

|                                                                     |              |
|---------------------------------------------------------------------|--------------|
| ● UNITÀ DI GUIDA - ACCESSORI / <i>LINEAR CONTROL UNIT ACCESSORY</i> | <b>A1.4</b>  |
| ● SLITTE / <i>SLIDES</i>                                            | <b>A1.17</b> |
| ● CILINDRI COMPATTI / <i>COMPACT CYLINDERS</i>                      | <b>A1.35</b> |
| ● PINZE / <i>GRIPPER</i>                                            | <b>A1.50</b> |
| ● ATTUATORI ROTANTI / <i>ROTARY ACTUATORS</i>                       | <b>A1.73</b> |

|                                               |              |
|-----------------------------------------------|--------------|
| ● SISTEMA V-Lock / <i>V-Lock SYSTEM</i>       | <b>B1.4</b>  |
| ● ELEMENTI BASE / <i>BASIC ELEMENTS</i>       | <b>B1.10</b> |
| ● ATTUATORI LINEARI / <i>LINEAR ACTUATORS</i> | <b>B1.33</b> |
| ● ATTUATORI ROTANTI / <i>ROTARY UNIT</i>      | <b>B1.82</b> |
| ● PINZE / <i>GRIPPER</i>                      | <b>B1.94</b> |

|                                                                                                                    |              |
|--------------------------------------------------------------------------------------------------------------------|--------------|
| ● VERSIONI SPECIALI DEI NOSTRI COMPONENTI PER L'AUTOMAZIONE / <i>SPECIAL VERSIONS OF OUR AUTOMATION COMPONENTS</i> | <b>C1.2</b>  |
| ● ATTUATORI SPECIALI / <i>SPECIAL ACTUATORS</i>                                                                    | <b>C1.6</b>  |
| ● ATTUATORI IN ACCIAIO INOSSIDABILE / <i>STAINLESS STEEL ACTUATORS</i>                                             | <b>C1.12</b> |
| ● GRUPPI MECCANICI CON CILINDRI PNEUMATICI INTEGRATI / <i>MECHANICAL UNITS WITH BUILT-IN PNEUMATIC CYLINDERS</i>   | <b>C1.14</b> |

|                                                                    |              |
|--------------------------------------------------------------------|--------------|
| ● DATI TECNICI / <i>TECHNICAL DATA</i>                             | <b>D1.2</b>  |
| ● ACCESSORI COMUNI, SENSORI / <i>STANDARD ACCESSORIES, SENSORS</i> | <b>D1.6</b>  |
| ● CERTIFICAZIONI / <i>CERTIFICATIONS</i>                           | <b>D1.16</b> |



# ATTUATORI ACTUATORS

|                                                                     |              |
|---------------------------------------------------------------------|--------------|
| ● UNITÀ DI GUIDA - ACCESSORI / <i>LINEAR CONTROL UNIT ACCESSORY</i> | <b>A1.4</b>  |
| ● SLITTE / <i>SLIDES</i>                                            | <b>A1.17</b> |
| ● CILINDRI COMPATTI / <i>COMPACT CYLINDERS</i>                      | <b>A1.35</b> |
| ● PINZE / <i>GRIPPER</i>                                            | <b>A1.50</b> |
| ● ATTUATORI ROTANTI / <i>ROTARY ACTUATORS</i>                       | <b>A1.73</b> |

**UNITÀ DI GUIDA - ACCESSORI / LINEAR CONTROL UNIT ACCESSORY**

|                                                                                     |                                                                           |       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------|
|    | ● UNITÀ DI GUIDA SERIE AMCL BA/BB<br>LINEAR CONTROL UNITS TYPE AMCL BA/BB | A1.4  |
|    | ● UNITÀ DI GUIDA SERIE AMC BA/BB<br>LINEAR CONTROL UNITS TYPE AMC BA/BB   | A1.5  |
|    | ● UNITÀ DI GUIDA SERIE AMC BA/BB<br>LINEAR CONTROL UNITS TYPE AMC BA/BB   | A1.6  |
|    | ● UNITÀ DI GUIDA SERIE AMHL BA/BB<br>LINEAR CONTROL UNITS TYPE AMHL BA/BB | A1.7  |
|    | ● UNITÀ DI GUIDA SERIE AMH BA/BB<br>LINEAR CONTROL UNITS TYPE AMH BA/BB   | A1.8  |
|                                                                                     | ● DIAGRAMMI<br>GRAPHS                                                     | A1.10 |
|    | ● PIASTRA POSTERIORE DI COLLEGAMENTO<br>REAR FLANGE COUPLING GUIDE        | A1.11 |
|    | ● GIUNTO DI COMPENSAZIONE<br>COMPENSATING JOINT                           | A1.12 |
|   | ● UNITÀ DI GUIDA SERIE AMLL BA/BB<br>LINEAR CONTROL UNITS TYPE AMLL BA/BB | A1.13 |
|  | ● UNITÀ DI GUIDA SERIE AMLX BA/BB<br>LINEAR CONTROL UNITS TYPE AMLX BA/BB | A1.15 |

**SLITTE / SLIDES**

|                                                                                     |                                                                                                          |       |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------|
|  | ● DOPPIO CILINDRO SERIE S10<br>TWIN CYLINDER SERIES S10                                                  | A1.17 |
|  | ● SLITTA A DOPPIO CILINDRO A CORPO FISSO SERIE S11<br>TWIN CYLINDER SLIDE WITH FIXED BODY SERIES S11     | A1.20 |
|  | ● SLITTA A DOPPIO CILINDRO A PIASTRE FISSE SERIE S12<br>TWIN CYLINDER SLIDE WITH FIXED PLATES SERIES S12 | A1.25 |
|  | ● SLITTA DI PRECISIONE SERIE S13<br>PRECISION SLIDE SERIES S13                                           | A1.31 |

**CILINDRO COMPATTO GUIDATO / COMPACT GUIDE CYLINDERS**

|                                                                                     |                                                                                          |       |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------|
|  | ● CILINDRO COMPATTO GUIDATO TIPO AMCCG BA/BB<br>COMPACT GUIDE CYLINDERS TYPE AMCCG BA/BB | A1.35 |
|  | ● CILINDRO COMPATTO GUIDATO SERIE MULTIFIX<br>COMPACT GUIDED CYLINDER SERIES MULTIFIX    | A1.41 |

**PINZE / GRIPPERS**

|                                                                                     |                                                                                          |       |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------|
|  | ● PINZA FULCRATA PNEUMATICA SERIE PFP<br>PNEUMATIC PIVOTED GRIPPER TYPE PFP              | A1.50 |
|  | ● PINZE A DUE GRIFFE FULCRATE 180° SERIE P9<br>GRIPPER 180° WITH 2 HINGED JAWS SERIES P9 | A1.52 |
|  | ● PINZA PNEUMATICA PARALLELA SERIE PP<br>PNEUMATIC PARALLEL GRIPPER TYPE PP              | A1.54 |
|  | ● PINZA A DUE GRIFFE PARALLELE SERIE P1<br>GRIPPER WITH TWO PARALLEL JAWS SERIES P1      | A1.55 |
|  | ● PINZA A DUE GRIFFE PARALLELE SERIE P2<br>GRIPPER WITH TWO PARALLEL JAWS SERIES P2      | A1.57 |





- **PINZA A DUE GRIFFE PARALLELE SERIE P3**  
**GRIPPER WITH TWO PARALLEL JAWS SERIES P3**

A1.59



- **PINZA A DUE GRIFFE PARALLELE A CORSA LUNGA SERIE P4**  
**GRIPPER WITH TWO PARALLEL LONG-STROKE JAWS, SERIES P4**

A1.65



- **PINZA A TRE GRIFFE PARALLELE SERIE P12**  
**GRIPPER WITH THREE PARALLEL JAWS, SERIES P12**

A1.68

## **ATTUATORI ROTANTI / ROTARY ACTUATORS**



- **ATTUATORE ROTANTE SERIE R2**  
**ROTARY ACTUATOR SERIES R2**

A1.73



- **ATTUATORE ROTANTE SERIE R3**  
**ROTARY ACTUATOR SERIES R3**

A1.76



- **ATTUATORE ROTANTE SERIE R3 CON DECELERATORI ESTERNI**  
**ROTARY ACTUATOR SERIES R3 WITH EXTERNAL SHOCK ABSORBERS**

A1.81

- **DIMENSIONAMENTO ATTUATORI ROTANTI**  
**ROTARY ACTUATORS SIZING**

A1.87+

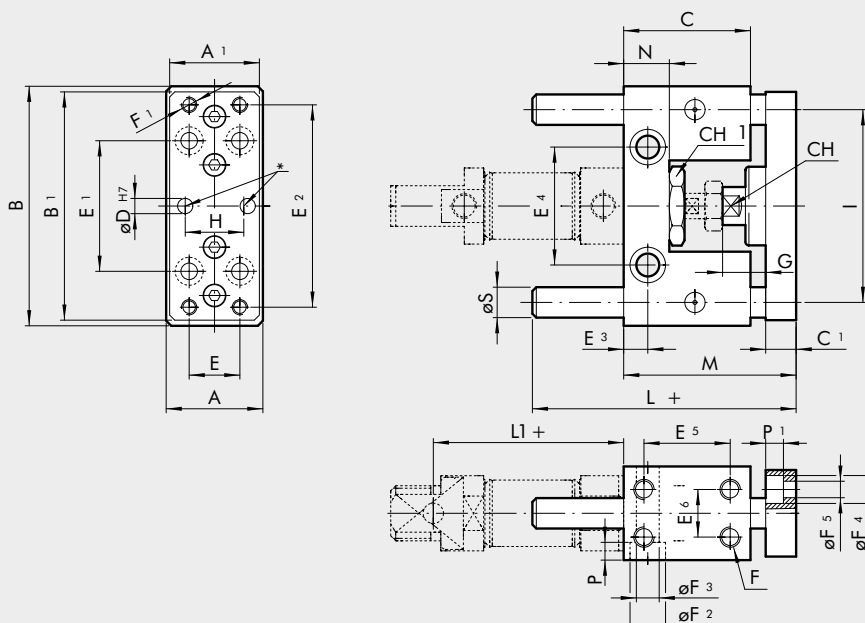
# UNITÀ DI GUIDA SERIE AMCL BA/BB LINEAR CONTROL UNITS TYPE AMCL BA/BB

PER CILINDRI DIN/ISO 6432 Ø 12÷16  
FOR CYLINDERS SERIES DIN/ISO 6432 Ø 12-16



## DIMENSIONI / DIMENSIONS

+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
\* = FORI PER SPINE DI CENTRATURA / CENTERING PINHOLES



| Ø  | A  | A <sub>1</sub> | B  | B <sub>1</sub> | C  | C <sub>1</sub> | Ch | Ch <sub>1</sub> | D | E  | E <sub>1</sub> | E <sub>2</sub> | E <sub>3</sub> | E <sub>4</sub> | E <sub>5</sub> | E <sub>6</sub> | F  | F <sub>1</sub> | F <sub>2</sub> | F <sub>3</sub> | F <sub>4</sub> | F <sub>5</sub> | G  | H  | I  | L  | L <sub>1</sub> | M  | N  | P   | P <sub>1</sub> | S  |
|----|----|----------------|----|----------------|----|----------------|----|-----------------|---|----|----------------|----------------|----------------|----------------|----------------|----------------|----|----------------|----------------|----------------|----------------|----------------|----|----|----|----|----------------|----|----|-----|----------------|----|
| 12 | 30 | 27             | 65 | 63             | 38 | 10             | 8  | 19              | 4 | 15 | 32             | 54             | 6.5            | 24             | 25             | 22             | M4 | M4             | 8.5            | 5.1            | 7.5            | 4.5            | 15 | 15 | 46 | 70 | 53             | 54 | 13 | 5.5 | 4.5            | 10 |
| 16 | 30 | 27             | 65 | 63             | 38 | 10             | 8  | 19              | 4 | 15 | 32             | 54             | 6.5            | 24             | 25             | 22             | M4 | M4             | 8.5            | 5.1            | 7.5            | 4.5            | 15 | 15 | 46 | 70 | 60             | 54 | 13 | 5.5 | 4.5            | 10 |

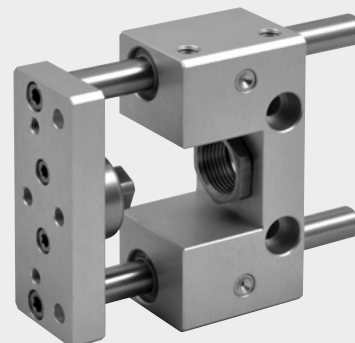
## CHIAVI DI CODIFICA / KEY TO CODE

| Cod. | AMCL<br>TIPOLOGIA<br>TYPE | 012<br>DIAMETRO<br>BORE | 100<br>CORSA<br>STROKE | BA<br>VERSIONE<br>VERSION |
|------|---------------------------|-------------------------|------------------------|---------------------------|
|      |                           | 012 Ø 12                | Corsa in mm            | BA Bronzine               |
|      |                           | 016 Ø 16                | Stroke in mm           | BB Sfere                  |
|      |                           |                         |                        | Bronze bushing            |
|      |                           |                         |                        | Ball bushing              |

# UNITÀ DI GUIDA SERIE AMC BA/BB LINEAR CONTROL UNITS TYPE AMC BA/BB

SOCIETÀ DEL GRUPPO  
**METALWORK**  
PNEUMATIC

PER CILINDRI DIN/ISO 6432 Ø 20÷25  
FOR CYLINDERS SERIES DIN/ISO 6432 Ø 20-25

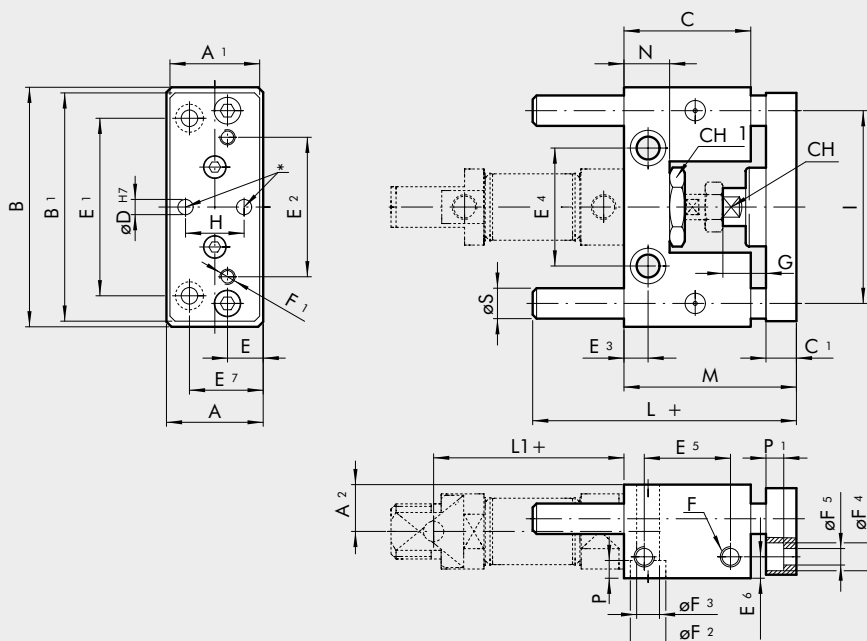


ATTUATORI / ACTUATORS

UNITÀ DI GUIDA SERIE AMC BA/BB  
LINEAR CONTROL UNITS TYPE AMC BA/BB

## DIMENSIONI / DIMENSIONS

+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
\* = FORI PER SPINE DI CENTRATURA / CENTERING PINHOLES



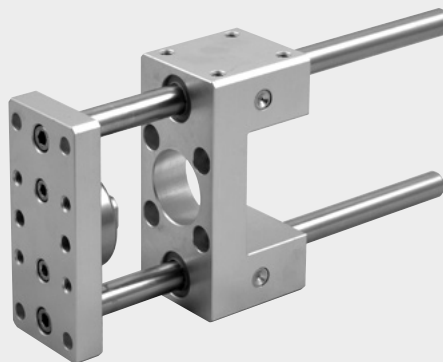
| Ø  | A  | A <sub>1</sub> | A <sub>2</sub> | B   | B <sub>1</sub> | C  | C <sub>1</sub> | Ch | Ch <sub>1</sub> | D | E  | E <sub>1</sub> | E <sub>2</sub> | E <sub>3</sub> | E <sub>4</sub> | E <sub>5</sub> | E <sub>6</sub> | E <sub>7</sub> | F  | F <sub>1</sub> | F <sub>2</sub> | F <sub>3</sub> | F <sub>4</sub> | F <sub>5</sub> | G  | H  | I  | L  | L <sub>1</sub> | M  | N  | P | P <sub>1</sub> | S  |
|----|----|----------------|----------------|-----|----------------|----|----------------|----|-----------------|---|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----------------|----------------|----------------|----------------|----------------|----|----|----|----|----------------|----|----|---|----------------|----|
| 20 | 40 | 38             | 24             | 100 | 90             | 48 | 12             | 13 | 27              | 6 | 15 | 70             | 55             | 8.5            | 46.5           | 32             | 10             | 30             | M8 | M6             | 14             | 9              | 11             | 6.5            | 22 | 20 | 76 | 77 | 71             | 65 | 17 | 9 | 6.5            | 12 |
| 25 | 40 | 38             | 24             | 100 | 90             | 48 | 12             | 13 | 27              | 6 | 15 | 70             | 55             | 8.5            | 46.5           | 32             | 10             | 30             | M8 | M6             | 14             | 9              | 11             | 6.5            | 22 | 20 | 76 | 77 | 76             | 71 | 17 | 9 | 6.5            | 12 |

## CHIAVI DI CODIFICA / KEY TO CODE

| Cod. | AMC<br>TIPOLOGIA<br>TYPE | 012<br>DIAMETRO<br>BORE | 100<br>CORSA<br>STROKE      | BA<br>VERSIONE<br>VERSION     |
|------|--------------------------|-------------------------|-----------------------------|-------------------------------|
|      |                          | 020 Ø 20                | Corsa in mm<br>Stroke in mm | BA Bronzine<br>Bronze bushing |
|      |                          | 025 Ø 25                |                             | BB Sfere<br>Ball bushing      |

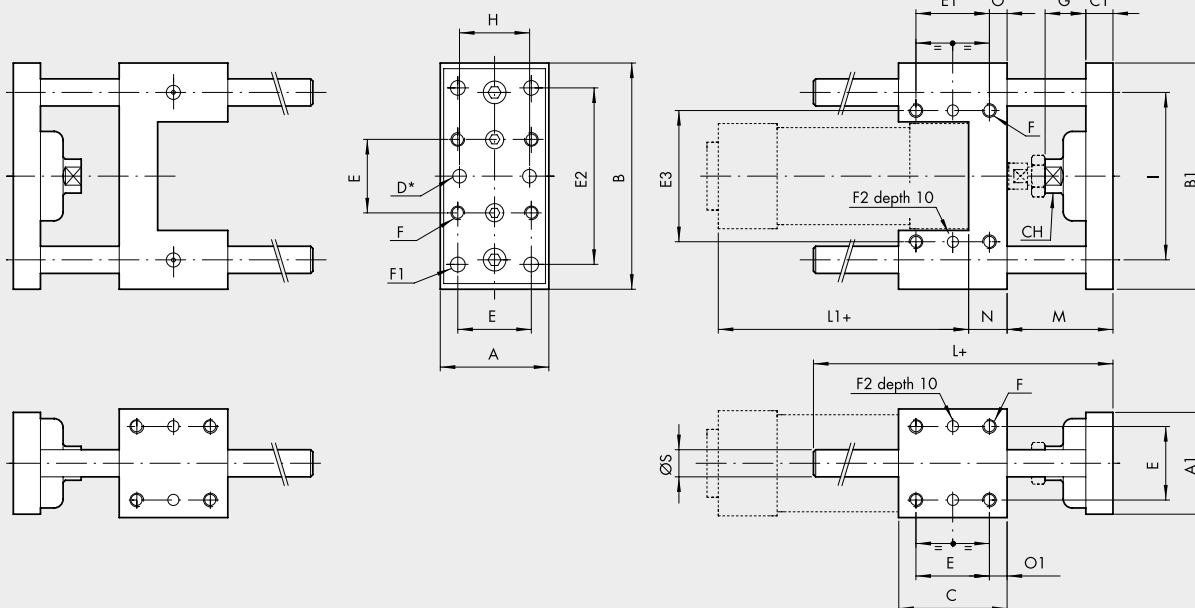
# UNITÀ DI GUIDA SERIE AMC BA/BB LINEAR CONTROL UNITS TYPE AMC BA/BB

PER CILINDRI DIN/ISO 15552 Ø 32÷100  
FOR CYLINDERS SERIES DIN/ISO 15552 Ø 32-100



## DIMENSIONI / DIMENSIONS

+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
\* = FORI PER SPINE DI CENTRATURA / CENTERING PINHOLES



| Ø   | A   | A <sub>1</sub> | B   | B <sub>1</sub> | C   | C <sub>1</sub> | D <sup>H7</sup> | E    | E <sub>1</sub> | E <sub>2</sub> | E <sub>3</sub> | F   | F <sub>1</sub> | F <sub>2</sub> <sup>H7</sup> | G  | H  | I   | L   | L <sub>1</sub> | M  | N  | O   | O <sub>1</sub> | ØS | Ch |
|-----|-----|----------------|-----|----------------|-----|----------------|-----------------|------|----------------|----------------|----------------|-----|----------------|------------------------------|----|----|-----|-----|----------------|----|----|-----|----------------|----|----|
| 32  | 48  | 45             | 100 | 95             | 48  | 12             | 6               | 32.5 | 32.5           | 78             | 58             | M6  | 6.5            | 6                            | 18 | 31 | 74  | 108 | 94             | 46 | 17 | 7.8 | 7.8            | 12 | 15 |
| 40  | 56  | 53             | 106 | 101            | 58  | 15             | 6               | 38   | 38             | 84             | 64             | M6  | 6.5            | 6                            | 21 | 36 | 80  | 120 | 105            | 52 | 21 | 10  | 10             | 12 | 15 |
| 50  | 66  | 63             | 125 | 120            | 59  | 15             | 6               | 46.5 | 46.5           | 100            | 80             | M8  | 8.5            | 6                            | 24 | 45 | 96  | 130 | 106            | 65 | 25 | 6.3 | 6.3            | 16 | 22 |
| 63  | 76  | 73             | 132 | 127            | 76  | 15             | 6               | 56.5 | 56.5           | 105            | 95             | M8  | 8.5            | 6                            | 24 | 45 | 104 | 145 | 121            | 65 | 25 | 9.8 | 9.8            | 16 | 22 |
| 80  | 98  | 95             | 165 | 160            | 90  | 16             | 6               | 72   | 50             | 130            | 130            | M10 | 11             | 6                            | 31 | 56 | 130 | 170 | 128            | 71 | 34 | 20  | 9              | 20 | 27 |
| 100 | 118 | 115            | 185 | 180            | 110 | 16             | 6               | 89   | 70             | 150            | 150            | M10 | 11             | 6                            | 31 | 56 | 152 | 190 | 138            | 71 | 39 | 20  | 10.5           | 20 | 27 |

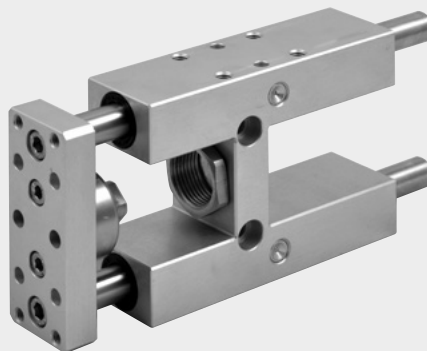
## CHIAVI DI CODIFICA / KEY TO CODE

| Cod. | AMC<br>TIPOLOGIA<br>TYPE | 032<br>DIAMETRO<br>BORE | 100<br>CORSO<br>STROKE      | BA<br>VERSIONE<br>VERSION     |
|------|--------------------------|-------------------------|-----------------------------|-------------------------------|
|      |                          | 032 Ø 32                | Corsa in mm<br>Stroke in mm | BA Bronzine<br>Bronze bushing |
|      |                          | 040 Ø 40                |                             | BB Sfere<br>Ball bushing      |
|      |                          | 050 Ø 50                |                             |                               |
|      |                          | 063 Ø 63                |                             |                               |
|      |                          | 080 Ø 80                |                             |                               |
|      |                          | 100 Ø 100               |                             |                               |

# UNITÀ DI GUIDA SERIE AMHL BA/BB

## LINEAR CONTROL UNITS TYPE AMHL BA/BB

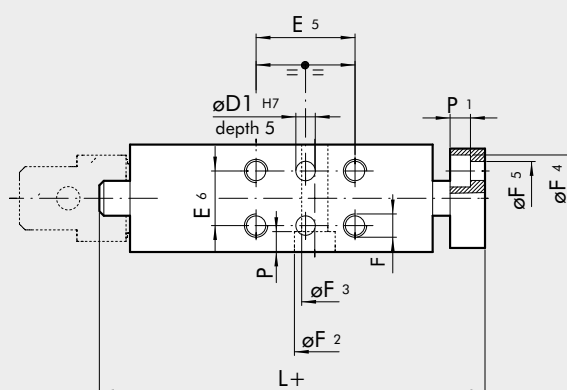
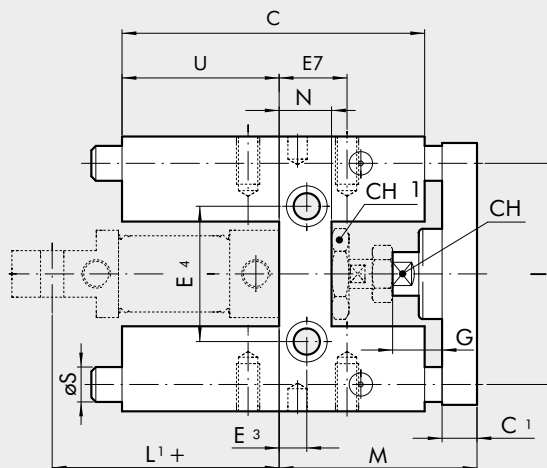
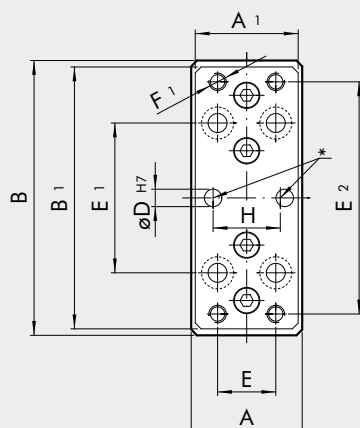
PER CILINDRI DIN/ISO 6432 Ø 12÷16  
FOR CYLINDERS SERIES DIN/ISO 6432 Ø 12-16



ATTUATORI / ACTUATORS

### DIMENSIONI / DIMENSIONS

+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
\* = FORI PER SPINE DI CENTRATURA / CENTERING PINHOLES



| Ø  | A  | A <sub>1</sub> | B  | B <sub>1</sub> | C  | C <sub>1</sub> | Ch | Ch <sub>1</sub> | D | D <sub>1</sub> | E  | E <sub>1</sub> | E <sub>2</sub> | E <sub>3</sub> | E <sub>4</sub> | E <sub>5</sub> | E <sub>6</sub> | E <sub>7</sub> | F  | F <sub>1</sub> | F <sub>2</sub> | F <sub>3</sub> | F <sub>4</sub> | F <sub>5</sub> | G  | H  | I  | L   | L <sub>1</sub> | M  | N  | P   | S  | U  |
|----|----|----------------|----|----------------|----|----------------|----|-----------------|---|----------------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----------------|----------------|----------------|----------------|----------------|----|----|----|-----|----------------|----|----|-----|----|----|
| 12 | 30 | 27             | 65 | 63             | 75 | 10             | 8  | 19              | 4 | 5              | 15 | 32             | 54             | 6.5            | 24             | 32.5           | 22             | 11             | M4 | M4             | 8.5            | 5.1            | 7.5            | 4.5            | 15 | 15 | 46 | 130 | 53             | 54 | 15 | 5.5 | 10 | 37 |
| 16 | 30 | 27             | 65 | 63             | 75 | 10             | 8  | 19              | 4 | 5              | 15 | 32             | 54             | 6.5            | 24             | 32.5           | 22             | 11             | M4 | M4             | 8.5            | 5.1            | 7.5            | 4.5            | 15 | 15 | 46 | 130 | 60             | 54 | 15 | 5.5 | 10 | 37 |

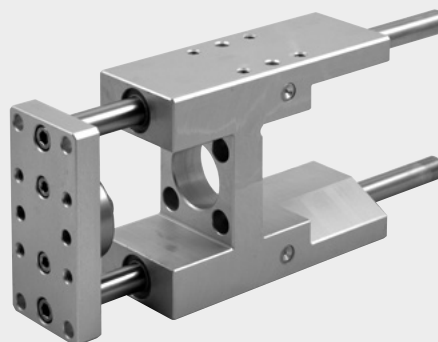
### CHIAVI DI CODIFICA / KEY TO CODE

| Cod. | AMHL<br>TIPOLOGIA<br>TYPE | 012<br>DIAMETRO<br>BORE | 100<br>CORSO<br>STROKE      | BA<br>VERSIONE<br>VERSION     |
|------|---------------------------|-------------------------|-----------------------------|-------------------------------|
|      |                           | 012 Ø 12                | Corsa in mm<br>Stroke in mm | BA Bronzine<br>Bronze bushing |
|      |                           | 016 Ø 16                |                             | BB Sfere<br>Ball bushing      |

UNITÀ DI GUIDA SERIE AMHL BA/BB  
LINEAR CONTROL UNITS TYPE AMHL BA/BB



PER CILINDRI DIN/ISO 15552 Ø 32÷100  
 FOR CYLINDERS SERIES DIN/ISO 15552 Ø 32-100

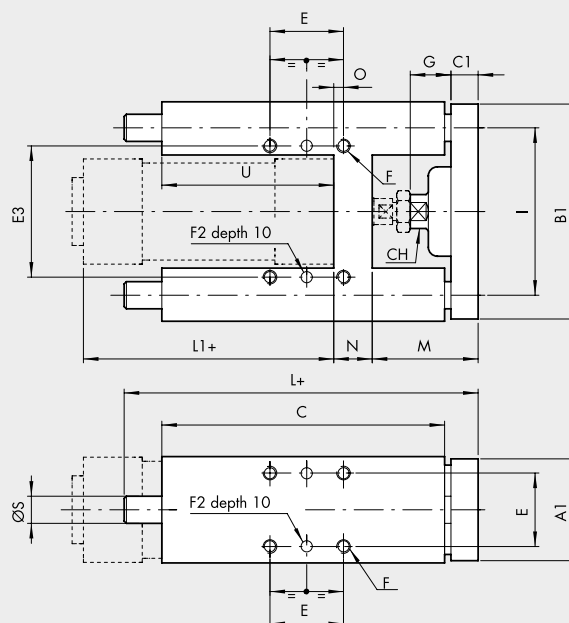
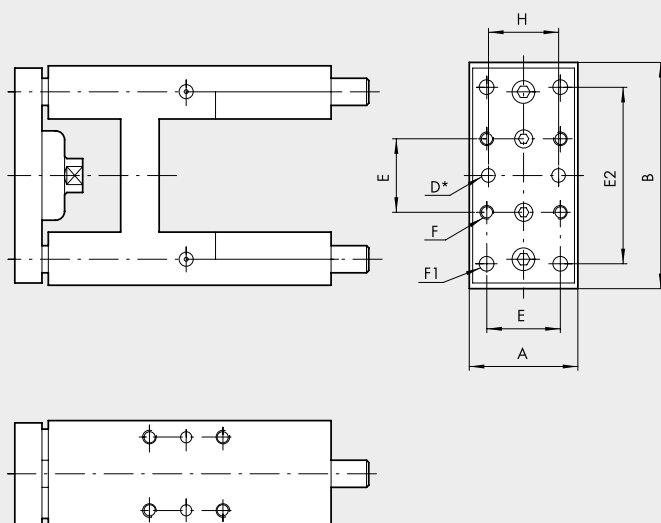


ATTUATORI / ACTUATORS

UNITÀ DI GUIDA SERIE AMH BA/BB  
 LINEAR CONTROL UNITS TYPE AMH BA/BB

## DIMENSIONI / DIMENSIONS

+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
 \* = FORI PER SPINE DI CENTRATURA / CENTERING PINHOLES



| Ø   | A   | A <sub>1</sub> | B   | B <sub>1</sub> | C   | C <sub>1</sub> | Ch | D <sup>H7</sup> | E    | E <sub>2</sub> | E <sub>3</sub> | F   | F <sub>1</sub> | F <sub>2</sub> <sup>H7</sup> | G  | H  | I   | L   | L <sub>1</sub> | M  | N  | O    | ØS | U   |
|-----|-----|----------------|-----|----------------|-----|----------------|----|-----------------|------|----------------|----------------|-----|----------------|------------------------------|----|----|-----|-----|----------------|----|----|------|----|-----|
| 32  | 49  | 45             | 97  | 90             | 125 | 12             | 13 | 6               | 32.5 | 78             | 61             | M6  | 6.5            | 6                            | 18 | 31 | 74  | 177 | 97             | 47 | 17 | 4.3  | 12 | 76  |
| 40  | 58  | 54             | 115 | 110            | 139 | 15             | 15 | 6               | 38   | 84             | 69             | M6  | 6.5            | 6                            | 21 | 36 | 87  | 192 | 105            | 53 | 21 | 11   | 16 | 81  |
| 50  | 69  | 63             | 137 | 130            | 148 | 15             | 22 | 6               | 46.5 | 100            | 85             | M8  | 8.5            | 6                            | 24 | 45 | 104 | 205 | 106            | 63 | 26 | 18.5 | 20 | 78  |
| 63  | 85  | 79             | 152 | 145            | 182 | 15             | 22 | 6               | 56.5 | 105            | 100            | M8  | 8.5            | 6                            | 24 | 45 | 119 | 237 | 121            | 62 | 26 | 15.3 | 20 | 111 |
| 80  | 105 | 99             | 189 | 180            | 215 | 20             | 27 | 6               | 72   | 130            | 130            | M10 | 11             | 6                            | 31 | 56 | 148 | 280 | 128            | 76 | 34 | 21   | 25 | 128 |
| 100 | 129 | 120            | 213 | 200            | 220 | 20             | 27 | 6               | 89   | 150            | 150            | M10 | 11             | 6                            | 31 | 56 | 172 | 280 | 138            | 76 | 39 | 24.5 | 25 | 128 |

## CHIAVI DI CODIFICA / KEY TO CODE

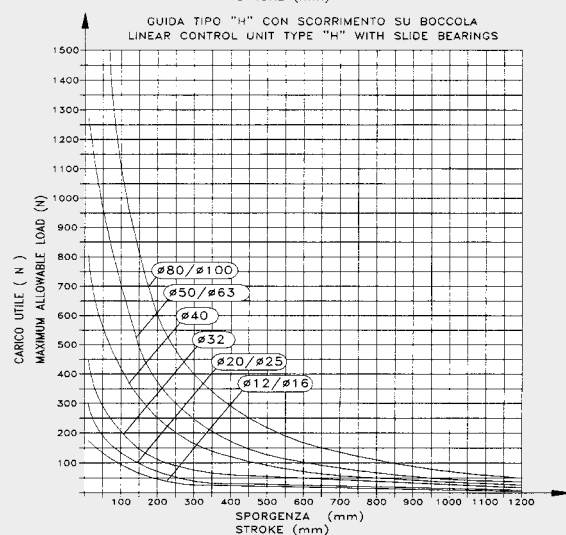
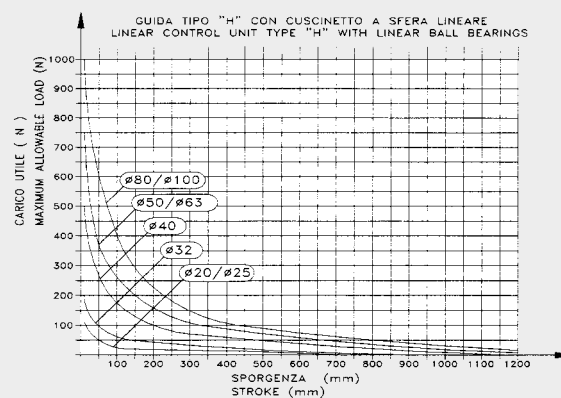
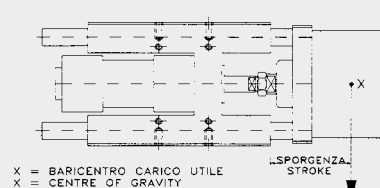
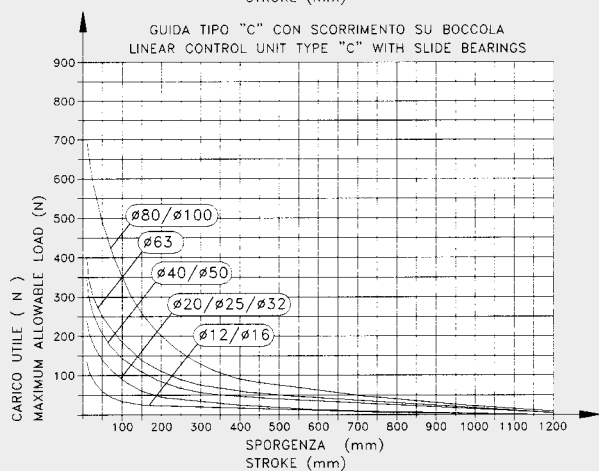
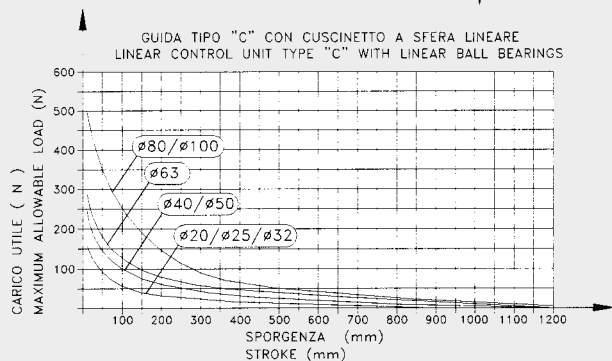
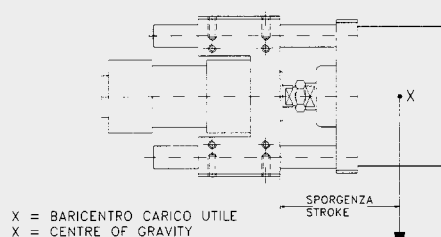
| Cod. | AMH<br>TIPOLOGIA<br>TYPE | 032<br>DIAMETRO<br>BORE | 100 *<br>CORSO<br>STROKE | BA<br>VERSIONE<br>VERSION |
|------|--------------------------|-------------------------|--------------------------|---------------------------|
|      |                          | 032 Ø 32                | Corsa in mm              | BA Bronzine               |
|      |                          | 040 Ø 40                | Stroke in mm             | BB Bronze bushing         |
|      |                          | 050 Ø 50                |                          | BB Sfere                  |
|      |                          | 063 Ø 63                |                          | BB Ball bushing           |
|      |                          | 080 Ø 80                |                          |                           |
|      |                          | 100 Ø 100               |                          |                           |

\* Inserire la corsa a 3 cifre (esempio 50 = 050)  
 Enter the stroke in 3 digits (e.g. 50 = 050)



**DIAGRAMMA MAX. CARICO UTILE IN FUNZIONE DELLA SPORGENZA / GRAPH MAXIMUM ALLOWABLE LOAD RELATED TO THE STROKE**

CON ASSE LONGITUDINALE DELL'UNITÀ DI GUIDA ORIZZONTALE  
WITH THE LONGITUDINAL AXES OF THE UNIT HORIZONTAL PLACED



# PIASTRA POSTERIORE DI COLLEGAMENTO STELI GUIDA REAR FLANGE COUPLING GUIDE

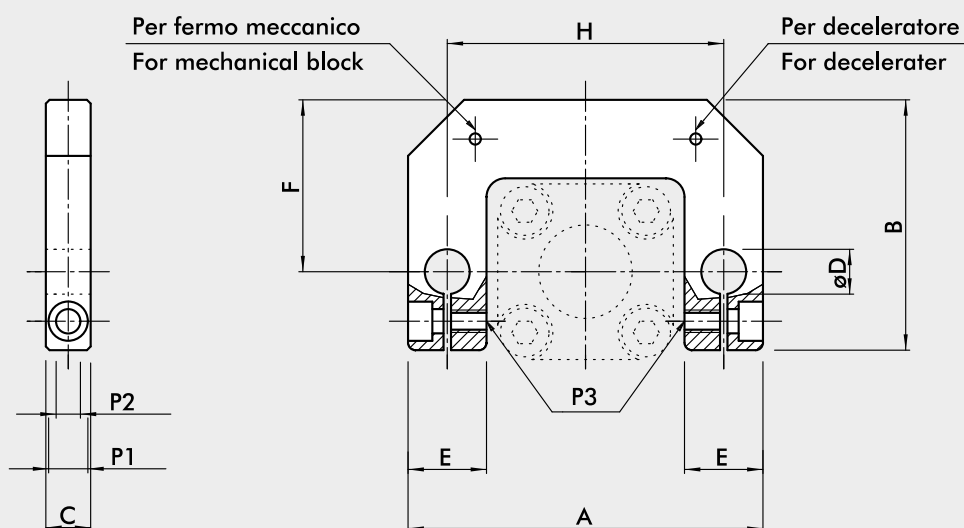
SERIE PPH Ø32÷100 PER AMH Ø32÷100  
PPH Ø32-100 FOR AMH Ø 32-100



## DIMENSIONI / DIMENSIONS

MATERIALE: Alluminio anodizzato / BUILDING MATERIAL: Anodized aluminium  
Nr. 2 viti di bloccaggio comprese / No. 2 fixing screws included

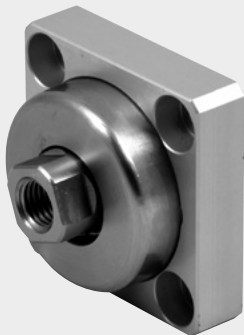
A RICHIESTA FORATURE SPECIALI PER FERMO  
MECCANICO E DECELERATORE IDRAULICO  
SPECIAL HOLES FOR MECHANICAL STOP AND  
SHOCK ABSORBER ON REQUEST



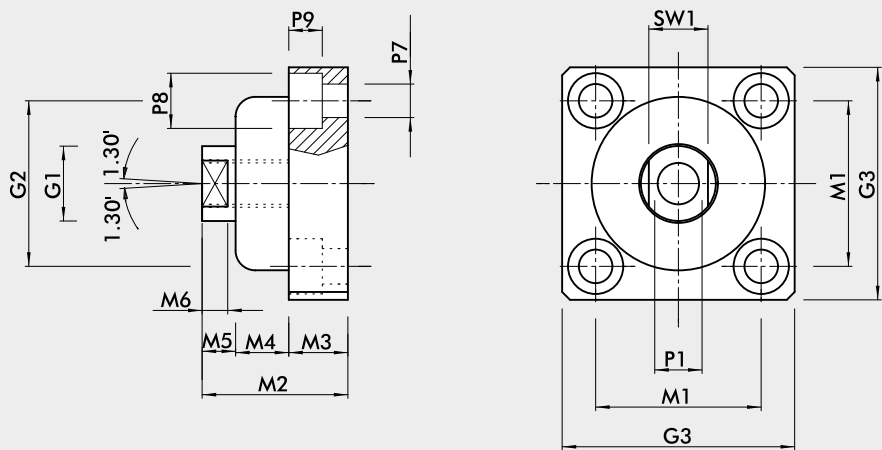
| Ø   | A   | B   | C  | D  | E  | F   | H   | P <sub>1</sub> | P <sub>2</sub> | P <sub>3</sub> |
|-----|-----|-----|----|----|----|-----|-----|----------------|----------------|----------------|
| 32  | 95  | 68  | 12 | 12 | 21 | 46  | 74  | 10.5           | 6.5            | M6             |
| 40  | 113 | 78  | 15 | 16 | 26 | 56  | 87  | 10.5           | 6.5            | M6             |
| 50  | 135 | 98  | 17 | 20 | 30 | 66  | 104 | 10.5           | 6.5            | M6             |
| 63  | 149 | 118 | 17 | 20 | 31 | 78  | 119 | 13.5           | 8.5            | M8             |
| 80  | 187 | 142 | 20 | 25 | 39 | 99  | 148 | 13.5           | 8.5            | M8             |
| 100 | 211 | 163 | 20 | 25 | 39 | 114 | 172 | 13.5           | 8.5            | M8             |

## CHIAVI DI CODIFICA / KEY TO CODE

| Cod. | PPH       | 032      |
|------|-----------|----------|
|      | TIPOLOGIA | DIAMETRO |
|      | TYPE      | BORE     |
|      | 032       | Ø 32     |
|      | 040       | Ø 40     |
|      | 050       | Ø 50     |
|      | 063       | Ø 63     |
|      | 080       | Ø 80     |
|      | 100       | Ø 100    |



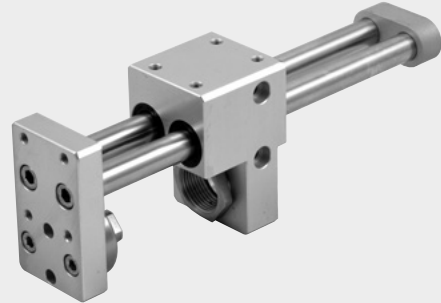
**DIMENSIONI / DIMENSIONS**



| Cod.   | Ø      | G <sub>1</sub> | G <sub>2</sub> | G <sub>3</sub> | M <sub>1</sub> | M <sub>2</sub> | M <sub>3</sub> | M <sub>4</sub> | M <sub>5</sub> | M <sub>6</sub> | P <sub>1</sub> | P <sub>7</sub> | P <sub>8</sub> | P <sub>9</sub> | SW <sub>1</sub> |
|--------|--------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| AMG025 | 25     | 15             | 31.5           | 39             | 29             | 31             | 12             | 10             | 9              | 6.5            | M10x1.25       | 5.5            | 9              | 6              | 13              |
| AMG032 | 32     | 17             | 39.5           | 49             | 36             | 30             | 12             | 10             | 8              | 6.5            | M10x1.25       | 6.5            | 11             | 6.5            | 15              |
| AMG040 | 40     | 19             | 44             | 59             | 42             | 36             | 15             | 13.5           | 7              | 6.5            | M12x1.25       | 8.5            | 14             | 8.5            | 15              |
| AMG050 | 50-63  | 26             | 59             | 79             | 58             | 44             | 20             | 15             | 9              | 7              | M16x1.5        | 10.5           | 17             | 10.5           | 22              |
| AMG080 | 80-100 | 31             | 69             | 89             | 65             | 51             | 20             | 20             | 11             | 8              | M20x1.5        | 12.5           | 19             | 12.5           | 27              |

# UNITÀ DI GUIDA SERIE AMLL BA/BB LINEAR CONTROL UNITS TYPE AMLL BA/BB

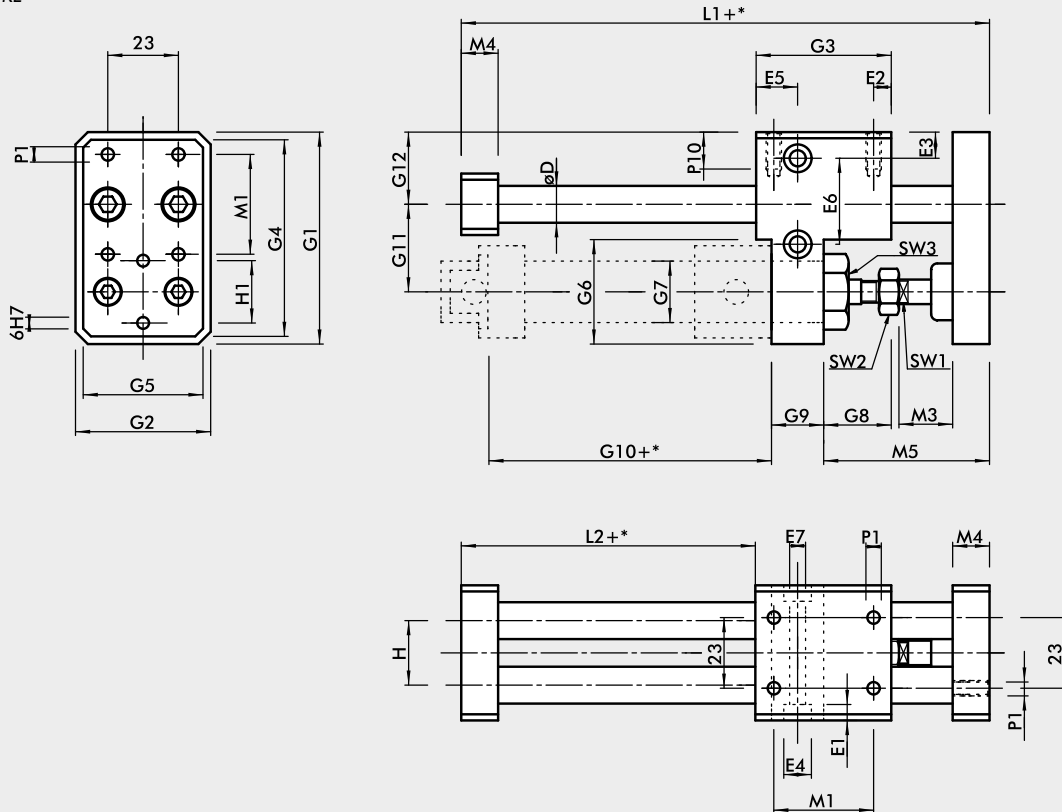
PER CILINDRI DIN/ISO 6432 Ø 16÷25  
FOR CYLINDERS SERIES DIN/ISO 6432 Ø 16-25



ATTUATORI / ACTUATORS

## DIMENSIONI / DIMENSIONS

+ = CORSA / STROKE



| Ø  | D  | Ø E <sub>1</sub> | E <sub>2</sub> | E <sub>3</sub> | Ø E <sub>4</sub> | E <sub>5</sub> | E <sub>6</sub> | Ø E <sub>7</sub> | G <sub>1</sub> | G <sub>2</sub> | G <sub>3</sub> | G <sub>4</sub> | G <sub>5</sub> | G <sub>6</sub> | Ø G <sub>7</sub> | G <sub>8</sub> | G <sub>9</sub> | G <sub>10</sub> | G <sub>11</sub> | G <sub>12</sub> | H  | H <sub>1</sub> | L <sub>1</sub> | L <sub>2</sub> | M <sub>1</sub> | M <sub>3</sub> | M <sub>4</sub> | M <sub>5</sub> | Ø P <sub>1</sub> | P <sub>10</sub> | SW <sub>1</sub> | SW <sub>2</sub> | SW <sub>3</sub> |
|----|----|------------------|----------------|----------------|------------------|----------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|----------------|----------------|-----------------|-----------------|-----------------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|-----------------|-----------------|-----------------|-----------------|
| 12 | 10 | 5.2              | 5.75           | 8.5            | 9                | 13.5           | 28             | 5.2              | 69             | 39             | 44             | 64             | 34             | 34             | 16               | 22             | 17             | 60              | 27              | 25              | 19 | 15             | 97             | 25             | 32.5           | 19             | 12             | 48             | M5               | 12              | 13              | 10              | 27              |
| 20 | 12 | 5.2              | 5.75           | 8.5            | 9                | 13.5           | 28             | 5.2              | 69             | 44             | 44             | 64             | 39             | 34             | 20               | 22             | 17             | 71              | 28.5            | 23.5            | 21 | 15             | 97             | 25             | 32.5           | 19             | 12             | 49             | M5               | 12              | 13              | 13              | 27              |
| 25 | 12 | 5.2              | 5.75           | 8.5            | 9                | 13.5           | 28             | 5.2              | 69             | 44             | 44             | 64             | 39             | 34             | 25               | 22             | 17             | 76              | 28.5            | 23.5            | 21 | 20             | 97             | 25             | 32.5           | 19             | 12             | 54             | M5               | 12              | 13              | 13              | 27              |

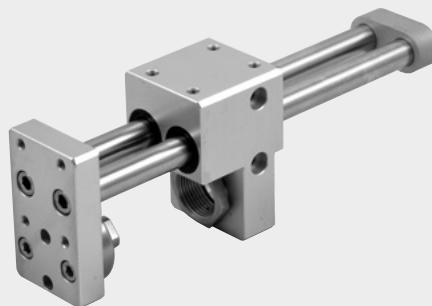
## CHIAVI DI CODIFICA / KEY TO CODE

| Cod. | AMLL<br>TIPOLOGIA<br>TYPE | 012<br>DIAMETRO<br>BORE | 100 *<br>CORSA<br>STROKE    | BA<br>VERSIONE<br>VERSION     |
|------|---------------------------|-------------------------|-----------------------------|-------------------------------|
|      |                           | 012 Ø 12                | Corsa in mm<br>Stroke in mm | BA Bronzine<br>Bronze bushing |
|      |                           | 016 Ø 16                |                             | BB Sfere<br>Ball bushing      |
|      |                           | 025 Ø 25                |                             |                               |

\* Inserire la corsa a 3 cifre (esempio 50 = 050)  
Enter the stroke in 3 digits (e.g. 50 = 050)

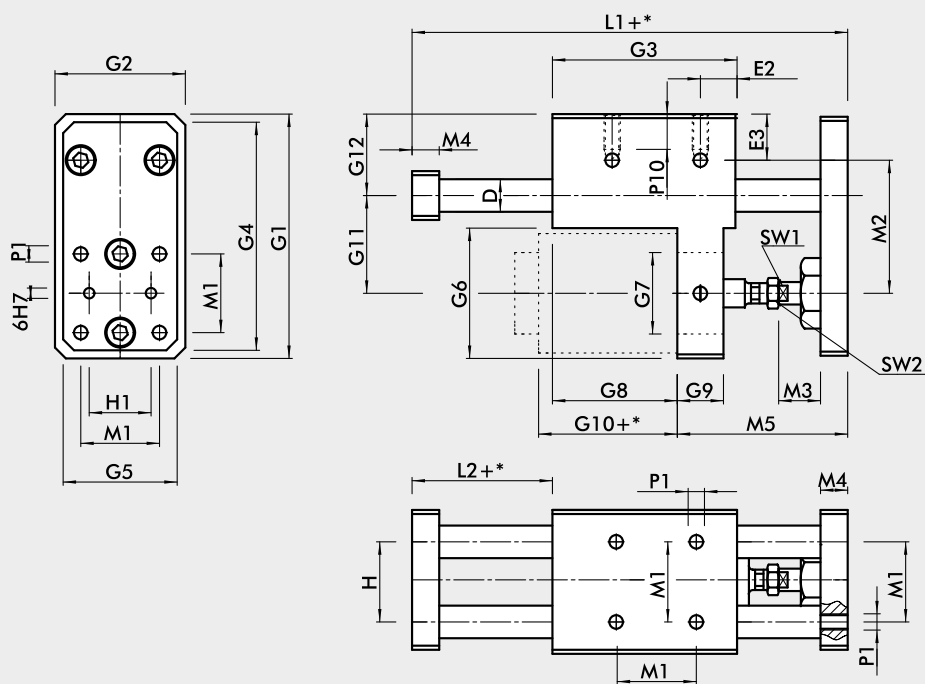
UNITÀ DI GUIDA SERIE AMLL BA/BB  
LINEAR CONTROL UNITS TYPE AMLL BA/BB

PER CILINDRI DIN/ISO 15552 Ø 32÷63  
FOR CYLINDERS SERIES DIN/ISO 15552 Ø 32-63



### DIMENSIONI / DIMENSIONS

+ = CORSA / STROKE



| Ø  | D  | G <sub>1</sub> | G <sub>2</sub> | G <sub>3</sub> | G <sub>4</sub> | G <sub>5</sub> | G <sub>6</sub> | Ø G <sub>7</sub> | G <sub>8</sub> | G <sub>9</sub> | G <sub>10</sub> | G <sub>11</sub> | G <sub>12</sub> | H  | H <sub>1</sub> | L <sub>1</sub> | L <sub>2</sub> | E <sub>2</sub> | E <sub>3</sub> | M <sub>1</sub> | M <sub>2</sub> | M <sub>3</sub> | M <sub>4</sub> | M <sub>5</sub> | Ø P <sub>1</sub> | P <sub>10</sub> | SW <sub>1</sub> | SW <sub>2</sub> |
|----|----|----------------|----------------|----------------|----------------|----------------|----------------|------------------|----------------|----------------|-----------------|-----------------|-----------------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|-----------------|-----------------|-----------------|
| 32 | 12 | 95             | 48             | 68             | 90             | 44             | 48             | 30               | 46             | 17             | 94              | 37              | 34              | 25 | 31             | 143            | 30             | 13.5           | 21             | 32.5           | 50             | 18             | 12             | 67             | M6               | 15              | 13              | 17              |
| 40 | 16 | 109            | 58             | 74             | 104            | 54             | 58             | 35               | 48             | 21             | 105             | 43              | 37              | 30 | 36             | 157            | 30             | 15.5           | 21             | 38             | 69             | 21             | 15             | 79             | M6               | 18              | 15              | 19              |
| 50 | 20 | 125            | 68             | 74             | 120            | 64             | 68             | 40               | 43             | 26             | 106             | 50              | 41              | 36 | 45             | 172            | 35             | 18             | 22             | 46.5           | 69             | 24             | 15             | 94             | M8               | 18              | 22              | 24              |
| 63 | 20 | 136            | 79             | 74             | 131            | 75             | 79             | 45               | 43             | 26             | 121             | 56              | 41              | 47 | 45             | 188            | 40             | 18             | 22             | 56.5           | 85             | 24             | 15             | 94             | M8               | 18              | 22              | 24              |

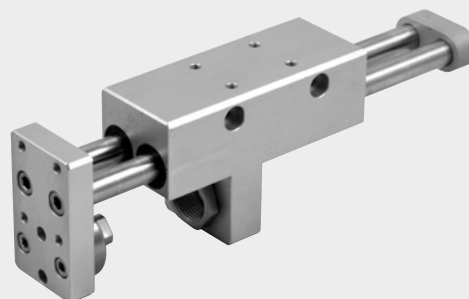
### CHIAVI DI CODIFICA / KEY TO CODE

| Cod. | AMLL<br>TIPOLOGIA<br>TYPE | 032<br>DIAMETRO<br>BORE | 100 *<br>CORSA<br>STROKE    | BA<br>VERSIONE<br>VERSION     |
|------|---------------------------|-------------------------|-----------------------------|-------------------------------|
|      |                           | 032 Ø 32                | Corsa in mm<br>Stroke in mm | BA Bronzine<br>Bronze bushing |
|      |                           | 040 Ø 40                |                             | BB Sfere<br>Ball bushing      |
|      |                           | 050 Ø 50                |                             |                               |
|      |                           | 063 Ø 63                |                             |                               |

\* Inserire la corsa a 3 cifre (esempio 50 = 050)  
Enter the stroke in 3 digits (e.g. 50 = 050)

# UNITÀ DI GUIDA SERIE AMLX BA/BB LINEAR CONTROL UNITS TYPE AMLX BA/BB

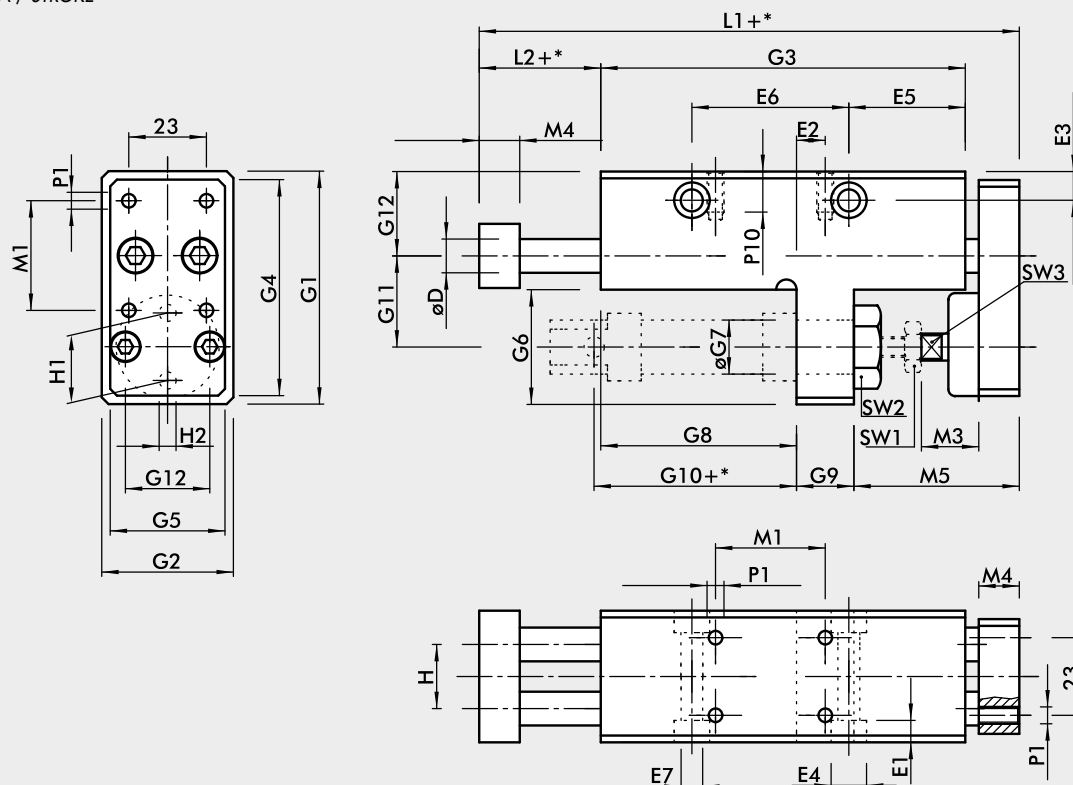
PER CILINDRI DIN/ISO 6432 Ø 16÷25  
FOR CYLINDERS SERIES DIN/ISO 6432 Ø 16-25



ATTUATORI / ACTUATORS

## DIMENSIONI / DIMENSIONS

+ = CORSA / STROKE



| Ø  | D  | G <sub>1</sub> | G <sub>2</sub> | G <sub>3</sub> | G <sub>4</sub> | G <sub>5</sub> | G <sub>6</sub> | Ø G <sub>7</sub> | G <sub>8</sub> | G <sub>9</sub> | G <sub>10</sub> | G <sub>11</sub> | G <sub>12</sub> | H  | H <sub>1</sub> | H <sub>2</sub> | L <sub>1</sub> | E <sub>1</sub> | E <sub>2</sub> | E <sub>3</sub> | E <sub>4</sub> | E <sub>5</sub> | E <sub>6</sub> | E <sub>7</sub> | M <sub>1</sub> | M <sub>3</sub> | M <sub>4</sub> | M <sub>5</sub> | Ø P <sub>1</sub> | P <sub>10</sub> | SW <sub>1</sub> | SW <sub>2</sub> | SW <sub>3</sub> | L <sub>2</sub> |
|----|----|----------------|----------------|----------------|----------------|----------------|----------------|------------------|----------------|----------------|-----------------|-----------------|-----------------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|-----------------|-----------------|-----------------|-----------------|----------------|
| 16 | 10 | 69             | 39             | 108            | 64             | 34             | 34             | 16               | 58             | 17             | 60              | 27              | 25              | 19 | 20             | Ø6H7           | 160            | 6.5            | 8.5            | 8.5            | 10.5           | 34.5           | 46.5           | 6.5            | 32.5           | 19             | 12             | 49             | M5               | 12              | 13              | 10              | 27              | 36             |
| 20 | 12 | 69             | 44             | 108            | 64             | 39             | 34             | 20               | 58             | 17             | 71              | 28.5            | 23.5            | 21 | 20             | Ø6H7           | 160            | 6.5            | 8.5            | 8.5            | 10.5           | 34.5           | 46.5           | 6.5            | 32.5           | 19             | 12             | 49             | M5               | 12              | 13              | 13              | 27              | 36             |
| 25 | 12 | 69             | 44             | 108            | 64             | 39             | 34             | 25               | 58             | 17             | 76              | 28.5            | 23.5            | 21 | 20             | Ø6H7           | 160            | 6.5            | 8.5            | 8.5            | 10.5           | 34.5           | 46.5           | 6.5            | 32.5           | 19             | 12             | 49             | M5               | 12              | 13              | 13              | 27              | 36             |

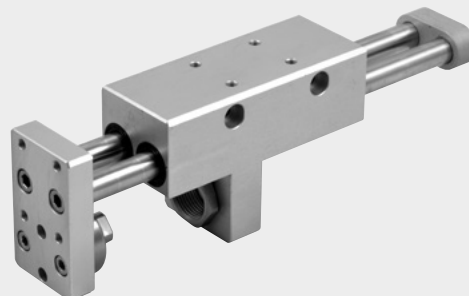
## CHIAVI DI CODIFICA / KEY TO CODE

| Cod. | AMLX<br>TIPOLOGIA<br>TYPE | 016<br>DIAMETRO<br>BORE | 100 *<br>CORSA<br>STROKE    | BA<br>VERSIONE<br>VERSION     |
|------|---------------------------|-------------------------|-----------------------------|-------------------------------|
|      |                           | 016 Ø 16                | Corsa in mm<br>Stroke in mm | BA Bronzine<br>Bronze bushing |
|      |                           | 020 Ø 20                |                             | BB Sfere<br>Ball bushing      |
|      |                           | 025 Ø 25                |                             |                               |

\* Inserire la corsa a 3 cifre (esempio 50 = 050)  
Enter the stroke in 3 digits (e.g. 50 = 050)

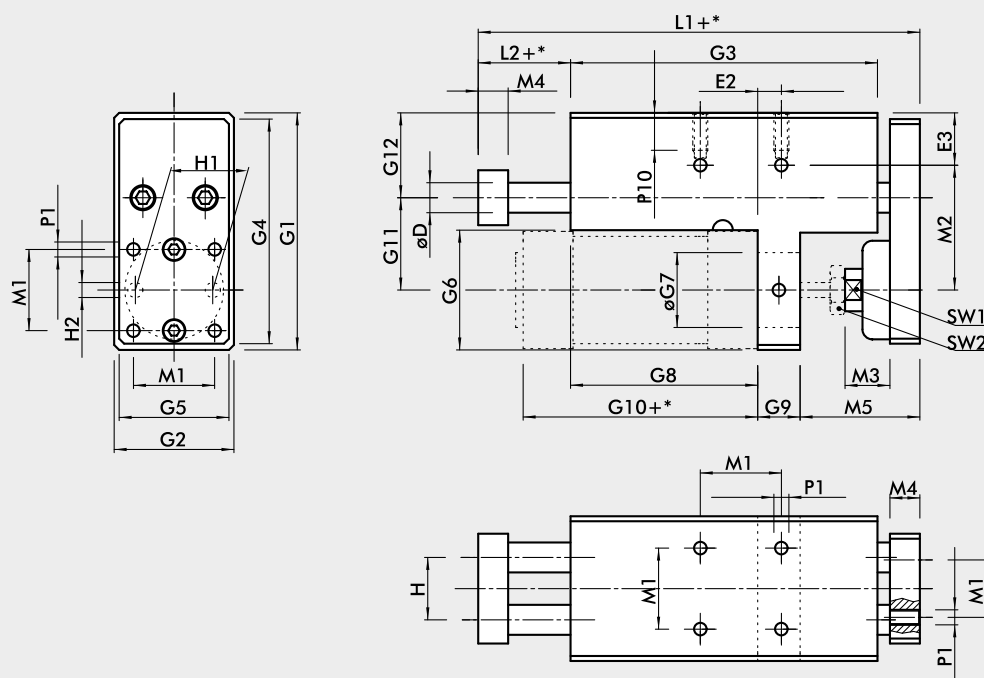
UNITÀ DI GUIDA SERIE AMLX BA/BB  
LINEAR CONTROL UNITS TYPE AMLX BA/BB

PER CILINDRI DIN/ISO 15552 Ø 32÷63  
FOR CYLINDERS SERIES DIN/ISO 15552 Ø 32-63



### DIMENSIONI / DIMENSIONS

+ = CORSA / STROKE



| Ø  | D  | G <sub>1</sub> | G <sub>2</sub> | G <sub>3</sub> | G <sub>4</sub> | G <sub>5</sub> | G <sub>6</sub> | Ø G <sub>7</sub> | G <sub>8</sub> | G <sub>9</sub> | G <sub>10</sub> | G <sub>11</sub> | G <sub>12</sub> | H  | H <sub>1</sub> | H <sub>2</sub> | L <sub>1</sub> | L <sub>2</sub> | E <sub>2</sub> | E <sub>3</sub> | M <sub>1</sub> | M <sub>2</sub> | M <sub>3</sub> | M <sub>4</sub> | M <sub>5</sub> | Ø P <sub>1</sub> | P <sub>10</sub> | SW <sub>1</sub> | SW <sub>2</sub> |
|----|----|----------------|----------------|----------------|----------------|----------------|----------------|------------------|----------------|----------------|-----------------|-----------------|-----------------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|-----------------|-----------------|-----------------|
| 32 | 12 | 95             | 48             | 123            | 90             | 44             | 48             | 30               | 75             | 17             | 94              | 37              | 34              | 25 | 31             | Ø6H7           | 177            | 37             | 9.5            | 21             | 32.5           | 50             | 18             | 12             | 48             | M6               | 15              | 15              | 17              |
| 40 | 16 | 109            | 58             | 138            | 104            | 54             | 58             | 35               | 80             | 21             | 105             | 43              | 37              | 30 | 36             | Ø6H7           | 192            | 37             | 10             | 21             | 38             | 69             | 21             | 15             | 54             | M6               | 18              | 15              | 19              |
| 50 | 20 | 125            | 68             | 148            | 120            | 64             | 68             | 40               | 77             | 26             | 106             | 50              | 41              | 36 | 45             | Ø6H7           | 202            | 37             | 19.2           | 22             | 46.5           | 69             | 24             | 15             | 62             | M8               | 18              | 22              | 24              |
| 63 | 20 | 136            | 79             | 180            | 131            | 75             | 79             | 45               | 110            | 26             | 121             | 56              | 41              | 47 | 45             | Ø6H7           | 236            | 37             | 14.3           | 22             | 56.5           | 85             | 24             | 15             | 63             | M8               | 18              | 22              | 24              |

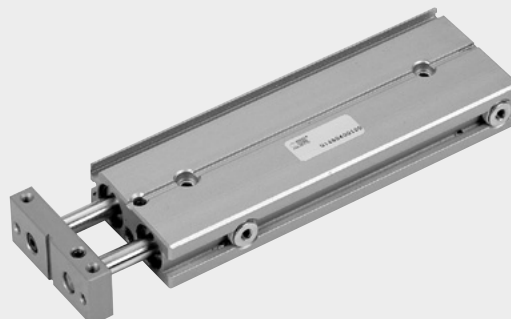
### CHIAVI DI CODIFICA / KEY TO CODE

| Cod. | AMLX<br>TIPOLOGIA<br>TYPE | 032<br>DIAMETRO<br>BORE | 100 *<br>CORSA<br>STROKE    | BA<br>VERSIONE<br>VERSION     |
|------|---------------------------|-------------------------|-----------------------------|-------------------------------|
|      |                           | 032 Ø 32                | Corsa in mm<br>Stroke in mm | BA Bronzine<br>Bronze bushing |
|      |                           | 040 Ø 40                |                             | BB Sfere<br>Ball bushing      |
|      |                           | 050 Ø 50                |                             |                               |
|      |                           | 063 Ø 63                |                             |                               |

\* Inserire la corsa a 3 cifre (esempio 50 = 050)  
Enter the stroke in 3 digits (e.g. 50 = 050)

# DOPPIO CILINDRO SERIE S10

## TWIN CYLINDER SERIES S10



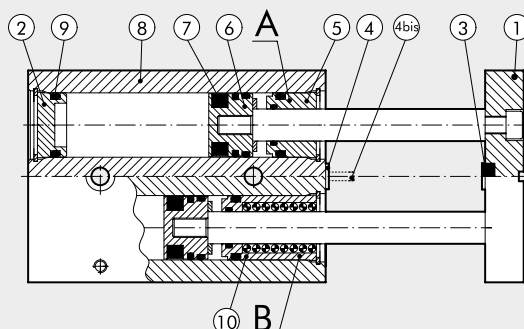
| DATI TECNICI / TECHNICAL DATA                                                                      |               | S10-12                                                                                                                                                                                | S10-16              | S10-20             | S10-25             | S10-30             |
|----------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|--------------------|--------------------|
| Pressione d'esercizio / Pressure range                                                             | bar           | 3 ÷ 7                                                                                                                                                                                 |                     |                    |                    |                    |
|                                                                                                    | MPa           | 0.3 ÷ 0.7                                                                                                                                                                             |                     |                    |                    |                    |
|                                                                                                    | psi           | 43.5 ÷ 101                                                                                                                                                                            |                     |                    |                    |                    |
| Temperatura d'esercizio / Temperature range                                                        | °C            | -10 ÷ +80                                                                                                                                                                             |                     |                    |                    |                    |
|                                                                                                    | Fluid / Fluid | Aria filtrata 20 µm essicata o lubrificata, se utilizzata la lubrificazione deve essere continua<br>Dried or lubricated 20 µm filtered air. Lubrication, if used, must be continuous. |                     |                    |                    |                    |
| Velocità max del pistone / Piston speed                                                            | mm/s          | 30 ÷ 100                                                                                                                                                                              |                     |                    |                    |                    |
| Versioni / Versions                                                                                |               | Con bussole a strisciamento / Con bussole a sfere / Con vite di fermo<br>System with sliding bushes / System with ball bushes available with stop screw                               |                     |                    |                    |                    |
| Taglie / Sizes                                                                                     |               | 12                                                                                                                                                                                    | 16                  | 20                 | 25                 | 30                 |
| Alesaggi / Bores                                                                                   | mm            | 2 x 12                                                                                                                                                                                | 2 x 16              | 2 x 20             | 2 x 25             | 2 x 30             |
| Diametro stelo / Piston rod diameter                                                               | mm            | 6                                                                                                                                                                                     | 8                   | 10                 | 12                 | 16                 |
| Corse / Strokes                                                                                    | mm            | 15                                                                                                                                                                                    | 15                  | 25                 | 25                 | 25                 |
|                                                                                                    | mm            | 25                                                                                                                                                                                    | 25                  | 50                 | 50                 | 50                 |
|                                                                                                    | mm            | 50                                                                                                                                                                                    | 50                  | 75                 | 75                 | 75                 |
|                                                                                                    | mm            | —                                                                                                                                                                                     | 75                  | 100                | 100                | 100                |
| Peso (C = corsa in mm) / Weight (C = stroke mm)                                                    |               | —                                                                                                                                                                                     | —                   | —                  | 125                | 125                |
| • Versione a bronzine / Bushes version                                                             | kg            | 0.12 + (0.002 x C)                                                                                                                                                                    | 0.24 + (0.0025 x C) | 0.51 + (0.005 x C) | 0.76 + (0.006 x C) | 1.3 + (0.009 x C)  |
| • Versione a sfere / Ball bearing version                                                          | kg            | 0.21 + (0.002 x C)                                                                                                                                                                    | 0.48 + (0.0025 x C) | 0.77 + (0.005 x C) | 0.18 + (0.006 x C) | 1.92 + (0.009 x C) |
| Spinta teorica (P = pressione relativa in bar) / Theoretical thrust (P = relative pressure in bar) |               | (il valore indicato è da moltiplicarsi per la pressione in bar)<br>(Multiply the value shown by the pressure in bar)                                                                  |                     |                    |                    |                    |
| • Forza di spinta / Thrust force                                                                   | da N          | 2.26 x P                                                                                                                                                                              | 4 x P               | 6.28 x P           | 9.8 x P            | 14.1 x P           |
| • Forza di tiro / Pull force                                                                       | da N          | 1.69 x P                                                                                                                                                                              | 3 x P               | 4.11 x P           | 7.5 x P            | 10.1 x P           |
| Carichi ammessi / Max. loads                                                                       |               | (i valori indicati si riferiscono alla corsa min e max)<br>(The values shown refer to the min. and max. strokes)                                                                      |                     |                    |                    |                    |
| • Versione a bronzine / Bushes version                                                             | N             | 6 ÷ 4                                                                                                                                                                                 | 11 ÷ 6              | 20 ÷ 7             | 26 ÷ 8             | 36 ÷ 11            |
| • Versione a sfere / Ball bearing version                                                          | N             | 3 ÷ 1.5                                                                                                                                                                               | 6 ÷ 3               | 10 ÷ 3.5           | 12 ÷ 5.6           | 20 ÷ 7             |

### COMPONENTI / COMPONENTS

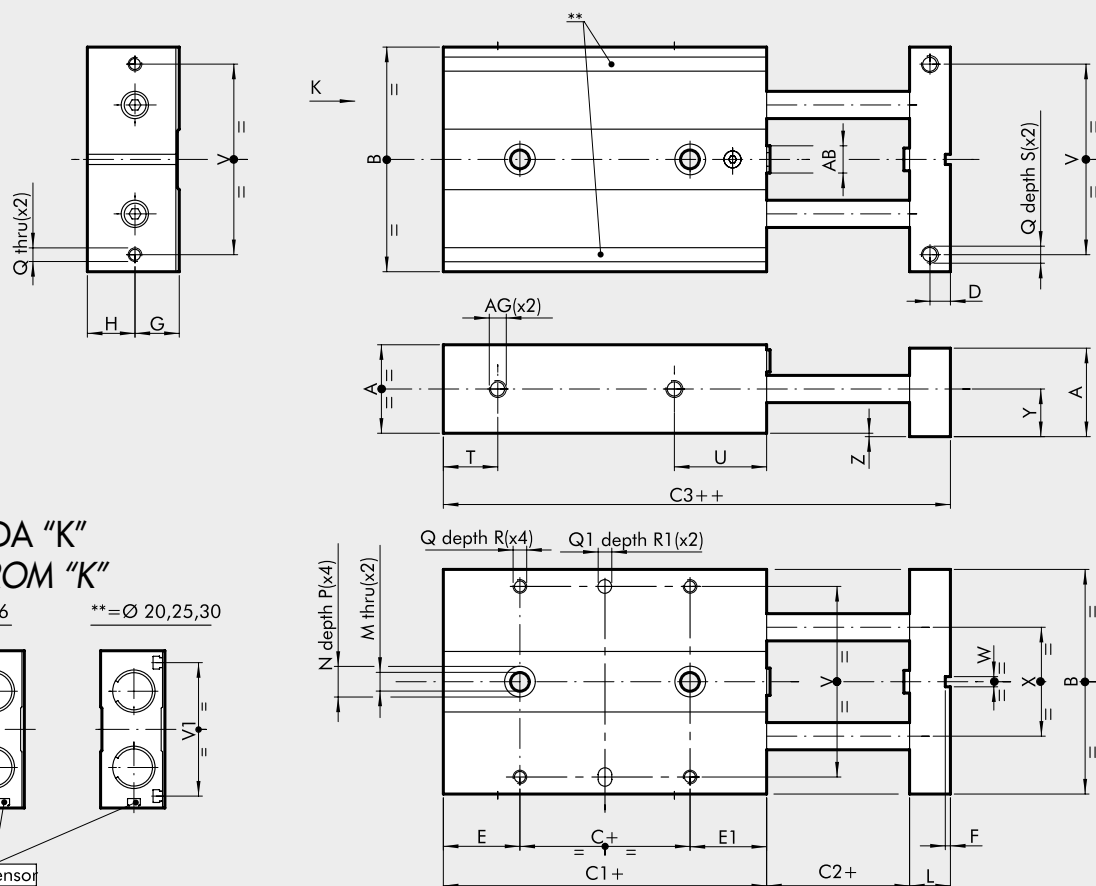
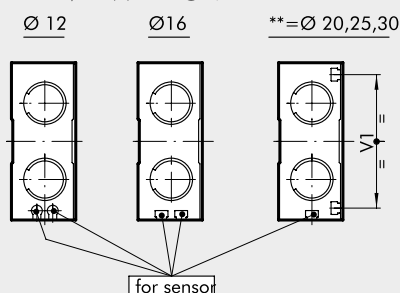
- ① FLANGIA: alluminio anodizzato / FLANGE: anodized aluminium
- ② FONDELLO POSTERIORE: alluminio anodizzato / REAR BASE: anodized aluminium
- ③ PARACOLPO: gomma / BUFFER: rubber
- ④ BATTUTA REGOLABILE: acciaio zincato / ADJUSTABLE STRIKER PLATE: Zinc-plated steel
- ④bis DECELERATORE IDRAULICO (a richiesta) / HYDRAULIC DECELERATOR (on request)
- ⑤ FONDELLO ANTERIORE: ottone / FRONT BASE: brass
- ⑥ PISTONE: ottone / PISTON: brass
- ⑦ MAGNETE: plastroferrite / MAGNET: Plastroferrite
- ⑧ CORPO CILINDRO: alluminio anodizzato / CYLINDER BODY: anodized aluminium
- ⑨ OR STATICI: NBR / STATIC O-RING: NBR
- ⑩ BUSSOLA A RICICOLO DI SFERE / BALL RE-CIRCULATION BUSH

#### VERSIONE / VERSIONS:

- Ⓐ Con bussole a scorrimento / With sliding bushes  
 Ⓑ Con bussole a sfere / With ball bushes





**DIMENSIONI CILINDRO DOPPIO SERIE S10 A BRONZINE Ø 12 ÷ 30 mm**  
**DIMENSIONS OF TWIN CYLINDER SERIES S10, ON BUSHES Ø 12 to 30 mm**

**VISTA DA "K"**  
**VIEW FROM "K"**


+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
 ++ = AGGIUNGERE 2 VOLTE LA CORSA / ADD TWICE THE STROKE

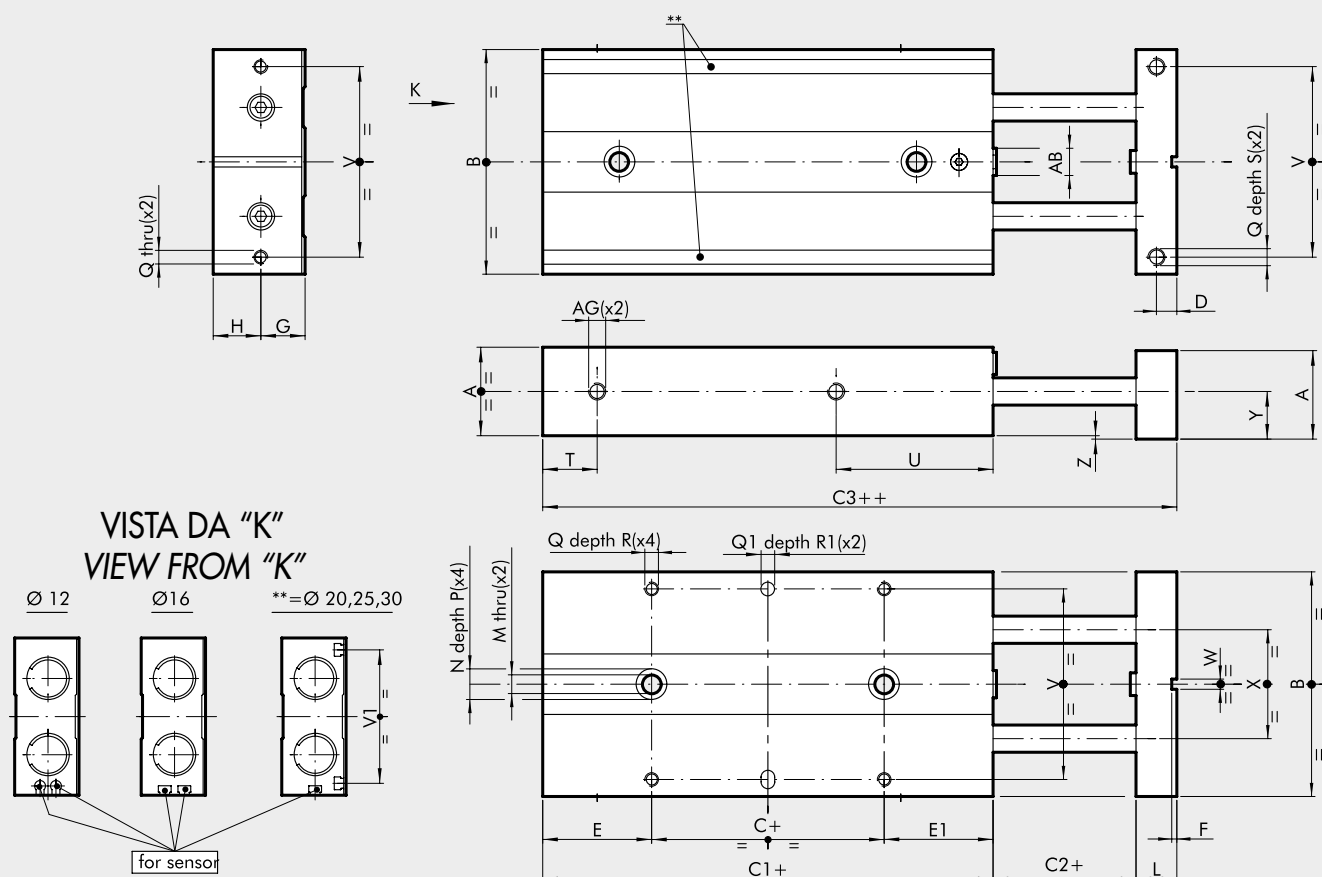
| Cod.        | Ø  | A  | B  | C  | C1 | C2 | C3  | D | E    | E1   | F   | G  | H  | L  | M   | N    | P | Q  | Q1 <sup>H7</sup> | R | R1 | S  | T  |
|-------------|----|----|----|----|----|----|-----|---|------|------|-----|----|----|----|-----|------|---|----|------------------|---|----|----|----|
| W1440122... | 12 | 18 | 46 | 10 | 50 | 2  | 60  | 4 | 20   | 20   | 1.5 | 9  | 10 | 8  | 4.3 | 8    | 4 | M3 | 4                | 5 | 3  | 8  | 9  |
| W1440162... | 16 | 22 | 56 | 16 | 62 | 2  | 74  | 5 | 26   | 20   | 1.5 | 11 | 12 | 10 | 4.3 | 8    | 4 | M4 | 4                | 6 | 3  | 8  | 10 |
| W1440202... | 20 | 26 | 66 | 10 | 68 | 2  | 82  | 6 | 29   | 29   | 1.5 | 13 | 14 | 12 | 5.5 | 9    | 5 | M4 | 4                | 7 | 3  | 10 | 11 |
| W1440252... | 25 | 32 | 78 | 10 | 74 | 2  | 90  | 7 | 32.5 | 31.5 | 2.5 | 16 | 17 | 14 | 6.5 | 10.5 | 6 | M5 | 4                | 7 | 3  | 12 | 11 |
| W1440302... | 30 | 36 | 98 | 10 | 87 | 2  | 105 | 8 | 37.5 | 39.5 | 2.5 | 18 | 19 | 16 | 8.5 | 14   | 8 | M6 | 6                | 8 | 5  | 12 | 13 |

| Ø  | U  | V  | V1 | W | X  | Y  | Z | AB  | AG     |
|----|----|----|----|---|----|----|---|-----|--------|
| 12 | 28 | 38 | -  | 3 | 20 | 10 | 1 | M5  | M5     |
| 16 | 33 | 46 | -  | 3 | 26 | 12 | 1 | M6  | M5     |
| 20 | 40 | 56 | 54 | 3 | 30 | 14 | 1 | M8  | M5     |
| 25 | 42 | 66 | 64 | 5 | 39 | 17 | 1 | M10 | M5     |
| 30 | 51 | 86 | 82 | 5 | 52 | 19 | 1 | M12 | G 1/8" |

... Inserire la corsa in mm (esempio: Ø 12 corsa 50 = W1440122050) / ...Enter the stroke in mm (e.g. Ø 12 stroke 50 = W1440122050)

Corse alesaggio 12 mm / Strokes for bore 12 mm 15; 25; 50;  
 Corse alesaggio 16 mm / Strokes for bore 16 mm 15; 25; 50; 75;  
 Corse alesaggio 20 mm / Strokes for bore 20 mm 25; 50; 75; 100;  
 Corse alesaggio 25 mm / Strokes for bore 25 mm 25; 50; 75; 100; 125;  
 Corse alesaggio 30 mm / Strokes for bore 30 mm 25; 50; 75; 100; 125;

**DIMENSIONI CILINDRO DOPPIO SERIE S10 A RICIRCOLO DI SFERE Ø 12 ÷ 30 mm**  
**DIMENSIONS OF TWIN CYLINDER SERIES S10, ON BALL BEARINGS Ø 12 to 30 mm**



+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
 ++ = AGGIUNGERE 2 VOLTE LA CORSA / ADD TWICE THE STROKE

| Cod.        | Ø  | A  | B  | C  | C1  | C2 | C3  | D | E    | E1   | F   | G  | H  | L  | M   | N    | P | Q  | Q1 <sup>H7</sup> | R | R1 | S  | T  |
|-------------|----|----|----|----|-----|----|-----|---|------|------|-----|----|----|----|-----|------|---|----|------------------|---|----|----|----|
| W1440123... | 12 | 18 | 46 | 10 | 69  | 2  | 79  | 4 | 29.5 | 29.5 | 1.5 | 9  | 10 | 8  | 4.3 | 8    | 4 | M3 | 4                | 5 | 3  | 8  | 9  |
| W1440163... | 16 | 22 | 56 | 10 | 90  | 2  | 98  | 5 | 42   | 38   | 1.5 | 11 | 12 | 10 | 4.3 | 8    | 4 | M4 | 4                | 6 | 3  | 8  | 10 |
| W1440203... | 20 | 26 | 66 | 10 | 100 | 2  | 111 | 6 | 46.5 | 43.5 | 1.5 | 13 | 14 | 12 | 5.5 | 9    | 5 | M4 | 4                | 7 | 3  | 10 | 11 |
| W1440253... | 25 | 32 | 78 | 10 | 108 | 2  | 120 | 7 | 51.5 | 46.5 | 2.5 | 16 | 17 | 14 | 6.5 | 10.5 | 6 | M5 | 4                | 7 | 3  | 12 | 11 |
| W1440303... | 30 | 36 | 98 | 10 | 124 | 2  | 142 | 8 | 56   | 58   | 2.5 | 18 | 19 | 16 | 8.5 | 14   | 8 | M6 | 6                | 8 | 5  | 12 | 13 |

| Ø  | U  | V  | V1 | W | X  | Y  | Z | AB  | AG     |
|----|----|----|----|---|----|----|---|-----|--------|
| 12 | 47 | 38 | -  | 3 | 20 | 10 | 1 | M5  | M5     |
| 16 | 57 | 46 | -  | 3 | 26 | 12 | 1 | M6  | M5     |
| 20 | 69 | 56 | 54 | 3 | 30 | 14 | 1 | M8  | M5     |
| 25 | 72 | 66 | 64 | 5 | 39 | 17 | 1 | M10 | M5     |
| 30 | 88 | 86 | 82 | 5 | 52 | 19 | 1 | M12 | G 1/8" |

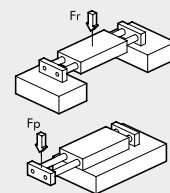
... Inserire la corsa in mm (esempio: Ø 12 corsa 50 = W1440123050) / ...Enter the stroke in mm (e.g. Ø 12 stroke 50 = W1440123050)

Corse alesaggio 12 mm / Strokes for bore 12 mm 15; 25; 50;  
 Corse alesaggio 16 mm / Strokes for bore 16 mm 15; 25; 50; 75;  
 Corse alesaggio 20 mm / Strokes for bore 20 mm 25; 50; 75; 100;  
 Corse alesaggio 25 mm / Strokes for bore 25 mm 25; 50; 75; 100; 125;  
 Corse alesaggio 30 mm / Strokes for bore 30 mm 25; 50; 75; 100; 125;

# SLITTA A DOPPIO CILINDRO A CORPO FISSO SERIE S11 TWIN CYLINDER SLIDE WITH FIXED BODY SERIES S11



| DATI TECNICI / TECHNICAL DATA                                                                       |      | S11-12                                                                                                                                                                                                  | S11-16                     | S11-20                     | S11-25                       | S11-30                      |
|-----------------------------------------------------------------------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------|------------------------------|-----------------------------|
| Fluido / Fluid                                                                                      |      | Aria filtrata 20 µm / 20 µm filtered air                                                                                                                                                                |                            |                            |                              |                             |
| Pressione di esercizio / Pressure range                                                             | bar  | 1.5 ÷ 7                                                                                                                                                                                                 |                            |                            |                              |                             |
|                                                                                                     | MPa  | 0.15 ÷ 0.7                                                                                                                                                                                              |                            |                            |                              |                             |
|                                                                                                     | psi  | 43.5 ÷ 101                                                                                                                                                                                              |                            |                            |                              |                             |
| Temperatura di esercizio / Temperature range                                                        | °C   | -10 ÷ +80                                                                                                                                                                                               |                            |                            |                              |                             |
| Velocità del pistone / Piston speed                                                                 | mm/s | 30 ÷ 200                                                                                                                                                                                                |                            |                            |                              |                             |
| Versioni / Versions                                                                                 |      | Con bussola a strisciamento / Con bussola a sfere / Con vite di fermo / Con deceleratori idraulici<br>With sliding bushes / With ball bearing bushes / With stop screw / With hydraulic shock absorbers |                            |                            |                              |                             |
| Alesaggi / Bores                                                                                    | mm   | 12                                                                                                                                                                                                      | 16                         | 20                         | 25                           | 30                          |
| Diametro steli / Piston rod diameter                                                                | mm   | 6                                                                                                                                                                                                       | 8                          | 10                         | 12                           | 16                          |
| Corse / Strokes                                                                                     | mm   | 25                                                                                                                                                                                                      | 25                         | 25                         | 25                           | 25                          |
|                                                                                                     |      | 50                                                                                                                                                                                                      | 50                         | 50                         | 50                           | 50                          |
|                                                                                                     |      | 75                                                                                                                                                                                                      | 75                         | 75                         | 75                           | 75                          |
|                                                                                                     |      | —                                                                                                                                                                                                       | 100                        | 100                        | 100                          | 100                         |
|                                                                                                     |      | —                                                                                                                                                                                                       | —                          | 125                        | 125                          | 125                         |
| Peso = X + (Y · C) dove C = corsa / Weight = X + (Y · C) where C = stroke kg                        |      | —                                                                                                                                                                                                       | —                          | —                          | 150                          | 150                         |
|                                                                                                     |      |                                                                                                                                                                                                         |                            |                            |                              |                             |
| • Versione a bronzine / Bushes version                                                              |      | X = 0.14                                                                                                                                                                                                | X = 0.25                   | X = 0.5                    | X = 0.7                      | X = 1.24                    |
|                                                                                                     |      | Y = 0.002                                                                                                                                                                                               | Y = 0.0035                 | Y = 0.045                  | Y = 0.007                    | Y = 0.01                    |
|                                                                                                     |      | X = 0.25                                                                                                                                                                                                | X = 0.37                   | X = 0.78                   | X = 1.04                     | X = 1.98                    |
| • Versione a sfere / Ball bearing version                                                           |      | Y = 0.002                                                                                                                                                                                               | Y = 0.0035                 | Y = 0.045                  | Y = 0.007                    | Y = 0.01                    |
|                                                                                                     |      | X = 0.25                                                                                                                                                                                                | X = 0.37                   | X = 0.78                   | X = 1.04                     | X = 1.98                    |
|                                                                                                     |      | Y = 0.002                                                                                                                                                                                               | Y = 0.0035                 | Y = 0.045                  | Y = 0.007                    | Y = 0.01                    |
| Spinta teorica (P = pressione relativa in bar)<br>Theoretical thrust (P = relative pressure in bar) | N    | 16.9 x P                                                                                                                                                                                                | 30 x P                     | 47 x P                     | 75 x P                       | 101 x P                     |
| Carichi ammessi / Max. loads                                                                        |      | (i valori indicati si riferiscono alla corsa min. e max.)<br>(The values shown refer to the min. and max. strokes)                                                                                      |                            |                            |                              |                             |
| • Versione a bronzine / Bushes version                                                              | N    | Fr: 13 ÷ 5<br>Fp: 6 ÷ 3                                                                                                                                                                                 | Fr: 35 ÷ 6.5<br>Fp: 11 ÷ 3 | Fr: 58 ÷ 7<br>Fp: 18 ÷ 5   | Fr: 80 ÷ 8<br>Fp: 23 ÷ 6     | Fr: 130 ÷ 18<br>Fp: 50 ÷ 8  |
|                                                                                                     | N    | Fr: 7 ÷ 3<br>Fp: 4 ÷ 1.5                                                                                                                                                                                | Fr: 20 ÷ 4<br>Fp: 4 ÷ 1.5  | Fr: 35 ÷ 4.5<br>Fp: 12 ÷ 3 | Fr: 50 ÷ 5.4<br>Fp: 15 ÷ 3.5 | Fr: 80 ÷ 12<br>Fp: 20 ÷ 4.5 |
|                                                                                                     | N    |                                                                                                                                                                                                         |                            |                            |                              |                             |

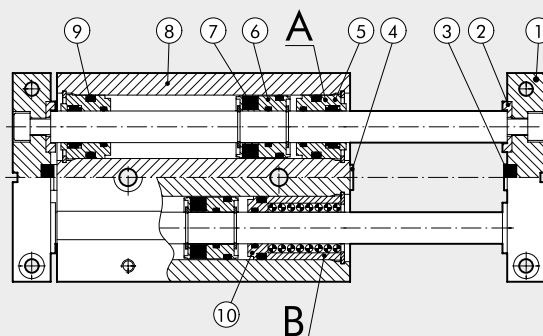


## COMPONENTI / COMPONENTS

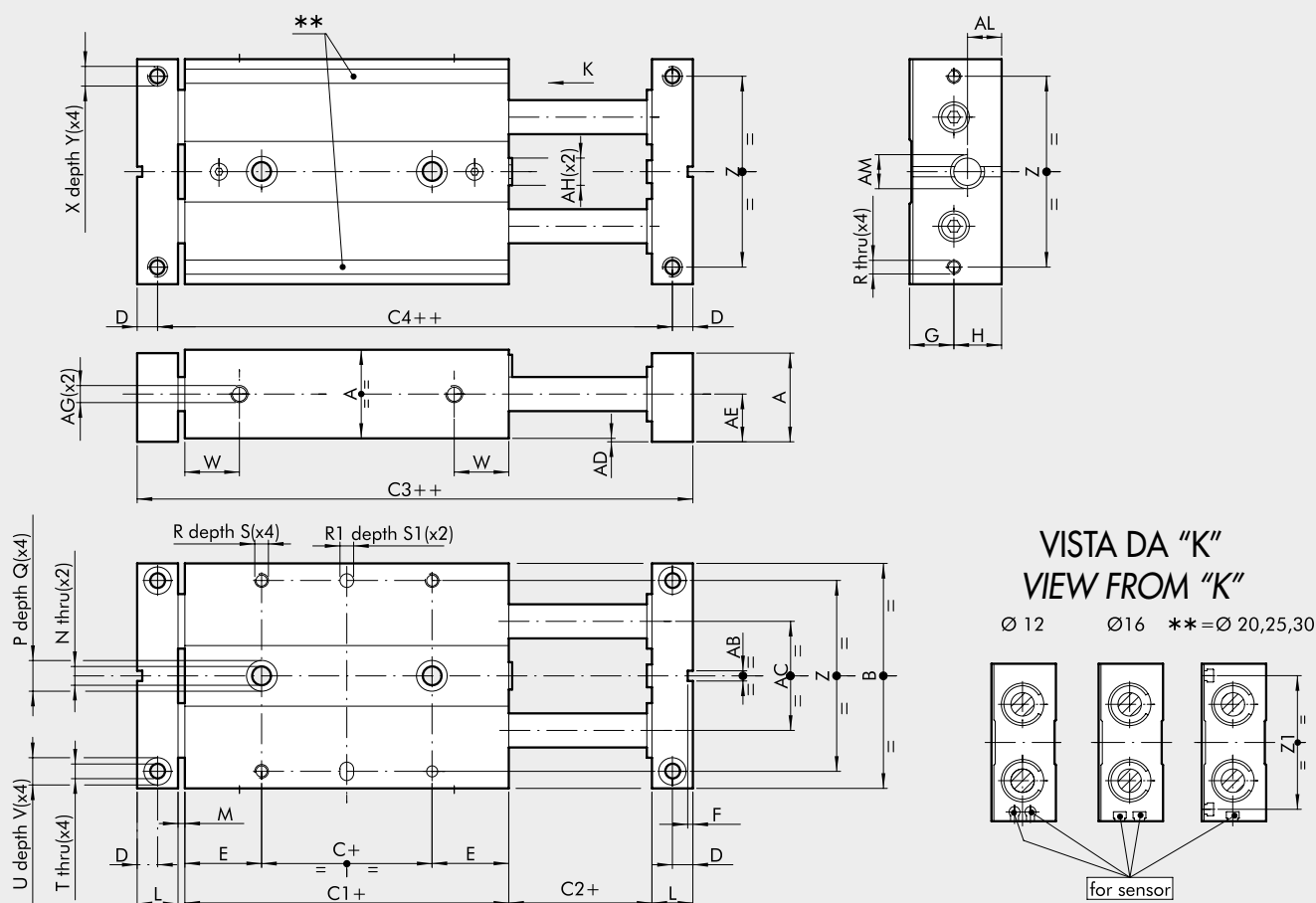
- FLANGIA: alluminio anodizzato / FLANGE: anodized aluminium
- RONDELLA: acciaio / WASHER: steel
- PARACOLPO: gomma / BUFFER: rubber
- BATTUTA REGOLABILE: acciaio zincato / ADJUSTABLE STRIKER PLATE: Zinc-plated steel
- FONDELLO: ottone / BASE: brass
- PISTONE: ottone / PISTON: brass
- MAGNETE: plastoferrite / MAGNET: plastoferrite
- CORPO CILINDRO: alluminio anodizzato / CYLINDER BODY: anodized aluminium
- OR statici: NBR / STATIC O-RINGS: NBR
- BUSSOLA: a ricircolo di sfere / BUSH: ball bearing

## VERSIONE / VERSIONS:

- Ⓐ Con bussole a scorrimento / With sliding bushes  
 Ⓑ Con bussole a ricircolo di sfere / With ball bearing bushes



**DIMENSIONI SLITTA SERIE S11 A BRONZINE - Ø 12 ÷ 30 mm**  
**DIMENSIONS OF TWIN-CYLINDER GUIDE UNITS SERIES S11, ON BUSHES Ø 12 to 30**



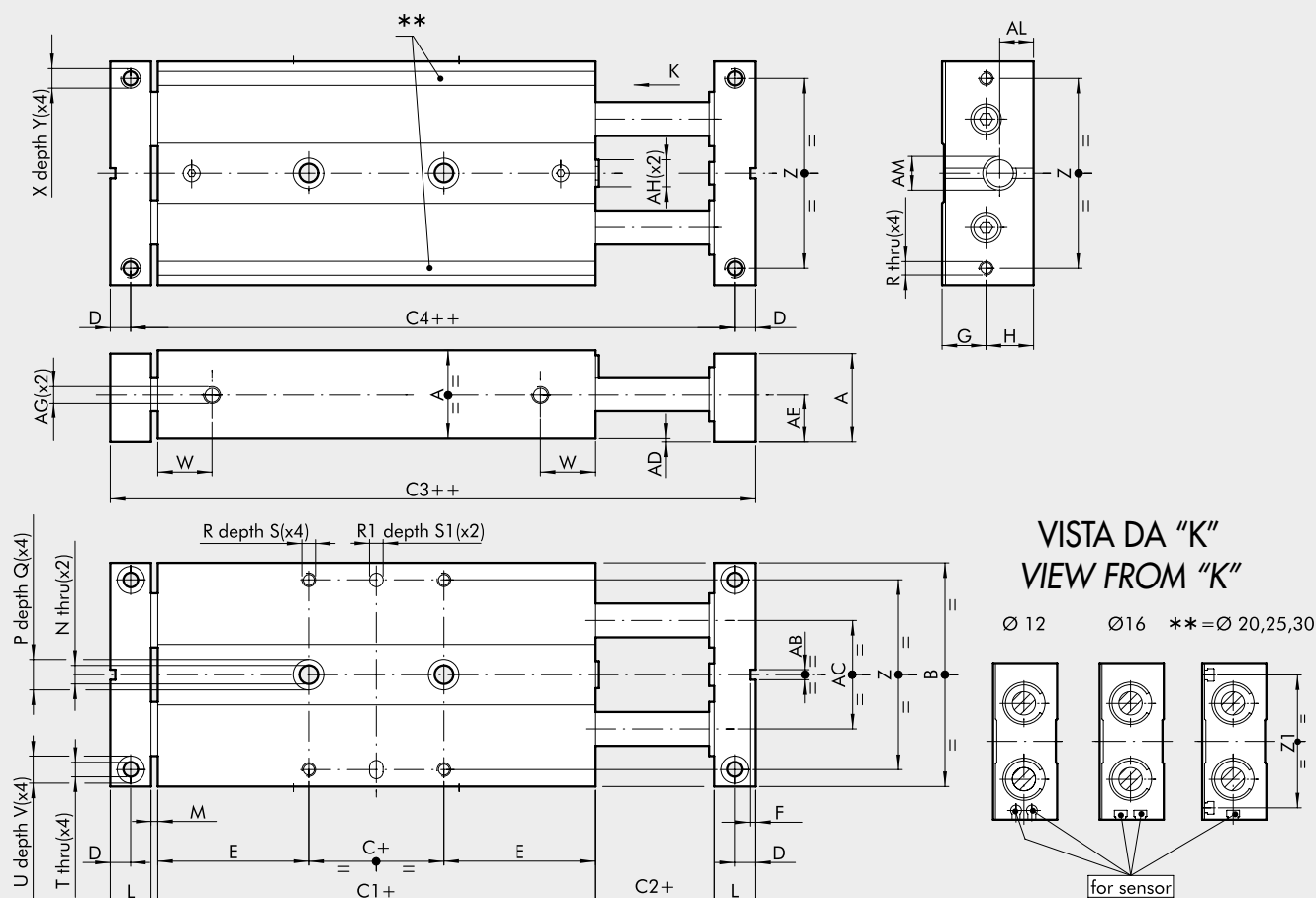
+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
 ++ = AGGIUNGERE 2 VOLTE LA CORSA / ADD TWICE THE STROKE

| Cod.        | Ø  | A  | B  | C  | C1 | C2 | C3  | C4 | D | E    | F   | G  | H  | L  | M | N   | P    | Q | R  | R1 <sup>17</sup> | S | S1 | T   |
|-------------|----|----|----|----|----|----|-----|----|---|------|-----|----|----|----|---|-----|------|---|----|------------------|---|----|-----|
| W1450122... | 12 | 18 | 46 | 5  | 45 | 2  | 65  | 57 | 4 | 20   | 1.5 | 9  | 10 | 8  | 2 | 4.3 | 8    | 4 | M3 | 4                | 5 | 3  | 3.3 |
| W1450162... | 16 | 22 | 56 | 10 | 50 | 2  | 74  | 64 | 5 | 20   | 1.5 | 11 | 12 | 10 | 2 | 4.3 | 8    | 4 | M4 | 4                | 6 | 3  | 4.3 |
| W1450202... | 20 | 26 | 66 | 10 | 55 | 2  | 83  | 71 | 6 | 22.5 | 1.5 | 13 | 14 | 12 | 2 | 5.5 | 9    | 5 | M4 | 4                | 7 | 3  | 4.3 |
| W1450252... | 25 | 32 | 78 | 10 | 60 | 2  | 92  | 78 | 7 | 25   | 2.5 | 16 | 17 | 14 | 2 | 6.5 | 10.5 | 6 | M5 | 4                | 7 | 3  | 5.2 |
| W1450302... | 30 | 36 | 98 | 10 | 70 | 2  | 106 | 90 | 8 | 30   | 2.5 | 18 | 19 | 16 | 2 | 8.5 | 14   | 8 | M6 | 6                | 8 | 5  | 5.2 |

| Ø  | U | V | W  | X  | Y  | Z  | Z1 | AB | AC | AD | AE | AF | AG    | AM      | AL  |
|----|---|---|----|----|----|----|----|----|----|----|----|----|-------|---------|-----|
| 12 | 6 | 3 | 14 | M4 | 6  | 38 | -  | 3  | 20 | 1  | 10 | 4  | M5    | M8x1    | 7   |
| 16 | 8 | 4 | 15 | M5 | 8  | 46 | -  | 3  | 26 | 1  | 12 | 5  | M5    | M10x1   | 8.5 |
| 20 | 8 | 4 | 16 | M5 | 10 | 56 | 54 | 3  | 30 | 1  | 14 | 5  | M5    | M10x1   | 9   |
| 25 | 9 | 5 | 19 | M6 | 12 | 66 | 64 | 5  | 39 | 1  | 17 | 6  | M5    | M12x1   | 10  |
| 30 | 9 | 5 | 21 | M6 | 12 | 86 | 82 | 5  | 52 | 1  | 19 | 6  | G 1/8 | M14x1.5 | 12  |

... Inserire la corsa in mm (esempio: Ø 12 corsa 50 = W1450122050) / ...Enter the stroke in mm (e.g. Ø 12 stroke 50 = W1450122050)

Corse alesaggio 12 mm / Strokes for bore 12 mm 25; 50; 75  
 Corse alesaggio 16 mm / Strokes for bore 16 mm 25; 50; 75; 100  
 Corse alesaggio 20 mm / Strokes for bore 20 mm 25; 50; 75; 100; 125  
 Corse alesaggio 25 mm / Strokes for bore 25 mm 25; 50; 75; 100; 125; 150  
 Corse alesaggio 30 mm / Strokes for bore 30 mm 25; 50; 75; 100; 125; 150

**DIMENSIONI SLITTA SERIE S11 A RICIRCOLO DI SFERE - Ø 12 ÷ 30 mm**  
**DIMENSIONS OF TWIN-CYLINDER GUIDE UNITS SERIES S11, ON BALL BEARINGS Ø 12 to 30**


+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
 ++ = AGGIUNGERE 2 VOLTE LA CORSA / ADD TWICE THE STROKE

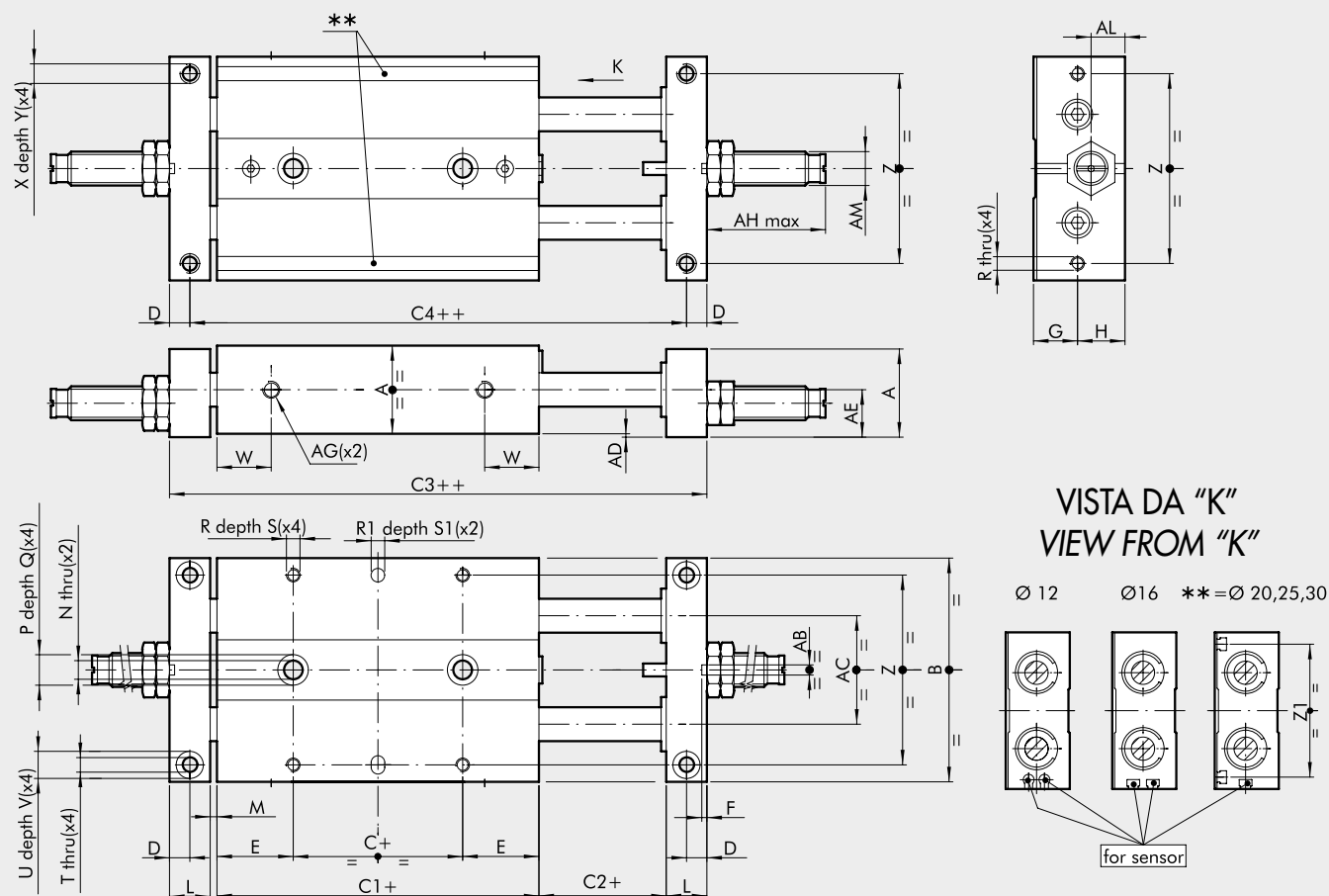
| Cod.        | Ø  | A  | B  | C  | C1  | C2 | C3  | C4  | D | E    | F   | G  | H  | L  | M | N   | P    | Q | R  | R1 <sup>17</sup> | S | S1 | T   |
|-------------|----|----|----|----|-----|----|-----|-----|---|------|-----|----|----|----|---|-----|------|---|----|------------------|---|----|-----|
| W1450123... | 12 | 18 | 46 | 5  | 71  | 2  | 91  | 83  | 4 | 33   | 1.5 | 9  | 10 | 8  | 2 | 4.3 | 8    | 4 | M3 | 4                | 5 | 3  | 3.3 |
| W1450163... | 16 | 22 | 56 | 10 | 85  | 2  | 109 | 99  | 5 | 37.5 | 1.5 | 11 | 12 | 10 | 2 | 4.3 | 8    | 4 | M4 | 4                | 6 | 3  | 4.3 |
| W1450203... | 20 | 26 | 66 | 10 | 99  | 2  | 127 | 115 | 6 | 44.5 | 1.5 | 13 | 14 | 12 | 2 | 5.5 | 9    | 5 | M4 | 4                | 7 | 3  | 4.3 |
| W1450253... | 25 | 32 | 78 | 10 | 105 | 2  | 137 | 123 | 7 | 47.5 | 2.5 | 16 | 17 | 14 | 2 | 6.5 | 10.5 | 6 | M5 | 4                | 7 | 3  | 5.2 |
| W1450303... | 30 | 36 | 98 | 10 | 128 | 2  | 164 | 148 | 8 | 59   | 2.5 | 18 | 19 | 16 | 2 | 8.5 | 14   | 8 | M6 | 6                | 8 | 5  | 5.2 |

| Ø  | U | V | W  | X  | Y  | Z  | Z1 | AB | AC | AD | AE | AF | AG    | AH  | AM      | AL  |
|----|---|---|----|----|----|----|----|----|----|----|----|----|-------|-----|---------|-----|
| 12 | 6 | 3 | 28 | M4 | 6  | 38 | -  | 3  | 20 | 1  | 10 | 4  | M5    | M5  | M8x1    | 7   |
| 16 | 8 | 4 | 33 | M5 | 8  | 46 | -  | 3  | 26 | 1  | 12 | 5  | M5    | M6  | M10x1   | 8.5 |
| 20 | 8 | 4 | 40 | M5 | 10 | 56 | 54 | 3  | 30 | 1  | 14 | 5  | M5    | M8  | M10x1   | 9   |
| 25 | 9 | 5 | 42 | M6 | 6  | 66 | 64 | 5  | 39 | 1  | 17 | 6  | M5    | M10 | M12x1   | 10  |
| 30 | 9 | 5 | 50 | M6 | 12 | 86 | 82 | 5  | 52 | 1  | 19 | 6  | G 1/8 | M12 | M14x1.5 | 12  |

... Inserire la corsa in mm (esempio: Ø 12 corsa 50 = W1450123050) / ...Enter the stroke in mm (e.g. Ø 12 stroke 50 = W1450123050)

Corse alesaggio 12 mm / Strokes for bore 12 mm 25; 50; 75  
 Corse alesaggio 16 mm / Strokes for bore 16 mm 25; 50; 75; 100  
 Corse alesaggio 20 mm / Strokes for bore 20 mm 25; 50; 75; 100; 125  
 Corse alesaggio 25 mm / Strokes for bore 25 mm 25; 50; 75; 100; 125; 150  
 Corse alesaggio 30 mm / Strokes for bore 30 mm 25; 50; 75; 100; 125; 150

**DIMENSIONI SLITTA SERIE S11 A BRONZINE CON DECELERATORE - Ø 12 ÷ 30 mm**  
**DIMENSIONS OF TWIN-CYLINDER GUIDE UNITS WITH SHOCK ABSORBERS SERIES S11, ON BUSHES Ø 12 to 30**



+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
 ++ = AGGIUNGERE 2 VOLTE LA CORSA / ADD TWICE THE STROKE

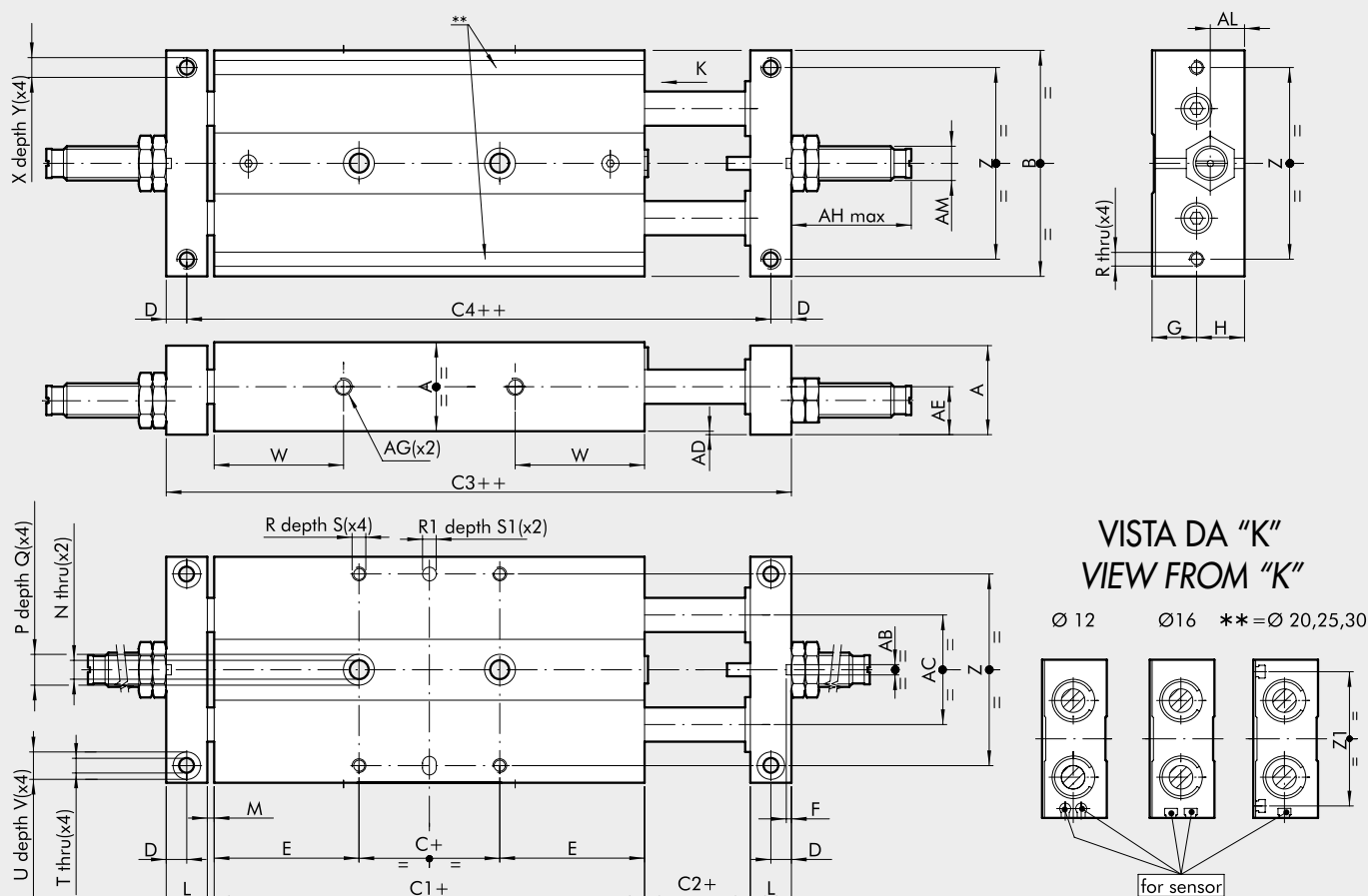
| Cod.        | Ø  | A  | B  | C  | C1 | C2 | C3  | C4 | D | E    | F   | G  | H  | L  | M | N   | P    | Q | R  | R1 <sup>17</sup> | S | S1 | T   |
|-------------|----|----|----|----|----|----|-----|----|---|------|-----|----|----|----|---|-----|------|---|----|------------------|---|----|-----|
| W1450124... | 12 | 18 | 46 | 5  | 45 | 2  | 65  | 57 | 4 | 20   | 1.5 | 9  | 10 | 8  | 2 | 4.3 | 8    | 4 | M3 | 4                | 5 | 3  | 3.3 |
| W1450164... | 16 | 22 | 56 | 10 | 50 | 2  | 74  | 64 | 5 | 20   | 1.5 | 11 | 12 | 10 | 2 | 4.3 | 8    | 4 | M4 | 4                | 6 | 3  | 4.3 |
| W1450204... | 20 | 26 | 66 | 10 | 55 | 2  | 83  | 71 | 6 | 22.5 | 1.5 | 13 | 14 | 12 | 2 | 5.5 | 9    | 5 | M4 | 4                | 7 | 3  | 4.3 |
| W1450254... | 25 | 32 | 78 | 10 | 60 | 2  | 92  | 78 | 7 | 25   | 2.5 | 16 | 17 | 14 | 2 | 6.5 | 10.5 | 6 | M5 | 4                | 7 | 3  | 5.2 |
| W1450304... | 30 | 36 | 98 | 10 | 70 | 2  | 106 | 90 | 8 | 30   | 2.5 | 18 | 19 | 16 | 2 | 8.5 | 14   | 8 | M6 | 6                | 8 | 5  | 5.2 |

| Ø  | U | V | W  | X  | Y  | Z  | Z1 | AB | AC | AD | AE | AF | AG    | AH | AM      | AL  |
|----|---|---|----|----|----|----|----|----|----|----|----|----|-------|----|---------|-----|
| 12 | 6 | 3 | 14 | M4 | 6  | 38 | -  | 3  | 20 | 1  | 10 | 4  | M5    | 30 | M8x1    | 7   |
| 16 | 8 | 4 | 15 | M5 | 8  | 46 | -  | 3  | 26 | 1  | 12 | 5  | M5    | 35 | M10x1   | 8.5 |
| 20 | 8 | 4 | 16 | M5 | 10 | 56 | 54 | 3  | 30 | 1  | 14 | 5  | M5    | 35 | M10x1   | 9   |
| 25 | 9 | 5 | 19 | M6 | 12 | 66 | 69 | 5  | 39 | 1  | 17 | 6  | M5    | 36 | M12x1   | 10  |
| 30 | 9 | 5 | 21 | M6 | 12 | 86 | 82 | 5  | 52 | 1  | 19 | 6  | G 1/8 | 60 | M14x1.5 | 12  |

... Inserire la corsa in mm (esempio: Ø 12 corsa 50 = W1450124050) / ...Enter the stroke in mm (e.g. Ø 12 stroke 50 = W1450124050)

Corse alesaggio 12 mm / Strokes for bore 12 mm 25; 50; 75  
 Corse alesaggio 16 mm / Strokes for bore 16 mm 25; 50; 75; 100  
 Corse alesaggio 20 mm / Strokes for bore 20 mm 25; 50; 75; 100; 125  
 Corse alesaggio 25 mm / Strokes for bore 25 mm 25; 50; 75; 100; 125; 150  
 Corse alesaggio 30 mm / Strokes for bore 30 mm 25; 50; 75; 100; 125; 150

**DIMENSIONI SLITTA SERIE S11 A RICIRCOLO DI SFERE CON DECELERATORE - Ø 12 ÷ 30 mm**  
***DIMENSIONS OF TWIN-CYLINDER GUIDE UNITS WITH SHOCK ABSORBERS SERIES S11, ON BALL BEARING Ø 12 to 30***



+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
++ = AGGIUNGERE 2 VOLTE LA CORSA / ADD TWICE THE STROKE

| Cod.        | Ø  | A  | B  | C  | C1  | C2 | C3  | C4  | D | E    | F   | G  | H  | L  | M | N   | P    | Q | R  | R1 <sup>H7</sup> | S | S1 | T   |
|-------------|----|----|----|----|-----|----|-----|-----|---|------|-----|----|----|----|---|-----|------|---|----|------------------|---|----|-----|
| W1450125... | 12 | 18 | 46 | 5  | 71  | 2  | 91  | 83  | 4 | 33   | 1.5 | 9  | 10 | 8  | 2 | 4.3 | 8    | 4 | M3 | 4                | 5 | 3  | 3.3 |
| W1450165... | 16 | 22 | 56 | 10 | 85  | 2  | 109 | 99  | 5 | 37.5 | 1.5 | 11 | 12 | 10 | 2 | 4.3 | 8    | 4 | M4 | 4                | 6 | 3  | 4.3 |
| W1450205... | 20 | 26 | 66 | 10 | 99  | 2  | 127 | 115 | 6 | 44.5 | 1.5 | 13 | 14 | 12 | 2 | 5.5 | 9    | 5 | M4 | 4                | 7 | 3  | 4.3 |
| W1450255... | 25 | 32 | 78 | 10 | 105 | 2  | 137 | 123 | 7 | 47.5 | 2.5 | 16 | 17 | 14 | 2 | 6.5 | 10.5 | 6 | M5 | 4                | 7 | 3  | 5.2 |
| W1450305... | 30 | 36 | 98 | 10 | 128 | 2  | 164 | 148 | 8 | 59   | 2.5 | 18 | 19 | 16 | 2 | 8.5 | 14   | 8 | M6 | 6                | 8 | 5  | 5.2 |

| Ø  | U | V | W  | X  | Y  | Z  | Z1 | AB | AC | AD | AE | AF | AG    | AH | AM      | AL  |
|----|---|---|----|----|----|----|----|----|----|----|----|----|-------|----|---------|-----|
| 12 | 6 | 3 | 28 | M4 | 6  | 38 | –  | 3  | 20 | 1  | 10 | 4  | M5    | 30 | M8x1    | 7   |
| 16 | 8 | 4 | 33 | M5 | 8  | 46 | –  | 3  | 26 | 1  | 12 | 5  | M5    | 35 | M10x1   | 8.5 |
| 20 | 8 | 4 | 40 | M5 | 10 | 56 | 54 | 3  | 30 | 1  | 14 | 5  | M5    | 35 | M10x1   | 9   |
| 25 | 9 | 5 | 42 | M6 | 6  | 66 | 64 | 5  | 39 | 1  | 17 | 6  | M5    | 36 | M12x1   | 10  |
| 30 | 9 | 5 | 50 | M6 | 12 | 86 | 82 | 5  | 52 | 1  | 19 | 6  | G 1/8 | 60 | M14x1.5 | 12  |

... Inserire la corsa in mm (esempio: Ø 12 corsa 50 = W1450125050) / ...Enter the stroke in mm (e.g. Ø 12 stroke 50 = W1450125050)

Corse alesaggio 12 mm / Strokes for bore 12 mm

25; 50; 75

Corse alesaggio 16 mm / Strokes for bore 16 mm 25; 50; 75; 100

25; 50; 75; 100

Corse alesaggio 20 mm / Strokes for bore 20 mm 25; 50; 75; 100; 125

25: 50: 75: 100: 125

Corse alesaggio 25 mm / Strokes for bore 25 mm 25; 50; 75; 100; 125; 150

25; 50; 75; 100; 125; 150

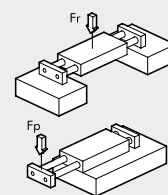
Corse alesaggio 30 mm / Strokes for bore 30 mm 25; 50; 75; 100; 125; 150

25; 50; 75; 100; 125; 150

# SLITTA A DOPPIO CILINDRO A PIASTRE FISSE SERIE S12 TWIN CYLINDER SLIDE WITH FIXED PLATES SERIES S12



| DATI TECNICI / TECHNICAL DATA                                                                       |      | S12-16                                                                                                                                                                                                  | S12-20                     | S12-25                       | S12-30                      |
|-----------------------------------------------------------------------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------|-----------------------------|
| Fluido / Fluid                                                                                      |      | Aria filtrata 20 µm / 20 µm filtered air                                                                                                                                                                |                            |                              |                             |
| Pressione di esercizio / Pressure range                                                             | bar  | 1.5 ÷ 7                                                                                                                                                                                                 |                            |                              |                             |
|                                                                                                     | MPa  | 0.15 ÷ 0.7                                                                                                                                                                                              |                            |                              |                             |
|                                                                                                     | psi  | 21.5 ÷ 101                                                                                                                                                                                              |                            |                              |                             |
| Temperatura di esercizio / Temperature range                                                        | °C   | -10 ÷ +80                                                                                                                                                                                               |                            |                              |                             |
| Velocità del pistone / Piston speed                                                                 | mm/s | 30 ÷ 200                                                                                                                                                                                                |                            |                              |                             |
| Versioni / Versions                                                                                 |      | Con bussole a strisciamento / Con bussole a sfere / Con vite di fermo / Con deceleratori idraulici<br>With sliding bushes / With ball bearing bushes / With stop screw / With hydraulic shock absorbers |                            |                              |                             |
| Alesaggi / Bores                                                                                    | mm   | 16                                                                                                                                                                                                      | 20                         | 25                           | 30                          |
| Diametro steli / Piston rod diameter                                                                | mm   | 8                                                                                                                                                                                                       | 10                         | 12                           | 16                          |
| Corse / Strokes                                                                                     | mm   | 25                                                                                                                                                                                                      | 25                         | 25                           | 25                          |
|                                                                                                     |      | 50                                                                                                                                                                                                      | 50                         | 50                           | 50                          |
|                                                                                                     |      | 75                                                                                                                                                                                                      | 75                         | 75                           | 75                          |
|                                                                                                     |      | 100                                                                                                                                                                                                     | 100                        | 100                          | 100                         |
|                                                                                                     |      | —                                                                                                                                                                                                       | 125                        | 125                          | 125                         |
| Peso = X + (Y · C) dove C = corsa / Weight = X + (Y · C) where C = stroke kg                        |      |                                                                                                                                                                                                         |                            |                              |                             |
|                                                                                                     |      | X = 0.25                                                                                                                                                                                                | X = 0.5                    | X = 0.7                      | X = 1.24                    |
| • Versione a bronzine / Bushes version                                                              |      | Y = 0.0035                                                                                                                                                                                              | Y = 0.045                  | Y = 0.007                    | Y = 0.01                    |
|                                                                                                     |      | X = 0.37                                                                                                                                                                                                | X = 0.78                   | X = 1.04                     | X = 1.98                    |
| • Versione a sfere / Ball bearing version                                                           |      | Y = 0.0035                                                                                                                                                                                              | Y = 0.045                  | Y = 0.007                    | Y = 0.01                    |
|                                                                                                     |      | X = 0.37                                                                                                                                                                                                | X = 0.78                   | X = 1.04                     | X = 1.98                    |
| Spinta teorica (P = pressione relativa in bar)<br>Theoretical thrust (P = relative pressure in bar) | N    | 30 x P                                                                                                                                                                                                  | 47 x P                     | 75 x P                       | 101 x P                     |
| Carichi ammessi / Max. loads                                                                        |      | (i valori indicati si riferiscono alla corsa min. e max.)<br>(The values shown refer to the min. and max. strokes)                                                                                      |                            |                              |                             |
| • Versione a bronzine / Bushes version                                                              | N    | Fr: 35 ÷ 6.5<br>Fp: 11 ÷ 3                                                                                                                                                                              | Fr: 58 ÷ 7<br>Fp: 18 ÷ 5   | Fr: 80 ÷ 8<br>Fp: 23 ÷ 6     | Fr: 130 ÷ 18<br>Fp: 50 ÷ 8  |
|                                                                                                     |      | Fr: 20 ÷ 4<br>Fp: 4 ÷ 1.5                                                                                                                                                                               | Fr: 35 ÷ 4.5<br>Fp: 12 ÷ 3 | Fr: 50 ÷ 5.4<br>Fp: 15 ÷ 3.5 | Fr: 80 ÷ 12<br>Fp: 20 ÷ 4.5 |
| • Versione a sfere / Ball bearing version                                                           | N    |                                                                                                                                                                                                         |                            |                              |                             |
|                                                                                                     |      |                                                                                                                                                                                                         |                            |                              |                             |

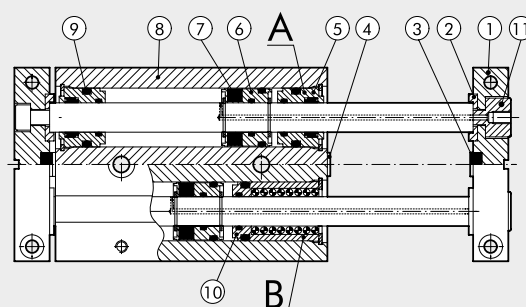


## COMPONENTI / COMPONENTS

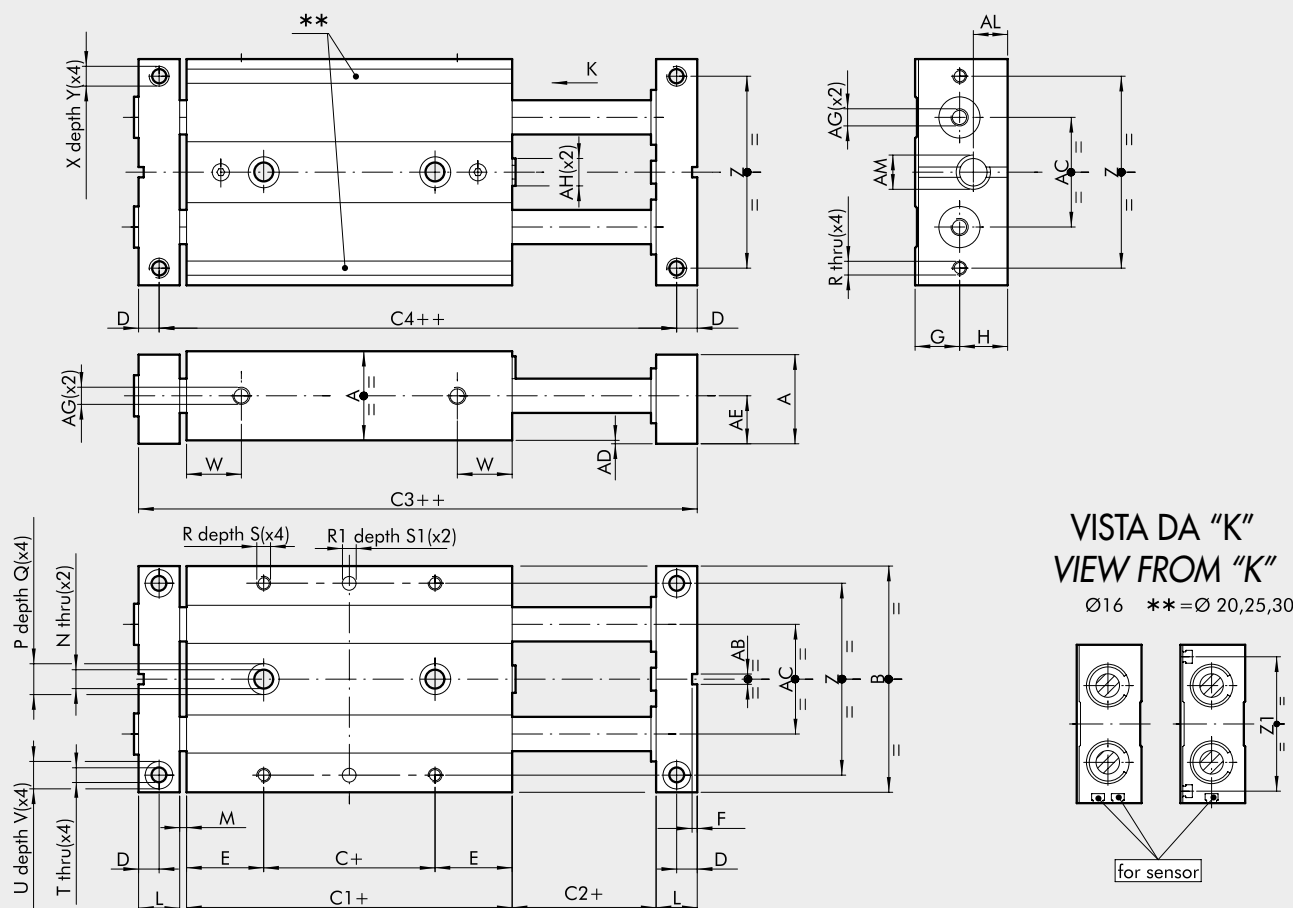
- FLANGIA: alluminio anodizzato / FLANGE: anodized aluminium
- RONDELLA: acciaio / WASHER: steel
- PARACOLPO: gomma / BUFFER: rubber
- BATTUTA REGOLABILE: acciaio zincato / ADJUSTABLE STRIKER PLATE: Zinc-plated steel
- FONDELLO: ottone / BASE: brass
- PISTONE: ottone / PISTON: brass
- MAGNETE: plastroferrite / MAGNET: plastroferrite
- CORPO CILINDRO: alluminio anodizzato / CYLINDER BODY: anodized aluminium
- OR statici: NBR / STATIC O-RINGS: NBR
- BUSSOLA: a ricircolo di sfere / BUSH: ball bearing
- VITE: con alimentazione pneumatica / SCREW: pneumatically powered

## VERSIONE / VERSIONS:

- Con bussole a scorrimento / With sliding bushes
- Con bussole a ricircolo di sfere / With ball bearing bushes





**DIMENSIONI SLITTA SERIE S12 A BRONZINE Ø 16 ÷ 30 mm**  
**DIMENSIONS OF TWIN-CYLINDER SLIDE SERIES S12, ON BUSHES Ø 16 to 30**


+ = AGGIUNGERE LA CORSA / ADD THE STROKE

++ = AGGIUNGERE 2 VOLTE LA CORSA / ADD TWICE THE STROKE

| Cod.        | Ø  | A  | B  | C  | C1 | C2 | C3  | C4 | D | E    | F   | G  | H  | L  | M | N   | P    | Q | R  | R1 <sup>1/2</sup> | S | S1 | T   |
|-------------|----|----|----|----|----|----|-----|----|---|------|-----|----|----|----|---|-----|------|---|----|-------------------|---|----|-----|
| W1460162... | 16 | 22 | 56 | 10 | 50 | 2  | 74  | 64 | 5 | 20   | 1.5 | 11 | 12 | 10 | 2 | 4.3 | 8    | 4 | M4 | 4                 | 6 | 3  | 4.3 |
| W1460202... | 20 | 26 | 66 | 10 | 55 | 2  | 83  | 71 | 6 | 22.5 | 1.5 | 13 | 14 | 12 | 2 | 5.5 | 9    | 5 | M4 | 4                 | 7 | 3  | 4.3 |
| W1460252... | 25 | 32 | 78 | 10 | 60 | 2  | 92  | 78 | 7 | 25   | 2.5 | 16 | 17 | 14 | 2 | 6.5 | 10.5 | 6 | M5 | 4                 | 7 | 3  | 5.2 |
| W1460302... | 30 | 36 | 98 | 10 | 70 | 2  | 106 | 90 | 8 | 30   | 2.5 | 18 | 19 | 16 | 2 | 8.5 | 14   | 8 | M6 | 6                 | 8 | 5  | 5.2 |

| Ø  | U | V | W  | X  | Y  | Z  | Z1 | AB | AC | AD | AE | AF | AG    | AH  | AM      | AL  |
|----|---|---|----|----|----|----|----|----|----|----|----|----|-------|-----|---------|-----|
| 16 | 8 | 4 | 15 | M5 | 8  | 46 | -  | 3  | 26 | 1  | 12 | 5  | M5    | M6  | M10x1   | 8.5 |
| 20 | 8 | 4 | 16 | M5 | 10 | 56 | 54 | 3  | 30 | 1  | 14 | 5  | M5    | M8  | M10x1   | 9   |
| 25 | 9 | 5 | 19 | M6 | 12 | 66 | 64 | 5  | 39 | 1  | 17 | 6  | M5    | M10 | M12x1   | 10  |
| 30 | 9 | 5 | 21 | M6 | 12 | 86 | 82 | 5  | 52 | 1  | 19 | 6  | G 1/8 | M12 | M14x1.5 | 12  |

... Inserire la corsa in mm (esempio: Ø 16 corsa 50 = W1450162050) / ...Enter the stroke in mm (e.g. Ø 16 stroke 50 = W1450162050)

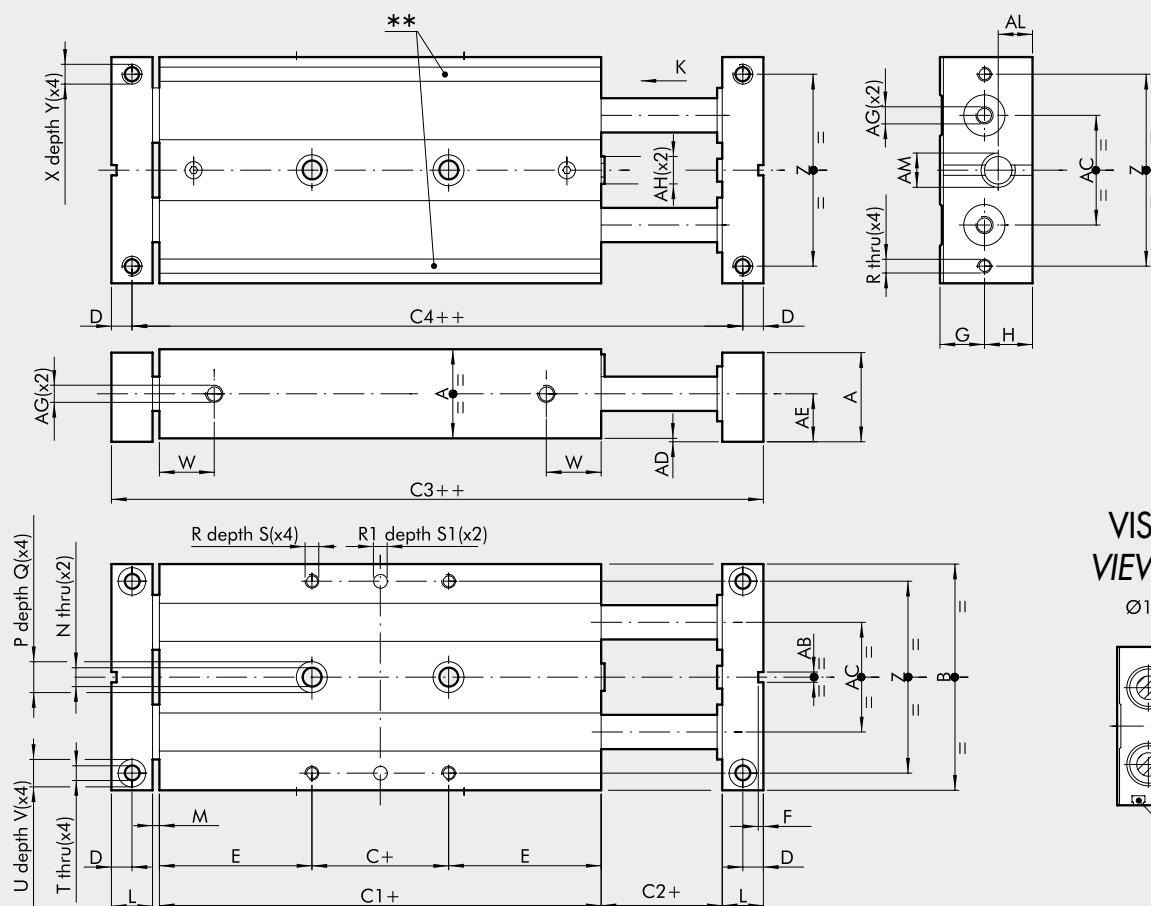
Corse alesaggio 16 mm / Strokes for bore 16 mm 25; 50; 75; 100

Corse alesaggio 20 mm / Strokes for bore 20 mm 25; 50; 75; 100; 125

Corse alesaggio 25 mm / Strokes for bore 25 mm 25; 50; 75; 100; 125; 150

Corse alesaggio 30 mm / Strokes for bore 30 mm 25; 50; 75; 100; 125; 150

**DIMENSIONI SLITTA SERIE S12 A RICIRCOLO DI SFERE Ø 16 ÷ 30 mm**  
**DIMENSIONS OF TWIN-CYLINDER SLIDE SERIES S12, ON BALL BEARINGS Ø 16 to 30**



+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
 ++ = AGGIUNGERE 2 VOLTE LA CORSA / ADD TWICE THE STROKE

| Cod.        | Ø  | A  | B  | C  | C1  | C2 | C3  | C4  | D | E    | F   | G  | H  | L  | M | N   | P    | Q | R  | R1 <sup>17</sup> | S | S1 | T   |
|-------------|----|----|----|----|-----|----|-----|-----|---|------|-----|----|----|----|---|-----|------|---|----|------------------|---|----|-----|
| W1460163... | 16 | 22 | 56 | 10 | 85  | 2  | 109 | 99  | 5 | 37.5 | 1.5 | 11 | 12 | 10 | 2 | 4.3 | 8    | 4 | M4 | 4                | 6 | 3  | 4.3 |
| W1460203... | 20 | 26 | 66 | 10 | 99  | 2  | 127 | 115 | 6 | 44.5 | 1.5 | 13 | 14 | 12 | 2 | 5.5 | 9    | 5 | M4 | 4                | 7 | 3  | 4.3 |
| W1460253... | 25 | 32 | 78 | 10 | 105 | 2  | 137 | 123 | 7 | 47.5 | 2.5 | 16 | 17 | 14 | 2 | 6.5 | 10.5 | 6 | M5 | 4                | 7 | 3  | 5.2 |
| W1460303... | 30 | 36 | 98 | 10 | 128 | 2  | 164 | 148 | 8 | 59   | 2.5 | 18 | 19 | 16 | 2 | 8.5 | 14   | 8 | M6 | 6                | 8 | 5  | 5.2 |

| Ø  | U | V | W  | X  | Y  | Z  | Z1 | AB | AC | AD | AE | AF | AG    | AH  | AM      | AL  |
|----|---|---|----|----|----|----|----|----|----|----|----|----|-------|-----|---------|-----|
| 16 | 8 | 4 | 33 | M5 | 8  | 46 | -  | 3  | 26 | 1  | 12 | 5  | M5    | M6  | M10x1   | 8.5 |
| 20 | 8 | 4 | 40 | M5 | 10 | 56 | 54 | 3  | 30 | 1  | 14 | 5  | M5    | M8  | M10x1   | 9   |
| 25 | 9 | 5 | 42 | M6 | 6  | 66 | 64 | 5  | 39 | 1  | 17 | 6  | M5    | M10 | M12x1   | 10  |
| 30 | 9 | 5 | 50 | M6 | 12 | 86 | 82 | 5  | 52 | 1  | 19 | 6  | G 1/8 | M12 | M14x1.5 | 12  |

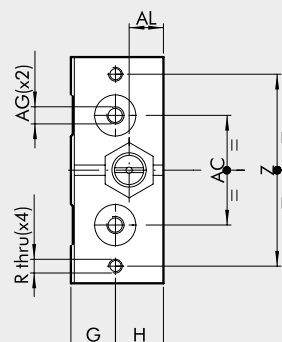
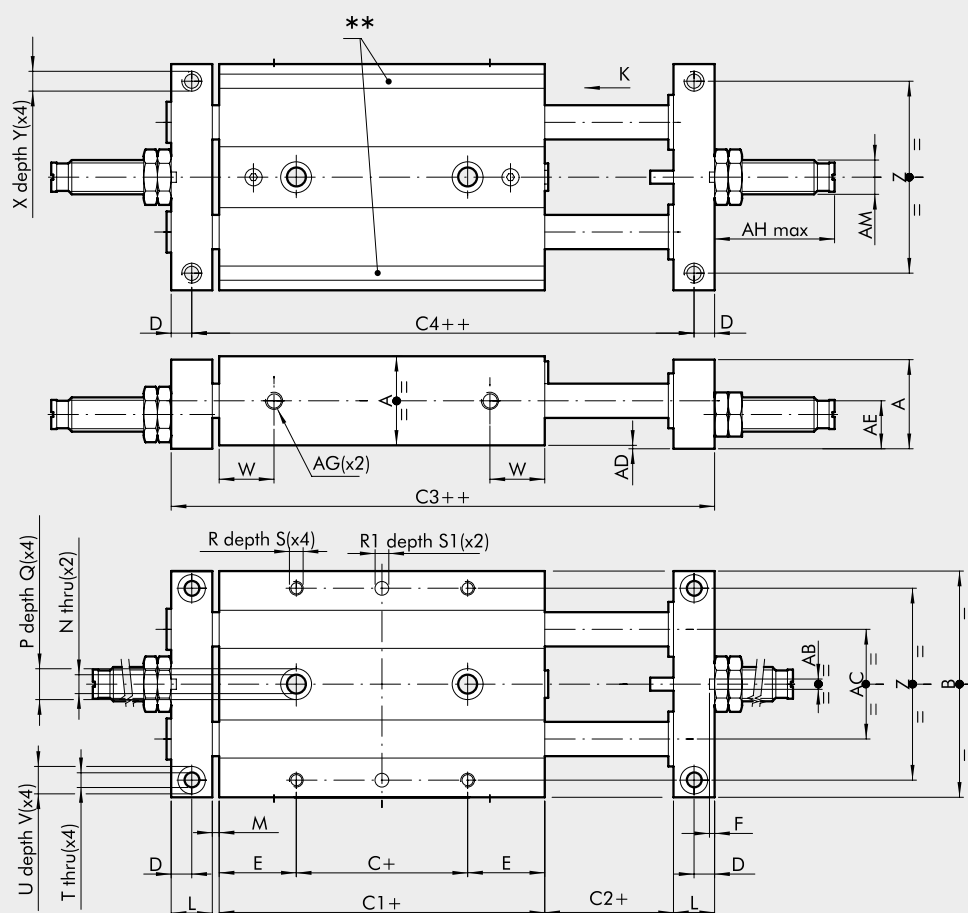
... Inserire la corsa in mm (esempio: Ø 16 corsa 50 = W1450162050) / ...Enter the stroke in mm (e.g. Ø 16 stroke 50 = W1450162050)

Corse alesaggio 16 mm / Strokes for bore 16 mm 25; 50; 75; 100

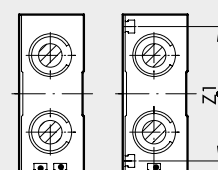
Corse alesaggio 20 mm / Strokes for bore 20 mm 25; 50; 75; 100; 125

Corse alesaggio 25 mm / Strokes for bore 25 mm 25; 50; 75; 100; 125; 150

Corse alesaggio 30 mm / Strokes for bore 30 mm 25; 50; 75; 100; 125; 150

**DIMENSIONI SLITTA SERIE S12 A BRONZINE CON DECELERATORE Ø 16 ÷ 30 mm**  
**DIMENSIONS OF TWIN-CYLINDER SLIDE WITH SHOCK ABSORBERS SERIES S12, ON BUSHES Ø 16 to 30**

**VISTA DA "K"**  
**VIEW FROM "K"**

Ø16 \*\* = Ø 20,25,30


 + = AGGIUNGERE LA CORSA / ADD THE STROKE  
 ++ = AGGIUNGERE 2 VOLTE LA CORSA / ADD TWICE THE STROKE

| Cod.        | Ø  | A  | B  | C  | C1 | C2 | C3  | C4 | D | E    | F   | G  | H  | L  | M | N   | P    | Q | R  | R1 <sup>147</sup> | S | S1 | T   |
|-------------|----|----|----|----|----|----|-----|----|---|------|-----|----|----|----|---|-----|------|---|----|-------------------|---|----|-----|
| W1460164... | 16 | 22 | 56 | 10 | 50 | 2  | 74  | 64 | 5 | 20   | 1.5 | 11 | 12 | 10 | 2 | 4.3 | 8    | 4 | M4 | 4                 | 6 | 3  | 4.3 |
| W1460204... | 20 | 26 | 66 | 10 | 55 | 2  | 83  | 71 | 6 | 22.5 | 1.5 | 13 | 14 | 12 | 2 | 5.5 | 9    | 5 | M4 | 4                 | 7 | 3  | 4.3 |
| W1460254... | 25 | 32 | 78 | 10 | 60 | 2  | 92  | 78 | 7 | 25   | 2.5 | 16 | 17 | 14 | 2 | 6.5 | 10.5 | 6 | M5 | 4                 | 7 | 3  | 5.2 |
| W1460304... | 30 | 36 | 98 | 10 | 70 | 2  | 106 | 90 | 8 | 30   | 2.5 | 18 | 19 | 16 | 2 | 8.5 | 14   | 8 | M6 | 6                 | 8 | 5  | 5.2 |

| Ø  | U | V | W  | X  | Y  | Z  | Z1 | AB | AC | AD | AE | AF | AG    | AH | AM      | AL  |
|----|---|---|----|----|----|----|----|----|----|----|----|----|-------|----|---------|-----|
| 16 | 8 | 4 | 15 | M5 | 8  | 46 | -  | 3  | 26 | 1  | 12 | 5  | M5    | 35 | M10x1   | 8.5 |
| 20 | 8 | 4 | 16 | M5 | 10 | 56 | 54 | 3  | 30 | 1  | 14 | 5  | M5    | 35 | M10x1   | 9   |
| 25 | 9 | 5 | 19 | M6 | 12 | 66 | 64 | 5  | 39 | 1  | 17 | 6  | M5    | 36 | M12x1   | 10  |
| 30 | 9 | 5 | 21 | M6 | 12 | 86 | 82 | 5  | 52 | 1  | 19 | 6  | G 1/8 | 60 | M14x1.5 | 12  |

... Inserire la corsa in mm (esempio: Ø 16 corsa 50 = W1450162050) / ...Enter the stroke in mm (e.g. Ø 16 stroke 50 = W1450162050)

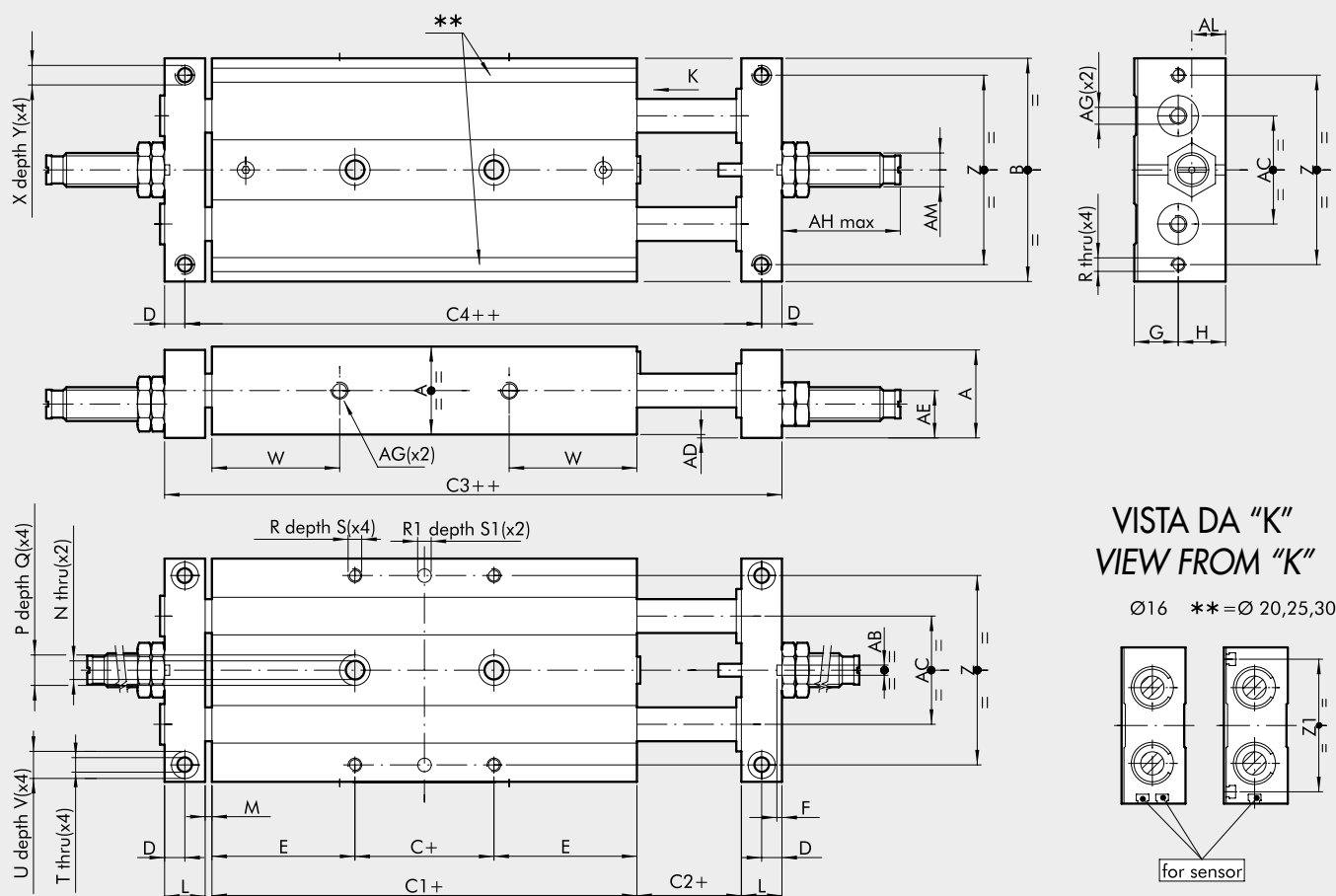
Corse alesaggio 16 mm / Strokes for bore 16 mm 25; 50; 75; 100

Corse alesaggio 20 mm / Strokes for bore 20 mm 25; 50; 75; 100; 125

Corse alesaggio 25 mm / Strokes for bore 25 mm 25; 50; 75; 100; 125; 150

Corse alesaggio 30 mm / Strokes for bore 30 mm 25; 50; 75; 100; 125; 150

**DIMENSIONI SLITTA SERIE S12 A RICIRCOLO DI SFERE CON DECELERATORE Ø 16 ÷ 30 mm**  
**DIMENSIONS OF TWIN-CYLINDER SLIDE WITH SHOCK ABSORBERS SERIES S12, ON BALL BEARING Ø 16 to 30**



+ = AGGIUNGERE LA CORSA / ADD THE STROKE  
 ++ = AGGIUNGERE 2 VOLTE LA CORSA / ADD TWICE THE STROKE

| Cod.        | Ø  | A  | B  | C  | C1  | C2 | C3  | C4  | D | E    | F   | G  | H  | L  | M | N   | P    | Q | R  | R1 <sup>147</sup> | S | S1 | T   |
|-------------|----|----|----|----|-----|----|-----|-----|---|------|-----|----|----|----|---|-----|------|---|----|-------------------|---|----|-----|
| W1460165... | 16 | 22 | 56 | 10 | 85  | 2  | 109 | 99  | 5 | 37.5 | 1.5 | 11 | 12 | 10 | 2 | 4.3 | 8    | 4 | M4 | 4                 | 6 | 3  | 4.3 |
| W1460205... | 20 | 26 | 66 | 10 | 99  | 2  | 127 | 115 | 6 | 44.5 | 1.5 | 13 | 14 | 12 | 2 | 5.5 | 9    | 5 | M4 | 4                 | 7 | 3  | 4.3 |
| W1460255... | 25 | 32 | 78 | 10 | 105 | 2  | 137 | 123 | 7 | 47.5 | 2.5 | 16 | 17 | 14 | 2 | 6.5 | 10.5 | 6 | M5 | 4                 | 7 | 3  | 5.2 |
| W1460305... | 30 | 36 | 98 | 10 | 128 | 2  | 164 | 148 | 8 | 59   | 2.5 | 18 | 19 | 16 | 2 | 8.5 | 14   | 8 | M6 | 6                 | 8 | 5  | 5.2 |

| Ø  | U | V | W  | X  | Y  | Z  | Z1 | AB | AC | AD | AE | AF | AG    | AH | AM    | AL  |
|----|---|---|----|----|----|----|----|----|----|----|----|----|-------|----|-------|-----|
| 16 | 8 | 4 | 33 | M5 | 8  | 46 | -  | 3  | 26 | 1  | 12 | 5  | M5    | 35 | M10x1 | 8.5 |
| 20 | 8 | 4 | 40 | M5 | 10 | 56 | 54 | 3  | 30 | 1  | 14 | 5  | M5    | 35 | M10x1 | 9   |
| 25 | 9 | 5 | 42 | M6 | 6  | 66 | 64 | 5  | 39 | 1  | 17 | 6  | M5    | 36 | M12x1 | 10  |
| 30 | 9 | 5 | 50 | M6 | 12 | 86 | 82 | 5  | 52 | 1  | 19 | 6  | G 1/8 | 60 | M14x1 | 12  |

... Inserire la corsa in mm (esempio: Ø 16 corsa 50 = W1450162050) / ...Enter the stroke in mm (e.g. Ø 16 stroke 50 = W1450162050)

Corse alesaggio 16 mm / Strokes for bore 16 mm 25; 50; 75; 100

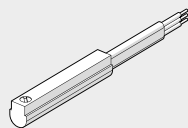
Corse alesaggio 20 mm / Strokes for bore 20 mm 25; 50; 75; 100; 125

Corse alesaggio 25 mm / Strokes for bore 25 mm 25; 50; 75; 100; 125; 150

Corse alesaggio 30 mm / Strokes for bore 30 mm 25; 50; 75; 100; 125; 150

## ACCESSORI PER SLITTA S10-S11-S12 / ACCESSORIES FOR SLIDES S10-S11-S12

### SENSORE Ø 4, PER SLITTA Ø 12 / SENSOR Ø 4, FOR SLIDE Ø 12

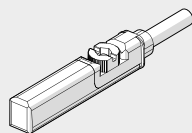


Per codici e dati tecnici vedere **capitolo dati tecnici**.  
For codes and technical data, see **chapter technical data**.

### SENSORE A SCOMPARSA, PER SLITTE Ø 16 ÷ 30 / RETRACTABLE SENSOR, FOR SLIDE Ø16 to 30

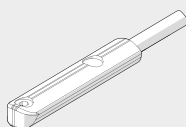
#### SENSORE TIPO SQUARE

Ultima generazione, fissaggio robusto  
**SENSOR, SQUARE TYPE**  
Latest generation, secure fixing



#### SENSORE TIPO OVALE

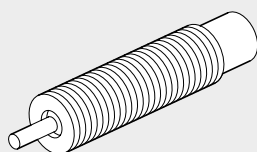
Tradizionale  
**SENSOR, OVAL TYPE**  
Traditional



Per codici e dati tecnici vedere **capitolo dati tecnici**.  
For codes and technical data, see **chapter technical data**.

## RICAMBI / SPARE PARTS

### DECELERATORI / SHOCK ABSORBERS



| Cod.       | Ø       | Descrizione / Description                                                         |
|------------|---------|-----------------------------------------------------------------------------------|
| 0950004001 | 12      | Deceleratore ECO8 MC2 + dado M8x1<br>Shock absorbers ECO 8 MC2 + nut M8x1         |
| 0950004002 | 16 - 20 | Deceleratore ECO10 MF2 + dado M10x1<br>Shock absorbers ECO 10 MF2 + nut M10x1     |
| 0950004003 | 25      | Deceleratore ECO15 MF1 + dado M12x1<br>Shock absorbers ECO 15 MF1 + nut M12x1     |
| 0950004004 | 30      | Deceleratore ECO25 MC2 + dado M14x1.5<br>Shock absorbers ECO 25 MC2 + nut M14x1.5 |

### NOTE / NOTES

# SLITTA DI PRECISIONE SERIE S13

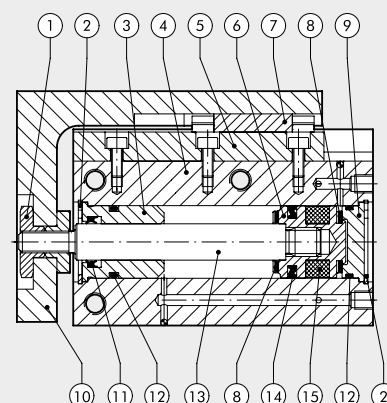
## PRECISION SLIDE SERIES S13



| DATI TECNICI / TECHNICAL DATA                                         |                | Ø 6                                                                                                                                                                                        | Ø 10  | Ø 16  | Ø 20  |
|-----------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|
| Pressione d'esercizio / Operating pressure                            | bar            | 2 ÷ 8                                                                                                                                                                                      |       |       |       |
|                                                                       | MPa            | 0.2 ÷ 0.8                                                                                                                                                                                  |       |       |       |
|                                                                       | psi            | 29 ÷ 116                                                                                                                                                                                   |       |       |       |
| Temperatura d'esercizio / Operating temperature                       | °C             | -10 ÷ +80                                                                                                                                                                                  |       |       |       |
|                                                                       | Fluido / Fluid | Aria filtrata a 20 µm non lubrificata, se lubrificata la lubrificazione deve essere continua<br>Lubricated and unlubricated compressed air at 20 µm, must be uninterrupted when lubricated |       |       |       |
| Velocità minima e massima / Minimum and maximum speed                 | mm/s           | 30 ÷ 500                                                                                                                                                                                   |       |       |       |
| Attacchi pneumatici / Pneumatic fittings                              |                | M5                                                                                                                                                                                         |       |       |       |
| Tipo di guida / Type of guide                                         |                | A ricircolo di sfere / Ball recirculation                                                                                                                                                  |       |       |       |
| Versioni / Versions                                                   |                | Doppio effetto magnetico con paracolpo in gomma<br>Magnetic dual-acting with rubber buffer                                                                                                 |       |       |       |
| Corse / Strokes                                                       | mm             | 10                                                                                                                                                                                         | 10    | 10    | 10    |
|                                                                       |                | 25                                                                                                                                                                                         | 25    | 25    | 25    |
|                                                                       |                | ---                                                                                                                                                                                        | ---   | 50    | 50    |
| Forza teorica in spinta, a 6 bar / Theoretical thrust force, at 6 bar | N              | 17                                                                                                                                                                                         | 47    | 120   | 188   |
| Forza teorica in tiro, a 6 bar / Theoretical pull force, at 6 bar     | N              | 13                                                                                                                                                                                         | 40    | 104   | 158   |
| Carichi ammessi / Admitted loads                                      |                | Vedere pagina seguente / See next page                                                                                                                                                     |       |       |       |
| Energia cinetica ammessa / Admitted kinetic energy                    | Joule          | 0.012                                                                                                                                                                                      | 0.025 | 0.050 | 0.100 |
| Tolleranza sulla corsa / Stroke tolerance                             | mm             | 0 / +1.0                                                                                                                                                                                   |       |       |       |
| Orientamento di montaggio / Assembly position                         |                | Qualsiasi (orizzontale o verticale) / Any (horizontal and vertical)                                                                                                                        |       |       |       |
| Peso / Weight                                                         | Kg             | Vedere pagina seguente / See next page                                                                                                                                                     |       |       |       |

### COMPONENTI / COMPONENTS

- ① DADO: acciaio inossidabile / NUT: stainless steel
- ② SEEGER: acciaio zincato / SNAP RING: galvanised steel
- ③ FONDELLO ANTERIORE: bronzo / FRONT BASE: bronze
- ④ CORPO: alluminio anodizzato / BODY: anodized aluminium
- ⑤ GUIDA: acciaio temprato inossidabile / GUIDE: tempered stainless steel
- ⑥ PISTONE: alluminio / PISTON: aluminium
- ⑦ PATTINO A RICIRCOLO DI SFERE: acciaio inossidabile / BALL RECIRCULATION PAD: stainless steel
- ⑧ PARACOLPI: NBR / BUFFER: NBR
- ⑨ FONDELLO POSTERIORE: alluminio anodizzato / REAR BASE: anodized aluminium
- ⑩ PIASTRA: alluminio anodizzato / PLATE: anodized aluminium
- ⑪ GUARNIZIONE STELO: tipo EM, in NBR / PISTON ROD GASKET: type EM, NBR
- ⑫ O RING: NBR / O-RING: NBR
- ⑬ STELO: acciaio inossidabile / PISTON ROD: stainless steel
- ⑭ GUARNIZIONE PISTONE: tipo PZ, in NBR / PISTON GASKET: type PZ, NBR
- ⑮ MAGNETE: neodimio (Ø 6 e Ø 10) plastoferrite (Ø 16 e Ø 20)  
MAGNET: neodymium (Ø 6 and Ø 10) plastoferrite (Ø 16 and Ø 20)



**PESI / WEIGHTS****PESO [gr] / WEIGHT [gr]**

| Corsa / Stroke | Alesaggio / Bore |     |     |     |
|----------------|------------------|-----|-----|-----|
|                | 6                | 8   | 16  | 20  |
| 10             | 68               | 125 | 230 | 455 |
| 25             | 90               | 160 | 280 | 550 |
| 50             | ---              | --- | 350 | 660 |

**PESO PARTE IN MOVIMENTO [gr] / WEIGHT OF MOVING PART [gr]**

| Corsa / Stroke | Alesaggio / Bore |     |     |     |
|----------------|------------------|-----|-----|-----|
|                | 6                | 8   | 16  | 20  |
| 10             | 30               | 50  | 100 | 180 |
| 25             | 40               | 68  | 125 | 220 |
| 50             | ---              | --- | 167 | 290 |

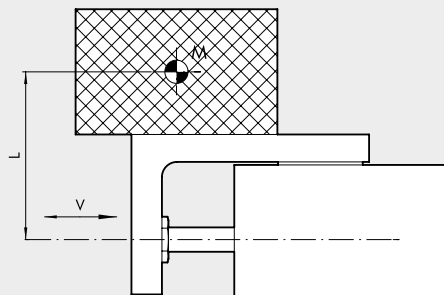
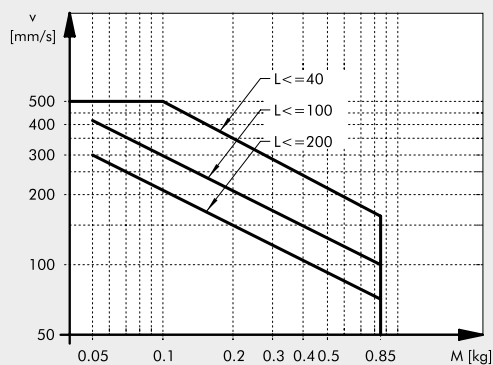
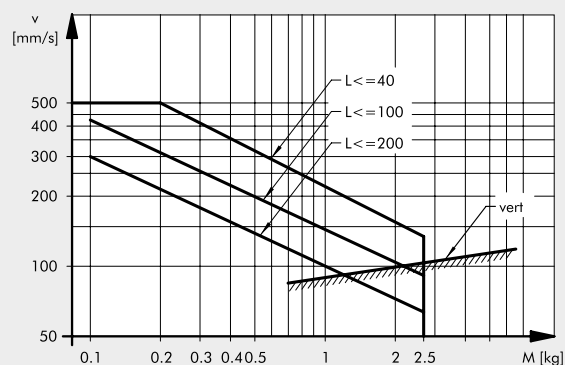
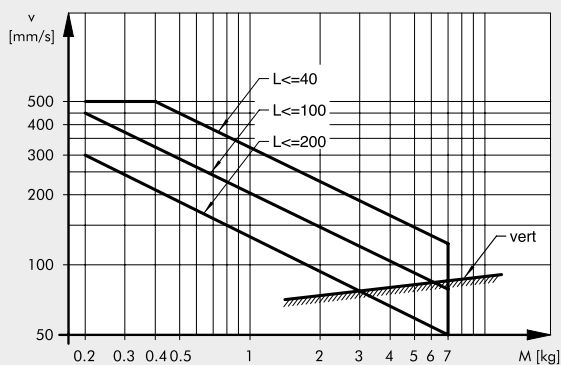
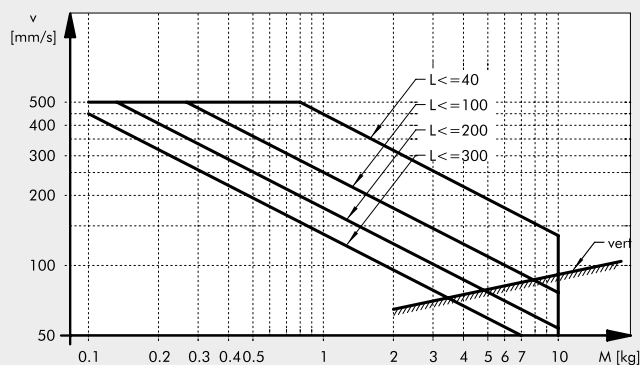
**DIAGRAMMI MASSA-VELOCITÀ / MASS-VELOCITY DIAGRAM**

$M$  (kg) = Massa applicata / Mass applied

$L$  (mm) = Distanza tra l'asse dello stelo e il baricentro della massa  
Distance between the axis of the piston rod and the barycentre of the mass

$v$  (mm/s) = Velocità della slitta / Velocity of the slide

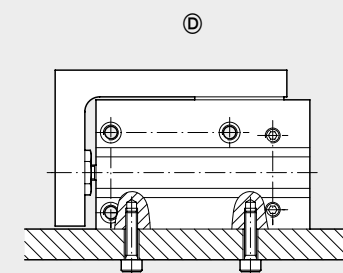
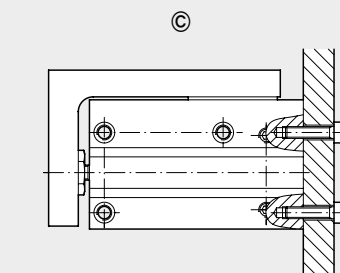
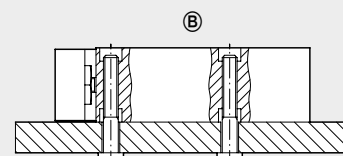
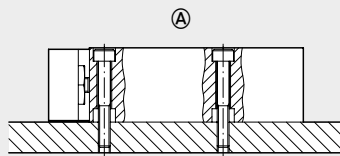
vert = Limite in caso di montaggio con movimento verticale  
Limit with vertical movement

**DIAGRAMMI CARICHI AMMESSI / ADMITTED LOADS DIAGRAM****S13-6****S13-10****S13-16****S13-20**

## POSSIBILITÀ DI FISSAGGIO / FIXING OPTIONS

### FISSAGGI DEL CORPO / FIXING THE BODY

- Ⓐ Fissaggio laterale attraverso i fori passanti  
*Lateral, via the through holes*
- Ⓑ Fissaggio laterale sui filetti dei fori  
*Lateral, on the hole threads*
- Ⓒ Fissaggio posteriore sui fori filettati  
*Rear, on the threaded holes*
- Ⓓ Fissaggio verticale sui fori filettati  
*Vertical, on the threaded holes*



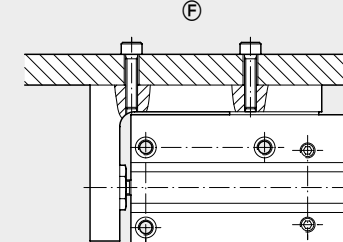
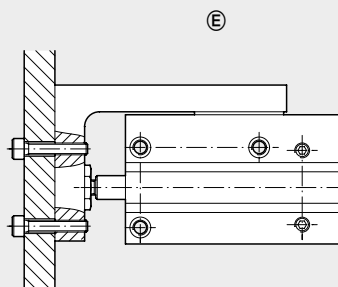
### FISSAGGI DELLA TAVOLA MOBILE FIXING THE MOVING TABLE

- Ⓔ Fissaggio frontale sui fori filettati  
*Front, on the threaded holes*
- Ⓕ Fissaggio superiore sui fori filettati  
*Top, on the threaded holes*

**N.B.:** dato che la tavola è supportata da guida/pattino a sfere, evitare di applicare coppie o sforzi eccessivi sulle stesse.

Perciò, quando si fissano le viti, tenere ferma la tavola e non il corpo in modo che le coppie non si scarichino attraverso al pattino a sfere.

**N.B.** Since the table is supported by a ball guide/pad, avoid applying excessive torques or forces. When securing the screws, hold the table, not the body, so that the torque discharges through the ball pad.



## ALIMENTAZIONE PNEUMATICA / COMPRESSED-AIR SUPPLY

Possibilità di alimentare pneumaticamente da dietro, da sinistra o da destra.

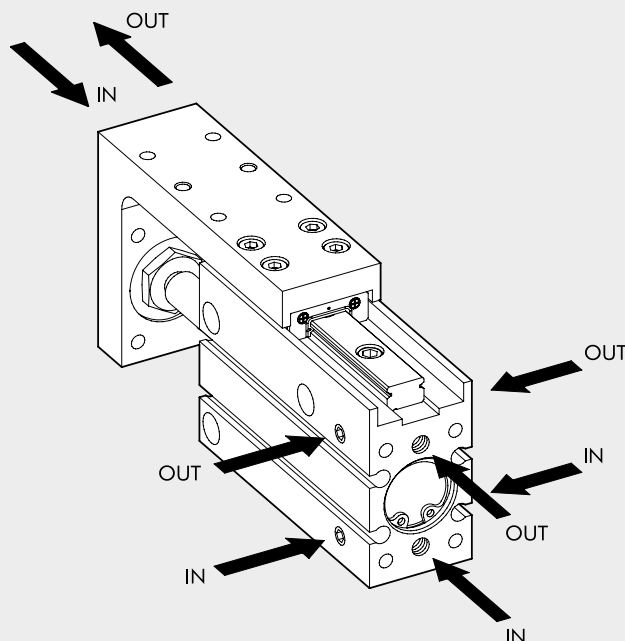
La slitta viene fornita con i fori a sinistra e a destra tappati da grani con O-ring.

Se si desidera utilizzarli, asportare le viti e gli O-ring e applicarli nei fori del lato posteriore, applicando una goccia di collante sul filetto dei grani.

The compressed air supply can be from the back, from the left or from the right.

The slide comes with holes on the left and right that are plugged with screws and O-ring seals.

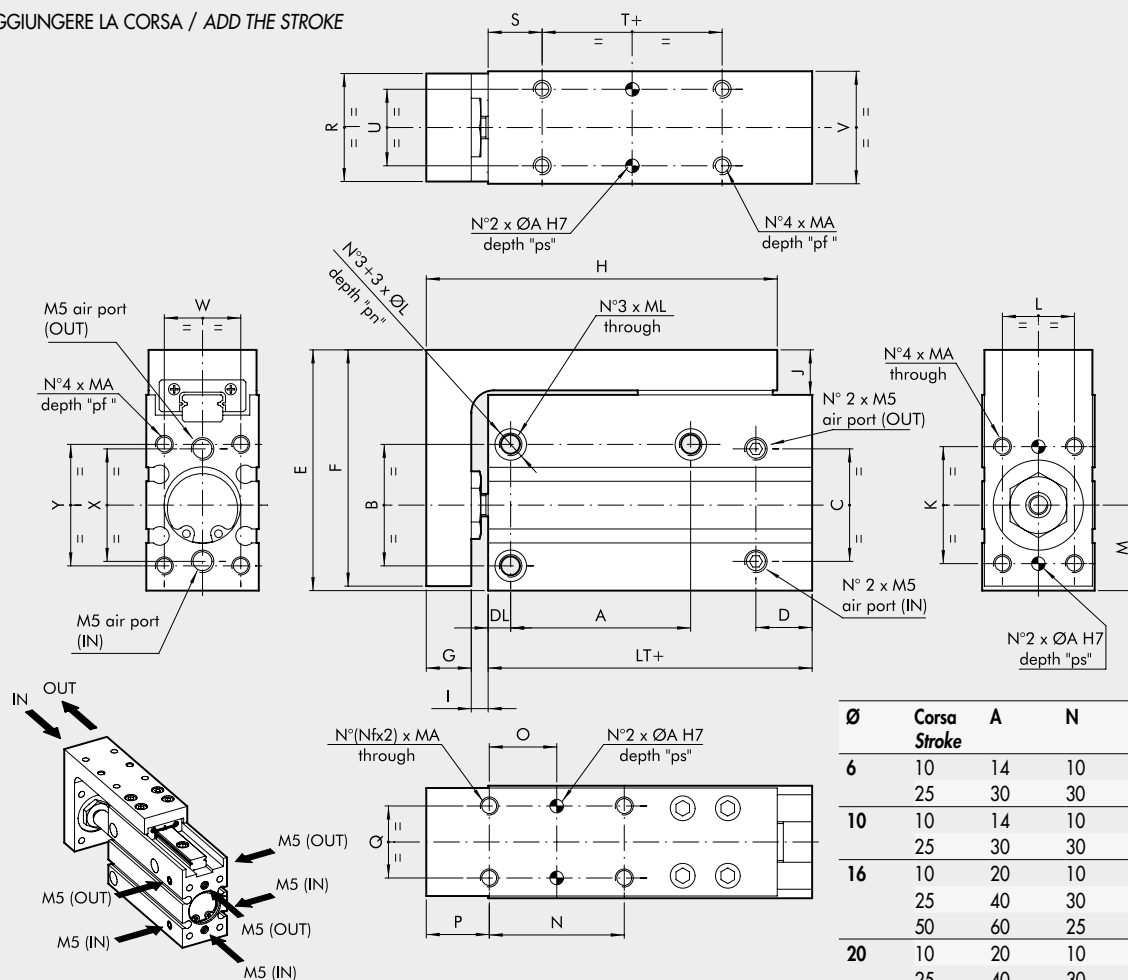
If you wish to use the holes, remove the screws and O-rings and fix them in the holes in the back, applying a drop of adhesive to the screw thread.





## DIMENSIONI / DIMENSIONS

+ = AGGIUNGERE LA CORSA / ADD THE STROKE



| Ø  | Corsa<br>Stroke | A  | N  | H   | NF |
|----|-----------------|----|----|-----|----|
| 6  | 10              | 14 | 10 | 42  | 2  |
|    | 25              | 30 | 30 | 62  | 2  |
| 10 | 10              | 14 | 10 | 49  | 2  |
|    | 25              | 30 | 30 | 69  | 2  |
| 16 | 10              | 20 | 10 | 58  | 2  |
|    | 25              | 40 | 30 | 78  | 2  |
|    | 50              | 60 | 25 | 98  | 3  |
| 20 | 10              | 20 | 10 | 64  | 2  |
|    | 25              | 40 | 30 | 84  | 2  |
|    | 50              | 70 | 25 | 104 | 3  |

| Cod.         | Ø  | LT   | B  | C  | D    | E    | F    | G   | I    | J    | K  | MA | pf | ØA | ps  | L  | M    | O   | P  | Q  | R  | S  |
|--------------|----|------|----|----|------|------|------|-----|------|------|----|----|----|----|-----|----|------|-----|----|----|----|----|
| W1471063...* | 6  | 31   | 19 | 18 | 10   | 39   | 38   | 5.5 | 2.9  | 7.5  | 15 | M3 | 5  | 2  | 4.5 | 9  | 14.5 | N/2 | 8  | 9  | 15 | 10 |
| W1471103...* | 10 | 35   | 23 | 20 | 12.5 | 47   | 46   | 7.5 | 4    | 9    | 18 | M4 | 6  | 2  | 4.5 | 11 | 15.5 | N/2 | 11 | 11 | 19 | 12 |
| W1471163...* | 16 | 42   | 27 | 25 | 12.5 | 53.5 | 52.5 | 10  | 3.75 | 10   | 26 | M4 | 7  | 3  | 7.5 | 16 | 19   | N/2 | 14 | 16 | 24 | 12 |
| W1471203...* | 20 | 52.5 | 34 | 32 | 15   | 64.5 | 63.5 | 11  | 4.5  | 10.5 | 34 | M5 | 9  | 3  | 7.5 | 20 | 23   | N/2 | 14 | 20 | 31 | 15 |

| Ø  | T  | U  | V  | W    | X  | Y  | ØL  | pn  | ML | DL |
|----|----|----|----|------|----|----|-----|-----|----|----|
| 6  | 5  | 9  | 16 | 10.5 | 18 | 19 | 6   | 3.5 | M4 | 4  |
| 10 | 5  | 13 | 20 | 13   | 20 | 23 | 7.5 | 4.5 | M5 | 5  |
| 16 | 10 | 17 | 25 | 17   | 25 | 27 | 7.5 | 4.5 | M5 | 5  |
| 20 | 10 | 20 | 32 | 20   | 32 | 34 | 9.5 | 7.5 | M6 | 6  |

\* Inserire la corsa, in mm (esempio Ø 6 corsa 10 = W1471063010) / \* Enter the stroke in mm (e.g. Ø 6 stroke 10=W1471063010)

Corse standard / Standard strokes:

Alesaggio / Bore Ø 6 -> 10; 25 mm

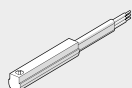
Alesaggio / Bore Ø 10 -> 10; 25 mm

Alesaggio / Bore Ø 16 -> 10; 25; 50 mm

Alesaggio / Bore Ø 20 -> 10; 25; 50 mm

## ACCESSORI / ACCESSORIES

### SENSORE Ø 4 / SENSOR Ø 4



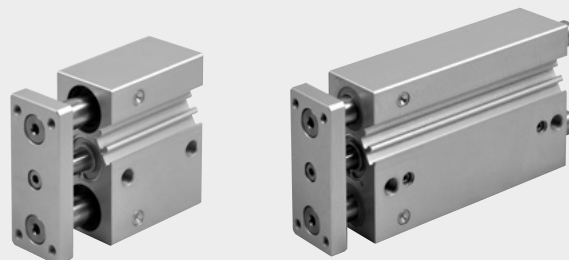
Per codici e dati tecnici vedere capitolo dati tecnici.

For codes and technical data, see chapter technical data.

# CILINDRO COMPATTO GUIDATO TIPO AMCCG BA/BB

## COMPACT GUIDE CYLINDERS TYPE AMCCG BA/BB

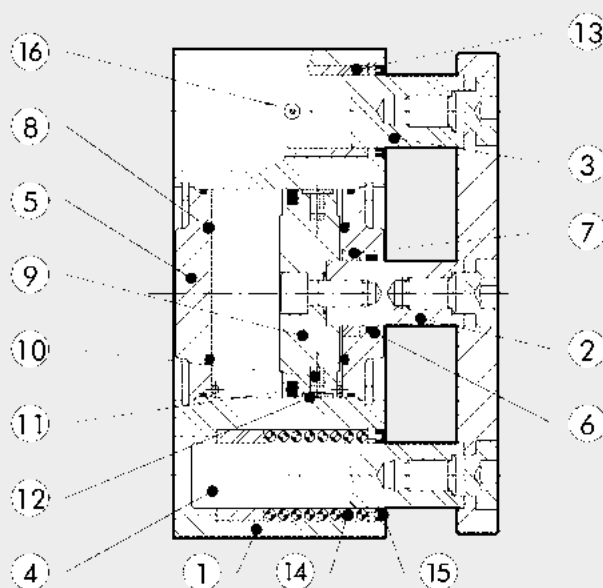
Ø16÷100



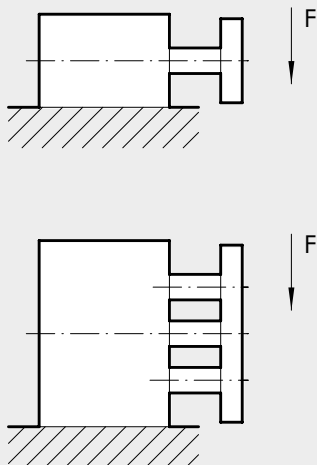
| DATI TECNICI / TECHNICAL DATA                   |     | AMMORTIZZATO / CUSHIONED                                                   | NON AMMORTIZZATO / NO-CUSHIONED                                                                                                                                                                                                      |
|-------------------------------------------------|-----|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pressione d'esercizio / Operating pressure      | bar |                                                                            | 1 ÷ 10                                                                                                                                                                                                                               |
|                                                 | MPa |                                                                            | 0.1 ÷ 1                                                                                                                                                                                                                              |
|                                                 |     |                                                                            | 14.5 ÷ 145                                                                                                                                                                                                                           |
| psi                                             |     |                                                                            | 0 ÷ 80°                                                                                                                                                                                                                              |
|                                                 |     |                                                                            | 32 ÷ 176°                                                                                                                                                                                                                            |
| Temperatura d'esercizio / Operating temperature | °C  |                                                                            |                                                                                                                                                                                                                                      |
|                                                 | °F  |                                                                            |                                                                                                                                                                                                                                      |
| Diametri / Bores                                | mm  | Ø 16; 20; 25; 32; 40; 50; 63                                               | Ø 16; 20; 25; 32; 40; 50; 63; 80; 100                                                                                                                                                                                                |
|                                                 | mm  | Ø 16: 20-30-40-50                                                          | Ø 16: 10-20-25*-30-40-50-75-100-150-200                                                                                                                                                                                              |
| Corse / Strokes                                 | mm  | Ø 20; Ø 25: 20-30-40-50-75-100-150                                         | Ø 20; Ø 25: 20-25*-30-40-50-75-100-150-200                                                                                                                                                                                           |
|                                                 | mm  | Ø 32 ÷ Ø 63: 25-50-75-100-150-175                                          | Ø 32 ÷ Ø 100: 25-50-75-100-150-200                                                                                                                                                                                                   |
|                                                 |     | Inoltre Ø 32: 125 a bronzine / Moreover Ø 32: 125 with bronze bushing      | A richiesta fornibili altre corse, ma gli ingombri del cilindro sono quelli della corsa standard immediatamente superiore<br>Other strokes on request but with the same cylinder dimensions as the standard stroke immediately above |
|                                                 |     | Con boccole in bronzo / With bronze bushings                               |                                                                                                                                                                                                                                      |
|                                                 |     | Con cuscinetti a sfera / With ball bearings                                |                                                                                                                                                                                                                                      |
| Versione / Version                              |     | * Solo per versione con boccole in bronzo / * Only bronze bushings version |                                                                                                                                                                                                                                      |

### COMPONENTI / COMPONENTS

- ① CAMICIA: lega di alluminio anodizzato  
JACKET: anodized aluminium alloy
- ② STELO: acciaio cromato e rettificato  
PISTON ROD: grinded chrome steel
- ③ STELO DI GUIDA: acciaio cromato e rettificato  
GUIDE ROD: grinded chrome steel
- ④ STELO DI GUIDA: acciaio al cromo temprato e cromato  
GUIDE ROD: hardened and tempered chrome steel
- ⑤ FONDELLO POSTERIORE: lega di alluminio anodizzato  
REAR BASE: anodized aluminium alloy
- ⑥ FONDELLO ANTERIORE: lega di alluminio anodizzato  
FRONT BASE: anodized aluminium alloy
- ⑦ BOCCOLA DI GUIDA: bronzo autolubrificante  
GUIDE BUSHING: self-lubricating bronze
- ⑧ GUARNIZIONE PARACOLPI: NBR  
BUFFER GASKET: NBR
- ⑨ PISTONE: lega di alluminio  
PISTON: aluminium alloy
- ⑩ MAGNETE: plastroferrite  
MAGNET: plastroferrite
- ⑪ GUARNIZIONE PISTONE: NBR (PARKER PRADIFA)  
PISTON GASKET: (PARKER PRADIFA) NBR
- ⑫ ANELLO DI GUIDA: PTFE  
GUIDE RING: PTFE
- ⑬ BRONZINA DI SCORRIMENTO: bronzo sinterizzato  
SLIDE BUSHING: sintered bronze
- ⑭ CUSCINETTI A SFERE  
BALL BEARINGS
- ⑮ GUARNIZIONE RASCHIAPOLVERE: NBR o FKM/FPM  
DUST SCRAPER RING: NBR or FKM/FPM
- ⑯ INGRASSATORI: zincati o inox  
GREASE NIPPLES: zinc-plated or stainless steel



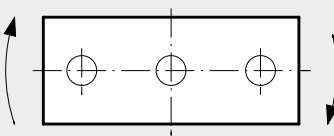
## CARICO LATERALE MASSIMO AMMISSIBILE / MAXIMUM SIDE LOAD



| Ø<br>mm | Guida / Guide unit | Corse / Stroke [mm] |    |     |    |    |     |      |      |     |     |     |
|---------|--------------------|---------------------|----|-----|----|----|-----|------|------|-----|-----|-----|
|         |                    | 16                  | 20 | 25  | 30 | 40 | 50  | 75   | 100  | 150 | 175 | 200 |
| 16      | Bronzine / Bushes  | 35                  | 29 | 27  | 26 | 23 | 20  | 16   | 14   | 10  | –   | 8   |
|         | Sfere / Ball       | 29                  | 31 | –   | 27 | 38 | 34  | 29   | 24   | 12  | –   | 8   |
| 20      | Bronzine / Bushes  | –                   | 52 | 50  | 45 | 39 | 35  | 58   | 49   | 38  | –   | 31  |
|         | Sfere / Ball       | –                   | 56 | –   | 48 | 79 | 70  | 54   | 50   | 27  | –   | 32  |
| 25      | Bronzine / Bushes  | –                   | 71 | 67  | 61 | 54 | 48  | 78   | 66   | 50  | –   | 41  |
|         | Sfere / Ball       | –                   | 72 | –   | 62 | 78 | 73  | 60   | 52   | 37  | –   | 30  |
| 32      | Bronzine / Bushes  | –                   | –  | 197 | –  | –  | 168 | 138  | 109  | 78  | 70  | 65  |
|         | Sfere / Ball       | –                   | –  | 89  | –  | –  | 60  | 276  | 217  | 138 | 122 | 110 |
| 40      | Bronzine / Bushes  | –                   | –  | 197 | –  | –  | 168 | 138  | 109  | 78  | 70  | 65  |
|         | Sfere / Ball       | –                   | –  | 89  | –  | –  | 60  | 276  | 217  | 138 | 122 | 110 |
| 50      | Bronzine / Bushes  | –                   | –  | 295 | –  | –  | 256 | 216  | 177  | 125 | 112 | 103 |
|         | Sfere / Ball       | –                   | –  | 138 | –  | –  | 89  | 393  | 314  | 184 | 163 | 148 |
| 63      | Bronzine / Bushes  | –                   | –  | 295 | –  | –  | 256 | 216  | 177  | 125 | 112 | 103 |
|         | Sfere / Ball       | –                   | –  | 138 | –  | –  | 89  | 393  | 314  | 184 | 163 | 148 |
| 80      | Bronzine / Bushes  | –                   | –  | 354 | –  | –  | 305 | 256  | 207  | 153 | –   | 128 |
|         | Sfere / Ball       | –                   | –  | 236 | –  | –  | 158 | 864  | 687  | 413 | –   | 335 |
| 100     | Bronzine / Bushes  | –                   | –  | 540 | –  | –  | 471 | 413  | 344  | 254 | –   | 213 |
|         | Sfere / Ball       | –                   | –  | 471 | –  | –  | 314 | 1374 | 1074 | 629 | –   | 511 |

N.B.: Le forze indicate in tabella sono espresse in N / NB: Forces are expressed in N

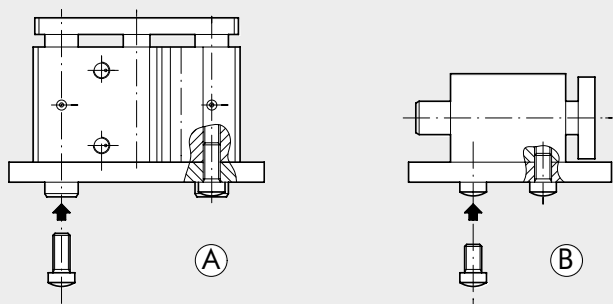
## MOMENTO MASSIMO AMMISSIBILE SULLA PIASTRA / MAXIMUM TORQUE ON PLATE



| Ø<br>mm | Guida / Guide unit | Corse / Stroke [mm] |      |       |      |      |       |       |      |       |      |      |
|---------|--------------------|---------------------|------|-------|------|------|-------|-------|------|-------|------|------|
|         |                    | 16                  | 20   | 25    | 30   | 40   | 50    | 75    | 100  | 150   | 175  | 200  |
| 16      | Bronzine / Bushes  | 0.51                | 0.45 | 0.40  | 0.36 | 0.32 | 0.28  | 0.24  | 0.20 | 0.46  | –    | 0.12 |
|         | Sfere / Ball       | 0.74                | 0.60 | –     | 0.50 | 0.72 | 0.65  | 0.54  | 0.45 | 0.35  | –    | 0.25 |
| 20      | Bronzine / Bushes  | –                   | 0.92 | 0.85  | 0.79 | 0.72 | 0.64  | 1.05  | 0.90 | 0.69  | –    | 0.56 |
|         | Sfere / Ball       | –                   | 1.28 | –     | 1.08 | 1.78 | 1.59  | 1.24  | 1    | 0.61  | –    | 0.49 |
| 25      | Bronzine / Bushes  | –                   | 1.55 | 1.42  | 1.32 | 1.18 | 1.04  | 1.70  | 1.44 | 1.10  | –    | 0.90 |
|         | Sfere / Ball       | –                   | 1.98 | –     | 1.70 | 2.16 | 2.20  | 1.66  | 1.4  | 1.02  | –    | 0.82 |
| 32      | Bronzine / Bushes  | –                   | –    | 3.94  | –    | –    | 2.95  | 2.46  | 1.97 | 1.55  | 1.38 | 1.24 |
|         | Sfere / Ball       | –                   | –    | 1.97  | –    | –    | 1     | 2.96  | 2.44 | 2.40  | 2.43 | 2.18 |
| 40      | Bronzine / Bushes  | –                   | –    | 4.40  | –    | –    | 3.45  | 2.96  | 2.46 | 1.70  | 1.55 | 1.40 |
|         | Sfere / Ball       | –                   | –    | 2.46  | –    | –    | 1.45  | 6.38  | 5.4  | 3     | 2.73 | 2.40 |
| 50      | Bronzine / Bushes  | –                   | –    | 7.36  | –    | –    | 5.9   | 4.90  | 4.4  | 3     | 2.78 | 2.50 |
|         | Sfere / Ball       | –                   | –    | 3.45  | –    | –    | 2.44  | 10.8  | 8.35 | 4.5   | 4.06 | 3.60 |
| 63      | Bronzine / Bushes  | –                   | –    | 7.85  | –    | –    | 6.38  | 5.40  | 4.9  | 3.4   | 3.05 | 2.80 |
|         | Sfere / Ball       | –                   | –    | 3.94  | –    | –    | 2.46  | 11.77 | 9.3  | 5     | 4.46 | 4    |
| 80      | Bronzine / Bushes  | –                   | –    | 11.78 | –    | –    | 9.80  | 7.84  | 6.88 | 5.30  | –    | 4.40 |
|         | Sfere / Ball       | –                   | –    | 9.34  | –    | –    | 5.88  | 31.38 | 24.5 | 10.40 | –    | 11.7 |
| 100     | Bronzine / Bushes  | –                   | –    | 22.55 | –    | –    | 19.62 | 16.68 | 14.7 | 10.65 | –    | 8.90 |
|         | Sfere / Ball       | –                   | –    | 21.56 | –    | –    | 13.73 | 63.72 | 49.1 | 26.6  | –    | 21.6 |

N.B.: Le forze indicate in tabella sono espresse in Nm / NB: Forces are expressed in Nm

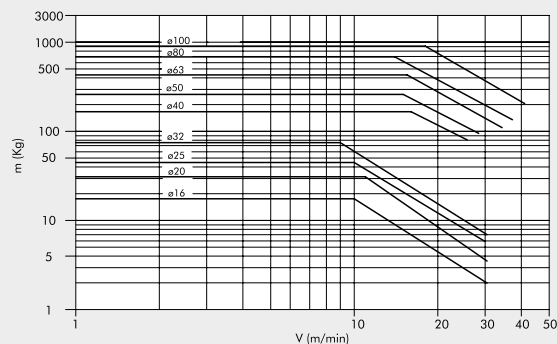
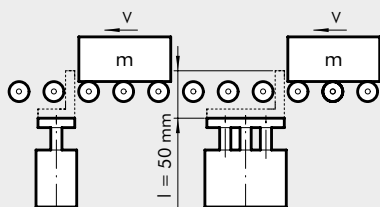
## POSSIBILITÀ DI MONTAGGIO / ASSEMBLY OPTIONS



Se il cilindro Compatto Guidato viene montato come in figura **A** è opportuno prevedere, nella struttura su cui viene montato, due fori passanti per le due colonne di guida.

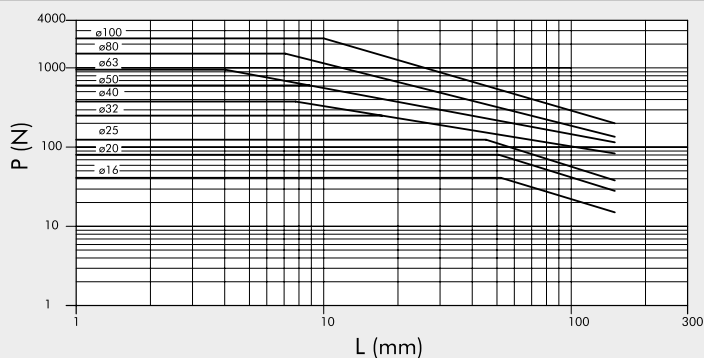
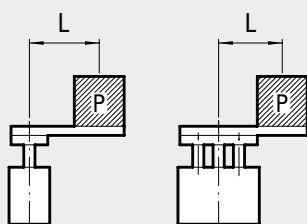
If the compact guided cylinder is mounted as shown in figure **A**, there need to be two through holes in the frame for the guide columns.

## UTILIZZO FUNZIONI STOPPER / STOPPER FUNCTIONS

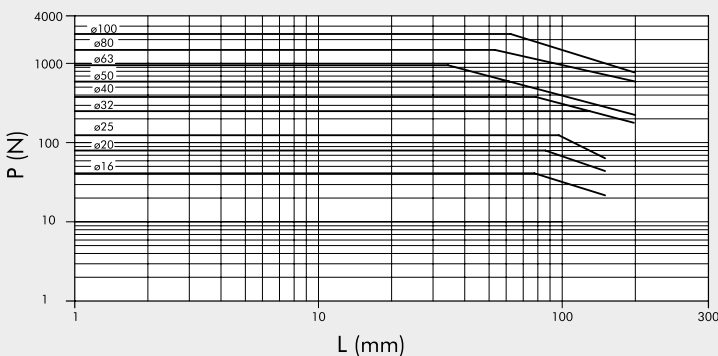


Il grafico di riferisce a un cilindro con corsa 50 mm  
 The graph refers to a 50mm-stroke cylinder.

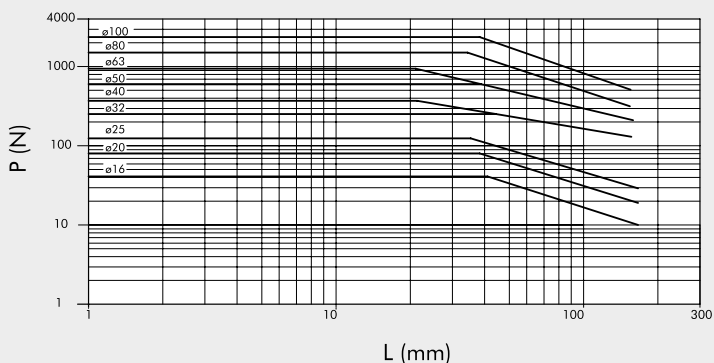
## UTILIZZO FUNZIONI DI SOLLEVAMENTO / LIFTING FUNCTIONS



Il grafico si riferisce a cilindri con corse 25÷50 mm con guida a ricircolo di sfere  
 The graph refers from 25 to 50 mm-stroke cylinders with ball re-circulation guide unit.



Il grafico si riferisce a cilindri con corse 75÷100 mm con guida a ricircolo di sfere  
 The graph refers from 75 to 100 mm-stroke cylinders with ball re-circulation guide unit.



Il grafico si riferisce a cilindri con corsa 50 mm con guida a bronzine  
 The graph refers to 50mm-stroke cylinders with bushing guide unit.

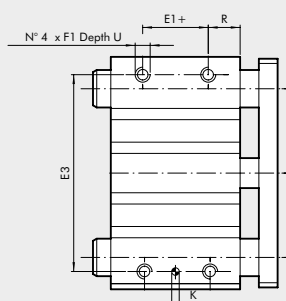
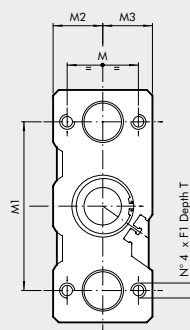
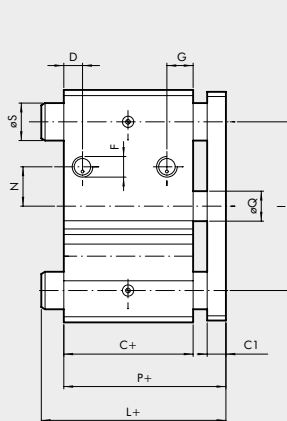
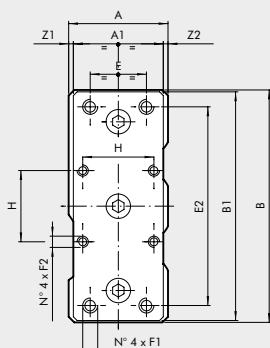
# CILINDRO COMPATTO GUIDATO TIPO AMCCG BA/BB COMPACT GUIDE CYLINDERS TYPE AMCCG BA/BB

Ø16÷100



## DIMENSIONI / DIMENSIONS

\* = CORSA / STROKE



| Ø   | Ø S                                       |                                      |
|-----|-------------------------------------------|--------------------------------------|
|     | Versione BA (bronzine)<br>Bronze-Bushings | Versione BB (sfere)<br>Ball-Bearings |
| 16  | 10                                        | 10                                   |
| 20  | 12                                        | 10                                   |
| 25  | 16                                        | 16                                   |
| 32  | 20                                        | 20                                   |
| 40  | 20                                        | 20                                   |
| 50  | 25                                        | **                                   |
| 63  | 25                                        | **                                   |
| 80  | 28                                        | 25                                   |
| 100 | 35                                        | 30                                   |

\*\* per corse 25 e 50 = 20 / for stroke 25 and 50 = 20  
per corse ≥ 75 = 25 / for stroke ≥ 75 = 25

| * = | corsa / stroke |
|-----|----------------|
| Ø   | 0÷50 75÷200    |
| 16  | 55 74.5        |
| 20  | 49 79          |
| 25  | 49.5 79.5      |

| Ø   | A   | A1  | B   | B1  | C    | C1 | D    | E  | E1 | E2  | E3  | F       | F1  | F2  | G    | H    | K <sup>HT</sup> | I   | L    | M  | M1  | M2   | M3   | N  | P    | ØQ | R  | T  | U    | Z1  | Z2  |
|-----|-----|-----|-----|-----|------|----|------|----|----|-----|-----|---------|-----|-----|------|------|-----------------|-----|------|----|-----|------|------|----|------|----|----|----|------|-----|-----|
| 16  | 33  | 25  | 64  | 62  | 33   | 10 | 9    | 16 | 7  | 52  | 54  | M5      | M5  | -   | 10.5 | -    | 4               | 40  | *    | 22 | 42  | 15   | 18   | 6  | 46   | 8  | 13 | 20 | 8    | 5.5 | 2.5 |
| 20  | 36  | 29  | 74  | 72  | 37   | 10 | 9    | 18 | 10 | 60  | 64  | 1/8 M5  | M5  | -   | 11   | -    | 5               | 46  | *    | 26 | 52  | 17   | 19   | 8  | 49   | 10 | 13 | 20 | 8    | 4.5 | 2.5 |
| 25  | 42  | 38  | 88  | 86  | 37.5 | 10 | 9    | 26 | 10 | 70  | 76  | 1/8 M6  | M6  | -   | 11.5 | -    | 5               | 56  | *    | 32 | 62  | 21   | 21   | 8  | 49.5 | 12 | 14 | 25 | 9    | 2   | 2   |
| 32  | 51  | 48  | 114 | 112 | 37.5 | 10 | 9    | 30 | 5  | 96  | 100 | 1/8 M8  | M8  | M6  | 12.5 | 32.5 | 6               | 80  | 73.5 | 38 | 80  | 25.5 | 25.5 | 14 | 49.5 | 16 | 16 | 20 | 11   | 1.5 | 1.5 |
| 40  | 51  | 48  | 124 | 122 | 44   | 10 | 11   | 30 | 10 | 106 | 110 | 1/8 M8  | M8  | M6  | 14   | 38   | 6               | 90  | 73.5 | 38 | 90  | 25.5 | 25.5 | 21 | 56   | 16 | 17 | 20 | 11   | 1.5 | 1.5 |
| 50  | 59  | 56  | 140 | 138 | 44   | 12 | 11   | 40 | 10 | 120 | 124 | 1/4 M10 | M8  | M8  | 14   | 46.5 | 6               | 100 | 83   | 44 | 100 | 29.5 | 29.5 | 27 | 58   | 20 | 17 | 25 | 12.5 | 1.5 | 1.5 |
| 63  | 72  | 69  | 150 | 148 | 49   | 12 | 11   | 50 | 10 | 130 | 132 | 1/4 M10 | M8  | M8  | 14   | 56.5 | 6               | 110 | 83   | 44 | 110 | 36   | 36   | 33 | 63   | 20 | 20 | 25 | 15   | 1.5 | 1.5 |
| 80  | 92  | 88  | 188 | 185 | 56.5 | 16 | 15.5 | 60 | 15 | 160 | 166 | 3/8 M12 | M10 | M10 | 19   | 72   | 6               | 140 | 93   | 56 | 140 | 46   | 46   | 36 | 74.5 | 25 | 21 | 30 | 18   | 2   | 2   |
| 100 | 112 | 108 | 224 | 221 | 66   | 16 | 19   | 80 | 15 | 190 | 200 | 3/8 M14 | M10 | M10 | 23   | 89   | 8               | 170 | 105  | 62 | 170 | 56   | 56   | 40 | 84   | 30 | 25 | 35 | 21   | 2   | 2   |

## CHIAVI DI CODIFICA / KEY TO CODE

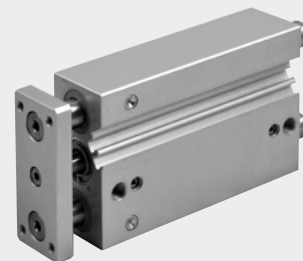
| Cod. | AMCCG<br>TIPOLOGIA<br>TYPE | 016<br>DIAMETRO<br>BORE | 100 *<br>CORSA<br>STROKE    | BA<br>VERSIONE<br>VERSION     |
|------|----------------------------|-------------------------|-----------------------------|-------------------------------|
|      |                            | 016 Ø 16                | Corsa in mm<br>Stroke in mm | BA Bronzine<br>Bronze bushing |
|      |                            | 032 Ø 32                |                             | BB Sfere<br>Ball bushing      |
|      |                            | 040 Ø 40                |                             |                               |
|      |                            | 050 Ø 50                |                             |                               |
|      |                            | 063 Ø 63                |                             |                               |
|      |                            | 080 Ø 80                |                             |                               |
|      |                            | 100 Ø 100               |                             |                               |

\* Inserire la corsa a 3 cifre (esempio 50 = 050)  
Enter the stroke in 3 digits (e.g. 50 = 050)

|        | Corse mm / Strokes mm                     |
|--------|-------------------------------------------|
| 16     | 10; 20; 25; 30; 40; 50; 75; 100; 150; 200 |
| 20     | 20; 25*; 30; 40; 50; 75; 100; 150; 200    |
| 25-100 | 25; 50; 75; 100; 150; 200                 |

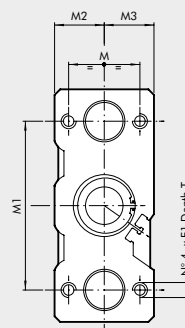
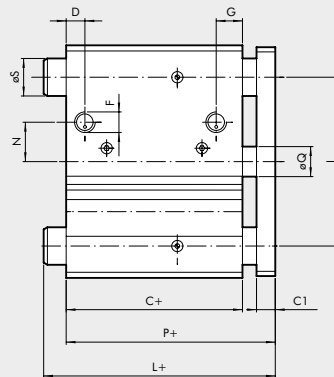
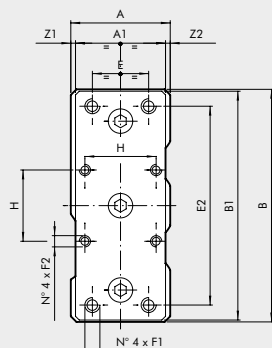
# CILINDRO COMPATTO GUIDATO AMMORTIZZATO TIPO AMCCG BA/AM CUSHIONED COMPACT GUIDE CYLINDERS TYPE AMCCG BA/AM

Ø16÷63

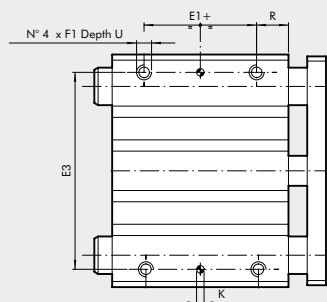


## DIMENSIONI / DIMENSIONS

\* = CORSA / STROKE



| * = | corsa / stroke |
|-----|----------------|
| Ø   | 0÷50 75÷200    |
| 16  | 73 -           |
| 20  | 78 105.5       |
| 25  | 78.5 108.5     |



| Ø  | Ø S                                       |                                      |
|----|-------------------------------------------|--------------------------------------|
|    | Versione BA (bronzine)<br>Bronze-Bushings | Versione BB (sfere)<br>Ball-Bearings |
| 16 | 10                                        | 10                                   |
| 20 | 12                                        | 10                                   |
| 25 | 16                                        | 16                                   |
| 32 | 20                                        | 20                                   |
| 40 | 20                                        | 20                                   |
| 50 | 25                                        | **                                   |
| 63 | 25                                        | **                                   |

\*\* per corse 25 e 50 = 20 / for stroke 25 and 50 = 20  
per corse ≥ 75 = 25 / for stroke ≥ 75 = 25

| Ø  | A  | A1 | B   | B1  | C    | C1 | D  | E  | E1 | E2  | E3  | F   | F1  | F2 | G    | H    | K <sup>1/2</sup> | I   | L     | M  | M1  | M2   | M3   | N    | P    | ØQ | R    | T  | U    | Z1  | Z2  |
|----|----|----|-----|-----|------|----|----|----|----|-----|-----|-----|-----|----|------|------|------------------|-----|-------|----|-----|------|------|------|------|----|------|----|------|-----|-----|
| 16 | 33 | 25 | 64  | 62  | 58   | 10 | 9  | 16 | 32 | 52  | 54  | M5  | M5  | -  | 10.5 | -    | 4                | 40  | *     | 22 | 42  | 15   | 18   | 8    | 73   | 8  | 13   | 20 | 8    | 5.5 | 2.5 |
| 20 | 36 | 29 | 74  | 72  | 62   | 10 | 9  | 18 | 35 | 60  | 64  | 1/8 | M5  | -  | 11   | -    | 5                | 46  | *     | 26 | 52  | 16.5 | 19.5 | 8.5  | 78   | 10 | 13   | 20 | 8    | 4.5 | 2.5 |
| 25 | 42 | 38 | 88  | 86  | 62.5 | 10 | 9  | 26 | 35 | 70  | 76  | 1/8 | M6  | -  | 11.5 | -    | 5                | 56  | *     | 32 | 62  | 21   | 21   | 13.5 | 78.5 | 12 | 14   | 25 | 9    | 2   | 2   |
| 32 | 51 | 48 | 114 | 112 | 62.5 | 10 | 9  | 30 | 30 | 96  | 100 | 1/8 | M8  | M6 | 12.5 | 32.5 | 6                | 80  | 106.5 | 38 | 80  | 25.5 | 25.5 | 15   | 82.5 | 16 | 16.5 | 20 | 11   | 1.5 | 1.5 |
| 40 | 51 | 48 | 124 | 122 | 69   | 10 | 11 | 30 | 35 | 106 | 110 | 1/8 | M8  | M6 | 14   | 38   | 6                | 90  | 106.5 | 38 | 90  | 25.5 | 25.5 | 20.5 | 89   | 16 | 17   | 20 | 11   | 1.5 | 1.5 |
| 50 | 59 | 56 | 140 | 138 | 69   | 12 | 11 | 40 | 35 | 120 | 124 | 1/4 | M10 | M8 | 14   | 46.5 | 6                | 100 | 118   | 44 | 100 | 29.5 | 29.5 | 37   | 93   | 20 | 17   | 25 | 12.5 | 1.5 | 1.5 |
| 63 | 72 | 69 | 150 | 148 | 74   | 12 | 11 | 50 | 35 | 130 | 132 | 1/4 | M10 | M8 | 14   | 56.5 | 6                | 110 | 118   | 44 | 110 | 36   | 36   | 31.5 | 98   | 20 | 20   | 25 | 15   | 1.5 | 1.5 |

## CHIAVI DI CODIFICA / KEY TO CODE

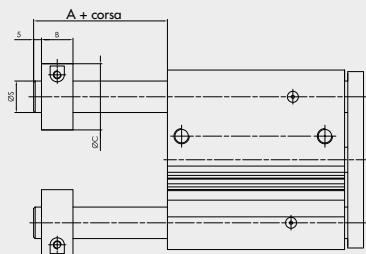
| Cod. | AMCCG<br>TIPOLOGIA<br>TYPE | 016<br>DIAMETRO<br>BORE | 100 *<br>CORSA<br>STROKE    | BA<br>VERSIONE<br>VERSION     | AM<br>VERSIONE<br>VERSION    |
|------|----------------------------|-------------------------|-----------------------------|-------------------------------|------------------------------|
|      |                            | 016 Ø 16                | Corsa in mm<br>Stroke in mm | BA Bronzine<br>Bronze bushing | AM Ammortizzato<br>Cushioned |
|      |                            | 032 Ø 32                |                             | BB Sfere<br>Ball bushing      |                              |
|      |                            | 040 Ø 40                |                             |                               |                              |
|      |                            | 050 Ø 50                |                             |                               |                              |
|      |                            | 063 Ø 63                |                             |                               |                              |
|      |                            | 080 Ø 80                |                             |                               |                              |
|      |                            | 100 Ø 100               |                             |                               |                              |

\* Inserire la corsa a 3 cifre  
(esempio 50 = 050)  
Enter the stroke in 3 digits  
(e.g. 50 = 050)

| Ø     | Corse mm / Strokes mm        |
|-------|------------------------------|
| 16    | 20; 30; 40; 50               |
| 20-25 | 20; 30; 40; 50; 75; 100; 150 |
| 32-63 | 25; 50; 75; 100; 150; 175    |

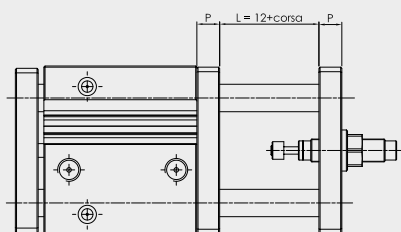
**CILINDRO COMPATTO GUIDATO, VERSIONI CON REGOLAZIONI DELLA CORSA FORNIBILI SU RICHIESTA**  
**GUIDED COMPACT CYLINDER, VERSIONS HAVING STROKE REGULATIONS SUPPLIED ON REQUEST**

Finecorsa meccanico della fuoriuscita della piastra  
*Mechanical end stroke of the plate coming out*



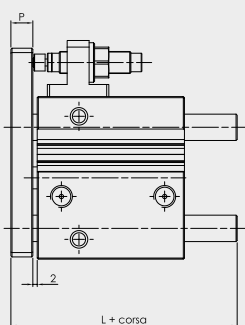
| Alesaggio / Bore | ØS | A  | B  | C  |
|------------------|----|----|----|----|
| 16               | 10 | 20 | 15 | 25 |
| 20               | 12 | 21 | 16 | 30 |
| 25               | 16 | 22 | 17 | 34 |
| 32               | 20 | 25 | 20 | 40 |
| 40               | 20 | 25 | 20 | 40 |
| 50               | 25 | 25 | 20 | 45 |
| 63               | 25 | 25 | 20 | 45 |

Finecorsa della fuoriuscita della piastra con deceleratore  
*End stroke of the plate coming out with decelerator*



| Alesaggio / Bore | P  |
|------------------|----|
| 16               | 10 |
| 20               | 10 |
| 25               | 10 |
| 32               | 10 |
| 40               | 10 |
| 50               | 12 |
| 63               | 12 |

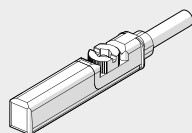
Finecorsa del rientro della piastra con deceleratore  
*End stroke of the plate return with decelerator*



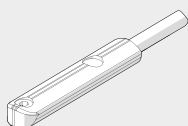
| Alesaggio / Bore | P  | L    | * Corsa / Stroke 0÷50 | Corsa / Stroke 75÷100 |
|------------------|----|------|-----------------------|-----------------------|
| 16               | 10 | *    | 45                    | -                     |
| 20               | 10 | *    | 49                    | 76                    |
| 25               | 10 | *    | 49.5                  | 79.5                  |
| 32               | 10 | 73.5 |                       |                       |
| 40               | 10 | 73.5 |                       |                       |
| 50               | 12 | 83   |                       |                       |
| 63               | 12 | 83   |                       |                       |

**ACCESSORI / ACCESSORIES**
**SENSORE A SCOMPARSA CON L'INSERIMENTO DALL'ALTO / RETRACTABLE SENSOR WITH INSERTION FROM ABOVE**
**SENSORE TIPO SQUARE**

Ultima generazione, fissaggio robusto  
**SENSOR, SQUARE TYPE**  
*Latest generation, secure fixing*


**SENSORE TIPO OVALE**

Tradizionale  
**SENSOR, OVAL TYPE**  
*Traditional*



Per codici e dati tecnici vedere **capitolo dati tecnici**.

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

# CILINDRO COMPATTO GUIDATO SERIE MULTIFIX COMPACT GUIDED CYLINDER SERIES MULTIFIX



| DATI TECNICI / TECHNICAL DATA                                               |     | SILENZIATO / SILENCED                                                                                                                                                                                                                                                                                                                                                                                             | CON AMMORTIZZO PNEUMATICO<br>WITH PNEUMATIC CUSHIONING                                               |
|-----------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Pressione d'esercizio / Operating pressure                                  | bar |                                                                                                                                                                                                                                                                                                                                                                                                                   | 1 ÷ 10                                                                                               |
|                                                                             | MPa |                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.1 ÷ 1                                                                                              |
|                                                                             | psi |                                                                                                                                                                                                                                                                                                                                                                                                                   | 14.5 ÷ 145                                                                                           |
| Temperatura d'esercizio / Temperature range                                 | °C  |                                                                                                                                                                                                                                                                                                                                                                                                                   | -20 ÷ +80                                                                                            |
|                                                                             | °F  |                                                                                                                                                                                                                                                                                                                                                                                                                   | 14 ÷ 176                                                                                             |
| Fluido / Fluid                                                              |     | Aria senza lubrificazione, se si utilizza aria lubrificata la lubrificazione deve essere continua<br>Unlubricated air. Lubrication, if used, must be continuous                                                                                                                                                                                                                                                   |                                                                                                      |
| Diametri / Bores                                                            | mm  | 16; 20; 25; 32; 40                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                      |
| Corse / Strokes                                                             | mm  | Ø 16: 10-20-30-40-50-75-100-125-150-175-200-250<br>Ø 20, Ø 25: 20-30-40-50-75-100-125-150-175-200<br>250-300-350-400<br>Ø 32 ÷ 40: 25-50-75-100-125-150-175-200-250-300<br>350-400<br>A richiesta fornibili altre corse, ma gli ingombri del cilindro sono quelli della corsa immediatamente superiore<br>Other strokes on request but with the same cylinder dimensions as the standard stroke immediately above | Ø 16: 25-50-75-100-125-150-175-200-250<br>Ø 20 ÷ 40: 25-50-75-100-125-150-175-200-250-300<br>350-400 |
| Versioni / Version                                                          |     | Con boccole in bronzo - Con cuscinetti a ricircolo di sfere / With bronze bushings, with ball recirculating bearings                                                                                                                                                                                                                                                                                              |                                                                                                      |
| Magnete per sensori / Magnet for sensors                                    |     | Sì                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                      |
| Pressione di spunto / Inrush pressure                                       | bar | Ø 16; 20; 25 = 0.8                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                      |
| con boccole in bronzo / with bronze bushings                                |     | Ø 32; 40 = 0.5                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                      |
| con cuscinetti a ricircolo di sfere / with ball recirculating bearings      |     | Ø 16; 20; 25 = 0.6                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                      |
|                                                                             |     | Ø 32; 40 = 0.4                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                      |
| Forze sviluppate in spinta/trazione / Forces generated in thrust/retraction |     | Vedere "Dati tecnici generali cilindri" all'inizio del capitolo<br>See cylinder "General technical data" at the beginning of the chapter                                                                                                                                                                                                                                                                          |                                                                                                      |

## PESI [kg] / WEIGHTS [kg]

### VERSIONE SILENZIATA / SILENCED VERSION

| Alesaggio / Bore |     | Corse [mm] / Strokes [mm] |      |      |      |      |      |      |      |      |      |      |     |      |     |     |  |
|------------------|-----|---------------------------|------|------|------|------|------|------|------|------|------|------|-----|------|-----|-----|--|
|                  | 10  | 20                        | 25   | 30   | 40   | 50   | 75   | 100  | 125  | 150  | 175  | 200  | 250 | 300  | 350 | 400 |  |
| 16               | 0.3 | 0.35                      | –    | 0.4  | 0.45 | 0.5  | 0.7  | 0.85 | 1    | 1.15 | 1.3  | 1.45 | 1.6 | –    | –   | –   |  |
| 20               | –   | 0.55                      | –    | 0.65 | 0.75 | 0.85 | 1.15 | 1.35 | 1.55 | 1.75 | 1.95 | 2.15 | 2.5 | 2.9  | 3.3 | 3.7 |  |
| 25               | –   | 0.9                       | –    | 1.05 | 1.2  | 1.35 | 1.9  | 2.25 | 2.55 | 2.85 | 3.15 | 3.35 | 4   | 4.35 | 4.7 | 5   |  |
| 32               | –   | –                         | 1.5  | –    | –    | 1.85 | 2.25 | 2.6  | 3    | 3.35 | 3.7  | 4.05 | 5.2 | 5.9  | 6.6 | 7.3 |  |
| 40               | –   | –                         | 1.75 | –    | –    | 2.15 | 2.55 | 2.95 | 3.35 | 3.75 | 4.15 | 4.55 | 5.8 | 6.6  | 7.4 | 8.2 |  |

### VERSIONE CON AMMORTIZZO PNEUMATICO / VERSION WITH PNEUMATIC CUSHIONING

| VERSIONE CON FRESINATO PRELIMINARE VERSION WITH PRELIMINARY SCUTTERING |      |                           |      |      |      |      |      |      |      |     |      |     |
|------------------------------------------------------------------------|------|---------------------------|------|------|------|------|------|------|------|-----|------|-----|
| Alesaggio / Bore                                                       |      | Corse [mm] / Strokes [mm] |      |      |      |      |      |      |      |     |      |     |
|                                                                        | 25   | 50                        | 75   | 100  | 125  | 150  | 175  | 200  | 250  | 300 | 350  | 400 |
| 16                                                                     | 0.55 | 0.65                      | 0.8  | 0.95 | 1.2  | 1.35 | 1.5  | 1.65 | 1.8  | –   | –    | –   |
| 20                                                                     | 0.8  | 1                         | 1.25 | 1.5  | 1.75 | 2    | 2.25 | 2.5  | 2.75 | 3   | 3.25 | 3.5 |
| 25                                                                     | 1.3  | 1.6                       | 2    | 2.4  | 2.7  | 3    | 3.3  | 3.6  | 4.2  | 4.8 | 5.4  | 6   |
| 32                                                                     | 1.8  | 2.1                       | 2.5  | 2.9  | 3.3  | 3.7  | 4.1  | 4.5  | 5.3  | 6.1 | 6.9  | 7.7 |
| 40                                                                     | 2.1  | 2.5                       | 2.9  | 3.4  | 3.8  | 4.2  | 4.6  | 5    | 6.1  | 7.1 | 8.2  | 9.3 |



**COMPONENTI VERSIONE SILENZIATA / COMPONENTS SILENCED VERSION**

- ① CORPO: lega di alluminio estruso anodizzato  
*BODY: anodized extruded aluminium alloy*
- ② STELO: acciaio cromato e rettificato  
*PISTON ROD: grinded chromed steel*
- ③ FONDELLO POSTERIORE: lega di alluminio anodizzato  
*REAR BASE: anodized aluminium alloy*
- ④ FONDELLO ANTERIORE: lega di alluminio anodizzato  
*FRONT BASE: anodized aluminium alloy*
- ⑤ PISTONE: lega di alluminio  
*PISTON: aluminium alloy*
- ⑥ MAGNETE: plastroferrite  
*MAGNET: plastroferrite*
- ⑦ GUARNIZIONE PISTONE: NBR o poliuretano  
*PISTON GASKET: NBR or polyurethane*
- ⑧ GUARNIZIONI O-RING: NBR  
*GASKET O-Ring: NBR*
- ⑨ FLANGIA: lega di alluminio anodizzato  
*FLANGE: anodized aluminium alloy*
- ⑩ PARACOLPO ELASTICO: poliuretano  
*ELASTIC BUFFER: polyurethane*
- ⑪ TAPPO FILETTATO: ottone nichelato con O-Ring  
*THREADED PLUG: nickel-plated brass with O-Ring*

N.B.: per utilizzare le alimentazioni pneumatiche laterali svitare i ed avvitare sui filetti delle alimentazioni pneumatiche sul lato superiore.

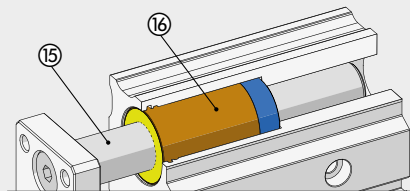
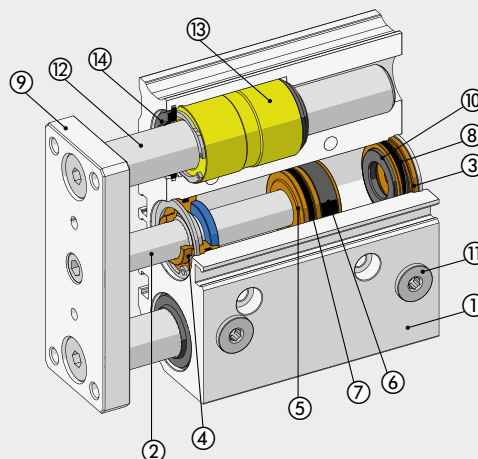
N.B.: when using side compressed air supplies, unscrew the caps tighten them onto the threads of the compressed air supplies on the upper side.

**Versione con boccole in bronzo / Version with bronze bushings**

- ⑫ STELO DI GUIDA: acciaio cromato e rettificato  
*GUIDE ROD: grinded chromed steel*
- ⑬ BRONZINA DI SCORRIMENTO: bronzo sinterizzato  
*SLIDE BUSHING: sintered bronze*
- ⑭ RASCHIATORE: NBR  
*WIPER RING: NBR*

**Versione con cuscinetti a ricircolo di sfere / Version with ball recirculating bearings**

- ⑮ STELO DI GUIDA: acciaio al cromo temprato e cromato  
*GUIDE ROD: tempered and chromed chrome steel*
- ⑯ CUSCINETTO A RICIRCOLO DI SFERE  
*BALL RECIRCULATING BEARING*

**Versione con cuscinetti a ricircolo di sfere  
Version with ball recirculating bearings****Versione con boccole in bronzo  
Version with bronze bushings****NOTE / NOTES**

# COMPONENTI VERSIONE CON AMMORTIZZO PNEUMATICO / COMPONENTS VERSION WITH PNEUMATIC CUSHIONING

- ① CORPO: lega di alluminio estruso anodizzato  
*BODY: anodized extruded aluminium alloy*
- ② STELO: acciaio cromato e rettificato  
*PISTON ROD: grinded chromed steel*
- ③ FONDELLO POSTERIORE: lega di alluminio anodizzato  
*REAR BASE: anodized aluminium alloy*
- ④ FONDELLO ANTERIORE: lega di alluminio anodizzato  
*FRONT BASE: anodized aluminium alloy*
- ⑤ PISTONE: lega di alluminio  
*PISTON: aluminium alloy*
- ⑥ MAGNETE: plastroferrite  
*MAGNET: plastroferrite*
- ⑦ GUARNIZIONE PISTONE: NBR o poliuretano  
*PISTON GASKET: NBR or polyurethane*
- ⑧ GUARNIZIONI O-RING: NBR  
*GASKET O-Ring: NBR*
- ⑨ FLANGIA: lega di alluminio anodizzato  
*FLANGE: anodized aluminium alloy*
- ⑩ GUARNIZIONE AMMORTIZZO: NBR  
*CUSHIONING GASKET: NBR*
- ⑪ SPILLO AMMORTIZZO: ottone  
*CUSHIONING NEEDLE: brass*
- ⑫ TAPPO FILETTATO: ottone nichelato con O-ring  
*THREADED PLUG: nickel-plated brass with O-Ring*

N.B.: per utilizzare le alimentazioni pneumatiche laterali svitare i tappi ed avvitarli sui filetti delle alimentazioni pneumatiche sul superiore.

N.B.: when using side compressed air supplies, unscrew the caps and tighten them onto the threads of the compressed air supplies on the upper side.

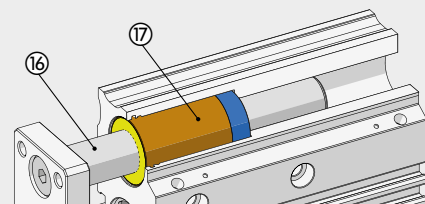
## Versione con boccole in bronzo / Version with bronze bushings

- ⑬ STELO DI GUIDA: acciaio cromato e rettificato  
*GUIDE ROD: grinded chromed steel*
- ⑭ BRONZINA DI SCORRIMENTO: bronzo sinterizzato  
*SLIDE BUSHING: sintered bronze*
- ⑮ RASCHIATORE: NBR  
*WIPER RING: NBR*

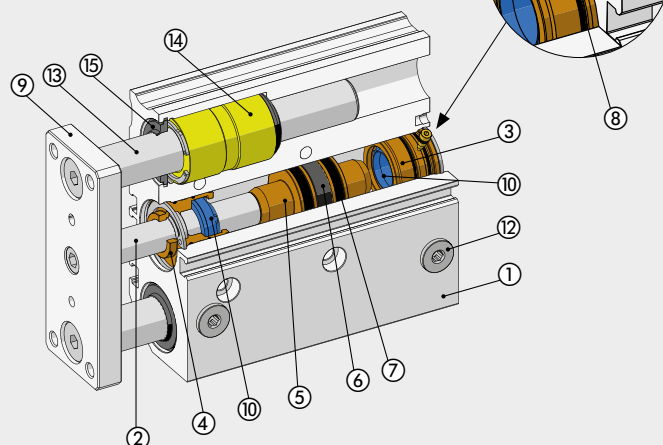
## Versione con cuscinetti a ricircolo di sfere / Version with ball recirculating bearings

- ⑯ STELO DI GUIDA: acciaio al cromo temprato e cromato  
*GUIDE ROD: tempered and chromed chrome steel*
- ⑰ CUSCINETTO A RICIRCOLO DI SFERE  
*BALL RECIRCULATING BEARING*

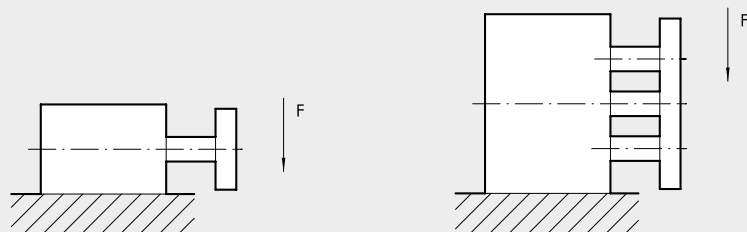
## Versione con cuscinetti a ricircolo di sfere Version with ball recirculating bearings



## Versione con boccole in bronzo Version with bronze bushings



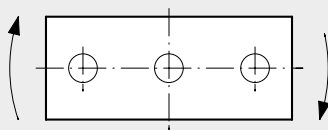
## NOTE / NOTES

**CARICO LATERALE MASSIMO AMMISSIBILE / MAXIMUM SIDE LOAD**


| Ø    | Guida / Guide unit | Corse [mm] / Stroke [mm] |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------|--------------------|--------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| [mm] |                    | 10                       | 20 | 25  | 30  | 40  | 50  | 75  | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 | 400 |
| 16   | Bronzine / Bushes  | 40                       | 35 | 32  | 29  | 25  | 24  | 25  | 20  | 19  | 18  | 16  | 13  | 10  |     |     |     |
|      | Sfere / Balls      | 35                       | 38 | 33  | 30  | 29  | 28  | 35  | 24  | 21  | 19  | 16  | 13  | 10  |     |     |     |
| 20   | Bronzine / Bushes  | -                        | 40 | 35  | 33  | 32  | 30  | 63  | 52  | 49  | 40  | 36  | 32  | 26  | 22  | 14  | 10  |
|      | Sfere / Balls      | -                        | 40 | 34  | 32  | 31  | 28  | 55  | 50  | 45  | 38  | 34  | 30  | 25  | 21  | 12  | 8   |
| 25   | Bronzine / Bushes  | -                        | 70 | 60  | 50  | 40  | 36  | 80  | 70  | 65  | 55  | 50  | 45  | 35  | 25  | 18  | 10  |
|      | Sfere / Balls      | -                        | 70 | 60  | 50  | 40  | 36  | 65  | 55  | 62  | 52  | 45  | 42  | 30  | 23  | 15  | 6   |
| 32   | Bronzine / Bushes  | -                        | -  | 140 | 130 | 125 | 120 | 150 | 120 | 110 | 90  | 80  | 70  | 50  | 40  | 20  | 10  |
|      | Sfere / Balls      | -                        | -  | 120 | 115 | 110 | 100 | 180 | 140 | 125 | 120 | 110 | 90  | 80  | 60  | 30  | 15  |
| 40   | Bronzine / Bushes  | -                        | -  | 140 | 130 | 125 | 120 | 150 | 120 | 110 | 90  | 80  | 70  | 50  | 40  | 20  | 10  |
|      | Sfere / Balls      | -                        | -  | 120 | 115 | 110 | 100 | 180 | 140 | 125 | 120 | 110 | 90  | 80  | 60  | 30  | 15  |

Distanza baricentro da piano anteriore = 50 mm / Centre of gravity distance from the front plane = 50 mm

N.B.: Le forze indicate in tabella sono espresse in N / N.B.: Forces are expressed in N

**MOMENTO MASSIMO AMMISSIBILE SULLA PIASTRA / MAXIMUM TORQUE ON PLATE**


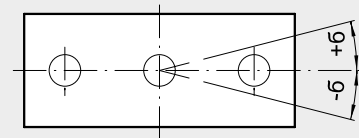
| Ø    | Guida / Guide unit | Corse [mm] / Stroke [mm] |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| [mm] |                    | 10                       | 20   | 25   | 30   | 40   | 50   | 75   | 100  | 125  | 150  | 175  | 200  | 250  | 300  | 350  | 400  |
| 16   | Bronzine / Bushes  | 0.71                     | 0.60 | 0.54 | 0.50 | 0.44 | 0.39 | 0.71 | 0.60 | 0.52 | 0.45 | 0.41 | 0.37 | 0.31 | -    | -    | -    |
|      | Sfere / Balls      | 1.02                     | 0.76 | 0.62 | 0.61 | 1.02 | 0.89 | 0.67 | 0.54 | 0.44 | 0.38 | 0.33 | 0.29 | 0.24 | -    | -    | -    |
| 20   | Bronzine / Bushes  | -                        | 1.08 | 1.03 | 0.96 | 0.85 | 0.77 | 1.94 | 1.68 | 1.48 | 1.32 | 1.19 | 1.09 | 0.93 | 0.80 | 0.71 | 0.64 |
|      | Sfere / Balls      | -                        | 1.30 | 1.13 | 1.06 | 2.24 | 2.00 | 1.57 | 1.29 | 1.38 | 1.21 | 1.06 | 0.96 | 0.78 | 0.67 | 0.58 | 0.50 |
| 25   | Bronzine / Bushes  | -                        | 1.81 | 1.67 | 1.60 | 1.42 | 1.29 | 3.05 | 2.65 | 2.33 | 2.08 | 1.88 | 1.72 | 1.46 | 1.28 | 1.12 | 1.01 |
|      | Sfere / Balls      | -                        | 2.17 | 2.01 | 1.80 | 3.47 | 3.11 | 2.45 | 2.03 | 2.11 | 1.83 | 1.63 | 1.45 | 1.19 | 1.01 | 0.88 | 0.76 |
| 32   | Bronzine / Bushes  | -                        | -    | 6.54 | -    | -    | 5.28 | 5.86 | 5.12 | 4.55 | 4.10 | 3.72 | 3.41 | 2.93 | 2.55 | 2.27 | 2.04 |
|      | Sfere / Balls      | -                        | -    | 6.13 | -    | -    | 5.04 | 5.26 | 4.65 | 6.53 | 5.96 | 5.49 | 5.08 | 4.42 | 3.89 | 3.48 | 3.13 |
| 40   | Bronzine / Bushes  | -                        | -    | 7.21 | -    | -    | 5.83 | 6.46 | 5.64 | 5.02 | 4.51 | 4.10 | 3.76 | 3.22 | 2.82 | 2.50 | 2.26 |
|      | Sfere / Balls      | -                        | -    | 6.75 | -    | -    | 5.55 | 5.79 | 5.11 | 7.19 | 6.57 | 6.05 | 5.59 | 4.86 | 4.28 | 3.82 | 3.45 |

N.B.: Le forze indicate in tabella sono espresse in Nm / N.B.: Forces are expressed in Nm

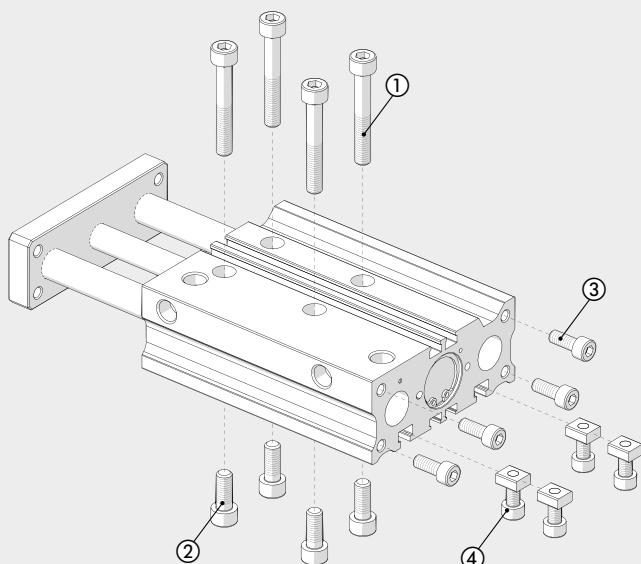
## GIOCO TORSIONALE / TORSIONAL BACKLASH

Gioco torsionale 6 con steli in posizione retratta e senza carichi applicati.  
*Torsional backlash 6 with piston rods retracted and without applied loads.*

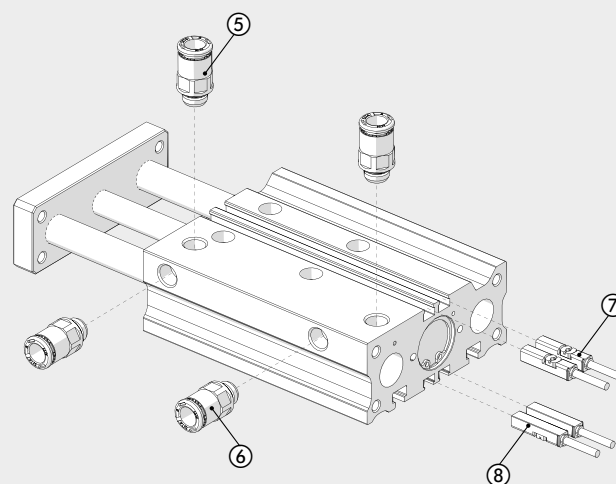
| Gioco torsionale 6 [°]                                                         | Ø [mm] |       |       |       |       |
|--------------------------------------------------------------------------------|--------|-------|-------|-------|-------|
|                                                                                | 16     | 20    | 25    | 32    | 40    |
| <b>Torsional backlash 6</b>                                                    |        |       |       |       |       |
| Con boccole in bronzo<br><i>With bronze bushings</i>                           | ±0,07  | ±0,06 | ±0,06 | ±0,05 | ±0,05 |
| Con cuscinetti a ricircolo di sfere<br><i>With ball recirculating bearings</i> | ±0,05  | ±0,04 | ±0,04 | ±0,03 | ±0,03 |



## POSSIBILITÀ DI FISSAGGIO / MOUNTING OPTIONS



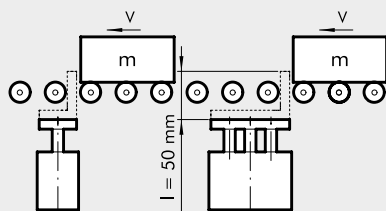
- ① Fissaggio con viti passanti  
*Fixing with through screws*
- ② Fissaggio mediante fori filettati  
*Fixing with threaded holes*
- ③ Fissaggio dal lato posteriore, mediante fori filettati  
*Fixing from the back side, using threaded holes*
- ④ Fissaggio con tasselli inseriti nelle cave a T  
*Fixing with plugs inserted into the T-slots*



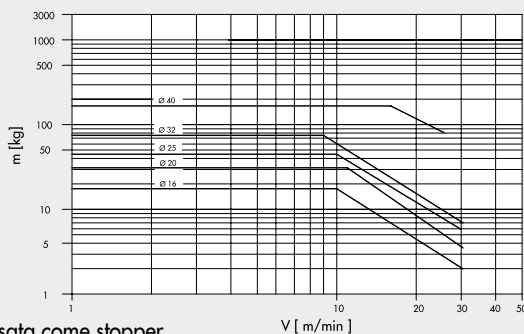
- ⑤ Alimentazioni pneumatiche sulla faccia superiore  
*Compressed air supply on the upper side*
- ⑥ Alimentazioni pneumatiche sulla faccia laterale  
*Compressed air supply on the lateral side*
- ⑦ Numero due cave per sensori sulla faccia superiore  
*Two sensor slots on the upper side*
- ⑧ Numero due cave per sensori sulla faccia inferiore  
*Two sensor slots on the lower side*

## NOTE / NOTES

## UTILIZZO FUNZIONI STOPPER / STOPPER FUNCTIONS



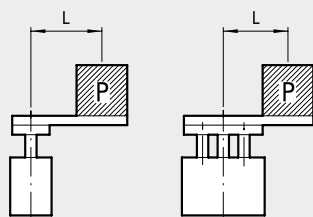
Il grafico si riferisce a un cilindro con corsa massima di 50 mm con guida a bronzine  
The graph refers to a cylinder with a maximum stroke of 50 mm and with bushing guides.



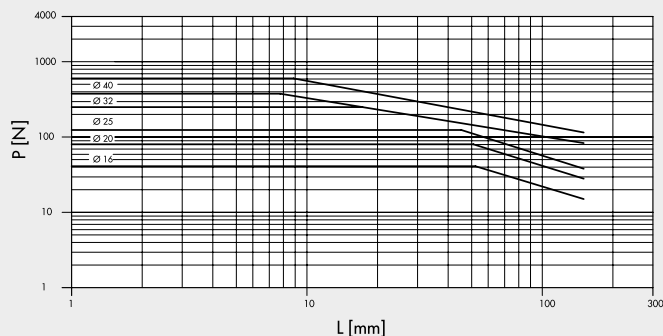
**N.B.:** La versione con boccia a sfere non deve essere usata come stopper.

**N.B.:** The version with a ball bushing must not be used as a stopper.

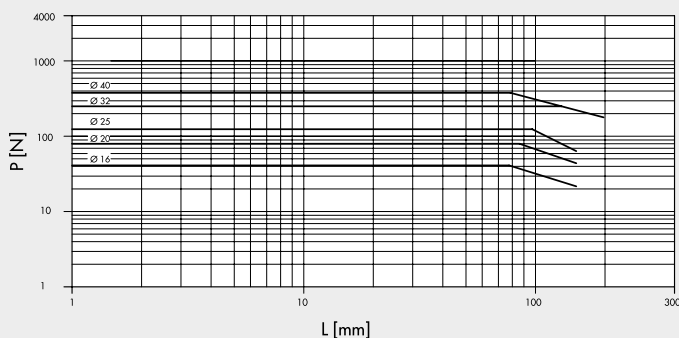
## UTILIZZO FUNZIONI DI SOLLEVAMENTO / LIFTING FUNCTIONS



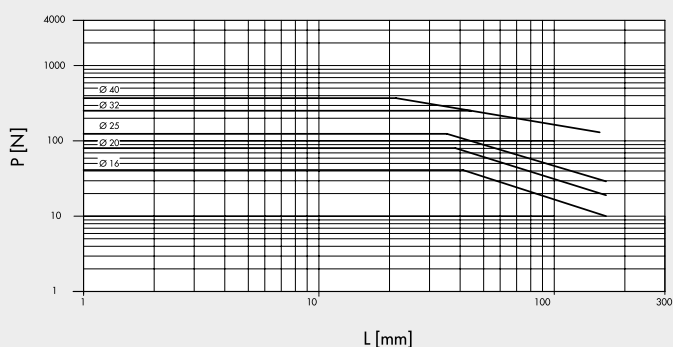
Il grafico si riferisce a cilindri con corse sino a 50 mm con guida a ricircolo di sfere  
The graph refers to cylinders with a stroke of up to 50 mm with a ball recirculation guide.



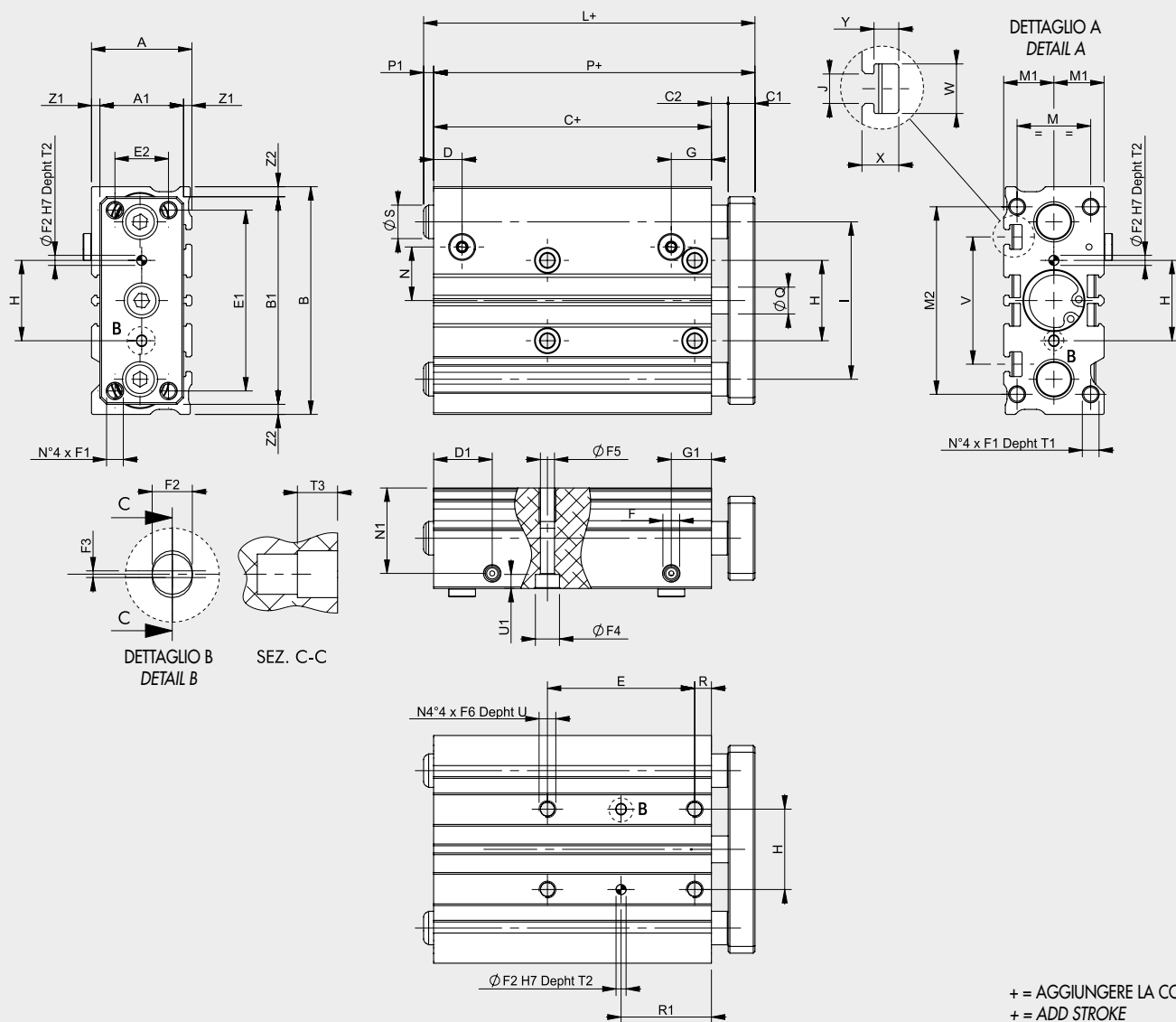
Il grafico si riferisce a cilindri con corse maggiori di 50 mm con guida a ricircolo di sfere  
The graph refers to cylinders with a stroke greater than 50 mm with a ball recirculation guide.



Il grafico si riferisce a cilindri con guida a bronzine  
The graph refers to cylinders with a bushing guide.



**DIMENSIONI VERSIONE SILENZIATA / DIMENSIONS SILENCED VERSION**

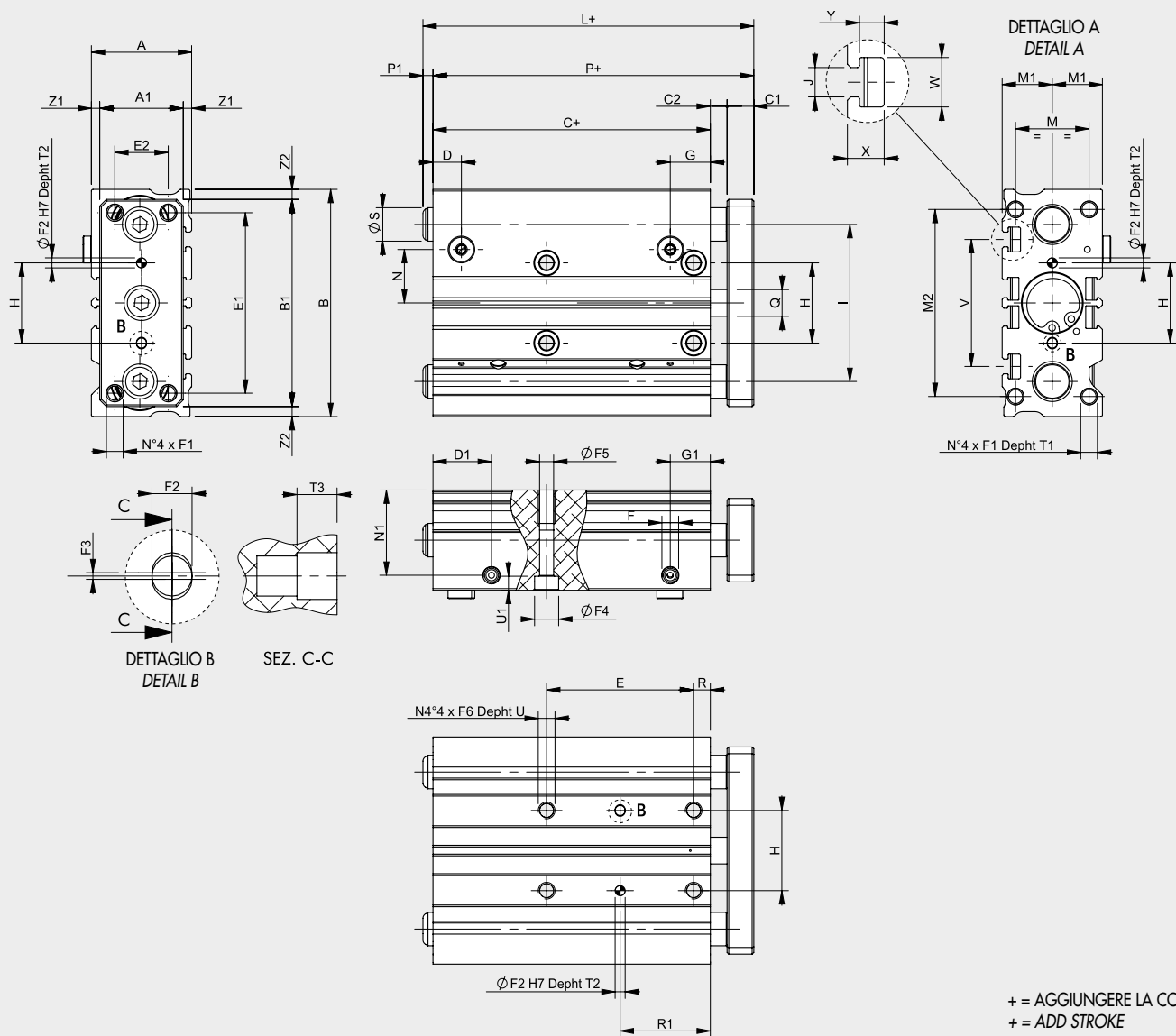


+ = AGGIUNGERE LA CORSA  
+ = *ADD STROKE*

| Ø  | A  | A1 | B   | B1  | C    | C1 | C2 | D    | D1   | E1  | E2 | F    | F1 | F2 <sup>H7</sup> | F3  | F4   | F5  | F6 | G    | G1   | H <sup>±0.025</sup> | I  | J   | M  | M1 | M2  |
|----|----|----|-----|-----|------|----|----|------|------|-----|----|------|----|------------------|-----|------|-----|----|------|------|---------------------|----|-----|----|----|-----|
| 16 | 30 | 25 | 68  | 62  | 33   | 8  | 5  | 8.5  | 17.5 | 54  | 16 | M5   | M5 | 3                | 0.5 | 7.2  | 4.2 | M5 | 12   | 12   | 24                  | 47 | 4.4 | 22 | 15 | 56  |
| 20 | 36 | 30 | 83  | 81  | 37   | 10 | 6  | 9.5  | 24.5 | 70  | 18 | G1/8 | M5 | 3                | 0.5 | 8.8  | 5.2 | M6 | 10.5 | 10.5 | 28                  | 54 | 5.4 | 24 | 18 | 72  |
| 25 | 42 | 38 | 101 | 91  | 37.5 | 10 | 6  | 10   | 24.5 | 78  | 26 | G1/8 | M6 | 4                | 0.5 | 8.8  | 5.2 | M6 | 10   | 10   | 34                  | 68 | 5.4 | 30 | 21 | 82  |
| 32 | 48 | 44 | 112 | 110 | 37.5 | 12 | 10 | 10   | 28   | 96  | 30 | G1/8 | M8 | 4                | 0.5 | 10.2 | 6.8 | M8 | 10.5 | 10.5 | 42                  | 78 | 6.5 | 34 | 24 | 98  |
| 40 | 54 | 44 | 120 | 118 | 44   | 12 | 10 | 12.5 | 31   | 104 | 30 | G1/8 | M8 | 4                | 0.5 | 10.2 | 6.8 | M8 | 12.5 | 12.5 | 50                  | 86 | 6.5 | 40 | 27 | 106 |

| Ø  | N    | N1   | P    | Q  | R  | S  | T1 | T2 | T3 | U  | U1  | V  | W    | X   | Y   | Z1  | Z2 |
|----|------|------|------|----|----|----|----|----|----|----|-----|----|------|-----|-----|-----|----|
| 16 | 16   | 25.5 | 46   | 8  | 5  | 10 | 10 | 6  | 3  | 10 | 4.2 | 38 | 7.4  | 5.5 | 3.7 | 2.5 | 3  |
| 20 | 25   | 29.5 | 53   | 10 | 17 | 12 | 12 | 6  | 3  | 12 | 5.2 | 44 | 8.4  | 7   | 4.5 | 3   | 1  |
| 25 | 25.5 | 36   | 53.5 | 12 | 17 | 16 | 12 | 6  | 3  | 12 | 5.2 | 50 | 8.4  | 7   | 4.5 | 2   | 5  |
| 32 | 35.5 | 41   | 59.5 | 16 | 21 | 20 | 16 | 6  | 3  | 16 | 6.2 | 63 | 10.5 | 7.5 | 5.5 | 2   | 1  |
| 40 | 36   | 46.5 | 66   | 16 | 22 | 20 | 16 | 6  | 3  | 16 | 6.2 | 72 | 10.5 | 7.5 | 5.5 | 5   | 1  |

| Ø     | E              |         |         |         |       | R1             |         |         |         |       | L              |         |       | P1             |         |      |
|-------|----------------|---------|---------|---------|-------|----------------|---------|---------|---------|-------|----------------|---------|-------|----------------|---------|------|
|       | Corse / Stroke |         |         |         |       | Corse / Stroke |         |         |         |       | Corse / Stroke |         |       | Corse / Stroke |         |      |
| 10÷30 | 40÷100         | 125÷200 | 250-300 | 350-400 | 10÷30 | 40÷100         | 125÷200 | 250-300 | 350-400 | 10÷50 | 75÷200         | 250÷400 | 10÷50 | 75÷200         | 250÷400 |      |
| 16    | 24             | 44      | 110     | 200     | -     | 17             | 27      | 60      | 105     | -     | 49             | 79      | 109   | 3              | 33      | 63   |
| 20    | 24             | 44      | 120     | 200     | 300   | 29             | 39      | 77      | 117     | 167   | 58             | 88      | 118   | 5              | 35      | 65   |
| 25    | 24             | 44      | 120     | 200     | 300   | 29             | 39      | 77      | 117     | 167   | 70.5           | 103     | 118   | 17             | 49.5    | 64.5 |
| 32    | 24             | 48      | 124     | 200     | 300   | 33             | 45      | 83      | 121     | 171   | 88             | 88      | 138   | 28.5           | 28.5    | 78.5 |
| 40    | 24             | 48      | 124     | 200     | 300   | 34             | 46      | 84      | 122     | 172   | 88             | 88      | 138   | 22             | 22      | 72   |

**DIMENSIONI VERSIONE CON AMMORTIZZO PNEUMATICO / DIMENSIONS WITH PNEUMATIC CUSHIONING VERSION**


+ = AGGIUNGERE LA CORSA  
+ = ADD STROKE

| Ø  | A  | A1 | B   | B1  | C    | C1 | C2 | D   | D1   | E1  | E2 | F    | F1 | F2 <sup>H7</sup> | F3  | F4   | F5  | F6 | G    | G1   | H <sup>±0.025</sup> | I  | J   | M  | M1 | M2  |
|----|----|----|-----|-----|------|----|----|-----|------|-----|----|------|----|------------------|-----|------|-----|----|------|------|---------------------|----|-----|----|----|-----|
| 16 | 30 | 25 | 68  | 62  | 58   | 8  | 5  | 8.5 | 17.5 | 54  | 16 | M5   | M5 | 3                | 0.5 | 7.2  | 4.2 | M5 | 12   | 12   | 24                  | 47 | 4.4 | 22 | 15 | 56  |
| 20 | 36 | 30 | 83  | 81  | 62   | 10 | 6  | 9   | 24.5 | 70  | 18 | G1/8 | M5 | 3                | 0.5 | 8.8  | 5.2 | M6 | 11.5 | 11.5 | 28                  | 54 | 5.4 | 24 | 18 | 72  |
| 25 | 42 | 38 | 101 | 91  | 62.5 | 10 | 6  | 9.5 | 24.5 | 78  | 26 | G1/8 | M6 | 4                | 0.5 | 8.8  | 5.2 | M6 | 10   | 10   | 34                  | 68 | 5.4 | 30 | 21 | 82  |
| 32 | 48 | 44 | 112 | 110 | 62.5 | 12 | 10 | 9   | 28   | 96  | 30 | G1/8 | M8 | 4                | 0.5 | 10.2 | 6.8 | M8 | 9    | 9    | 42                  | 78 | 6.5 | 34 | 24 | 98  |
| 40 | 54 | 44 | 120 | 118 | 69   | 12 | 10 | 10  | 31   | 104 | 30 | G1/8 | M8 | 4                | 0.5 | 10.2 | 6.8 | M8 | 10   | 10   | 50                  | 86 | 6.5 | 40 | 27 | 106 |

| Ø  | N    | N1   | P    | Q  | R  | S  | T1 | T2 | T3 | U  | U1  | V  | W    | X   | Y   | Z1  | Z2 |
|----|------|------|------|----|----|----|----|----|----|----|-----|----|------|-----|-----|-----|----|
| 16 | 16   | 25.5 | 71   | 8  | 5  | 10 | 10 | 6  | 3  | 10 | 4.2 | 38 | 7.4  | 5.5 | 3.7 | 2.5 | 3  |
| 20 | 25   | 29.5 | 78   | 10 | 17 | 12 | 12 | 6  | 3  | 12 | 5.2 | 44 | 8.4  | 7   | 4.5 | 3   | 1  |
| 25 | 25.5 | 36   | 78.5 | 12 | 17 | 16 | 12 | 6  | 3  | 12 | 5.2 | 50 | 8.4  | 7   | 4.5 | 2   | 5  |
| 32 | 35.5 | 41   | 84.5 | 16 | 21 | 20 | 16 | 6  | 3  | 16 | 6.2 | 63 | 10.5 | 7.5 | 5.5 | 2   | 1  |
| 40 | 36   | 46.5 | 91   | 16 | 22 | 20 | 16 | 6  | 3  | 16 | 6.2 | 72 | 10.5 | 7.5 | 5.5 | 5   | 1  |

| Ø  | E              |         |         |         | R1             |         |         |         | L              |        |         | P1             |        |         |
|----|----------------|---------|---------|---------|----------------|---------|---------|---------|----------------|--------|---------|----------------|--------|---------|
|    | Corse / Stroke |         |         |         | Corse / Stroke |         |         |         | Corse / Stroke |        |         | Corse / Stroke |        |         |
|    | 25÷75          | 100÷175 | 200-250 | 300÷400 | 25÷75          | 100÷175 | 200-250 | 300÷400 | 25÷50          | 75÷200 | 250÷400 | 25÷50          | 75÷200 | 250÷400 |
| 16 | 44             | 110     | 200     | -       | 27             | 60      | 105     | -       | 71             | 79     | 109     | 0              | 8      | 38      |
| 20 | 44             | 120     | 200     | 300     | 39             | 77      | 117     | 167     | 78             | 88     | 118     | 0              | 10     | 40      |
| 25 | 44             | 120     | 200     | 300     | 39             | 77      | 117     | 167     | 78.5           | 103    | 118     | 0              | 24.5   | 39.5    |
| 32 | 48             | 124     | 200     | 300     | 45             | 83      | 121     | 171     | 88             | 88     | 138     | 3.5            | 3.5    | 53.5    |
| 40 | 48             | 124     | 200     | 300     | 46             | 84      | 122     | 172     | 91             | 91     | 138     | 0              | 0      | 47      |

## CHIAVE DI CODIFICA / KEY TO CODES

| W 1 4 3<br>TIPOLOGIA<br>TYPE                         | 0 2 0<br>ALESAGGIO<br>DIAMETER                 | D<br>VERSIONE<br>VERSION                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0 7 5<br>CORSO<br>STROKE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cilindro compatto guidato<br>Compact guided cylinder | 016 16<br>020 20<br>025 25<br>032 32<br>040 40 | <p><b>A</b> Con boccole in bronzo, silenziato<br/><i>Bronze bushings, silenced</i></p> <p><b>B</b> Con cuscinetti a ricircolo di sfere, silenziato<br/><i>Ball recirculating bearings, silenced</i></p> <p><b>C</b> Con boccole in bronzo, con ammortizzo pneumatico<br/><i>Bronze bushings with pneumatic cushioning</i></p> <p><b>D</b> Con cuscinetti a ricircolo di sfere, con ammortizzo pneumatico<br/><i>Ball recirculating bearings with pneumatic cushioning</i></p> | <p>VERSIONE SILENZIATA ♦<br/><i>SILENCED VERSION ♦</i></p> <p>Ø 16: 10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250<br/>           Ø 20 ÷ 25: 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400<br/>           Ø 32 ÷ 40: 25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400</p> <p>VERSIONE CON AMMORTIZZO PNEUMATICO<br/><i>WITH PNEUMATIC CUSHIONING VERSION</i></p> <p>Ø 16: 25, 50, 75, 100, 125, 150, 175, 200, 250<br/>           Ø 20 ÷ 40: 25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400</p> <p>♦ A richiesta fornibili altre corse, ma gli ingombri del cilindro sono quelli della corsa standard immediatamente superiore<br/> <i>Other strokes on request but with the same cylinder dimensions as the standard stroke immediately above.</i></p> |

## ACCESSORI / ACCESSORIES

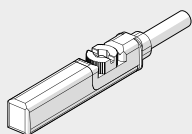
### SENSORE A SCOMPARSA / RETRACTABLE SENSOR

#### SENSORE TIPO SQUARE

Ultima generazione,  
fissaggio robusto

#### SENSOR, SQUARE TYPE

Latest generation,  
secure fixing

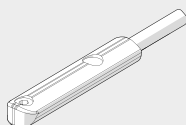


#### SENSORE TIPO OVALE

Tradizionale

#### SENSOR, OVAL TYPE

Traditional

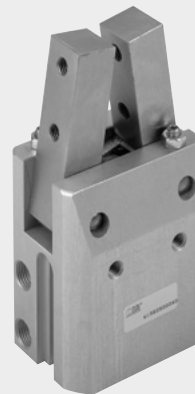


Per codici e dati tecnici vedere capitolo A6.  
 For codes and technical data, see chapter A6.

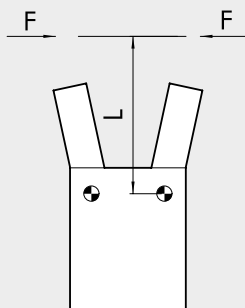
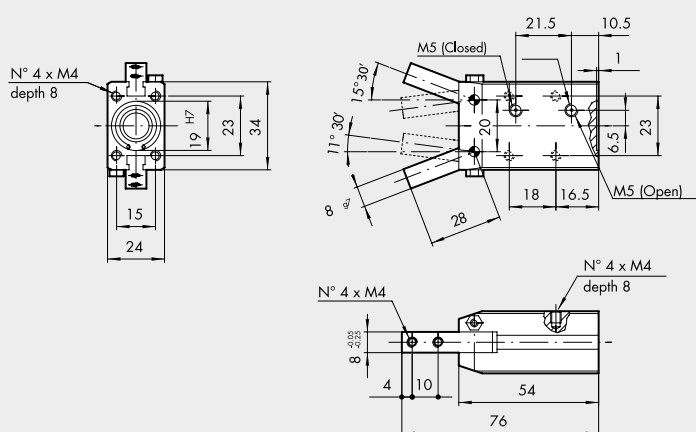
## NOTES



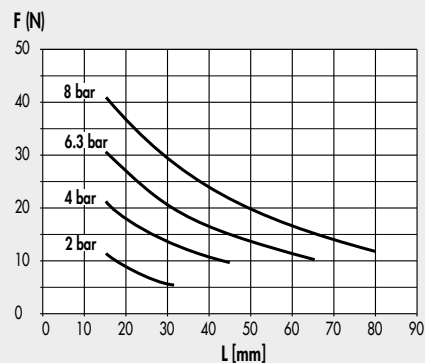
# PINZA FULCRATA PNEUMATICA SERIE PFP PNEUMATIC PIVOTED GRIPPER TYPE PFP

**DATI TECNICI / TECHNICAL DATA**

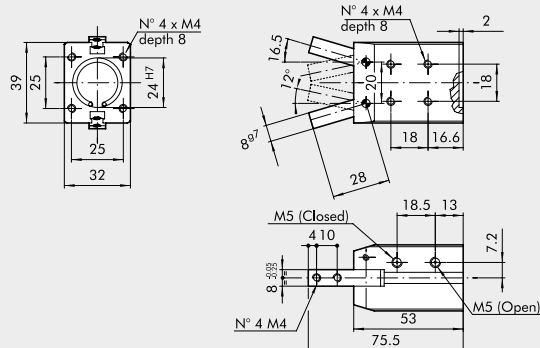
|                                                                                                                                                                                                                  |     | PFP-16                                                                                                                                                                                             | PFP-20   | PFP-32   | PFP-50   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|
| Pressione d'esercizio / Operating pressure                                                                                                                                                                       | bar | 2 ÷ 10                                                                                                                                                                                             | 2 ÷ 10   | 2 ÷ 10   | 2 ÷ 10   |
|                                                                                                                                                                                                                  | MPa | 0.2 ÷ 1                                                                                                                                                                                            | 0.2 ÷ 1  | 0.2 ÷ 1  | 0.2 ÷ 1  |
|                                                                                                                                                                                                                  | psi | 29 ÷ 145                                                                                                                                                                                           | 29 ÷ 145 | 29 ÷ 145 | 29 ÷ 145 |
| Fluido / Fluid                                                                                                                                                                                                   |     | Aria filtrata 20 µm con o senza lubrificazione, se utilizzata la lubrificazione deve essere continua<br>20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous |          |          |          |
| Temperatura d'esercizio / Temperature range                                                                                                                                                                      | °C  | -10 ÷ +80                                                                                                                                                                                          |          |          |          |
| Angolo massimo di apertura singola griffa / Maximum opening angle of single jaw                                                                                                                                  |     | 15° 30'                                                                                                                                                                                            | 16° 30'  | 16°      | 8° 30'   |
| Forza di serraggio (a 6.3 bar) a 20 mm dal centro di rotazione delle griffe,<br>in apertura o chiusura<br>Clamping force at 6.3 bar 20 mm from the centre of rotation of the jaws,<br>during opening and closing | N   | 27                                                                                                                                                                                                 | 50       | 120      | 380      |
| Peso / Weight                                                                                                                                                                                                    | kg  | 0.12                                                                                                                                                                                               | 0.19     | 0.5      | 1.6      |

**SCHEMA FORZA DI SERRAGGIO IN FUNZIONE DEL PUNTO DI APPLICAZIONE**  
**TABLE OF CLAMPING FORCES FOR VARIOUS POINTS OF APPLICATION**
**DIMENSIONI PINZE PFP-16 / DIMENSIONS OF GRIPPERS PFP-16**

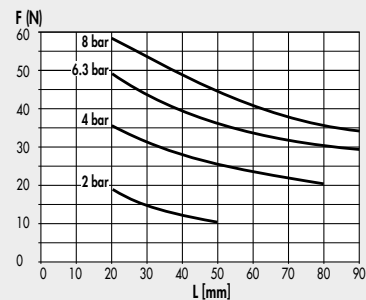
| Cod.        | Descrizione / Description                                           |
|-------------|---------------------------------------------------------------------|
| W1590160200 | Pinza 2 griffe fulcrata PFP-16<br>Gripper with 2 hinged jaws PFP-16 |



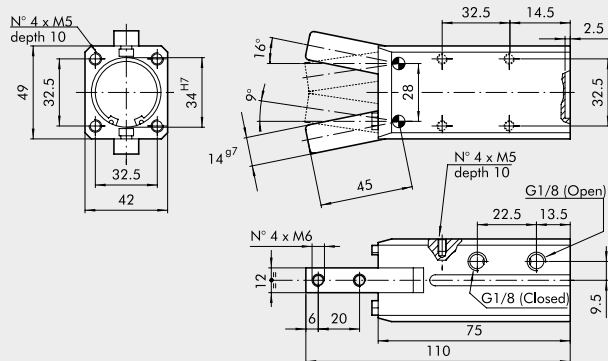
### DIMENSIONI PINZE PFP-20 / DIMENSIONS OF GRIPPERS PFP-20



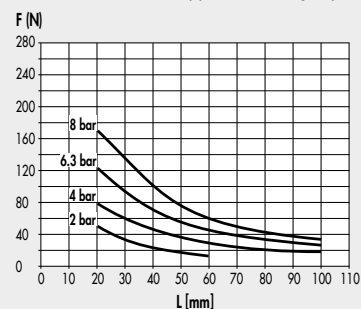
**Cod.** W1590200200 **Descrizione / Description**  
 Pinza 2 griffe fulcrata PFP-20  
 Gripper with 2 hinged jaws PFP-20



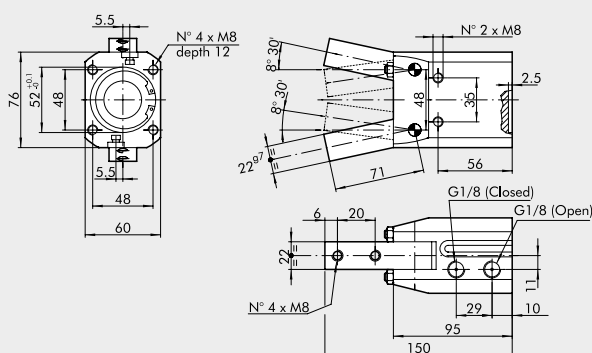
### DIMENSIONI PINZE PFP-32 / DIMENSIONS OF GRIPPERS PFP-32



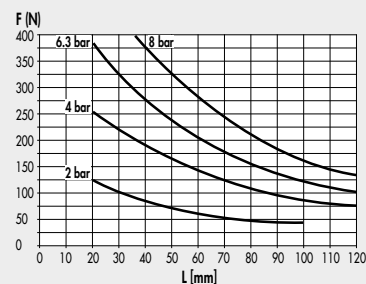
**Cod.** W1590320200 **Descrizione / Description**  
 Pinza 2 griffe fulcrata PFP-32  
 Gripper with 2 hinged jaws PFP-32



### DIMENSIONI PINZE PFP-50 / DIMENSIONS OF GRIPPERS PFP-50



**Cod.** W1590500200 **Descrizione / Description**  
 Pinza 2 griffe fulcrata PFP-50  
 Gripper with 2 hinged jaws PFP-50

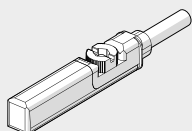


## ACCESSORI / ACCESSORIES

### SENSORE A SCOMPARSA CON L'INSERIMENTO DALL'ALTO / RETRACTABLE SENSOR WITH INSERTION FROM ABOVE

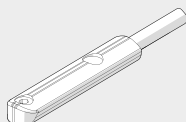
#### SENSORE TIPO SQUARE

Ultima generazione, fissaggio robusto  
**SENSOR, SQUARE TYPE**  
 Latest generation, secure fixing



#### SENSORE TIPO OVALE

Tradizionale  
**SENSOR, OVAL TYPE**  
 Traditional



Per codici e dati tecnici vedere **capitolo dati tecnici**.  
 For codes and technical data, see **chapter technical data**.

# PINZE A DUE GRIFFE FULCRATE 180° SERIE P9 GRIPPER 180° WITH 2 HINGED JAWS SERIES P9

**DATI TECNICI / TECHNICAL DATA**

Pressione d'esercizio / Operating pressure

bar

**P9-32****P9-40**

2 ÷ 8

MPa

0.2 ÷ 0.8

psi

29 ÷ 116

Temperatura d'esercizio / Temperature range

°C

-10 ÷ +80

Fluido / Fluid

Aria filtrata 20 µm con o senza lubrificazione

Se si utilizza aria lubrificata la lubrificazione deve essere continua

Filtered, lubricated or unlubricated air;  
lubrication if used, it must be continuous

Alesaggi / Bores

mm

32

40

Angolo di apertura delle griffe / Jaw opening angle

180° con possibilità di regolazione

Adjustable 180°

Forza di serraggio (a 6.3 bar) a 40 mm di distanza dal fulcro delle griffe, w  
in apertura o chiusura

N

160

260

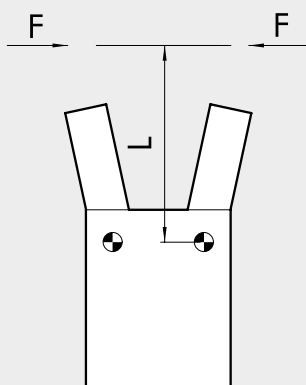
Clamping force at 6.3 bar 40 mm from the jaw pivot  
during opening and closing

Peso / Weight

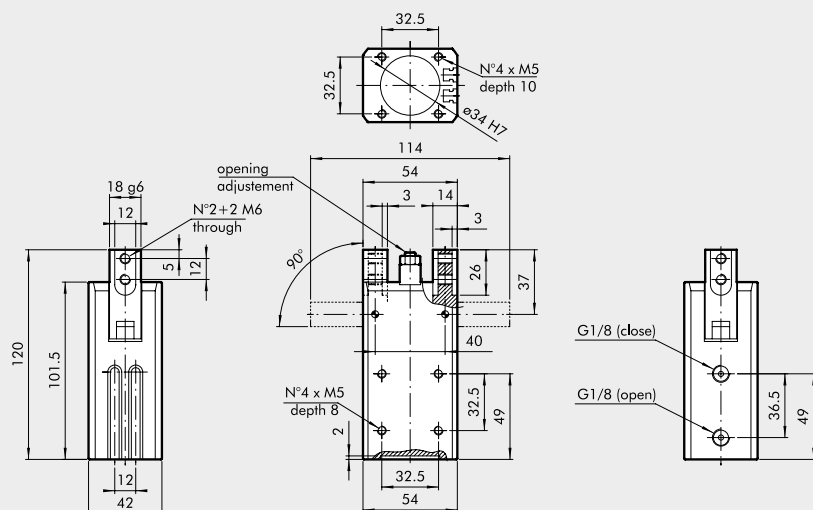
kg

0.85

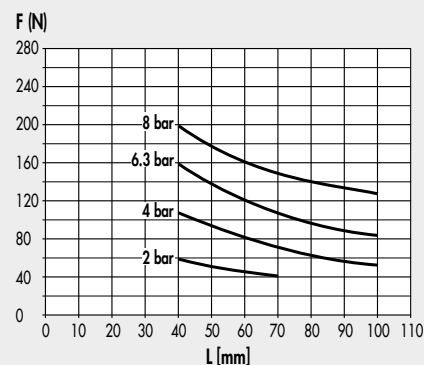
1.5

**SCHEMA FORZA DI SERRAGGIO IN FUNZIONE DEL PUNTO DI APPLICAZIONE**  
**TABLE OF CLAMPING FORCES FOR VARIOUS POINTS OF APPLICATION**


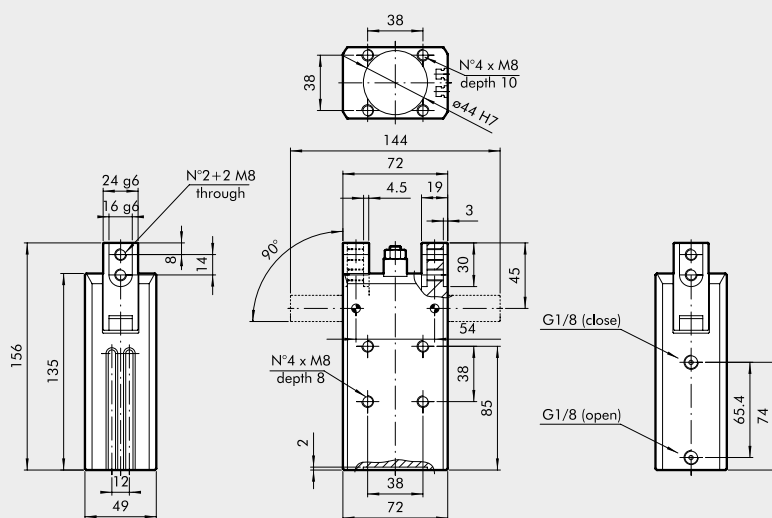
## DIMENSIONI PINZA P9-32 / DIMENSIONS OF GRIPPER P9-32



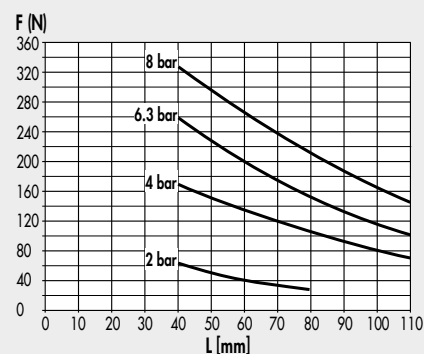
| Cod.               | Descrizione / Description                                 |
|--------------------|-----------------------------------------------------------|
| <b>W1530320180</b> | Pinza a due griffe fulcrate P9-32<br>Hinged gripper P9-32 |



## DIMENSIONI PINZA P9-40 / DIMENSIONS OF GRIPPER P9-40



| Cod.               | Descrizione / Description                                 |
|--------------------|-----------------------------------------------------------|
| <b>W1530400180</b> | Pinza a due griffe fulcrate P9-40<br>Hinged gripper P9-40 |



## ACCESSORI / ACCESSORIES

### SENSORE A SCOMPARSA CON L'INSERIMENTO DALL'ALTO / RETRACTABLE SENSOR WITH INSERTION FROM ABOVE

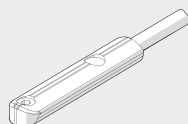
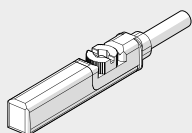
#### SENSORE TIPO SQUARE

Ultima generazione, fissaggio robusto  
**SENSOR, SQUARE TYPE**  
 Latest generation, secure fixing

#### SENSORE TIPO OVALE

Tradizionale  
**SENSOR, OVAL TYPE**  
 Traditional

Per codici e dati tecnici vedere capitolo dati tecnici.  
 For codes and technical data, see chapter technical data.

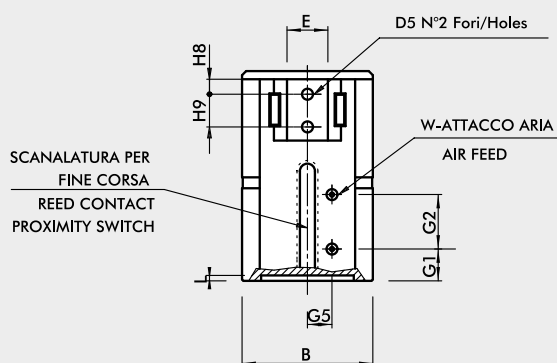
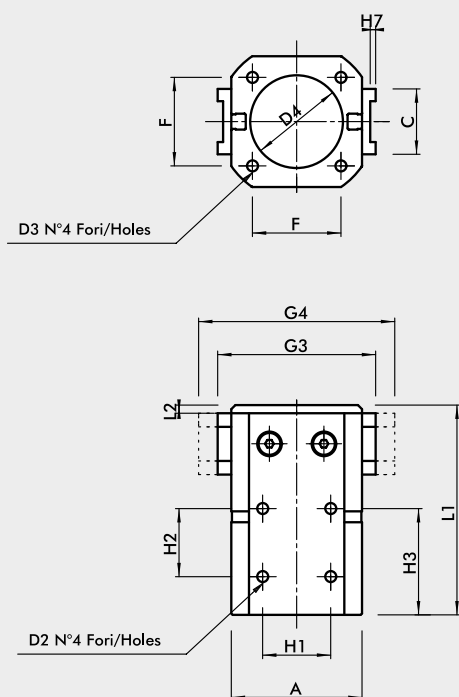


# PINZA PNEUMATICA PARALLELA SERIE PP PNEUMATIC PARALLEL GRIPPER TYPE PP

Ø20, Ø32



| DATI TECNICI / TECHNICAL DATA                            |     | PP-20                                                                  | PP-32 |
|----------------------------------------------------------|-----|------------------------------------------------------------------------|-------|
| Pressione d'esercizio / Operating pressure               | bar | 2 ÷ 6                                                                  |       |
|                                                          | MPa | 0.2 ÷ 0.6                                                              |       |
|                                                          | psi | 29 ÷ 87                                                                |       |
|                                                          | °C  | 5 ÷ 70                                                                 |       |
| Temperatura d'esercizio / Temperature range              |     | Aria filtrata 20 µm con o senza lubrificazione                         |       |
| Fluido / Fluid                                           |     | Se si utilizza aria lubrificata la lubrificazione deve essere continuo |       |
|                                                          |     | 20 µm filtered, lubricated or unlubricated air;                        |       |
|                                                          |     | lubrication if used, it must be continuous                             |       |
| Alesaggi / Bores                                         | mm  | 20                                                                     | 32    |
| Forza di serraggio a 6.3 bar / Clamping force at 6.3 bar | N   | 180                                                                    | 420   |
| Corsa singola griffa / Single jaw stroke                 | mm  | 5                                                                      | 5     |
| Peso / Weight                                            | kg  | 0.40                                                                   | 0.50  |



| Ø  | A  | B  | C  | ØD <sub>2</sub> | ØD <sub>3</sub> | ØD <sub>4</sub>  | ØD <sub>5</sub> | E                | F    | G <sub>1</sub> | G <sub>2</sub> | G <sub>3</sub> | G <sub>4</sub> | G <sub>5</sub> | H <sub>1</sub> | H <sub>2</sub> | H <sub>3</sub> | H <sub>7</sub> | H <sub>8</sub> | H <sub>9</sub> | L   | L <sub>1</sub> | L <sub>2</sub> | W    |
|----|----|----|----|-----------------|-----------------|------------------|-----------------|------------------|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|----------------|----------------|------|
| 20 | 39 | 39 | 18 | M4              | M4              | 22               | M4              | 10 <sup>H7</sup> | 25   | 8              | 21             | 44             | 54             | 7              | 18             | 18             | 35             | 2              | 3.5            | 9              | 1.5 | 69             | 2.7            | M5   |
| 32 | 48 | 48 | 24 | M5              | M5              | 34 <sup>H7</sup> | M5              | 15 <sup>G6</sup> | 32.5 | 11.5           | 22             | 54             | 64             | 11             | 25             | 25             | 39.5           | 2              | 5              | 12             | 2.2 | 78             | 2.5            | G1/8 |

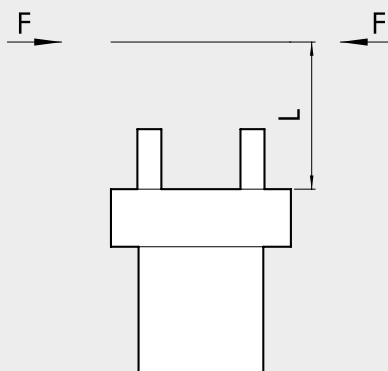
# PINZA A DUE GRIFFE PARALLELE SERIE P1 GRIPPER WITH TWO PARALLEL JAWS SERIES P1

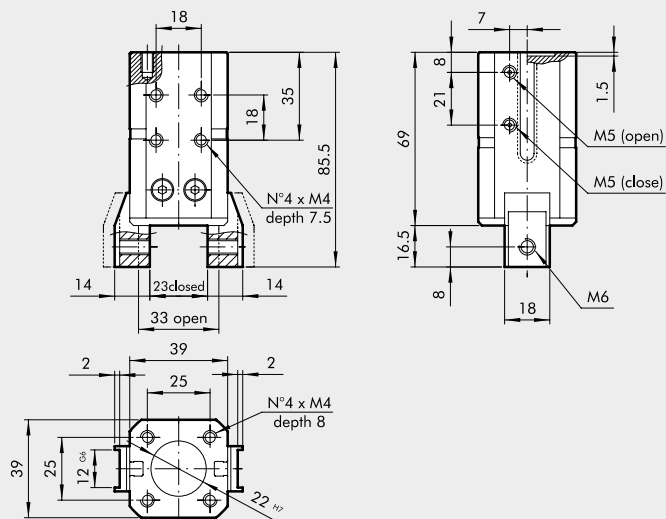
Ø20, Ø32



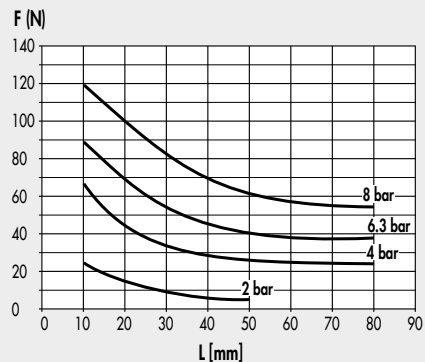
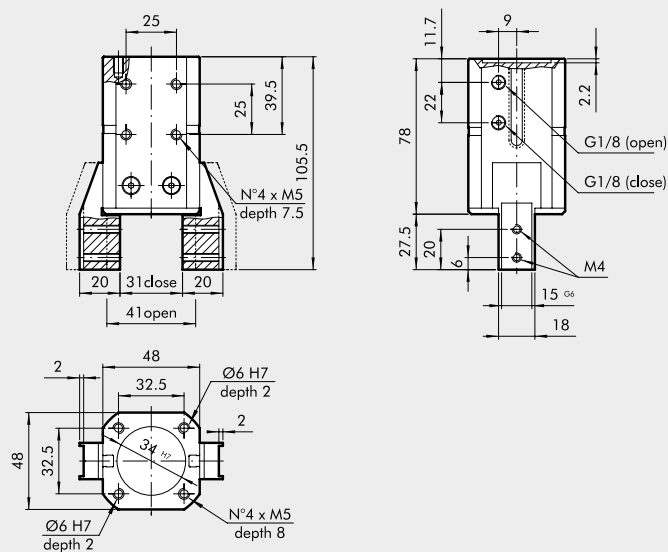
| DATI TECNICI / TECHNICAL DATA                                                                  |     | P1-20                                                                                                                                                                                                                     | P1-32 |
|------------------------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Pressione d'esercizio / Operating pressure                                                     | bar | 2 ÷ 8                                                                                                                                                                                                                     |       |
|                                                                                                | MPa | 0.2 ÷ 0.8                                                                                                                                                                                                                 |       |
|                                                                                                | psi | 29 ÷ 116                                                                                                                                                                                                                  |       |
|                                                                                                | °C  | 5 ÷ 70                                                                                                                                                                                                                    |       |
| Temperatura d'esercizio / Temperature range                                                    |     | Aria filtrata 20 µm con o senza lubrificazione<br>Se si utilizza aria lubrificata la lubrificazione deve essere continuo<br>20 µm filtered, lubricated or unlubricated air;<br>lubrication if used, it must be continuous |       |
| Fluido / Fluid                                                                                 |     |                                                                                                                                                                                                                           |       |
|                                                                                                |     |                                                                                                                                                                                                                           |       |
| Alesaggi / Bores                                                                               | mm  | 20                                                                                                                                                                                                                        | 32    |
| Forza di serraggio (a 6.3 bar) a 20 mm di distanza dal piano superiore, in apertura o chiusura | N   | 70                                                                                                                                                                                                                        | 170   |
| Clamping force at 6.3 bar 20 mm from the top surface during opening and closing                |     |                                                                                                                                                                                                                           |       |
| Corsa singola griffa / Single jaw stroke                                                       | mm  | 5                                                                                                                                                                                                                         | 5     |
| Peso / Weight                                                                                  | kg  | 0.50                                                                                                                                                                                                                      | 0.70  |
|                                                                                                |     |                                                                                                                                                                                                                           |       |
|                                                                                                |     |                                                                                                                                                                                                                           |       |
|                                                                                                |     |                                                                                                                                                                                                                           |       |
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**SCHEMA FORZA DI SERRAGGIO IN FUNZIONE DEL PUNTO DI APPLICAZIONE**  
**TABLE OF CLAMPING FORCES FOR VARIOUS POINTS OF APPLICATION**

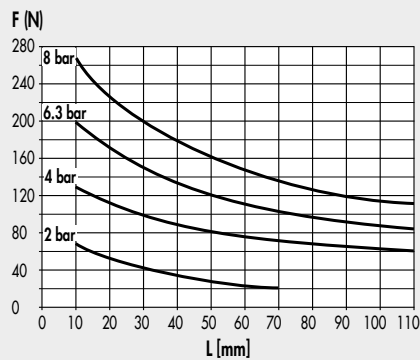


**DIMENSIONI PINZA P1-20 / DIMENSIONS OF GRIPPER P1-20**


| Cod.        | Descrizione / Description                                              |
|-------------|------------------------------------------------------------------------|
| W1550200001 | Pinza a 2 griffe parallele P1-20<br>Gripper with 2 parallel jaws P1-20 |


**DIMENSIONI PINZA P1-32 / DIMENSIONS OF GRIPPER P1-32**


| Cod.        | Descrizione / Description                                              |
|-------------|------------------------------------------------------------------------|
| W1550320001 | Pinza a 2 griffe parallele P1-32<br>Gripper with 2 parallel jaws P1-32 |

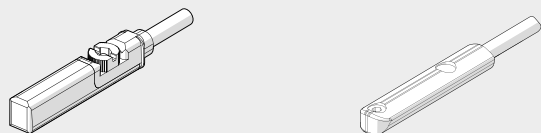

**ACCESSORI / ACCESSORIES**
**SENSORE A SCOMPARSA CON L'INSERIMENTO DALL'ALTO / RETRACTABLE SENSOR WITH INSERTION FROM ABOVE**
**SENSORE TIPO SQUARE**

Ultima generazione, fissaggio robusto  
**SENSOR, SQUARE TYPE**  
Latest generation, secure fixing

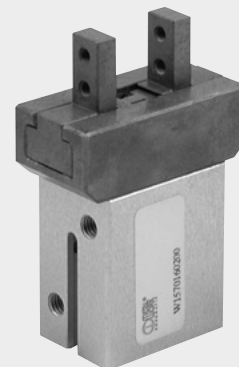
**SENSORE TIPO OVALE**

Tradizionale  
**SENSOR, OVAL TYPE**  
Traditional

Per codici e dati tecnici vedere capitolo dati tecnici.  
For codes and technical data, see chapter technical data.

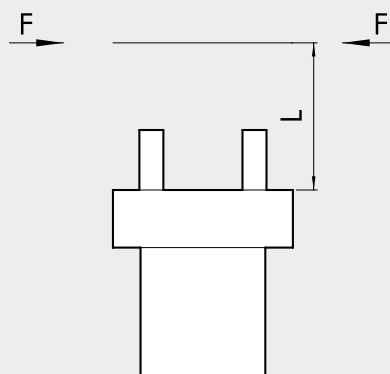


# PINZA A DUE GRIFFE PARALLELE SERIE P2 GRIPPER WITH TWO PARALLEL JAWS SERIES P2



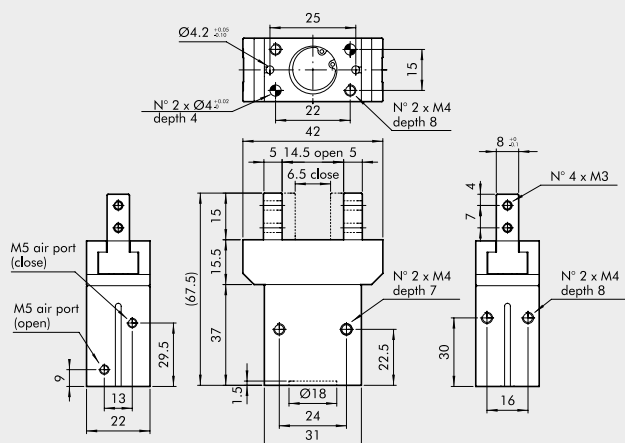
| DATI TECNICI / TECHNICAL DATA                                                                                                                                                     |                  | P2 -16                                                                                                                                                                                            | P2-20     | P2- 25 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|
| Pressione d'esercizio / Operating pressure                                                                                                                                        | bar              |                                                                                                                                                                                                   | 2 ÷ 8     |        |
|                                                                                                                                                                                   | MPa              |                                                                                                                                                                                                   | 0.2 ÷ 0.8 |        |
|                                                                                                                                                                                   | psi              |                                                                                                                                                                                                   | 29 ÷ 116  |        |
| Temperatura d'esercizio / Operating temperature                                                                                                                                   | °C               |                                                                                                                                                                                                   | -10 ÷ +80 |        |
| Frequenza max di utilizzo / Maximum operating frequency                                                                                                                           | cicli / cycles/s |                                                                                                                                                                                                   | 2         |        |
| Fluido / Fluid                                                                                                                                                                    |                  | Aria filtrata 20 µm con o senza lubrificazione se utilizzata la lubrificazione deve essere continua<br>20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous |           |        |
| Taglia / Size                                                                                                                                                                     |                  | 16                                                                                                                                                                                                | 20        | 25     |
| Alesaggio / Bore                                                                                                                                                                  | mm               | 16                                                                                                                                                                                                | 20        | 25     |
| Corsa singola griffa / Single jaw stroke                                                                                                                                          | mm               | 4                                                                                                                                                                                                 | 5         | 7      |
| Forza di serraggio (a 6.3 bar) a 20 mm di distanza dal piano superiore, in apertura o chiusura<br>Clamping force at 6.3 bar 20 mm from the top surface during opening and closing | N                | 45                                                                                                                                                                                                | 100       | 135    |
| Peso / Weight                                                                                                                                                                     | kg               | 0.2                                                                                                                                                                                               | 0.4       | 0.75   |
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**SCHEMA FORZA DI SERRAGGIO IN FUNZIONE DEL PUNTO DI APPLICAZIONE**  
**TABLE OF CLAMPING FORCES FOR VARIOUS POINTS OF APPLICATION**

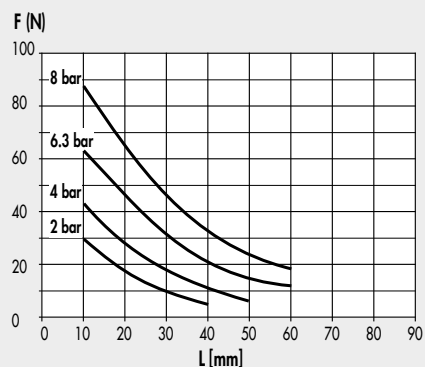




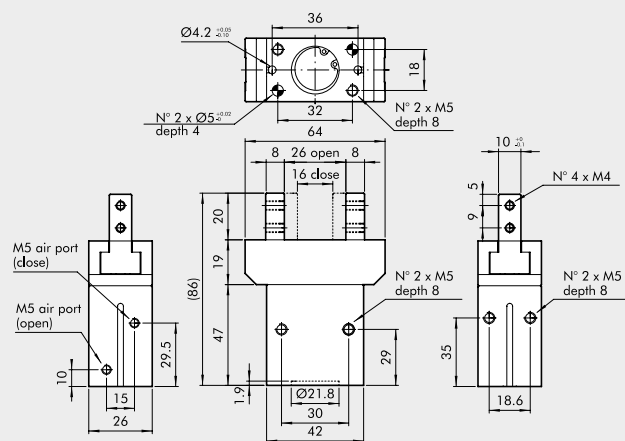
### DIMENSIONI PINZA P2-16 / DIMENSIONS OF GRIPPER P2-16



| Cod.        | Descrizione / Description                                            |
|-------------|----------------------------------------------------------------------|
| W1570160200 | Pinza 2 griffe parallele P2-16<br>Gripper with 2 parallel jaws P2-16 |



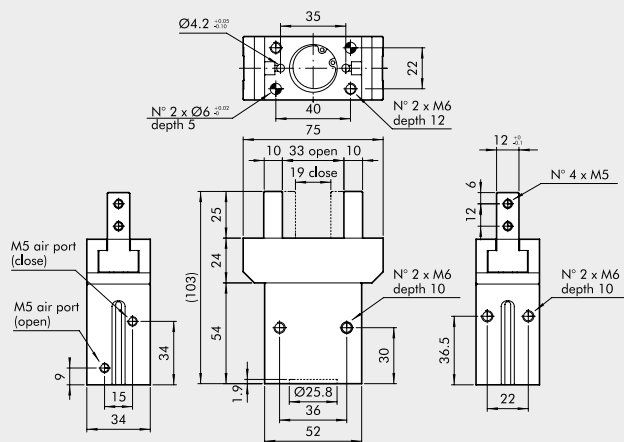
### **DIMENSIONI PINZA P2-20 / DIMENSIONS OF GRIPPER P2-20**



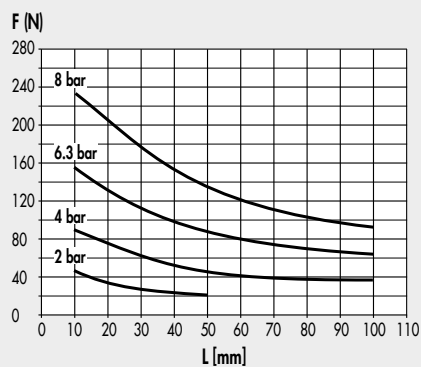
| Cod.        | Descrizione / Description                                            |
|-------------|----------------------------------------------------------------------|
| W1570200200 | Pinza 2 griffe parallele P2-20<br>Gripper with 2 parallel jaws P2-20 |



### DIMENSIONI PINZA P2-25 / DIMENSIONS OF GRIPPER P2-25

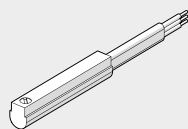


| Cod.        | Descrizione / Description                                            |
|-------------|----------------------------------------------------------------------|
| W1570250200 | Pinza 2 griffe parallele P2-25<br>Gripper with 2 parallel jaws P2-25 |



## ACCESSORI / ACCESSORIES

**SENSORE Ø 4 / SENSOR Ø 4**



Per codici e dati tecnici vedere **capitolo dati tecnici**.  
For codes and technical data, see **chapter technical data**.

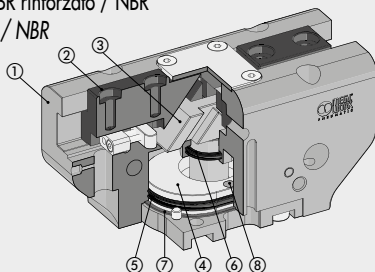
# PINZA A DUE GRIFFE PARALLELE SERIE P3 GRIPPER WITH TWO PARALLEL JAWS SERIES P3



| DATI TECNICI / TECHNICAL DATA                                                                                                                                                                                         |                    | P3-40                                                                                                                                                                                                                | P3-64 | P3-80    |                                     | P3-100   |                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------|-------------------------------------|----------|-------------------------------------|
|                                                                                                                                                                                                                       |                    |                                                                                                                                                                                                                      |       | Standard | Forza maggiorata<br>Increased force | Standard | Forza maggiorata<br>Increased force |
| Pressione d'esercizio / Operating pressure                                                                                                                                                                            | bar                |                                                                                                                                                                                                                      |       |          | 2 ÷ 8                               |          |                                     |
|                                                                                                                                                                                                                       | MPa                |                                                                                                                                                                                                                      |       |          | 0.2 ÷ 0.8                           |          |                                     |
|                                                                                                                                                                                                                       | psi                |                                                                                                                                                                                                                      |       |          | 29 ÷ 116                            |          |                                     |
| Temperatura d'esercizio / Temperature range                                                                                                                                                                           | °C                 |                                                                                                                                                                                                                      |       |          | -10 ÷ 80                            |          |                                     |
| Fluido / Fluid                                                                                                                                                                                                        |                    | Aria filtrata 20 µm con o senza lubrificazione. Se si utilizza aria lubrificata la lubrificazione deve essere continua<br>20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous |       |          |                                     |          |                                     |
| Forza di serraggio di una singola griffa<br>a 6,3 bar a 20 mm dal piano superiore,<br>in apertura e chiusura<br>Clamping force of a single jaw<br>at 6.3 bar, 20 mm from the upper surface,<br>on opening and closing | N                  | 75                                                                                                                                                                                                                   | 125   | 265      | 445                                 | 360      | 790                                 |
| Massimo peso movimentabile / Maximum movable weight                                                                                                                                                                   | kg                 | 0.65                                                                                                                                                                                                                 | 1.3   | 2.5      | 5                                   | 3.5      | 7                                   |
| Corsa di una singola griffa / Stroke of each jaw                                                                                                                                                                      | mm                 | 2.5                                                                                                                                                                                                                  | 6     | 8        | 4                                   | 10       | 5                                   |
| Tempo minimo apertura/chiusura<br>Minimum opening/closing time                                                                                                                                                        | s                  |                                                                                                                                                                                                                      |       | 0.05     |                                     |          |                                     |
| Ripetibilità / Repeatability                                                                                                                                                                                          | mm                 |                                                                                                                                                                                                                      |       | 0.01     |                                     |          |                                     |
| Momento d'inerzia rispetto all'asse del pistone<br>Moment of inertia as regards the piston axis                                                                                                                       | kg cm <sup>2</sup> | 1.8                                                                                                                                                                                                                  | 4     | 4.5      |                                     | 12       |                                     |
| Carichi massimi statici ammissibili:<br>Max. admissible static loads:                                                                                                                                                 |                    |                                                                                                                                                                                                                      |       |          |                                     |          |                                     |
| - Fa                                                                                                                                                                                                                  | N                  | 250                                                                                                                                                                                                                  | 1100  | 1500     |                                     | 2000     |                                     |
| - Mx                                                                                                                                                                                                                  | Nm                 | 10                                                                                                                                                                                                                   | 40    | 90       |                                     | 80       |                                     |
| - My                                                                                                                                                                                                                  | Nm                 | 5                                                                                                                                                                                                                    | 60    | 55       |                                     | 115      |                                     |
| - Mz                                                                                                                                                                                                                  | Nm                 | 12                                                                                                                                                                                                                   | 40    | 55       |                                     | 70       |                                     |
| Peso / Weight                                                                                                                                                                                                         | kg                 | 0.12                                                                                                                                                                                                                 | 0.35  | 0.5      |                                     | 0.9      |                                     |

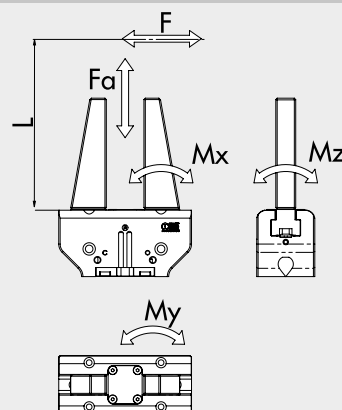
## COMPONENTI / COMPONENTS

- ① CORPO: alluminio anodizzato duro / BODY: hard-anodised aluminium
- ② GRIFFE: acciaio nitratato / JAWS: nitrided steel
- ③ STELO + GUIDA: acciaio nitratato / PISTON ROD + GUIDE: nitrided steel
- ④ PISTONE: alluminio anodizzato duro / PISTON: hard-anodised aluminium
- ⑤ GUARNIZIONE PISTONE: NBR / PISTON GASKET: NBR
- ⑥ GUARNIZIONE STELO: NBR / poliuretano  
PISTON ROD GASKET: NBR / polyurethane
- ⑦ GUARNIZIONE FONDELLO: SBR rinforzato / NBR  
BASE GASKET: reinforced SBR / NBR
- ⑧ MAGNETE: neodimio  
MAGNET: neodymium



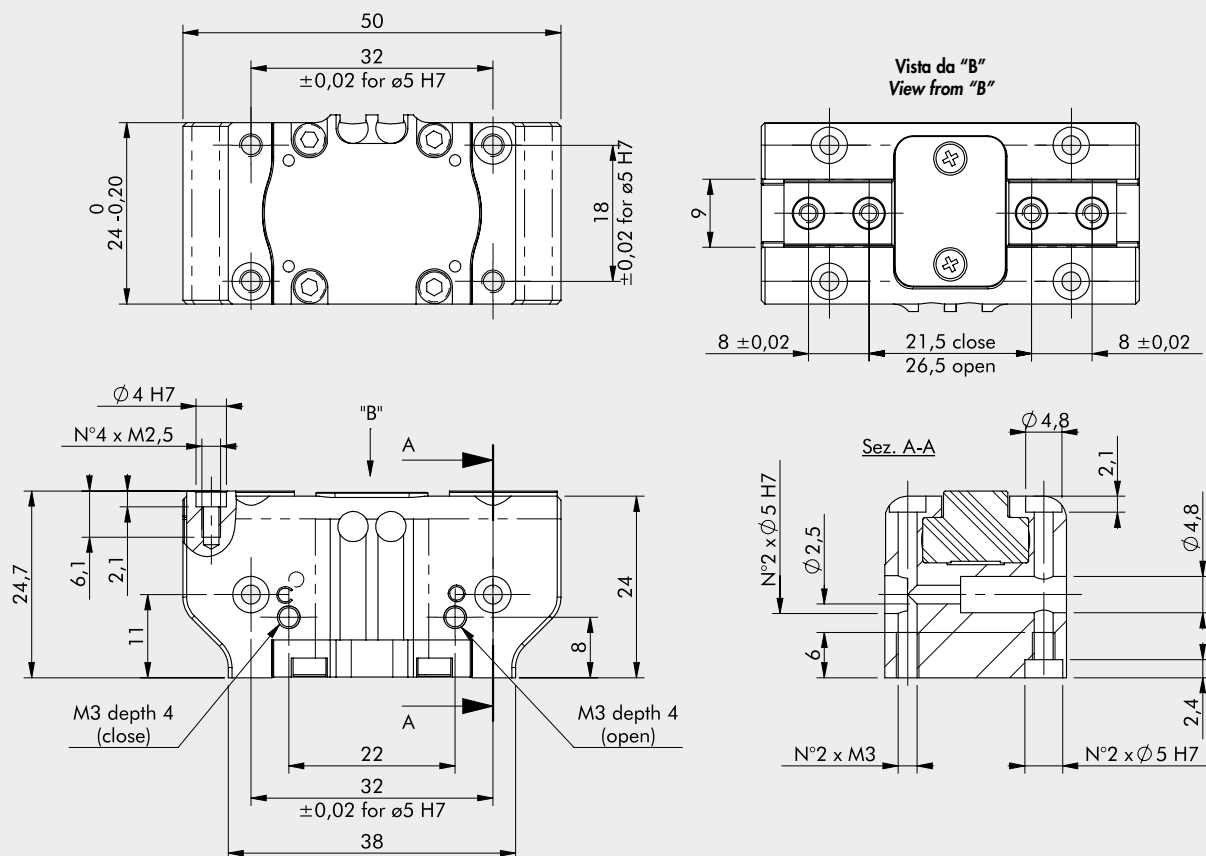
## SCHEMA FORZE E MOMENTI

### DIAGRAM OF FORCES AND MOMENTS

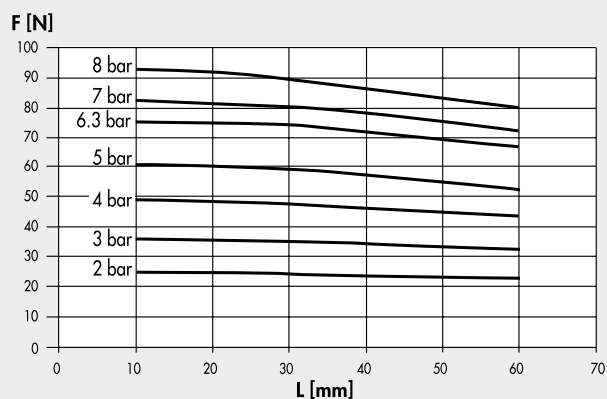


F Forza di serraggio per ogni griffa / Clamping force for each jaw  
Fa Forza assiale statica massima / Maximum static axial force  
Mx, My, Mz Momenti statici massimi / Maximum static moments

### DIMENSIONE PINZA P3-40 / DIMENSIONS OF GRIPPER P3-40



\* Attacco aria per pressurizzazione di spurgo (sul lato opposto) / Air purge connection (on the opposite side)



| Cod.        | Descrizione / Description                                           |
|-------------|---------------------------------------------------------------------|
| W1560400200 | Pinza 2 griffe parallele P3-40 / Gripper with 2 parallel jaws P3-40 |

## ATTUATORI / ACTUATORS

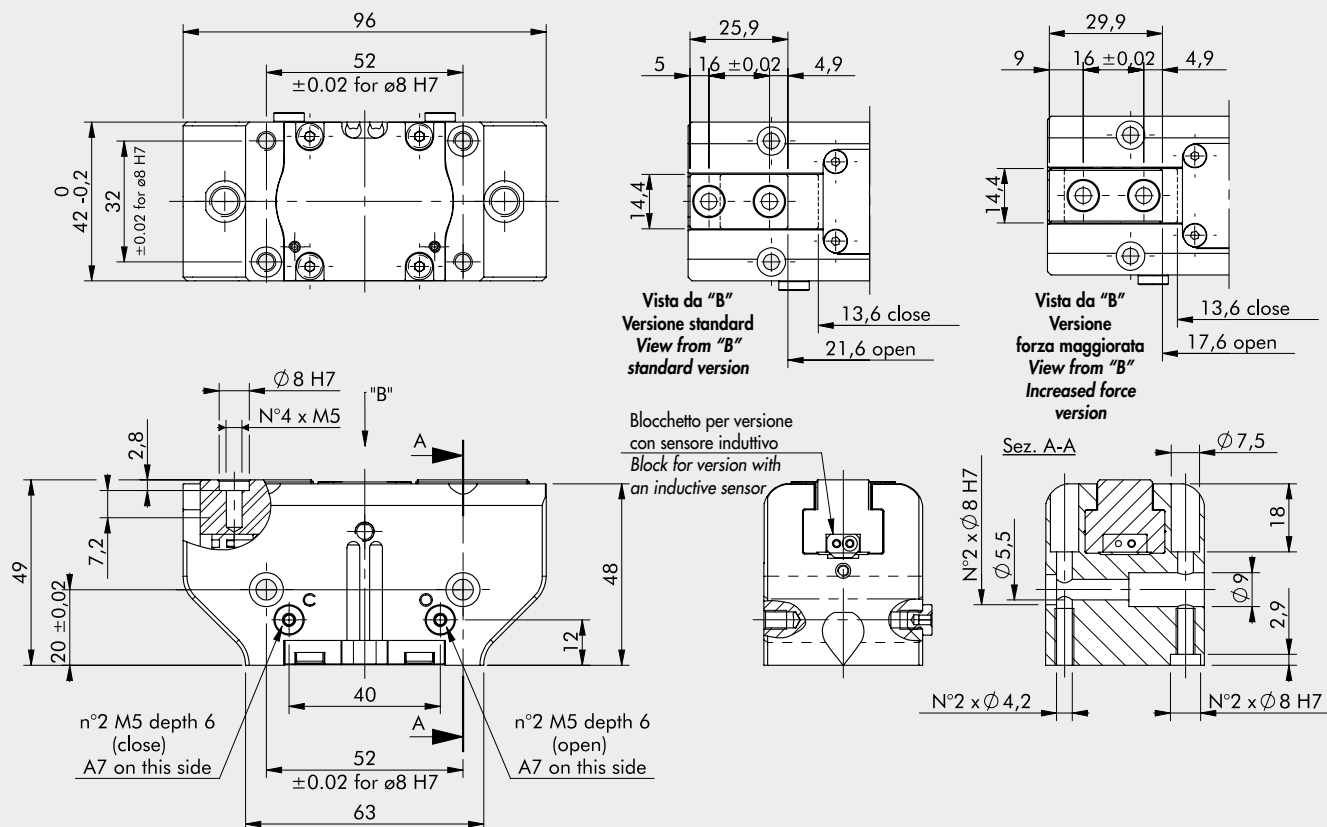


The graph shows the relationship between force  $F$  [N] and length  $L$  [mm] for different pressure levels. The force decreases linearly as the length increases for all pressure levels.

| Pressure (bar) | Force $F$ [N] at $L = 0$ mm | Force $F$ [N] at $L = 100$ mm |
|----------------|-----------------------------|-------------------------------|
| 8 bar          | 158                         | 115                           |
| 7 bar          | 140                         | 100                           |
| 6.3 bar        | 125                         | 90                            |
| 5 bar          | 105                         | 75                            |
| 4 bar          | 85                          | 60                            |
| 3 bar          | 65                          | 45                            |
| 2 bar          | 45                          | 30                            |

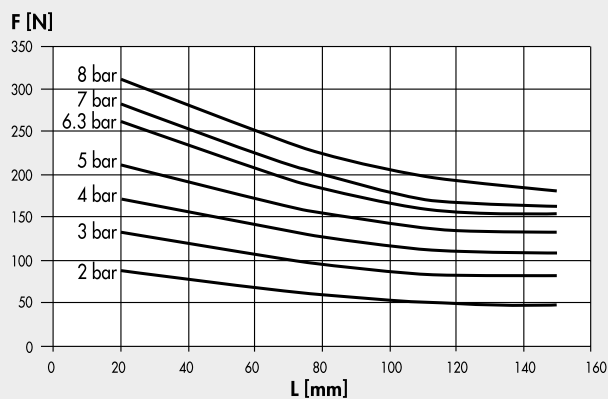
| Cod.        | Descrizione / Description                                                                                       |
|-------------|-----------------------------------------------------------------------------------------------------------------|
| W1560640200 | Pinza 2 griffe parallele P3-64 / Gripper with 2 parallel jaws P3-64                                             |
| W1560640201 | Pinza 2 griffe parallele P3-64 per sensore induttivo / Gripper with 2 parallel jaws P3-64 for inductive sensors |

## DIMENSIONE PINZA P3-80 / DIMENSIONS OF GRIPPER P3-80

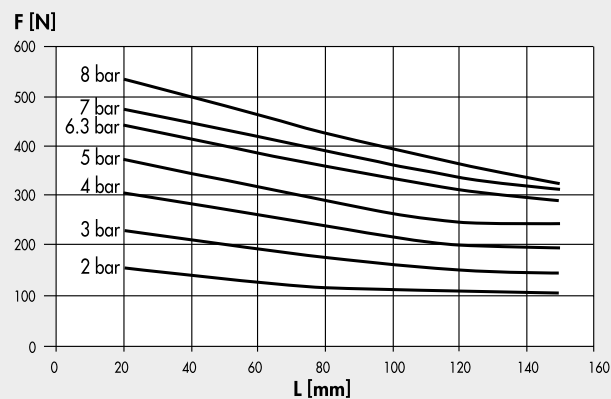


\* Attacco aria per pressurizzazione di spurgo / Air purge connection

## Versione standard / Standard version

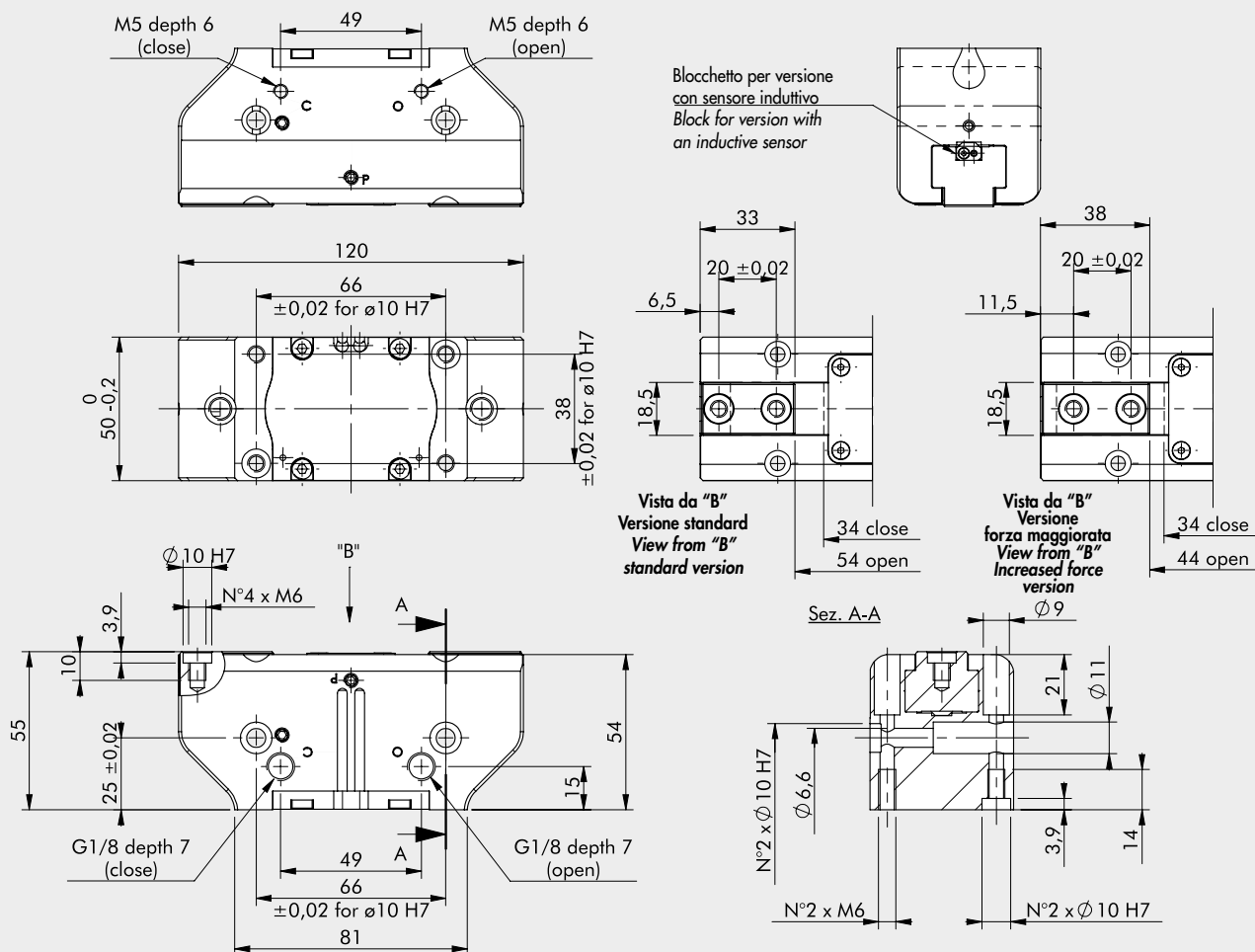


## Versione forza maggiorata / Increased force version



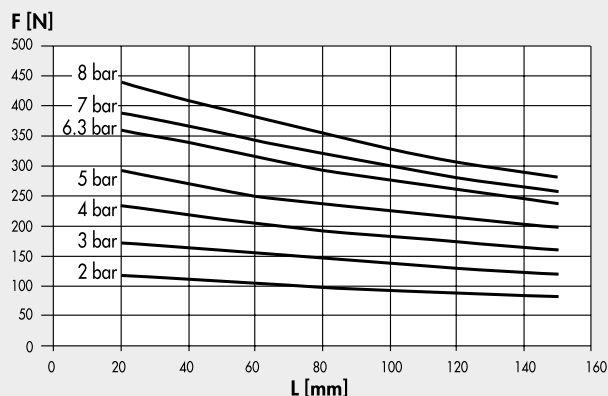
| Cod.        | Descrizione / Description                                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| W1560800200 | Pinza 2 griffe parallele P3-80 / Gripper with 2 parallel jaws P3-80                                                                              |
| W1560800201 | Pinza 2 griffe parallele P3-80 per sensore induttivo / Gripper with 2 parallel jaws P3-80 for inductive sensors                                  |
| W1560800220 | Pinza 2 griffe parallele P3-80 forza maggiorata / Gripper with 2 parallel jaws P3-80 increased force                                             |
| W1560800221 | Pinza 2 griffe parallele P3-80 forza maggiorata per sensore induttivo / Gripper with 2 parallel jaws P3-80 increased force for inductive sensors |

# **DIMENSIONE PINZA P3-100 / DIMENSIONS OF GRIPPER P3-100**

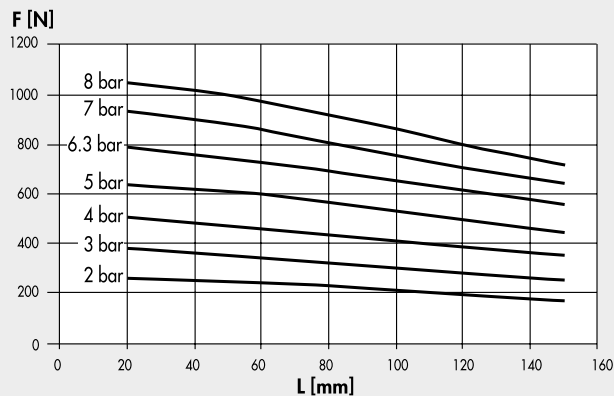


\* Attacco aria per pressurizzazione di spurgo / Air purge connection

## **Versione standard / Standard version**

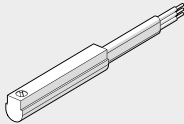


## **Versione forza maggiorata / Increased force version**



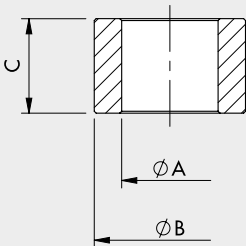
| Cod.        | Descrizione / Description                                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| W1561000200 | Pinza 2 griffe parallele P3-100 / Gripper with 2 parallel jaws P3-100                                                                              |
| W1561000201 | Pinza 2 griffe parallele P3-100 per sensore induttivo / Gripper with 2 parallel jaws P3-100 for inductive sensors                                  |
| W1561000220 | Pinza 2 griffe parallele P3-100 forza maggiorata / Gripper with 2 parallel jaws P3-100 increased force                                             |
| W1561000221 | Pinza 2 griffe parallele P3-100 forza maggiorata per sensore induttivo / Gripper with 2 parallel jaws P3-100 increased force for inductive sensors |

SENSORE Ø 4 / SENSOR Ø 4



Per codici e dati tecnici vedere capitolo dati tecnici.  
For codes and technical data, see chapter technical data.

ANELLO DI CENTRAGGIO / CENTRING RING



| Cod.        | Taglia / Size | ØA                                | ØB <sup>17</sup> | C                                |
|-------------|---------------|-----------------------------------|------------------|----------------------------------|
| W1560409201 | 40            | 3 <sup>0</sup> <sub>-0.1</sub>    | 4                | 4 <sup>0</sup> <sub>-0.1</sub>   |
| W1560649201 | 64            | 4.5 <sup>0</sup> <sub>-0.1</sub>  | 6                | 5 <sup>0</sup> <sub>-0.1</sub>   |
| W1560809201 | 80            | 5.1 <sup>0</sup> <sub>-0.1</sub>  | 8                | 5 <sup>0</sup> <sub>-0.05</sub>  |
| W1561009201 | 100           | 6.2 <sup>+0</sup> <sub>-0.1</sub> | 10               | 6.9 <sup>0</sup> <sub>-0.1</sub> |

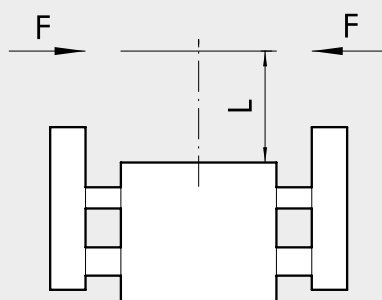
Nota: n. 2 pezzi per confezione / Note: 2-pieces pack

NOTE / NOTES

**PINZA A DUE GRIFFE PARALLELE  
A CORSA LUNGA SERIE P4  
GRIPPER WITH TWO PARALLEL  
LONG-STROKE JAWS, SERIES P4**

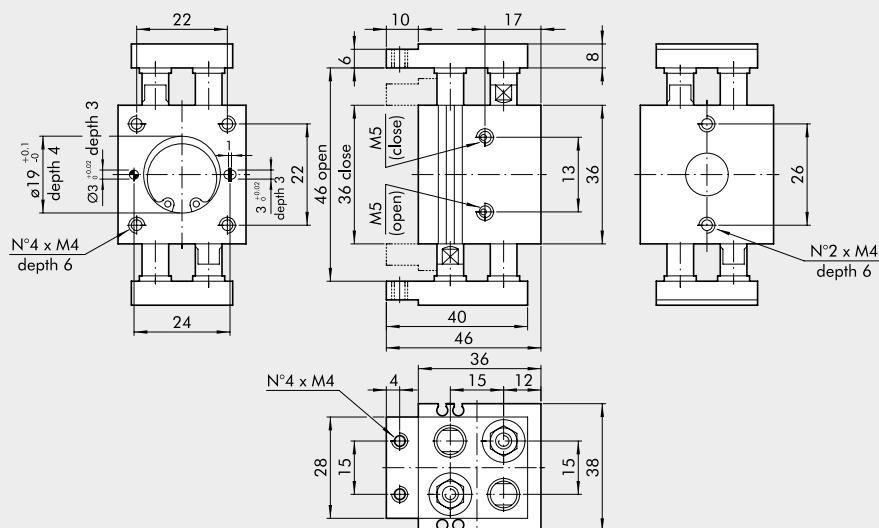
[illegible]

**SCHEMA FORZA DI SERRAGGIO IN FUNZIONE DEL PUNTO DI APPLICAZIONE**  
**TABLE OF CLAMPING FORCES FOR VARIOUS POINTS OF APPLICATION**

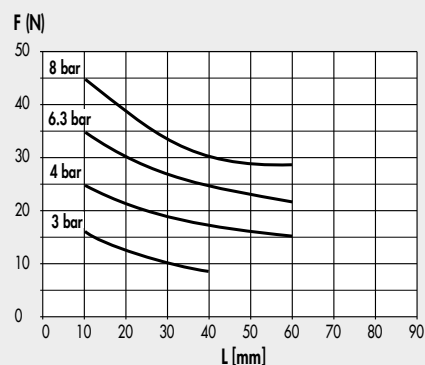




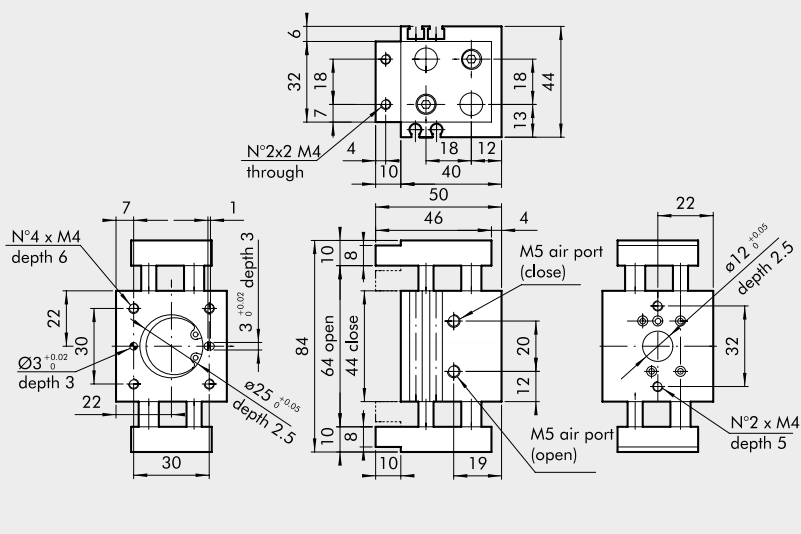
### DIMENSIONI PINZA P4-10 / DIMENSIONS OF GRIPPER P4-10



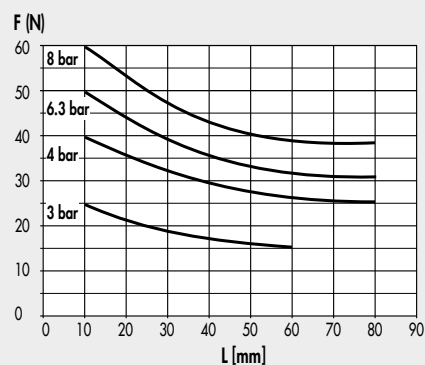
| Cod.        | Descrizione / Description                                                                       |
|-------------|-------------------------------------------------------------------------------------------------|
| W1580100200 | Pinza 2 griffe parallele corsa lunga P4-10<br>Gripper with 2 parallel long-stroke jaws<br>P4-10 |



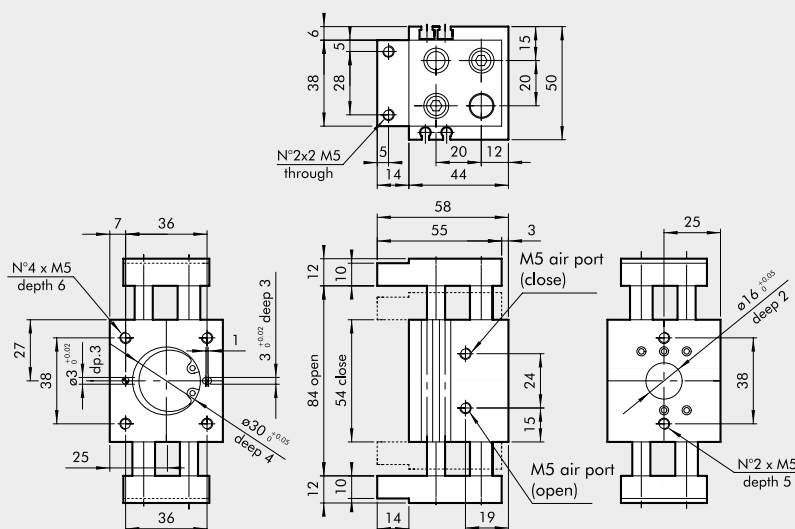
### DIMENSIONI PINZA P4-12 / DIMENSIONS OF GRIPPER P4-12



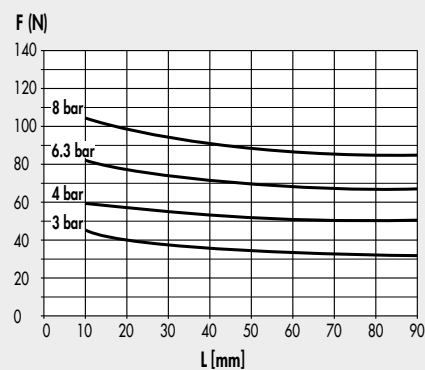
| Cod.        | Descrizione / Description                                                                       |
|-------------|-------------------------------------------------------------------------------------------------|
| W1580120200 | Pinza 2 griffe parallele corsa lunga P4-12<br>Gripper with 2 parallel long-stroke jaws<br>P4-12 |



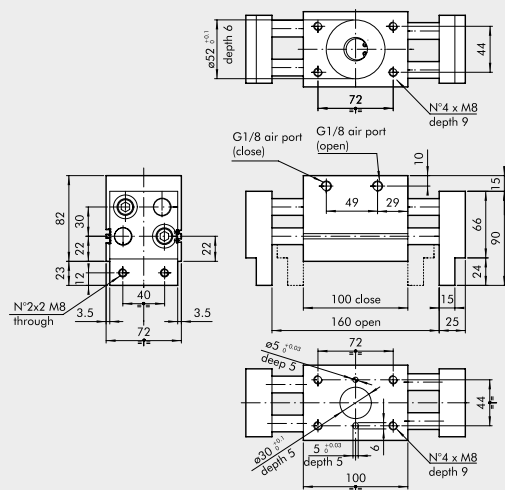
### **DIMENSIONI PINZA P4-16 / DIMENSIONS OF GRIPPER P4-16**



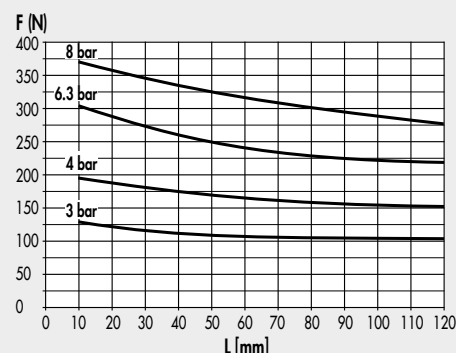
| Cod.        | Descrizione / Description                                                                       |
|-------------|-------------------------------------------------------------------------------------------------|
| W1580160200 | Pinza 2 griffe parallele corsa lunga P4-16<br>Gripper with 2 parallel long-stroke jaws<br>P4-16 |



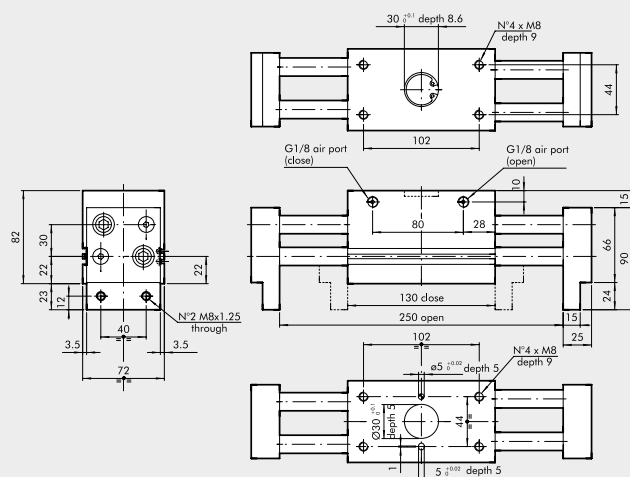
## DIMENSIONI PINZA P4-25 / DIMENSIONS OF GRIPPER P4-25



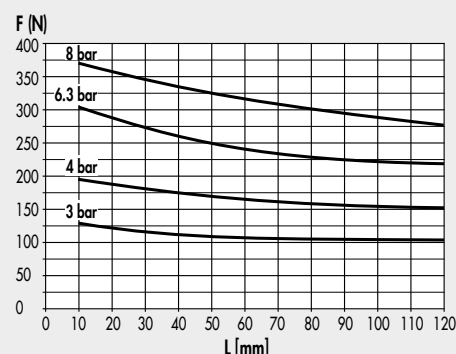
| Cod.               | Descrizione / Description                                                                    |
|--------------------|----------------------------------------------------------------------------------------------|
| <b>W1580250200</b> | Pinza 2 griffe parallele corsa lunga P4-25<br>Gripper with 2 parallel long-stroke jaws P4-25 |



## DIMENSIONI PINZA P4-30 / DIMENSIONS OF GRIPPER P4-30

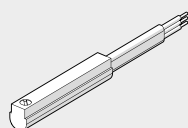


| Cod.               | Descrizione / Description                                                                    |
|--------------------|----------------------------------------------------------------------------------------------|
| <b>W1580300200</b> | Pinza 2 griffe parallele corsa lunga P4-30<br>Gripper with 2 parallel long-stroke jaws P4-30 |



## ACCESSORI / ACCESSORIES

### SENSORE Ø 4 PER PINZA P4-10 ÷ 30 / SENSOR Ø 4 FOR P4 10-30



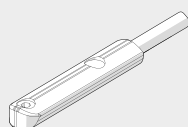
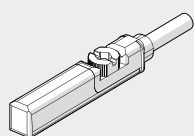
Per codici e dati tecnici vedere **capitolo dati tecnici**  
 For codes and technical data, see **chapter technical data**.

### SENSORE A SCOMPARSA, PER PINZE P4-12 ÷ 30 / RETRACTABLE SENSOR FOR P4-12-30

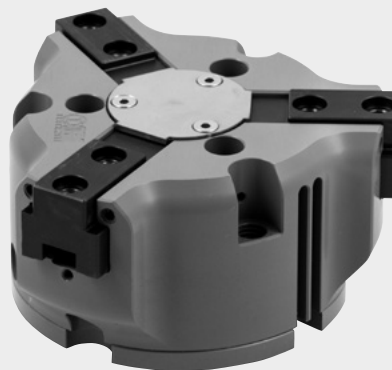
**SENSORE TIPO SQUARE**  
 Ultima generazione, fissaggio robusto  
**SENSOR, SQUARE TYPE**  
 Latest generation, secure fixing

**SENSORE TIPO OVALE**  
 Tradizionale  
**SENSOR, OVAL TYPE**  
 Traditional

Per codici e dati tecnici vedere **capitolo dati tecnici**  
 For codes and technical data, see **chapter technical data**.



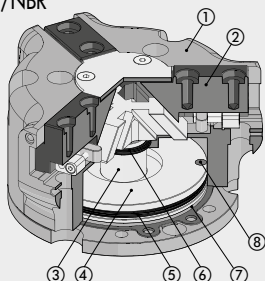
# PINZA A TRE GRIFFE PARALLELE SERIE P12 GRIPPER WITH THREE PARALLEL JAWS, SERIES P12



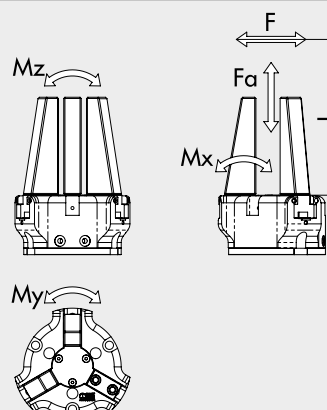
| DATI TECNICI / TECHNICAL DATA                                                                                                                                                                                         |                    | P12-40                                                                                                                                                                                                               | P12-64 | P12-80   |                                     | P12-100  |                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------|-------------------------------------|----------|-------------------------------------|
|                                                                                                                                                                                                                       |                    |                                                                                                                                                                                                                      |        | Standard | Forza maggiorata<br>Increased force | Standard | Forza maggiorata<br>Increased force |
| Pressione d'esercizio / Operating pressure                                                                                                                                                                            | bar                |                                                                                                                                                                                                                      |        |          | 2 ÷ 8                               |          |                                     |
|                                                                                                                                                                                                                       | MPa                |                                                                                                                                                                                                                      |        |          | 0.2 ÷ 0.8                           |          |                                     |
|                                                                                                                                                                                                                       | psi                |                                                                                                                                                                                                                      |        |          | 29 ÷ 116                            |          |                                     |
| Temperatura d'esercizio / Temperature range                                                                                                                                                                           | °C                 |                                                                                                                                                                                                                      |        |          | -10 ÷ 80                            |          |                                     |
| Fluido / Fluid                                                                                                                                                                                                        |                    | Aria filtrata 20 µm con o senza lubrificazione. Se si utilizza aria lubrificata la lubrificazione deve essere continua<br>20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous |        |          |                                     |          |                                     |
| Forza di serraggio di una singola griffa<br>a 6,3 bar a 20 mm dal piano superiore,<br>in apertura e chiusura<br>Clamping force of a single jaw<br>at 6.3 bar, 20 mm from the upper surface,<br>on opening and closing | N                  | 130                                                                                                                                                                                                                  | 310    | 435      | 860                                 | 840      | 1450                                |
| Massimo peso movimentabile / Maximum movable weight                                                                                                                                                                   | kg                 | 1.3                                                                                                                                                                                                                  | 2.9    | 4.5      | 9                                   | 9        | 20                                  |
| Corsa di una singola griffa / Stroke of each jaw                                                                                                                                                                      | mm                 | 2.5                                                                                                                                                                                                                  | 6      | 8        | 4                                   | 10       | 5                                   |
| Tempo minimo apertura/chiusura<br>Minimum opening/closing time                                                                                                                                                        | s                  |                                                                                                                                                                                                                      |        | 0.05     |                                     |          |                                     |
| Ripetibilità / Repeatability                                                                                                                                                                                          | mm                 |                                                                                                                                                                                                                      |        | 0.01     |                                     |          |                                     |
| Momento d'inerzia rispetto all'asse del pistone<br>Moment of inertia as regards the piston axis                                                                                                                       | kg cm <sup>2</sup> | 2.1                                                                                                                                                                                                                  | 6      | 6.5      |                                     | 19       |                                     |
| Carichi massimi statici ammissibili:<br>Max. admissible static loads:                                                                                                                                                 |                    |                                                                                                                                                                                                                      |        |          |                                     |          |                                     |
| - Fa                                                                                                                                                                                                                  | N                  | 250                                                                                                                                                                                                                  | 1100   | 1500     |                                     | 2000     |                                     |
| - Mx                                                                                                                                                                                                                  | Nm                 | 10                                                                                                                                                                                                                   | 40     | 90       |                                     | 80       |                                     |
| - My                                                                                                                                                                                                                  | Nm                 | 5                                                                                                                                                                                                                    | 60     | 55       |                                     | 115      |                                     |
| - Mz                                                                                                                                                                                                                  | Nm                 | 12                                                                                                                                                                                                                   | 40     | 55       |                                     | 70       |                                     |
| Peso / Weight                                                                                                                                                                                                         | kg                 | 0.2                                                                                                                                                                                                                  | 0.7    | 0.75     |                                     | 1.4      |                                     |

## COMPONENTI / COMPONENTS

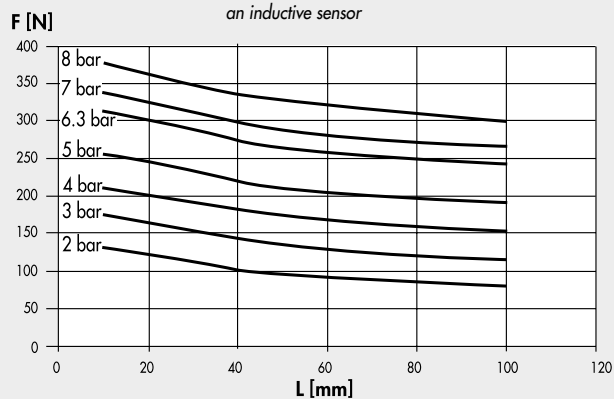
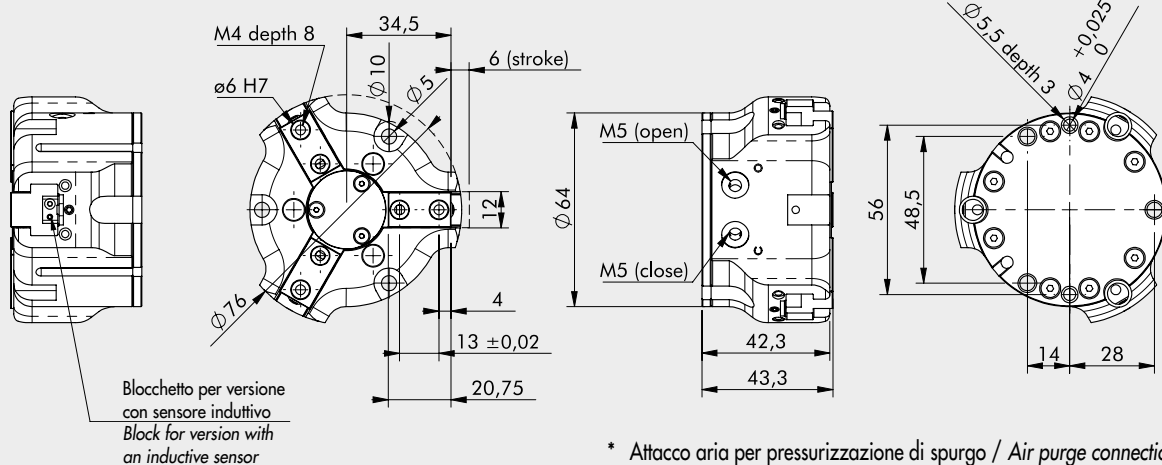
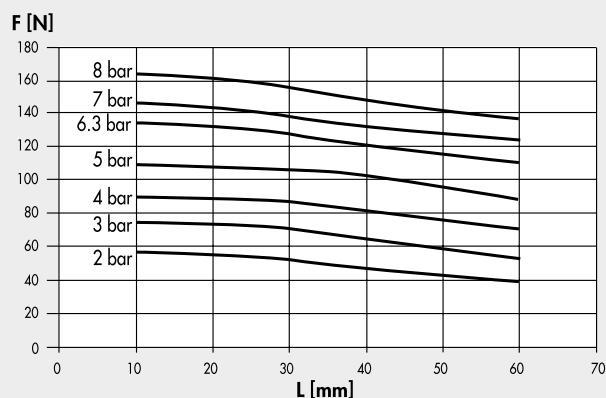
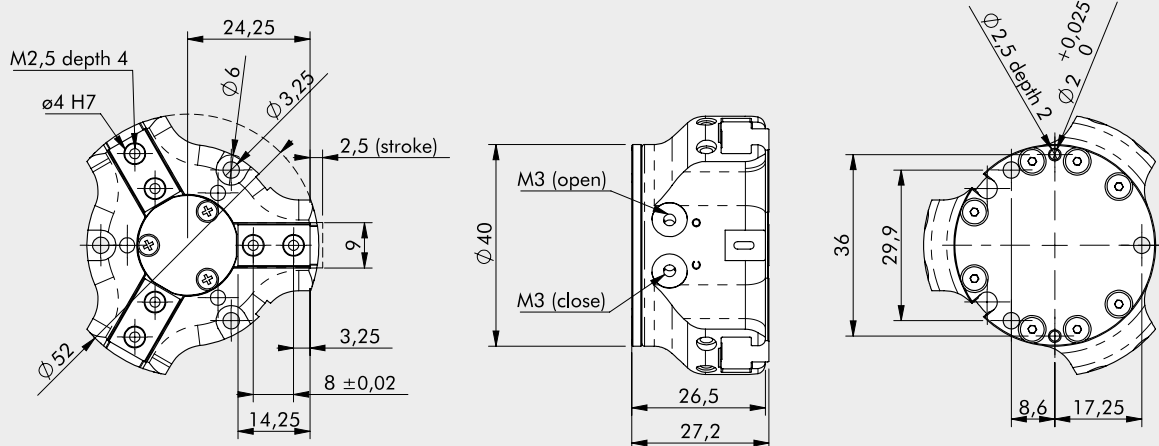
- ① CORPO: alluminio anodizzato duro / BODY: hard-anodised aluminium
- ② GRIFFE: acciaio nitruato / JAWS: nitrided steel
- ③ STELO + GUIDA: acciaio nitruato / PISTON ROD + GUIDE: nitrided steel
- ④ PISTONE: alluminio anodizzato duro / PISTON: hard-anodised aluminium
- ⑤ GUARNIZIONE PISTONE: NBR / PISTON GASKET: NBR
- ⑥ GUARNIZIONE STELO: NBR / poliuretano  
PISTON ROD GASKET: NBR / polyurethane
- ⑦ GUARNIZIONE FONDELLO: SBR rinforzato / NBR  
BASE GASKET: reinforced SBR / NBR
- ⑧ MAGNETE: neodimio  
MAGNET: neodymium



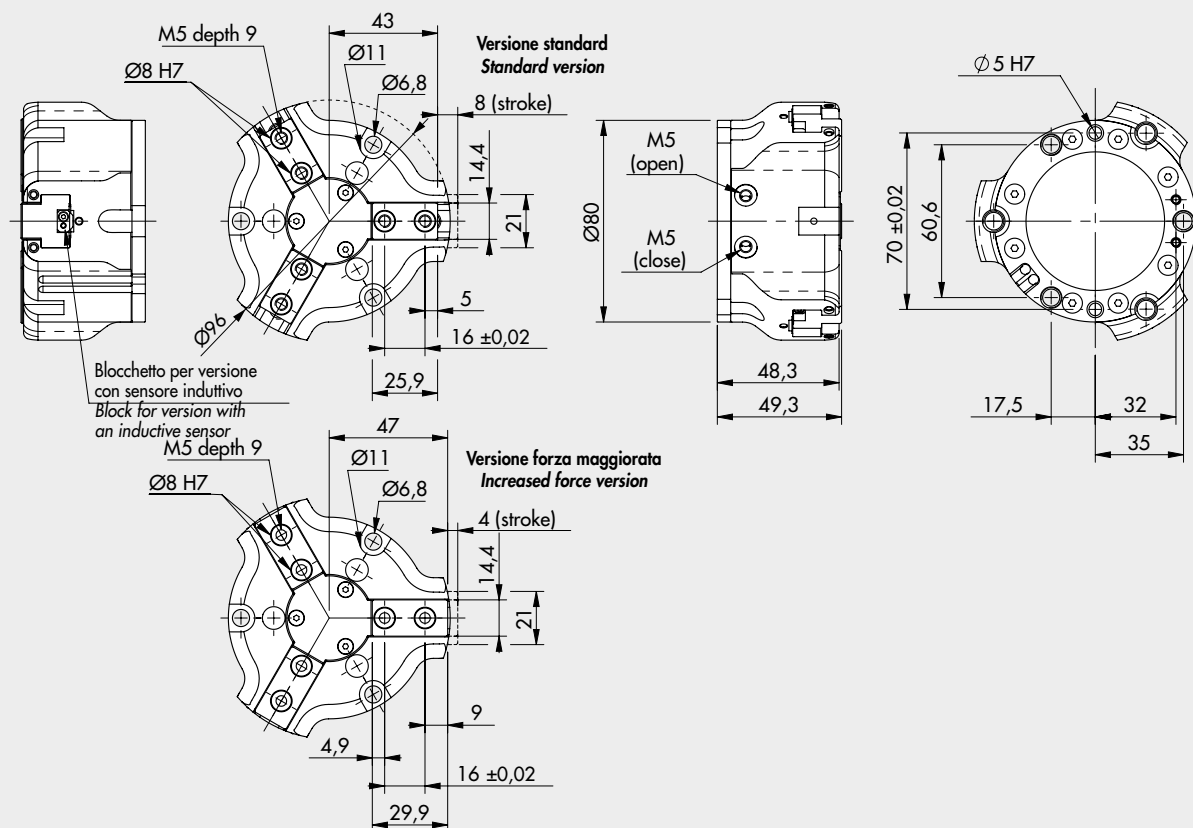
## SCHEMA FORZE E MOMENTI / DIAGRAM OF FORCES AND MOMENTS



F Forza di serraggio per ogni griffa / Clamping force for each jaw  
 Fa Forza assiale statica massima / Maximum static axial force  
 Mx, My, Mz Momenti statici massimi / Maximum static moments

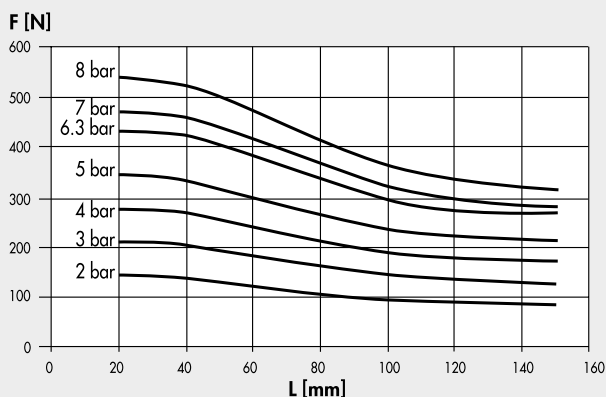


## DIMENSIONE PINZA P12-80 / DIMENSIONS OF GRIPPER P12-80

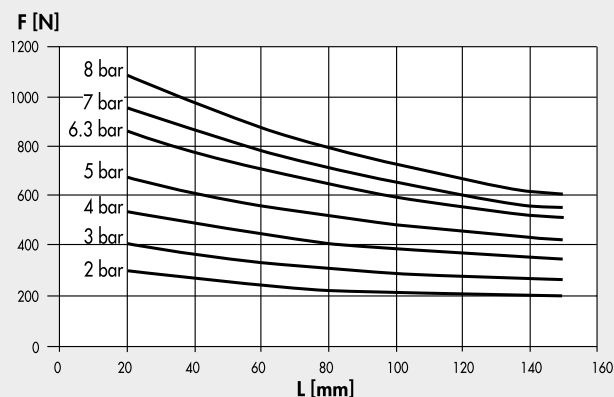


\* Attacco aria per pressurizzazione di spurgo / Air purge connection

## Versione standard / Standard version



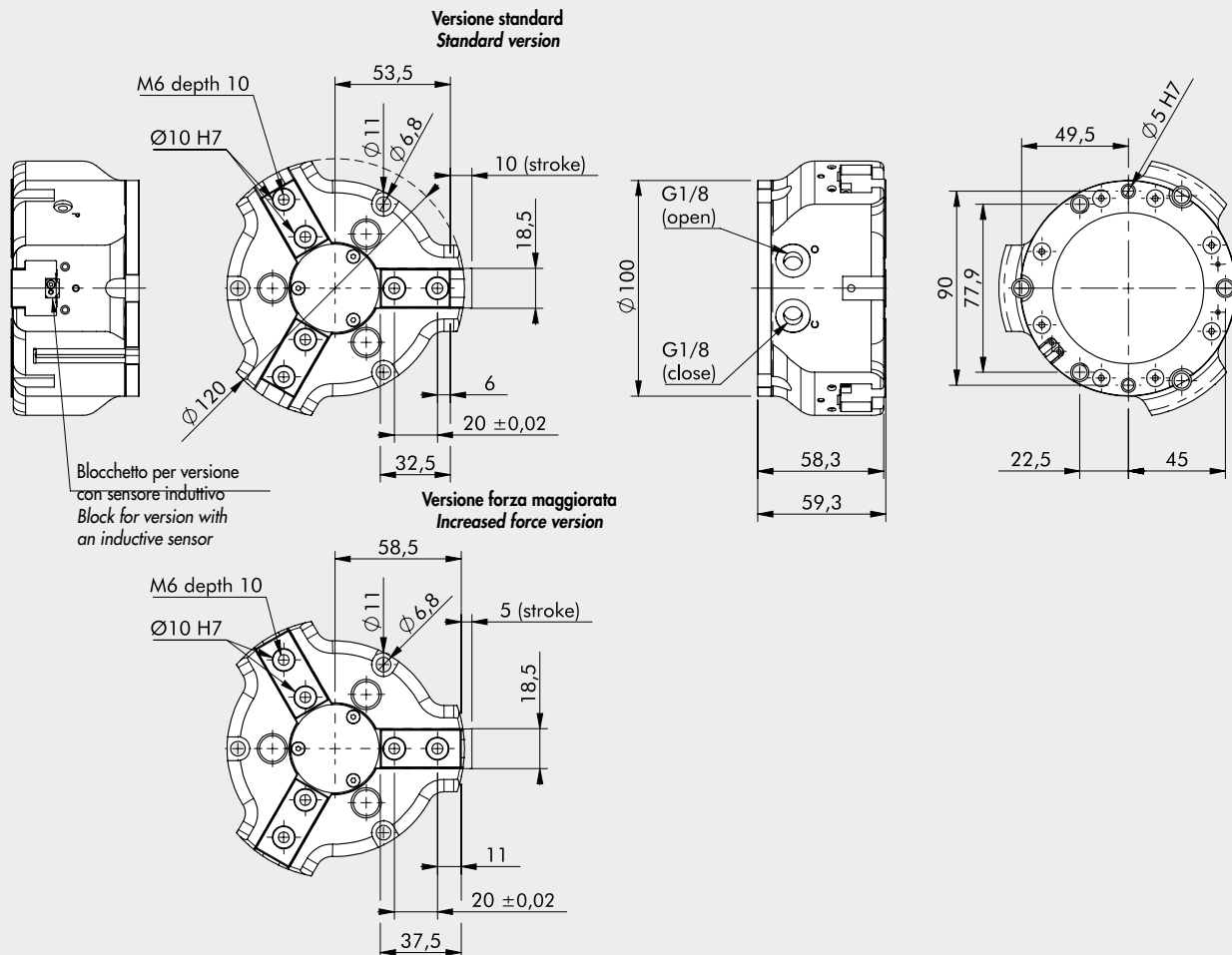
## Versione forza maggiorata / Increased force version



\* Attacco aria p

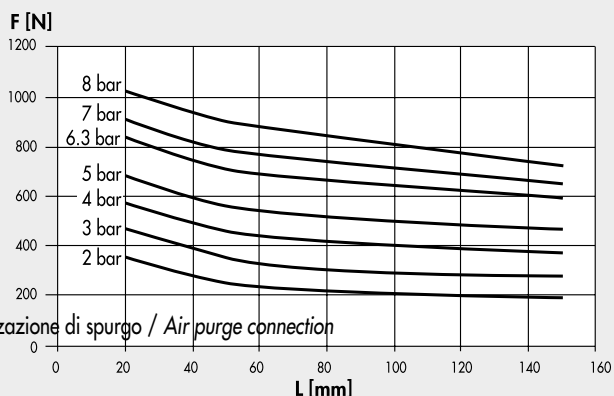
| Cod.        | Descrizione / Description                                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| W1560800300 | Pinza 3 griffe parallele P12-80 / Gripper with 3 parallel jaws P12-80                                                                              |
| W1560800301 | Pinza 3 griffe parallele P12-80 per sensore induttivo / Gripper with 3 parallel jaws P12-80 for inductive sensors                                  |
| W1560800320 | Pinza 3 griffe parallele P12-80 forza maggiorata / Gripper with 3 parallel jaws P12-80 increased force                                             |
| W1560800321 | Pinza 3 griffe parallele P12-80 forza maggiorata per sensore induttivo / Gripper with 3 parallel jaws P12-80 increased force for inductive sensors |

# **DIMENSIONE PINZA P12-100 / DIMENSIONS OF GRIPPER P12-100**

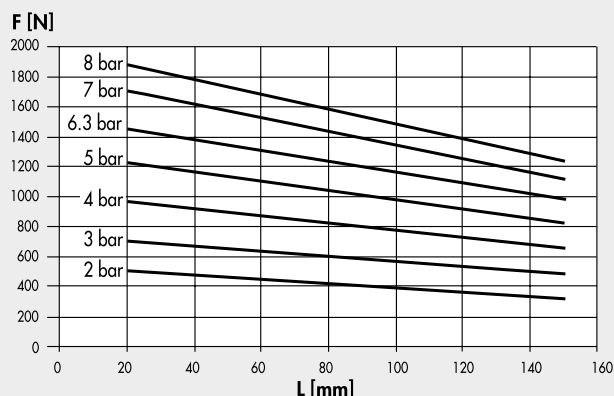


\* Attacco aria per pressurizzazione di spurgo / Air purge connection

## **Versione standard / Standard version**

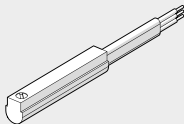


## **Versione forza maggiorata / Increased force version**



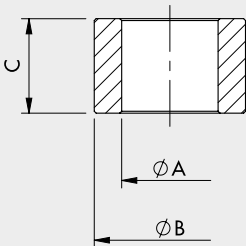
| Cod.        | Descrizione / Description                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| W1561000300 | Pinza 3 griffe parallele P12-100 / Gripper with 3 parallel jaws P12-100                                                                              |
| W1561000301 | Pinza 3 griffe parallele P12-100 per sensore induttivo / Gripper with 3 parallel jaws P12-100 for inductive sensors                                  |
| W1561000320 | Pinza 3 griffe parallele P12-100 forza maggiorata / Gripper with 3 parallel jaws P12-100 increased force                                             |
| W1561000321 | Pinza 3 griffe parallele P12-100 forza maggiorata per sensore induttivo / Gripper with 3 parallel jaws P12-100 increased force for inductive sensors |

SENSORE Ø 4 / SENSOR Ø 4



Per codici e dati tecnici vedere capitolo dati tecnici.  
For codes and technical data, see chapter technical data.

ANELLO DI CENTRAGGIO / CENTRING RING



| Cod.        | Taglia / Size | ØA                                | ØB <sup>17</sup> | C                                |
|-------------|---------------|-----------------------------------|------------------|----------------------------------|
| W1560409201 | 40            | 3 <sup>0</sup> <sub>-0.1</sub>    | 4                | 4 <sup>0</sup> <sub>-0.1</sub>   |
| W1560649201 | 64            | 4.5 <sup>0</sup> <sub>-0.1</sub>  | 6                | 5 <sup>0</sup> <sub>-0.1</sub>   |
| W1560809201 | 80            | 5.1 <sup>0</sup> <sub>-0.1</sub>  | 8                | 5 <sup>0</sup> <sub>-0.05</sub>  |
| W1561009201 | 100           | 6.2 <sup>+0</sup> <sub>-0.1</sub> | 10               | 6.9 <sup>0</sup> <sub>-0.1</sub> |

Nota: n. 2 pezzi per confezione / Note: 2-pieces pack

NOTE / NOTES



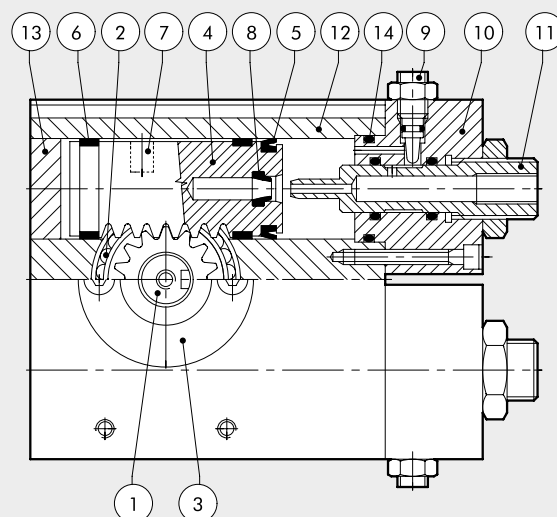
# ATTUATORE ROTANTE SERIE R2 ROTARY ACTUATOR SERIES R2



| DATI TECNICI / TECHNICAL DATA                                                                        |                 | R2-12                                      | R2-16    | R2-20    | R2-25    |
|------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------|----------|----------|----------|
| Pressione d'esercizio / Operating pressure                                                           | bar             | 1.5 ÷ 7                                    |          |          |          |
|                                                                                                      | MPa             | 0.15 ÷ 0.7                                 |          |          |          |
|                                                                                                      | psi             | 22 ÷ 101                                   |          |          |          |
|                                                                                                      | °C              | -10 ÷ +80                                  |          |          |          |
| Temperatura d'esercizio / Temperature range                                                          | °C              | 35° (+10° - 25° circa) / (about +10° -25°) |          |          |          |
| Regolazione angolare / Angle adjustment                                                              | gradi / degrees | 90° di rotazione / 180° di rotazione       |          |          |          |
| Fluidi / Fluid                                                                                       |                 | 90°/180° rotation                          |          |          |          |
|                                                                                                      |                 | Entrambe frontali / Both at the front      |          |          |          |
| Versioni / Versions                                                                                  |                 |                                            |          |          |          |
| Attacchi / Ports                                                                                     |                 |                                            |          |          |          |
| Alesaggio / Sizes                                                                                    | mm              | 12                                         | 16       | 20       | 25       |
| Coppia teorica ( $\Delta P$ = pressione in bar) - Theoretical torque ( $\Delta P$ = pressure in bar) | Nm              | 0.065 x P                                  | 0.11 x P | 0.21 x P | 0.48 x P |
| Carico assiale MAX / Max. axial load                                                                 | N               | 8                                          | 14       | 40       | 80       |
| Carico radiale MAX / Max. radial load                                                                | N               | 8                                          | 14       | 40       | 80       |
| Peso con rotazione 90° / Weight with 90° rotation                                                    | kg              | 0.18                                       | 0.26     | 0.63     | 0.8      |
| Peso con rotazione 180° / Weight with 180° rotation                                                  | kg              | 0.21                                       | 0.31     | 0.72     | 1        |
| Tempo di rotazione senza carico: / Rotation time without load:                                       |                 |                                            |          |          |          |
| • angolo 90° / 90° angle                                                                             | s               | 0.2                                        | 0.2      | 0.2      | 0.2      |
| • angolo 180° / 180° angle                                                                           | s               | 0.3                                        | 0.3      | 0.3      | 0.3      |

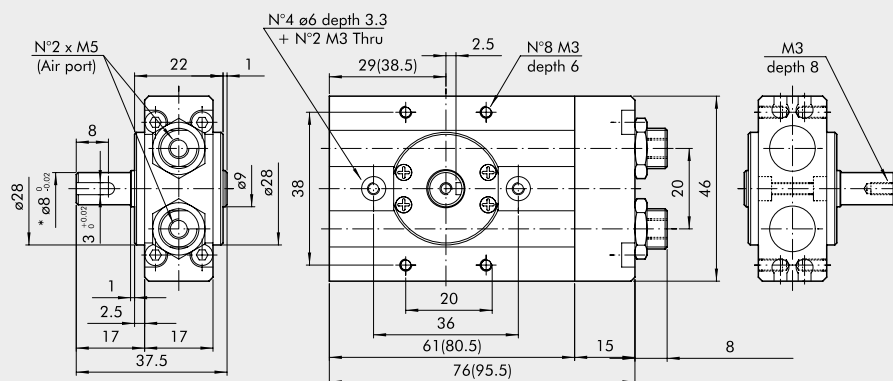
## COMPONENTI / COMPONENTS

- ① ALBERO ROTANTE - PIGNONE: acciaio temprato  
ROTARY SHAFT - PINION: hardened and tempered steel
- ② CUSCINETTO A SFERE / BALL BEARING
- ③ FLANGIA: alluminio anodizzato / FLANGE: anodised aluminium
- ④ PISTONE - CREMAGLIERA: acciaio temprato  
PISTON-RACK: hardened and tempered steel
- ⑤ GUARNIZIONE PISTONE: NBR / PISTON GASKET: NBR
- ⑥ PATTINO DI GUIDA: PTFE / GUIDE PAD: PTFE
- ⑦ MAGNETE: neodimio / MAGNET: neodymium
- ⑧ GUARNIZIONE DI AMMORTIZZO: NBR  
CUSHIONING GASKET: NBR
- ⑨ SPILLO DI AMMORTIZZO: acciaio zincato  
CUSHIONING PIN: zinc-plated steel
- ⑩ TESTATA: alluminio anodizzato / HEAD: anodised aluminium
- ⑪ CONNESSIONE PNEUMATICA - REGISTRAZIONE CORSA: acciaio  
PNEUMATIC CONNECTION - STROKE ADJUSTMENT: steel
- ⑫ CAMICIA: alluminio anodizzato / BARREL: anodised aluminium
- ⑬ FONDELLO: alluminio anodizzato / BASE: anodised aluminium
- ⑭ GUARNIZIONE DI TENUTA: NBR / SEAL: NBR





## ATTUATORE ROTANTE R2-12 90°/180° / ROTARY ACTUATOR R2-12 90°/180°



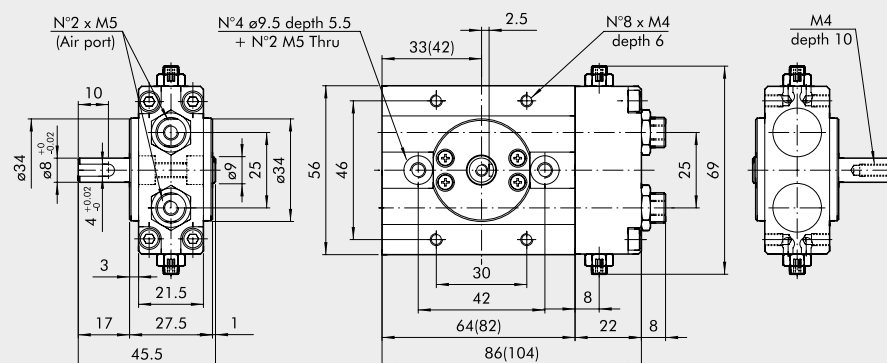
\* Era Ø 6 mm. Sono ancora fornibili attuatori di ricambio codice W1620122091

\* For the version R2-12-90° it was Ø6 mm; spare actuators code W1620122091 can be still supplied

Nelle parentesi sono riportate le dimensioni relative alla rotazione 180°

Dimensions for 180° rotation are given in brackets

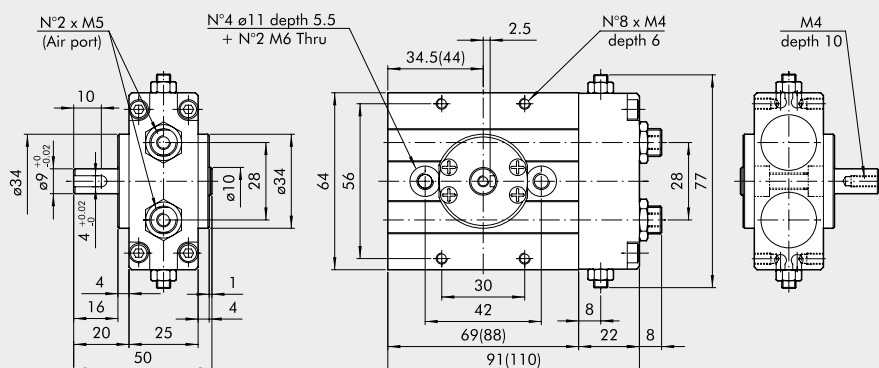
## ATTUATORE ROTANTE R2-16 90°/180° / ROTARY ACTUATOR R2-16 90°/180°



Nelle parentesi sono riportate le dimensioni relative alla rotazione 180°

Dimensions for 180° rotation are given in brackets

## ATTUATORE ROTANTE R2-20 90°/180° / ROTARY ACTUATOR R2-20 90°/180°



Nelle parentesi sono riportate le dimensioni relative alla rotazione 180°

Dimensions for 180° rotation are given in brackets

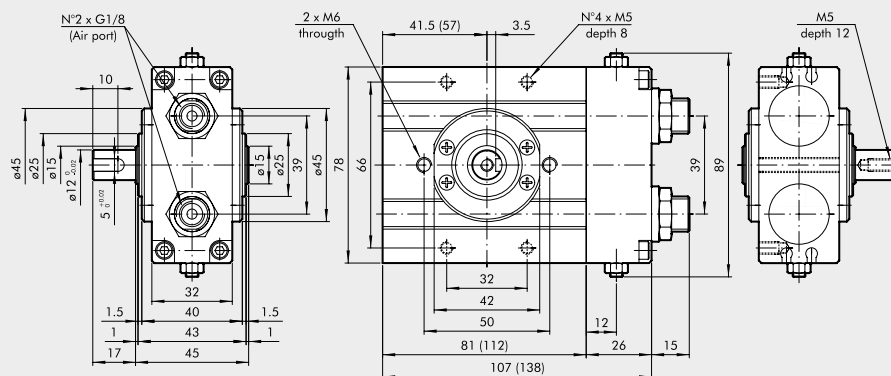
| Cod.        | Descrizione / Description                                                    |
|-------------|------------------------------------------------------------------------------|
| W1620122090 | Attuatore rotante con albero R2-12-90°<br><i>Rotary actuator R2-12-90°</i>   |
| W1620122180 | Attuatore rotante con albero R2-12-180°<br><i>Rotary actuator R2-12-180°</i> |

| Cod.        | Descrizione / Description                                                    |
|-------------|------------------------------------------------------------------------------|
| W1620162090 | Attuatore rotante con albero R2-16-90°<br><i>Rotary actuator R2-16-90°</i>   |
| W1620162180 | Attuatore rotante con albero R2-16-180°<br><i>Rotary actuator R2-16-180°</i> |

| Cod.        | Descrizione / Description                                                    |
|-------------|------------------------------------------------------------------------------|
| W1620202090 | Attuatore rotante con albero R2-20-90°<br><i>Rotary actuator R2-20-90°</i>   |
| W1620202180 | Attuatore rotante con albero R2-20-180°<br><i>Rotary actuator R2-20-180°</i> |

# ATTUATORE ROTANTE R2-25 90°/180° / ROTARY ACTUATOR R2-25 90°/180°

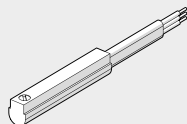
| Cod.        | Descrizione / Description                                             |
|-------------|-----------------------------------------------------------------------|
| W1620252090 | Attuatore rotante con albero R2-25-90°<br>Rotary actuator R2-25-90°   |
| W1620252180 | Attuatore rotante con albero R2-25-180°<br>Rotary actuator R2-25-180° |



Nelle parentesi sono riportate le dimensioni relative alla rotazione 180°  
 Dimensions for 180° rotation are given in brackets

## ACCESSORI / ACCESSORIES

### SENSORE Ø 4 / SENSOR Ø 4



Per codici e dati tecnici vedere **capitolo dati tecnici**.  
 For codes and technical data, see **chapter technical data**.

### NOTE / NOTES

**DATI TECNICI / TECHNICAL DATA**

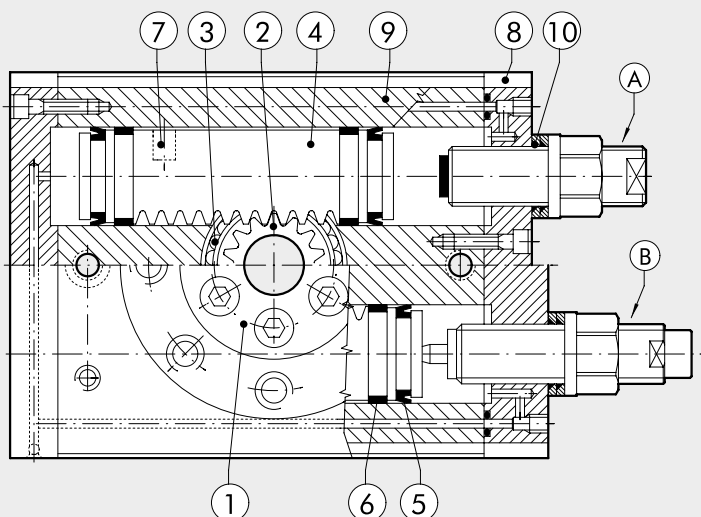
|                                                                                                            |                 | R3-16                                                                                                                                                                                          | R3-20  | R3-22  | R3-25  | R3-30  | R3-40  |
|------------------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|
| Pressione d'esercizio / Operating pressure                                                                 | bar             | 3 ÷ 7                                                                                                                                                                                          |        |        |        |        |        |
|                                                                                                            | MPa             | 0.3 ÷ 0.7                                                                                                                                                                                      |        |        |        |        |        |
|                                                                                                            | psi             | 43.5 ÷ 101                                                                                                                                                                                     |        |        |        |        |        |
|                                                                                                            | °C              | -10 ÷ +80                                                                                                                                                                                      |        |        |        |        |        |
| Temperatura d'esercizio / Temperature range                                                                | °C              | -10 ÷ +80                                                                                                                                                                                      |        |        |        |        |        |
| Campo di regolazione / Angle adjustment                                                                    | gradi / degrees | 0° ÷ 180°                                                                                                                                                                                      |        |        |        |        |        |
| Fluido / Fluid                                                                                             |                 | Aria filtrata 20 µm essicata o lubrificata, se utilizzata la lubrificazione deve essere continua<br>20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous |        |        |        |        |        |
| Versioni / Versions                                                                                        |                 | Con fine corsa meccanico / Con deceleratore idraulico<br>With mechanical stop / hydraulic decelerator                                                                                          |        |        |        |        |        |
| Alesaggio / Sizes                                                                                          | mm              |                                                                                                                                                                                                |        |        |        |        |        |
| Alesaggi / Bores                                                                                           | mm              | 16                                                                                                                                                                                             | 20     | 22     | 25     | 30     | 40     |
| Coppia teorica a 6 bar / Theoretical torque at 6 bar                                                       | Nm              | 2 x 16                                                                                                                                                                                         | 2 x 20 | 2 x 22 | 2 x 25 | 2 x 30 | 2 x 40 |
| Carico assiale MAX / Max. axial load                                                                       | N               | 0.9                                                                                                                                                                                            | 1.8    | 2.7    | 4.6    | 9.3    | 22     |
| Carico radiale MAX / Max. radial load                                                                      | N               | 74                                                                                                                                                                                             | 135    | 195    | 300    | 340    | 360    |
| Peso / Weight                                                                                              | kg              | 78                                                                                                                                                                                             | 137    | 360    | 450    | 490    | 560    |
| Tempo di rotazione senza carico / Rotation time without load                                               | s               | 0.53                                                                                                                                                                                           | 0.99   | 1.29   | 2.08   | 3.9    | 6.7    |
|                                                                                                            |                 | 0.2                                                                                                                                                                                            | 0.2    | 0.2    | 0.2    | 0.3    | 0.3    |
| Energia cinetica ammissibile / Admissible kinetic energy                                                   | Joule           |                                                                                                                                                                                                |        |        |        |        |        |
| CON FINECORSO MECCANICO / WITH MECHANICAL STOP                                                             |                 | 0.007                                                                                                                                                                                          | 0.025  | 0.049  | 0.082  | 0.090  | 0.150  |
| (con flangia W1630__2180 e con albero W1630__5180)<br>(with flange W1630__2180 and with shaft W1630__5180) |                 |                                                                                                                                                                                                |        |        |        |        |        |
| CON DECELERATORI INTERNI / WITH HYDRAULIC DECELERATOR                                                      |                 | -                                                                                                                                                                                              | -      | -      | 0.29   | 1.10   | 1.60   |
| (con flangia W1630__2180 e con albero W1630__5180)<br>(with flange W1630__2180 and with shaft W1630__5180) |                 |                                                                                                                                                                                                |        |        |        |        |        |

**COMPONENTI / COMPONENTS**

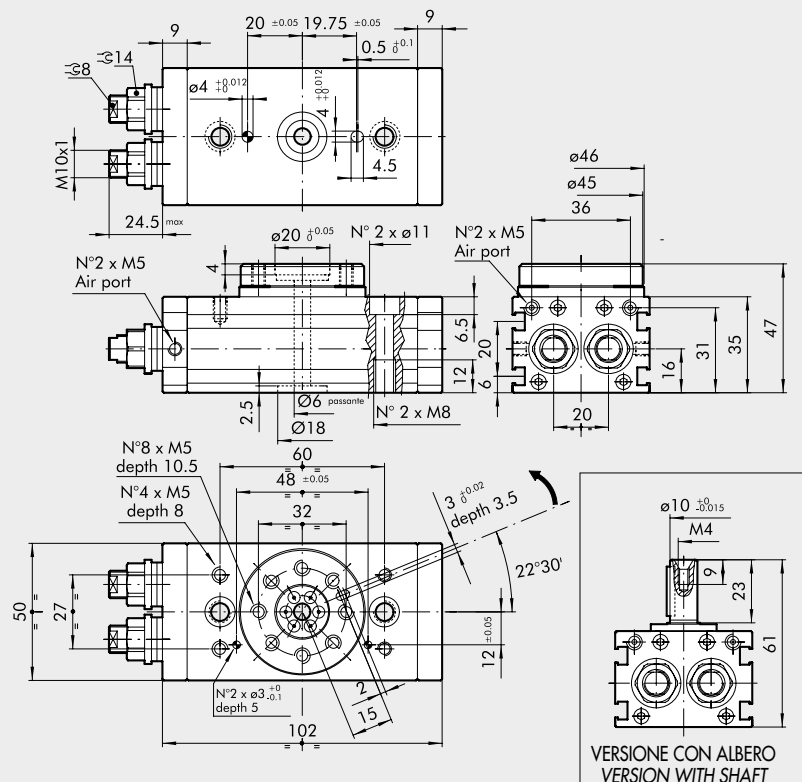
- ① FLANGIA ROTANTE: alluminio anodizzato  
ROTARY FLANGE: anodised aluminium
- ② PIGNONE: acciaio temprato  
PINION: hardened and tempered steel
- ③ CUSCINETTO A SFERE / BALL BEARING
- ④ PISTONE - CREMAGLIERA: acciaio temprato  
PISTON / RACK: hardened and tempered steel
- ⑤ GUARNIZIONE PISTONE: NBR / CUSHIONING GASKET: NBR
- ⑥ PATTINO DI GUIDA: PTFE / GUIDE PAD: PTFE
- ⑦ MAGNETE: neodimio / MAGNET: neodymium
- ⑧ TESTATA: alluminio anodizzato / HEAD: anodised aluminium
- ⑨ CAMICIA: alluminio anodizzato / BARREL: anodised aluminium
- ⑩ GUARNIZIONE DI TENUTA: NBR / SEAL: NBR

**VERSIONE: / VERSIONS:**

- A Regolatore corsa / Stroke adjustment
- B Regolatore corsa con deceleratore idraulico  
(a partire dal Ø 25)  
Stroke adjustment with inside hydraulic shock  
absorbers (available from Ø 25)



# ATTUATORE ROTANTE R3-16 / ROTARY ACTUATOR R3-16

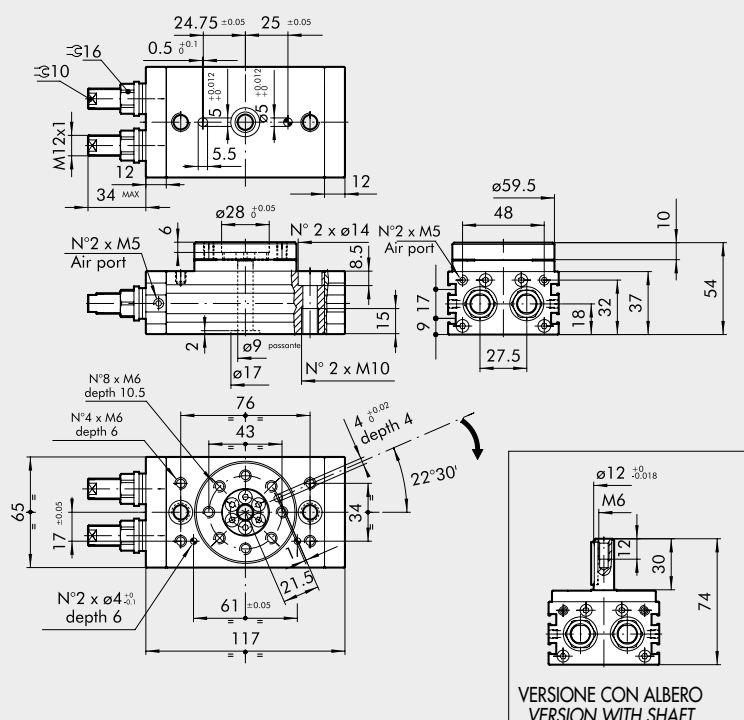


| Cod.        | Descrizione / Description                                                |
|-------------|--------------------------------------------------------------------------|
| W1630162180 | Attuatore rotante con flangia R3-16<br>Rotary actuator with flange R3-16 |
| W1630165180 | Attuatore rotante con albero R3-16<br>Rotary actuator with shaft R3-16   |

ATTUATORI / ACTUATORS

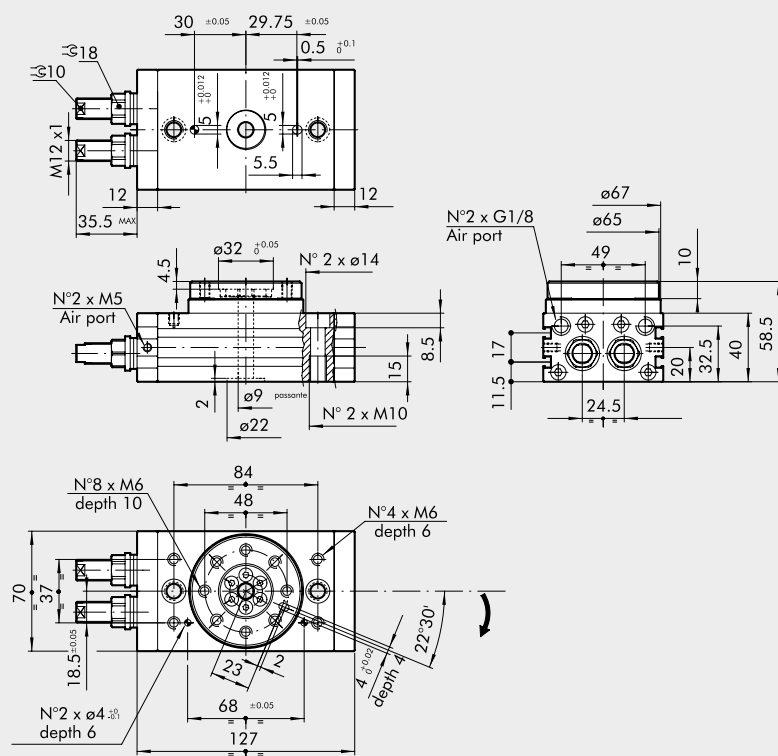
ATTUATORE ROTANTE SERIE R3  
 ROTARY ACTUATOR SERIES R3

# ATTUATORE ROTANTE R3-20 / ROTARY ACTUATOR R3-20

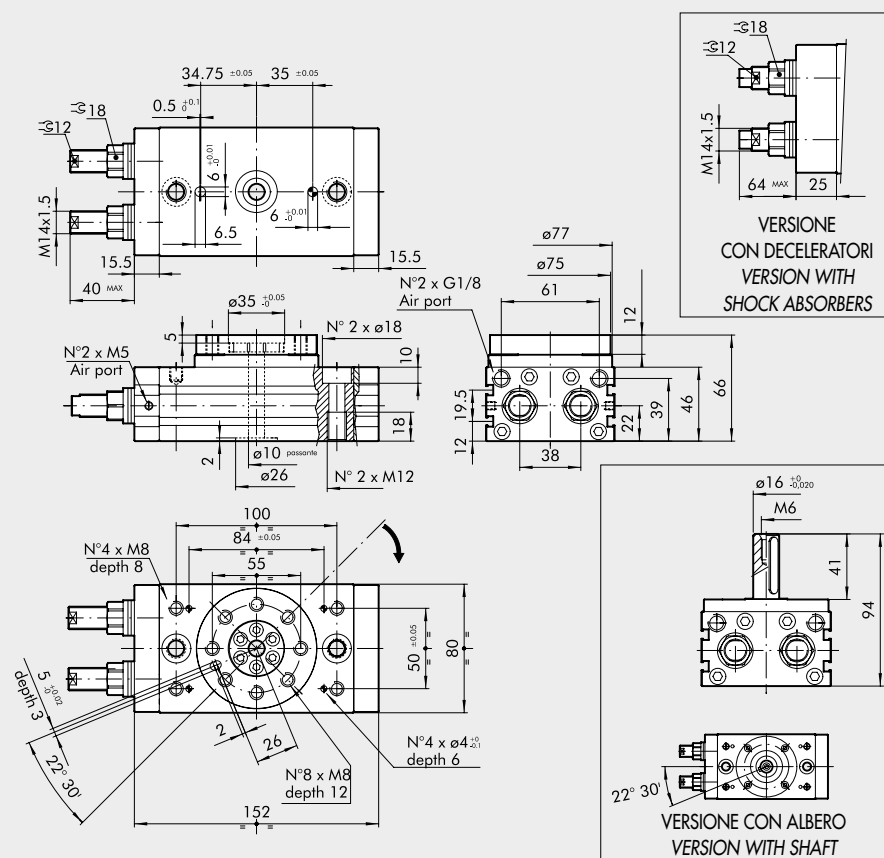


| Cod.        | Descrizione / Description                                                |
|-------------|--------------------------------------------------------------------------|
| W1630202180 | Attuatore rotante con flangia R3-20<br>Rotary actuator with flange R3-20 |
| W1630205180 | Attuatore rotante con albero R3-20<br>Rotary actuator with shaft R3-20   |

## ATTUATORE ROTANTE R3-22 / ROTARY ACTUATOR R3-22



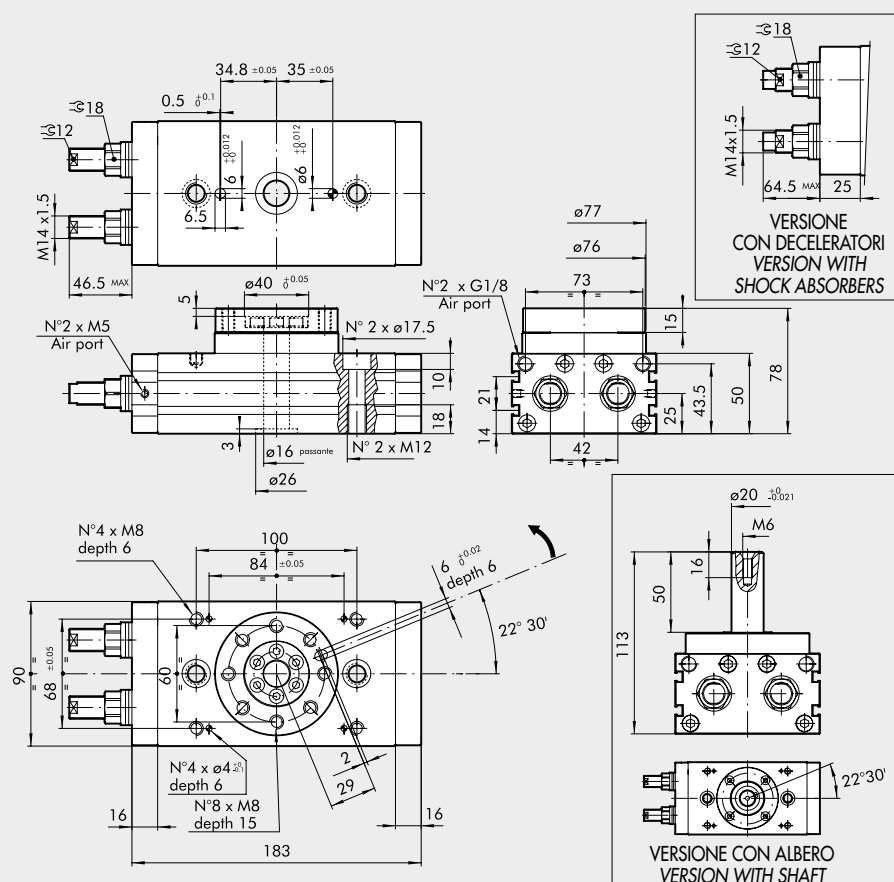
## ATTUATORE ROTANTE R3-25 / ROTARY ACTUATOR R3-25



| Cod.        | Descrizione / Description                                                |
|-------------|--------------------------------------------------------------------------|
| W1630222180 | Attuatore rotante con flangia R3-22<br>Rotary actuator with flange R3-22 |

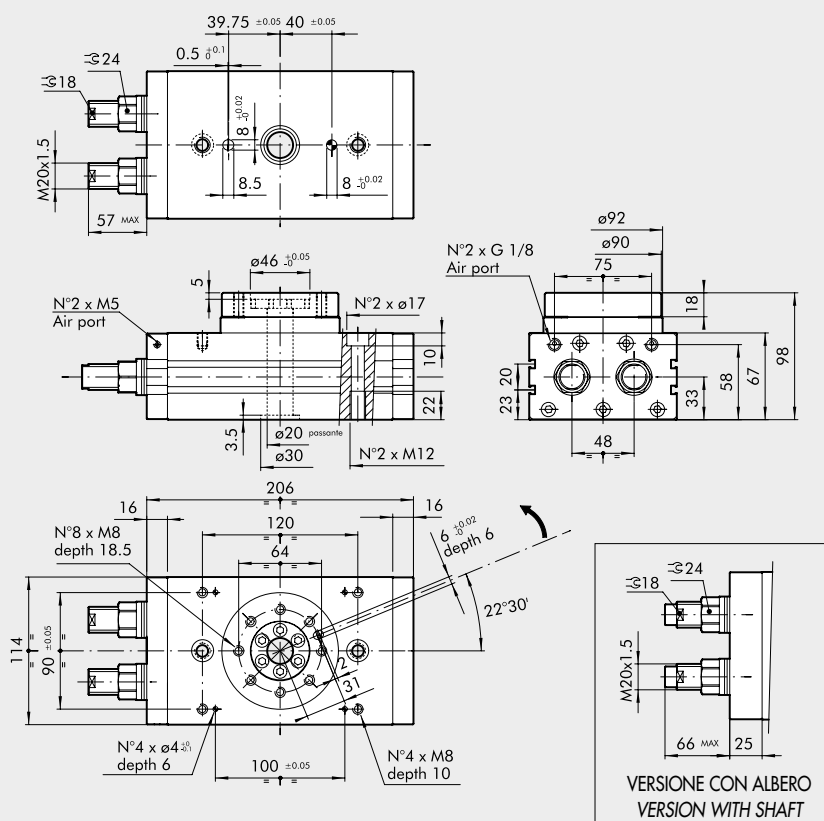
| Cod.        | Descrizione / <i>Description</i>                                                                                        |
|-------------|-------------------------------------------------------------------------------------------------------------------------|
| W1630252180 | Attuatore rotante con flangia R3-25<br><i>Rotary actuator with flange R3-25</i>                                         |
| W1630253180 | Attuatore rotante con flangia<br>+ deceleratore R3-25<br><i>Rotary actuator with flange<br/>+ shock absorbers R3-25</i> |
| W1630255180 | Attuatore rotante con albero R3-25<br><i>Rotary actuator with shaft R3-25</i>                                           |
| W1630256180 | Attuatore rotante con albero<br>+ deceleratore R3-25<br><i>Rotary actuator with shaft<br/>+ shock absorbers R3-25</i>   |

### ATTUATORE ROTANTE R3-30 / ROTARY ACTUATOR SERIES R3-30



| Cod.               | Descrizione / Description                                                                                       |
|--------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>W1630302180</b> | Attuatore rotante con flangia R3-30<br>Rotary actuator with flange R3-30                                        |
| <b>W1630303180</b> | Attuatore rotante con flangia<br>+ deceleratore R3-30<br>Rotary actuator with flange<br>+ shock absorbers R3-30 |
| <b>W1630305180</b> | Attuatore rotante con albero R3-30<br>Rotary actuator with shaft R3-30                                          |
| <b>W1630306180</b> | Attuatore rotante con albero<br>+ deceleratore R3-30<br>Rotary actuator with shaft<br>+ shock absorbers R3-30   |

### ATTUATORE ROTANTE R3-40 / ROTARY ACTUATOR SERIES R3-40



| Cod.               | Descrizione / Description                                                                                       |
|--------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>W1630402180</b> | Attuatore rotante con flangia R3-40<br>Rotary actuator with flange R3-40                                        |
| <b>W1630403180</b> | Attuatore rotante con flangia<br>+ deceleratore R3-40<br>Rotary actuator with flange<br>+ shock absorbers R3-40 |



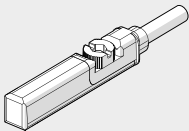
ACCESSORI / ACCESSORIES

ATTUATORI / ACTUATORS

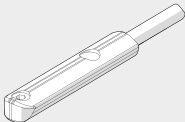
ATTUATORE ROTANTE SERIE R3  
ROTARY ACTUATOR SERIES R3

SENSORE A SCOMPARSA / RETRACTABLE SENSOR

**SENSORE TIPO SQUARE**  
Ultima generazione, fissaggio robusto  
**SENSOR, SQUARE TYPE**  
*Latest generation, secure fixing*

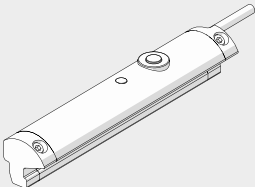


**SENSORE TIPO OVALE**  
Tradizionale  
**SENSOR, OVAL TYPE**  
*Traditional*



Per codici e dati tecnici vedere **capitolo dati tecnici**.  
*For codes and technical data, see **chapter technical data**.*

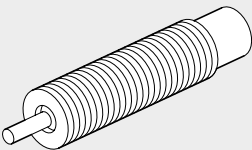
TRASDUTTORI DI POSIZIONE LTS / LTS POSITION SENSORS



Per codici e dati tecnici vedere **capitolo dati tecnici**.  
*For codes and technical data, see **chapter technical data**.*

RICAMBI / SPARE PARTS

DECELERATORI / SHOCK ABSORBERS

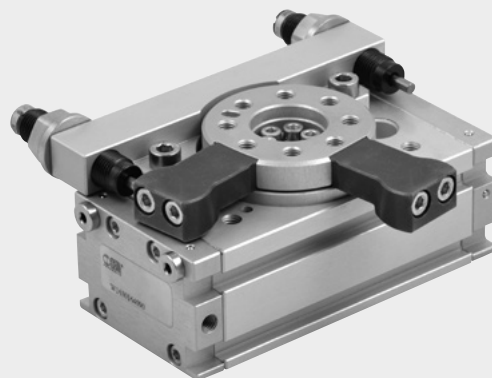


| Cod.       | Ø    | Descrizione / Description                                                                      |
|------------|------|------------------------------------------------------------------------------------------------|
| 0950004015 | Ø 25 | Deceleratore ECO S 25 MC2 corto M14 x 1.5<br><i>Shock absorbers ECO S 25 MC2 short M14x1.5</i> |
| 0950004008 | Ø 30 | Deceleratore ECO25 MC4 M14 x 1.5<br><i>Shock absorbers ECO 25 MC4 M14x1.5</i>                  |
| 0950004005 | Ø 40 | Deceleratore ECO50 MC2 + dado M20 x 1.5<br><i>Shock absorbers ECO 50 MC2 + nut M20x1.5</i>     |

NOTE / NOTES



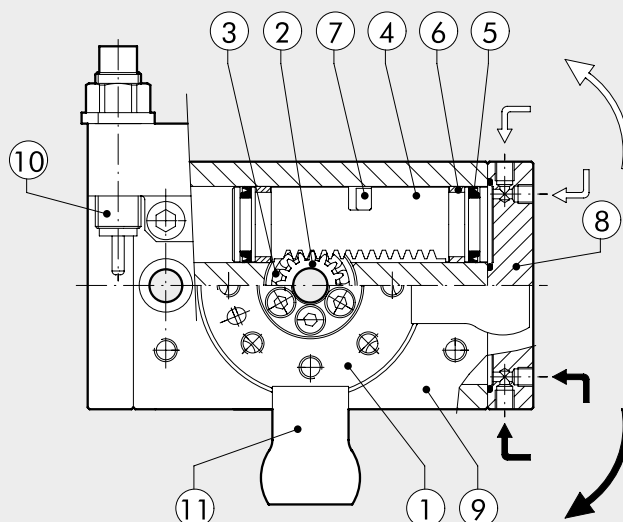
# ATTUATORE ROTANTE SERIE R3 CON DECELERATORI ESTERNI ROTARY ACTUATOR SERIES R3 WITH EXTERNAL SHOCK ABSORBERS



| DATI TECNICI / TECHNICAL DATA                                |                 | R3-16                                                                                            | R3-20  | R3-22  | R3-25  | R3-30  | R3-40  |
|--------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|
| Pressione d'esercizio / Operating pressure                   | bar             | 3 ÷ 7                                                                                            |        |        |        |        |        |
|                                                              | MPa             | 0.3 ÷ 0.7                                                                                        |        |        |        |        |        |
|                                                              | psi             | 43.5 ÷ 101                                                                                       |        |        |        |        |        |
| Temperatura d'esercizio / Temperature range                  | °C              | -10 ÷ +80                                                                                        |        |        |        |        |        |
|                                                              | gradi / degrees | 90° o 180° ± 3°                                                                                  |        |        |        |        |        |
| Rotazione / Angle adjustment                                 |                 | Aria filtrata 20 µm essicata o lubrificata, se utilizzata la lubrificazione deve essere continua |        |        |        |        |        |
| Fluido / Fluid                                               |                 | 20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous       |        |        |        |        |        |
| Alesaggio / Sizes                                            | mm              | 16                                                                                               | 20     | 22     | 25     | 30     | 40     |
| Alesaggi / Bore                                              | mm              | 2 x 16                                                                                           | 2 x 20 | 2 x 22 | 2 x 25 | 2 x 30 | 2 x 40 |
| Coppia teorica a 6 bar / Theoretical torque at 6 bar         | Nm              | 0.9                                                                                              | 1.8    | 2.7    | 4.6    | 9.3    | 22     |
| Carico assiale MAX / Max. axial load                         | N               | 74                                                                                               | 135    | 195    | 300    | 340    | 360    |
| Carico radiale MAX / Max. radial load                        | N               | 78                                                                                               | 137    | 360    | 450    | 490    | 560    |
| Momento ribaltante MAX / Max overturning moment              | Nm              | 2.4                                                                                              | 4      | 5.3    | 9.7    | 12     | 18     |
| Energia cinetica ammissibile / Admissible kinetic energy     | J               | 0.16                                                                                             | 0.55   | 0.85   | 1.40   | 1.85   | 3.35   |
| Tempo di rotazione senza carico / Rotation time without load | s               | 0.2                                                                                              | 0.2    | 0.2    | 0.2    | 0.3    | 0.3    |

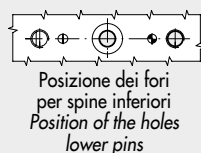
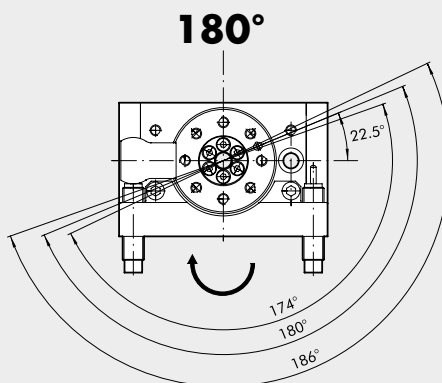
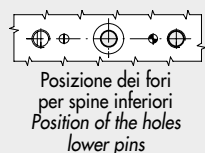
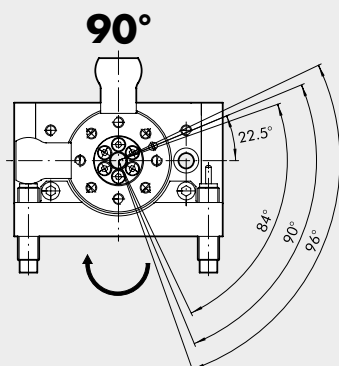
## COMPONENTI / COMPONENTS

- ① FLANGIA ROTANTE: alluminio anodizzato  
ROTARY FLANGE: anodised aluminium
- ② PIGNONE: acciaio temprato  
PINION: hardened and tempered steel
- ③ CUSCINETTO A SFERE  
BALL BEARING
- ④ PISTONE - CREMAGLIERA: acciaio temprato  
PISTON / RACK: hardened and tempered steel
- ⑤ GUARNIZIONE PISTONE: NBR / CUSHIONING GASKET: NBR
- ⑥ PATTINO DI GUIDA: PTFE / GUIDE PAD: PTFE
- ⑦ MAGNETE: neodimio / MAGNET: neodymium
- ⑧ TESTATA: alluminio anodizzato / HEAD: anodised aluminium
- ⑨ CAMICIA: alluminio anodizzato / BARREL: anodised aluminium
- ⑩ REGOLATORE CORSA CON DECELERATORE IDRAULICO  
STROKE REGULATOR WITH HYDRAULIC SHOCK ABSORBERS
- ⑪ FERMO per versione 90° / Block for 90° version





# ANGOLI DI ROTAZIONE / ROTATION ANGLE

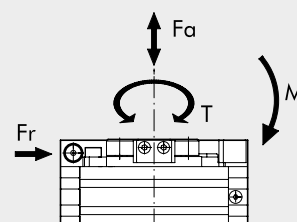


# ENERGIA CINETICA AMMISSIBILE Joule [J] ADMISSIBLE KINETIC ENERGY Joule [J]

| Alesaggio<br>Bore<br>Ø | Con flangia, rotazione 90°: W1630_4090<br>With flange, 90° rotation°: W1630_4090<br>Con flangia, rotazione 180°: W1630_4180<br>With flange, 180° rotation°: W1630_4180 |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16                     | 0.16                                                                                                                                                                   |
| 20                     | 0.55                                                                                                                                                                   |
| 22                     | 0.85                                                                                                                                                                   |
| 25                     | 1.40                                                                                                                                                                   |
| 30                     | 1.85                                                                                                                                                                   |
| 40                     | 3.35                                                                                                                                                                   |

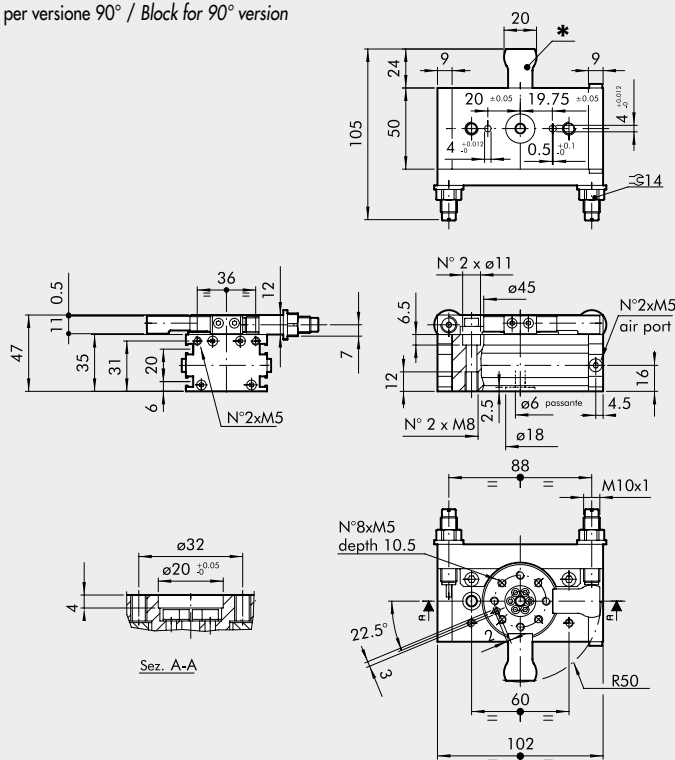
# DIMENSIONAMENTO - FORZE E MOMENTO / DIMENSIONES - FORCES AND MOMENTS

| Alesaggio<br>Bore<br>Ø | T [Nm]<br>Coppia teorica a 6 bar<br>Theoretical torque<br>at 6 bar | FA [N]<br>Carico assiale Max<br>Max. axial load | FR [N]<br>Carico radiale Max<br>Max. radial load | M [Nm]<br>Momento ribaltante<br>Averturing momnet |
|------------------------|--------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------|---------------------------------------------------|
| 16                     | 0.9                                                                | 74                                              | 78                                               | 2.4                                               |
| 20                     | 1.8                                                                | 135                                             | 137                                              | 4                                                 |
| 22                     | 2.7                                                                | 195                                             | 360                                              | 5.3                                               |
| 25                     | 4.6                                                                | 300                                             | 450                                              | 9.7                                               |
| 30                     | 9.3                                                                | 340                                             | 490                                              | 12                                                |
| 40                     | 22                                                                 | 360                                             | 560                                              | 18                                                |



# ATTUATORE ROTANTE CON DECELERATORI ESTERNI R3-16 90/180° ROTARY ACTUATOR SERIES R3-16 WITH EXTERNAL SHOCK ABSORBERS, 90/180°

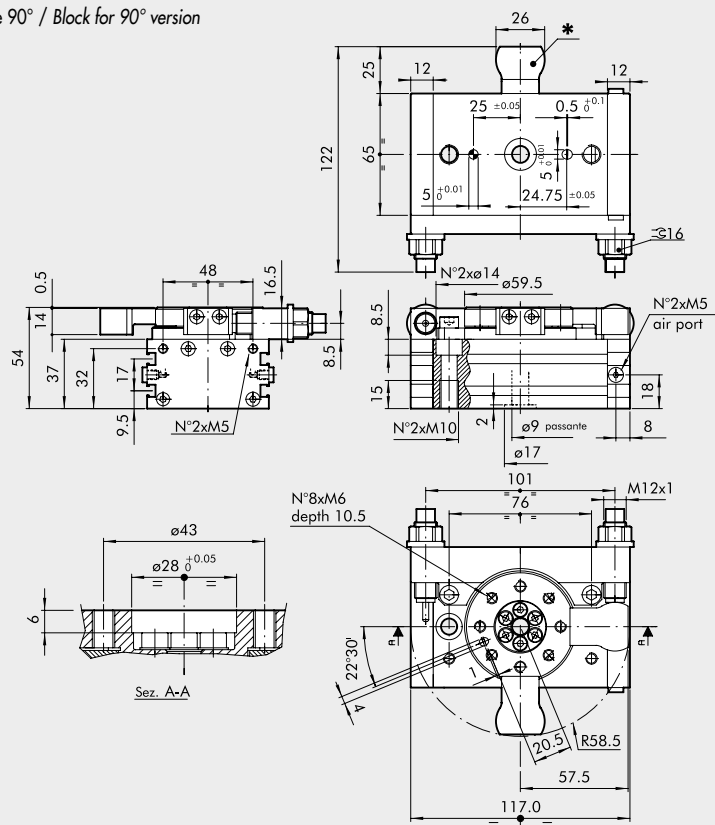
\* Fermo per versione 90° / Block for 90° version



| Cod.        | Descrizione / Description                                                                                                       |
|-------------|---------------------------------------------------------------------------------------------------------------------------------|
| W1630164090 | Attuatore rotante con flangia<br>+ deceleratore esterno R3-16-90<br>Rotary actuator with flange<br>+ shock absorbers R3-16-90   |
| W1630164180 | Attuatore rotante con flangia<br>+ deceleratore esterno R3-16-180<br>Rotary actuator with flange<br>+ shock absorbers R3-16-180 |

**ATTUATORE ROTANTE CON DECELERATORI ESTERNI R3-20 90/180°**  
**ROTARY ACTUATOR SERIES R3-20 WITH EXTERNAL SHOCK ABSORBERS, 90/180°**

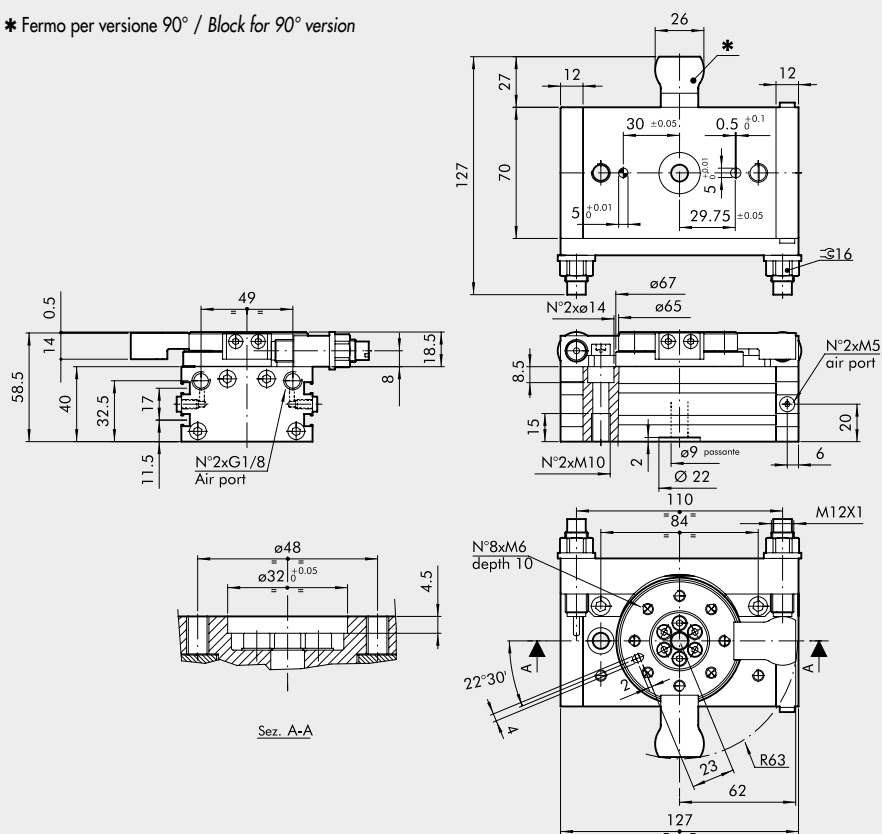
\* Fermo per versione 90° / Block for 90° version



| Cod.               | Descrizione / Description                                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>W1630204090</b> | Attuatore rotante con flangia<br>+ deceleratore esterno R3-20-90<br><i>Rotary actuator with flange<br/>+ shock absorbers R3-20-90</i>   |
| <b>W1630204180</b> | Attuatore rotante con flangia<br>+ deceleratore esterno R3-20-180<br><i>Rotary actuator with flange<br/>+ shock absorbers R3-20-180</i> |

**ATTUATORE ROTANTE CON DECELERATORI ESTERNI R3-22 90/180°**  
**ROTARY ACTUATOR SERIES R3-22 WITH EXTERNAL SHOCK ABSORBERS, 90/180°**

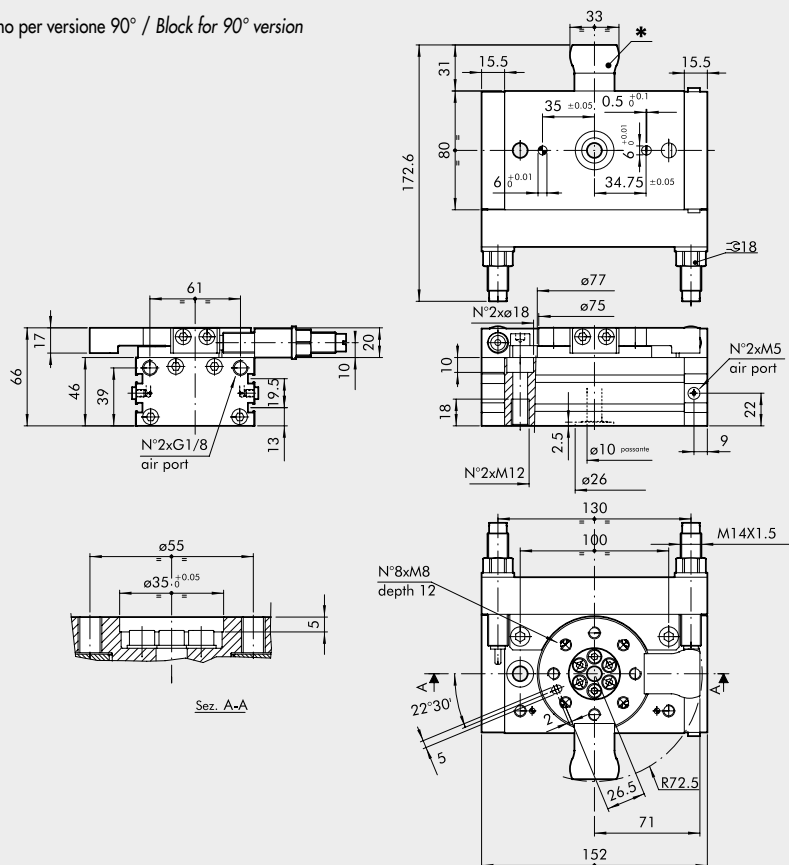
\* Fermo per versione 90° / Block for 90° version



| Cod.               | Descrizione / Description                                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>W1630224090</b> | Attuatore rotante con flangia<br>+ deceleratore esterno R3-22-90<br><i>Rotary actuator with flange<br/>+ shock absorbers R3-22-90</i>   |
| <b>W1630224180</b> | Attuatore rotante con flangia<br>+ deceleratore esterno R3-22-180<br><i>Rotary actuator with flange<br/>+ shock absorbers R3-22-180</i> |

**ATTUATORE ROTANTE CON DECELERATORI ESTERNI R3-25 90/180°**  
**ROTARY ACTUATOR SERIES R3-25 WITH EXTERNAL SHOCK ABSORBERS, 90/180°**

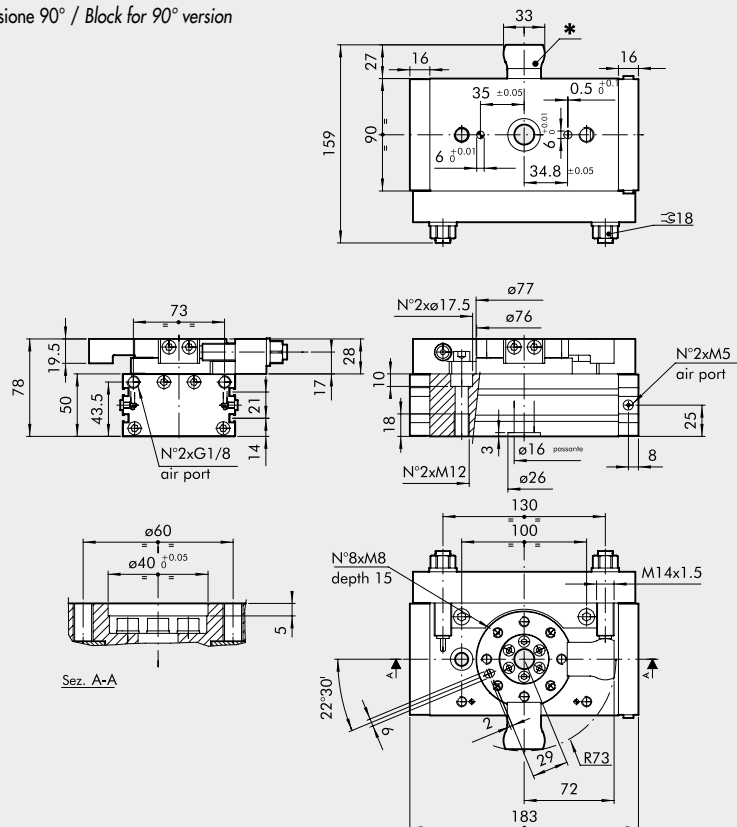
\* Fermo per versione 90° / Block for 90° version



| Cod.               | Descrizione / Description                                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>W1630254090</b> | Attuatore rotante con flangia<br>+ deceleratore esterno R3-25-90<br><i>Rotary actuator with flange +<br/>shock absorbers R3-25-90</i>   |
| <b>W1630254180</b> | Attuatore rotante con flangia<br>+ deceleratore esterno R3-25-180<br><i>Rotary actuator with flange +<br/>shock absorbers R3-25-180</i> |

**ATTUATORE ROTANTE CON DECELERATORI ESTERNI R3-30 90/180°**  
**ROTARY ACTUATOR SERIES R3-30 WITH EXTERNAL SHOCK ABSORBERS, 90/180°**

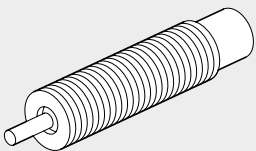
\* Fermo per versione 90° / Block for 90° version



| Cod.               | Descrizione / Description                                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>W1630304090</b> | Attuatore rotante con flangia<br>+ deceleratore esterno R3-30-90<br><i>Rotary actuator with flange +<br/>shock absorbers R3-30-90</i>   |
| <b>W1630304180</b> | Attuatore rotante con flangia<br>+ deceleratore esterno R3-30-180<br><i>Rotary actuator with flange +<br/>shock absorbers R3-30-180</i> |



**DECELERATORI / SHOCK ABSORBERS**

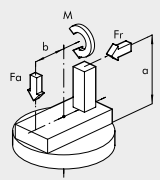


| Cod.       | Ø         | Descrizione / Description                                                             |
|------------|-----------|---------------------------------------------------------------------------------------|
| 0950004009 | Ø 16      | Deceleratore ECO10 MF3 M10x1<br><i>Shock absorbers ECO 10 MF3 M10x1</i>               |
| 0950004010 | Ø 22      | Deceleratore ECO15 MF4 M12x1<br><i>Shock absorbers ECO 15 MF4 M12x1</i>               |
| 0950004015 | Ø 25 ÷ 30 | Deceleratore ECO S 25 MC2 M14x1.5<br><i>Shock absorbers ECO S 25 MC2 M14x1.5</i>      |
| 0950004005 | Ø 40      | Deceleratore ECO50 MC2 + dado M20x1.5<br><i>Shock absorbers ECO MC2 + nut M20x1.5</i> |

**NOTE / NOTES**

## DIMENSIONAMENTO ATTUATORI ROTANTI/ ROTARY ACTUATORS SIZING

### CALCOLO ENERGIA CINETICA, FORZE E MOMENTO / HOW TO CALCULATE KINETIC ENERGY

|                 | Denominazione<br><i>Denomination</i>                                                                                                                                                | Unità di misura<br><i>Unit of measurement</i> | Formula<br><i>Formula</i>                                                          | Esempio<br><i>Example</i>                                   |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------|
|                 |                                                                                                                                                                                     |                                               |  |                                                             |
| $\alpha$        | Angolo di rotazione<br><i>Angle of rotation</i>                                                                                                                                     | rad                                           | $= \text{gradi} \cdot \frac{\pi}{180}$<br>$= \text{degrees}$                       | $= 90^\circ = \frac{\pi}{2} \text{ rad.}$                   |
| t               | Tempo di rotazione<br><i>Rotation time</i>                                                                                                                                          | s                                             |                                                                                    | 2                                                           |
| J <sub>ta</sub> | Momento d'inerzia delle masse in rotazione<br>N.B.: sommare quello delle singole masse<br><i>Moment of inertia of rotating masses</i><br>N.B.: added those of the individual masses | kg m <sup>2</sup>                             | $= \sum J_i$                                                                       | $= 0.078 + 0.02 + 0.133 = 0.232$                            |
| E               | Energia cinetica<br><i>Kinetic energy</i>                                                                                                                                           | Nm                                            | $= 1/2 J \omega^2 = 2J \cdot \left(\frac{\alpha}{t}\right)^2$                      | $= 2 \cdot 0.232 \cdot \left(\frac{\pi}{2}\right)^2 = 0.57$ |
| Fr              | Forza radiale<br>(Ricordarsi di considerare le forze centrifughe)<br><i>Radial force</i><br>(Remember to take into account centrifugal forces)                                      | N                                             | $(F_c = M \cdot \omega^2 \cdot R)$                                                 | 50                                                          |
| Fa              | Forza assiale<br><i>Axial force</i>                                                                                                                                                 | N                                             |                                                                                    | 10                                                          |
| M               | Momento ribaltante<br><i>Overturning moment</i>                                                                                                                                     | Nm                                            | $= M + Fr \cdot a + Fa \cdot b$                                                    | $= 50 \times 0.1 + 10 \times 0 = 5$                         |

### MOMENTI D'INERZIA PER LE FORME PIÙ FREQUENTI / MOMENTS OF INERTIA FOR THE MOST COMMON SHAPES

|   | Denominazione<br><i>Denomination</i>                                                                  | Unità di misura<br><i>Unit of measurement</i> | Formula<br><i>Formula</i>                                                                                       | Esempio<br><i>Example</i>            |
|---|-------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------|
|   |                                                                                                       |                                               | Disco<br><i>Disco</i>                                                                                           |                                      |
| M | Massa del disco<br><i>Disk mass</i>                                                                   | kg                                            |                                                                                                                 | 7                                    |
| d | Diametro del disco<br><i>Disk diameter</i>                                                            | m                                             |                                                                                                                 | 0.3                                  |
| J | Momento d'inerzia del disco<br><i>Moment of inertia of the disk</i>                                   | kg m <sup>2</sup>                             | $= \frac{Md^2}{8}$                                                                                              | $= \frac{7 \cdot 0.3^2}{8} = 0.0787$ |
|   |                                                                                                       |                                               | Massa lontana dall'asse di rotazione<br><i>Mass distant from rotation axis</i>                                  |                                      |
| M | Massa<br><i>Mass</i>                                                                                  | kg                                            |                                                                                                                 | 0.5                                  |
| R | Distanza tra baricentro e l'asse di rotazione<br><i>Distance between barycenter and rotation axis</i> | m                                             |                                                                                                                 | 0.2                                  |
| J | Momento d'inerzia della massa<br><i>Moment of inertia of the mass</i>                                 | kg m <sup>2</sup>                             | $= MR^2$                                                                                                        | $= 0.5 \times 0.2^2 = 0.02$          |
|   |                                                                                                       |                                               | Parallelepipedo con baricentro sull'asse di rotazione<br><i>Parallelepiped with barycenter on rotation axis</i> |                                      |
| M | Massa<br><i>Mass</i>                                                                                  | kg                                            |                                                                                                                 | 10                                   |
| L | Lato maggiore del parallelepipedo<br><i>Side of the parallelepiped</i>                                | m                                             |                                                                                                                 | 0.4                                  |
| J | Momento d'inerzia della massa<br><i>Moment of inertia of the mass</i>                                 | kg m <sup>2</sup>                             | $= M \frac{L^2}{12}$                                                                                            | $= \frac{10 \cdot 0.4^2}{12} = 0.13$ |

