

Precision gripper PG

PG 12 - PG 20

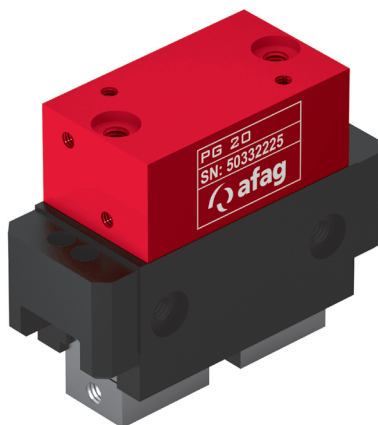
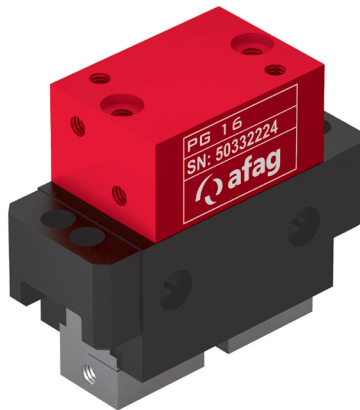
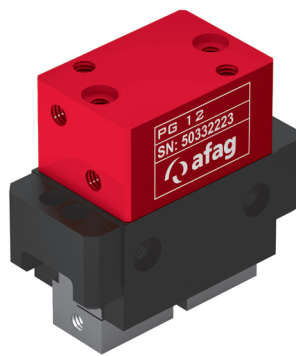
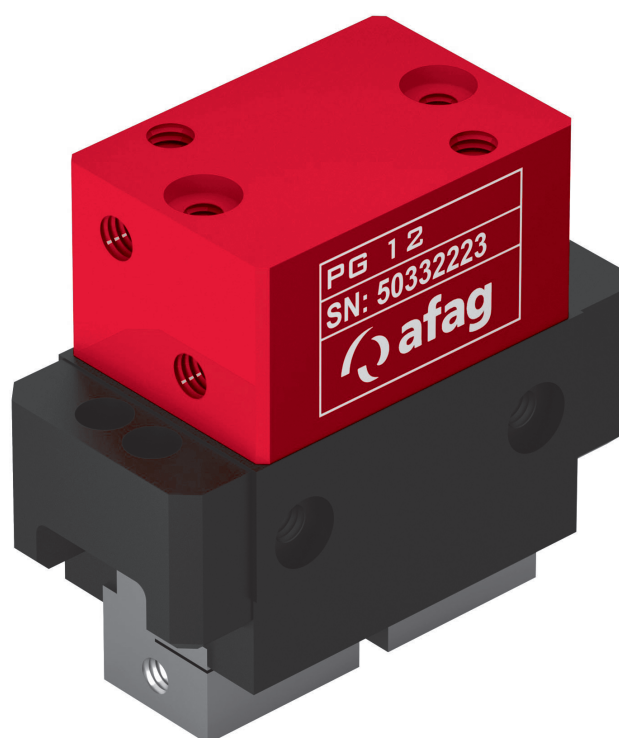


Table of contents: PG

| Precision gripper PG | Page |
|----------------------|------|
| PG 12 | 101 |
| PG 16 | 107 |
| PG 20 | 115 |

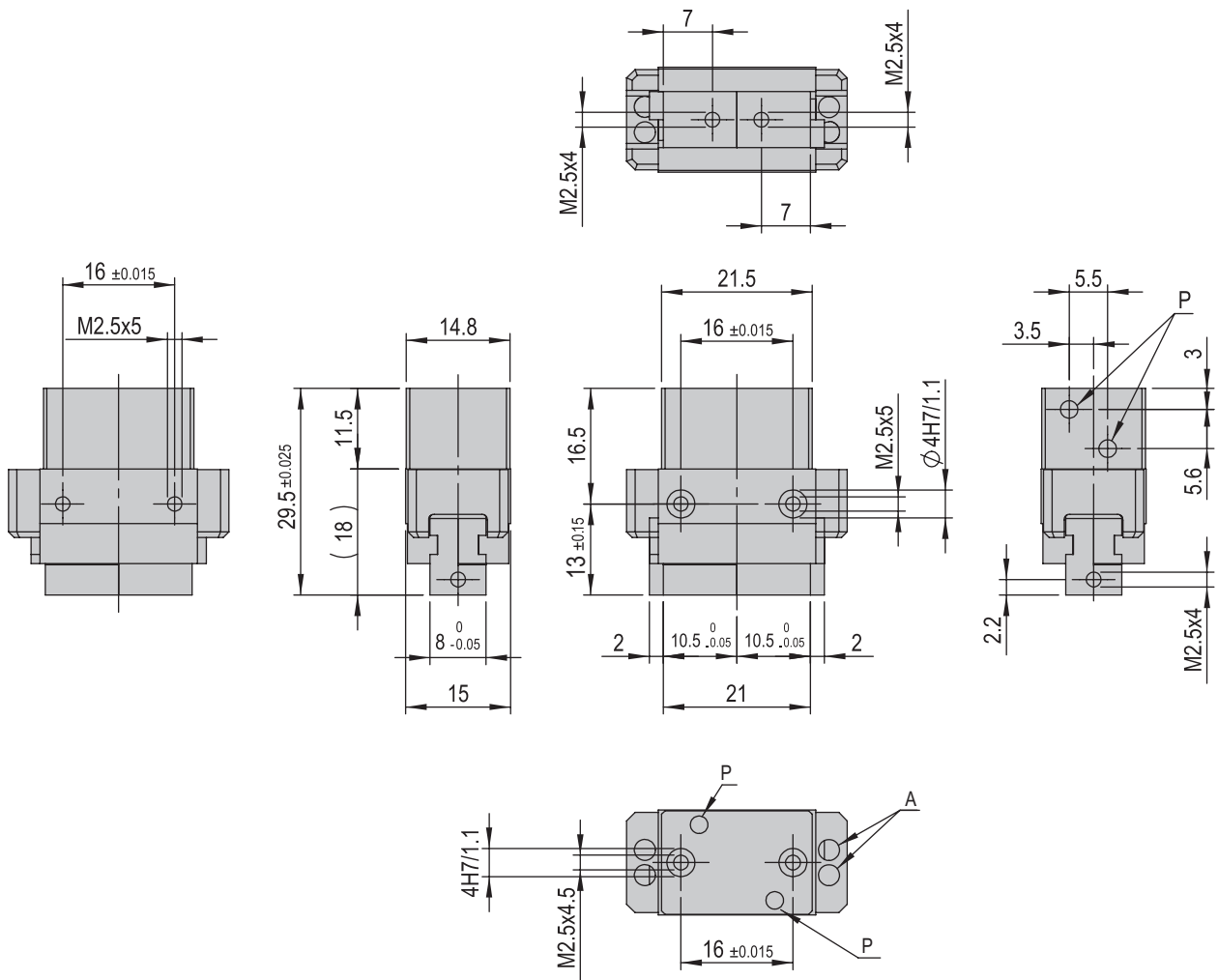
Precision gripper PG

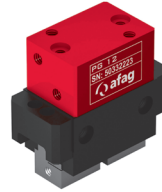
PG 12



- Highly precise jaw guidance
- Miniature design
- Simplest operation

| Type | PG 12 |
|------|---------------------------|
| A | Sensor \varnothing 3 mm |
| P | M3 |





| PG 12 | |
|-----------------------------|-------------|
| Attachment grid | 16 mm |
| Attachment grid alternative | M2.5 |
| Operating pressure | 6 +/- 2 bar |
| Air connection P | M3 |
| Cylinder Ø | 11 mm |
| Operating temperature | 0 - 50 °C |
| Storage temperature | 0 - 50 °C |

| Type | PG 12 |
|-------------------------|--|
| Order number | 50332223 |
| Net weight | 0.035 kg |
| Air consumption/cycle | 0.005 NL |
| Closing time | **Closing time = Finger weight 50 ms = 30 g 30 ms = 20 g 20 ms = 15 g 10 ms = 10 g |
| Gripping force, opening | *46 N |
| Gripping force, closing | *36 N |
| Opening stroke | 2 x 2 mm |
| Repeat accuracy | +/- 0.01 mm |
| Handling accuracy | +/- 0.05 mm |
| Positions | 2 |
| Mounting position | ✦ |

The technical data refer to a nominal pressure of 6 bar under Afag standard test conditions.
The module can be operated with lubricated or dry air.
Cleanroom class ISO 14644-1, class ISO 7

- *Observe gripping force diagrams
- Measurements for slowly closing fingers
- All module measurements carried out via outer clamping
- **Closing times in unthrottled operation Observe gripping force diagrams
- Measurements for slowly closing fingers
- All module measurements carried out via outer clamping

Included in the delivery
(Catalogue HT accessories)

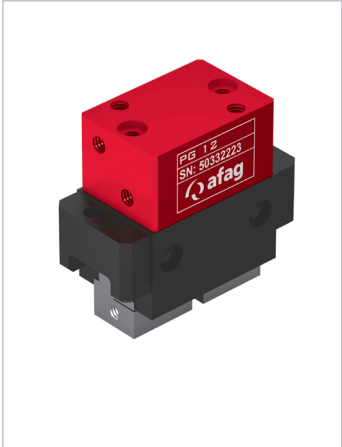
- 2x Centering bushing Ø4x2

Accessories

(Catalogue HT accessories)

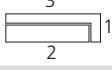
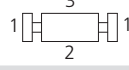




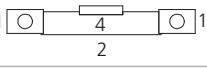
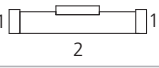


- Compressed air connection straight M3 x 0.5
- Compressed air connection angled M3 x 0.5
- INI d3x22-Sn0.8-PNP-NO-M8x1
- INI d3x12-Sn0.8-PNP-NO

Warranty: 24 months following commissioning, but a maximum of 27 months following delivery



| | | | |
|---------|-----|-------------|-----|
| CS 6 | 1 | VS 514 | 1,2 |
| | 3 | VP 153 | 1,2 |
| CS 8 | 1,3 | VP 153 | 1 |
| | 1,3 | VP 152 | 2 |
| CR 12 | 3 | VP 153 | 1 |
| | 3 | VP 152 | 2 |
| RM 12 | 3 | VF 400 | 1,2 |
| SA-1 | 1,2 | VP 153 | 1 |
| | 1,2 | VP 152 | 2 |
| SREH-50 | 3 | VP 160 | 1 |
| | 3 | VP 151 | 2 |
| RA-40 | 3 | VP 50486392 | 2 |

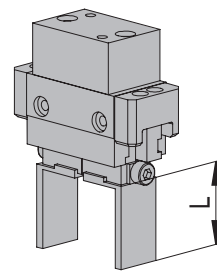
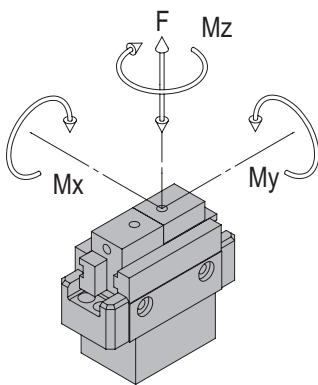
Mounting areas

| CS, ES | LM | HM | SA | UG, GM, SG, DG, PG, GE, SGE |
|---|---|---|--|---|
|  |  |  |  |  |
| PMP, PMP-c | PEZ, PDZ | PEL, PDL | RM, RE | CR, RM 32, RE, SREH, RA |
|  |  |  |  |  |

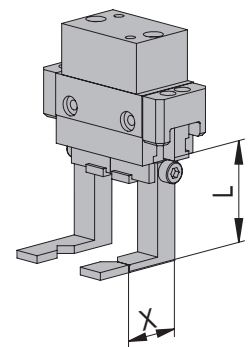
Note that there might be different mounting positions from one module to another one.

The required connection elements and the range of support columns are depicted in the catalogue HT accessories.

| Type | PG 12 |
|---------------------------|---------|
| Max. static torque M_x | 1 Nm |
| Max. static torque M_y | 1 Nm |
| Max. static torque M_z | 1 Nm |
| Max. dynamic torque M_x | 0.01 Nm |
| Max. dynamic torque M_y | 0.01 Nm |
| Max. dynamic torque M_z | 0.01 Nm |
| Max. static force F | 30 N |
| Max. dynamic force F | 0.3 N |



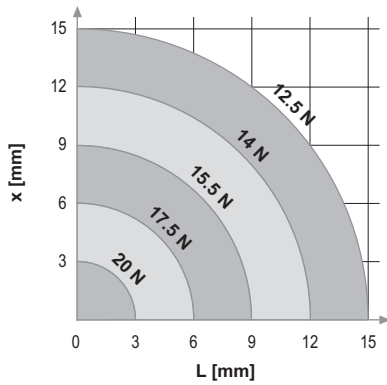
Finger length centric



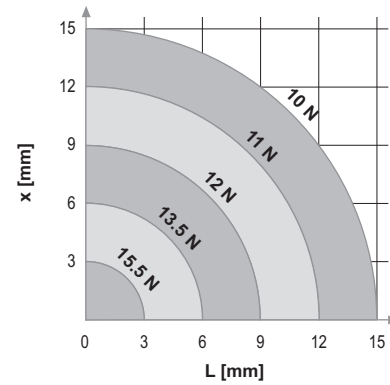
Finger length eccentric

Gripping force diagrams per jaw

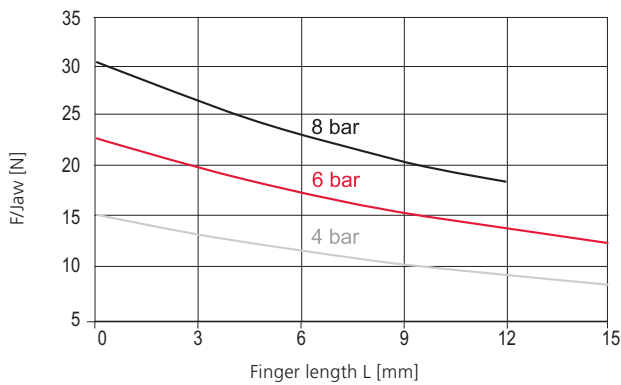
Centric gripping force, opening



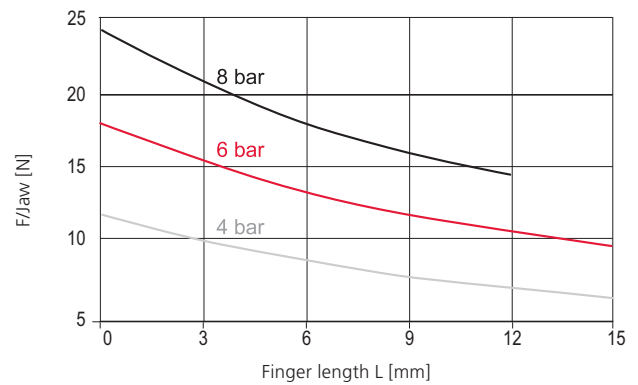
Centric gripping force, closing



Centric gripping force, opening

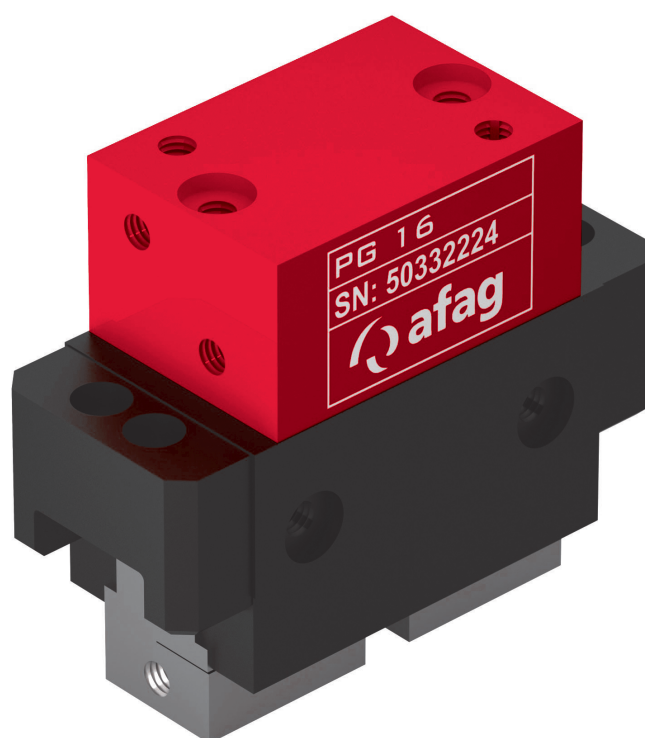


Centric gripping force, closing



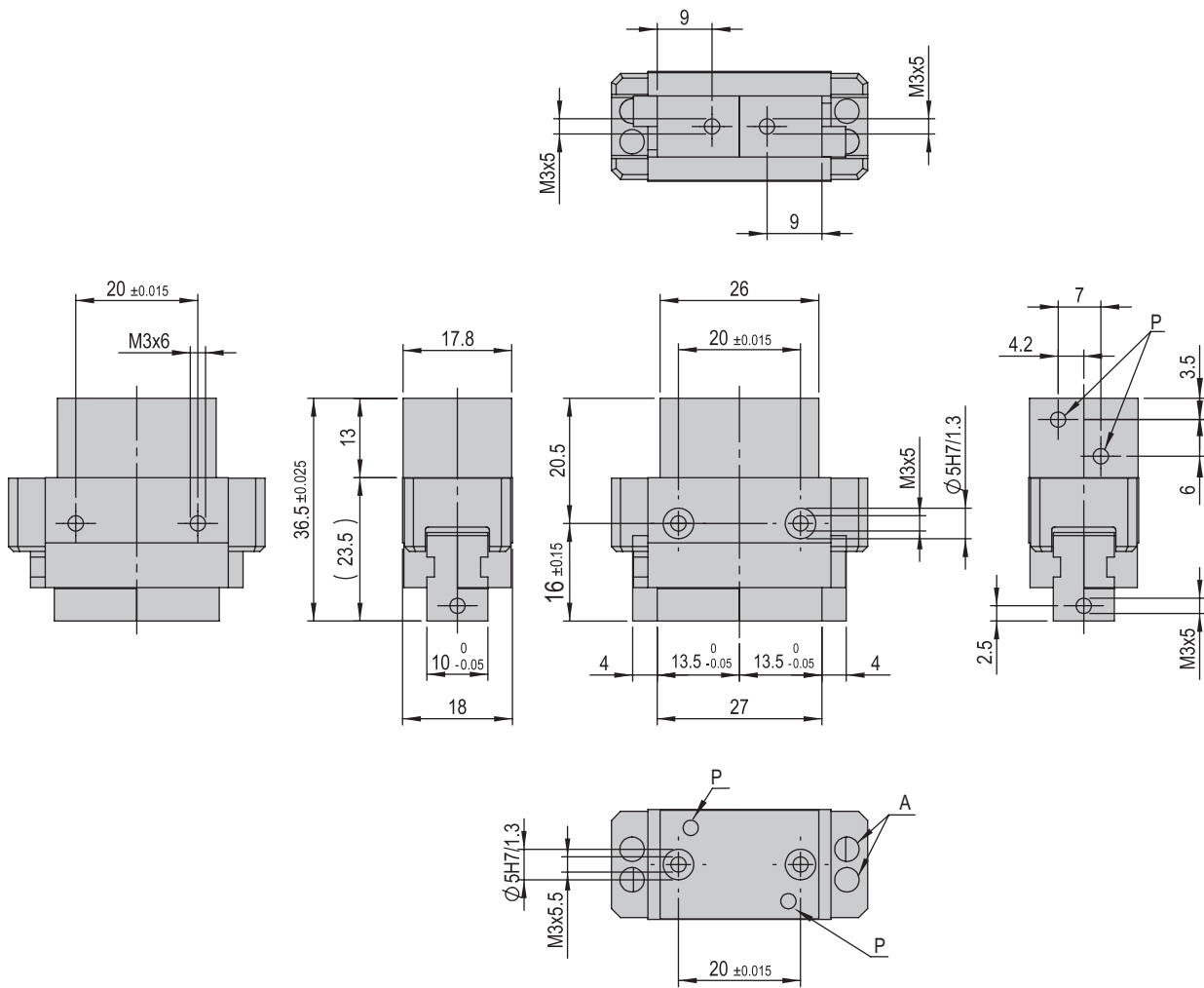
Precision gripper PG

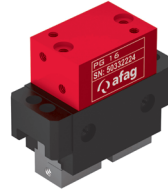
PG 16



- Highly precise jaw guidance
- Miniature design
- Gripping force maintenance

| Type | PG 16 NN |
|------|---------------|
| A | Sensor Ø 4 mm |
| P | M3 |





| PG 16 | |
|-----------------------------|-------------|
| Attachment grid | 20 mm |
| Attachment grid alternative | M3 |
| Operating pressure | 6 +/- 2 bar |
| Air connection P | M3 |
| Cylinder Ø | 16 mm |
| Operating temperature | 0 - 50 °C |
| Storage temperature | 0 - 50 °C |

| Type | PG 16 NN |
|-------------------------|---|
| Order number | 50332224 |
| Net weight | 0.066 kg |
| Air consumption/cycle | 0.0064 NL |
| Closing time | **Closing time = Finger weight 50 ms = 60 g 30 ms = 40 g 20 ms = 30 g 10 ms = - |
| Gripping force, opening | *78 N |
| Gripping force, closing | *66 N |
| Opening stroke | 2 x 4 mm |
| Repeat accuracy | +/- 0.01 mm |
| Handling accuracy | +/- 0.05 mm |
| Positions | 2 |
| Mounting position | ✚ |

The technical data refer to a nominal pressure of 6 bar under Afag standard test conditions.
The module can be operated with lubricated or dry air.
Cleanroom class ISO 14644-1, class ISO 7

- *Observe gripping force diagrams
- Measurements for slowly closing fingers
- All module measurements carried out via outer clamping
- **Closing times in unthrottled operation Observe gripping force diagrams
- Measurements for slowly closing fingers
- All module measurements carried out via outer clamping

Included in the delivery
(Catalogue HT accessories)

- 2x Centering bushing Ø5x2.5

Accessories
(Catalogue HT accessories)

- Compressed air connection straight M3 x 0.5
- Compressed air connection angled M3 x 0.5
- INI d4x25-Sn1.0-PNP-NC-M8x1

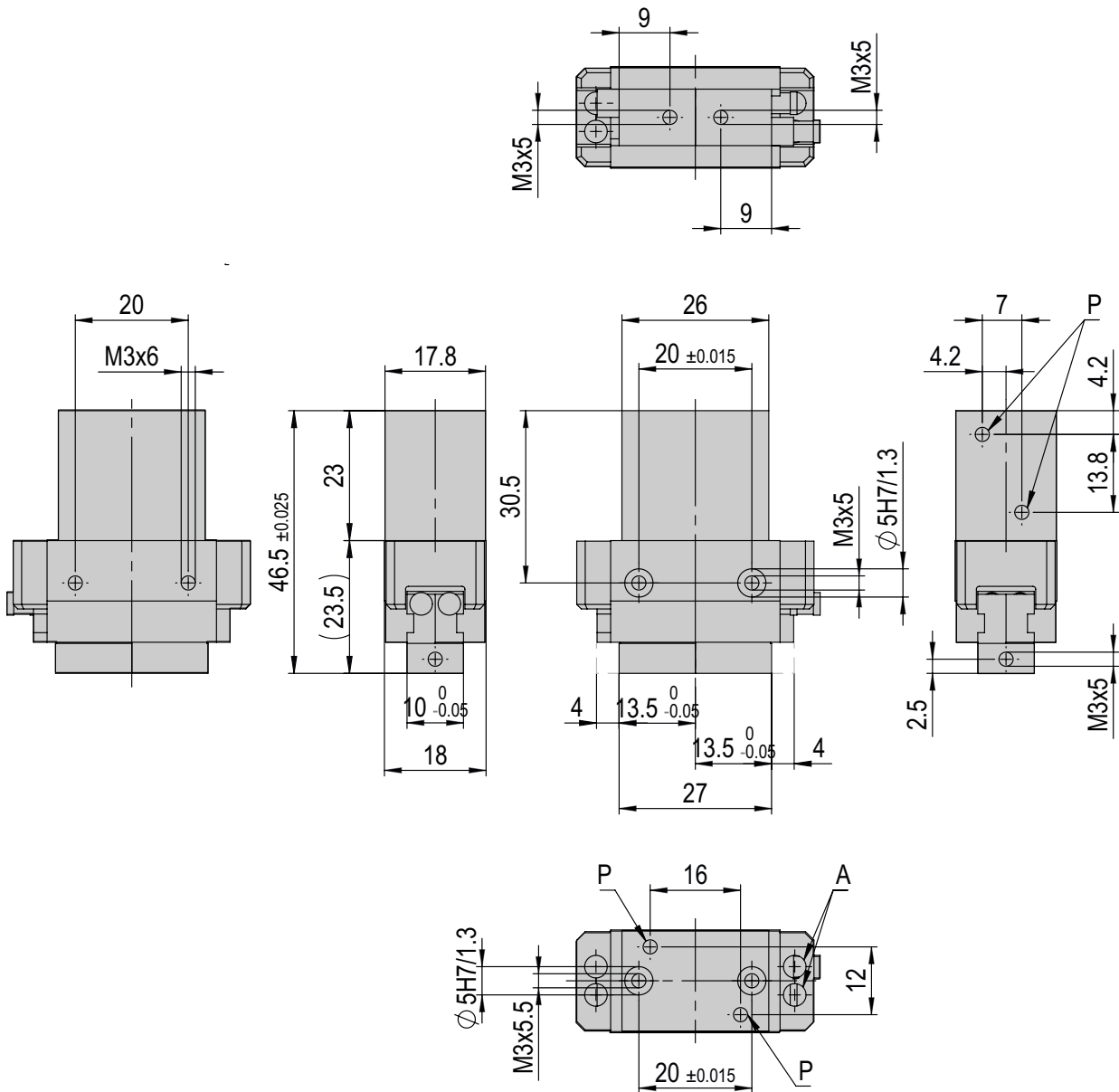
Alternative accessories
(Catalogue HT accessories)

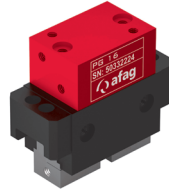
- INI M4x12-Sn0.8-PNP-NO

Warranty: 24 months following commissioning, but a maximum of 27 months following delivery

Dimensions and dimension drawings PG 16 NC & PG 16 NO

| Type | PG 16 NC | PG 16 NO |
|------|---------------|---------------|
| A | Sensor Ø 4 mm | Sensor Ø 4 mm |
| P | M3 | M3 |





| PG 16 | |
|-----------------------------|-------------|
| Attachment grid | 20 mm |
| Attachment grid alternative | M3 |
| Operating pressure | 6 +/- 2 bar |
| Air connection P | M3 |
| Cylinder Ø | 16 mm |
| Operating temperature | 0 - 50 °C |
| Storage temperature | 0 - 50 °C |

| Type | PG 16 NO | PG 16 NC |
|-------------------------|---|-----------------|
| Order number | 50531661 | 50531662 |
| Net weight | 0.074 kg | 0.073 kg |
| Air consumption/cycle | 0.0064 NL | 0.0064 NL |
| Gripping time | 0.01 s | 0.01 s |
| Closing time | **Closing time = Finger weight 50 ms = 60 g 30 ms = 40 g 20 ms = 30 g 10 ms = - | |
| Gripping force, opening | *52 N | *100 N |
| Gripping force, closing | *92 N | *44 N |
| Spring force | 13 N | 11 N |
| Opening stroke | 2 x 4 mm | 2 x 4 mm |
| Repeat accuracy | +/- 0.01 mm | +/- 0.01 mm |
| Handling accuracy | +/- 0.05 mm | +/- 0.05 mm |
| Positions | 2 | 2 |
| Mounting position | | |

The technical data refer to a nominal pressure of 6 bar under Afag standard test conditions.
The module can be operated with lubricated or dry air.
Cleanroom class ISO 14644-1, class ISO 7

- *Observe gripping force diagrams
- Measurements for slowly closing fingers
- All module measurements carried out via outer clamping
- **Closing times in unthrottled operation Observe gripping force diagrams
- Measurements for slowly closing fingers
- All module measurements carried out via outer clamping

Included in the delivery

(Catalogue HT accessories)

- 2x Centering bushing Ø5x2.5

Accessories

(Catalogue HT accessories)

- Compressed air connection straight M3 x 0.5
- Compressed air connection angled M3 x 0.5
- INI d4x25-Sn1.0-PNP-NC-M8x1

Alternative accessories

(Catalogue HT accessories)

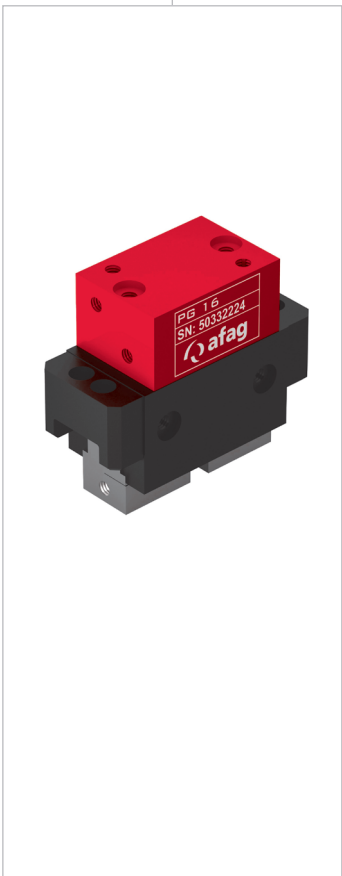
- INI M4x12-Sn0.8-PNP-NO

Warranty: 24 months following commissioning, but a maximum of 27 months following delivery

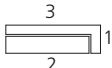
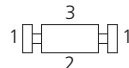

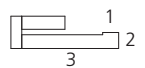


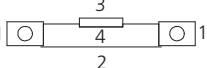
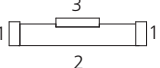


←

→

| | | | |
|---------|-----|----------------|-----|
| CS 6 | 1 | VP 152 | 1,2 |
| | 3 | VP 153 | 1,2 |
| CS 8 | 1 | < direct > | 1,2 |
| | 3 | VP 101 | 1,2 |
| CS 12 | 1,3 | VP 111 | 1,2 |
| LM 12 | 1 | VW 305 | 1,2 |
| LM 16 | 1 | VW 305 | 1,2 |
| CR 12 | 3 | VP 101 | 1,2 |
| CR 16 | 3 | VP 101 | 1,2 |
| RM 12 | 3 | VF 400 | 1,2 |
| RM 16 | 3 | VF 403 | 1,2 |
| ES12 | 1,3 | VP 111 | 1 |
| | 1,3 | VP 151 | 2 |
| SA-1 | 1 | VS 503 | 1,2 |
| | 2 | VP 101 | 1 |
| | 2 | VP 100 | 2 |
| SA-3 | 1 | VP 111 | 1,2 |
| | 2 | VP 111 | 1 |
| | 2 | VP 151 | 2 |
| RE-50 | 3 | VP 111 | 1 |
| | 3 | VP 151 | 2 |
| SREH-50 | 3 | VP 160 | 1 |
| | 3 | VP 151 | 2 |
| RA-40 | 3 | VP 50486393 | 2 |



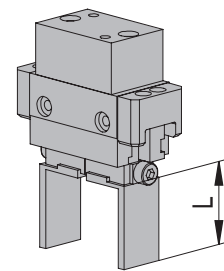
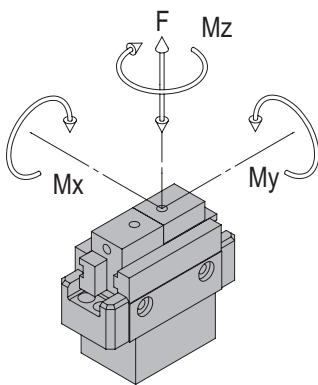
Mounting areas

| | | | | |
|---|---|---|---|--|
| CS, ES  | LM  | HM  | SA  | UG, GM, SG, DG, PG, GE, SGE  |
| PMP, PMP-c  | PEZ, PDZ  | PEL, PDL  | RM, RE  | CR, RM 32, RE, SREH, RA  |

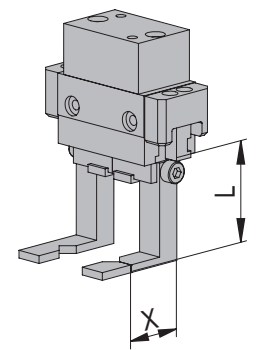
Note that there might be different mounting positions from one module to another one.

The required connection elements and the range of support columns are depicted in the catalogue HT accessories.

| Type | PG 16 NN |
|---------------------------|----------|
| Max. static torque M_x | 3 Nm |
| Max. static torque M_y | 3 Nm |
| Max. static torque M_z | 3 Nm |
| Max. dynamic torque M_x | 0.03 Nm |
| Max. dynamic torque M_y | 0.03 Nm |
| Max. dynamic torque M_z | 0.03 Nm |
| Max. static force F | 60 N |
| Max. dynamic force F | 0.6 N |



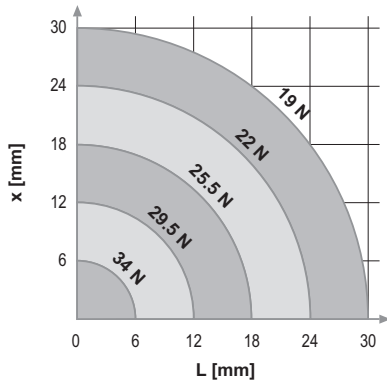
Finger length centric



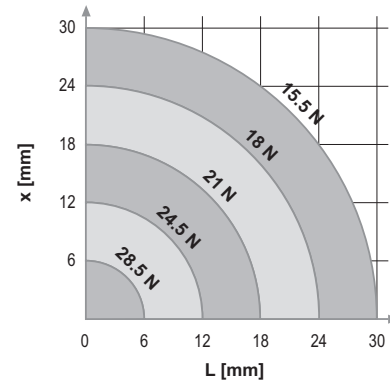
Finger length eccentric

Gripping force diagrams per jaw

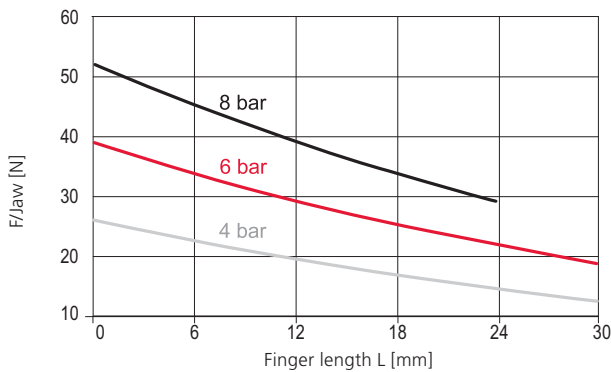
Centric gripping force - PG 16 NN opening



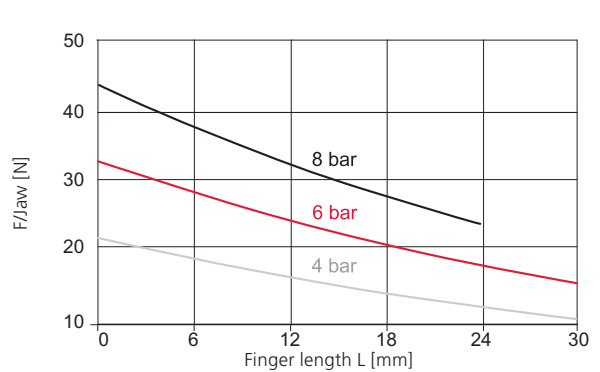
Centric gripping force - PG 16 NN closing



Centric gripping force - PG 16 NN opening

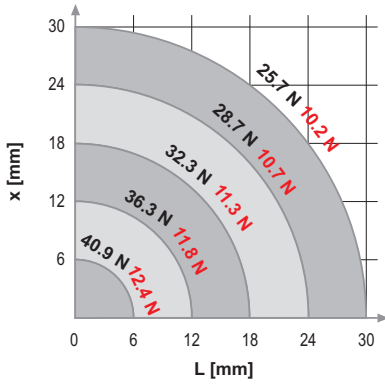


Centric gripping force - PG 16 NN closing

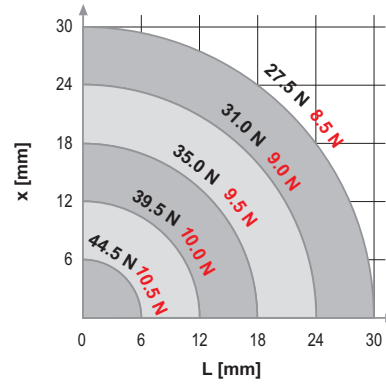


Gripping force diagrams per jaw

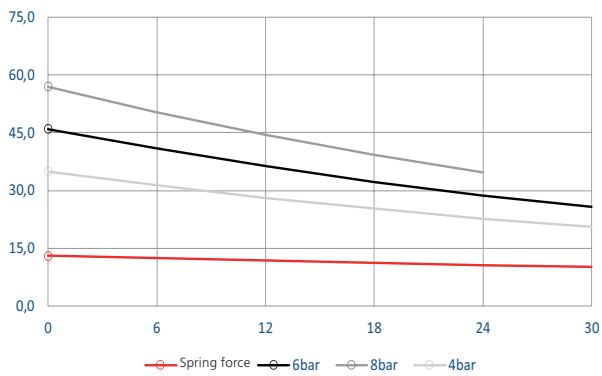
Centric gripping force - PG 16 NC closing



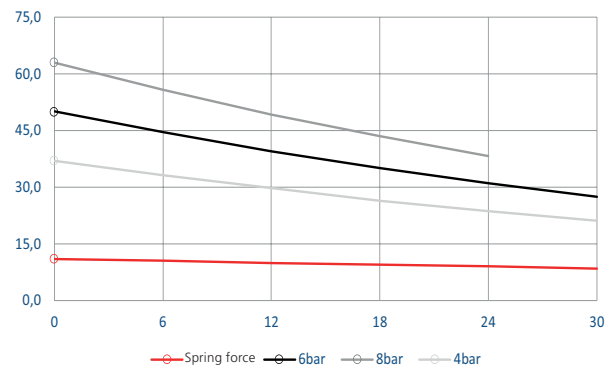
Centric gripping force - PG 16 NO opening



Centric gripping force - PG 16 NC closing

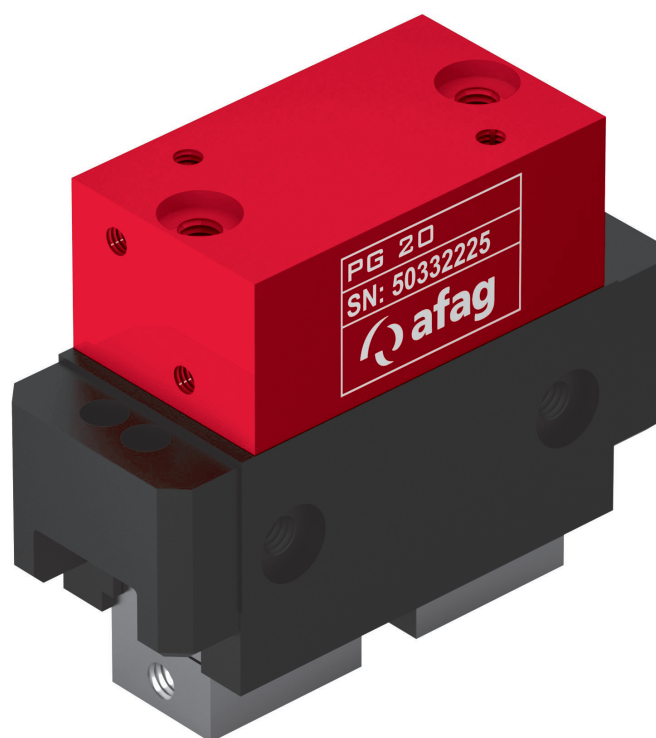


Centric gripping force - PG 16 NO opening



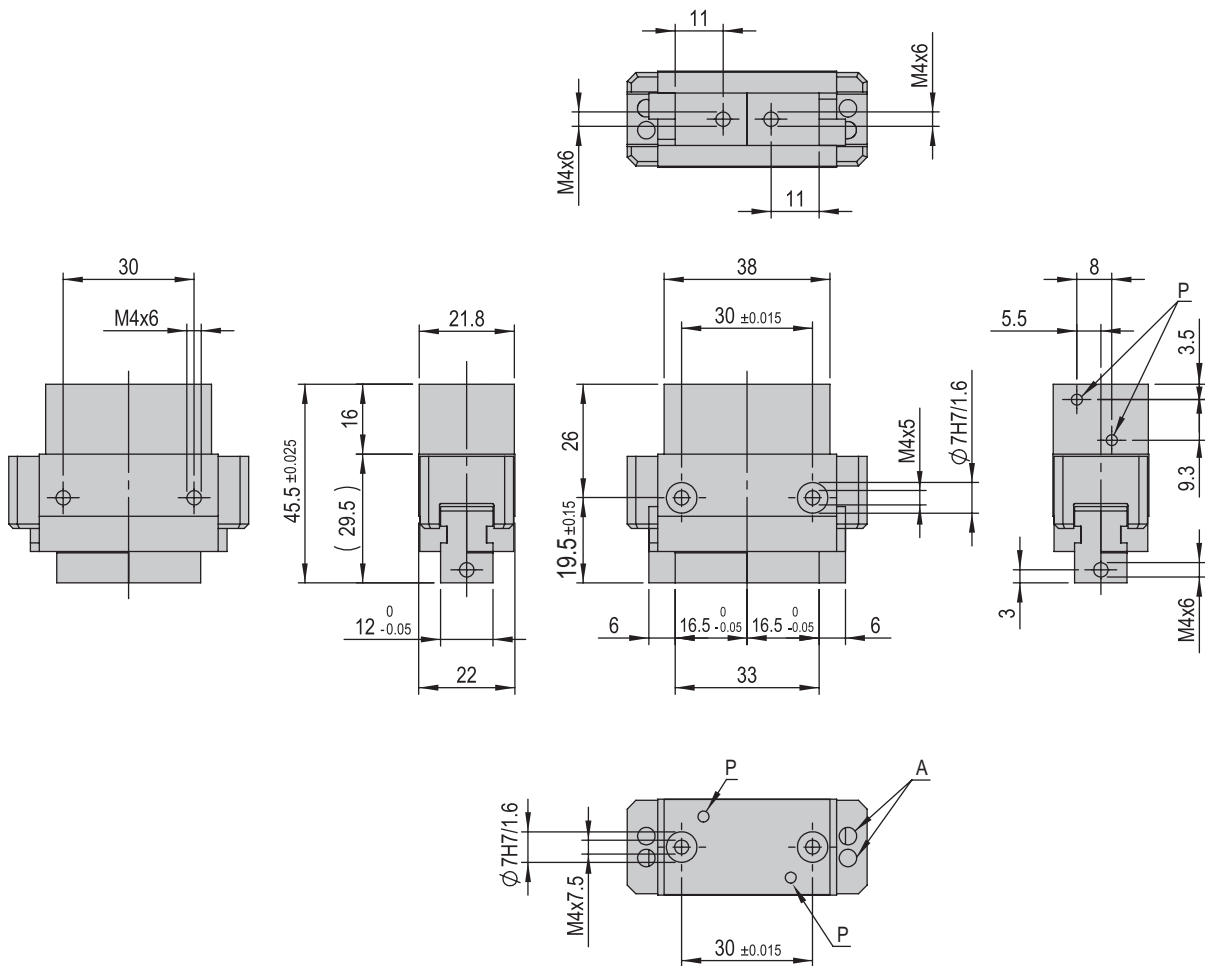
Precision gripper PG

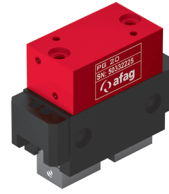
PG 20



- Highly precise jaw guidance
- Miniature design
- Simplest operation

| Type | PG 20 |
|------|---------------|
| A | Sensor Ø 4 mm |
| P | M3 |





| PG 20 | |
|-----------------------------|-------------|
| Attachment grid | 30 mm |
| Attachment grid alternative | M4 |
| Operating pressure | 6 +/- 2 bar |
| Air connection P | M3 |
| Cylinder Ø | 20 mm |
| Operating temperature | 0 - 50 °C |
| Storage temperature | 0 - 50 °C |

| Type | PG 20 |
|-------------------------|---|
| Order number | 50332225 |
| Net weight | 0.132 kg |
| Air consumption/cycle | 0.01 NL |
| Closing time | **Closing time = Finger weight 50 ms = 100 g 30 ms = 60 g 20 ms = - 10 ms = - |
| Gripping force, opening | *136 N |
| Gripping force, closing | *108 N |
| Opening stroke | 2 x 6 mm |
| Repeat accuracy | +/- 0.01 mm |
| Handling accuracy | +/- 0.05 mm |
| Positions | 2 |
| Mounting position | ✚ |

The technical data refer to a nominal pressure of 6 bar under Afag standard test conditions.
The module can be operated with lubricated or dry air.
Cleanroom class ISO 14644-1, class ISO 7

- *Observe gripping force diagrams
- Measurements for slowly closing fingers
- All module measurements carried out via outer clamping
- **Closing times in unthrottled operation Observe gripping force diagrams
- Measurements for slowly closing fingers
- All module measurements carried out via outer clamping

Included in the delivery
(Catalogue HT accessories)

- 2x Centering bushing Ø7x3

Accessories

(Catalogue HT accessories)

- Compressed air connection straight M3 x 0.5
- Compressed air connection angled M3 x 0.5
- INI d4x25-Sn1.0-PNP-NC-M8x1

Alternative accessories

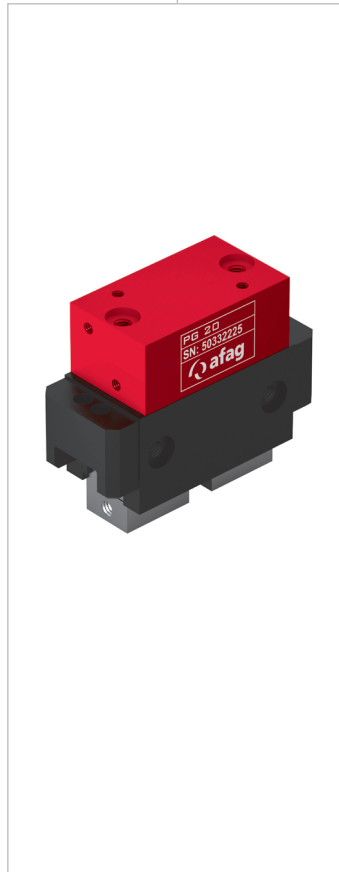
(Catalogue HT accessories)

- INI M4x12-Sn0.8-PNP-NO

Warranty: 24 months following commissioning, but a maximum of 27 months following delivery



| | | | |
|---------|-------------|--------------------------------|---------------|
| CS 12 | 1 2 | VS 512 VP 139 | 1,2 1,2 |
| CS 16 | 1 3 | VS 512 VP 139 | 1,2 1,2 |
| LM 16 | 1 1 | VP 112 VP 108 | 1 2 |
| LM 20 | 1 | VP 105 | 1,2 |
| HM 10 | 1 | VP 139 | 1,2 |
| CR 16 | 3 | VP 151 | 1,2 |
| CR 20 | 3 | VP 151 | 1,2 |
| RM 16 | 3 | VF 403 | 1,2 |
| RM 25 | 3 | VF 403 | 1,2 |
| ES20 | 1,3 | VP 139 | 1,2 |
| SA-3 | 1 2 2 | < direct > VP 137 VP 151 | 1,2 1 2 |
| SA-6 | 1 2 2 | < direct > VP 137 VP 151 | 1,2 1 2 |
| RE-50 | 3 3 | VP 137 VP 151 | 1 2 |
| SREH-50 | 3 3 | VP 160 VP 151 | 1 2 |
| RA-40 | 3 | VP 50486394 | 2 |

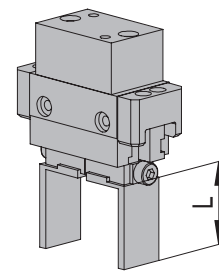
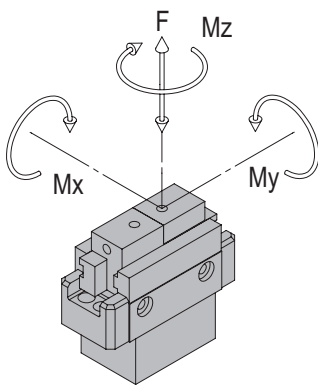


↑ ↑ **Mounting areas**

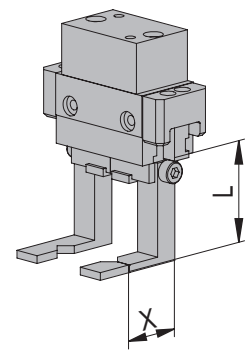
| CS, ES | LM | HM | SA | UG, GM, SG, DG, PG, GE, SGE |
|------------|----------|----------|--------|-----------------------------|
| | | | | |
| PMP, PMP-c | PEZ, PDZ | PEL, PDL | RM, RE | CR, RM 32, RE, SREH, RA |
| | | | | |

Note that there might be different mounting positions from one module to another one.
The required connection elements and the range of support columns are depicted in the catalogue HT accessories.

| Type | PG 20 |
|---------------------------|--------|
| Max. static torque M_x | 10 Nm |
| Max. static torque M_y | 10 Nm |
| Max. static torque M_z | 10 Nm |
| Max. dynamic torque M_x | 0.1 Nm |
| Max. dynamic torque M_y | 0.1 Nm |
| Max. dynamic torque M_z | 0.1 Nm |
| Max. static force F | 100 N |
| Max. dynamic force F | 1 N |



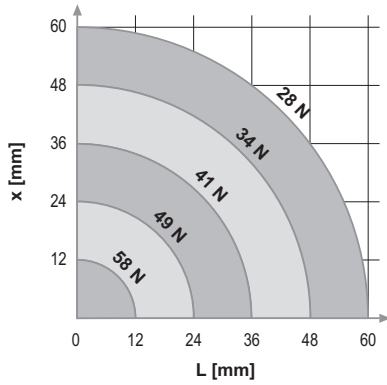
Finger length centric



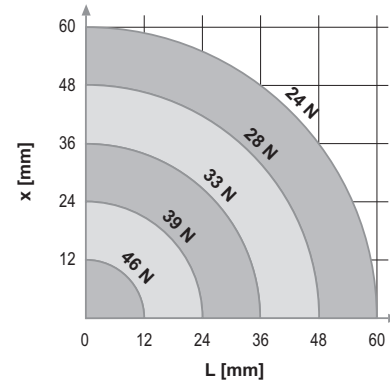
Finger length eccentric

Gripping force diagrams per jaw

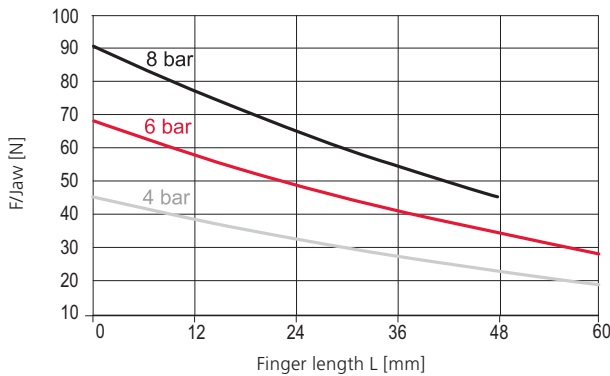
Centric gripping force, opening



Centric gripping force, closing



Centric gripping force, opening



Centric gripping force, closing

