



**Universal Cylinders**

double acting, max. operating pressure 400 bar



**Application**

These cylinders are used as lifting and clamping cylinders in machine and fixture building. They can be inserted in the smooth through-hole and fixed in different levels by means of a locking ring.

**Description**

Large clamping force range. Radial and axial oil ports. High degree of sealing. Wiper as protection of contamination, swarf, and coolants.

**Material**

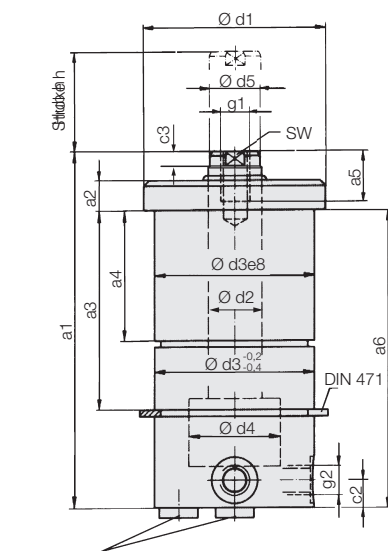
Piston and piston rod one-piece components are hardened and ground. Cylinder of high alloy steel, black oxidized.

**Accessories**

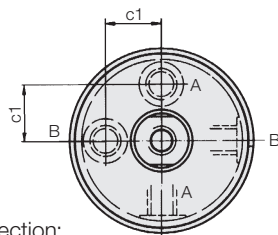
Contact bolts see data sheet G 3.800.

**Important notes**

Operating conditions, tolerances and other data see data sheet A 0.100.



Change plugs in case of axial connection

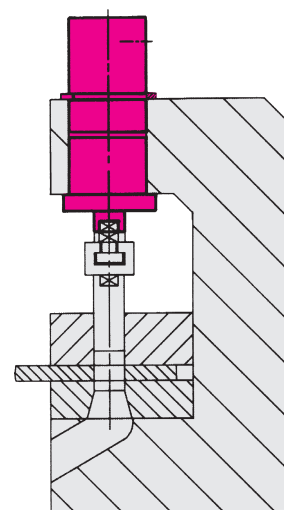
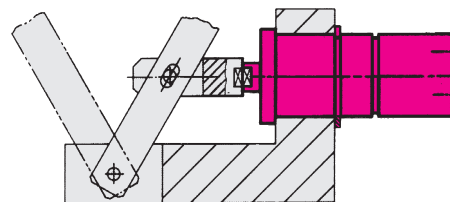


Oil connection:

A = Piston side

B = Rod size

**Application examples**



<b>Piston Ø d4</b>	<b>[mm]</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>
<b>Rod Ø d2</b>	<b>[mm]</b>	<b>14</b>	<b>18</b>	<b>22</b>	<b>28</b>	<b>36</b>
Stroke h	[mm]	32	40	50	64	64
Force to push 100 bar	[kN]	4.9	8	12.5	19.6	31.1
at 400 bar	[kN]	19.6	32	50	78.4	124.4
Force to pull 100 bar	[kN]	3.3	5.5	8.7	13.5	21
at 400 bar	[kN]	13.2	22	34.8	54	84
Oil volume per 1 mm piston stroke						
Piston side	[cm <sup>3</sup> ]	0.5	0.8	1.3	2.0	3.1
Rod side	[cm <sup>3</sup> ]	0.4	0.6	0.9	1.4	2.1
a1	[mm]	122	133	147	167	186
a2	[mm]	10	10	12	12	15
a3	[mm]	65.1	70.1	80.1	80.1	100.1
a4	[mm]	45.1	45.1	50.1	50.1	60.1
a5	[mm]	12	16	18	20	20
a6	[mm]	100	110	120	136	150
c1	[mm]	14.5	18	23	28	34
c2	[mm]	12.5	12.5	10.5	10.5	13
Ø d1	[mm]	56	66	76	90	105
Ø d3	[mm]	50	58	68	80	95
Ø d5 x c3	[mm]	13x5.5	17x6.5	21x8.5	27x10.5	35x12
g1	[mm]	M 8	M 10	M 12	M 16	M 20
g2		G 1/4	G 1/4	G 1/4	G 1/4	G 3/8
SW	[mm]	11	15	19	24	30
Weight	[kg]	1.7	2.4	3.6	5.7	8.7
<b>Part no.</b>		<b>5112303</b>	<b>5112403</b>	<b>5112503</b>	<b>5112603</b>	<b>5112703</b>

Article available on request