

Hydraulic swivel clamps, double action

Max. operating pressure 250 bar

This new, and improved type series of swivel clamps replace the series 728D... and 729D...; see table below. The old models are still available upon request. Hydraulic swivel clamps are particularly designed for applications which require high clamping forces and easy loading of workpieces in confined spaces. The options to order separately the clamping cylinder, clamping arm, pressure spindle, flange and the adaptor allows you to decide what to order according to your needs.

Technical characteristics:

- Screw-in and block version available
- On the screw-in version both A and B ports are on the top flange and at the bottom
- You are free to choose the clamping arm position over 360°
- Glide ring seal with high wear resistance
- Piston with guide ring
- Long piston rod guide
- Swivel direction can be changed by the customer
- Change to linear stroke (without swivel) is possible.
- For block version, sensing of the clamping position is possible

Important note

- Clamping must be accomplished in the vertical stroke range.
- The clamping arm cannot be impeded during swivel
- The cycle time for a clamping or a unclamping stroke should not fall under 1,5 sec. If necessary, the oil flow must be reduced according to the pump size and the number of swivel clamps installed.

Recommended accessories (separate order)

The following screw connections are necessary to connect the cylinder to hydraulic tubes and pipes:

2 straight screw connections, model no. **D8L-R1/8** or

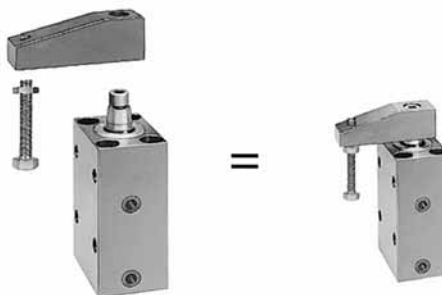
D8S-R1/8

See pages 25.7 to 25.10 for all screw connections.

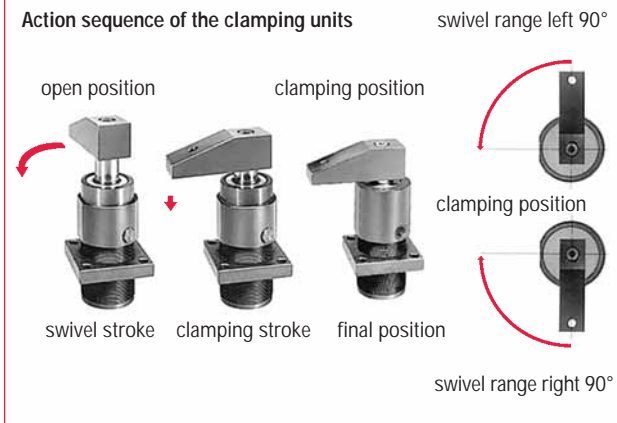
Screw-in version





Block version

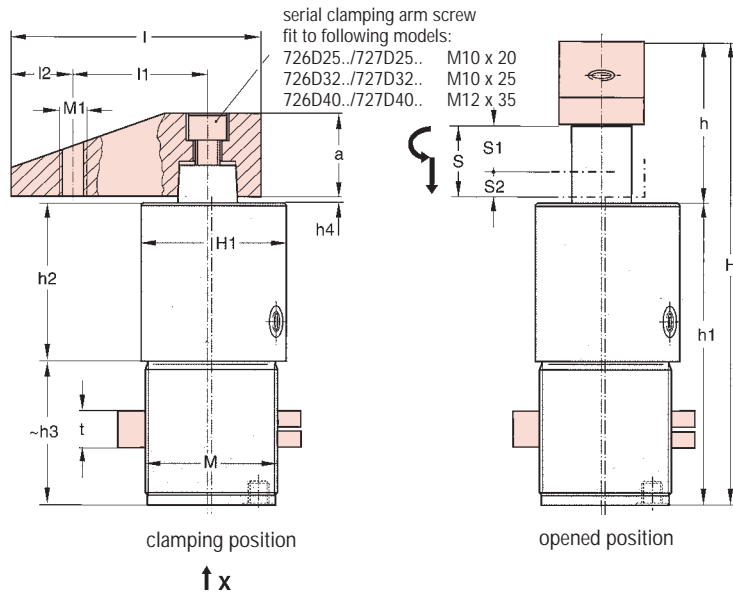


Action sequence of the clamping units

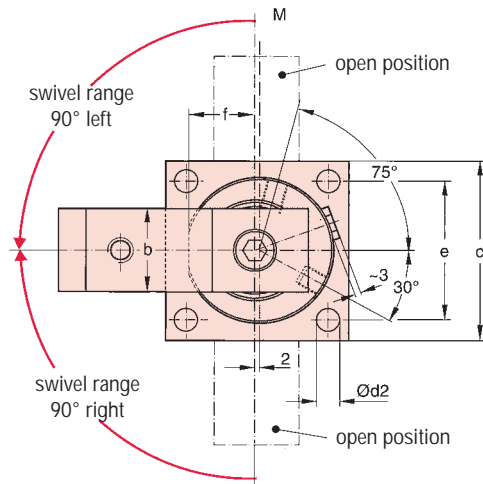
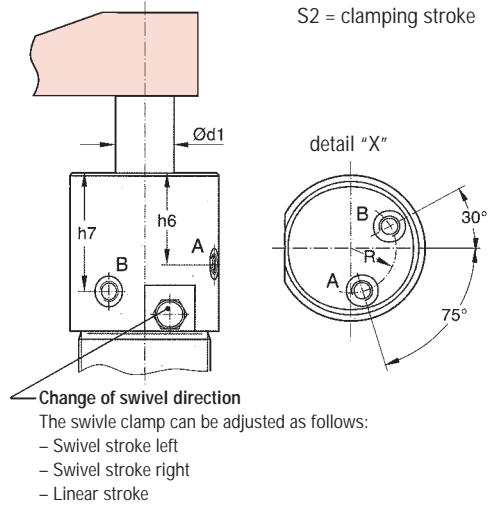


| | Basic unit | | | | Clamping force at 100 bar [daN] | Set parts (separate order) | | | |
|---|--------------|-------------------------------|-------------|-------------------------------|---------------------------------|----------------------------|---|-------------|-------------------------|
| | Swivel right | | Swivel left | | | Clamping arm | Adaptor for customer made clamping arms | Flange | Pressure spindle, rigid |
| | Model no. | Comparable with old model no. | Model no. | Comparable with old model no. | | Model no. | Model no. | Model no. | Model no. |
|  Screw-in version | 726D25221-2 | 728D25221-1 | 727D25221-2 | 729D25221-1 | 190 | 728Z25SP0-1 | 728Z25AD0-1 | 728Z25FL0-1 | 220203-M |
| | 726D32321-2 | 728D32271-1 | 727D32321-2 | 729D32271-1 | 340 | 728Z32SP0-1 | 728Z32AD0-1 | 728Z32FL0-1 | 220203-M |
| | 726D40341-2 | 728D40301-1 | 727D40341-2 | 729D40301-1 | 500 | 728Z40SP0-1 | 728Z40AD0-1 | 728Z40FL0-1 | 220203-M |
|  Block version | 726D25222-2 | 728D25222-1 | 727D25222-2 | 729D25222-1 | 190 | 728Z25SP0-1 | 728Z25AD0-1 | - | 220203-M |
| | 726D32322-2 | 728D32272-1 | 727D32322-2 | 729D32272-1 | 340 | 728Z32SP0-1 | 728Z32AD0-1 | - | 220203-M |
| | 726D40342-2 | 728D40302-1 | 727D40342 | 729D40302-1 | 500 | 728Z40SP0-1 | 728Z40AD0-1 | - | 220203-M |

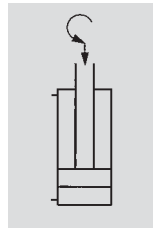
Screw-in version



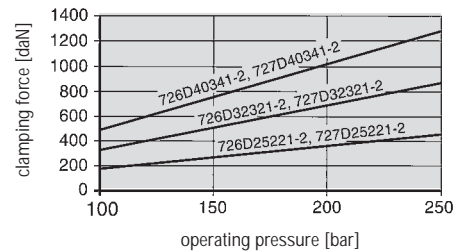
S = complete stroke
 S1 = swivel stroke
 S2 = clamping stroke



Symbol



clamping force characteristics

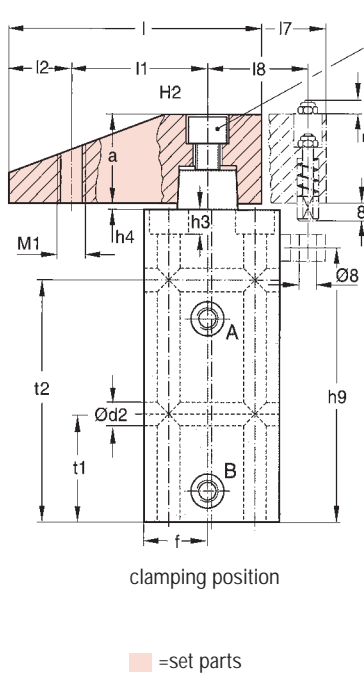


| Model no. | | Clamping force at 100 bar [daN] | Complete stroke S [mm] | Swivel stroke S1 [mm] | Clamping stroke S2 [mm] | Operating pressure | | Oil consumption forward stroke [cm³] | Oil consumption back-stroke [cm³] | Piston Ø [mm] | Piston rod Ød1 [mm] | Con-nection G 4x | a | b | c | d2 | e |
|--------------|-------------|---------------------------------|------------------------|-----------------------|-------------------------|--------------------|------------|--------------------------------------|-----------------------------------|---------------|---------------------|------------------|----|----|----|----|----|
| Swivel right | Swivel left | | | | | min. [bar] | max. [bar] | | | | | | | | | | |
| 726D25221-2 | 727D25221-2 | 190 | 27 | 17 | 10 | 100 | 250 | 6,4 | 13,3 | 25 | 18 | 1/8 | 25 | 25 | 65 | 9 | 50 |
| 726D32321-2 | 727D32321-2 | 340 | 31 | 20 | 11 | 100 | 250 | 13,2 | 24,9 | 32 | 22 | 1/8 | 30 | 30 | 70 | 9 | 56 |
| 726D40341-2 | 727D40341-2 | 500 | 34 | 22 | 12 | 100 | 250 | 21,8 | 42,7 | 40 | 28 | 1/8 | 40 | 40 | 85 | 11 | 65 |

| Model no. | | f | H | H1 | h | h1 | h2 | h3 | h4 | h6 | h7 | l | l1 | l2 | M | M1 | R | t | Max. torque [Nm] | Weight [kg] |
|--------------|-------------|----|-----|------|----|-----|----|----|----|------|------|-----|----|------|--------|-----|----|----|------------------|-------------|
| Swivel right | Swivel left | | | | | | | | | | | | | | | | | | | |
| 726D25221-2 | 727D25221-2 | 23 | 173 | 53 | 55 | 118 | 61 | 57 | 3 | 35,5 | 44,5 | 88 | 51 | 19,5 | 48x1,5 | M12 | 29 | 12 | 30 | 1,85 |
| 726D32321-2 | 727D32321-2 | 27 | 199 | 61,5 | 64 | 135 | 70 | 65 | 3 | 46 | 57 | 97 | 57 | 19,5 | 52x1,5 | M12 | 34 | 15 | 45 | 2,6 |
| 726D40341-2 | 727D40341-2 | 31 | 222 | 68 | 77 | 145 | 76 | 69 | 3 | 44 | 57 | 117 | 63 | 29 | 62x1,5 | M12 | 44 | 18 | 80 | 3,5 |

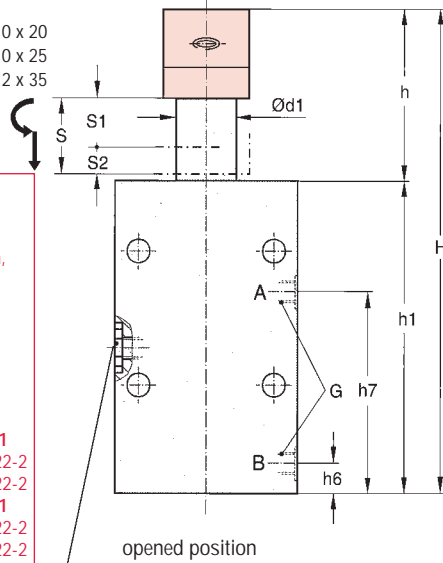
Hydraulic swivel clamps, double action

Block version



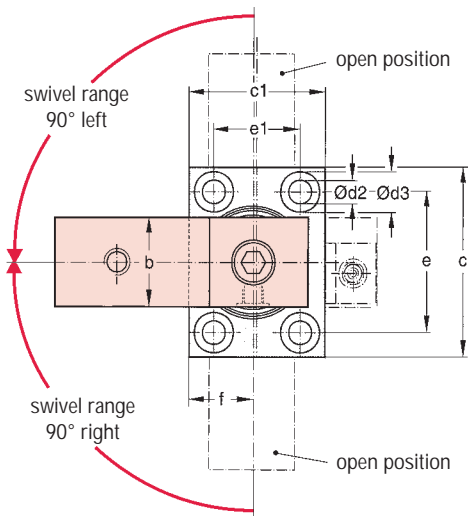
serial clamping arm screw fit to following models:
 726D25../727D25.. M10 x 20
 726D32../727D32.. M10 x 25
 726D40../727D40.. M12 x 35

Position control set
 (separate order)
 consisting of:
 1 special clamping arm, longer with spring-loaded thrust pad
 1 bracket for proximity switch (proximity switch not included in delivery)
 order no. 793S01AS2-1 for model no. 726D25222-2, 727D25222-2
 order no. 793S02AS2-1 for model no. 726D32322-2, 727D32322-2
 order no. 793S03AS2-1 for model no. 726D40342-2, 727D40342-2



S = complete stroke
 S1 = swivel stroke
 S2 = clamping stroke

■ = set parts



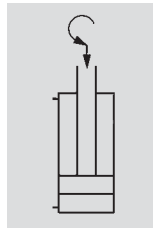
Change of swivel direction

The swivel clamp can be adjusted as follows:
 - Swivel stroke left
 - Swivel stroke right
 - Linear stroke

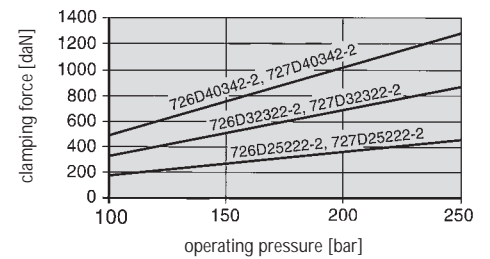
Notes on assembling the clamping arm

When loosening and tightening the clamping arm screw the clamping arm must be fixed to prevent damage to the piston guide. See table for max. torque for arm screw.

Symbol



Clamping force characteristics



| Model no. | | Clamping force at 100 bar [daN] | Complete stroke S [mm] | Swivel stroke S1 [mm] | Clamping stroke S2 [mm] | Operating pressure | | Oil consumption forward stroke [cm³] | Oil consumption back-stroke [cm³] | Piston Ø [mm] | Piston rod Ød1 [mm] | Con-nection G 2x | a | b | c | c1 | d2 Ø | d3 Ø | e |
|--------------|-------------|---------------------------------|------------------------|-----------------------|-------------------------|--------------------|------------|--------------------------------------|-----------------------------------|---------------|---------------------|------------------|----|----|----|----|------|------|----|
| Swivel right | Swivel left | | | | | min. [bar] | max. [bar] | | | | | | | | | | | | |
| 726D25222-2 | 727D25222-2 | 190 | 27 | 17 | 10 | 100 | 250 | 6,4 | 13,3 | 25 | 18 | 1/8 | 25 | 25 | 65 | 45 | 8,5 | 13,5 | 50 |
| 726D32322-2 | 727D32322-2 | 340 | 31 | 20 | 11 | 100 | 250 | 13,2 | 24,9 | 32 | 22 | 1/8 | 30 | 30 | 75 | 55 | 10,5 | 18 | 55 |
| 726D40342-2 | 727D40342-2 | 500 | 34 | 22 | 12 | 100 | 250 | 21,8 | 42,7 | 40 | 28 | 1/8 | 40 | 40 | 85 | 63 | 10,5 | 18 | 63 |

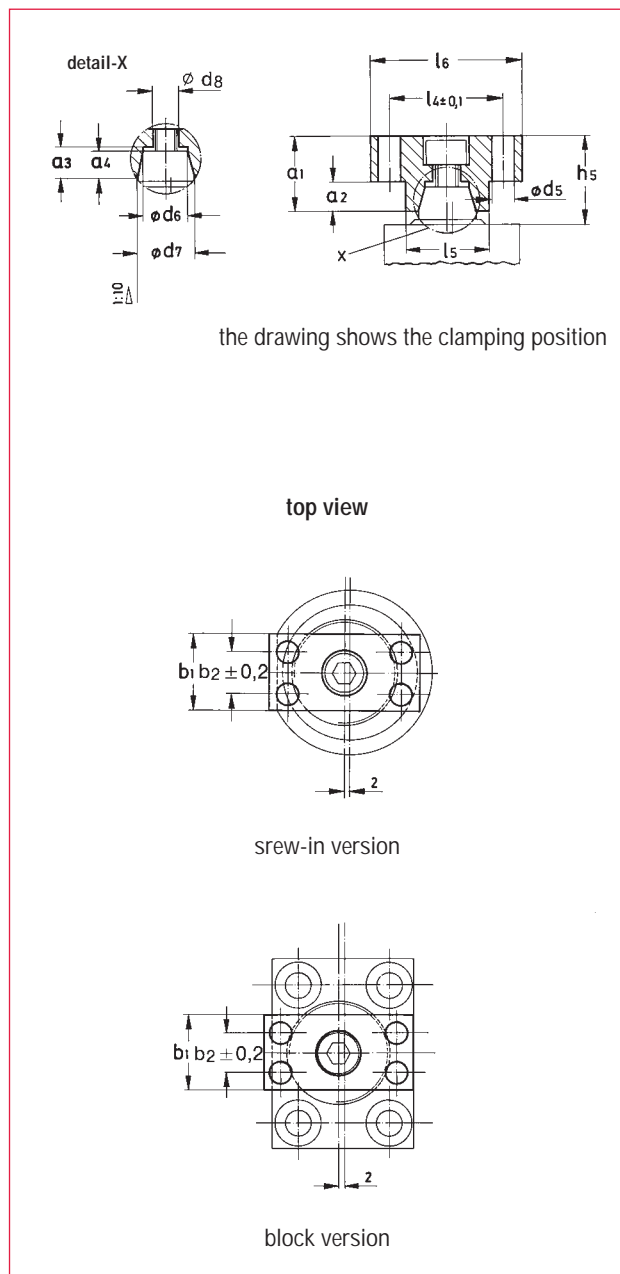
| Model no. | | e1 | f | H | h | h1 | h3 | h4 | h6 | h7 | h9 | l | l1 | l2 | l7 | l8 | M1 | t1 | t2 | Max. torque [Nm] | Weight [kg] |
|--------------|-------------|----|------|-----|----|-----|----|----|------|------|-----|-----|----|------|------|------|-----|------|-------|------------------|-------------|
| Swivel right | Swivel left | | | | | | | | | | | | | | | | | | | | |
| 726D25222-2 | 727D25222-2 | 30 | 20,5 | 165 | 55 | 110 | 9 | 3 | 10 | 70,5 | 93 | 88 | 51 | 19,5 | 28,5 | 37,5 | M12 | 35 | 85 | 30 | 2,2 |
| 726D32322-2 | 727D32322-2 | 35 | 25,5 | 194 | 64 | 130 | 11 | 3 | 12,5 | 79 | 113 | 97 | 57 | 19,5 | 30,5 | 42,5 | M12 | 45,5 | 100,5 | 45 | 3,5 |
| 726D40342-2 | 727D40342-2 | 40 | 29,5 | 217 | 77 | 140 | 11 | 3 | 14 | 91 | 123 | 117 | 63 | 29 | 30 | 46,5 | M12 | 48,5 | 108,5 | 80 | 4,9 |

Safe connection

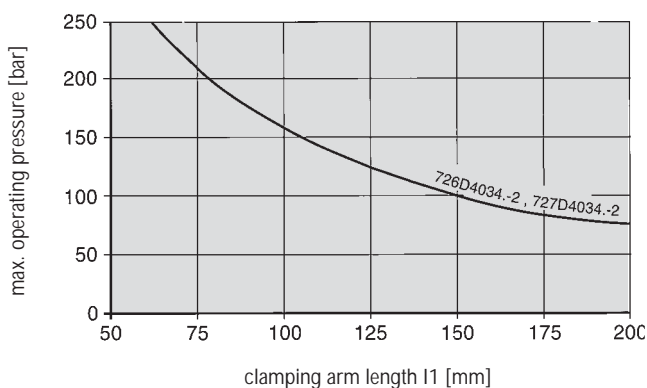
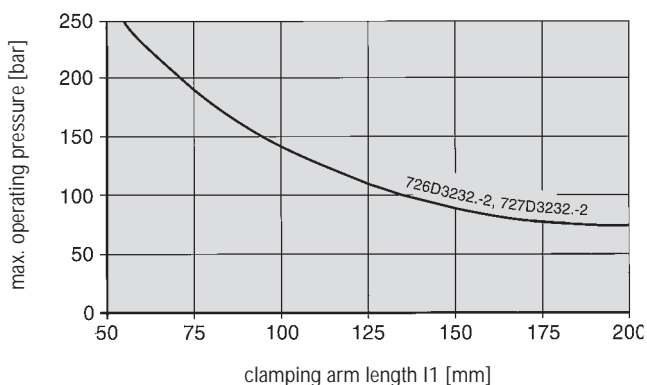
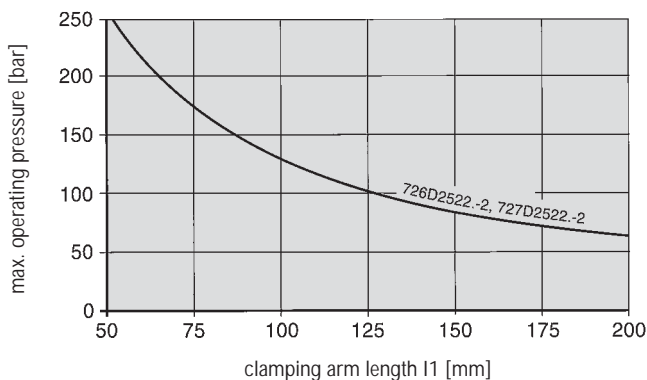
The adaptors were developed to ensure a safe connection between your own manufactured clamping arms and the piston rods of the swivel clamping cylinder.

Important note

Please ensure that the distance of the clamping point of your own manufactured clamping arm is identical with the dimension I1 in the tables on the pages 24.2 and 24.3. If dimension I1 is increased, the operating pressure must be reduced in accordance with the diagrams shown below.



Clamping arm length-pressure diagram



| order no. | a1 | a2 | a3 | a4 | b1 | b2 | Ød5 | Ød6 | Ød7 | Ød8 | h5 | l4 | l5 | l6 | permitted max. clamping arm weight [kg] |
|-------------|----|----|------|----|----|----|-----|------|-----|-----|----|----|----|----|---|
| 728Z25ADO-1 | 25 | 12 | 11,5 | 10 | 25 | 14 | 5,5 | 17 | 18 | 11 | 28 | 45 | 30 | 60 | 0,3 |
| 728Z32ADO-1 | 30 | 15 | 12 | 10 | 30 | 16 | 9 | 21 | 22 | 11 | 33 | 46 | 30 | 60 | 0,5 |
| 728Z40ADO-1 | 40 | 20 | 17 | 15 | 40 | 20 | 9 | 26,5 | 28 | 13 | 43 | 60 | 40 | 80 | 1,1 |

Hydraulic retracting clamp, double action

Max. operating pressure 250 bar

Hydraulic retracting clamps are designed for clamping on machines and fixtures, for holding-down plates or to work as latch clamps as for example on foam ejection moulds.

In order to clamp, the clamping claw moves out of the clamp's body (23,5 mm), presses onto the workpiece while moving downwards (max. 9 mm). In the released position, the clamping claw is completely retracted.

Technical characteristics

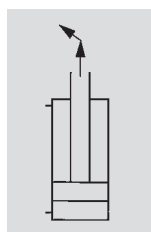
- Precise guidance of the piston and the piston rod
- Hardened clamping surface of the clamping claw
- Dirt wipe-off stripper on the upper and lower side of the clamping claw
- Slim design
- High clamping force
- Workpiece tolerances are automatically compensated during the vertical clamping stroke
- end position control (standart equipment for 70622-DA)

Recommended accessories (separate order)

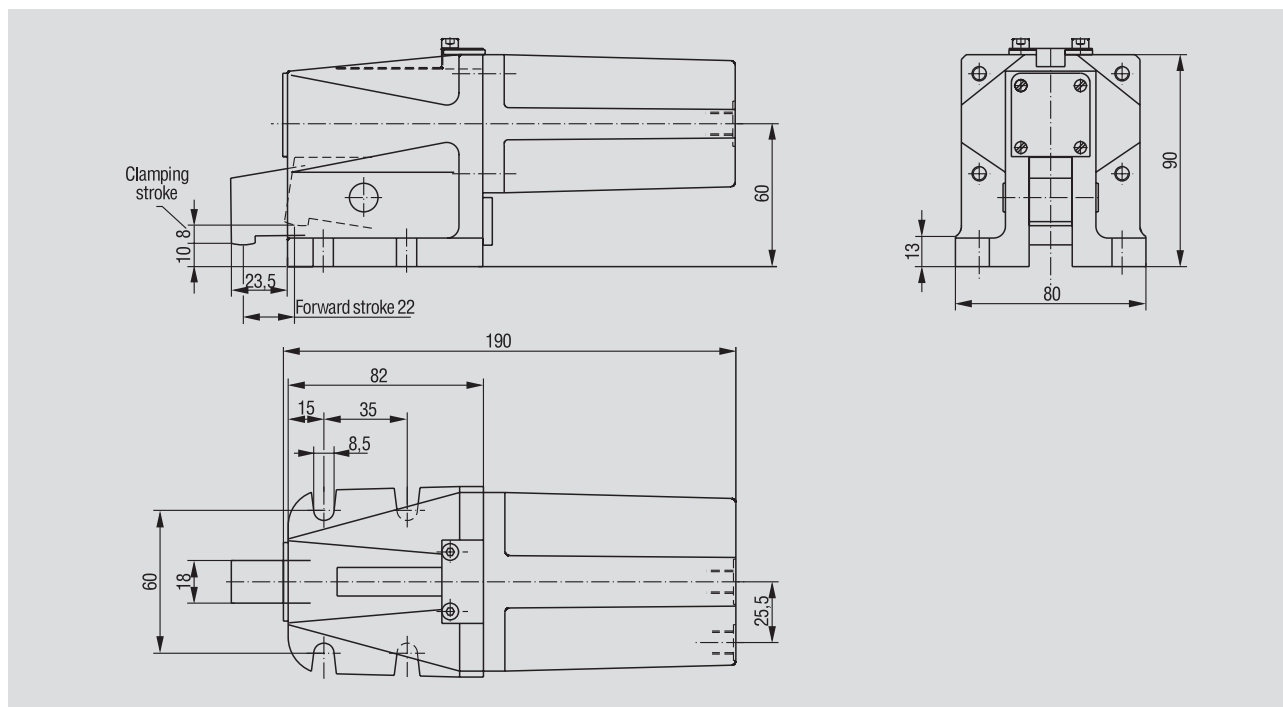
- 2 straight srew connections order no. D8S-R1/4
- connector order no. 8EL-002-1 (for 70622-DA)
- Sensing kit order no. 70622-DE (for 70622-D1)



Symbol



double action



| Model no. | Clamping force at 100 bar [daN] | Forward stroke [mm] | Clamping stroke max. [mm] | Operating pressure max. [bar] | Oil consumption/stroke forward stroke [cm ³] | Oil consumption/stroke backstroke [cm ³] | Connection G | Weight ~ [kg] |
|----------------------|---------------------------------|---------------------|---------------------------|-------------------------------|--|--|--------------|---------------|
| 70622-D1 70622-DA | 650 | 22 | 9 | 250 | 38 | 23 | 2xG1/8 | 4,1 |

Max. operating pressure 250 bar

These power clamps are used where a high clamping force is needed combined with small clamp dimensions. The clamps are equipped with double oil connections for the clamping and opening procedures. This makes it easy to connect pipes when the clamps are arranged close together

If necessary, the cylinder body (after removal of the fastening screws) can be turned 90° in relation to the clamp. The stated clamping force of 500 daN at 100 bar oil pressure is achieved only within the last 4 mm of clamping arm movement.

Technical characteristics

- Short clamping cycles with the double action version
- High clamping force with small dimensions
- Tolerance compensation of up to 4 mm

Recommended accessories (separate order)

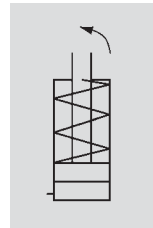
The following screw connections are necessary to connect the clamp to hydraulic tubes and pipes:

1 or 2 straight screw connections, order no. **D8S-R1/8**

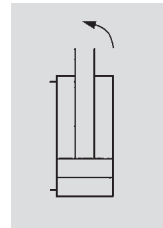
See pages 25.7 to 25.10 for all screw connections.



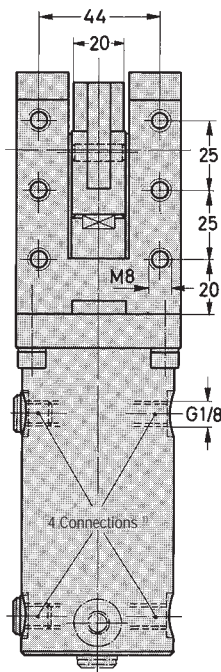
Symbol



single action

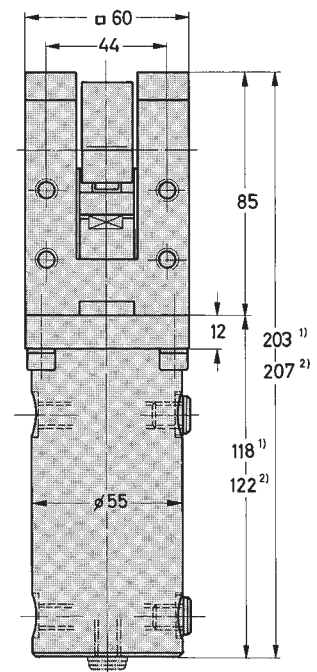
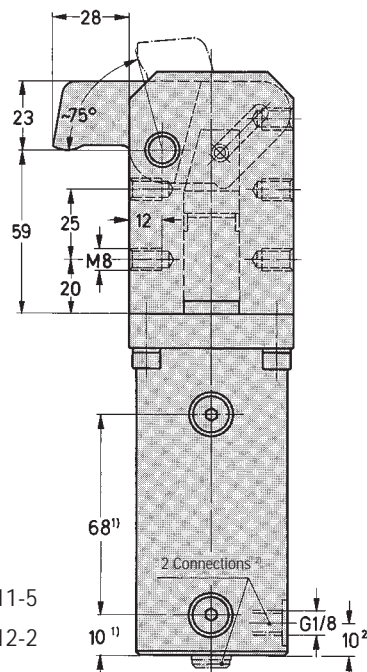


double action



1) concerns model 7011-5

2) concerns model 7012-2



| Model no. | | Clamping force at 100 bar [daN] | Operating pressure max. [bar] | Oil consumption | | Connection G | Weight ~ [kg] |
|---------------|---------------|---------------------------------------|-------------------------------------|--------------------------------------|----------------------------------|-----------------|---------------------|
| single action | double action | | | forward stroke [cm ³] | backstroke [cm ³] | | |
| - | 7011-5 | 500 | 250 | 25,7 | 15,5 | 4xG1/8 | 3,8 |
| 7012-2 | - | 500 | 250 | 25,7 | - | 2xG1/8 | 3,9 |

Hydraulic edge clamp, single action

Max. operating pressure 500 bar

Edge clamps are mainly used where workpiece clamping "from the top" is difficult or impossible.

Its small design is an advantage where space is limited. The clamp is equipped with 2 hydraulic connections. Both connections are linked via a transverse hole. This allows the possibility to link the edge clamps directly if several clamps are to be operated simultaneously.

Technical characteristics:

- Spring retraction
- Clamping lever with or without ball element
- The hold down force is the vertically (downward) acting component of the clamping force

Recommended accessories (separate order)

The following screw connections are necessary to connect the clamp to hydraulic tubes and pipes:

1 straight screw connection, order no. **D8S-R1/4**

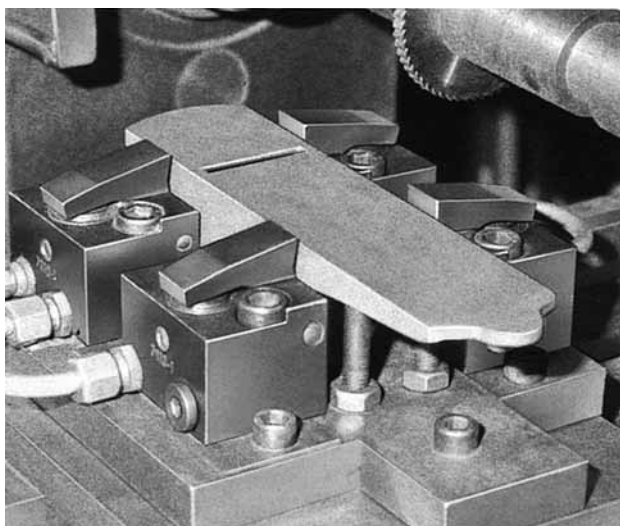
See pages 25.7 to 25.10 for all screw connections.



**without ball element,
model no. 733E03701-1**

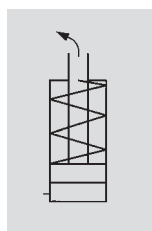


**with a corrugated ball element,
model no. 733E03702-1**



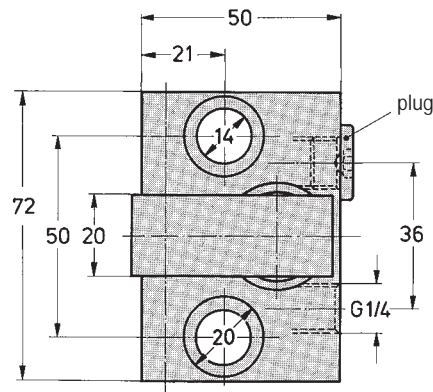
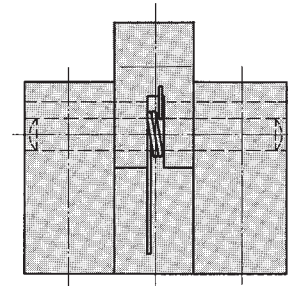
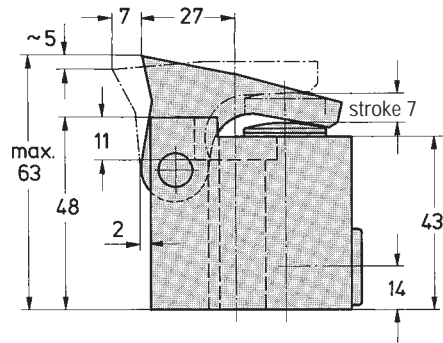
hydraulic edge clamp, single action, to clamp the bottom of planes in a milling jig

Symbol



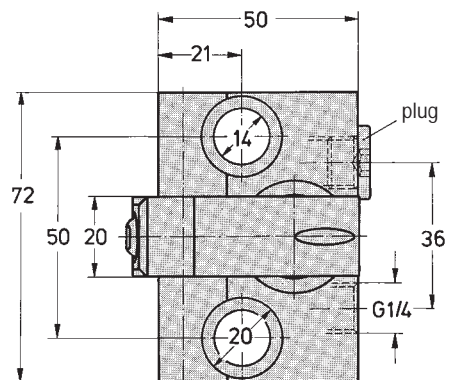
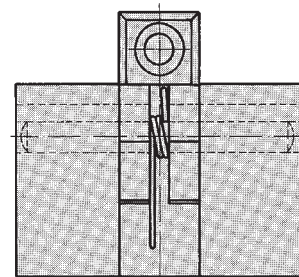
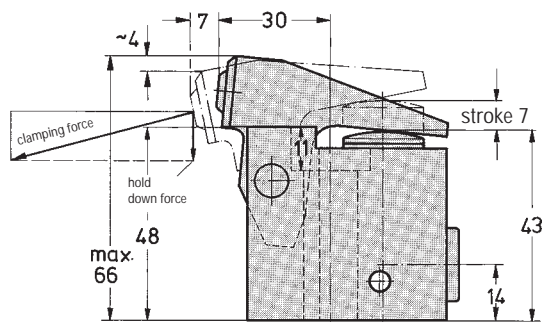
| Model no. | Clamping force | | Piston Ø [mm] | Max. clamping range | | Max. operating pressure [bar] | Oil consumption stroke [cm³] | Weight ~ [kg] |
|-------------|---------------------|---------------------|------------------|---------------------|------------------|-------------------------------------|------------------------------------|---------------------|
| | at 100 bar [daN] | at 500 bar [daN] | | horizontal [mm] | vertical [mm] | | | |
| 733E03701-1 | 370 | 1850 | 20 | 7 | 5 | 500 | 2,2 | 1 |
| 733E03702-1 | 370 | 1850 | 20 | 7 | 5 | 500 | 2,2 | 1 |

model no. 733E03701-1



Note:
the distance between the mounting holes is 50 mm

model no. 733E03702-1



Note:
the distance between the mounting holes is 50 mm