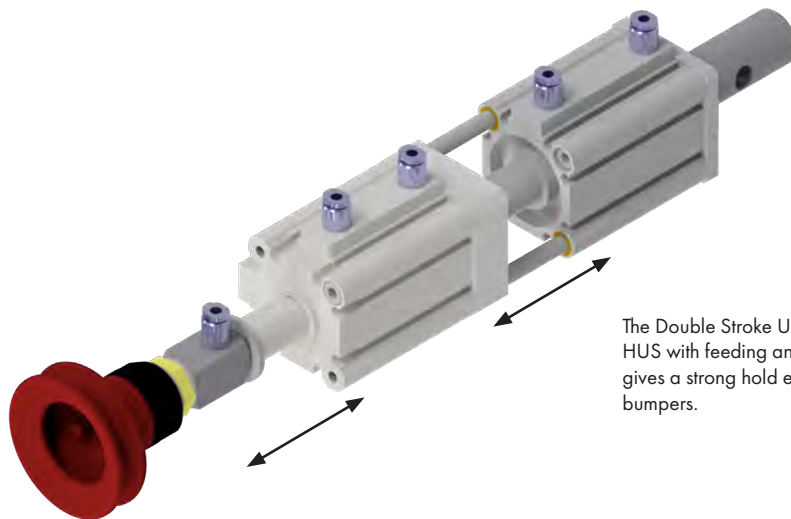
Application example KHR



Application example ZHG/ZHD



Application example HUS



The Double Stroke Unit for Vacuum Cups HUS with feeding and demoulding stroke gives a strong hold e.g. for demoulding bumpers.

Application example DPL



Application example ZTB



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PA-Forming
Others

700 | Special Elements

Application example SZD



Application example KHZ + DPL



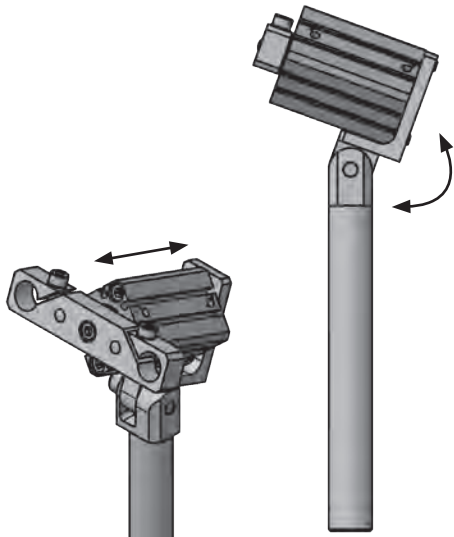
Application example ADZ



Application example GAZ



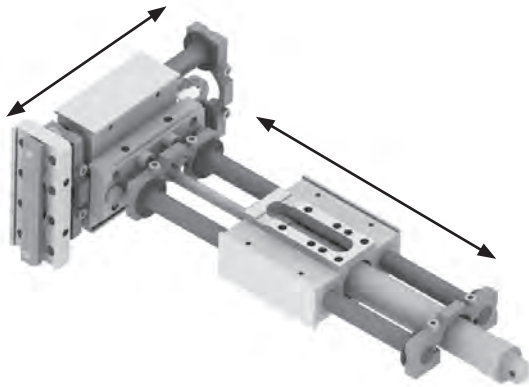
Application example GAZ S



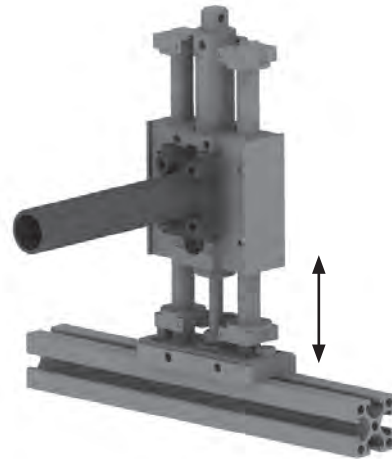
Application example GP-HEU



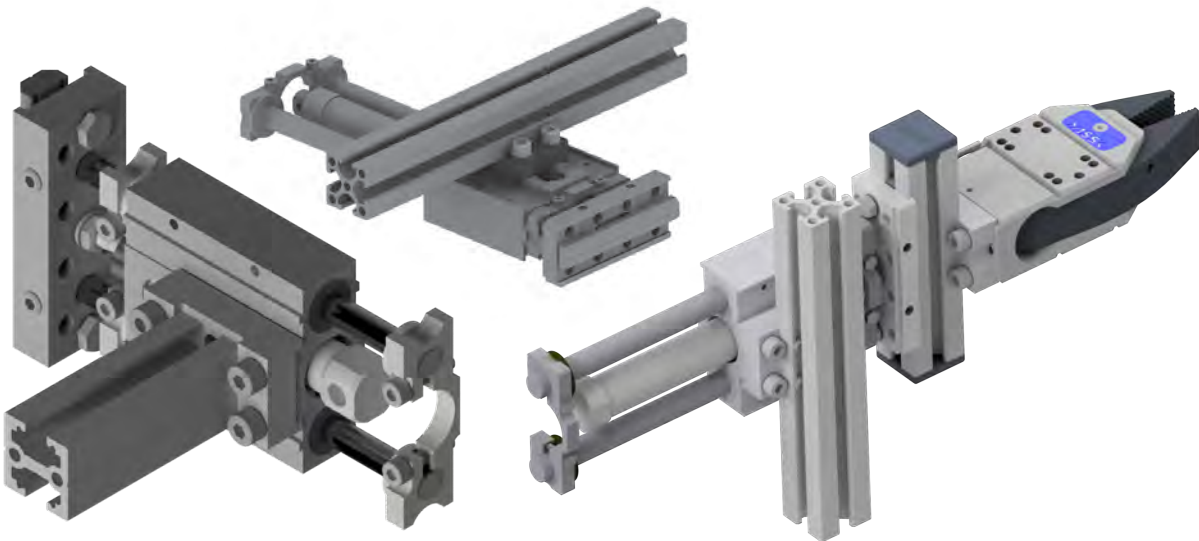
Application example HEU



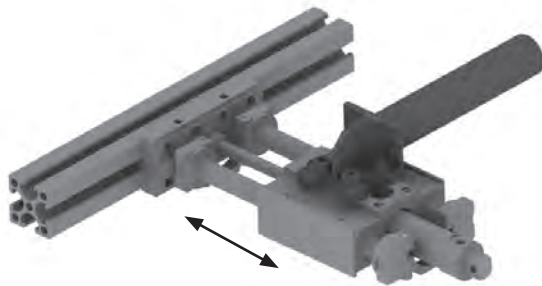
Application example AE-HEU



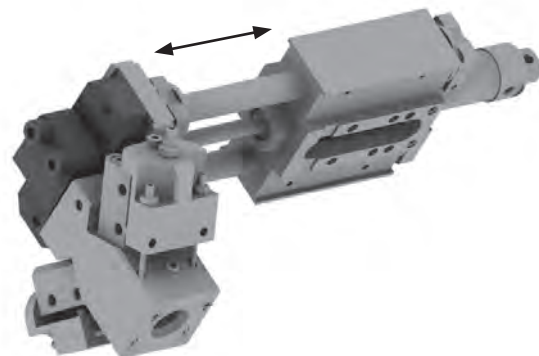
Application examples AP-HEU



Application example AU-HEU



Application example KN-HEU



000
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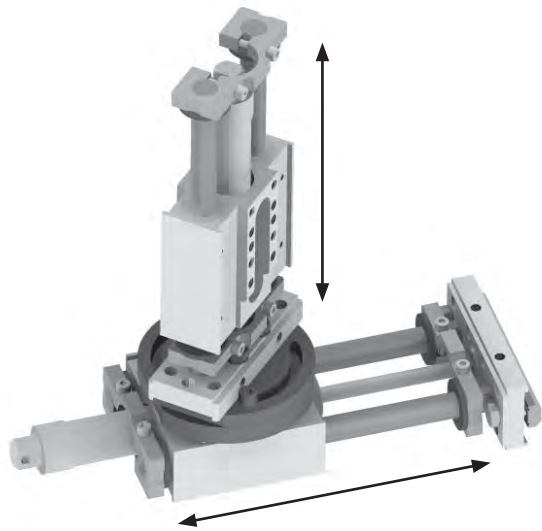
850
Pneumatics

990
Tubular System
Micro System

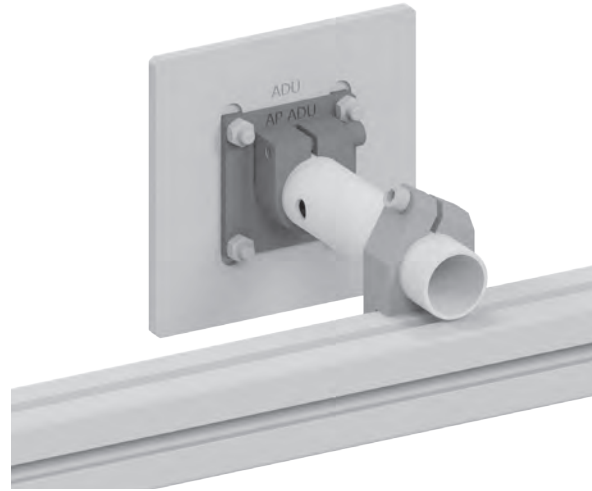
990
PA-Forming
Others

700 | Special Elements

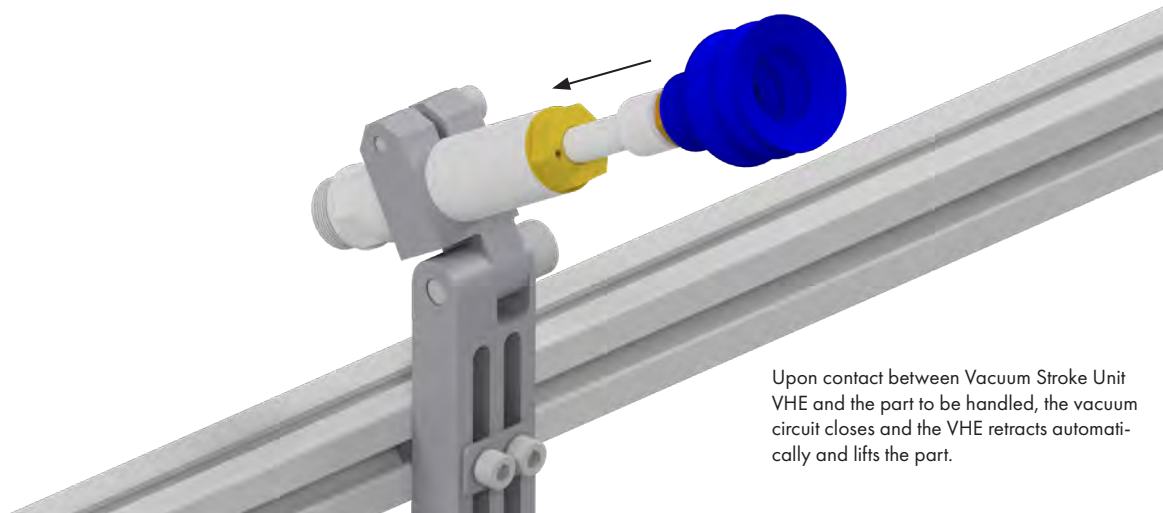
Application example HEU A XY



App. example ADU / AP ADU



Application example VHE 20



Upon contact between Vacuum Stroke Unit VHE and the part to be handled, the vacuum circuit closes and the VHE retracts automatically and lifts the part.

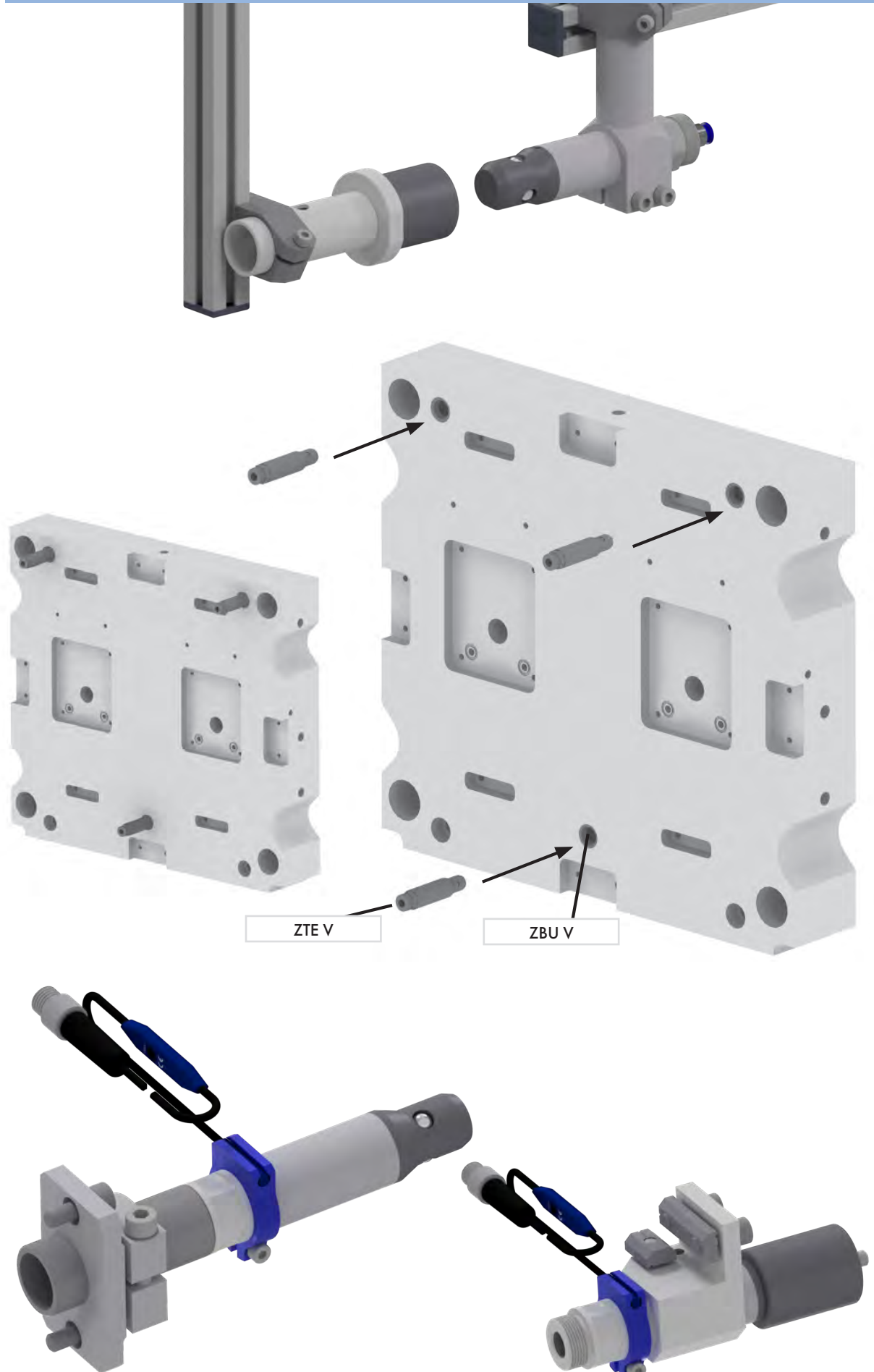
Application example SF



Application example SFP



Application example ZTE



000
Quick Change
Systems

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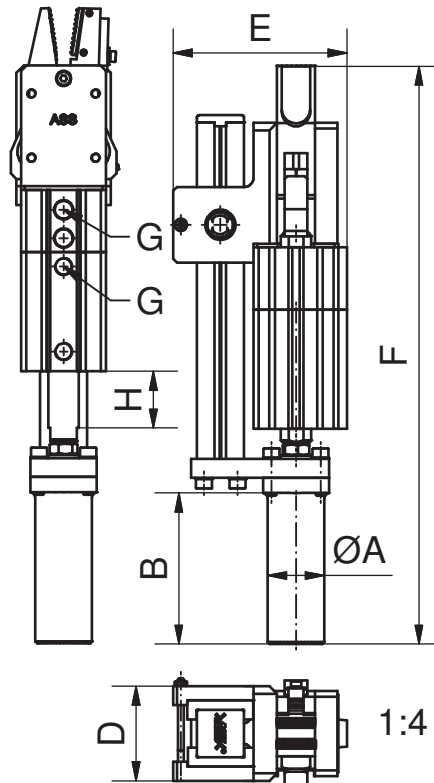
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

HUZ / Gripper with Stroke



Remarks:

Application: strong double-acting gripper on stroke for demolding tasks

- double-acting gripper
- end positions of cylinders can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Variants:

- C part present sensor IEK 8
- CS part present sensor IES 8

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB

Part No.	Description	closing force max. [N]	All pistons Ø [mm]	Part present	Part present with plug	Stroke H [mm]
1-740-12-00	HUZ 32-30	350	32			30
1-740-15-00	HUZ 32-30 C	350	32	x		30
1-740-18-00	HUZ 32-30 CS	350	32		x	30
1-740-21-00	HUZ 32-40	350	32			40
1-740-24-00	HUZ 32-40 C	350	32	x		40
1-740-27-00	HUZ 32-40 CS	350	32		x	40

Part No.	Description	A [mm]	B [mm]	D [mm]	E [mm]	F Default position [mm]	G ["]	Weight [g]
1-740-12-00	HUZ 32-30	30	80	50	92	304	G1/8	1334
1-740-15-00	HUZ 32-30 C	30	80	50	92	307	G1/8	1397
1-740-18-00	HUZ 32-30 CS	30	80	50	92	307	G1/8	1364
1-740-21-00	HUZ 32-40	30	80	50	92	314	G1/8	1389
1-740-24-00	HUZ 32-40 C	30	80	50	92	317	G1/8	1505
1-740-27-00	HUZ 32-40 CS	30	80	50	92	317	G1/8	1473

HUZ D / Gripper with Double Stroke

Remarks:

Application: strong double-acting gripper on double-stroke (feeding and demoulding stroke), e.g. for demoulding bumpers

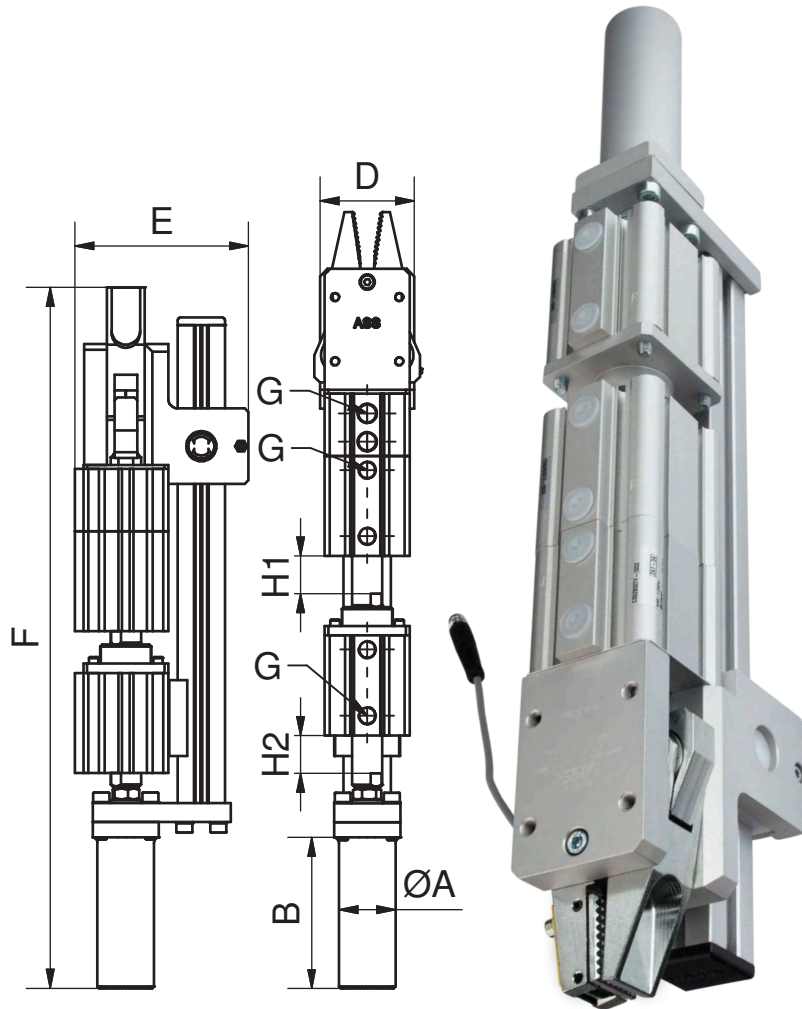
- double-acting gripper
- end positions of cylinders can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Variants:

- C part present sensor IEK 8
- CS part present sensor IES 8

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB



Part No.	Description	closing force max. [N]	All pistons Ø [mm]	Part present	Part present with plug	Stroke H1 [mm]	Stroke H2 [mm]
1-740-54-00	HUZ 32-20-10 C	350	32	x		20	10
1-740-57-00	HUZ 32-20-10 CS	350	32		x	20	10
1-740-64-00	HUZ 32-20-20 C	350	32	x		20	20
1-740-67-00	HUZ 32-20-20 CS	350	32		x	20	20
1-740-74-00	HUZ 32-20-30 C	350	32	x		20	30
1-740-77-00	HUZ 32-20-30 CS	350	32		x	20	30

Part No.	Description	A [mm]	B [mm]	D [mm]	E [mm]	F Default position [mm]	G ["]	Weight [g]
1-740-54-00	HUZ 32-20-10 C	30	80	50	92	361	G1/8	1770
1-740-57-00	HUZ 32-20-10 CS	30	80	50	92	361	G1/8	1648
1-740-64-00	HUZ 32-20-20 C	30	80	50	92	371	G1/8	1731
1-740-67-00	HUZ 32-20-20 CS	30	80	50	92	371	G1/8	1756
1-740-74-00	HUZ 32-20-30 C	30	80	50	92	381	G1/8	1788
1-740-77-00	HUZ 32-20-30 CS	30	80	50	92	381	G1/8	1762

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

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Vacuum Cups

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Adapters for
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450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

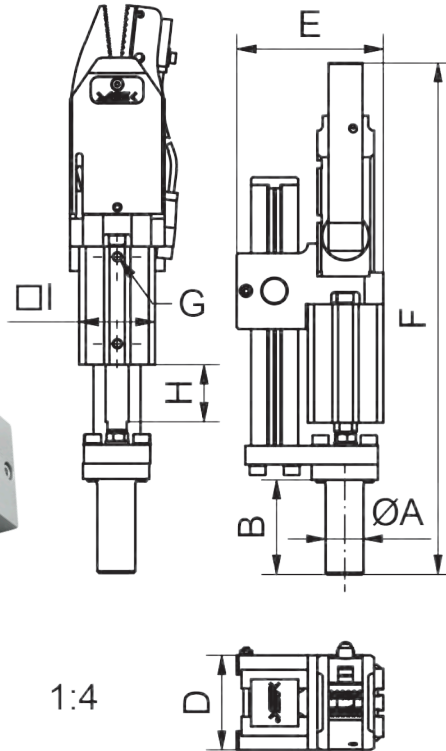
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

HUZ 25 / GRZ 25 with Stroke



1:4

Remarks:

Application: strong gripper GRZ 25 on stroke for demoulding tasks

- compact and lightweight design
- end positions of cylinders can be monitored
- single-acting gripper
- end position of gripper jaws can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Variants:

- CS part present sensor IES 8
- Option clamping Ø 20mm

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Sensor MFS T2 for monitoring GRZ 25 (Part No. 1-808-30-00)
- Stroke Reducer DB
- Gripper Jaws for GRZ 25

Part No.	Description	closing force max. [N]	Piston Ø [mm]	Part present sensor with plug	Stroke H [mm]
1-741-30-00	HUZ 25-30 with option	350	25		30
1-741-31-00-1	HUZ 25-30 CS with option	350	25	x	30
1-742-30-00	HUZ 25 32-30 with option	350	32		30
1-742-31-00-1	HUZ 25 32-30 CS with option	350	32	x	30

Part No.	Description	A [mm]	B [mm]	D [mm]	E [mm]	F Default position [mm]	G [°] [mm]	I [mm]	Weight [g]
1-741-30-00	HUZ 25-30 with option	20	50	50	77,5	270	M5	40	960
1-741-31-00-1	HUZ 25-30 CS with option	20	50	50	77,5	270	M5	40	992
1-742-30-00	HUZ 25 32-30 with option	20	50	50	82,5	282	G1/8	45	1074
1-742-31-00-1	HUZ 25 32-30 CS with option	20	50	50	82,5	282	G1/8	45	1086

HUZ 25 D / GRZ 25 with Double Stroke

Remarks:

Application: strong gripper GRZ 25 on double-stroke (feeding and demoulding stroke), e.g. for demoulding bumpers

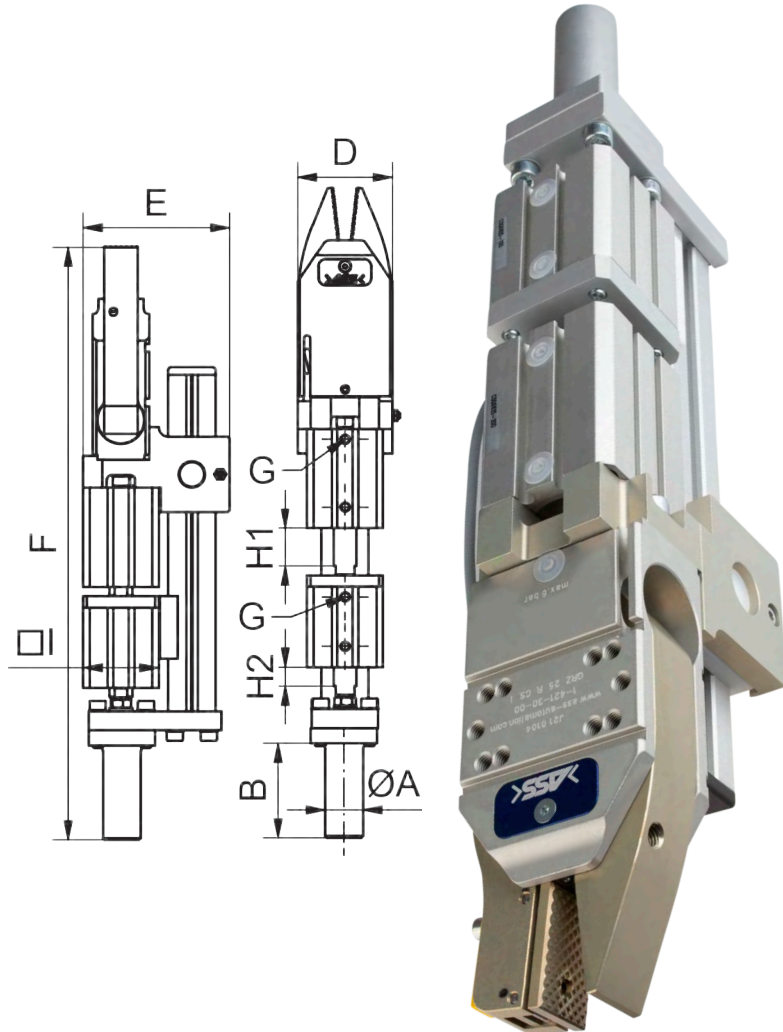
- compact and lightweight design
- end positions of cylinders can be monitored
- single-acting gripper
- end position of gripper jaws can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Variants:

- CS part present sensor IES 8
- Option clamping Ø 20mm

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Sensor MFS T2 for monitoring GRZ 25 (Part No. 1-808-30-00)
- Stroke Reducer DB
- Gripper Jaws for GRZ 25



Part No.	Description	closing force max. [N]	Piston Ø H1 [mm]	Piston Ø H2	Part present with plug	Stroke H1 [mm]	Stroke H2 [mm]
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1-741-32-00	HUZ 25-20-10 with option	350	25	25		20	10
1-741-33-00-1	HUZ 25-20-10 CS with option	350	25	25	x	20	10
1-742-32-00	HUZ 25 32-30-10 with option	350	32	32		30	10
1-742-33-00-1	HUZ 25 32-30-10 CS with option	350	32	32	x	30	10
1-742-34-00	HUZ 25 32-30-20	350	32	32		30	20

Part No.	Description	A [mm]	B [mm]	D [mm]	E [mm]	F Default position [mm]	G [°] [mm]	I [mm]	Weight [g]
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1-741-32-00	HUZ 25-20-10 with option	20	50	50	77,5	313	M5	40	1213
1-741-33-00-1	HUZ 25-20-10 CS with option	20	50	50	77,5	313	M5	40	1186
1-742-32-00	HUZ 25 32-30-10 with option	20	50	50	82,5	345	G1/8	45	1428
1-742-33-00-1	HUZ 25 32-30-10 CS with option	20	50	50	82,5	345	G1/8	45	1433
1-742-34-00	HUZ 25 32-30-20	30	80	50	82,5	387	G1/8	45	1505

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

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Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

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Profile
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Accessories

200
Vacuum Cup
Connectors

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Gripper Arms

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Gripper Fingers

460
Needle Gripper

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Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

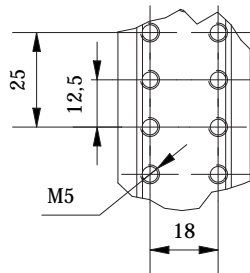
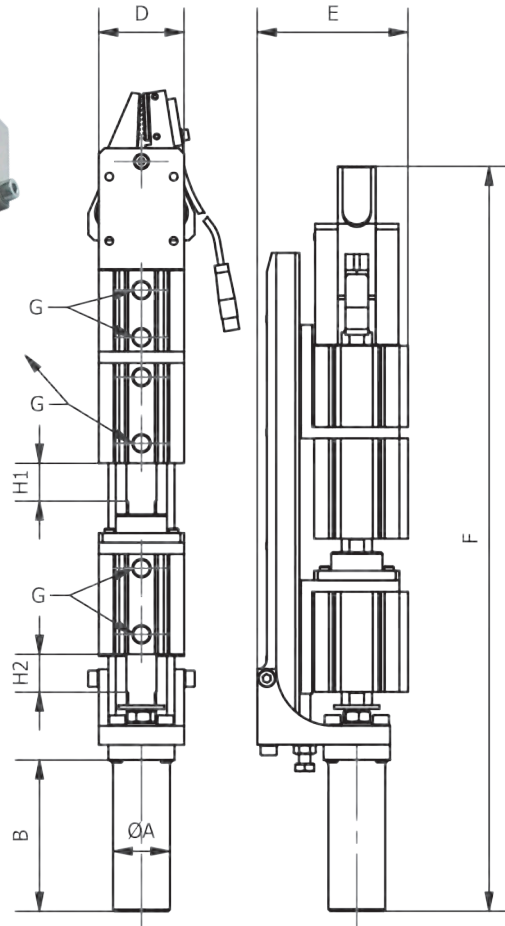
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

HUZ-P D / Gripper with Double Stroke, Precision Slide



Remarks:

Application: strong double-acting gripper on double-stroke (feeding and demoulding stroke) with precision slide, e.g. for demoulding bumpers

- new sliding guide
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- double-acting gripper
- end positions of cylinders can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

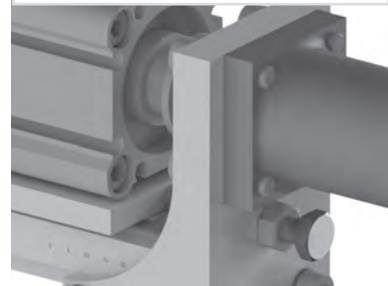
Variants:

CS part present sensor IES 8

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB

Demoulding stroke can be adjusted stepless. Scale reduces setup time and optimizes reproducibility.



Part No.	Description	Closing force max. [N]	Pistons Ø [mm]	Part present control with plug	Stroke H1 [mm]	Stroke H2 [mm]
1-739-67-00	HUZ-P 32-20-20 CS	350	32	x	20	20

Part No.	Description	A [mm]	B [mm]	D [mm]	E [mm]	F Default position [mm]	G [°]	Weight [g]
1-739-67-00	HUZ-P 32-20-20 CS	30	80	45	80	390	G1/8	1933

HUZ-P 25 D / Gripper with Double Stroke, Precision Slide

Remarks:

Application: strong gripper GRZ 25 on double-stroke (feeding and demoulding stroke) with precision slide, e.g. for demoulding bumpers

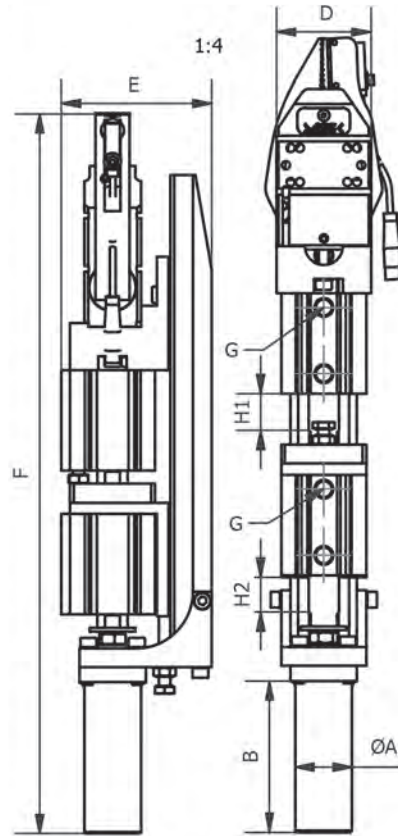
- new sliding guide
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- compact and lightweight design
- end positions of cylinders can be monitored
- single-acting gripper
- end position of gripper jaws can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Variants:

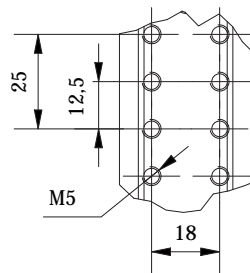
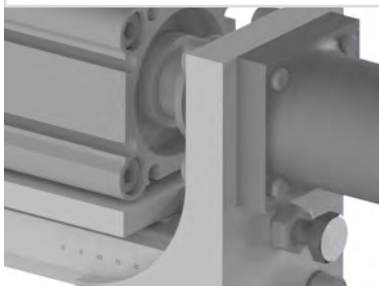
CS part present sensor IES 8

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Sensor MFS T2 for monitoring GRZ 25 (Part No. 1-808-30-00)
- Stroke Reducer DB
- Gripper Jaws for GRZ 25



Demoulding stroke can be adjusted stepless. Scale reduces setup time and optimizes reproducibility.



Part No.	Description	Closing force max. [N]	Pistons Ø [mm]	Part present control with plug	Stroke H1 [mm]	Stroke H2 [mm]
1-739-01-00	HUZ-P 25 32-20-20 CS	350	32	x	20	20

Part No.	Description	A [mm]	B [mm]	D [mm]	E [mm]	F Default position [mm]	G [°]	Weight [g]
1-739-01-00	HUZ-P 25 32-20-20 CS	30	80	50	80	380	G1/8	1730

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

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Profile
Accessories

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Vacuum Cup
Connectors

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Gripper
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Gripper Fingers

460
Needle Gripper

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Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

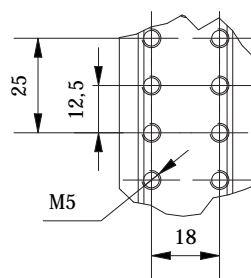
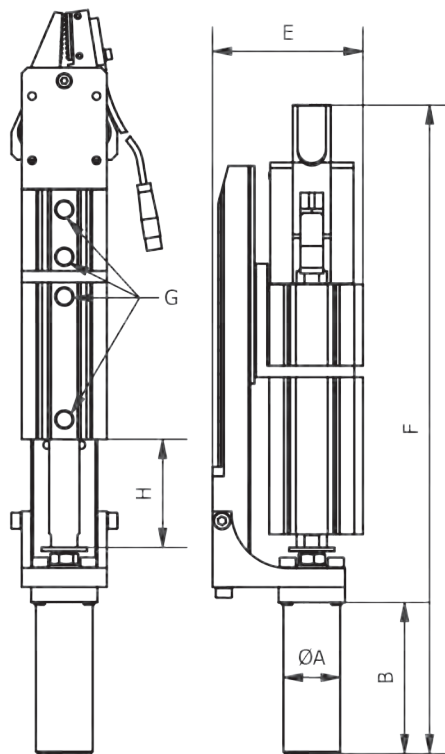
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

HUZ P / Gripper with Stroke, Precision Slide



Remarks:

Application: strong double-acting gripper on stroke with precision slide for demoulding tasks

- can be easily upgraded with Stopover ZSM: HUZ-P becomes HUZ-PZ
- new sliding guide
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- double-acting gripper
- end positions of cylinders can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Variants:

- C part present sensor IEK 8
- CS part present sensor IES 8

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB
- Stopover ZSM

Part No.	Description	Closing force max. [N]	Pistons Ø [mm]	Stroke H [mm]	A [mm]	B [mm]	D [mm]	E [mm]
1-739-22-00	HUZ-P 32-50	350	32	50	30	80	56	80
1-739-23-00	HUZ-P 32-50 C	350	32	50	30	80	56	80
1-739-24-00	HUZ-P 32-50 CS	350	32	50	30	80	56	80

Part No.	Description	F Default position [mm]	G ["°][mm]	Part present control	Part present control with plug	Weight [g]
1-739-22-00	HUZ-P 32-50	345	G1/8			1676
1-739-23-00	HUZ-P 32-50 C	345	G1/8	x		1744
1-739-24-00	HUZ-P 32-50 CS	345	G1/8		x	1707

HUZ P 25 / Gripper with Stroke, Precision Slide

Remarks:

Application: strong gripper GRZ 25 on stroke with precision slide for demoulding tasks

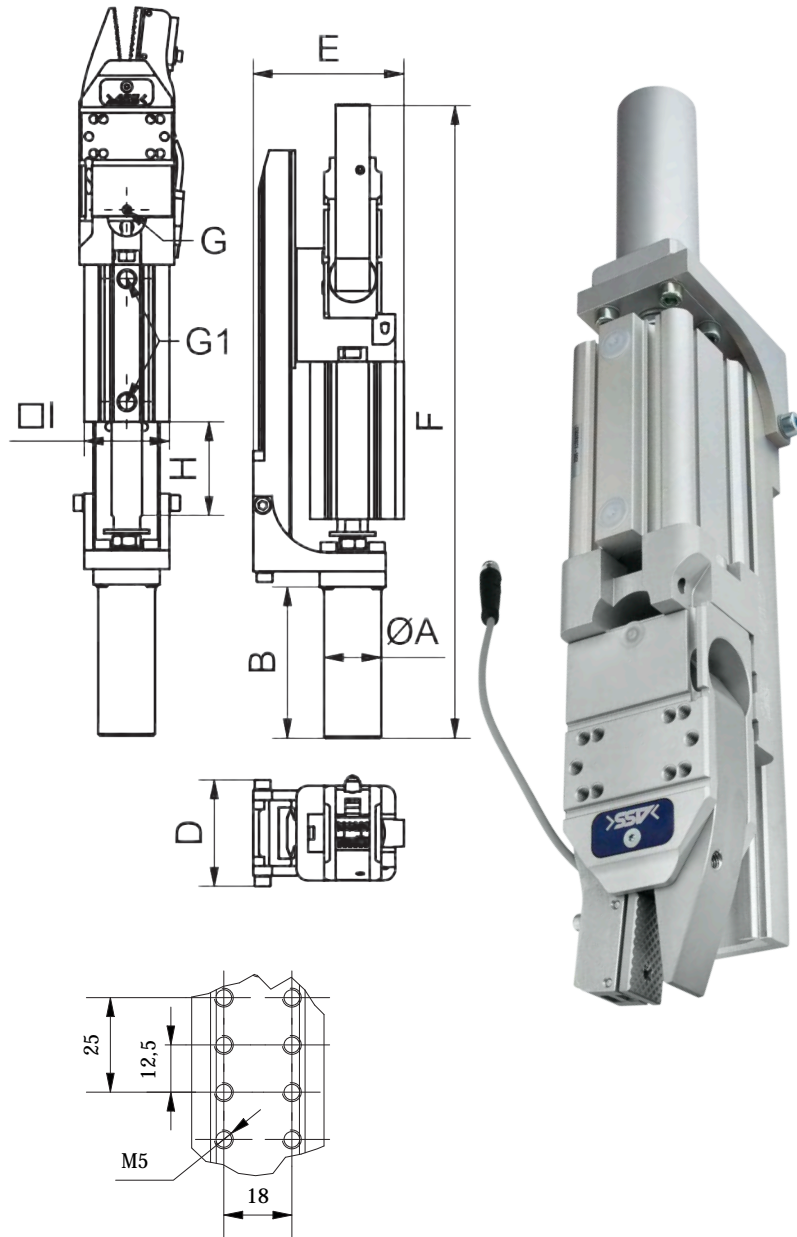
- can be easily upgraded with Stopover ZSM: HUZ-P becomes HUZ-PZ
- new sliding guide
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- compact and lightweight design
- end positions of cylinders can be monitored
- single-acting gripper
- end position of gripper jaws can be monitored
 - » closing force measured at the point of the jaws at 6 bar
 - » maximum air pressure is 6 bar, use dry and filtered air only

Variants:

CS part present sensor IES 8

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Sensor MFS T2 for monitoring GRZ 25 (Part No. 1-808-30-00)
- Stroke Reducer DB
- Stopover ZSM
- Gripper Jaws for GRZ 25



Part No.	Description	Closing force max. [N]	Pistons Ø [mm]	Stroke H [mm]	A [mm]	B [mm]	D [mm]	E [mm]
1-739-02-00	HUZ-P 25 32-50	350	32	50	30	80	56	79,5
1-739-03-00	HUZ-P 25 32-50 CS	350	32	50	30	80	56	79,5

Part No.	Description	F Default position [mm]	G [mm]	G1 ["]	I [mm]	Part present control with plug	Weight [g]
1-739-02-00	HUZ-P 25 32-50	334	M5	G1/8	45		1178
1-739-03-00	HUZ-P 25 32-50 CS	334	M5	G1/8	45	x	1190

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

HUZ-PL 32 / Gripper with Stroke, Precision Slide, Lightweight



Remarks:

Application: strong double-acting gripper on stroke with precision slide for demoulding tasks

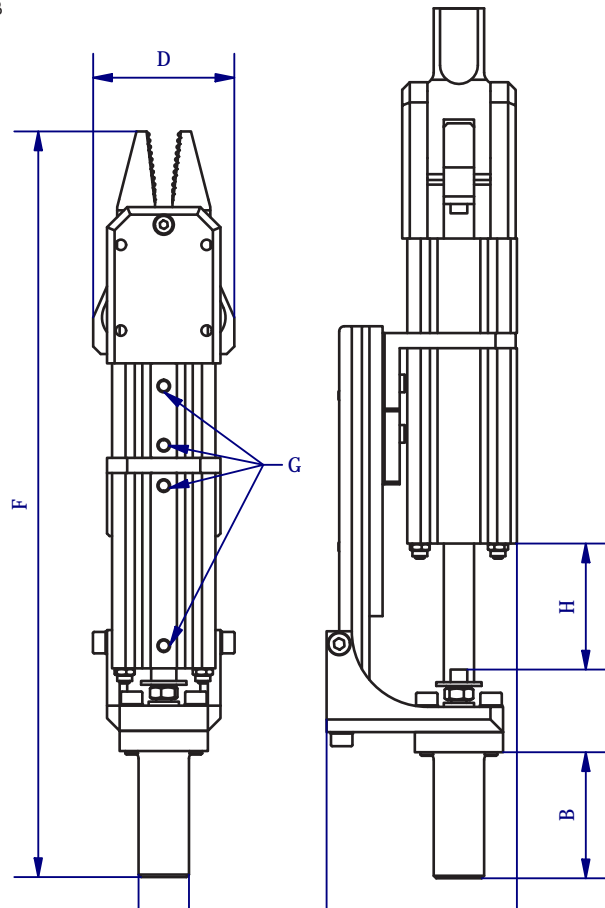
- weight-reduced variant, with the same strokes and forces as the conventional P variants
- can be easily upgraded with Stopover ZSM: HUZ-P becomes HUZ-PZ
- new sliding guide
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- double-acting gripper
- end positions of cylinders can be monitored
 - » closing force measured at the point of the jaws at 6 bar
 - » maximum air pressure is 6 bar, use dry and filtered air only

Variants:

- C part present sensor IEK 8
- CS part present sensor IES 8

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB
- Stopover ZSM



Part No.	Description	Closing force max. [N]	Pistons Ø [mm]	Stroke H [mm]	A [mm]	B [mm]	D [mm]	E [mm]
1-738-22-00	HUZ-PL 32-50	350	32	50	20	50	56	75.5
1-738-23-00	HUZ-PL 32-50 C	350	32	50	20	50	56	75.5
1-738-24-00	HUZ-PL 32-50 CS	350	32	50	20	50	56	75.5

Part No.	Description	F Default position [mm]	G ["°][mm]	Part present control	Part present control with plug	Weight [g]
1-739-22-00	HUZ-P 32-50	345	G1/8			1676
1-739-23-00	HUZ-P 32-50 C	345	G1/8	x		1744
1-739-24-00	HUZ-P 32-50 CS	345	G1/8		x	1707

HUZ-PL 32 D / Gripper with Double-Stroke, Precision Slide, Lightweight

Remarks:

Application: strong double-acting gripper on double-stroke (feeding and demoulding stroke) with precision slide, e.g. for demoulding bumpers

- weight-reduced variant, with the same strokes and forces as the conventional P variants
- new sliding guide
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- double-acting gripper
- end positions of cylinders can be monitored
 - » closing force measured at the point of the jaws at 6 bar
 - » maximum air pressure is 6 bar, use dry and filtered air only

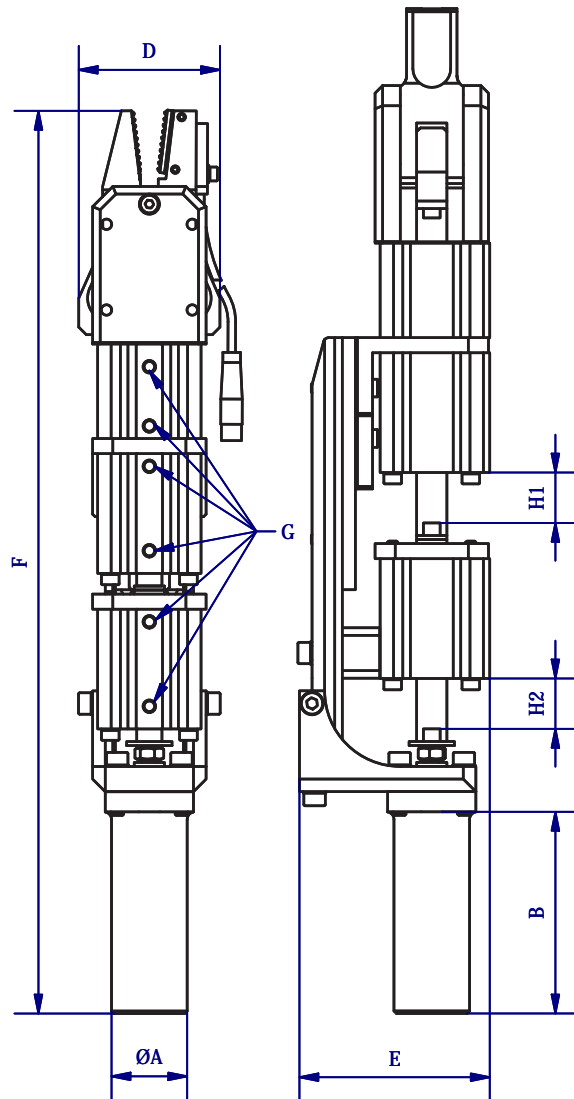


Variants:

CS part present sensor IES 8

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB



Part No.	Description	Closing force max. [N]	Pistons Ø [mm]	Stroke H1 [mm]	Stroke H2 [mm]	A [mm]	B [mm]	D [mm]	E [mm]
1-738-67-00	HUZ-PL 32-20-20 CS	350	32	20	20	30	80	56	75,5

Part No.	Description	F [mm]	G [mm]	Part present control with plug	Weight [g]
1-738-67-00	HUZ-PL 32-20-20 CS	358	M5	x	1282

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

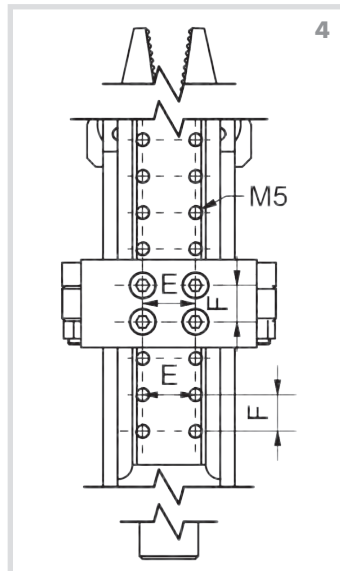
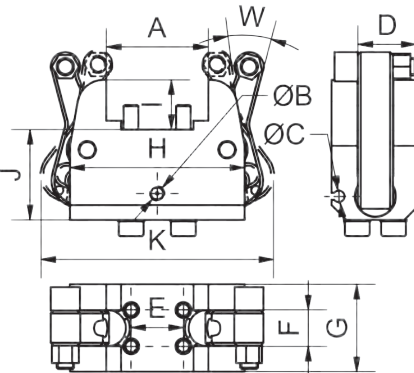
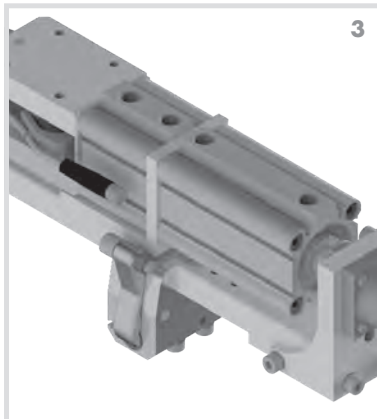
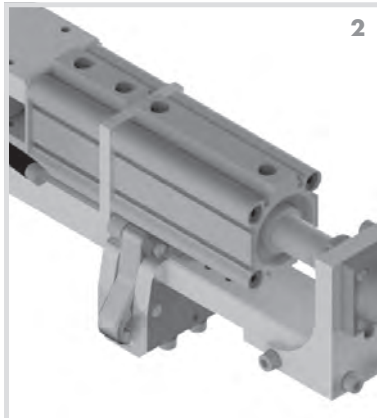
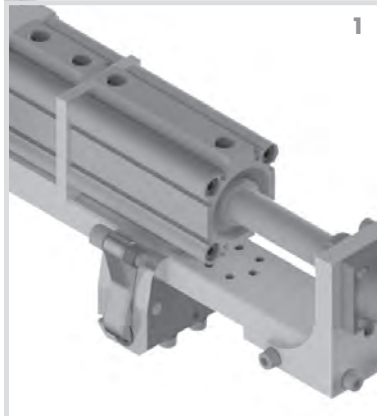
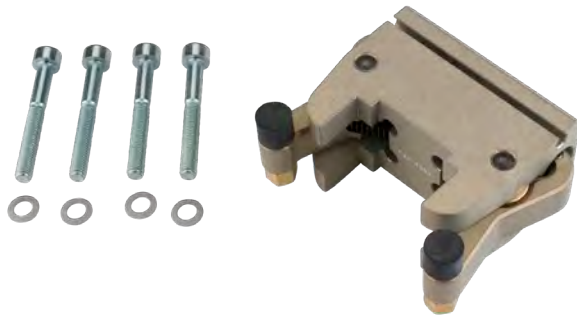
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

ZSM-HUZ PZ / Stopover for HUZ-P



Remarks:

Application: ZSM allows easy retrofitting with a second stroke: HUZ-P becomes HUZ-PZ.

- feeding stroke 50 mm
- demoulding stroke: 0-50 mm infinitely adjustable
- Stopover ZSM can be easily mounted
- Mounting in 12.5mm grid, see Figure 4
- stepless fine adjustment
- integrated C-slot for monitoring end position
- low-wear rubber buffers dampen the demolding stroke
- » maximum air pressure is 6 bar, use dry and filtered air only

Procedure:

- *Fig. 3: Basic position*
 - delivery stroke, ZSM and GRZ in basic position
- *Fig. 1: Gripping the part*
 - delivery stroke in working position
 - ZSM in basic position
 - GRZ closed
- *Fig. 2: Demolding stroke*
 - ZSM in working position
 - GRZ closed
 - delivery stroke in basic position, basic position is not achieved = intermediate position
- *Fig. 1: Laying down the part*
 - delivery stroke in working position
 - ZSM in basic position
 - GRZ open
- *Fig. 3: Basic position*
 - delivery stroke, ZSM and GRZ in basic position

Accessories e.g.:

- Sensor MFS T2 for monitoring ZSM (Part No. 1-808-30-00)

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]
1-739-00-00	ZSM-HUZ PZ	35	M5	4	20	18	12,5	30	60

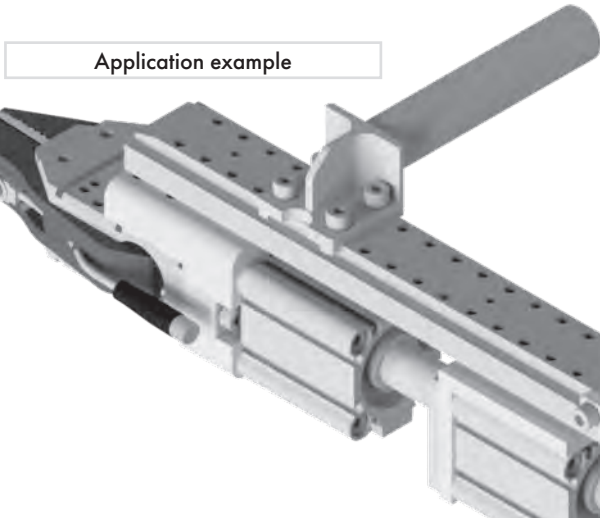
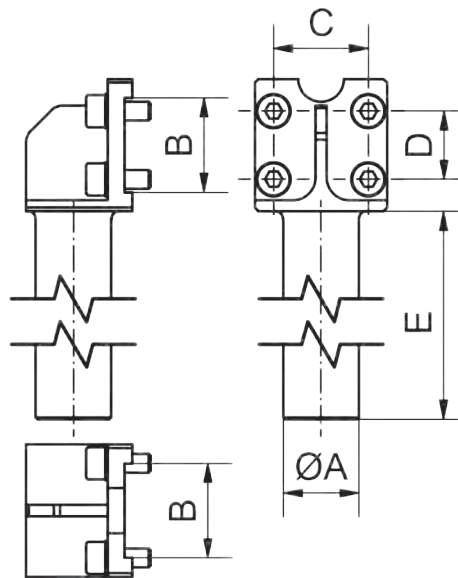
Part No.	Description	I [mm]	J [mm]	W [°]	compatible to	Weight [g]
1-739-00-00	ZSM-HUZ PZ	17	31	22	HUZ-P/PL 25 HUZ-P/PL 32	277

AU HUZ-P / Adapter for HUZ-P

Remarks:

Application: adapter can be mounted form-fitting at 90° to the precision sliding guide of the HUZ-P series

- clamping diameter is compatible with the Robot Hand Kit (EOAT) and offers various application possibilities
- » see application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-753-04-00	AU 20-100 HUZ-P	20	25	25	18	100	Aluminium	79

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

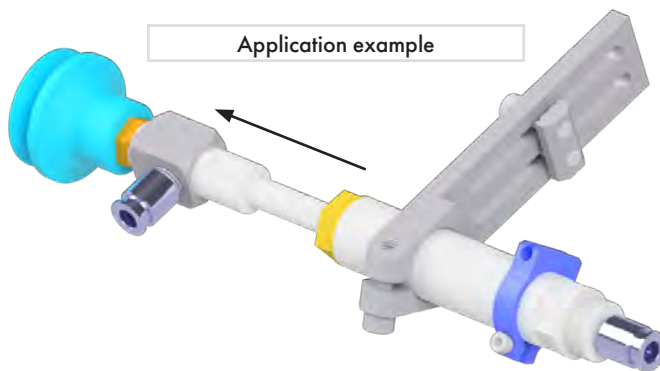
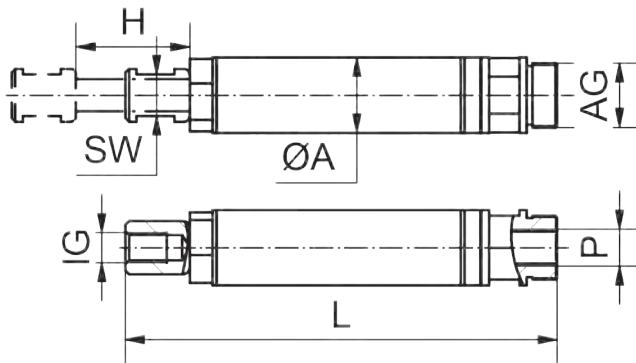
990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

ZHS / Stroke unit for vacuum cups

ZHS VG / Stroke unit for vacuum cups, non-rotating



Remarks:

Application: for gripping sidewise, e.g. for diagonal feeding of vacuum cups

- VG = non-rotating version
 - single-acting cylinder:
 - air pressure - moving forward
 - spring - moving backwards
 - required accessories:
 - Adapter with female thread:
 - AVI 8-1/8-1/8 (Part No. 1-290-77-00) for vacuum cups with 1/8" connection thread or
 - AVI 8-1/4-1/8 (Part No. 1-290-79-00) for vacuum cups with 1/4" connection thread
- » maximum air pressure is 6 bar, use dry and filtered air only

Scope of delivery:

- adaptors and vacuum cups not included

Accessories e.g.:

- Sensor MFS T2 3,7 (Part No. 1-808-30-00)
- Sensor Bracket GFR SH 20 AL
- Sensor ICS 8 (Part No. 1-808-36-00)
- Sensor Bracket GRF-SH20-ICS

Part No.	Description	A [mm]	Hub H [mm]	L [mm]	IG [mm]	AG [mm]	P ["]	SW [mm]	Weight [g]
1-776-00-00	ZHS 20-30	20	30	106	M8	M17x1	G1/8	11	62
1-776-00-00-1	ZHS 20-30 VG	20	30	106	M8	M17x1	G1/8	11	62

New

HUS / Double Stroke Unit for Vacuum Cups



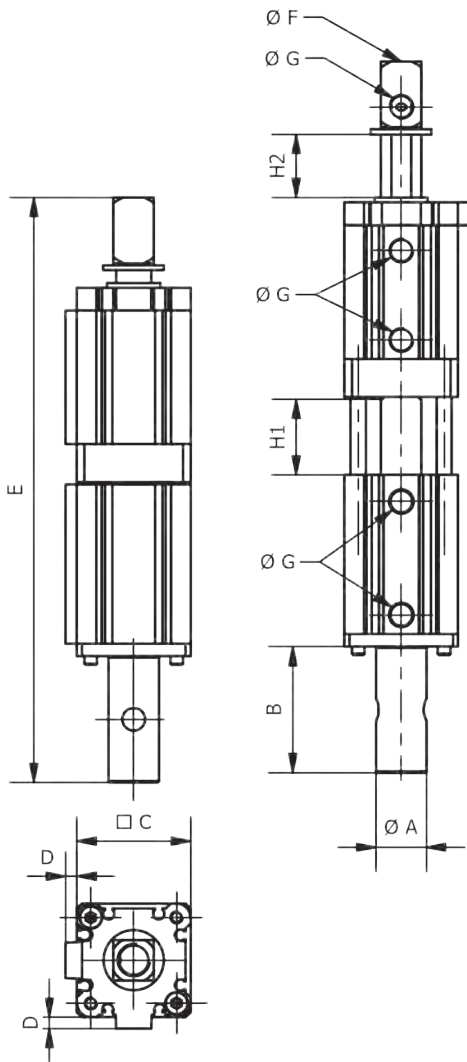
Remarks:

Application: Double Stroke Unit for Vacuum Cups with feeding and demoulding stroke, e.g. for demoulding bumpers

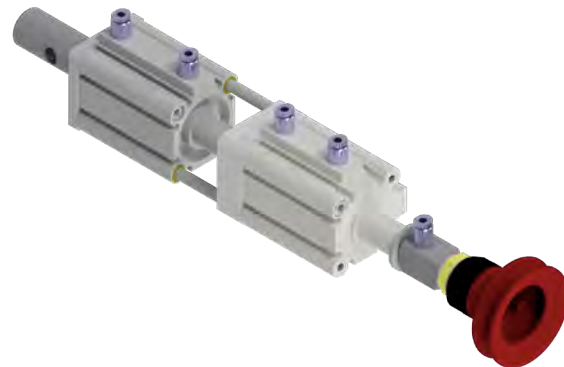
- locked against rotation
- end positions of cylinders can be monitored
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Vacuum and Special Vacuum Cups (chapter 200 and 224)
- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)



Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E Default Position [mm]	F [°]	G [°]
1-749-01-00	HUS 32-30-20	20	50	45	4,5	232	G 1/4	G 1/8

Part No.	Description	Piston Ø [mm]	Stroke H1 [mm]	Stroke H2 [mm]	Weight [g]
1-749-01-00	HUS 32-30-20	32	30	20	803

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Quick Change Systems

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Connectors

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Profile
Accessories

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Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

G-HUS 32-20 / Stroke Unit for Vacuum Cups, locked against rotation



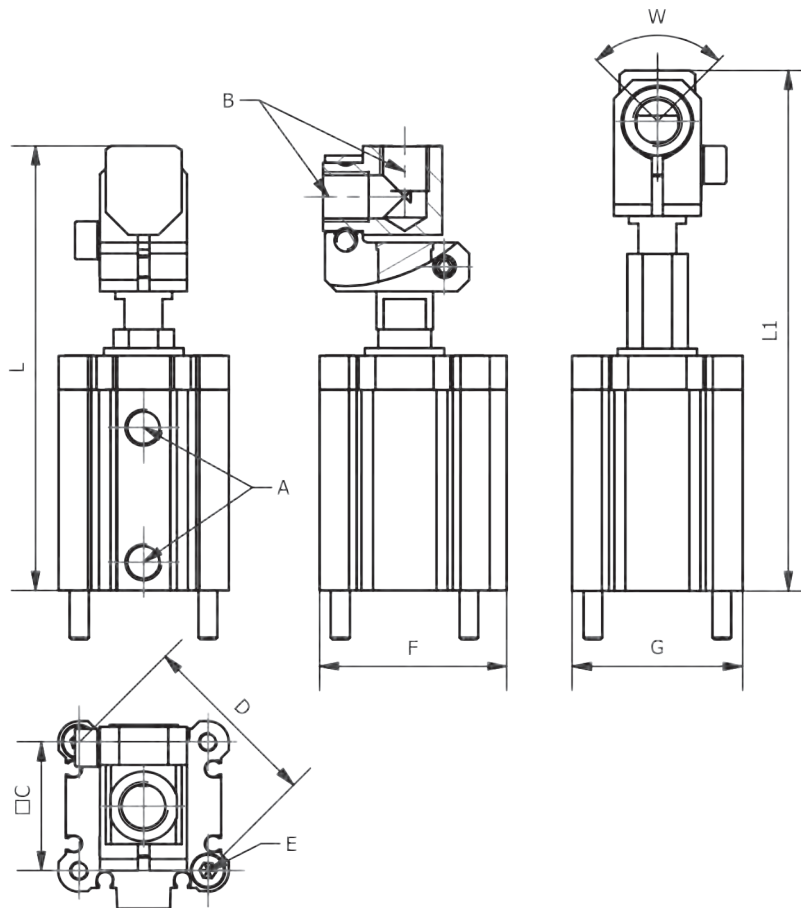
Remarks:

Application: Stroke Unit for oval suction cups and/or angled vacuum cups

- flexibal positioning of vacuum cups
- cylinder locked against rotation
- end positions of cylinders can be monitored
- threads for vacuum suction and suction line can be reduced with reducing nipple RNK
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Gripper Arm for Short Stroke Cylinder GAZ and GAZ S
- Adapter ADZ
- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB



Application example



Part No.	Description	A ["]	B ["]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]
1-749-50-00	G-HUS 32-20	G 1/8	G 1/4	34	48	M5	49,5	45

Part No.	Description	Piston Ø [mm]	Stroke [mm]	L [mm]	L1 [mm]	W [°]	Weight [g]
1-749-50-00	G-HUS 32-20	32	20	117,5	137,5	+/- 90	314

HUS DUV 32-30 / Stroke Unit for Vacuum Cups, locked against rotation, double acting, with air duct

Remarks:

Application: e.g. for Vacuum Cups with feeding and demoulding stroke, e.g. for demoulding parts

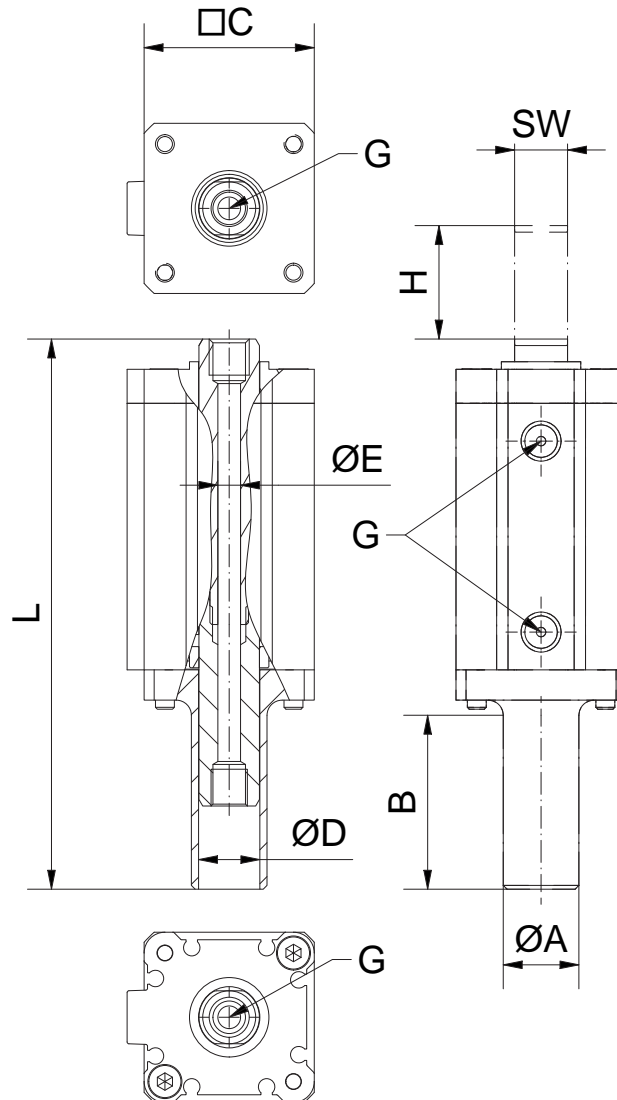
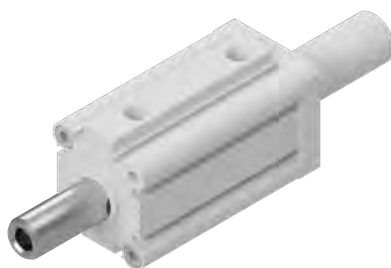
- also suitable for oval vacuum cups
- double acting
- locked against rotation
- end positions of cylinders can be monitored
- maximum air pressure is 6 bar, use dry and filtered air only

Accessories e.g.:

- Vacuum and Special Vacuum Cups (chapter 200 and 224)
- Sensor ICS 8 (Part No. 1-808-36-00)
- Sensor MFS T2 (Part No. 1-808-30-00)



Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	H [mm]	L [mm]	SW [mm]	Weight [g]
1-749-80-00	HUS DUV 32-30	20	45	45	16,2	6	1/8	30	145,5	14	500

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Quick Change Systems

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Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

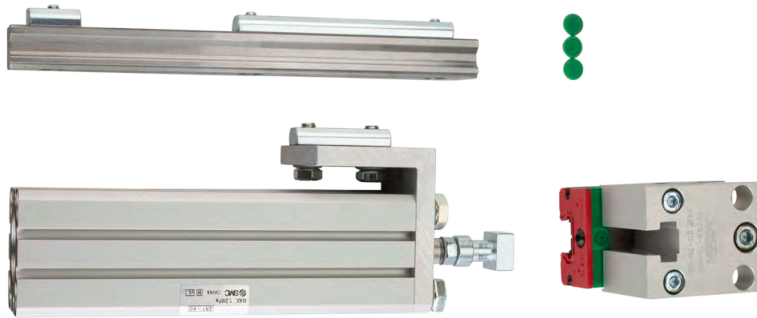
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

HUE / Slide Unit



Remarks:

Application: e.g. for compacting plastic parts or for pushing active elements (such as nippers, gripper fingers, grippers etc.) against the plastic part

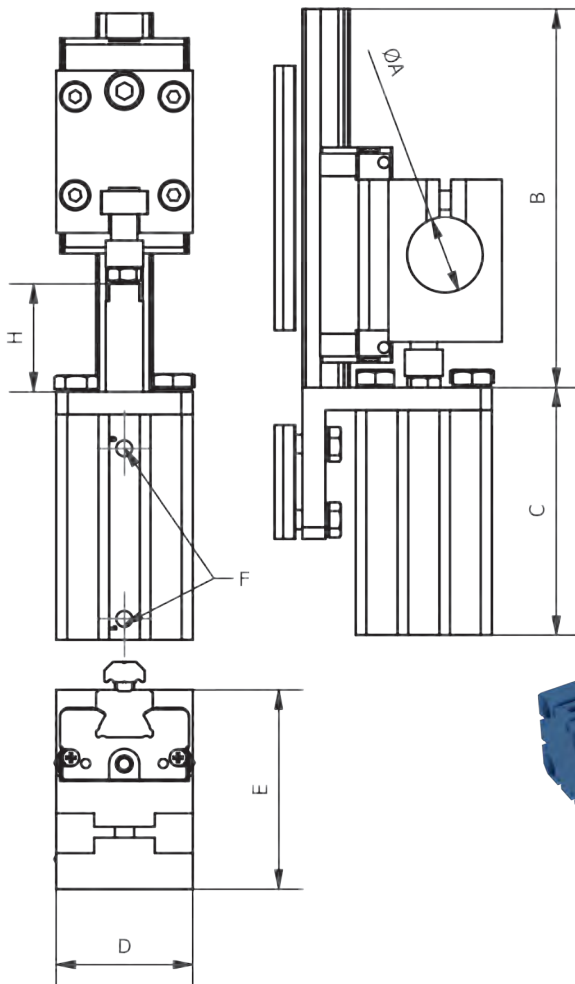
- sliding unit easy to mount on profile
- mounting material fits for profile systems
- clamping diameter 20 mm
- air connections: M5
- precise and resilient linear ball guide
- can absorb lateral forces and moments
- double-acting cylinder
- end positions of cylinders can be monitored

Scope of delivery:

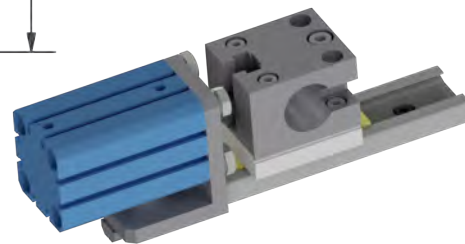
- incl. mounting material

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB



Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Piston Ø [mm]	Stroke H [mm]	Weight [g]
1-745-11-00	HUE 20-30-20	20	100	65.5	36	52.5	M5	20	30	689
1-745-10-00	HUE 20-50-20	20	120	85.5	36	52.5	M5	20	50	719
1-745-12-00	HUE 20-75-20	20	145	122	36	52.5	M5	20	75	859
1-745-13-00	HUE 20-100-20	20	170	147	36	52.5	M5	20	100	961
1-745-14-00	HUE 20-125-20	20	195	172	36	52.5	M5	20	125	1074

HUE G / Slide Unit with Sliding Guide

Remarks:

Application: e.g. for compacting plastic parts or for pushing active elements (such as nippers, gripper fingers, grippers etc.) against the plastic part

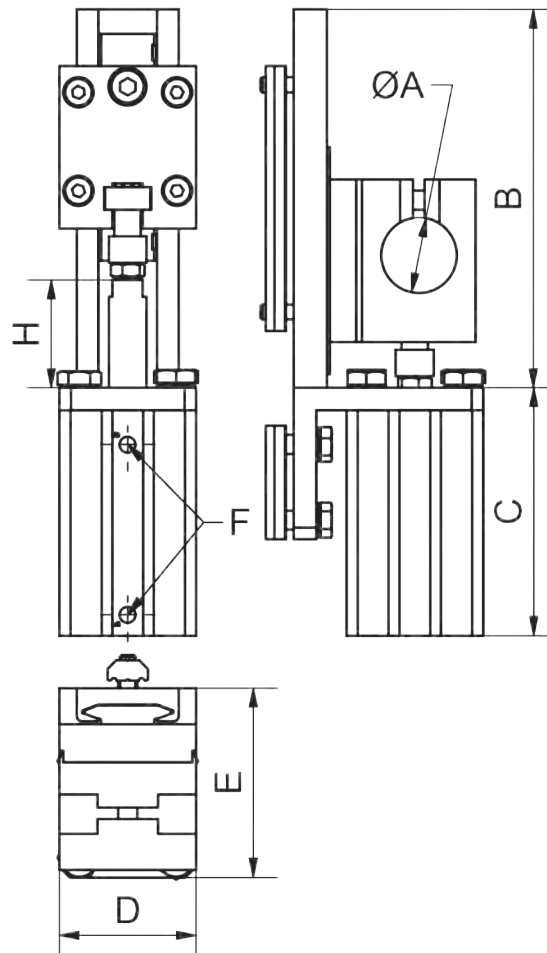
- new sliding guide
- lightweight alternative to HUE
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- end positions of cylinders can be monitored
- mounting material fits for profile systems
- clamping diameter 20 mm
- can absorb lateral forces and moments
- double-acting cylinder
- » maximum air pressure is 6 bar, use dry and filtered air only

Scope of delivery:

- incl. mounting material

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Piston Ø [mm]	Stroke H [mm]	Weight [g]
1-745-20-00	HUE G 20-30-20	20	100	65,5	36	50	M5	20	30	455
1-745-21-00	HUE G 20-50-20	20	120	85,5	36	50	M5	20	50	515
1-745-22-00	HUE G 20-75-20	20	150	122	36	50	M5	20	75	620
1-745-23-00	HUE G 20-100-20	20	175	147	36	50	M5	20	100	695
1-745-24-00	HUE G 20-125-20	20	200	172	36	50	M5	20	125	765

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

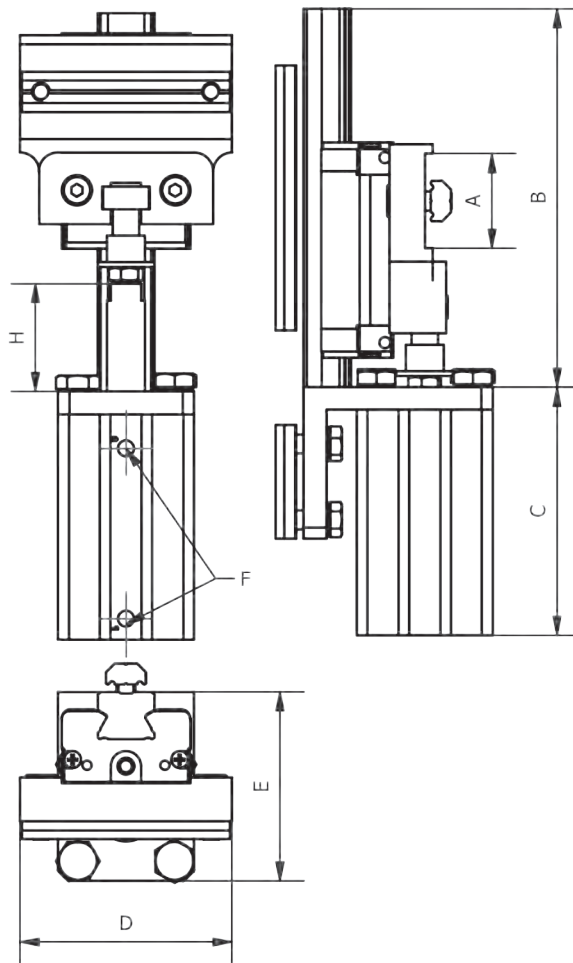
800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

HUE X / Slide Unit for adapting X-Profile



Remarks:

Application: e.g. for compacting plastic parts or for pushing active elements (such as nippers, gripper fingers, grippers etc.) against the plastic part

- form fitting connection to X 25 profile
- sliding unit easy to mount on profile
- mounting material fits for profile systems
- air connections: M5
- precise and resilient linear ball guide
- can absorb lateral forces and moments
- double-acting cylinder
- end positions of cylinders can be monitored

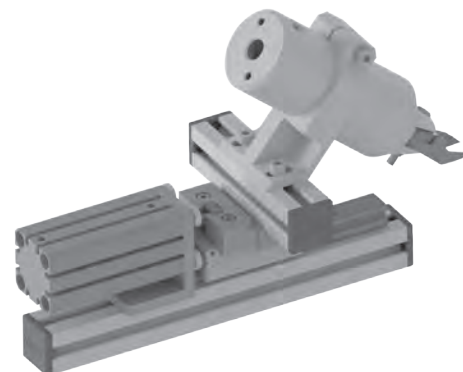
Scope of delivery:

- incl. mounting material

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB

Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Piston Ø [mm]	Stroke H [mm]	Weight [g]
1-745-50-00	HUE X 25-30-20	25	100	65,5	56	50	M5	20	30	656
1-745-51-00	HUE X 25-50-20	25	120	65,5	56	50	M5	20	50	740
1-745-52-00	HUE X 25-75-20	25	145	65,5	56	50	M5	20	75	869
1-745-53-00	HUE X 25-100-20	25	170	65,5	56	50	M5	20	100	967
1-745-54-00	HUE X 25-125-20	25	195	65,5	56	50	M5	20	125	1089

HUE G Profile / Slide Unit with Sliding Guide on Profile

Remarks:

Application: e.g. for compacting plastic parts or for pushing active elements (such as nippers, gripper fingers, grippers etc.) against the plastic part

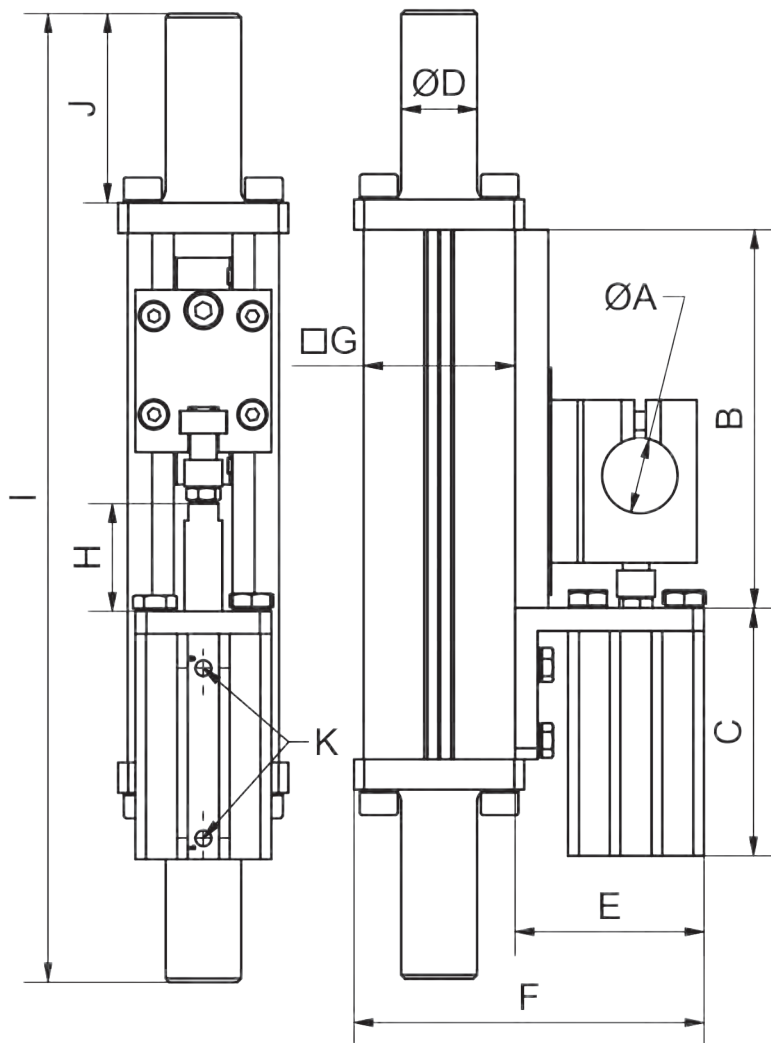
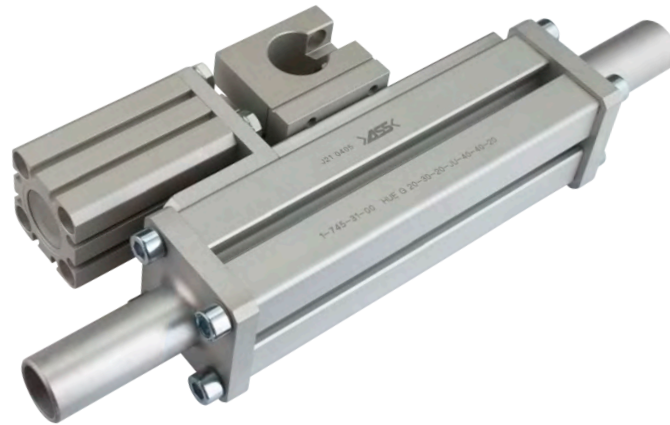
- flexible mounting options
 - new sliding guide
 - free from floating due to spring-loaded sliding elements
 - wear is compensated by spring
 - end positions of cylinders can be monitored
 - mounting material fits for profile systems
 - clamping diameter suitable for the Robot Hand Kit
 - can absorb lateral forces and moments
 - double-acting cylinder
 - can be combined individually with other elements from the Robot Hand Kit such as HUE, DKZ
- » maximum air pressure is 6 bar, use dry and filtered air only

Scope of delivery:

- incl. mounting material

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	I [mm]	J [mm]
1-745-30-00	HUE G 20-30-20-X-25-25-14	20	100	65,5	14	50	76,5	25	248	50
1-745-31-00	HUE G 20-30-20-JU-40-40-20	20	100	65,5	20	50	92,5	40	256	50

Part No.	Description	K [mm]	Stroke H [mm]	Piston Ø [mm]	Weight [g]
1-745-30-00	HUE G 20-30-20-X-25-25-14	M5	30	20	611
1-745-31-00	HUE G 20-30-20-JU-40-40-20	M5	30	20	857

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

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Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

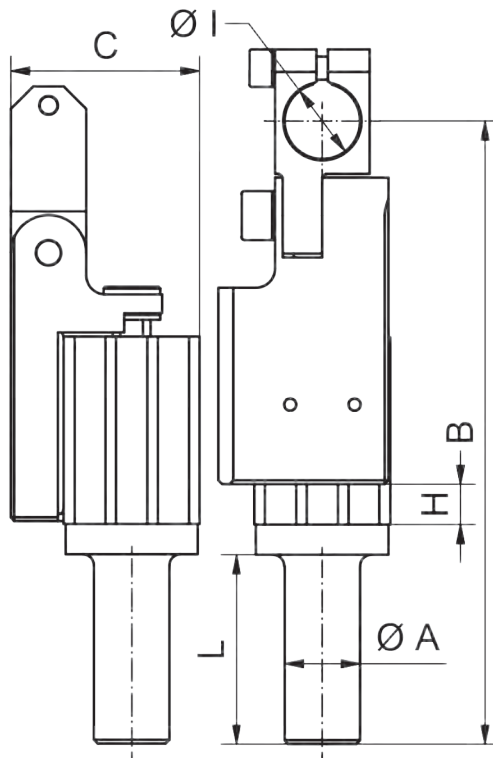
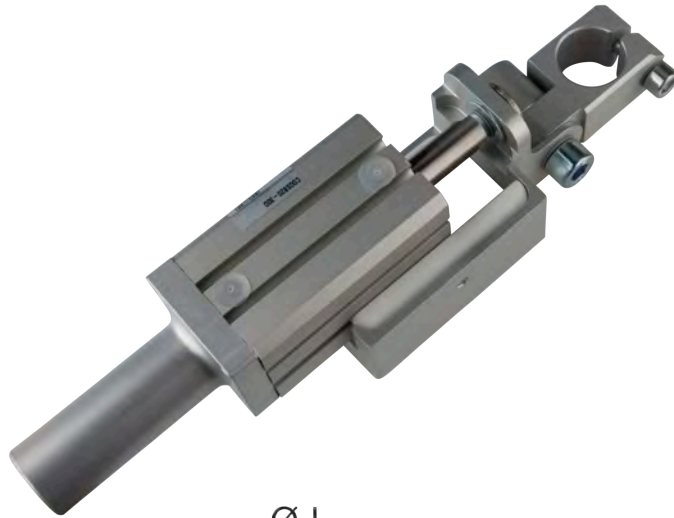
990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

ZHG / Cutter Slide

ZHD / Cutter Slide, double-acting



Remarks:

Application: e.g. in combination with nippers

- articulated arm infinitely adjustable
- two variants available:
 - single-acting - ZHG
 - double-acting - ZHD
- weight and cost optimized solution
- end positions of cylinders can be monitored

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)

ZHG / Cutter Slide

Part No.	Description	A [mm]	B [mm]	C [mm]	L [mm]	I [mm]	Piston Ø [mm]	Run-in	Getting out	Stroke H [mm]	Weight [g]
1-748-11-00	ZHG 20-10	20	162.7	50	50	20	20	compr. air	spring load	5	383
1-748-12-00	ZHG 20-20	20	173.7	50	50	20	20	compr. air	spring load	14	435
1-748-03-00	ZHG 14-12-10	14	134.3	31.5	40	14	12	compr. air	spring load	4	148

ZHD / Cutter Slide, double acting

Part No.	Description	A [mm]	B [mm]	C [mm]	L [mm]	I [mm]	Piston Ø [mm]	Run-in	Getting out	Stroke H [mm]	Weight [g]
1-748-21-00	ZHD 20-10	20	155	50	50	20	20	compr. air	compr. air	12.5	378
1-748-22-00	ZHD 20-20	20	165	50	50	20	20	compr. air	compr. air	22.5	420
1-748-04-00	ZHD 14-12-10	14	123,8	31,5	40	14	12	compr. air	compr. air	11	148

KHR / Blade Holder

Remarks:

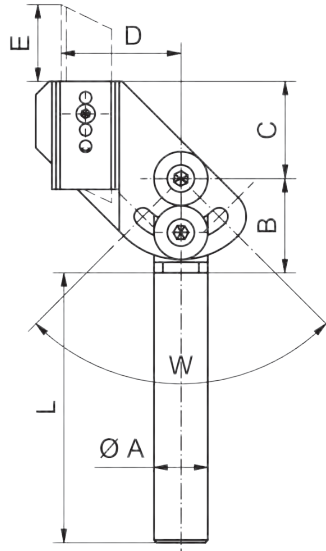
Application: for precise separation of film gates

- compact design
- easy to combine with other components
- blade angle is adjustable
- blade can be heated optionally
- heatable to 130°C

Scope of delivery:

- 5 blades
- blade cover

Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	W [°]	L [mm]	Weight [g]
1-744-00-00	KHR 20-100	20	35	36	45	16.5 - 34.5	+/- 45	100	244

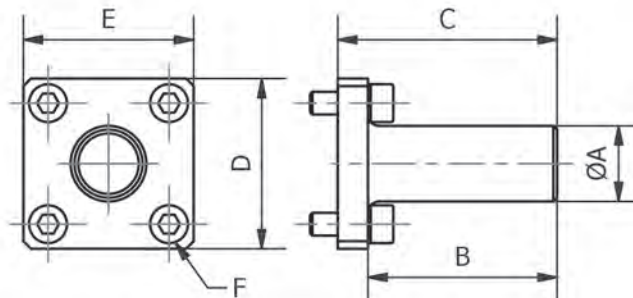
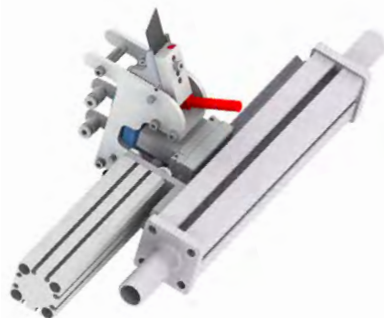
DKZ / Mounting Bar, central

Remarks:

Application: allows a more flexible integration of swivelling blade holder KHR-S

- can be easily mounted at the ends of profiles
- » see application example

Application example



Part No.	Description	A Ø [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-110-45-00	DKZ X 14-50	14	50	54	28	28	M5	Aluminium	32
1-110-50-00	DKZ JU 20-50	20	50	58	45	45	M6	Aluminium	84

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Quick Change Systems

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Profiles
Channel Nuts

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Clamps

120
Profile
Connectors

190
Profile
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Vacuum Cups

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Gripper
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

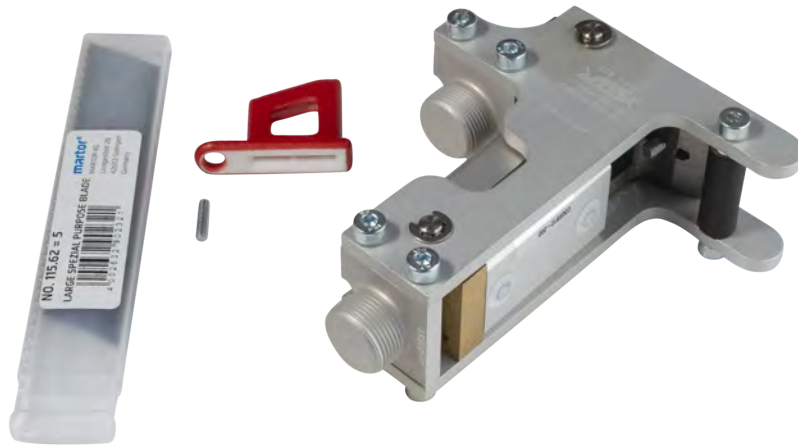
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

KHR-S / Blade Holder, swivelling



Remarks:

Application: for precise separation of film gates - the blade is pressed on the part

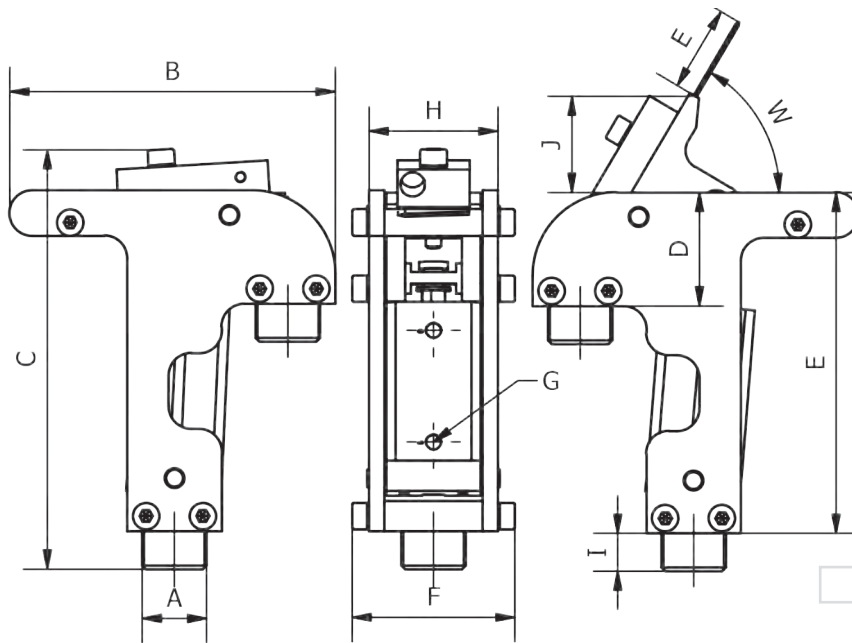
- two positions can be monitored
- double-acting, piston Ø 12 mm
- optionally: blade can be heated by commercially available heating cartridge (Ø 6,5mm)
- » maximum air pressure is 6 bar, use dry and filtered air only
- » see application example

Scope of delivery:

- 5 blades
- blade cover

Accessories e.g.:

- Sensor MFS T2 (Part No. 1-808-30-00)



Application example



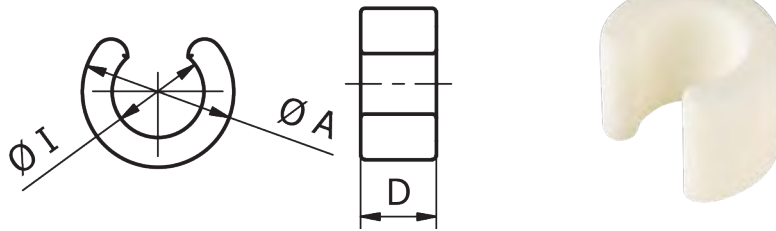
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	J [mm]	W [°]	Weight [g]
1-744-50-00	KHR-S 20-60	M17x1	86	111	30	90	43	M5	34	10	25	60	383

DB / Stroke Reducer

Remarks:

Application: for reducing the stroke of the HUZ, SZD or KHZ units

» see application example



Part No.	Description	compatible to compact cylinder Ø	Ø I [mm] Piston	A [mm]	D [mm]	Material	Weight [g]
1-701-01-00	DB 5-32	32	16	24	5	PA	1
1-701-02-00	DB 10-32	32	16	24	10	PA	2
1-701-03-00	DB 15-32	32	16	24	15	PA	3
1-701-04-00	DB 5-25	25	12	20	5	PA	1
1-701-05-00	DB 10-25	25	12	20	10	PA	2
1-701-06-00	DB 15-25	25	12	20	15	PA	2
1-701-07-00	DB 5-20	20	10	18	5	PA	1
1-701-08-00	DB 10-20	20	10	18	10	PA	2
1-701-09-00	DB 15-20	20	10	18	15	PA	2

KHZ / Short Stroke Cylinder

Remarks:

Application: universally applicable, double-acting Short Stroke Cylinder

- end positions of cylinders can be monitored
- » maximum air pressure is 6 bar, use dry and filtered air only

Drawing:

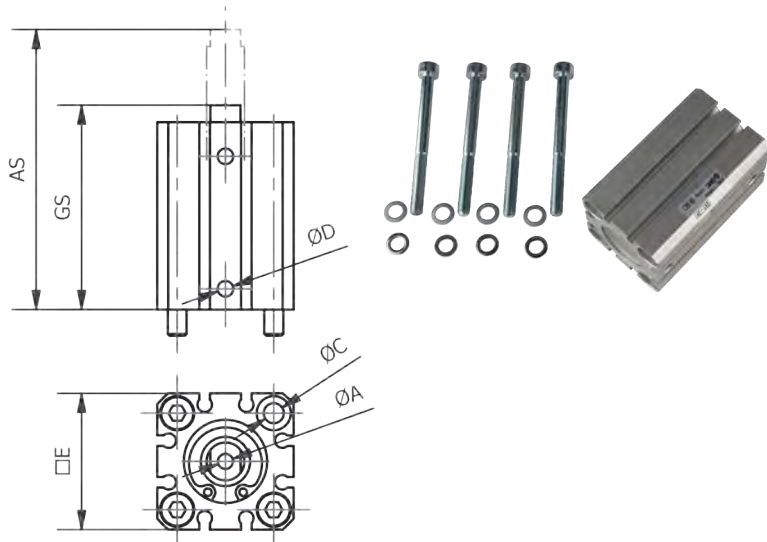
D air connection

Scope of delivery:

- with screws and locking washers

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Gripper Arms for Short Stroke Cylinder GAZ and GAZ S



Part No.	Description	Piston Ø [mm]	A [mm]	B [mm]	C [mm]	D [mm] ["°]	E [mm]	GS [mm]	AS [mm]	Stroke [mm]	Sensor	Weight [g]
1-710-09-00	KHZ 12-5 DA	12	M3	21.9	3.5	M5	25	25.5	30.5	5	ICS 8	44
1-710-12-00	KHZ 12-10 DA	12	M3	21.9	3.5	M5	25	30.5	40.5	10	ICS 8	51
1-710-39-00	KHZ 20-5 DA	20	M5	36.1	5.5	M5	36	39	44	5	ICS 8	119
1-710-42-00	KHZ 20-10 DA	20	M5	36.1	5.5	M5	36	44	54	10	ICS 8	134
1-710-45-00	KHZ 20-20 DA	20	M5	36.1	5.5	M5	36	54	74	20	ICS 8	167
1-710-48-00	KHZ 20-30 DA	20	M5	36.1	5.5	M5	36	64	94	30	ICS 8	197
1-710-69-00	KHZ 32-5 DA	32	M8	48.1	5.5	G1/8	45	45	50	5	ICS 8	213
1-710-72-00	KHZ 32-10 DA	32	M8	48.1	5.5	G1/8	45	50	60	10	ICS 8	227
1-710-75-00	KHZ 32-20 DA	32	M8	48.1	5.5	G1/8	45	60	80	20	ICS 8	271
1-710-78-00	KHZ 32-30 DA	32	M8	48.1	5.5	G1/8	45	90	100	30	ICS 8	315
1-710-82-00	KHZ 32-50 DA	32	M8	48.1	5.5	G1/8	45	90	140	50	ICS 8	407

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Quick Change Systems

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Vacuum Cups

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Special
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Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

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Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
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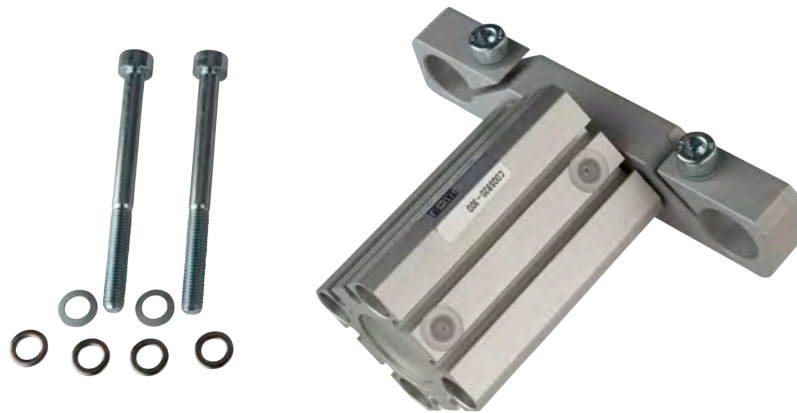
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

SZD / Special Cylinder



Remarks:

Application: double-acting Special Short Stroke Cylinder with yoke plate for gripper arms for vacuum cups, such as GSE, GGE, etc.

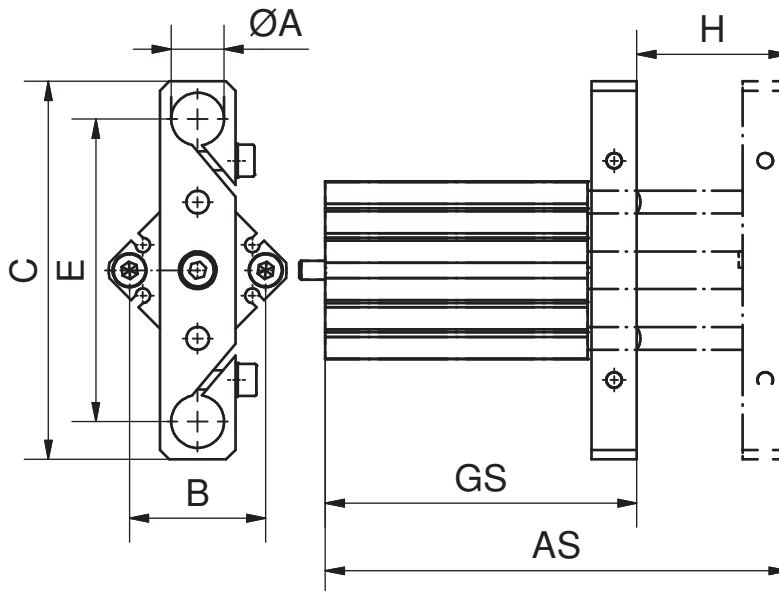
- special designs of the yoke plate (dimensions A and E) on request
- double-acting cylinder
- end positions of cylinders can be monitored
- » maximum air pressure is 6 bar, use dry and filtered air only
- » see application example

Scope of delivery:

- with screws and locking washers

Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Gripper Arms for Short Stroke Cylinder GAZ and GAZ S



Part No.	Description	Piston Ø [mm]	A [mm]	B [mm]	C [mm]	E [mm]	GS [mm]	AS [mm]	Stroke H [mm]	Air connection	Weight [g]
1-715-03-00	SZD 12-10-55A	12	10	21.9	70	55	41	51	10	M5	80
1-715-06-00	SZD 12-20-55A	12	10	21.9	70	55	51	71	20	M5	95
1-715-30-00	SZD 20-10-80A	20	14	36.1	100	80	52.5	62.5	10	M5	209
1-715-33-00	SZD 20-20-80A	20	14	36.1	100	80	62.5	82.5	20	M5	240
1-715-36-00	SZD 20-30-80A	20	14	36.1	100	80	72.5	102.5	30	M5	274
1-715-39-00	SZD 20-40-80A	20	14	36.1	100	80	82.5	122.5	40	M5	306
1-715-42-00	SZD 20-50-80A	20	14	36.1	100	80	92.5	142.5	50	M5	337
1-715-60-00	SZD 32-10-120A	32	20	48.1	145	120	59	69	10	G1/8	373
1-715-63-00	SZD 32-20-120A	32	20	48.1	145	120	69	89	20	G1/8	416
1-715-66-00	SZD 32-30-120A	32	20	48.1	145	120	79	109	30	G1/8	461
1-715-69-00	SZD 32-40-120A	32	20	48.1	145	120	89	129	40	G1/8	508
1-715-72-00	SZD 32-50-120A	32	20	48.1	145	120	99	149	50	G1/8	554

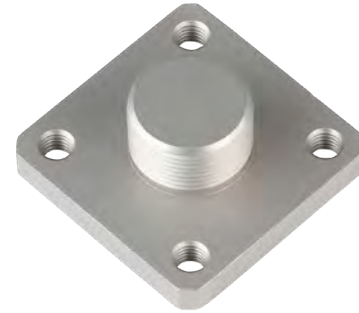
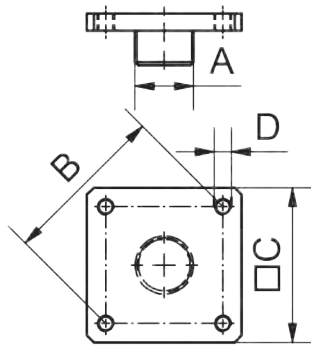
ADZ / Adapter for Short Stroke Cylinder KHZ and SZD

Remarks:

Application: adapts short stroke cylinders KHZ and SZD on extension tube VLR

Accessories e.g.:

- Extension Tube VLR



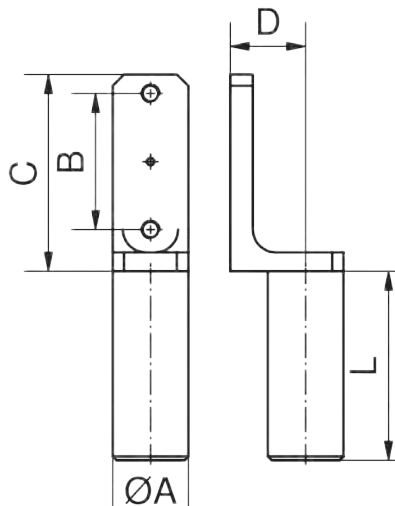
Part No.	Description	compatible with VLR	compatible with KHZ	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-725-03-00	ADZ 14-12	VLR 14	KHZ/SZD 12	M12x1	21.9	25	M3	Aluminium	11
1-725-06-00	ADZ 20-20	VLR 20	KHZ/SZD 20	M17x1	36.1	35	M5	Aluminium	22
1-725-09-00	ADZ 20-32	VLR 20	KHZ/SZD 32	M17x1	48.1	45	M5	Aluminium	33
1-725-12-00	ADZ 30-32	VLR 30	KHZ/SZD 32	M27x1	48.1	45	M5	Aluminium	42

GAZ / Gripper Arm for Short Stroke Cylinder KHZ and SZD

Remarks:

Application: for mounting short stroke cylinders KHZ and SZD

- cylinder mounted with 2 screws to the GAZ
- clamping diameter offers several mounting methods
- made of anodized Aluminium



Part No.	Description	compatible with	A [mm]	B [mm]	C [mm]	D [mm]	L [mm]	Material	Weight [g]
1-720-03-00	GAZ 12-10-30	KHZ/SZD12	10	22	37	12.5	30	Aluminium	12
1-720-06-00	GAZ 12-10-60	KHZ/SZD12	10	22	37	12.5	60	Aluminium	17
1-720-09-00	GAZ 12-10-90	KHZ/SZD12	10	22	37	12.5	90	Aluminium	22
1-720-12-00	GAZ 12-14-40	KHZ/SZD12	14	22	37	12.5	40	Aluminium	16
1-720-15-00	GAZ 12-14-80	KHZ/SZD12	14	22	37	12.5	80	Aluminium	24
1-720-18-00	GAZ 12-14-120	KHZ/SZD12	14	22	37	12.5	120	Aluminium	32
1-720-21-00	GAZ 20-20-50	KHZ/SZD20	20	36	52	20	50	Aluminium	35
1-720-24-00	GAZ 20-20-100	KHZ/SZD20	20	36	52	20	100	Aluminium	50
1-720-27-00	GAZ 20-20-150	KHZ/SZD20	20	36	52	20	150	Aluminium	67
1-720-30-00	GAZ 32-20-50	KHZ/SZD32	20	48.1	66	20	50	Aluminium	43
1-720-33-00	GAZ 32-20-100	KHZ/SZD32	20	48.1	66	20	100	Aluminium	60
1-720-36-00	GAZ 32-20-150	KHZ/SZD32	20	48.1	66	20	150	Aluminium	72

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Quick Change Systems

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Vacuum Cups

224
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Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

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Electrics and
Sensors

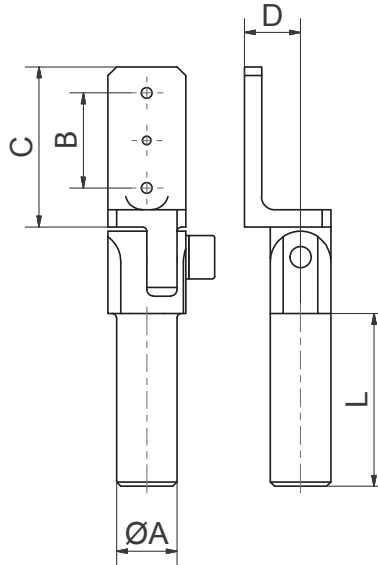
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

GAZ S / Gripper Arm for Short Stroke Cylinder with Swivel



Remarks:

Application: for mounting short stroke cylinders KHZ and SZD in an angle

- for usage with Short Stroke Cylinder KHZ and Special Cylinder SZD
- infinitely adjustable angle of +/- 90 °
- strong clamping prevents adjustment while mounting
- clamping diameter offers several mounting methods
- made of anodized Aluminium
- » see application example

Part No.	Description	Compatibel to cylinder	A [mm]	B [mm]	C [mm]
1-720-04-00	GAZ S 12-10-30	KHZ/SZD12	10	22	37
1-720-07-00	GAZ S 12-10-60	KHZ/SZD12	10	22	37
1-720-10-00	GAZ S 12-10-90	KHZ/SZD12	10	22	37
1-720-13-00	GAZ S 12-14-40	KHZ/SZD12	14	22	37
1-720-16-00	GAZ S 12-14-80	KHZ/SZD12	14	22	37
1-720-19-00	GAZ S 12-14-120	KHZ/SZD12	14	22	37
1-720-22-00	GAZ S 20-20-50	KHZ/SZD20	20	36	52
1-720-25-00	GAZ S 20-20-100	KHZ/SZD20	20	36	52
1-720-28-00	GAZ S 20-20-150	KHZ/SZD20	20	36	52
1-720-31-00	GAZ S 32-20-50	KHZ/SZD32	20	48	66
1-720-34-00	GAZ S 32-20-100	KHZ/SZD32	20	48	66
1-720-37-00	GAZ S 32-20-150	KHZ/SZD32	20	48	66

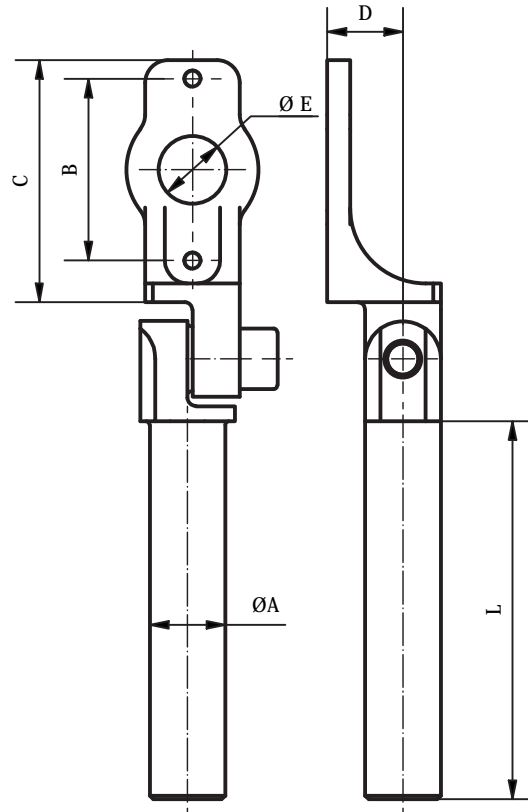
Part No.	Description	D [mm]	L [mm]	Swivel Area	Material	Weight [g]
1-720-04-00	GAZ S 12-10-30	15	30	+/- 90°	Aluminium	19
1-720-07-00	GAZ S 12-10-60	15	60	+/- 90°	Aluminium	22
1-720-10-00	GAZ S 12-10-90	15	90	+/- 90°	Aluminium	26
1-720-13-00	GAZ S 12-14-40	13	40	+/- 90°	Aluminium	36
1-720-16-00	GAZ S 12-14-80	13	80	+/- 90°	Aluminium	44
1-720-19-00	GAZ S 12-14-120	13	120	+/- 90°	Aluminium	55
1-720-22-00	GAZ S 20-20-50	20	50	+/- 90°	Aluminium	92
1-720-25-00	GAZ S 20-20-100	20	100	+/- 90°	Aluminium	107
1-720-28-00	GAZ S 20-20-150	20	150	+/- 90°	Aluminium	126
1-720-31-00	GAZ S 32-20-50	20	50	+/- 90°	Aluminium	98
1-720-34-00	GAZ S 32-20-100	20	100	+/- 90°	Aluminium	112
1-720-37-00	GAZ S 32-20-150	20	150	+/- 90°	Aluminium	132

GAZ SK / Gripper Arm for Short Stroke Cylinder with Swivel, conical clamping

Remarks:

Application: for mounting short stroke cylinders KHZ and SZD in an angle

- improved clamping force due to conical clamping
- especially for short-stroke and special cylinders KHZ and SZD
- the hole allows the piston rod of the cylinder to pass through
- continuously adjustable angle of +/- 105°
- various lengths for the widest possible range of use
- anodized aluminum gripper arm



Part No.	Description	Compatibel to cylinder	A [mm]	B [mm]	C [mm]
1-721-22-00	GAZ SK 20-20-50	KHZ/SZD 20	20	36	64
1-721-25-00	GAZ SK 20-20-100	KHZ/SZD 20	20	36	64
1-721-28-00	GAZ SK 20-20-150	KHZ/SZD 20	20	36	64
1-721-31-00	GAZ SK 32-20-50	KHZ/SZD 32	20	48	78
1-721-34-00	GAZ SK 32-20-100	KHZ/SZD 32	20	48	78
1-721-37-00	GAZ SK 32-20-150	KHZ/SZD 32	20	48	78

Part No.	Description	D [mm]	E [mm]	L [mm]	Swivel Area	Material	Weight [g]
1-721-22-00	GAZ SK 20-20-50	20	18	50	+/-105	Aluminium	111
1-721-25-00	GAZ SK 20-20-100	20	18	100	+/-105	Aluminium	126
1-721-28-00	GAZ SK 20-20-150	20	18	150	+/-105	Aluminium	145
1-721-31-00	GAZ SK 32-20-50	20	18	50	+/-105	Aluminium	117
1-721-34-00	GAZ SK 32-20-100	20	18	100	+/-105	Aluminium	131
1-721-37-00	GAZ SK 32-20-150	20	18	150	+/-105	Aluminium	151

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

610
Nipper Blades

700
Special Elements

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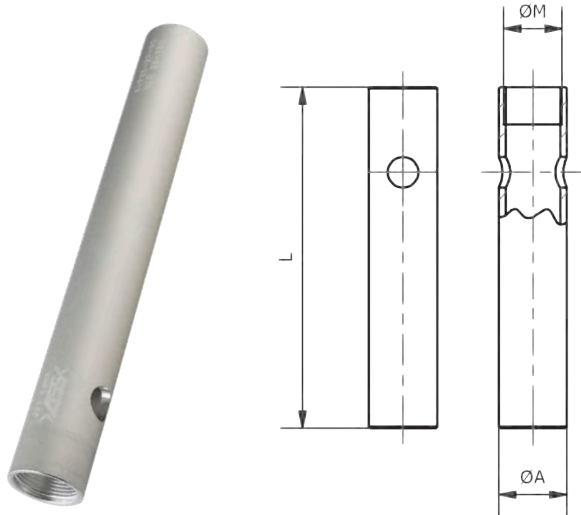
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

VLR / Extension Tubes



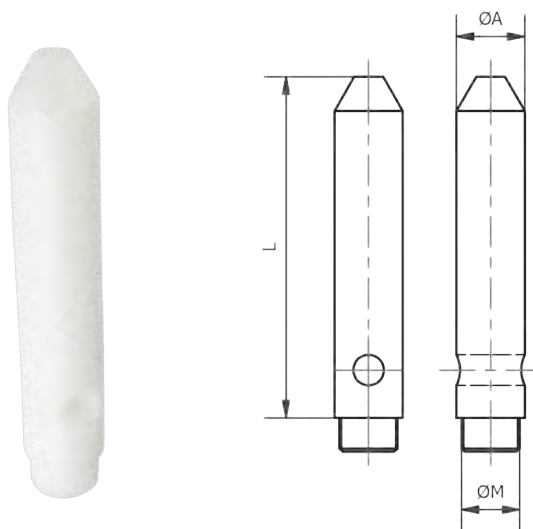
Remarks:

Application: for extending various components of the Robot Hand Kit (EOAT)

- Extension Tubes VLR are suitable for e.g.:
 - gripper fingers GRF, GFD, GRF P
 - adapters ADZ, AP-PGR, AD IGB AD-GRZ 20 U
 - ZTB centering pin
 - and many other components
- clamping diameter compatible with the Robot Hand Kit (EOAT) for flexible applications
- it is recommended to glue the VLR

Part No.	Description	A [mm]	M [mm]	L [mm]	Material	Weight [g]
1-735-03-00	VLR 10-30	10	M8x1	30	Aluminium	3
1-735-06-00	VLR 10-60	10	M8x1	60	Aluminium	7
1-735-09-00	VLR 10-90	10	M8x1	90	Aluminium	12
1-735-12-00	VLR 14-40	14	M12x1	40	Aluminium	7
1-735-15-00	VLR 14-80	14	M12x1	80	Aluminium	15
1-735-18-00	VLR 14-120	14	M12x1	120	Aluminium	23
1-735-21-00	VLR 20-50	20	M17x1	50	Aluminium	16
1-735-24-00	VLR 20-100	20	M17x1	100	Aluminium	34
1-735-27-00	VLR 20-150	20	M17x1	150	Aluminium	52
1-735-30-00	VLR 30-80	30	M27x1	80	Aluminium	47
1-735-33-00	VLR 30-140	30	M27x1	140	Aluminium	85
1-735-36-00	VLR 30-200	30	M27x1	200	Aluminium	124

ZTB / Centering Pin



Remarks:

Application: for example for simple centering tasks

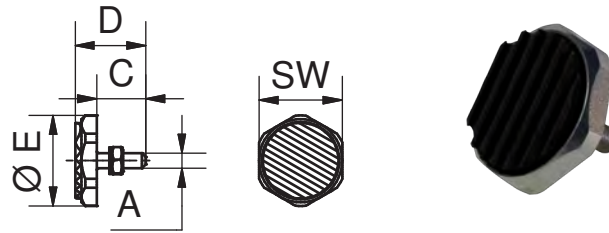
- can be tightened by the cross hole using a screwdriver
- thread G allows the ZTB to connect to a VLR extension tube

Part No.	Description	A [mm]	M [mm]	L [mm]	compatible with	Material	Weight [g]
1-790-20-00	ZTB 10-60	10	M8x1	60	VLR 10	POM	7
1-790-23-00	ZTB 14-80	14	M12x1	80	VLR 14	POM	17
1-790-29-00	ZTB 20-100	20	M17x1	100	VLR 20	POM	43
1-790-35-00	ZTB 30-100	30	M27x1	100	VLR 30	POM	100

DPL / Pressure Plate for Short Stroke Cylinder

Remarks:

- a ribbed rubber pad is glued on the Pressure Plates
- Exception: DPL 12-3 is completely made of steel and galvanized



Part No.	Description	A [mm]	SW [mm]	C [mm]	D [mm]	E [mm]	Weight [g]
1-790-03-00	DPL 12-3	M 3		9	12.3	12	3
1-790-06-00	DPL 25-3	M 3	22	7	11.7	25	8
1-790-09-00	DPL 25-4	M 4	22	13	18.5	25	12
1-790-12-00	DPL 25-5	M 5	22	13	18.5	25	13
1-790-16-00	DPL 25-6	M 6	22	13	18.5	25	15

DPL PU / Pressure Plate for Short Stroke Cylinder

Remarks:

- Pressure Plates are covered with polyurethane pads
- PU pads increase friction and also are dimensionally stable
- EPDM is heat resistant up to 150°C



Part No.	Description	A [mm]	SW [mm]	C [mm]	D [mm]	E [mm]	Weight [g]
1-790-08-00	DPL 25-3 PU	M 3	22	7	11.9	25	8
1-790-10-00	DPL 25-4 PU	M 4	22	13	18.7	25	12
1-790-15-00	DPL 25-5 PU	M 5	22	13	18.7	25	13
1-790-17-00	DPL 25-6 PU	M 6	22	13	18.7	25	15
1-790-07-00	DPL 25-3 EPDM	M3	22	7	11.9	25	9

DST / Pressure Plate

Remarks:

- EP Coating: low-marking, see category 990
- Flock: ideal for parts to be painted (visible face)
- PTFE: reduces friction and temperature resistant up to 260°C



Part No.	Description	Material	Coating	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Weight [g]
1-790-61-00	DST 14-25 ALU EP	Aluminium	EP	14	5	25	30	25	13
1-790-62-00	DST 14-25 ALU BF	Aluminium	Flock	14	5	25	30	25	13
1-790-64-00	DST 14-25 ABS EP	ABS	EP	14	5	25	30	25	5
1-790-65-00	DST 14-25 ABS BF	ABS	Flock	14	5	25	30	25	5
1-790-69-00	DST 14-25 PTFE	PTFE	-	14	5	25	30	25	10

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Quick Change Systems

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700
Special Elements

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Electrics and
Sensors

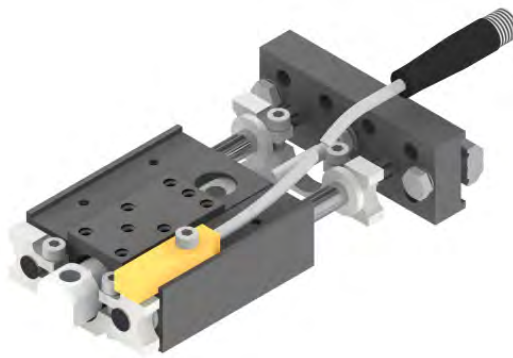
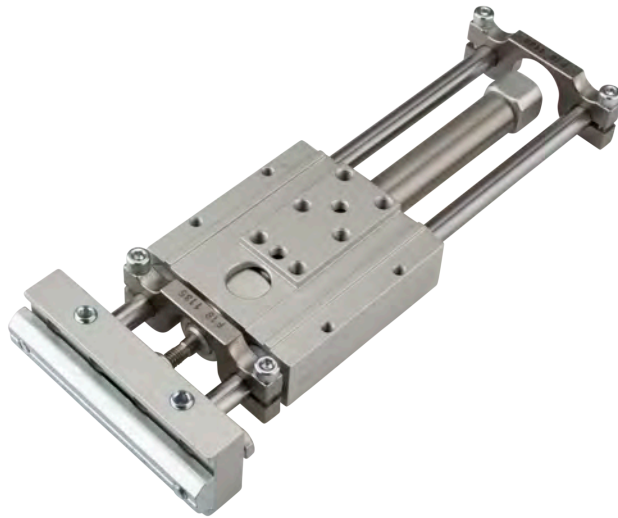
850
Pneumatics

990
Tubular System
Micro System

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PA-Forming
Others

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HEU 10 / Stroke Unit with Piston-Ø 10 mm



Remarks:

Application: for delivery of various components - numerous mounting accessories allow various applications such as positioning textiles or demoulding parts

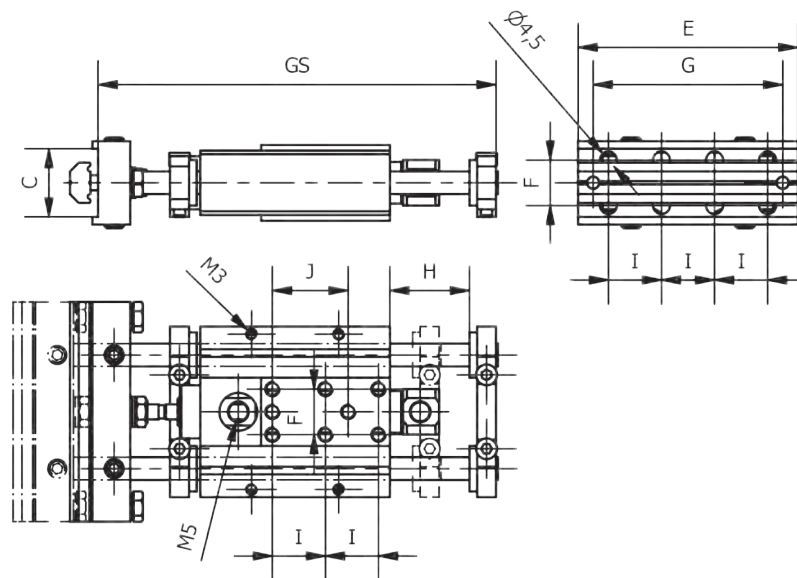
- pneumatic Stroke Unit with piston diameter 10 mm (double-acting)
- one cylinder and two guides
- Stroke Unit can absorb lateral forces and moments
- stroke infinitely adjustable
 - » maximum air pressure is 6 bar, use dry and filtered air only

Monitoring:

- monitoring of end positions (inductive) with IEK 8 or IES 8
 - » see small application example

Accessories e.g.:

- L Profile
- Mounting Bar DKS L 10-60
- Adapter A3 HEU 10



Part No.	Description	Piston Ø [mm]	GS [mm]	Stroke H [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	I [mm]	J [mm]	Weight [g]
1-752-60-00	HEU 10-15	10	98	0-15	18	22	58	12	50	14	20	229
1-752-61-00	HEU 10-60	10	143	0-60	18	22	58	12	50	14	20	264

HEU / Stroke Unit with Piston-Ø 16 mm

Remarks:

Application: for delivery of various components - numerous mounting accessories allow various applications such as positioning textiles or demoulding parts

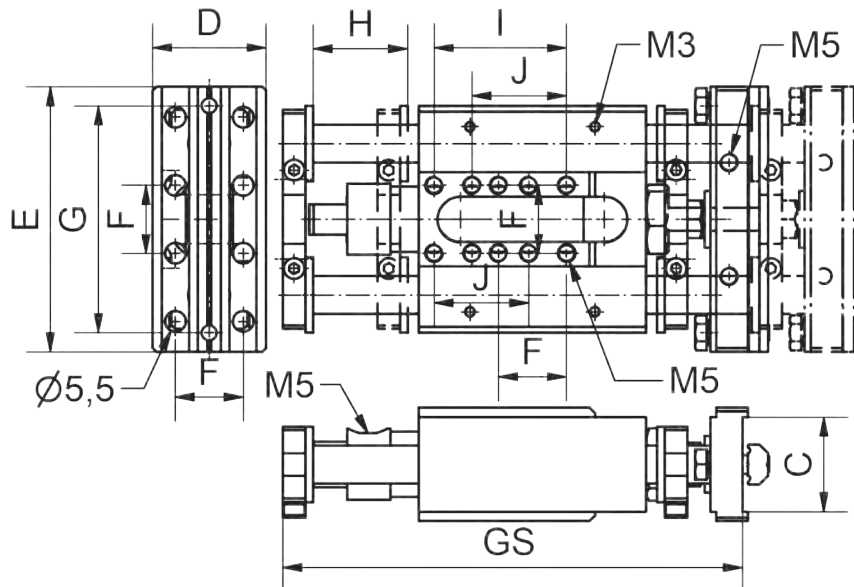
- pneumatic Stroke Unit with piston diameter 16 mm (double-acting)
- one cylinder and two guides
- Stroke Unit can absorb lateral forces and moments
- stroke infinitely adjustable
- » maximum air pressure is 6 bar, use dry and filtered air only

Monitoring:

- monitoring of end positions (inductive) with IEK 8 or IES 8
- » see small application example

Accessories e.g.:

- X-Profile
- GP-HEU 16 - adapter plate HEU
- KN-HEU 16 - adapter for 20 mm clamps
- AE-HEU 16 - adapter HEU
- AU-HEU 16 - adapter HEU
- AP-HEU 16 - adapter HEU



Part No.	Description	Piston Ø [mm]	GS [mm]	Stroke H [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	I [mm]	J [mm]	Weight [g]
1-752-01-00	HEU 16-25	16	122	0-25	25	30	70	18	60	35	25	485
1-752-00-00	HEU 16-50	16	146.5	0-50	25	30	70	18	60	35	25	526
1-752-02-00	HEU 16-80	16	176.5	0-80	25	30	70	18	60	35	25	576
1-752-03-00	HEU 16-100	16	196.5	0-100	25	30	70	18	60	35	25	608
1-752-06-00	HEU 16-125	16	221.5	0-125	25	30	70	18	60	35	25	651
1-752-09-00	HEU 16-160	16	256.5	0-160	25	30	70	18	60	35	25	710
1-752-12-00	HEU 16-200	16	296.5	0-200	25	30	70	18	60	35	25	775

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Quick Change Systems

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Profiles
Channel Nuts

100/115
Clamps

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Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

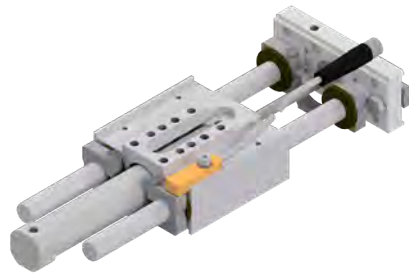
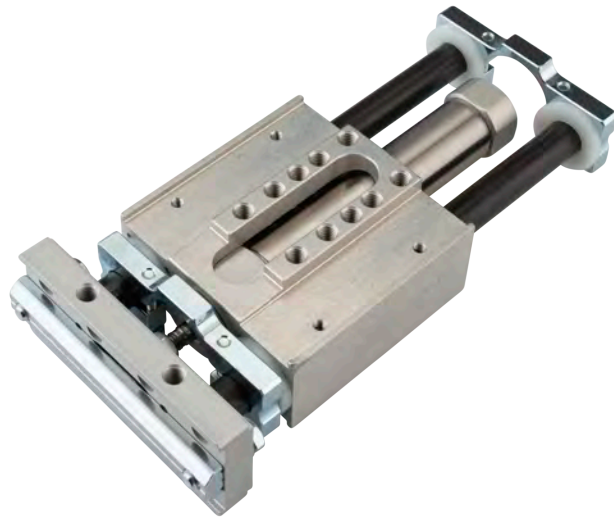
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

HEU L 16 / Stroke Unit Light Weight with Piston-Ø 16 mm



Remarks:

Application: for delivery of various components - numerous mounting accessories allow various applications such as positioning textiles or demoulding parts

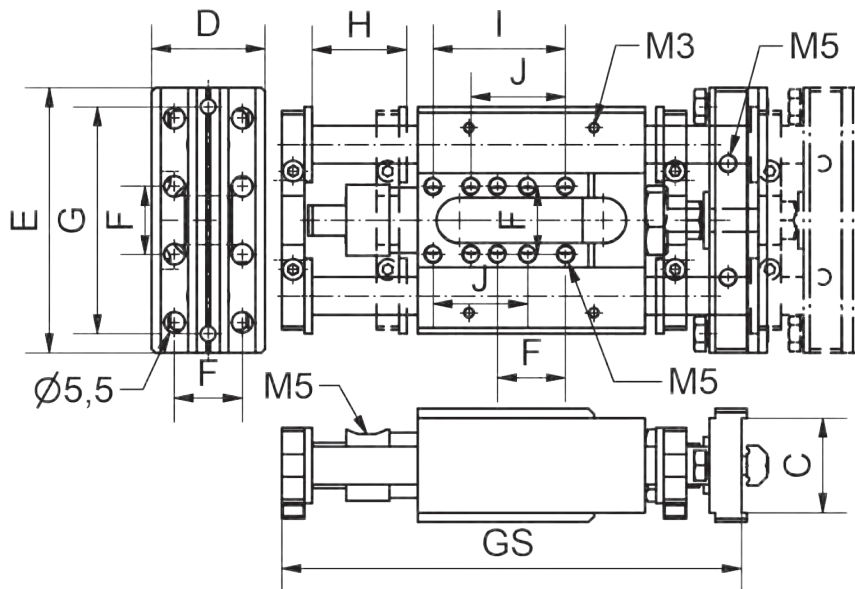
- weight reduction through Aluminium shafts and linear plastic bearings
- 30% lighter than standard stroke units (HEU) with steel shaft
- same dimensions as the HEU
- pneumatic Stroke Unit with piston diameter 16 mm (double-acting)
- one cylinder and two guides
- Stroke Unit can absorb lateral forces and moments
- stroke infinitely adjustable
- » maximum air pressure is 6 bar, use dry and filtered air only

Monitoring:

- monitoring of end positions (inductive) with IEK 8 or IES 8
- » see small application example

Accessories e.g.:

- X-Profile
- GP-HEU 16 - adapter plate HEU
- KN-HEU 16 - adapter for 20 mm clamps
- AE-HEU 16 - adapter HEU
- AU-HEU 16 - adapter HEU
- AP-HEU 16 - adapter HEU



Part No.	Description	Piston Ø [mm]	GS [mm]	Stroke H [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	I [mm]	J [mm]	Weight [g]
1-752-40-00	HEU L 16-25	16	122	0-25	25	30	70	18	60	35	25	368
1-752-43-00	HEU L 16-50	16	146.5	0-50	25	30	70	18	60	35	25	391
1-752-46-00	HEU L 16-80	16	176.5	0-80	25	30	70	18	60	35	25	414
1-752-49-00	HEU L 16-100	16	196.5	0-100	25	30	70	18	60	35	25	435

HEU 20 / Stroke Unit with Piston-Ø 20 mm

Remarks:

Application: for delivery of various components - numerous mounting accessories allow various applications such as positioning textiles or demoulding parts

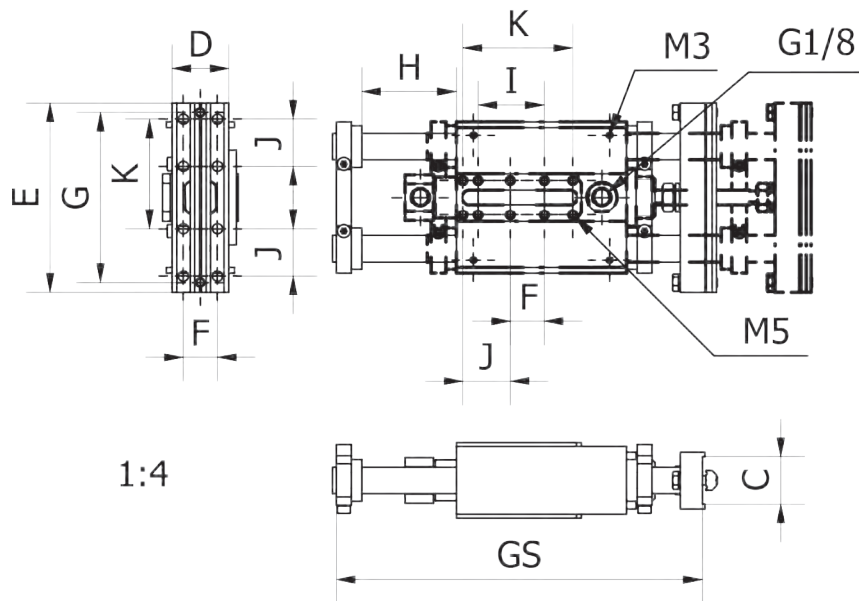
- pneumatic Stroke Unit with piston diameter 20 mm (double-acting)
- one cylinder and two guides
- Stroke Unit can absorb lateral forces and moments
- stroke infinitely adjustable
- » maximum air pressure is 6 bar, use dry and filtered air only

Monitoring:

- monitoring of end positions (inductive) with IEK 8 or IES 8
- » see small application example

Accessories e.g.:

- X-Profile
- GP-HEU 20 - adapter plate HEU
- KN-HEU 16 - adapter for clamps
- AE-HEU 16 - adapter HEU
- AU-HEU 16 - adapter HEU
- AP-HEU 16 - adapter HEU



Part No.	Description	Piston Ø [mm]	GS [mm]	Stroke H [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	I [mm]	J [mm]	K [mm]	Weight [g]
1-752-70-00	HEU 20-50	20	193,5	0-50	25	30	100	18	90	35	25	58	1284
1-752-71-00	HEU 20-100	20	243,5	0-100	25	30	100	18	90	35	25	58	1421

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Quick Change Systems

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Profiles
Channel Nuts

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Clamps

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Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

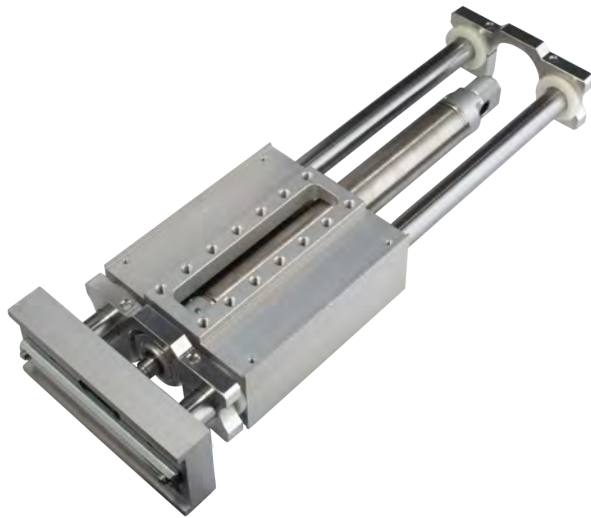
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

HEU 25 / Stroke Unit with Piston-Ø 25 mm



Remarks:

Application: for delivery of various components - numerous mounting accessories allow various applications such as positioning textiles or demoulding parts

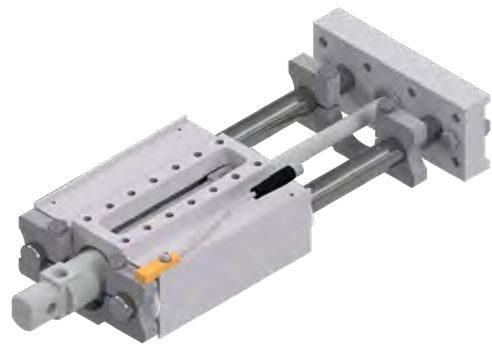
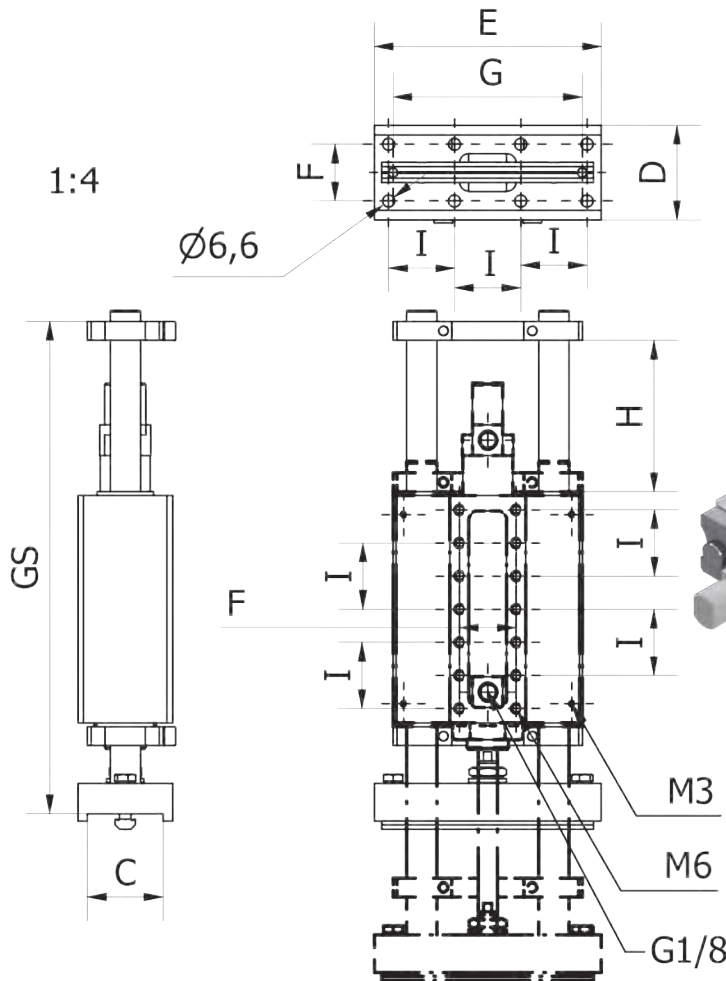
- pneumatic Stroke Unit with piston diameter 25 mm (double-acting)
- one cylinder and two guides
- Stroke Unit can absorb lateral forces and moments
- stroke infinitely adjustable
 - » maximum air pressure is 6 bar, use dry and filtered air only

Monitoring:

- monitoring of end positions (inductive) with IEK 8 or IES 8
- » see small application example

Accessories e.g.:

- JU-Profile
- GP-HEU 25 - adapter plate HEU
- AE-HEU 25
- AU-HEU 25
- AP-HEU 25



Part No.	Description	Piston Ø [mm]	GS [mm]	Stroke H [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	I [mm]	Weight [g]
1-752-20-00	HEU 25-80	25	260	0-80	40	50	120	30	100	35	2683
1-752-21-00	HEU 25-100	25	280	0-100	40	50	120	30	100	35	2767
1-752-22-00	HEU 25-160	25	340	0-160	40	50	120	30	100	35	3027
1-752-24-00	HEU 25-200	25	380	0-200	40	50	120	30	100	35	3195

GP HEU / Adapter Plate for Stroke Unit

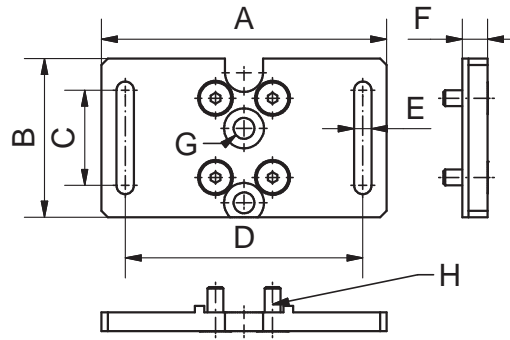
Remarks:

Application: this adapter plate connects stroke units HEU directly to profiles

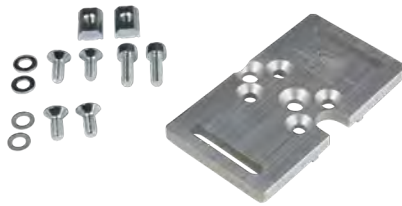
» see application examples for mounting example

Scope of delivery:

- incl. mounting material



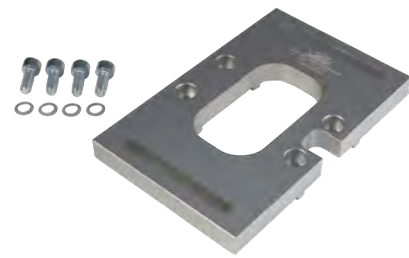
1-753-06-00



1-753-15-00



1-753-27-00



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Material	Weight [g]
1-753-06-00	GP HEU 16	90	50	30	75	5.5	8	6.6	M5x14	Aluminium	73
New 1-753-15-00	GP HEU 20	110	60	45	96	5,5	8	6,6	M5x12	Aluminium	117
1-753-27-00	GP HEU 25	140	90	60	120	6.6	15	6.6	M6x14	Aluminium	312

KN HEU / Mounting Adapter for Needle Gripper on Stroke Units

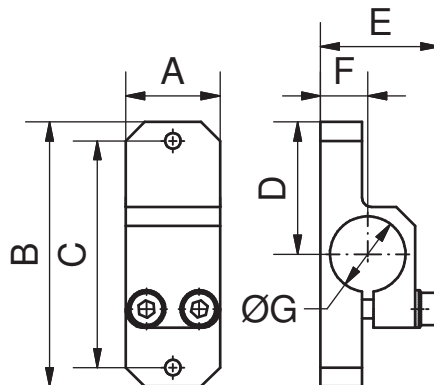
Remarks:

Application: e.g. for mounting other components such as needle grippers to the HEU stroke units

- can be mounted directly to the stroke unit
- » see application examples for mounting example

Scope of delivery:

- incl. mounting material



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Material	Weight [g]
1-753-08-00	KN HEU 16	25	70	60	35	31.6	12.5	20	Aluminium	67

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Quick Change Systems

050
Profiles
Channel Nuts

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Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

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Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

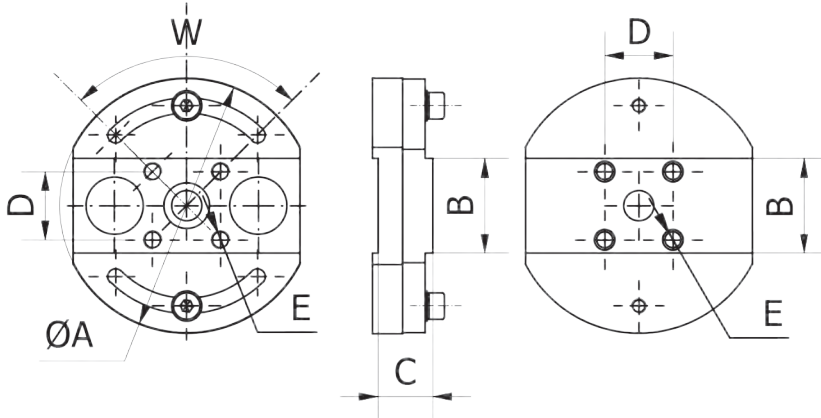
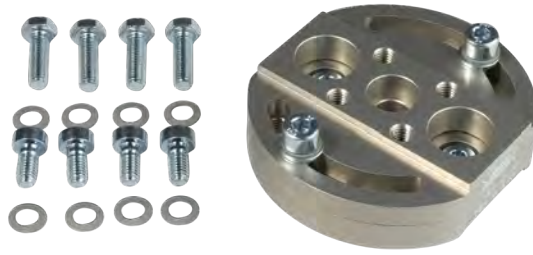
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

HEU 16 A XY / Adapter for XY-Stroke Unit



Remarks:

Application: e.g. for even more flexibility in pick-and-place robot hands (material injection)

- easy to assemble and space-saving design
- two HEU 16 can be adapted to an XY stroke unit
- angle of the X-stroke can be infinitely adjusted by an integrated centering +/- 45 °
- both stroke units are connected positively and form locking to the adapter
- » see application examples for mounting example

Scope of delivery:

- incl. mounting material

Artikelnr.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	W [°]	Weight [g]
1-753-12-00	HEU 16 A XY	67	25	14,5	18	M5	+/- 45	159

AE HEU / Mounting Adapter for HEU Stroke Unit



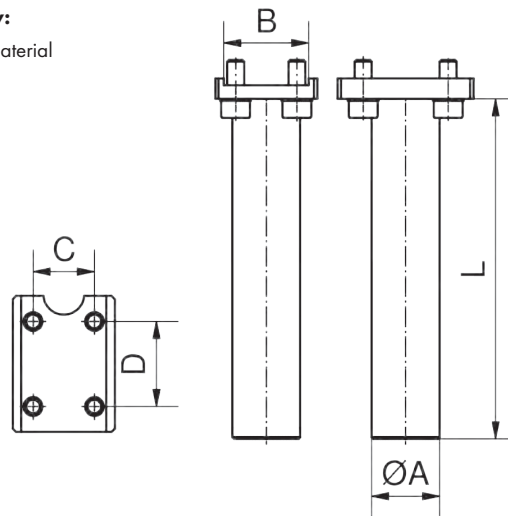
Remarks:

Application: e.g. for flexible mounting of stroke units

- adapter is mounted form-fitting on the body of the HEU and offers various adjustment options
- this adapter fits all HEU and HEU L stroke units
- » see application examples for mounting example

Scope of delivery:

- incl. mounting material



Artikelnr.	Description	A [mm]	B [mm]	C [mm]	D [mm]	L [mm]	Material	Weight [g]
1-753-03-00	AE 20 - 100 HEU 16	20	25	18	25	100	Aluminium	65
1-753-23-00	AE 30 - 80 HEU 25	30	40	30	35	80	Aluminium	133

AU HEU / Mounting Adapter for HEU Stroke Unit

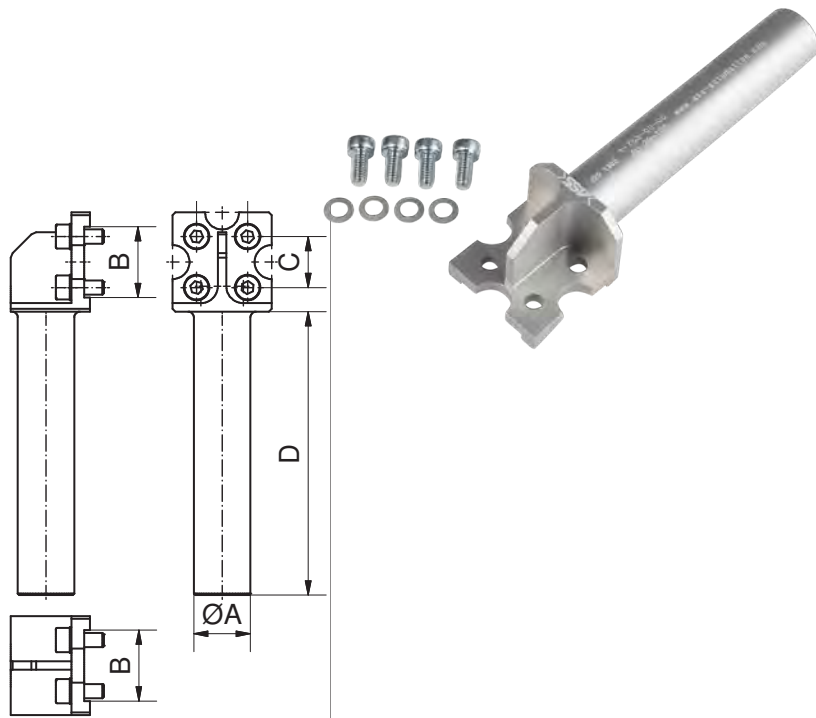
Remarks:

Application: e.g. for flexible mounting of HEU Stroke Units

- Adapter can be mounted lengthwise or crosswise (90 °) to the axis of the stroke unit with form locking
- clamping diameter allow several mounting options
- » see application examples for mounting example

Scope of delivery:

- incl. mounting material



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-753-00-00	AU 20 - 100 HEU 16	20	25	18	100	Aluminium	72
1-753-22-00	AU 30 - 80 HEU 25	30	40	30	80	Aluminium	324

AP HEU / Mounting Adapter for Stroke Units to a Profiles

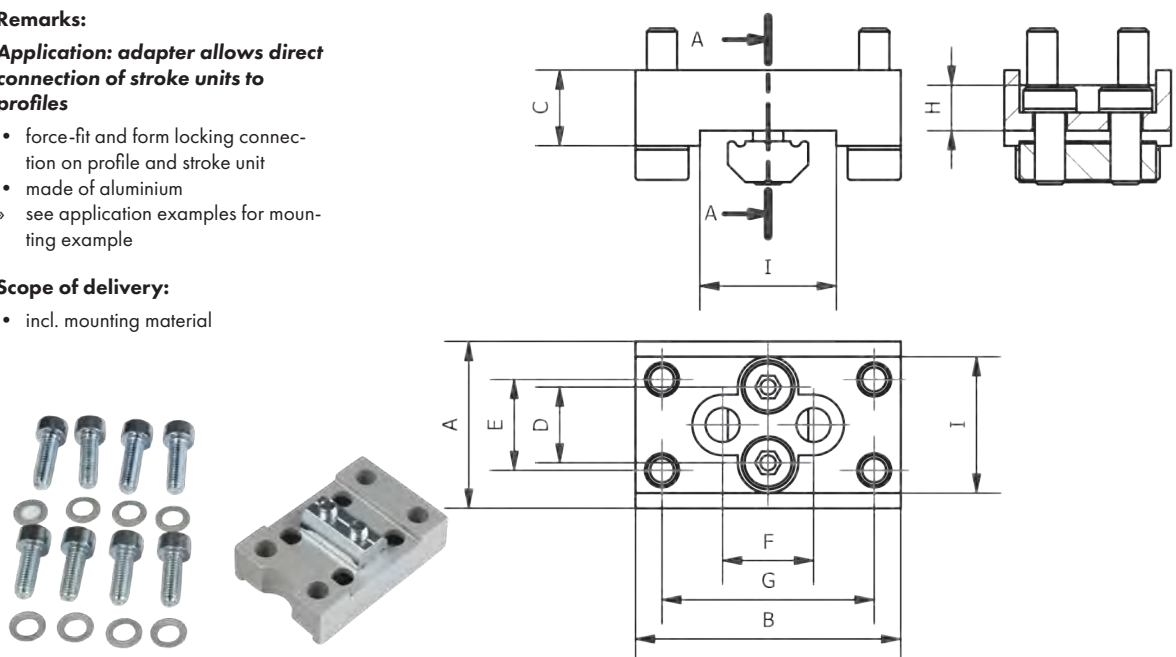
Remarks:

Application: adapter allows direct connection of stroke units to profiles

- force-fit and form locking connection on profile and stroke unit
- made of aluminium
- » see application examples for mounting example

Scope of delivery:

- incl. mounting material



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Dimension I form locking to profile	Weight [g]
1-753-40-00	AP HEU 10	22	35	10	10	12	10	28	6	18	L 18-10 or L 18-18	23
1-753-10-00	AP HEU 16	30	45	12	10	18	18	35	8	25	X 25-25 or X 50-25	64
1-753-20-00	AP HEU 25	30	120	20	-	30	32	105	11	25	X 25-25 or X 50-25	314

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Quick Change Systems

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Profiles
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120
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Connectors

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Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
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Vacuum Cups

300
Gripper Arms

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Gripper
Parallel Gripper

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Gripper Fingers

460
Needle Gripper

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Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

A3 HEU 10 / Mounting Adapter for HEU 10 with 3 Mounting Options



Remarks:

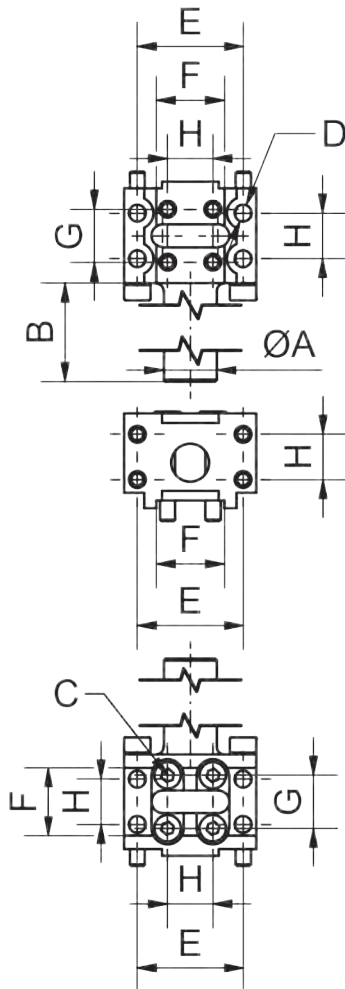
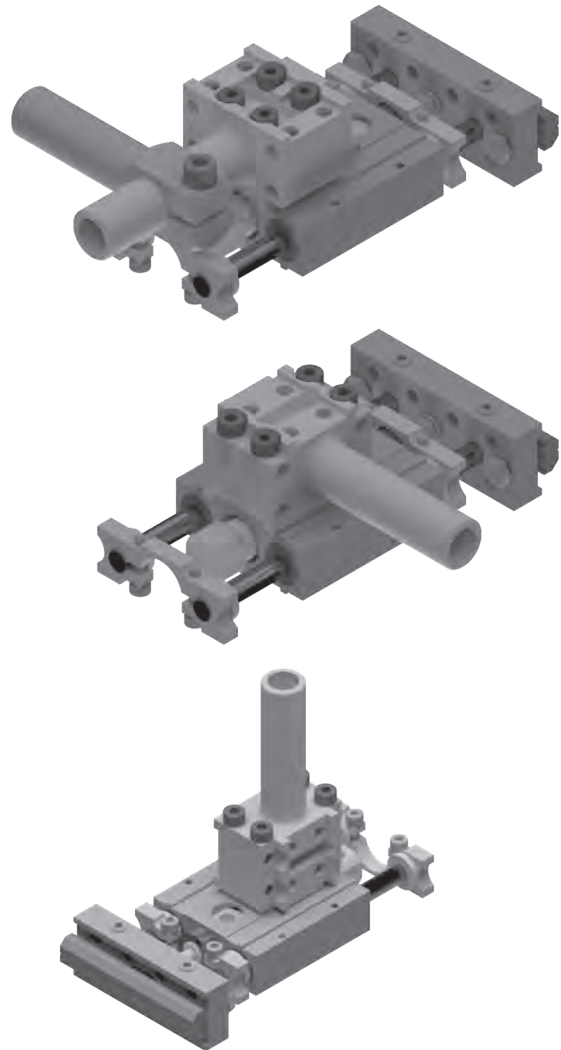
Application: for more flexible assembly options of stroke units HEU 10

- clamping can be placed in all three axes, see application examples
- clamping diameter allow several mounting options
- » see application examples for mounting example

Scope of delivery:

- incl. mounting material

Application examples



Part No.	Description	A Ø [mm]	B [mm]	C [mm]	D Ø [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Material	Weight [g]
1-753-41-00	A3 HEU 10	14	50	M4	4,5	28	18	14	12	Aluminium	74

ADU / Universal Mounting Bracket

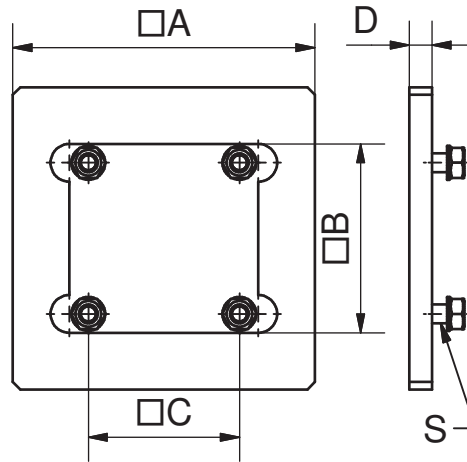
Remarks:

Application: active elements (e.g. stroke units, rotating units, grippers, etc.) can be mounted and integrated into the EOAT

- » individual hole pattern needed
- » see application examples

Accessories e.g.:

- Adapter AP ADU



Part No.	Description	A [mm]	B [mm]	C [mm]	S	D [mm]	Material	Weight [g]
1-437-00-00	ADU 60	60	40	30	M4x12	5	Aluminium	49
1-437-03-00	ADU 80	80	50	40	M5x14	6	Aluminium	106
1-437-06-00	ADU 120	120	60	50	M6x16	6	Aluminium	232

AP ADU / Flange for Adapter Plate ADU

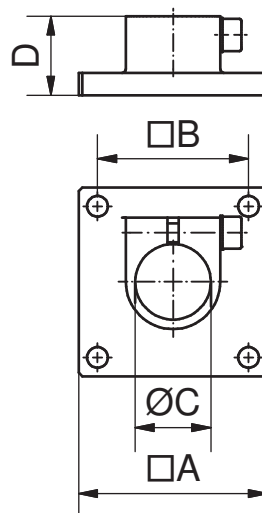
Remarks:

Application: with this flange plate e.g. the adapter plate ADU can be connected to an extension tube VLR

- » see application examples

Accessories e.g.:

- Adapter Plate ADU
- Extension Tube VLR



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-436-80-00	AP ADU 60	40	30	14	17	Aluminium	24
1-436-83-00	AP ADU 80	50	40	20	21	Aluminium	50
1-436-86-00	AP ADU 120	60	50	30	25	Aluminium	83

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Gripper
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

610
Nipper Blades

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Special Elements

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Electrics and
Sensors

850
Pneumatics

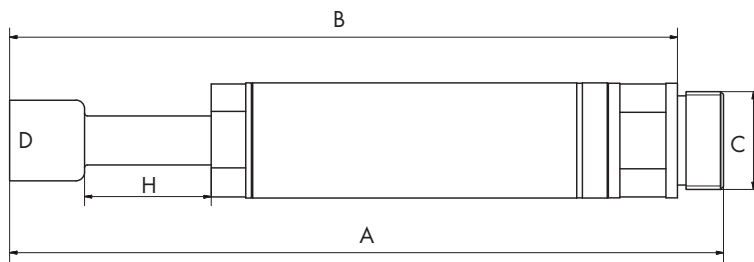
990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

VHE 20 / Vacuum-Stroke Unit

VHE 20 VG / Vacuum-Stroke Unit, non-rotating



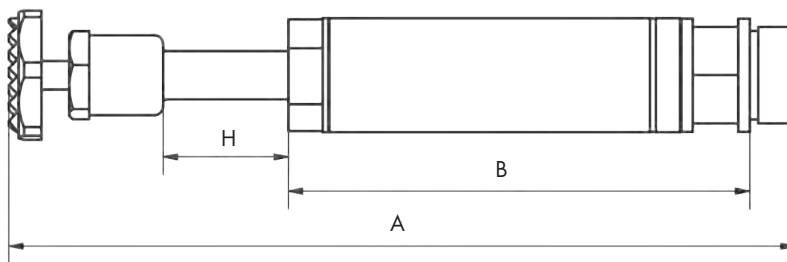
Part No.	Description	A [mm]	B [mm]	C [mm]	D Air Connection	Stroke H [mm]	Material	Weight [g]	
1-775-00-00	VHE 20	124	116	M17x1	1/8"	20	48		
1-775-00-00-1	VHE 20 VG	124	116	M17x1	1/8"	20	20	48	New

Remarks:

Application: e.g. for extracting of layers

- VG = non-rotating version
- two functions:
 1. suction
 2. back stroke
- just one vacuum circle needed
- clamp diameter 20mm
- spring-loaded slipping forward
- return stroke by pressure difference
- holding force is depending on vacuum and diameter of vacuum cup
- return stroke depends on the vacuum level
 - » maximum air pressure is 6 bar, use dry and filtered air only
 - » see application example

SF 20 / Stacking Guide



Part No.	Description	A [mm]	B [mm]	Stroke H [mm]	Material	Weight [g]
1-771-00-00	SF 20	138	81	20	20	68

Remarks:

Application: e.g. for „probing“ on tool (ejector side) or magazine

- increases the security of the robot hand
- for precise work
- easy to use
- clamping diameter 20mm

Accessories:

- Sensor MFS T2 (Part No. 1808-30-00)
- Sensor Bracket GRF SH 20 AL

SFP / Stacking Guide Specific

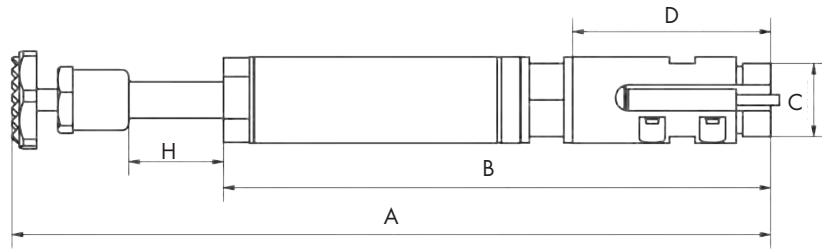
Bemerkungen:

Application: e.g. for monitored „probing“ on tool (ejector side) or magazine

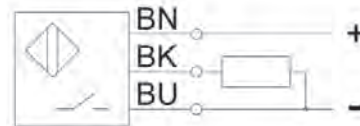
- inductive monitoring
- increases the safety of the robot hand
- sensor (3-pin, with 2m cable) included
- for precise work
- easy to use
- clamp diameter 20mm
- up to three positions can be monitored:
 - 1x via inductive sensor (included)
 - 2x via magnetic field sensor (see accessories)
- » endurance test: two million cycles completed without any error
- » see application example

Accessories:

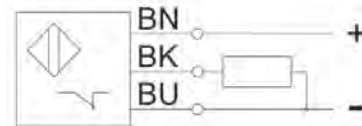
- Sensor MFS T2 (Part No. 1-808-30-00)
- Sensor Bracket GRF SH 20 AL



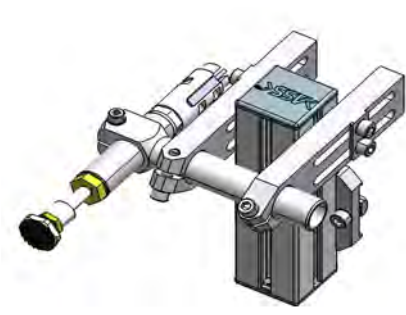
Normally opened:



Normally closed:



Application example: Stacking Guide with additional sensors



Application example: Robot hand with integrated Stacking Guide

Part No.	Description	A [mm]	B [mm]	C	D [mm]	Stroke H [mm]	Electrical contacts	Weight [g]
1-770-00-00	SFP 20	176	127	M17x1	46	20	normally opened	129
1-772-00-00	SFP 20 NC	176	127	M17x1	46	20	normally closed	129

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Quick Change Systems

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Profiles
Channel Nuts

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Clamps

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Profile
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Gripper Arms

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Parallel Gripper

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Needle Gripper

600
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700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

700 | Special Elements

ZTE V / Docking Finger, Pneumatic



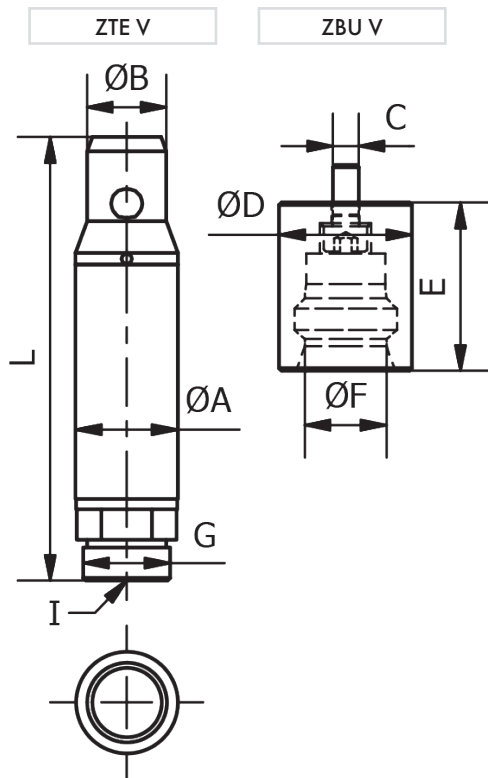
Remarks:

Application: e.g. for safe and positionally accurate centering of the EOAT in the tool

- for absolute accuracy
- high holding force
- powerful, pneumatic centering unit (ZTE V + ZBU V)
- compact design
- use H7-tolerance for inserting ZBU V into tool
- with a teachable sensor, the locked and unlocked position can be monitored
- single-acting
 - » maximum air pressure is 6 bar, use dry and filtered air only
 - » see application example

Accessories:

- Docking Connector ZBU V
- Sensor MFS T2 (Part No. 1-808-30-00)
- Sensor Bracket GRF SH AL



ZTE V / Docking Finger

Part No.	Description	A [mm]	B [mm]	L [mm]	I ["]	G [mm]	holding force at 6 bar [N]	Weight [g]
1-747-20-00	ZTE 20 V	20	15.5	91	G1/8	M17x1	750	81
1-747-30-00	ZTE 30 V	30	25.5	133.5	G1/8	M27x1	1500	314

ZBU V / Docking Connector

Part No.	Description	C [mm]	D [mm]	E [mm]	F [mm]	Weight [g]
1-747-21-00	ZBU 20 V	M5	26h7	33	16	91
1-747-31-00	ZBU 30 V	M6	40h7	43,5	26	267

App. example GGE-F + LES-6



Application example LRS-18



Application example SH



App. example SEO-10 + GEO-10



Application example KK



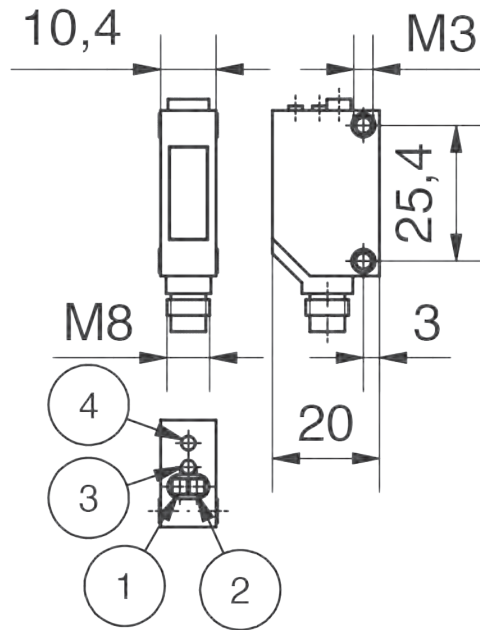
Application example RPLG



000	Quick Change Systems
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100/115	Clamps
120	Profile Connectors
190	Profile Accessories
200	Vacuum Cup Connectors
220	Vacuum Cups
224	Special Vacuum Cups
230	Manifold
290	Adapters for Vacuum Cups
300	Gripper Arms
400	Gripper Parallel Gripper
450	Gripper Fingers
460	Needle Gripper
600	Nipper Bodies
610	Nipper Blades
700	Special Elements
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850	Pneumatics
990	Tubular System Micro System
990	PA-Forming Others

800 | Electrics and Sensors

LES 6 / Photoelectric Sensor - Compact



Remarks:

- optical part present control
- with plug connection
- connection M8x1, 4-pin
- NPN version on demand

Drawing:

- 1 status (orange)
- 2 ready (green)
- 3 sensitivity adjustment
- 4 switch light/dark

Scope of Delivery:

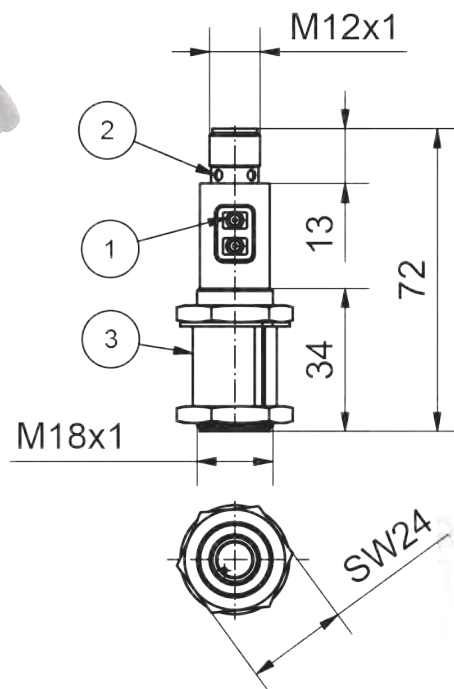
- without cable

Accessories e.g.:

- Gripper Arms for Sensor GGE 14 F
- connector with cable KG 8-4
- elbow connector KW 8-4

Part No.	Description	U [V] DC	I [mA] DC	Range [mm]	Output	Weight [g]
1-802-02-00-1	LES 6	10-36	200	20-1000	PNP	21

LRS 18 / Photoelectric Sensor - Cylindric



Remarks:

- optical part present control
- mounting diameter 20mm
- connection M12 4-pin

Drawing:

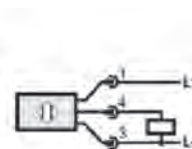
- 1 LED program button
- 2 LED 4x90 detection
- 3 sleeve (RMB sleeve Ø 20 mm Part No. 1-116-00-05)

Scope of Delivery:

- without cable

Accessories e.g.:

- connector with cable KG 18
- elbow connector KW 18



Part No.	Description	U [V] DC	I [mA] DC	Range [mm]	Output	Switch type	Weight [g]
1-802-04-00	LRS 18	10-24	200	2-800	PNP	Light or Dark	48

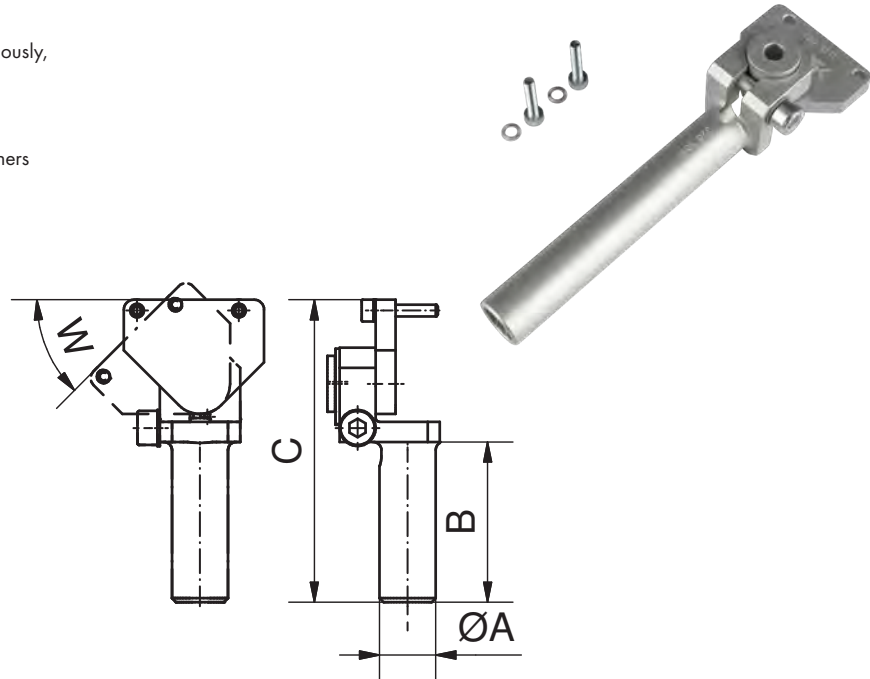
GGE 14...F / Gripper Arm for Photoelectric Sensor LES - 6

Remarks:

- sensor can be adjusted continuously, at any angle W, see table

Scope of Delivery:

- including screws and lock washers
- LES 6 not included

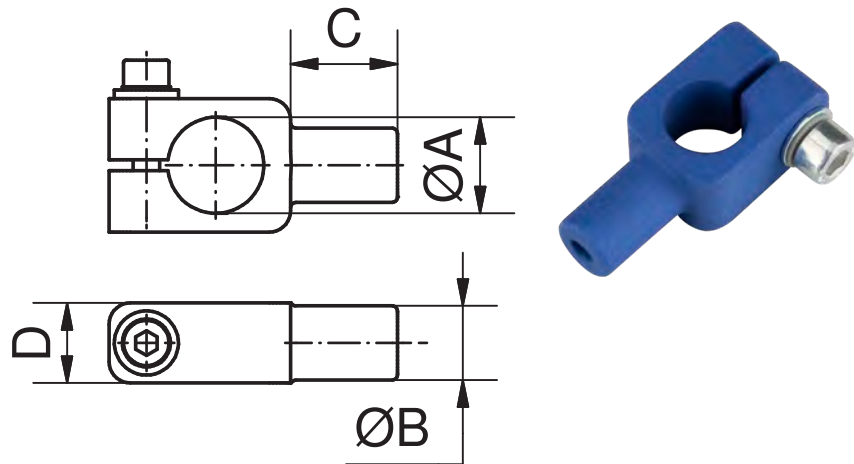


Part No.	Description	A [mm]	B [mm]	C [mm]	W [°]	Material	Weight [g]
1-315-60-00	GGE 14-40 F	14	40	75.5	+/- 45	Aluminium	38
1-315-63-00	GGE 14-80 F	14	80	117.5	+/- 45	Aluminium	46
1-315-66-00	GGE 14-120 F	14	120	155.5	+/- 45	Aluminium	54

SH / Sensor Bracket for round sensors

Remarks:

- made with of Polyamide
- » custom design on request



Part No.	Description	for sensor Ø [mm]	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-804-02-00	SH4-10	4	4	10	16	12	Polyamide	6
1-804-03-00	SH5-10	5	5	10	16	12	Polyamide	6
1-804-04-00	SH6.5-10	6.5	6.5	10	16	12	Polyamide	6
1-804-05-00	SH8-10	8	8	10	16	12	Polyamide	7
1-804-06-00	SH12-10	12	12	10	16	13	Polyamide	10
1-804-07-00	SH18-14	18	18	14	20	15	Polyamide	16
1-804-08-00	SH20-14	20	20	14	20	15	Polyamide	20
1-804-09-00	SH30-20	30	30	20	26	20	Polyamide	36

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Electrics and
Sensors

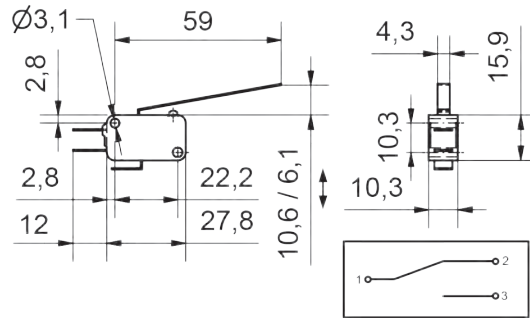
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

800 | Electrics and Sensors

SEO 5 / Mechanical Switch without Cable



Remarks:

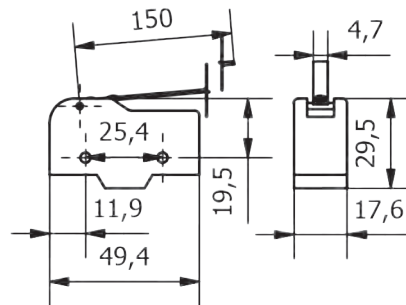
- changeover switch with switching flag
- 3 plug connections for cable lugs

Scope of Delivery:

- switch without cable

Part No.	Description	U [V] DC	I [A] DC	Weight [g]
1-806-02-00	SEO 5	24	1	7

SEO 10 / Mechanical Switch without Cable



Remarks:

- changeover switch with switching flag
- 3 screw connections

Scope of Delivery:

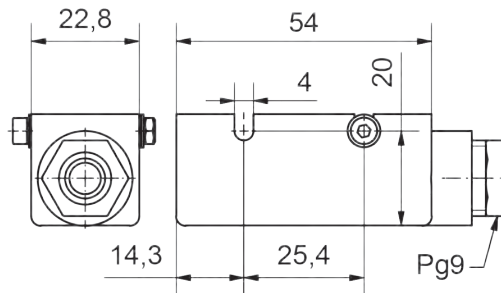
- switch without cable

Accessories e.g.:

- housing GEO 10

Part No.	Description	U [V] DC	I [A] DC	Weight [g]
1-806-04-00	SEO 10	24	1	40

GEO 10 / Housing for Mechanical Switch SEO 10



Remarks:

- SEO 10 can be mounted using the GEO 10 housing
- » see application examples

Scope of Delivery:

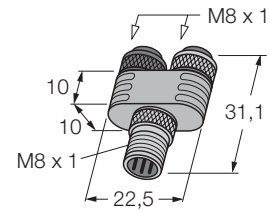
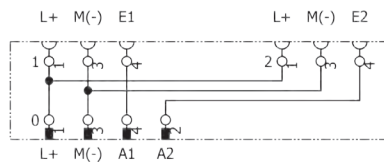
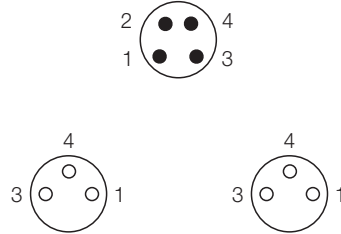
- including screws

Part No.	Description	Weight [g]
1-806-06-00	GEO 10	19

VTY / Splitter Y-Form

Remarks:

- 2 way splitter in Y-form, screw-on
- 1 x male, 4-pins, M8x1 (plug with external thread), straight
- 2 x female, 3-pins, M8x1 (union nut with internal thread), straight
- space saving
- up to 12 inputs in 1 EVM 8-6-4
- » see application example

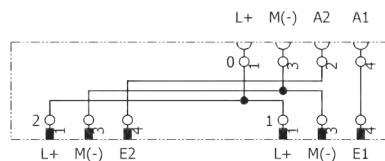
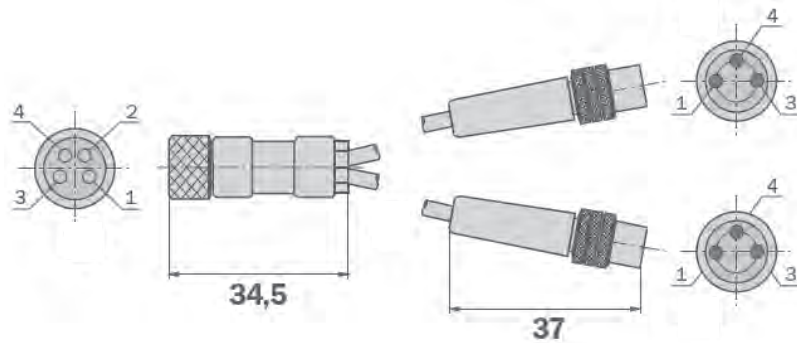


Part No.	Description	Wire	Thread	compatible with	Weight [g]
1-803-15-00	VTY-4-3-3	4-2x3	M8x1	EVM-8-6-4	10

ASY / Adapter Y-Form

Remarks:

- Y-adapter with one female socket connector (4 pins) and two male plug connectors (3 pins)
- 1 x M8 4-pin female, socket
- 2 x M8 3-pin male, plug
- the signals of a sensor (4-pin) with two output signals can be divided into two individual signals (3-pin), e.g. MFS T2 3.7



Part No.	Description	Cable length [mm]	Thread	Number of pins female	Number of pins male	Weight [g]
1-803-16-00	ASY-3-3-4	250	M8	1x4	2x3	30

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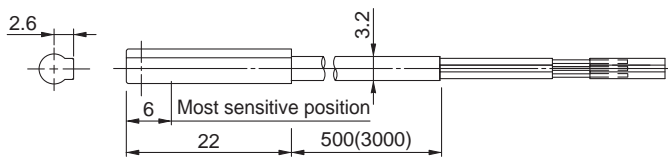
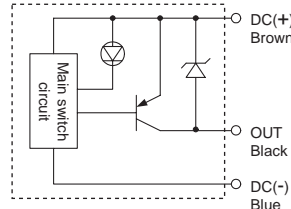
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

800 | Electrics and Sensors

ICS 8 / Sensor, C-Nut, Plug, M8



Remarks:

- 3-pin proximity switch for monitoring an end-position at short stroke cylinders
- suitable for C-nut
- connection M8 3-pin
- suitable for e.g.:
 - Short Stroke Cylinder KHZ
 - Special Cylinder SZD
 - Grippers with Stroke HUZ / HUP P
 - Sliding Units HUE

Accessories e.g.:

- connector KG 8-3

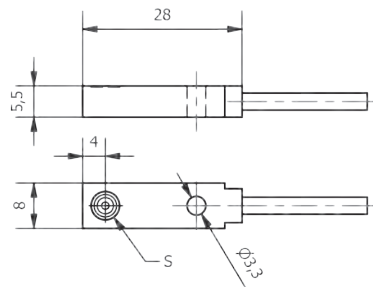
Part No.	Description	U [V] DC	function	Cable length [m]	Output	Weight [g]
1-808-36-00	ICS 8	4,5 - 28	Closer	0,5	PNP	11
1-808-37-00	ICS 8 NPN	4,5 - 28	Closer	0,5	NPN	11

IEK 8 / IES 8 / Sensor

IEK 8 (with cable)



IES 8 (with plug)



Remarks:

- inductive proximity switch
- sensor is used e.g. for standard monitoring on ASS grippers (GRZ 20-16, GRZ 32, GRZ 10-12) and stroke units (HEU / HEU-L)
- PNP and NPN switching available
- Initiator can be fixed with an M3 screw
- connection M8 3-pin

Drawing:

- S sensor

Scope of delivery:

- M3 hexagon socket screw not included

Part No.	Description	Cable length [mm]	Plug	Output	U [V] DC	I [mA] DC	Number of pins	Weight [g]
1-808-12-00	IEK 8 PNP	3000		PNP	10-30	150	3	32
1-808-14-00	IEK 8 NPN	3000		NPN	10-30	150	3	32
1-808-16-00	IES 8 PNP	160	x	PNP	10-30	150	3	6
1-808-18-00	IES 8 NPN	160	x	NPN	10-30	150	3	6

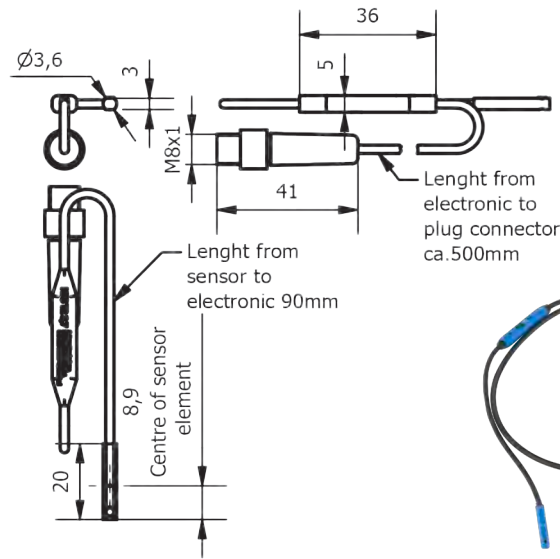
MFS T2 3,7 / Sensor with two Acting Points „Teachable“

Remarks:

- 2 teach points / acquisition of 2 end positions
- depending on magnetic field, stroke up to 50 mm ascertainable
- compact configuration
- easy clamping with stud screw
- for roundslot-cylinders, gripper fingers and other actuators

Accessories e.g.:

- Connector KG 8-4
- Sensor Bracket GRF SH
- Adapter ASY



Part No.	Description	Ambient temperature [°C]	Output	U [V] DC	I [mA] DC	Number of pins	Weight [g]
1-808-30-00	MFS T2 3,7	-20 up to +75	PNP	12-30	100	4	11

IRK 4 / Proximity Switch for Parallel Gripper PGR-P and PGR

Remarks:

- inductive proximity switch with a 0.8/1.0 mm range
- it senses the open/close positions of gripper jaws
- » IRK 4 suitable for:
 - PGR-P/PGR 32, 40, 50, 64
- » IRK 4.4 suitable for:
 - PGR 20, 25
- » see chapter 400



Part No.	Description	A [mm]	B [mm]	Z [mm]	U [V] DC	Switching function	Cable length [m]	Pins	Output	Weight [g]
1-808-02-00	IRK 4	4	25	0.8	24	Closer	2	3	PNP	30
1-808-03-00	IRK 4.4	4	15,2	1,0	24	Closer	2	3	PNP	21

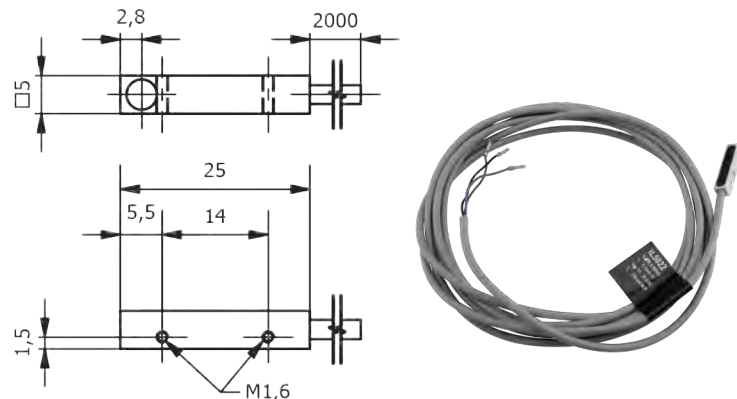
IE AL K / Proximity Switch

Remarks:

- inductive proximity switch with a 0.8mm range
- e.g. is used for monitoring tasks with parallel grippers (PGR-P) and Stacking Guide (SFP)
- particularly compact rectangular design for usage in confined spaces
- compact design
- good visibility of signals
- high switching frequency

Scope of Delivery:

- 1 x sensor
- 2 x slotted screw M1.6x10



Part No.	Description	I [mA] DC	U [V] DC	Switching function	Cable length [m]	Pins	Output	Weight [g]
1-808-38-00	IE AL K	100	10-30	Closer	2	3	PNP	28
1-808-39-00	IE AL K NPN	100	10-30	Closer	2	3	NPN	28

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KK / Junction Box

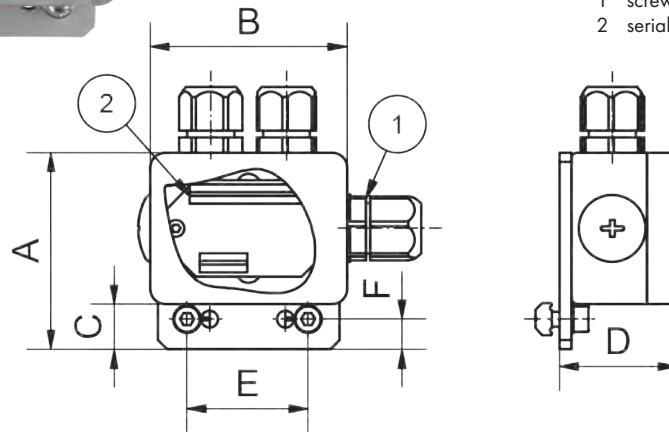


Remarks:

- this compact junction box is for connecting up to 4 sensors in a series or individually (observe manufacturer instructions of the sensor!)
- PNP switching, also suitable for NPN
- for NPN, simply swap the supply voltage (+/-)

Drawing:

- 1 screwed connections
- 2 serial terminals



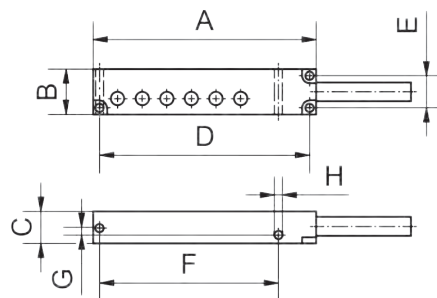
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Number of electric terminals	Number of insertion	Weight [g]
1-805-20-00	KK 1	65	65	16	38.9	40	10	9	3	140

EVM / Bus Module



Remarks:

- passive distributor
- 4, 6, 8, 10 or 12 inputs
- for connecting initiators or part controls
- flexible cable
- with M8 3-pin connections
- » Expection: EVM 8-6-4 M8 4-pin

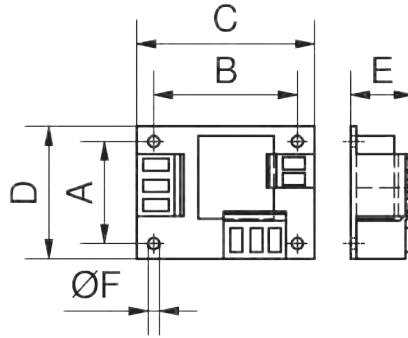


Part No.	Description	Number of inputs	3-pin	4-pin	Cable length [m]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Weight [g]
1-808-20-00	EVM 8-4	4	x		10	92	24	17	85	17	68.5	4.1	4.3	624
1-808-22-00	EVM 8-6	6	x		10	118	24	17	111	17	94.6	4.1	4.3	787
1-808-24-00	EVM 8-8	8	x		10	144	24	17	138	17	121.5	4.1	4.3	872
1-808-26-00	EVM 8-10	10	x		10	170	24	17	163	17	146.5	4.1	4.3	963
1-808-28-00	EVM 8-12	12	x		10	196	24	17	189	17	172	4.1	4.3	1031
1-808-42-00	EVM 8-6-4	6		x	5	118	24	17	110	17	93.5	4.1	4.3	776

RPL / Relay Board

Remarks:

- for summarizing signals
- voltage 22–24V
- PNP switching, also suitable for NPN
- for NPN, simply swap the supply voltage (+/-)
- 2 exits
- 1 output sum signal
- 1 output < 1



Part No.	Description	Number of inputs	Number of Outputs	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Weight [g]
1-805-02-00	RPL 2	2	2	27	38	47	37	20	3	22
1-805-04-00	RPL 4	4	2	38	48	47	57	20	3	39
1-805-06-00	RPL 6	6	2	38	69	47	80	20	3	57
1-805-08-00	RPL 8	8	2	38	90	47	100	20	3	74

RPLG / Relay Board with Enclosure

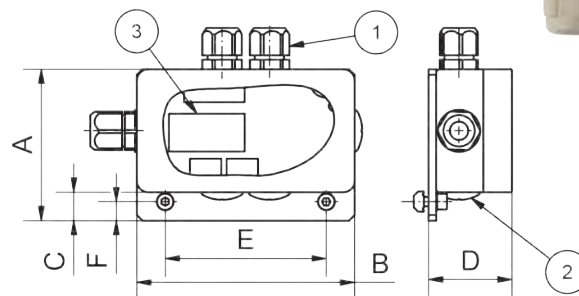
Remarks:

- for summarizing signals
- voltage 22–24V
- PNP switching, also suitable for NPN
- for NPN, simply swap the supply voltage (+/-)
- 2 exits
- 1 output sum signal
- 1 output < 1



Drawing:

- 1 cable insertion
- 2 blind plug
- 3 relays



Part No.	Description	Number of inputs	Number of Outputs	Number of cable entries	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Weight [g]
1-805-10-00	RPLG 2	2	2	3	65	65	15	40	25	10	148
1-805-12-00	RPLG 4	4	2	5	80	115	15	44	85	10	318
1-805-14-00	RPLG 6	6	2	7	80	115	15	44	85	10	346
1-805-16-00	RPLG 8	8	2	9	80	115	15	44	85	10	359

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LPL / Logical Board, LPL-G(-S) / Logical Board with Box

LPL 8



LPL-G 8



LPL-G-S 8



Remarks:

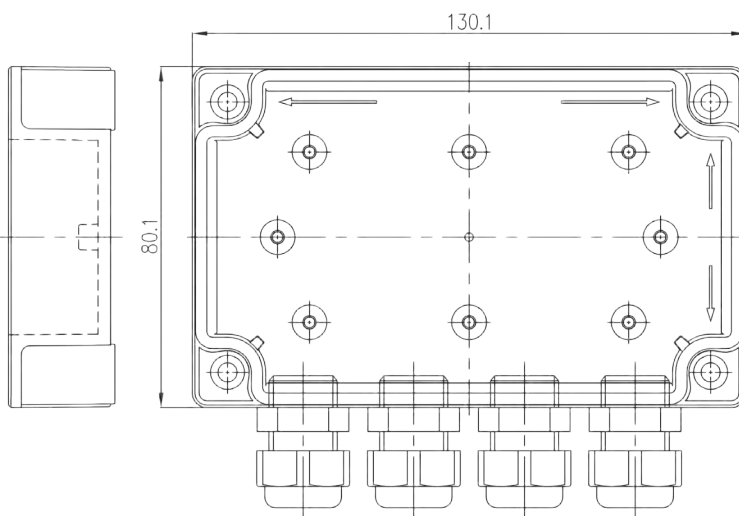
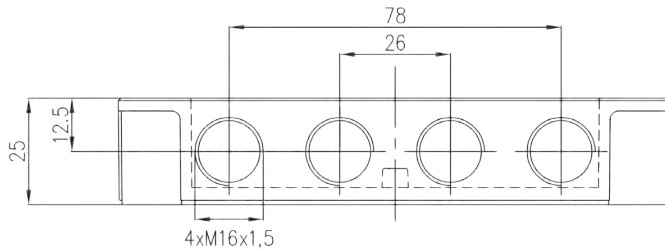
Application: Logical Board for summarizing input signals

- up to 8 inputs and 4 outputs can be assigned
 - inputs can be controlled with +24V driven (for initiators with PNP output) or 0V (for initiators with NPN output)
 - outputs can be used as PNP output (active + 24V, otherwise open) or NPN output (active 0V, otherwise open)
 - the state of the inputs and outputs as well as the normal state of the board are indicated by LEDs; this allows a permanent overview of the operation state of the system
 - by default, there are 4 functions programmed and selectable via DIP switch (other functions on request)
- » see following page

Accessories e.g.:

- connector KG 12-8
- plug 3-pin UCR-SEA-3GS-M8-S

4 x M16 cable glands mounted



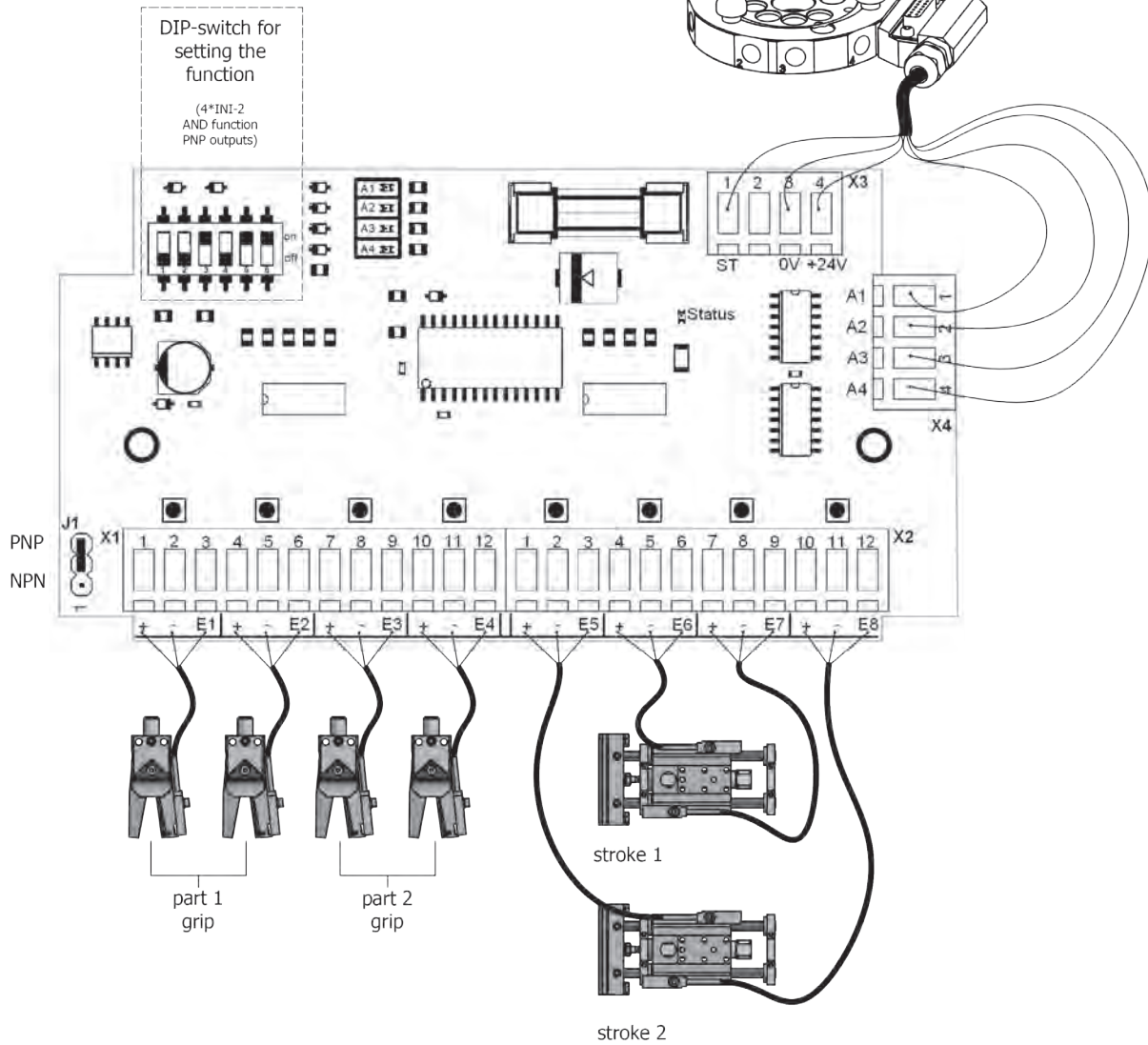
Part No.	Description	Type	Weight [g]
1-805-17-00	LPL 8	Logical Board	45
1-805-18-00	LPL-G 8	Logical Board with Box	378
1-805-19-00	LPL-G-S 8	Logical Board with Box and Plugs	392

Application example LPL

Output:

- A1**= PNP NO, part 1 gripped (E1, E2 series connection*)
- A2**= PNP NO, part 2 gripped (E3, E4 series connection*)
- A3**= PNP NO, stroke 1 and 2 extended (E5, E6 series connection*)
- A4**= PNP NO, stroke 1 and 2 retracted (E7, E8 series connection*)

* AND function



Programm 1x8

Input	Logical Function*	Output
1-8	AND	1 u. 2
1-8	OR	3 u. 4
1-8	NOR	3 u. 4

Programm 1x6 and 1x2

Input	Logical Function*	Output
1-6	AND	1
7-8	AND	2
1-6	OR/NOR	3
7-8		4

Programm 2x4

Input	Logical Function*	Output
1-4	AND	1
5-8	AND	2
1-4	OR/NOR	3
5-8		4

Programm 4x2

Input	Logical Function*	Output
1-2	AND/OR	1
3-4		2
5-6		3
7-8		4

* = selectable via dip switch

The inputs and outputs can be used as PNP or NPN by switching a dip-switch.

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Parallel Gripper

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Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

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Nipper Blades

700
Special Elements

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Electrics and
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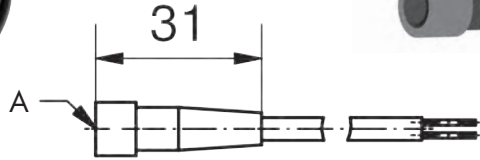
850
Pneumatics

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Tubular System
Micro System

990
PA-Forming
Others

800 | Electrics and Sensors

KG / Connector with Cable 3, 4 or 8 Pin Female

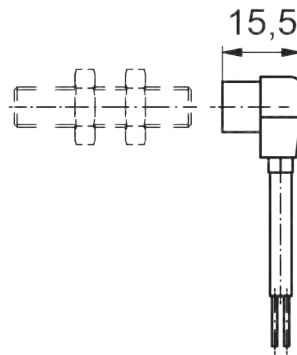


Remarks:

- connector for sensors, see table

Part No.	Description	Wire	Union Nut A	suitable for	Cable length [m]	Weight [g]
1-803-02-00	KG 8-4	4	M8x1	LES 6/MFS T	5	125
1-803-04-00	KG 8-3	3	M8x1	IES 8/ICS 8/IE AL K	5	107
1-803-05-00	KG 12-8	8	M12x1	LPL-G-S-8	5	230
1-808-06-00	KG 18-4	4	M12x1	LRS 18	5	154

KW 18 / Elbow Connector 3 or 4 pin Female with Cable

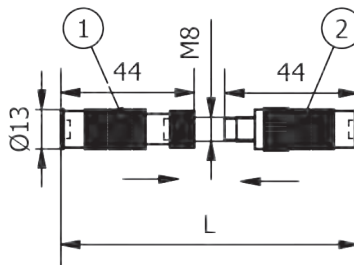


Remarks:

- connector for sensors, see table

Part No.	Description	Wire	Union Nut	suitable for	Cable length [m]	Weight [g]
1-803-06-00	KW 8-3	3	M8x1	IES 8/ICS 8/IE AL K	5	107
1-803-07-00	KW 8-4	4	M8x1	MFS T/LES 6	5	150
1-808-08-00	KW 18-4	4	M12x1	LRS 18	5	158

VRS 8 / Plug and Socket Connection 3 and 4 Pin



Remarks:

- allows an easy exchange of sensors
- table: L = installed length

Drawing:

- 1 socket
- 2 plug



Part No.	Description	U [V] DC	I [A] DC	Cable diameter [mm ²]	L [mm]	Weight [g]
1-808-10-00	VRS 8-3	24	1	0.14 - 1.0	82	16
1-808-11-00	VRS 8-4	24	1	0.14 - 1.0	82	16

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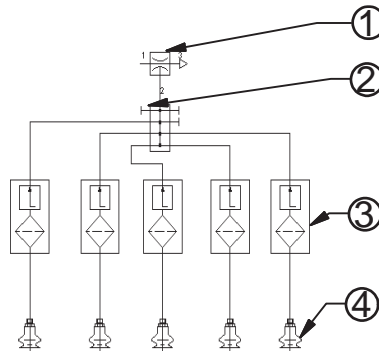
STV / Smart Flow Valve

Remarks:

- when several vacuum cups are used, but not all are used, this flow valve is used
- closes the line of the inactive vacuum suction cup

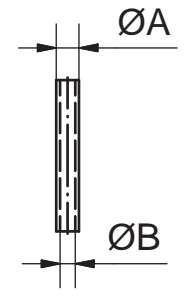
Drawing:

- 1 vacuum generator
- 2 manifold
- 3 smart flow valve
- 4 vacuum cups



Part No.	Description	A ["]	B ["]	Weight [g]
1-852-20-00	STV 1/8	G1/8	G1/8	9
1-852-22-00	STV 1/4	G1/4	G1/4	15

PSS / Pneumatic Hose



Part No.	Description	Colour	A [mm]	B [mm]	Hose Ø [mm]	Length [m]
1-852-01-00	PSS 3-0,5	silver	3	2	3/0,5	10
1-852-02-00	PSS 4-3	silver	4	2.6	4/3	20
1-852-02-01	PSS 4-3 ro	red	4	2.6	4/3	10
1-852-02-02	PSS 4-3 gr	green	4	2.6	4/3	10
1-852-02-03	PSS 4-3 ge	yellow	4	2.6	4/3	10
1-852-02-04	PSS 4-3 bl	blue	4	2.6	4/3	10
1-852-02-06	PSS 4-3 sw	black	4	2,6	4/3	10
1-852-04-01	PSS 6-4 ro	red	6	4	6/4	10
1-852-04-00	PSS 6-4	silver	6	4	6/4	25
1-852-04-02	PSS 6-4 gr	green	6	4	6/4	10
1-852-04-03	PSS 6-4 ge	yellow	6	4	6/4	10
1-852-04-04	PSS 6-4 bl	blue	6	4	6/4	10
1-852-04-06	PSS 6-4 sw	black	6	4	6/4	10
1-852-06-00	PSS 8-6	silver	8	6	8/6	20

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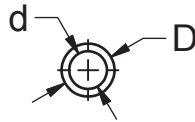
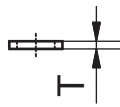
850
Pneumatics

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PDA / Seal Ring



Remarks:

- sold in 100 pcs bags

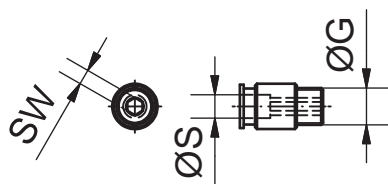
Part No.	Description	D [mm]	d [mm]	T [mm]	for thread [mm] ["]	Items per unit [pcs]	Material
1-857-10-00	PDA M5	7.5	5	1	M5	100	Aluminum
1-857-12-00	PDA 1/8	14	10	2	1/8	100	Aluminum
1-857-14-00	PDA 1/4	18	13.3	2	1/4	100	Aluminum

STA / Straight Quick Hose Connector



Remarks:

- self-sealing screw thread
- metric size threads have a rubber seal ring
- sold in bags of 10 pcs

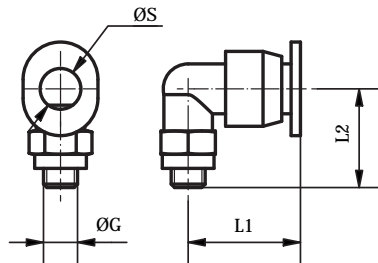


Part No.	Description	compatible with hose	G [mm] ["]	Ø S [mm]	Weight [g]	Items per unit [pcs]
1-852-30-00	STA M3-3-0,5	PSS 3-0,5	M3	3	2	10
1-852-32-00	STA M3 4-3	PSS 4-3	M3	4	2	10
1-852-34-00	STA M5 4-3	PSS 4-3	M5	4	3	10
1-852-36-00	STA M5 6-4	PSS 6-4	M5	6	4	10
1-852-38-00	STA 1/8 4-3	PSS 4-3	R 1/8	4	6	10
1-852-40-00	STA 1/8 6-4	PSS 6-4	R 1/8	6	5	10
1-852-42-00	STA 1/8 8-6	PSS 8-6	R 1/8	8	8	10

VSL, PSL / Quick Hose Connector L-90°

Remarks:

- quick hose connector can rotate 360° when installed
- G threads are self sealing
- connectors with metric thread have a rubber seal ring
- sold in bags of 10 pcs



VSL / Quick Hose Connector L-90°

Part No.	Description	G [mm] ["]	S [mm]	L1 [mm]	L2 [mm]	compatible with hose	Weight [g]	Items per unit [pcs]
1-852-44-00	VSL M3 4-3	M3	4	15.7	14	4/3	3	10
1-852-46-00	VSL M5 4-3	M5	4	15.7	13.5	4/3	3	10
1-852-48-00	VSL M5 6-4	M5	6	16.3	14.5	6/4	4	10
1-852-50-00	VSL 1/8 4-3	R1/8	4	16	16	4/3	10	10
1-852-52-00	VSL 1/8 6-4	R1/8	6	16.5	17	6/4	11	10
1-852-54-00	VSL 1/8 8-6	R1/8	8	22.7	24	8/6	14	10
1-852-56-00	VSL 1/4 6-4	R1/4	6	21.8	28	6/4	19	10
1-852-58-00	VSL 1/4 8-6	R1/4	8	23.7	28	8/6	20	10

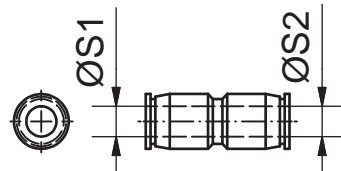
PSL / Quick Hose Connector L-90°

Part No.	Description	G [mm] ["]	S [mm]	L1 [mm]	L2 [mm]	compatible with hose	Weight [g]	Items per unit [pcs]
1-852-60-00	PSL 1/8 4-3	R1/8	4	15.5	28.5	4/3	11	10
1-852-62-00	PSL 1/8 6-4	R1/8	6	16.5	29.5	6/4	13	10
1-852-64-00	PSL 1/8 8-6	R1/8	8	22.7	40.5	8/6	16	10
1-852-66-00	PSL 1/4 6-4	R1/4	6	21.8	42.5	6/4	20	10
1-852-68-00	PSL 1/4 8-6	R1/4	8	23.7	44.5	8/6	22	10

STG / Straight Quick Connector

Remarks:

- push-pull-principle
- sold in bags of 10 pcs



Part No.	Description	Ø S1 for hose [mm]	Ø S2 for hose [mm]	Weight [g]	Items per unit [pcs]
1-851-01-01	STG 4	4/3	4/3	2	10
1-851-01-02	STG 6	6/4	6/4	3	10
1-851-01-03	STG 8	8/6	8/6	9	10
1-851-01-04	STG 6-4	6/4	4/3	3	10
1-851-01-05	STG 8-6	8/6	6/4	8	10

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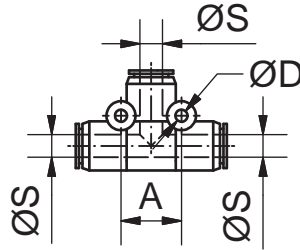
850
Pneumatics

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Tubular System
Micro System

990
PA-Forming
Others

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STT / T Hose Quick Connector

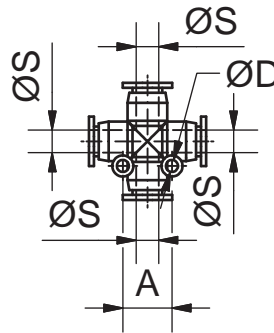
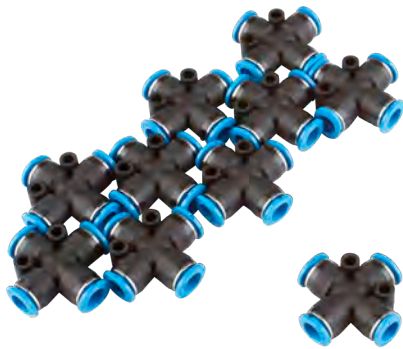


Remarks:

- push-pull-principle
- sold in bags of 10 pcs

Part No.	Description	ØS for hose [mm]	A [mm]	D [mm]	Material	Weight [g]	Items per unit [pcs]
1-851-02-01	STT 4	4/3	11	3.2	CuZn/Kunst.	3	10
1-851-02-02	STT 6	6/4	13	3.2	CuZn/Kunst.	5	10
1-851-02-03	STT 8	8/6	18	3.2	CuZn/Kunst.	15	10

STX / X Hose Quick Connector

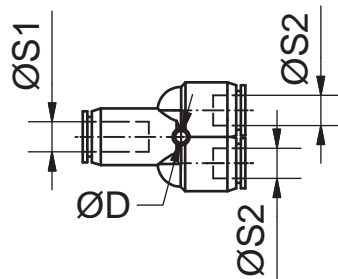


Remarks:

- push-pull-principle
- sold in bags of 10 pcs

Part No.	Description	ØS for hose [mm]	A [mm]	Ø D [mm]	Weight [g]	Items per unit [pcs]
1-851-03-01	STX 4	4/3	11	3.2	4	10
1-851-03-02	STX 6	6/4	13	3.2	7	10
1-851-03-03	STX 8	8/6	18	3.2	20	10

STY / Y Hose Connector



Remarks:

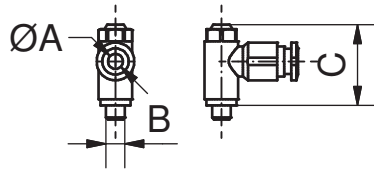
- push-pull-principle
- sold in bags of 10 pcs

Part No.	Description	Ø S1 for Hose	Ø S2 for Hose	Ø D [mm]	Weight [g]	Items per unit [pcs]
1-851-04-01	STY 4	4/3	4/3	3.2	3	10
1-851-04-02	STY 6	6/4	6/4	3.2	5	10
1-851-04-03	STY 8	8/6	8/6	3.2	15	10
1-851-04-04	STY 6-4	6/4	4/3	3.2	10	10
1-851-04-05	STY 8-6	8/6	6/4	3.2	12	10

DRV / One Way Restrictor

Remarks:

- push-pull-principle
- cross-category can be adjusted by a screwdriver
- seals are included
- accessory for:
HEU, HEU-L, KHZ, SZD, HUZ

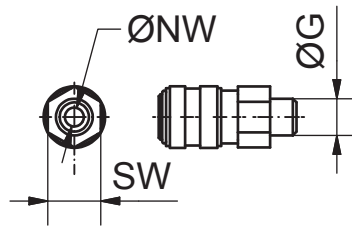


Part No.	Description	A [mm]	B [mm] ["]	C [mm]	Weight [g]
1-851-05-00	DRV-M5-4-3	4	M5	21,5	11
1-851-05-01	DRV-M5-6-4	6	M5	21,5	13
1-851-05-02	DRV-1/8-6-4	6	1/8	31,5	19

PSK / Quick Release Coupling

Remarks:

- accessories for quick change system SWM (see category 000)
- sold in bags of 10 pcs
- seals are included

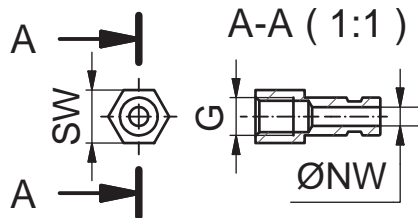


Part No.	Description	Ø G [mm] ["]	SW [mm]	Ø NW [mm]	compatible with	Accessory for SWM	Material	Weight [g]	Items per unit [pcs]
1-862-02-00	PSK M5	M5	9	2.5	STN M5	0+1	CuZn	8	10
1-862-04-00	PSK 1/8	G 1/8	14	5	STN 1/8	2	CuZn	26	10
1-862-06-00	PSK 1/4	G 1/4	22	7	STN 1/4	3	CuZn	72	10

STN / Plug-In Nipple

Remarks:

- the STN is an accessory to the SWM quick change system
- it fits into the PSK quick release coupling (see category 000)
- the threads must be sealed with teflon tape or liquid thread seal



Part No.	Description	ØG [mm] ["]	NW [mm]	SW [mm]	compatible with	Accessory for SWM	Material	Weight [g]	Items per unit [pcs]
1-862-10-00	STN M5	M 5	2.5	7	PSK M5	0+1	CuZn	3	10
1-862-12-00	STN 1/8	G 1/8	5	14	PSK 1/8	2	CuZn	16	10
1-862-14-00	STN 1/4	G 1/4	7	17	PSK 1/4	3	CuZn	24	10

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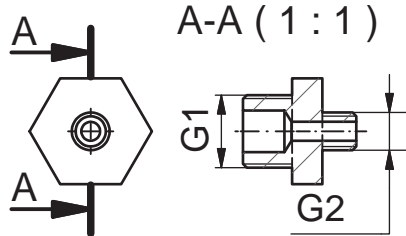
850
Pneumatics

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PDN / Double Union with Hex

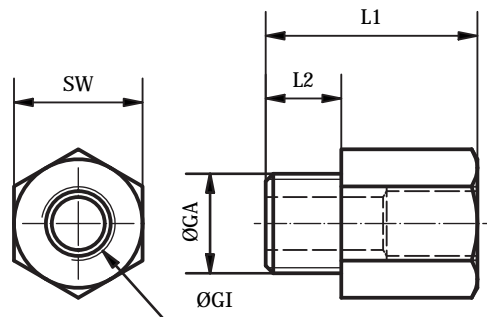


Remarks:

- use of teflon tape or liquid seal is recommended
- sold in bags of 10 pcs

Part No.	Description	G1 [mm] ["]	G2 [mm] ["]	Weight [g]	Items per unit [pcs]	Material
1-858-08-00	PDN M5-M5	M5	M5	2	10	CuZn
1-858-10-00	PDN 1/8-1/8	G1/8	G1/8	11	10	CuZn
1-858-12-00	PDN 1/4-1/4	G1/4	G1/4	20	10	CuZn
1-858-14-00	PDN 1/8-M5	G1/8	M5	8	10	CuZn
1-858-16-00	PDN 1/4-1/8	G1/4	G1/8	19	10	CuZn
1-858-18-00	PDN 3/8-1/4	G3/8	G1/4	29	10	CuZn

RNL / Reducing Union Long



Remarks:

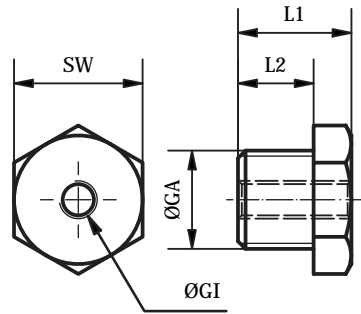
- sold in bags of 10 pcs
- threads must be sealed

Part No.	Description	ØGI ["]	ØGA ["]	L1 [mm]	L2 [mm]	SW [mm]	Items per unit [pcs]	Material	Weight [g]
1-858-20-00	RNL 1/8-1/8	G1/8	G1/8	23	8	14	10	CuZn	17
1-858-22-00	RNL 1/8-1/4	G1/8	G1/4	28	10	17	10	CuZn	35
1-858-24-00	RNL 1/4-1/4	G1/4	G1/4	28	10	17	10	CuZn	28
1-858-26-00	RNL 1/4-1/8	G1/4	G1/8	25.5	7.5	17	10	CuZn	23

RNK / Reducing Union Short

Remarks:

- sold in bags of 10 pcs
- threads must be sealed

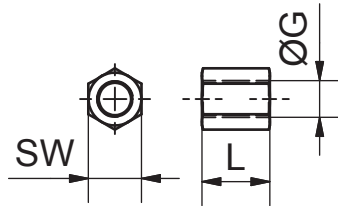


Part No.	Description	ØGI ["] [mm]	ØGA ["] [mm]	L1 [mm]	L2 [mm]	SW [mm]	Items per unit [pcs]	Material	Weight [g]
1-858-28-00	RNK M3-M5	M3	M5	7.5	4.5	8	10	CuZn	2
1-858-30-00	RNK M5-1/8	M5	G1/8	10	6,5	14	10	CuZn	7
1-858-32-00	RNK M5-1/4	M5	G1/4	15	10	17	10	CuZn	16
1-858-34-00	RNK 1/8-1/4	G1/8	G1/4	14	10	17	10	CuZn	10

PMM / Thread Coupling

Remarks:

- sold in bags of 10 pcs
- use of thread seal is recommended
- threads must be sealed

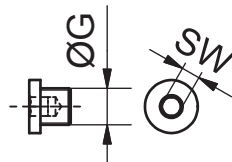


Part No.	Description	L [mm]	SW [mm]	G [mm] ["]	Items per unit [pcs]	Weight [g]	Material
1-858-38-00	PMM M5	9	8	M5	10	3	CuZn
1-858-40-00	PMM 1/8	18	14	G1/8	10	16	CuZn
1-858-42-00	PMM 1/4	26	17	G1/4	10	28	CuZn

PVS / Hex Plug

Remarks:

- use with PDA Seal Ring (see category 850)
- sold in bags of 10 pcs
- threads must be sealed



Part No.	Description	SW [mm]	G ["]	fitting seal	Items per unit [pcs]	Material	Weight [g]
1-858-44-00	PVS M5	8	M5	PDA M5	10	CuZn	2
1-858-46-00	PVS 1/8	5	G1/8	PDA 1/8	10	CuZn	7
1-858-48-00	PVS 1/4	6	G1/4	PDA 1/4	10	CuZn	15

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Special Elements

800
Electrics and
Sensors

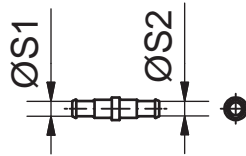
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

850 | Pneumatics

SVG / Straight Hose Connector

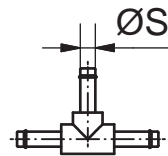
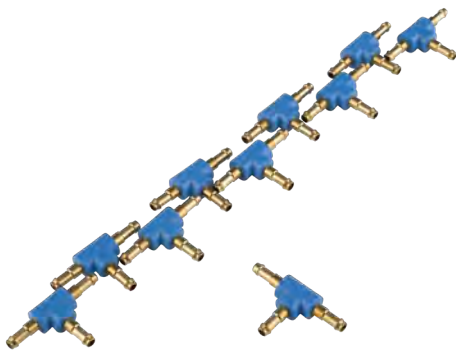


Remarks:

- sold in bags of 10 pcs

Part No.	Description	Ø S1 for Hose	Ø S2 for Hose	Weight [g]	Items per unit [pcs]	Material
1-860-02-00	SVG 4-3-4-3	4/3	4/3	1	10	CuZn
1-860-04-00	SVG 4-3-6-4	4/3	6/4	1	10	CuZn
1-860-06-00	SVG 6-4-6-4	6/4	6/4	1	10	CuZn
1-860-08-00	SVG 6-4-8-6	6/4	8/6	4	10	CuZn
1-860-10-00	SVG 8-6-8-6	8/6	8/6	3	10	CuZn

SVT / T Hose Connector

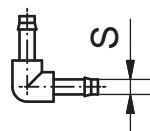
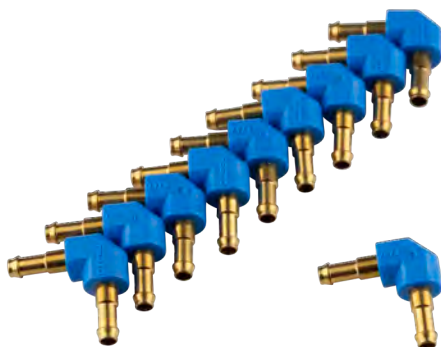


Remarks:

- sold in bags of 10 pcs

Part No.	Description	Ø S for Hose	Weight [g]	Items per unit [pcs]	Material
1-860-12-00	SVT 4-3	4/3	2	10	CuZn
1-860-14-00	SVT 6-4	6/4	3	10	CuZn

SVL / L Hose Connector



Remarks:

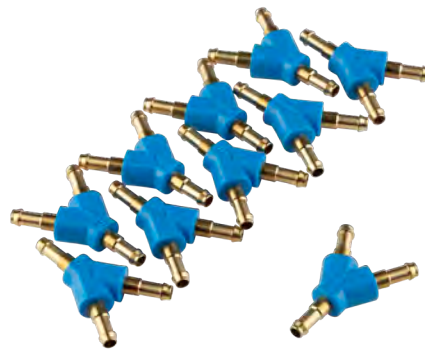
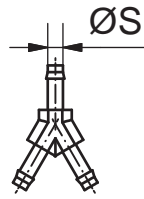
- sold in bags of 10 pcs

Part No.	Description	Ø S for hose	Weight [g]	Items per unit [pcs]	Material
1-860-18-00	SVL 4-3	4/3	1	10	CuZn/plastic
1-860-20-00	SVL 6-4	6/4	2	10	CuZn/plastic

SVY / Y Hose Connector

Remarks:

- sold in bags of 10 pcs

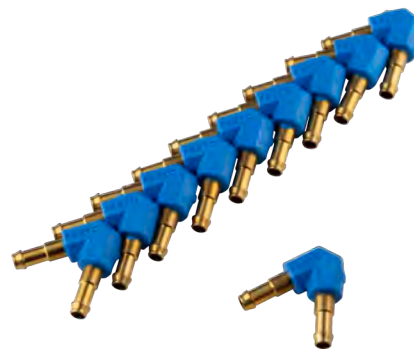
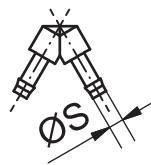


Part No.	Description	Ø S for hose	Weight [g]	Items per unit [pcs]	Material
1-860-24-00	SVY 4-3	4/3	2	10	CuZn/Plastics
1-860-26-00	SVY 6-4	6/4	4	10	CuZn/Plastics

SVV / V Hose Connector

Remarks:

- sold in bags of 10 pcs

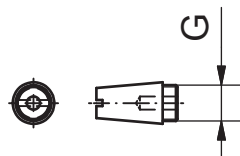


Part No.	Description	Ø S for hose	Weight [g]	Items per unit [pcs]	Material
1-860-30-00	SVV 4-3	4/3	1	10	CuZn
1-860-32-00	SVV 6-4	6/4	2	10	CuZn

PSD / Silencer

Remarks:

- made of bronze
- sold in bags of 10 pcs
- no seal necessary



Part No.	Description	Ø G [mm] ["]	Weight [g]	Items per unit [pcs]	Material
1-864-02-00	PSD M5	M5	6	10	Bronze
1-864-04-00	PSD 1/8	G1/8	7	10	Bronze
1-864-06-00	PSD 1/4	G1/4	14	10	Bronze

000
Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

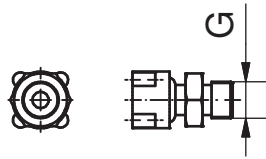
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

850 | Pneumatics

ADS / Exhaust Throttle-Silencer

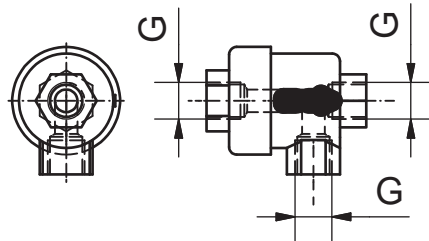


Remarks:

- double nipple silencer made of brass
- ADS 1/8 with WS = 14mm
- ADS 1/4 with WS = 17mm

Part No.	Description	G ["]	Weight [g]
1-864-10-00	ADS 1/8	G1/8	18
1-864-12-00	ADS 1/4	G1/4	28

SEV / Quick Exhaust Valve

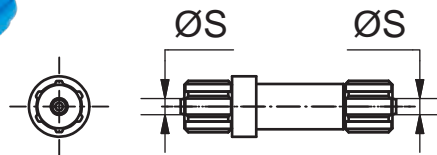


Remarks:

- for example for venting cylinders

Part No.	Description	G ["]	Weight [g]
1-864-16-00	SEV 1/8	G1/8	84
1-864-18-00	SEV 1/4	G1/4	162

FSL / Particle Filter for Vacuum or Pneumatic Lines

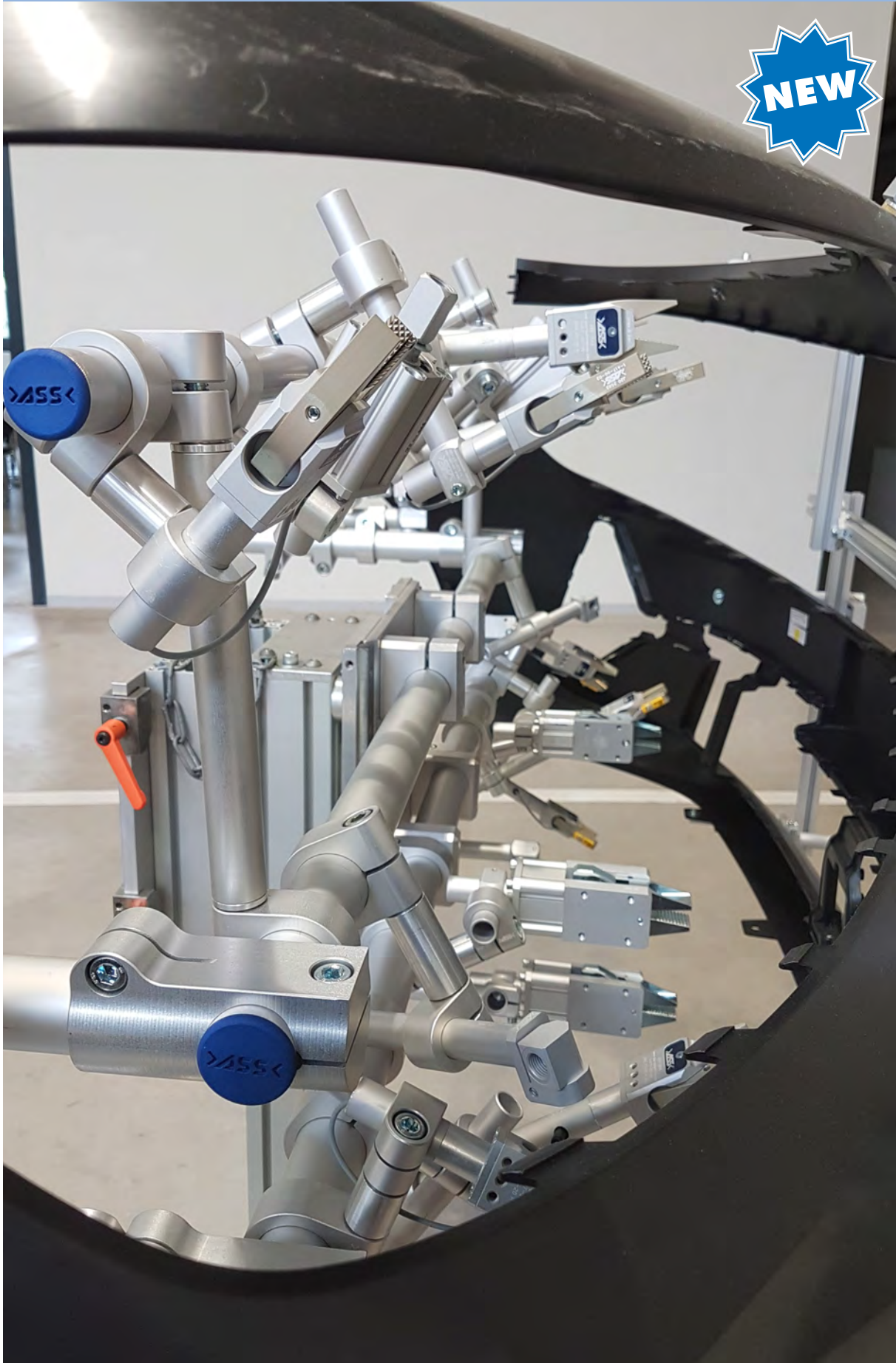


Remarks:

- recommended for use with the IGP ID-Gripper

Part No.	Description	ØS for hose [mm]	Weight [g]
1-852-26-00	FSL 4	4/3	6
1-852-27-00	FSL 6	6/4	10

Tubular-System EOAT Baseframe Kit



NEW

EOAT connectors in milled design for highest dynamic loads.

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

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Special
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Gripper Arms

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Gripper
Parallel Gripper

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Needle Gripper

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Nipper Bodies

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Nipper Blades

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Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

990 | Tubular- and Micro-System

GPM R / EOAT (Robot Hand) Base Plate, Tubular-System

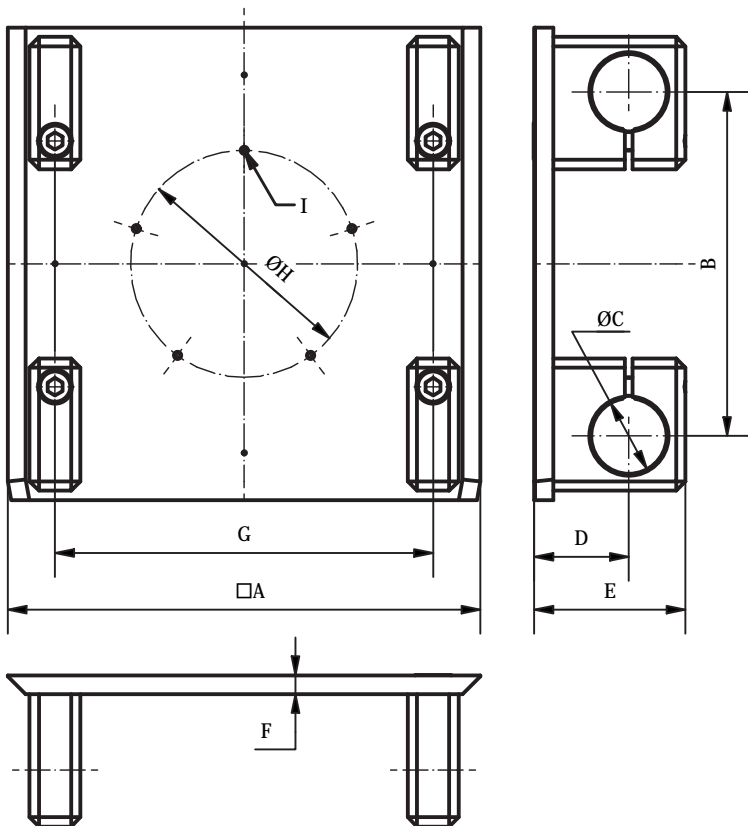


Remarks:

Application: with the GPM R you can continue building directly with the tubular system

- 2 round tubes Ø 40 can be clamped horizontally aligned
- for example for the removal of bumpers, spoilers etc.
- GPM are provided with drilling pattern for SWH G 150 (size I)
- see application example
- SWH G 150 is not included in the scope of delivery

Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Weight [g]
3-005-01-00	GPM 3-40 R	250	182	40	50	80	10	200	120	5x M6	2809

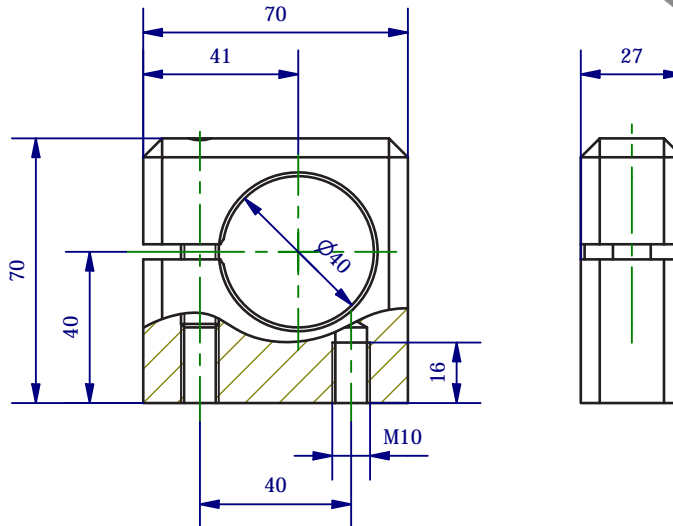
RVG / Connector for Base-Plate GPM

Remarks:

- for connecting round tube profiles to GPM base plates

Scope of Delivery:

- clamping screw included
- mounting screws for base plate not included; screws of strength class at least 10.9 are recommended

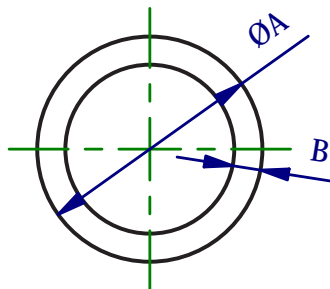


Part No.	Description	Material	Weight [g]
3-020-40-00	RVG 40	Aluminium	260

R-Profile / Tubular-System

Remarks:

- for the construction of grippers in round tube design
- minimum length of the round tube profiles 50 mm
- special lengths over 2000 mm on request



Part No.	Description	A [mm]	B [mm]	Länge [mm]	Werk-stoff	Weight [g]
3-050-20-01	R 20-2,5-1000	20	2,5	1000	Al	390
3-050-20-02	R 20-2,5-2000	20	2,5	2000	Al	780
3-050-20-06	R 20-2,5-0001	20	2,5	1	Al	0.39
3-050-25-01	R 25-5-1000	25	5	1000	Al	885
3-050-25-02	R 25-5-2000	25	5	2000	Al	1770
3-050-25-06	R 25-5-0001	25	5	1	Al	0.89
3-050-30-01	R 30-3-1000	30	3	1000	Al	710
3-050-30-02	R 30-3-2000	30	3	2000	Al	1420
3-050-30-06	R 30-3-0001	30	3	1	Al	0.71
3-050-40-01	R 40-4-1000	40	4	1000	Al	1270
3-050-40-02	R 40-4-2000	40	4	2000	Al	2540
3-050-40-06	R 40-4-0001	40	4	1	Al	1.27

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Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
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190
Profile
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Vacuum Cups

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Nipper Bodies

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Nipper Blades

700
Special Elements

800
Electrics and
Sensors

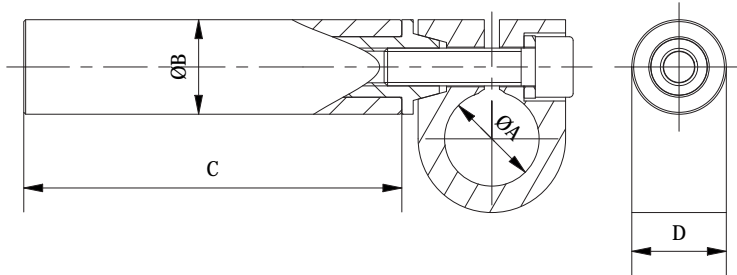
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

990 | Tubular- and Micro-System

RV 1 / Connector, round



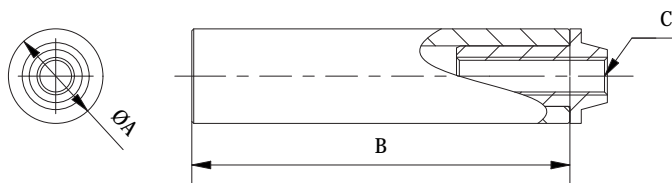
Remarks:

- universally applicable connector to continue building e.g. from RV 2
- alternatively, a WKA angle arm or a GLA articulated gripper arm can also be used for an RV 2 with clamping diameters of 20 or 30 mm, e.g. see photo



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
3-103-03-00	RV 1-25-20-100	20	25	100	25	Aluminium	194
3-103-06-00	RV 1-25-20-200	20	25	200	25	Aluminium	280
3-103-09-00	RV 1-25-20-300	20	25	300	25	Aluminium	366
3-103-12-00	RV 1-25-25-100	25	25	100	25	Aluminium	200
3-103-15-00	RV 1-25-25-200	25	25	200	25	Aluminium	286
3-103-18-00	RV 1-25-25-300	25	25	300	25	Aluminium	372
3-103-21-00	RV 1-25-30-100	30	25	100	25	Aluminium	210
3-103-24-00	RV 1-25-30-200	30	25	200	25	Aluminium	296
3-103-27-00	RV 1-25-30-300	30	25	300	25	Aluminium	382
3-103-30-00	RV 1-25-40-100	40	25	100	25	Aluminium	253
3-103-33-00	RV 1-25-40-200	40	25	200	25	Aluminium	339
3-103-36-00	RV 1-25-40-300	40	25	300	25	Aluminium	425

VLK 1 / Extension, single-cone



Remarks:

- for assembling individual Round-Connectors RV 1

Accessories e.g.:

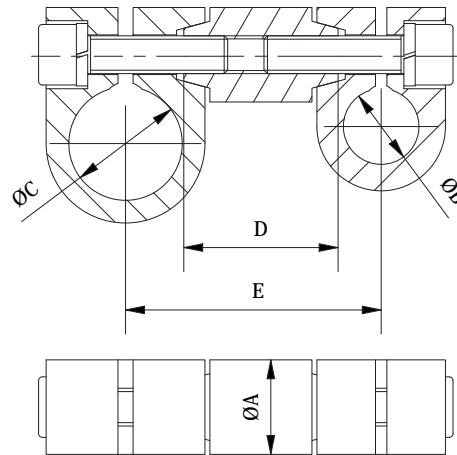
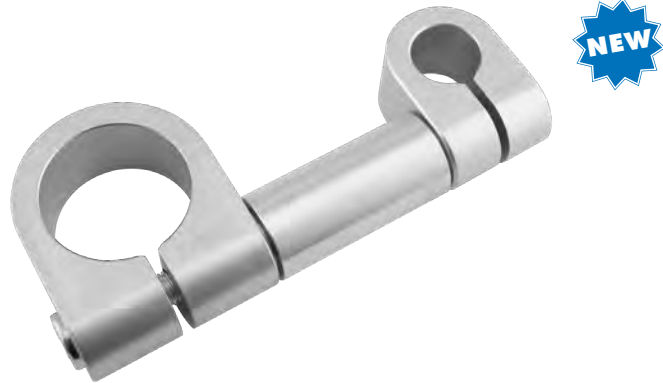
- RK K / Mounting Adapter cone

Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
3-100-10-00	VLK 1 25-100 Extension, single-cone, Ø25, length 100	25	100	M10	Al	100
3-100-20-00	VLK 1 25-200 Extension, single-cone, Ø25, length 200	25	200	M10	Al	186
3-100-30-00	VLK 1 25-300 Extension, single-cone, Ø25, length 300	25	300	M10	Al	272

RV 2 / Double-Connector, round

Remarks:

- universally applicable round connector with clamping on both sides
- for connecting various round tube elements with each other to mount a tubular base frame
- allows the connection of the round tube construction kit with gripper elements from the ASS robot hand construction kit which have a clamping diameter of 20 or 30 mm



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
3-104-01-00	RV 2-25-25-25-40	25	25	25	40	69	Aluminium	237
3-104-02-00	RV 2-25-20-30-40	25	20	30	40	68	Aluminium	241
3-104-03-00	RV 2-25-20-25-40	25	20	25	40	66	Aluminium	231
3-104-11-00	RV 2-25-20-25-66	25	20	25	66	92	Aluminium	264
3-104-12-00	RV 2-25-20-40-66	25	20	40	66	100	Aluminium	317
3-104-13-00	RV 2-25-40-40-66	25	40	40	66	111	Aluminium	376

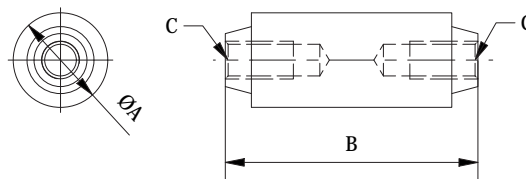
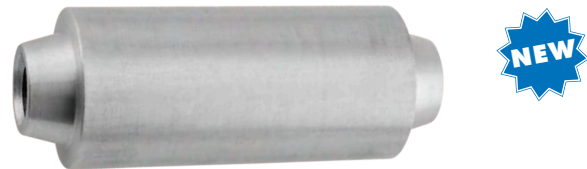
VLK 2 / Extension, double-cone

Remarks:

- for assembling individual Round-Connectors RV 2

Accessories e.g.:

- RK K / Mounting Adapter cone



Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
3-102-27-01	VLK 2 25-40 Extension, double-cone, Ø25, distance 40	25	40	M10	Aluminium	37
3-102-53-01	VLK 2 25-66 Extension, double-cone, Ø25, distance 66	25	66	M10	Aluminium	70

000
Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

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Vacuum Cups

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Special
Vacuum Cups

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Adapters for
Vacuum Cups

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Gripper Arms

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Gripper Fingers

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Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

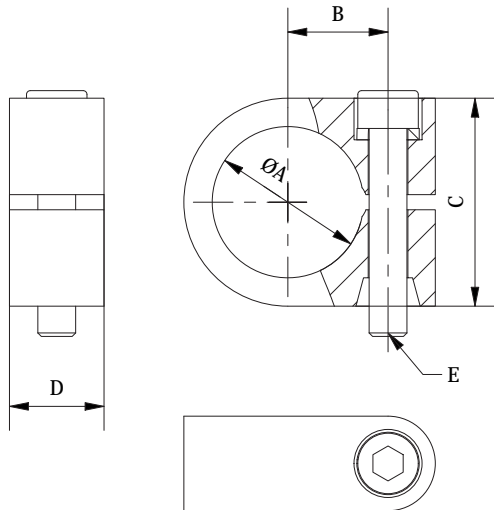
850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

990 | Tubular- and Micro-System

RK K / Mounting Adapter Cone



Remarks:

- for assembling individual Round-Connectors RV 1 or RV 2

Scope of Delivery:

- mounting material included

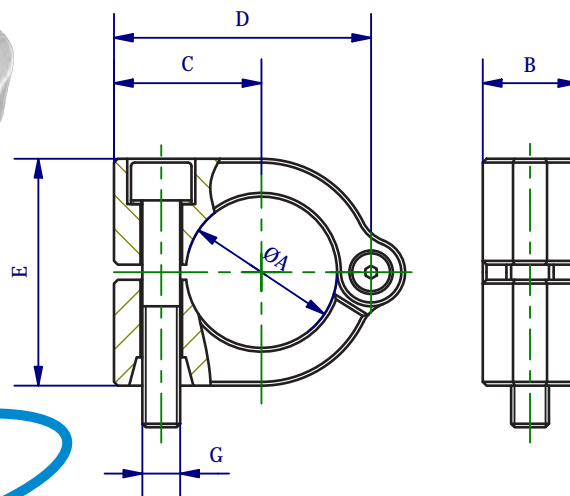
Accessories e.g.:

- VLK 1 / Extension, single-cone
- VLK 2 / Extension, double-cone



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
3-101-20-00	RK K25-20 Mounting Adapter cone25, clamping Ø20	20	19	34	25	M10	Al	94
3-101-25-00	RK K25-25 Mounting Adapter cone25, clamping Ø25	25	19	39	25	M10	Al	100
3-101-30-00	RK K25-30 Mounting Adapter cone25, clamping Ø30	30	23.5	42	25	M10	Al	110
3-101-40-00	RK K25-40 Mounting Adapter cone25, clamping Ø40	40	26.5	55	25	M10	Al	153

RKN K / Mounting Adapter for VLK



Remarks:

- for subsequent expansion of the EOAT
- no disassembly necessary
- clamping piece is attached to the tubular gripper and then the desired VLK 1 or VLK 2 is mounted

Scope of Delivery:

- mounting material included

Accessories e.g.:

- VLK 1 / Extension, single-cone
- VLK 2 / Extension, double-cone

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	Material	Weight [g]
3-107-25-00	RKN K25-25	25	25	33	55.5	48	M10	Aluminium	159
3-107-40-00	RKN K25-40	40	25	39	68	60	M10	Aluminium	191

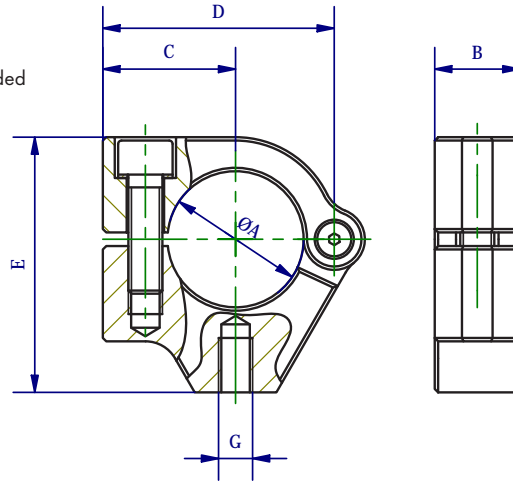
RKN G / Mounting Adapter for panels

Remarks:

- for mounting tubular systems e.g. to plates

Scope of Delivery:

- mounting material included



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	Material	Weight [g]
3-108-25-00	RKN G8-25	25	25	33	55.5	60	M8	Aluminium	174
3-108-40-00	RKN G10-40	40	25	39	68	75	M10	Aluminium	225

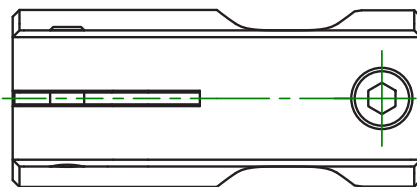
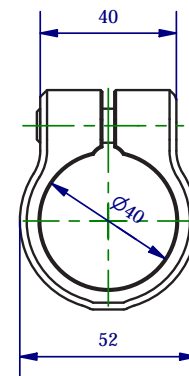
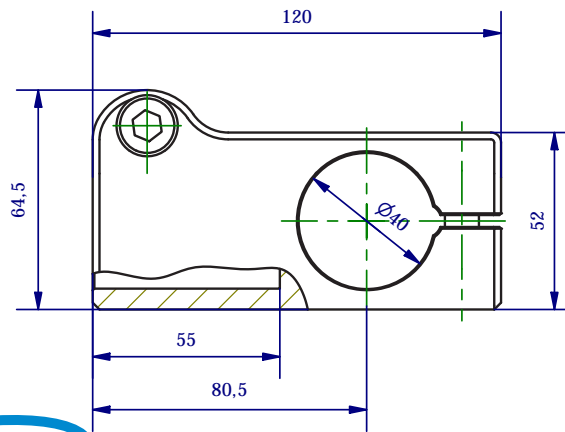
RKT / Connector, round, T-style

Remarks:

- for connecting tubular profiles at an angle of 90°
- T-style: one profile is attached to the head side, the other side can be pushed through
- no additional work such as drilling or thread cutting required

Scope of Delivery:

- mounting material included



Part No.	Description	Material	Weight [g]
3-120-40-00	RKT 40 Connector, round, T-style, ϕ_{40}	Aluminium	413

000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
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Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

990 | Tubular- and Micro-System

RKW / Connector, round, angle 45°

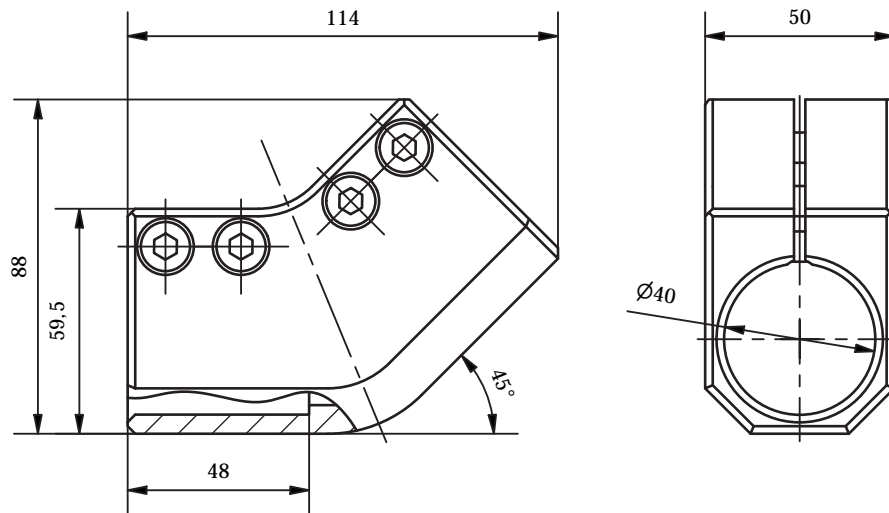


Remarks:

- for connecting tubular profiles at an angle of 45°
- no additional work such as drilling or thread cutting required

Scope of Delivery:

- mounting material included



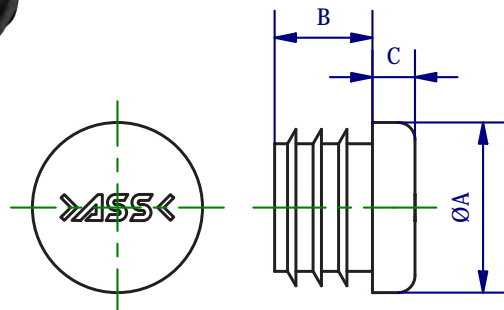
Part No.	Description	Material	Weight [g]
3-121-40-00	RKW 45-40 Connector, round, angle 45°, Ø40	Aluminium	508

ADK R / Profile End Cap, round



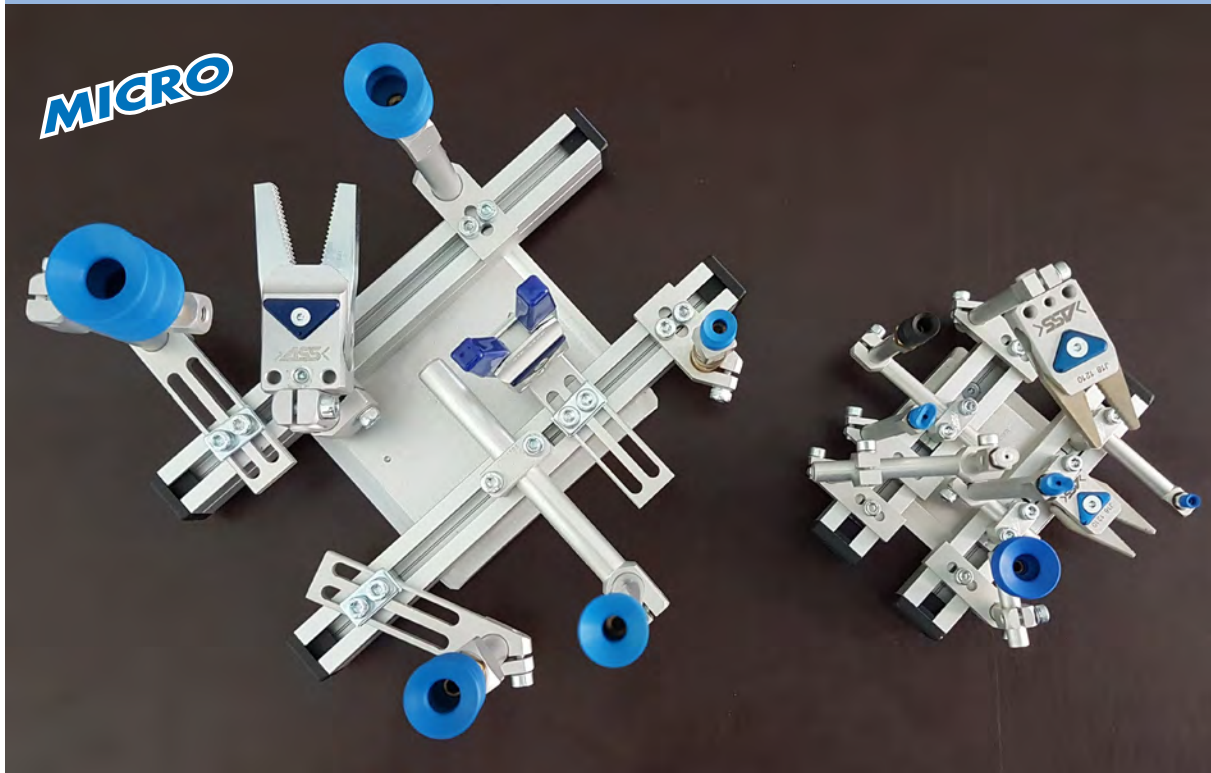
Remarks:

- for closing tubular profile ends
- holes for holding the tread caps should be deburred
- caps are simply inserted with a rubber hammer



Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
3-190-20-00	ADK R 20 Profile End Cap, round Ø20	20	11.5	5	Plastics	1
3-190-25-00	ADK R 25 Profile End Cap, round Ø25	25	11.5	5	Plastics	3
3-190-30-00	ADK R 30 Profile End Cap, round Ø30	30	11.5	5	Plastics	4
3-190-40-00	ADK R 40 Profile End Cap, round Ø40	40	11.5	5	Plastics	5

Micro Series EOAT Kit



A gripping system for the niche: Micro System for tight spaces and the smallest components

The innovative Micro System for tight spaces and the smallest components from ASS closes the gap: With a clamping diameter of 6 millimeters, the Micro System is significantly smaller and lighter than the previous smallest system with a 10 millimeter clamping diameter. The Micro System is used wherever small injection molding machines or small linear handlings and other micro machines are in use and there is little space in the tool. With the new system, even the smallest components, which were previously case parts, can now be handled easily and cleanly in the tightest of spaces.

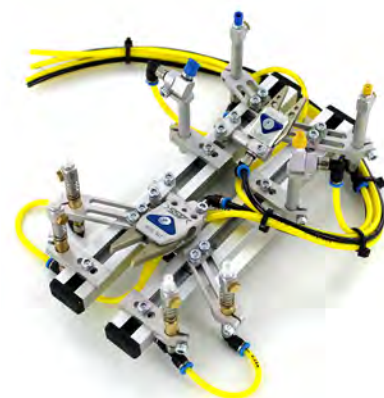
The Micro System was awarded the „RHEINLAND GENIAL“ innovation prize.

Remarks:

For use in small injection moulding machines, linear handling machines or other miniature machines where space is limited or only a low handling weight is allowed.

For an example comparison:

- Micro System: 239g, B85xH70xT75 (right side on top image)
- 10mm clamping diameter: 436g, B125xH110xT115 (left side on top image)
- Particularly for setting up a micro gripper the small quick change systems SWM in sizes 0 or 01 and the semi-automatic quick change system SWH 50 are suitable.
- L-profile + GPM => When using a base plate with the L-profile, it is recommended to countersink the screw head in the profile in order to remain the micro components displaceable.



000
Quick Change
Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

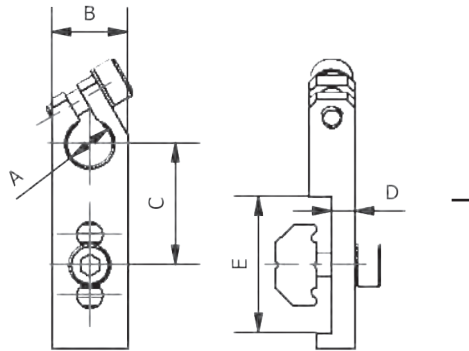
990
Tubular System
Micro System

990
PA-Forming
Others

990 | Tubular- and Micro-System

WST L 6 U / Universal Angle Clamp „Micro Series“

MICRO



Remarks:

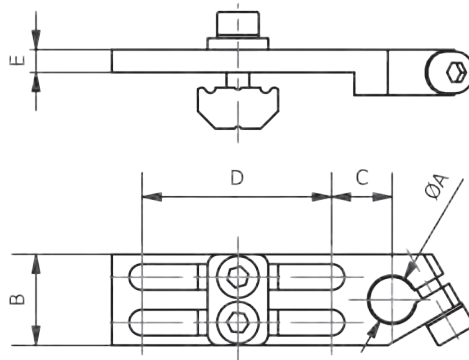
Application: has the advantage of many possible applications: can be mounted form fit or adjustable

- just one tool needed: hexagon socket screw key
- mounted directly on profile
- allows compact gripper design

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-103-01-00	WST L 6 U	6	10	16	3	18	Aluminium	7

WSL L 6-25 U / Universal Long Angle Clamp „Micro Series“

MICRO



Remarks:

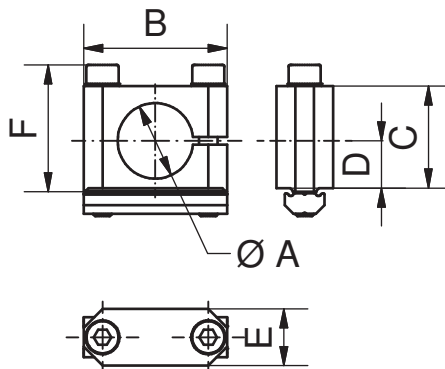
Application: universal Long Angle Clamp e.g. for mounting Gripper GRZ or other components with 6mm connection to profiles

- same allen screw size for clamping and channel nuts
- can be mounted directly on profiles
- allows compact gripper design

Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-105-06-00	WSL L 6-25 U	6	12	8	25	3	Aluminium	11

KVB L 6 / Cross Connector „Micro Series“

MICRO



Remarks:

Application: gripper arms, adapters, etc. with 6mm connection can be clamped at an angle of 90 ° to the profile

- Cross Connector is mounted directly to the profile
- exact positioning through an additional positive connection
- by loosening a screw, various settings can be made without changing the position of the KVB

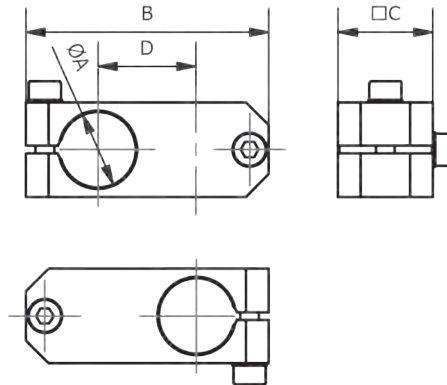
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-115-01-00	KVB L 6	6	15	9	4,5	8	12,5	Aluminium	11

KKS 6-6-10 / Cross Connector „Micro Series“

Remarks:

Application: connects two components with clamping diameter 6mm at a 90° angle

- both clamps can be set independently



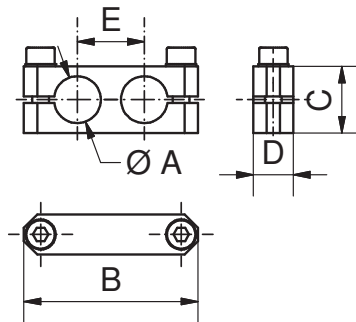
Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-115-39-00	KKS 6-6-10	6	25	10	10	Aluminium	6

PKS / Parallel Connector „Micro Series“

Remarks:

Application: connects two components with clamping diameter 6mm at parallel arrangement

- both clamps can be set independently

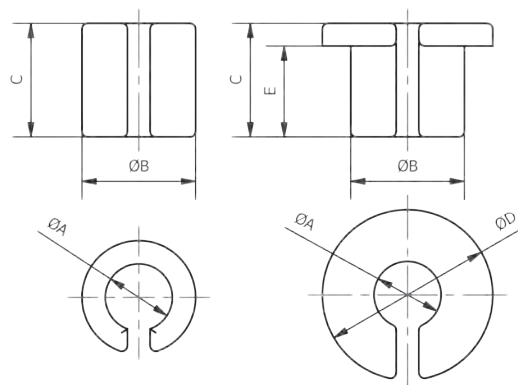


Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-115-59-00	PKS 6-6-10	6	25	10	8	10	Aluminium	5

RMB-ROB / Reduction with and without collar „Micro Series“

Remarks:

Application: to connect the Micro Series (6mm clamping diameter) to clamping diameter 10mm



Part No.	Description	ØA [mm]	ØB [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-116-00-16	RMB 0610-10	6	10	10	15	8	Polyamide	<1
1-116-00-17	ROB 0610-10	6	10	10	-	-	Polyamide	<1

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Quick Change Systems

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Nipper Blades

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Special Elements

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Electrics and
Sensors

850
Pneumatics

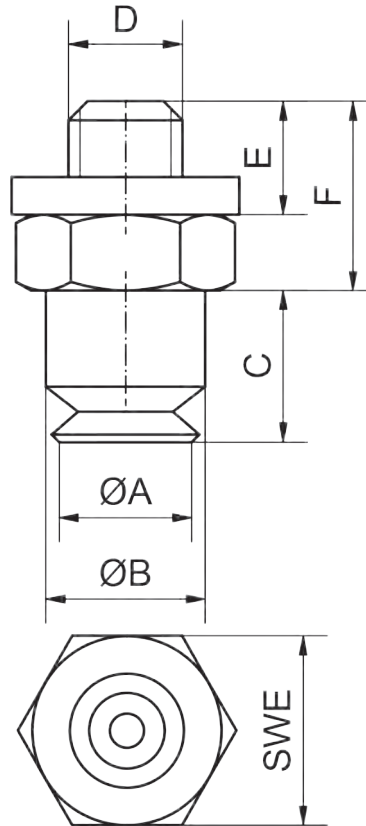
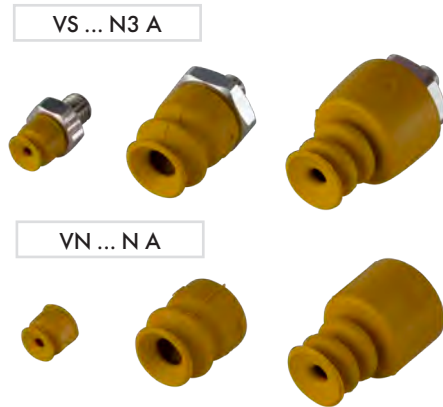
990
Tubular System
Micro System

990
PA-Forming
Others

990 | Tubular- and Micro-System

VS N3 A / VN N3 A / Vacuum Cups Nitril, antistatic „Micro Series“

MICRO



Remarks:

Application: antistatic Vacuum Cups for the Micro Series

- to avoid electrical charging and rapid discharge
- Versions with 1, 2 and 3 bellows available
- VS ... N3 A: complete vacuum cup: suction cup with mounted adapters
- VN ... N3 A: suction cup without adapter
- VSA ...: Adapter for suckers
- other matching vacuum cups suitable for the Micro Series can be found in category 220 (VS 2, VN 2, VS 3 and VN 3)

Vacuum Cup VS N3 A, complete (suction cup with adapter)

Suction Cup VN N3 A (suction cup without adapter)

Adapter VSA for suction cup VN

Part No.	Description	Part No.	Description	Part No.	Description
1	1-226-12-00 VS 1-2 N3 A	1-226-12-01	VN 1-2 N A	1-290-05-00	VSA 5
2	1-226-14-00 VS 1-3,5 N3 A	1-226-14-01	VN 1-3,5 N A	1-290-05-00	VSA 5
3	1-226-15-00 VS 1-5 N3 A	1-226-15-01	VN 1-5 N A	1-290-04-00	VSA 4
4	1-226-26-00 VS 2-6 N3 A	1-226-26-01	VN 2-6 N A	1-290-04-00	VSA 4
5	1-226-27-00 VS 2-11 N3 A	1-226-27-01	VN 2-11 N A	1-290-16-00	VSA 16
6	1-226-35-00 VS 3-5 N3 A	1-226-35-01	VN 3-5 N A	1-290-17-00	VSA 17
7	1-226-37-00 VS 3-7 N3 A	1-226-37-01	VN 3-7 N A	1-290-16-00	VSA 16
8	1-226-39-00 VS 3-9 N3 A	1-226-39-01	VN 3-9 N A	1-290-16-00	VSA 16

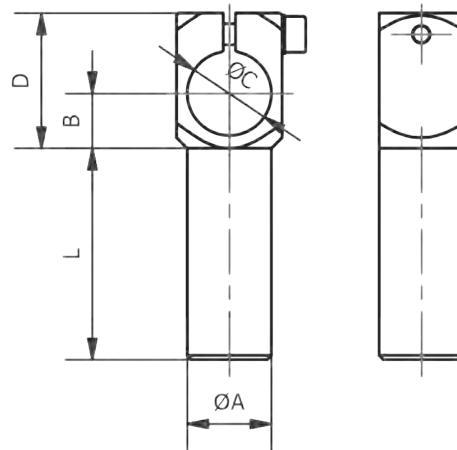
	Material	Working Area [mm]	Operating [cm ²]	Holding Force [N]	Push fit	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	SWE [mm]
1	Nitril antistatic	1	0.007	0.05	x	2	4.2	4	M3	3	5	5
2	Nitril antistatic	1	0.007	0.05	x	3.5	4.2	4	M3	3	5	5
3	Nitril antistatic	1.5	0.02	0.1	x	5	7.7	6.5	M3	3	5	5
4	Nitril antistatic	3	0.07	0.4	x	6	7.2	9	M3	3	5	5
5	Nitril antistatic	4.5	0.16	0.9	x	11	10	16	M3	3	5	5
6	Nitril antistatic	2.6	0.05	0.3	x	5	7	14	M3	3	5	5
7	Nitril antistatic	1.8	0.03	0.15	x	7	9	14	M3	3	5	5
8	Nitril antistatic	3.8	0.11	0.7	x	9	9	15	M3	3	5	5

WKA 6-6 / Angle Arm „Micro Series“

Remarks:

Application: e.g. for easy mounting of components with clamping diameter 6mm

- easy to handle
- secure connection by cylinder screw



MICRO



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	L [mm]	Material	Weight [g]
1-320-63-00	WKA 6-6-20	6	4.5	6	12	20	Aluminium	3
1-320-66-00	WKA 6-6-40	6	4.5	6	12	40	Aluminium	4
1-320-69-00	WKA 6-6-60	6	4.5	6	12	60	Aluminium	6

GSE U 6 / Gripper Arm for Suction Cups with air duct „Micro Series“

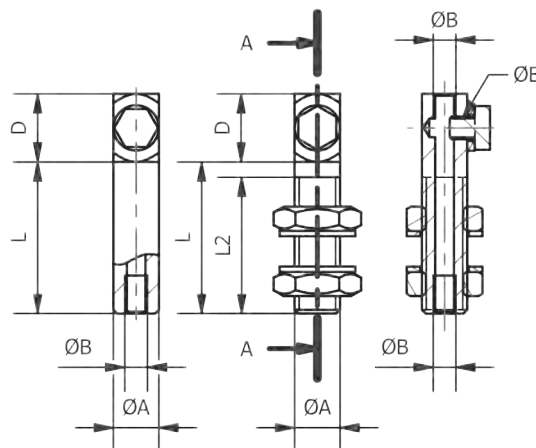
Remarks:

Application: for mounting vacuum cups to the micro EOAT

- vacuum connection sideways or air duct

Scope of delivery:

- sealing screw included



MICRO

1-311-30-00
1-311-31-00
1-311-32-00

1-311-35-00
1-311-36-00
1-311-37-00



Artikelnummer	Bezeichnung	ØA [mm]	B	D [mm]	L [mm]	L2 [mm]	Material	Weight [g]
1-311-30-00	GSE U 6-M3-M3-20	6	M3	9	20	-	Aluminium	3
1-311-31-00	GSE U 6-M3-M3-40	6	M3	9	40	-	Aluminium	4
1-311-32-00	GSE U 6-M3-M3-60	6	M3	9	60	-	Aluminium	6
1-311-35-00	GSE U M6x1-M3-M3-20	M6	M3	9	20	18	Aluminium	5
1-311-36-00	GSE U M6x1-M3-M3-40	M6	M3	9	40	38	Aluminium	6
1-311-37-00	GSE U M6x1-M3-M3-60	M6	M3	9	60	58	Aluminium	7

000
Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
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Vacuum Cups

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Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

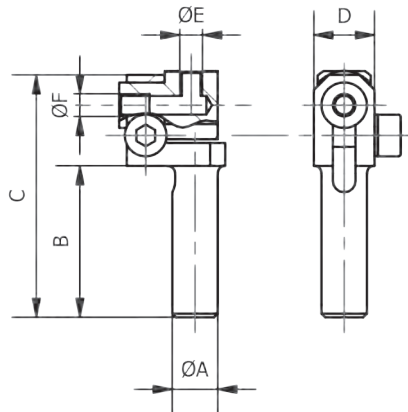
990
Tubular System
Micro System

990
PA-Forming
Others

990 | Tubular- and Micro-System

GGE 6 / Swivel Head Gripper Arm for Vacuum Cups „Micro Series“

MICRO



Remarks:

Application: for mounting vacuum cups at an angle

- swivel head can be clamped separately by cylinder screw
- air connection (F) on the side

Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-315-00-00	GGE 6-M3-M3-20	6	20	32	8	M3	M3	Al	4
1-315-01-00	GGE 6-M3-M3-40	6	40	52	8	M3	M3	Al	6
1-315-02-00	GGE 6-M3-M3-60	6	60	72	8	M3	M3	Al	8

GAF U 6 / GAF U 6 M / Spring Comp. Grip. Arm f. Vac.Cups, air duct „Micro“

MICRO

1-355-01-00

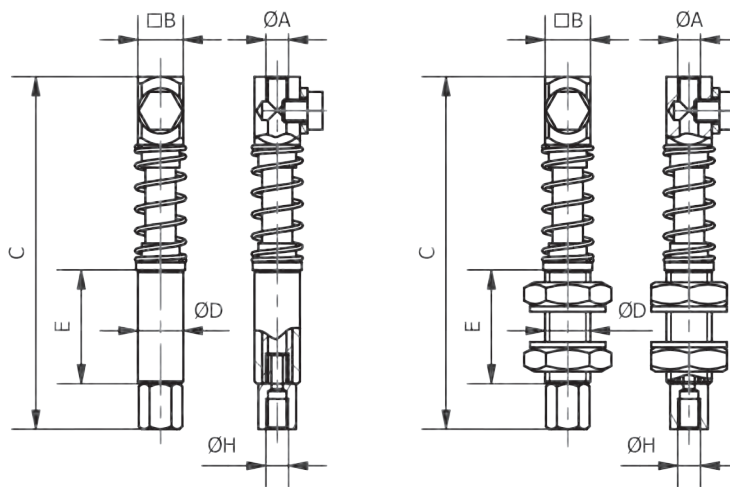
1-355-02-00



Remarks:

Application: for mounting vacuum cups in the robot hand

- for rotationally symmetrical vacuum cups
- vacuum cup can rotate relative to the clamping piece
- for best positioning of vacuum cups to the part to be removed
- spring travel to compensate for the ejector stroke
- gripper arm is guided with rotation enabled
- high quality stainless steel spring



Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	H [mm]	Spring travel [mm]	Material	Weight [g]
1-355-01-00	GAF U 6-M3-M3-10	M3	6	46.5	6	15	M3	10	Al/CuZn	6
1-355-02-00	GAF U M6-M3-M3-10	M3	6	46.5	M6	15	M3	10	Al/CuZn	9

GRZ 06-06 / Gripper Size 06-06 „Micro Series“

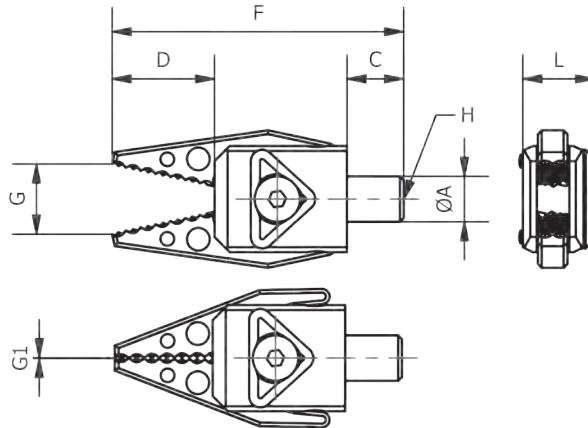
Remarks:

Application: micro sized gripper GRZ

- very lightweight
- very small and compact design
- single-acting gripper
- gripper jaws chequered
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only



MICRO



Part No.	Description	ØA [mm]	C [mm]	D [mm]	F [mm]	G [mm]	G1 [mm]	H	L [mm]	Closing force max. [N]	Weight [g]
1-406-00-00	GRZ 06-06	6	7.5	13.5	39	10	0	M3	10	6	6.5

GRZ 06-06 / Gripper Size 06-06 with EP Coating „Micro Series“

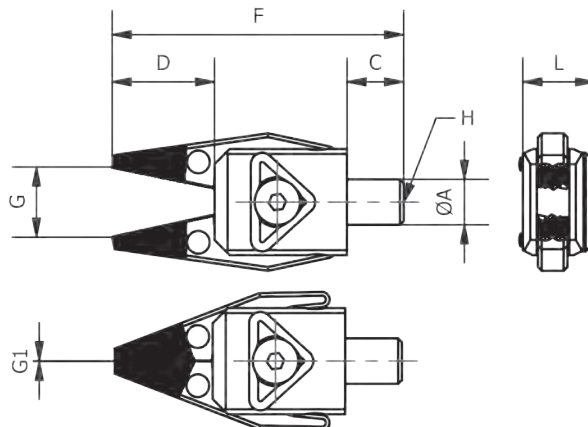
Remarks:

Application: micro sized gripper GRZ with soft EP Coating, Shore 60

- very smooth gripping with more friction
- very lightweight
- very small and compact design
- single-acting gripper
- gripper jaws with EP coating Shore 60, colour black
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only



MICRO



Part No.	Description	ØA [mm]	C [mm]	D [mm]	F [mm]	G [mm]	G1 [mm]	H	L [mm]	Closing force max. [N]	Weight [g]
1-406-02-00	GRZ 06-06 EP	6	7.5	13.5	39	10	0	M3	10	6	6.5

The EP-coating is an elastomer, so all dimensions are nominal.

000
Quick Change Systems

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Profiles
Channel Nuts

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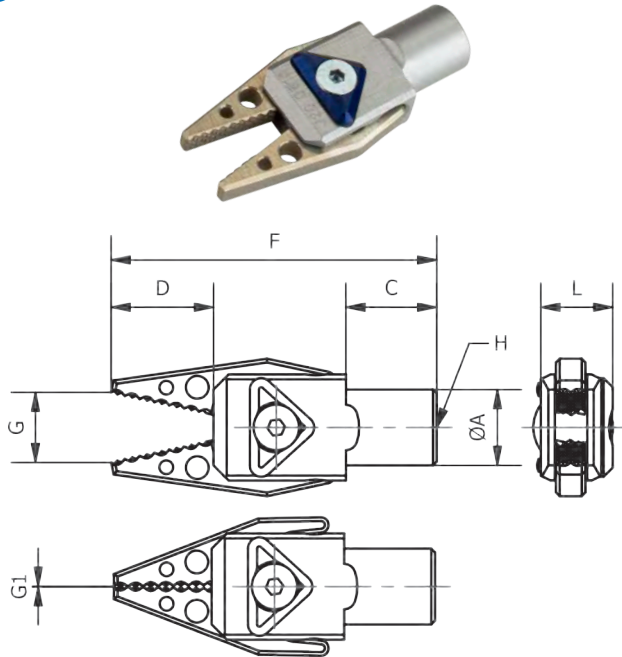
990
Tubular System
Micro System

990
PA-Forming
Others

990 | Tubular- and Micro-System

GRZ 10-06 / Gripper Size 10-06 „Micro Series“

MICRO



Remarks:

Application: micro sized gripper GRZ with clamping diameter 10mm

- lightweight
- small and compact design
- single-acting gripper
- gripper jaws chequered
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories for example:

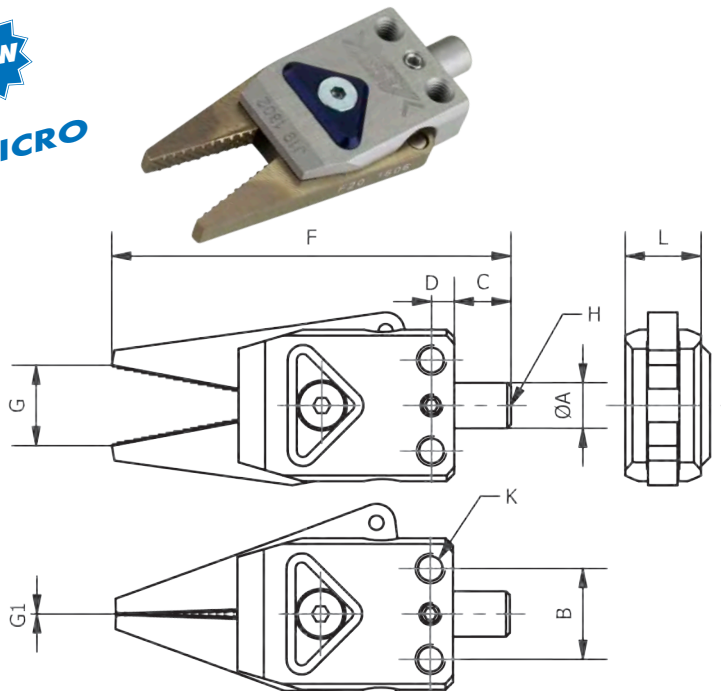
- extension with air duct VL U

Part No.	Description	ØA [mm]	C [mm]	D [mm]	F [mm]	G [mm]	G1 [mm]	H	L [mm]	Closing force max. [N]	Weight [g]
1-406-01-00	GRZ 10-06	10	12	13.5	43	10	0	M5	10	6	8

GRZ 06-08 / Gripper Size 06-08 „Micro Series“

NEW

MICRO



Remarks:

Application: gripper GRZ in miniature design suitable for the Micro System, known from the series GRZ 10-08

- CM: chequered jaws
- BSG: chequered and hardened jaws
- ideal when a higher closing force is required for small robot hands (EOAT)
- lightweight
- small and compact design
- single-acting gripper
- gripper jaws chequered
- two pistons, Ø 8mm
- optionally equipped sensor mounting bracket and initiator
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

Accessories for example:

- Sensor Bracket SH GRZ 10-08
- adapter for board mounting AGP GRZ

Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	F [mm]	G [mm]	G1 [mm]	H	K	L [mm]	Closing force max. [N]	Weight [g]
1-408-01-00	GRZ 06-08 CM	6	12	7.5	3	52.8	10	0	M3	M4	10	19	15
1-408-05-00	GRZ 06-08 CM BSG	6	12	7.5	3	52.8	10	0	M3	M4	10	19	15

NEW

EOAT Training in our facility

Bring your sample part and build an robot hand (End-of-Arm-Tool) under the supervision of our application engineers. You will receive a customized training to meet your application needs. After the training you have a finished robot hand ready for setting-up in your injection moulding machine.

The training is for free, you just have to pay the components of the robot hand you take with you.

The training lasts approximately 6-8 hours. It consists a theoretical introduction and hands-on training on our gripper components in combination with your sample part.

For your custom EOAT-Training date please contact us.

Robot gripper installation at your facility

Our service vehicles carry all components needed to build a standard robot hand (End-of-Arm-Tool).

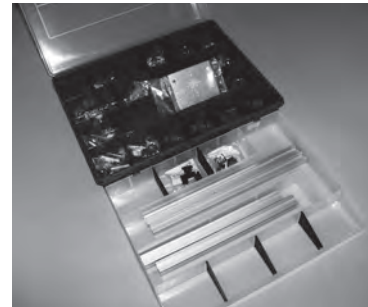
For your individual training please contact us.

Starter Kit

Remarks:

Application: for starting to build EOAT based on ASS components

- ASS Starter Kits are customized regarding your needs



Part No.	Description
Startbox L	Startbox L
Startbox X	Startbox X

KUG / Glue and Polyurethane Pad

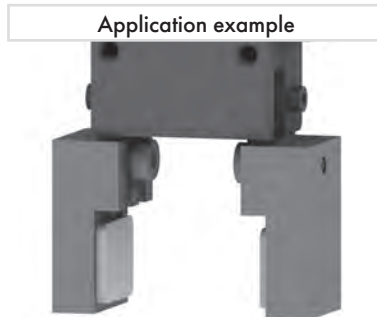
Remarks:

Application: for bonding polyurethane to the jaws of parallel grippers (PGR-P), gripper fingers (GRF) or gripping (GRZ)

- Polyurethane increases the friction between jaw and article and supports a better demoulding
- PU allows gentle and low-pressure gripping
- image can deviate
- » see application example

Scope of Delivery:

- incl. glue



Part No.	Description	Dimension polyurethane pad LxWxH [mm]
1-990-04-00	KUG 250-4	250x250x4
1-990-05-00	KUG 250-5	250x250x5

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Micro System

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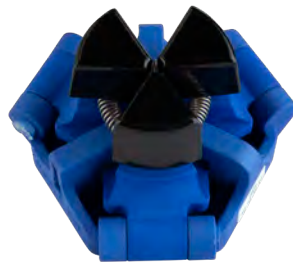
990
PA-Forming
Others

990 | Other / PA-Forming

EP / Elastomeric Polyurethan Coating



Standardized gripping components with EP coating that are in stock: e.g. Gripper GRZ, Gripper Fingers GRF, ID Gripper IGP or Pressure Plates DST.



Remarks:

- EP: Elastomere Polyurethane
- coating consists of a high strength Elastomere Polyurethane
- two types
- Shore A Hardness (+/- 5): 90
 - colour blue
- Shore A Hardness (+/- 5): 60
 - colour black

Material Properties:

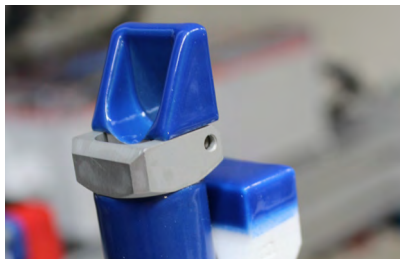
- there is a laboratory test certificate for lacque compatibility (LABS) of the EP Coating Shore Hardness 90 (color blue)
- abrasion resistant
- slip resistant
- silicone free
- Tensile Strength: 29 N/mm²
- Fracture Strain: 320%
- Wear Resistance: 3,5 mg (H 22 Rad)

Advantages:

- secure grip
- reducing wear and tear
- electrically insulated
- surface protecting
- non marking
- energy absorbing
- temperature range -50°C to +90°C
- partial or full surface coating available

Suitable for e.g.:

- Gripper jaws
- Gripper Finger
- Contour piece
- Brackets
- any component with part contact



Individual contours or adapted gripper jaws for GRZ Grippers, PGR-P Parallel Grippers or IGP ID Grippers can be provided with the non-marking EP coating. It is almost irrelevant what material the surface to be coated is made of.

We are at your disposal as a contact person for solving your tasks for a non-binding consultation.

Part No.	Description
ASS Robot Hand Kit (EOAT) Components	about all ASS Robot Hand Kit (EOAT) components can be partly or full-faced coated depending for individual functions
ASS PA-Forming (SLS Laser Sinter)	special components made of Polyamide can be partly or full-faced coated

PA-Forming / 3D Printing made by SLS Laser Sinter

Remarks:

- sintered gripper components in special design can be manufactured on request, for example:
 - jaws for parallel gripper PGR-P (for positive gripping)
 - jaws for grippers GRZ with adapter jaws, so that the article or sprue can be gripped in a form-fitting manner (GRZ 10-12 A, GRZ 10-12 A1, GRZ 14 D A, GRZ 20-16 A)
 - contour pieces for grippers, for exact positioning
 - contour reception for workpiece carriers, cutting stations, etc.
 - complete grippers made of polyamide
- 3D CAD data of the plastic workpiece can be used to produce precisely contoured parts
- sintered components can be coated with e.g. the EP coating or flock
 - » see application examples

Advantages:

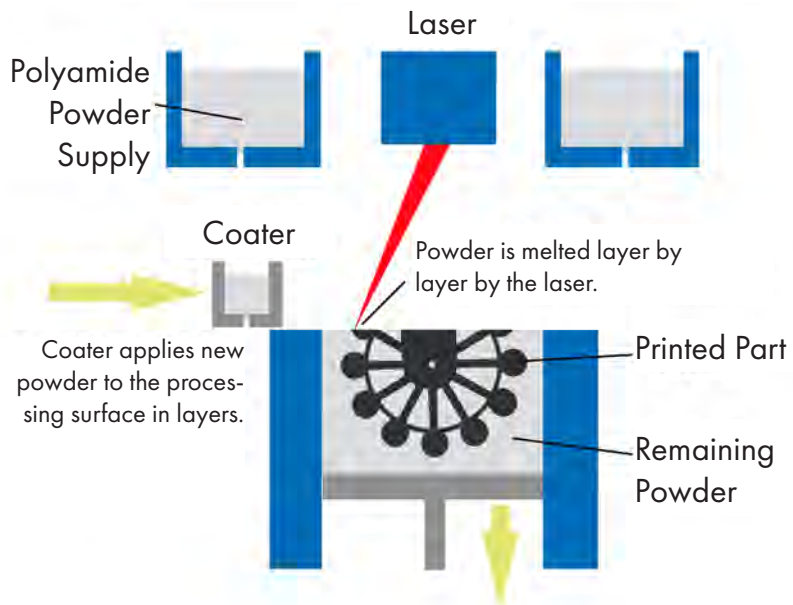
- very low weight
- combination of functions
- integration of internal air ducts or vacuum channels
- integration of functional components, such as movable ID gripper or structures
- time and cost savings
- geometric freedom of design
- multifunctional applications that are not possible with standard components
- combination of mechanical and vacuum gripping with sensors

Material:

- Fine Polyamide PA 2200
- PA 2200 is a powder based on Polyamide-12
- Working temperature range -40°C to +80°C, higher temperature for a short time period is possible

PA-Forming / Select Laser Sintering / 3D Printing technology allows our engineers to custom design EOAT components or even complete End-of-Arm-Tooling. Our engineers design is based upon 3 D CAD data of the part that needs to be handled.

The cost is not influenced by the complexity of the design. The finished gripper will weigh less than any traditional alternative and can include process relevant options like ID gripping and internal channels eliminating the need for pneumatic hose. The material used is Polyamide and has similar properties as Nylon or Delrin.



Schematic representations SLS method

000
Quick Change Systems

050
Profiles
Channel Nuts

100/115
Clamps

120
Profile
Connectors

190
Profile
Accessories

200
Vacuum Cup
Connectors

220
Vacuum Cups

224
Special
Vacuum Cups

230
Manifold

290
Adapters for
Vacuum Cups

300
Gripper Arms

400
Gripper
Parallel Gripper

450
Gripper Fingers

460
Needle Gripper

600
Nipper Bodies

610
Nipper Blades

700
Special Elements

800
Electrics and
Sensors

850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

000
Quick Change
Systems

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Electrics and
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850
Pneumatics

990
Tubular System
Micro System

990
PA-Forming
Others

990 | Other / PA-Forming

Application examples / 3D Printing



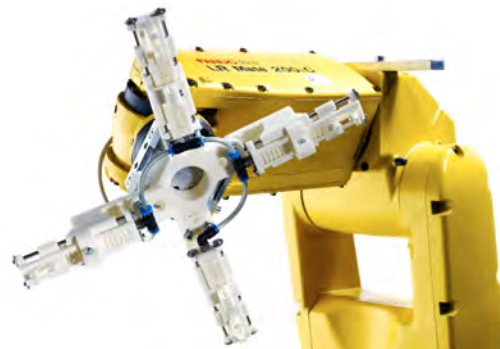
*Lightweight Needle Gripper NGR including Polyamide party:
reduced weight: 37%*



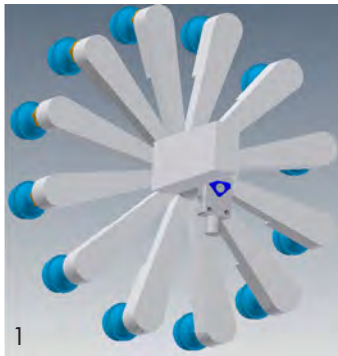
ID Gripper IGP with integrated expansion-bellow



Flocked counter piece for a very soft discard for sensible parts



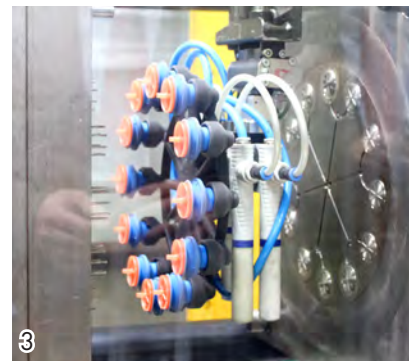
Lightweight EOAT with parallel grippers made of Polyamide



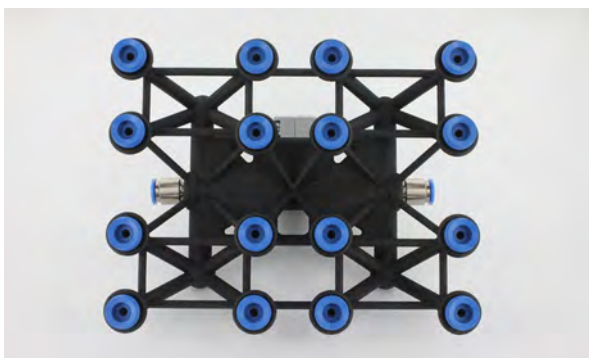
1 First theoretical CAD modell...



*2 ...assembled EOAT with Polaymide body,
Gripper and Vacuum Cups...*



*3 ...finished EOAT in injection moulding
machine.*



Lightweight EOAT with integrated air ducts



EP-coated counter piece for specialised handling

PGR-E / Parallel Gripper, electrical

Remarks:

Application: electrical Parallel-gripper with up to nine teachable positions

- load-bearing and low-play T-slot guide for safe and precise handling with high load ratings
- drive concept step motor
- housing made of high-strength aluminum alloy for minimum weight and high stiffness
- can be used as external or internal gripper
- centering possibilities on the gripping jaws
- easy to mount
- clamping diameter 14mm
- » external control unit is required

Special component:

Price and current delivery time on request!



NGR 16-18 EE / Needle Gripper, adjustable, electrical

Remarks:

Application: electrical Needlegrripper with up to nine teachable positions

- extra-thin needles with a diameter of 0.7 mm
- needle depth is teachable
- easy-exchanging needle package
- sensor option integrated
- easy to mount
- clamping diameter 20mm
- » external control unit is required

Special component:

Price and current delivery time on request!



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Micro System

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PA-Forming
Others

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Systems

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Micro System

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PA-Forming
Others

990 | Other / PA-Forming

Bin Picking

Bin-Picking ...works!

Aim

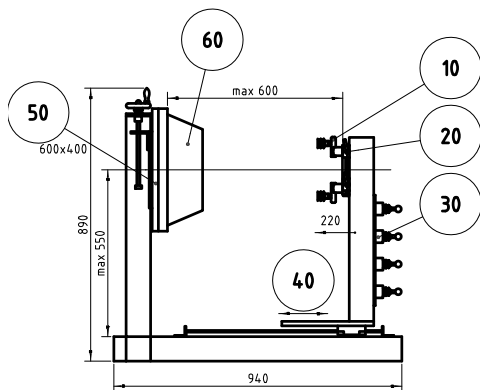
- ready-to-go system
- user-friendly
- suitable even for small bulk material

Approved on customer´s part

- Aluminium-tube for engine cooling
- feasibility study, conception, designing and planning und integration by ASS



Assembly Fixture / Table Top



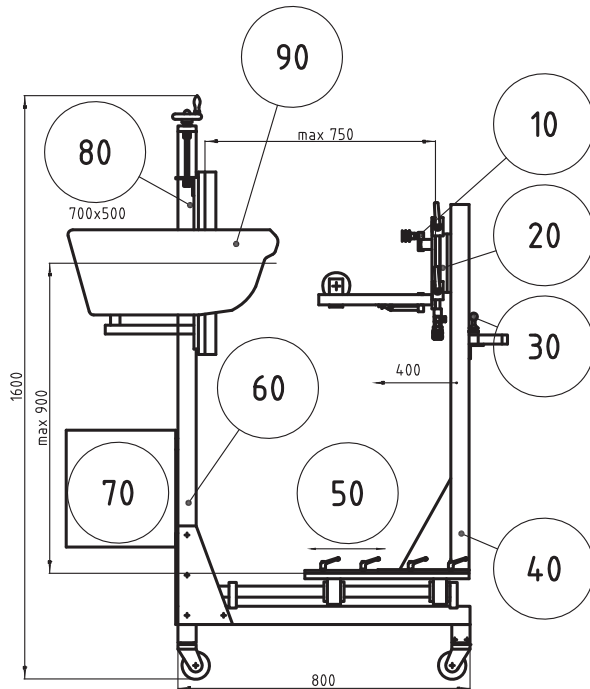
For simple assembly of ASS gripper parts

Procedure

1. mount the plastic parts on the clamping plate in a right position (same way as injection mould)
2. mount the profile on the gripper base plate and push it into the quick change system
3. bring the gripper's movable side to the plastic part
4. assemble all other necessary ASS gripper parts and find out the right position of the elements with moving the base frame to the plastic part several times
5. now check the vacuum and grip functions using the function valves

- 10 - Robot hand
- 20 - Quick change system robot hand
- 30 - Function valve (compressed air and vacuum)
- 40 - Channel unit (stroke 400 mm)
- 50 - clamping plate
- 60 - plastic part

Part No.	Description
1-082-12-00	Assembly fixture / table top



For simple assembly of ASS gripper parts

Procedure

1. mount the plastic parts on the clamping plate in a right position (same way as injection mould)
2. mount the profile on the gripper base plate and push it into the quick change system
3. bring the gripper's movable side to the plastic part
4. assemble all other necessary ASS gripper parts and find out the right position of the elements with moving the base frame to the plastic part several times
5. now check the vacuum and grip functions using the function valves

- 10 - Robot hand
- 20 - Quick change system robot hand
- 30 - Function valve (compressed air and vacuum)
- 40 - movable side
- 50 - Channel unit (stroke 240 mm)
- 60 - fix side
- 70 - filling box
- 80 - clamping plate
- 90 - plastic part

000
Quick Change Systems

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Pneumatics

990
Tubular System
Micro System

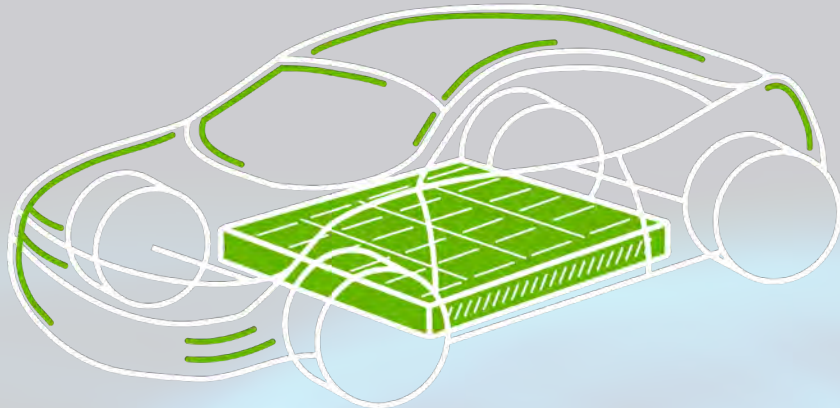
990
PA-Forming
Others

Part No.	Description
1-083-00-00	Assembly fixture / mobile

Components & solutions for E-Mobility

From individual cells to the finished battery pack, from the plug to the complete charging station or from the smallest plastic parts to complex interior and exterior parts.

With our mechatronic components, we offer you solutions that have been tried and tested in practice. A lot is possible for full performance in all areas of e-mobility.

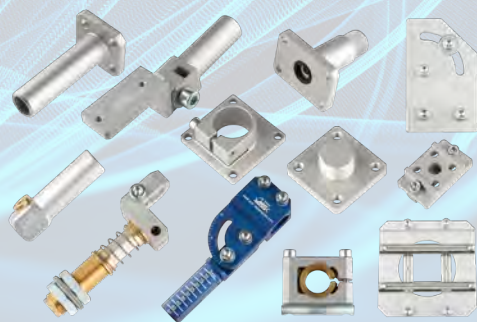


As a German manufacturer with almost 40 years of experience, we produce climate-neutrally and supply you with customer-oriented and high-quality products and solutions for handling your products. The modular system enables gripping solutions to be adapted to all product areas and production processes.

As a contact person for your individual tasks, we are at your disposal for a non-binding consultation.

HEAT RESISTANT

Gripping components and insulators that come into contact with components with heat-resistant properties enable process-reliable handling of hot materials. Organo sheets or pultruded components can be safely moved even in heating fields.



NON-MARKING

Special coatings and adapted or adjustable force regulations enable parts with sensitive surfaces to be handled. For example, painted or thin-walled parts can be moved safely without restrictions.

SCALABLE

The large selection of standardized mechatronic components of different sizes enables a pronounced variety of variants.

The spectrum that can be grasped ranges from the smallest plugs to body parts - regardless of the material, be it parts made of solid or flexible materials.



COMPACT

Flat components and their possible combinations allow gripping solutions in the tightest of spaces, for example when inserting electronic components, cell modules or cell stacks in battery housings.

Our award-winning and innovative Micro System is also available for the smallest parts.

FLEXIBILITY

Semi-automatic quick-change systems and combinable gripping components enable a quick product change within your automation and thus offer a high degree of adaptability to your processes.

CONNECTION

Our extensive modular system contains numerous cross-system connections to enable you to integrate the components economically and easily.

ABILITY TO DELIVER

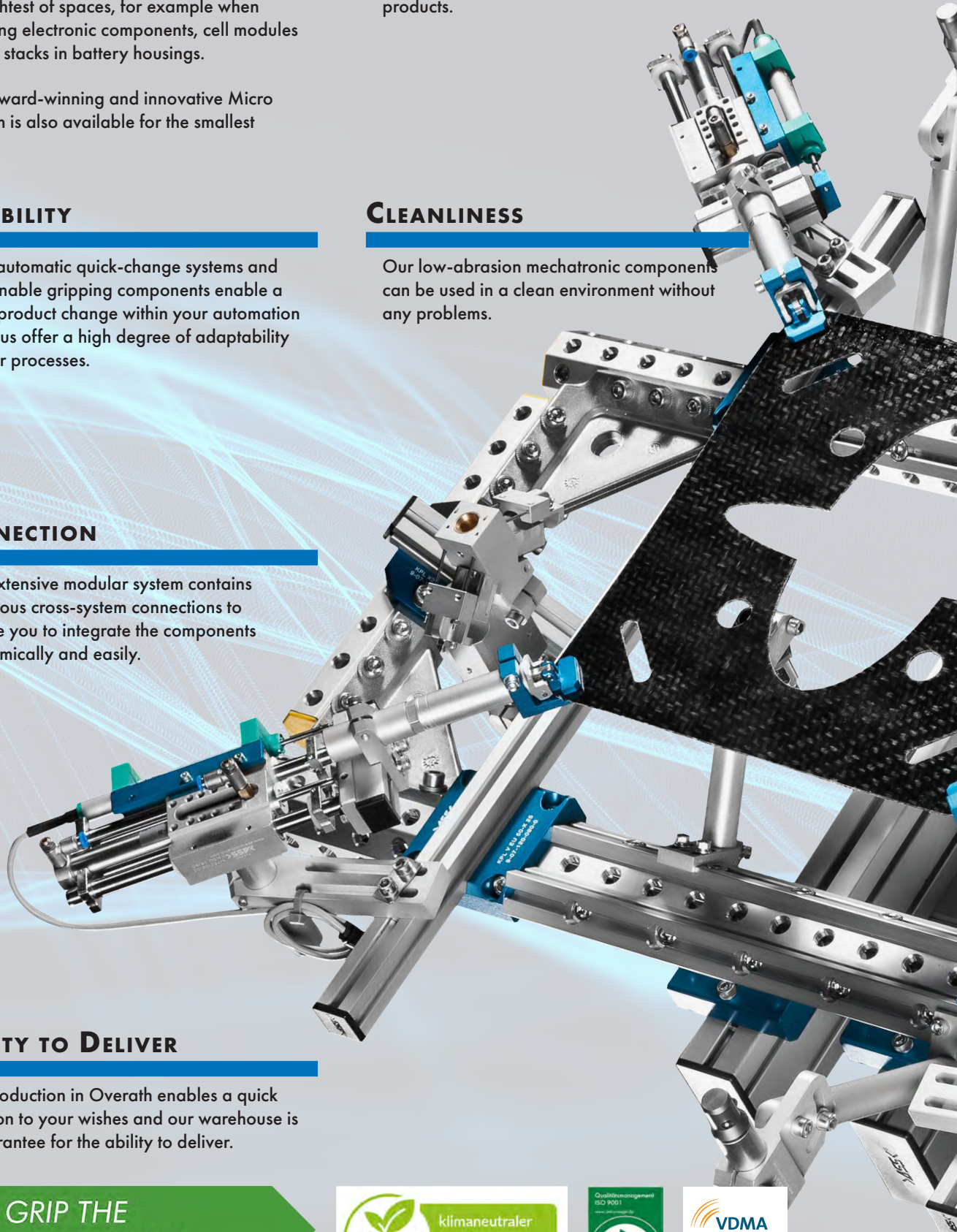
The production in Overath enables a quick reaction to your wishes and our warehouse is a guarantee for the ability to deliver.

SOLUTION ORIENTED

Solutions for individual tasks are one of our core competencies - from prototypes to series products.

CLEANLINESS

Our low-abrasion mechatronic components can be used in a clean environment without any problems.



**GRIP THE
GREEN TURN.**

CO₂ NEUTRAL PRODUCTION



Solutions for Flexible Materials

Increasingly lighter construction methods require the use of components made of fiber composite materials. Every gram of material saved counts, and not only in electromobility. A wide variety of flexible materials often have to be moved in a process-reliable manner.

With our mechatronic needle grippers, we offer you solutions that have been tried and tested in practice - with excellent properties!

Small and precise piercing depths for safe gripping and lifting of stacks, inserting parts to be back-injected into the injection molding machine, picking up high-temperature masses and organo sheets, through to handling foam and felt mats with extra-long needles.

Regardless of whether functional insulation materials, sensitive interior materials or other materials are being handled: We at ASS Maschinenbau GmbH offer you the needle gripper that suits your requirements directly from stock or develop a tailor-made and process-reliable solution for you in the shortest possible time.

As a German manufacturer with almost 40 years of experience, we produce climate-neutrally and supply you with customer-oriented and high-quality products and solutions for handling your products. The modular system enables gripping solutions to be adapted to all product areas and production processes.

We are at your disposal as a contact person for solving your tasks for a non-binding consultation.



METHODICALLY

A needle gripper solution is available for every handling task.

Flexible materials and components made of fiber composite or foam materials and textiles of all kinds can be handled reliably.

TESTING & FIELD TRIALS

Material tests are particularly important for limp or adhesive materials.

We would be happy to advise you on site or carry out tests at our site in Overath. We will find solutions for you and your handling tasks - regardless of whether they are prototypes or series production.

EXCERPT OF THE ASS NEEDLE GRIPPERS

The examples of our needle grippers show the diversity of variants. Further special versions with, for example, individual piercing angles or depths can be realized at short notice thanks to our own development and production - and this is usually at a price level similar to that in a catalogue.

Each needle gripper has its individual advantages and our technical advice will work with you to determine the needle gripper that suits your application.

Part No.	Description	Number of needles	Penetration depth [mm]	Penetration angle [°]	Needle Ø [mm]	Contact area	Span, max. ca. [mm]	limp/flexible	tempered	sticky	voluminous	others
1-460-03-00	NGR X 16-10	4	0-5	30	2	Aluminium	65	x				
1-460-06-00	NGR 12	4	0-4	45	2	Aluminium	58	x				*1
1-460-08-00	NGR 12-6	6	0-4	45	2	Aluminium	55	x				
1-460-09-00	NGR 12 D	4	0-2,5	30	2	Aluminium	116	x				*2
1-460-10-00	NGR 12-10 D	10	0-2,8	20	2	PTFE	130	x	x	x		*3
1-460-12-00	NGR 12 DL	4	0-2,5	30	2	Polyamide	121	x				*2,7
1-460-13-00	NGR 12-8 DK	8	0-2,5	30	2	Aluminium	120	x				*2,7
1-460-14-00	NGR 12-8 D	8	0-2,5	30	2	Aluminium	116	x				*2
1-460-19-00	NGR 16-18 EZ	18	0-1,8	30	0,7	Steel	36	x				*4,8
1-460-25-00	NGR 20-6-25 D	6	0-25	45	1,5	PTFE	233	x	x	x	x	*5,8
1-460-30-00	NGR 16-10-7 D	10	0-7	30	1,5	PTFE	123	x	x	x		*6,8
1-460-33-00	NGR 16-10-15 D	10	0-15	30	1,5	PTFE	177	x	x	x	x	*6,8
1-460-70-00	NGR 12-6 DS A	6	0-5	30	2	Aluminium	100	x	x			*6,8
9-07-460-060-0	NGR 12-10 D EST	10	0-4,5	20	2	PTFE	130	x	x	x		*3
9-07-460-157-0	NGR 12-6 DS A TP	6	0-5	30	2	PTFE	100	x	x	x		*6,8
9-07-460-200-0	NGR 25-6-88 D	6	0-88	45	4	PTFE	555	x	x	x	x	*5,8
9-07-460-210-0	NGR 32-36-50 D	36	0-55	24	4	PTFE	755	x	x	x	x	*5,8

- *1 - magazine rod, centering mandrel or similar can dip into it
- *2 - magazine rod, centering pin or similar can dive trough completely
- *3 - specially designed contact surface to wipe off buildup
- *4 - additional cover for very thin fabrics included
- *5 - also suitable for SMC materials, for example
- *6 - can be bundled, needles additionally coated with PTFE
- *7 - weight-optimized lightweight construction
- *8 - Basic and working position can be queried as an option

NON-STICKING

Special coatings enable handling of sticky and adhesive materials. For example, sheet mold compound (SMC) and other sticky fiber matrix semi-finished products can be handled without leaving any residue.

HEAT RESISTANT

Needle grippers and insulators with heat-resistant properties that come into contact with components enable process-reliable handling of temperature-controlled materials. Even in heating fields, organo sheets or tough compound masses can be moved safely. Components such as heat-resistant vacuum cups are also available.



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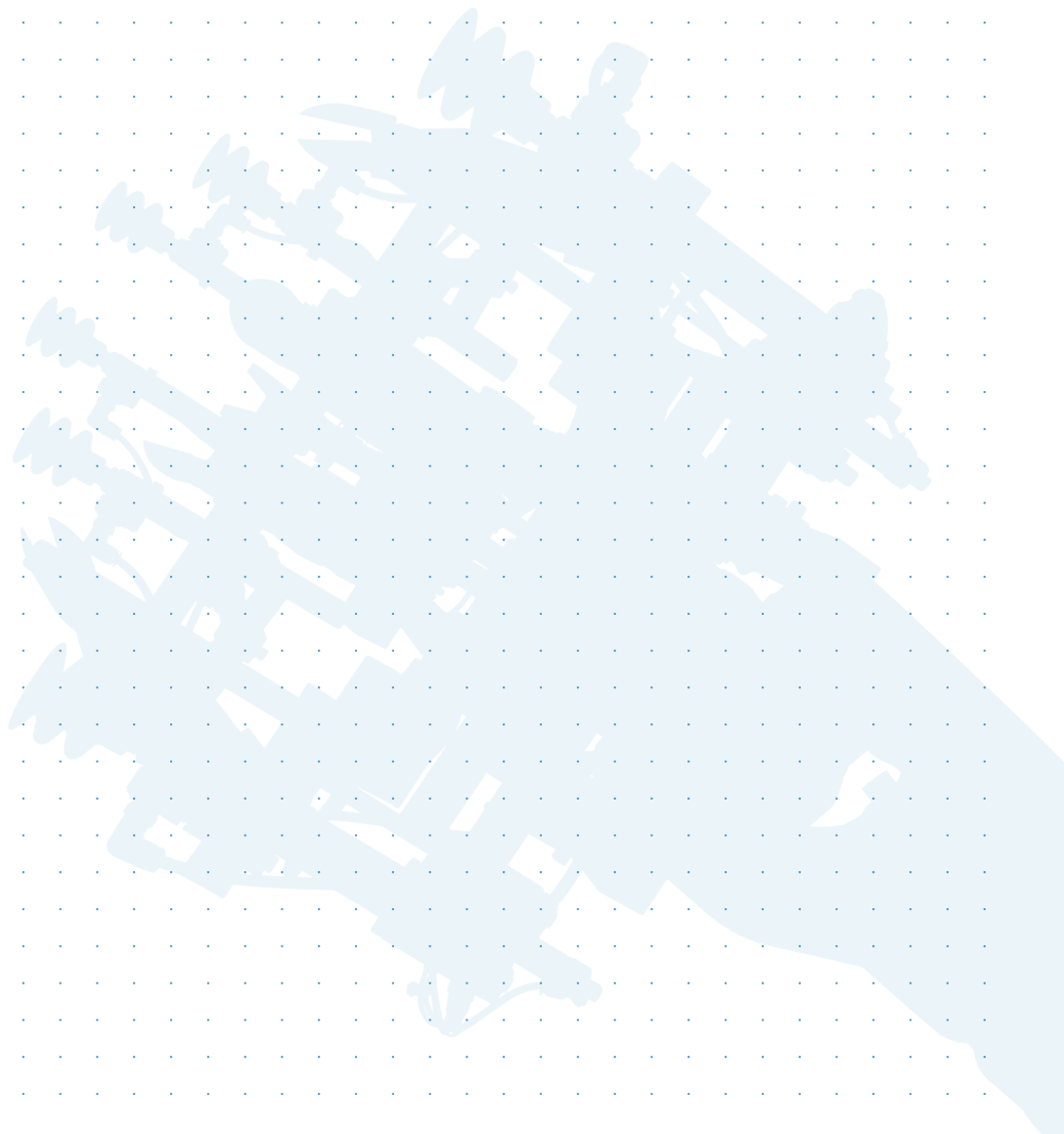
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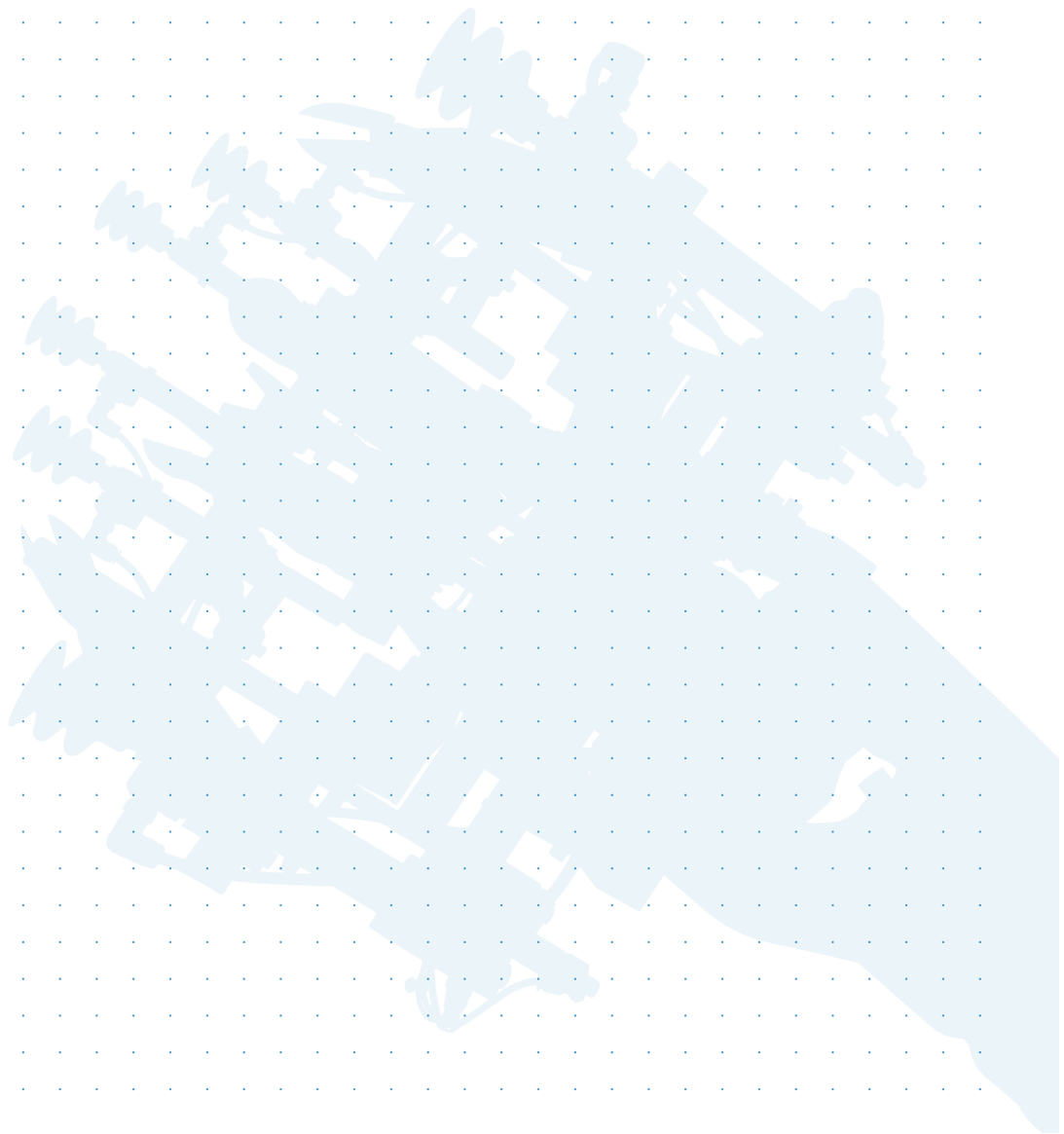
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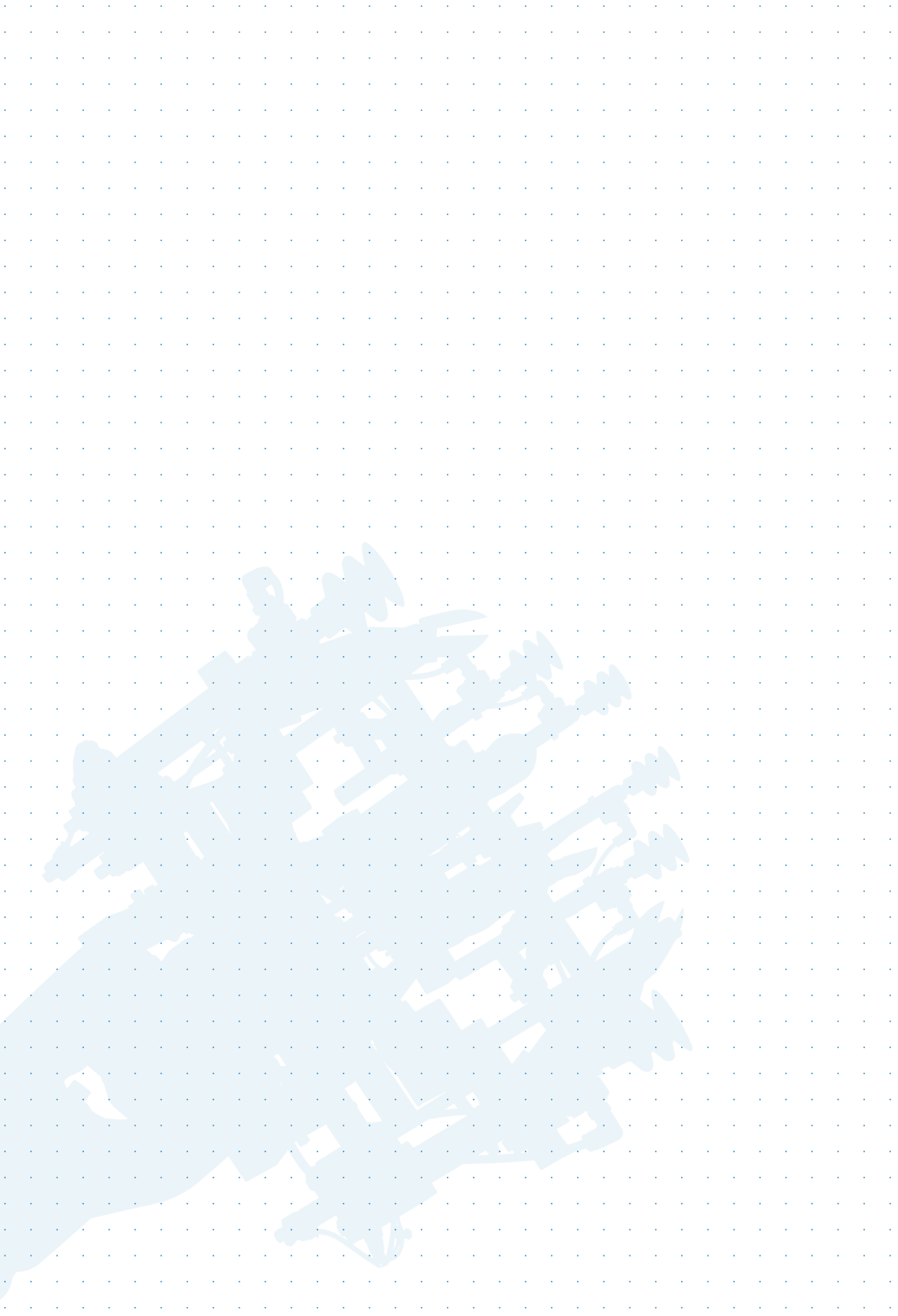
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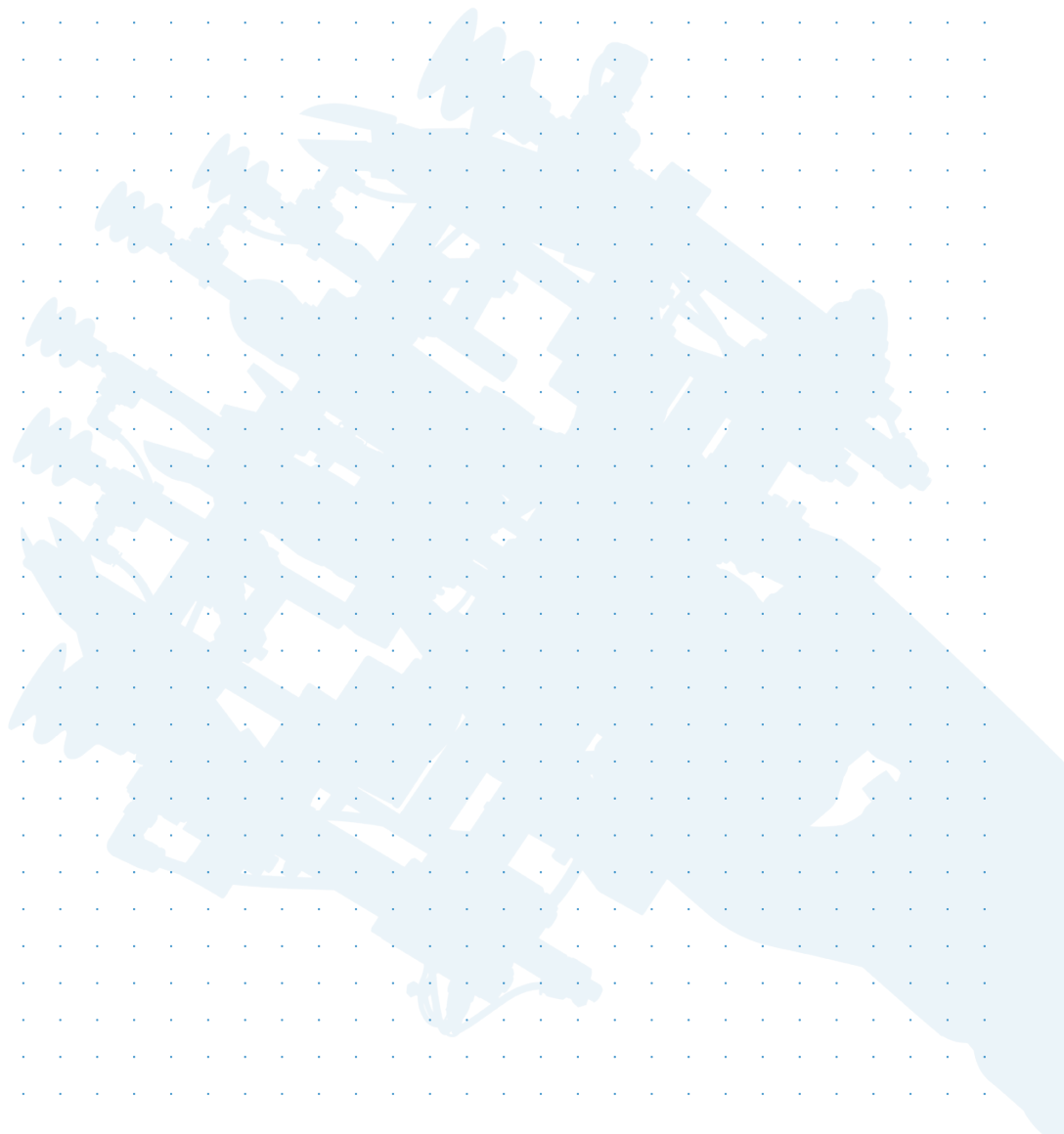




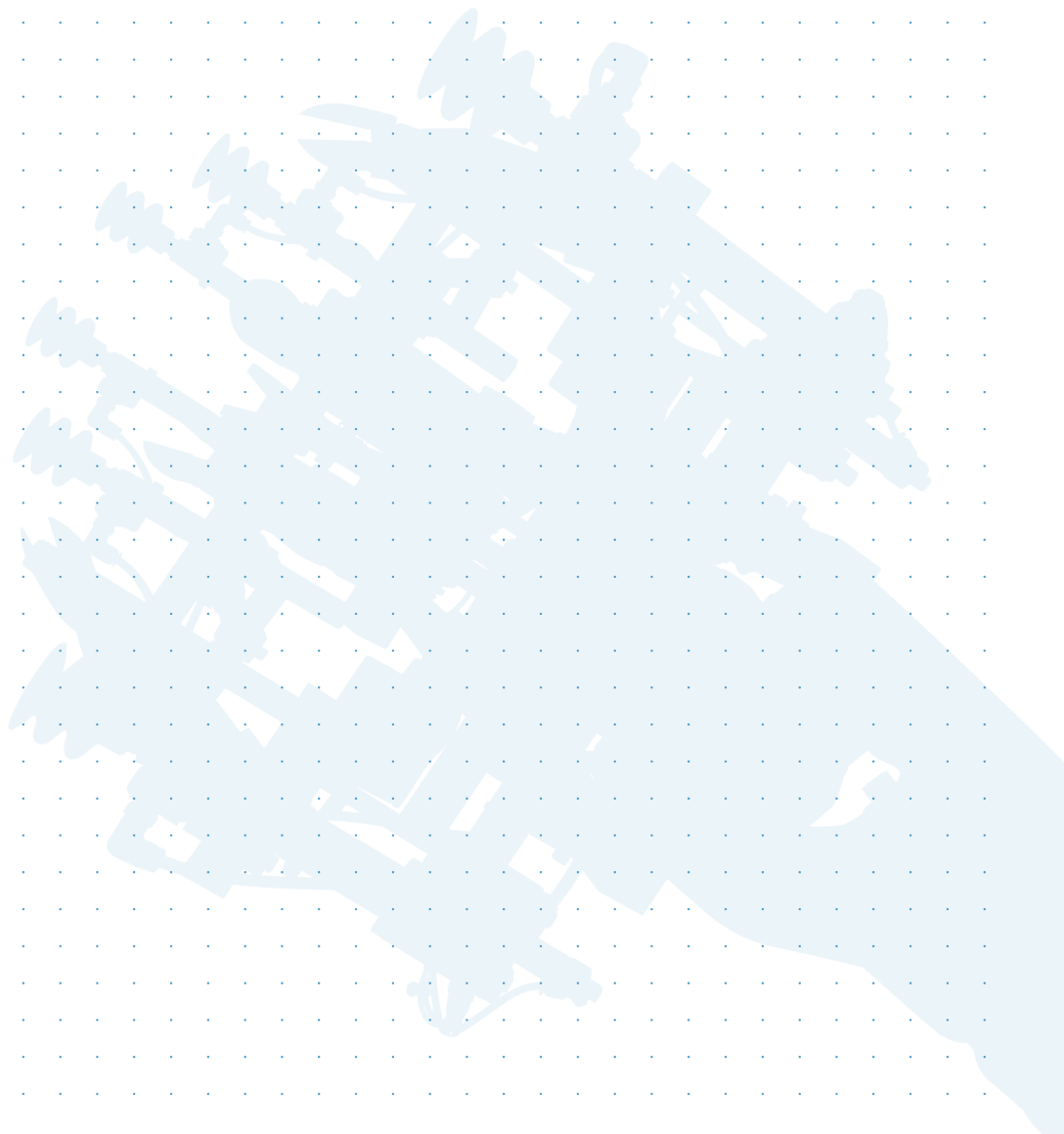




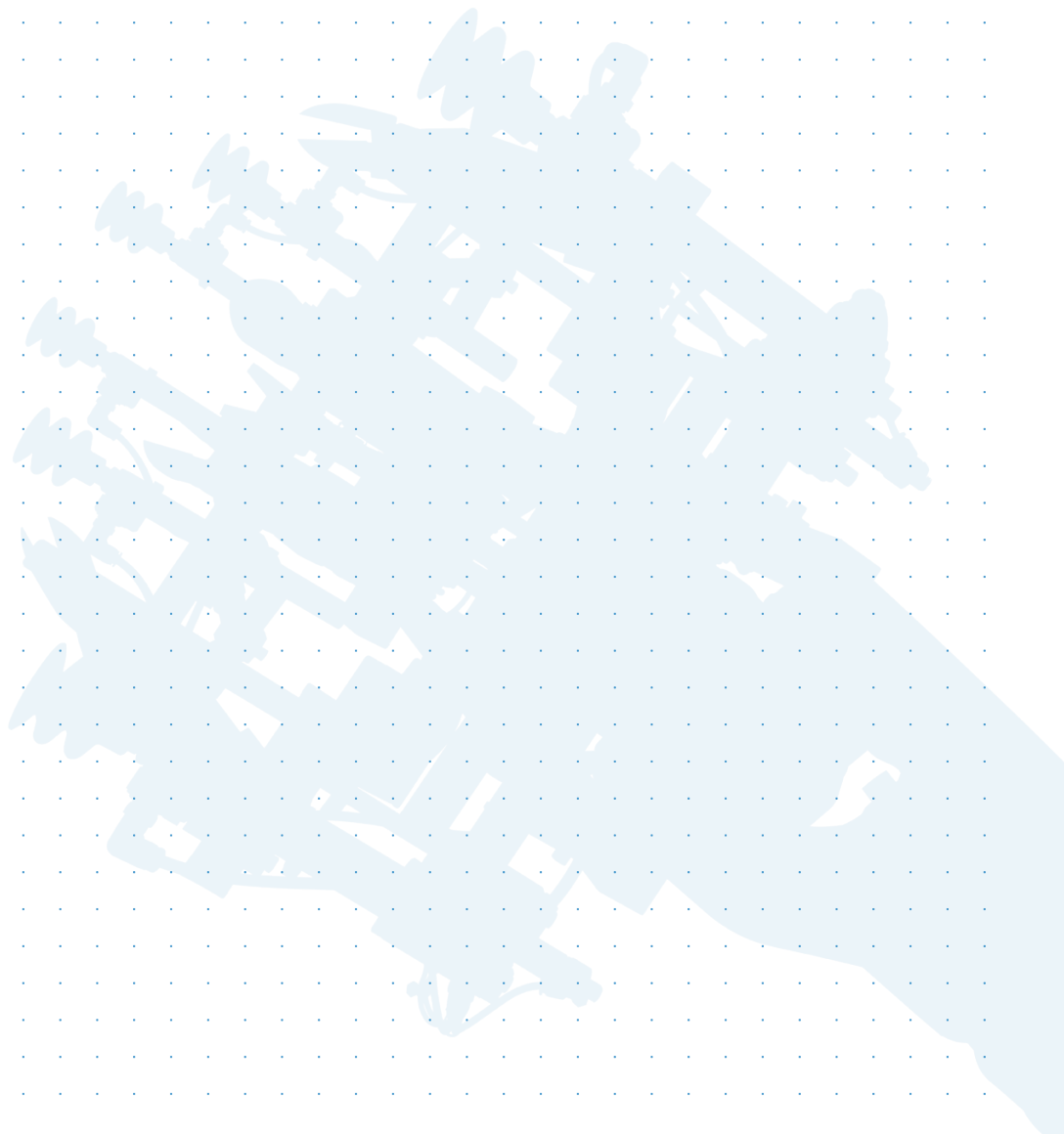


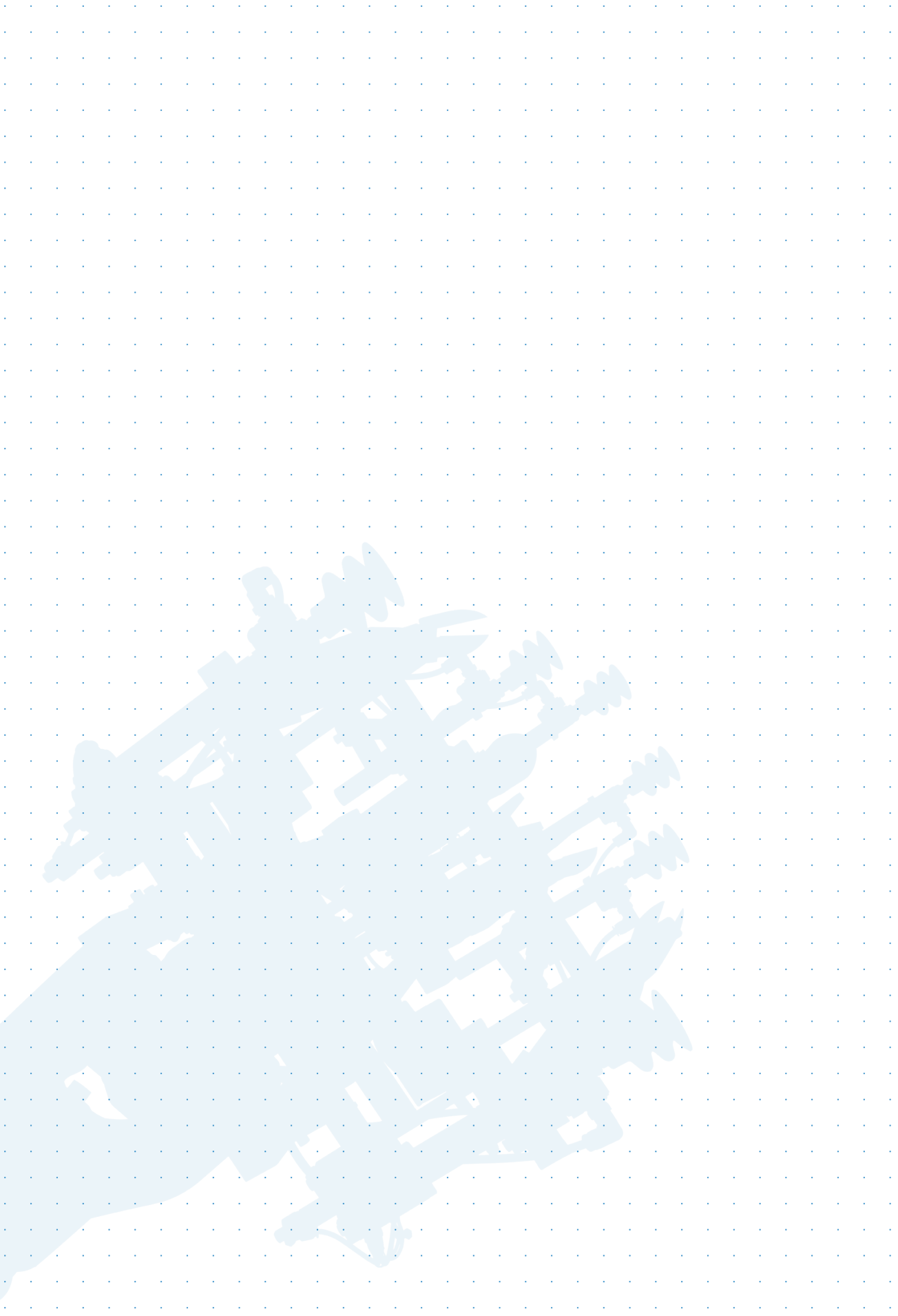


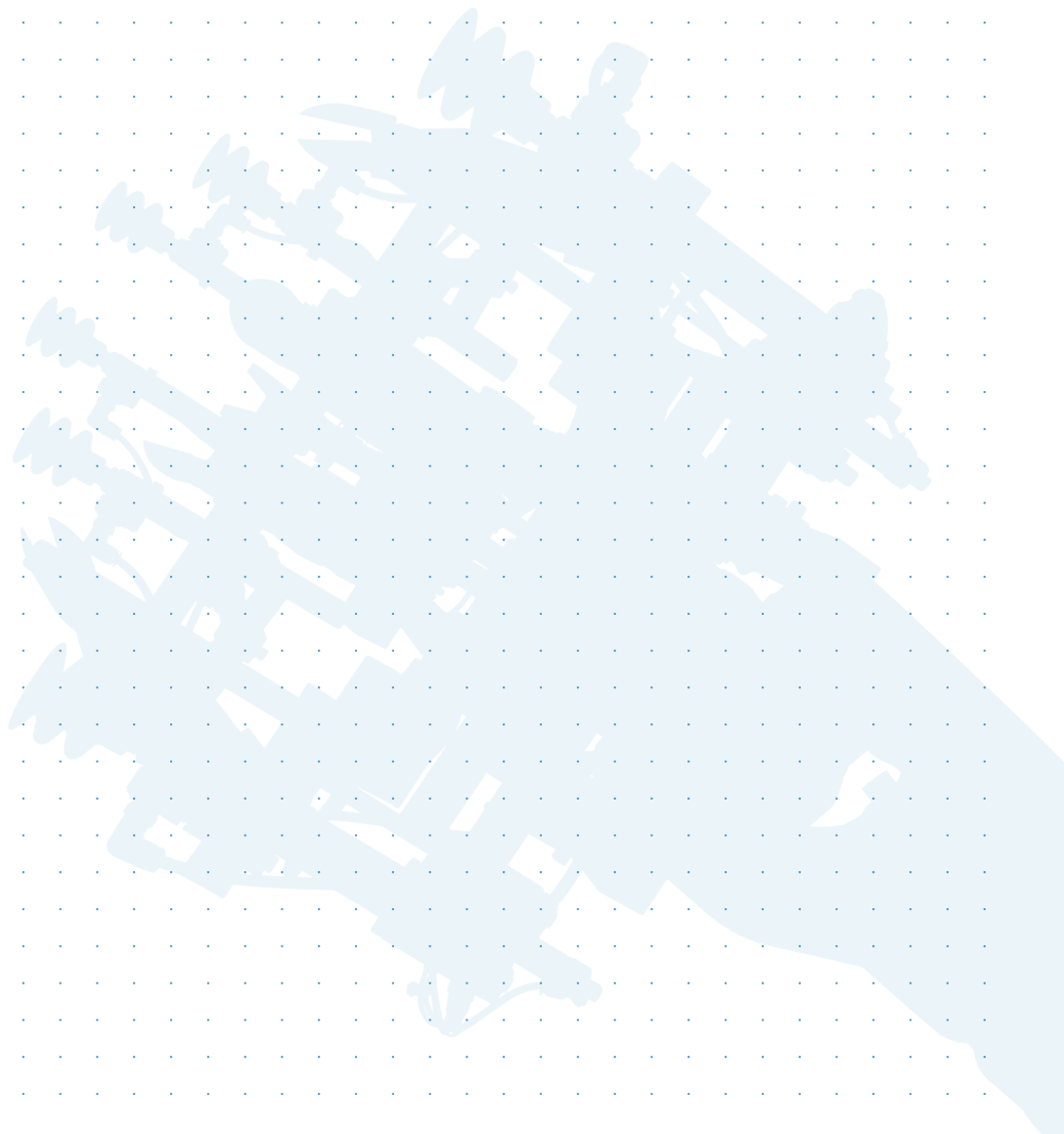


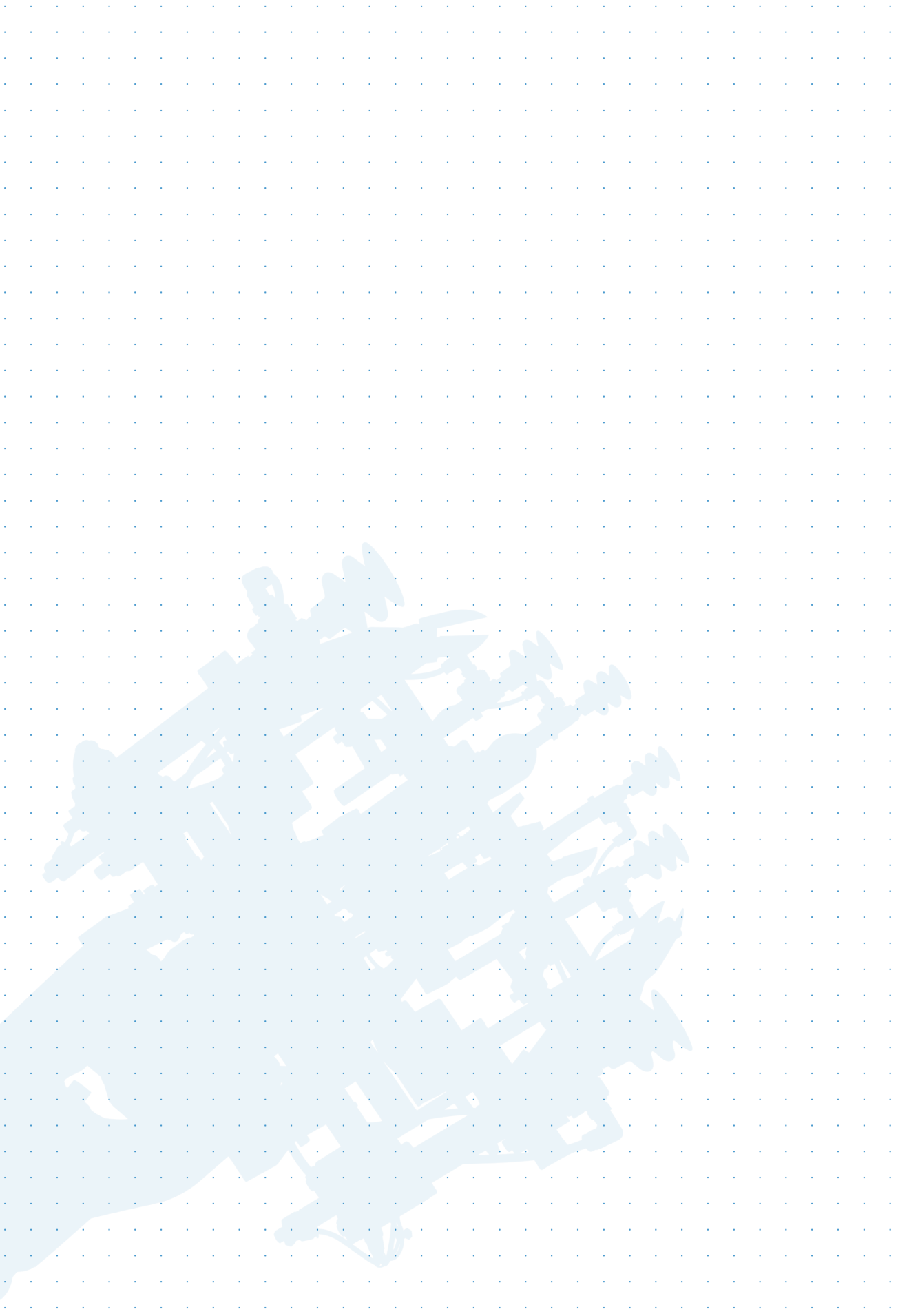


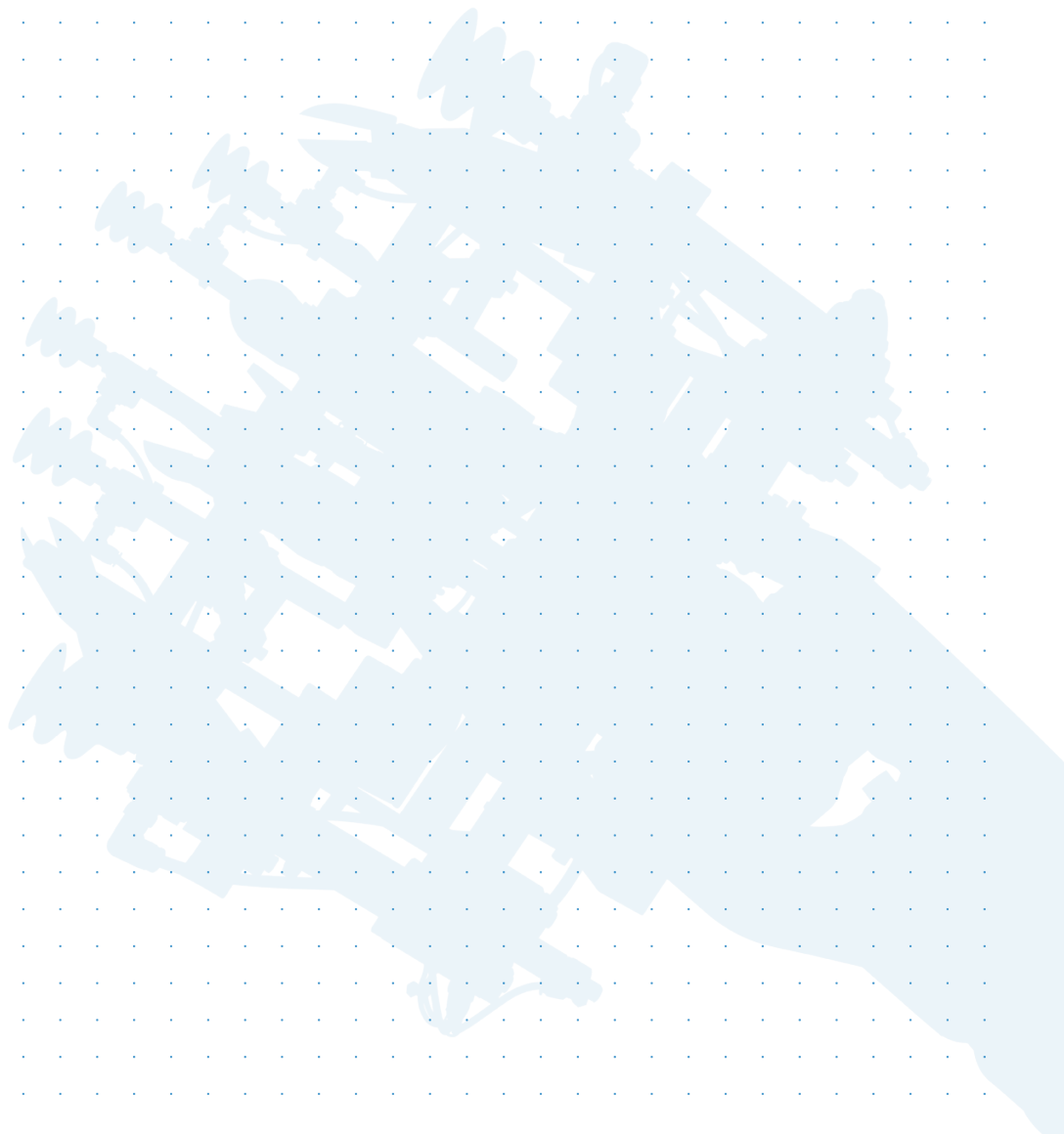


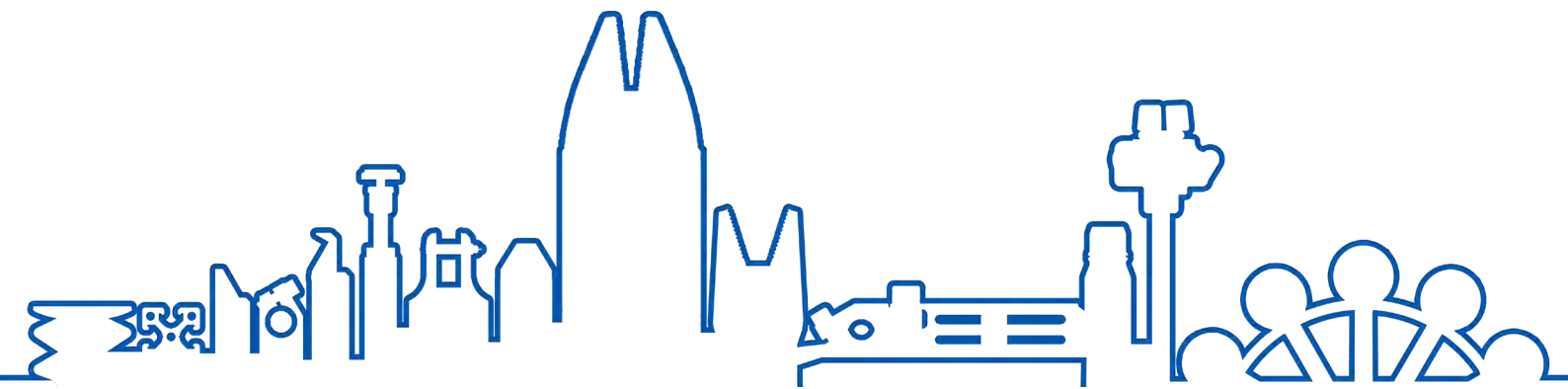












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