

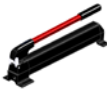
## Product Catalog


### Hydraulic Clamping Technology Power Sources | Cylinders | Swing Clamps





# HYDRAULIC CLAMPING TECHNOLOGY


## Product Overview


Hydraulic power sources manual systems		Pressure range [bar]	Page
	711E35004-1	350	6
	711E35012-1	350	6

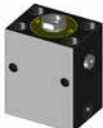
Air-hydraulic systems		Pressure range [bar]	Page
	70101-1	230	7
	70104-1	225	7
	70104-2	210	8

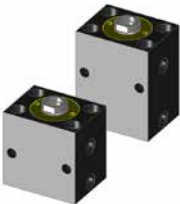
	70130	210	9
	70130-Y12	350	9
	70130-Y12-F	350	10
	70130-Y12-H	350	11
	713D...	150-600	13


Electro-hydraulic systems		Pressure range [bar]	Page
	718D3500201	350	14
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Hydraulic screw-in cylinder single acting	Clamping force at 100 bar [kN]	Page	
	721E08101-1	0,4	16
	721E12101-1	1,1	16
	721E16121-1	1,9	16
	721E20161-1	2,8	16
	721E20401-1	2,7	16
	721E25155-1	4,7	18
	721E25161-1	4,7	16
	721E25255-1	4,6	18
	721E25401-1	4,6	16
	721E25405-1	4,6	18
	721E32161-1	7,8	16
	721E38125-1	10,9	18
	721E38255-1	10,9	18
	721E38505-1	10,8	18
	721E40161-1	12,2	16
	721E40401-1	12,0	16
	721E50251-1	19,1	16
	721E50255-1	19,1	18

Hydraulic screw-in cylinder double acting	Clamping force at 100 bar [kN]	Page	
	721D25501-1	4,8	20
	721D32501-1	7,9	20
	721D40501-1	12,3	20
	721D50501-1	19,3	20
	725D35151-2	9,6	22
	725D50151-2	19,6	22
	725D63171-1	31,2	22
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Hydraulic block cylinder single acting	Clamping force at 100 bar [kN]	Page	
	722E16202-1	1,9	24
	722E25202-1	4,6	24
	722E32202-1	7,7	24
	722E40202-1	12,0	24
	722E50202-1	18,9	24


Hydraulic block cylinder double acting	Clamping force at 100 bar [kN]	Page	
	722D16162-1	2,0	26
	722D16502-1	2,0	26
	722D25202-1	4,8	26
	722D32252-1	7,9	26
	722D32502-1	7,9	26
	722D40252-1	12,3	26
	722D40992-1	12,3	26
	722D50252-1	19,3	26
	722D50502-1	19,3	26
	722D50992-1	19,3	26
	722D63252-1	30,0	26
	722D63502-1	30,0	26
	722D63802-1	30,0	26

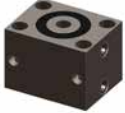
Hydraulic hollow piston cylinder single acting	Clamping force at 100 bar [kN]	Page	
	70537-DX11	8,0	28
	70537-D1	8,4	28
	70537-DG	8,4	28
	70550-D2	15,7	28
	70550-DG	15,7	28
	70562-D2	23,9	28
	70562-DG	23,9	28

	723E38092-1	8,0	28
	723E51122-1	15,7	28
	723E63152-1	23,9	28


# HYDRAULIC CLAMPING TECHNOLOGY


## Product Overview


Hydraulic hollow piston cylinder double acting		Clamping force at 100 bar [kN]	Page
	7411-2	8,6	30
	7412-2	12,9	30
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	7414-2	26,2	30


	723D38102-2	8,6	30
	723D48152-2	12,9	30
	723D57242-2	18,1	30
	723D68242-2	26,2	30


Hydraulic swing clamps double acting		Clamping force at 100 bar [kN]	Page
	726D25221-2	1,9	33
	726D32321-2	3,4	33
	726D40341-2	5	33


	726D25222-2	1,9	34
	726D32322-2	3,4	34
	726D40342-2	5	34


	726D32243-2	1	35
	726D32373-2	1	35
	726D50293-2	1,9	35
	726D50393-2	1,9	35

	726D32244-2	1	36
	726D32374-2	1	36
	726D50294-2	1,9	36
	726D50394-2	1,9	36


	726D25082-5	0,5	37
	726D32122-5	1,0	37
	726D50122-5	1,9	37
	726D63122-5	2,9	37


	726D25083-5	0,5	38
	726D32123-5	1,0	38
	726D50123-5	1,9	38
	726D63123-5	2,9	38

	726D25084-5	0,5	39
	726D32124-5	1,0	39
	726D50124-5	1,9	39
	726D63124-5	2,9	39



Hydraulic lever clamp double acting		Clamping force at 100 bar [kN]	Page
	732D16HSZY-01	1,5	44
	732D25HSZY-01	3,9	44
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Hydraulic edge clamp single acting		Clamping force at 100 bar [kN]	Page
	733E03701-1	3,7	46
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# HYDRAULIC CLAMPING TECHNOLOGY

## General information

### General information

Clamping of workpieces for machining purposes has a major effect on the product quality, the manufacturing times, the degree of machine utilisation, the operator's safety and on the production plant. The emphasis is on secure clamping and rapid changing of the workpieces.

The clamping forces must be high enough to clamp the workpieces safely even when being exposed to varying loads.

#### Requirements of modern clamping equipment:

- Simple, rapid and safe handling
- Wide variety of applications, re-usable
- Easily exchangeable
- Low costs per clamping point
- High output per time unit
- High quality of the machined workpieces

The profitability and rationalisation effect essentially depend on the choice of the correct clamping equipment. The electrical and air hydraulic power clamping system of DE-STA-CO meets these requirements and helps to solve the various problems of clamping.

### The system

The power sources, clamping elements and accessories shown in this catalogue are products which meet all the demands of modern clamping systems. The clamping system can be connected to any pneumatic, hydraulic and electrical network. If none of the energy sources is available, the required clamping pressure can be produced by a hydraulic hand pump (e.g. in smaller workshops and building sites). The benefits and effects of the system remain the same, regardless of the choice of the energy source. The clamping system operates with high pressure hydraulics; it allows to transfer high clamping forces by the use of relatively small clamping elements. This offers the advantage to use small, mobile devices. A particular advantage of this electrical and air hydraulic power clamping system is its application both in large high capacity production plants and small series production. Furthermore, it is used in fixed cycle operation on machine tools.

The clamping elements simultaneously clamp on various and remote clamping points with only one control valve. The clamping system's flexibility and its wide range of accessories allow to clamp even complex and irregularly shaped parts. The clamping pressures can be repeated as often as necessary. All system elements are supplied ex works along with international standard pipe thread connectors or NPT-thread connectors. Adaptors (supplied free of charge along with the unit) allow to connect the NPT-threads to different types of threads or screw connections.

### Assembly and Connection

Alignment, assembly and connection can be carried out easily and quickly without special tools. The power sources, such as pressure convertors, air hydraulic pumps or electrical hydraulic pumps, are first connected to the pneumatic or electrical networks. Thereafter, they are connected to the clamping units. It is also possible to directly connect the clamping units to an already existing hydraulic network. However, the pressure produced by the hydraulic network must never exceed the maximum operating pressure of the clamping units. Before actuating the clamping system, it must be ventilated at its highest point.

This procedure is explained in detail in the assembly instructions delivered along with the power sources.

### Information on seals

All seals are made of BUNA N. This material is suitable for gas, air, hydraulic oil and mineral oil based liquids (water-glycol- mixtures). The material BUNA N is not suitable for hardly combustible hydraulic liquids, brake fluids, cetones and acids. Also cooling fluids are not always compatible with standard seals and may affect compatibility characteristics of sealing material.

BUNA N seals are designed for maximum operating temperatures of 110 °C. For operating temperatures exceeding 110 °C, VITON seals having a maximum operating temperature of 210 °C must be used.

The seals are designed for a maximum stroke speed of  $V_{max} = 0,5 \text{ m/sec}$ .

### Approved oil

Hydraulic oil: HLP according to the DIN 51524 Part 2

### Viscosity range:

min. 22 mm<sup>2</sup>/s, max. 68 mm<sup>2</sup>/s

### Recommended viscosity grade:

ISO VG 32 or VG 46 DIN 51519

### Filtering:

use only filtered hydraulic oil of 25 µm absolute.

# HYDRAULIC CLAMPING TECHNOLOGY

## General information

### Information concerning technical units (SI units)

#### Force

NI accordance with the international unit system, force is denoted in Newtons (N).

One Newton is the force which accelerates a mass of 1 kg by 1 m/s<sup>2</sup>.

$$1 \text{ N} = 1 \text{ kg m/s}^2$$

In this catalogue, force is expressed in kN

$$1 \text{ kN} = 1000 \text{ N}$$

#### Pressure

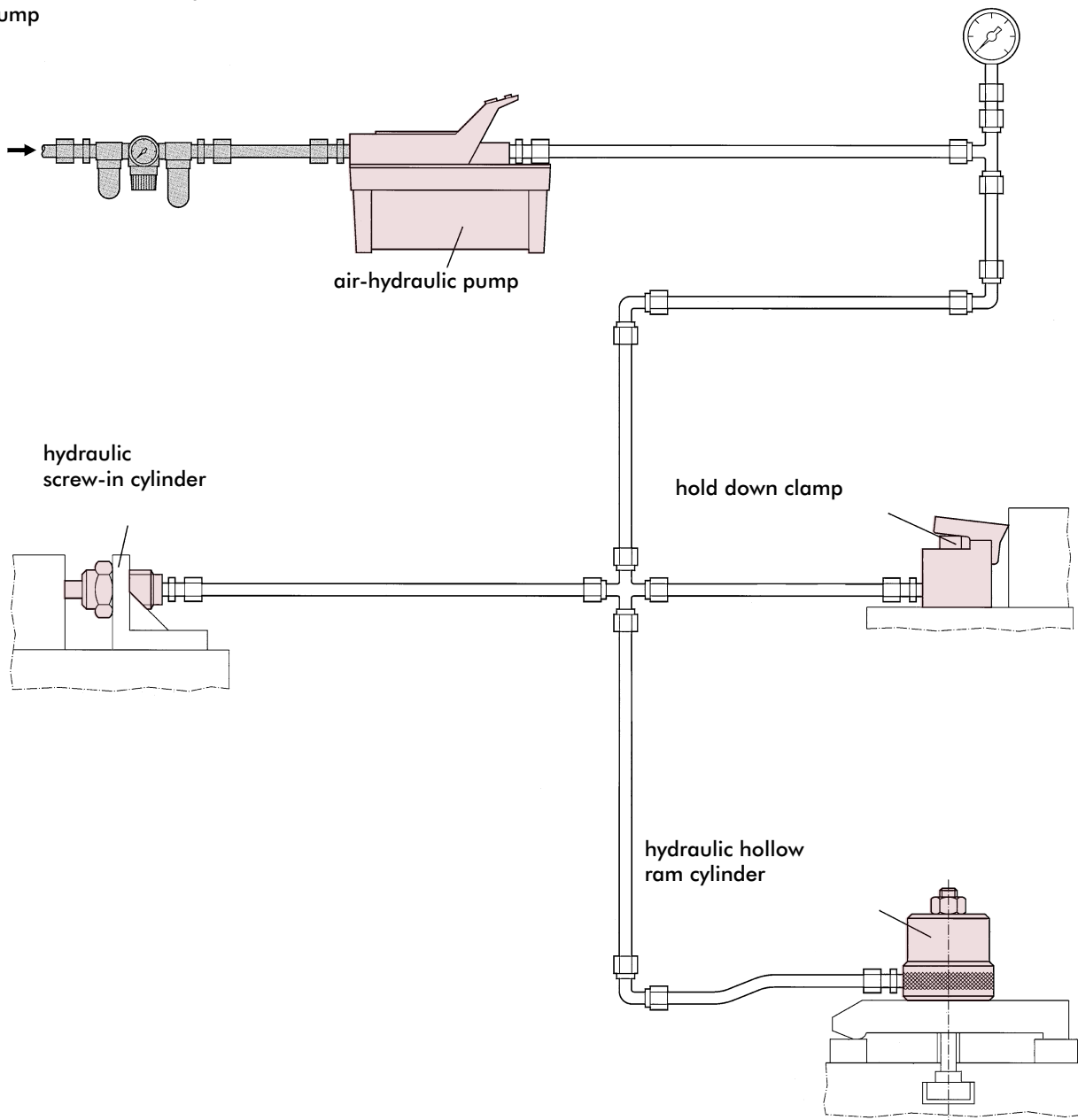
The unit of pressure in the SI system is the Pascal (Pa). Pressure is still stated in this catalogue in bar.

$$1 \text{ bar} = 10^5 \text{ Pa}$$

$$1 \text{ bar} = 10 \text{ N/cm}^2 (= 1,02 \text{ kp/cm}^2)$$

### Connection example

Single action hydraulic clamp connected to an air-hydraulic pump



# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic hand pump | single acting

### Operating pressure max. 350 bar

Workpieces can be efficiently clamped using this two-speed hydraulic pump with our single acting hydraulic clamping cylinders. If compressed air or hydraulic mains supply are not available (e. g. out-doors assembly work, energy failure etc.), the clamping units can be supplied with high pressure by means of this hand pump. Furthermore, this pump can be used to raise loads, to align or dismantle components, for carrying out adjustments and clamping procedures, and for a wide variety of other applications.

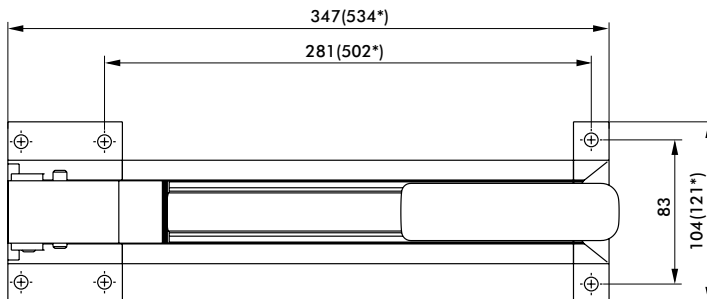
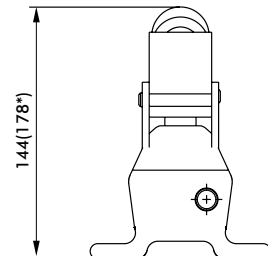
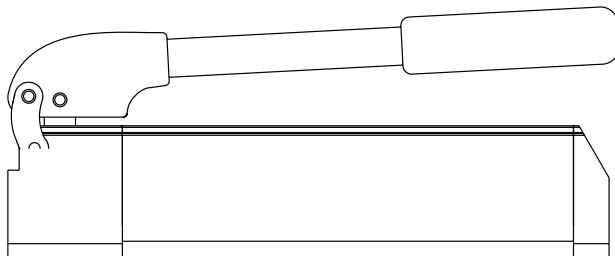
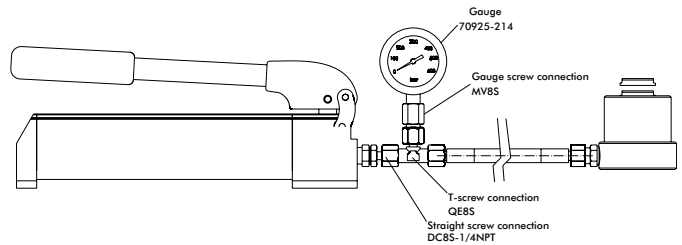
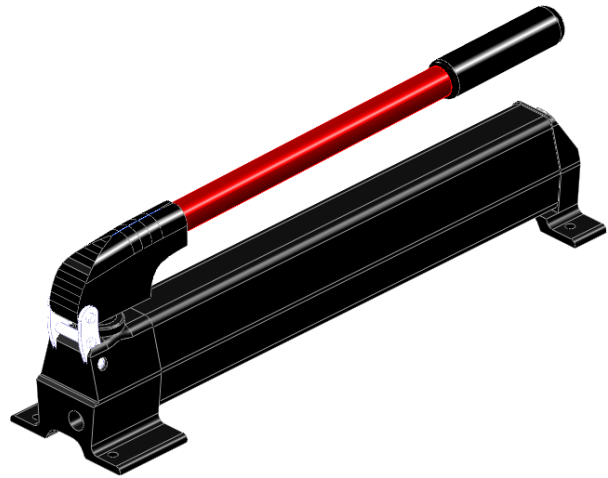
### Features

- All metal constructions, won't burn through in welding environments
- Two-speed reduces handle strokes so you work faster and easier
- Formed metal handle provides less flex, and reduces operator fatigue
- Relief valve inboard of check valve prevents loads from drifting down
- Large valve knob gives added control for slowly metering loads down

### Included Accessories

1 Reducing nipple, Model no. **PTRS-1/4 NPT**

1 Straight screw connection, Model no. **D8S-1/4 NPT**



\*Dimension for 711E35012-1

Model no.	Oil output/ stroke		max. pressure		Handle effort [N]	Reservoir		Weight [kg]
	LP [cm <sup>3</sup> ]	HP [cm <sup>3</sup> ]	LP [bar]	HP [bar]		oilcapacity [cm <sup>3</sup> ]	usable oilcapacity [cm <sup>3</sup> ]	
711E35004-1	4,1	0,9	59	350	370	475	443	2,3
711E35012-1	12	2,6	59	350	440	1131	1082	4,1

# HYDRAULIC CLAMPING TECHNOLOGY

Pressure converter | pneumatic-hydraulic | single acting

**Operating pressure max. 225 bar, 230 bar**  
**Ratio 1:32, 1:33**

Compressed air from the mains is converted into hydraulic high pressure by these pressure converters. Without this converting facilities, many clamping problems cannot be solved at all or only at high costs.

## Technical characteristics

- The large oil tank automatically supplies the system with fresh oil according to the needs.
- Hydraulic piston with guide rings.
- The backstroke is produced by spring retraction. This offers the advantage of low air consumption and a single valve system.
- The moving parts are made of corrosion protected materials.

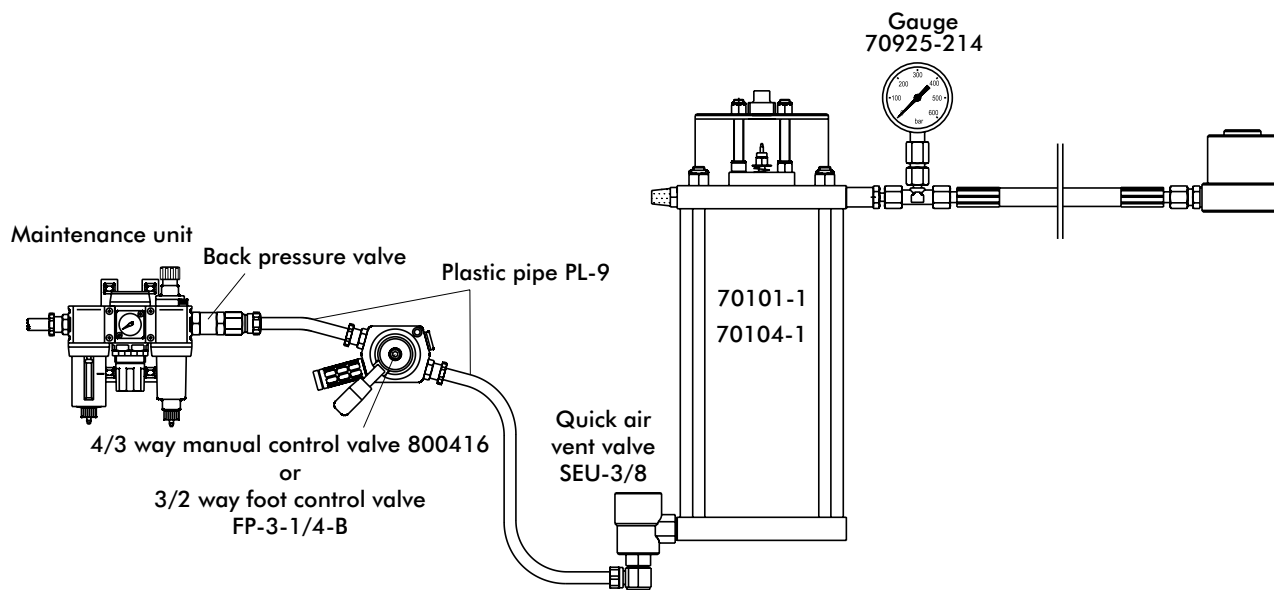
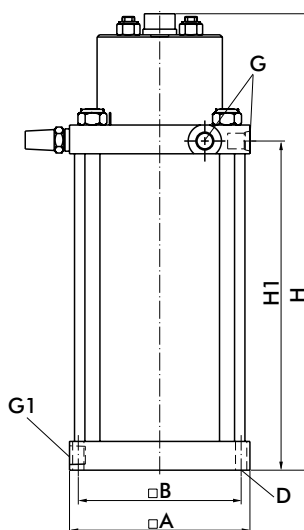
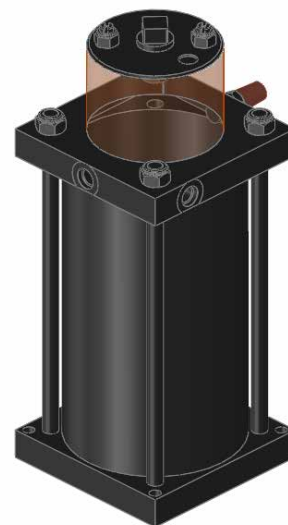
Contrary to hydraulic pumps, the maximum output of the pressure converter is restricted to one stroke. The amount of oil required per stroke is calculated as follows:

$$\text{Cylinder number} \times \text{piston surface} \times \text{stroke}$$

**ATTENTION: A reserve of 20% should be taken into account!**

## Included accessories

- Connecting nipple R-1/4-1/4NPT (Air side)
- Adapter SAE4-1/4NPT (Oil side)
- Straight screw connection D8L-1/4NPT (Oil side)



Model no.	Ratio	Air pressure		Air consumption	max. operating	Oil quantity/	oil volume	A	B	D	H	H1	Connection		Weight
		min	max.	at 6 bar	max.	stroke	(Reservoir)						Oil side	Air side	
		[bar]	[bar]	[l/hub]	[bar]	[cm³]	[cm³]	[mm]	[mm]	[mm]	[mm]	[mm]	G	G1	[kg]
70101-1	1:33	3	7	5	230	16	170	115	103,2	7,2	295	210	SAE 4	1/4NPT	4.5
70104-1	1:32	3	7	16	225	64	690	165	146	8,6	435	335	SAE 4	1/4NPT	11

# HYDRAULIC CLAMPING TECHNOLOGY

Pressure converter | pneumatic-hydraulic | single acting

**Operating pressure max. 210 bar**

**Ratio 1:32**

Compressed air from the mains is converted into hydraulic high pressure by these pressure converters. Without this converting facilities, many clamping problems cannot be solved at all or only at high costs.

## Technical characteristics

- Metal oil tank with oil level indicator
- Fast backstroke by the 2.air line
- Works in vertical and horizontal position

**CUSTOMER BUILD VERSIONS (E. G. HIGHER PRESSURE, HIGHER OIL QUANTITY/STROKE) POSSIBLE.**

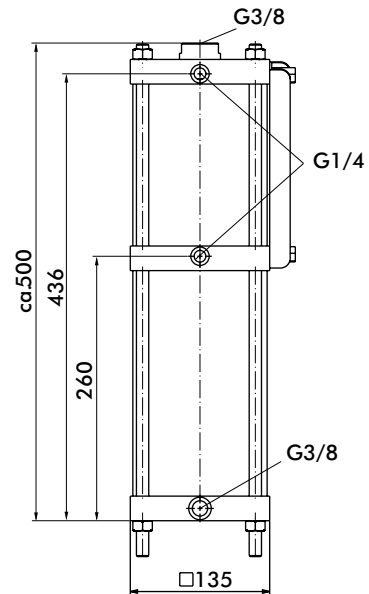
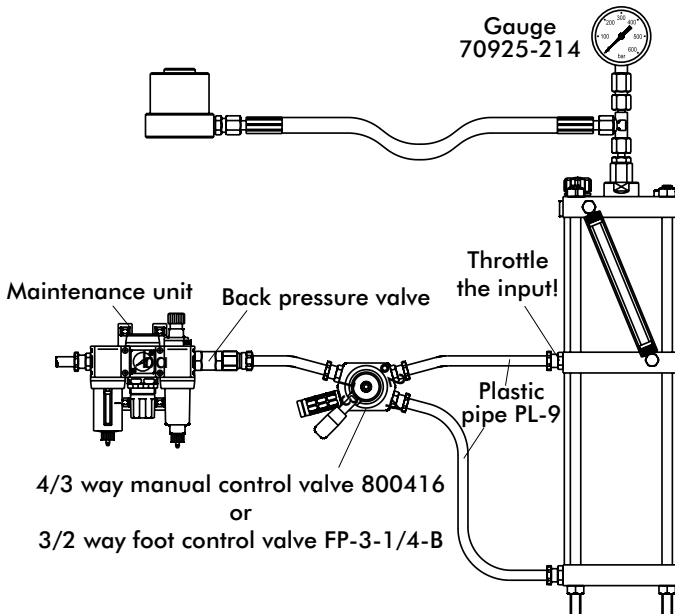
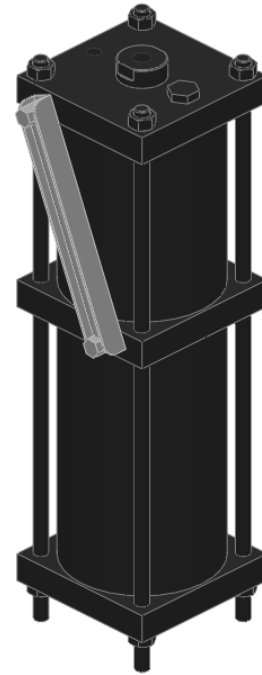
Contrary to hydraulic pumps, the maximum output of the pressure converter is restricted to one stroke. The amount of oil required per stroke is calculated as follows:

$$\text{Cylinders number} \times \text{piston surface} \times \text{stroke}$$

**ATTENTION: A reserve of 20% should be taken into account!**

Included accessories

- Screw connection CK-1/4-PK9 (Air side)
- Screw connection CK-3/8-PK9 (Air side)
- Adapter GWR-3/8-1/4 (Oil side)
- Screw connection D8L-1/4 (Oil side)



Model no.	Air pressure		Air consumption		Operating pressure max. [bar]	Oil quantity/ stroke [cm <sup>3</sup> ]	Oil volume (reservoir) [cm <sup>3</sup> ]	A [mm]	H [mm]	H1 [mm]	H2 [mm]	Connection				Weight [kg]
	Ratio	min. [bar]	max. [bar]	at 6 bar [l/stroke]								G	G1	G2	G3	
70104-2	1:30	3	7	16	210	64	690	135	ca. 500	260	436	G3/8	G1/4	G1/4	G3/8	11



# HYDRAULIC CLAMPING TECHNOLOGY

## Air hydraulic pump

**Operating pressure max. 210 bar/700 bar**

**Conversion ratio 1:30, 1:100**

Compact Air-hydraulic-pump for single acting hydraulic tools. This air hydraulic pump can activate a higher number of clamping cylinders simultaneously due to the tank volume of 1600 cm<sup>3</sup>. The compact lightweight design allows to set up the pumps wherever required. Actuating by foot control valve.

### Technical features

- Switching on the pump and releasing the hydraulic systems pressure is carried out by foot valve activation
- integrated back pressure valve prevents pressure loss in the clamping circuit
- In case of a pressure drop > 10 bar within the pressure circuit, the pump automatically restarts to pump oil in Order to restore the set pressure
- Reservoir made of aluminium

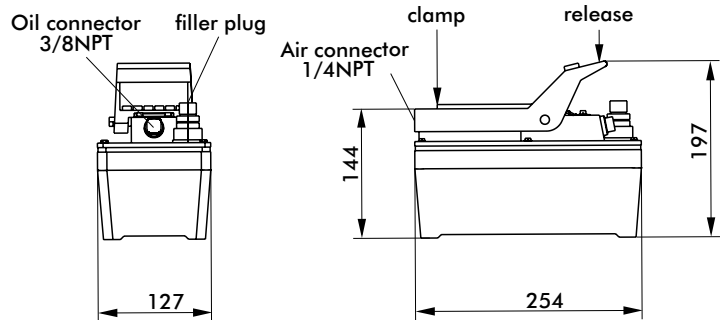
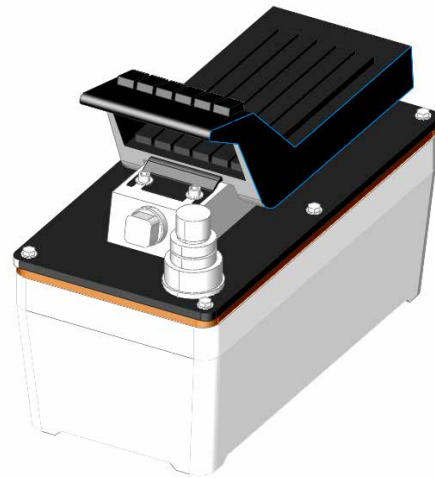
### Included accessories

1 Transition nipple **R1/4-1/4 NPT**

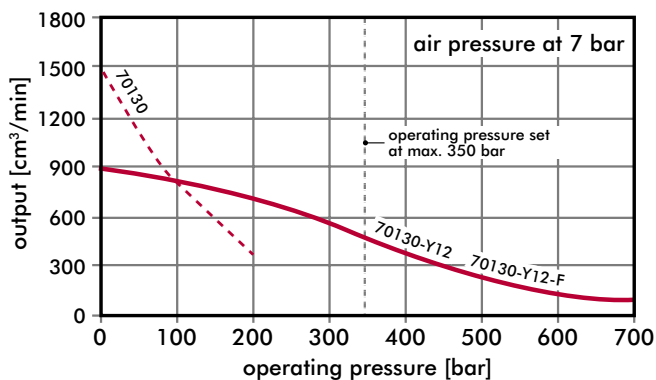
1 Reducing nipple **PTRS-1/4 NPT**

1 Straight screw connector

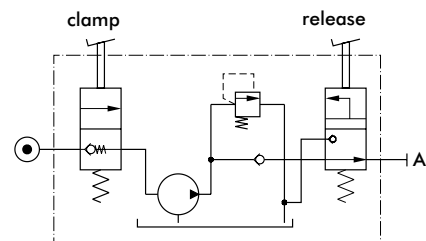
**D8S-1/4 NPT**



### Output characteristics



### Schematic diagram



Model no.	actuating by	Ratio	oil capacity [cm <sup>3</sup> ]	usable oil capacity [cm <sup>3</sup> ]	Air inlet pressure		max. operating pressure [bar]	Air consumption at 6 bar [m <sup>3</sup> /min]	Sound level [dB(A)]	Weight [kg]
					min. [bar]	max. [bar]				
<b>70130</b>	foot control	1:30	1720	1600	3	7	210	0,5	72	6,5
<b>70130-Y12</b>	foot control	1:100	1720	1600	3	7	700	0,5	72	6,5

# HYDRAULIC CLAMPING TECHNOLOGY

## Air hydraulic pump

**Operating pressure max. 700 bar**

**Conversion ratio 1:100**

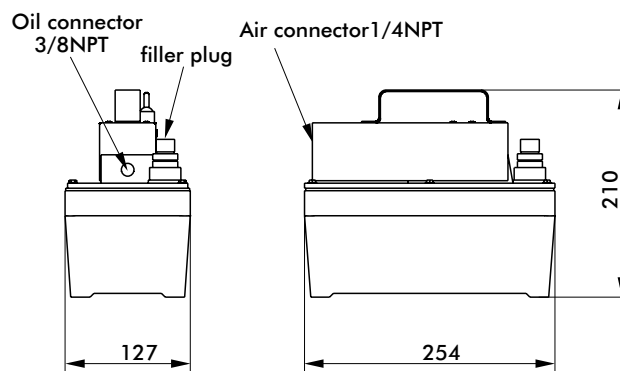
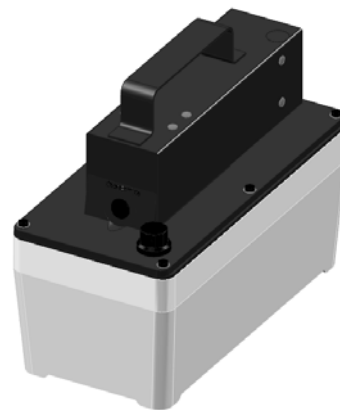
Compact Air-hydraulic-pump for single acting hydraulic tools. This air hydraulic pump can activate a higher number of clamping cylinders simultaneously due to the tank volume of 1600 cm<sup>3</sup>. The compact lightweight design allows to set up the pumps wherever required. Actuating by remote control valve.

### Technical features

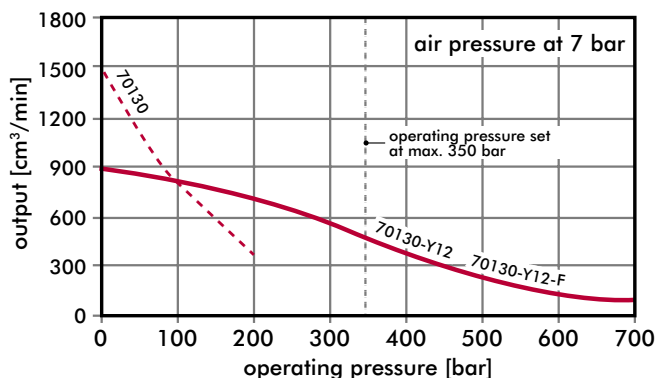
- Switching on the pump and releasing the hydraulic systems pressure is carried out by remote control activation
- integrated back pressure valve prevents pressure loss in the clamping circuit
- In case of a pressure drop > 10 bar within the pressure circuit, the pump automatically restarts to pump oil in Order to restore the set pressure
- Reservoir made of aluminium

### Included accessories

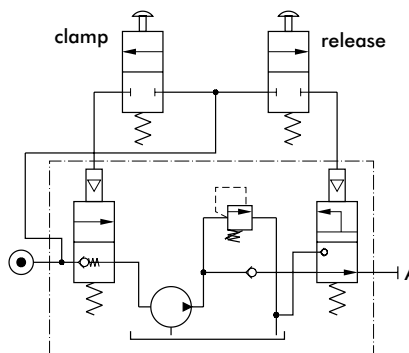
- Transition nipple **R 1/4-1/4 NPT**
- Reducing nipple **PTRS-1/4 NPT**
- Straight screw connector **D8S-1/4 NPT.**



### Output characteristics



### Schematic diagram



Model no	actuating by	Ratio	Reservoir oil capacity	usable oil capacity	Air inlet pressure		max. operating max.	Air consumption bei 6 bar	Sound level [dB(A)]	Weight [kg]
			[cm <sup>3</sup> ]	[cm <sup>3</sup> ]	min. [bar]	max. [bar]				
<b>70130-Y12-F</b>	remote control	1:100	1720	1600	3	7	210	0.5	72	8,3

# HYDRAULIC CLAMPING TECHNOLOGY

## Air hydraulic pump

**Operating pressure max. 700 bar**

**Conversion ratio 1:100**

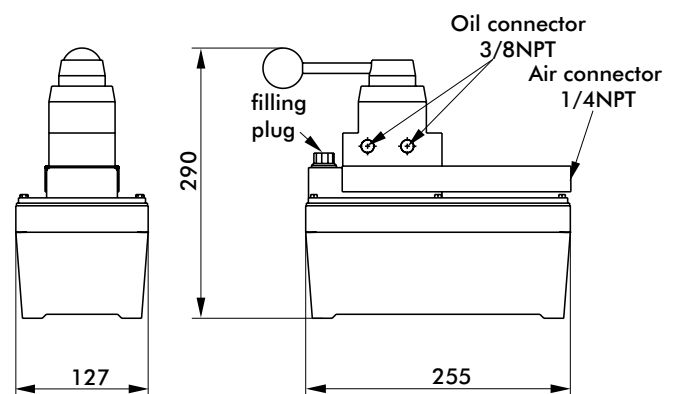
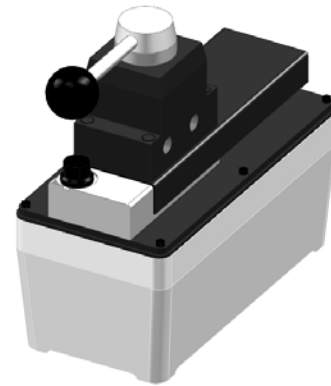
Compact Air-hydraulic-pump for single- and double acting hydraulic tools. This air hydraulic pump can activate a higher number of clamping cylinders simultaneously due to the tank volume of 1600 cm<sup>3</sup>. The compact lightweight design allows to set up the pumps wherever required. Actuating by manual control valve.

### Technical features

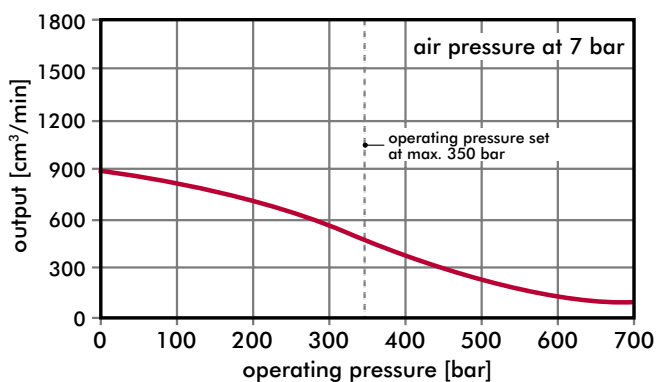
- Switching on the pump and releasing the hydraulic systems pressure is carried out by manual control valve activation
- integrated back pressure valve prevents pressure loss in the clamping circuit
- In case of a pressure drop > 10 bar within the pressure circuit, the pump automatically restarts to pump oil in Order to restore the set pressure
- Reservoir made of aluminium

### Included accessories

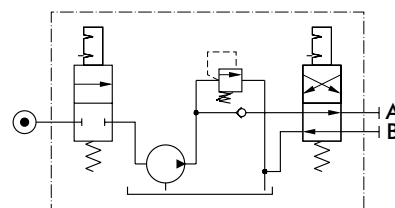
- 1 transition nipple **R 1/4-1/4 NPT**
- 2 reducing nipple **PTRS-1/4 NPT**
- 2 straight screw connector **D8S-1/4 NPT**.



### Output characteristics



### Schematic diagram



Model no.	actuating by	Ratio	oil capacity	usable oil capacity	Air inlet pressure		max. operating pressure.	Air consumption at 6 bar	Sound level	Weight
			[cm <sup>3</sup> ]	[cm <sup>3</sup> ]	min. [bar]	max. [bar]				
<b>70130-Y12-H</b>	manual valve	1:100	1720	1600	3	7	700	0,5	72	8,4

# HYDRAULIC CLAMPING TECHNOLOGY

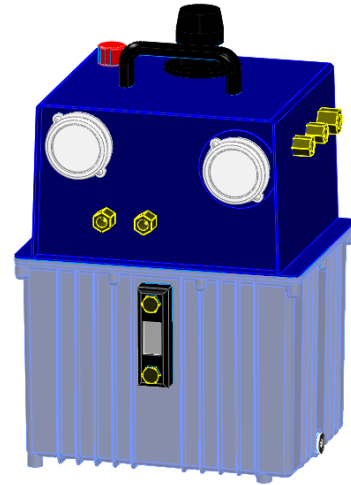
## Air hydraulic pump

**Operating pressure max. 150 bar/360 bar/600 bar**  
**Conversion ratio 1:25/1:60/1:1000**

These air hydraulic pumps are designed for various hydraulic applications, especially for intermittent operation. By connecting a 3/2-way or 4/2-way pneumatic valve, the built-in hydraulic valves for stroke and backstroke can be actuated. The pumps are complete, and only have to be connected to the existing compressed air supply.

### Technical characteristics

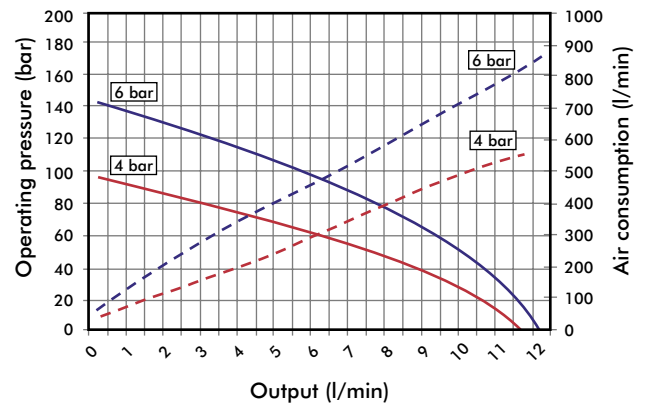
- Double piston pump-therefore pressure build-up almost pulsation free
- Compact pump - low required space
- 3 different conversion ratios available
- integrated back pressure valve prevents pressure loss in the clamping circuit
- In case of a pressure drop > 10 bar within the pressure circuit, the pump automatically restarts to pump oil in Order to restore the set pressure



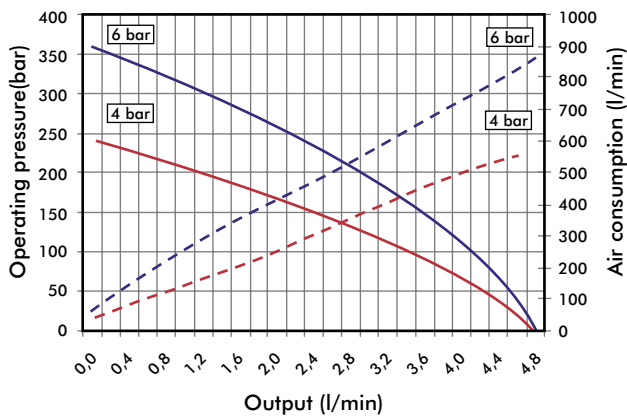
### Recommended accessories (separate Order)

- 1 4/2-ways manual-control-valve **800416**
- 1 3/2-way-foot-control-valve **FP-3-1/4-H**
- 2 screw-in connections **CK-1/4-PK6**
- 1 screw-in connections **CK-3/8-PK9**

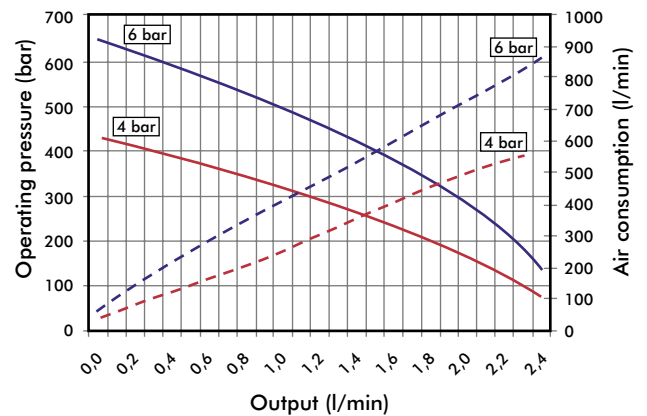
713D1505.-1



713D3605.-1



713D6005.-1



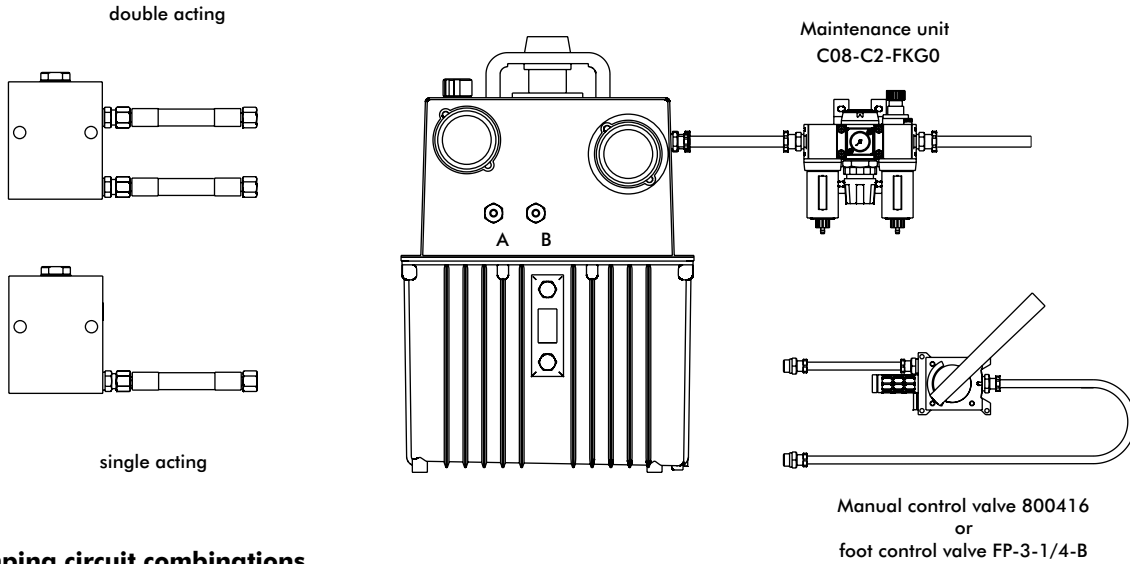
Model no. double acting	Ratio	max. operating pressure	Reservoir oil quantity	usable oil quantity	Air inlet pressure		Connection oil side	Sound level [dB(A)]	Weight [kg]
		[bar]	[l]	[l]	min. [bar]	max. [bar]			
713D1505-1	1:25	150	8	5,5	1,5	6	2xG1/4	65	31
713D3605-1	1:60	360	8	5,5	1,5	6	2xG1/4	65	31
713D6005-1	1:100	600	8	5,5	1,5	6	2xG1/4	65	31

# HYDRAULIC CLAMPING TECHNOLOGY

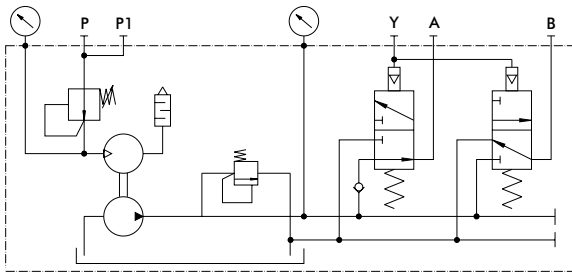
Air hydraulic pump

## Connection diagram:

in this connection diagram you can see an air hydraulic pump, double action, with pneumatic control. On a single action design, the connection B does not apply.

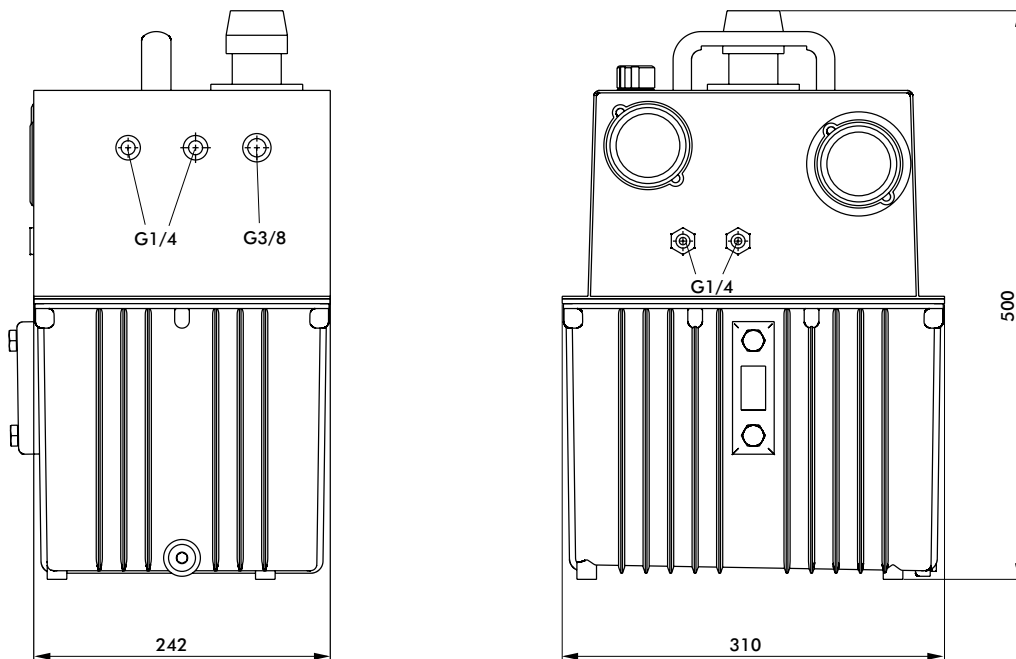


## Clamping circuit combinations



1 clamping circuit\*, double action\*  
713D15051-1, 713D36051-1, 713D60051-1

\* Pumps with more circuits, with electrically controlled valves, positioning circuit or accumulator control unit circuit are also available.



# HYDRAULIC CLAMPING TECHNOLOGY

## Electro hydraulic pumps

### Electro hydraulic pumps series 718D...

This hydraulic power pack is used for machine tools (lathes and milling machines), jigs or general machine applications for permanent and intermittent operation.

Optionally the hydraulic power pack is available with electronic control. After the unit has been filled with hydraulic oil and connected to the electrical supply, the equipment is immediately ready for operation.

#### Technical data:

##### 1. General parameters:

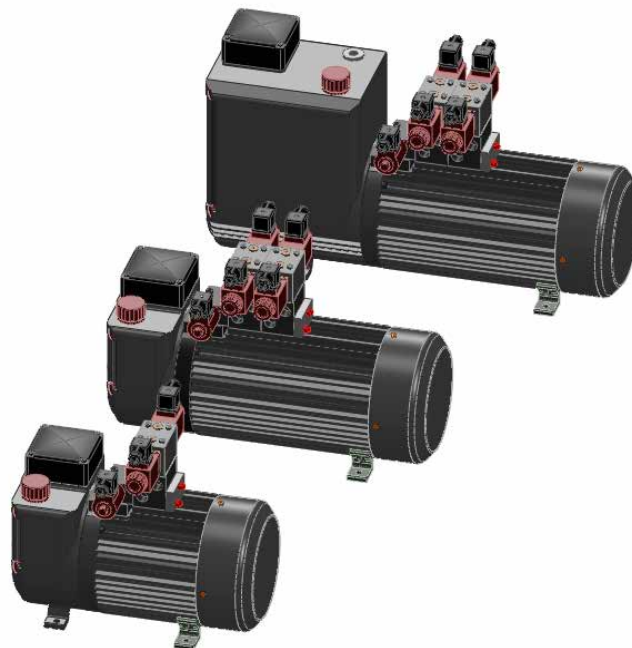
- Oil immersed compact hydraulic power pack for permanent and intermittent operation (operation modes S2, S3, S6)
- Radial piston pump and/or gear pump with integrated motor
- Cooling via finned tubular tank with additional fan wheel
- Mounting position: horizontal
- 3 pump/tank standard combination
- Connection block with idle circulation valve
- Valve block with seat valves in sandwich structure-extendible

##### 2. Hydraulic parameters:

- Operating pressure up to 350 bar
- Output flow 2,15–4,5 l/min (pressure-dependent)
- Tank capacity gesamt 3,7–11,2 l (size-dependent)
- Usable tank capacity 1,7-8,2 l (size-dependent)

##### 3. Electrical parameters:

- Standard: 3-phase motor (optimal 1-phase motor)
- Nominal output 1,5/ 2,2 kW
- Nominal speed 1410 1/min
- Nominal voltage 3~400/230V 50Hz
- Nominal current 3,5A/ 6,1A
- $\cos \varphi$  0,83
- Operating mode: short time rating (S2), intermittent service (S3), continuous periodically use-load...unload (S6)
- Temperature switch: switch off the pump if the fluid temperature rises over 80°C



Model no.	max. operating pressure [bar]	Output flow max. [l/min]	Clamping-circuits	Reservoir oil quantity [l]	usable oil quantity [l]	Motor voltage	Motor rating [kW]	Valve voltage	Connection	Weight [kg]
718D3500201	350	2.15	1	3,7	1,7	3~400/230V	1,5	24V	G3/8	24
718D3500402	350	3.35	2	5,5	2,6	3~400/230V	2,2	24V	G3/8	33
718D2000402	210	4.5	2	11,2	8,2	3~400/230V	2,2	24V	G3/8	28

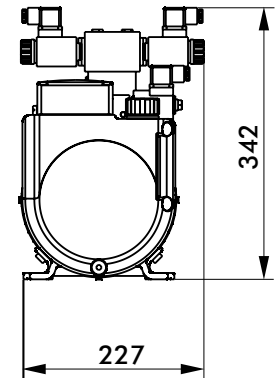
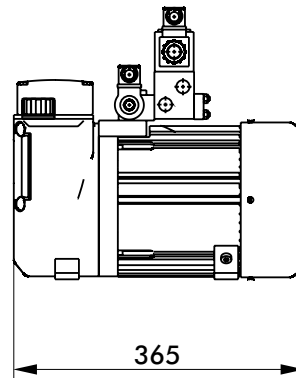
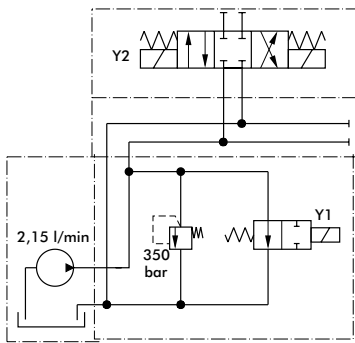
# HYDRAULIC CLAMPING TECHNOLOGY

Electro hydraulic pump

## Electro-hydraulic-pump 718D3500201

### Features

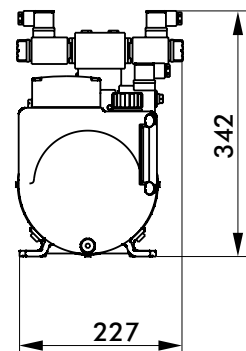
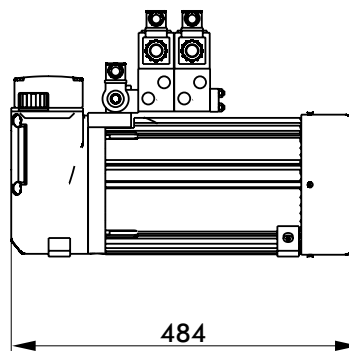
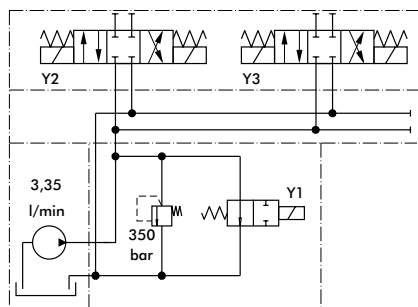
- Compact unit with radial piston pump
- 1 clamping circuit (extendible), circulation valve
- max. operating pressure 350 bar
- Max. output flow 2,15 l/min



## Electro-hydraulic-pump 718D3500402

### Features

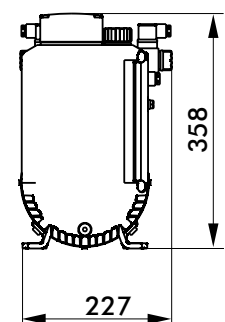
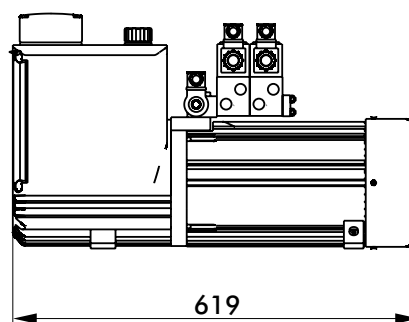
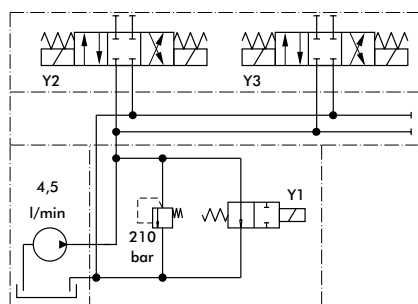
- Compact unit with radial piston pump
- 2 clamping circuits (extendible), circulation valve
- max. operating pressure 350 bar
- Max. output flow 3,35 l/min



## Electro-hydraulic-pump 718D2100402

### Features

- Compact unit with gear pump
- 2 clamping circuits (extendible), circulation valve
- max. operating pressure 210 bar
- Max. output flow 4,5 l/min



# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic screw-in cylinder | single acting

### Operating pressure max. 350 bar/min 100 bar

These hydraulic screw-in cylinder are single acting and with spring retraction. They can be used in clamping fixtures for positioning, clamping and gripping of workpieces.

### Technical characteristics

- Only suitable for operating pressures starting from 100 bar
- Use for pipe connections and for integrated oil supply (sealing on the cylinder's base with a seal which is delivered with the unit)
- External thread along the whole length of the housing
- Narrow distances between the cylinders are possible when the cylinders are mounted in groups
- Spring retraction
- Slide ring seals with high wear resistance
- No stick-slip effect
- Piston rods with internal thread on all Models starting from Model 721E16121-1 onwards

### CUSTOMER DESIGNED Models

If you need a special cylinder for your application – customer designed Models are available. PLEASE LET US KNOW!



### Included accessories

DELTRIN seal ring

### Recommended accessories (separate Order)

- Hexagonal nut DIN 936
- Groove nut DIN 1804
- Straight screw-connection D8S-R1/8
- Straight screw-connection D8S-R1/4

### Important Note

The maximum spring retraction force has been taken into account in the clamping force values diagram.

The operating pressure should not exceed 150 bar if the piston is actuated without a counter force.

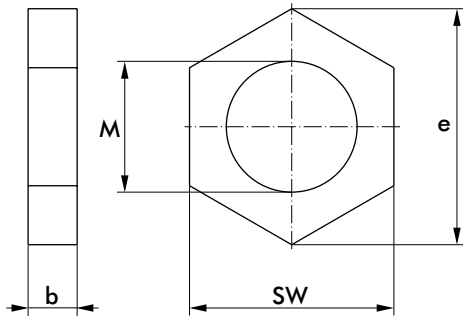
Model no.	Clamping force		Repair kit	Piston Ø	Stroke* S max.	Piston- surface area	Oil con- sumption/ stroke	Spring retracting force min	Connection G	Weight ~
	at 100 bar [kN]	at 350 bar [kN]								
721E08101-1	0,4	1,4	-	8	10	0,5	0,5	39	-	0,03
721E12101-1	1,0	3,7	720V12-0001	12	10	1,13	1,13	25	G1/8	0,25
721E16121-1	1,9	6,7	720V16-0001	16	12	2,01	2,41	60	G1/8	0,32
721E20161-1	2,8	9,8	720V20-0001	20	16	3,14	5,02	62	G1/4	0,4
721E20401-1	2,7	9,4	720V20-0001	20	40	3,14	12,57	66	G1/4	0,6
721E25161-1	4,6	16,2	720V25-0003	25	16	4,91	7,85	117	G1/4	0,6
721E25401-1	4,6	15,9	720V25-0003	25	40	4,91	19,63	115	G1/4	0,9
721E32161-1	7,8	27,3	720V32-0003	32	16	8,04	12,87	98	G1/4	0,95
721E40161-1	12,2	42,8	720V40-0003	40	16	12,57	20,11	201	G1/4	1,45
721E40401-1	12	42,1	720V40-0003	40	40	12,57	50,28	280	G1/4	2,4
721E50251-1	19,1	66,7	720V50-0002	50	25	19,63	49,09	239	G1/4	3,3



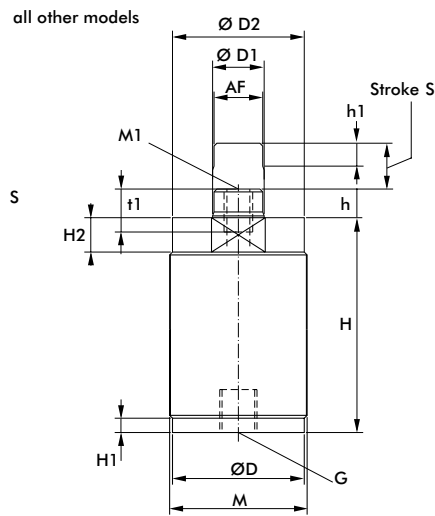
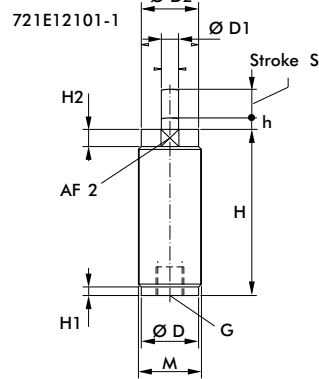
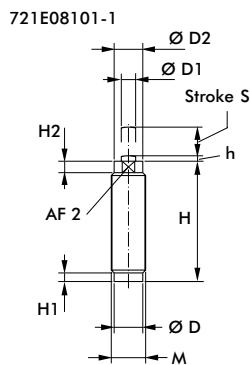
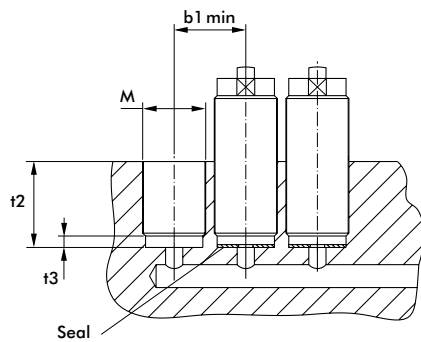
# HYDRAULIC CLAMPING TECHNOLOGY

Hydraulic screw-in cylinder | single acting

## Accessories hexagonal nut DIN 936



Model no. M	b	e [mm]	AF
M22x1,5	10	35,72	32
M27x1,5	12	45,63	41
M33x1,5	14	55,8	50
M38x1,5	16	66,96	60
M48x1,5	18	83,9	75
M56x1,5N	groove nut DIN 1804 (see page 24)		
M68x1,5N	groove nut DIN 1804 (see page 24)		



Model no.	b1	D	D1	D2	H	H1	H2	h	h1	M	M1	SW1	SW2	t1	t2	t3	max. torque [Nm]
[mm]																	
721E08101-1	15	10	5	10	42	3	4	1,9	-	M12x1,5	-	-	9	-	18	3	10
721E12101-1	25	20	6	20	58	3	6	4	-	M22x1,5	-	-	19	-	30	3	70
721E16121-1	30	24	10	25	75	3	6,5	7	5,5	M27x1,5	M5	8	22	10	36	3	130
721E20161-1	38	30	10	31	84,5	3	8	7	5,5	M33x1,5	M5	8	27	10	42	3	230
721E20401-1	38	30	10	31	140	3	8	7	5,5	M33x1,5	M5	8	27	10	42	3	230
721E25161-1	43	35	12	36	95	5	12	7	5,5	M38x1,5	M6	9	32	12	52	5	370
721E25401-1	43	35	12	36	137	5	12	7	5,5	M38x1,5	M6	9	32	12	52	5	370
721E32161-1	53	45	18	46	91	5	12	10	8	M48x1,5	M10	15	42	15	61	5	750
721E40161-1	61	53	22	54	99	5	12	10	8	M56x1,5	M12	19	50	18	71	5	1200
721E40401-1	61	53	22	54	173	5	12	10	8	M56x1,5	M12	19	50	18	71	5	1200
721E50251-1	73	65	32	65	116	5	15	10	8	M68x1,5	M20	27	60	30	85	5	2000

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic screw-in cylinder | single acting

### Operating pressure max. 250 bar/min 100 bar

These hydraulic screw-in cylinder are single acting and with spring retraction. They can be used in clamping fixtures for positioning, clamping and gripping of workpieces. Flexible applicable because of the radial and axial ports.

### Technical characteristics

- Suitable even for operating pressures under 100 bar
- 1 oil port radial, one axial
- External thread along the whole housing
- Spring retraction
- O-ring-seal
- Piston rod with internal thread

### CUSTOMER DESIGNED Models

If you need a special cylinder for your application – customer designed Models are available. PLEASE LET US KNOW!

### Recommended accessories (separate Order)

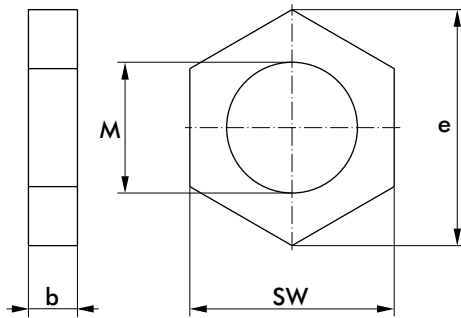
- Hexagonal nut DIN 936
- Straight screw-connection D8S-R1/8
- Straight screw-connection D8S-R1/4



Model no.	clamping force		Repair kit	Piston Ø [mm]	Stroke* S max. [mm]	Piston surface area [cm <sup>2</sup> ]	Oil con- sumption/ stroke [cm <sup>3</sup> ]	Spring retracting force min [N]	Connection G	Weight ~ [kg]
	at 100 bar [kN]	at 250 bar [kN]								
721E25155-1	4,7	11,6	720V25-0006-1	25	15	4,91	7,37	60	G1/8	0,6
721E25255-1	4,6	11,5	720V25-0006-1	25	25	4,91	12,28	70	G1/8	0,7
721E25405-1	4,6	11,4	720V25-0006-1	25	40	4,91	19,63	110	G1/8	0,9
721E38125-1	10,9	27,3	720V38-0001	38	12,5	11,34	14,18	200	G1/8	1,4
721E38255-1	10,9	27,1	720V38-0001	38	25	11,34	28,35	220	G1/8	1,8
721E38505-1	10,8	27	720V38-0001	38	50	11,34	56,7	280	G1/8	2,5
721E50255-1	19,1	47,7	720V50-0008	50,8	25	19,95	49,87	200	G1/4	3,4

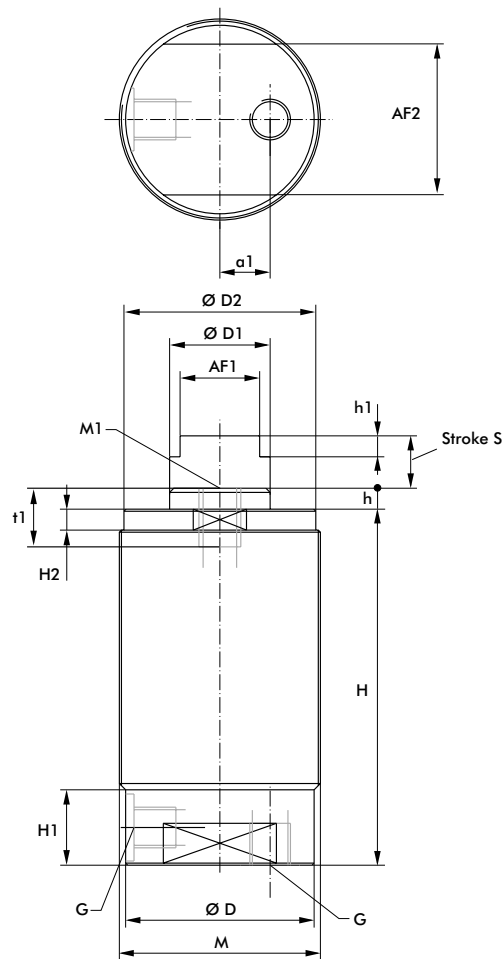
# HYDRAULIC CLAMPING TECHNOLOGY

Hydraulic screw-in cylinder | single acting



Accessories hexagonal nut DIN 936

Order no. M	b	e [mm]	AF
M33x1,5	14	55,8	50
M48x1,5	18	83,9	75



Model no.	a1	D	D1	D2	H	H1	H2	h	h1	M	M1	AF1	AF2	t1
[mm]														
721E25155-1	7	30	14	30	80	21	5	5	5	M33x1,5	M8	11	24	10
721E25255-1	7	30	14	30	98	21	5	5	5	M33x1,5	M8	11	24	10
721E25405-1	7	30	14	30	126	21	5	5	5	M33x1,5	M8	11	24	10
721E38125-1	12	45	24	45,8	85	19	5	5	5	M48x1,5	M10	19	36	14
721E38255-1	12	45	24	45,8	122,5	19	5	5	5	M48x1,5	M10	19	36	14
721E38505-1	12	45	24	45,8	177	19	5	5	5	M48x1,5	M10	19	36	14
721E50255-1	-	60	36	-	107	22	-	5	5	M64x1,5	M16	30	50	20

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic screw-in cylinder | double acting

### Operating pressure max. 350 bar/min 100 bar

These hydraulic screw-in cylinder are double acting. They can be used in clamping fixtures for positioning, clamping and gripping of workpieces. Such cylinder should be used if rapid and precise stroke speeds are required or when high retraction forces are needed.

### Technical characteristics

- Hydraulic ports at the cylinder bottom
- External thread along the whole housing
- Glide ring seal with high wear resistance
- No stick-slip-effect
- Double piston-rod seal
- An extended piston rod guide assures high stability when transversal forces occur
- Piston rod with internal thread

### CUSTOMER DESIGNED Models

If you need a special cylinder for your application – customer designed Models are available. PLEASE LET US KNOW!

### Recommended accessories (separate Order)

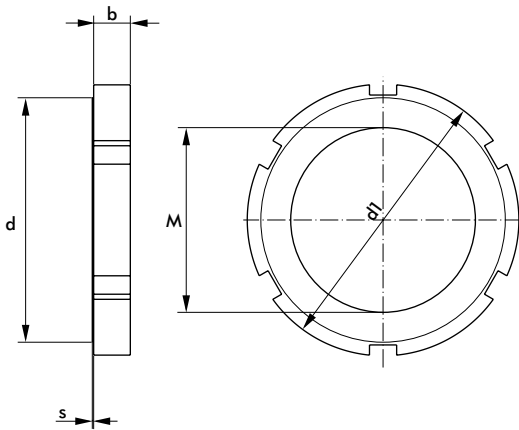
- Groove nut DIN 1804
- 2 x straight screw connection D8S-R1/4



Model no.	Clamping force at 100 bar		Repair kit	Piston Ø [mm]	Stroke* S [mm]	Piston surface area		Oil consumption/ stroke		Connection G 2x	Weight ~ [kg]	
	forward stroke [kN]	backstroke [kN]				max.	forward	back	forward			back
						[cm <sup>2</sup> ]	[cm <sup>2</sup> ]	[cm <sup>3</sup> ]	[cm <sup>3</sup> ]			
721D25501-1	4,8	2,8	720V25-0002	25	50	4,90	2,90	24,50	14,50	G1/4	2,5	
721D32501-1	7,9	4,8	720V32-0002	32	50	8,04	4,90	40,20	24,50	G1/4	2,90	
721D40501-1	12,3	7,5	720V40-0002	40	50	12,56	7,66	62,80	38,30	G1/4	3,50	
721D50501-1	19,3	11,4	720V50-0001	50	50	19,63	11,59	98,15	57,95	G1/4	4,50	

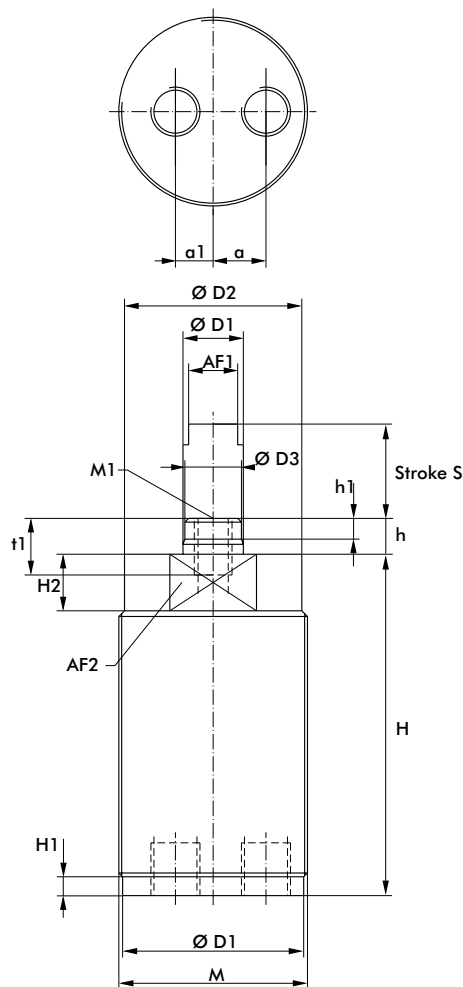
# HYDRAULIC CLAMPING TECHNOLOGY

Hydraulic screw-in cylinder | double acting



Accessories groove nut DIN 1804

Order no. M	b	d [mm]	d1	s
M50x1,5N	13	67	75	0,5
M56x1,5N	13	70	80	0,5
M68x1,5N	14	90	100	0,5
M80x2N	16	105	175	1



Model no.	a	a1	D	D1	D2	D3	H	H1	H2	h	h1	M	M1	AF1	AF2	t
[mm]																
721D25501-1	14	10	48	16	47	15	133,5	5	15	9,5	5,5	M50x1,5	M10	13	41	20
721D32501-1	17	10	54	20	52	19	138	5	15	10	7	M56x1,5	M12	17	46	24
721D40501-1	22,5	5	65	25	64	24	144	5	15	11	8	M68x1,5	M16	21	55	32
721D50501-1	28	-	76	32	76	31	145,5	5	15	12	8	M80x2	M20	27	65	38

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic short stroke cylinder | double acting

### Operating pressure max. 350 bar/min 100 bar

These double action hydraulic short-stroke cylinders are primarily used for operating double action hydraulic punching, notching and cutting units. Furthermore, they can be used as clamping cylinders. The double action version allows rapid stroke speeds. The cylinders are mounted to the hydraulic punching units with the help of mounting flanges. Adequate mounting flanges available on request.

### Technical characteristics

- Optimal piston rod guide; hardened piston rod for protection against corrosion and wear and for better gliding.
- Fine-grinded, polished slide faces for the lip seal and the piston rod improve the service life and the function of the seals.
- Lateral oil ports, additional advance stroke connection on the cylinder base

### CUSTOMER DESIGNED Models

If you need a special cylinder for your application – customer designed Models are available. PLEASE LET US KNOW!

### Included accessories

2 x reducing nipples GWR-3/8-1/4 (only 725D80151-1)

### Recommended accessories (separate Order)

2 x straight screw connectors D8S-R1/4

Mounting flange

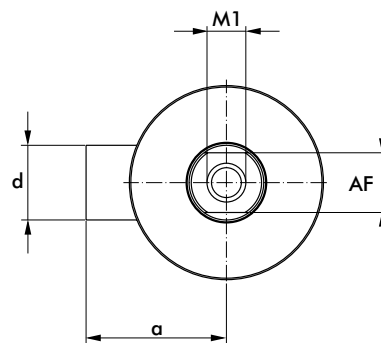
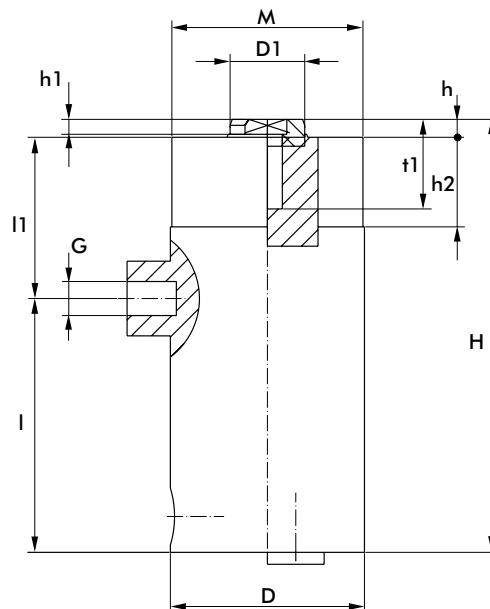
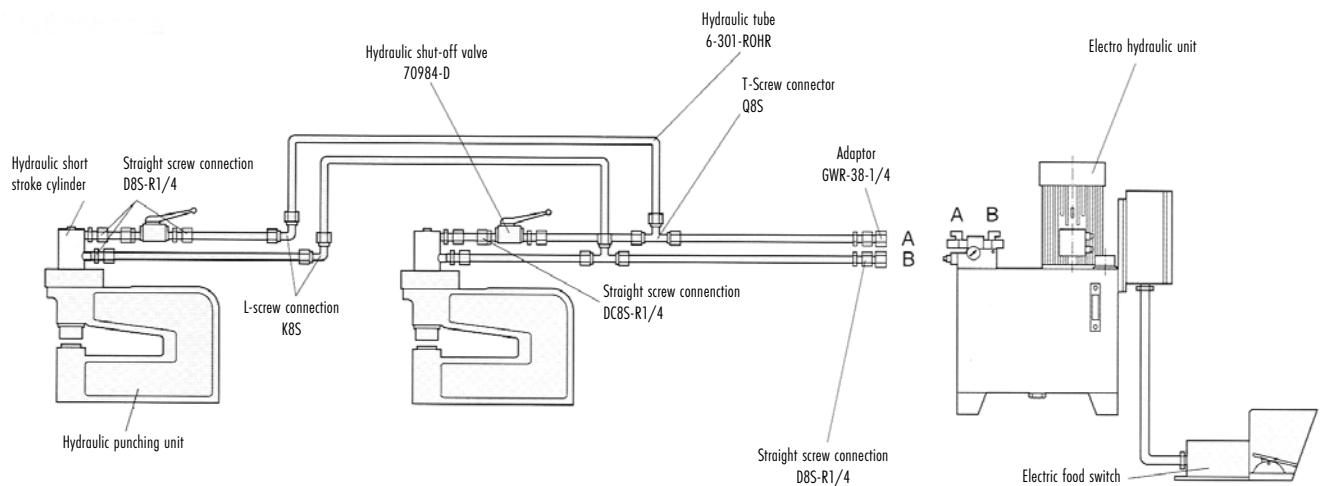
Grooved or hexagonal nut (see page 20 and 24)



Model no.	Clamping force at 100 bar		Repair kit	Piston Ø [mm]	Stroke* S [mm]	Piston surface area		Oil consumption/ stroke		Connection G 2x	Weight ~ [kg]
	forward stroke	back stroke				forward stroke	back stroke	forward stroke	back stroke		
	[kN]	[kN]				[cm²]	[cm²]	[cm³]	[cm³]		
725D35151-2	9,6	6,5	720V35-0001	35	15	9,62	6,47	14,40	9,70	G1/4	1,9
725D50151-2	19,6	14,7	720V50-0005-2	50	15	19,63	14,72	29,50	22,10	G1/4	3,0
725D63171-1	31,2	22,7	720V63-0001	63	17	31,17	23,13	53,00	39,30	G1/4	4,5
725D80151-1	50,3	37,7	720V80-0001	80	15	50,26	37,69	75,40	56,60	G3/8	10,0

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic short stroke cylinder | double acting



Model no.	a	d	D	D1	h	hi	h2	H	l	l1	M	M1	AF	t1
	[mm]													
725D35151-2	40	25	50	20	9	7	30	159	88	52	M48x1,5	M10	17	25
725D50151-2	-	-	84	25	9	7	30	137	90	47	M64x1,5	M12	20	25
725D63171-1	-	-	97	32	9	7	32	150	96	45	M80x2	M16	27	30
725D80151-1	65	28	105	40	9	7	29,5	183,5	105	72,5	M80x2	M16	36	31

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic block cylinder | single acting

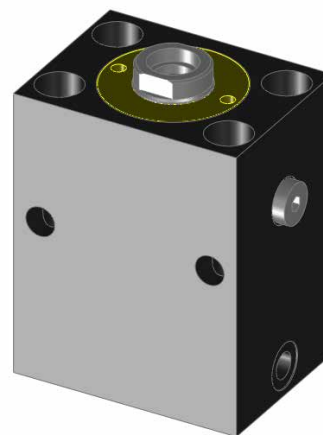
### Operating pressure max. 500 bar/min 100 bar

This hydraulic block cylinder are single acting with spring retraction. Due to their block shape design, hydraulic block cylinders can be used in a wide range of applications, e.g. clamping, punching, pressing, aligning.

The factory made mounting holes allow easy and quick mounting of the cylinder in the horizontal or vertical position.

### Technical characteristics

- Suitable for operating pressures starting from 100 bar onwards.
- Lateral hydraulic connection
- Spring retraction
- Convertible to a double action cylinder
- Glide ring seal with high wear resistance
- No stick-slip effect
- An extended piston rod guide gives high stability when transversal-forces occur
- Piston rod with internal thread



### CUSTOMER DESIGNED Models

If you need a special cylinder for your application – customer designed Models are available. PLEASE LET US KNOW!

### Important Note

The maximum spring retraction force has been taken into account in the clamping force values.

The operating pressure should not exceed 150 bar if the piston is actuated without a counter force.

### Recommended accessories (separate Order)

1 straight screw connectors D8S-R1/4

Model no.	Clamping force		Repair kit	Piston Stroke*		Piston surface area	Oil consumption/stroke	Spring retracting force min	Connection G	Weight ~
	at 100 bar	at 500 bar		Ø	S max.					
	[kN]	[kN]		[mm]	[mm]					
722E16202-1	1,9	9,7	720V16-0003	16	20	2,01	4,02	50	G1/4	1,0
722E25202-1	4,6	22,9	720V25-0005	25	20	4,91	9,82	104	G1/4	2,0
722E32202-1	7,7	38,4	720V32-0005	32	20	8,04	16,08	200	G1/4	3,0
722E40202-1	12	59,8	720V40-0005	40	20	12,56	25,12	270	G1/4	3,7
722E50202-1	18,9	94,5	720V50-0004	50	20	19,64	39,27	460	G1/4	5,7

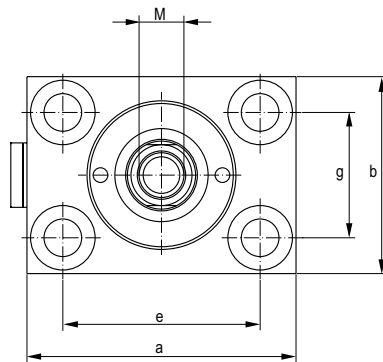
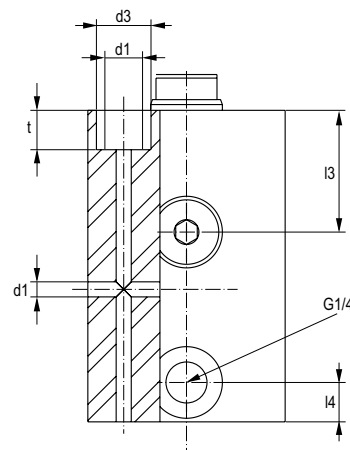
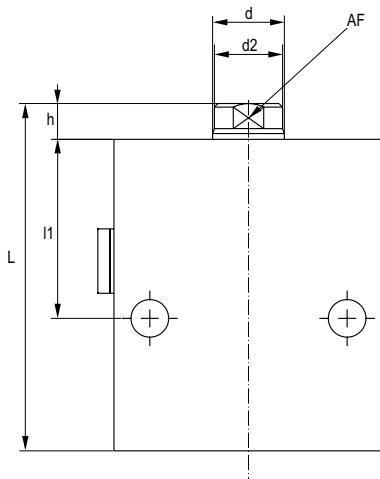
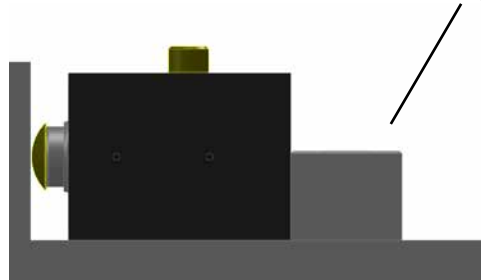


# HYDRAULIC CLAMPING TECHNOLOGY

Hydraulic block cylinder | single acting

Application example

Support is necessary in case of operating pressure over 160 bar



Model no.	a	b	c	d	d1	d2	d3	e	g	h	L	l1	l3	l4	M	AF	t	t1
	[mm]														x depth			
722E16202-1	60	35	17,5	10	6,5	9	11	40	22	6	111	44	30,5	11	M 6x15	8	6,8	4,5
722E25202-1	65	45	22,5	16	8,5	15	13,5	50	30	7	114	46	32	11	M10x15	13	9	5,5
722E32202-1	75	55	27,5	20	10,5	19	18	55	35	10	122	50	34	11	M12x18	17	11	7
722E40202-1	85	63	31,5	25	10,5	24	18	63	40	10	123	49	33	11	M16x25	21	11	7
722E50202-1	100	75	37,5	32	13	31	20	76	45	10	135	54	38	13	M20x30	27	13	8

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic block cylinder | double acting

### Operating pressure max. 500 bar/min 100 bar

Hydraulic double acting block cylinders are particularly suited for applications requiring frequent cycles and rapid stroke speeds. The block design allows a wide range of applications such as clamping, pressing, aligning and punching. The mounting boreholes are a further advantage which allow quick and easy mounting in the horizontal or vertical position.

### Technical characteristics

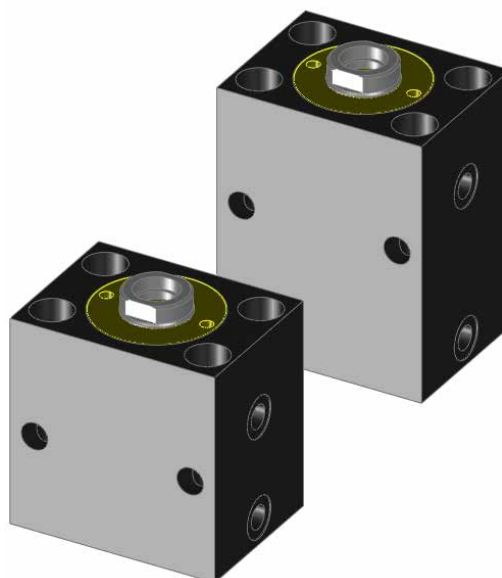
- Lateral hydraulic connections
- No stick-slip effect
- Double piston rod seal
- An extended piston rod guide assures high stability when transversal forces occur on the piston.
- Piston rod with internal thread

### CUSTOMER DESIGNED Models

If you need a special cylinder for your application – customer designed Models are available. PLEASE LET US KNOW!

### Recommended accessories (separate Order)

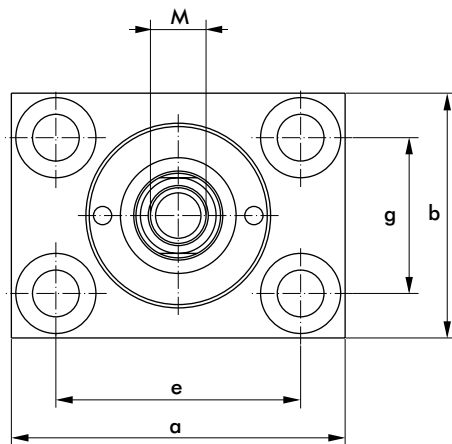
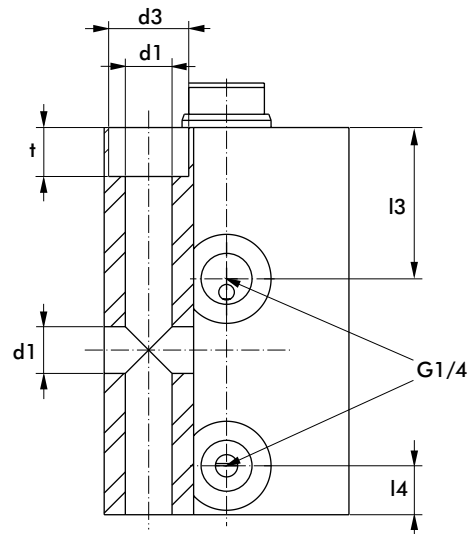
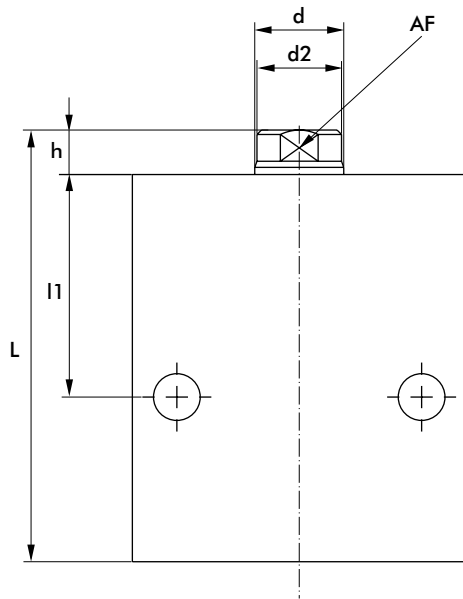
2 straight screw connectors D8S-R1/4



Model no.	Clamping force at 100 bar		Repair kit	Piston Ø [mm]	Stroke* S [mm]	Piston surface area		Oil consumption		Connection G	Weight ~ [kg]
	forward stroke [kN]	back stroke [kN]				forward stroke [cm <sup>3</sup> ]	back stroke [cm <sup>3</sup> ]	forward stroke [cm <sup>3</sup> ]	back stroke [cm <sup>3</sup> ]		
722D16162-1	2,0	1,2	720V16-0002	16	16	2,01	1,23	3,20	1,95	G1/4	0,9
722D16502-1	2,0	1,2	720V16-0002	16	50	2,01	1,23	10,05	6,15	G1/4	1,3
722D25202-1	4,8	2,8	720V25-0002	25	20	4,91	2,90	9,82	5,80	G1/4	1,4
722D32252-1	7,9	4,8	720V32-0002	32	25	8,04	4,90	20,10	12,25	G1/4	2,0
722D32502-1	7,9	4,8	720V32-0002	32	50	8,04	4,90	40,20	24,50	G1/4	3,2
722D40252-1	12,3	7,5	720V40-0002	40	25	12,56	7,66	31,40	19,15	G1/4	2,8
722D40992-1	12,3	7,5	720V40-0002	40	100	12,56	7,66	125,70	75,60	G1/4	5,5
722D50252-1	19,3	11,4	720V50-0001	50	25	19,64	11,59	49,10	29,00	G1/4	5,7
722D50502-1	19,3	11,4	720V50-0001	50	50	19,64	11,59	98,20	58,00	G1/4	7,0
722D50992-1	19,3	11,4	720V50-0001	50	100	19,64	11,59	196,40	116,00	G1/4	13,0
722D63252-1	30,0	18,0	720V63-0002	63	25	31,2	18,6	77,9	46,5	G1/4	8,0
722D63502-1	30,0	18,0	720V63-0002	63	50	31,2	18,6	155,9	93,0	G1/4	9,4
722D63802-1	30,0	18,0	720V63-0002	63	80	31,2	18,6	249,4	148,9	G1/4	14,0

# HYDRAULIC CLAMPING TECHNOLOGY

Hydraulic block cylinder | double acting



Model no.	a	b	c	d	d1	d2	d3	e	g	h	L	l1	l3	l4	M	AF	t	t1
	[mm]																	
722D16162-1	60	35	17,5	10	6,5	9	11	40	22	6	76	44	30,5	11	M 6x15	8	6,8	4,5
722D16502-1	60	35	17,5	10	6,5	9	11	40	22	6	111	44	30,5	11	M 6x15	8	6,8	4,5
722D25202-1	65	45	22,5	16	8,5	15	13,5	50	30	7	84	46	32	11	M10x15	13	9	4,5
722D32252-1	75	55	27,5	20	10,5	19	18	55	35	10	97	50	34	11	M12x18	17	11	7
722D32502-1	75	55	27,5	20	10,5	19	18	55	35	10	122	50	34	11	M12x18	17	11	7
722D40252-1	85	63	31,5	25	10,5	24	18	63	40	10	98	49	33	11	M16x25	21	11	7
722D40992-1	85	63	31,5	25	10,5	24	18	63	40	10	173	49	33	11	M16x25	21	20	7
722D50252-1	100	75	37,5	32	13	31	20	76	45	10	110	54	38	13	M20x30	27	13	8
722D50502-1	100	75	37,5	32	13	31	20	76	45	10	135	54	38	13	M20x30	27	13	8
722D50992-1	100	75	37,5	32	13	31	20	76	45	10	165	56	38	13	M20x30	27	30	8
722D63252-1	125	95	47,5	40	17,5	39	26	95	65	10	110	56	38	13	M27x30	36	16	8
722D63502-1	125	95	47,5	40	17,5	39	26	95	65	10	135	56	38	13	M27x30	36	16	8
722D63802-1	125	95	47,5	40	17,5	39	26	95	65	10	165	56	38	13	M27x30	36	16	8

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic hollow piston cylinder | single acting

### Operating pressure max. 350 bar/min 100 bar

These hydraulic cylinder are single acting with spring retraction. A typical application for hydraulic hollow piston cylinders is when pulling and/or pushing forces are needed for clamping. The piston inserts which can be mounted in the thread on the top end of the piston are used to secure threaded bolts or screws. The piston inserts are available with the internal thread (type A) or with the through-hole (type B).

### Technical characteristics

- Cylindrical and Block version available
- Cylindrical version available with- or without external thread
- Spring retraction
- Piston with through-hole (different piston inserts available)
- Piston nitrogen hardened
- Fastening threads at the base
- Lateral hydraulic connection

### CUSTOMER DESIGNED Models

If you need a special cylinder for your application – customer designed Models are available. PLEASE LET US KNOW!

### Important note

The operating pressure should not exceed 100 bar if the piston is actuated without a counter force.

### Recommended accessories (separate Order)

1 straight screw connectors D8S-R1/8

1 straight screw connectors D8S-R1/4


Piston inserts

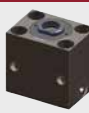


Cylindrical version



Block version

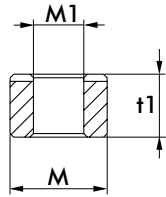
Model no. cylindrical version	Clamping force at 100 bar		Stroke S max.	Piston surface area	Oil consump- tion/stroke	Spring retracting force min	Connection G	Weight ~	
	[kN]	Repair kit							[mm]
	70537-DX11	8	70537-D1-00	9	8,8	7,9	340	G1/8	1,25
	70537-D1	8,4	70537-D1-00	9	8,8	7,9	125	G1/8	1,25
	70537-DG	8,4	70537-D1-00	9	8,8	7,9	125	G1/8	1,25
	70550-D2	15,7	70550-D2-00	12,5	16,4	20,5	185	G1/4	2
	70550-DG	15,7	70550-D2-00	12,5	16,4	20,5	185	G1/4	2
	70562-D2	23,9	70562-D1-00	15,5	24,8	38,4	320	G1/4	2,8
	70562-DG	23,9	70562-D1-00	15,5	24,8	38,4	320	G1/4	2,8

block version									
	723E38092-1	8	70537-D1-00	9	8,8	7,9	340	G1/8	1,5
	723E51122-1	15,7	70550-D2-00	12,5	16,4	20,5	185	G1/4	2,5
	723E63152-1	23,9	70562-D1-00	15,5	24,8	28,4	320	G1/4	3,3

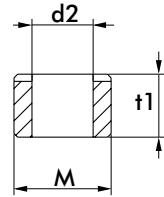
# HYDRAULIC CLAMPING TECHNOLOGY

Hydraulic hollow piston cylinder | single acting

Form A



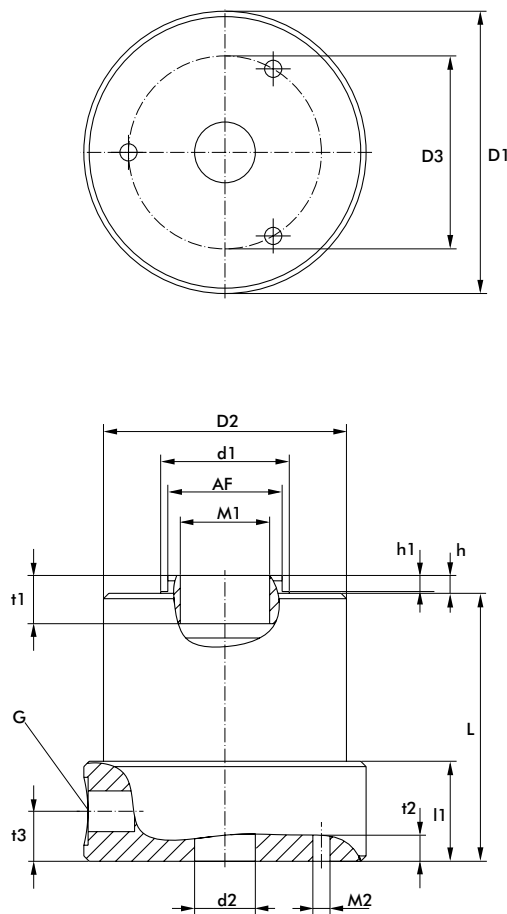
Form B



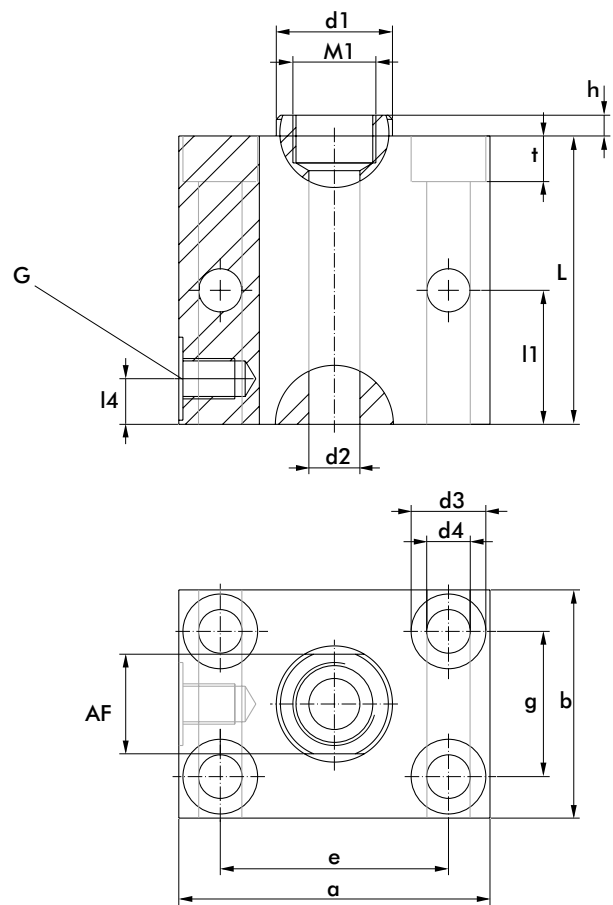
## Accessories piston inserts

Order no. Type A	Order no. Type B	d2	M1	M	t1	for Model
[mm]						
705383-D	705384-D	12,3	M12	M20x1,5	11,5	70537.../ 723E38...
705511-D	705513-D	17	M16	M27x1,5	17,5	70550.../ 723E51...
705633-D	705634-D	21	M20	M36x1,5	21	70562.../ 723E63...

Cylindrical version 705...



Block version 723E...



Model cylindrical version	a	b	d1	d3	d4	D1	D2/M3	D3	e	g	h	h1	L	l1	l4	M1	M2	AF	t	t2	t3
[mm]																					
70537-DX11	-	-	28	-	-	65	55	46	-	-	5	4,5	64,5	22	-	M20x1,5	M5	22	-	8	11
70537-D1	-	-	28	-	-	65	55	46	-	-	5	4,5	60	25	-	M20x1,5	M5	24	-	8	12
70537-DG	-	-	28	-	-	65	M50x1,5	46	-	-	5	4,5	60	25	-	M20x1,5	M5	24	-	8	12
70550-D2	-	-	36	-	-	79	68	54	-	-	5	4,5	75	28	-	M27x1,5	M6	32	-	9	14
70550-DG	-	-	36	-	-	79	M68x1,5	54	-	-	5	4,5	75	28	-	M27x1,5	M6	32	-	9	14
70562-D2	-	-	48	-	-	93	80	60	-	-	5	4,5	92	32	-	M36x1,5	M6	41	-	10	16
70562-DG	-	-	48	-	-	93	M80x2	60	-	-	5	4,5	92	32	-	M36x1,5	M6	41	-	10	16

block version	a	b	d1	d3	d4	D1	D2/M3	D3	e	g	h	h1	L	l1	l4	M1	M2	AF	t	t2	t3
723E38092-1	75	55	28	18	10,5	-	-	-	55	35	5	4,5	64,5	32,5	11	M20x1,5	-	24	11	-	-
723E51122-1	100	75	36	20	13	-	-	-	76	45	5	4,5	75	37,5	14	M27x1,5	-	32	13	-	-
723E63152-1	110	85	48	20	13	-	-	-	86	55	5	4,5	92	46	16	M36x1,5	-	41	13	-	-

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic hollow piston cylinder | double acting

### Operating pressure max. 350 bar/min 100 bar

Hydraulic hollow piston cylinders can solve many clamping problems because they can also be used as pulling cylinders due to the hollow piston combined with a tie rod. The double action principle allows short stroke times and high retraction forces, i.e. clamping forces in the reverse stroke direction.

### Technical characteristics

- Piston with through-hole and with internal thread
- 2 fastening threads at the base
- Lateral hydraulic connections

### CUSTOMER DESIGNED Models

If you need a special cylinder for your application – customer designed Models are available. PLEASE LET US KNOW!

### Important note

The operating pressure should not exceed 250 bar if the piston is actuated without a counter force.

### Recommended accessories (separate Order)


2 straight screw connectors D8S-R1/4




Cylindrical version



Block version

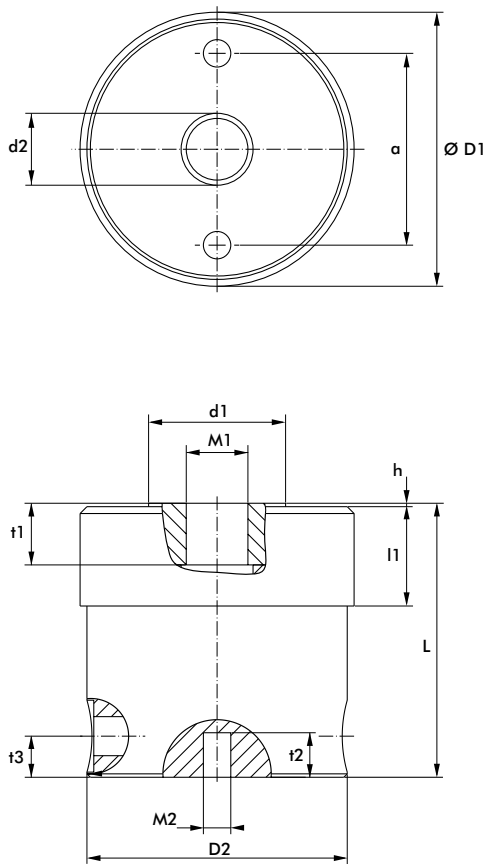
Model no. cylindrical version	Clamping force at 100 bar		Repair kit	Stroke* S max. [mm]	Piston surface area		Oil consumption		Connection G 2x	Weight ~ [kg]	
	forward stroke [kN]	back stroke [kN]			forward stroke [cm <sup>2</sup> ]	back stroke [cm <sup>2</sup> ]	forward stroke [cm <sup>3</sup> ]	back stroke [cm <sup>3</sup> ]			
		7411-2			8,6	5,9	7411-2-00	10			8,8
	7412-2	12,9	8,3	7412-2-00	15	13,2	8,4	21,1	13,4	G1/4	1,5
	7413-2	18,1	12,7	7413-2-00	24	18,4	15,0	44,1	36,0	G1/4	2,0
	7414-2	26,2	20	7414-2-00	24	26,7	20,4	64,1	49,0	G1/4	2,6

block version											
	723D38102-2	8,6	5,9	7411-1-00	10	8,8	6,0	8,8	6,0	G1/4	1,3
	723D48152-2	12,9	8,3	7412-1-00	15	13,2	8,4	21,1	13,4	G1/4	1,8
	723D57242-2	18,1	12,7	7413-1-00	24	18,4	15,0	44,1	36,0	G1/4	2,5
	723D68242-2	26,2	20	7414-1-00	24	26,7	20,4	64,1	49,0	G1/4	3,1

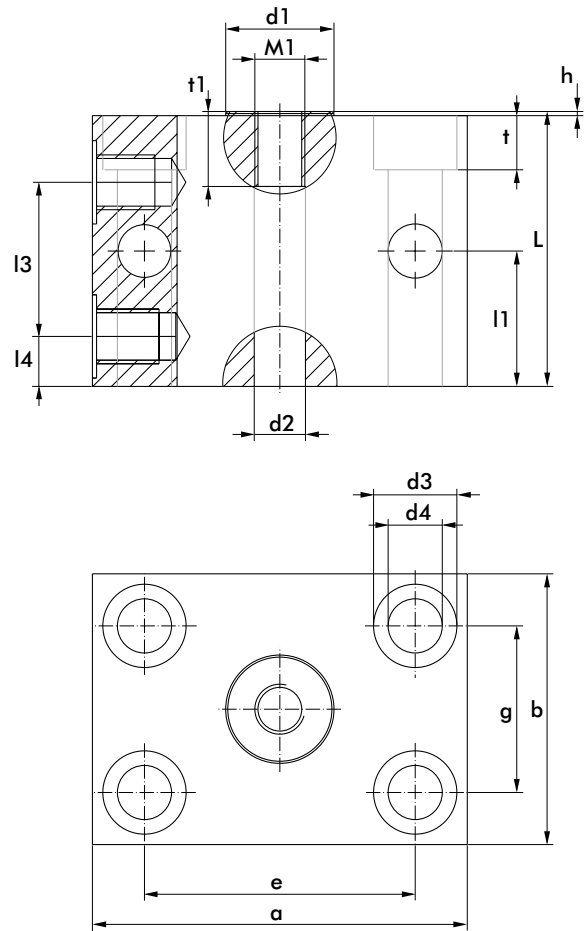
# HYDRAULIC CLAMPING TECHNOLOGY

Hydraulic hollow piston cylinder | double acting

Cylindrical version 74...



Block version 723D...



Model no. cylindrical version	a	b	d1	d2	d3	d4	D1	D2	e	g	h	l1	l3	l4	L	M1	M2	t	t1	t2	t3
	[mm]																				
7411-2	40	-	25	12,3	-	-	60	56	-	-	1	25	-	-	66	M12x1,5	M8	-	18	12	12
7412-2	48	-	35	17	-	-	72	66	-	-	1	33	-	-	72	M16x1,5	M8	-	18	13	12
7413-2	56	-	40	21	-	-	80	76	-	-	1	29	-	-	80	M20x1,5	M10	-	18	13	12
7414-2	60	-	45	25	-	-	90	84	-	-	1	29	-	-	90	M24x1,5	M10	-	18	13	12

block version	a	b	d1	d2	d3	d4	D1	D2	e	g	h	l1	l3	l4	L	M1	M2	t	t1	t2	t3
723D38102-2	90	65	25	12,3	20	13	-	-	65	40	1	32,5	37	12	66	M12x1,5	-	13	18	-	-
723D48152-2	100	75	35	17	20	13	-	-	76	45	1	35,5	41	12	72	M16x1,5	-	13	18	-	-
723D57242-2	110	85	40	21	20	13	-	-	86	55	1	39,5	50	12	80	M20x1,5	-	13	18	-	-
723D68242-2	110	85	45	25	20	13	-	-	86	55	1	39,5	50	12	80	M24x1,5	-	13	18	-	-

# HYDRAULIC CLAMPING TECHNOLOGY

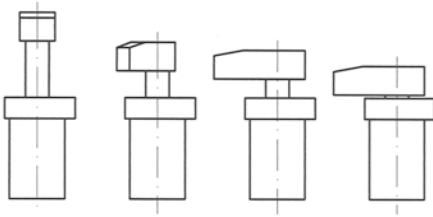
## Hydraulic swing clamps | double acting

Hydraulic swing clamps are particularly designed for applications which require high clamping forces and easy loading of workpieces in confined spaces.

### Standard version

Double acting swing clamps

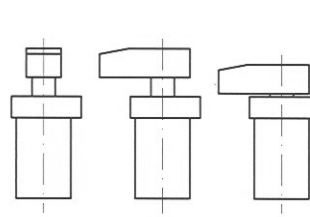
Cylinder with helical pivoting. The cylinder swing around 90° with swivel stroke and continue to the vertical clamping stroke. Complete stroke = swivel stroke + clamping stroke. Available in block-, screw-in-, top flange- and base flange version.










### Compact version

Double acting swing clamps

Cylinder with rotation in a plane. The cylinder swing around 90° without stroke movement, continue to the vertical clamping stroke. Complete stroke = clamping stroke. Available in top flange-, base flange- and block version



	Model no.		Pressure range		stroke [mm]	Clamping force	
	swivel right	swivel left	min [bar]	max [bar]		min [kN]	max [kN]
	<b>screw-in version standard</b>						
	726D25221-2	727D25221-2	100	250	10	1,9	4,8
	726D32321-2	727D32321-2	100	250	11	3,4	8,5
	726D40341-2	727D40341-2	100	250	12	5	12,5
	<b>block-version standard</b>						
	726D25222-2	727D25222-2	100	250	10	1,9	4,8
	726D32322-2	727D32322-2	100	250	11	3,4	8,5
	726D40342-2	727D40342-2	100	250	12	5	12,5
	<b>bottom-flange-version standard</b>						
	726D32243-2	727D32243-2	30	250	12	1	8
	726D32373-2	727D32373-2	30	250	25	1	8
	726D50293-2	727D50293-2	30	250	15	1,9	16
	726D50393-2	727D50393-2	30	250	25	1,9	16
	<b>top-flange-version standard</b>						
	726D32244-2	727D32244-2	30	250	12	1	8
	726D32374-2	727D32374-2	30	250	25	1	8
	726D50294-2	727D50294-2	30	250	15	1,9	16
	726D50394-2	727D50394-2	30	250	25	1,9	16
	<b>block-version compact</b>						
	726D25082-5	727D25082-5	30	250	8	0,5	4
	726D32122-5	727D32122-5	30	250	12	1,0	8
	726D50122-5	727D50122-5	30	250	12	1,9	16
	726D63122-5	727D63122-5	30	250	12	2,9	24
	<b>base-flange-version compact</b>						
	726D25083-5	727D25083-5	30	250	8	0,5	4
	726D32123-5	727D32123-5	30	250	12	1,0	8
	726D50123-5	727D50123-5	30	250	12	1,9	16
	726D63123-5	727D63123-5	30	250	12	2,9	24
	<b>top-flange-version compact</b>						
	726D25084-5	727D25084-5	30	250	8	0,5	4
	726D32124-5	727D32124-5	30	250	12	1,0	8
	726D50124-5	727D50124-5	30	250	12	1,9	16
	726D63124-5	727D63124-5	30	250	12	2,9	24



# HYDRAULIC CLAMPING TECHNOLOGY

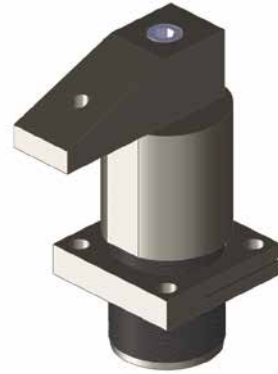
## Hydraulic swing clamps – Standard version

### Swing clamp-screw-in version

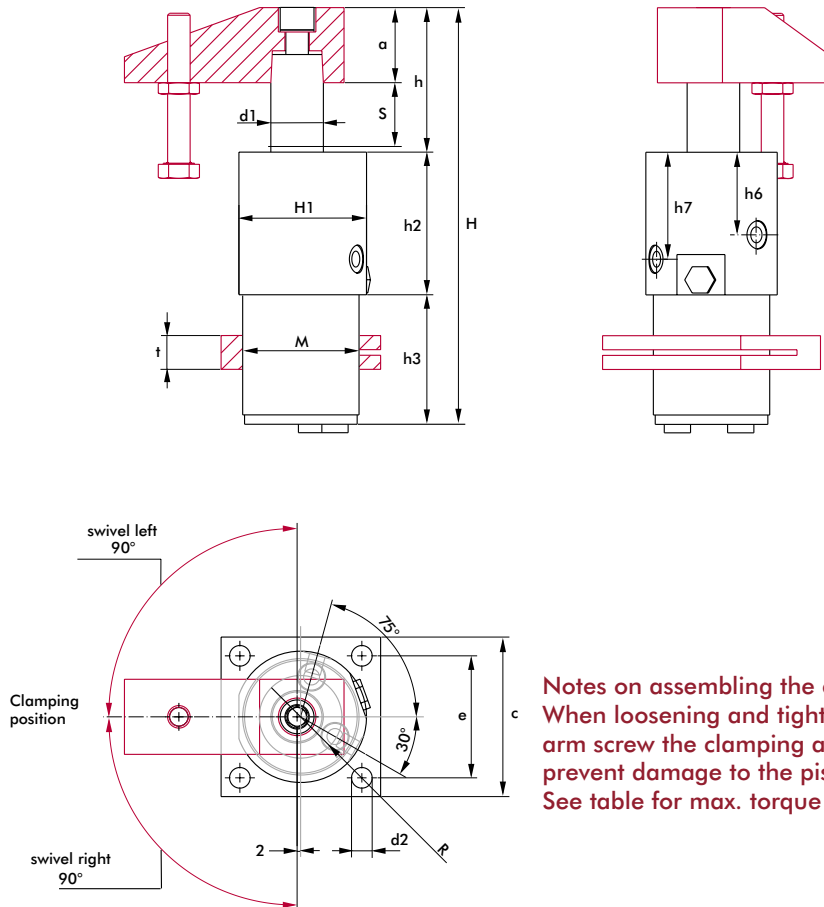
- Double acting version
- More accessories under accessories standard

### Technical 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 s. If necessary, the oil flow must be reduced. Observe the max. permitted oil flow.



Model no.		operating pressure		Clamping force	volume flow	stroke		Oil consumption		Connection	Weight
swivel right	swivel left	min. [bar]	max. [bar]	at 100 bar [kN]	max. [l/min]	complete stroke [mm]	clamping stroke [mm]	clamping [cm³]	unclamping [cm³]	G	[kg]
726D25221-2	727D25221-2	100	250	1,9	0,26	27	10	6,4	13,3	4x G1/8	1,85
726D32321-2	727D32321-2	100	250	3,4	0,53	31	11	13,2	24,9	4x G1/8	2,6
726D40341-2	727D40341-2	100	250	5,0	0,87	34	12	21,8	42,7	4x G1/8	3,5



**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.

Model no.		a	c	d1	d2	e	f	H	H1	h	h2	h3	h6	h7	M	R	t	max. torque
swivel right	swivel left	[mm]																[Nm]
726D25221-2	727D25221-2	25	65	18	9	50	23	173	53	55	61	57	35,5	44,5	48x1,5	29	12	30
726D32321-2	727D32321-2	30	70	22	9	56	27	199	61,5	64	70	65	46	57	52x1,5	34	15	45
726D40341-2	727D40341-2	40	85	28	11	65	31	222	68	77	76	69	44	57	62x1,5	44	18	80

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic swing clamps – Standard version

### Swing clamp-block version

- Double acting version

### Optional

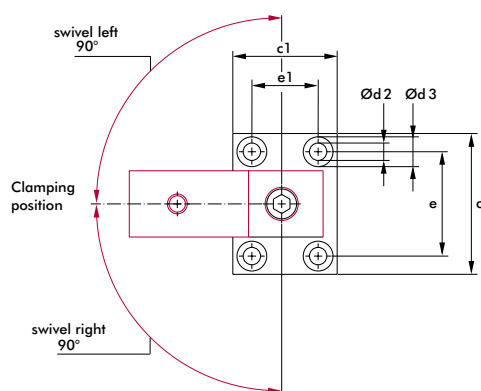
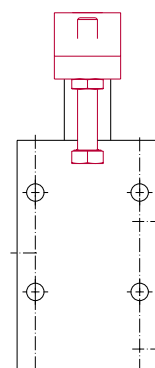
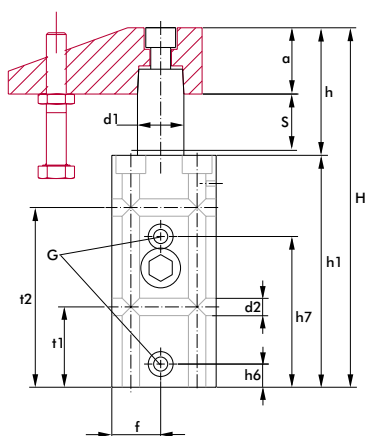
- Position control (E)
- More accessories under accessories standard

### Technical 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 s. If necessary, the oil flow must be reduced. Observe the max. permitted oil flow.



Model no.		operating pressure		Clamping force	Volume flow	Stroke		Oil consumption		Connection	Weight
swivel right	swivel left	min. [bar]	max. [bar]	at 100 bar [kN]	max. [l/min]	complete stroke [mm]	clamping stroke [mm]	clamping [cm³]	unclamping [cm³]	G	[kg]
726D25222-2	727D25222-2	100	250	1,9	0,26	27	10	6,4	13,3	2x G1/8	2,2
726D32322-2	727D32322-2	100	250	3,4	0,53	31	11	13,2	24,9	2x G1/8	3,5
726D40342-2	727D40342-2	100	250	5	0,87	34	12	21,8	42,7	2x G1/8	4,9



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

Model no.		a	c	c1	d1	d2	d3	e	e1	f	H	h	h1	h6	h7	t1	t2	max. Torque [Nm]
swivel right	swivel left	[mm]																
726D25222-2	727D25222-2	25	65	45	18	8,5	13,5	50	30	20,5	165	55	110	10	70,5	35	85	30
726D32322-2	727D32322-2	30	75	55	22	10,5	18	55	35	25,5	194	64	130	12,5	79	45,5	100,5	45
726D40342-2	727D40342-2	40	85	63	28	10,5	18	63	40	29,5	217	77	140	14	91	48,5	108,5	80

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic swing clamps – Standard version

### Swing clamp-base flange version

- Double acting version

### Optional

- Piston with indexing for high repeat accuracy
- Other angle of rotation 0°, 45°, 60°
- Bigger stroke
- More accessories under accessories standard

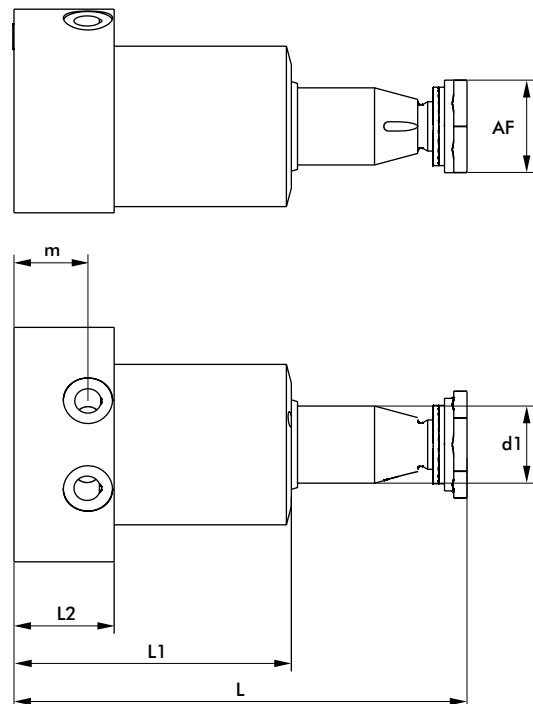
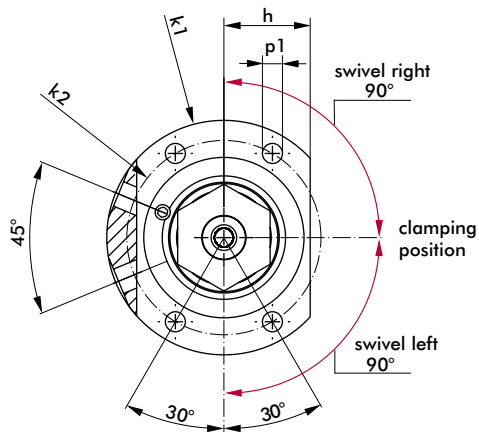
### Technical note:

- 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 s. If necessary, the oil flow must be reduced. Observe the max. permitted oil flow.



Model no.		operating pressure		Clamping force	Volume flow	Stroke		Oil consumption		Connection	Weight
swivel right	swivel left	min. [bar]	max. [bar]	at 100 bar [kN]	max. [l/min]	complete stroke [mm]	clamping stroke [mm]	clamping [cm³]	unclamping [cm³]	G	[kg]
726D32243-2	727D32243-2	30	250	3,2	0,9	24	12	11,1	22,6	G1/8	1,9
726D32373-2	727D32373-2	30	250	3,2	0,9	37	25	27,0	55,9	G1/8	2,2
726D50293-2	727D50293-2	30	250	6,4	2,0	29	15	17,4	35,6	G1/4	4,6
726D50393-2	727D50393-2	30	250	6,4	2,0	39	25	36,9	76,6	G1/4	5,3

**Notes on assembling the clamping arm**  
When loosening and tightening the clamping arm screw the clamping arm must fixed to prevent damage to the piston guide.



Model no.		Piston	d1	D	e	f	h	k1	k2	L	L1	L2	m	p1	AF
swivel right	swivel left	Ø						[mm]							
726D32243-2	727D32243-2	32	25	52	M16x1,5	6	28	76	63	147	90	32,5	24	6,5	22
726D32373-2	727D32373-2	32	25	52	M16x1,5	6	28	76	63	176	106	32,5	24	6,5	30
726D50293-2	727D50293-2	50	36	72	M24x1,5	10	38	110	90	176,5	106,5	42	29	10,5	40
726D50393-2	727D50393-2	50	36	72	M24x1,5	10	38	110	90	201,5	121,5	42	29	10,5	46

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic swing clamps – Standard version

### Swing clamp-top flange version

- Double acting version

### Optional

- Position control
- Piston with indexing for high repeat accuracy
- Other angle of rotation 0°, 45°, 60°
- Bigger stroke
- More accessories under accessories standard

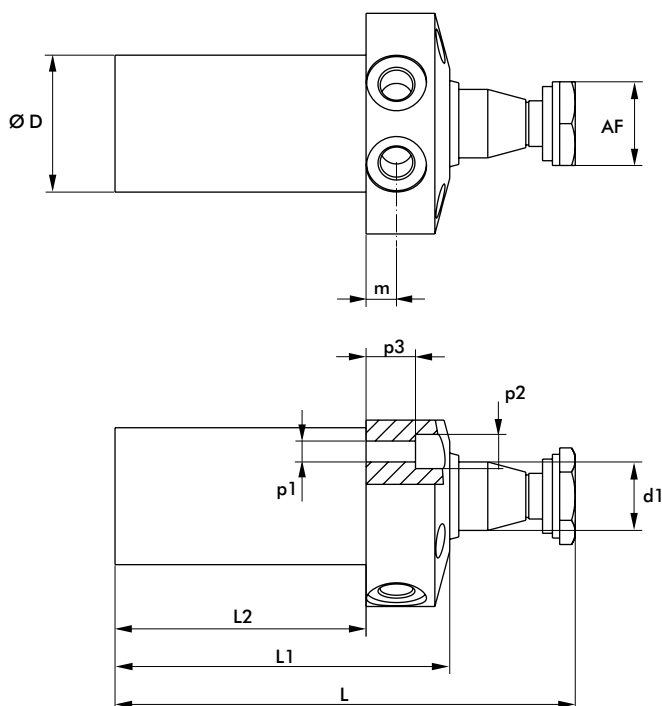
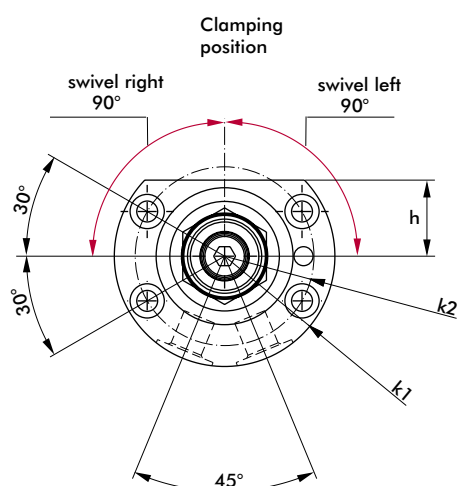
### Technical note:

- 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 s. If necessary, the oil flow must be reduced. Observe the max. permitted oil flow.



Model no.		operating pressure		Clamping force at 100 bar [kN]	Volume flow max. [l/min]	Stroke		Oil consumption		Connection G	Weight [kg]
swivel right	swivel left	min. [bar]	max. [bar]			complete stroke [mm]	clamping stroke [mm]	clamping [cm³]	unclamping [cm³]		
726D32244-2	727D32244-2	30	250	3,2	0,9	24	12	11,1	22,6	G1/8	1,7
726D32374-2	727D32374-2	30	250	3,2	0,9	37	25	27,0	55,9	G1/8	2
726D50294-2	727D50294-2	30	250	6,4	2,0	29	15	17,4	35,6	G1/4	4
726D50394-2	727D50394-2	30	250	6,4	2,0	39	25	36,9	76,6	G1/4	4,5

Notes on assembling the clamping arm  
When loosening and tightening the clamping arm screw the clamping arm must fixed to prevent damage to the piston guide.



Model no.		piston	d1	D	e	f	h	k1	k2	L	L1	L2	m	p1	p2	p3	AF
swivel right	swivel left	Ø	[mm]														
726D32244-2	727D32244-2	32	25	52	M16x1,5	6	28	76	63	146,5	89,5	63,5	11	6,5	10,5	16	30
726D32374-2	727D32374-2	32	25	52	M16x1,5	6	28	76	63	175,5	105,5	79,5	11	6,5	10,5	16	30
726D50294-2	727D50294-2	50	36	72	M24x1,5	10	38	110	90	176	106	78	11	10,5	17	11	40
726D50394-2	727D50394-2	50	36	72	M24x1,5	10	38	110	90	201	121	93	11	10,5	17	11	40

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic swing clamps – compact version

### Swivel clamp-block version

- Double acting version
- Rotation in a plane – without swivel stroke

### Optional

- Piston with indexing for high repeat accuracy
- Other angle of rotation 0°, 45°, 60°
- Bigger stroke
- More accessories under accessories compact

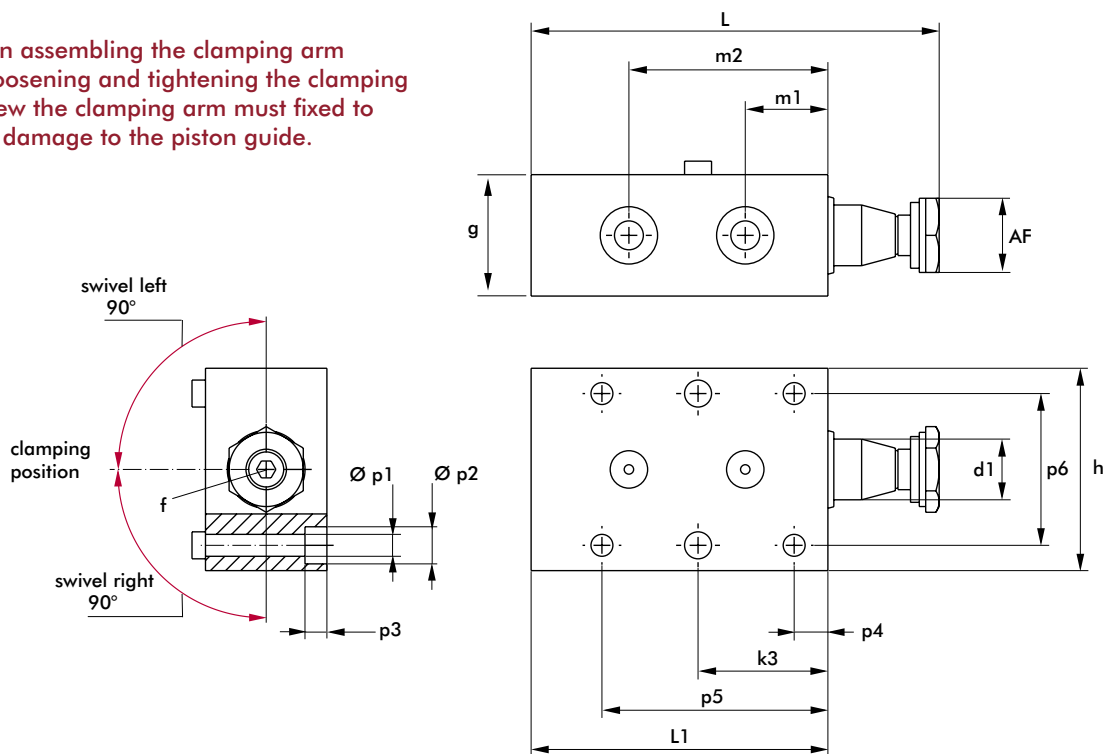
### Technical note:

- 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 s. If necessary, the oil flow must be reduced. Observe the max. permitted oil flow.



Model no.		operating pressure		Clamping force	Volume flow	Stroke		Oil consumption		Connection	Weight
swivel right	swivel left	min. [bar]	max. [bar]	at 100 bar [kN]	max. [l/min]	complete stroke [mm]	clamping stroke [mm]	clamping [cm³]	unclamping [cm³]	G	[kg]
726D25082-5	727D25082-5	30	250	1,6	0,4	8	8	5,3	7,4	G1/8	1.8
726D32122-5	727D32122-5	30	250	3,2	0,9	12	12	15,0	21,0	G1/4	3
726D50122-5	727D50122-5	30	250	6,4	2,0	12	12	41,0	53,0	G1/4	7
726D63122-5	727D63122-5	30	250	9,6	3,0	12	12	74,0	88,0	G1/4	15

Notes on assembling the clamping arm  
When loosening and tightening the clamping arm screw the clamping arm must fixed to prevent damage to the piston guide.



Model no.		piston	d1	e	f	g	h	k3	L	L1	L3	m1	m2	p1	p2	p3	p4	p5	p6	AF
swivel right	swivel left	Ø							[mm]											
726D25082-5	727D25082-5	25	18	M12x1,5	5	36	60	38,5	121	88	48,5	24.5	59	6,5	11	6.5	10	67	45	22
726D32122-5	727D32122-5	32	25	M16x1,5	6	52	75	44,5	152	107	59,5	28	68,5	8,5	14	8	12	77	58	30
726D50122-5	727D50122-5	50	36	M24x1,5	10	72	96	60	195	142	75	34	94	10,5	17	11	15	105	76	40
726D63122-5	727D63122-5	63	42	M30x1,5	12	85	116	70	218	161	85	40	107	13	20	13	20	120	92	46

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic swing clamps – compact version

### Swing clamp-base flange version

- Double acting version
- Rotation in a plane – without swivel stroke

### Optional

- Piston with indexing for high repeat accuracy
- Other angle of rotation 0°, 45°, 60°
- Bigger stroke
- More accessories under accessories compact

### Technical note:

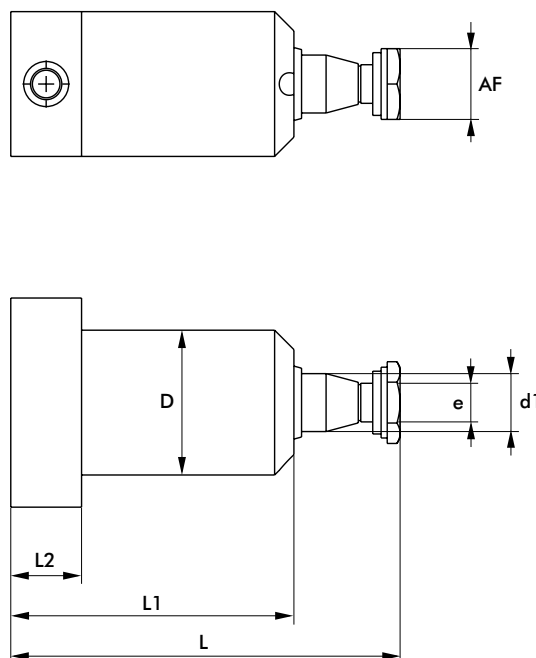
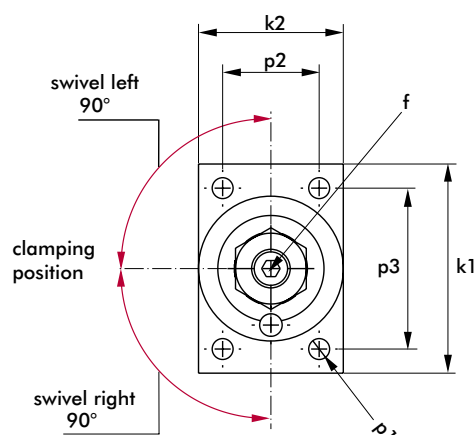
- Clamping must be accomplished in the vertical stroke range.
- The clamping arm cannot be impeded during swivel.
- The cycle time for a clamping or a unclamping stroke should not fall under 1,5 s. If necessary, the oil flow must be reduced. Observe the max. permitted oil flow.



Model no.		operating pressure		Clamping force	Volume flow	Stroke		Oil consumption		Connection	Weight
swivel right	swivel left	min. [bar]	max. [bar]	at 100 bar [kN]	max. [l/min]	complete stroke [mm]	clamping stroke [mm]	clamping [cm³]	unclamping [cm³]	G	[kg]
726D25083-5	727D25083-5	30	250	1,6	0,4	8	8	5,3	7,4	G1/8	1,8
726D32123-5	727D32123-5	30	250	3,2	0,9	12	12	15,0	21,0	G1/8	3
726D50123-5	727D50123-5	30	250	6,4	2,0	12	12	41,0	53,0	G1/4	7
726D63123-5	727D63123-5	30	250	9,6	3,0	12	12	74,0	88,0	G1/4	15

### 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.



Model no.		piston	d1	D	e	f	k1	k2	L	L1	L2	p1	p2	p3	AF
swivel right	swivel left	Ø					[mm]								
726D25083-5	727D25083-5	25	18	M45x1,5	M12x1,5	5	65	45	121	88	22	6,5	30	50	22
726D32123-5	727D32123-5	32	25	M60x1,5	M16x1,5	6	83	63	152	107	22	8,5	44	65	30
726D50123-5	727D50123-5	50	36	M80x2	M24x1,5	10	110	80	195	142	25	13	60	83	40
726D63123-5	727D63123-5	63	42	M95x2	M30x1,5	12	120	95	218	161	25	15	70	96	46

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic swing clamps – compact version

### Swing clamps-top flange version

- Double acting version
- Rotation in a plane-without swivel stroke

### Optional

- Position control(P/E/H)
- Piston with indexing for high repeat accuracy
- Other angle of rotation 0°, 45°, 60°
- Bigger stroke
- More accessories under accessories compact

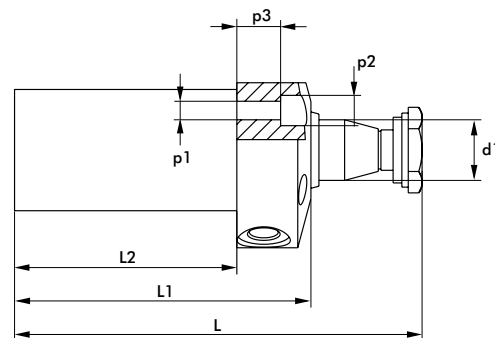
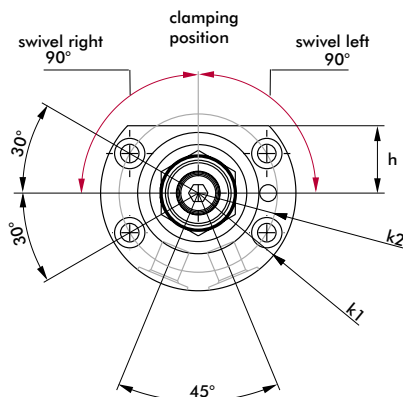
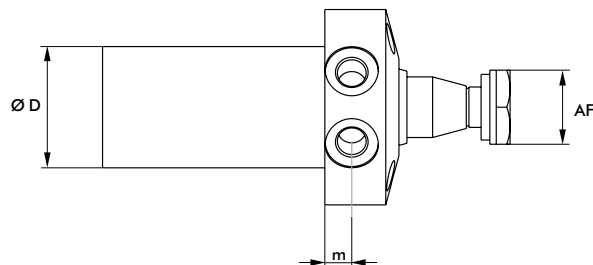
### Technical note:

- 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 s. If necessary, the oil flow must be reduced. Observe the max. permitted oilflow.



Model no.		operating pressure		Clamping force	Volume flow	Stroke		Oil consumption		Connection	Weight
swivel right	swivel left	min. [bar]	max. [bar]	at 100 bar [kN]	max. [l/min]	complete stroke [mm]	clamping stroke [mm]	clamping [cm³]	unclamping [cm³]	G	[kg]
726D25084-5	727D25084-5	30	250	1,6	0,4	8	8	5,3	7,4	G1/8	0,9
726D32124-5	727D32124-5	30	250	3,2	0,9	12	12	15,0	21,0	G1/8	2
726D50124-5	727D50124-5	30	250	6,4	2,0	12	12	41,0	53,0	G1/4	5
726D63124-5	727D63124-5	30	250	9,6	3,0	12	12	74,0	88,0	G1/4	7,7

Notes on assembling the clamping arm  
When loosening and tightening the clamping arm screw the clamping arm must fixed to prevent damage to the piston guide.



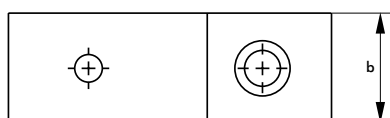
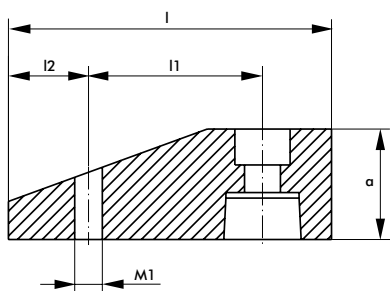
Model no.		piston	d1	D	e	f	h	K1	K2	L	L1	L2	m	p1	p2	p3	AF
swivel right	swivel left	Ø						[mm]									
726D25084-5	727D25084-5	25	18	36	M12x1,5	5	20	58	47	121	88	66	8	5,5	9	13	22
726D32124-5	727D32124-5	32	25	52	M16x1,5	6	28	76	63	152	107	81	11	6,5	10,5	16	30
726D50124-5	727D50124-5	50	36	72	M24x1,5	10	38	110	90	195	142	114	11	10,5	17	11	40
726D63124-5	727D63124-5	63	42	85	M30x1,5	12	45	125	105	218	161	131	12	10,5	17	12	46

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic swing clamps – accessories Standard

### Clamping arm-standard

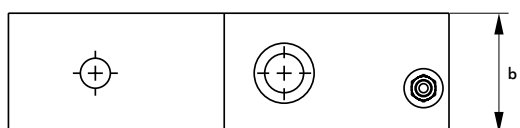
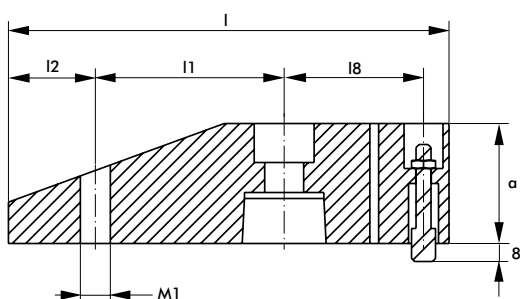
Model no.	a	b	l	l1 [mm]	l2	M1	max. torque [Nm]
728Z25SP0-1	25	25	88	51	19,5	M12	30
728Z32SP0-1	30	30	97	57	19,5	M12	45
728Z40SP0-1	40	40	117	63	29	M12	80



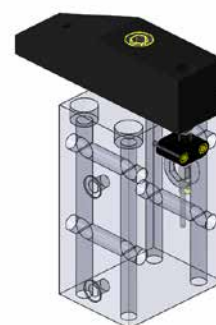
Notes on assembling the clamping arm  
When loosening and tightening the clamping arm screw the clamping arm must be fixed to prevent damage to the piston guide.  
See table for max. torque for arm screw.

### Clamping arm for position control

Model no.	a	b	l	l1 [mm]	l2	l8	M1	max. torque [Nm]
793S01AS2-1	25	25	116,5	51	19,5	37,5	M12	30
793S02AS2-1	30	30	127,5	57	19,5	42,5	M12	45
793S03AS2-1	40	40	147	63	29	46,5	M12	80



Scope of delivery:  
The highlighted parts belong to the package.  
The sensor is not part of the package.



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.



# HYDRAULIC CLAMPING TECHNOLOGY

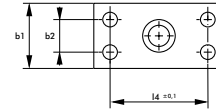
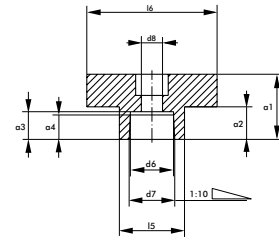
## Hydraulic swing clamps – accessories Standard

### 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.

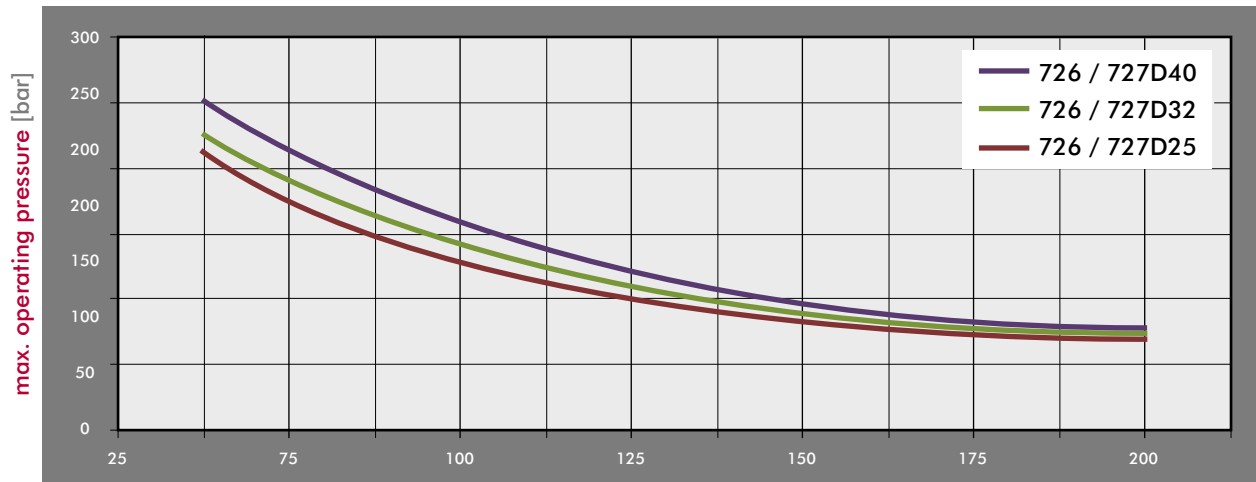
### Important note

Please ensure that the distance of the clamping point of your own manufactured clamping arm is identical with the dimension l1 in the tables. If dimension l1 and/or the weight is increased, the operating pressure must be reduced in accordance with the diagrams shown below.



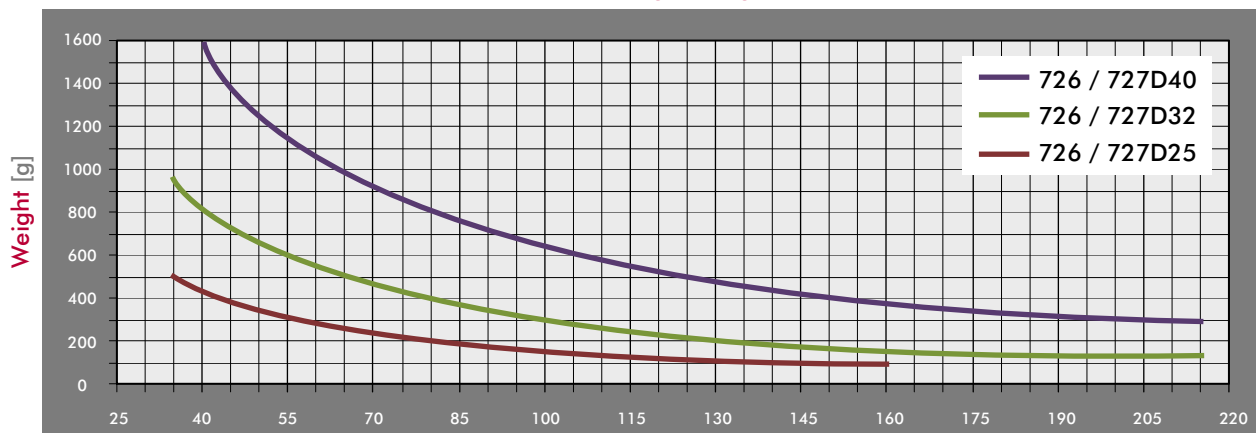
Model no.	a1	a2	a3	a4	b1	b2	Ød5	Ød6	Ød7	Ød8	l4	l5	l6	max. weight [Nm]
	[mm]													
728Z25AD0-1	25	12	11,5	10	25	14	5,5	17	18	11	45	30	360	0,3
728Z32AD0-1	30	15	12	10	30	16	9	21	22	11	46	30	60	0,5
728Z40AD0-1	40	20	17	15	40	20	9	26,5	28	13	60	40	60	1,1

Guide line length/pressure



clamping arm length L1 [mm]

Guide line weight/ length



clamping arm length L1 [mm]

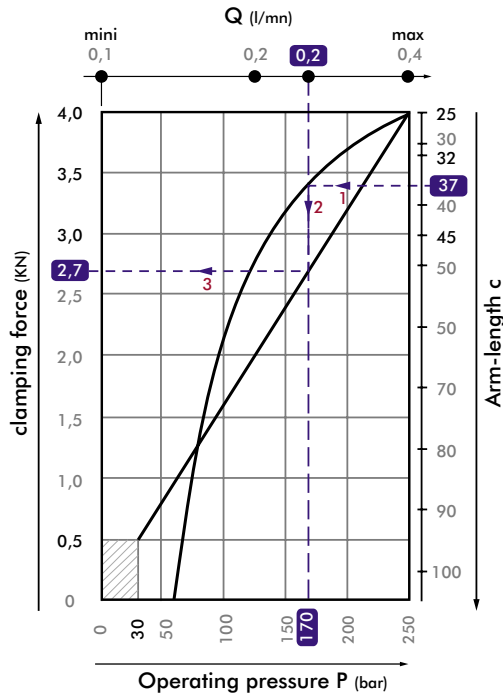
# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic swing clamps – accessories compact

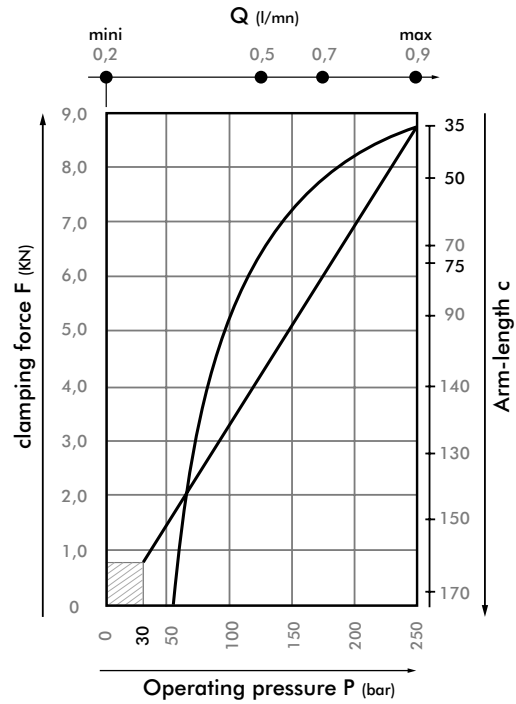
### Selection chart for special clamping arms and settings for the hydraulic system

With help of the following charts you can identify the correct settings for your hydraulic system. E.g.: Swing clamp with piston  $\varnothing$  25 mm and clamping arm effective length  $c=37$  mm: max. pressure=170 bar, max. clamping force 2,7 kN

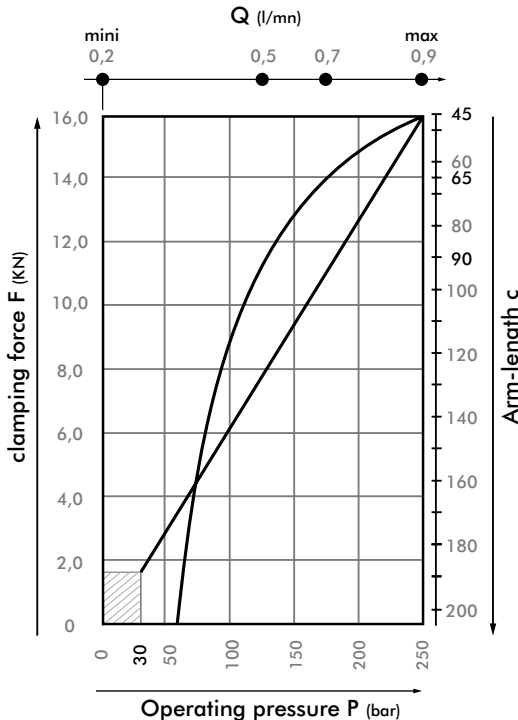
Clamping arm 728Z25SPB...



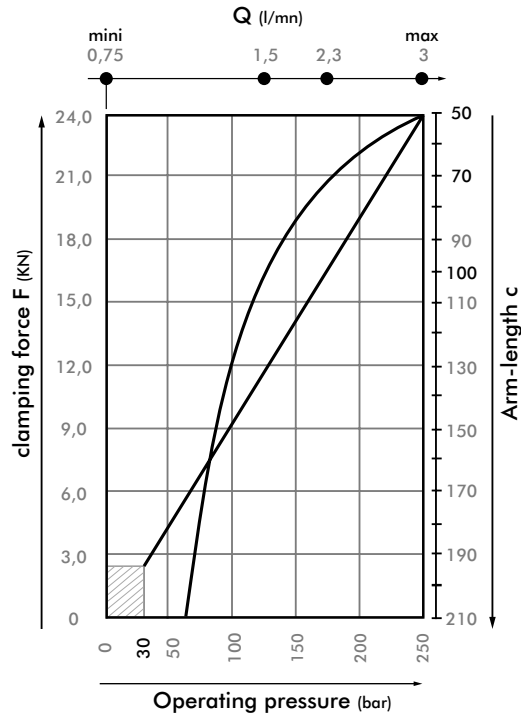
Clamping arm 728Z32SPB...



Clamping arm 728Z50SPB...



Clamping arm 728Z63SPB...

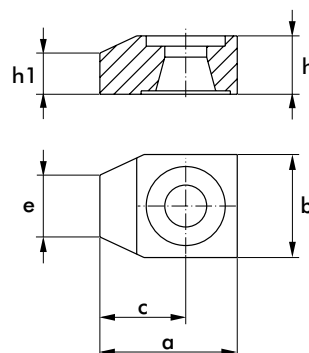


# HYDRAULIC CLAMPING TECHNOLOGY

Hydraulic swing clamps – accessories compact

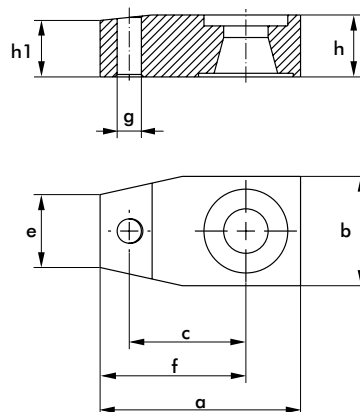
## Clamping arm short size BC

Model no.	a	b	c	e	h	h1
	[mm]					
728Z25SPBC-1	40	30	25	18	17	12
728Z32SPBC-1	55	40	35	23	23	16,5
728Z50SPBC-1	72	55	44,5	30	30	20
728Z63SPBC-1	85	70	50	36	33	20



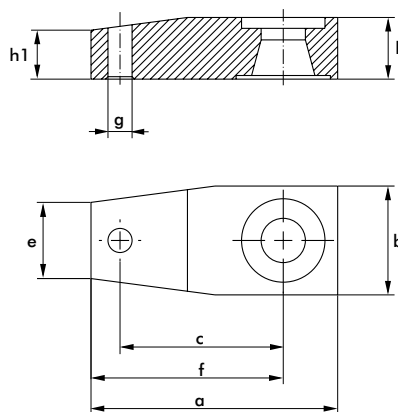
## Clamping arm middle size BM

Model no.	a	b	c	e	f	g	h	h1
	[mm]							
728Z25SPBM-1	55	30	32	20	4	M8	17	15,5
728Z32SPBM-1	85	40	50	21	65	M12	23	21,5
728Z50SPBM-1	108	55	65	35	80,5	M16	30	25
728Z63SPBM-1	125	70	70	43	90	M20	33	30,5



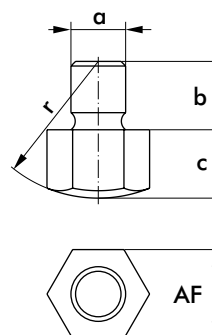
## Clamping arm long size BL

Model no.	a	b	c	e	f	g	h	h1
	[mm]							
728Z25SPBL-1	68	30	45	21	53	M8	17	13,5
728Z32SPBL-1	110	40	75	24	90	M12	23	17
728Z50SPBL-1	134	55	90	40	106,5	M16	30	22
728Z63SPBL-1	155	70	100	50	120	M20	33	27



## Contact bolt

Model no.	a	b	c	r	AF
	[mm]				
728Z25SPVB-1	M8	10	10	20	13
728Z32SPVB-1	M12	12	10	45	19
728Z50SPVB-1	M16	20	10	60	24
728Z63SPVB-1	M20	25	10	80	30



# HYDRAULIC CLAMPING TECHNOLOGY

## Lever clamp

Lever clamps are primarily meant for individual cases, where the clamping position needs to be free for handling once the workpiece is clamped.

Compared to swing clamps, lever clamps have a more compact construction and higher clamping force. Lever clamps are especially meant for those cases, where bothering contours make the use of swing clamps unsuitable.

### Technical features

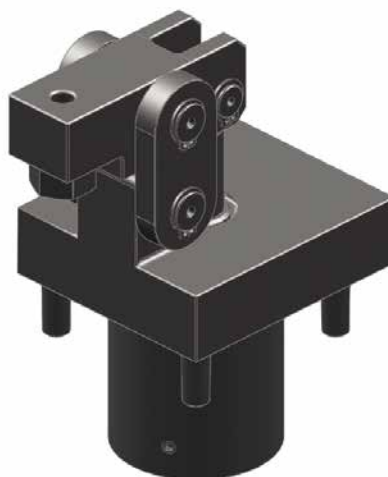
- 3 different sizes
- Since the clamping lever has a movable position, the clamping point can be fully released.
- In horizontal position the clamping lever provides its optimal clamping force
- Workpiece tolerances with a position deviation of appr.  $\pm 8.5^\circ$  can be compensated easily.
- With metal scraper

### Optional available:

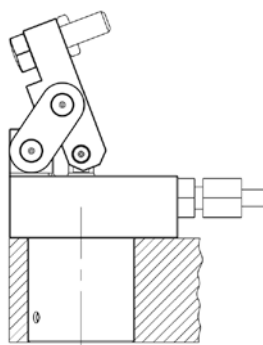
- The lever clamp cylinder can be equipped with full-length piston rod. The sensing can be made through inductive proximity switch or pneumatically.
- Special designed lever on request
- Lever clamp with O-Ring flanged connection (-02) oder Cartridge version (-03)

### Recommended accessories (separate Order)

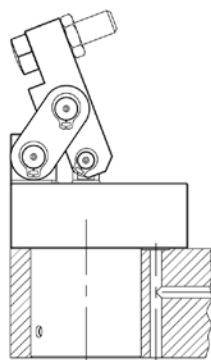
2 x straight screw connections **D8S-R1/8** or **D8S-R1/4**



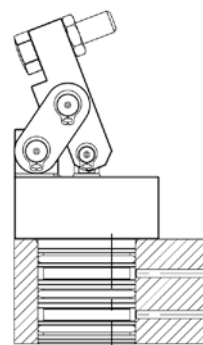
### Available versions:



With threaded connection G1/4  
Model no. -01



with O-Ring flanged connection  
Model no. -02

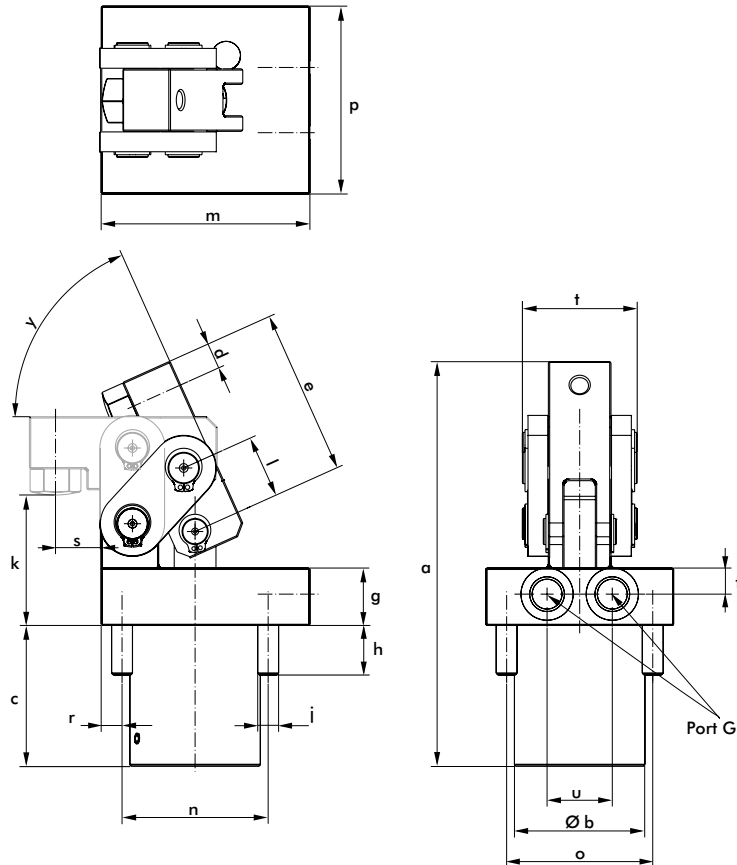


Cartridge version  
Model no. -03

Model no.	Clamping force at 100 bar [kN]	max. operating pressure [bar]	Oil consumption		Piston Ø [mm]	Connection G	Weight [kg]
			clamping [cm <sup>3</sup> ]	unclamping [cm <sup>3</sup> ]			
732D16HSZY-01	1,5	350	4,2	2,6	16	G1/8	1,4
732D25HSZY-01	3,9	350	13,2	7,8	25	G1/4	2,9
732D40HSZY-01	9,5	200	50,3	30,6	40	G1/4	6,9

# HYDRAULIC CLAMPING TECHNOLOGY

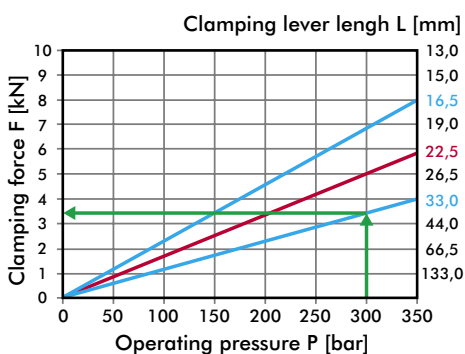
## Lever clamp



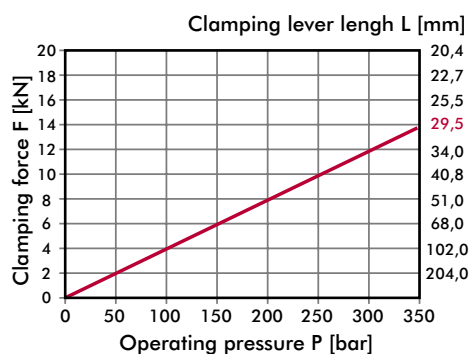
Model no.	a	b	c	d	e	f	g	h	j	k	l	m	n	o	p	r	s	t	u	y
	[mm]																			
732D16HSZY-01	117	38	37,5	7,5	49	8	22,5	10,5	M6	41,5	19	61	38	38	52	7	16	28	18	69°
732D25HSZY-01	156	50	54	10	63,5	10	22	19	M8	50	24	80	56	56	72	8	17	44	25	65°
732D40HSZY-01	191	70	67,5	10	82,5	12,5	25	20	M10	65	31,5	85	62	78	100	13,5		66	30	65°

### Guidance for special clamping lever

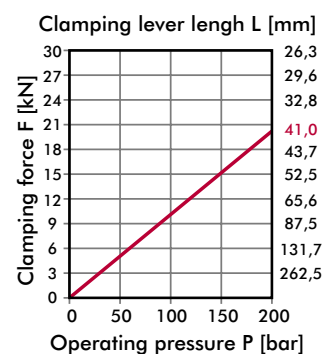
#### 732D16HSZY-01



#### 732D25HSZY-01



#### 732D40HSZY-01



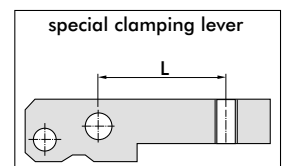
- Standard clamping lever
- Drawing example
- Calculation example

#### Values from diagram:

max. operating pressure	$P_{max} = 350 \text{ bar}$
Fmax. at a Pmax.	$F_{max} = 4 \text{ kN}$
Clamping lever length	$L = 33 \text{ mm}$
Operating pressure	$P = 300 \text{ bar}$
Resulting clamping force	$F = 3,43 \text{ kN}$

#### Solution:

$$\text{Clamping force } F = F_{max} \times \frac{P}{P_{max}} = 4 \text{ kN} \times \frac{300 \text{ bar}}{350 \text{ bar}} = 3,43 \text{ kN}$$



# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic edge clamp | single acting

### Operating pressure max. 500 bar

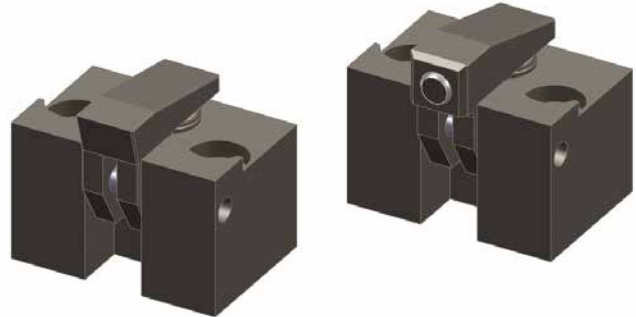
Edge clamps are mainly used where workpiece clamping "from the top" is difficult or impossible. Its small design is an advantage where space is limited. The clamp is equipped with 2 hydraulic connections. Both connections are linked via a transverse hole. This allows the possibility to link the edge clamps directly if several clamps are to be operated simultaneously.

### Technical characteristics:

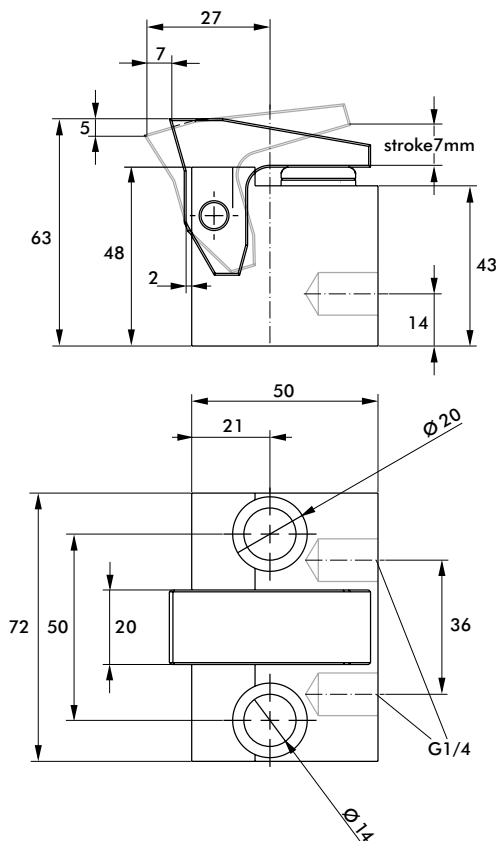
- Spring retraction
- Clamping lever with or without ball element
- The hold down force is the vertically (downward) acting component of the clamping force

### Recommended accessories (separate Order)

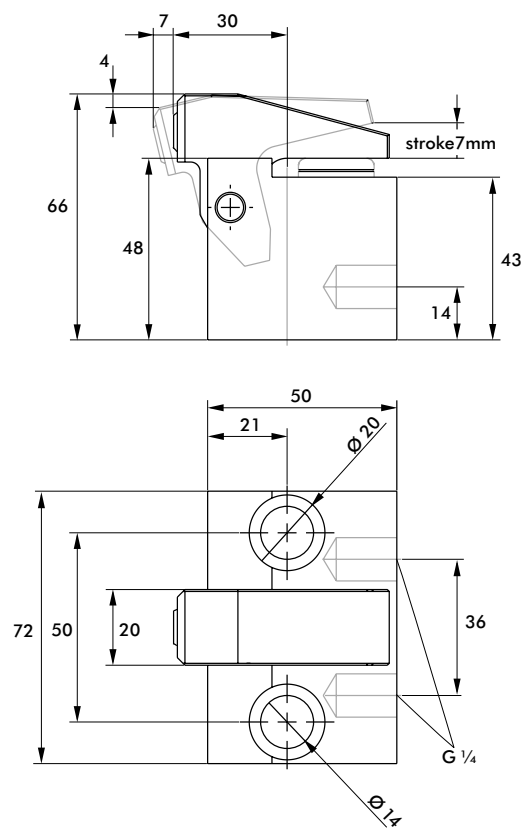
1 straight screw connection, Order no. **D8S-R1/4**



### Model no. 733E03701-1



### Model no. 733E03702-1



Model no.	version	max. operating pressure [bar]	Clamping force at 100 bar [kN]	Clamping range horizontal [mm]	Clamping range vertical [mm]	Oil consumption [cm <sup>3</sup> ]	Connection	Weight [kg]
733E03701-1	standard	500	3,7	7	5	2,2	2 x G1/4	1
733E03702-1	with ball element							



# HYDRAULIC CLAMPING TECHNOLOGY

## Pressure accumulator control unit | double action

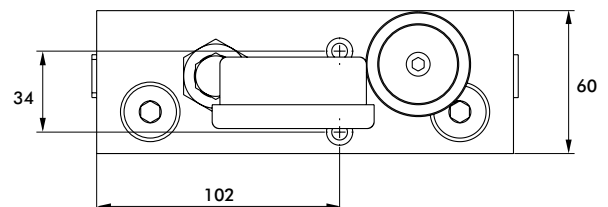
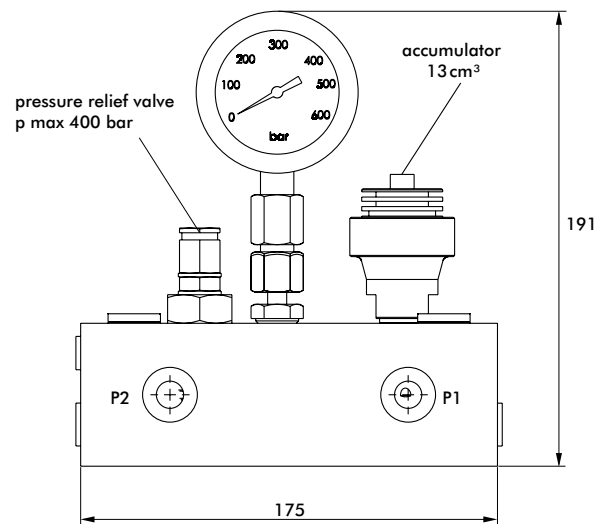
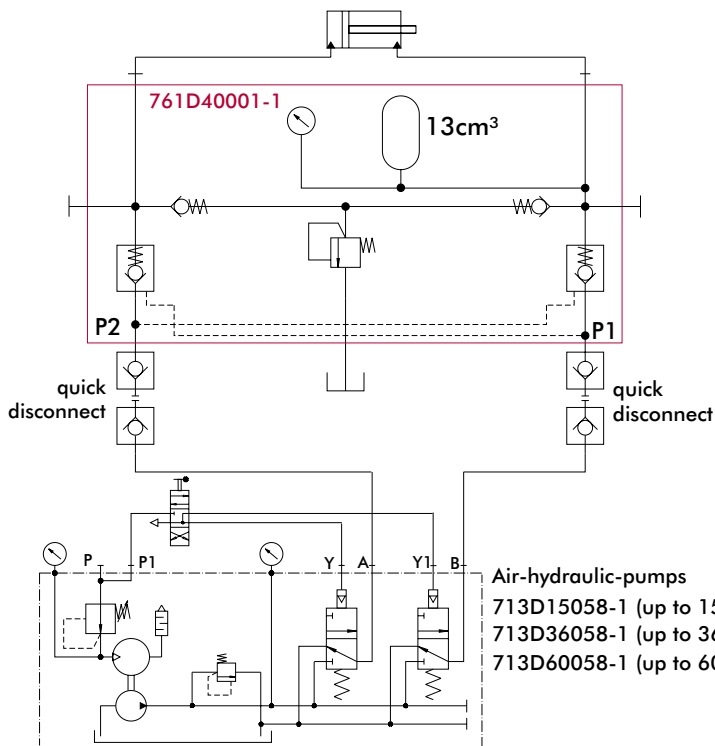
### Pressure accumulator control unit, double action Operating pressure max. 400 bar

The pressure accumulator control unit is used in those applications where hydraulic clamping devices are disconnected from the pressure generators, e.g. on flexible production systems with hydraulic clamping devices, CNC machine tools in conjunction with palette exchangers.

The main task of the pressure accumulator control unit is to compensate for pressure fluctuations and in the event of any minor leakages to prevent sudden drops in pressure.

Control is effected only via the air hydraulic pump. Switchover is automatically controlled by an internal back pressure valve inside the pressure control unit which avoids the necessity to fit an additional manual valve.

The protection for the pressure control unit is guaranteed by the integrated pressure relief valve.



Model no.	max. operating pressure [bar]	Pressure relief valve set at [bar]	Gas pressure [bar]	Accumulator volume [bar]	Connection	Weight [kg]
761D40001-1	400	400	100	13	G1/4	5,4



# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic rotary unions

### Operation pressure max. 400 bar

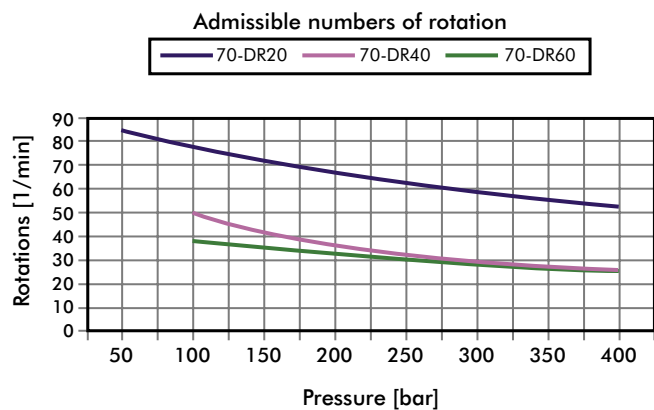
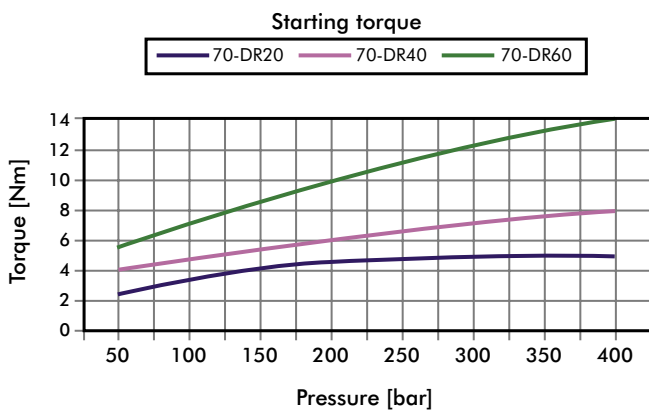
Rotary unions transfer hydraulic oil from a fixed to a rotating machine part. The assembly is done in the rotating axis of the subassembly. Depending on the number of junction levels several single or double acting hydraulic elements can be connected. On principle, the rotary coupling is only suitable for hydraulic oil. If pneumatic shall be transferred, the catalogued elements can be used providing that the air is filtered and lubricated to guarantee seal greasing and corrosion protection.

### Technical features:

- 2 versions per size
- Suitable for hydraulic, pneumatic and vacuum

### Optional:

- Rotary valve unions



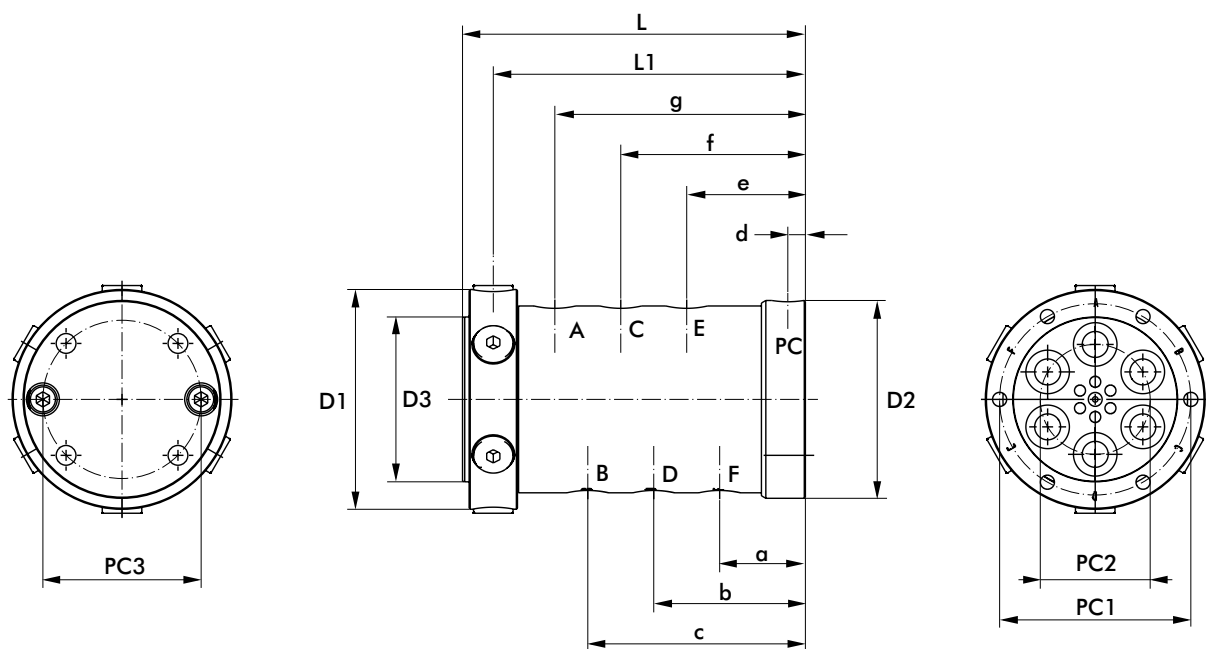
Model no.	nominal diameter	Connections	Rotations* 1/min	Leakage rate cm <sup>3</sup> / 100h	Connection standard ports	Connection leakage port	Weight [kg]
70-DR20-1	5	2	50-80	0	G1/4	-	2,2
70-DR20-2	5	2	50-80	30	G1/4	G1/8	2,5
70-DR40-1	5	4	25-45	0	G1/4	-	3,8
70-DR40-2	5	4	25-45	50	G1/4	G1/8	4,2
70-DR60-1	5	6	25-35	0	G1/4	-	5,8
70-DR60-2	5	6	25-35	60	G1/4	G1/8	6,2

\*pressure-controlled

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic rotary unions

Model no.	D1	D2	D3	L	L1	a	b	c	d	e	f	g	h	PC1	PC2	PC3
	[mm]															
70-DR20-1	75	75	-	70	49	20	-	-	-	36	-	-	59,5	50	25	50
70-DR20-2	75	80	-	85	64	35	-	-	8	51	-	-	74,5	50	25	50
70-DR40-1	85	85	60	100	76	20,5	48,5	-	-	34,5	62,5	-	86,5	72	35	72
70-DR40-2	85	90	60	115	91	35,5	63,5	-	8	49,5	77,5	-	101,5	72	35	72
70-DR60-1	100	85	75	141	127	24	54	84	-	39	69	99	127	87	50	72
70-DR60-2	100	90	75	156	131	39	69	99	8	54	84	131	142	87	50	72

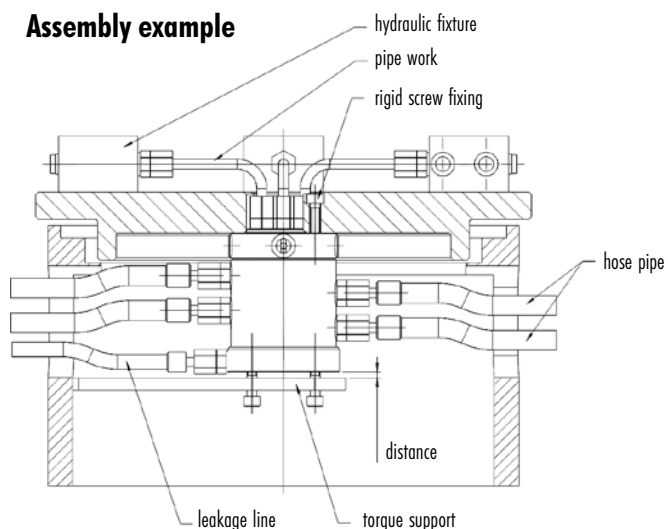


The rotary coupling must be mounted in a way that no transverse moment is effected on the standing or rotating element. It has proven to be best to screw the rotating housing with its ports towards the clamping devices and to protect the rotating piston only against twisting (no initiation of bearing forces). The line connection from the torque support to the rotating piston should be done via hoses only.

The rotary coupling may only be taken into operation when all junction levels are connected to the power unit in order to guarantee the necessary seal lubrication.

The multiple passage rotary couplings have axial and radial G1/4 threaded ports in the rotating piston. In addition, they can be connected axially at the rotating piston with O-Rings 16 x 2. In this case, please calculate the necessary screw forces of the fixing screws imperatively.

### Assembly example



# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic valves

### Hydraulic pressure control valve

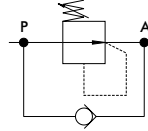
This valve can be used in hydraulic systems where further pressure increase must be prevented after the pressure pre-set at the valve has been achieved. Furthermore, the valve allows to operate two or more clamping circuits at different pressure levels.

#### Function

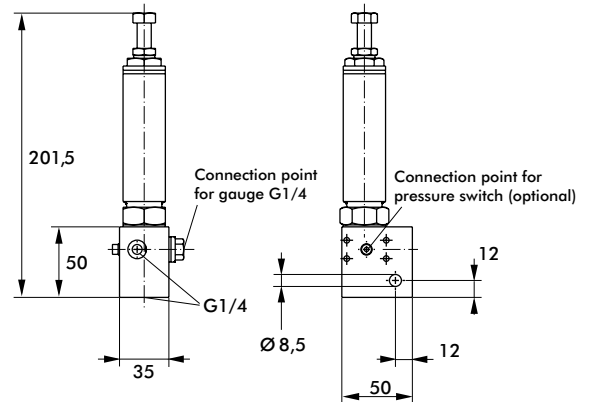
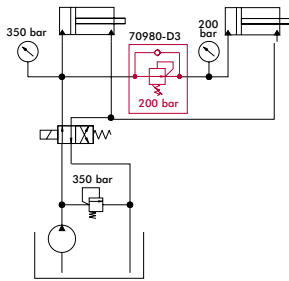
The valve blocks the flow to a connected unit when a preset pressure level is achieved within the user line.

When pressure drops at connection "A", the valve opens, allowing the pump to build up pressure again. The valve works leakagefree.

Symbol:



Connection example:

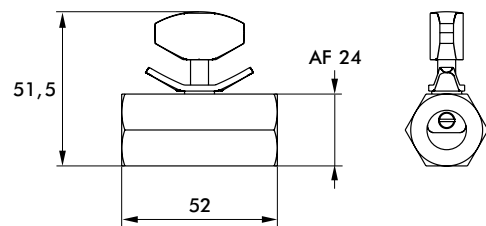
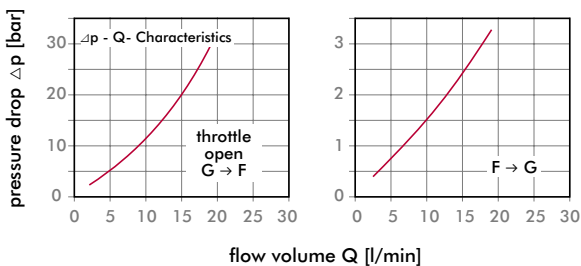
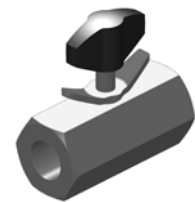
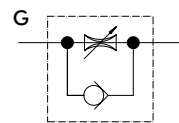


Model no.	Mounting position	max. operating pressure [bar]	Setting range min. [bar]	max. [bar]	max. flow volume [l/min]	Flow direction	Connection	Weight [kg]
70980-D3	beliebig	380	30	380	12	P --> A	G1/4	1,3

### Hydraulic throttle valve with reverse free flow

Hydraulic throttle valves are used as restrictor valves in hydraulic systems. Their flow resistance is changed by adjusting the diameter of the restrictor; this regulates the flow volume. In the opposite flow direction, the flow is not restricted.

Symbol:



Model no.	Mounting position	max. operating pressure [bar]	max. flow volume [l/min]	flow direction		Temperature range	Connection	Weight [kg]
				throttled	free			
70981-D	beliebig	500	15	G --> F	F --> G	-40°...+80°C	G1/4	0,4

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic valves

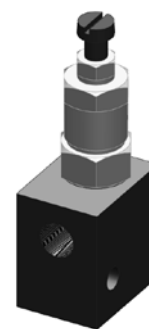
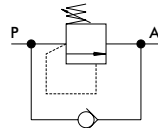
### Hydraulic opening valve, direct control

The use of hydraulic opening valves is recommended in applications where 2 or more hydraulic cylinders have to be operated in sequence or where workpieces have first to be positioned and then clamped.

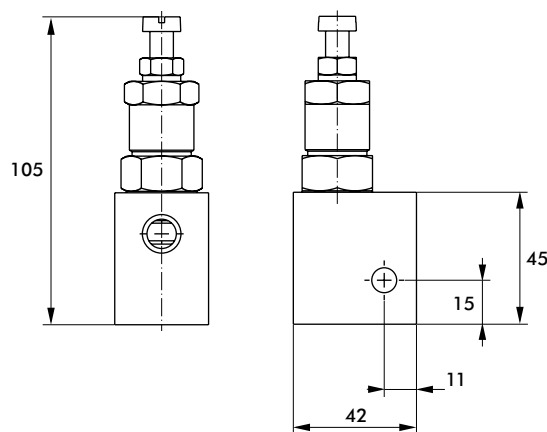
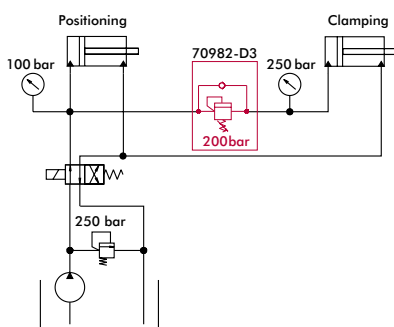
#### Function

Hydraulic opening valves are mounted into the feed line of hydraulic cylinders which have to be actuated with a delay. Opening valves only open when the pre-set pressure is achieved or exceeded.

Symbol:



Connection example:



Model no.	Mounting position	max. operating pressure [bar]	Setting range min. [bar]	max. [bar]	max. flow volume [l/min]	Flow direction	Connection	Weight [kg]
70982-D3	optional	350	20	250	40	P --> A	G1/4	0,4

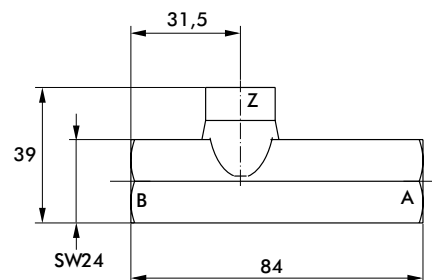
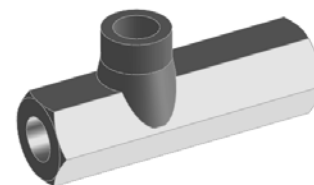
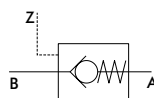
### Back pressure valve with hydraulic release

Back pressure valves serve to avoid pressure drop in pressurised cylinders as a result of leakage in the directional control slide valve. Furthermore, back pressure valves are used where hydraulic cylinders must be blocked for safety reasons in case of control valve failure.

#### Function

Flow direction A → B blocked, B → A open. The flow direction A → B (blocked) can be released by hydraulic pressure to Z.

Symbol:



Model no.	Mounting position	max. operating pressure [bar]	max. flow volume [l/min]	Temperature range	Connection	Weight [kg]
70983-D	optional	700	15	-40°...+80°C	G1/4	0,3

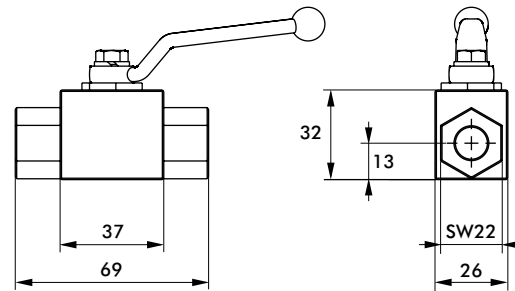
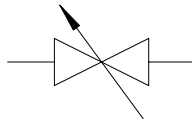
# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic valves

### Hydraulic high pressure shut-off valve

Hydraulic high pressure shut-off valves are used for blocking hydraulic lines, e.g. in case one or more cylinders in a hydraulic clamping circuit must be temporarily shut-off.

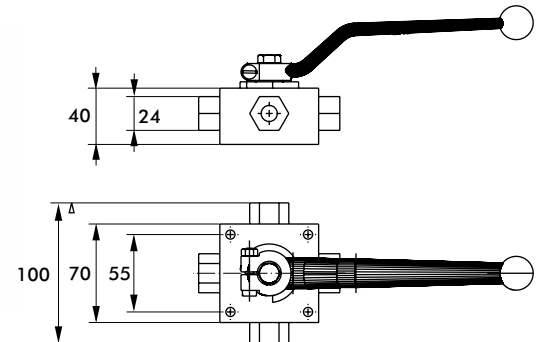
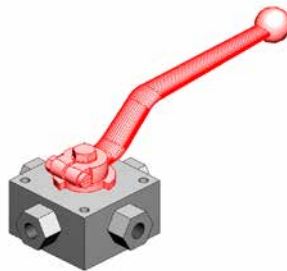
Symbol:



Model no.	Mounting position	max. operating pressure [bar]	body	Material			Connection	Weight [kg]
				ball and shaft	ball seal	shaft seal		
<b>70984-D</b>	optional	500	steel	steel chromed	polyamide	perbunan	G1/4	0,4

### Hydraulic 4/3-way manual ball valve

Hydraulic 4/3-way manual ball valves are used e. g. for direct control of hydraulic cylinders in single or double action systems.



Model no.	schematic diagram	Mounting position	max. operating pressure [bar]	max. flow volume [l/min]	Temperature range	Connection	Weight [kg]
<b>70911-1</b>		optional	350	15	-20°....+70°C	G1/4	0,3
<b>70912-1</b>		optional	350	15	-20°....+70°C	G1/4	0,3
<b>70913-1</b>		optional	350	15	-20°....+70°C	G1/4	0,3

# HYDRAULIC CLAMPING TECHNOLOGY

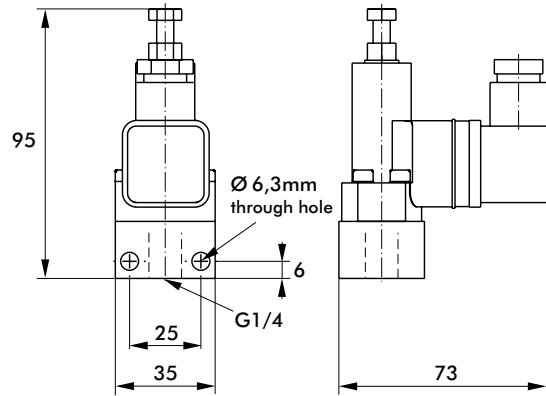
## Hydraulic accessories

### Electro-hydraulic piston pressure switch

Electro-hydraulic pressure switches are devices which close or open electrical contacts when pressurized. They are usually used for all applications where a electrical signal should be triggered whenever the set pressure is achieved or exceeded. This signal may be utilized to start a subsequent operation cycle or to stop an operation cycle.

#### Recommended accessories:

Straight screw connection **D8S-R1/4**



Model no.	Pressure range [bar]	Temperature range [°C]	Mounting position	Switching precision [l/min]	max. switching frequency [1/min]	Portection	Permitted current load	Weight [kg]
<b>70-DG34-1/4</b>	100-400	-20 to +80	optional	±2...3%	30	IP65	2A	0,4

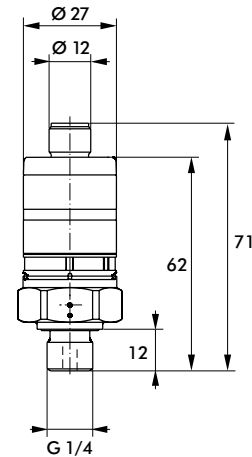
### Electronic pressure switch

The electronic pressure switch apply wire strain gauges with full bridge circuitry. The adaptation and evaluation of the signal output is via analogous electronics.

- Two fully-electronic PNP-outlets (switching plus)
- Two LED's (yellow) as switching status indicators
- adjustment via 2 rings with scales
- plombable

#### Recommended accessories:

- Gauge screw connection **MV8S** or **MVE8S**
- KConnection socket 4-pin M12x1 (5m cable) **8EL-003-1**



Model no.	Pressure range [bar]	Temperature range [°C]	Mounting position	Switching precision [l/min]	Hysteresis	Protection	Voltage [VDC]	Permitted current load [mA]	Weight [kg]
<b>70-DG64-1/4</b>	0-400	-25 to +80	optional	±2,5%	2%	IP67	9,6...32	max. 500	0,8

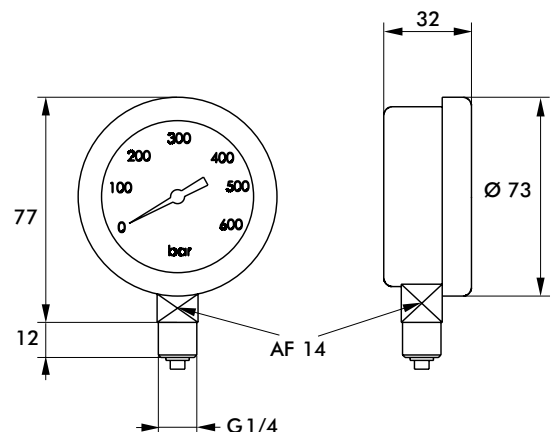
### Hydraulic gauge with glycerin filling

Max. operating pressure 0-600 bar

#### Recommended accessories:

- Gauge screw connection **MV8S**

Model no.	Pressure range [bar]	Connection	Weight [kg]
<b>70925-214</b>	0-600	below	0,25



# HYDRAULIC CLAMPING TECHNOLOGY

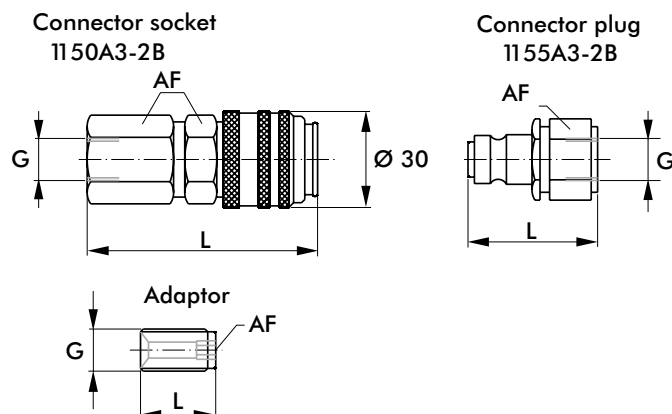
Hydraulic accessories

## Hydraulic quick connectors

### Technical features

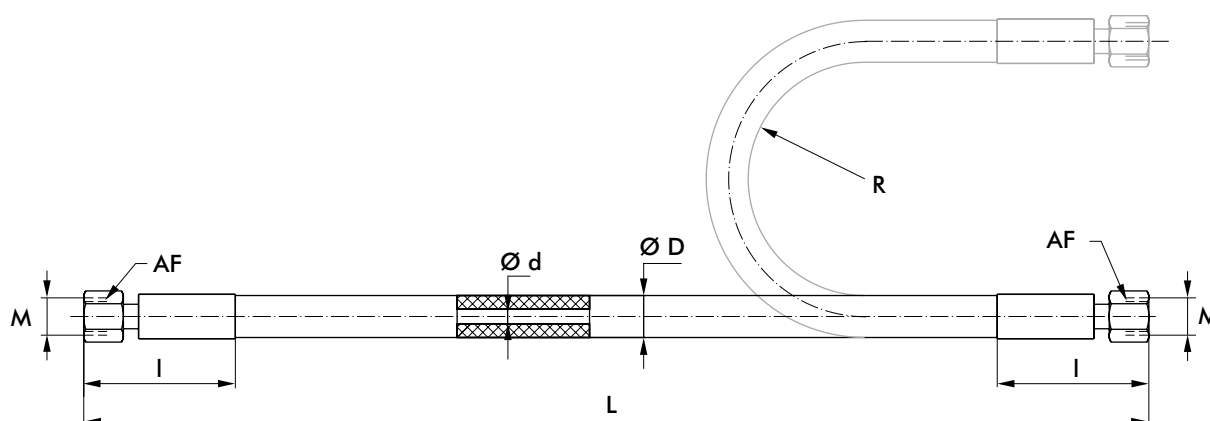
- Minimal pressure drop due to unobstructed flow
- Drop free connection or disconnection
- Automatic safety function
- Dust cap supplied as standard

**Note:** not connecting or disconnecting under pressure/load



Model no.	max. operating pressure connected [bar]	max. operating pressure disconnected [bar]	max. flow volume [l/min]	Length ~L [mm]	Connection G [mm]	AF [mm]	Weight [Kg]
1150A3-2B	1000	1000	6	72,5	G1/4	24	0,3
1155A3-2B	1000	1000	6	41	G1/4	22	0,1
1184-2B	1000	1000	6	23,5	G1/4	5	0,02

## Hydraulic high pressure hose



Model no.	nominal size	max. operating pressure [bar]	Internal-Ø [mm]	External-Ø [mm]	Connector-thread M16x1,5	~l [mm]	Total length*	AF [mm]	Bendradius min.	Weight [kg]
6-301-300S	6	500	6,4	18	M16x1,5	65	300	19	150	0,3
6-301-600S	6	500	6,4	18	M16x1,5	65	600	19	150	0,4
6-301-900S	6	500	6,4	18	M16x1,5	65	900	19	150	0,6
6-301-1200S	6	500	6,4	18	M16x1,5	65	1200	19	150	0,7
6-301-1500S	6	500	6,4	18	M16x1,5	65	1500	19	150	0,8

\* special length on request

# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic accessories

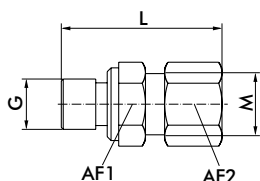
### Screw connections for hydraulic pipe (external Ø 8mm) and hydraulic hoses

Screw connection, standard application (coupling nut M14x1,5 or M16x1,5 and cutting ring are removable)

#### Permitted operating pressure:

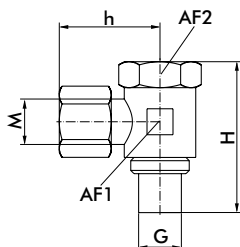
- L-screw connection R1/8 max. 200 bar (e.g.D8L-R1/8)
- L-screw connection R1/4 max. 250 bar (e.g.D8L-R1/4)
- S-screw connection max. 630 bar (e.g.D8S-R1/4)

#### Straight screw connection



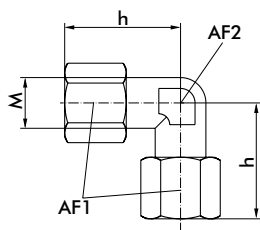
Model no.	max. pressure [bar]	~L	M [mm]	AF1	AF2	Thread G
D8L-R1/8	200	31	M14x1,5	17	17	G1/8
D8L-R1/4	250	36,5	M14x1,5	19	17	G1/8
D8L-SAE4	250	36,5	M14x1,5	19	17	7/16-20UNF
D8S-R1/8	630	39	M16x1,5	17	19	G1/4
D8S-R1/4	630	42	M16x1,5	19	19	G1/4
D8L-1/8NPT	200	31,5	M14x1,5	14	17	1/8NPT
D8L-1/4NPT	250	36,5	M14x1,5	14	17	1/4NPT
D8S-1/4NPT	630	42,5	M16x1,5	17	19	1/4NPT

#### L-screw connection, adjustable



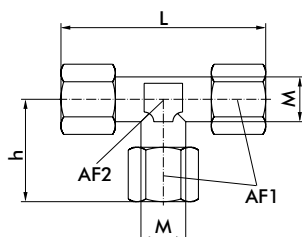
Model no.	max. pressure [bar]	H	~h	M [mm]	AF1	AF2	Thread G
DSVK-8LR	250	45	29	M14x1,5	17	22	G1/4
DSVK-8SR	630	45	31	M16x1,5	19	22	G1/4

#### L-screw connection



Model no.	max. pressure [bar]	~h	M [mm]	AF1	AF2
K8L	250	29	M14x1,5	17	12
K8S	630	31	M16x1,5	19	14

#### T-screw connection



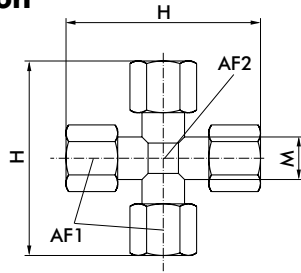
Model no.	max. pressure [bar]	~h	~L	M [mm]	AF1	AF2
Q8L	250	29	57	M14x1,5	17	12
Q8S	630	31	63	M16x1,5	19	14



# HYDRAULIC CLAMPING TECHNOLOGY

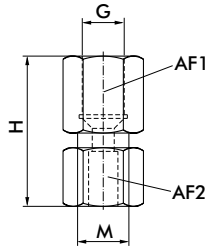
Hydraulic accessories

## Cross screw connection



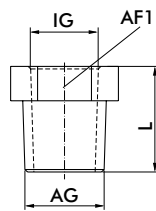
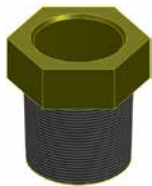
Model no.	max. pressure [bar]	~H	M [mm]	AF1	AF2
KV8L	250	57	M14x1,5	17	12
KV8S	630	63	M16x1,5	19	14

## Gauge screw connection



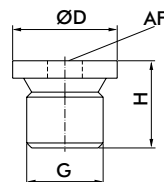
Model no.	max. pressure [bar]	~H	M [mm]	AF1
MV8L	250	250	M14x1,5	17
MV8S	630	630	M16x1,5	19

## Reducing nipple



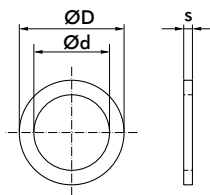
Model no.	max. pressure [bar]	~L	AG [mm]	IG	AF1
GWR-3/8-1/4	630	36	G3/8	G1/4	22
PTRS-1/4NPT	630	22	3/8NPT	1/4NPT	19

## Blanking plug



Model no.	max. pressure [bar]	ØD	H [mm]	AF1	Thread G
70215-09	630	14	12	5	G1/8
70230-09	630	18	15	6	G1/4
130-000-019	630	SW14	17	SW14	SAE4

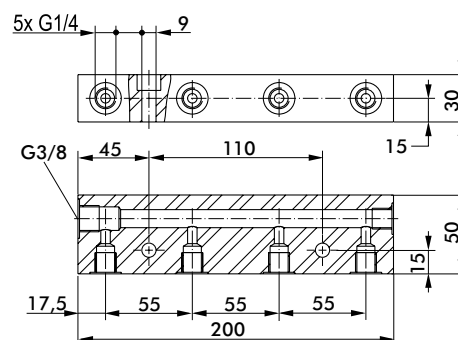
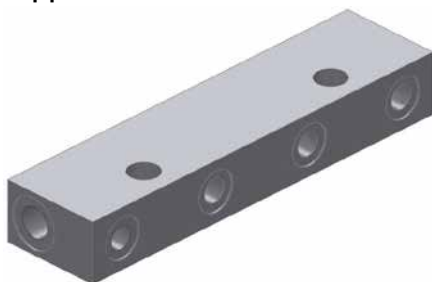
## Copper seal ring



Model no.	max. pressure [bar]	Ød	ØD [mm]	S	for Thread
70200-01	630	10	15	1,5	G1/8
70200-02	630	13	18	1,5	G1/4

## Manifold

- 1 reducing nipple GWR-3/8-1/4 included



# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic accessories

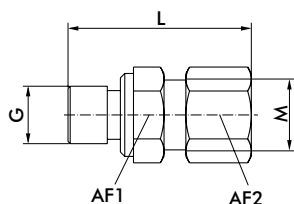
### Screw connections

Screw connection, pre-assembled (the coupling nut M14x1,5 or M16x1,5 and cutting ring are pre-assembled)

#### Permitted operating pressure

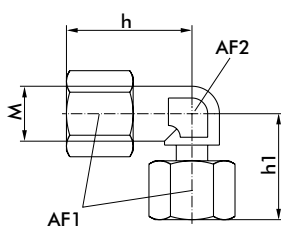
- L-screw connection R1/8 max. 200 bar (e.g. D8L-R1/8)
- L-screw connection R1/4 max. 250 bar (e.g. D8L-R1/4)
- S-screw connection max. 630 bar (e.g. D8S-R1/4)

### Straight screw connection, pre-assembled



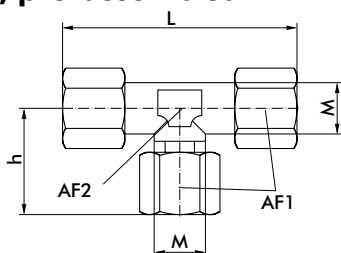
Model no.	max. pressure [bar]	~H	M [mm]	AF1	AF2	Thread G
DC8L-R1/8	200	35	M14x1,5	17	17	G1/8
DC8L-R1/4	250	37	M14x1,5	19	17	G1/4
DC8S-R1/4	630	42	M16x1,5	19	19	G1/4
DC8L-1/4NPT	250	34	M14x1,5	14	17	1/4NPT
DC8S-1/4NPT	630	40	M16x1,5	14	19	1/4NPT

### L-screw connection, pre-assembled



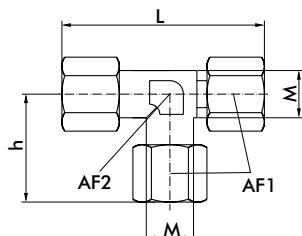
Model no.	max. pressure [bar]	~h	~H1	M [mm]	AF1	AF2
KE8L	250	29	27	M14x1,5	17	12
KE8S	630	31	30	M16x1,5	19	14

### T-screw connection, pre-assembled



Model no.	max. pressure [bar]	~h	~L	M [mm]	AF1	AF2
QE8L	250	27	57	M14x1,5	17	12
QE8S	630	30	63	M16x1,5	19	14

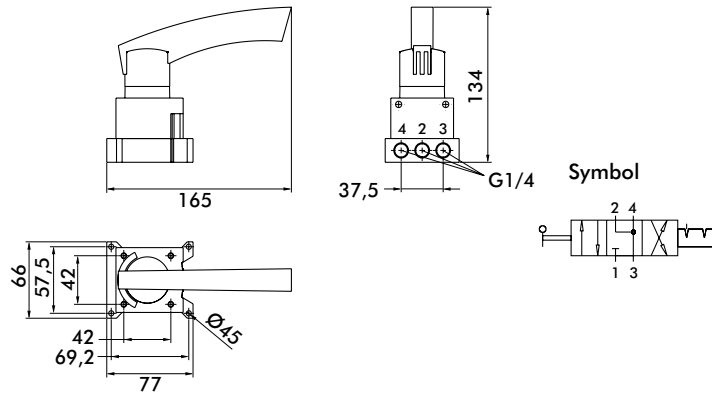
### T-screw connection, pre-assembled



Model no.	max. pressure [bar]	~h	~L	M [mm]	AF1	AF2
LE8L	250	27	56	M14x1,5	17	12
LE8S	630	30	61	M16x1,5	19	14

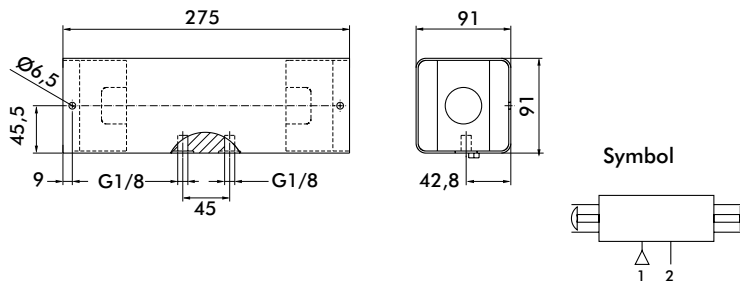
# HYDRAULIC CLAMPING TECHNOLOGY

## Hydraulic accessories



### 800416 4/3 way manual control valve

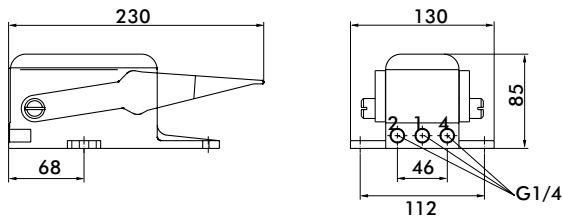
- Operating pressure range 3-8 bar
- For temperature range +5 bis +40°C
- Connection G1/4
- With sensor slot for position control



### XM-2720 Two-hand control unit

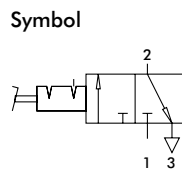
- Operating pressure range 3-8 bar
- For temperature range +5 bis +40°C
- Connection G1/8
- 3/2 way function
- Both hands must be engaged simultaneously
- Meet the requirement of EN574 class IIIB

## Foot control valve with locking notch



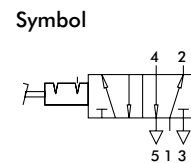
### FP-3-1/4-B

- 3/2 way valve

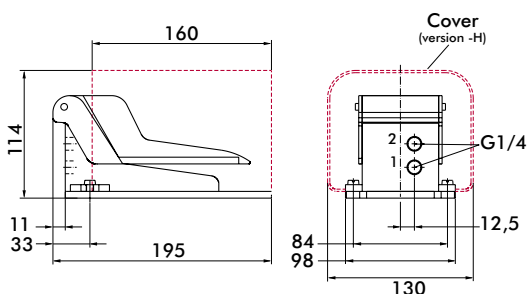


### FP-5-1/4-B

- 5/2 way valve

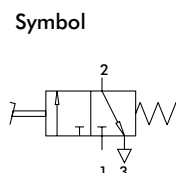


## Foot control valve with spring release



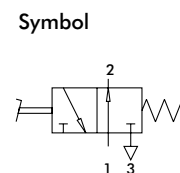
### F-3-1/4-B (Standard) F-3-1/4-H (with cover)

- Flow blocked in zero position



### FO-3-1/4-B (Standard) FO-3-1/4-H (with cover)

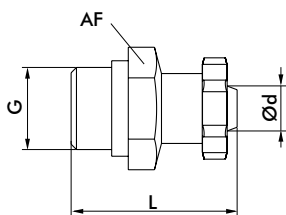
- Flow open in zero position



# HYDRAULIC CLAMPING TECHNOLOGY

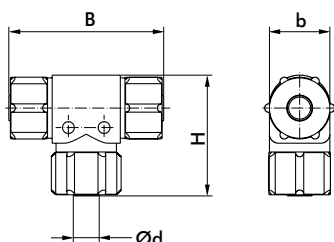
## Hydraulic accessories

### Pneumatic fitting, aluminium with seal



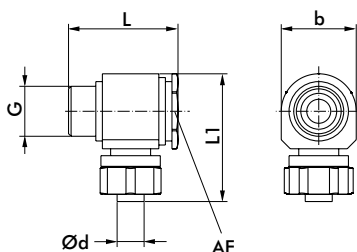
Model no.	L [mm]	AF [mm]	Thread G	Plastic pipe internal-dØ
CK-1/8-PK6	31	13	G1/8	6
CK-1/4-PK6	36,5	17	G1/4	6
CK-1/4-PK9	36,5	17	G1/4	9
CK-3/8-PK6	39	19	G3/8	6
CK-3/8-PK9	42	19	G3/8	9

### T-fitting



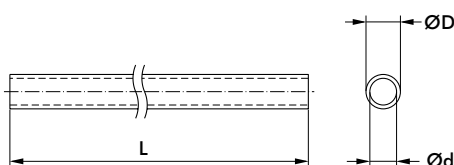
Model no.	B [mm]	b [mm]	H [mm]	Plastic pipe internal-dØ
FCK-3-PK6	52	18	34	6
FCK-3-PK9	64	22	46	9

### L-pneumatic fitting, swivel with seal



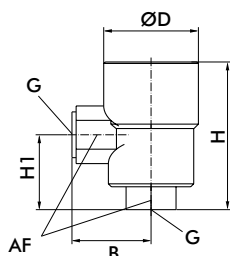
Model no.	b [mm]	L [mm]	L1 [mm]	AF [mm]	Thread G	Plastic pipe internal-dØ
LCK-1/4-PK6	19	34	29	18	G1/4	6
LCK-3/8-PK9	25	42	37	22	G3/8	9

### Plastic tube



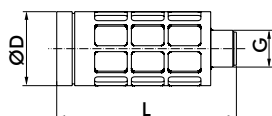
Model no.	Ød [mm]	ØD [mm]	L
PK-6	6	8,5	per Meter
PU-6	5,9	8,3	per Meter
PU-9-SW	9	11,6	per Meter

### Quick vent valve with



Model no.	b [mm]	ØD [mm]	H [mm]	H1 [mm]	AF [mm]	Thread G
SEU-1/4	38	32	42	27	19	G1/4
SEU-3/8	38	46	71	36	24	G3/8

### Sound dampener

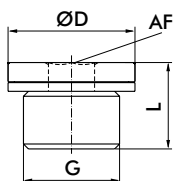
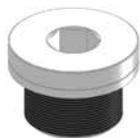


Model no.	ØD [mm]	L [mm]	Thread G
U-1/4	52	18	G1/4
U-3/8	64	22	G1/8

# HYDRAULIC CLAMPING TECHNOLOGY

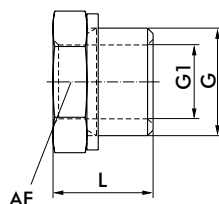
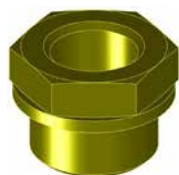
Hydraulic accessories

## Blanking plug with seal



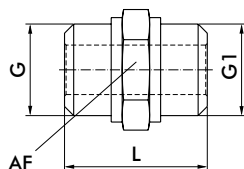
Model no.	ØD	L [mm]	AF	Thread G
70215-09	18	15	6	G1/4
70230-09	22	15	8	G3/8

## Reducing nipple with seal



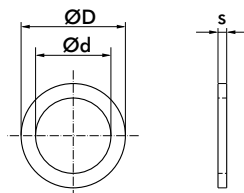
Model no.	L [mm]	AF	Thread G	Thread G1
D-1/8I-1/4A	11	17	G1/4	G1/8
D-1/4I-3/8A	15	19	G3/8	G1/4
D-3/8I-1/2A	18	24	G3/8	G3/8

## Twin nipple with seal



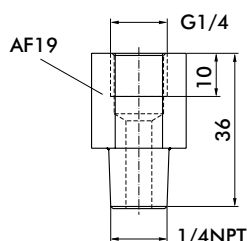
Model no.	L [mm]	AF	Thread G	Thread G1
E-1/4-1/4	23	17	G1/4	G1/4
E-1/4-3/8	25	19	G1/4	G3/8
E-3/8-3/8	27	19	G3/8	G3/8

## Plastic seal

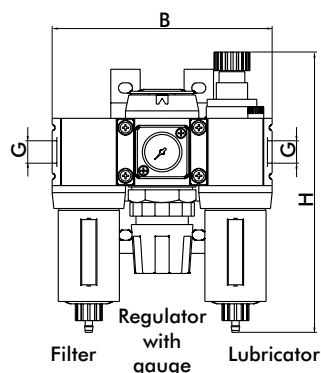


Model no.	Ød	ØD [mm]	s	for Thread
O-1/4	13	18	2	G1/4
O-3/8	17	22	2	G3/8

## Connector R1/4-1/4NPT



## Maintenance unit



Model no.	b [mm]	H [mm]	Thread G	flow volume [Nm <sup>3</sup> /h]	Weight [kg]
C08-C2-FKG0	120	152	G1/4	65	0,67
C18-C3-FKG0	197	212	G3/3	270	2,2







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