



## Short-Stroke Hollow Piston Cylinders

single acting, with spring return  
 max. operating pressure 400 bar

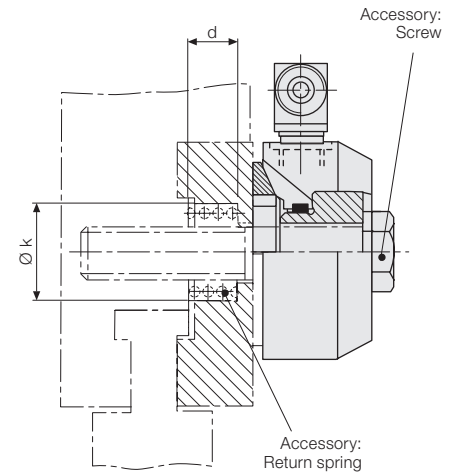


### Advantages

- Flat and compact design
- Jerkless piston movement
- Stroke limitation designed for max. operating pressure
- Easy to retrofit
- Ideal force transmission

### Description

The clamping element is particularly suitable for clamping mechanical clamping bars on die bending presses and folding presses. The clamping force is generated by applying hydraulic pressure to the piston, and the piston is returned by a spring which is installed in the clamping bar. The piston is provided with a through hole and is hardened and ground. For an optimum adaptation to the clamping surface, the hollow piston disk cylinder can be equipped with a spherical disk.



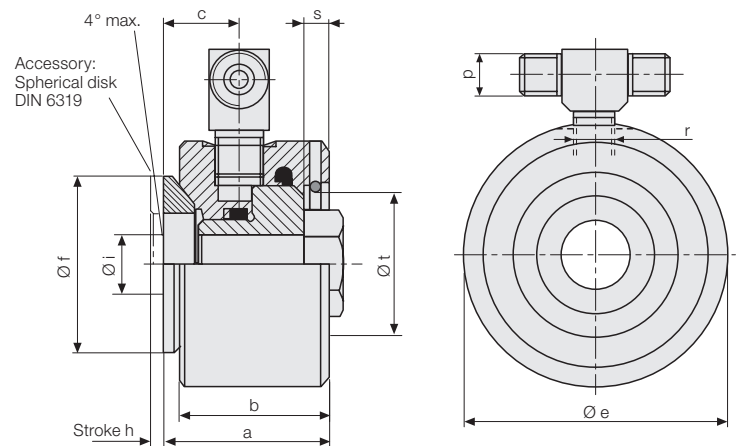
### Application

Hollow piston cylinders are used in connection with tie rods, screws and threaded rods, for clamping and locking dies on presses and machines.

### Technical data

Max. operating pressure 400 bar

<b>Clamping force at 100 bar</b>	<b>[kN]</b>	<b>5.5</b>	<b>13.5</b>
<b>Clamping force at 400 bar</b>	<b>[kN]</b>	<b>22</b>	<b>54</b>
For screw		M 12	M 16
Stroke h	[mm]	2.5	3.0
Spring return force	[kN]	0.27	0.67
Piston area	[cm <sup>2</sup> ]	5.5	13.5
Oil volume per 1 mm stroke	[cm <sup>3</sup> ]	0.6	1.4
a	[mm]	33	46
b	[mm]	30.6	41
c	[mm]	15	20
d	[mm]	12	18
Ø e	[mm]	50	80
Ø f	[mm]	36	56
Spherical disk		C 21	C 31
Ø i	[mm]	13	18
Ø k	[mm]	22	30
p		M12 x 1.5	M14 x 1.5
r		G 1/8	G 1/4
s	[mm]	5.2	8.6
Ø t	[mm]	30	48
Weight	[kg]	0.4	1.4
<b>Part no.</b>		<b>1830011</b>	<b>1830012</b>
<b>Accessories</b>			
<b>Spherical disk</b>	<b>Part no.</b>	<b>5700028</b>	<b>5700029</b>
<b>Return spring</b>	<b>Part no.</b>	<b>5700031</b>	<b>5700032</b>



Special versions on request

### Hydraulic power units

see product group 7

### Accessories

see product group 11