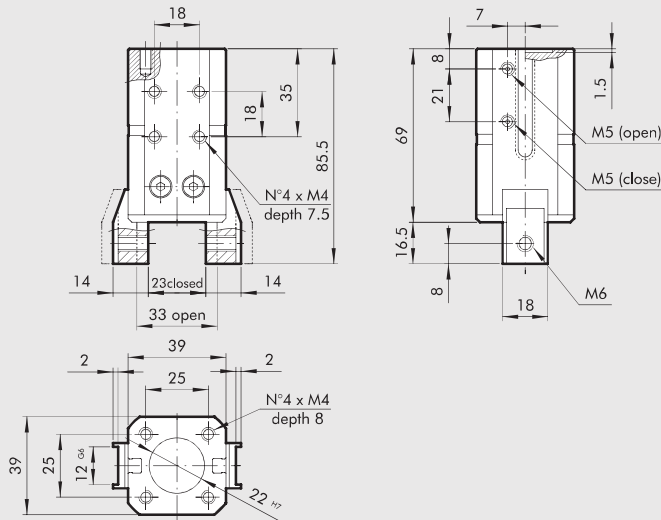
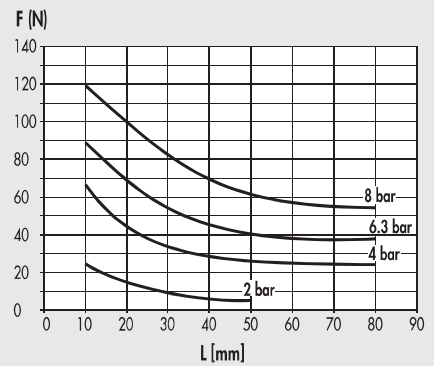




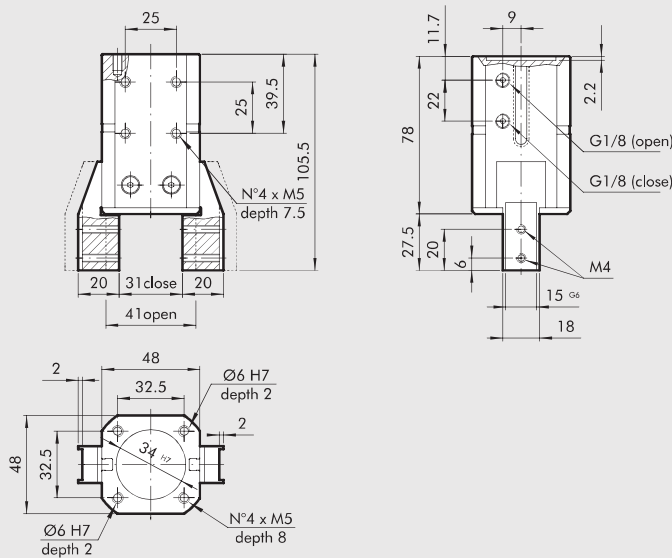
**DIMENSIONS OF GRIPPER P1-20**



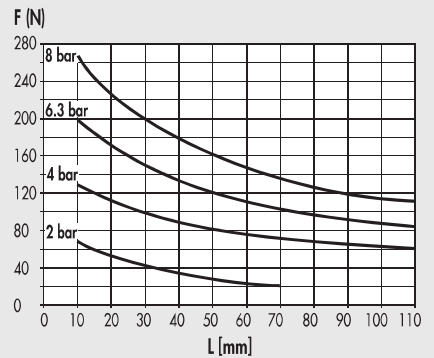
| Code       | Description                        |
|------------|------------------------------------|
| W155020001 | Gripper with 2 parallel jaws P1-20 |



**DIMENSIONS OF GRIPPER P1-32**



| Code        | Description                        |
|-------------|------------------------------------|
| W1550320001 | Gripper with 2 parallel jaws P1-32 |

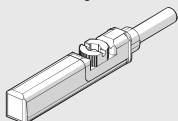


**ACCESSORIES**

**RETRACTABLE SENSOR**

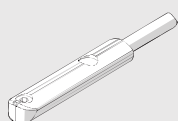
**SENSOR, SQUARE TYPE**

Latest generation,  
secure fixing



**SENSOR, OVAL TYPE**

Traditional



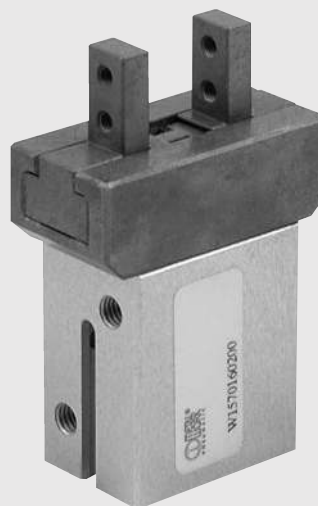
For codes and technical data, see chapter A6.

## GRIPPER WITH TWO PARALLEL JAWS SERIES P2

ACTUATORS

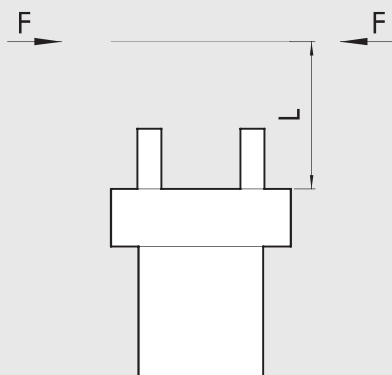
GRIPPER WITH TWO PARALLEL JAWS SERIES P2

Double-acting system with clamping in both directions.  
All the grippers come with magnet and sensor slots.

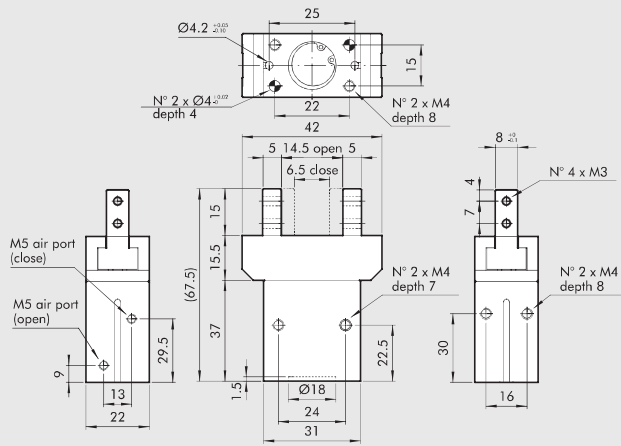


| TECHNICAL DATA  |          | P2 -16   | P2-20      | P2- 25 |
|---|----------|--|------------|--------|
| Operating pressure  | bar      |  | 2 to 8     |        |
|   | MPa      |  | 0.2 to 0.8 |        |
|   | psi      |  | 29 to 116  |        |
| Operating temperature   | °C       |  | -10 to +80 |        |
|   | cycles/s |  | 2          |        |
| Maximum operating frequency   |          |  |            |        |
| Fluid   |          | 20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous |            |        |
| Size  |          | 16   | 20         | 25     |
| Bore  | mm       | 16   | 20         | 25     |
| Single jaw stroke   | mm       | 4  | 5          | 7      |
| Clamping force at 6.3 bar 20 mm from the top surface during opening and closing | N        | 45   | 100        | 135    |
| Weight  | kg       | 0.2  | 0.4        | 0.75   |

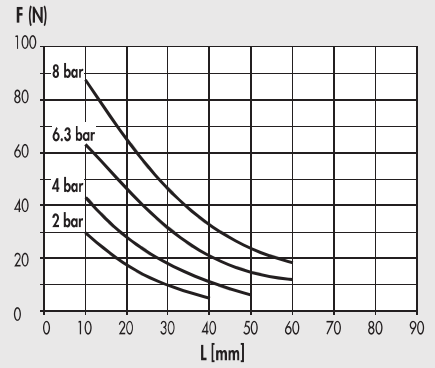
TABLE OF CLAMPING FORCES FOR VARIOUS POINTS OF APPLICATION



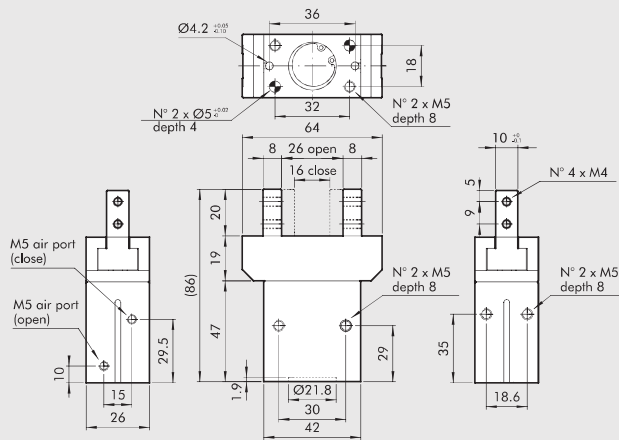
**DIMENSIONS OF GRIPPER P2-16**



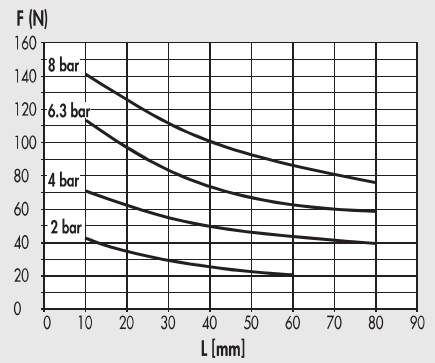
**Code** W1570160200 **Description** Gripper with 2 parallel jaws P2-16



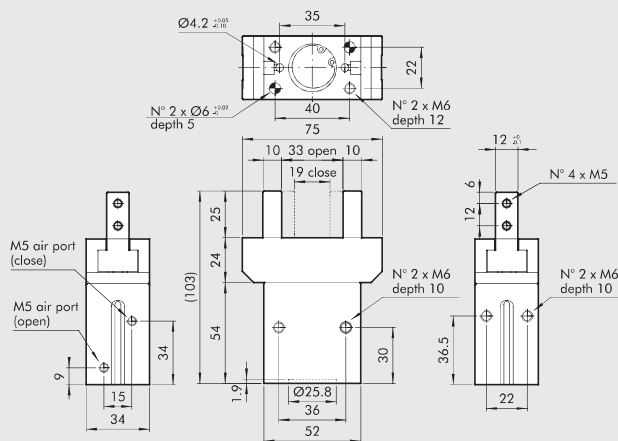
**DIMENSIONS OF GRIPPER P2-20**



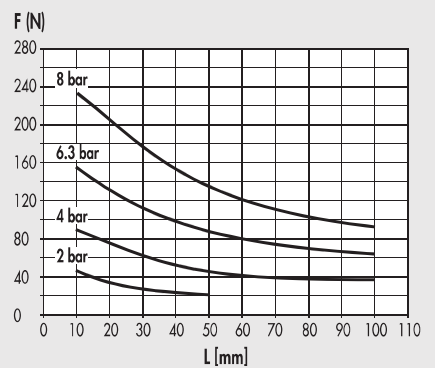
**Code** W1570200200 **Description** Gripper with 2 parallel jaws P2-20



**DIMENSIONS OF GRIPPER P2-25**

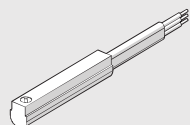


**Code** W1570250200 **Description** Gripper with 2 parallel jaws P2-25



**ACCESSORIES**

**SENSOR Ø 4**



For codes and technical data, see chapter A6.

# GRIPPER WITH TWO PARALLEL JAWS, SERIES P3

ACTUATORS

GRIPPER WITH TWO PARALLEL JAWS, SERIES P3

Parallel double-acting two-jaw gripper, with either internal or external clamping.

Aluminum alloy body coated with surface hardening treatment; jaws made of wear-resistant coated steel.

The jaw-guiding system and precision in coupling with the body make the gripper extremely stable.

The ceramic-coated body reduces friction and wear, and enhances the movement of the jaws on the body.

All sizes are available in the version with standard stroke and clamping force, while only some in the version with reduced stroke but with higher clamping torque.

The gripper is equipped with a magnet and grooves for sensors.

A version designed to house inductive sensors is also available (**the inductive sensors are not supplied by Metal Work**).

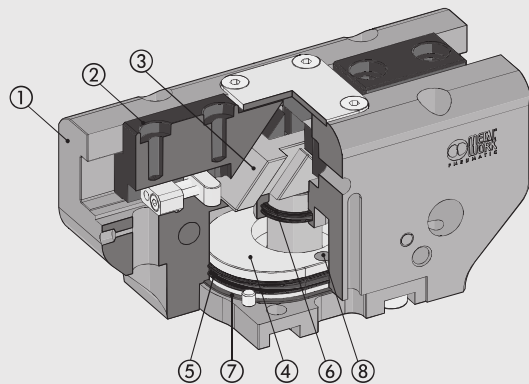
Pneumatic supply is available on both sides.



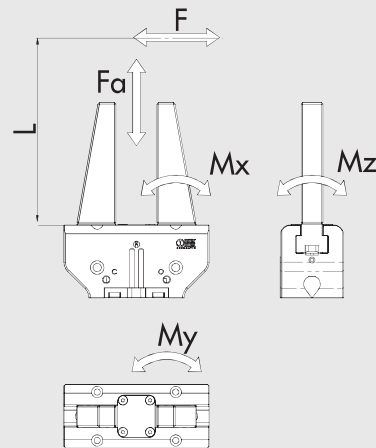
| TECHNICAL DATA   |                    | P3-40  | P3-64 | P3-80      |                 | P3-100   |                 |
|--|--------------------|--|-------|------------|-----------------|----------|-----------------|
|  |                    |  |       | Standard   | Increased force | Standard | Increased force |
| Operating pressure   | bar                |  |       | 2 to 8     |                 |          |                 |
|  | MPa                |  |       | 0.2 to 0.8 |                 |          |                 |
|  | psi                |  |       | 29 to 116  |                 |          |                 |
| Temperature range  | °C                 |  |       | -10 to 80  |                 |          |                 |
| Fluid  |                    | 20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous |       |            |                 |          |                 |
| Clamping force of a single jaw                                   | N                  | 75   | 125   | 265        | 445             | 360      | 790             |
| at 6.3 bar, 20 mm from the upper surface, on opening and closing |                    |  |       |            |                 |          |                 |
| Maximum movable weight   | kg                 | 0.65   | 1.3   | 2.5        | 5               | 3.5      | 7               |
| Stroke of each jaw   | mm                 | 2.5  | 6     | 8          | 4               | 10       | 5               |
| Minimum opening/closing time                                     | s                  | 0.05   |       |            |                 |          |                 |
| Repeatability  | mm                 | 0.01   |       |            |                 |          |                 |
| Moment of inertia as regards the piston axis                     | kg cm <sup>2</sup> | 1.8  | 4     | 4.5        |                 | 12       |                 |
| Max. admissible static loads:                                    |                    |  |       |            |                 |          |                 |
| - Fa   | N                  | 250  | 1100  | 1500       |                 | 2000     |                 |
| - Mx   | Nm                 | 12   | 60    | 90         |                 | 115      |                 |
| - My   | Nm                 | 5  | 40    | 55         |                 | 70       |                 |
| - Mz   | Nm                 | 10   | 40    | 55         |                 | 80       |                 |
| Weight   | kg                 | 0.12   | 0.35  | 0.5        |                 | 0.9      |                 |

## COMPONENTS

- ① BODY: hard-anodized aluminium
- ② JAWS: nitrided steel
- ③ PISTON ROD + GUIDE: nitrided steel
- ④ PISTON: hard-anodized aluminium
- ⑤ PISTON GASKET: NBR
- ⑥ PISTON ROD GASKET: NBR / polyurethane
- ⑦ BASE GASKET: reinforced SBR / NBR
- ⑧ MAGNET: neodymium

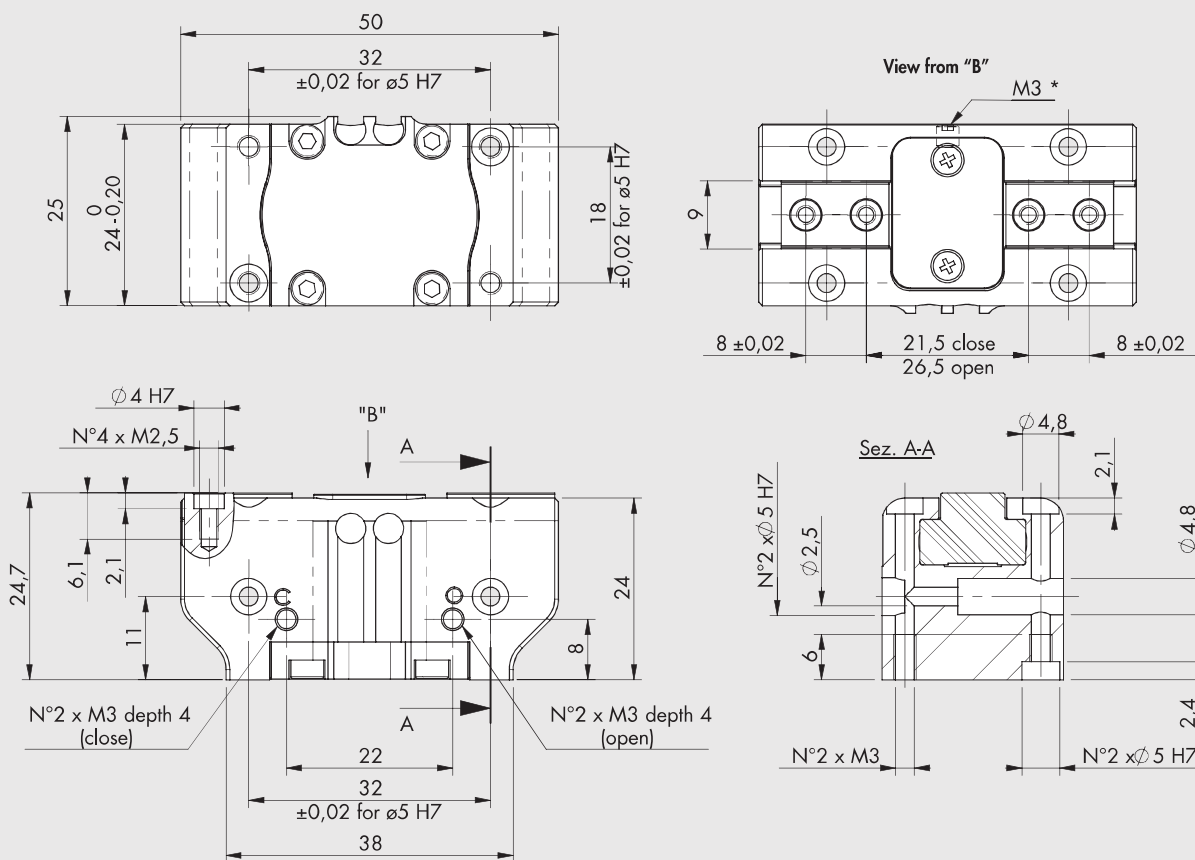


## DIAGRAM OF FORCES AND MOMENTS

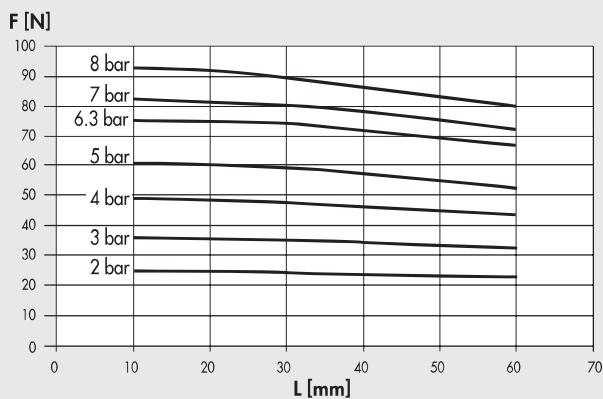


F Clamping force for each jaw  
 Fa Maximum static axial force  
 Mx, My, Mz Maximum static moments

**DIMENSIONS OF GRIPPER P3-40**

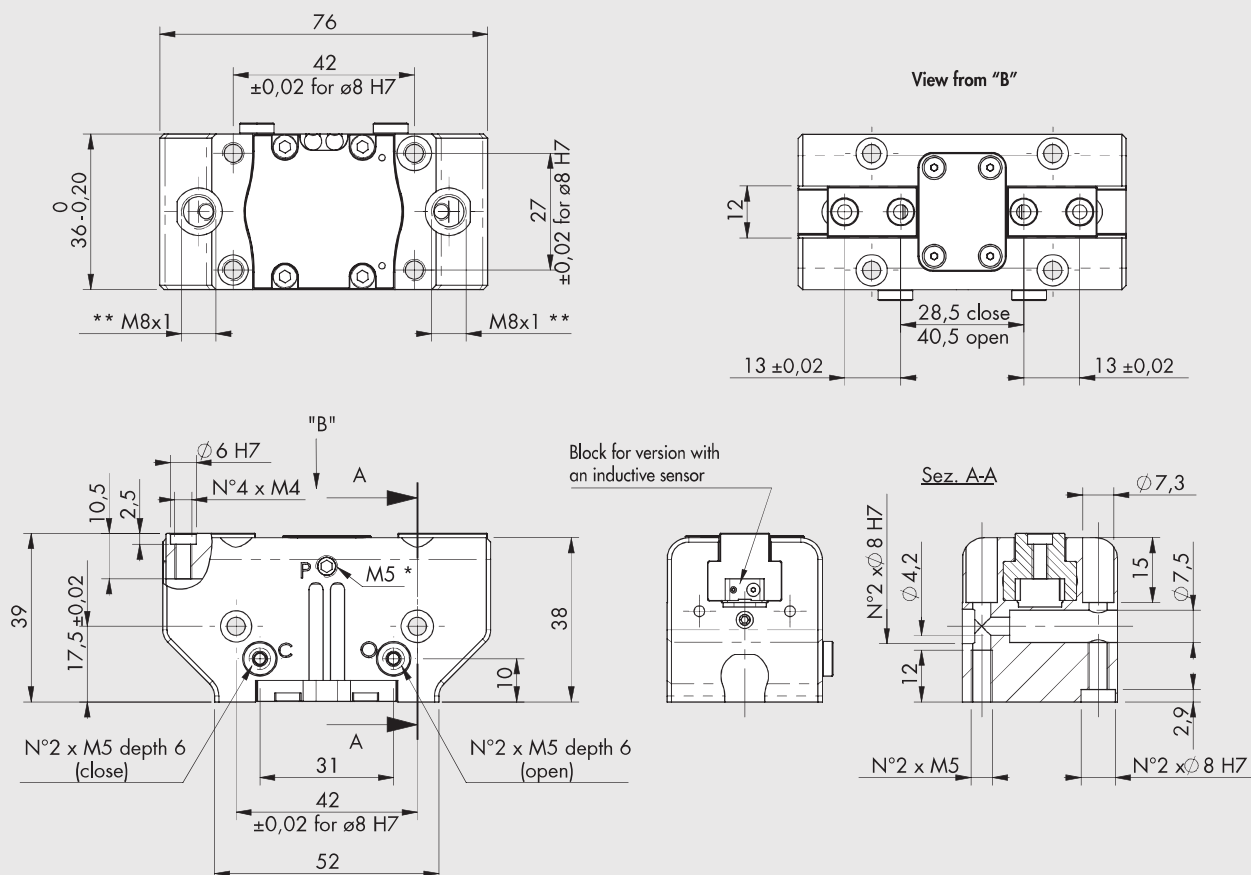


\* Discharge pressurization connection

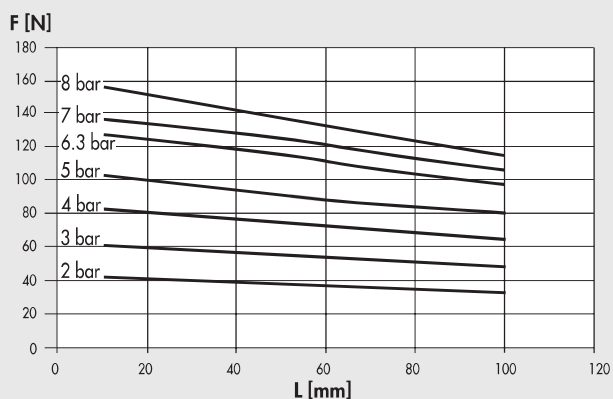


| Code        | Description                        |
|-------------|------------------------------------|
| W1560400200 | Gripper with 2 parallel jaws P3-40 |

DIMENSIONS OF GRIPPER P3-64

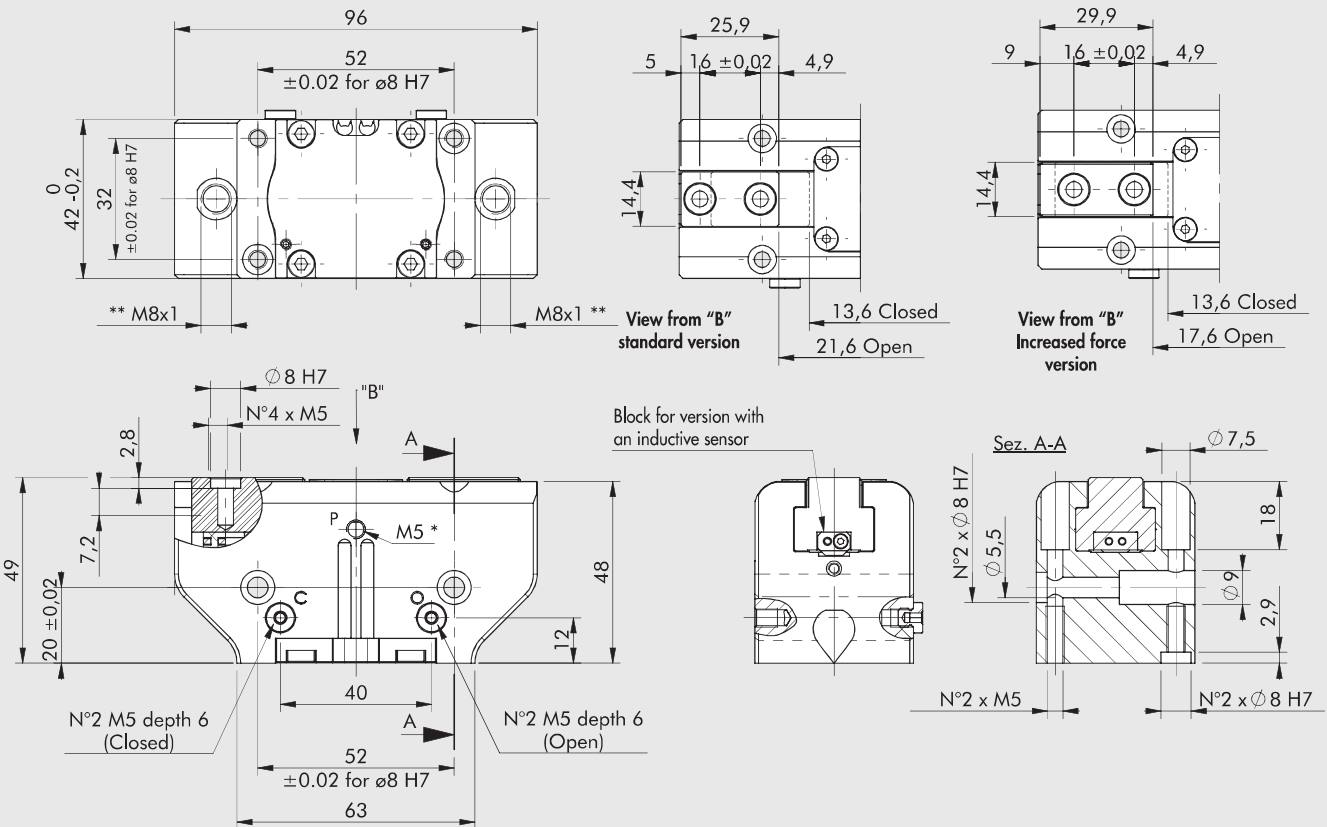


\* Discharge pressurization connection, present on both sides  
\*\* Inductive sensor slot



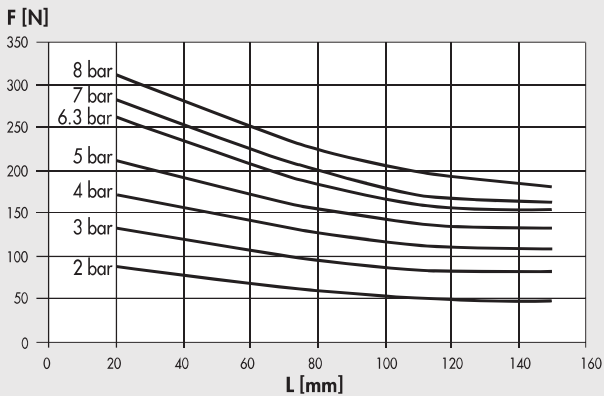
| Code        | Description  |
|-------------|--|
| W1560640200 | Gripper with 2 parallel jaws P3-64                       |
| W1560640201 | Gripper with 2 parallel jaws P3-64 for inductive sensors |

**DIMENSIONS OF GRIPPER P3-80**

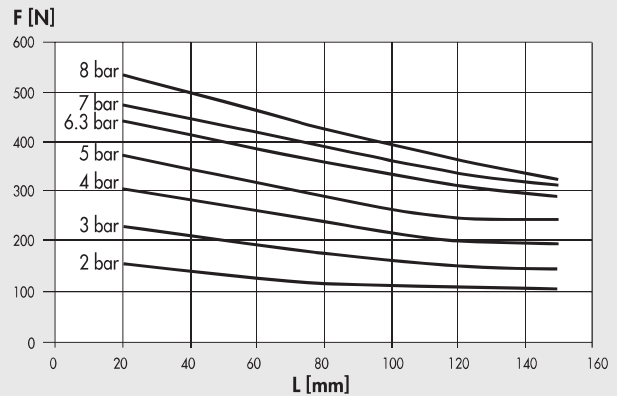


\* Discharge pressurization connection, present on both sides  
\*\* Inductive sensor slot

**Standard version**



**Increased force version**

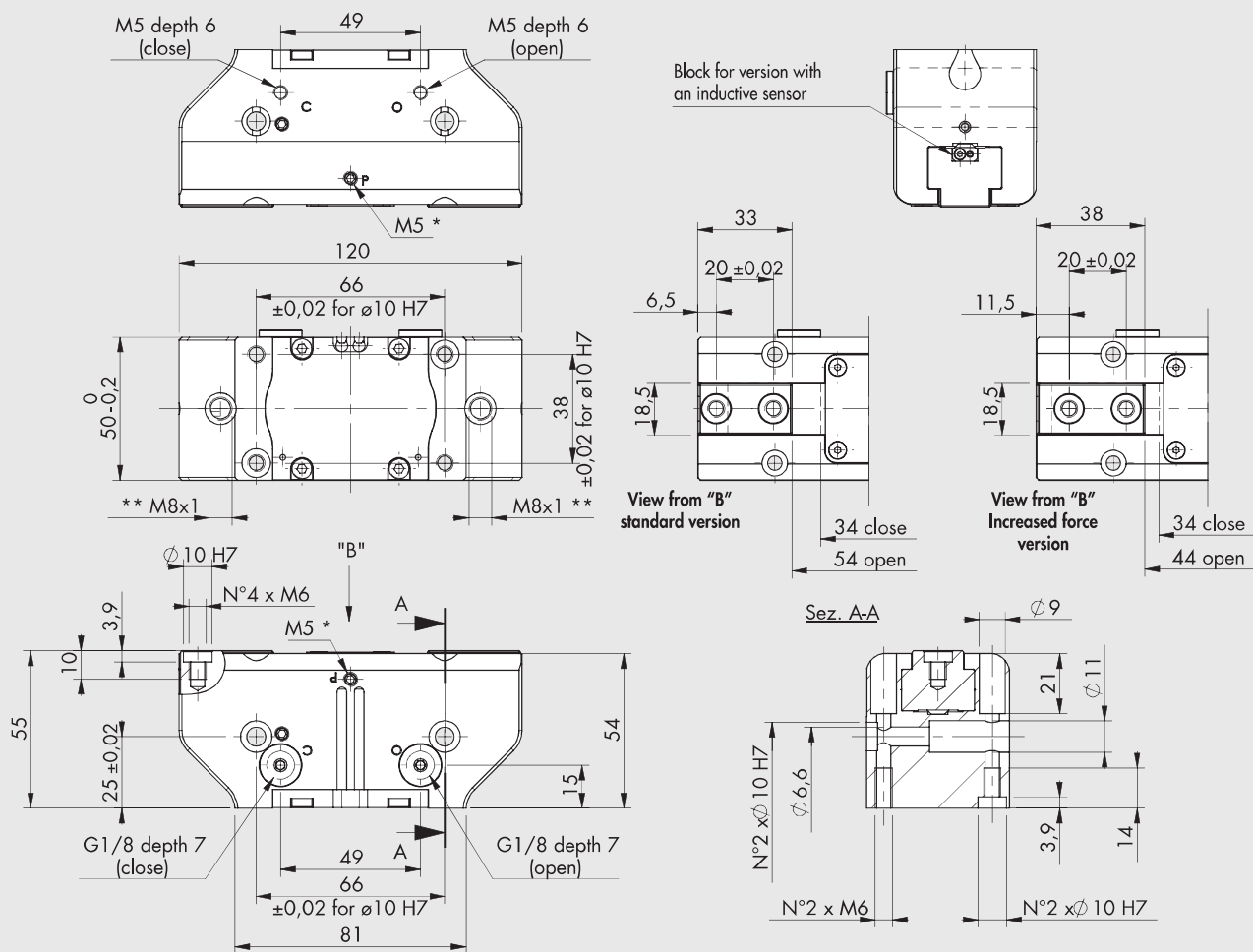


| Code        | Description  |
|-------------|--|
| W1560800200 | Gripper with 2 parallel jaws P3-80                                       |
| W1560800201 | Gripper with 2 parallel jaws P3-80 for inductive sensors                 |
| W1560800220 | Gripper with 2 parallel jaws P3-80 increased force                       |
| W1560800221 | Gripper with 2 parallel jaws P3-80 increased force for inductive sensors |

**ACTUATORS**  
GRIPPER WITH TWO PARALLEL JAWS, SERIES P3

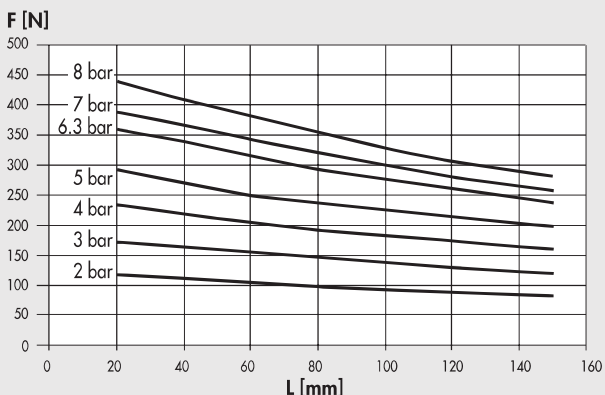


**DIMENSIONS OF GRIPPER P3-100**

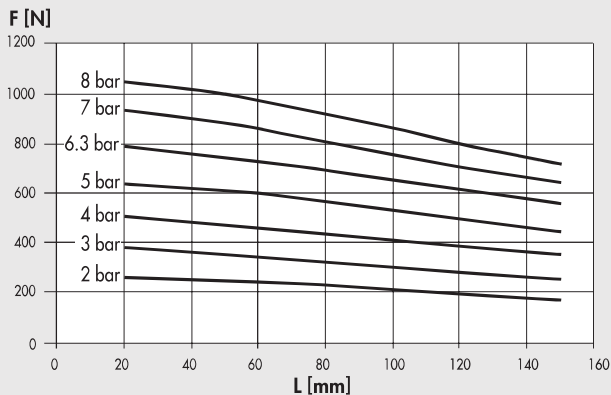


\* Discharge pressurization connection, present on both sides  
\*\* Inductive sensor slot

**Standard version**



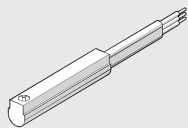
**Increased force version**



| Code        | Description   |
|-------------|---|
| W1561000200 | Gripper with 2 parallel jaws P3-100                                       |
| W1561000201 | Gripper with 2 parallel jaws P3-100 for inductive sensors                 |
| W1561000220 | Gripper with 2 parallel jaws P3-100 increased force                       |
| W1561000221 | Gripper with 2 parallel jaws P3-100 increased force for inductive sensors |

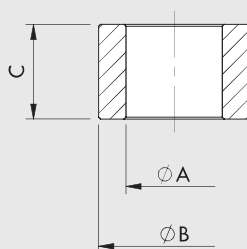
**ACCESSORIES**

**SENSOR Ø 4**



For codes and technical data, see **chapter A6**.

**CENTRING RING**



| Code        | Size | ØA                  | ØB <sup>h7</sup> | C                   |
|-------------|------|---------------------|------------------|---------------------|
| W1560409201 | 40   | 3 <sup>-0.1</sup>   | 4                | 4 <sup>-0.1</sup>   |
| W1560649201 | 64   | 4.5 <sup>-0.1</sup> | 6                | 5 <sup>-0.1</sup>   |
| W1560809201 | 80   | 5.1 <sup>-0.1</sup> | 8                | 5 <sup>-0.05</sup>  |
| W1561009201 | 100  | 6.2 <sup>+0.1</sup> | 10               | 6.9 <sup>-0.1</sup> |

Note: 2-pieces pack

**NOTES**

**ACTUATORS**

GRIPPER WITH TWO PARALLEL JAWS, SERIES P3



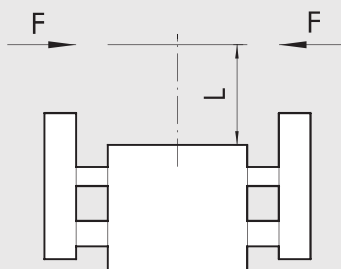
## GRIPPER WITH TWO PARALLEL LONG-STROKE JAWS, SERIES P4

These are grippers with 2 parallel long-stroke jaws. The mechanical design makes them suitable for clamping bulky parts. All grippers, except for the smallest ones, can mount a retracting magnetic proximity sensor.

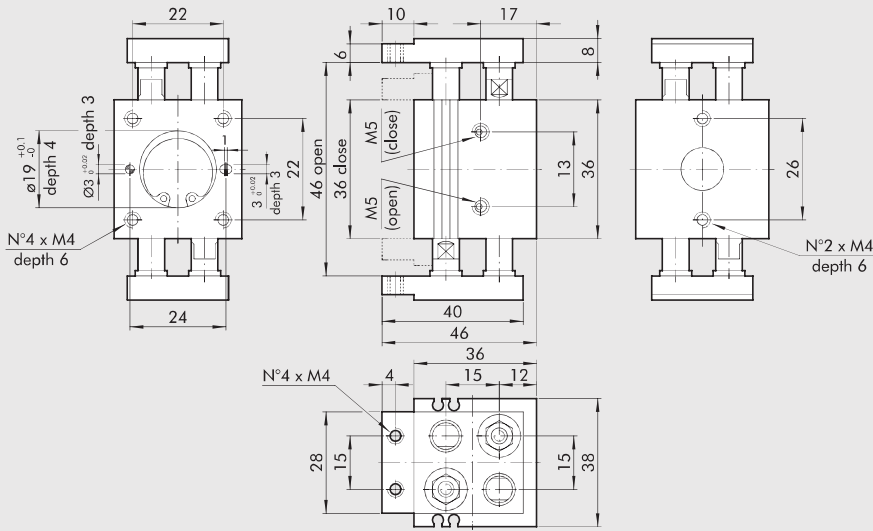


| TECHNICAL DATA  |          | P4-10  | P4-12  | P4-16      | P4-25  | P4-30  |
|---|----------|--|--------|------------|--------|--------|
| Operating pressure  | bar      |  |        | 3 to 7     |        |        |
|   | MPa      |  |        | 0.3 to 0.7 |        |        |
|   | psi      |  |        | 43 to 101  |        |        |
| Operating temperature   | °C       |  |        | -10 to +80 |        |        |
|   | cycles/s |  |        | 1          |        |        |
| Fluid   |          | 20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous |        |            |        |        |
| Bore  | mm       | 2 x 10   | 2 x 12 | 2 x 16     | 2 x 30 | 2 x 30 |
| Single jaw stroke   | mm       | 5  | 10     | 15         | 30     | 60     |
| Clamping force at 6.3 bar 20 mm from the top surface during opening and closing | N        | 30   | 45     | 75         | 280    | 280    |
| Weight  | kg       | 0.18   | 0.3    | 0.5        | 2.95   | 3.7    |

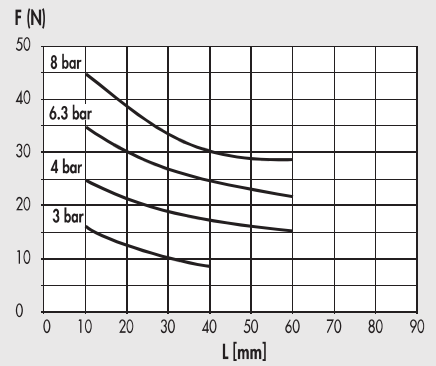
TABLE OF CLAMPING FORCES FOR VARIOUS POINTS OF APPLICATION



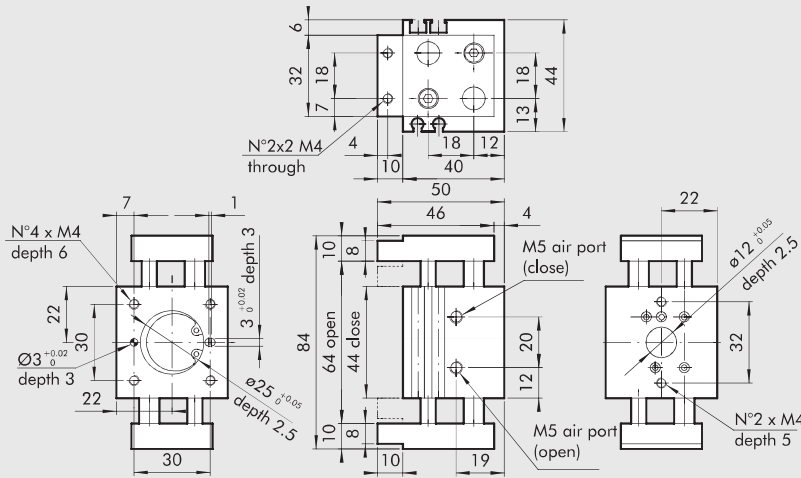
**DIMENSIONS OF GRIPPER P4-10**



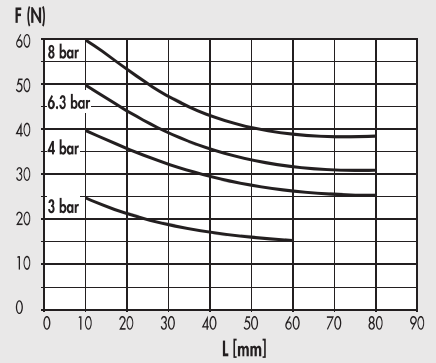
| Code        | Description                                    |
|-------------|--|
| W1580100200 | Gripper with 2 parallel long-stroke jaws P4-10 |



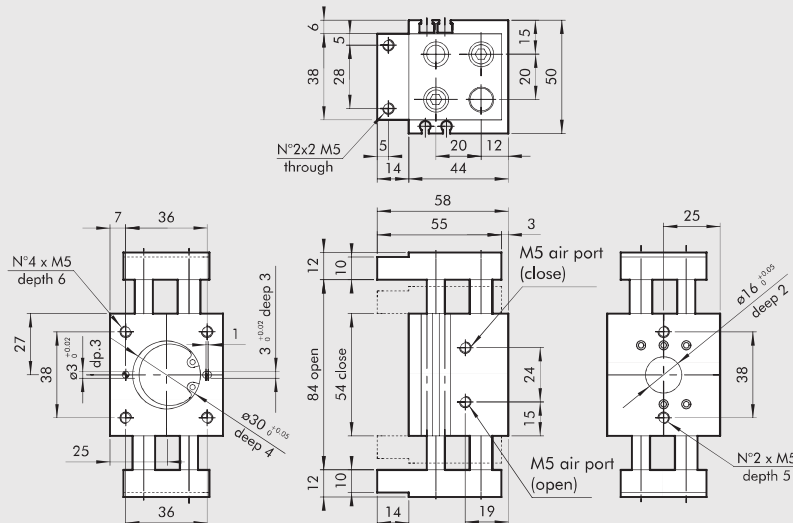
**DIMENSIONS OF GRIPPER P4-12**



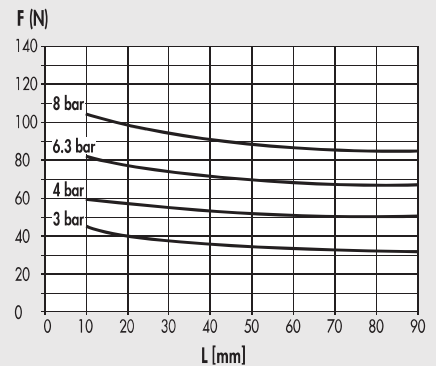
| Code        | Description                                    |
|-------------|--|
| W1580120200 | Gripper with 2 parallel long-stroke jaws P4-12 |



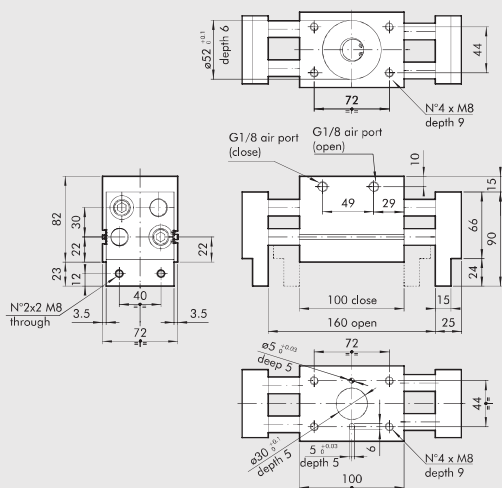
**DIMENSIONS OF GRIPPER P4-16**



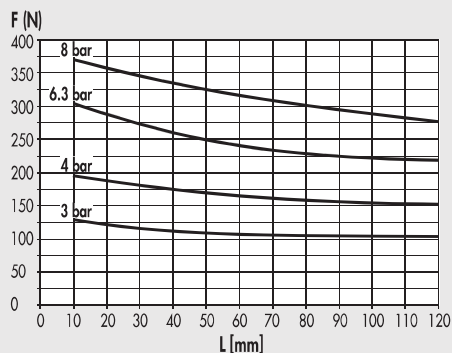
| Code        | Description                                    |
|-------------|--|
| W1580160200 | Gripper with 2 parallel long-stroke jaws P4-16 |



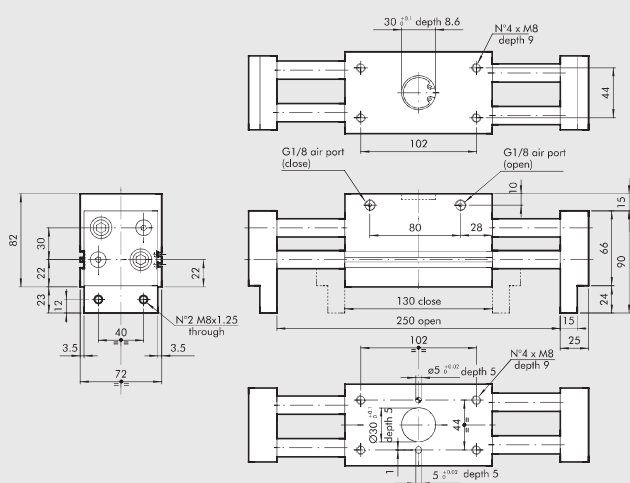
**DIMENSIONS OF GRIPPER P4-25**



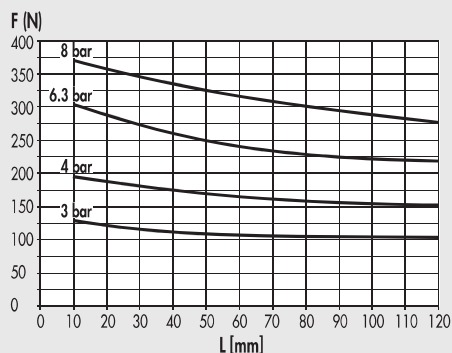
| Code        | Description                                    |
|-------------|--|
| W1580250200 | Gripper with 2 parallel long-stroke jaws P4-25 |



**DIMENSIONS OF GRIPPER P4-30**

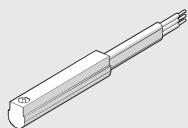


| Code        | Description                                    |
|-------------|--|
| W1580300200 | Gripper with 2 parallel long-stroke jaws P4-30 |



**ACCESSORIES**

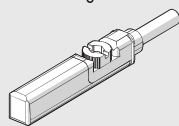
**SENSOR Ø 4 FOR P4 10-30**



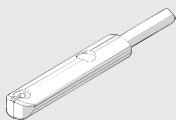
For codes and technical data, see chapter A6.

**RETRACTABLE SENSOR FOR P4-12-30**

**SENSOR, SQUARE TYPE**  
Latest generation,  
secure fixing



**SENSOR, OVAL TYPE**  
Traditional



For codes and technical data, see chapter A6.

# GRIPPER WITH TWO HINGED JAWS – SERIES P7

ACTUATORS

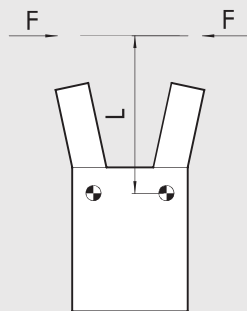
GRIPPER WITH TWO HINGED JAWS – SERIES P7

Bores 16, 20, 32 and 50 mm.  
All grippers are magnetic with slots in the body with retracting sensors.

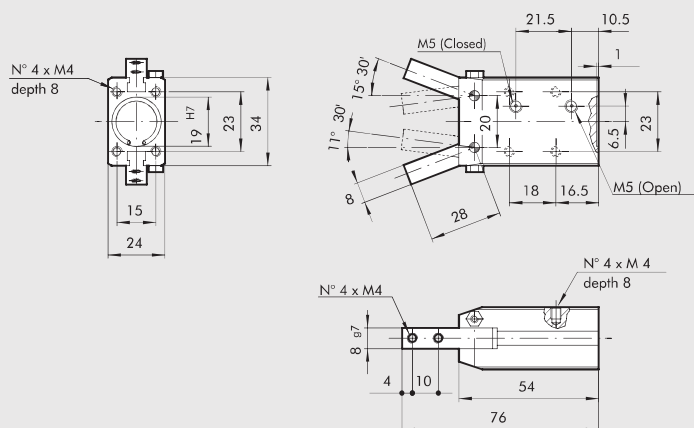


| TECHNICAL DATA  |  | P7-16      | P7-20     | P7-32     | P7-50     |
|---|--|------------|-----------|-----------|-----------|
| Operating pressure  | bar  | 2 to 10    | 2 to 10   | 2 to 10   | 2 to 10   |
|   | MPa  | 0.2 to 1   | 0.2 to 1  | 0.2 to 1  | 0.2 to 1  |
|   | psi  | 29 to 145  | 29 to 145 | 29 to 145 | 29 to 145 |
| Fluid   | 20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous |            |           |           |           |
| Temperature range   | °C   | -10 to +80 |           |           |           |
| Maximum opening angle of single jaw   |  | 15° 30'    | 16° 30'   | 16°       | 8° 30'    |
| Clamping force at 6.3 bar 20 mm from the centre of rotation of the jaws, during opening and closing | N  | 27         | 50        | 120       | 380       |
| Weight  | kg   | 0.12       | 0.19      | 0.5       | 1.6       |

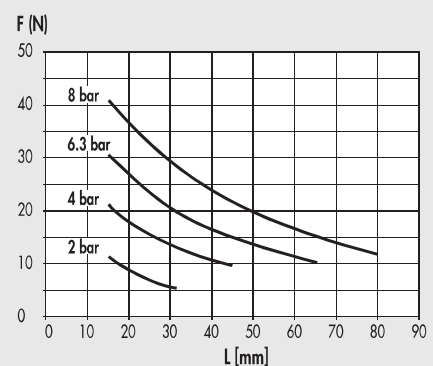
## TABLE OF CLAMPING FORCES FOR VARIOUS POINTS OF APPLICATION



## DIMENSIONS OF GRIPPER P7-16



| Code        | Description                      |
|-------------|----------------------------------|
| W1590160200 | Gripper with 2 hinged jaws P7-16 |







# TECHNOPOLYMER HINGED GRIPPER SERIES P8

ACTUATORS

TECHNOPOLYMER HINGED GRIPPER SERIES P8

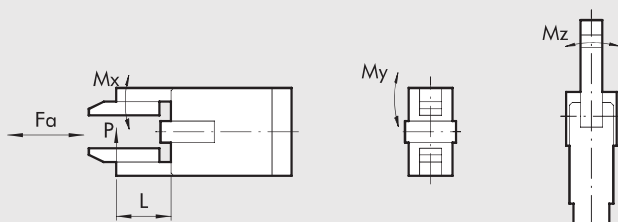
Single-acting hinged grippers, normally open, made entirely of technopolymer. Three sizes with clamping force 25-80 N at 6 bar. This solution makes the entire system lighter. This gripper is corrosion-resistant and antimagnetic. It comes complete with spring-loaded bracket for pre-loading the piece (force 1.5-6 N) and sensor holders.



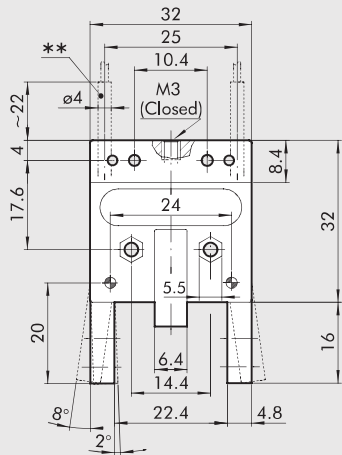
| TECHNICAL DATA                  |  | P8-32 | P8-40      | P8-50 |
|---------------------------------|--|-------|------------|-------|
| Operating pressure              | bar  |       | 4 to 7     |       |
|                                 | MPa  |       | 0.4 to 0.7 |       |
| Operating temperature           | bar  |       | 58 to 101  |       |
|                                 | °C   |       | -10 to +60 |       |
| Fluid                           | 20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous |       |            |       |
| Life                            | Over 2 million cycles  |       |            |       |
| Jaw opening angle               |  |       | 8°         |       |
| Clamping force per jaw at 6 bar | N  | 22.5  | 48         | 80    |
| Applicable weight (recommended) | kg   | 0.2   | 0.4        | 0.8   |
| Air consumption per cycle       | cm <sup>3</sup>  | 0.5   | 1          | 1.8   |
| Opening time                    | sec  | 0.04  | 0.05       | 0.05  |
| Closing time                    | sec  | 0.06  | 0.08       | 0.08  |
| Weight of grippers              | g  | 36    | 45         | 60    |
| Moment of inertia               | kg cm <sup>2</sup>   | 0.04  | 0.12       | 0.15  |
| Repeatability                   | mm   | 0.1   | 0.1        | 0.1   |

## TABLE OF MOMENTS

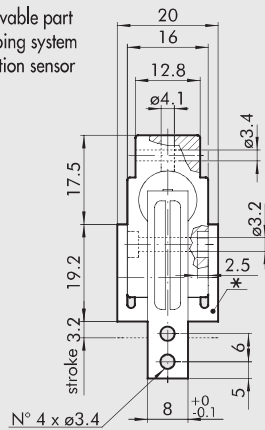
| Gripper | FA (N) | Mx (Ncm) | My (Ncm) | Mz (Ncm) | P (N) |
|---------|--------|----------|----------|----------|-------|
| P8 - 32 | 3      | 9        | 10       | 10       | 22.5  |
| P8 - 40 | 5      | 23       | 20       | 20       | 47.5  |
| P8 - 50 | 8      | 49       | 30       | 40       | 80    |



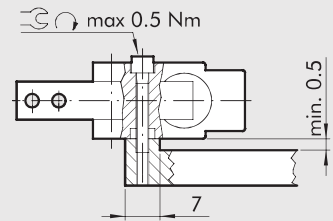
**DIMENSIONS OF GRIPPER P8-32**



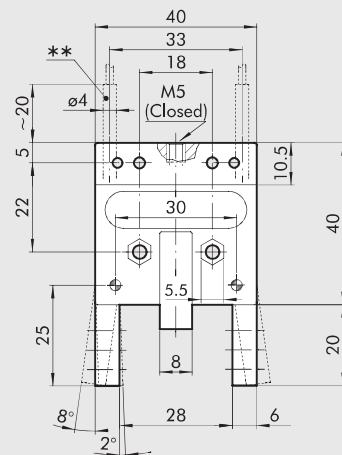
- \* Removable part damping system
- \*\* Induction sensor



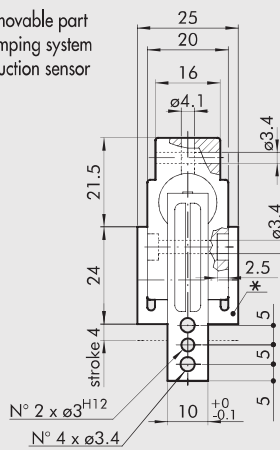
**Code** W0710010002  
**Description** Tecnopolimer hinged grippers P8-32



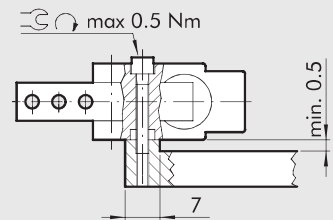
**DIMENSIONS OF GRIPPER P8-40**



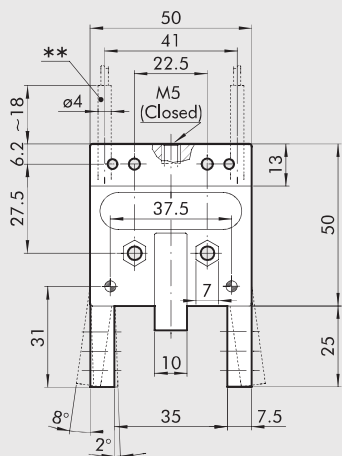
- \* Removable part damping system
- \*\* Induction sensor



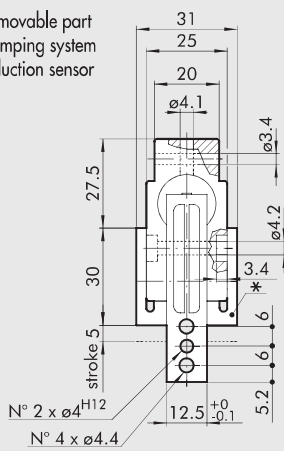
**Code** W0710010003  
**Description** Tecnopolimer hinged grippers P8-40



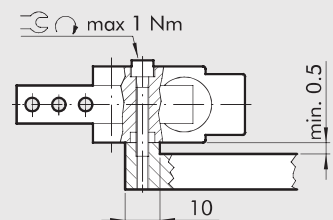
**DIMENSIONS OF GRIPPER P8-50**



- \* Removable part damping system
- \*\* Induction sensor

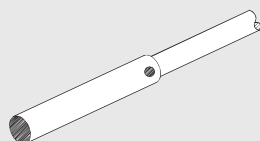


**Code** W0710010004  
**Description** Tecnopolimer hinged grippers P8-50



**ACCESSORIES**

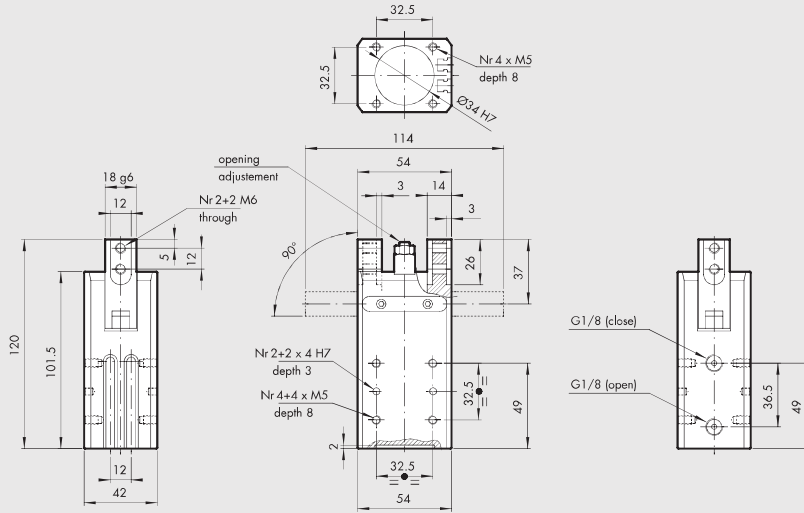
**INDUCTION SENSOR**



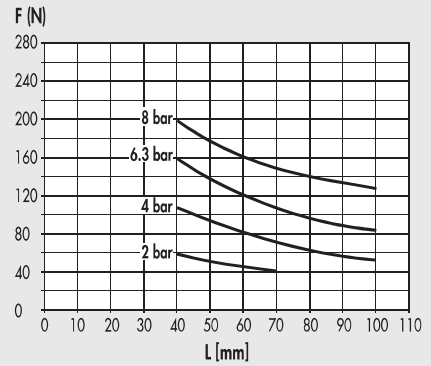
**Code** W0950037391  
**Description** Induction sensor Ø 4 mm PNP-NO-2 m



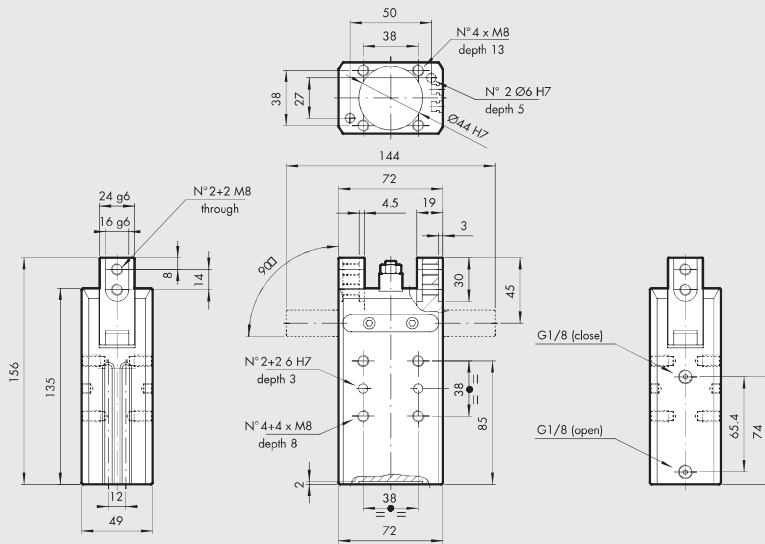
**DIMENSIONS OF GRIPPER P9-32**



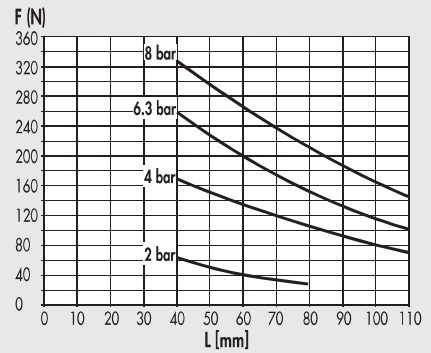
**Code** W1530320180  
**Description** Hinged gripper P9-32



**DIMENSIONS OF GRIPPER P9-40**



**Code** W1530400180  
**Description** Hinged gripper P9-40

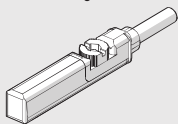


**ACCESSORIES**

**RETRACTABLE SENSOR**

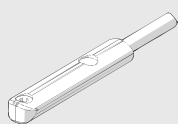
**SENSOR, SQUARE TYPE**

Latest generation,  
secure fixing



**SENSOR, OVAL TYPE**

Traditional



For codes and technical data, see chapter A6.

# GRIPPER WITH THREE PARALLEL JAWS, SERIES P12

Parallel double-acting three-jaw gripper, with either internal or external clamping.

Aluminum alloy body coated with surface hardening treatment; jaws made of wear-resistant coated steel.

The jaw-guiding system and precision in coupling with the body make the gripper extremely stable.

The ceramic-coated body reduces friction and wear, and enhances the movement of the jaws on the body.

All sizes are available in the version with standard stroke and clamping force, while only some in the version with reduced stroke but with higher clamping torque.

The gripper is equipped with a magnet and grooves for sensors.

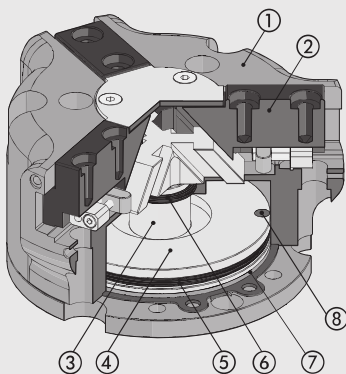
A version designed to house inductive sensors is also available (**the inductive sensors are not supplied by Metal Work**).



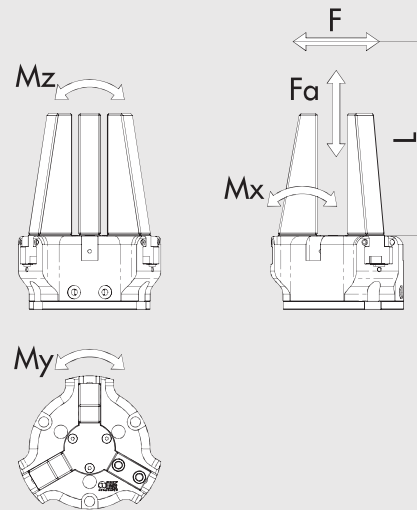
| TECHNICAL DATA  |                    | P12-40   | P12-64 | P12-80     |                 | P12-100  |                 |
|---|--------------------|--|--------|------------|-----------------|----------|-----------------|
|   |                    |  |        | Standard   | Increased force | Standard | Increased force |
| Operating pressure  | bar                |  |        | 2 to 8     |                 |          |                 |
|   | MPa                |  |        | 0.2 to 0.8 |                 |          |                 |
|   | psi                |  |        | 29 to 116  |                 |          |                 |
| Temperature range   | °C                 |  |        | -10 to 80  |                 |          |                 |
| Fluid   |                    | 20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous |        |            |                 |          |                 |
| Clamping force of a single jaw at 6.3 bar, 20 mm from the upper surface, on opening and closing | N                  | 130  | 310    | 435        | 860             | 840      | 1450            |
| Maximum movable weight  | kg                 | 1.3  | 2.9    | 4.5        | 9               | 9        | 20              |
| Stroke of each jaw  | mm                 | 2.5  | 6      | 8          | 4               | 10       | 5               |
| Minimum opening/closing time  | s                  |  |        | 0.05       |                 |          |                 |
| Repeatability   | mm                 |  |        | 0.01       |                 |          |                 |
| Moment of inertia as regards the piston axis  | kg cm <sup>2</sup> | 2.1  | 6      | 6.5        |                 | 19       |                 |
| Max. admissible static loads:   |                    |  |        |            |                 |          |                 |
| - Fa  | N                  | 250  | 1100   | 1500       |                 | 2000     |                 |
| - Mx  | Nm                 | 12   | 60     | 90         |                 | 115      |                 |
| - My  | Nm                 | 5  | 40     | 55         |                 | 70       |                 |
| - Mz  | Nm                 | 10   | 40     | 55         |                 | 80       |                 |
| Weight  | kg                 | 0.2  | 0.7    | 0.75       |                 | 1.4      |                 |

## COMPONENTS

- ① BODY: hard-anodized aluminium
- ② JAWS: nitrided steel
- ③ PISTON ROD + GUIDE: nitrided steel
- ④ PISTON: hard-anodized aluminium
- ⑤ PISTON GASKET: NBR
- ⑥ PISTON ROD GASKET: NBR / polyurethane
- ⑦ BASE GASKET: reinforced SBR / NBR
- ⑧ MAGNET: neodymium

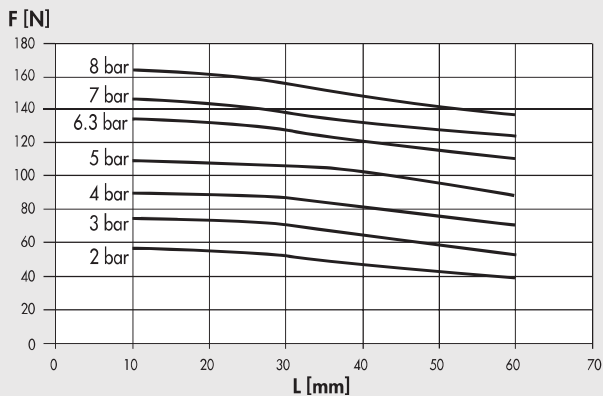
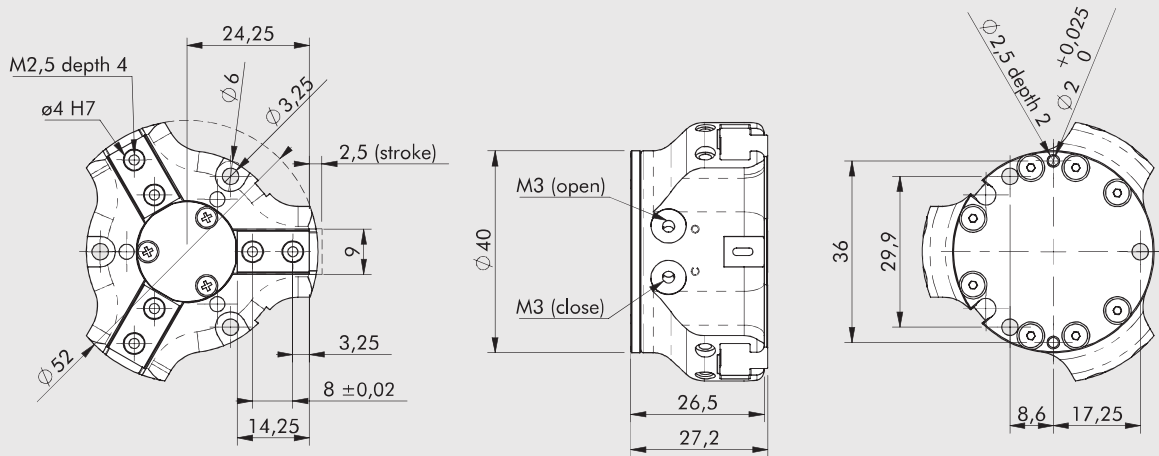


## DIAGRAM OF FORCES AND MOMENTS



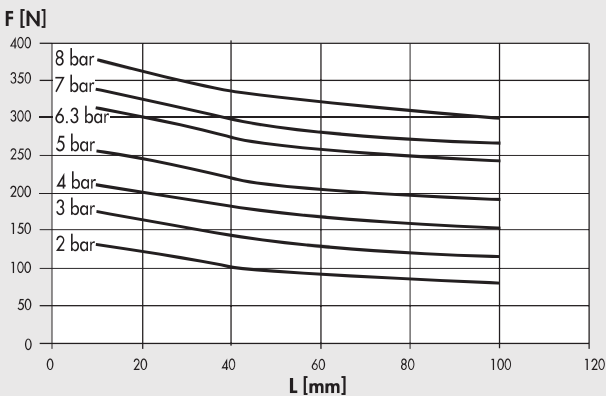
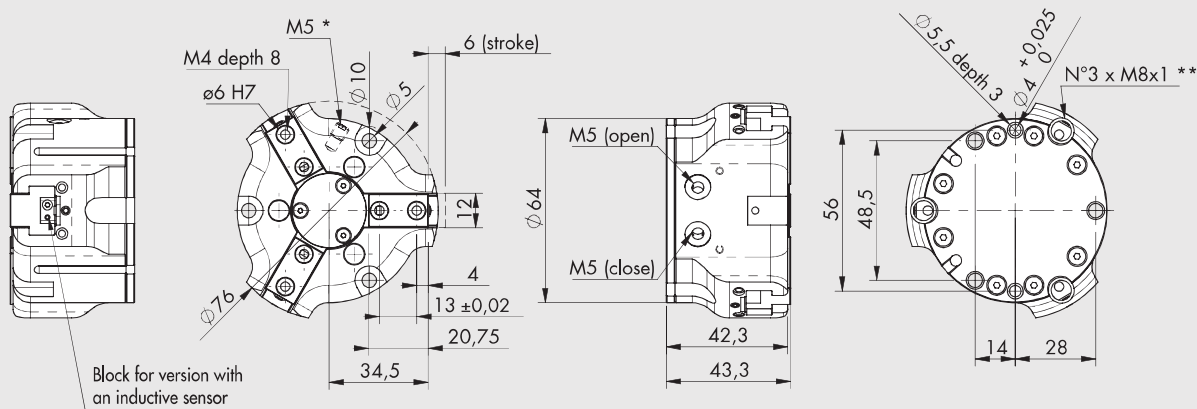
F Clamping force for each jaw  
 Fa Maximum static axial force  
 Mx, My, Mz Maximum static moments

**DIMENSIONS OF GRIPPER P12-40**



| Code        | Description                         |
|-------------|-------------------------------------|
| W1560400300 | Gripper with 3 parallel jaws P12-40 |
|             |                                     |
|             |                                     |
|             |                                     |
|             |                                     |
|             |                                     |
|             |                                     |
|             |                                     |
|             |                                     |

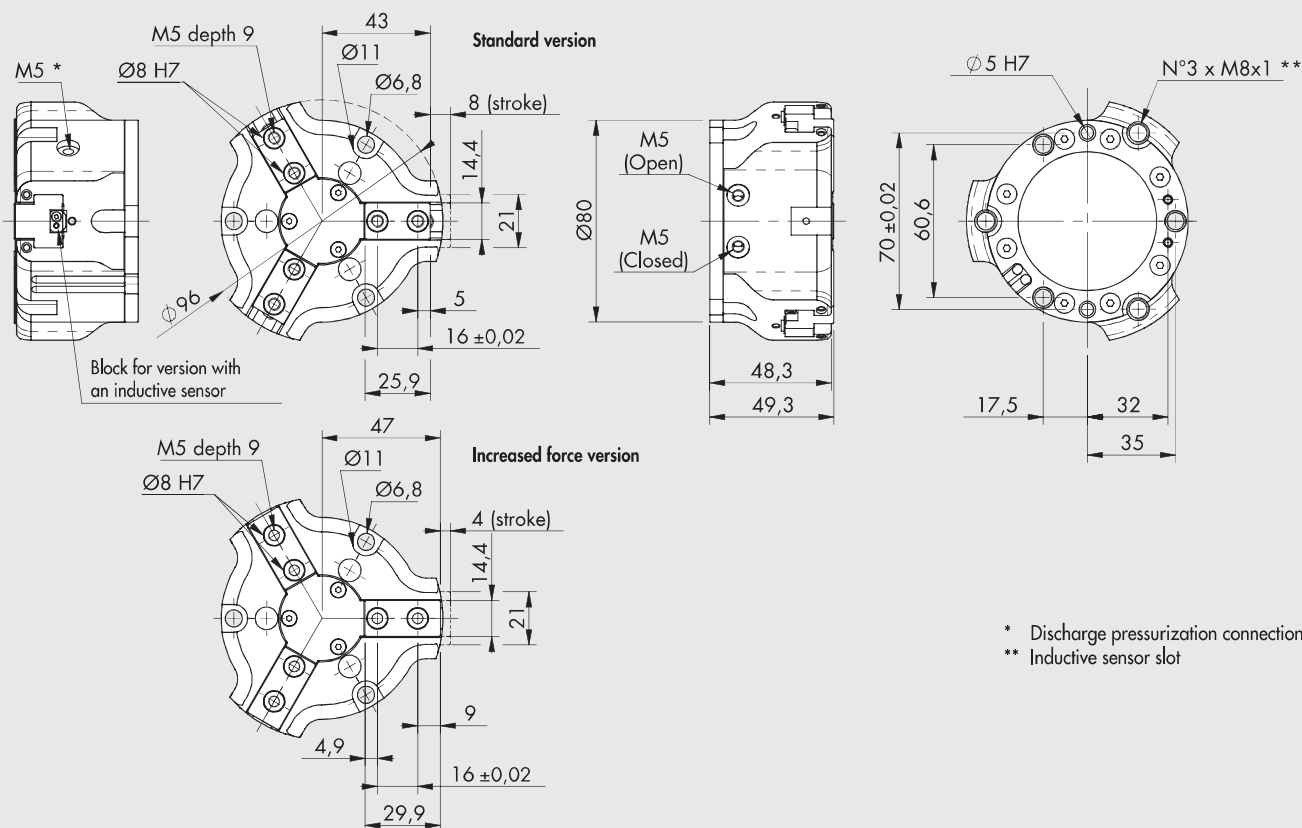
**DIMENSIONS OF GRIPPER P12-64**



| Code        | Description   |
|-------------|---|
| W1560640300 | Gripper with 3 parallel jaws P12-64                       |
| W1560640301 | Gripper with 3 parallel jaws P12-64 for inductive sensors |
|             |   |
|             |   |
|             |   |
|             |   |
|             |   |
|             |   |
|             |   |

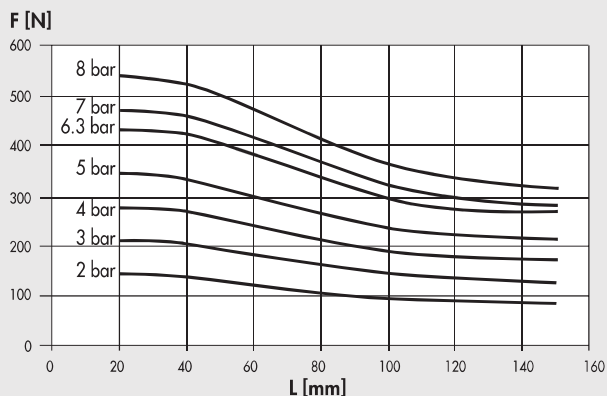
\* Discharge pressurization connection  
\*\* Inductive sensor slot

**DIMENSIONS OF GRIPPER P12-80**

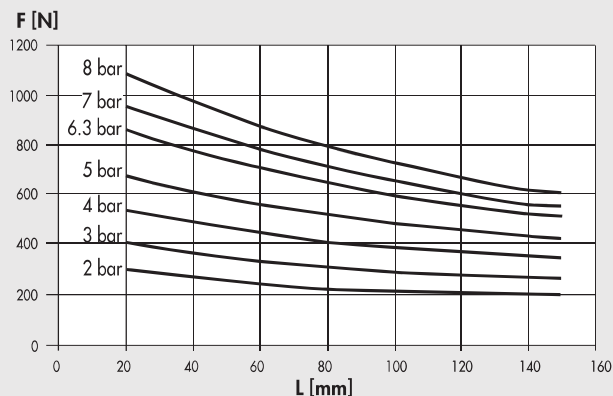


\* Discharge pressurization connection  
\*\* Inductive sensor slot

**Standard version**



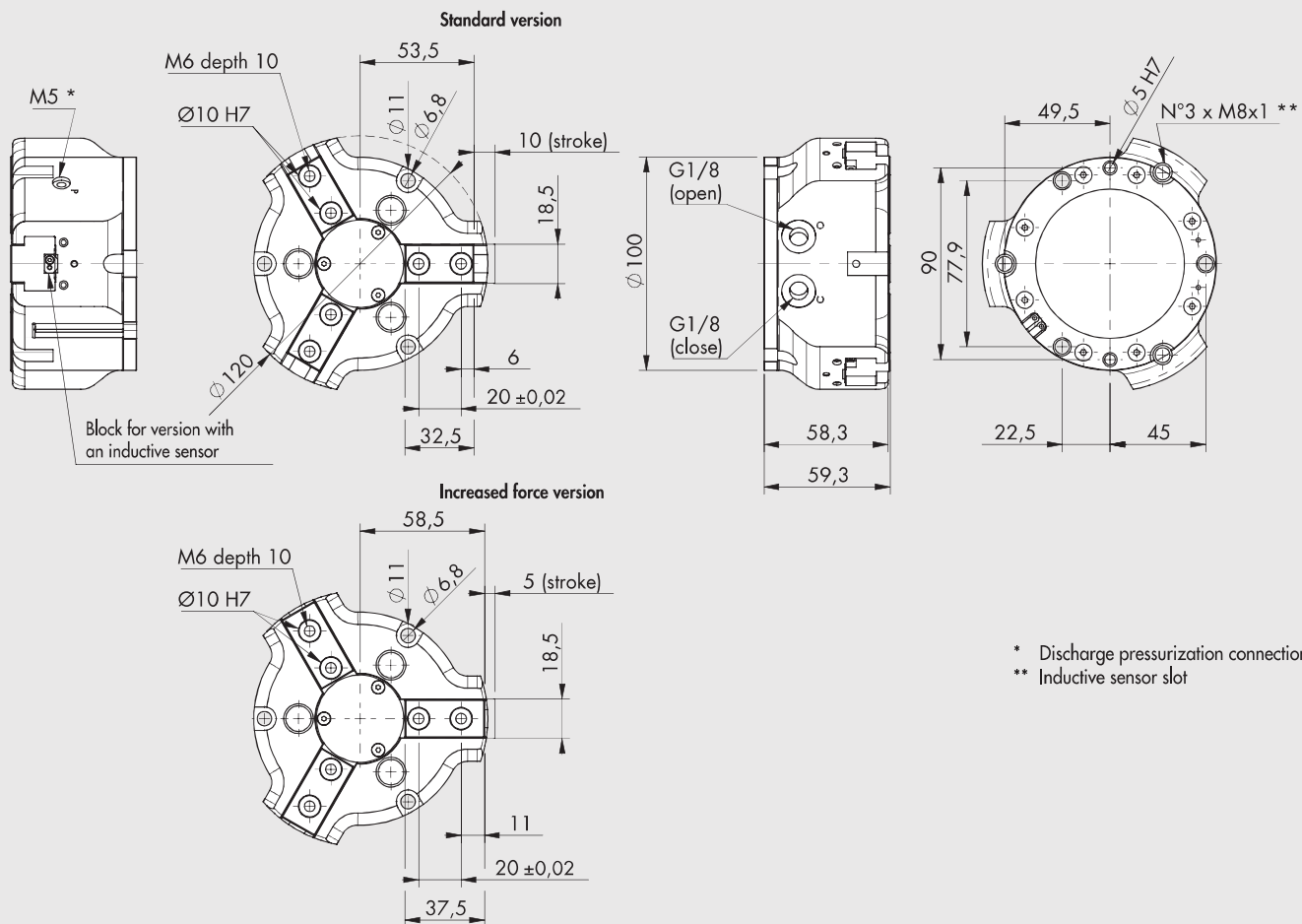
**Increased force version**



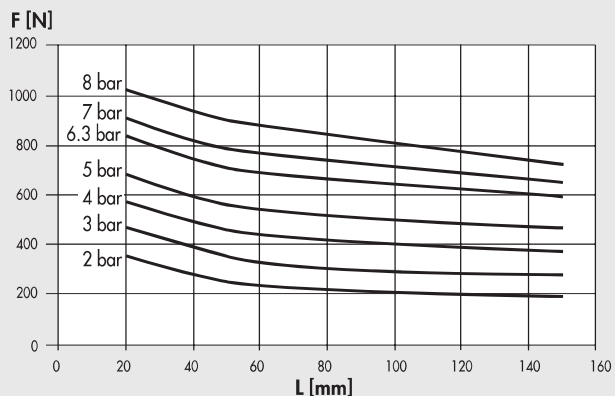
| Code        | Description   |
|-------------|---|
| W1560800300 | Gripper with 3 parallel jaws P12-80                                       |
| W1560800301 | Gripper with 3 parallel jaws P12-80 for inductive sensors                 |
| W1560800320 | Gripper with 3 parallel jaws P12-80 increased force                       |
| W1560800321 | Gripper with 3 parallel jaws P12-80 increased force for inductive sensors |



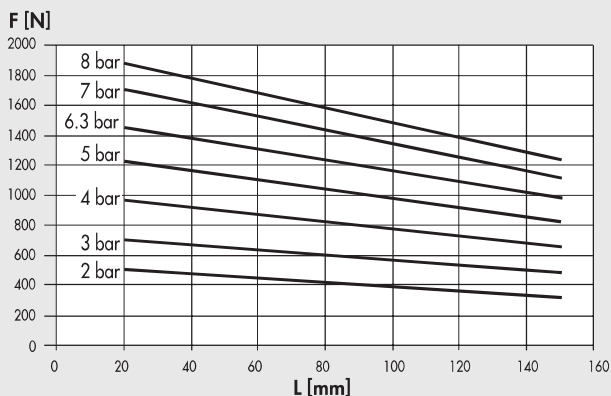
**DIMENSIONS OF GRIPPER P12-100**



**Standard version**



**Increased force version**



| Code        | Description  |
|-------------|--|
| W1561000300 | Gripper with 3 parallel jaws P12-100                                       |
| W1561000301 | Gripper with 3 parallel jaws P12-100 for inductive sensors                 |
| W1561000320 | Gripper with 3 parallel jaws P12-100 increased force                       |
| W1561000321 | Gripper with 3 parallel jaws P12-100 increased force for inductive sensors |