

# Series CGLN wide opening parallel grippers

Bores:  $\varnothing$  10 - 16 - 20 - 25 - 32 mm



- » High installation versatility
- » Rack and pinion synchronized mechanism
- » Sturdy and accurate construction

Series CGLN's double piston ensures a high gripping force from within a compact unit. The body of the gripper is complete of grooves to mount magnetic proximity switches (Series CSC).

The wide range of bores and strokes available allows to meet technical requirements at its best. Repositioning of the gripper body on the fixing surface is made easier by the locating pins provided in the base.

## GENERAL DATA

|   |   |
|---|---|
| Operation   | double effect   |
| Working pressure  | 1 ÷ 7 bar (1,5 ÷ 7 bar for $\varnothing$ 10)  |
| Working temperature   | -10°C ÷ 60°C  |
| Lubrication   | not required  |
| Repeatability   | ± 0.1 mm  |
| Effective gripping force with pressure = 0.5MPa and gripping moment R = 40 mm ( $\varnothing$ 10-16-20-25) or = 80 mm ( $\varnothing$ 32) | $\varnothing$ 10 = 15N<br>$\varnothing$ 16 = 45N<br>$\varnothing$ 20 = 75N<br>$\varnothing$ 25 = 125N<br>$\varnothing$ 32 = 225N                                      |
| Air ports   | $\varnothing$ 10 - 16 - 20 - 25 = M5<br>$\varnothing$ 32 = G1/8   |
| Fluid   | filtered air, without lubrication.<br>If lubricated air is used, it is recommended to use oil ISO VG32.<br>Once applied, the lubrication should never be interrupted. |

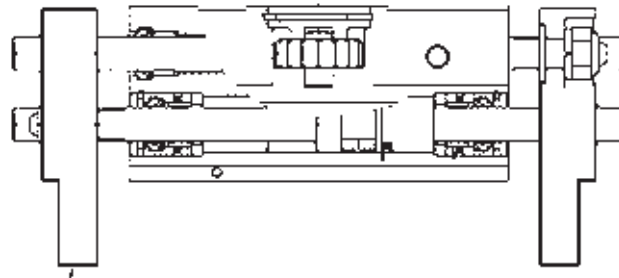
| CODING EXAMPLE |  |                          |     |
|----------------|--|--------------------------|-----|
| CGLN           | -  | 20                       | 040 |
| <b>CGLN</b>    | SERIES   | PNEUMATIC SYMBOL<br>PNZ1 |     |
| <b>20</b>      | SIZES:<br>10 = ø 10 mm<br>16 = ø 16 mm<br>20 = ø 20 mm<br>25 = ø 25 mm<br>32 = ø 32 mm |                          |     |
| <b>040</b>     | STROKE   |                          |     |

**PNEUMATIC SYMBOLS**

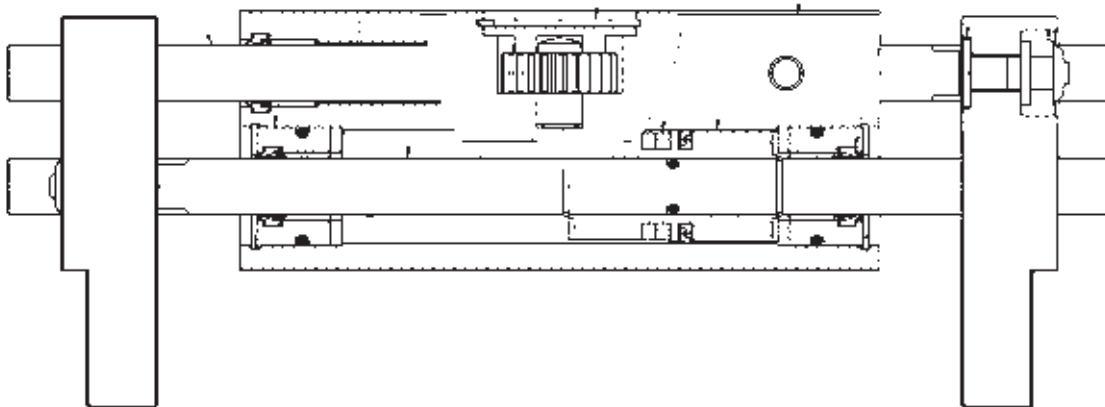
The pneumatic symbols which have been indicated in the CODING EXAMPLE are shown below.

## Series CGLN Gripper - construction

New



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16



## LIST OF COMPONENTS

| PARTS                | MATERIALS       |
|----------------------|-----------------|
| 1 - Bushing          | Bronze          |
| 2 - Body             | Aluminium       |
| 3 - Rack             | Stainless steel |
| 4 - Self-locking nut | Steel           |
| 5 - Gripping flange  | Aluminium       |
| 6 - Buffer seal      | PU              |
| 7 - Piston seal      | NBR             |
| 8 - Rod seal         | NBR             |
| 9 - Magnet           | Plastoferrite   |
| 10 - Pinion          | Steel           |
| 11 - Pinion          | Aluminium       |
| 12 - Washer          | Steel           |
| 13 - Rod             | Stainless steel |
| 14 - Rod-piston      | Stainless steel |
| 15 - Plug            | Aluminium       |
| 16 - Head            | Aluminium       |

Sizing criteria: 1) GRIPPING FORCE ANALYSIS

New

1

MOVEMENT

The selection of the size of the gripper has to be carried out according to the weight of the object that has to be moved. It is strongly recommended to select a gripper bore able to develop a gripping force at least 20 times higher than the weight of the object. In case of great acceleration or impact during the moving of the object, it is necessary to increase the factor of safety.

EXAMPLE OF CALCULATION (see the diagram on the right)  
 Size of the object to be moved (side x side) = 200 mm x 200 mm  
 Weight of the object to be moved (Kg) = 0.3  
 Factor of safety = 20  
 Gripping moment R (mm) = 70  
 Working pressure (MPa) = 0.5  
 Minimum required gripping force  $F_{min} = 0.3 \text{ kg} \times 20 \times 9.8 \text{ m/s}^2 = 60 \text{ N}$

Through the diagrams "Effective Gripping force" we deduce from the above mentioned conditions that the gripping force with the mod. CGLN-20 is 73N, that is 24 times the weight of the object.

The condition requiring that gripping force is at least 20 times higher than the set gripping force is thus satisfied.

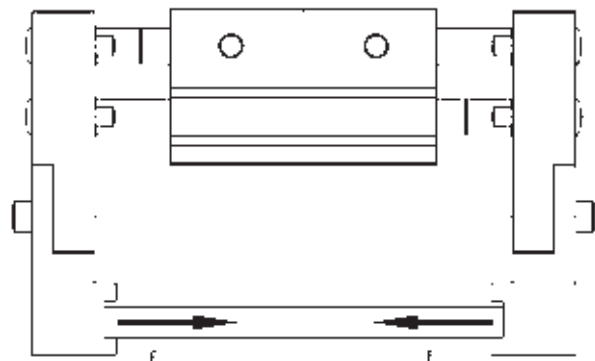
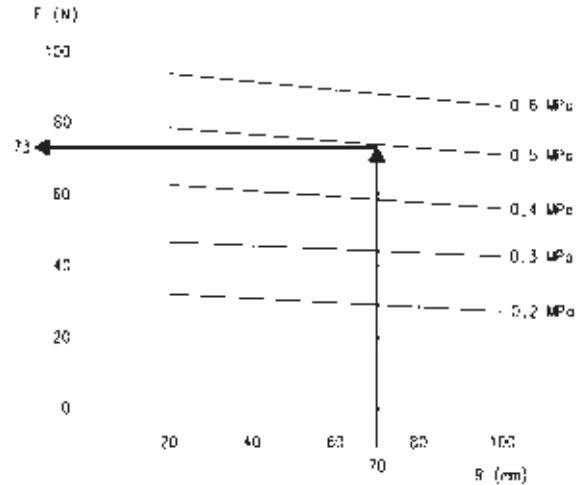
Once the gripper size is chosen, select a stroke that allows to have a maximum opening which is wider than the size of the object to be moved.

In the case above the gripper CGLN-20-80 is the right choice.  
 $F = 220 \text{ mm} > 200 \text{ mm}$

ACTUAL GRIPPING FORCE (F)

The shown gripping force corresponds to the gripping force of a finger when all fingers (or accessories) are in contact with the load.

F = Pushing force of 1 finger

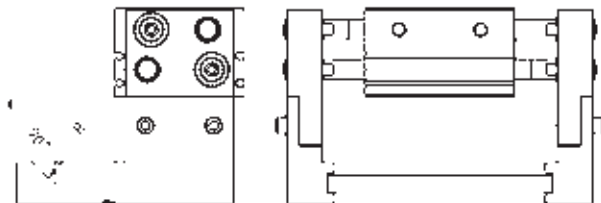


Sizing criteria: 2) GRIPPING DISTANCE ANALYSIS

New

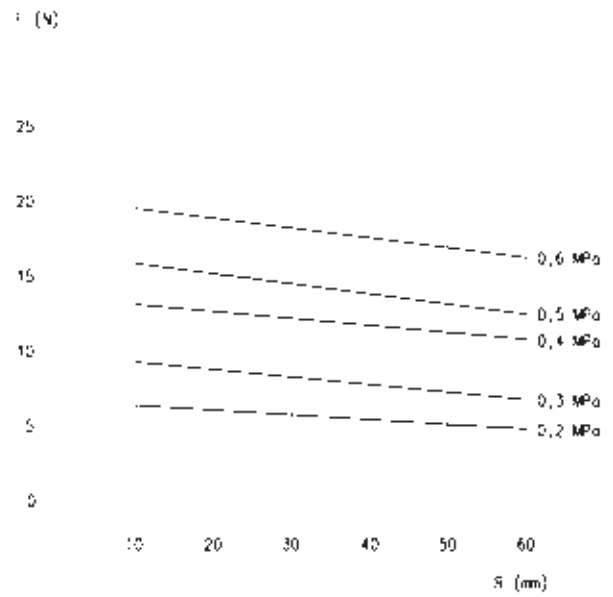
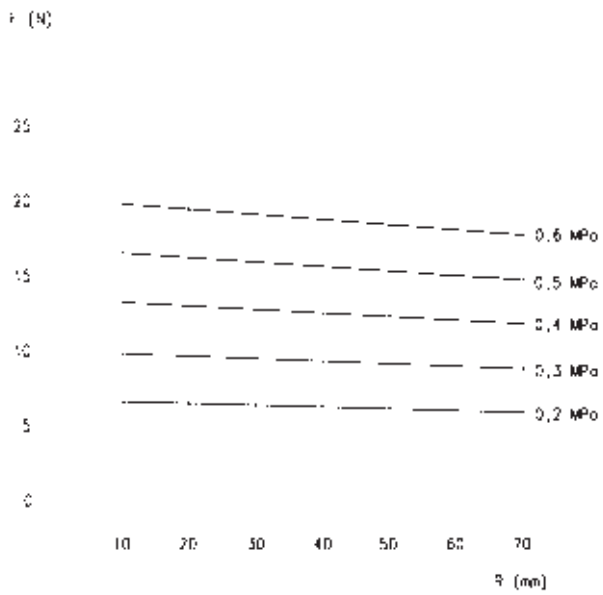
The R gripping distance of the object has to meet the parameters of the lines of force which are indicated for each pressure in the diagrams "Effective grip force". If the R distance is exceeded, the load applied will be too much overhanging, thus causing the screws to loosen as well as a reduced component life.

R = gripping distance (mm)



## Gripping force for bore 10

New



CGLN-10-020

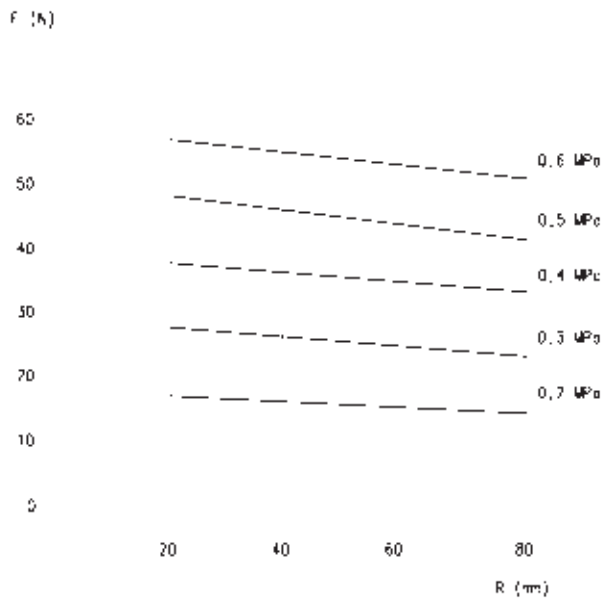
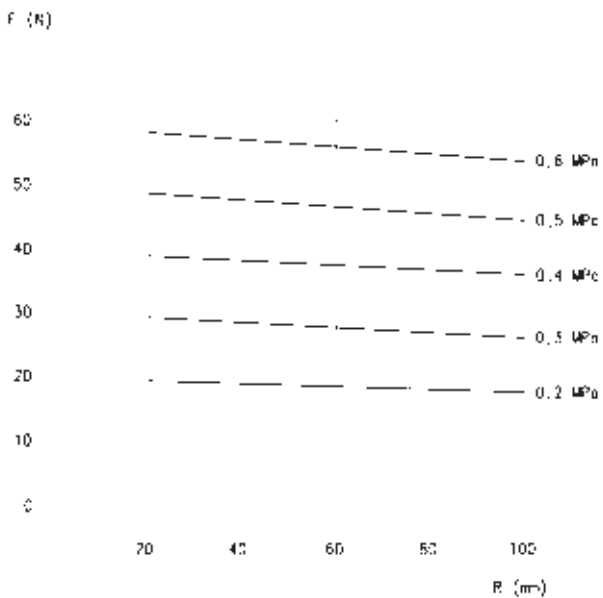
 F = Gripping force (N)  
 R = Gripping moment (mm)

CGLN-10-040 and CGLN-10-060

 F = Gripping force (N)  
 R = Gripping moment (mm)

## Gripping force for bore 16

New



CGLN-16-030

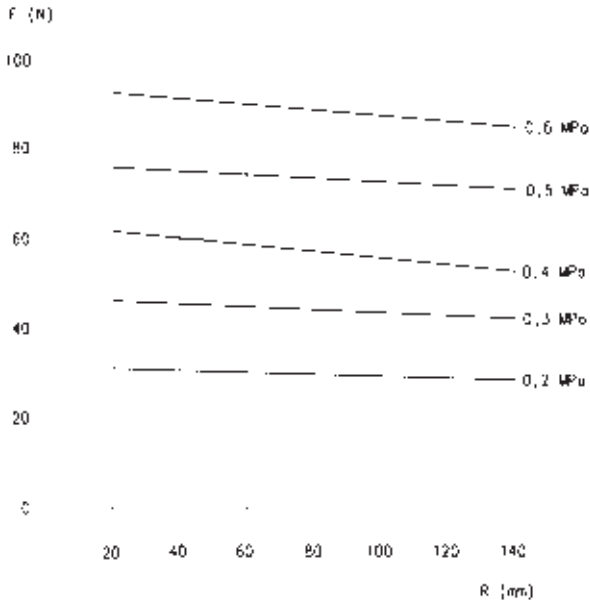
 F = Gripping force (N)  
 R = Gripping moment (mm)

CGLN-16-060 and CGLN-16-080

 F = Gripping force (N)  
 R = Gripping moment (mm)

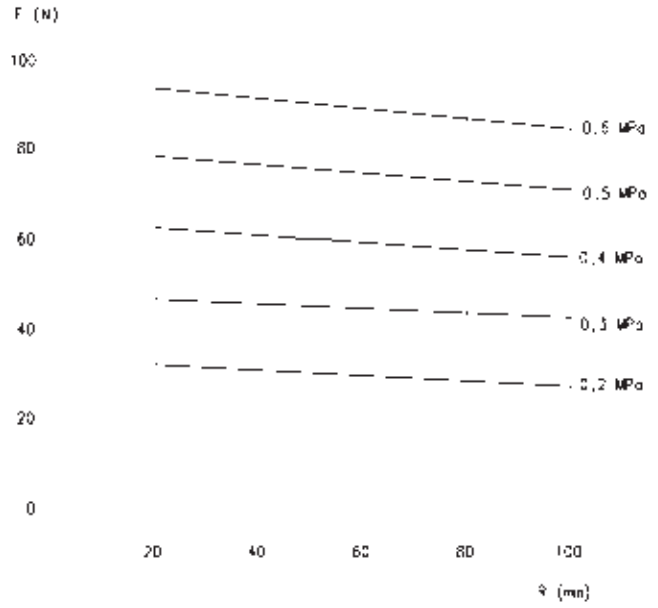
Gripping force for bore 20

New



CGLN-20-040

F = Gripping force (N)  
R = Gripping moment (mm)

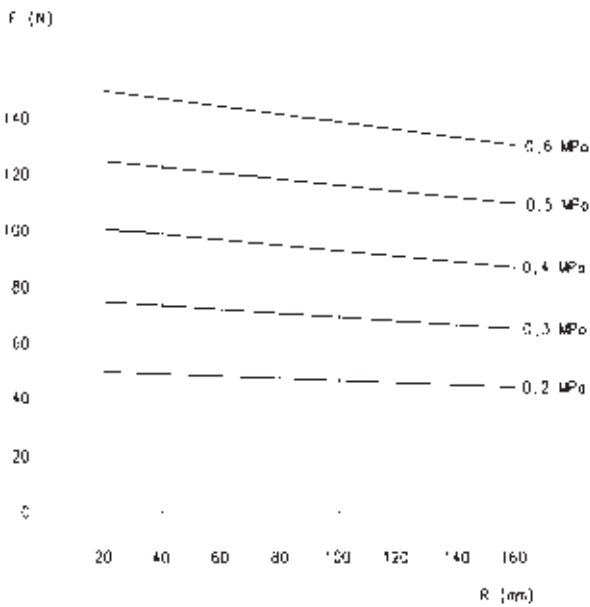


CGLN-20-080 and CGLN-20-100

F = Gripping force (N)  
R = Gripping moment (mm)

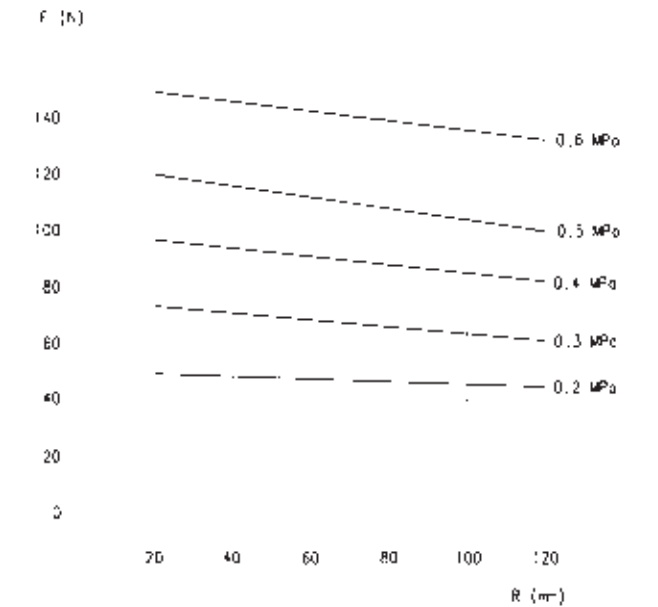
Gripping force for bore 25

New



CGLN-25-050

F = Gripping force (N)  
R = Gripping moment (mm)

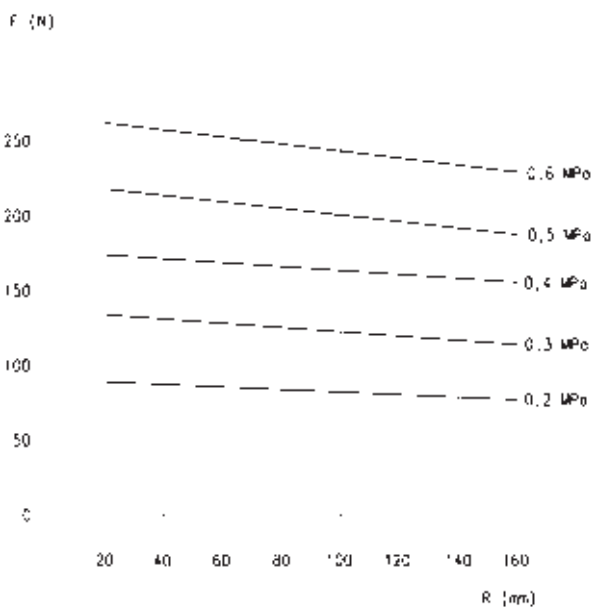


CGLN-25-100 and CGLN-25-120

F = Gripping force (N)  
R = Gripping moment (mm)

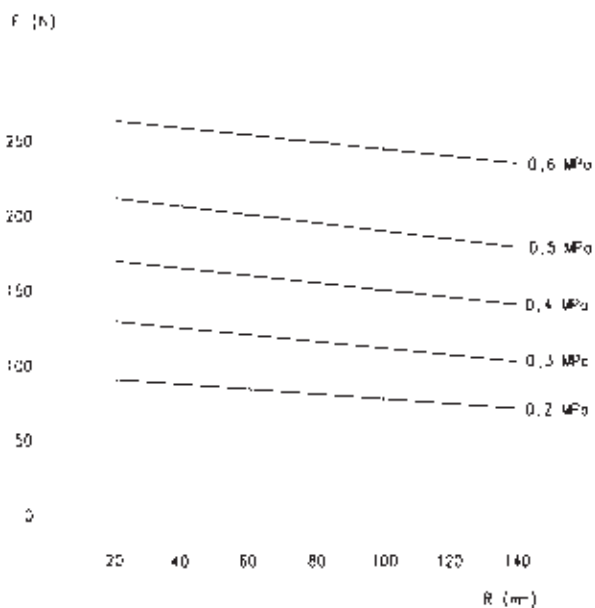
## Gripping force for bore 32

New



CGLN-32-070

F = Gripping force (N)  
R = Gripping moment (mm)



CGLN-32-120 and CGLN-32-170

F = Gripping force (N)  
R = Gripping moment (mm)

CGLN gripper, bore 10 mm - dimensions

New

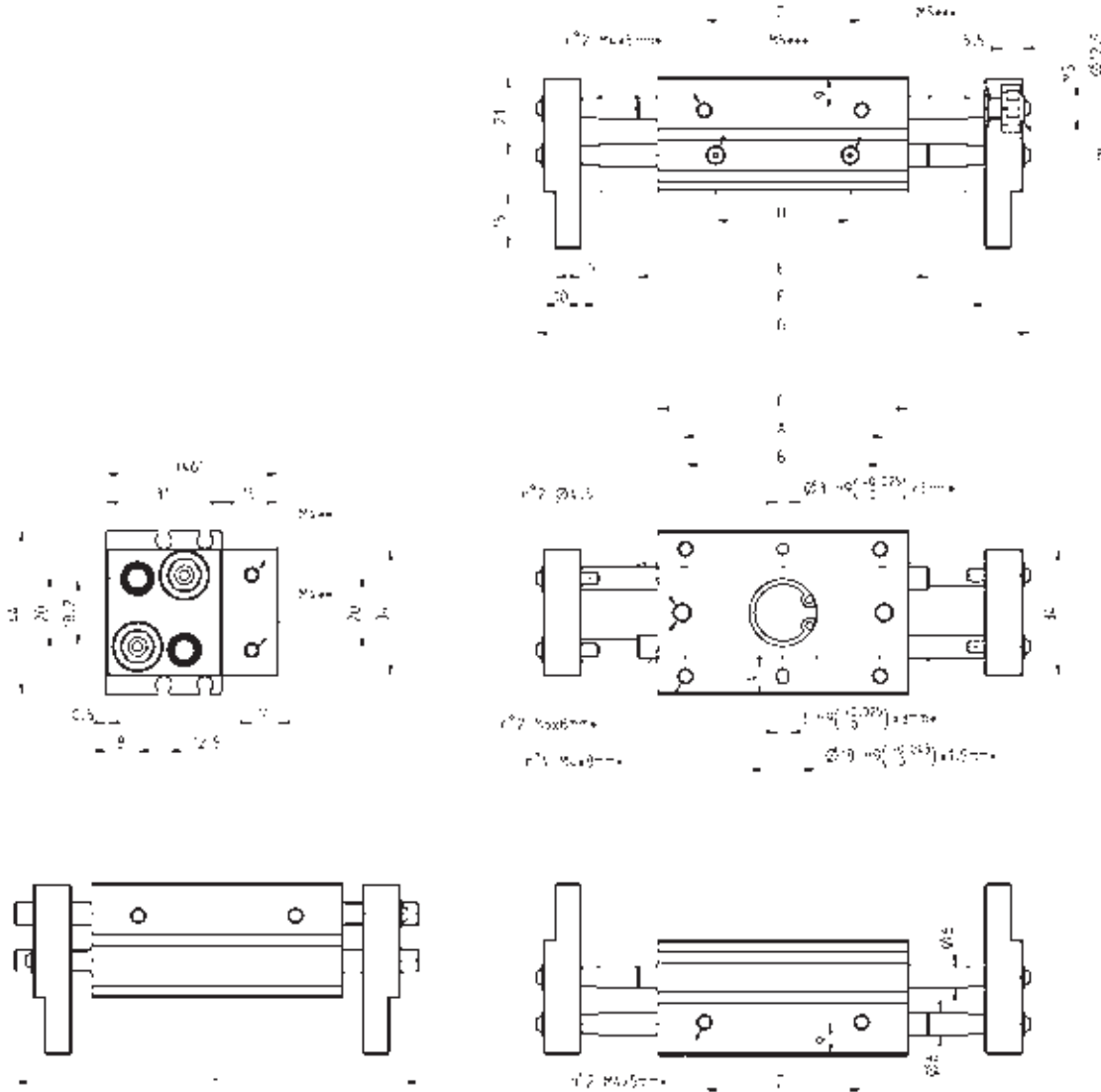
1

MOVEMENT



DRAWING LEGEND:

- \* = depth of the mounting threads
- \*\* = thread for the accessory mounting
- \*\*\* = opening/closing of air connections



| Mod.               | Bore | Stroke | A  | B  | C  | D  | E (Closed) | Min opening | F (Open) | Max opening | J (Closed) | G (Open) | H  | Max frequency (cycles/min) | Weight (g) |
|--------------------|------|--------|----|----|----|----|------------|-------------|----------|-------------|------------|----------|----|----------------------------|------------|
| <b>CGLN-10-020</b> | 10   | 20     | 38 | 36 | 51 | 26 |            | 56          |          | 76          | 80         | 100      | 20 | 60                         | 285        |
| <b>CGLN-10-040</b> | 10   | 40     | 54 | 52 | 67 | 42 |            | 78          |          | 118         | 108        | 142      | 36 | 40                         | 355        |
| <b>CGLN-10-060</b> | 10   | 60     | 72 | 70 | 85 | 60 |            | 96          |          | 156         | 146        | 180      | 54 | 40                         | 435        |



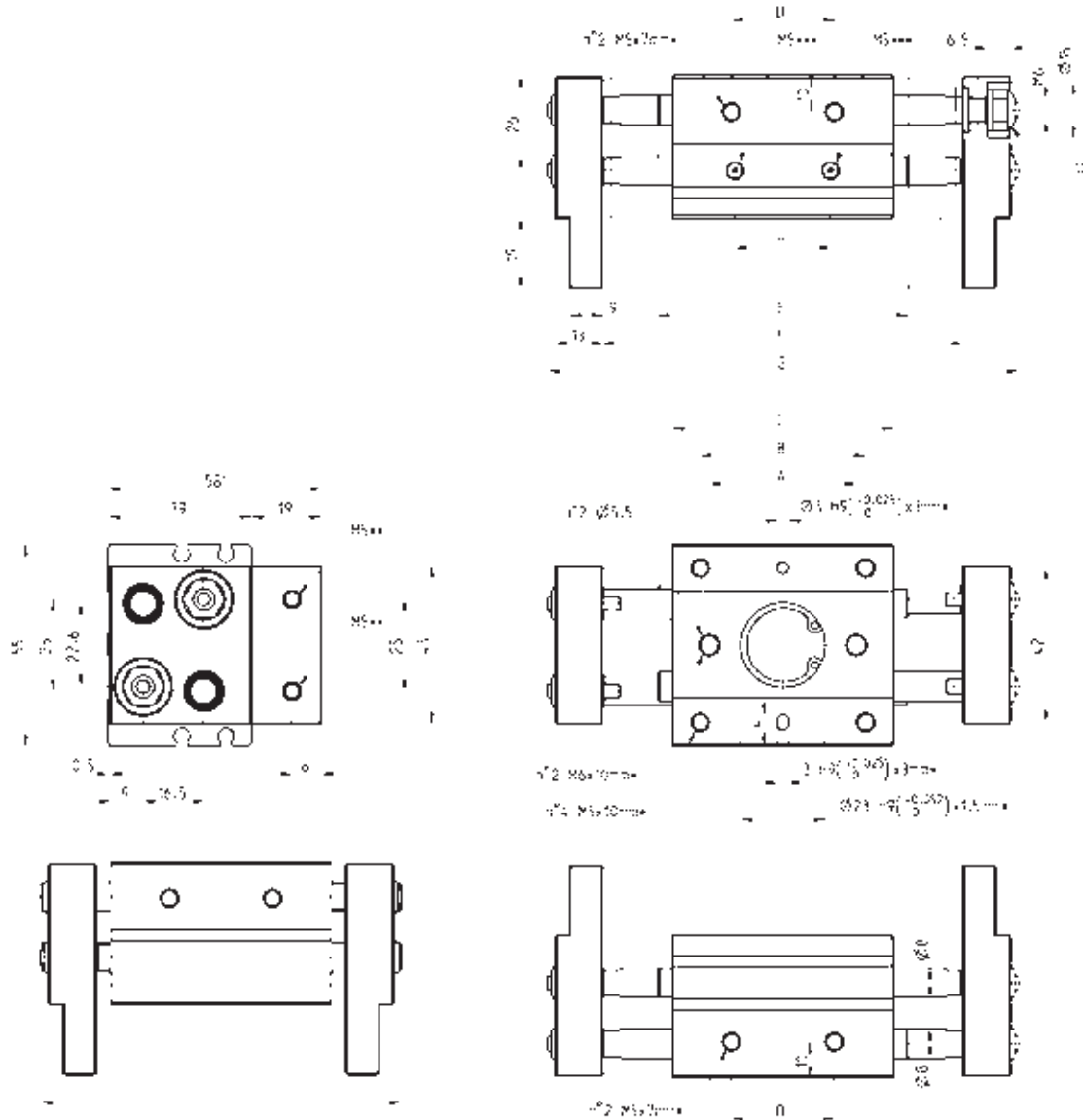
## CGLN gripper, bore 16 mm - dimensions

New



## DRAWING LEGEND:

- \* = depth of the mounting threads
- \*\* = thread for the accessory mounting
- \*\*\* = opening/closing of air connections



| Mod.               | Bore | Stroke | A  | B  | C   | D  | E (Closed) | Min opening | F (Open) | Max opening | J (Closed) | G (Open) | H  | Max frequency (cycles/min) | Weight (g) |
|--------------------|------|--------|----|----|-----|----|------------|-------------|----------|-------------|------------|----------|----|----------------------------|------------|
| <b>CGLN-16-030</b> | 16   | 30     | 40 | 45 | 60  | 28 |            | 68          |          | 98          | 98         | 128      | 26 | 60                         | 570        |
| <b>CGLN-16-060</b> | 16   | 60     | 70 | 75 | 90  | 58 |            | 110         |          | 170         | 152        | 200      | 56 | 40                         | 795        |
| <b>CGLN-16-080</b> | 16   | 80     | 90 | 95 | 110 | 78 |            | 130         |          | 210         | 192        | 240      | 76 | 40                         | 945        |

CGLN gripper, bore 20 mm - dimensions

New

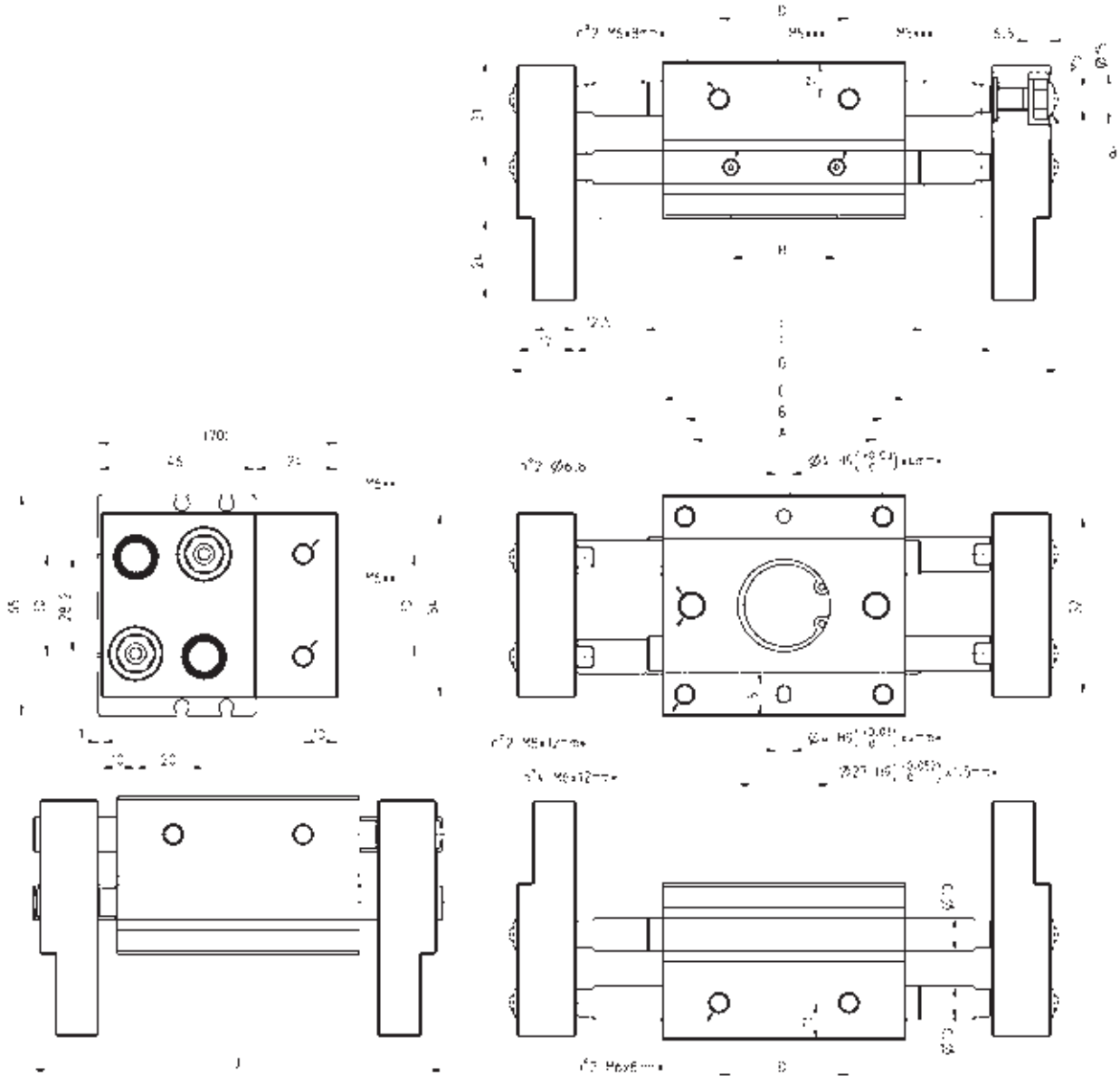
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MOVEMENT



DRAWING LEGEND:

- \* = depth of the mounting threads
- \*\* = thread for the accessory mounting
- \*\*\* = opening/closing of air connections



| Mod.               | Bore | Stroke | A   | B   | C   | D   | E (Closed) | Min opening | F (Open) | Max opening | J (Closed) | G (Open) | H  | Max frequency (cycles/min) | Weight (g) |
|--------------------|------|--------|-----|-----|-----|-----|------------|-------------|----------|-------------|------------|----------|----|----------------------------|------------|
| <b>CGLN-20-040</b> | 20   | 40     | 54  | 58  | 71  | 38  |            | 82          |          | 122         | 120        | 160      | 31 | 60                         | 990        |
| <b>CGLN-20-080</b> | 20   | 80     | 96  | 100 | 113 | 80  |            | 142         |          | 222         | 195        | 260      | 73 | 40                         | 1415       |
| <b>CGLN-20-100</b> | 20   | 100    | 116 | 120 | 133 | 100 |            | 162         |          | 262         | 235        | 300      | 93 | 40                         | 1610       |

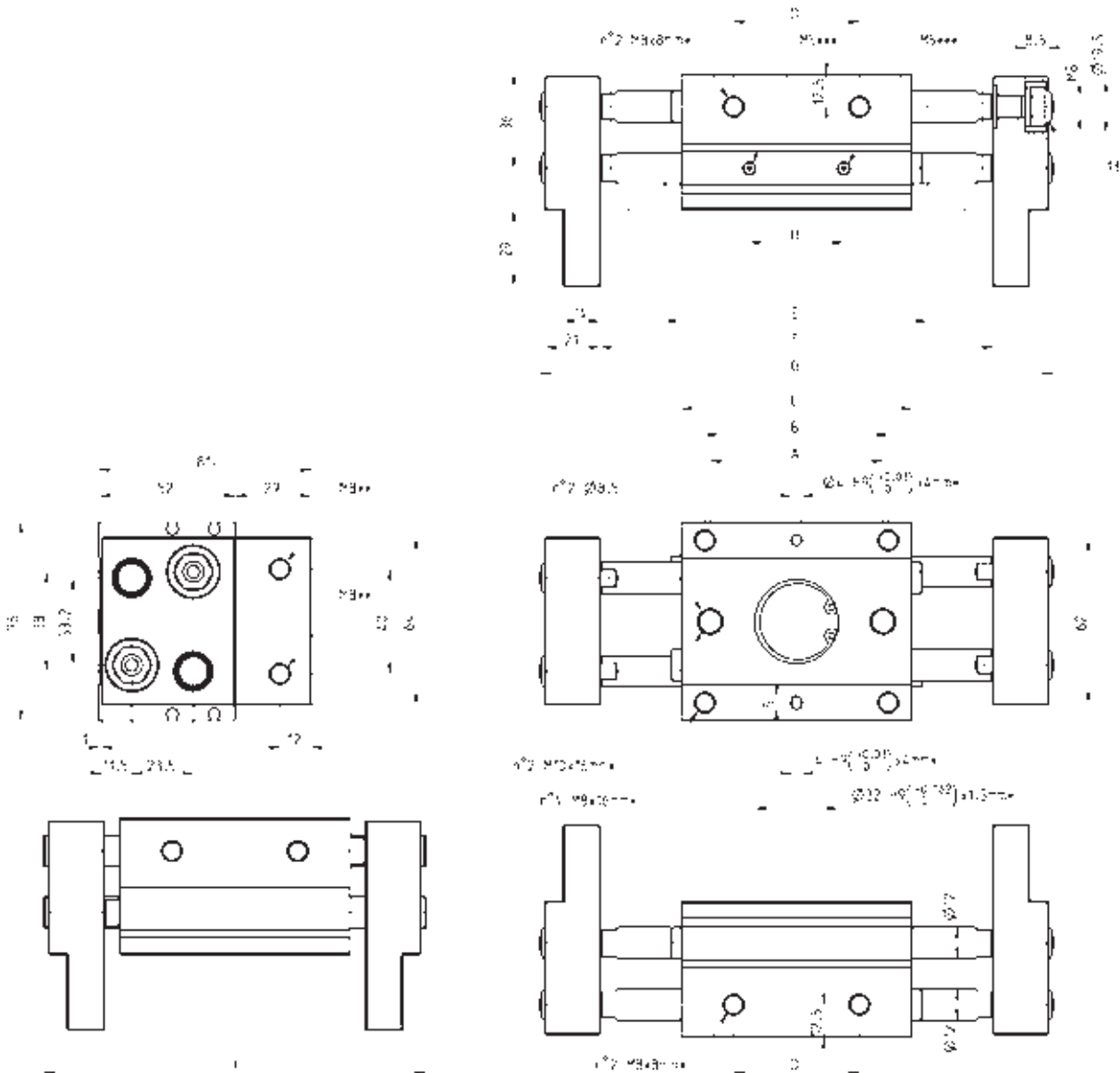
## CGLN gripper, bore 25 mm - dimensions

New



## DRAWING LEGEND:

- \* = depth of the mounting threads
- \*\* = thread for the accessory mounting
- \*\*\* = opening/closing of air connections



| Mod.               | Bore | Stroke | A   | B   | C   | D   | E (Closed) | Min opening | F (Open) | Max opening | J (Closed) | G (Open) | H   | Max frequency (cycles/min) | Weight (g) |
|--------------------|------|--------|-----|-----|-----|-----|------------|-------------|----------|-------------|------------|----------|-----|----------------------------|------------|
| <b>CGLN-25-050</b> | 25   | 50     | 66  | 70  | 88  | 48  |            | 100         |          | 150         | 146        | 196      | 36  | 60                         | 1670       |
| <b>CGLN-25-100</b> | 25   | 100    | 120 | 124 | 142 | 102 |            | 182         |          | 282         | 244        | 328      | 90  | 40                         | 2415       |
| <b>CGLN-25-120</b> | 25   | 120    | 138 | 142 | 160 | 120 |            | 200         |          | 320         | 282        | 366      | 108 | 40                         | 2655       |

CGLN gripper, bore 32 mm - dimensions

New

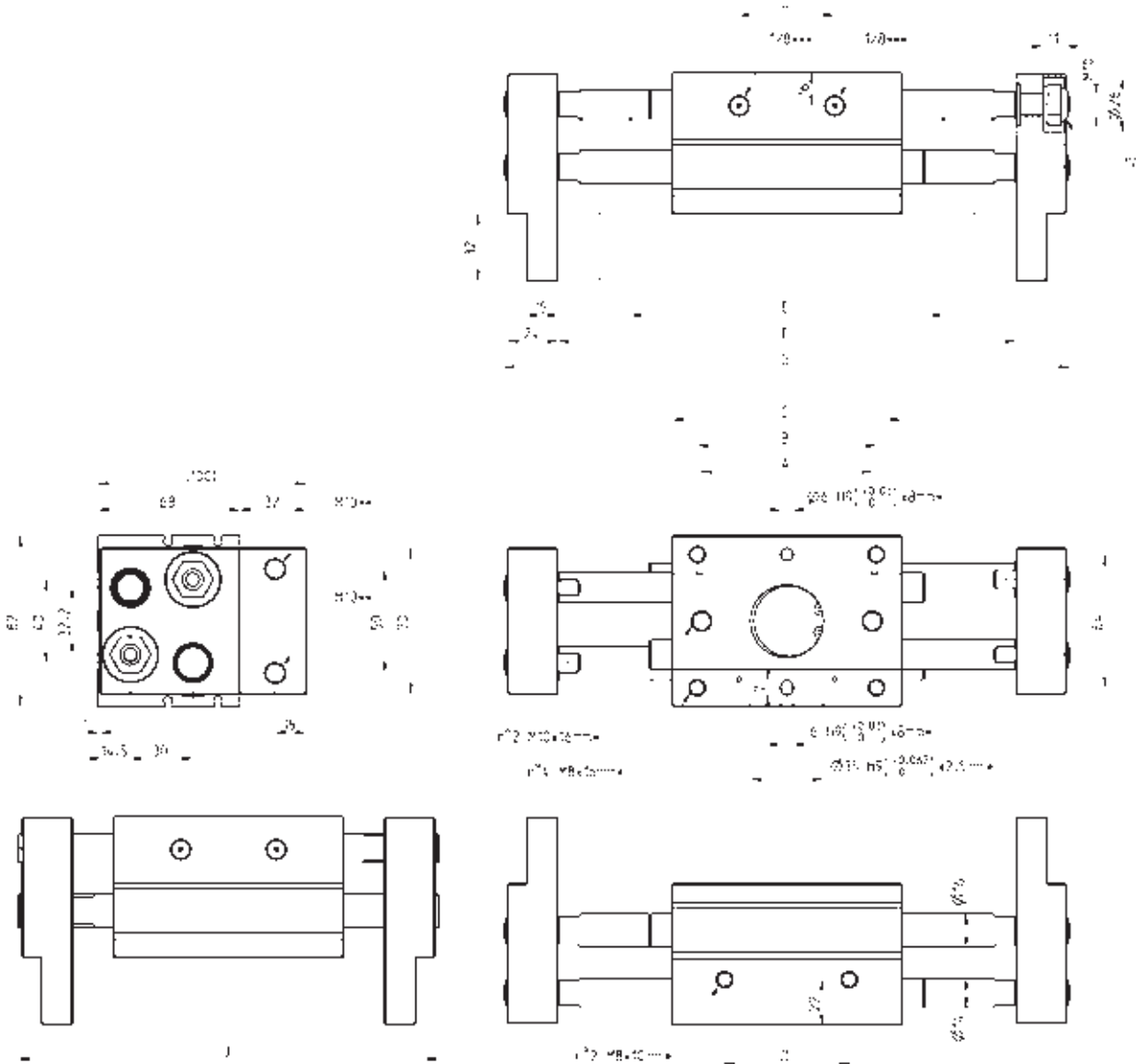
1

MOVEMENT



DRAWING LEGEND:

- \* = depth of the mounting threads
- \*\* = thread for the accessory mounting
- \*\*\* = opening/closing of air connections



| Mod.               | Bore | Stroke | A   | B   | C   | D   | E (Closed) | Min opening | F (Open) | Max opening | J (Closed) | G (Open) | H   | Max frequency (cycles/min) | Weight (g) |
|--------------------|------|--------|-----|-----|-----|-----|------------|-------------|----------|-------------|------------|----------|-----|----------------------------|------------|
| <b>CGLN-32-070</b> | 32   | 70     | 82  | 86  | 110 | 60  |            | 150         |          | 220         | 202        | 272      | 60  | 30                         | 2970       |
| <b>CGLN-32-120</b> | 32   | 120    | 130 | 134 | 158 | 108 |            | 198         |          | 318         | 282        | 370      | 108 | 20                         | 3840       |
| <b>CGLN-32-160</b> | 32   | 160    | 174 | 178 | 202 | 152 |            | 242         |          | 402         | 366        | 454      | 152 | 20                         | 4680       |

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