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FIPA Sprue grippers and gripper fingers

- > Active gripper elements for secure and precise demoulding of plastic parts or general handling of workpieces



Sprue grippers

- > Wide jaw opening for large sprues
- > Narrow closing-gap for small sprues
- > Single-acting or double-acting
- > Series 130 and 140 come with self-centering factory setting, easy to deactivate if required
- > Detects sprues larger 1 mm

> See page 138



Grippers with lift

- > For flat sprues or flaps
- > Feed lift for demoulding of plastic parts
- > Return lift for depositing
- > Double-acting and self-centering
- > Detects parts larger 1 mm

> See page 155



Exchangeable jaws for grippers GR40.103 and GR04.131C

- > Jaws with HNBR elastomer pad for gentle gripping of sprues or film
- > Aluminium blanks for customisation
- > Prism and V-notch shaped jaws (anvil principle) enable 3-point gripping of conical sprues
- > V-notch shaped jaws for axial gripping

> See page 145 and 152



Grippers for direct mounting

- > Compact design for direct integration to extrusions
- > Single-acting (GR04.110A and B) and double-acting (GR04.110)
- > Detects sprues larger 1 mm

> See page 158



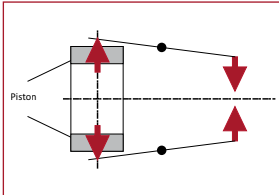
Gripper fingers

- > Gripping behind and clamping workpieces
- > 35° and 95° lift
- > HNBR elastomer pads for gentle product contact
- > Centering and stop elements available

> See page 164



FIPA Sprue grippers and gripper fingers - Technical properties



Very high gripping force

- > Force directly transferred to gripper jaws by two pneumatic pistons
- > Wear is minimised, gripping force is maximised



Long life due to robust design

- > Gripper body and jaws made of high-strength, anodised aluminium alloy
- > Maximises wear resistance and lifetime



Direct part detection

- > Large area sensor activation, independent of sprue position in the gripper
- > PNP and NPN sensors
- > Detects sprues larger 1 mm
- > Integrated control LED



Indirect part detection

- > Sensor activated if no part has been gripped and jaws are fully closed
- > PNP and NPN sensors
- > Sensors without mechanical or moving components, suitable for high loads
- > Integrated control LED



Series 130 and 140 can be easily disassembled without snap rings

- > Jaws quickly exchanged
- > Grippers easily changed-over to non self-centering



Grippers | Sprue grippers

Series 80 - miniature gripper, clamping diameter 10 mm

Series 80 - miniature gripper, clamping diameter 10 mm



HIGHEST GRIPPING FORCE IN RELATION TO SIZE



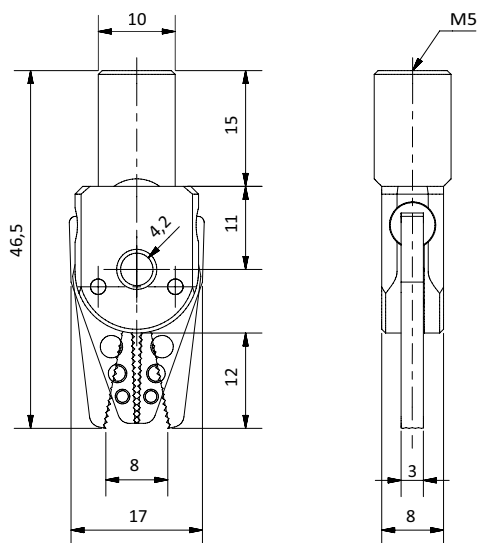
Product description

- > Gripper for small sprues and restricted space requirements
- > High gripping force and wide jaw opening
- > Body and jaws made of high-strength anodised aluminium alloy

Technical data

Item no.	Principle of operation	Medium	Operating pressure [bar]	Closing force at 6 bar [N]	Weight [g]
GR04.080	Single-acting	Filtered and oiled / unoiled air	6	12	8

Dimensions





Series 90 - miniature grippers, clamping diameter 10 mm



GR04.090



GR04.091

Product description

- > Gripper for small sprues and restricted space requirements
- > High gripping force and wide jaw opening
- > Part control via indirect sensing
 - Sensor activated if no part has been gripped
- > Body and jaws made of high-strength anodised aluminium alloy

Notes

- > PNP inverter 20.530 enables direct part detection: Sensor is activated if a part has been gripped
- > The converter 20.531 enables use of the grippers in NPN circuits

Ordering notes

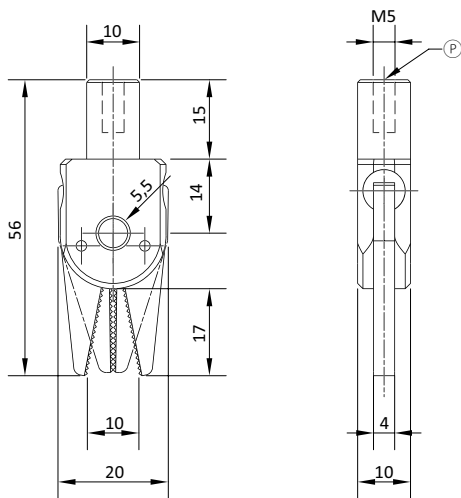
- > GR04.091: Sensor cable with plug 3-wire M8, length 0.3 m included in scope of delivery

Technical data

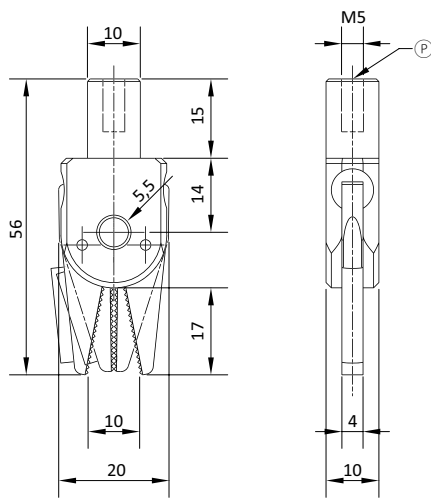
Item no.	Principle of operation	Medium	Operating pressure [bar]	Sensor	Closing force at 6 bar [N]	Weight [g]	Accessories
GR04.090	Single-acting	Filtered and oiled / unfiltered air	2.5 - 6	--	15	15	--
GR04.091	Single-acting	Filtered and oiled / unfiltered air	2.5 - 6	PNP*	15	17	Connector cable 20.503 (p.380) Signal converter 20.530 (p.392) Signal converter 20.531 (p.392)

* = Sensing of parts larger 2 mm

Dimensions



GR04.090



GR04.091

Ⓟ = Compressed air connection



Grippers | Sprue grippers

Series 100 - grippers, clamping diameter 10 mm, without sensor

Series 100 - grippers, clamping diameter 10 mm, without sensor



SINGLE-ACTING OR DOUBLE-ACTING

Product description

- > Medium sized gripper with wide jaw opening for large sprues
- > Gap-free closing for flat sprues
- > Double-acting to enable short duty cycles
- > Body and jaws made of high-strength anodised aluminium alloy

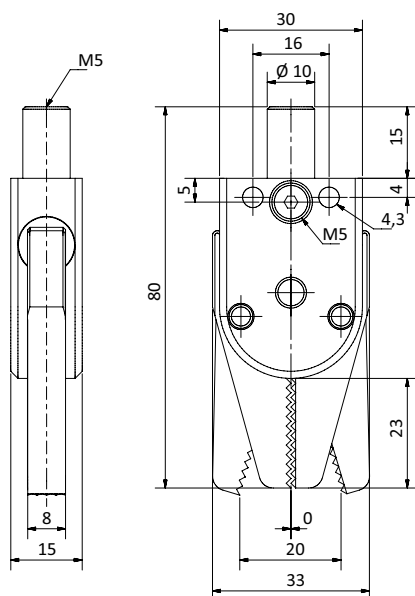
Notes

- > If sensing is required, please use grippers GR04.101A or GR04.104

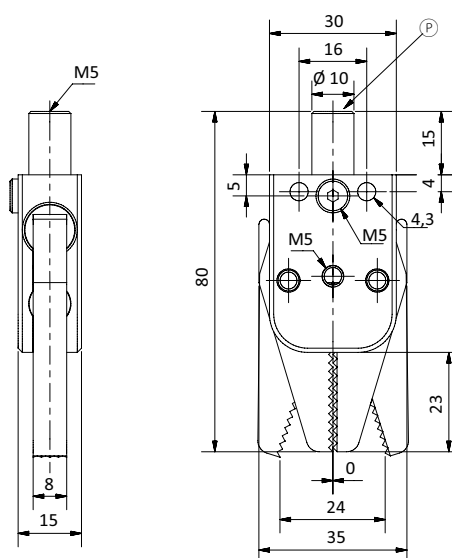
Technical data

Item no.	Principle of operation	Medium	Operating pressure [bar]	Closing force at 6 bar [N]	Weight [g]
GR04.100	Single-acting	Filtered and oiled / unoled air	2.5 - 8	22	48
GR04.102A	Double-acting	Filtered and oiled / unoled air	2.5 - 8	20	49

Dimensions



GR04.100



GR04.102A

Ⓟ = Compressed air connection



Series 100 - gripper, clamping diameter 10 mm, with sensor

GR04.101A: DETECTS SPRUES LARGER 1 MM



GR04.101A



GR04.104

Product description

- > Grippers with wide jaw opening for large sprues
- > Gap-free closing for flat sprues
- > Model 101A with direct part detection, large area sensor activation, regardless of sprue position
- > Model 104 with indirect part detection, signals when jaws are closed because no part has been gripped
 - No moving parts
- > Body and jaws made of high-strength anodised aluminium alloy

Ordering notes

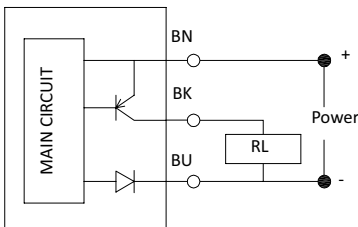
- > Sensor with 3-pole M8 connector cable 0.2 m included in scope of delivery

Technical data

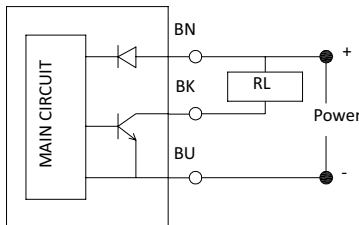
Item no.	Principle of operation	Medium	Operating pressure [bar]	Sensor	Closing force at 6 bar [N]	Weight [g]	Accessories
GR04.101A	Single-acting	Filtered and oiled / unoiled air	2.5 - 8	PNP	22	48	Sensor GR04.131-S1 (p.378) Connector cable 20.503 (p.380)
GR04.101A/NPN	Single-acting	Filtered and oiled / unoiled air	2.5 - 8	NPN	22	48	Sensor GR04.131-S2 (p.378) Connector cable 20.503 (p.380)
GR04.104	Single-acting	Filtered and oiled / unoiled air	2.5 - 8	PNP	22	53	Sensor GR04.203P (p.374) Connector cable 20.503 (p.380)
GR04.104/NPN	Single-acting	Filtered and oiled / unoiled air	2.5 - 8	NPN	22	53	Sensor GR04.203N (p.374) Connector cable 20.503 (p.380)

Wiring diagram sensors

GR04.203P



GR04.203N



BN = Brown, BK = Black, BU = Blue

Continued on the next page



Grippers | Sprue grippers

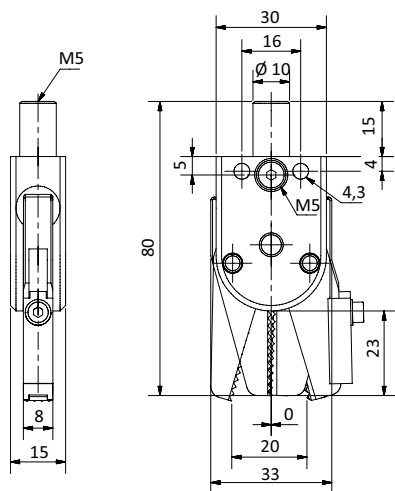
Series 100 - gripper, clamping diameter 10 mm, with sensor

Large area sprue detection

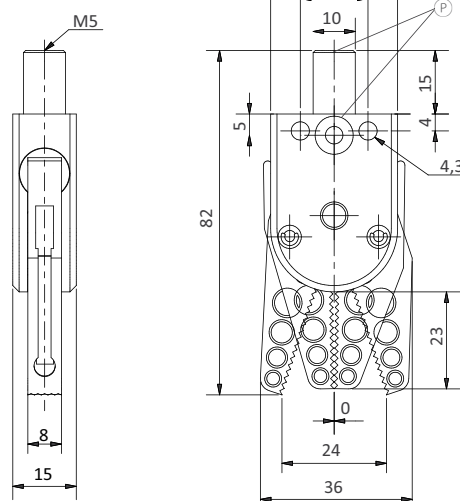


Direct sprue detection GR04.101A, GR04.101A/NPN - indirect sprue detection GR04.104, GR04.104/NPN

Dimensions



GR04.101A | GR04.101A/NPN



GR04.104 | GR04.104/NPN

P = Compressed air connection



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Grippers | Sprue grippers

Series 100 - grippers, clamping diameter 10 mm, HNBR-gummed jaws

Series 100 - grippers, clamping diameter 10 mm, HNBR-gummed jaws

NEW



GENTLE PRODUCT CONTACT ON ALL SIDES

Coated jaws protected by a utility model

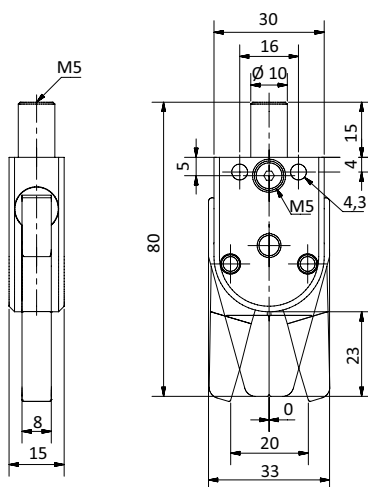
Product description

- > Fully HNBR-coated jaws allow for gentle gripping without scratching the workpiece
- > Gripper with wide opening jaws for large sprues
- > Gap-free closing for flat sprues
- > Body and jaws made of high-strength anodised aluminium alloy

Technical data

Item no.	Principle of operation	Medium	Operating pressure [bar]	Closing force at 6 bar [N]	Weight [g]
GR04.100-HNBR	Single-acting	Filtered and oiled / unoled air	2.5 - 8	22	48

Dimensions





Exchangeable jaws for gripper GR04.103



GR04.103-1 and GR04.103-4



GR04.103-2 and GR04.103-3

Product description

- > Gripper jaws to be used with base gripper GR04.103
- > Easy adjustment to changing product requirements

Ordering notes

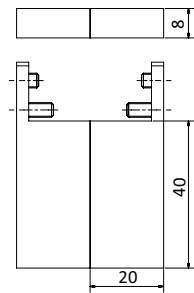
- > One set of HNBR pads for GR04.103-4 included in scope of delivery

Technical data

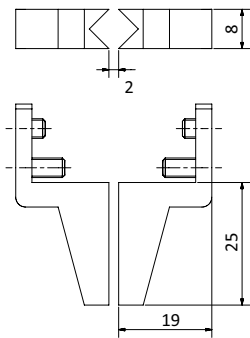
Item no.	Closing force [N]	Weight [g]	Jaw design	Application benefit	HNBR elastomer
GR04.103-1	*	40	Raw jaws	Aluminium-blanks: For customised jaw design	--
GR04.103-2	23	14	V-shape	Safe and secure grip of soft sprues or multi-component systems. Enables three-point contact when gripping conical sprues	--
GR04.103-3	23	14	V-shape, prism shape	Safe and secure grip of soft sprues or multi-component systems. Axial gripping of sprues	--
GR04.103-4	23	14	Jaws with HNBR elastomer	2x padded jaws: Soft gripping of sensitive components, films and more. Temperature range up to about 140 °C	GR04.103-4HNBR

* = Closing force depends on geometry of gripper jaws

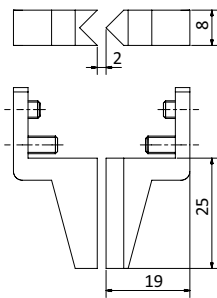
Dimensions



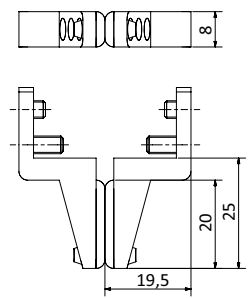
GR04.103-1



GR04.103-2



GR04.103-3



GR04.103-4



Grippers | Sprue grippers

Series 130 - grippers, clamping diameter 20 mm, without sensor

Series 130 - grippers, clamping diameter 20 mm, without sensor

SELF-CENTERING FACTORY SETTING



GR04.131A with straight jaws



GR04.131B with rounded jaws for inclined or very large sprues

Product description

- > Gripper with high gripping force and wide jaw opening for large sprues
- > Narrow closing gap for flat sprues (model A closes gap-free!)
- > Model B comes with rounded jaws with saw tooth profile for gripping inclined or very large sprues
- > Easy assembly / disassembly of gripper jaws without snap-rings
- > Body and jaws made of high-strength anodised aluminium alloy

Notes

- > If required the grippers can be easily converted to non self-centering
- > If part detection is required, please use the grippers GR04.131D, GR04.131E or GR04.130F

Technical data

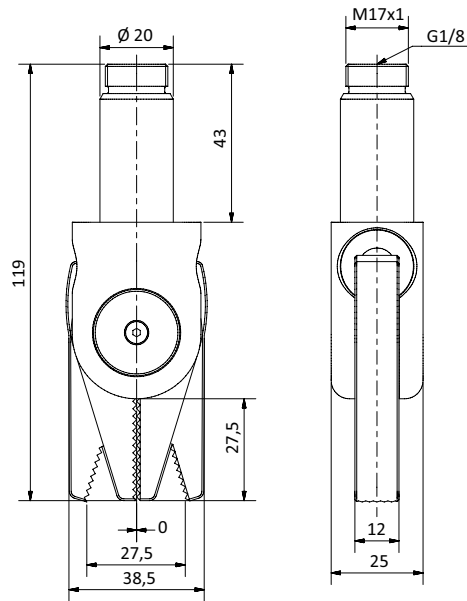
Item no.	Principle of operation	Medium	Operating pressure [bar]	Closing force at 6 bar [N]	Weight [g]
GR04.131A	Single-acting	Filtered and oiled / unoiled air	2.5 - 8	95	124
GR04.131B	Single-acting	Filtered and oiled / unoiled air	2.5 - 8	95	124

Assembly of the gripper jaws without snap rings

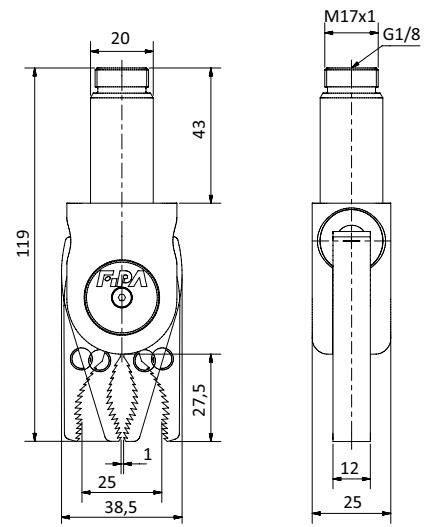




Dimensions



GR04.131A



GR04.131B



Grippers | Sprue grippers

Series 130 - grippers, clamping diameter 20 mm, adaptable

Series 130 - grippers, clamping diameter 20 mm, adaptable



Example of use with HNBR-gummed exchangeable jaws GR04.130C-4

Product description

- > Medium sized gripper for adapting customised jaws
- > Wide opening for large sprues
- > Variety of interchangeable jaws available as standard
- > Body and jaws made of high-strength anodised aluminium alloy

Notes

Exchangeable jaws

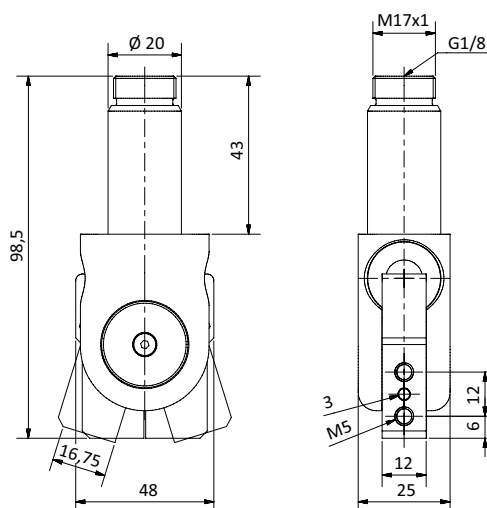
- > GR04.130C-1: Aluminium-blanks: For customised jaw design
- > GR04.130C-2: V-shape
Safe and secure grip of soft sprues or multi-component systems. Enables three-point contact when gripping conical sprues
- > GR04.130C-3: V-shape, prism shape
Safe and secure grip of soft sprues or multi-component systems. Axial gripping of sprues
- > GR04.130C-4: Jaws with HNBR elastomer
2x padded jaws: Soft gripping of sensitive components, films and more. Temperature range up to about 140 °C

Technical data

Item no.	Principle of operation	Medium	Operating pressure [bar]	Closing force at 6 bar [N]	Weight [g]	Exchangeable jaws
GR04.131C	Single-acting	Filtered and oiled / unoled air	2.5 - 8	*	110	GR04.130C-1 (p.152) GR04.130C-2 (p.152) GR04.130C-3 (p.152) GR04.130C-4 (p.152)

* = Closing force depends on geometry of gripper jaws

Dimensions





Series 130 - grippers, clamping diameter 20 mm, with direct sensing

DETECTS SPRUES LARGER 1 MM, SELF-CENTERING FACTORY SETTING



GR04.131D with straight jaws



GR04.131E with rounded jaw for very large or inclined sprues

Product description

- > Grippers with high gripping force and very wide jaw opening for large sprues
- > Narrow closing gap for flat sprues (model A closes gap-free!)
- > Self-centering factory setting
- > Large area sensor activation, regardless of sprue position
- > Easy assembly / disassembly of the gripper jaws without snap-rings
- > Model E comes with rounded jaw with saw tooth profile for gripping inclined or very large sprues
- > Body and jaws made of high-strength anodised aluminium alloy

Notes

- > If required the grippers can be easily converted to non self-centering

Ordering notes

- Included in scope of delivery
- > Sensor GR04.131-S1, resp. GR04.131-S2, cable 0.2 m, 3-pin M8 male plug
 - > Extension cable 2 m, 3-pin M8 socket, free end

Technical data

Item no.	Principle of operation	Medium	Operating pressure [bar]	Sensor	Closing force at 6 bar [N]	Weight [g]	Accessories
GR04.131D	Single-acting	Filtered and oiled / unoled air	2 - 8	PNP	95	134	Extension tube GR06.022 (p.91) Connector cable 20.503 (p.380) Sensor GR04.131-S1 (p.378)
GR04.131D/NPN	Single-acting	Filtered and oiled / unoled air	2 - 8	NPN	95	134	Extension tube GR06.022 (p.91) Connector cable 20.503 (p.380) Sensor GR04.131-S2 (p.378)
GR04.131E	Single-acting	Filtered and oiled / unoled air	2 - 8	PNP	95	134	Extension tube GR06.022 (p.91) Connector cable 20.503 (p.380) Sensor GR04.131-S1 (p.378)
GR04.131E/NPN	Single-acting	Filtered and oiled / unoled air	2 - 8	NPN	95	134	Extension tube GR06.022 (p.91) Connector cable 20.503 (p.380) Sensor GR04.131-S2 (p.378)

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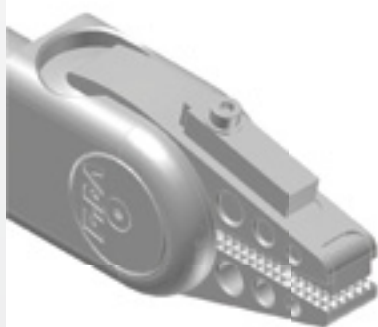
Grippers | Sprue grippers

Series 130 - grippers, clamping diameter 20 mm, with direct sensing

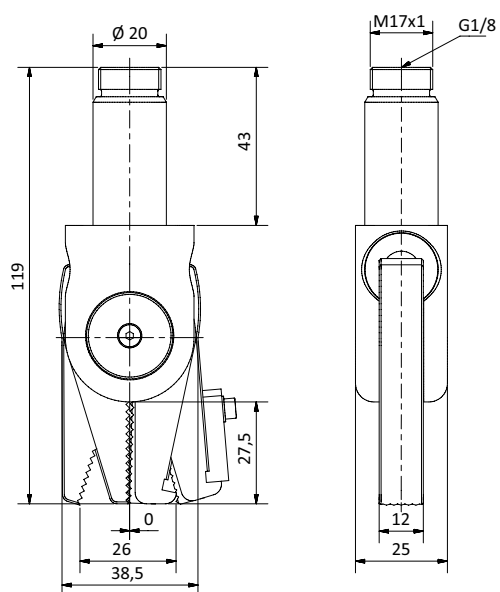
Assembly of the gripper jaws without snap rings



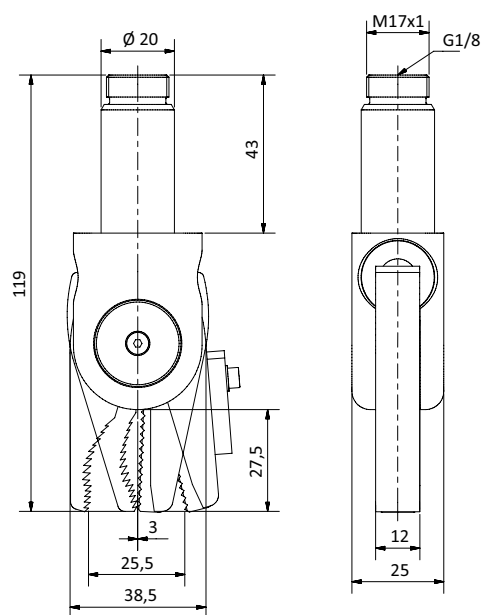
Large area sensor activation



Dimensions



GR04.131D | GR04.131D/NPN



GR04.131E | GR04.131E/NPN



Series 130 - grippers, clamping diameter 20 mm, with indirect sensor

SENSOR ACTIVATION WITH JAWS FULLY CLOSED



Product description

- > Grippers with high gripping force and wide jaw opening for large sprues
- > Narrow closing gap for flat sprues
- > Signals when jaws are closed because no part has been gripped
- > Sensor with no moving parts for increased mechanical stability
- > Body and jaws made of high-strength anodised aluminium alloy

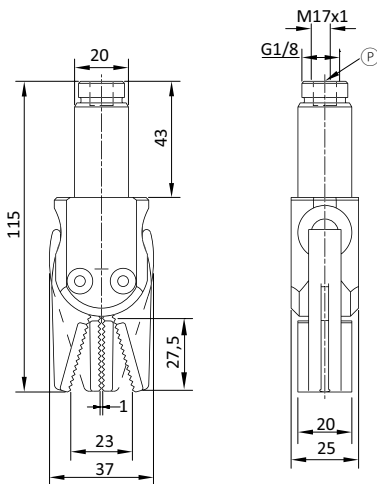
Ordering notes

- > Sensor GR04.111A, cable 0.3 m, 3-pin M8 male connector, free end, included in scope of delivery

Technical data

Item no.	Principle of operation	Medium	Operating pressure [bar]	Closing force at 6 bar [N]	Weight [g]	Accessories
GR04.130F	Single-acting	Filtered and oiled / unoiled air	2.5 - 8	95	120	Extension tube GR06.022 (p.91) Connector cable 20.503 (p.380) Sensor GR04.111A-Sensor

Dimensions



Ⓟ = Compressed air connection



Grippers | Sprue grippers

Exchangeable jaws for gripper GR04.131C

Exchangeable jaws for gripper GR04.131C



GR04.130C-1 and GR04.130C-4



GR04.130C-2 and GR04.130C-3

Product description

- > Gripper jaws to be used with base gripper GR04.131C
- > Easy adjustment to changing product requirements

Ordering notes

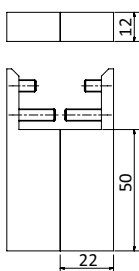
- > One set of HNBR pads included in scope of delivery

Technical data

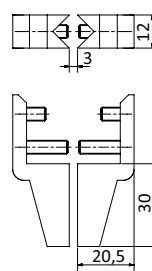
Item no.	Closing force [N]	Weight [g]	Jaw design	Application benefit	HNBR elastomer
GR04.130C-1	*	87	Raw jaws	Aluminium-blanks: For customised jaw design	--
GR04.130C-2	60	36	V-shape	Safe and secure grip of soft sprues or multi-component systems. Enables three-point contact when gripping conical sprues	--
GR04.130C-3	60	36	V-shape, prism shape	Safe and secure grip of soft sprues or multi-component systems. Axial gripping of sprues	--
GR04.130C-4	60	35	Jaws with HNBR elastomer	2x padded jaws: Soft gripping of sensitive components, films and more. Temperature range up to about 140 °C	GR04.130C-4HNBR

* = Closing force depends on geometry of gripper jaws

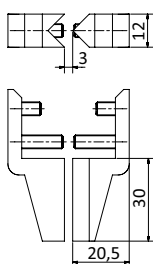
Dimensions



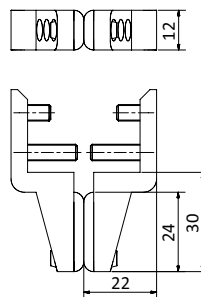
GR04.130C-1



GR04.130C-2



GR04.130C-3



GR04.130C-4



Series 140 - power grippers, clamping diameter 20 mm

DETECTS SPRUES LARGER 1 MM, SELF-CENTERING FACTORY SETTING



Application example: Gripping of plastic flaps

Product description

- > Grippers with high gripping force and narrow closing gap for flat sprues
- > Large area sensor activation, regardless of sprue position
- > Easy exchange of jaws without snap-rings
- > Body and jaws made of high-strength anodised aluminium alloy

Notes

- > If required, the grippers can be easily converted to non self-centering

Ordering notes

- > Included in scope of delivery
- > Sensor GR04.131-S1, resp. GR04.131-S2, cable 0.2 m, 3-pin M8 male plug
- > Extension cable 2 m, 3-pin M8 socket, free end

Technical data

Item no.	Principle of operation	Medium	Operating pressure [bar]	Sensor	Closing force at 6 bar [N]	Weight [g]	Accessories
GR04.140A	Single-acting	Filtered and oiled / unoiled air	2 - 8	--	380	395	--
GR04.140B	Single-acting	Filtered and oiled / unoiled air	2 - 8	PNP	380	405	Connector cable 20.503 (p.380) Sensor GR04.131-S1 (p.378)
GR04.140B/NPN	Single-acting	Filtered and oiled / unoiled air	2 - 8	NPN	380	405	Connector cable 20.503 (p.380) Sensor GR04.131-S2 (p.378)

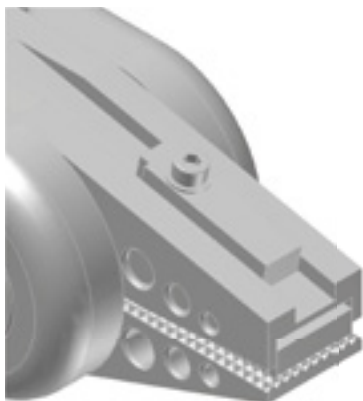
Assembly of the gripper jaws without snap rings



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Large area sensor activation

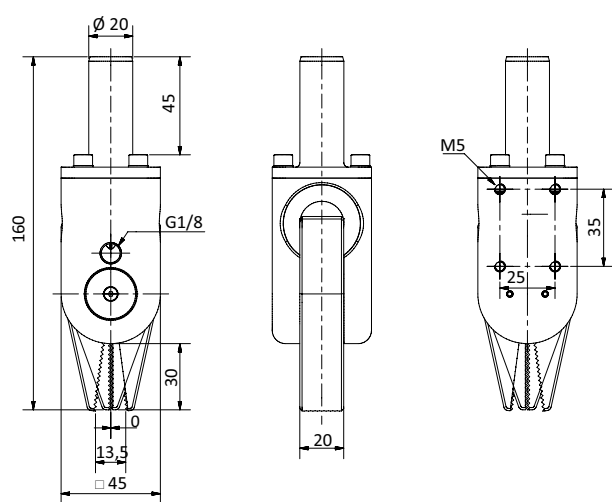


GR04.140B | GR04.140B/NPN

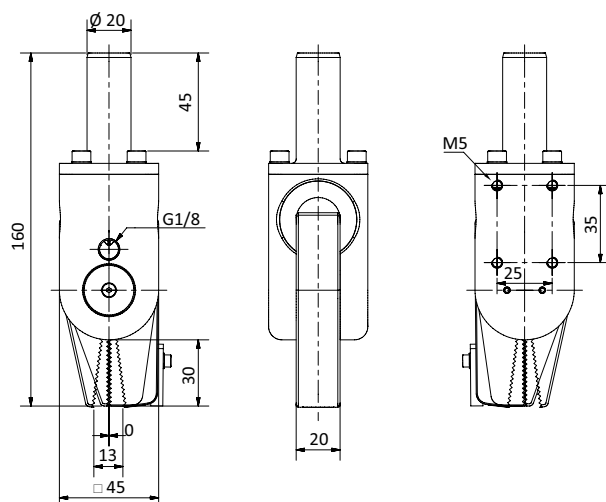
Installation example with side-mounted fitting



Dimensions



GR04.140A



GR04.140B | GR04.140B/NPN



Series 840 - power grippers with lift, clamping diameter 30 mm

NEW

DETECTS SPRUES LARGER 1 MM



Product description

- > Grippers with high gripping force and narrow closing gap for flat sprues
- > Feed lift (cylinder 1) moves gripper towards the mould for part removal
- > Back lift (cylinder 2) fully retracts gripper to enable undisturbed part release, e.g. on a conveyor belt
- > Grippers are self-centering
- > Suitable for heavy-duty applications due to closed, coaxial cylinder guiding
- > Part control via large area sensor activation, regardless of sprue position (GR04.140B, GR04.140B/NPN)
- > Detection of lift via optional cylinder sensors
- > Easy exchange of jaws without snap-rings

Notes

- > If required the grippers can quickly be changed over to non self-centering

Ordering notes

- > Included in scope of delivery of GR04.840B:
 - Sensor GR04.131-S1, resp. GR04.131-S2, cable 0.2 m, 3-pin M8 male connector, free end
 - Extension cable 2 m, 3-pin M8 male connector, free end
- > Please refer to "suitable sensors" for cylinder sensors

Technical data

Item no.	Medium	Operating pressure [bar]	Sensor	Closing force at 6 bar [N]	Lift 1 [mm]	Lift 2 [mm]	Weight [g]	Suitable sensors
GR04.840A-10	Filtered and oiled / unoiled air	6	--	380	10	--	1,040	GR04.280N (p.374) GR04.280P (p.374) GR04.202N (p.374) GR04.202P (p.374)
GR04.840A-20	Filtered and oiled / unoiled air	6	--	380	20	--	1,110	GR04.280N (p.374) GR04.280P (p.374) GR04.202N (p.374) GR04.202P (p.374)
GR04.840A-30	Filtered and oiled / unoiled air	6	--	380	30	--	1,185	GR04.280N (p.374) GR04.280P (p.374) GR04.202N (p.374) GR04.202P (p.374)
GR04.840A-20-10	Filtered and oiled / unoiled air	6	--	380	10	20	1,420	GR04.280N (p.374) GR04.280P (p.374) GR04.202N (p.374) GR04.202P (p.374)
GR04.840A-20-20	Filtered and oiled / unoiled air	6	--	380	20	20	1,480	GR04.280N (p.374) GR04.280P (p.374) GR04.202N (p.374) GR04.202P (p.374)

Continued on the next page



Grippers | Sprue grippers

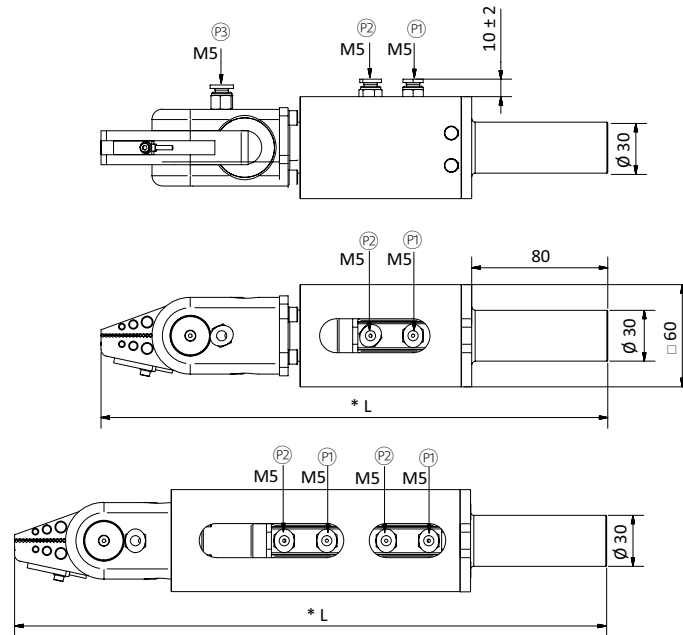
Series 840 - power grippers with lift, clamping diameter 30 mm

Technical data

Item no.	Medium	Operating pressure [bar]	Sensor	Closing force at 6 bar [N]	Lift 1 [mm]	Lift 2 [mm]	Weight [g]	Suitable sensors
GR04.840A-20-30	Filtered and oiled / unoled air	6	--	380	30	20	1,540	GR04.280N (p.374) GR04.280P (p.374) GR04.202N (p.374) GR04.202P (p.374)
GR04.840B-10	Filtered and oiled / unoled air	6	PNP	380	10	--	1,055	GR04.131-S1 (p.378) GR04.280P (p.374) GR04.202P (p.374)
GR04.840B-20	Filtered and oiled / unoled air	6	PNP	380	20	--	1,130	GR04.131-S1 (p.378) GR04.280P (p.374) GR04.202P (p.374)
GR04.840B-30	Filtered and oiled / unoled air	6	PNP	380	30	--	1,200	GR04.131-S1 (p.378) GR04.280P (p.374) GR04.202P (p.374)
GR04.840B-20-10	Filtered and oiled / unoled air	6	PNP	380	10	20	1,440	GR04.131-S1 (p.378) GR04.280P (p.374) GR04.202P (p.374)
GR04.840B-20-20	Filtered and oiled / unoled air	6	PNP	380	20	20	1,500	GR04.131-S1 (p.378) GR04.280P (p.374) GR04.202P (p.374)
GR04.840B-20-30	Filtered and oiled / unoled air	6	PNP	380	30	20	1,560	GR04.131-S1 (p.378) GR04.280P (p.374) GR04.202P (p.374)
GR04.840B-10/NPN	Filtered and oiled / unoled air	6	NPN	380	10	--	1,055	GR04.131-S2 (p.378) GR04.202N (p.374) GR04.280N (p.374)
GR04.840B-20/NPN	Filtered and oiled / unoled air	6	NPN	380	20	--	1,130	GR04.131-S2 (p.378) GR04.202N (p.374) GR04.280N (p.374)
GR04.840B-30/NPN	Filtered and oiled / unoled air	6	NPN	380	30	--	1,200	GR04.131-S2 (p.378) GR04.202N (p.374) GR04.280N (p.374)
GR04.840B-20-10/NPN	Filtered and oiled / unoled air	6	NPN	380	10	20	1,440	GR04.131-S2 (p.378) GR04.202N (p.374) GR04.280N (p.374)
GR04.840B-20-20/NPN	Filtered and oiled / unoled air	6	NPN	380	20	20	1,500	GR04.131-S2 (p.378) GR04.202N (p.374) GR04.280N (p.374)
GR04.840B-20-30/NPN	Filtered and oiled / unoled air	6	NPN	380	30	20	1,560	GR04.131-S2 (p.378) GR04.202N (p.374) GR04.280N (p.374)



Dimensions



* = The length L refers to the gripper with retracted cylinders. Total length = L + lift 1 resp. lift 2

P1 = Compressed air connection cylinder extended P2 = Compressed air connection cylinder retracted P3 = Compressed air connection gripper

Item no.	L [mm]
GR04.840A-10	288
GR04.840A-20	298
GR04.840A-30	308
GR04.840A-20-10	338
GR04.840A-20-20	348
GR04.840A-20-30	358
GR04.840B-10	288
GR04.840B-20	298
GR04.840B-30	308
GR04.840B-20-10	338
GR04.840B-20-20	348
GR04.840B-20-30	358
GR04.840B-10/NPN	288
GR04.840B-20/NPN	298
GR04.840B-30/NPN	308
GR04.840B-20-10/NPN	338
GR04.840B-20-20/NPN	348
GR04.840B-20-30/NPN	358



Grippers | Sprue grippers for direct mounting

Series 110 - grippers, with indirect sensing, single-acting

Series 110 - grippers, with indirect sensing, single-acting



Example of use with mounting bracket GR04.196A

Product description

- > Grippers with high gripping force and wide jaw opening
- > Jaws with rough tooth pattern for parts that are difficult to demould
- > Sprue detection via indirect sensing, signals when jaws are closed, because no part has been gripped

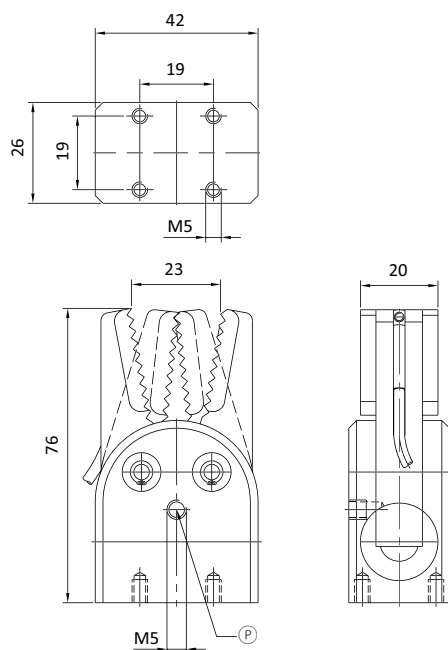
Ordering notes

- > Sensor with 3-pole M8 plug and 0.3 m cable included in scope of delivery

Technical data

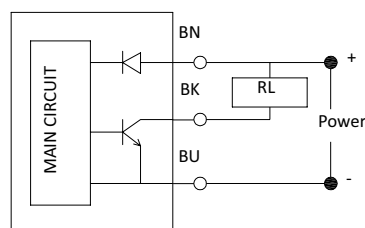
Item no.	Principle of operation	Operating pressure [bar]	Sensor	Closing force at 6 bar [N]	Weight [g]	Accessories
GR04.111A	Single-acting	2 - 8	PNP*	95	135	Mounting bracket GR04.196A (p.163) Connector cable 20.503 (p.380) Sensor GR04.111A-Sensor
GR04.111A/NPN	Single-acting	2 - 8	NPN*	95	135	Mounting bracket GR04.196A (p.163) Connector cable 20.503 (p.380) Sensor GR04.111A-Sensor-NPN

Dimensions

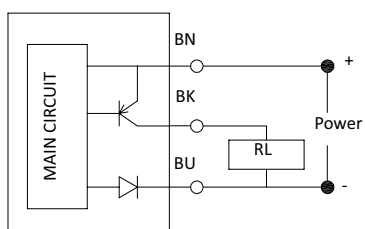


Wiring diagrams sensors

NPN



PNP



BN = Brown, BK = Black, BU = Blue

P = Compressed air connection * = Sensing of parts larger 2 mm



Series 110 - grippers, single-acting



DETECTS SPRUES LARGER 1 MM

Product description

- > Grippers with high gripping force and extra wide jaw opening for thick sprues
- > Gap-free closing for flat sprues
- > Large area sensor activation, regardless of sprue position

Notes

- > GR04.110B: Model without sensor

Ordering notes

- > GR04.110A und GR04.110A/NPN: 0.2 m cable with 3-pin M8 connector included in scope of delivery

Technical data

Item no.	Principle of operation	Operating pressure [bar]	Sensor	Closing force on the jaw tip [N]	Minimum sprue thickness [mm]	Weight [g]	Accessories
GR04.110A	Single-acting	2 - 8	PNP	95	1	130	Connector cable 20.503 (p.380) Mounting bracket GR04.197B (p.162) Sensor GR04.131-S1 (p.378)
GR04.110A/NPN	Single-acting	2 - 8	NPN	95	1	130	Connector cable 20.503 (p.380) Mounting bracket GR04.197B (p.162) Sensor GR04.131-S2 (p.378)
GR04.110B	Single-acting	2 - 8	--	95	1	130	Mounting bracket GR04.197B (p.162)

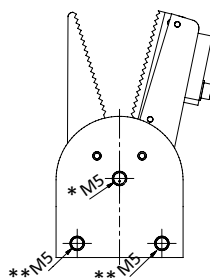
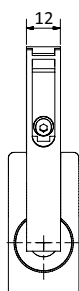
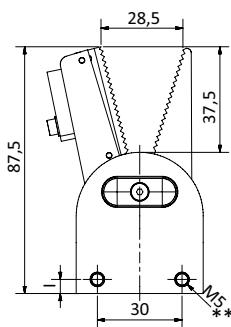
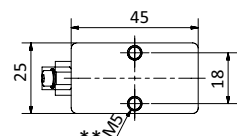
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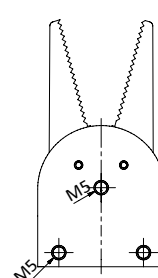
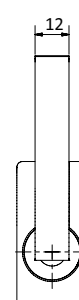
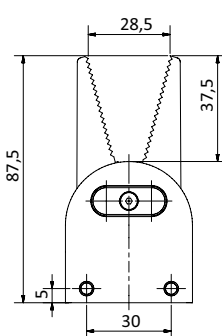
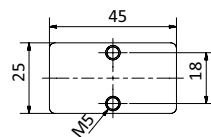
Grippers | Sprue grippers for direct mounting

Series 110 - grippers, single-acting

Dimensions



GR04.110A | GR04.110A/NPN

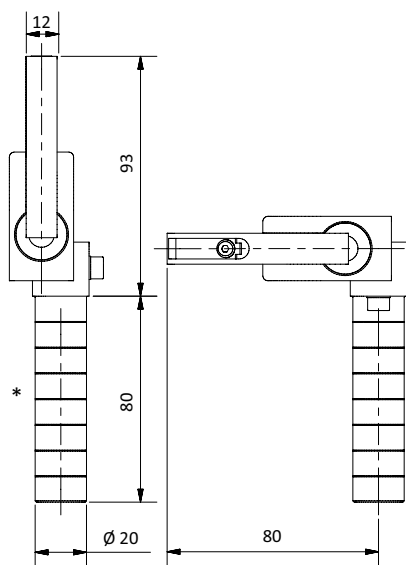


GR04.110B

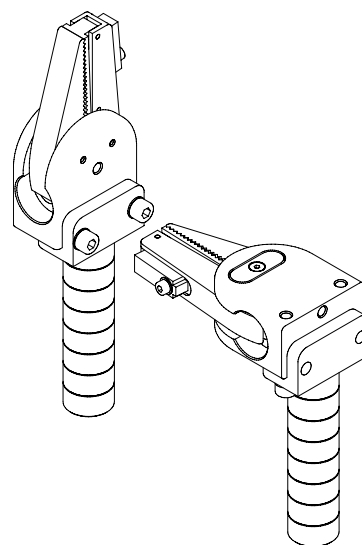
* = Compressed air connection ** = Fixing hole

Examples of application with fitting GR04.197B

> Dimensions gripper with fitting GR04.197B



> Mounting example gripper and fitting GR04.197B



* = Distance between grid marks 10 mm



Series 110 - grippers, double-acting



FOR APPLICATIONS WITH
SHORT DUTY CYCLES



Gripper with mounting bracket GR04.197A
for straight or 90° installation

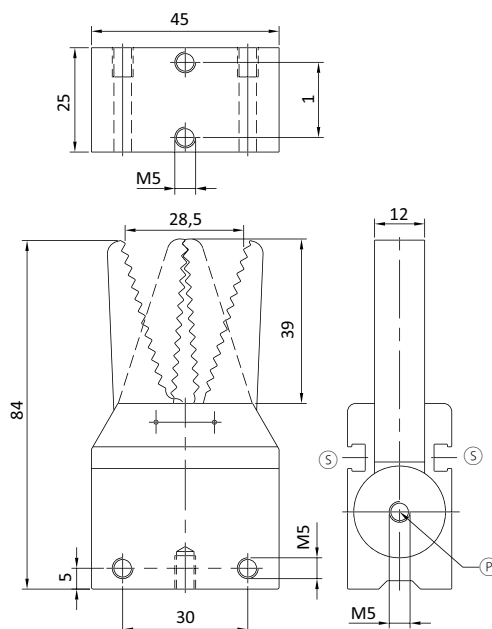
Product description

- > Grippers without shaft with extra long jaws and wide jaw opening
- > Jaws are self-centering
- > Double-acting for short duty cycles, opening and closing controlled separately
- > Sensor for optional monitoring of piston position (jaws open / closed)

Technical data

Item no.	Principle of operation	Operating pressure [bar]	Sensor	Closing force at 6 bar [N]	Max. Operating frequency [1/min]	Weight [g]	Accessories
GR04.110	Double-acting	2 - 8	optional	23	120	23	Connector cable 20.503 (p.380) Mounting bracket GR04.197A (p.162) Sensor GR04.199 (p.374) Sensor GR04.199/NPN (p.374)

Dimensions



Ⓢ = Sensor slot Ⓟ = Compressed air connection

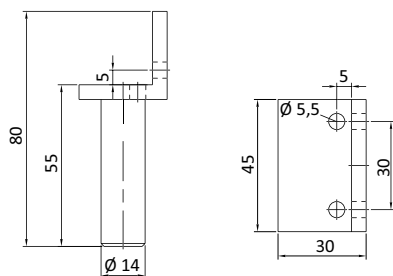
Mounting arm for gripper GR04.110



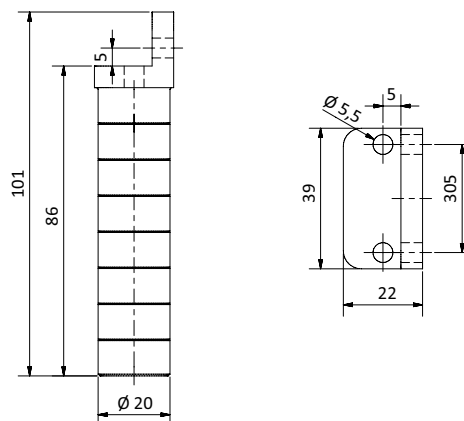
Technical data

Item no.	Weight [g]
GR04.197A	47
GR04.197B	47

Dimensions



GR04.197A



GR04.197B

Examples of application

> Installation example for gripper GR04.110 on fitting GR04.197A



> Installation example for gripper GR04.110 on fitting GR04.197A





Mounting arm for gripper GR04.111A

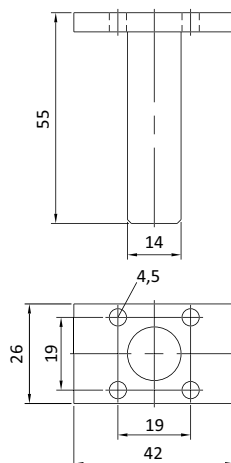


Installation example

Technical data

Item no.	Weight [g]
GR04.196A	27

Dimensions





Grippers | Gripper fingers

Gripper fingers angle lift 95°

Gripper fingers angle lift 95°



Gripper finger with HNBR pad and HNBR stop element for soft gripping

Product description

- > Gripper fingers in slim design for rear gripping such as in demoulding of parts
- > Single acting, spring return
- > Body and jaws made of high-strength aluminium alloy
- > Sensors for optional monitoring piston position (finger swung in or out)

Notes

- > Gripping surface with central hole to mount HNBR elastomer pad for sensitive gripping

Ordering notes

- > Ready-made gripper fingers with HNBR pad and HNBR stop element:
 - GR04.034-SE-HNBR
 - GR04.040-SE-HNBR
 - GR04.044-SE-HNBR
- > HNBR elastomer pad optional

Technical data

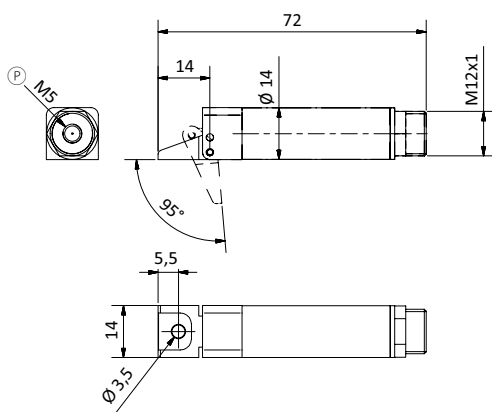
Item no.	Principle of operation	Clamping- Ø [mm]	Angle lift [°]	Sensor nut	Closing force [N]	Weight [g]	Accessories
GR04.034	Single-acting	14	95	--	24	25	Stop element GR04.036 (p.170) Stop element GR04.034-H (p.170) HNBR elastomer GR04.034-HNBR Locator pin GR04.037 (p.169) Extension tube GR06.021A (p.91) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374) Sensor mounting bracket GR04.038S (p.168)
GR04.040	Single-acting	20	95	Yes	70	82	Stop element GR04.046 (p.170) Stop element GR04.044-H (p.170) HNBR elastomer GR04.044-HNBR Locator pin GR04.047 (p.169) Extension tube GR06.022 (p.91) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.044	Single-acting	20	95	--	70	60	Stop element GR04.046 (p.170) Stop element GR04.044-H (p.170) HNBR elastomer GR04.044-HNBR Locator pin GR04.047 (p.169) Extension tube GR06.022 (p.91)



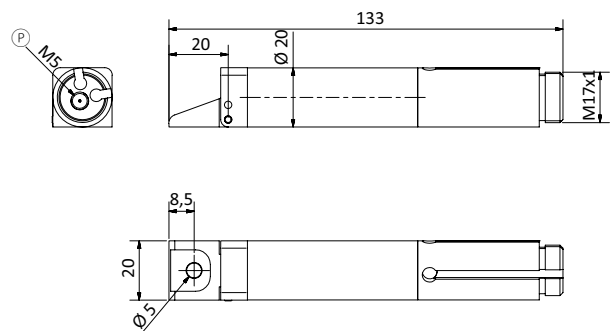
Application example with sensor



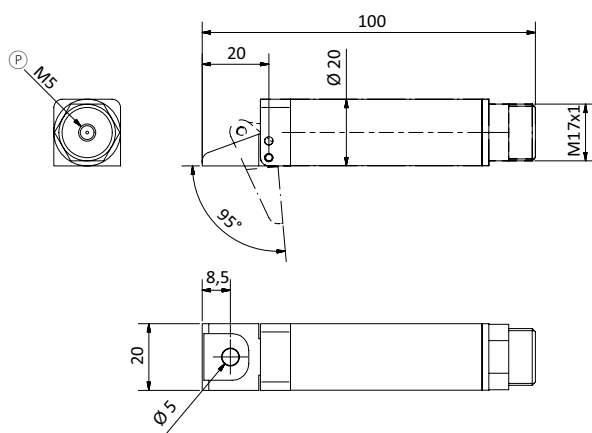
Dimensions



GR04.034



GR04.040



GR04.044

Ⓟ = Compressed air connection



Grippers | Gripper fingers

Gripper fingers angle lift 35°

Gripper fingers angle lift 35°



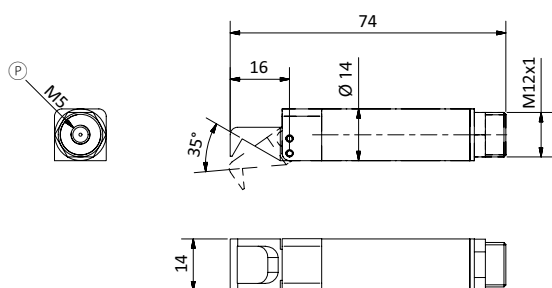
Product description

- > Gripper fingers in slim design for rear gripping such as in demoulding of parts
- > Single-acting, spring return
- > Body and jaws made of high-strength aluminium alloy
- > Sensors for optional monitoring piston position (finger swung in or out)

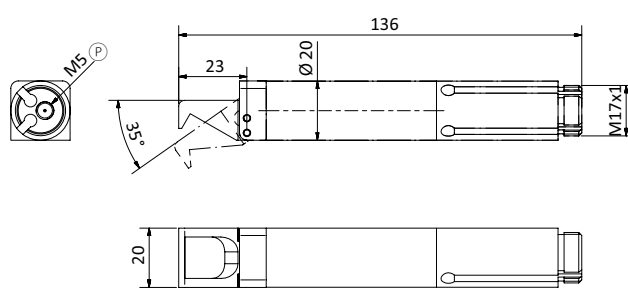
Technical data

Item no.	Principle of operation	Clamping- Ø [mm]	Angle lift [°]	Sensor nut	Closing force [N]	Weight [g]	Accessories
GR04.035	Single-acting	14	35	--	23	25	Stop element GR04.036 (p.170) Stop element GR04.034-H (p.170) Locator pin GR04.037 (p.169) Extension tube GR06.021A (p.91) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374) Sensor mounting bracket GR04.038S (p.168)
GR04.041	Single-acting	20	35	Yes	65	86	Stop element GR04.046 (p.170) Stop element GR04.044-H (p.170) Locator pin GR04.047 (p.169) Extension tube GR06.022 (p.91) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.045	Single-acting	20	35	--	65	65	Stop element GR04.046 (p.170) Stop element GR04.044-H (p.170) Locator pin GR04.047 (p.169) Extension tube GR06.022 (p.91)

Dimensions



GR04.035

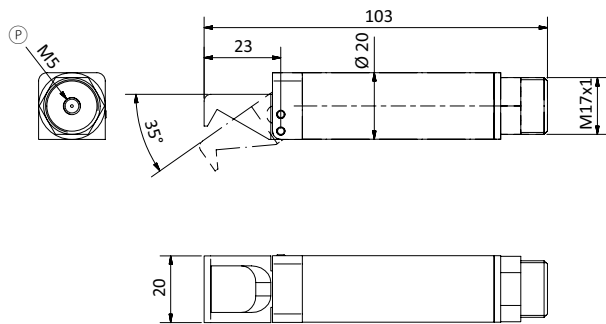


GR04.041

Ⓢ = Sensor slot Ⓟ = Compressed air connection



Dimensions



GR04.045

Ⓢ = Sensor slot Ⓟ = Compressed air connection



Grippers | Gripper fingers

Sensor mounting bracket for gripper fingers clamping diameter 14 mm

Sensor mounting bracket for gripper fingers clamping diameter 14 mm

NEW



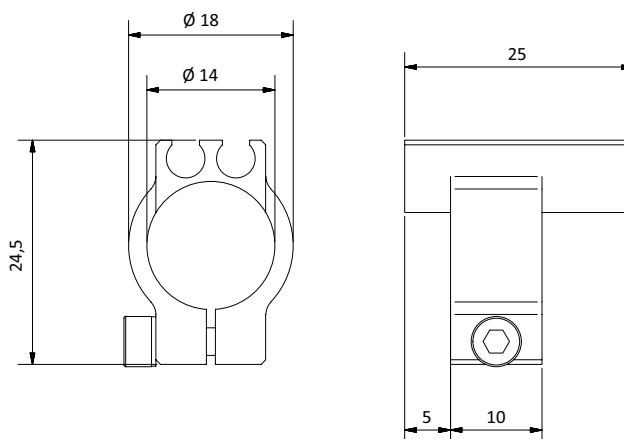
Product description

> Mounting bracket for sensors to monitor action of gripper fingers via piston position (fingers swung out / reset)

Technical data

Item no.	Suitable for gripper fingers	Weight [g]	Suitable sensors
GR04.038S	GR04.034, GR04.035	6	GR04.198 (p.374) GR04.198/NPN (p.374)

Dimensions





Centering element for gripper fingers



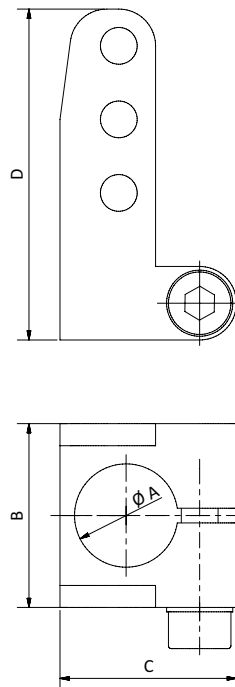
Product description

- > Accurate centering of components
- > Can be used in combination with stop elements
- > Made of POM

Technical data

Item no.	Weight [g]	Suitable finger grippers
GR04.037	12	GR04.034 (p.164) GR04.035 (p.166)
GR04.047	19	GR04.040 (p.164) GR04.041 (p.166) GR04.044 (p.164) GR04.045 (p.166)

Dimensions



Item no.	Ø A [mm]	B [mm]	C [mm]	D [mm]
GR04.037	14	25	24	45
GR04.047	20	32	31	50



Stop elements for gripper fingers

FOR GRIPPER FINGERS WITH
CLAMPING DIAMETER 14 AND 20 MM



GR04.036 and GR04.046 without HNBR



GR04.034-H and GR04.044-H with HNBR pad

Product description

- > Height adjustable stop elements made of POM plastic
- > Can be used with centering elements
- > HNBR elastomer grip pads for gentle contact with workpiece

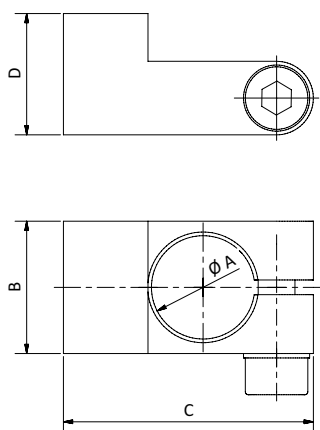
Ordering notes

- > GR04.034-H and GR04.044-H: One HNBR pad included in scope of delivery

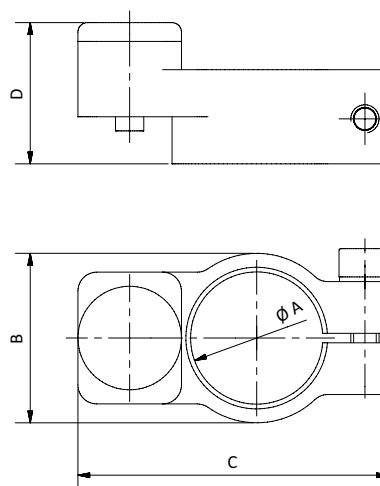
Technical data

Item no.	Suitable for	Clamping-Ø [mm]	Weight [g]	HNBR elastomer
GR04.036	GR04.034, GR04.035	14	11	--
GR04.046	GR04.040, GR04.041, GR04.044, GR04.045	20	16	--
GR04.034-H	GR04.034, GR04.035	14	6	GR04.034-HNBR
GR04.044-H	GR04.040, GR04.041, GR04.044, GR04.045	20	13	GR04.044-HNBR

Dimensions



GR04.036 | GR04.046



GR04.034-H | GR04.044-H

Item no.	Ø A [mm]	B [mm]	C [mm]	D [mm]
GR04.036	14	18	34	16.5
GR04.046	20	24	45	14.5
GR04.034-H	14	18	33	15
GR04.044-H	20	24	44.5	13



Examples of application

> Gripper finger with stop element without HNBR pad



> Gripper finger with stop element with HNBR pad





Grippers | Parallel grippers

2-finger parallel grippers - compact

2-finger parallel grippers - compact



Gripper (GR04.114) with mounting bracket (GR04.189)



Gripper (GR04.116) with two sensors (GR04.193P) to monitor piston position

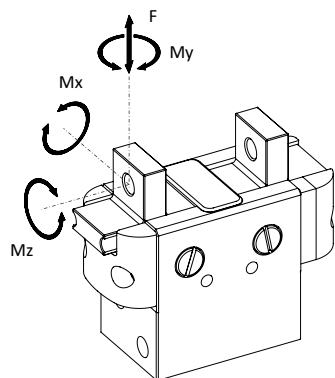
Product description

- > Grippers in small size with very high gripping force
- > Double-acting for inside / outside gripping and short duty cycles
- > Body and jaws made of high-strength aluminium alloy
- > Sensors for monitoring gripper action via detection of piston position optional

Technical data

Item no.	GR04.114	GR04.115	GR04.116
Principle of operation	Double-acting	Double-acting	Double-acting
Medium	Filtered and oiled / unoled air	Filtered and oiled / unoled air	Filtered and oiled / unoled air
Operating pressure [bar]	2 - 8	2 - 8	2 - 8
Piston diameter [mm]	25	32	40
Lift per gripper jaw [mm]	3	4	6
Closing force at 6 bar [N]	94	120	146
Opening force at 6 bar [N]	104	134	160
Max. jaw opening [mm]	25	32	40
Weight [g]	43	86	170
Accessories	Mounting bracket GR04.189 (p.174) Sensor GR04.193N (p.378) Sensor GR04.193P (p.378)	Mounting bracket GR04.190 (p.174) Sensor GR04.193N (p.378) Sensor GR04.193P (p.378)	Mounting bracket GR04.191 (p.174) Sensor GR04.193N (p.378) Sensor GR04.193P (p.378)

Max. forces and loads



	GR04.114	GR04.115	GR04.116
F s [N]	50	70	120
Mx s [Nm]	2	4	6
My s [Nm]	2	4	6
Mz s [Nm]	2	4	6
F d [N]	0.5	0.7	1.2
Mx d [Nm]	2	4	6
My d [Nm]	2	4	6
Mz d [Nm]	2	4	6
m 0.2 s [g]	50	70	120
m 0.5 s [g]	20	30	40
m 0.02 s [g]	15	20	--
m 0.01 s [g]	10	--	--

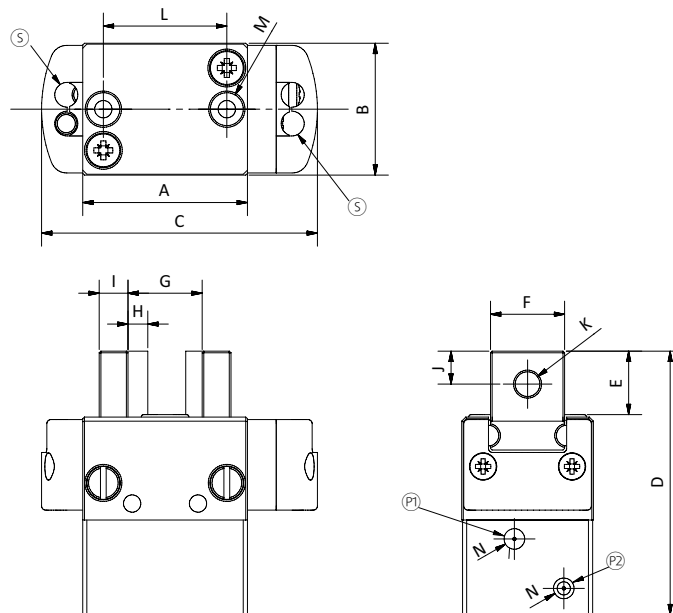
- > F s, Mx s, My s and Mz s: Maximum allowable load under static conditions, i.e. stationary gripper jaws
- > F d, Mx d, My d and Mz d: Maximum allowable load under dynamic conditions, i.e. moving gripper jaws
- > m: Maximum authorised mass [m] according to open-close time



Application example



Dimensions



Ⓢ = Sensor slot for \varnothing 4 mm sensor (GR04.193 P/N) Ⓜ = Compressed air connection open Ⓟ = Compressed air connection close

Item no.	GR04.114	GR04.115	GR04.116
A [mm]	26	32	40
B [mm]	17.8	21.8	25.8
C [mm]	37	46	56
D [mm]	34	43	51
E [mm]	8	10	12
F [mm]	10	12	16
G [mm]	17	22	28
H [mm]	3	4	6
I [mm]	4	5	6
J [mm]	4	5	6
K [mm]	3	4	4
L [mm]	20	25	32
M	M3	M4	M4
N	M3	M5	M5



Grippers | Parallel grippers

Mounting bracket for parallel gripper - compact

Mounting bracket for parallel gripper - compact



Application example parallel gripper GR04.116
with mounting bracket GR04.191

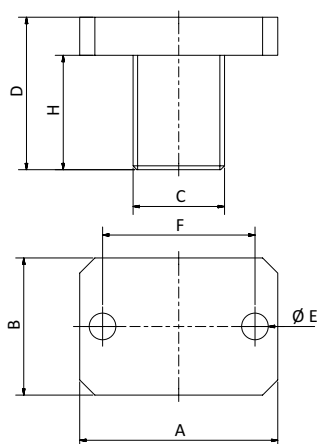
Product description

> Suitable for parallel grippers GR04.114 to GR04.116

Technical data

Item no.	Weight [g]	Suitable extension tube
GR04.189	10	GR06.021A (p.91)
GR04.190	13	GR06.021A (p.91)
GR04.191	21	GR06.022 (p.91)

Dimensions



Item no.	A [mm]	B [mm]	C	D [mm]	Ø E [mm]	F [mm]	H [mm]
GR04.189	26	18	M12x1	20	3.5	20	15
GR04.190	32	22	M12x1	20	4.5	25	15
GR04.191	40	26	M17x1	20	4.5	32	15



2-finger parallel grippers



GR04.122-20 with sensor GR04.202P (cable angle 90°)

Product description

- > Gripper with high gripping force
- > Double-acting for inside / outside gripping and short duty cycles
- > Single-acting: Normally open (NO), compressed air for closing, opening via return spring
- > Body and jaws made of high-strength aluminium alloy
- > Options
 - Base jaws for customisation
 - Sensors for monitoring gripper action via piston position

Ordering notes

- > Connector cable for sensors:
 - 20.503: 3-Pol M8, cable straight, length 2,500 mm, open wire
 - 20.507: 3-Pol M8, cable 90°, length 2,000 mm, open end
 - 20.570: 3-Pol M8, length 1,500 mm, end with plug 3-Pol M8
- > PNP and NPN sensors:
 - C-slot (90° angle): GR04.202P, GR04.202N
 - C-slot (straight, short design): GR04.280P, GR04.280N
 - T-slot (straight): GR04.203P, GR04.203N

Technical data

Item no.	Principle of operation	Medium	Operating pressure [bar]	Piston diameter [mm]	Lift per gripper jaw [mm]	Closing force at 5 bar [N]	Opening force at 5 bar [N]	Max. Operating frequency [1/min]	Operating temperature [°C]	Weight [g]	Accessories
GR04.122-10	Double-acting	Filtered and oiled / unoled air	3 - 7	10	2	16	11	180	-10 - 60	120	Connector cable 20.503 (p.380) Connector cable 20.507 (p.380) Connector cable 20.570 (p.380)
GR04.122-10S	Single-acting	Filtered and oiled / unoled air	3 - 7	10	2	16	11	180	-10 - 60	120	Sensor GR04.203N (p.374) Sensor GR04.203P (p.374) Mounting bracket GR06.050 (p.204)
GR04.122-16	Double-acting	Filtered and oiled / unoled air	3 - 7	16	3	44	33	180	-10 - 60	160	Connector cable 20.503 (p.380) Connector cable 20.507 (p.380) Connector cable 20.570 (p.380) Sensor GR04.202N (p.374) Sensor GR04.202P (p.374) Sensor GR04.203N (p.374)
GR04.122-16S	Single-acting	Filtered and oiled / unoled air	3 - 7	16	3	44	33	180	-10 - 60	160	Sensor GR04.203P (p.374) Sensor GR04.280N (p.374) Sensor GR04.280P (p.374) Mounting bracket GR06.051 (p.204)

Continued on the next page



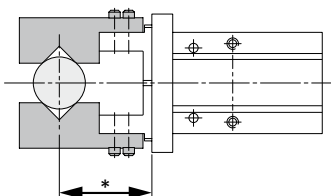
Grippers | Parallel grippers

2-finger parallel grippers

Technical data

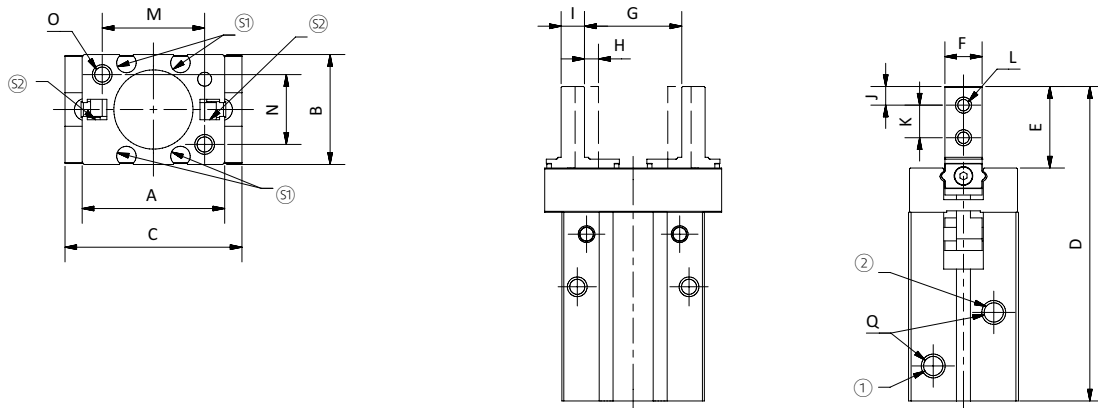
Item no.	Principle of operation	Medium	Operating pressure [bar]	Piston diameter [mm]	Lift per gripper jaw [mm]	Closing force at 5 bar [N]	Opening force at 5 bar [N]	Max. Operating frequency [1/min]	Operating temperature [°C]	Weight [g]	Accessories
GR04.122-20	Double-acting	Filtered and oiled / unoled air	3 - 7	20	5	65	40	180	-10 - 60	300	Connector cable 20.503 (p.380) Connector cable 20.507 (p.380) Connector cable 20.570 (p.380) Sensor GR04.202N (p.374) Sensor GR04.202P (p.374)
GR04.122-20S	Single-acting	Filtered and oiled / unoled air	3 - 7	20	5	65	40	180	-10 - 60	300	Sensor GR04.203N (p.374) Sensor GR04.203P (p.374) Sensor GR04.280N (p.374) Sensor GR04.280P (p.374) Mounting bracket GR06.052 (p.204)
GR04.122-25	Double-acting	Filtered and oiled / unoled air	3 - 7	25	7	105	66	180	-10 - 60	365	Connector cable 20.503 (p.380) Connector cable 20.507 (p.380) Connector cable 20.570 (p.380) Sensor GR04.202N (p.374) Sensor GR04.202P (p.374)
GR04.122-25S	Single-acting	Filtered and oiled / unoled air	3 - 7	25	7	105	66	180	-10 - 60	365	Sensor GR04.203N (p.374) Sensor GR04.203P (p.374) Sensor GR04.280N (p.374) Sensor GR04.280P (p.374) Mounting bracket GR06.053 (p.204)
GR04.122-32	Double-acting	Filtered and oiled / unoled air	3 - 7	32	11	225	156	60	-10 - 60	860	Connector cable 20.503 (p.380) Connector cable 20.507 (p.380) Connector cable 20.570 (p.380) Sensor GR04.202N (p.374) Sensor GR04.202P (p.374)
GR04.122-32S	Single-acting	Filtered and oiled / unoled air	3 - 7	32	11	225	156	60	-10 - 60	860	Sensor GR04.203N (p.374) Sensor GR04.203P (p.374) Sensor GR04.280N (p.374) Sensor GR04.280P (p.374) Mounting bracket GR06.054 (p.204)
GR04.122-40	Double-acting	Filtered and oiled / unoled air	3 - 7	40	15	320	255	60	-10 - 60	950	Connector cable 20.503 (p.380) Connector cable 20.507 (p.380) Connector cable 20.570 (p.380) Sensor GR04.202N (p.374) Sensor GR04.202P (p.374)
GR04.122-40S	Single-acting	Filtered and oiled / unoled air	3 - 7	40	15	320	255	60	-10 - 60	950	Sensor GR04.203N (p.374) Sensor GR04.203P (p.374) Sensor GR04.280N (p.374) Sensor GR04.280P (p.374) Mounting bracket GR06.055 (p.204)

Distance to gripping point (* see diagrams)





Dimensions

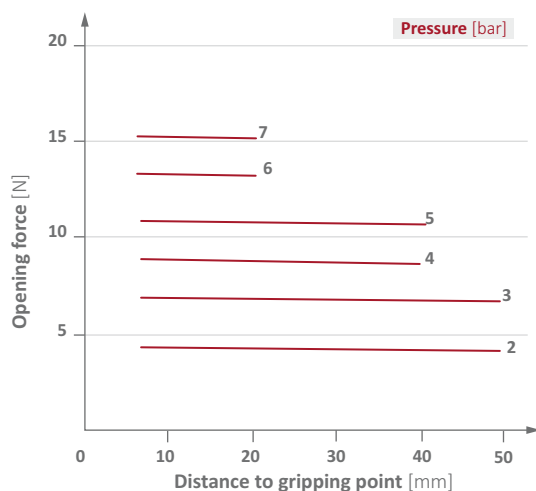


S1 = Sensor slot for GR04.202 and GR04.280 S2 = Sensor slot for GR04.203 ① = Compressed air connection open
② = Compressed air connection close

Item no.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	J [mm]	K [mm]	L	M [mm]	N [mm]	O	Q
GR04.122-10	23	16.4	29	57	12	5	15	2	4	3	5.7	M2.5	18	12	M4	M3
GR04.122-10S	23	16.4	29	57	12.5	5	15	2	4	3	5.7	M2.5	18	12	M8	M3
GR04.122-16	31	23.6	38	67.5	15	8	21	3	5	4	7	M3	22	15	M4	M5
GR04.122-16S	31	23.6	38	67.5	15	8	21	3	5	4	7	M3	22	15	M4	M5
GR04.122-20	42	27.6	50	85	20	10	26.3	5	8	5	9	M4	32	18	M4	M5
GR04.122-20S	42	27.6	50	85	20	10	26.3	5	8	5	9	M4	32	18	M4	M5
GR04.122-25	52	33.6	63	102.7	25	12	33.3	7	10	6	12	M5	40	22	M6	M6
GR04.122-25S	52	33.6	63	102.7	25	12	33.3	7	10	6	12	M5	40	22	M6	M6
GR04.122-32	60	40	97	113	29	15	48	11	12	7	14	M6	46	31.4	M6	M6
GR04.122-32S	60	40	97	113	29	15	48	11	12	7	14	M6	46	31.4	M6	M6
GR04.122-40	72	48	119	139	36	18	60	15	14	9	17	M8	56	32	M8	M8
GR04.122-40S	72	48	119	139	36	18	60	15	14	9	17	M8	56	32	M8	M8

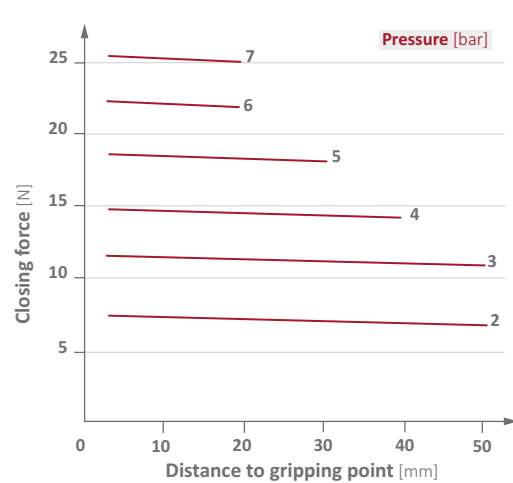
Diagrams

> Opening force as a function of distance to gripping point and feed pressure



GR04.122-10 | GR04.122-10S

> Closing force as a function of distance to gripping point and feed pressure



GR04.122-10 | GR04.122-10S

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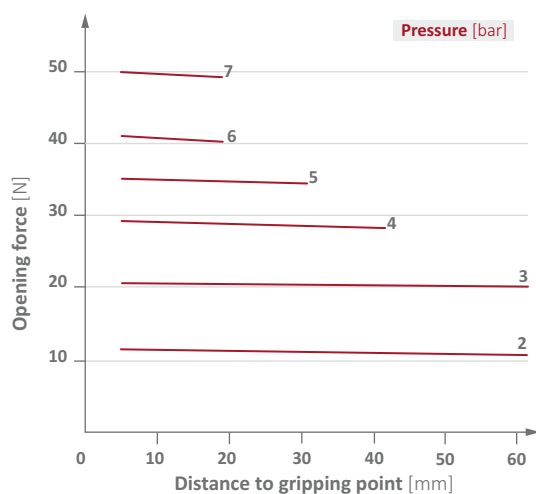


Grippers | Parallel grippers

2-finger parallel grippers

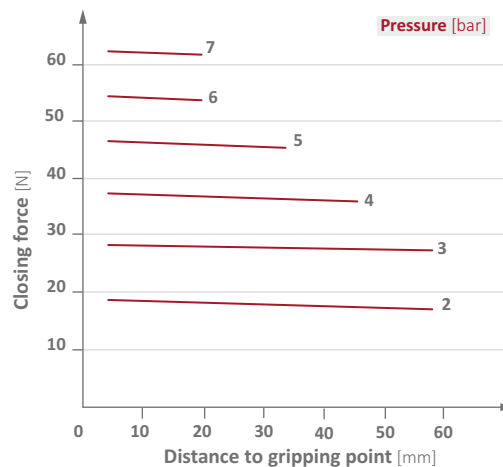
Diagrams

> Opening force as a function of distance to gripping point and feed pressure



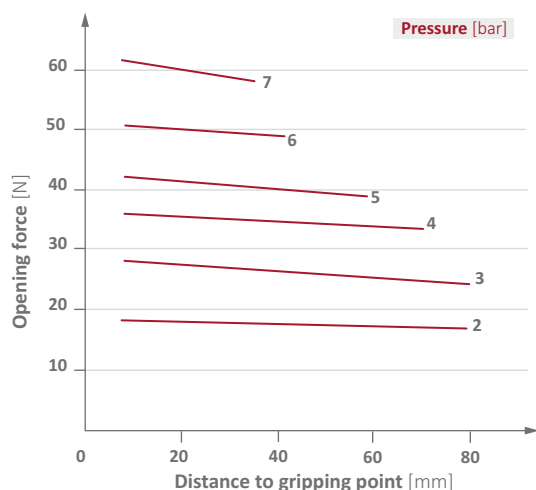
GR04.122-16 | GR04.122-16S

> Closing force as a function of distance to gripping point and feed pressure



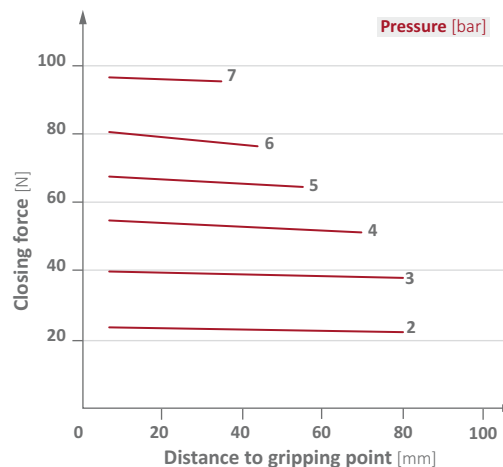
GR04.122-16 | GR04.122-16S

> Opening force as a function of distance to gripping point and feed pressure



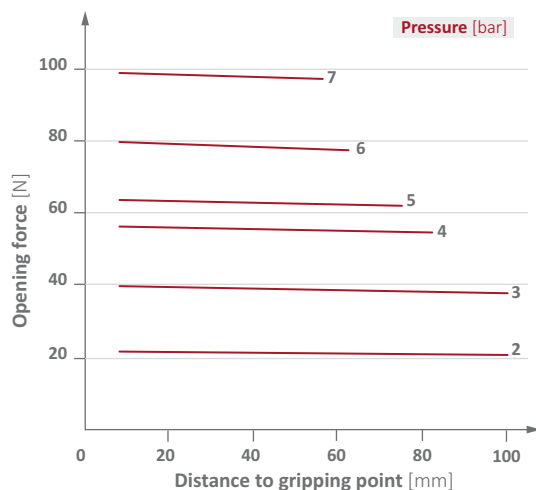
GR04.122-20 | GR04.122-20S

> Closing force as a function of distance to gripping point and feed pressure



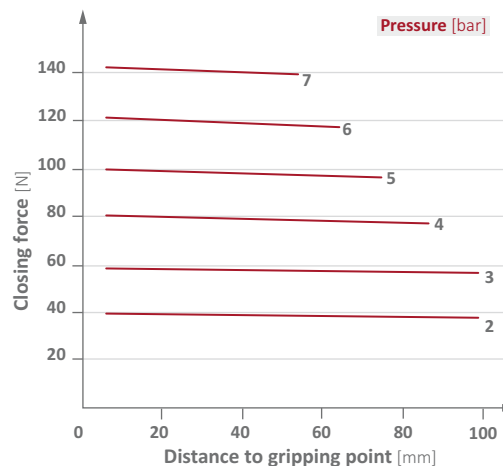
GR04.122-20 | GR04.122-20S

> Opening force as a function of distance to gripping point and feed pressure



GR04.122-25 | GR04.122-25S

> Closing force as a function of distance to gripping point and feed pressure

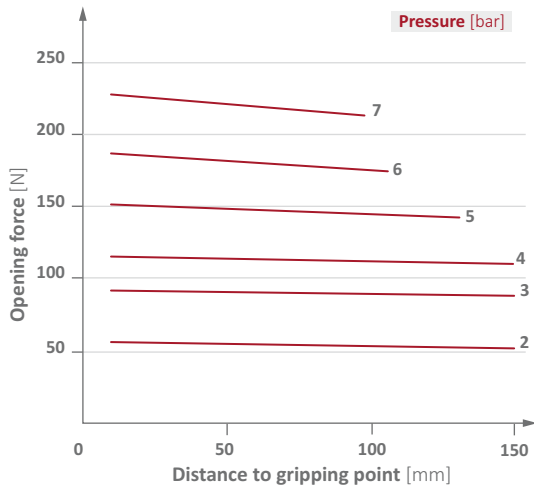


GR04.122-25 | GR04.122-25S



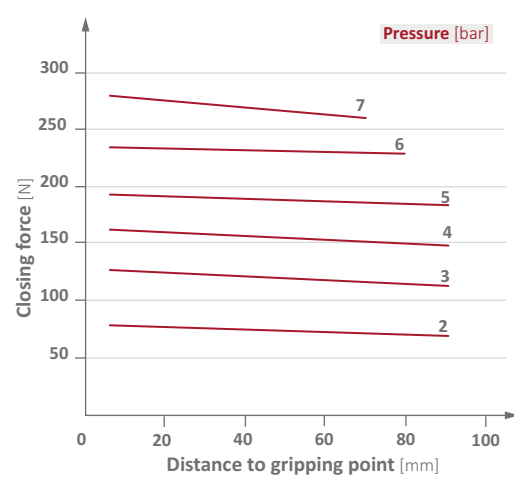
Diagrams

> Opening force as a function of distance to gripping point and feed pressure



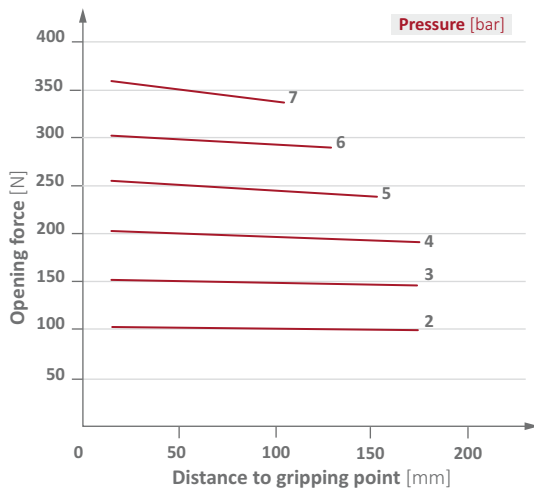
GR04.122-32 | GR04.122-32S

> Closing force as a function of distance to gripping point and feed pressure



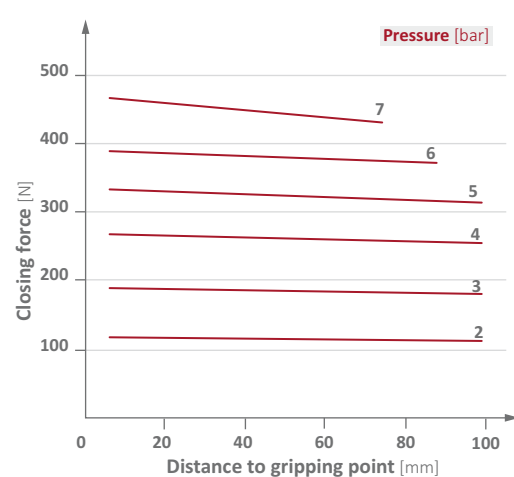
GR04.122-32 | GR04.122-32S

> Opening force as a function of distance to gripping point and feed pressure



GR04.122-40 | GR04.122-40S

> Closing force as a function of distance to gripping point and feed pressure



GR04.122-40 | GR04.122-40S



Grippers | Parallel grippers

Base jaws for parallel grippers

Base jaws for parallel grippers

NEW



Product description

- > Aluminium (index -1) or steel (index -4) blanks for customised jaws
- > HNBR pads enable soft gripping

Notes

- > Base jaws with index -4 come with HNBR pads

Ordering notes

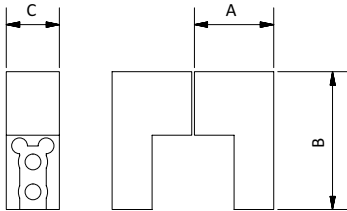
- > Screws included in scope of delivery

Technical data

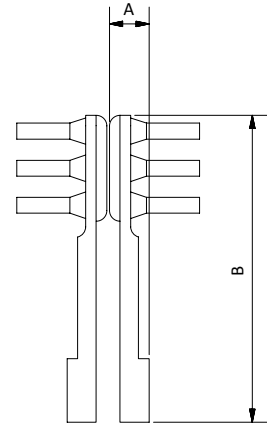
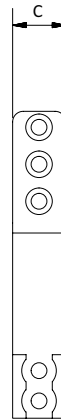
Item no.	Suitable for parallel grippers	Weight [g]	HNBR elastomer
GR04.122-10-1	GR04.122-10, GR04.122-10S	20	--
GR04.122-16-1	GR04.122-16, GR04.122-16S	24	--
GR04.122-20-1	GR04.122-20, GR04.122-20S	37	--
GR04.122-25-1	GR04.122-25, GR04.122-25S	53	--
GR04.122-32-1	GR04.122-32, GR04.122-32S	106	--
GR04.122-40-1	GR04.122-40, GR04.122-40S	156	--
GR04.122-10-4	GR04.122-10, GR04.122-10S	29	GR04.103-4HNBR
GR04.122-16-4	GR04.122-16, GR04.122-16S	49	GR04.103-4HNBR
GR04.122-20-4	GR04.122-20, GR04.122-20S	61	GR04.130C-4HNBR
GR04.122-25-4	GR04.122-25, GR04.122-25S	85	GR04.103-4HNBR
GR04.122-32-4	GR04.122-32, GR04.122-32S	136	GR04.103-4HNBR
GR04.122-40-4	GR04.122-40, GR04.122-40S	230	GR04.130C-4HNBR



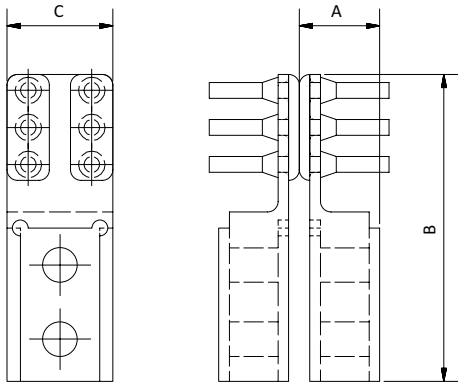
Dimensions



GR04.122-10-1 | GR04.122-16-1 | GR04.122-20-1 |
GR04.122-25-1 | GR04.122-32-1 | GR04.122-40-1



GR04.122-10-4 | GR04.122-16-4 | GR04.122-20-4



GR04.122-25-4 | GR04.122-32-4 | GR04.122-40-4

Item no.	A [mm]	B [mm]	C [mm]
GR04.122-10-1	15	25	10
GR04.122-16-1	17.9	28	13
GR04.122-20-1	21.5	33	15
GR04.122-25-1	25	38	17.4
GR04.122-32-1	36.4	42	20
GR04.122-40-1	40.4	49	23
GR04.122-10-4	7.5	57	10
GR04.122-16-4	9.5	57	12
GR04.122-20-4	10.5	57	15
GR04.122-25-4	12.5	57	17.4
GR04.122-32-4	15.2	57	20
GR04.122-40-4	17.3	64	24



Grippers | Parallel grippers

2-finger parallel grippers - high gripping force

2-finger parallel grippers - high gripping force



Product description

- > Grippers with high gripping force taking high bending moments
- > Compact design
- > Double-acting for inside / outside gripping and short duty cycles
- > Body made of high-strength aluminium alloy
- > Sensors for monitoring gripper action via piston position

Notes

- > Gripping force values are valid for a holding position L=25 mm measured from top of gripper

Ordering notes

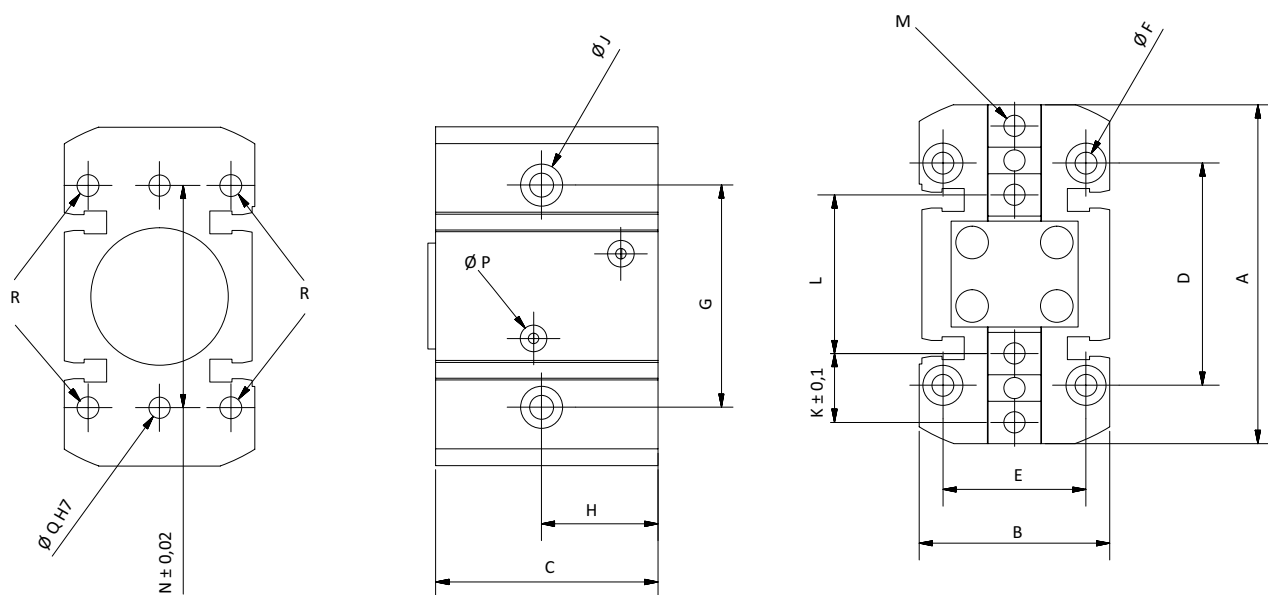
- > PNP and NPN sensors:
- T-slot (straight): GR04.203P, GR04.203N

Technical data

Item no.	GR04.600-12	GR04.600-16	GR04.600-20	GR04.600-26	GR04.600-32
Principle of operation	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting
Operating pressure [bar]	3 - 7	3 - 7	3 - 7	3 - 7	3 - 7
Piston diameter [mm]	12	16	20	26	32
Lift per gripper jaw [mm]	6	8	10	13	16
Closing force at 6 bar [N]	240	320	550	750	1,200
Opening force at 6 bar [N]	280	370	600	830	1,300
Max. Operating frequency [1/min]	180	180	180	180	180
Operating temperature [°C]	-5 - 60	-5 - 60	-5 - 60	-5 - 60	-5 - 60
Weight [g]	280	450	760	1,400	2,500
Medium	Filtered and oiled / unoled air	Filtered and oiled / unoled air	Filtered and oiled / unoled air	Filtered and oiled / unoled air	Filtered and oiled / unoled air
Suitable sensors	GR04.203N (p.374) GR04.203P (p.374)	GR04.203N (p.374) GR04.203P (p.374)	GR04.203N (p.374) GR04.203P (p.374)	GR04.203N (p.374) GR04.203P (p.374)	GR04.203N (p.374) GR04.203P (p.374)



Dimensions



Item no.	GR04.600-12	GR04.600-16	GR04.600-20	GR04.600-26	GR04.600-32
A [mm]	64	80	100	125	160
B [mm]	36	42	50	60	72
C [mm]	42	51	59	68	82
D [mm]	42	52	66	82	100
E [mm]	27	32	38	45	56
F	Ø4.2; Ø7.5x26U	Ø4.2; Ø7.5x34U	Ø5.0; Ø9.1x45U	Ø6.8; Ø11x41U	Ø6.8; Ø11x56U
G [mm]	42	52	66	82	100
H [mm]	22	23	20	36	34
J	Ø4.5; Ø8x9U	Ø5.1; Ø9x10U	Ø8.0; Ø11x11U	Ø9.0; Ø15x14U	Ø9.0; Ø15x15U
K [mm]	13	16	20	24	32
L	28 (min)	38 (min)	46 (min)	60 (min)	78 (min)
M	M4x8	M5x10	M6x10	M6x12	M8x49
N [mm]	42	52	66	82	100
P	M5	M5	G1/8	G1/8	G1/8
Ø Q [mm]	4	4	5	6	6
R	M5	M5	M6	M8	M8

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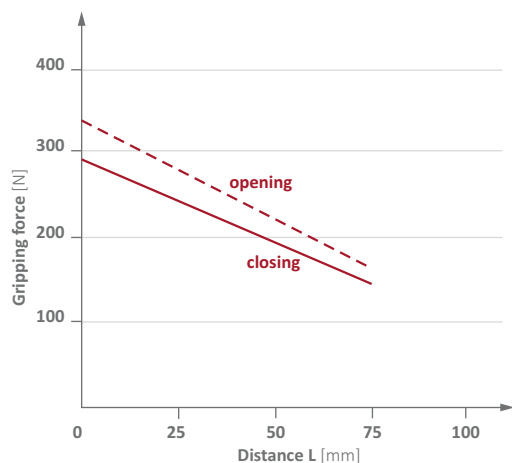


Grippers | Parallel grippers

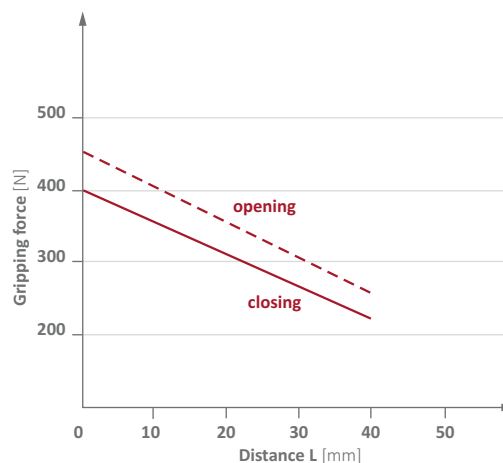
2-finger parallel grippers - high gripping force

Diagrams

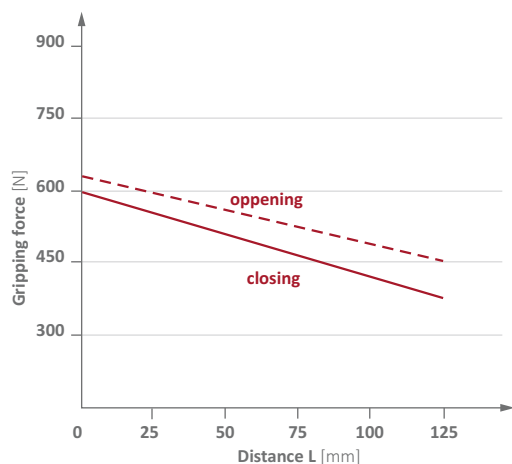
> Gripping force piston diameter 12 mm



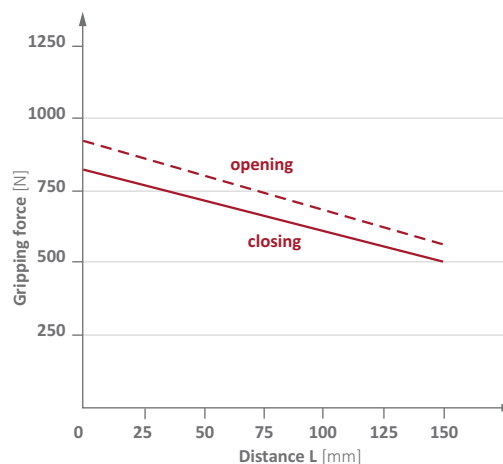
> Gripping force piston diameter 16 mm



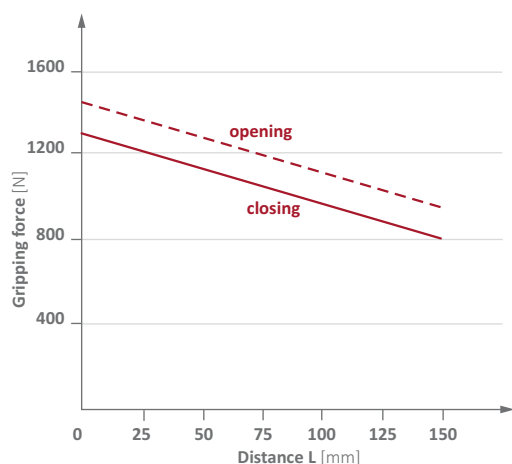
> Gripping force piston diameter 20 mm



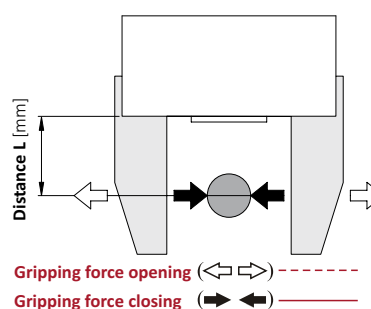
> Gripping force piston diameter 26 mm



> Gripping force piston diameter 32 mm



> Description of holding position L





Parallel grippers for large lifts - piston diameter 10 - 20 mm



Product description

- > Grippers for large lifts for handling large parts
- > Double-acting for inside / outside gripping and short duty cycles
- > Body and jaws made of high-strength aluminium alloy
- > Sensors for monitoring gripper action via piston position optionally available

Ordering notes

- > PNP and NPN sensors:
 - T-slot (straight): GR04.199, GR04.199/NPN

Technical data

Item no.	GR04.510	GR04.510-1	GR04.510-2	GR04.516	GR04.516-1	GR04.516-2	GR04.520	GR04.520-1	GR04.520-2
Principle of operation	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting
Operating pressure [bar]	1.5 - 6	1.5 - 6	1.5 - 6	1 - 6	1 - 6	1 - 6	1 - 6	1 - 6	1 - 6
Piston diameter [mm]	10	10	10	16	16	16	20	20	20
Lift per gripper jaw [mm]	10	20	30	15	30	40	20	40	50
Closing force at 6 bar [N]	22	22	22	60	60	60	100	100	100
Medium	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air
Operating temperature [°C]	-5 - 70	-5 - 70	-5 - 70	-5 - 70	-5 - 70	-5 - 70	-5 - 70	-5 - 70	-5 - 70
Weight [g]	280	350	430	600	800	950	1,000	1,500	1,700
Suitable sensors	GR04.199 (p.374), GR04.199/NPN (p.374)								

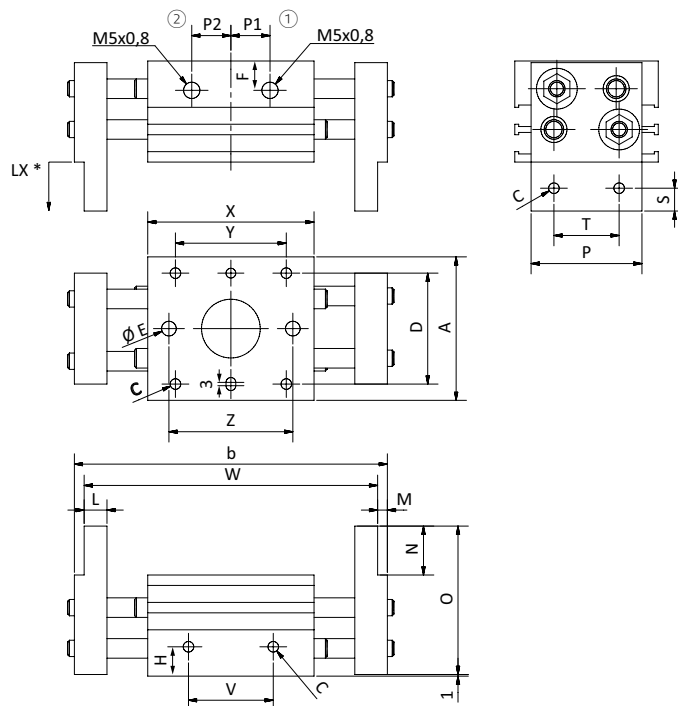
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Grippers | Parallel grippers

Parallel grippers for large lifts - piston diameter 10 - 20 mm

Dimensions



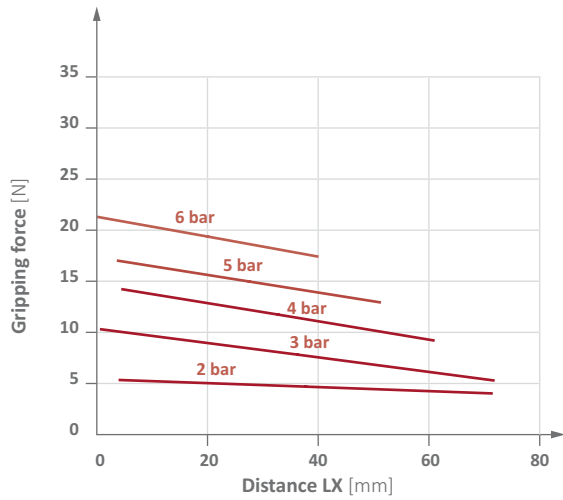
* = LX: Distance gripper jaws - workpiece ① = Compressed air connection open ② = Compressed air connection close

Item no.	GR04.510	GR04.510-1	GR04.510-2	GR04.516	GR04.516-1	GR04.516-2	GR04.520	GR04.520-1	GR04.520-2
A [mm]	44	44	44	55	55	55	65	65	65
b open [mm]	96	138	176	124	196	236	156	256	296
C	M4	M4	M4	M5	M5	M5	M6	M6	M6
D [mm]	34	34	34	42	42	42	52	52	52
Ø E [mm]	4.5	4.5	4.5	5.5	5.5	5.5	6.6	6.6	6.6
F [mm]	9	9	9	10	10	10	11	11	11
H [mm]	9	9	9	10	10	10	11	11	11
L [mm]	7	7	7	9	9	9	12.5	12.5	12.5
M [mm]	3	3	3	4	4	4	4.5	4.5	4.5
N [mm]	15	15	15	19	19	19	24	24	24
O [mm]	45.5	45.5	45.5	58	58	58	69	69	69
P [mm]	34	34	34	44	44	44	54	54	54
P1 [mm]	12	19.5	28.5	14.4	29.4	39.4	16.9	34.4	44.4
P2 [mm]	12	19.5	28.5	14.4	29.4	39.4	16.9	34.4	44.4
S [mm]	7	7	7	8	8	8	10	10	10
T [mm]	20	20	20	25	25	25	30	30	30
V [mm]	26	42	60	28	58	78	38	80	100
W open [mm]	90	132	170	116	188	228	147	247	287
W closed [mm]	70	92	110	86	128	148	107	167	187
X [mm]	51	67	85	60	90	110	71	113	133
Y [mm]	36	52	70	45	75	95	58	100	120
Z [mm]	38	54	72	40	70	90	54	96	116

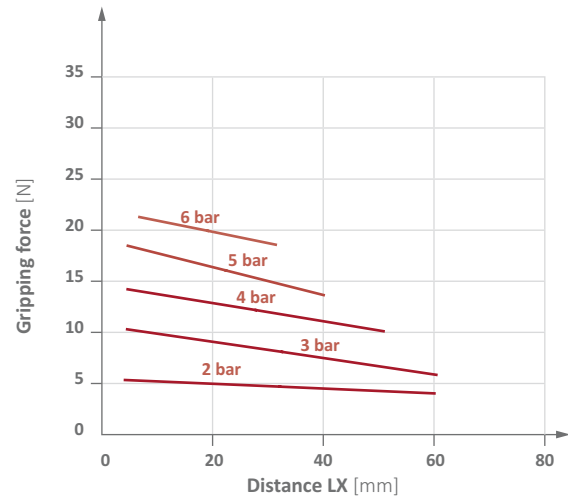


Diagrams

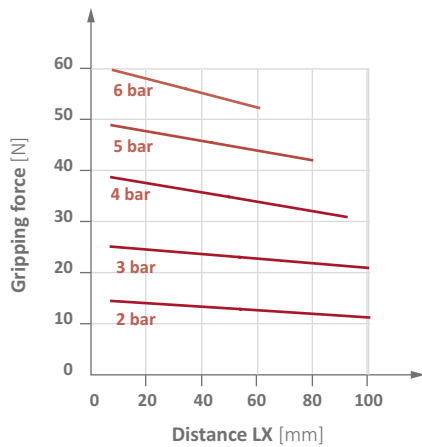
> Gripping force piston diameter 10 mm - Standard version



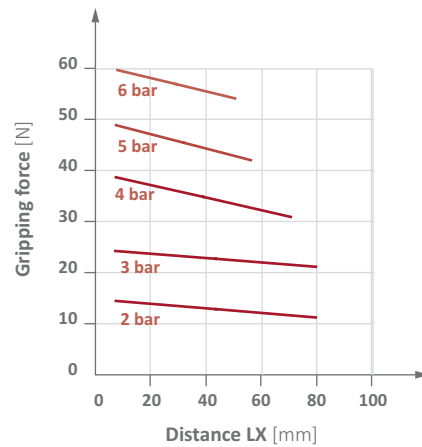
> Gripping force piston diameter 10 mm - versions 1 & 2



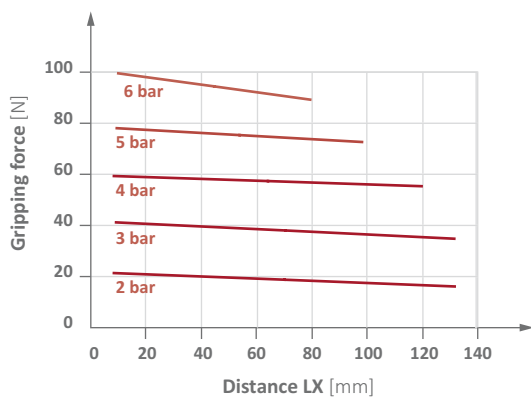
> Gripping force piston diameter 16 mm - Standard version



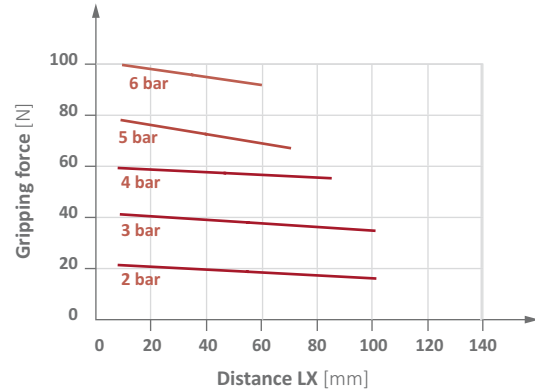
> Gripping force piston diameter 16 mm - versions 1 & 2



> Gripping force piston diameter 20 mm - Standard version



> Gripping force piston diameter 20 mm - versions 1 & 2





Grippers | Parallel grippers

Parallel grippers for large lifts - piston diameter 25 - 32 mm

Parallel grippers for large lifts - piston diameter 25 - 32 mm



Product description

- > Grippers for large lifts for handling large parts
- > Double-acting for inside / outside gripping and short duty cycles
- > Body and jaws made of high-strength aluminium alloy
- > Sensors for monitoring gripper action via piston position optionally available

Ordering notes

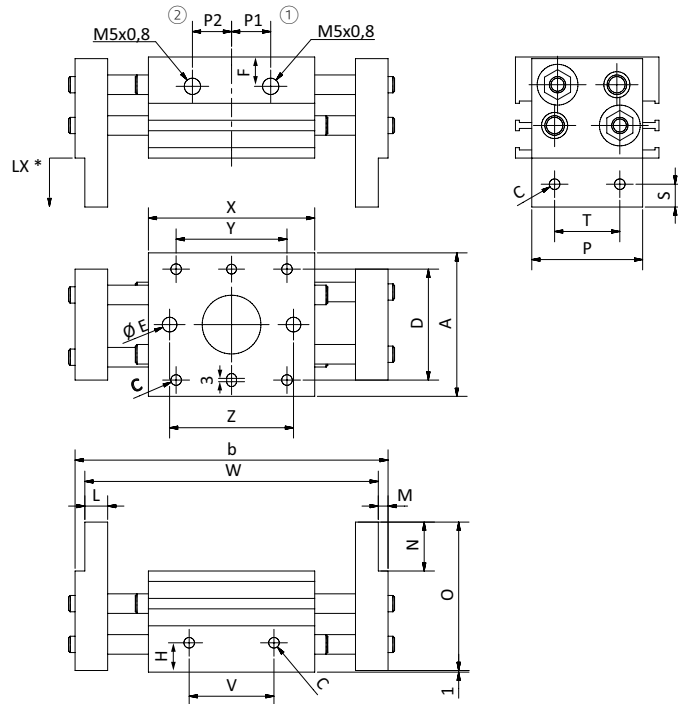
- > PNP and NPN sensors:
 - T-slot (straight): GR04.199, GR04.199/NPN

Technical data

Item no.	GR04.525	GR04.525-1	GR04.525-2	GR04.532	GR04.532-1	GR04.532-2
Principle of operation	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting
Medium	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air
Operating pressure [bar]	1 - 6	1 - 6	1 - 6	1 - 6	1 - 6	1 - 6
Piston diameter [mm]	25	25	25	32	32	32
Lift per gripper jaw [mm]	25	50	60	35	60	80
Closing force at 6 bar [N]	160	160	160	300	300	300
Operating temperature [°C]	-5 - 70	-5 - 70	-5 - 70	-5 - 70	-5 - 70	-5 - 70
Weight [g]	1,700	2,500	2,800	2,900	3,800	4,700
Suitable sensors	GR04.199 (p.374), GR04.199/NPN (p.374)					



Dimensions



* = LX: Distance gripper jaws - workpiece ① = Compressed air connection open ② = Compressed air connection close

Item no.	GR04.525	GR04.525-1	GR04.525-2	GR04.532	GR04.532-1	GR04.532-2
A [mm]	76	76	76	82	82	82
b open [mm]	194	326	364	268	366	450
C	M8	M8	M8	M8	M8	M8
D [mm]	62	62	62	64	64	64
Ø E [mm]	9	9	9	--	--	--
F [mm]	20.5	20.5	20.5	16	16	16
H [mm]	12.5	12.5	12.5	22	22	22
L [mm]	14	14	14	15	15	15
M [mm]	8	8	8	9	9	9
N [mm]	29	29	29	32	32	32
O [mm]	80	80	80	100	100	100
P [mm]	64	64	64	70	70	70
P1 [mm]	23	50	59	28.8	52	74
P2 [mm]	23	23	24	28.8	52	74
S [mm]	12	12	12	15	15	15
T [mm]	40	40	40	50	50	50
V [mm]	48	102	120	60	108	152
W open [mm]	178	310	348	250	348	432
W closed [mm]	128	210	228	180	228	272
X [mm]	88	142	160	110	158	202
Y [mm]	70	124	142	86	134	178
Z [mm]	66	120	138	--	--	--

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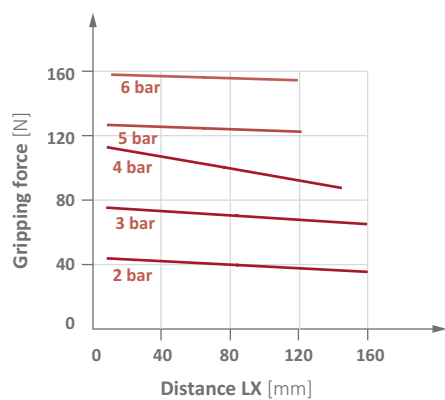


Grippers | Parallel grippers

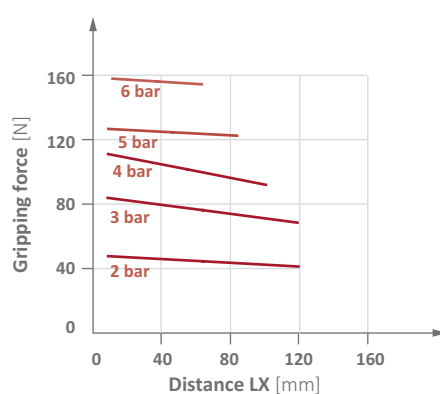
Parallel grippers for large lifts - piston diameter 25 - 32 mm

Diagrams

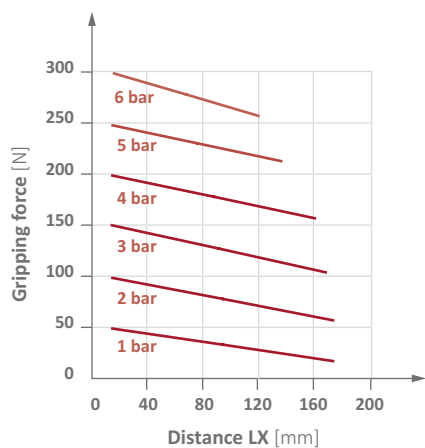
> Gripping force piston diameter 25 mm - Standard version



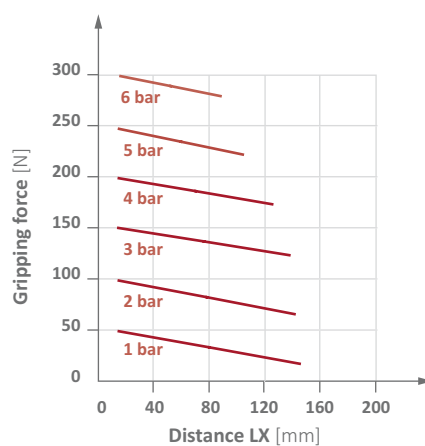
> Gripping force piston diameter 25 mm - versions 1 & 2



> Gripping force piston diameter 32 mm - Standard version



> Gripping force piston diameter 32 mm - versions 1 & 2





3-finger grippers



Product description

- > Grippers with high gripping force
- > Compact design
- > Double-acting for inside / outside gripping and short duty cycles
- > Body and jaws made of high-strength aluminium alloy
- > Sensors for monitoring gripper action via piston position optionally available

Notes

Calculation of the inner gripping diameter:

- > Min: Dimensions W closed x 2
- > Max: Dimensions W opened x 2

Ordering notes

- > PNP and NPN sensors:
- T-slot (straight): GR04.199, GR04.199/NPN

Technical data

Item no.	GR04.125-16	GR04.125-25	GR04.125-32	GR04.125-40	GR04.125-50	GR04.125-60	GR04.125-80
Principle of operation	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting
Medium	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air
Operating pressure [bar]	2 - 6	2 - 6	1 - 6	1 - 6	1 - 6	1 - 6	1 - 6
Piston diameter [mm]	16	25	32	40	50	63	80
Lift per gripper jaw [mm]	2	3	4	5	6	8	10
Closing force at 5 bar [N]	14	42	74	118	187	335	500
Opening force at 5 bar [N]	16	47	82	130	204	359	525
Operating frequency [Hz]	120	120	60	60	60	60	30
Operating temperature [°C]	-5 - 70	-5 - 70	-5 - 70	-5 - 70	-5 - 70	-5 - 70	-5 - 70
Weight [g]	62	139	240	354	542	1,000	1,850
Suitable Sensors	GR04.280N GR04.280P (p.374)	GR04.280N GR04.280P (p.374)	GR04.280N GR04.280P (p.374)	GR04.280N GR04.280P (p.374)	GR04.280N GR04.280P (p.374)	GR04.280N GR04.280P (p.374)	GR04.280N GR04.280P (p.374)
Suitable Mounting brackets	GR06.125-16 (p.205)	GR06.125-25 (p.205)	GR06.125-32 (p.205)	GR06.125-40 (p.205)	GR06.125-50 (p.205)	GR06.125-60 (p.205)	GR06.125-80 (p.205)

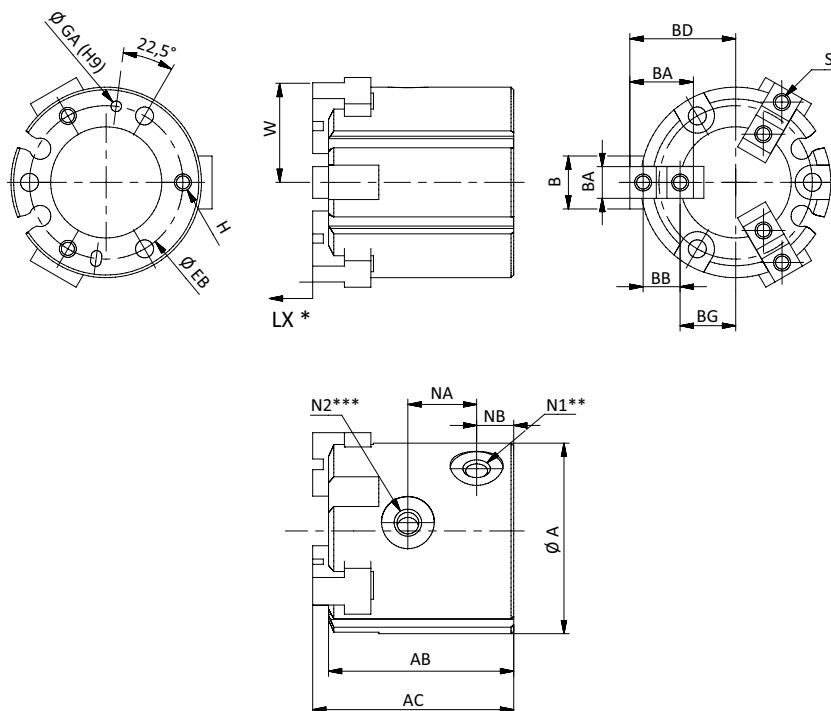
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Grippers | Parallel grippers

3-finger grippers

Dimensions



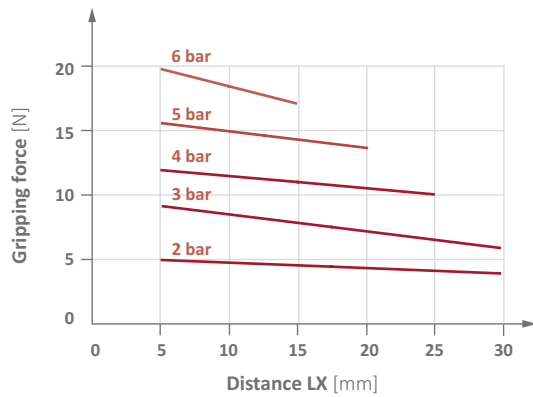
* = LX: Distance between the gripper jaw and the gripper (see gripper force diagrams) ** = Compressed air connection open
*** = Compressed air connection close

Item no.	GR04.125-16	GR04.125-25	GR04.125-32	GR04.125-40	GR04.125-50	GR04.125-60	GR04.125-80
Ø A [mm]	30	42	52	62	70	86	106
AB [mm]	32	37	41	44	52	62	77
AC [mm]	35	40	44	47	55	66	82
B [mm]	8	12	14	16	18	24	28
BA [mm]	5	6	8	8	10	12	14
BB [mm]	6	8	11	12	14	17	20
BD open [mm]	17	24	32	35	41	51	63.5
BD closed [mm]	15	21	28	31	35	43	53.5
BF [mm]	10	14	20	21	24	28	32
BG open [mm]	9	13	16.5	19.5	22	28.5	37.5
BG closed [mm]	7	10	12.5	14.5	16	20.5	27.5
Ø EB [mm]	25	34	44	53	62	76	95
Ø GA	2x2	3x3	3x3	4x4	4x4	5x5	6x6
H	M3x0.5x4	M4x0.5x7	M4x0.7x6	M5x0.8x7.5	M5x0.8x10	M6x1x9	M6x1x12
N1/N2	M3x0.5x11	M5x0.8x15	M5x0.8	M5x0.8	M5x0.8	M5x0.8	G1/8
NA [mm]	11	15	16	17	20	22	27
NB [mm]	7	7	8	9	9	12	13.5
S	M3x0.5x5	M3x0.5x5	M4x0.7x8	M4x0.7x8	M5x0.8x10	M5x0.8x10	M6x1x12
W open [mm]	17.5	24	32	35	41	51	63.5
W closed [mm]	15	21	28	31	35	43	53.5

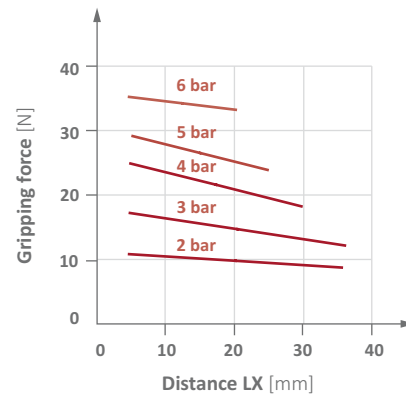


Diagrams

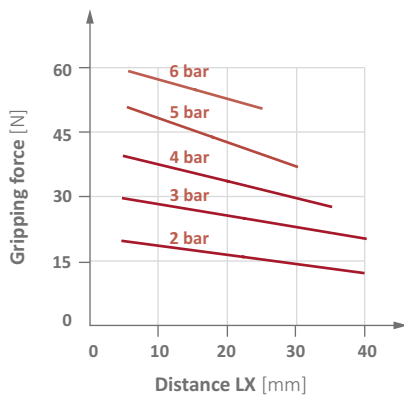
> Gripping force piston diameter 16 mm



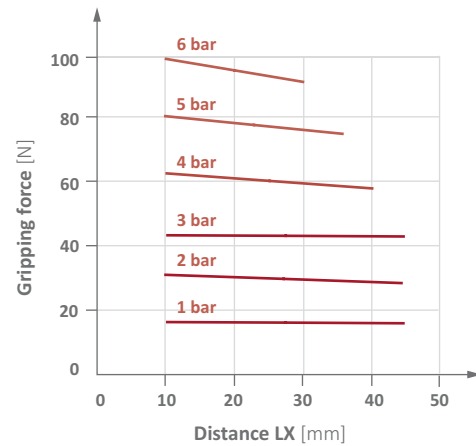
> Gripping force piston diameter 20 mm



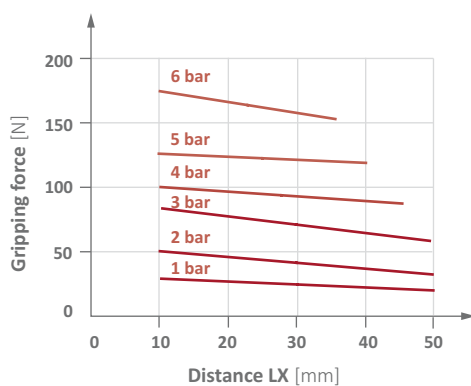
> Gripping force piston diameter 25 mm



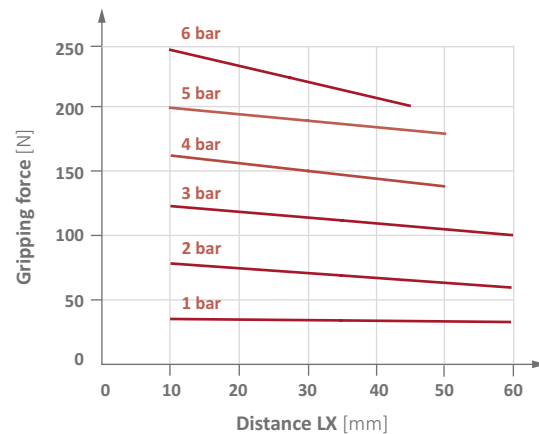
> Gripping force piston diameter 32 mm



> Gripping force piston diameter 40 mm



> Gripping force piston diameter 50 mm





Grippers | Parallel grippers

3-finger grippers for large lifts

3-finger grippers for large lifts



Product description

- > Grippers with lift more than double of GR04.125 at same gripping force
- > Compact and flat design
- > Double-acting for inside / outside gripping and short duty cycles
- > Body and jaws made of high-strength aluminium alloy
- > Sensors for monitoring gripper action via piston position optionally available

Notes

Calculation of the inner gripping diameter:

- > Min: Dimensions W closed x 2
- > Max: Dimensions W opened x 2

Ordering notes

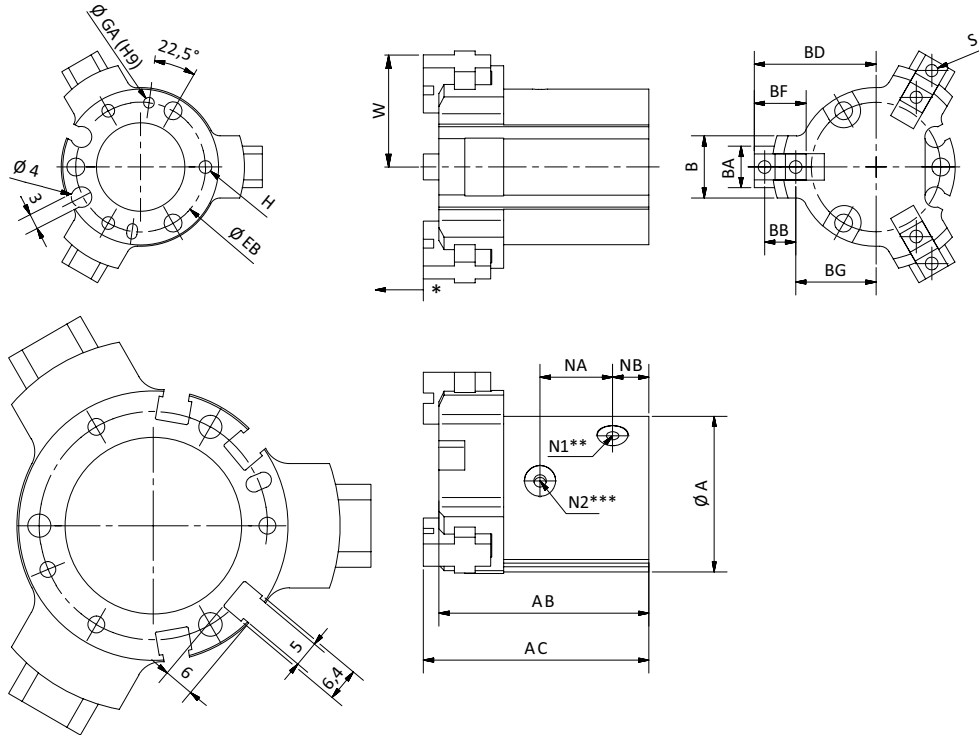
- > PNP and NPN sensors:
 - C-slot (90° angle): GR04.202P, GR04.202N
 - C-slot (straight, short design): GR04.280P, GR04.280N

Technical data

Item no.	GR04.125-16L	GR04.125-25L	GR04.125-32L	GR04.125-40L	GR04.125-50L
Principle of operation	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting
Medium	Filtered and oiled / unoled air	Filtered and oiled / unoled air	Filtered and oiled / unoled air	Filtered and oiled / unoled air	Filtered and oiled / unoled air
Operating pressure [bar]	2 - 6	2 - 6	1 - 6	1 - 6	1 - 6
Piston diameter [mm]	16	25	32	40	50
Lift per gripper jaw [mm]	5	6	8	10	14
Closing force at 5 bar [N]	14	42	74	118	187
Opening force at 5 bar [N]	16	47	82	130	204
Operating frequency [Hz]	120	120	60	60	60
Operating temperature [°C]	-10 - 60	-10 - 60	-10 - 60	-10 - 60	-10 - 60
Weight [g]	100	190	373	600	930
Suitable Sensors	GR04.202N (p.374) GR04.202P (p.374) GR04.280N (p.374) GR04.280P (p.374)	GR04.202N (p.374) GR04.202P (p.374) GR04.280N (p.374) GR04.280P (p.374)	GR04.202N (p.374) GR04.202P (p.374) GR04.280N (p.374) GR04.280P (p.374)	GR04.199 (p.374) GR04.199/NPN (p.374)	GR04.199 (p.374) GR04.199/NPN (p.374)
Suitable Mounting brackets	GR06.125-16 (p.205)	GR06.125-25 (p.205)	GR06.125-32 (p.205)	GR06.125-40 (p.205)	GR06.125-50 (p.205)



Dimensions



* = LX: Distance between the gripper jaw and the gripper (see gripper force diagrams) ** = Compressed air connection open
*** = Compressed air connection close

Item no.	GR04.125-16L	GR04.125-25L	GR04.125-32L	GR04.125-40L	GR04.125-50L
$\varnothing A$ [mm]	30	42	52	62	70
AB [mm]	40.5	46	55	61	74.5
AC [mm]	43.5	49	58	64	77.5
B [mm]	12	19	24	30	32
BA [mm]	8	13	16	18	20
BB [mm]	6	8	11	12	14
BD open [mm]	23.5	30	42	47.5	60
BD closed [mm]	18.5	24	34	37.5	46
BF [mm]	11	14.5	19.5	23.5	28
BG open [mm]	15.5	19	26.5	31	41
BG closed [mm]	10.5	13	18.5	21	27
$\varnothing EB$ [mm]	25	34	44	53	62
$\varnothing GA$	2x2	3x3	3x3	4x4	4x4
H	M3x0.5x1.5	M4x0.7x1.5	M4x0.7x6	M5x0.8x10	M5x0.8x10
N1/N2	M3x0.5	M5x0.8	M5x0.8	M5x0.8	G1/8
NA [mm]	14	16.5	20	22	29
NB [mm]	7	7	8	9	9
S	M3x0.5x5	M3x0.5x6	M4x0.7x8	M4x0.7x8	M5x0.8x10
W open [mm]	23.5	30	42	47.5	60
W closed [mm]	18.5	24	34	37.5	46

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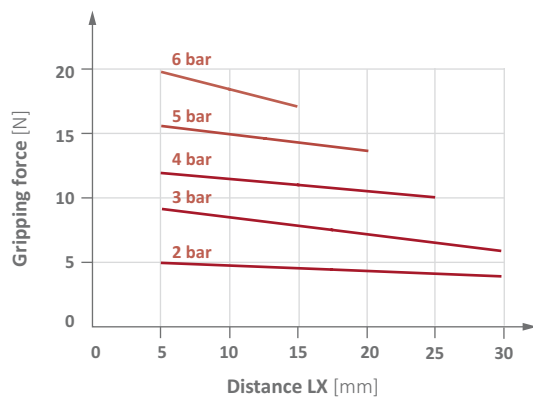


Grippers | Parallel grippers

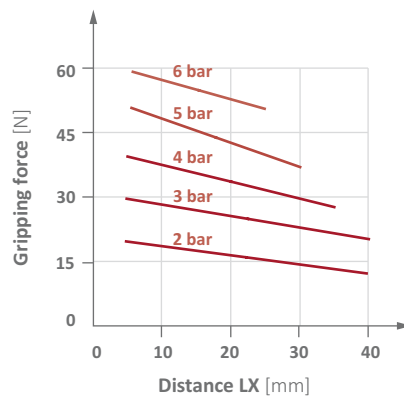
3-finger grippers for large lifts

Diagrams

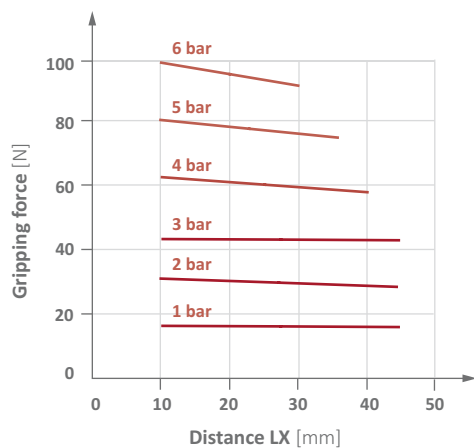
> Gripping force piston diameter 16 mm



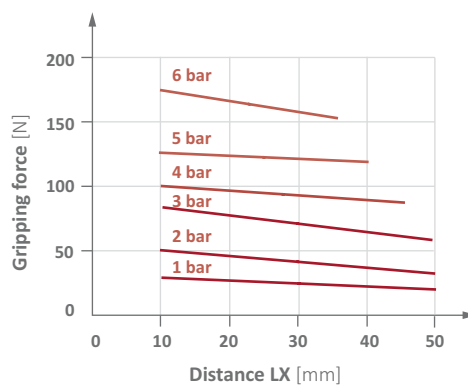
> Gripping force piston diameter 25 mm



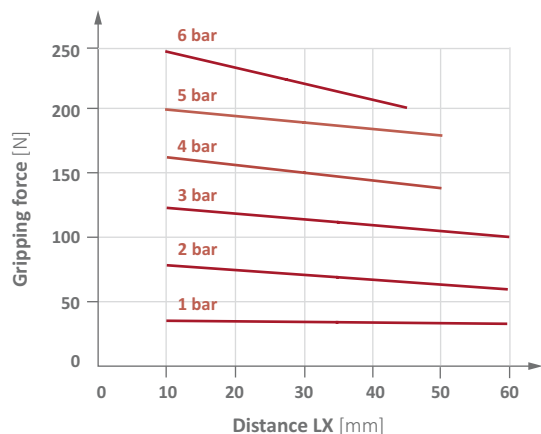
> Gripping force piston diameter 32 mm



> Gripping force piston diameter 40 mm

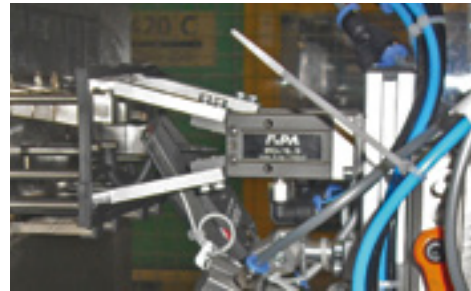


> Gripping force piston diameter 50 mm





2-finger angular grippers 40°



Product description

- > Grippers for undercuts, clamping, mounting and pick & place applications
- > Double-acting: Inside / outside gripping and short duty cycles
- > Body and jaws made of high-strength aluminium alloy
- > Sensors for monitoring gripper action via piston position optionally available

Ordering notes

- > PNP and NPN sensors:
 - T-slot (straight): GR04.203P, GR04.203N

Technical data

Item no.	GR04.123-10	GR04.123-16	GR04.123-20	GR04.123-25	GR04.123-32
Principle of operation	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting
Medium	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air
Pressure range [bar]	1.5 - 7	1.5 - 7	1.5 - 7	1.5 - 7	1.5 - 7
Piston diameter [mm]	10	16	20	25	32
Angle lift open [°]	-10	-10	-10	-10	-10
Angle lift closed [°]	30	30	30	30	30
Max. closing torque at 6 bar [Ncm]	11	47	100	199	358
Max. opening torque at 6 bar [Ncm]	15	65	135	252	476
Max. Operating frequency [1/min]	180	180	180	180	180
Operating temperature [°C]	0 - 60	0 - 60	0 - 60	0 - 60	0 - 60
Weight [g]	100	120	200	330	560
Suitable Connector cable	20.503 (p.380)	20.503 (p.380)	20.503 (p.380)	20.503 (p.380)	20.503 (p.380)
Suitable Sensors	GR04.203N (p.374) GR04.203P (p.374)	GR04.203N (p.374) GR04.203P (p.374)	GR04.203N (p.374) GR04.203P (p.374)	GR04.203N (p.374) GR04.203P (p.374)	GR04.203N (p.374) GR04.203P (p.374)
Suitable Mounting brackets	GR06.050 (p.204)	GR06.051 (p.204)	GR06.052 (p.204)	GR06.053 (p.204)	GR06.054 (p.204)
Suitable Base jaws	GR04.123-10-1 (p.200)	GR04.123-16-1 (p.200)	GR04.123-20-1 (p.200)	GR04.123-25-1 (p.200)	GR04.123-32-1 (p.200)

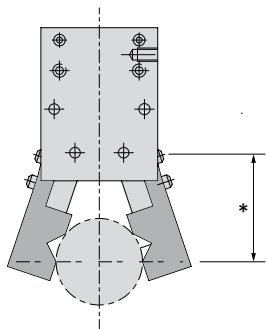
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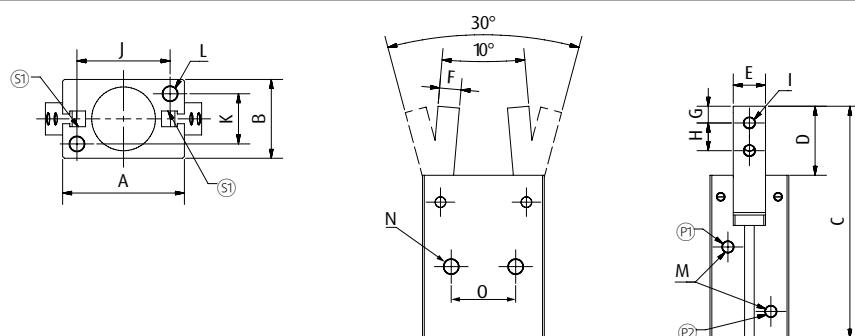
Grippers | Angular grippers

2-finger angular grippers 40°

Length of gripping point (* see diagrams)



Dimensions



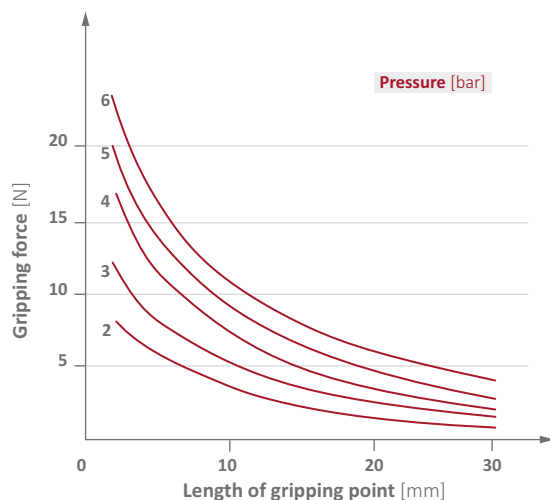
S1 = Sensor slot for GR04.203 P1 = Compressed air connection open P2 = Compressed air connection close

Item no.	GR04.123-10	GR04.123-16	GR04.123-20	GR04.123-25	GR04.123-32
A [mm]	23	34	45	52	60
B [mm]	16	22	26	32	40
C [mm]	52	63	75	87	98
D [mm]	15.7	17.5	22	26	30
E [mm]	7	9	12	14	18
F [mm]	4	6	7	9	10
G [mm]	3	3	4	5	6
H [mm]	6	8	10	12	14
I	M3	M3	M4	M5	M5
J [mm]	17	26	35	40	46
K [mm]	10	14	16	20	26
L	M3	M4	M5	M6	M6
M	M3	M5	M5	M5	M5
N	M3	M4	M5	M6	M6
O [mm]	18	24	30	36	44



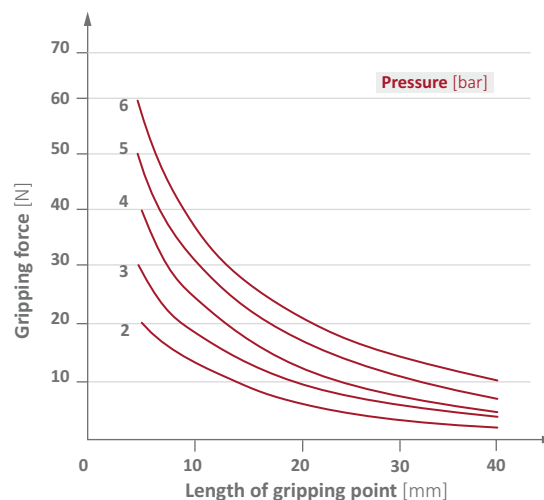
Diagrams

> Gripping force as a function of length of gripping point and feed pressure



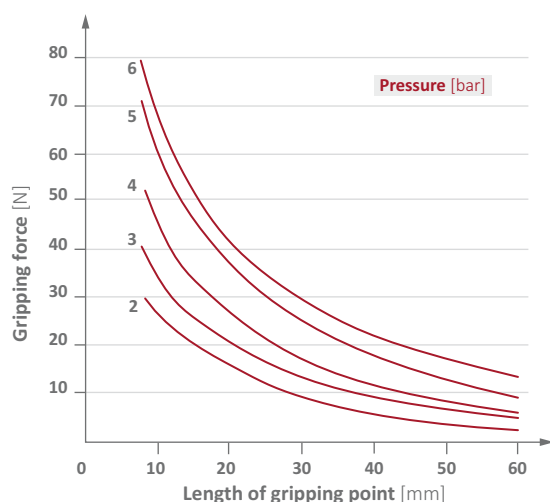
GR04.123-10

> Gripping force as a function of length of gripping point and feed pressure



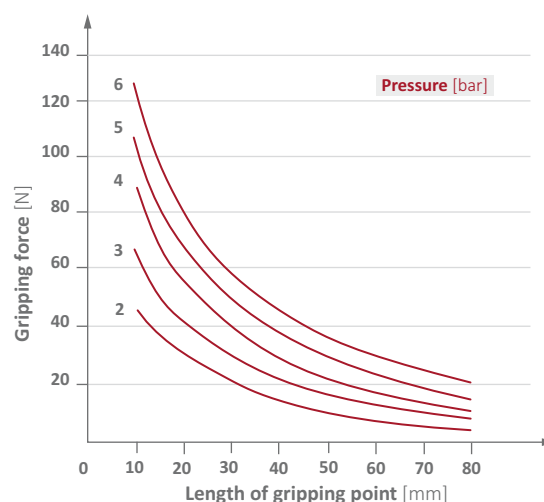
GR04.123-16

> Gripping force as a function of length of gripping point and feed pressure



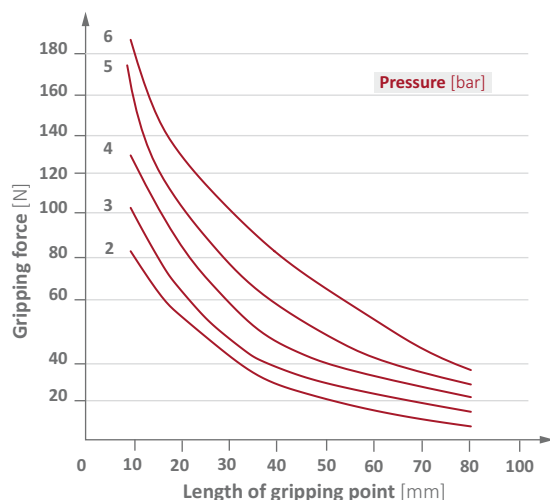
GR04.123-20

> Gripping force as a function of length of gripping point and feed pressure



GR04.123-25

> Gripping force as a function of length of gripping point and feed pressure



GR04.123-32



Grippers | Angular grippers

Base jaws for angular grippers

Base jaws for angular grippers

NEW



Product description

> Aluminium blanks for customised jaws

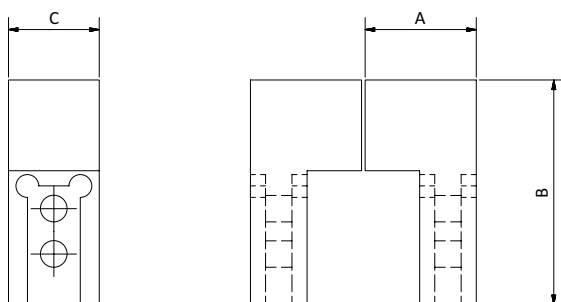
Ordering notes

> Screws included in scope of delivery

Technical data

Item no.	Suitable for angular grippers	Weight [g]
GR04.123-10-1	GR04.123-10	18
GR04.123-16-1	GR04.123-16	30
GR04.123-20-1	GR04.123-20	38
GR04.123-25-1	GR04.123-25	56
GR04.123-32-1	GR04.123-32	150

Dimensions



Item no.	A [mm]	B [mm]	C [mm]
GR04.123-10-1	14.7	29.7	12
GR04.123-16-1	20.5	31.5	14
GR04.123-20-1	24	36	17
GR04.123-25-1	29.8	40	19
GR04.123-32-1	33	44	23



2-finger angular gripper 180° - self-centering



Product description

- > High gripping force with high gripping precision
- > Gripping of objects located behind large undercuts; clamping and assembly of parts
- > Suitable for dusty environments due to dust protection seals
- > Double-acting, short duty cycles
- > Body and jaws made of high-strength aluminium alloy
- > Versatile use with customised gripper jaws
- > Optional parts monitoring by detection of piston position
 - PNP and NPN sensors:
 - Round nut (cable straight, short design): GR04.280P, GR04.280N
 - Round nut (cable 90°): GR04.202P, GR04.202N

Ordering notes

- Extension cable for sensors:
- > 20.503: 3-Pole M8, length 2.500 mm, open wire
 - > 20.570: 3-Pole M8, length 1.500 mm, end with plug 3-Pole M8
- PNP and NPN sensors:
- C-slot (90° angle): GR04.202P, GR04.202N
 - C-slot (straight, short design): GR04.280P, GR04.280N

Technical data

Item no.	GR04.121-10	GR04.121-16	GR04.121-20	GR04.121-25
Principle of operation	Double-acting	Double-acting	Double-acting	Double-acting
Medium	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air	Filtered and oiled / unoiled air
Pressure range [bar]	1 - 6	1 - 6	1 - 6	1 - 6
Effective gripping torque [Nm]	0.16	0.54	1.1	2.28
Piston diameter [mm]	10	16	20	25
Angle lift open [°]	180 - 182	180 - 182	180 - 182	180 - 182
Angle lift closed [°]	-3	-3	-3	-3
Repeat accuracy [mm]	+/- 0.2	+/- 0.2	+/- 0.2	+/- 0.2
Max. Operating frequency [1/min]	60	60	60	60
Operating temperature [°C]	-10 - 60	-10 - 60	-10 - 60	-10 - 60
Weight [g]	80	150	320	600
Accessories	Sensor GR04.202N (p.374) Sensor GR04.202P (p.374) Sensor GR04.280N (p.374) Sensor GR04.280P (p.374) Connector cable 20.503 (p.380) 20.570 (p.380)	Sensor GR04.202N (p.374) Sensor GR04.202P (p.374) Sensor GR04.280N (p.374) Sensor GR04.280P (p.374) Connector cable 20.503 (p.380) 20.570 (p.380)	Sensor GR04.202N (p.374) Sensor GR04.202P (p.374) Sensor GR04.280N (p.374) Sensor GR04.280P (p.374) Connector cable 20.503 (p.380) 20.570 (p.380)	Sensor GR04.202N (p.374) Sensor GR04.202P (p.374) Sensor GR04.280N (p.374) Sensor GR04.280P (p.374) Connector cable 20.503 (p.380) 20.570 (p.380)

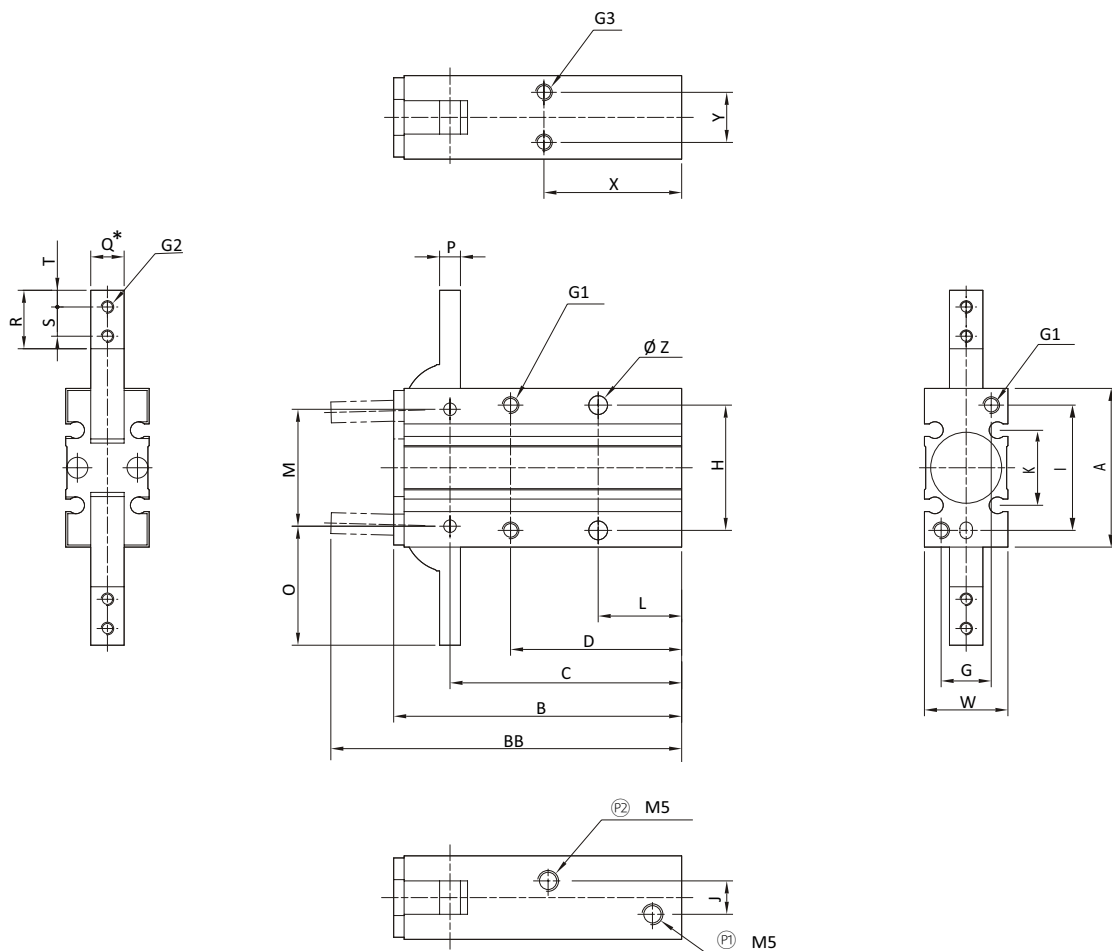
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Grippers | Angular grippers

2-finger angular gripper 180° - self-centering

Dimensions



* = Tolerance: -0.005 mm to -0.025 mm P1 = Compressed air connection open P2 = Compressed air connection close

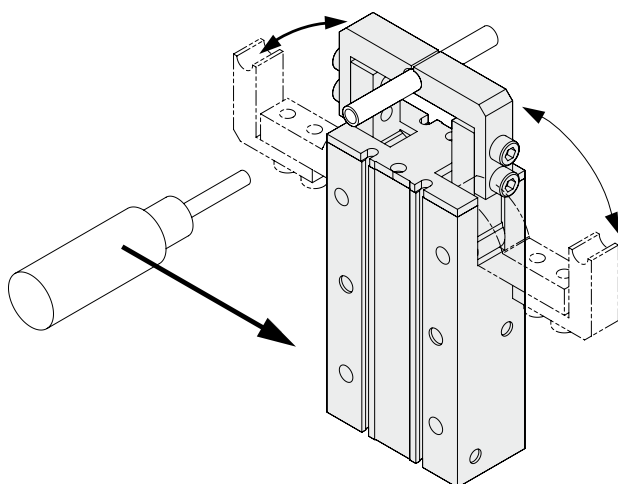
Item no.	GR04.121-10	GR04.121-16	GR04.121-20	GR04.121-25
G1	2-M3 x 6 depth	2-M4 x 8 depth	2-M5 x 10 depth	2-M6 x 12 depth
G2	4-M3	4-M3	4-M4	4-M5
G3	2-M3 x 4 depth	2-M4 x 5 depth	2-M5 x 8 depth	2-M6 x 10 depth
A [mm]	30	38	48	58
B [mm]	58	69	86	107
BB [mm]	71	84	106	131
D [mm]	35	41	50	60
F [mm]	2	2.5	3	3
G [mm]	9	12	16	18
H [mm]	24	30	36	42
I [mm]	24	30	38	46
J [mm]	3	8	12	14
K [mm]	13	18	20	24
L [mm]	13	18	20	24
M [mm]	22	28	36	45
O [mm]	23.5	28.5	37	45
P [mm]	4	5	8	10
Q [mm]	6	8	10	12



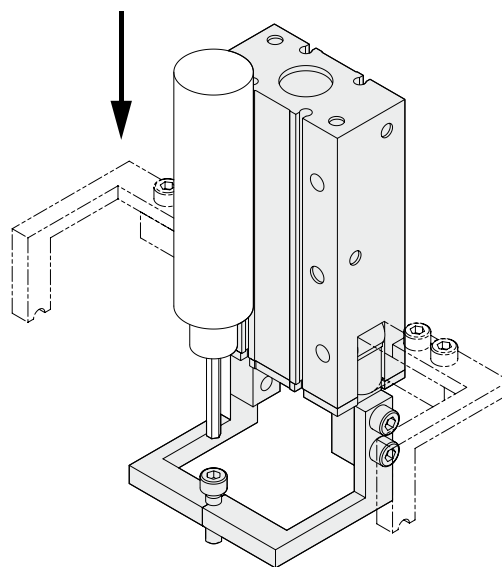
Item no.	GR04.121-10	GR04.121-16	GR04.121-20	GR04.121-25
R [mm]	12	14	18	22.5
S [mm]	6	7	9	12
T [mm]	3	4	5	6
W [mm]	15	20	26	30
X [mm]	30	33	42	50
Y [mm]	9	12	14	16
Ø Z [mm]	3.4	4.5	5.5	6.6

Examples of application

> Clamping



> Assembly





Grippers | Angular grippers

Mounting brackets for parallel and angular grippers

Mounting brackets for parallel and angular grippers



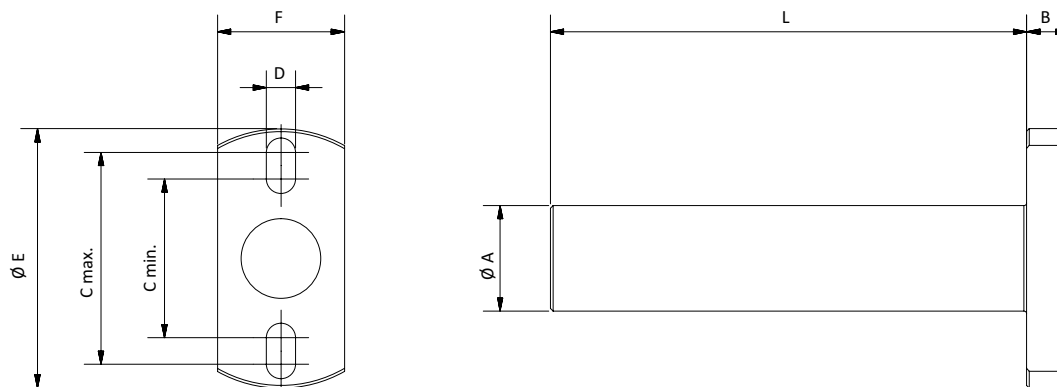
Product description

- > Brackets for mounting parallel or angular grippers to extrusions
- > Compatible with many brands of grippers due to slotted mounting holes

Technical data

Item no.	Suitable for	Weight [g]
GR06.050	GR04.122-10, GR04.123-10	14
GR06.051	GR04.122-16, GR04.123-16	16
GR06.052	GR04.122-20, GR04.123-20	52
GR06.053	GR04.122-25, GR04.123-25	56
GR06.054	GR04.122-32, GR04.123-32	110
GR06.055	GR04.122-32	152

Dimensions



Item no.	Ø A [mm]	B [mm]	C min. [mm]	C max. [mm]	D [mm]	Ø E [mm]	F [mm]	L [mm]
GR06.050	10	6	16	25.7	3.5	33	14	60
GR06.051	14	6	22	32.5	4.5	39	18	60
GR06.052	20	8	30	40	5.5	49	24	90
GR06.053	20	8	32	50	6.5	59	24	90
GR06.054	30	8	44	53	6.5	64	32	120
GR06.055	30	10	56	65	8.5	79	40	120



Mounting brackets for 3-finger grippers



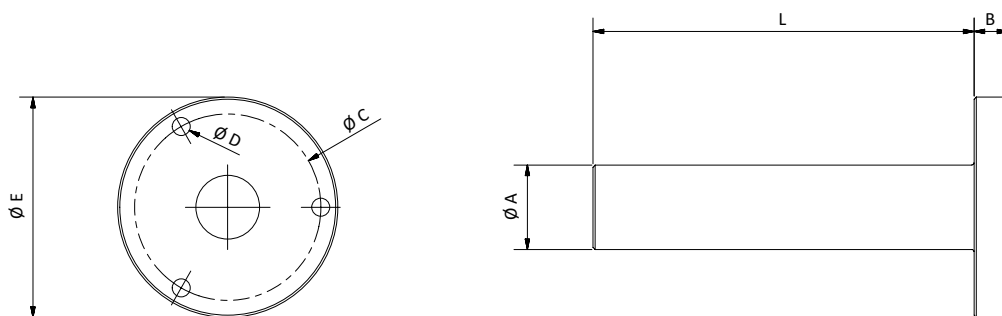
Product description

> Brackets for mounting 3-finger parallel grippers to extrusions

Technical data

Item no.	Suitable for	Weight [g]
GR06.125-16	GR04.125-16L	18
GR06.125-20	GR04.125-20L	24
GR06.125-25	GR04.125-25L	34
GR06.125-32	GR04.125-32L	74
GR06.125-40	GR04.125-40L	102
GR06.125-50	GR04.125-50L	232
GR06.125-60	GR04.125-60L	216
GR06.125-80	GR04.125-80L	388

Dimensions



Item no.	Ø A [mm]	B [mm]	Ø C [mm]	Ø D [mm]	Ø E [mm]	L [mm]
GR06.125-16	10	6	25	3.2	30	60
GR06.125-20	14	6	29	3.2	36	60
GR06.125-25	14	6	34	4.2	42	90
GR06.125-32	20	8	44	4.2	52	90
GR06.125-40	20	8	53	5.3	62	120
GR06.125-50	30	8	62	5.3	70	150
GR06.125-60	30	8	76	6.3	86	150
GR06.125-80	30	10	95	6.3	106	150



Grippers | Expansion grippers

ID grippers for diameters 3 to 10 mm

ID grippers for diameters 3 to 10 mm

NEW



GRIPPING WITHIN SMALL RECESSES, FOOD GRADE GRIPPER HEADS



Product description

- > Expansion grippers for small or lightweight parts
- > Compact and lightweight design
- > Food grade gripper heads (FDA approved material)
- > Body made of high-strength, anodised aluminium
- > Gripper heads can be easily exchanged
- > Optional monitoring of piston position

Notes

- > ID grippers series GR04.F2 come with O-Ring for improved holding force

Ordering notes

- > PNP and NPN sensors:
- C-slot (straight): GR04.198, GR04.198NPN

Technical data

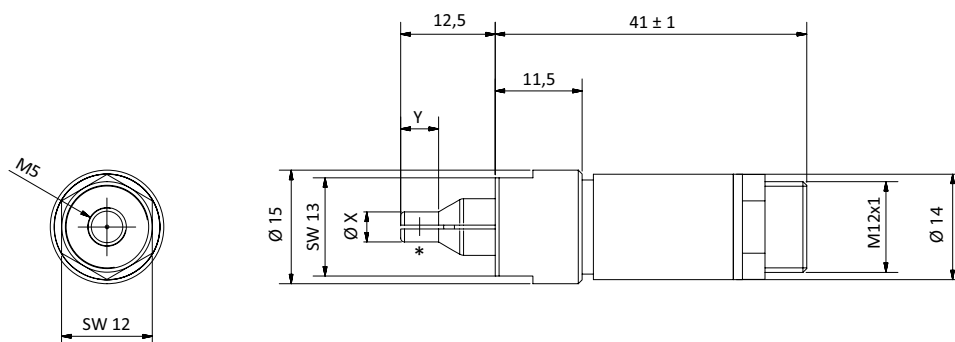
Item no.	For parts having an inner ϕ from / to [mm]	Optimal feed pressure [bar]	Clamping- ϕ [mm]	Weight [g]	Accessories
GR04.F01-35	3.5 - 3.9	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.F01-40	4 - 4.4	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.F01-45	4.5 - 4.9	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.F02-50	5 - 5.4	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.F02-55	5.5 - 5.9	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.F02-60	6 - 6.4	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.F02-65	6.5 - 6.9	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)



Technical data

Item no.	For parts having an inner \varnothing from / to [mm]	Optimal feed pressure [bar]	Clamping- \varnothing [mm]	Weight [g]	Accessories
GR04.F02-70	7 - 7.4	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.F02-75	7.5 - 7.9	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.F02-80	8 - 8.4	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.F02-85	8.5 - 8.9	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.F02-90	9 - 9.4	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.F02-95	9.5 - 9.9	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)
GR04.F02-100	10 - 10.4	6	14	21	Extension tube GR06.021A (p.91) Sensor mounting bracket GR04.038S (p.168) Sensor GR04.198 (p.374) Sensor GR04.198/NPN (p.374)

Dimensions



* = O-Ring ID gripper series GR04.F02

Item no.	X [mm]	X with O-Ring [mm]	Y [mm]
GR04.F01-35	3	--	2.5
GR04.F01-40	3.5	--	3.5
GR04.F01-45	4	--	5
GR04.F02-50	4.5	--	5
GR04.F02-55	5	--	5
GR04.F02-60	5.5	--	5
GR04.F02-65	6	6.5	5.5
GR04.F02-70	6.5	7	12.5
GR04.F02-75	7	7.5	12.5
GR04.F02-80	7.5	8	12.5
GR04.F02-85	8	8.5	12.5
GR04.F02-90	8.5	9	12.5
GR04.F02-95	9	9.5	12.5
GR04.F02-100	9.5	10	12.5



Grippers | Expansion grippers

ID grippers for diameters 8 to 85 mm

ID grippers for diameters 8 to 85 mm

NEW



ID-gripper with silicone bellow

PISTON MOVEMENT ADJUSTABLE TO POSITION OF GRIPPED OBJECT, BELLOW IS NOT INFLATED, NO RISK OF BURSTING



Left: initial position | Right: bellow expanded

Product description

- > Single-acting grippers with high holding force
- > Gripper bellow expanded by pneumatically driven piston, clamps workpiece at its inner surface
- > Ventilation of gripper resets piston and bellow and releases workpiece
- > Piston movement adjustable to position of gripped object
- > Holding force controlled by feed pressure
- > Robust body, made of anodised, high-strength aluminium alloy
- > Elastomer bellows available in EPDM or silicone
- > Easy and non-destructive exchange of bellows

Notes

Downward piston movement (workpiece pushed):

- > Clamp the upper (black) part of gripper body or using optional extension tubes or threaded mounting brackets

Upward piston movement (workpiece drawn):

- > Clamp the bottom (red) part of gripper body

Technical data

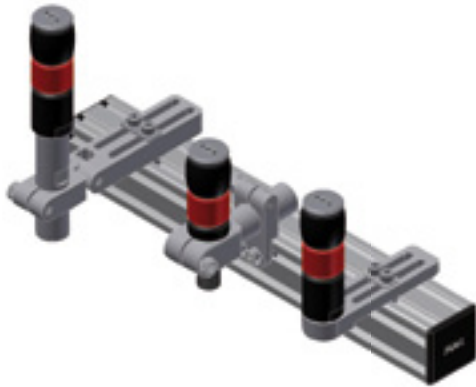
Item no.	For parts having an inner Ø from / to [mm]	Optimal feed pressure [bar]	Weight [g]	Accessories
GR04.F208	8 - 11	8	25	Extension tube GR06.034 (p.211), EPDM elastomer GR04.208-1, Silicone elastomer GR04.208-2, Mounting bracket GR02.280 (p.212), Mounting bracket GR02.227 (p.213)
GR04.F210	10.5 - 14	8	26	Extension tube GR06.034 (p.211), EPDM elastomer GR04.210-1, Silicone elastomer GR04.210-2, Mounting bracket GR02.280 (p.212), Mounting bracket GR02.227 (p.213)
GR04.F212	13 - 17	8	28	Extension tube GR06.034 (p.211), EPDM elastomer GR04.212-1, Silicone elastomer GR04.212-2, Mounting bracket GR02.280 (p.212), Mounting bracket GR02.227 (p.213)
GR04.F214	15 - 19.5	8	31	Extension tube GR06.034 (p.211), EPDM elastomer GR04.214-1, Silicone elastomer GR04.214-2, Mounting bracket GR02.280 (p.212), Mounting bracket GR02.227 (p.213)
GR04.F218	19.5 - 25	8	53	Extension tube GR06.034 (p.211), EPDM elastomer GR04.218-1, Silicone elastomer GR04.218-2, Mounting bracket GR02.281 (p.212), Mounting bracket GR02.227 (p.213)
GR04.F222	24 - 31.5	8	83	Extension tube GR06.035 (p.211), EPDM elastomer GR04.222-1, Silicone elastomer GR04.218-2, Mounting bracket GR02.282 (p.212), Mounting bracket GR02.228 (p.213)
GR04.F227	28 - 37	8	117	Extension tube GR06.035 (p.211), EPDM elastomer GR04.227-1, Silicone elastomer GR04.227-2, Mounting bracket GR02.283 (p.212), Mounting bracket GR02.228 (p.213)
GR04.F233	34 - 45	8	182	Extension tube GR06.036 (p.211), EPDM elastomer GR04.233-1, Silicone elastomer GR04.233-2, Mounting bracket GR02.284 (p.212), Mounting bracket GR02.229 (p.213)
GR04.F241	42 - 54	8	364	Extension tube GR06.036 (p.211), EPDM elastomer GR04.241-1, Silicone elastomer GR04.241-2, Mounting bracket GR02.285 (p.212), Mounting bracket GR02.229 (p.213)
GR04.F251	54 - 68	8	611	Extension tube GR06.037 (p.211), EPDM elastomer GR04.251-1, Silicone elastomer GR04.251-2, Mounting bracket GR02.286 (p.212), Mounting bracket GR02.232 (p.79)
GR04.F263	66 - 85	8	1,051	EPDM elastomer GR04.263-1, Silicone elastomer GR04.263-2, Mounting bracket GR02.287 (p.212), Mounting bracket GR02.233 (p.213)



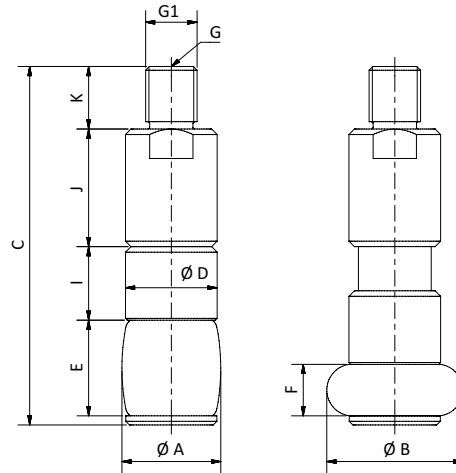
Elastomer replacement

EPDM [Included in delivery] Colour black	Silicone Colour red
> Non-marking > Heat resistant to 130 °C	> Very long service life > Heat resistant to 200 °C

Application examples



Dimensions



Item no.	G	G1	Ø A [mm]	Ø B [mm]	C [mm]	Ø D [mm]	E [mm]	F [mm]	I [mm]	J [mm]	K [mm]
GR04.F208	M5	M12x1.5	8	11	67	16	7	3.5	11	23	15
GR04.F210	M5	M12x1.5	10.5	14	69	16	8.5	4.5	11	23	15
GR04.F212	M5	M12x1.5	13	17	71	16	10.5	5	11	23	15
GR04.F214	M5	M12x1.5	15	19.5	73	16	13	6	11	23	15
GR04.F218	M5	M12x1.5	19.5	25	78	20	16.5	9	20	23.5	15
GR04.F222	M5	M14x1.5	24	31.5	93	23	21	9	20	32	17
GR04.F227	M5	M14x1.5	28	37	98	25	26	14	20	32	17
GR04.F233	G1/8	M16x1.5	34	45	113	30	32.5	24	20	37.5	19
GR04.F241	G1/8	M16x1.5	42	54	138	40	39.5	14	20	54.5	19
GR04.F251	G1/8	M20x1.5	54	68	148	50	48	30	30	42	19
GR04.F263	G1/8	M24x1.5	66	85	176	60	61	36	30	56	19

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Installation examples

- > Clamping the upper part of gripper body enables downward piston movement (workpiece pushed) GR02.280 - GR02.287



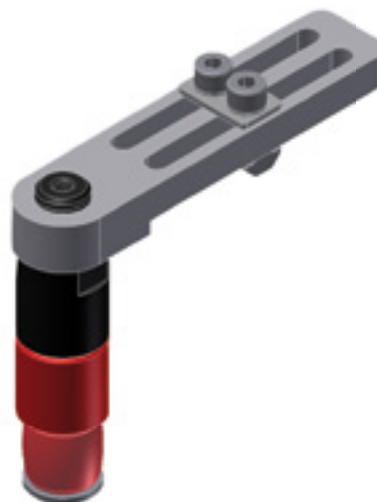
- > Clamping the lower gripper body enables upward piston movement (workpiece drawn) GR02.280 - GR02.287



- > Clamping to extension tubes enables downward piston movement (workpiece pushed) GR06.034 - GR06.037



- > Fitting to threaded mounting brackets enables downward piston movement (workpiece pushed)
- > GR02.227 - 229 and GR02.232 - GR02.233





Extension tubes for ID grippers with gripper bellows



SUITABLE FOR ID-GRIPPERS GR04 WITH INDEX F



Product description

- > Extension tubes with rear-side compressed air connection and through hole
- > For mounting inside grippers to angle clamps

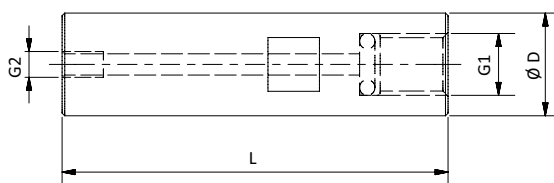
Notes

- > Does not fit to ID grippers with Index N

Technical data

Item no.	Suitable for	Weight [g]
GR06.034	GR04.F208 - GR04.F218	56
GR06.035	GR04.F222 - GR04.F227	54
GR06.036	GR04.F233 - GR04.F241	45
GR06.037	GR04.F251	118

Dimensions



Item no.	G1	G2	Ø D [mm]	L [mm]
GR06.034	M12x1.5	M5	20	75
GR06.035	M14x1,5	M5	20	75
GR06.036	M16x1.5	G1/8	20	75
GR06.037	M20x1.5	G1/8	30	75



Grippers | Expansion grippers

Mounting brackets for ID bellow grippers

Mounting brackets for ID bellow grippers

NEW



SUITABLE FOR ID GRIPPERS GR04 WITH INDEX F



Product description

- > Mounting brackets for variable angle installation of ID grippers

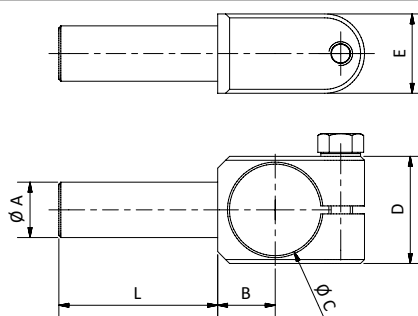
Notes

- > Clamping grippers to upper part (black) enables upward movement, workpiece is drawn
- > Clamping grippers to bottom part (red) or clamping to extension tube enables downward movement, workpiece is pushed

Technical data

Item no.	Suitable for expansion grippers	Weight [g]
GR02.280	GR04.F208, GR04.F212, GR04.F214	18
GR02.281	GR04.F218	36
GR02.282	GR04.F222	40
GR02.283	GR04.F227	50
GR02.284	GR04.F233	57
GR02.285	GR04.F241	68
GR02.286	GR04.F251	145
GR02.287	GR04.F263	172

Dimensions



Item no.	Ø A [mm]	B [mm]	Ø C [mm]	D [mm]	E [mm]	L [mm]
GR02.280	10	11	16	20	10	30
GR02.281	14	13	20	24	20	40
GR02.282	14	14.5	23	27	20	40
GR02.283	20	15.5	25	29	20	50
GR02.284	20	18	30	34	20	50
GR02.285	20	23	40	44	20	50
GR02.286	30	27	50	54	30	60
GR02.287	30	32	60	64	30	60



Threaded mounting brackets for ID grippers

NEW

SUITABLE FOR ID GRIPPERS GR04 WITH INDEX F



Product description

> Threaded mounting brackets for installation the grippers on profiles

Notes

> Threaded mounting bracket enables downward movement of piston of ID gripper, workpiece is pushed

Ordering notes

> Slot nuts and mounting screws included in scope of delivery

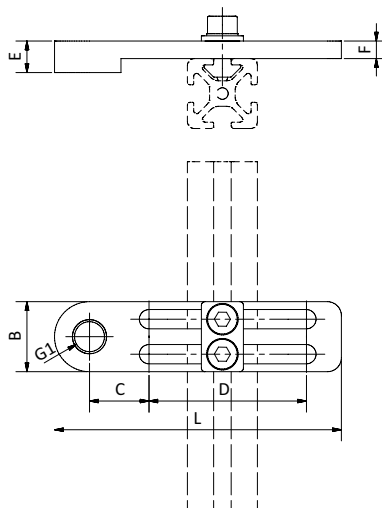
Technical data

Item no.	Suitable for expansion grippers	Weight [g]
GR02.227	GR04.F208 - GR04.F218	50
GR02.228	GR04.F222 - GR04.F227	53
GR02.229	GR04.F233 - GR04.F241	57
GR02.232	GR04.F251	63
GR02.233	GR04.F263	70

Dimensions

G1	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	L [mm]
M12x1.5	22	23	55	12	8.5	99
M14x1.5	24	22	55	12	8.5	99
M16x1.5	26	21	55	12	8.5	99
M20x1.5	28	21	65	12	8.5	110
M24x1.5	32	21	65	12	8.5	110

Dimensions



[illegible]



Special ID & OD grippers



Special pneumatic ID gripper

Special vacuum OD gripper

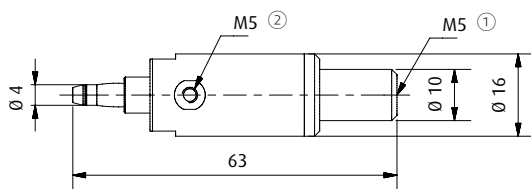
Product description

- > Customised ID & OD grippers for inserts such as stem nuts or threaded bushings
- > Gripper customised to workpiece specifications
- > Pneumatically driven:
 - Clamping the workpiece with its inner contour
 - Single-acting or double-acting for short cycle times
- > Vacuum driven:
 - For gripping parts on the face, if ID pick-up is not permitted
- > Lightweight and compact housing, made from aluminium or brass

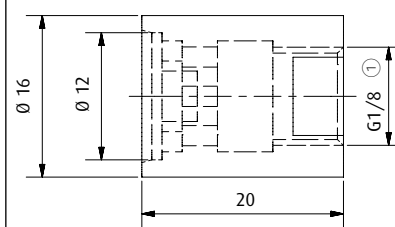
Notes

- > Dimensioned items below are for illustration only and not available as standard
- > We will be happy to develop the gripper that matches your application

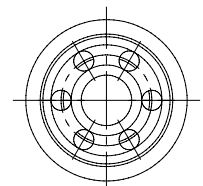
Dimensions



GR09.xx2



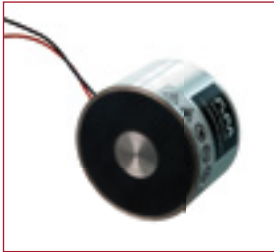
GR09.xx3



① = Compressed air connection for extending the piston ② = Compressed air connection for stripping for product release ① = Vacuum connection



FIPA Special grippers



Magnetic grippers

- > Secure handling of sheet metal and ferromagnetic workpieces with and without recesses

MG series

- > Combination of electronic and permanent magnet
- > High cycle times for thin and / or alloyed metal sheets thanks to negligible residual magnetism after switching off the magnetic force
- > Holding force up to 700 N
- > No compressed air required
- > Very energy-efficient, as a short electrical pulse is only required for product release

> See page 219



Bernoulli vacuum cups - SX-B and SX-B-PK

- > Non-contact, deformation-resistant transport of thin and sensitive products
- > No ejector, requires compressed air only
- > Suitable for porous products thanks to high volume flow
- > Series for direct contact with food (approval in accordance with FDA/EC1935/2004)

> See page 220



Vacuum tweezers

- > Compressed air or vacuum operated pick-up tool for the assembly of small parts
- > Delivery includes set of miniature vacuum cups

> See page 224



FIPA Special grippers



Modular grippers

- > Customised gripper tools made of Polyamide
- > Easy adaption to robots
- > Integrated media channels to minimise piping complexity
- > Food grade material

> See page 225



Needle grippers - slim design, with sensor

- > Internal lift guiding for extra slim design
- > Sensor for monitoring gripper action via piston position (needles extracted / retracted)

> See page 226



Needle grippers

- > For materials that are non-dimensionally stable or difficult to handle with vacuum
- > Alignment to material thickness via adjustable lift
- > Double-acting, enables short duty cycles

> See page 228



Mounting brackets for needle gripper

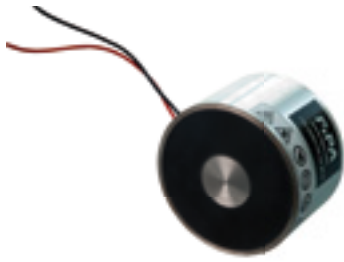
- > Installation on SLine and MLine extrusion systems or on spring-loaded suction fingers

> See page 236

[illegible]



Magnetic grippers - electrical controlled



Product description

- > Safe handling of sheet metal or ferromagnetic workpieces with or without recesses
- > Very high holding force thanks to high-performance electromagnet / permanent magnet
- > Short cycle times for thin and / or alloyed metal sheets thanks to negligible residual magnetism after switching off the magnetic force
- > No compressed air required
- > Very energy-efficient as a short electrical pulse is only required for product release
- > Robust design

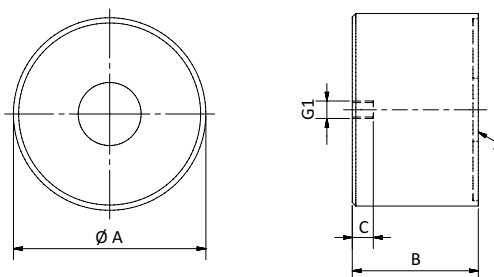
Notes

- > Indicated holding forces are valid for direct placement, without air gap, on the flat holding surface

Technical data

Item no.	Principle of operation	Rated power [W]	Gripping force [N]	Residual gripping force [N]	Operating voltage of the switch-off coil [V]	Power-on time [ED]	Protection class	Max. operating temperature [°C]	Weight [g]	Suitable mounting brackets
MG35	Electrical	4.6	160	< 1	24	25 % ED at < 2 min.	IP65	0 - 70	200	270.448
MG55	Electrical	9	420	< 1	24	25 % ED at < 2 min.	IP65	0 - 70	500	270.449
MG70	Electrical	13.3	720	< 1	24	25 % ED at < 2 min.	IP65	0 - 70	900	270.450

Dimensions



* = Holding surface

Item no.	G1	Ø A [mm]	B [mm]	C [mm]
MG35	M4	35	30	5
MG55	M5	55	36	6
MG70	M8	70	45	8



Bernoulli vacuum cups SX-B



Housing made of anodised aluminium



Product description

- > Integrated vacuum generation on the Bernoulli principle
- > Non-contact, deformation-resistant transport of thin and sensitive products
- > Suitable for porous products thanks to high volume flow at low vacuum level
- > Easy to install, system flexibly expandable through lateral compressed air inlets
- > Long life cycle due to maintenance-free operation

Notes

- > Only operate with unooled, dry compressed air

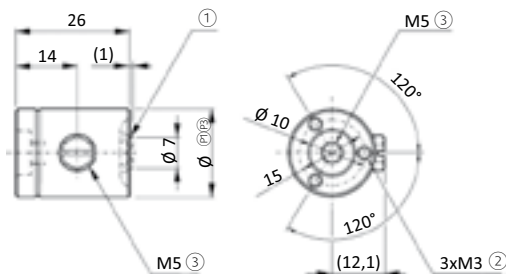
Ordering notes

- > With 65.530 and 65.540, the pads can be removed for contact-free applications
- > Silicone pads (pads SI) are included in scope of delivery

Technical data

Item no.	Model	Operating pressure [bar]	Holding force at 5 bar [N]	Air consumption at 5 bar [l/min]	Ambient air temperature [°C]	Weight [g]	Accessories
65.510	SX-B-20	1 - 7	0.9	100	5 - 60	50	Pads NBR 78.509 Pads SI 78.510
65.520	SX-B-30	1 - 7	1.3	100	5 - 60	70	Pads NBR 78.509 Pads SI 78.510
65.530	SX-B-40	1 - 7	2	110	5 - 60	120	Pads NBR 78.511 Pads SI 78.512
65.540	SX-B-60	1 - 7	6	210	5 - 60	260	Pads NBR 78.511 Pads SI 78.512

Dimensions

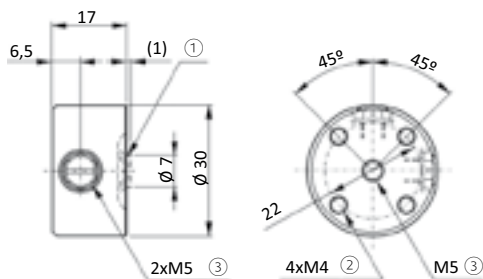


65.510

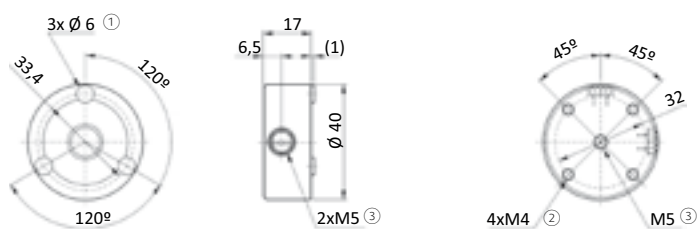
① = Pads ② = Depth 5 mm ③ = Compressed air connection



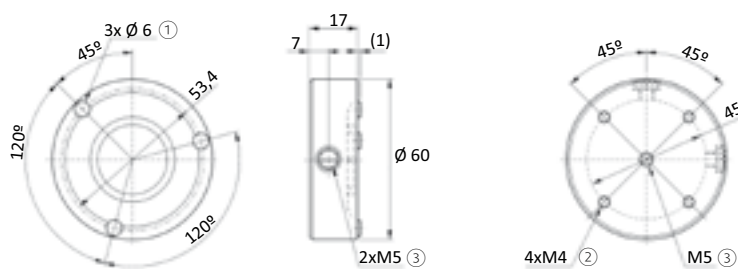
Dimensions



65.520



65.530

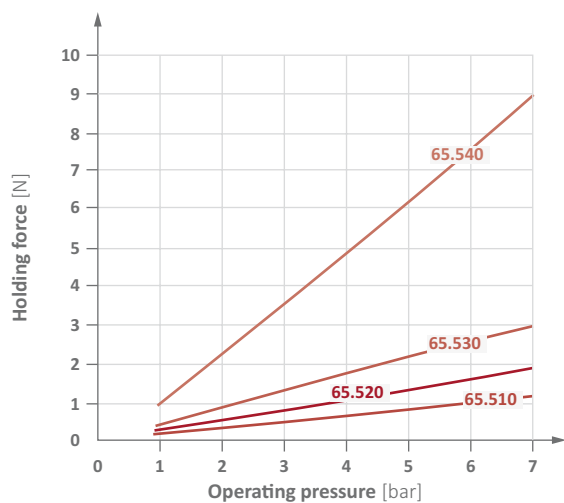


65.540

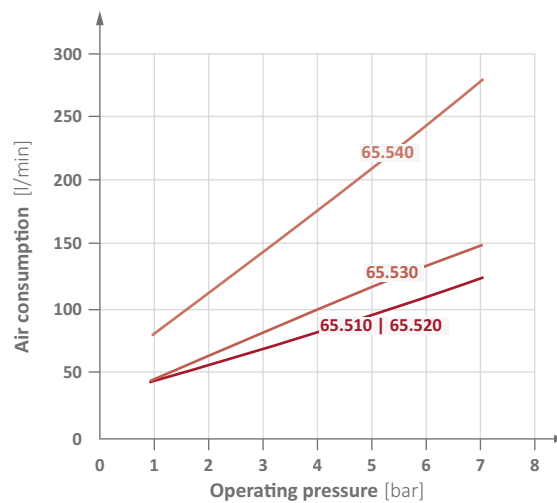
① = Pads ② = Depth 5 mm ③ = Compressed air connection

Diagrams

> Holding force as a function of operating pressure



> Air consumption as a function of operating pressure





Bernoulli vacuum cups SX-B-PK



SUITABLE FOR FOODSTUFFS

Body and blind screws made of Polyetheretherketone (PEEK), nozzle made of stainless steel

Product description

- > Integrated vacuum generation on the Bernoulli principle
- > No ejector, requires compressed air only
- > Non-contact, deformation-resistant transport of thin and sensitive products
- > Suitable for direct contact with food products (Approval by FDA/EC1935/2004)
- > Suitable for porous products thanks to high volume flow at low vacuum level
- > Easy to install, system flexibly expandable through lateral compressed air inlets
- > Long life cycle due to maintenance-free operation

Notes

- > Only operated with oil-free, dry compressed air

Technical data

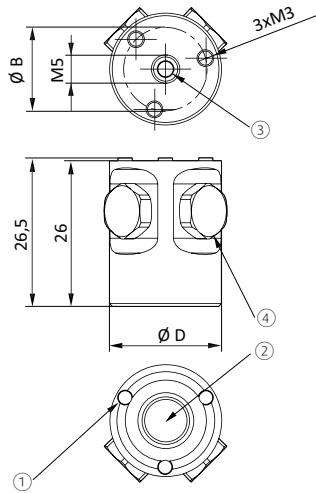
Item no.	Model	Operating pressure [bar]	Holding force at 5 bar [N]	Air consumption at 5 bar [l/min]	Max. Particle size [µm]	Medium	Ambient air temperature [°C]	Weight [g]	Suitable silicone pads
65.510-PK	SX-B-PK-20	1 - 7	2.5	150	40	Compressed air	5 - 60	10	78.510
65.520-PK	SX-B-PK-30	1 - 7	3	150	40	Compressed air	5 - 60	20	78.510
65.530-PK	SX-B-PK-40	1 - 7	5.5	150	40	Compressed air	5 - 60	30	78.512
65.540-PK	SX-B-PK-60	1 - 7	12	220	40	Compressed air	5 - 60	70	78.512

Technical specifications

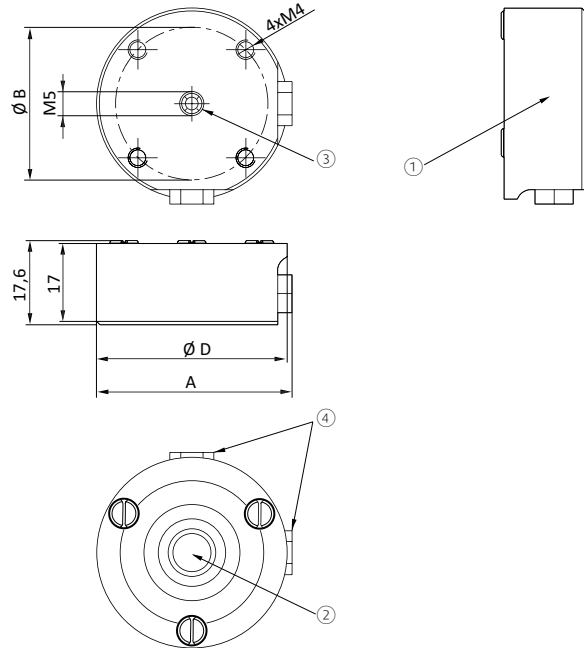
- > Highly resistant against diverse chemicals used in the food industry
- > Suitable for all conventional CIP (Cleaning-In-Place) and SIP (Sterilisation-In-Place) processes
- > Hygienic product design enables quick and easy cleaning
- > Materials:
 - Housing: Polyetheretherketone
 - Pad: Silicone caoutchouc
 - Nozzle: Stainless steel
 - Seals: Fluorocaoutchouc
 - Blanking screw: Polyetheretherketone



Dimensions



65.510-PK



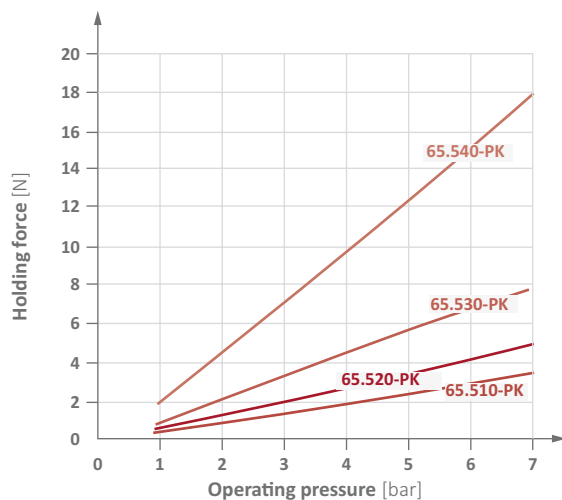
65.520-PK | 65.530-PK | 65.540-PK

① = Silicone rubber pads ② = Nozzle ③ = Compressed air connection ④ = Alternative compressed air connection

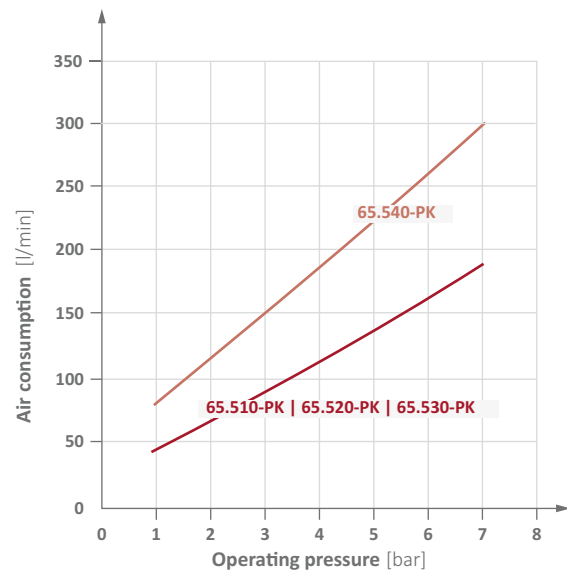
Item no.	A [mm]	Ø B [mm]	Ø D [mm]
65.510-PK	--	15	20
65.520-PK	31	22	30
65.530-PK	41	32	40
65.540-PK	61	45	60

Diagrams

> Holding force as a function of operating pressure



> Air consumption as a function operating pressure





Vacuum tweezers



Product description

- > Compressed air- or vacuum-operated special tool for assembly of small parts
- > VTA-Set:
Vacuum tweezers with built-in ejector, without valve and with air vent. To pick up the object, close the air vent with the fingertip and release to place the object.
- > VTB-Set:
Vacuum tweezers with built-in ejector, compressed air valve and built-in silencer - hence, very low-noise. The built-in compressed air valve is used to switch on the vacuum only when needed.
- > VTA-Set-1:
Vacuum tweezers without ejector and with air vent. To pick up the object, close the air vent with the fingertip and release to place the object.

Ordering notes

- The sets contains:
- > Vacuum tweezers, spiral tubing, one of each size vacuum cup (Silicone) Ø 2, 4, 6 and 8 mm
 - > Curved adapter for vacuum cups Ø 2 and 4 mm
 - > Curved adapter for vacuum cups Ø 6 and 8 mm

Technical data

Item no.	Operating principle	Operating pressure [bar]	Nominal supply pressure [bar]	Final vacuum [%]	Operating temperature [°C]	Weight [g]	Accessories
VTA-Set	Operated with compressed air	1.5 - 7	5	90	0 - 60	22	Adapter straight for vacuum cups Ø 2, 4 mm VPZ-2-S Adapter straight for vacuum cups Ø 6, 8 mm VPZ-6-S Spare cup NBR Ø 2, 4, 6, 8 mm VT-NBR-Set Mounting bracket EIL.05-HO
VTB-Set	Operated with compressed air	1.5 - 7	5	90	0 - 60	16	Adapter for vacuum cups - bended Ø 2, 4 mm VPZ-2 Adapter for vacuum cups - bended Ø 6, 8 mm VPZ-6 Spare cup NBR Ø 2, 4, 6, 8 mm VT-NBR-Set Mounting bracket EIL.05-HO
VTA-Set-1 *	Vacuum-operated	--	--	--	0 - 60	22	Adapter for vacuum cups - bended Ø 2, 4 mm VPZ-2 Adapter for vacuum cups - bended Ø 6, 8 mm VPZ-6 Spare cup NBR Ø 2, 4, 6, 8 mm VT-NBR-Set Mounting bracket EIL.05-HO

* = Values depend on vacuum generator



Modular grippers



SUITABLE FOR FOODSTUFFS



Customised design example

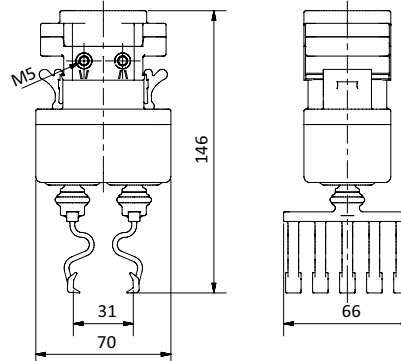
Product description

- > Grippers are customised to the workpiece
- > Connection to robots such as Delta Robots
- > Single-acting or double-acting
- > All components made of FDA compliant material
- > Material: Polyamide-based high-performance plastic

Ordering notes

- > The product examples displayed are based on customer specifications
- > We would be pleased to develop your customised solution

Dimensions



Examples of application

- > Modular gripper for cans - the gripper design follows the contours of the handling item, to enable rapid acceleration



- > Modular gripper with integrated ejector EMM and Varioflex® bellows vacuum cups for height compensation





NEW



SLIM DESIGN DUE TO INTERNAL LIFT GUIDING

Product description

- > Gripper for materials that are non-dimensionally stable or difficult to handle with vacuum
- > Alignment to material thickness via adjustable lift
- > Double-acting, enables short duty cycles, separate compressed air connections for extraction / retraction of needles
- > Internal lift guiding for extra slim design
- > Sensor for monitoring gripper action via piston position (needles extracted / retracted)

Notes

- > Lift corresponds to maximum entry depth of needles

Ordering notes

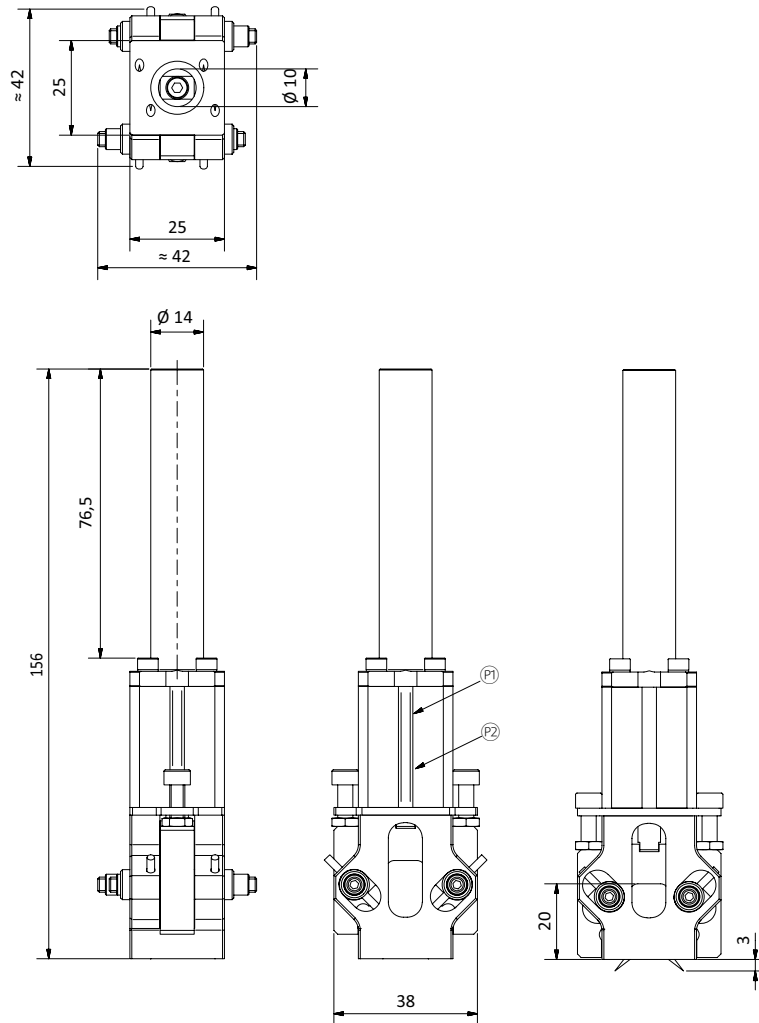
- > Sensors and spare needle sets with 10 needles each, available as accessories
- > PNP and NPN sensors:
 - C-nut (cable: 90°): GR04.202P, GR04.202N
 - C-nut (cable: straight, short design): GR04.280P, GR04.280N

Technical data

Item no.	GR04.740B
Principle of operation	Double-acting
Lift [mm]	0 - 3
Number of needles [Pcs.]	4
Needle diameter [mm]	2
Infeed angle [°]	45
Operating pressure [bar]	2 - 8
Operating temperature [°C]	-10 - 60
Weight [g]	226
Accessories	Spare needle kit GR04.740-30N Sensor GR04.280N (p.374) Sensor GR04.280P (p.374) Sensor GR04.202N (p.374) Sensor GR04.202P (p.374)



Dimensions



Ⓘ = Compressed air connection M5 needles extended Ⓙ = Compressed air connection M5 needles retracted



Grippers | Needle grippers

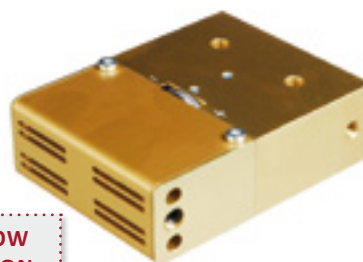
Needle grippers GR04.700 and GR04.730

Needle grippers GR04.700 and GR04.730



GR04.700

**SMALL NEEDLE DIAMETER FOR LOW
ENTRY DEPTH, BLOW-OFF FUNCTION
FOR FAST PRODUCT RELEASE**



GR04.730

Product description

- > Grippers with flat entry angle enables handling of thin or flat parts
- > Knurled screw for lift adjustment to textile thickness
- > GR04.700: Double-acting enables short duty cycles: Separate compressed air connections for extraction / retraction of needles, additional compressed air inlet (A) for fast product release
- > GR04.730: Single-acting, compressed air connection for needle extraction, reset via return spring

Notes

- > Lift corresponds to maximum entry depth of needles

Ordering notes

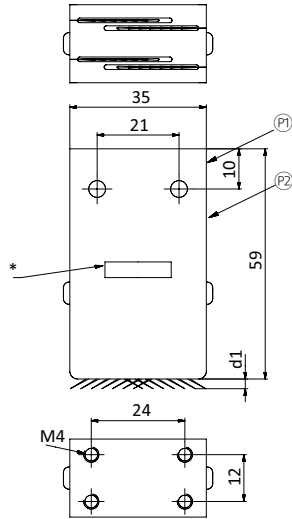
- > Spare needle plates available as accessories

Technical data

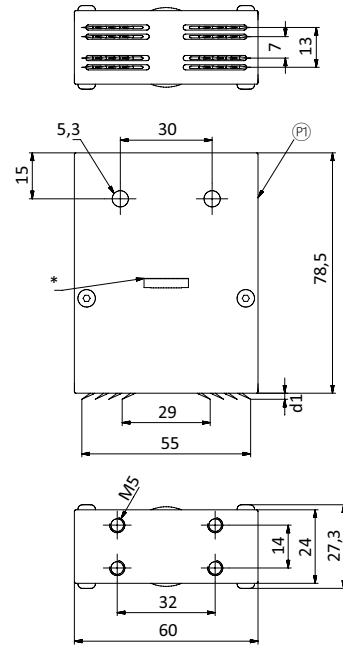
Item no.	GR04.700-20	GR04.700-25	GR04.730-20
Principle of operation	Double-acting	Double-acting	Single-acting
Lift [mm]	0 - 2	0 - 2.5	0 - 2
Number of needles [Pcs.]	32	32	32
Needle diameter [mm]	0.7	0.7	0.7
Infeed angle [°]	45	45	45
Operating pressure [bar]	4 - 7	4 - 7	7
Operating temperature [°C]	-10 - 60	-10 - 60	-10 - 60
Weight [g]	114	114	250
Accessories	Spare needle kit GR04.700-20N Mounting bracket GR07.040 (p.236)	Spare needle kit GR04.700-25N Mounting bracket GR07.040 (p.236)	Spare needle kit GR04.730-20N Mounting bracket GR07.041 (p.236)



Dimensions



GR04.700-20 | GR04.700-25



GR04.730-20

* = Lift adjustment with knurled screw P1 = Compressed air connection M5 needles extended
P2 = Compressed air connection M5 needles retracted

Item no.	GR04.700-20	GR04.700-25	GR04.730-20
Ø d1 [mm]	2	2.5	0 - 2



Grippers | Needle grippers

Needle grippers GR04.710 and GR04.720

Needle grippers GR04.710 and GR04.720



GR04.710

LIFT ADJUSTABLE TO
MATERIAL THICKNESS



GR04.720 with spring load

Product description

- > Grippers for materials that are non-dimensionally stable or difficult to handle with vacuum
- > Central bore hole to allow insertion of gripper into stack rails for pick and place
- > Lift limitation adjustable to material thickness
- > Needles centrally crossed for firm grip
- > Double-acting enables short duty cycles: Separate compressed air connections for extraction / retraction of needles

Notes

- > Needles can be individually replaced

Ordering notes

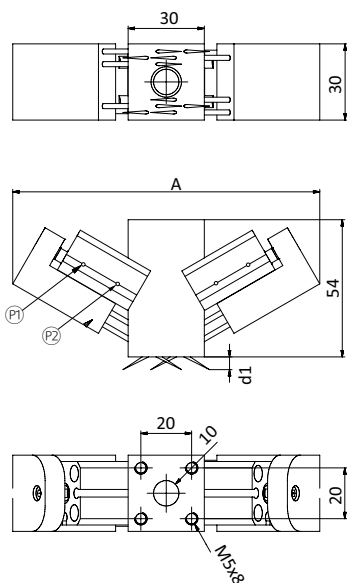
- > Spare needle sets, each containing 10 pieces available

Technical data

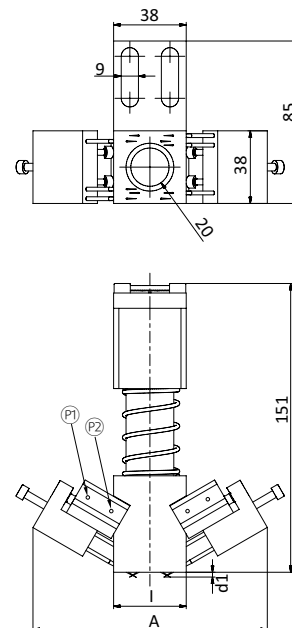
Item no.	GR04.710-25	GR04.710-50	GR04.710-75	GR04.710-100	GR04.720-25	GR04.720-50
Principle of operation	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting	Double-acting
Lift [mm]	0 - 2.5	0 - 5	0 - 7.5	0 - 10	0 - 2.5	0 - 5
Number of needles [Pcs.]	10	10	10	10	10	10
Needle diameter [mm]	2	2	2	2	2	2
Infeed angle [°]	45	45	45	45	45	45
Operating pressure [bar]	2 - 8	2 - 8	2 - 8	2 - 8	2 - 8	2 - 8
Max. operating temperature [°C]	-10 - 60	-10 - 60	-10 - 60	-10 - 60	-10 - 60	-10 - 60
Weight [g]	240	255	301	311	492	512
Accessories	Spare needle kit GR04.710-50N Mounting bracket GR07.040 (p.236)	Spare needle kit GR04.710-50N Mounting bracket GR07.040 (p.236)	Spare needle kit GR04.710-75AN Spare needle kit GR04.710-75N Mounting bracket GR07.040 (p.236)	Spare needle kit GR04.710-75AN Spare needle kit GR04.710-75N Mounting bracket GR07.040 (p.236)	Spare needle kit GR04.720-25N	Spare needle kit GR04.720-25N



Dimensions



GR04.710-25 | GR04.710-50 | GR04.710-75 | GR04.710-100



GR04.720-25 | GR04.720-50

P1 = Compressed air connection M5 needles extended P2 = Compressed air connection M5 needles retracted

Item no.	GR04.710-25	GR04.710-50	GR04.710-75	GR04.710-100	GR04.720-25	GR04.720-50
A [mm]	108 - 116.5	120 - 138	128 - 154	138.5 - 173	123 - 131.5	131.5 - 149
d1 [mm]	0 - 2.5	0 - 5	0 - 7.5	0 - 10	0 - 2.5	0 - 5



Grippers | Needle grippers

Needle grippers GR04.715

Needle grippers GR04.715

RETRACTION OF NEEDLES CAN BE CONTROLLED
SEPARATELY FOR BOTH SIDES



Product description

- > Grippers for workpieces or materials that are non-dimensionally stable or difficult to handle with vacuum
- > Narrow design
- > Lift can be adjusted to material thickness
- > Double-acting enables short duty cycles: Separate compressed air connections for extraction / retraction of needles on the face-side, alternatively one connection / each for separate extraction, one connection for central retraction

Notes

- > Needles can be individually replaced

Ordering notes

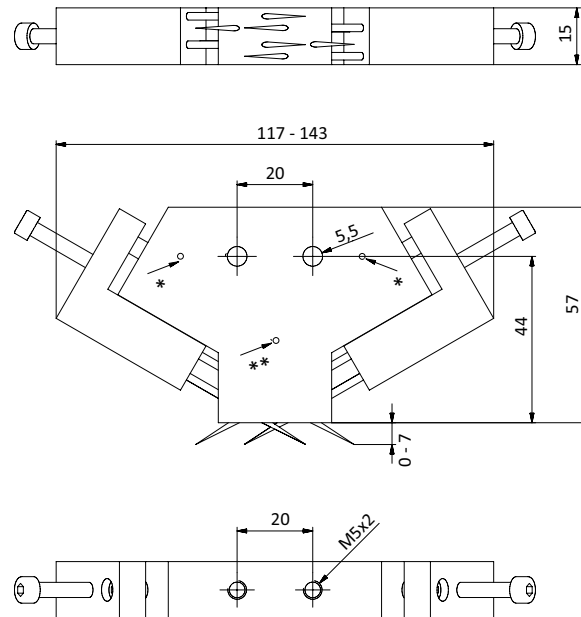
- > Spare needle sets, each containing 10 pieces available

Technical data

Item no.	GR04.715-70
Principle of operation	Double-acting
Lift [mm]	0 - 7
Number of needles [Pcs.]	6
Needle diameter [mm]	2
Infeed angle [°]	45
Operating pressure [bar]	2 - 8
Operating temperature [°C]	-10 - 60
Weight [g]	195
Accessories	Mounting bracket GR07.042 (p.237) Spare needle kit GR04.715-70N



Dimensions



* = Bore holes M3 for separate extration of needles per side ** = Bore hole M3 for central retraction of needles



Needle grippers GR04.725



ESPECIALLY SUITED FOR HANDLING HEAVIER WORKPIECES

Product description

- > Grippers for materials that are non-dimensionally stable or difficult to handle with vacuum
- > Lift can be adjusted to material thickness
- > Double-acting enables short duty cycles: Separate compressed air connections for extraction / retraction of needles

Ordering notes

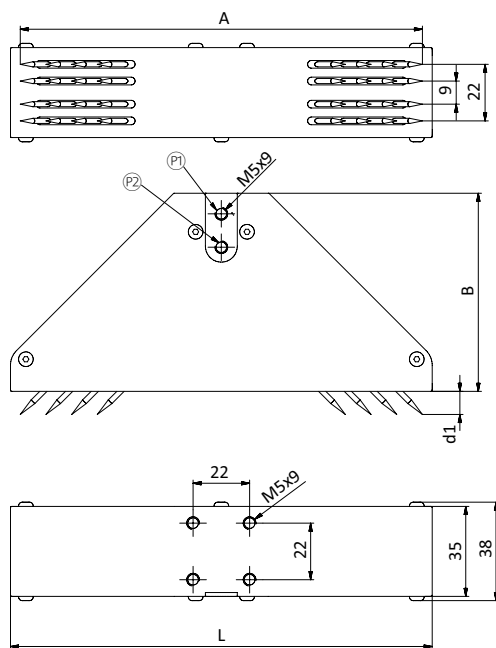
- > Spare needle plates, available

Technical data

Item no.	GR04.725-60	GR04.725-90
Principle of operation	Double-acting	Double-acting
Lift [mm]	6	9
Number of needles [Pcs.]	32	32
Needle diameter [mm]	2	2
Infeed angle [°]	45	45
Max. gripping force [N]	360	360
Operating pressure [bar]	2 - 8	2 - 8
Operating temperature [°C]	-10 - 60	-10 - 60
Weight [g]	450	480
Accessories	Mounting bracket GR07.041 (p.236) Spare needle kit GR04.725-60N	Mounting bracket GR07.041 (p.236) Spare needle kit GR04.725-90N



Dimensions



Ⓟ = Compressed air connection M5 needles extended Ⓡ = Compressed air connection M5 needles retracted

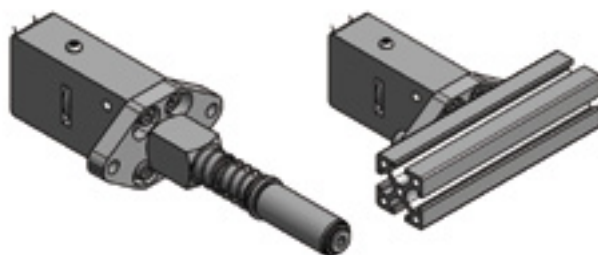
Item no.	GR04.725-60	GR04.725-90
A [mm]	135	150
B [mm]	70	77
d1 [mm]	0 - 6	0 - 9
L [mm]	150	164



Grippers | Needle grippers

Mounting plates for needle gripper

Mounting plates for needle gripper



Installation example for needle gripper GR04.700 on spring-loaded suction finger or FIPA SLine extrusion system

Product description

- > Mounts needle grippers on the SLine and MLine extrusion systems or spring-loaded suction fingers

Notes

- > Two bore holes for DIN 912-M5, for mounting on extrusion

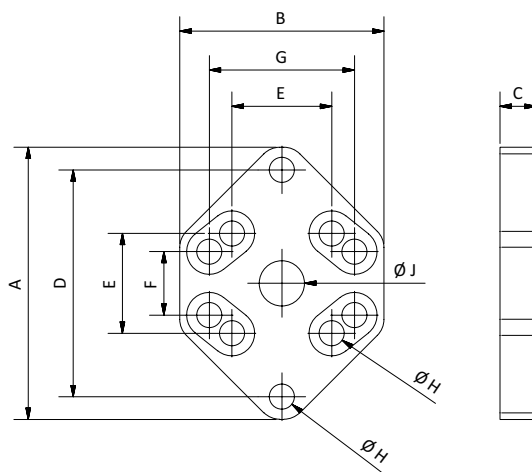
Ordering notes

- > Slot nuts and screws included in scope of delivery

Technical data

Item no.	Suitable for	Weight [g]	Suitable suction fingers
GR07.040	GR04.700, GR04.710	21	GR03.090A (p.104) GR03.091A (p.104) GR03.130A GR03.131A
GR07.041	GR04.725, GR04.730	27	GR03.090A (p.104) GR03.091A (p.104) GR03.130A GR03.131A

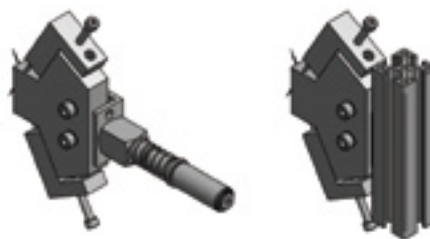
Dimensions



Item no.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Ø H [mm]	Ø J [mm]
GR07.040	60	35	8	50	20	12	24	5.5	10
GR07.041	60	45	8	50	22	14	32	5.5	10



Mounting bracket for needle gripper GR04.715



Installation example for needle gripper GR04.715 on spring-loaded suction finger or SLine extrusion system

Product description

> Mounted needle gripper on the SLine and MLine extrusion systems or on spring-loaded suction finger

Notes

> Two bore holes for DIN 912-M5, for mounting on extrusion with slot nuts

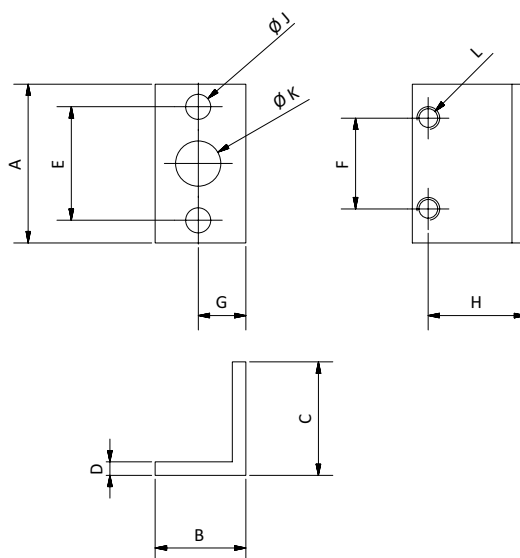
Ordering notes

> Slot nuts and screws included in scope of delivery

Technical data

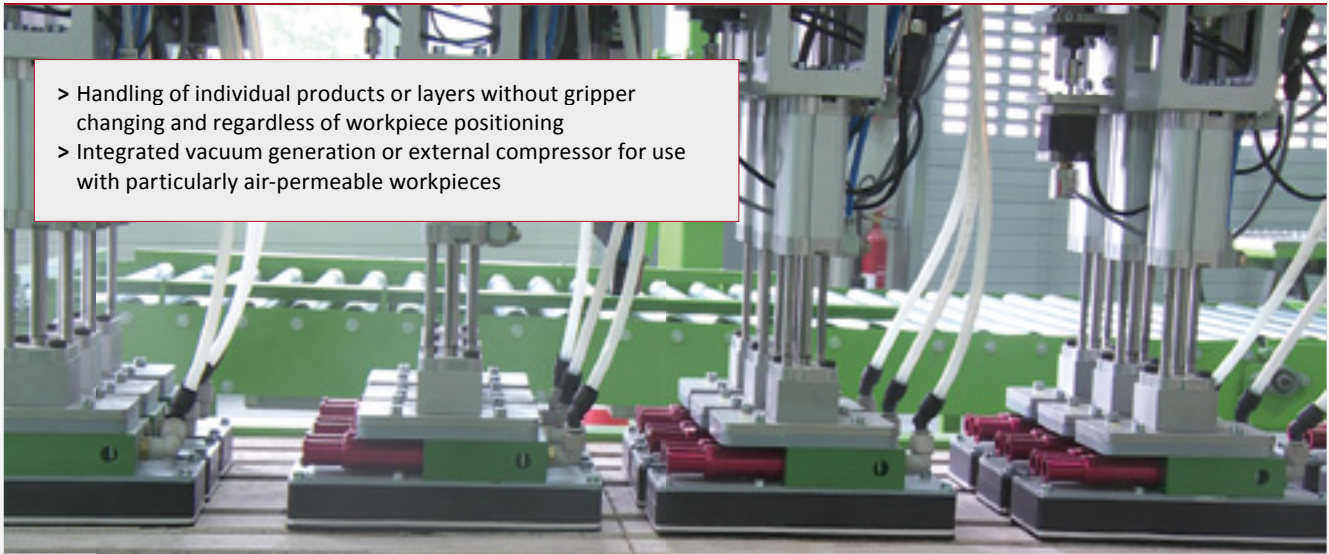
Item no.	Weight [g]	Suitable suction fingers
GR07.042	11	GR03.090A (p.104) GR03.091A (p.104) GR03.130A GR03.131A

Dimensions



Item no.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Ø J [mm]	Ø K [mm]	L
GR07.042	35	20	25	3	25	20	10.5	19	5.5	10	M5

FIPA Vacuum and bag grippers



- > Handling of individual products or layers without gripper changing and regardless of workpiece positioning
- > Integrated vacuum generation or external compressor for use with particularly air-permeable workpieces



Vacuum grippers with closing valves - TC

- > Very large flow cross-sections for long service life and high process reliability, even if exposed to dust
- > Integrated valves seal uncovered suction openings without loss of gripping force
- > No minimum coverage
- > Swivel and tilt movements up to $< 90^\circ$

> See page 240



Vacuum grippers with leakage reduction - TL

- > Economical gripper solution for low-dust handling processes
- > Recommended minimum coverage: 80 %
- > Swivel and tilt movements up to 360°

> See page 244



Suction plates with leakage reduction - SPLT

- > Reliable suction with variable product shapes
- > Maintain an acceptable vacuum level by reducing leakage by means of integrated flow resistors in vacuum cups without product contact

> See page 247



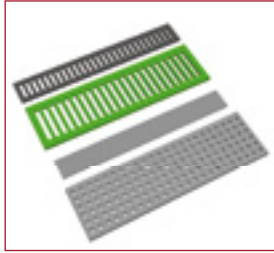
Bag grippers - TG

- > Handling of dimensionally unstable bags and shrink wrapping
- > Also suitable for other products, if vacuum cell is fully covered
- > Swivel and tilt movements possible up to 360°
- > External design similar to that of the TL variant

> See page 248



FIPA Vacuum and bag grippers: Accessories

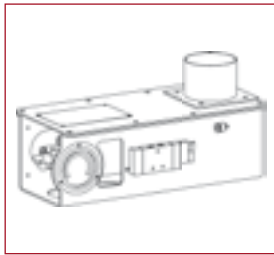


Accessories

Sealing foam for vacuum grippers

- > Very good vacuum sealing and surface protection at the interface with the workpiece
- > Easy mounting and quick replacement without residue
- > Wide standard range
- > Quick implementation of customised dimensions and hole patterns suitable for vacuum grippers of other brands

> See page 250



Pick-up and release system

- > For TC vacuum grippers from 400x600 mm and external vacuum supply
- > Minimises energy consumption and maximises service life
- > Combination of gripper box and blower box
- > Configuration depends on number of vacuum grippers used

> See page 252



Gripper / robot connection elements

- > For example for vertical or 3-axis movements or the connection of multiple or longer gripper systems
- > Layout depends on gripper system and robots

> See page 254



Vacuum gripping systems | Vacuum grippers

Vacuum grippers with closing valves

Vacuum grippers with closing valves

Strong holding force, independent of gripper coverage



MAXIMUM LIFE, MINIMUM MAINTENANCE

Product description

- > Automated handling of individual products or product layers without gripper change
- > Suitable for rigid products with an even or uneven surface
- > Integrated valves seal unused suction openings without loss of gripping force
- > Large valve openings reduce sensitivity to dirt and ensure maximum suction power
- > Fast and uniform vacuum distribution ensures short cycle times and high acceleration rates
- > Separate compressed air connection for blow-off function for fast product release
- > Sealing foam for gentle product contact and optimum vacuum sealing - can be quickly replaced without tools and without leaving any residue

Notes

- > Suitable for use with < 90° swivel and tilt movements
- > No minimum coverage required
- > TC200x400:
 - Gripping area is divided into zones for flexible product pick-up and/or release
 - Available for all vacuum grippers on request
- > For vacuum grippers from TC400x600 with external vacuum supply, the pick-up and release system (36.900/36.901) minimises power consumption and extends system service life (see the chapter on accessories)

Ordering notes

- > Ordering example vacuum generation
 - TC120x230-P20: integrated via ejectors
 - TC120x230-P20-OV: designed for external vacuum generation, e.g. via side channel blower or pump
- > EPDM sealing foam, 24 mm thick, and vacuum gauge included in scope of delivery
- > See chapter accessories for more information on:
 - Sealing foam program for various applications
 - Gripper/robot connection elements

Technical data

Item no.	Air consumption at 6 bar [Nl/min]	Suction power against atmosphere [Nl/min]	Number of closing valves	Final vacuum [%]	Width [mm]	Recommended suction power at 35 % vacuum level [m³/h]	Weight [kg]	Suitable sealing foam
TC120x230-P20	105	360	50	85	--	--	2.3	PPF120.230-P20 (p.250)
TC120x230-P40	105	198	15	85	--	--	2.3	PPF120.230-P40 (p.250)
TC120x400-P20	210	396	95	85	--	--	3.55	PPF120.400-P20 (p.250)
TC120x400-P40	105	198	30	85	--	--	3.55	PPF120.400-P40 (p.250)
TC200x400-P20	420	1,440	171	85	--	--	6.15	PPF200.400-P20 (p.250)
TC200x400-P40	210	720	50	85	--	--	6.15	PPF200.400-P40 (p.250)
TC600x400-P20-OV*	--	--	551	--	35	90 - 140	12	PPF-600x400-20 (p.250)
TC600x400-P28-OV*	--	--	260	--	40	90 - 140	12	PPF-600x400-28 (p.250)
TC600x400-P40-OV*	--	--	126	--	55	50 - 90	12	PPF-600x400-40 (p.250)



Technical data

Item no.	Air consumption at 6 bar [Nl/min]	Suction power against atmosphere [Nl/min]	Number of closing valves	Final vacuum [%]	Width [mm]	Recommended suction power at 35 % vacuum level [m³/h]	Weight [kg]	Suitable sealing foam
TC1300x260-P20-OV*	--	--	768	--	35	140 - 300	17	PPF-1300x260-20 (p.250)
TC1300x260-P28-OV*	--	--	360	--	40	90 - 140	17	PPF-1300x260-28 (p.250)
TC1300x260-P40-OV*	--	--	192	--	55	50 - 90	17	PPF-1300x260-40 (p.250)
TC1300x500-P20-OV*	--	--	1,536	--	35	140 - 300	32	PPF-1300x500-20 (p.250)
TC1300x500-P28-OV*	--	--	765	--	40	140 - 300	32	PPF-1300x500-28 (p.250)
TC1300x500-P40-OV*	--	--	384	--	55	140 - 300	32	PPF-1300x500-40 (p.250)

* = Depending on external vacuum supply

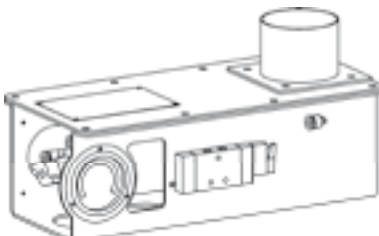
Large valve openings reduce sensitivity to dirt and ensure maximum suction power



Quick and non-destructive replacement of the sealing foam



Optional gripper box 36.900 for short gripping times



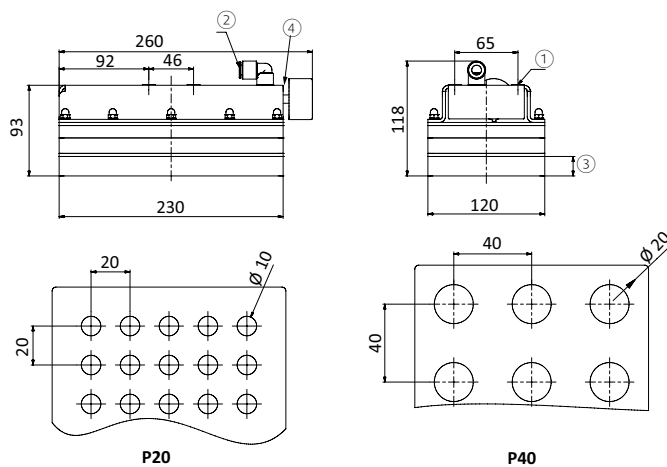
- > The vacuum inside the vacuum hose starts to build up while the workpiece is approached, this reduces the gripping time
- > Special valves with excellent suction power for fast evacuation or venting
- > Extremely high dirt tolerance for maximum service life and high process reliability



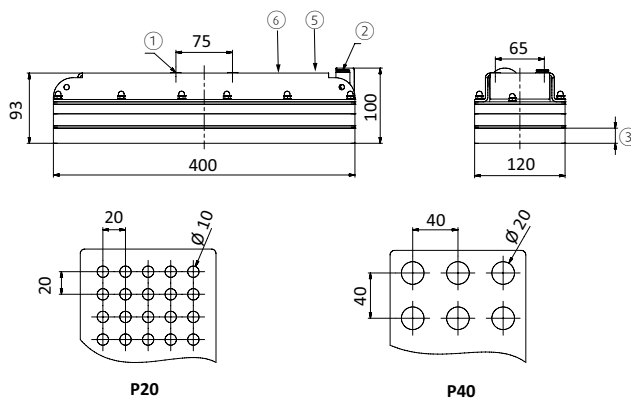
Vacuum gripping systems | Vacuum grippers

Vacuum grippers with closing valves

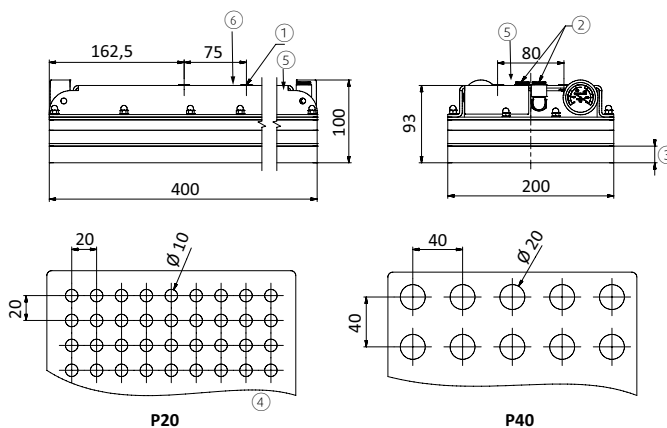
Dimensions



TC120x230-P20 | TC120x230-P40



TC120x400-P20 | TC120x400-P40



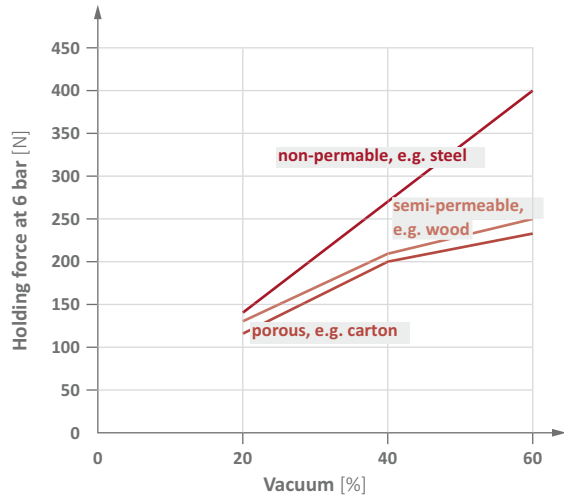
TC200x400-P20 | TC200x400-P40

- ① = Fixing with M6 screws ② = Compressed air connection G1/8-female with 10 mm quick-fitting ③ = 24 mm sealing foam
 ④ = Alternative compressed air connection G1/8-female (besides gauge) ⑤ = Alternative compressed air connection G1/8-female (at the top)
 ⑥ = Compressed air connection G1/8-female blow-off (at the top)



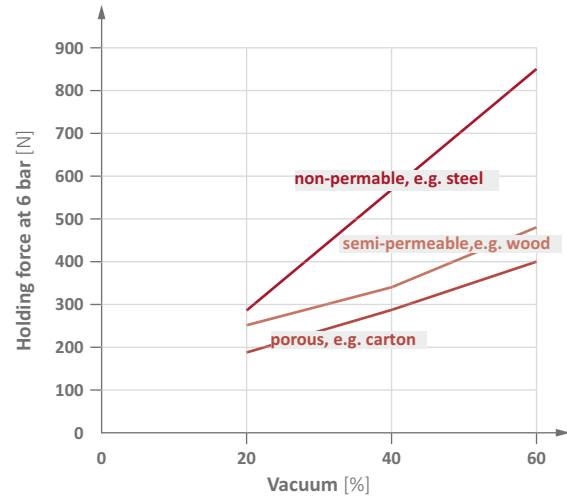
Diagrams

> Holding force against vacuum for different materials at 100 % coverage and safety factor 1.5



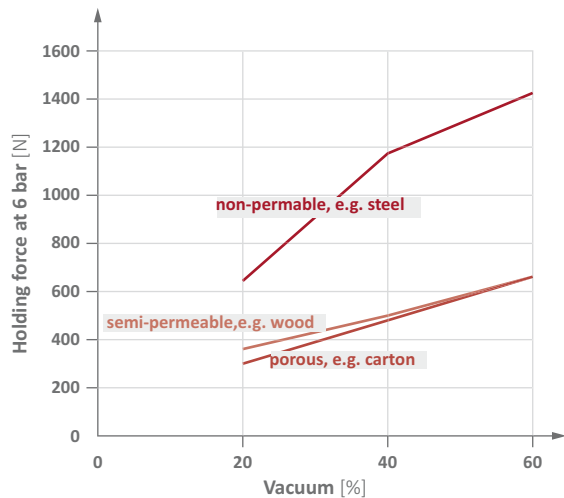
TC120x230-P20 | TC120x230-P40

> Holding force against vacuum for different materials at 100 % coverage and safety factor 1.5



TC120x400-P20 | TC120x400-P40

> Holding force against vacuum for different materials at 100 % coverage and safety factor 1.5



TC200x400-P20 | TC200x400-P40



Vacuum gripping systems | Vacuum grippers

Vacuum grippers with reduced leakage

Vacuum grippers with reduced leakage

Holding force increases with product coverage

NEW



**ECONOMIC GRIPPER SOLUTIONS FOR
DUST-FREE HANDLING PROCESSES**

Product description

- > Automated handling of individual products or product layers without gripper change
- > Suitable for rigid products with an even or uneven surface
- > Fast and uniform vacuum distribution ensures short cycle times and high acceleration rates
- > Separate compressed air connection for blow-off function for fast product release
- > Sealing foam for gentle product contact and optimum vacuum sealing - can be quickly replaced without tools and without leaving any residue

Notes

- > Minimum coverage of 80 % recommended
- > Suitable for use with > 90° swivel and tilt movements

Ordering notes

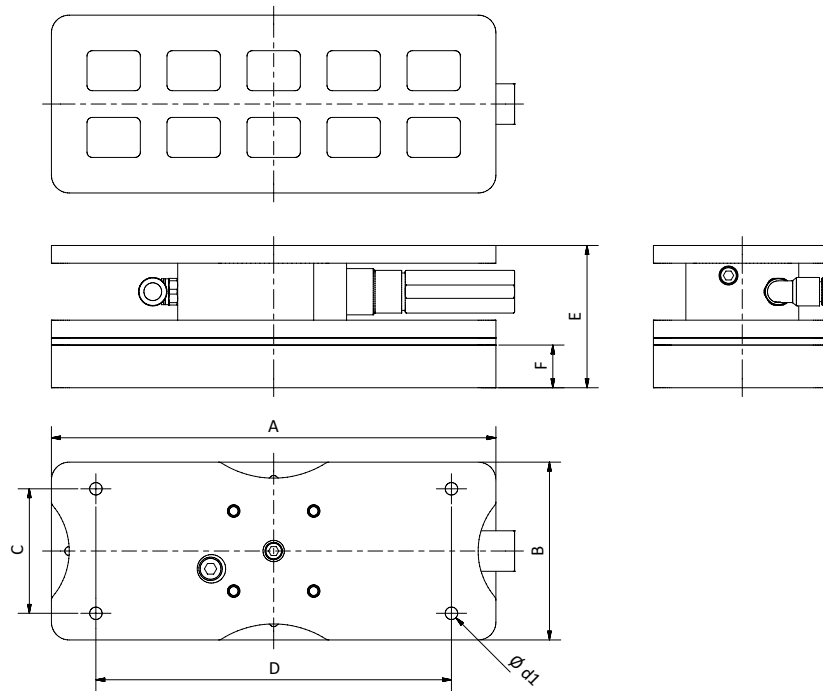
- > Wide range of standard grippers and quick manufacture of customised solutions
- > Ordering example vacuum generation
 - TL150x300: integrated via ejectors
 - TL150x300-OV: designed for external vacuum generation, e.g. via side channel blower or pump
- > Universal EPDM sealing foam, 24 mm thick (Index x24), included in scope of delivery
- > Optional: EPDM sealing foam, 12 mm thick (Index x12)
- > The gripping area is divided into zones for flexible product pick-up and/or release
- > See chapter accessories for more information on:
 - Wide range of sealing foam for different applications
 - Gripper/robot connection elements

Technical data

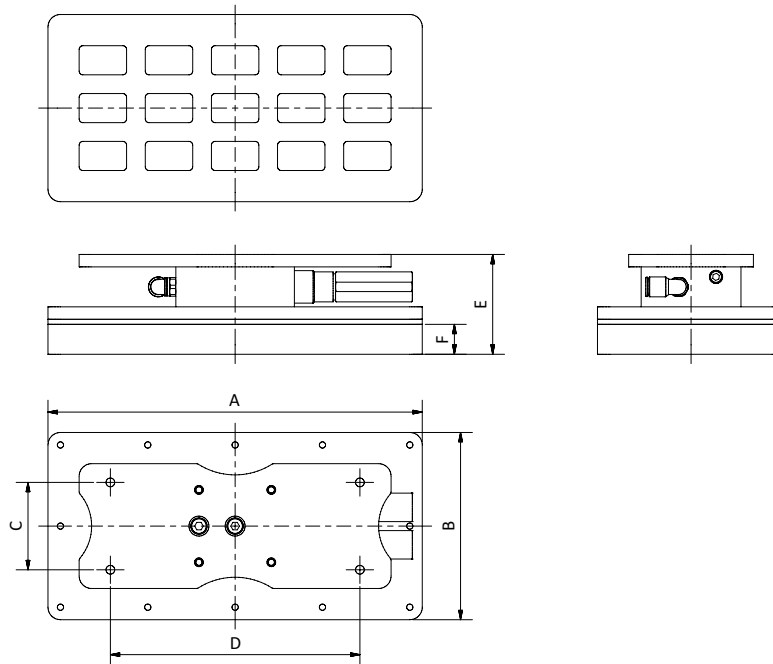
Item no.	Air consumption at 6 bar [NI/min]	Suction power against atmosphere [NI/min]	Final vacuum [%]	Weight [kg]	Suitable sealing foam
TL100x250	105	198	85	1.55	PPF-TL-100x250x12 (p.250) PPF-TL-100x250x24 (p.250)
TL150x300	210	396	85	3.2	PPF-TL-150x300x12 (p.250) PPF-TL-150x300x24 (p.250)
TL200x350	210	396	85	4.2	PPF-TL-200x350x12 (p.250) PPF-TL-200x350x24 (p.250)
TL250x400	210	396	85	4.65	PPF-TL-250x400x12 (p.250) PPF-TL-250x400x24 (p.250)



Dimensions



TL100x250



TL150x300 | TL200x350 | TL250x400

Item no.	A [mm]	B [mm]	C [mm]	D [mm]	d1 [mm]	E [mm]	F [mm]
TL100x250	250	100	70	200	7	78	24
TL150x300	300	150	70	200	7	80	24
TL200x350	350	200	70	200	7	80	24
TL250x400	400	250	70	200	7	69	24

Continued on the next page →

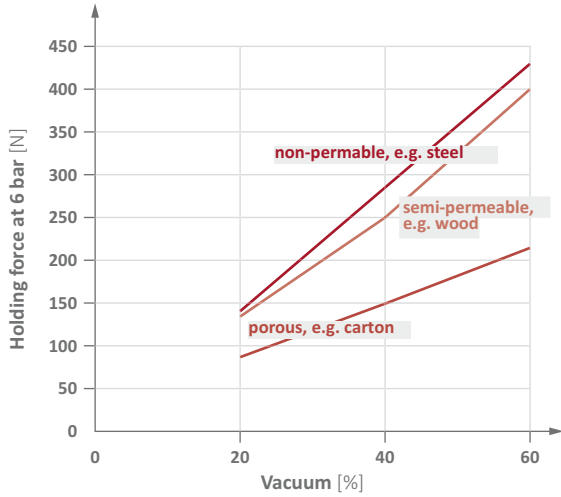


Vacuum gripping systems | Vacuum grippers

Vacuum grippers with reduced leakage

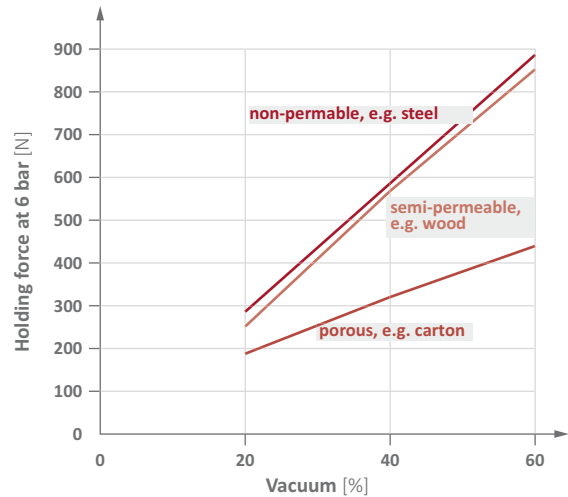
Diagrams

> Holding force against vacuum for different materials at 100 % coverage and safety factor 1.5



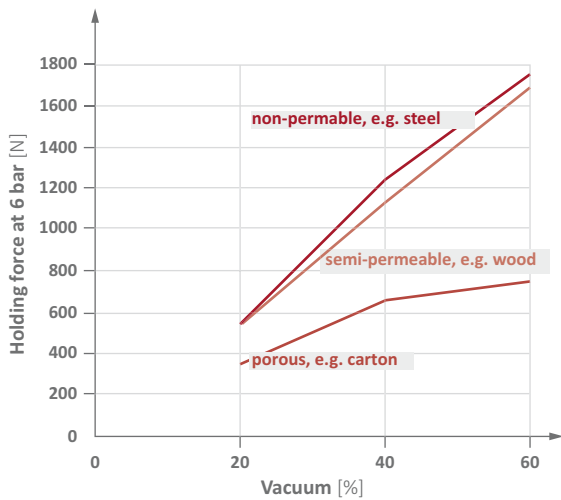
TL100x250

> Holding force against vacuum for different materials at 100 % coverage and safety factor 1.5



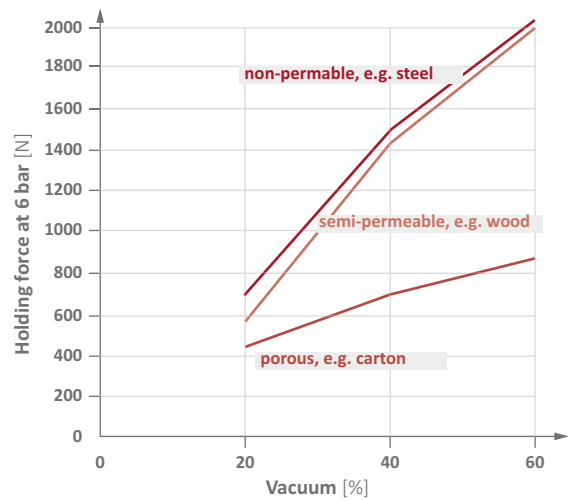
TL150x300

> Holding force against vacuum for different materials at 100 % coverage and safety factor 1.5



TL200x350

> Holding force against vacuum for different materials at 100 % coverage and safety factor 1.5



TL250x400



NEW



Suction plate 67.010



Low-leak suction plates - SPLT

Product description

- > Combination of 4x4 or 6x6 bellows vacuum cups with 2.5 bellows in oil resistant NBR
- > Suction plate suspended using a spring leveler with internal vacuum channel (25 mm lift)
- > Off-center vacuum connection possible
- > Reliable suction with variable product geometries

Notes

- > Due to the flow cross-section of 0.4 mm per vacuum cup, these suction plates are not suitable for equipment with very short cycle times

Technical data

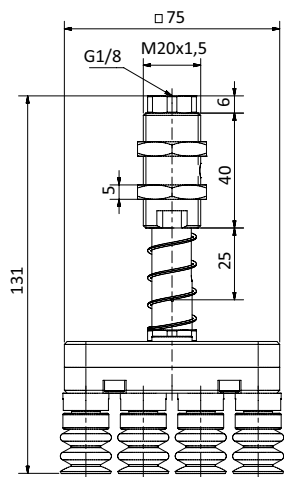
Item no.	Model	Number of vacuum cups	Lift Spring leveler [mm]	Cup lift [mm]	Gripping force * [N]	Max. leakage ** [Nl/min]	Connection to the machine	Vacuum connection	Accessories
67.010	SPLT-4x4-25	16	25	9.5	190	24	M20x1,5-male	G1/8-female	Spare cup 20.018.125.1 Wrench socket for cup assembly 90.008
67.011	SPLT-6x6-25	36	25	9.5	426	54	M30x1,5-male	G3/8-female	Spare cup 20.018.125.1 Wrench socket for cup assembly 90.008

* = theoretical value at 60 % vacuum and a dry, smooth product surface. Figure excludes safety factor ** = at 60 % vacuum

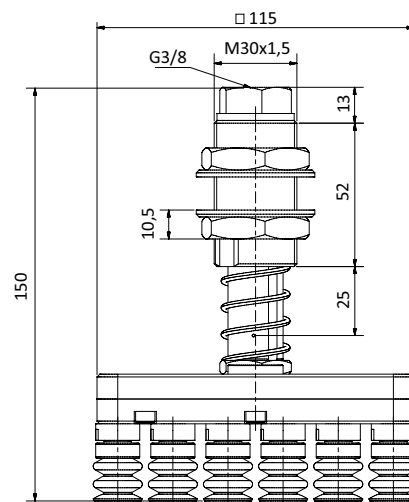
Application:

- > Handling of variable product geometries or products with recesses that prevent all vacuum cups from making contact with the product surface (e.g. metal sheet in laser cutting systems)
- > Integrated flow resistors reduce leakage and maintain an adequate vacuum level for the remaining vacuum cups covered by product, thus preventing products from being dropped

Dimensions



67.010



67.011



Vacuum gripping systems | Bag grippers

Bag grippers

Bag grippers

Handling of non-rigid goods

**MAXIMUM DURABILITY,
MINIMUM MAINTENANCE**



View of the suction chamber

Product description

- > Handling of limp, non-rigid objects such as bags, shrink-wraps or any product that fully covers the suction chamber
- > On board vacuum generation via high performance ejectors for optimum suction power
- > Dust-resistant design
- > Sealing foam with optimum adjustment to product surface - easy to replace
- > Optional side channel blower for handling very porous goods

Notes

On request:

- > Splitting of suction chamber for multi-zone picking and release
- > Depth of the suction chamber can be adjusted for optimum handling of specific products (standard 40 mm)

Ordering notes

Ordering example vacuum generation

- > TG150x300: integrated via ejectors
- > TG150x300-OV: designed for external vacuum generation, e.g. via side channel blower or pump

Technical data

Item no.	Air consumption at 6 bar [NI/min]	Suction power against atmosphere [NI/min]	Max. gripping force at 60 % vacuum (-600 mbar) safety factor 1.5 [N]			Weight [kg]	Suitable sealing foam
			Dense products (e.g. steel)	Semi-porous products (e.g. wood)	Porous products (e.g. carton boxes)		
TG100x250	105	198	280	170	70	1.5	PPF100x250
TG150x300	210	396	500	300	125	2.5	PPF150x300
TG200x350	210	396	770	470	190	3.5	PPF200x350
TG250x400	210	396	1,100	670	270	4.7	PPF250x400
TG300x500	210	396	1,670	1,000	400	6.7	PPF300x500
TG400x600	210	396	2,670	1,600	625	14.7	PPF400x600

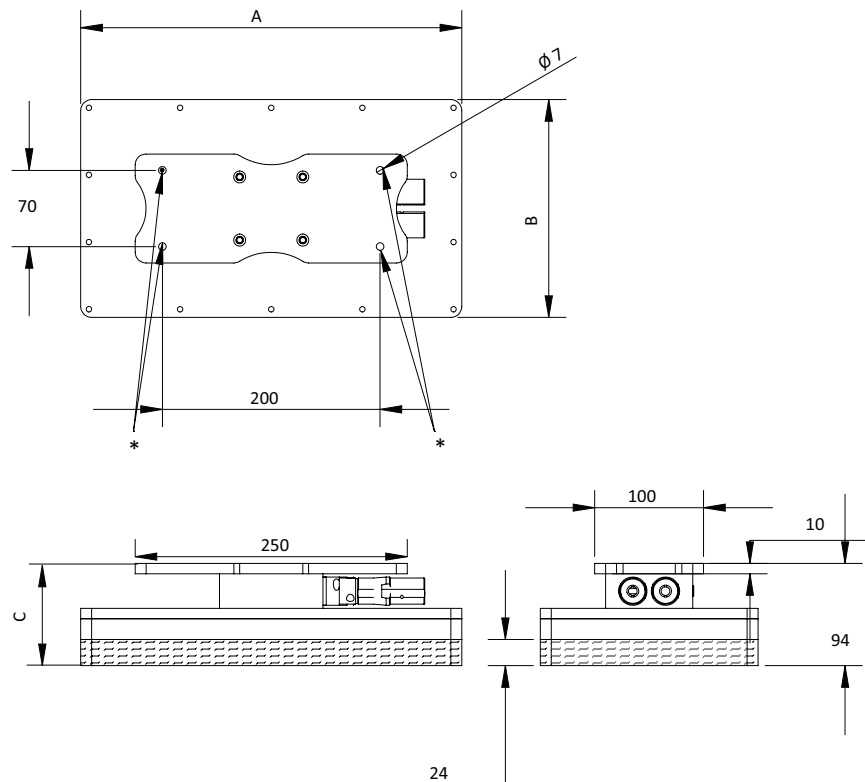


Sealing foam



Easy replacement of sealing foam

Dimensions



* = Fixing holes for connection to gripper system

Item no.	A [mm]	B [mm]	C [mm]
TG100x250	100	250	62
TG150x300	150	300	62
TG200x350	200	350	62
TG250x400	250	400	93
TG300x500	300	500	93
TG400x600	400	600	93

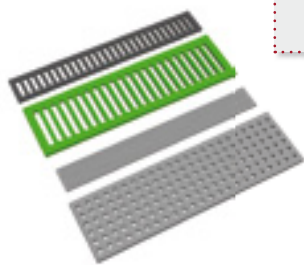


Vacuum gripping systems | Accessories

Sealing foam for vacuum grippers

Sealing foam for vacuum grippers

Suitable for all vacuum grippers



**EASY INSTALLATION - FAST,
RESIDUE-FREE REPLACEMENT!**



Easy replacement of the sealing foam without tools

Product description

- > Firm grip on the gripper bottom
- > Quick, residue-free replacement without pre-handling or tools
- > Different foams for a broad range of applications

Notes

- > For information on the relevant hole patterns, see the chapter on vacuum grippers

Ordering notes

- > Custom sizes and hole patterns available, quick and easy to implement
- > The indicated item no. pertains to the universal sealing foam type

Technical data

Item no.	Suction area [mm]	Thickness [mm]	Material
PPF120.230-P20	120x230	24	EPDM
PPF120.230-P40	120x230	24	EPDM
PPF120.400-P20	120x400	24	EPDM
PPF120.400-P40	120x400	24	EPDM
PPF200.400-P20	200x400	24	EPDM
PPF200.400-P40	200x400	24	EPDM
PPF160.600-P20	160x600	24	EPDM
PPF160.600-P40	160x600	24	EPDM
PPF-TL-100x250x12	100x250	12	EPDM
PPF-TL-150x300x12	150x300	12	EPDM
PPF-TL-200x350x12	200x350	12	EPDM
PPF-TL-250x400x12	250x400	12	EPDM
PPF-TL-100x250x24	100x250	24	EPDM
PPF-TL-150x300x24	150x300	24	EPDM
PPF-TL-200x350x24	200x350	24	EPDM
PPF-TL-250x400x24	250x400	24	EPDM
PPF-600x400-20	600x400	24	EPDM
PPF-600x400-28	600x400	24	EPDM
PPF-600x400-40	600x400	24	EPDM
PPF-1300x260-20	1,300x260	24	EPDM
PPF-1300x260-28	1,300x260	24	EPDM
PPF-1300x260-40	1,300x260	24	EPDM
PPF-1300x500-20	1,300x500	24	EPDM
PPF-1300x500-28	1,300x500	24	EPDM
PPF-1300x500-40	1,300x500	24	EPDM



Available sealing foam and their properties

Suction mat type	Material	Properties	Example applications
Universal	EPDM	<ul style="list-style-type: none"> > Very soft structure > Very short reset time 	<ul style="list-style-type: none"> > Porous workpieces such as cardboard boxes or untreated wooden pallets > Dense workpieces such as coated wooden boards > Suitable for short cycle times
Valve foam	EPDM	<ul style="list-style-type: none"> > Very soft structure > Very short reset time 	<ul style="list-style-type: none"> > Handling of open glass jars (in combination with foam gripper TL) > Suitable for short cycle times
NR green	Natural rubber	<ul style="list-style-type: none"> > More rigid structure > Cut-resistant > Short reset time 	<ul style="list-style-type: none"> > Building material, ceramics > Untreated wooden pallets > Wet pallets > Sharp-edged or abrasive products

On request, the preparation of composite sealing foams is possible to combine, for example, short reset times and cut-resistance.



Vacuum gripping systems | Accessories

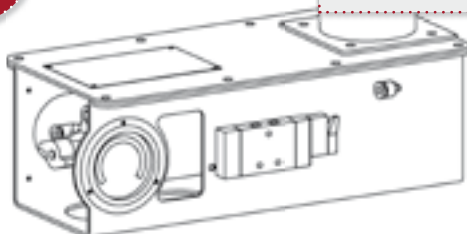
Pick-up and release system

Pick-up and release system

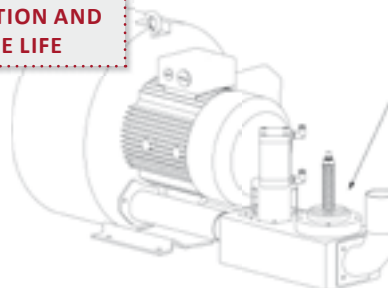
For vacuum grippers from size 400x600 mm and external vacuum supply with side channel blower

NEW

**MINIMIZES ENERGY CONSUMPTION AND
MAXIMIZES SYSTEM SERVICE LIFE**



Pick-up box 36.900



Blower box 36.901 (shown with side channel blower)

Product description

- > Combination of gripper box mounted on vacuum gripper and blower box
- > One pneumatically powered cylinder each ensures a high value for the rated flow and proactive vacuum control
- > This enables short gripping times and minimises blower power consumption
- > In addition to reducing power consumption, automatic venting after release also ensures long service life as blower is not continuously exposed to vacuum

Notes

- > The number of pick-up boxes depends on the gripping system used

Ordering notes

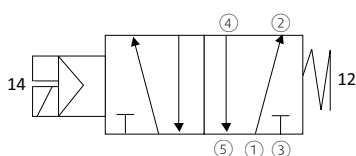
Included in scope of delivery:

- > 1 x aluminium housing, 5/2-way solenoid valve, pneumatically powered cylinder
- > Control cable with plug, 24 VDC, 1.28 W, IP65, 2-pin, 5m length, open end

Technical data

Item no.	Feed pressure [bar]	Tubing diameter vacuum connection [mm]	Operating temperature [°C]
36.900	3 - 8	60	-5 - 50
36.901	3 - 8	60	-5 - 50

Schematic of 5/2-way solenoid valve for pneumatic cylinder control

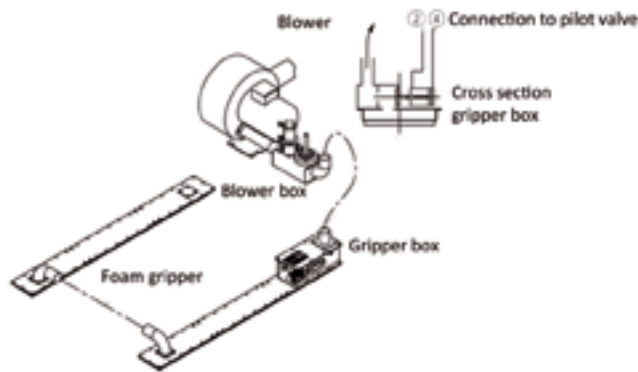


Assignment

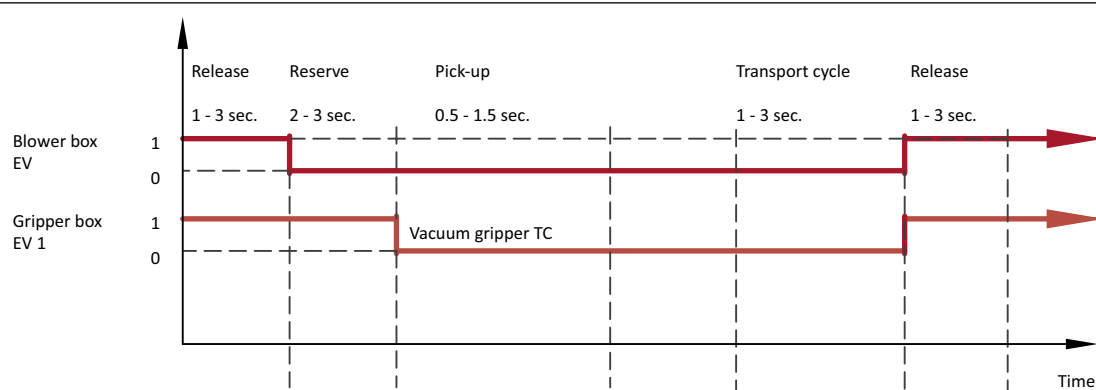
- ① Compressed air inlet
- ② Working connection (Cylinder open)
- ④ Working connection (Cylinder closed)
- ③, ⑤ Ventilation



Diagram of pick-up and release system



Example diagram of pick-up and release system for vacuum gripper with two TC gripper heads



Process description

Vacuum build-up:

- > The gripper/vacuum tubing connection is interrupted. The required vacuum is built up in the tubing during approach of gripper to workpiece.

Pick-up:

- > The gripper/vacuum tubing connection is made
- > The vacuum becomes operational on the gripper. This significantly reduces gripping time.

Transport cycle:

- > The workpiece is securely moved by the gripper to its destination

Release:

- > The gripper is connected to atmospheric pressure, thus the workpiece is quickly released
- > The blower is vented with atmospheric air, which reduces power consumption and significantly increases service life as the blower is not continuously exposed to vacuum



Connection elements gripper - robot

Application specific interface to the robot

NEW



Product description

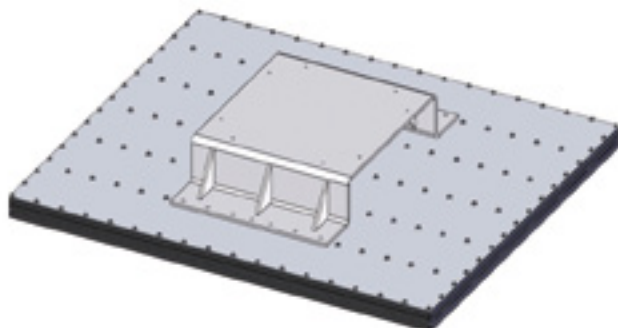
- > Example A: Installation of grippers on robots without removal of the plate
- > Example B: For vertical movements between robot and gripper
- > Example C: For 3-axis movements between robot and gripper
- > Example D: For connection of multiple or longer gripper systems, 3-axis movement

Ordering notes

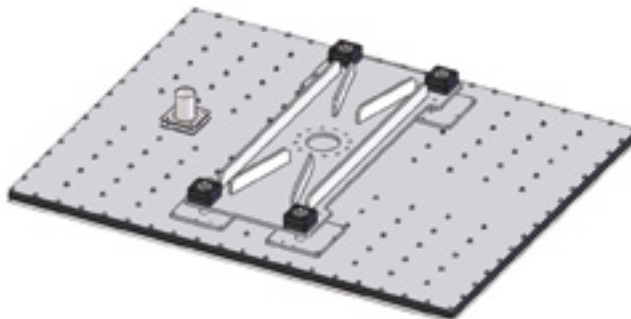
- > Layout dependent on gripper system and robots used
- > We will be happy to customize the interfaces for your application

Examples of application

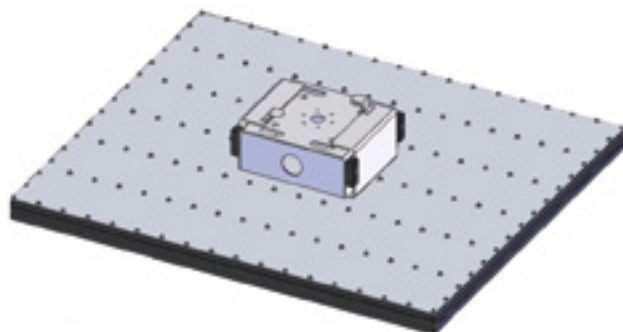
- > Example A: Robot/gripper interface, raised



- > Example B: Robot/gripper interface, type 1



- > Example C: Robot/gripper interface, type 2



- > Example D: Robot/gripper interface, type 3

