

BLOCK CYLINDERS

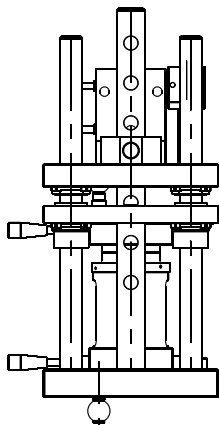
with end position control, double-acting, pmax. 500 bar



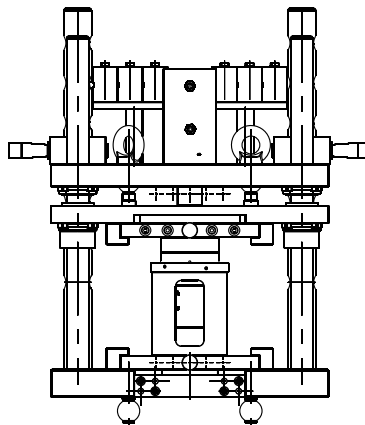
Application:

HYDROKOMP developed the above shown test fixture for coupling systems. On the lower fixture plate the coupling plates to be tested are plugged hydraulically. On the upper fixture plate the coupling nipple plates are fastened. The block cylinder descends the upper fixture plate and links up both systems.

The link-up process of the cylinder piston is controlled by the inductive sensors. Once the piston is completely protracted and the coupling process is therefore completed, the system is pressurized and checked for proper operation.



Test fixture for coupling systems



Description:

When time or tact dependent clamp/release processes are essential, the advantages of this block cylinder with end position control become effective. It is ideal for the application in automated plants.

The position of the cylinder head is read through the end position control. To do so, the block cylinder has two inductive sensors. These are located in the housing, in the end position of the piston.

Assembly instruction:

In order to avoid damages through transport the inductive cylinders are mounted shortly before use of the block cylinder.

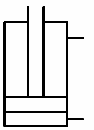
For that, please refer to the assembly instructions on page 4, "Inductive Sensor".

The block cylinder with end position check is suitable for maximum ambient temperature between -25°C...+120°C.



Webcode: 020010

We also design and manufacture special designs



Connections:

- ⊗ G1/4 / G1/2 threaded port
- ⊗ Manifold with O-ring bottom side or broadside

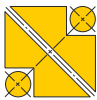
Advantages:

- ⊗ Ideal for automated plants
- ⊗ Space-saving installation
- ⊗ 3 mounting options
- ⊗ Metal wiper as standard
- ⊗ FKM sealing as standard
- ⊗ High monitoring precision



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Block cylinders with end position control / Order numbers

Piston ⁽¹⁾ Ø	[mm]	16	20	25	32	40	50	63	80	100
Rod Ø	[mm]	10	12	16	20	25	32	40	50	63
Pressure force at 100 bar	[kN]	2,0	3,1	4,9	8,0	12,6	19,6	31,2	50,3	78,5
Pressure force at 500 bar	[kN]	10,1	15,7	24,5	40,2	62,8	98,2	155,9	251,3	392,7
Tensile force at 100 bar	[kN]	1,2	2,0	2,9	4,9	7,7	11,6	18,6	30,6	47,4
Tensile force at 500 bar	[kN]	6,1	8	14,5	24,5	38,3	57,9	93	153,2	236,8
Oil req./10 mm stroke, for. flow	[cm³]	2,01	3,14	4,91	8,04	12,57	19,63	31,17	50,27	78,54
Oil req./10 mm stroke, ret. flow	[cm³]	1,23	2,01	2,90	4,90	7,66	11,59	18,61	30,63	47,37
a	[mm]	60	60	65	75	85	100	125	160	200
b	[mm]	35	35	45	55	63	75	95	120	150
c	[mm]	6	7	7	10	10	10	14	14	15
e Ø	[mm]	10,5	10,5	14	18	18	20	26	33	40
f	[mm]	30	40	50	55	63	76	95	120	158
g Ø	[mm]	6,5	6,5	8,5	10,5	10,5	13	17	21	25
h	[mm]	40	38	38	45	45	49	52	62	64
h1 (from stroke 50)	[mm]	24,5	24,5	26	27	27	30	41	47	54
i	[mm]	4,4	4,4	6,4	7,6	10,6	12,6	16,6	20,6	24,8
k	[mm]	20,5	20,5	21	25	27	29,5	32	39	40
l	[mm]	6,4	6,4	8,6	10,6	10,6	12,6	16,6	20,6	24,8
m	[mm]	11	11	11	11	11	13	17	21	25
n	[mm]	16,5	17	18	22	24	27	26	34	35
o1 = thread x depth	[mm]	M6x15	M8x16	M10x17	M12x18	M16x27	M20x32	M27x40	M30x40	M42x60
o2 = Ø x depth		Ø6,3x3	Ø8,5x3	Ø10,5x4	Ø12,5x4	Ø16,5x7	Ø21,0x8	Ø27,5x8	Ø30,5x8	Ø43,0x8
o3 = chamfer		0,5x30°	0,5x30°	0,5x30°	0,5x30°	0,5x30°	0,5x30°	0,5x30°	0,5x30°	0,5x30°
p		G1/4	G1/4	G1/4	G1/4	G1/4	G1/4	G1/2	G1/2	G1/2
P-j Ø	[mm]	M12x1	M12x1	M12x1	M12x1	M12x1	M12x1	M12x1	M12x1	M12x1
P-l	[mm]	28	28	24,5	30,5	30	33	34,5	41,5	42,5
P-m	[mm]	11	11	12,7	14,5	13	17,5	21	26	30
p-k	[mm]	32	34	34	32,5	31,5	29	45	36	26
r	[mm]	20	22	25	22,5	31,5	38	47,5	60	79
s	[mm]	40	40	50	55	63	76	95	120	158
A/F		8	10	13	17	-	-	-	-	-
t	[mm]	22	22	30	35	40	45	65	80	108
w	[mm]	1,1	1,1	1,1	1,1	1,1	1,1	1,5	1,5	1,5
x Ø	[mm]	4	4	4	5	6	6	8	8	8
y Ø	[mm]	9,8	9,8	9,8	9,8	9,8	9,8	10,8	13,8	13,8
z	[mm]	7	7	7,5	10	10	13	16	21	25
Stroke ⁽²⁾ ±1	[mm]	16	16	20	25	25	25	30	32	40
Housing length L ±1	[mm]	75	80	81	92	94	99	112	127	141
Weight approx.	[kg]	1,12	1,19	1,67	2,65	3,50	5,15	9,20	16,54	29,18
Stroke ⁽²⁾ ±1	[mm]	32	32	50	50	50	50	63	80	100
Housing length L ±1	[mm]	91	96	111	117	119	124	145	175	201
Weight approx.	[kg]	1,35	1,41	2,24	3,31	4,33	6,30	11,59	22,01	40,13
Stroke ⁽²⁾ ±1	[mm]	50	50	100	100	100	100	100	100	160
Housing length L ±1	[mm]	109	114	161	167	169	174	182	195	265
Weight approx.	[kg]	1,61	1,66	3,19	4,62	5,98	8,59	14,27	24,29	51,94

⁽¹⁾Other piston diameters available on request.

⁽²⁾Other strokes available on request.

Scope of supply includes the O-rings.

Order number key, block cylinders:

Example **BZP1** - **063** - **100** - **AV001**

Piston Ø [mm]: **016, 020, 025, 032, 040, 050, 063, 080, 100**

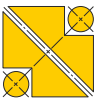
Stroke [mm]: (see table above)

Design: **A, D, E** (see table above)

Sealing: as standard at this cylinder type FKM = **V**

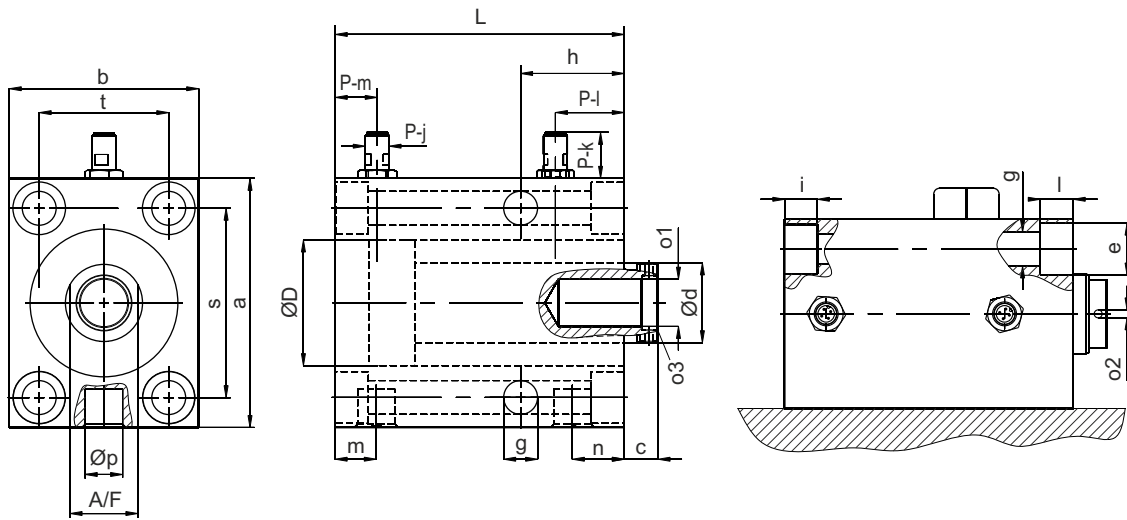
Functioning: double-acting = **001**

Inductive sensors and plugs are available separately as accessories. For order numbers see page 4.

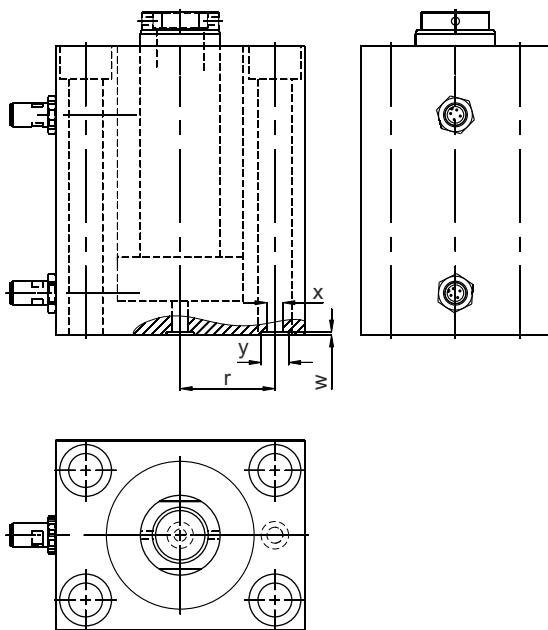


Block cylinders with end position control / Designs

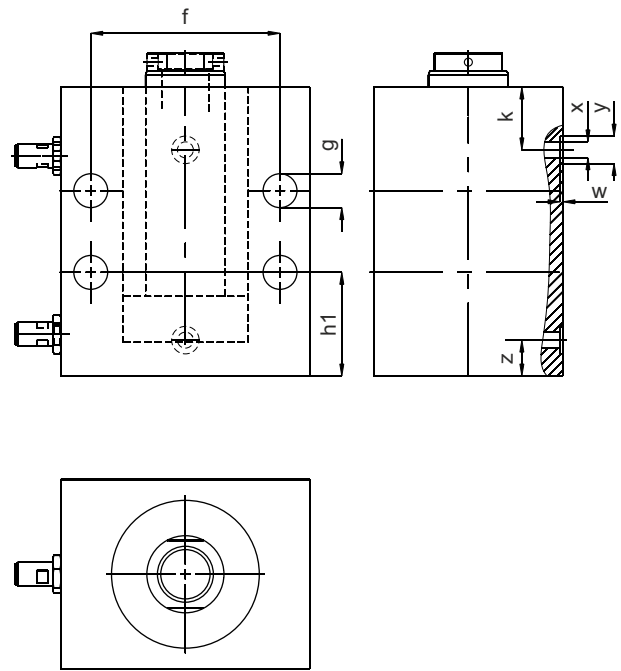
A threaded port, bleeder and cross bores



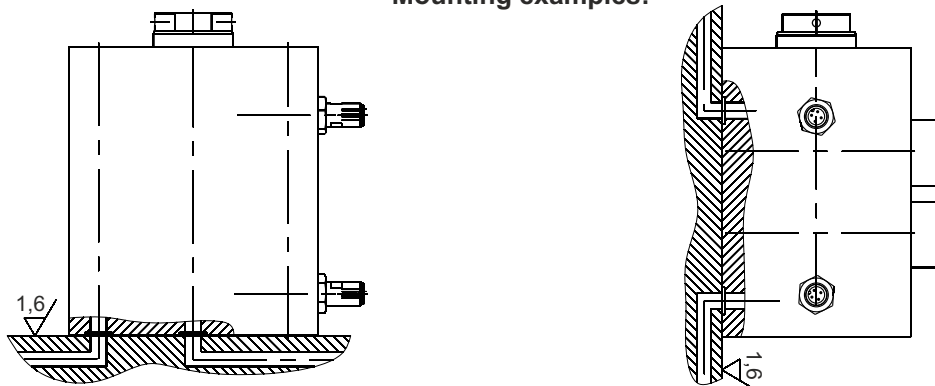
D manifold with O-ring, rod side)

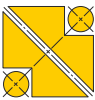


E manifold with O-ring, broadside

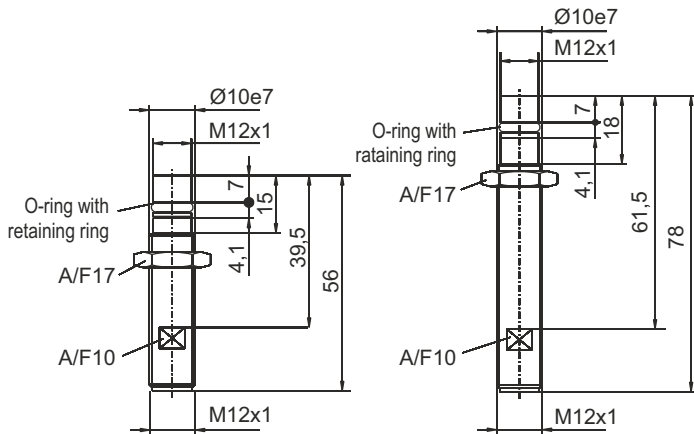


Mounting examples:





Block cylinders with end position control / Inductive sensors



Mounting instructions:

Sensor, front

1. Protract the piston completely.
2. Carefully screw the sensor up to the stop at the piston, into the housing.
3. Turn back the sensor as follow in order to set-up the switch point (S.P.) before the end position (E.P.)
 - 1/4 rotation S.P. approx. 4 mm before E.P.
 - 1 1/4 rotations S.P. approx. 1 mm before E.P.
4. Fix the sensor in the position with the counter nut.
5. Connect the switch and check its function.

Sensor, back

1. Completely retract the piston.
2. Proceed with mounting and set-up analog the front sensor.

LED (not for all plugs):

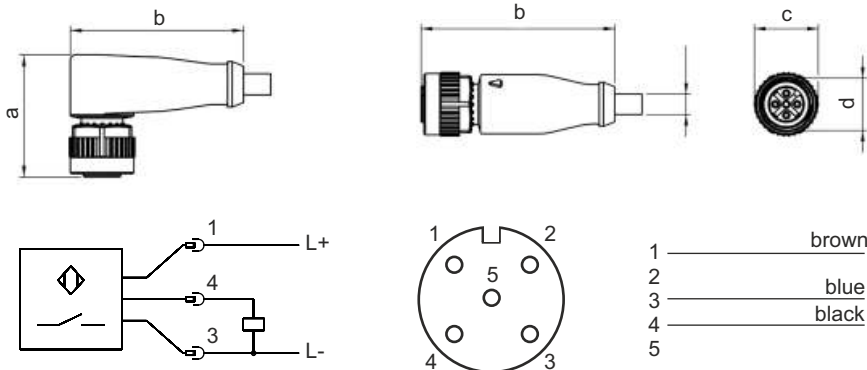
● = Operating voltage ● = Functional display

Technical data sensor:

for cylinders with Piston Ø [mm]	16, 20, 25, 32, 40, 50		63, 80, 100	
Ambient temperature [°C]	-25...+80	-25...+120	-25...+80	-25...+120
Switching distance, nominal [mm]	1,5	1,5	1,5	1,5
Switching distance, assured [mm]	0...1,2	0...2,0	0...1,2	0...2,0
Repeatability [%]	£ 5	£ 5	£ 5	£ 5
Hysteresis max. [%]	15	15	15	15
Dimensions DxT [mm]	M12x1x56	M12x1x56	M12x1x78	M12x1x78
Material, housing	1.4104	1.4104	1.4104	1.4104
Material, active area	Duroplast	Ceramics	Duroplast	Ceramics
Protection grade [IP]	68 (BWN Pr20)	68 (BWN Pr20)	68 (BWN Pr20)	68 (BWN Pr20)
Connection, plug	S4 (M12)	S4 (M12)	S4 (M12)	S4 (M12)
Electrical type	DC	DC	DC	DC
Wiring	3 pins	3 pins	3 pins	3 pins
Switch function	switch (NO)	switch (NO)	switch (NO)	switch (NO)
Output circuit	PNP	PNP	PNP	PNP
Rated voltage [V]	24 DC	24 DC	24 DC	24 DC
Rated current [mA]	200	200	200	200
Operating voltage [V]	10...30 DC	10...30 DC	10...30 DC	10...30 DC
Residual ripple max. [%]	15	15	15	15
Switching frequency [Hz]	1000	400	1000	400
No-load current [mA]	£ 10	£ 8	£ 10	£ 8
Voltage drop max. [mA]	1,5	2,5	1,5	2,5
Protection, short circuit	yes	yes	yes	yes
Protection, reverse polarity	yes	yes	yes	yes
Torque [Nm]	25	25	25	25
Order number	8500-044	8500-048	8500-049	8500-050

O-ring for sensor FKM⁽⁴⁾.....**6007-008**
 Retaining ring for sensor⁽⁴⁾.....**6007-007**

⁽⁴⁾Within scope of supply, order number only applies for spare part order.
 Plugs must be ordered separately.



Sensor accessories	a [mm]	b [mm]	c [mm]	Thread	Protection	Ambient temperature	LED	Order no:
Plug PNP, angular	25	39	32	M12x1	IP 68	-25...+ 80 C°	yes	8500-047
Plug PNP, straight	-	41	46	M12x1	IP 68	-25...+ 80 C°	yes	8500-051
Plug PNP, angular	31,5	38	66	M12x1	IP 68	-25...+120 C°	no	8500-052
Plug PNP, straight	-	35,5	75	M12x1	IP 68	-25...+120 C°	no	8500-053

All plugs are equipped with 2 m connection cable.