

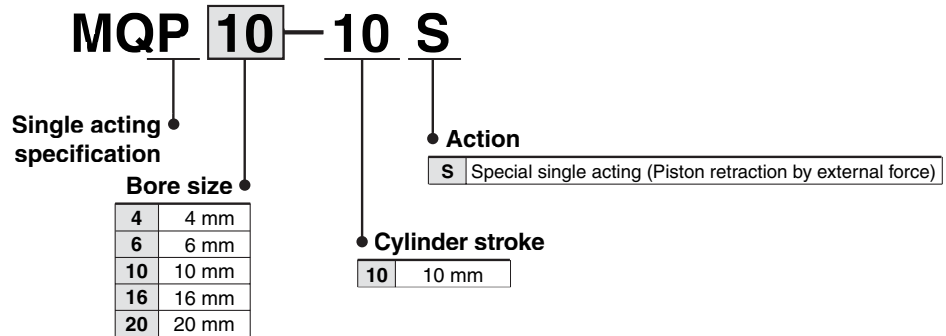
Metal Seal

# Low Friction Cylinder (Single Acting)

# Series MQP

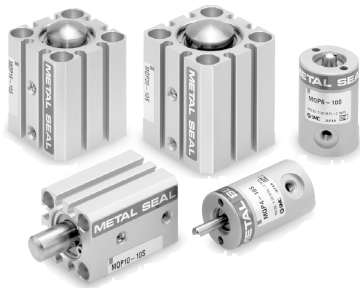
ø4, ø6, ø10, ø16 ø20

## How to Order



\* The MQP series is not auto switch capable.

## Specifications



Bore size (mm)	4	6	10	16	20
<b>Seal construction</b>	Metal seal				
<b>Action</b>	Special single acting (Piston retraction by external force)				
<b>Proof pressure</b>	1.05 MPa				
<b>Maximum operating pressure</b>	0.7 MPa				
<b>Minimum operating pressure</b> <small>Note 1)</small>	0.001 MPa				
<b>Ambient and fluid temperature</b>	-5 to +80C				
<b>Lubrication</b> <small>Note 2)</small>	Not required (Non-lube)				
<b>Stroke length tolerance</b>	+1.0 0				
<b>Total allowable leakage</b>	Supply pressure 0.1 MPa	100 cm <sup>3</sup> /min or less			
	Supply pressure 0.3 MPa	500 cm <sup>3</sup> /min or less			
	Supply pressure 0.5 MPa	1000 cm <sup>3</sup> /min or less			

Note 1) Excluding the weight of moving parts

Note 2) Refer to precautions on page 22 regarding lubrication.

## Moving Parts and Total Weight

Bore size (mm)	Moving parts weight	Total weight
4	4	43
6	8	55
10	24	96
16	62	161
20	103	239

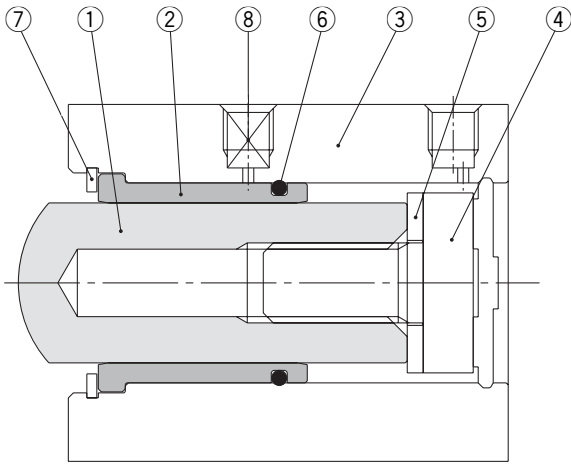
Unit: g

## Theoretical Output

Bore size (mm)	Piston area (mm <sup>2</sup> )	Operating pressure (MPa)						
		0.1	0.2	0.3	0.4	0.5	0.6	0.7
4	12.6	1.3	2.6	3.9	5.2	6.5	7.8	9.1
6	28.3	2.8	5.6	8.4	11.2	14.0	16.8	19.6
10	78.5	7.9	15.7	23.6	31.4	39.3	47.1	55.0
16	196.1	19.6	39.2	58.9	78.4	98.1	117.7	137.3
20	314.2	31.4	62.8	94.3	125.7	157.1	188.5	219.9

Unit: N

## Construction

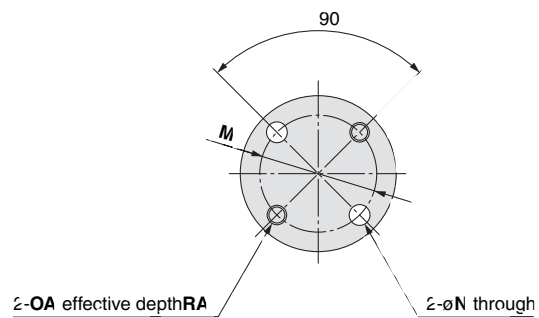
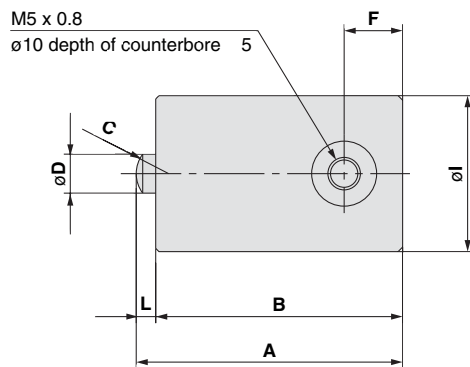


### Component Parts

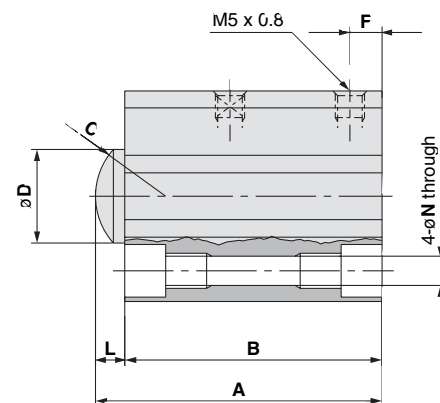
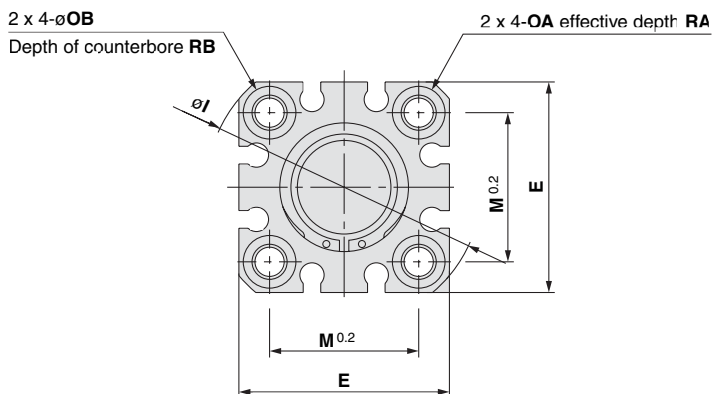
No.	Description	Material	Note
1	<b>Piston rod</b>	Special stainless steel	
2	<b>Liner</b>	Special stainless steel	
3	<b>Cylinder tube</b>	Aluminum alloy	Harc anodized
4	<b>Bolt</b>	Carbon tool steel	
5	<b>Bumper</b>	Fluororesin	
6	<b>O-ring</b>	NBR	
7	<b>Retaining ring</b>	Carbon tool steel	Nicke plated
8	<b>Plug</b>	Carbon tool steel	Nicke plated

## Dimensions

**ø4, ø6**



**ø10, ø16, ø20**



(mm)

Bore size (mm)	A	B	C	D <sup>Note)</sup>	E	F	I	L	M	N	OA	OB	RA	RB
4	41	38	SR3	4	—	9	22	3	16	3.2	M3 x 0.5	—	6	—
6	41	38	SR5	6	—	9	24	3	18	3.2	M3 x 0.5	—	6	—
10	46.5	41.5	SR8	10	29	5.5	38	5	20	3.5	M4 x 0.7	6.5	7	4
16	49	44	SR12	16	36	5.5	47	5	25.5	5.4	M6 x 1.0	9	10	7
20	52.5	47.5	SR15	20(19)	40	5.5	52	5	28	5.4	M6 x 1.0	9	10	7

Note) Figures in ( ) are the diameter in the rod end part.