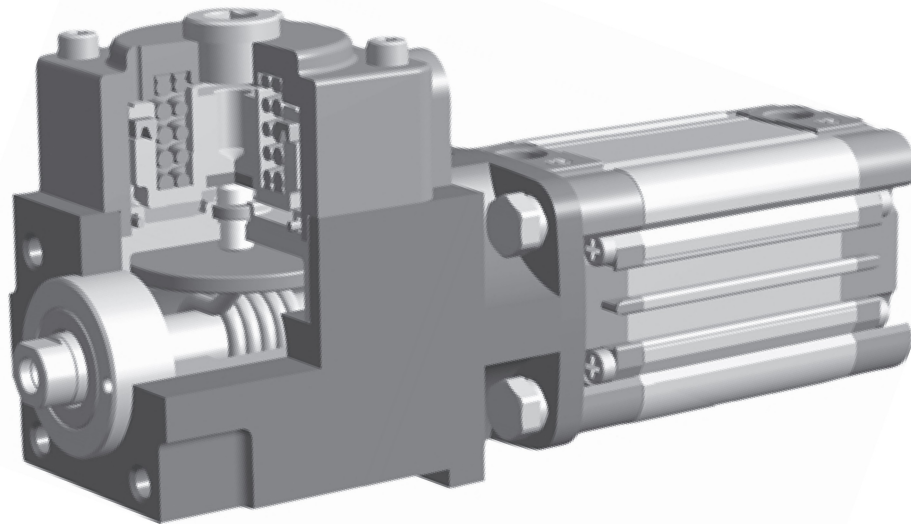
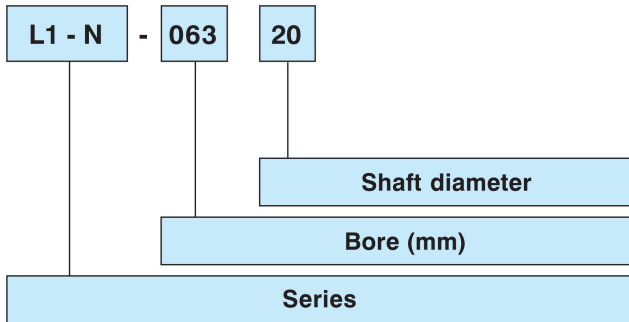


A product which combines the familiar and traditional aspect of the UNIVER locking unit and a new and revolutionary “elastic heart” capable to improve its performances under every point of view. Maximum locking force, excellent response time, high kinetic energy which can be dissipated, excellent locking repeatability, high resistance to shock and vibrations.

TECHNICAL CHARACTERISTICS



Codification key



Fluid: filtered air, with or without lubrication  
 Working pressure: 4,5 ÷ 10 bar  
 Ambient temperature: -20° ÷ 80 °C

TECHNICAL CHARACTERISTICS

- \* prearranged only for chromium-plated steel rods
- \* the new series is completely interchangeable with the old one
- \* the new locking units tolerate without problems load variations as well as the application of sudden loads.
- \* the new series of locking units functions without problems also if rods or shafts are dirty with oil or grease.
- \* Safety standards are perfectly complied with: the air pressure can only be used for releasing the device (4 bar).
- \* **alternatively it is possible to use the integrated cylinder locking unit as shown on page 59-II.**

- TYPE**
- 1 Mechanical lock
- BORE SIZES**
- Ø 16 ÷ 125
- SHAFT DIAMETER**
- Ø 6 ÷ 32

|                      |       |      |      |      |    |      |      |    |      |       |
|----------------------|-------|------|------|------|----|------|------|----|------|-------|
| Cylinder bore (mm)   | 16    | 20   | 25   | 32   | 40 | 50   | 63   | 80 | 100  | 125   |
| Rod diameter (mm)    | 6     | 8    | 10   | 12   | 16 | 20   | 20   | 25 | 25   | 32    |
| Pneumatic connection | G 1/8 |      |      |      |    |      |      |    |      |       |
| Mass (kg)            | 0,43  | 0,43 | 0,43 | 0,78 | 1  | 1,50 | 2,30 | 4  | 6,70 | 10,70 |

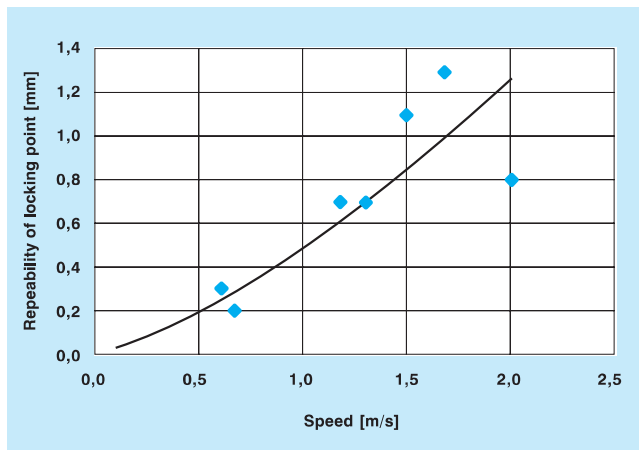


A spring in special steel, developed together with FEA (Finite Element Analysis) and with the assistance of the most advanced CAD technics, constitutes the heart of this new locking unit which, in addition to the excellent locking capacity and repeatability, enable a soft braking of the moved masses.

**Main performances and characteristics:**

| Size or bore of the equivalent cylinder           | 16 (shaft 6)                         | 20 (shaft 8) | 25 (shaft 10) | 32 (shaft 12) | 40 (shaft 16) | 50 (shaft 20) | 63 (shaft 20) | 80 (shaft 25) | 100 (shaft 25) | 125 (shaft 32) |
|---|--------------------------------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|
| Static locking force [N]                          | 200                                  | 314          | 490           | 800           | 1260          | 2000          | 3100          | 5000          | 7850           | 12300          |
| Pressure applied to the equivalent cylinder [bar] | 10                                   | 10           | 10            | 10            | 10            | 10            | 10            | 10            | 10             | 10             |
| Dynamic braking force at 1 m/s                    | 40% of the static locking force      |              |               |               |               |               |               |               |                |                |
| Response time at 6 bar [ms]                       | 12                                   | 12           | 15            | 20            | 20            | 25            | 25            | 30            | 30             | 40             |
| Repeatability of locking point                    | < 1 mm a 1 m/s (see diagram below)   |              |               |               |               |               |               |               |                |                |
| Resistance to vibration                           | 10 g (10-55 Hz) 30 min. on each axis |              |               |               |               |               |               |               |                |                |
| Shock resistance [J]                              | 2                                    | 3            | 4             | 5             | 8             | 11            | 15            | 21            | 29             | 40             |
| Minimum release pressure [bar]*                   | 4                                    |              |               |               |               |               |               |               |                |                |

\* For release pressure values under 4 bar, the reaction of the locking unit cannot be foreseen.



**Braking distance**

In some applications, it could be necessary to know the piston rod stroke between the reception of an emergency signal and its stop.

This value (S) depends on the following:

V = speed in emergency in m/s

t = locking system response time in seconds (approx. 0,03 sec.)

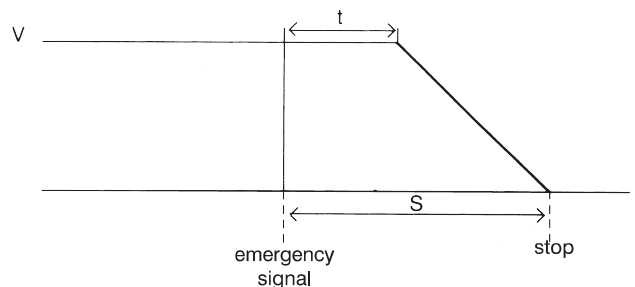
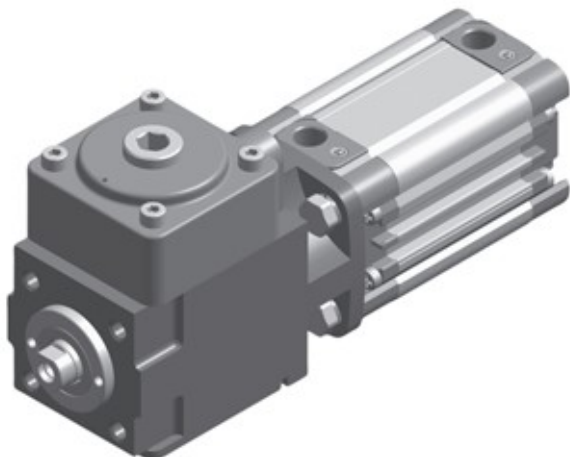
f = braking force under dynamic conditions in N

This displacement (S) is obtained by the following formula:

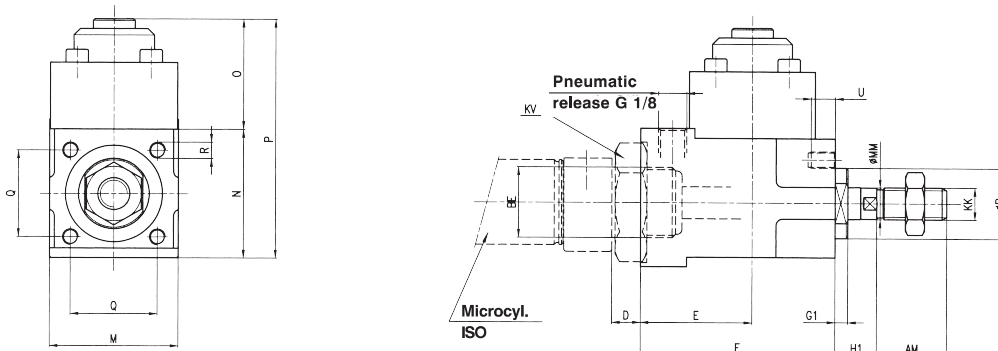
$$S = (V \cdot t) + \frac{m V^2}{2 f}$$

**Example:**

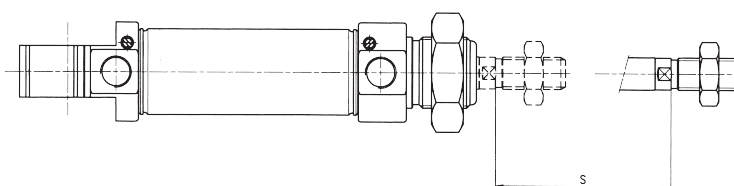
locking unit size 40 with dynamic load 10 kg at a speed of 0,7 m/s:



### Locking units for Ø 16 - 20 - 25 mm ISO microcylinders

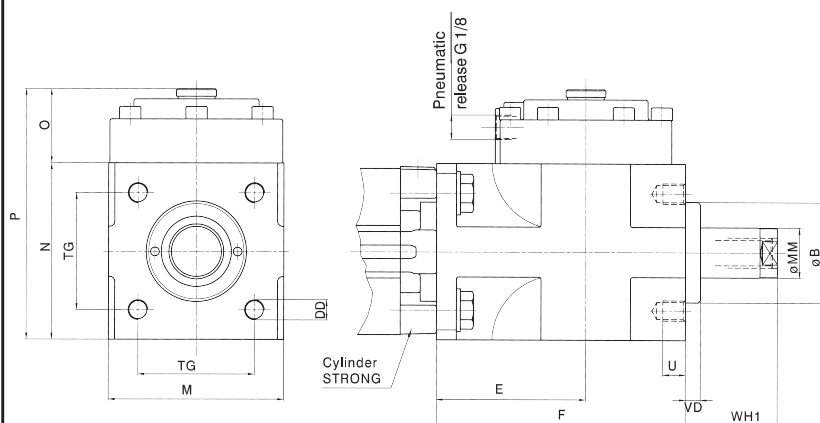


### Additional length to the standard rod



| Cyl. Ø | AM | B  | BE        | D  | E  | F  | G1  | H1 | KK         | KV     | M  | MM | N  | O    | P    | Q  | R  | S  | U   |
|--------|----|----|-----------|----|----|----|-----|----|------------|--------|----|----|----|------|------|----|----|----|-----|
| 16     | 16 | 16 | M16 x 1,5 | 10 | 35 | 61 | 1,5 | 7  | M6 x 1     | es. 24 | 40 | 6  | 40 | 34,5 | 74,5 | 27 | M5 | 55 | 7,5 |
| 20     | 20 | 22 | M22 x 1,5 | 10 | 35 | 61 | 4   | 9  | M8 x 1,25  | es. 32 | 40 | 8  | 40 | 34,5 | 74,5 | 27 | M5 | 55 | 7,5 |
| 25     | 22 | 22 | M22 x 1,5 | 10 | 35 | 61 | 4   | 13 | M10 x 1,25 | es. 32 | 40 | 10 | 40 | 34,5 | 74,5 | 27 | M5 | 55 | 7,5 |

### Locking unit for compact cylinders STRONG Ø 32 - 63 mm



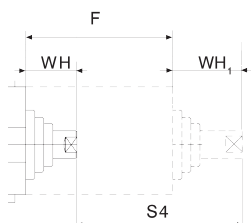
### Fixing screws

Grain UNI 5923, washer and nut UNI 5589

| Cyl. Ø | Small parts | Q.ty | Dimens.    | Part number   |
|--------|-------------|------|------------|---------------|
| 32     | Grain       | 4    | M 6 x 30   | AZ4-VS0630    |
|        | washer      | 4    | 6,4 x 16   | AZ4-SR06,41,6 |
|        | nut         | 4    | M 6 x 1    | AZ4-SO0064    |
| 40     | Grain       | 4    | M 6 x 30   | AZ4-VS0630    |
|        | washer      | 4    | 6,4 x 1,6  | AZ4-SR06,41,6 |
|        | nut         | 4    | M 6 x 1    | AZ4-SO0064    |
| 50     | Grain       | 4    | M 8 x 40   | AZ4-VS0840    |
|        | washer      | 4    | 8,4 x 1,6  | AZ4-SR841,6   |
|        | nut         | 4    | M 8 x 1,25 | AZ4-SH08125   |
| 63     | Grain       | 4    | M 8 x 40   | AZ4-VS0840    |
|        | washer      | 4    | 8,4 x 1,6  | AZ4-SR8,41,6  |
|        | nut         | 4    | M 8 x 1,25 | AZ4-SH08125   |

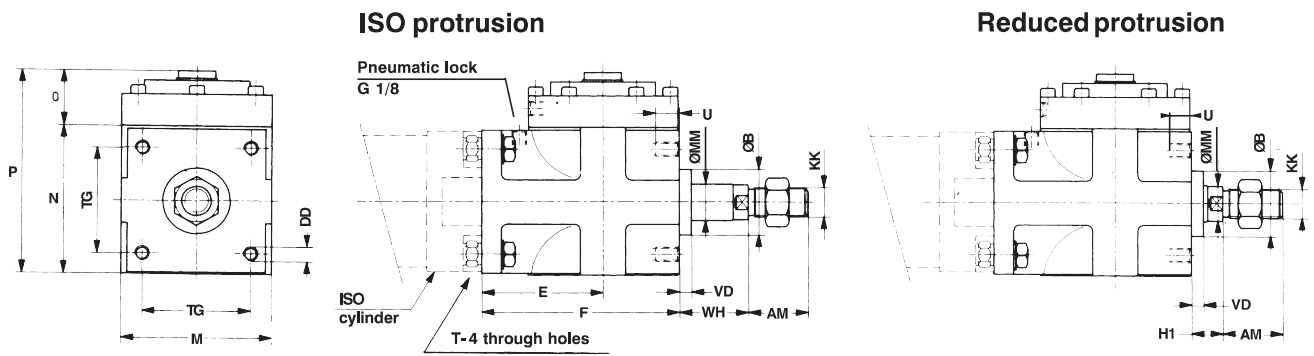
| Ø  | B  | DD | E    | F   | M  | MM | N  | O    | P    | TG   | U  | VD | WH1 |
|----|----|----|------|-----|----|----|----|------|------|------|----|----|-----|
| 32 | 30 | M6 | 54,5 | 84  | 50 | 12 | 50 | 29,5 | 79,5 | 32,5 | 10 | 6  | 26  |
| 40 | 35 | M6 | 58   | 90  | 58 | 16 | 58 | 29,5 | 87,5 | 38   | 9  | 6  | 30  |
| 50 | 40 | M8 | 60   | 100 | 70 | 20 | 70 | 29   | 99   | 46,5 | 10 | 6  | 37  |
| 63 | 45 | M8 | 65   | 110 | 85 | 20 | 85 | 37   | 122  | 56,5 | 13 | 6  | 37  |

### Additional length to standard rod with ISO protrusion



| Cyl. Ø | WH | F   | WH <sub>1</sub> | S4  |
|--------|----|-----|-----------------|-----|
| 32     | 14 | 84  | 26              | 96  |
| 40     | 14 | 90  | 30              | 106 |
| 50     | 18 | 100 | 37              | 119 |
| 63     | 18 | 110 | 37              | 129 |

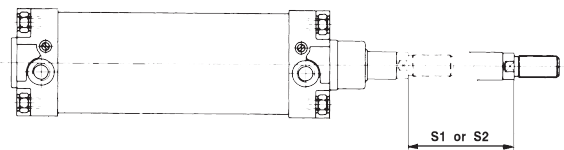
## Locking units for ISO cylinders Ø 32 ÷ 125



### Additional length to the standard rod

S<sub>1</sub> for ISO dimensions

S<sub>2</sub> for reduced dimensions



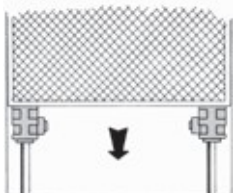
| Cyl. Ø | AM | B  | DD  | E     | F   | H1 | KK         | M   | MM | N   | O    | P     | S1  | S2  | TG   | U  | VD  | WH |
|--------|----|----|-----|-------|-----|----|------------|-----|----|-----|------|-------|-----|-----|------|----|-----|----|
| 32     | 22 | 30 | M6  | 54,5  | 84  | 16 | M10 x 1,25 | 50  | 12 | 50  | 29,5 | 79,5  | 85  | 75  | 32,5 | 10 | 6   | 26 |
| 40     | 24 | 35 | M6  | 58    | 90  | 15 | M12 x 1,25 | 58  | 16 | 58  | 29,5 | 87,5  | 90  | 75  | 38   | 9  | 6   | 30 |
| 50     | 32 | 40 | M8  | 60    | 100 | 17 | M16 x 1,5  | 70  | 20 | 70  | 29   | 99    | 100 | 80  | 46,5 | 10 | 6   | 37 |
| 63     | 32 | 45 | M8  | 65    | 110 | 17 | M16 x 1,5  | 85  | 20 | 85  | 37   | 122   | 110 | 90  | 56,5 | 13 | 6   | 37 |
| 80     | 40 | 45 | M10 | 75    | 125 | 21 | M20 x 1,5  | 100 | 25 | 100 | 40,5 | 140,5 | 125 | 100 | 72   | 16 | 8   | 46 |
| 100    | 40 | 55 | M10 | 90    | 152 | 26 | M20 x 1,5  | 116 | 25 | 120 | 59   | 179   | 150 | 125 | 89   | 18 | 8   | 51 |
| 125    | 54 | 60 | M12 | 112,5 | 185 | 35 | M27 x 2    | 145 | 32 | 145 | 62   | 207   | 185 | 155 | 110  | 22 | 9,5 | 65 |

### Screw with hexagonal head UNI 5739 and washer UNI 6592 for assembling locking unit to ISO cylinder

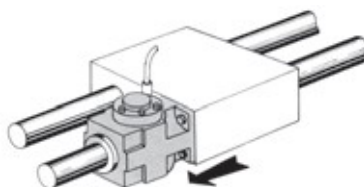
| Cyl. Ø |        | Quantity | Dimensions | Part number   |
|--------|--------|----------|------------|---------------|
| 32     | screws | 4        | M6 x 16    | AZ4-VE0616    |
|        | washer | 4        | 6,4 x 1,6  | AZ4-SR06,41,6 |
| 40     | screws | 4        | M6 x 20    | AZ4-VE0620    |
|        | washer | 4        | 6,4 x 1,6  | AZ4-SR06,41,6 |
| 50     | screws | 4        | M8 x 20    | AZ4-VE0820    |
|        | washer | 4        | 8,4 x 1,6  | AZ4-SR08,41,6 |
| 63     | screws | 4        | M8 x 25    | AZ4-VE0825    |
|        | washer | 4        | 8,4 x 1,6  | AZ4-SR08,41,6 |
| 80     | screws | 4        | M10 x 30   | AZ4-VE1030    |
|        | washer | 4        | 10,5 x 2   | AZ4-SR10,52,0 |
| 100    | screws | 4        | M10 x 30   | AZ4-VE1030    |
|        | washer | 4        | 10,5 x 2   | AZ4-SR10,52,0 |
| 125    | screws | 4        | M12 x 35   | AZ4-VE1235    |
|        | washer | 4        | 13 x 2,5   | AZ4-SR13,02,5 |

## ... other examples of locking unit applications ...

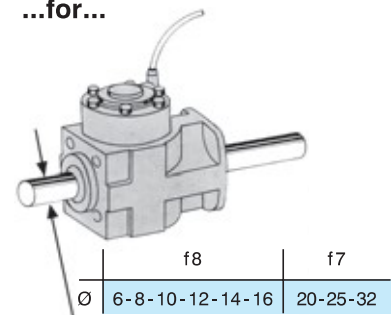
...for gates...



...for slides...



...for...



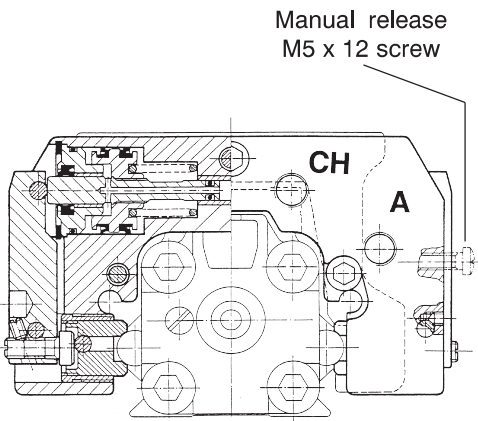
Chromium-plated shaft

**Locking unit**

The UNIVER locking unit for rodless cylinders has been realized with the aim to stop the carriage in any point of its stroke and it is able to provide a good locking precision. It is possible to assemble it indifferently on either side of the carriage and its mechanical braking force may be further amplified by means of an additional pneumatic control.

Fluid: filtered air, with or without lubrication  
 Working pressure: 4,5 ÷ 10 bar  
 Working temperature: - 20° ÷ 80°C

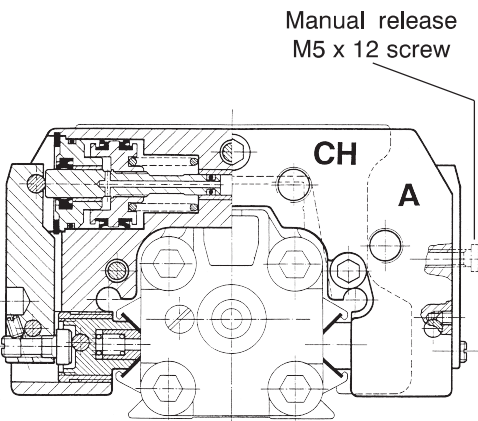
**Locking unit for S5 series**



**Maximum locking force (N)**

| Cyl. Ø |      |
|--------|------|
| 25     | 810  |
| 32     | 1185 |
| 40     | 825  |
| 50     | 1235 |

**Locking unit for VL1 series**



**Maximum locking force (N)**

| Cyl. Ø |      |
|--------|------|
| 25     | 520  |
| 32     | 745  |
| 40     | 1465 |
| 50     | 2365 |

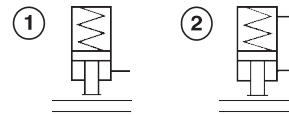
**TECHNICAL CHARACTERISTICS**

- \* Min. release pressure 4,5 bar.
- \* It keeps the carriage in position in both directions
- \* Easy assembly which may be effected indifferently on both sides of the carriage
- \* Manual release, permanent, realizable with 2 screws M5

| Cyl. Ø | 25 | 32    | 40 | 50 |
|--------|----|-------|----|----|
| A = CH | M5 | G 1/8 |    |    |

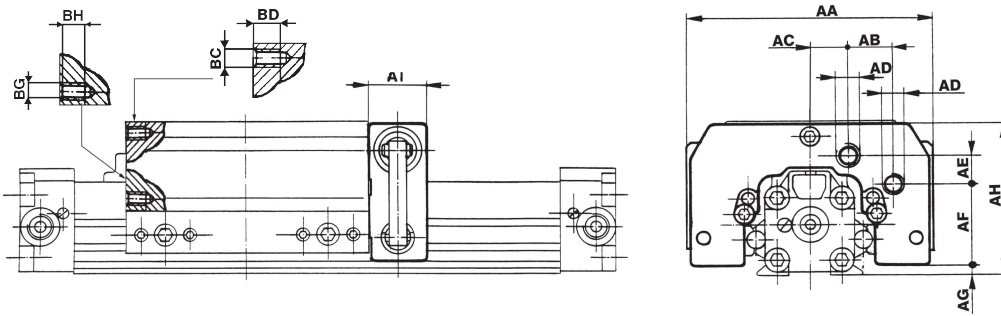
A = Release Ch = Pneumatic locking

- \* standard supplied in one only version: locking by means of mechanical springs which lock the carriage in the absence of an air signal ①. With the aim to increase the locking force this model is already foreseen for the additional pneumatic control ②.





Locking unit for S5 series

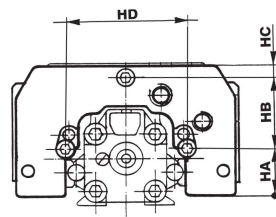


| Cyl. Ø | AA  | AB   | AC   | AD    | AE   | AF   | AG   | AH    | AI | BC | BD | BG | BH | Mass in kg |               |        | Part number |
|--------|-----|------|------|-------|------|------|------|-------|----|----|----|----|----|------------|---------------|--------|-------------|
|        |     |      |      |       |      |      |      |       |    |    |    |    |    | Stroke "0" | Locking units | Total  |             |
| 25     | 120 | 24,5 | 12,5 | M5    | 16,5 | 34,5 | 5    | 71,5  | 32 | M6 | 15 | M6 | 15 | 1,625      | 0,35          | 1,975  | L6 - S5025  |
| 32     | 132 | 25,3 | 17   | G 1/8 | 16,2 | 42,3 | 6,5  | 81,5  | 32 | M6 | 15 | M6 | 15 | 2,775      | 0,46          | 3,235  | L6 - S5032  |
| 40     | 150 | 26   | 17   | G 1/8 | 18,2 | 58,3 | 10   | 106   | 40 | M6 | 15 | M6 | 15 | 6,095      | 0,82          | 6,915  | L6 - S5040  |
| 50     | 164 | 26   | 20   | G 1/8 | 19,8 | 72,5 | 12,7 | 125,7 | 51 | M8 | 16 | M6 | 15 | 10,03      | 1,45          | 11,480 | L6 - S5050  |

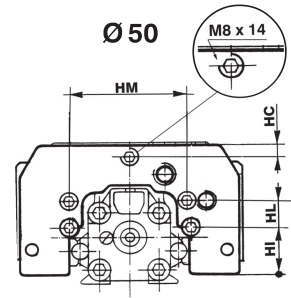
Fixing dimensions

| Cyl. Ø | HA   | HB   | HC  | HD   | HI   | HL   | HM |
|--------|------|------|-----|------|------|------|----|
| 25     | 24,7 | 34,8 | 7   | 59,5 | -    | -    | -  |
| 32     | 27   | 41,5 | 6,5 | 68   | -    | -    | -  |
| 40     | 45,3 | 43,8 | 6,9 | 81,5 | -    | -    | -  |
| 50     | -    | -    | 12  | -    | 36,5 | 22,5 | 96 |

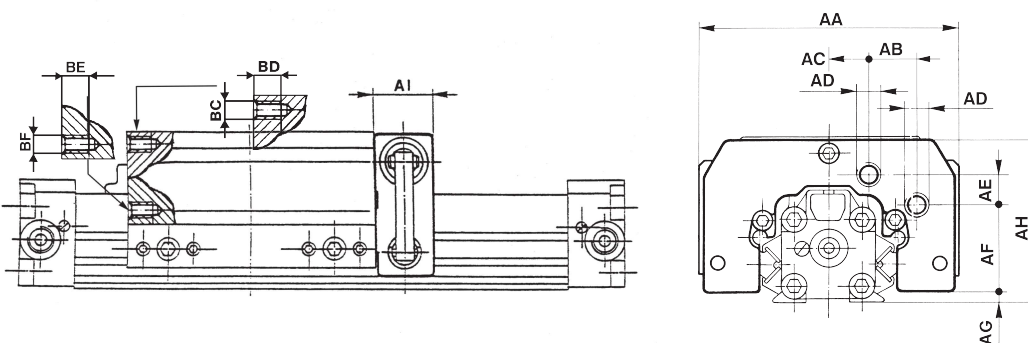
Ø 25 - 32 - 40



Ø 50



Locking unit for VL1 series

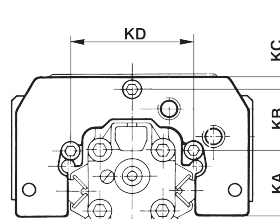


| Cyl. Ø | AA  | AB   | AC   | AD    | AE   | AF   | AG   | AH    | AI | BC | BD | BE | BF | Mass in kg |              |       | Part number |
|--------|-----|------|------|-------|------|------|------|-------|----|----|----|----|----|------------|--------------|-------|-------------|
|        |     |      |      |       |      |      |      |       |    |    |    |    |    | Stroke "0" | Locking unit | Total |             |
| 25     | 120 | 24,5 | 12,5 | M5    | 16,5 | 34,5 | 7,1  | 73,6  | 32 | M6 | 10 | M6 | 10 | 2,095      | 0,35         | 2,445 | L6 - V1025  |
| 32     | 132 | 25,3 | 17   | G 1/8 | 16,2 | 42,3 | 6,5  | 81,5  | 32 | M6 | 10 | M6 | 10 | 3,125      | 0,46         | 3,585 | L6 - V1032  |
| 40     | 150 | 26   | 17   | G 1/8 | 18,2 | 58,3 | 9    | 105   | 40 | M6 | 15 | M6 | 15 | 6,43       | 0,82         | 7,25  | L6 - V1040  |
| 50     | 164 | 26   | 20   | G 1/8 | 19,8 | 72,5 | 12,7 | 125,7 | 51 |    |    | M6 | 12 | 10,85      | 1,45         | 12,3  | L6 - V1050  |

Fixing dimensions

| Cyl. Ø | KA   | KB   | KC  | KD   | KI   | KL   | KM |
|--------|------|------|-----|------|------|------|----|
| 25     | 31,5 | 28   | 7   | 52   | -    | -    | -  |
| 32     | 35   | 33,5 | 6,5 | 64   | -    | -    | -  |
| 40     | 45,3 | 43,8 | 6,9 | 81,5 | -    | -    | -  |
| 50     | -    | -    | 12  | -    | 36,5 | 22,5 | 96 |

Ø 25 - 32 - 40



Ø 50

