

Metal Seal

Compact Low Friction Cylinder

MQQ Series

ø10, ø16, ø20, ø25, ø30, ø40

RoHS

How to Order

MQQ T B 10 - 10 D

Compact low friction specification

T	Standard type
L	Lateral load resisting type (Built-in ball bushing)

Type

Mounting

B	Through hole & Double end tapped (Standard)
L	Foot type
F	Rod side flange type
G	Head side flange type
D (Note)	Double clevis type

Note) Available with the MQQL□ only.

* Mounting brackets are included when shipped, but unassembled.

Bore size

10	10 mm
16	16 mm
20	20 mm
25	25 mm
30	30 mm
40	40 mm

Body option

Nil	Standard (Rod end female thread)
M (Note)	Rod end male thread

Note) A rod end thread adapter is attached.

* A rod end thread adapter is shipped being assembled.

Action

D	Double acting
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Cylinder stroke

Bore size (mm)	Standard stroke (mm)
10	10, 20, 30, 40
16	10, 20, 30, 40, 50, 60
20	10, 20, 30, 40, 50, 60
25	10, 20, 30, 40, 50, 75, 100
30	10, 20, 30, 40, 50, 75, 100
40	10, 20, 30, 40, 50, 75, 100

* Strokes are available in 1 mm increments by installing a spacer in standard stroke cylinders.

Example: MQQT B10-15D

(5 mm width spacer is installed in MQQT B10-20D to adjust the stroke.)

Port thread type

Nil	M thread	ø10 to ø20
	Rc	
TN	NPT	ø25 to ø40
TF	G	

* The MQQ series is not auto switch capable.

Mounting Bracket Part No.

Bore size (mm)	Foot (Note 1)	Flange	Double clevis	Rod end thread adapter (with nut)
10	CQS-L016	CQS-F016	CQS-D016	MQ10-M
16	CQS-L020	CQS-F020	CQS-D020	MQ16-M
20	CQS-L025	CQS-F025	CQS-D025	MQ20-M
25	MQ-L032	MQ-F032	MQ-D032	MQ25-M
30	MQ-L040	MQ-F040	MQ-D040	MQ28-M
40	CQ-L050	CQ-F050	MQ-D050	

Note 1) When ordering a foot bracket, order 2 pcs. for each cylinder.

Note 2) The following parts are included with a bracket respectively.

Foot, Flange Body mounting bolts

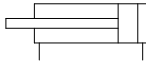
Double clevis Clevis pin, C type retaining ring for shaft, Body mounting bolts

Specifications: Standard Type/MQQT



Symbol

Double acting, Single rod



Weight: Standard Type/MQQT

Unit: g

Bore size (mm)	Cylinder stroke (mm)							
	10	20	30	40	50	60	75	100
10	94	118	142	166	—	—	—	—
16	166	206	246	286	326	366	—	—
20	228	290	352	414	476	538	—	—
25	395	487	579	671	763	—	993	1223
30	479	567	655	743	831	—	1052	1272
40	728	846	964	1082	1200	—	1495	1790

Weight: Lateral Load Resisting Type/MQQL (Built-in Ball Bushing)

Unit: g

Bore size (mm)	Cylinder stroke (mm)							
	10	20	30	40	50	60	75	100
10	148	172	196	220	—	—	—	—
16	284	324	364	404	444	484	—	—
20	383	445	507	569	631	693	—	—
25	552	644	736	828	920	—	1150	1380
30	911	999	1087	1175	1263	—	1485	1705
40	1337	1455	1573	1691	1809	—	2104	2399

* Refer to page 340 for moving parts mass.

Bore size (mm)	10	16	20	25	30	40
Seal construction	Metal seal					
Action	Double acting, Single rod					
Fluid	Air					
Proof pressure	1.05 MPa					
Maximum operating pressure	0.5 MPa					
Minimum operating pressure ^{Note 1)}	0.005 MPa					
Ambient and fluid temperature	-10 to 80°C					
Cushion	Rubber bumper (Standard)					
Lubrication ^{Note 2)}	Not required (Non-lube)					
Rod end thread	Female thread					
Stroke length tolerance	$+1.0$ 0					
Piston speed ^{Note 3)}	0.3 to 300 mm/s (Refer to page 340.)					
Total leakage ^{Note 4)}	Supply pressure 0.1 MPa	150 cm ³ /min	200 cm ³ /min	300 cm ³ /min	400 cm ³ /min	
	Supply pressure 0.3 MPa	800 cm ³ /min	1000 cm ³ /min	1200 cm ³ /min	1600 cm ³ /min	
	Supply pressure 0.5 MPa	1500 cm ³ /min	2000 cm ³ /min	3000 cm ³ /min	4000 cm ³ /min	

Note 1) Value when horizontal. (Use clean, dry, and nonfreezing air) However, as the stroke increases, it will likely be affected by the mass of its moving parts and the pressure will likely increase by approx. 0.003 to 0.005 MPa due to an offset load from the mass of the rod.

Note 2) Refer to precautions on page 339 regarding lubrication. This product uses turbine oil as an initial lubricant. Lubricant may seep out of the rod or the piping port.

Note 3) Control low speed actuation with differential pressure and a speed controller, etc. (Refer to recommended circuit examples on page 319 for further details.)

Note 4) The values are only for reference and are not guaranteed.

Specifications: Lateral Load Resisting Type/MQQL

Bore size (mm)	10	16	20	25	30	40
Seal construction	Metal seal					
Action	Double acting, Single rod					
Fluid	Air					
Proof pressure	1.05 MPa					
Maximum operating pressure	0.7 MPa					
Minimum operating pressure ^{Note 1)}	0.005 MPa					
Ambient and fluid temperature	-10 to 80°C					
Cushion	Rubber bumper (Standard)					
Lubrication ^{Note 2)}	Not required (Non-lube)					
Rod end thread	Female thread					
Stroke length tolerance	$+1.0$ 0					
Piston speed ^{Note 3)}	0.5 to 500 mm/s (Refer to page 340.)					
Total leakage ^{Note 4)}	Supply pressure 0.1 MPa	150 cm ³ /min	200 cm ³ /min	300 cm ³ /min	400 cm ³ /min	
	Supply pressure 0.3 MPa	800 cm ³ /min	1000 cm ³ /min	1200 cm ³ /min	1600 cm ³ /min	
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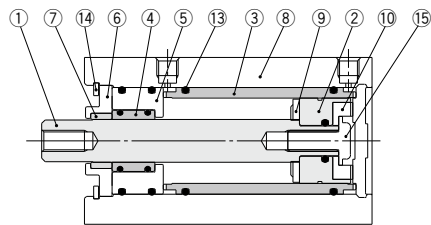
Theoretical Output (Guide)



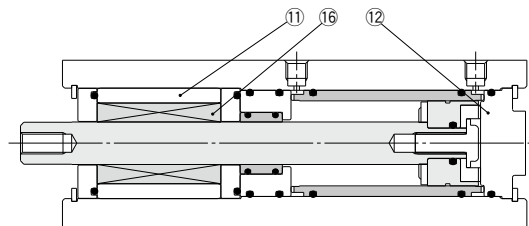
Bore size (mm)	Rod size (mm)	Direction	Piston area (mm ²)	Operating pressure (MPa)						
				0.1	0.2	0.3	0.4	0.5	0.6	0.7
10	6	IN	50.3	5.0	10.1	15.1	20.1	25.2	30.2	35.2
		OUT	78.5	7.9	15.7	23.6	31.4	39.3	47.1	55.0
16 (15.8)	8	IN	145.8	14.9	29.2	43.7	58.3	72.9	87.5	102.1
		OUT	196.1	19.6	39.2	58.9	78.4	98.1	117.7	137.3
20	10	IN	235.6	23.6	47.1	70.7	94.2	117.8	141.4	164.9
		OUT	314.2	31.4	62.8	94.3	125.7	157.1	188.5	219.9
25	12	IN	377.8	37.8	75.6	113.3	151.1	188.9	226.7	262.5
		OUT	490.9	49.1	98.2	147.3	196.4	245.5	294.5	343.6
30	16	IN	505.8	50.6	101.2	151.8	202.4	253.0	303.6	354.2
		OUT	706.9	70.7	141.4	212.1	282.8	353.5	424.2	494.9
40	20	IN	1055.6	105.6	211.2	316.8	422.4	528.0	633.6	739.2
		OUT	1256.6	125.7	251.4	377.1	502.8	628.5	754.2	879.9

Construction

Standard type: MQQT



Lateral load resisting type: MQQL (Built-in ball bushing)



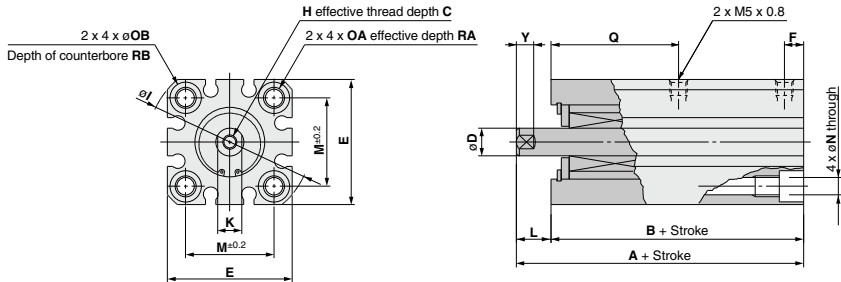
Component Parts

No.	Description	Material	Note
1	Rod	Carbon steel	Hard chrome plated
2	Piston	Special stainless steel	
3	Liner	Special stainless steel	
4	Sleeve	Special stainless steel	
5	Sleeve retainer	Aluminum alloy	
6	Plate	Aluminum alloy	Hard anodized
7	Guide	Fluororesin	
8	Cylinder tube	Aluminum alloy	Hard anodized
9	Bumper A	Polyurethane	
10	Bumper B	Polyurethane	
11	Bushing	Aluminum alloy	
12	Bottom plate	Aluminum alloy	Hard anodized
13	O-ring	NBR	
14	Retaining ring	Carbon tool steel	Phosphate coated
15	Bolt	Carbon tool steel	Chromated
16	Ball bushing		

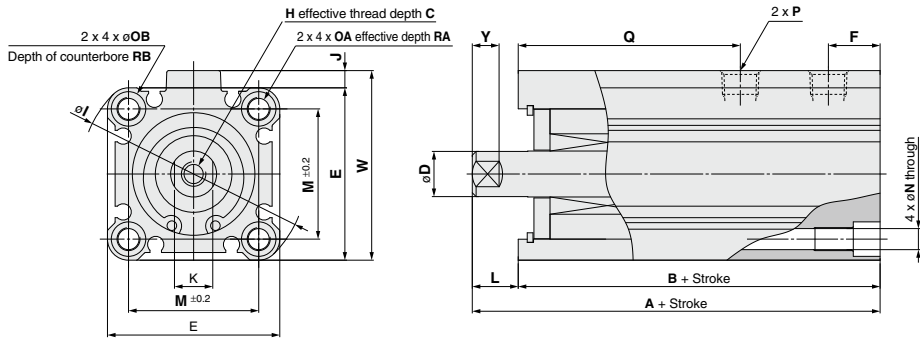
MQQ Series

Dimensions

Lateral load resisting type (Through hole & Double end tapped): MQQLB
ø10, ø16, ø20



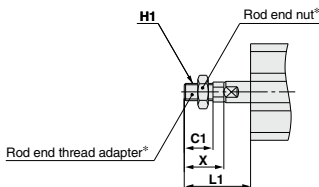
ø25, ø30, ø40



(mm)																									
Bore size (mm)	Stroke range (mm)	A	B	C	D ^(Note)		E	F	H	I	J	K	L	M	N	OA	OB	P			Q	RA	RB	W	Y
					—	TN												TF							
10	10 to 40	69.5	61.5	6	6 (5.8)		29	9	M3 x 0.5	38	—	5	8	20	3.5	M4 x 0.7	6.5	—	—	—	39.5	7	4	—	5
16	10 to 60	80.5	70.5	8	8 (7.8)		36	11	M4 x 0.7	47	—	7	10	25.5	5.4	M6 x 1.0	9	—	—	—	48.5	10	7	—	5
20	10 to 60	89	79	10	10 (9.8)		40	11.5	M5 x 0.8	52	—	8	10	28	5.4	M6 x 1.0	9	—	—	—	55	10	7	—	6
25	10 to 50, 75, 100	96.5	84.5	12	12 (11.8)		45	13.5	M6 x 1.0	60	4.5	10	12	34	5.5	M6 x 1.0	9	Rc 1/8	NPT 1/8	G 1/8	58	10	7	49.5	7
30	10 to 50, 75, 100	116	104	13	16 (15.8)		52	17.5	M8 x 1.25	69	5	14	12	40	5.5	M6 x 1.0	9	Rc 1/8	NPT 1/8	G 1/8	71	10	7	57	10
40	10 to 50, 75, 100	116	104	13	16 (15.8)		64	17.5	M8 x 1.25	86	7	14	12	50	6.6	M8 x 1.25	11	Rc 1/4	NPT 1/4	G 1/4	71	14	8	71	10

Note) (): Rod end dimensions

With rod end male thread: MQQ□□DM



Bore size (mm)	(mm)			
	L1	C1	H1	X
10	23.5	10.5	M5 x 0.8	15.5
16	26.5	11.5	M6 x 1.0	16.5
20	28.5	13.5	M8 x 1.25	18.5
25	34.5	16.5	M10 x 1.25	22.5
30	40.5	22.5	M14 x 1.5	28.5
40	40.5	22.5	M14 x 1.5	28.5

* Refer to page 330 for details regarding the rod end thread adapter and the rod end nut.