

## Hydraulic screw-in cylinder, single action

### Max. operating pressure 350 bar

Hydraulic screw-in cylinders are essential elements in machine and tool manufacture. 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
- Hardened piston rod
- An extended piston rod guide assures high stability when the piston is exposed to transversal forces
- Piston rods with internal thread on all models starting from model 721E16121-1 onwards

### 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.

### Included accessories

1 DELRIN seal ring

### Recommended accessories (separate order)

1 hexagonal nut DIN 936

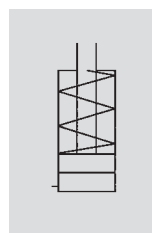
The following screw connection is necessary for connecting the cylinder to hydraulic tubes and pipes:

1 straight screw connection, order no. **D8S-R1/8** or **D8S-R1/4** (not for model 721E8101-1)

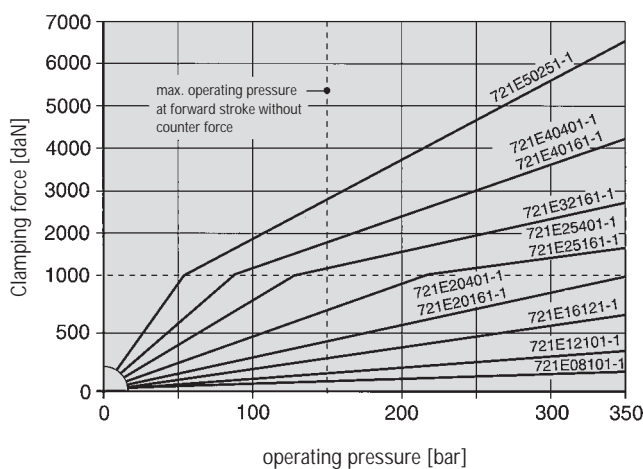
See pages 25.7 to 25.10 for all screw connections



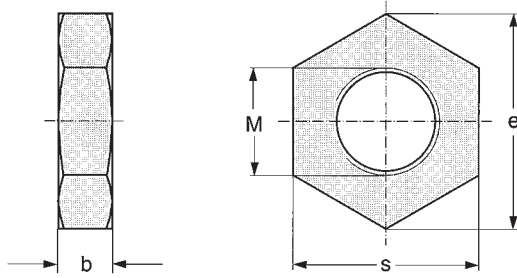
Symbol



### Clamping force characteristics



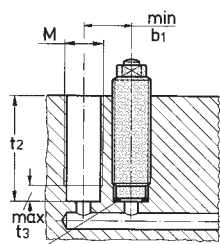
Model no.	Clamping force at 100 bar [daN]	Piston Ø [mm]	Stroke S [mm]	Operating pressure		Piston surface [cm <sup>2</sup> ]	Oil consumption/stroke [cm <sup>3</sup> ]	Spring retraction force min. [daN]	Connection G	Weight [kg]
				min. [bar]	max. [bar]					
721E08101-1	42	8	10	100	350	0,50	0,50	3,9	-	0,03
721E12101-1	106	12	10	100	350	1,13	1,13	2,5	G1/8	0,25
721E16121-1	193	16	12	100	350	2,01	2,41	6,0	G1/8	0,32
721E20161-1	280	20	16	100	350	3,14	5,02	6,2	G1/4	0,4
721E20401-1	270	20	40	100	350	3,14	12,57	6,6	G1/4	0,6
721E25161-1	465	25	16	100	350	4,91	7,85	11,7	G1/4	0,6
721E25401-1	456	25	40	100	350	4,91	19,63	11,5	G1/4	0,9
721E32161-1	780	32	16	100	350	8,04	12,87	9,8	G1/4	0,95
721E40161-1	1224	40	16	100	350	12,57	20,11	20,1	G1/4	1,45
721E40401-1	1204	40	40	100	350	12,57	50,28	28,0	G1/4	2,4
721E50251-1	1906	50	25	100	350	19,63	49,09	23,9	G1/4	3,3



Special accessories (separate order) hexagonal nut, DIN 936

order no.	b	e	S	weight ~ [kg]
M				
M22 x 1,5	10	35,72	32	0,04
M27 x 1,5	12	45,63	41	0,09
M33 x 1,5	14	55,8	50	0,155
M38 x 1,5	16	66,96	60	0,2
M48 x 1,5	18	83,9	75	0,46
M56 x 1,5N	groove nut DIN 1804, see p. 23.6			
M68 x 1,5N	groove nut DIN 1804, see p. 23.6			

### Installation example for all models



Seal ring (standard)

### Installation instructions

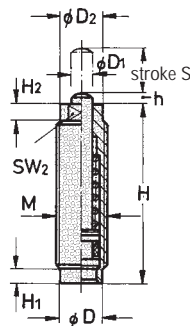
For installation of the cylinder take into account the dimension "t2", of the threaded bore in the clamping fixture.

This threaded bore is sealed with the Delrin seal which is supplied along with the unit.

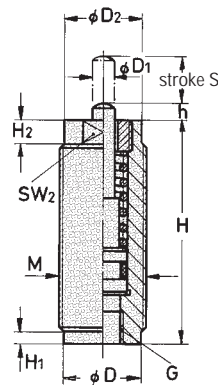
For the maximum torque see table on this page.

For further installation examples for the models 721E12101-1 to 721E50251-1 see p. 21.3

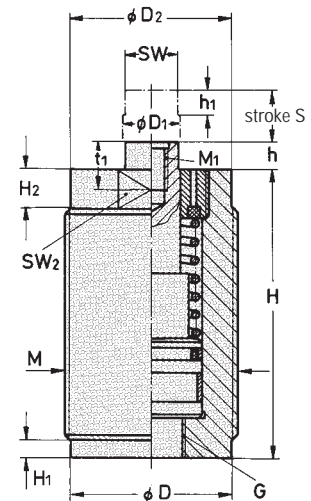
### model 721E08101-1



### model 721E12101-1



### all other models



Model no.	b1	ØD	ØD1	ØD2	H	H1	H2	h	h1	M	M1	SW	SW2	t1	t2	t3	Max. torque [Nm]
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	M 5	8	22	10	36	3	130
721E20161-1	38	30	10	31	84,5	3	8	7	5,5	M33x1,5	M 5	8	27	10	42	3	230
721E20401-1	38	30	10	31	140	3	8	7	5,5	M33x1,5	M 5	8	27	10	42	3	230
721E25161-1	43	35	12	36	95	5	12	7	5,5	M38x1,5	M 6	9	32	12	52	5	370
721E25401-1	43	35	12	36	137	5	12	7	5,5	M38x1,5	M 6	9	32	12	52	5	370
721E32161-1	53	46	18	46	91	5	12	10	8	M48x1,5	M 10	15	42	15	61	5	750
721E40161-1	61	53	22	54	99	5	12	10	8	M56x1,5	M 12	19	50	18	71	5	1200
721E40401-1	61	53	22	54	173	5	12	10	8	M56x1,5	M 12	19	50	18	71	5	1200
721E50251-1	73	65	32	65	116	5	15	10	8	M68x1,5	M 20	27	60	30	85	5	2000

## Hydraulic screw-in cylinder, single action

**Max. operating pressure 250 bar**

These hydraulic screw-in cylinders are the successors of the obsolete series 70215-D to 70220-D-50 (see table below). Apart of some exceptions, all new models are interchangeable with the discontinued models due to the fact that the housing length has been increased by some millimetres.

### Technical characteristics

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

### Recommended accessories (separate order)

1 hexagonal nut DIN 936

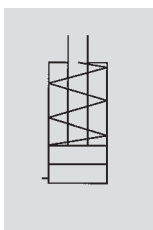
The following screw connection is necessary for connecting the cylinder to hydraulic tubes and pipes:

1 straight screw connection, order no. **D8L-R1/8**

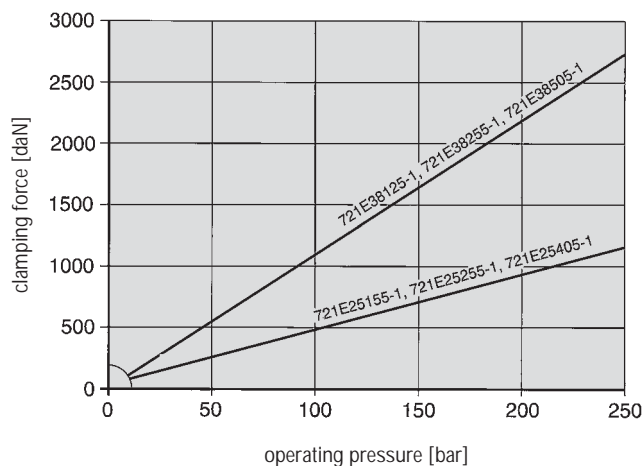
See pages 25.7 to 25.10 for all screw connections.



### Symbol

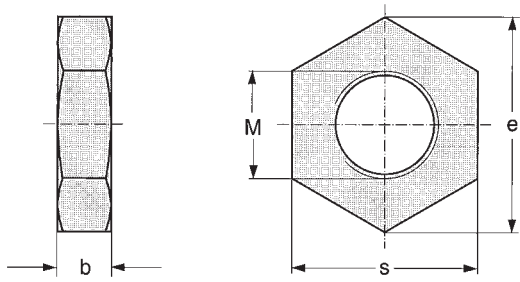


### Clamping force characteristics



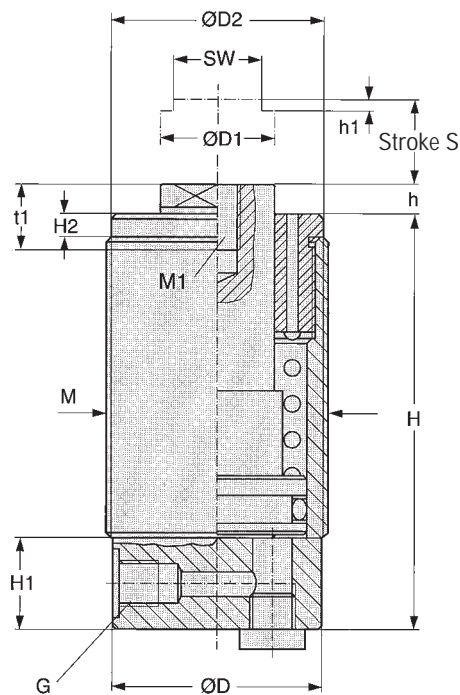
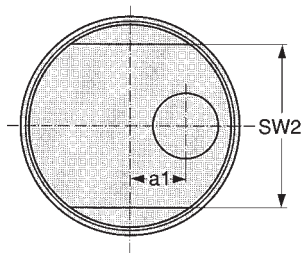
Model no.	Clamping force at 100 bar [daN]	Cylinder comparable with obsolete model no.	Piston Ø [mm]	Stroke S max. [mm]	Operating pressure min. [bar]	Piston surface [cm <sup>2</sup> ]	Oil consumption/stroke [cm <sup>3</sup> ]	Spring retraction force min. [daN]	Connection G	Weight ~ [kg]
721E25155-1	465	70215-D	25	15	250	4,91	7,37	6	G1/8	0,6
721E25255-1	460	70218-D	25	25	250	4,91	12,28	7	G1/8	0,7
721E25405-1	456	70218-D-40	25	40	250	4,91	19,63	11	G1/8	0,9
721E38125-1	1091	70220-D	38	12,5	250	11,34	14,18	20	G1/8	1,4
721E38255-1	1085	70220-D-25	38	25	250	11,34	28,35	22	G1/8	1,8
721E38505-1	1080	70220-D-50	38	50	250	11,34	56,70	28	G1/8	2,5

Special accessories (separate order)



Hexagonal nut, DIN 936

order no.	b	e	S	weight ~ [kg]
M				
M33 x 1.5	14	55,8	50	0,155
M48 x 1.5	18	83,9	75	0,46



Model no.	a1	ØD	ØD1	ØD2	H	H1	H2	h	h1	M	M1	SW	SW2	t1
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

## Hydraulic screw-in cylinder, double action

### Max. operating pressure 350 bar

These double action hydraulic screw-in cylinders can be used in applications where precise and rapid stroke speeds are required or when high retraction forces are needed.

### Technical characteristics

- Hydraulic connections at the cylinder's base
- External thread over the whole length of the housing
- Glide ring seal with high wear resistance
- No stick-slip effect
- A double piston rod seal guarantees leakage-proof operation
- Hardened piston rod
- An extended piston rod guide assures high stability when transversal forces occur
- Piston rod with internal thread



### Recommended accessories (separate order)

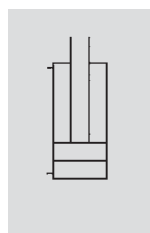
1 hexagonal nut, DIN 1804

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

2 straight screw connections, order no. **D8S-R1/4**

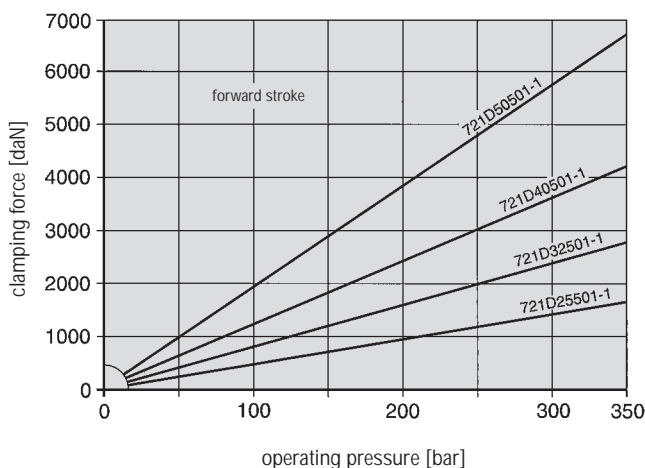
See pages 25.7 to 25.10 or all screw connections.

### Symbol

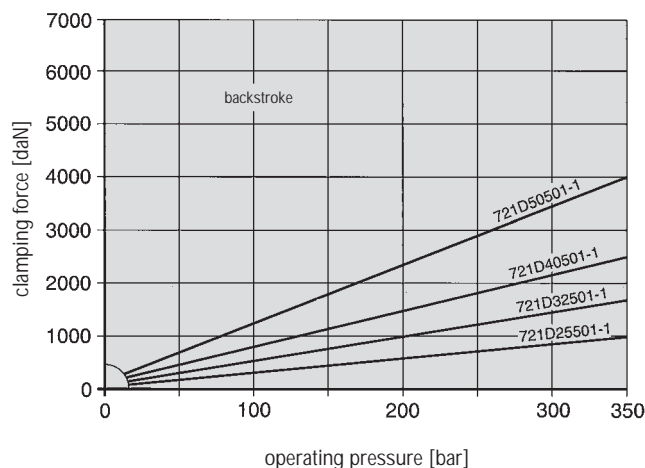


### Special designs available on request (also in stainless steel)

### Clamping force characteristics, forward stroke

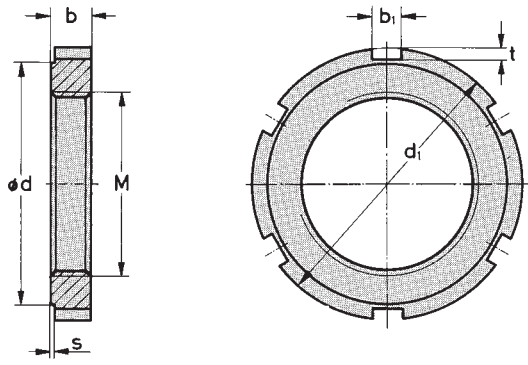


### Clamping force characteristics, backstroke



Model no.	Clamping force at 100 bar		Clamping force comparable with old model no.	Piston Ø [mm]	Stroke S max. [mm]	Operating pressure max. [bar]	Piston surface		Oil consumption/stroke		Con-nection G 2x	Weight ~ [kg]
	forward stroke [daN]	backstroke [daN]					forward stroke [cm²]	back-stroke [cm²]	forward stroke [cm³]	back-stroke [cm³]		
721D25501-1	480	284	7200-3	25	50	350	4,9	2,9	24,5	14,5	G1/4	2,5
721D32501-1	788	480	7201-3	32	50	350	8,04	4,9	40,2	24,5	G1/4	2,9
721D40501-1	1232	751	7202-3	40	50	350	12,56	7,66	62,8	38,3	G1/4	3,5
721D50501-1	1925	1136	7203-3	50	50	350	19,63	11,59	98,15	57,95	G1/4	4,5

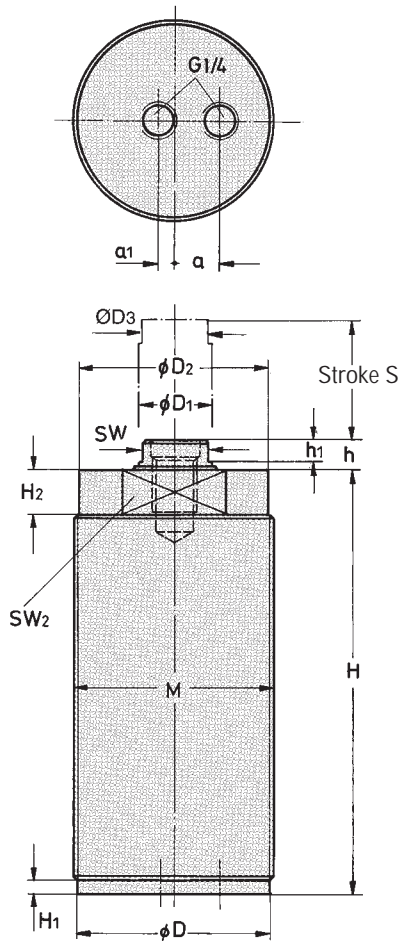
Special accessories (separate order)



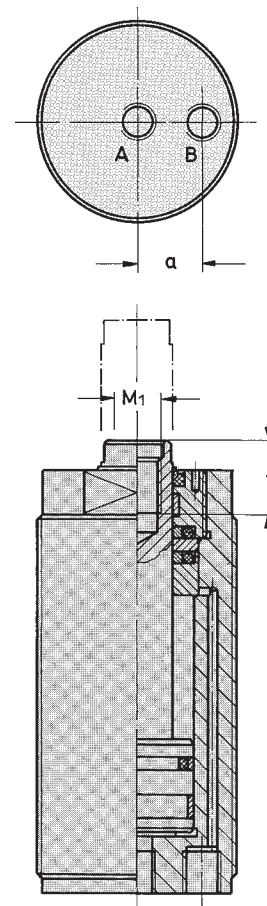
Grooved nut, DIN 1804

order no.	b	b1	Ød	Ød1	s	t	weight ~ [kg]
M							
M50 x 1,5N	13	8	67	75	0,5	3,5	0,24
M56 x 1,5N	13	10	70	80	0,5	4	0,25
M68 x 1,5N	14	10	90	100	0,5	4	0,45
M80 x 2 N	16	10	105	115	1	4	0,58

Model 721D25501-1 to 721D40501-1



Model 721D50501-1



A = forward stroke  
B = backstroke

Model no.	a	a1	ØD	ØD1	ØD2	ØD3	H	H1	H2	h	h1	m	M1	SW	SW2	t
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 short-stroke cylinder, double action

### Max. operating pressure 350 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

- Compact design
- 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.
- All seals with standard sizes
- Lateral oil ports, additional advance stroke connection on the cylinder base
- Model 725D80151-1 provided with G3/8 oil ports

### Recommended accessories (separate order)

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

2 straight screw connections, order no. **D8S-R1/4**

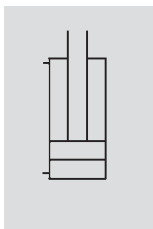
**Included accessories** for model 725D80151 -1

2 reducing nipples, order no. **GWR-3/8-1/4**

See pages 25.7 to 25.10 for all screw connections.

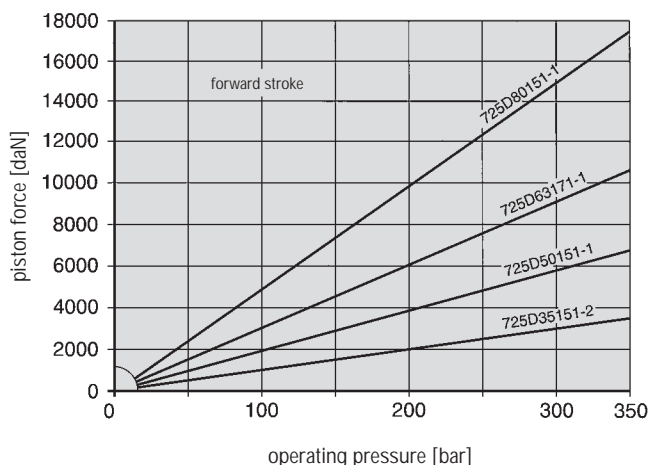
### Special versions available on request

### Symbol



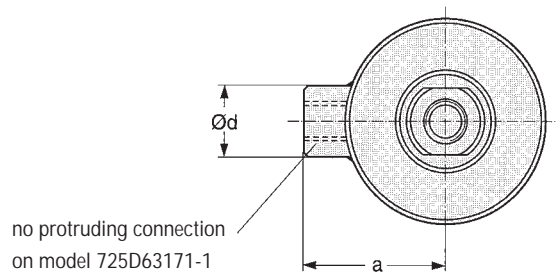
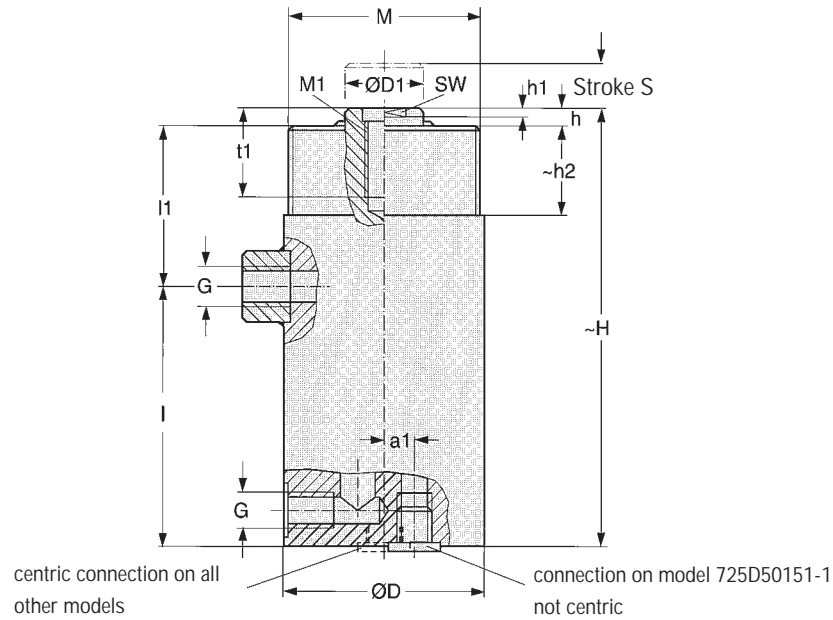
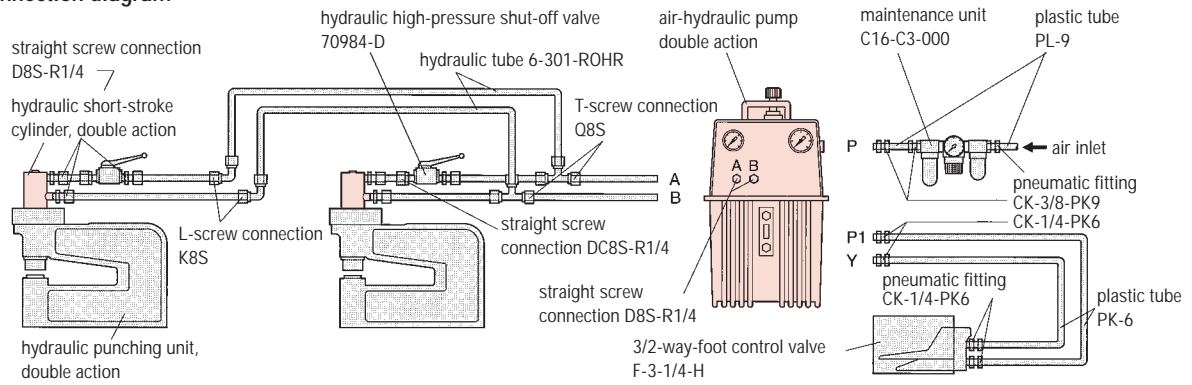
Hydraulic short-stroke cylinders for DE-STA-CO punching units in a series punching fixture

### Forward stroke piston force characteristics



Model no.	Piston force at 100 bar		Piston force comparable with the old model no.	Piston Ø [mm]	Stroke S max. [mm]	Operating pressure max. [bar]	Piston surface		Oil consumption/stroke		Con-nection G 3x	Weight ~ [kg]
	forward stroke [daN]	backstroke [daN]					forward stroke [cm²]	back-stroke [cm²]	forward stroke [cm³]	back-stroke [cm³]		
725D35151-2	962	647	7112	35	15	350	9,62	6,47	14,4	9,7	G1/4	1,9
725D50151-1	1963	1472	7100	50	15	350	19,63	14,72	29,5	22,1	G1/4	3
725D63171-1	3117	2267	7111	63	17	350	31,17	23,13	53	39,3	G1/4	4,5
725D80151-1	5026	3769	7113	80	15	350	50,26	37,69	75,4	56,6	G3/8	10

## Connection diagram



Model no.	a	a1	Ød	ØD	ØD1	h	h1	h2	-H	l	l1	M	M1	SW	t1
725D35151-2	40	-	25	50	20	9	7	30	159	98	52	M48x1,5	M10	17	25
725D50151-1	47	9,5	25	65	25	6	7	30	145	85	54	M64x1,5	M12	20	30
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	102	72,5	M80x2	M16	36	31

## Hydraulic block cylinder, single action

### Max. operating pressure 500 bar

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
- Hardened piston rod
- An extended piston rod guide gives high stability when transversal forces occur
- Piston rod with internal thread

### Important note:

- The maximum spring retraction force has been taken into account in the clamping force diagram
- The operating pressure should not exceed 150 bar if the piston is actuated without a counter force.

### Recommended accessories (separate order)

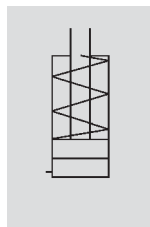
The following screw connection is necessary for connecting the cylinder to hydraulic tubes and pipes:

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

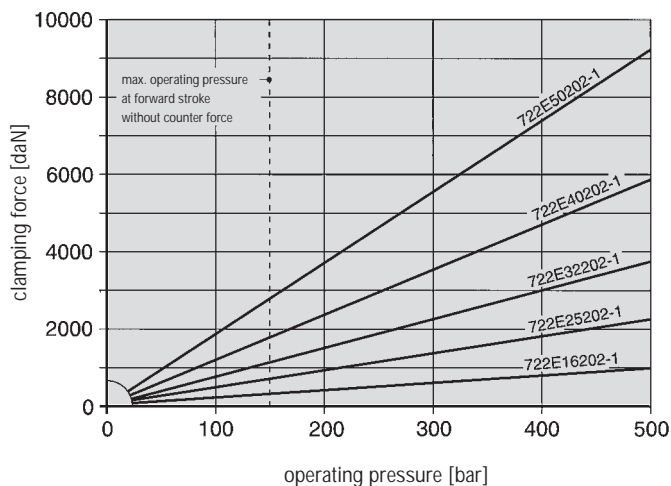
See pages 25.7 to 25.10 for all screw connections.



### Symbol



### Clamping force characteristics



Model no.	Clamping force at 100 bar [daN]	Clamping force comparable with old model no.	Piston Ø [mm]	Stroke S max. [mm]	Operating pressure		Piston surface [cm²]	Oil consumption/stroke [cm³]	Spring retraction force [daN]	Con-nection G 1x	Weight ~ [kg]
					min. [bar]	max. [bar]					
722E16202-1	193	7515-1	16	20	100	500	2,01	4,02	5	G1/4	1
722E25202-1	457	7516-1	25	20	100	500	4,91	9,82	10,4	G1/4	2
722E32202-1	767	7517-1	32	20	100	500	8,04	16,08	20	G1/4	3
722E40202-1	1195	7518-1	40	20	100	500	12,56	25,12	27	G1/4	3,7
722E50202-1	1889	7519-1	50	20	100	500	19,64	39,27	46	G1/4	5,7



## Hydraulic block cylinder, double action

**Max. operating pressure 500 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
- Glide ring seal with high wear resistance
- No stick-slip effect
- Double piston rod seal
- Hardened piston rod
- An extended piston rod guide assures high stability when transversal forces occur on the piston.
- Piston rod with internal thread
- 2 models with strokes up to 100 mm available

### Recommended accessories (separate order)

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

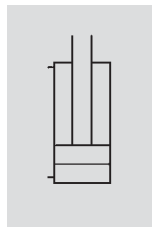
2 straight screw connections, order no. **D8S-R1/4**

See pages 25.7 to 25.10 for all screw connections.

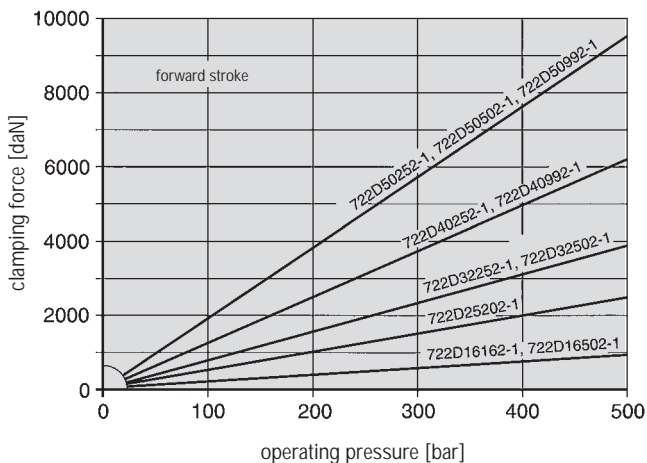


Special designs (also in stainless steel) available on request

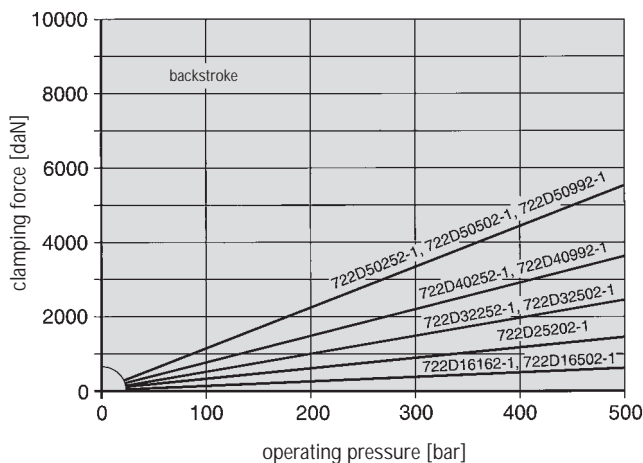
### Symbol



### Clamping force characteristics, forward stroke



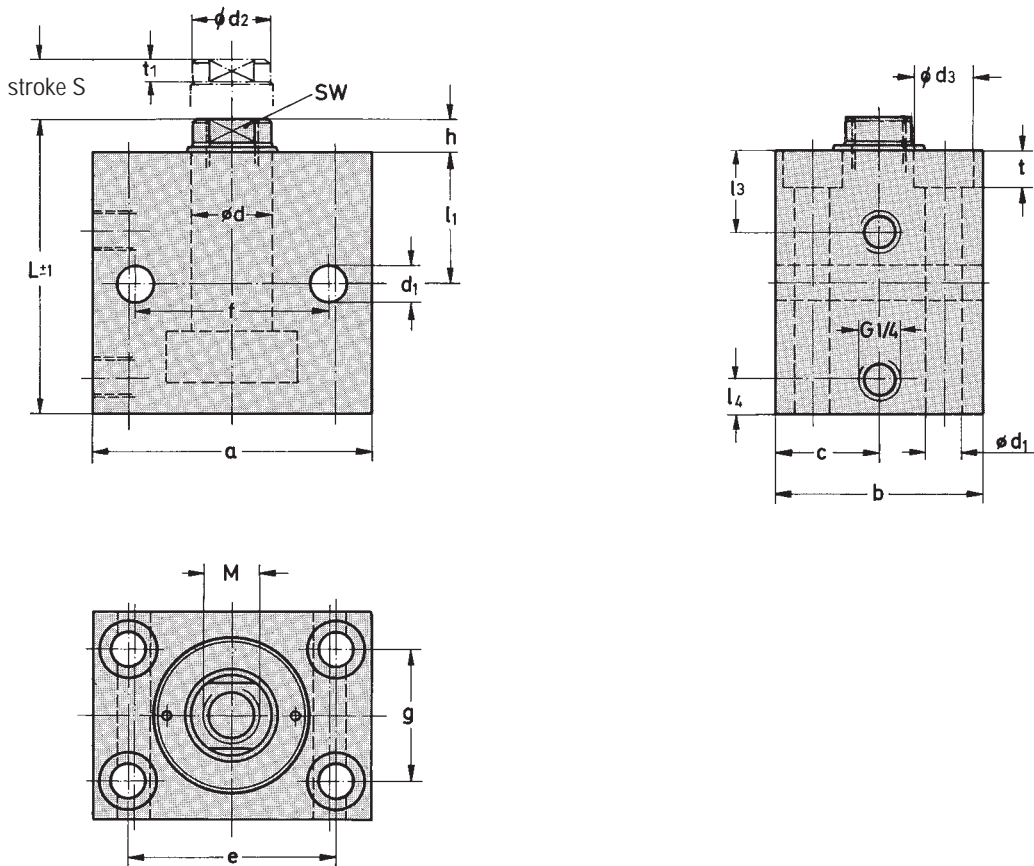
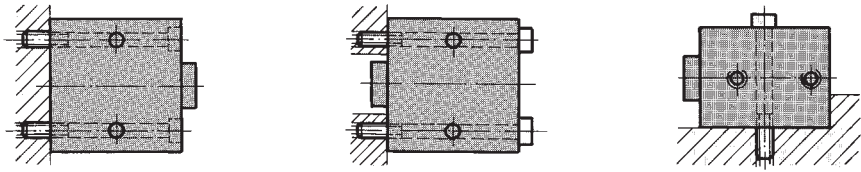
### Clamping force characteristics, backstroke



Model no.	Clamping force at 100 bar		Clamping force comparable with old model no.	Piston Ø [mm]	Stroke S max. [mm]	Operating pressure max. [bar]	Piston surface		Oil consumption/stroke		Con-nection G 2x	Weight [kg]
	forward stroke [daN]	backstroke [daN]					forward stroke [cm²]	back stroke [cm²]	forward stroke [cm³]	back stroke [cm³]		
722D16162-1	197	120	7550-1	16	16	500	2,01	1,23	3,2	1,95	G1/4	0,9
722D16502-1	197	120	7565-1	16	50	500	2,01	1,23	10,05	6,15	G1/4	1,3
722D25202-1	480	284	7551-1	25	20	500	4,91	2,9	9,82	5,8	G1/4	1,4
722D32252-1	788	480	7552-1	32	25	500	8,04	4,9	20,1	12,25	G1/4	2,0
722D32502-1	788	480	7567-1	32	50	500	8,04	4,9	40,2	24,5	G1/4	3,2
722D40252-1	1232	751	7553-1	40	25	500	12,56	7,66	31,4	19,15	G1/4	2,8
722D40992-1	1232	751	-	40	100	500	12,56	7,66	125,7	76,6	G1/4	10,2
722D50252-1	1925	1136	7554-1	50	25	500	19,64	11,59	49,1	29	G1/4	5,7
722D50502-1	1925	1136	7569-1	50	50	500	19,64	11,59	98,2	58	G1/4	7,0
722D50992-1	1925	1136	-	50	100	500	19,64	11,59	196,4	116	G1/4	13,0

## Mounting options

application example  
see p. 23.10



Model no.	a	b	c	Ød	Ød1	Ød2	Ød3	e	f	g	h	L	l1	l3	l4	M x depth	SW	t	t1
722D16162-1	60	35	17,5	10	6,5	9	11	40	40	22	6	76	44	30,5	11	M6x15	8	6,8	4,5
722D16502-1	60	35	17,5	10	6,5	9	11	40	40	22	6	111	44	30,5	11	M6x15	8	6,8	4,5
722D25202-1	65	45	22,5	16	8,5	15	13,5	50	50	30	7	84	46	32	11	M10x15	13	9	5,5
722D32252-1	75	55	27,5	20	10,5	19	18	55	55	35	10	97	50	34	11	M12x18	17	11	7
722D32502-1	75	55	27,5	20	10,5	19	18	55	55	35	10	122	50	34	11	M12x18	17	11	7
722D40252-1	85	63	31,5	25	10,5	24	18	63	63	40	10	98	49	33	11	M16x25	21	11	7
722D40992-1	85	63	31,5	25	10,5	24	18	63	63	40	10	187	49	33	11	M16x25	21	20	7
722D50252-1	100	75	37,5	32	13	31	20	76	76	45	10	110	54	38	13	M20x30	27	13	8
722D50502-1	100	75	37,5	32	13	31	20	76	76	45	10	135	54	38	13	M20x30	27	13	8
722D50992-1	100	75	37,5	32	13	31	20	76	76	45	10	199	56	38	13	M20x30	27	30	8

## Hydraulic hollow piston cylinder, single action

### Max. operating pressure 350 bar

A typical application for hydraulic hollow piston cylinders is when pulling and/or pushing forces are needed for clamping (see application examples p. 23.14 and p. 23.16).

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

- Piston with through-hole (different piston inserts available)
- Piston nitrogen hardened
- Spring retraction
- 2 cylinder types available with or without external thread
- Fastening threads at the base
- Lateral hydraulic connection

### Important note

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

### Recommended accessories (separate order)

For mounting threaded bolts or screws, piston inserts with the internal thread type A or with the through-hole type B can be ordered separately (see next page).

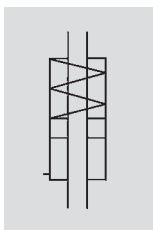
The following screw connections are necessary for connecting the cylinder to hydraulic tubes and pipes:

1 straight screw connection, order no. **D8S-R1/8** or **D8S-R1/4**

See pages 25.7 to 25.10 for all screw connections.

### Special versions (also in stainless steel) available on request.

### Symbol

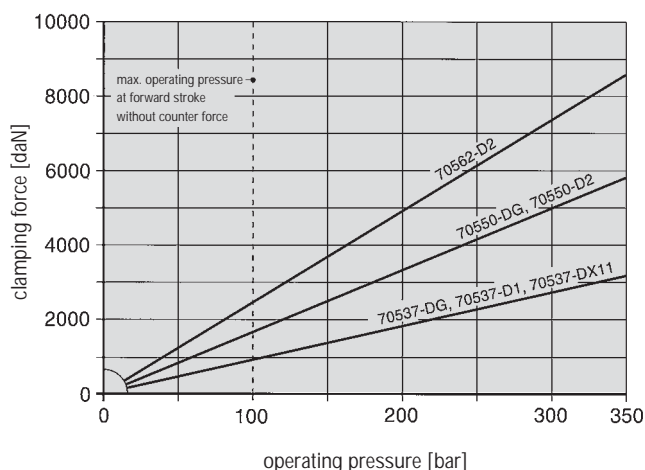


Model 70550-D2 with piston insert type B



Model 70550-DG with piston insert type B

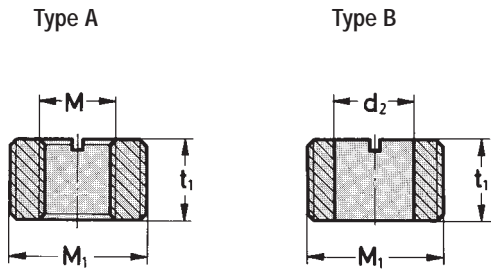
### Clamping force characteristics



Model no.	Clamping force at 100 bar [daN]	Stroke S max. [mm]	Spring retraction force min. [daN]	Operating pressure max. [bar]	Piston surface [cm <sup>2</sup> ]	Oil consumption [cm <sup>3</sup> /stroke]	Connection G	Weight ~ [kg]
70537-DX11	800	9	34	350	8,8	7,9	G1/8	1,25
70537-D1	840	9	12,5	350	8,8	7,9	G1/8	1,25
70537-DG	840	9	12,5	350	8,8	7,9	G1/8	1,25
70550-D2	1570	12,5	18,5	350	16,4	20,5	G1/4	2
70550-DG	1570	12,5	18,5	350	16,4	20,5	G1/4	2
70562-D2	2385	15,5	32	350	24,8	38,4	G1/4	2,8

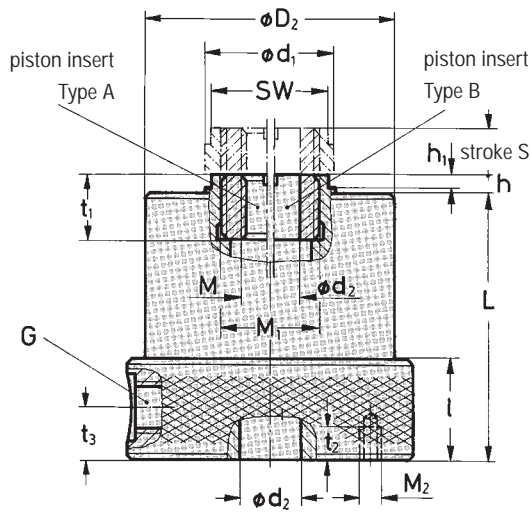
# Hydraulic hollow piston cylinder, single action

Special accessories (separate order)

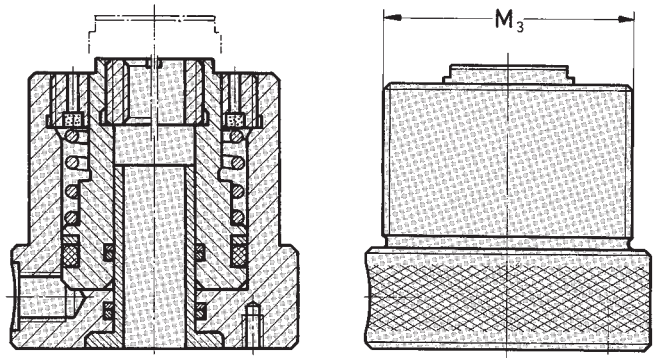


## Piston inserts

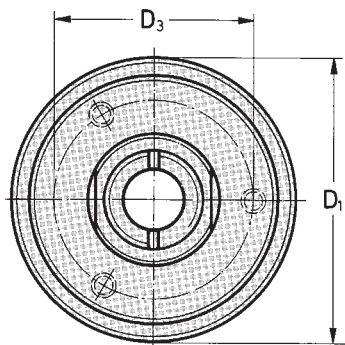
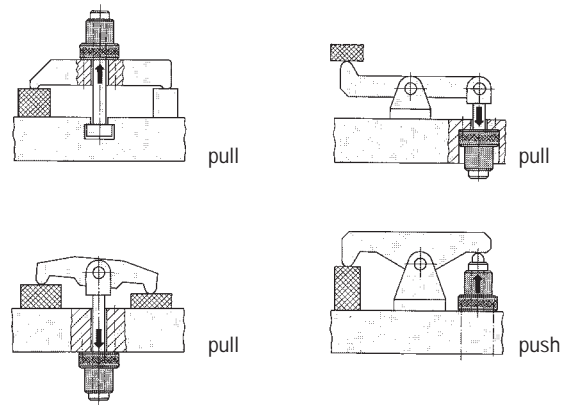
Type A order no.	Type B order no.	Ød2	M	M1	t1	To fit with hollow piston cylinder
705383-D	705384-D	12,3	M12	M20x1,5	11,5	70537-DX11 70537-D1 70537-DG
705511-D	705513-D	17	M16	M27x1,5	17,5	70550-D2 70550-DG
705633-D	705634-D	21	M20	M36x1,5	21	70562-D2



models 70537-DG and  
70550-DG with external thread



## application examples



Model no.	Ød1	Ød2	ØD1	ØD2/M3	ØD3	h	h1	l	L	M	M1	M2	Con- nection G	SW	t1	t2	t3
70537-DX11	26	12,3	65	55	46	5	4,5	22	64,5	M12	M20x1,5	M5	G1/8	22	11,5	8	11
70537-D1	28	12,3	65	55	46	5	4,5	25	60	M12	M20x1,5	M5	G1/8	24	11,5	8	12
70537-DG	28	12,3	65	M55x1,5	46	5	4,5	25	60	M12	M20x1,5	M5	G1/8	24	11,5	8	12
70550-D2	36	17	79	68	54	5	4,5	28	75	M16	M27x1,5	M6	G1/4	32	17,5	9	14
70550-DG	36	17	79	M68x1,5	54	5	4,5	28	75	M16	M27x1,5	M6	G1/4	32	17,5	9	14
70562-D2	48	21	93	80	60	5	4,5	32	92	M20	M36x1,5	M6	G1/4	41	21	10	16

## Hydraulic hollow piston cylinder, double action

**Max. operating pressure 350 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 (see application examples p. 23.14 and p. 23.16).

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
- Piston hardened by inductive process
- 2 fastening threads at the base
- Lateral hydraulic connections

### Important note

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

### Recommended accessories (separate order)

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

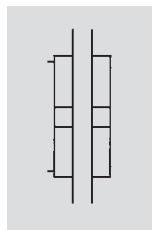
2 straight screw connections, order no. **D8S-R1/4**

See pages 25.7 to 25.10 for all screw connections.

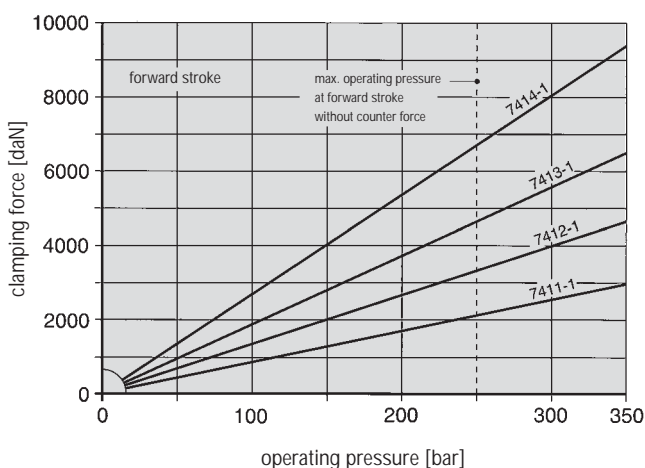


Special versions (also in stainless steel) available on request

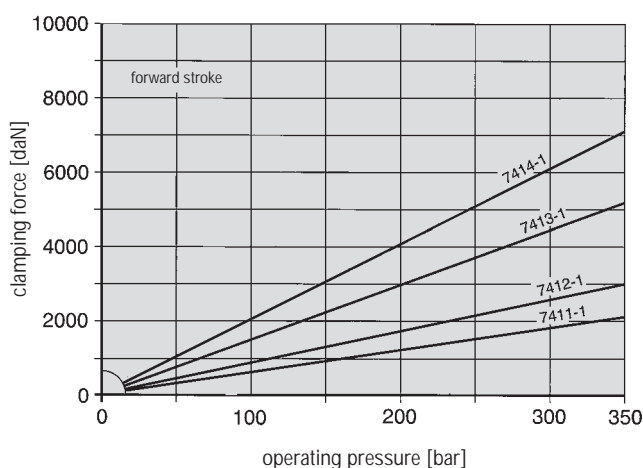
### Symbol



Clamping force characteristics, forward stroke

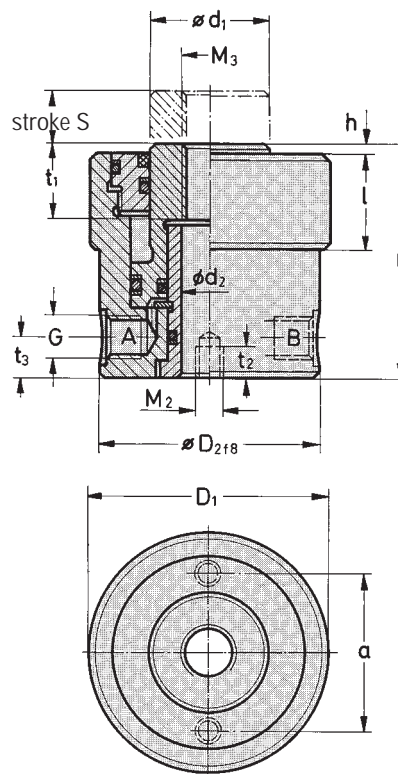
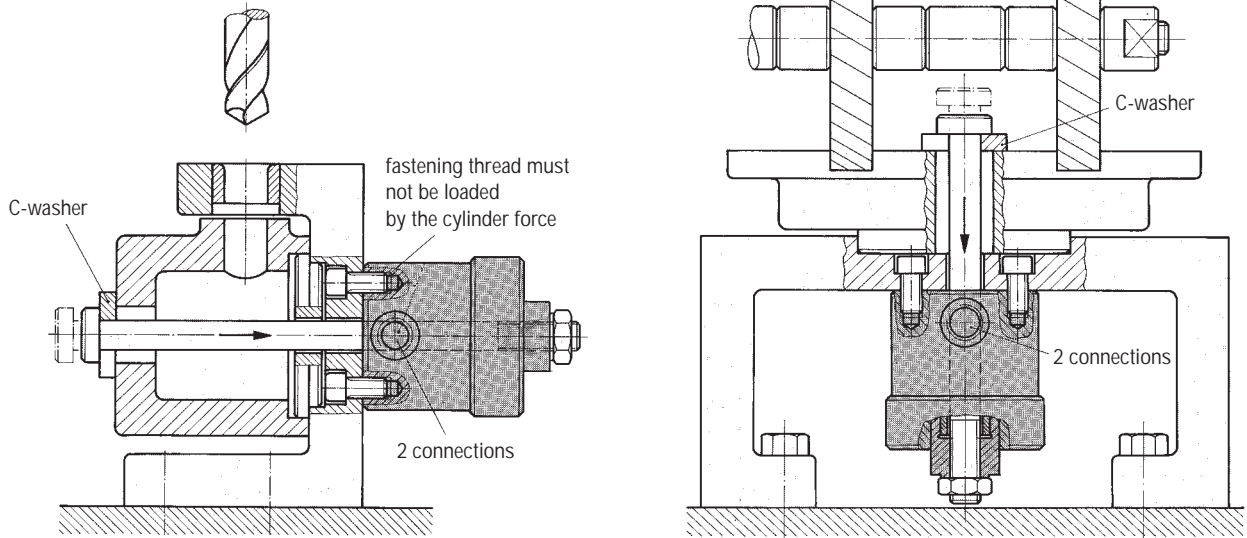


Clamping force characteristics, backstroke



Model no.	Clamping force at 100 bar		Stroke max. [mm]	Operating pressure max. [bar]	Piston surface		Oil consumption/stroke		Connection G	Weight [kg]
	forward stroke [daN]	back-stroke [daN]			forward stroke [cm <sup>2</sup> ]	back-stroke [cm <sup>2</sup> ]	forward stroke [cm <sup>3</sup> ]	back-stroke [cm <sup>3</sup> ]		
7411-1	860	590	10	350	8,8	6	8,8	6	G1/4	0,9
7412-1	1290	830	15	350	13,2	8,4	21,1	13,4	G1/4	1,5
7413-1	1808	1270	24	350	18,4	15	44,1	36	G1/4	2
7414-1	2616	2000	24	350	26,7	20,4	64,1	49	G1/4	2,6

## Application examples



Model no.	a	Ød1	Ød2	D1	ØD2	h	l	L	M2	M3	t1	t2	t3
7411-1	40	26	12,3	60	56	1	25	66	M8	M12X1,5	18	12	12
7412-1	48	35	17	72	66	1	33	72	M8	M16x1,5	18	13	12
7413-1	56	40	21	80	76	1	29	80	M10	M20X1,5	18	13	12
7414-1	60	45	25	90	84	1	29	80	M10	M24x1,5	18	13	12

## Hydraulic hollow piston block style cylinder, single or double action

### Max. operating pressure 350 bar

Hydraulic hollow piston cylinders can be used in many ways to solve clamping problems because their drilled-through piston supports both pushing and pulling actions. Due to their block-type cylinder body they can be easily installed horizontally or vertically.

### Features

- Piston inserts can be screwed into the thread in the upper end of the hollow piston to attach threaded bolts or screws to single-action cylinders
- Pistons of double-action cylinders have a hole down their length and an inside thread
- Standard spring-actuated retraction mechanism of single-action cylinder model 723E38092-1 has a reinforced retaining spring
- Lateral hydraulic connectors

### Important Note

The operating pressure should not exceed 100 bar (single-action cylinders) or 250 bar (double-action cylinders) if the piston is actuated without a counter force.

### Recommended accessories (order separately)

Separate piston inserts with inside thread (type A) or hole (type B) are available for the attachment of threaded bolts or screws to the single-action models (see next page).

You need the following fittings to connect the cylinder block to hydraulic pipes and tubes:

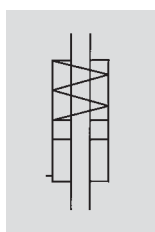
1 or 2 straight screw-in connections,

order no. **D8S-R1/8 / D8S-R1/4**

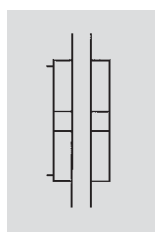
See p 25.7 to 25.10 for all screw connections.

### Special designs (including stainless steel makes) upon request

### Symbol



single-action



double-action

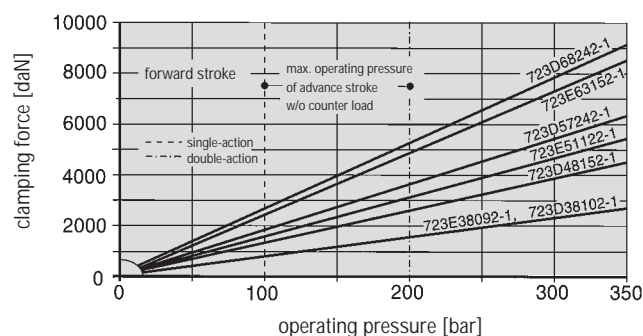


Fig. showing the single-action hollow piston cylinder

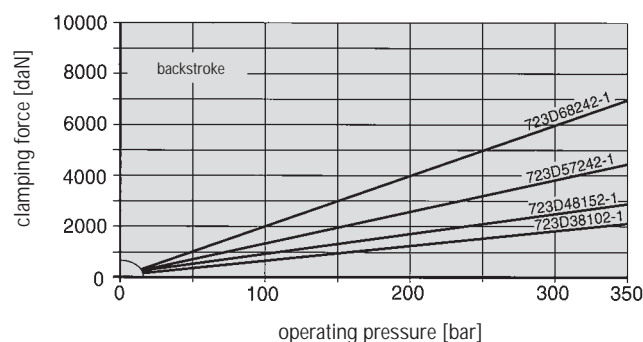


Fig. showing the double-action hollow piston cylinder

### Clamping force characteristic, forward stroke



### Clamping force characteristic, backstroke

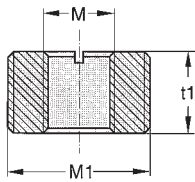


Model no.	Clamping force at 100 bar		Min. retraction force of pressure spring [daN]	Max. stroke S [mm]	Max. operating pressure [bar]	Piston surface		Oil consumption/stroke		Connector G	Weight ~ [kg]
	forward stroke [daN]	backstroke [daN]				forward stroke [cm <sup>2</sup> ]	back-stroke [cm <sup>2</sup> ]	forward stroke [cm <sup>3</sup> ]	back-stroke [cm <sup>3</sup> ]		
723E38092-1	800	-	34	9	350	8,8	-	7,9	-	G1/8	1,5
723E51122-1	1570	-	18,5	12,5	350	16,4	-	20,5	-	G1/4	2,5
723E63152-1	2385	-	32	15,5	350	24,8	-	38,4	-	G1/4	3,3
double-action											
723D38102-1	860	590	-	10	350	8,8	6	8,8	6	G1/4	1,3
723D48152-1	1290	830	-	15	350	13,2	8.4	21,1	13,4	G1/4	1,8
723D57242-1	1808	1270	-	24	350	18,4	15	44,1	36	G1/4	2,5
723D68242-1	2616	2000	-	24	350	26,7	20.4	64,1	49	G1/4	3,1

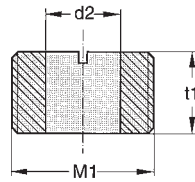
# Hydraulic hollow piston block style cylinder, single or double action

Special accessories (order separately)

Type A



Type B

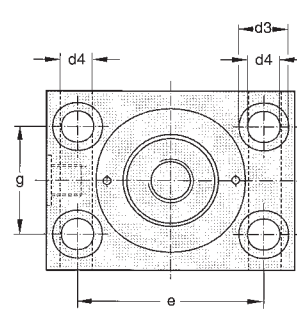
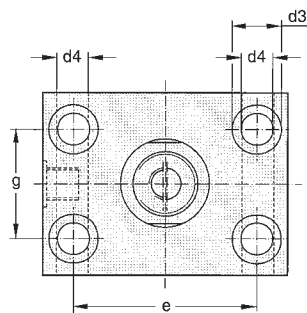
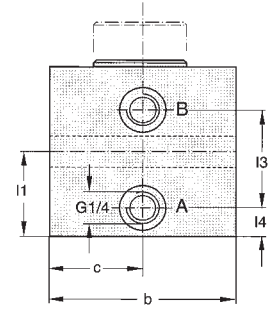
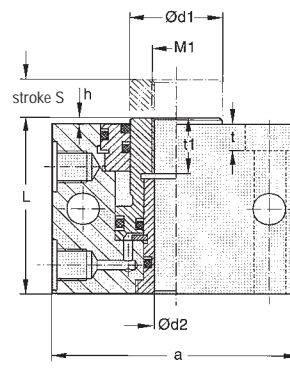
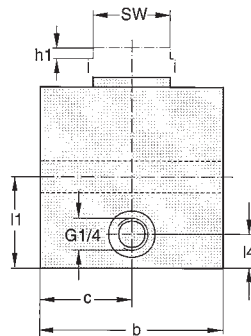
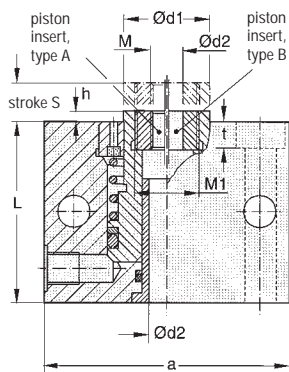


Piston inserts

Type A order no.	Type B order no.	Ød2	M	M1	t1	For hollow piston cylinder
705383-D	705384-D	12,3	M12	M20x1,5	11,5	723E38092-1
705511-D	705513-D	17	M16	M27x1,5	17,5	723E51122-1
705633-D	705634-D	21	M20	M36x1,5	21	723E63152-1

Single-action hydraulic hollow piston cylinder 723E...

Double-action hydraulic hollow piston cylinder 723D...



Model no.	a	b	c	Ød1	Ød2	Ød3	Ød4	e	g	h	h1	L	l1	l3	l4	M	M1	SW	t	t1
single-action																				
723E38092-1	75	55	27,5	28	12,3	18	10,5	55	35	5	4,5	69,5	32,3	-	11	M12	M20x1,5	24	11	11,5
723E51122-1	100	75	37,5	36	17	20	13	76	45	5	4,5	80	37,5	-	14	M16	M27x1,5	32	13	17,5
723E63152-1	110	85	42,5	48	21	20	13	186	55	5	4,5	97	46	-	16	M20	M36x1,5	41	13	21
double-action																				
723D38102-1	90	65	32,5	26	12,3	20	13	65	40	1	-	66	32,5	37	12	-	M12x1,5	-	13	18
723D48152-1	100	75	37,5	35	17	20	13	76	45	1	-	72	35,5	41	12	-	M16x1,5	-	13	18
723D57242-1	110	85	42,5	40	21	20	13	86	55	1	-	80	39,5	50	12	-	M20x1,5	-	13	18
723D68242-1	110	85	42,5	45	25	20	13	86	55	1	-	80	39,5	50	12	-	M24x1,5	-	13	18