

AQS Series

Mini Square tube cylinder

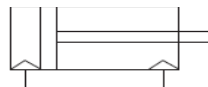
Bore size : Ø12, Ø16, Ø20



- Compact type cylinder
- Compact space for installation
- Shorter tube length by 6%~28% than AQ2 series.

Symbol

Double acting: Single rod



How to order

ADQSA12-30DCM-W8H S

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Magnet Option(D or blank)

Bore size (mm)	Option : D (Built-in magnet / With Auto Switch)	Option : Blank (Standard type / Without Auto Switch)
12	AQS [-6mm shorter than AQ2 series]	Same as AQ2 series
16	AQS [-8.5mm shorter than AQ2 series]	AQS [-1.5mm shorter than AQ2 series]
20	AQS [-2mm shorter than AQ2 series]	Same as AQ2 series
Bigger than 25	Same as AQ2 series	

※ If the cylinder is bigger than Ø25 and Ø12, Ø20 without auto-switch, please order with AQ2 series.

② Attachment

A : Both ends tapped (Standard type)

※ For Ø12~Ø20, it is integrated type of both ends tapped and through-hole type

③ Bore Size

12 : 12mm

16 : 16mm

20 : 20mm

(For more than Ø25, be same as AQ2 series's)

④ Stroke (mm)

Ø12, Ø16

: 5,10,15,20,25,30

Ø20

: 5,10,15,20,25,30,35,40,45,50

⑤ Action

D : Double-acting (Standard)

⑥ Body Specification 1

C : Rubber cushion (Standard)

⑦ Body Specification 2

Blank : Standard type (Rod end female thread)

M : Rod end male thread

⑧ Auto Switch Type

Blank : None

(Built-in magnet)

Reed Switch

W8H : Compact auto switch (Horizontal type, 2 wires)

W8V : Compact auto switch (Vertical type, 2 wires)

Solid State Switch

W9H : Compact auto switch (Horizontal type, 2 wires)

W9V : Compact auto switch (Vertical type, 2 wires)

W9HN : Compact auto switch (Horizontal type, 3 wires)

W9VN : Compact auto switch (Vertical type, 3 wires)

W10V : Compact auto switch (Vertical type, 2 wires)

W20H : Compact auto switch (Horizontal type, 2 wires)

(2 colors displayed)

※If the lead wire length is 3 m, add L at the end of part number Ex) W8HL

⑨ Number of auto switches

Blank : 2 pcs

S : 1 pc

n : n pcs

●Precautions

* Production of middle stroke

By mounting a spacer on the standard stroke cylinder, it is possible to make the middle stroke from the minimum length of 3mm by adding 1mm. Example 1) For AQSA12-27DC, 3 mm wide spacer should be inserted inside the standard cylinder AGQA12-30DC

※ For Ø16 only, please contact us.

Specifications

Bore size (mm)	12	16	20
Description	Air pressure (Non-lube) type		
Action	Double-acting single rod		
Fluid	Air		
Proof pressure	1.5MPa		
Max. operating pressure	1.0MPa		
Min. operating pressure	0.07MPa		0.05MPa
Ambient & fluid temperature	Without auto switch : -5°C~70°C (Non-freezing)		
	With auto switch : -5°C~60°C (Non-freezing)		
Cushion	Rubber cushion at both sides (Standard)		
Tolerance of stroke length	+1.0 / 0 mm [⚠])		
Installation	Integrated type of both ends tapped and through-hole type		
Rod-end thread	Female thread		
Piston speed	50~500m/s		

Note) The tolerance of the stroke length does not include the variation of the damper (Rubber cushion).

※ For Ø12 ~ Ø25 - it is integrated type of both ends tapped and through-hole type

Standard Stroke

Bore Size (mm)	Standard Stroke (mm)
12, 16	5, 10, 15, 20, 25, 30
20	5, 10, 15, 20, 25, 30, 35, 40, 50

Type

Bore size(mm)		12	16	20	
Air pressure type	Mounting	Through-hole (standard)	○	○	○
		Both ends tapped	(Common)	(Common)	(Common)
	Built-in magnet		○	○	○
	Piping Method	Screw connecting type	M5x0.8		
		Rubber cushion (standard)		○	○

Weight Table

(Unit g)

Without auto-switch

Bore Size (mm)	Stroke (mm)									
	5	10	15	20	25	30	35	40	45	50
12	29	36	42	49	56	62	-	-	-	-
16	37	45	54	62	71	79	-	-	-	-
20	63	76	90	103	116	129	142	155	168	181

With auto-switch (Built-in magnet)

Bore Size (mm)	Stroke (mm)									
	5	10	15	20	25	30	35	40	45	50
12	37	43	50	57	63	70	-	-	-	-
16	48	57	66	74	83	91	-	-	-	-
20	92	105	118	131	144	157	170	183	196	210

※ Please contact us for information on the weight of the auto-switch.

Additional Weight Table

(Unit g)

Bore Size (mm)		12	16	20
Rod end - male thread	Male thread	1.5	3	6
	Nut	1	2	4

How to calculate

Ex) AGQA32-28DC

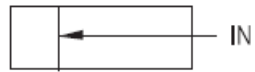
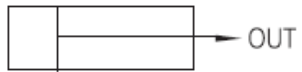
● Reference Weight : AQSA12-25DC ----- 56g

● Additional weight: Rod end male thread ----- 1.5g

Nut ----- 1g

58.5g

Theoretical Output Table

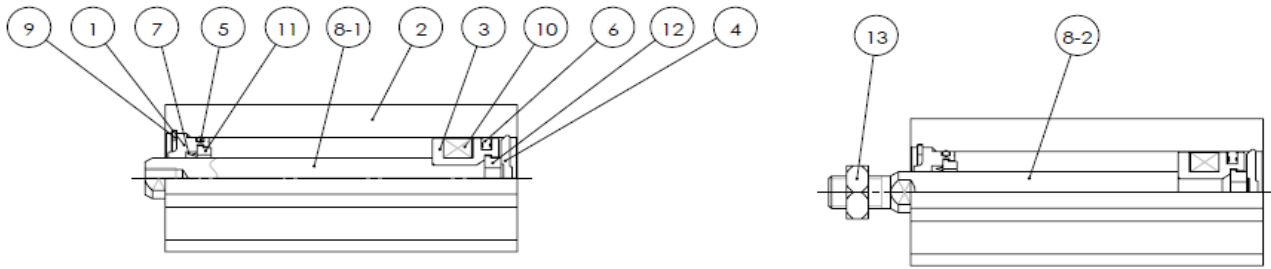


Bore Size (mm)	Operating Direction	Operating Pressure (MPa)							
		0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
12	OUT	34	45	57	68	79	90	102	113
	IN	25	34	42	51	59	68	76	85
16	OUT	60	80	101	121	141	161	181	201
	IN	45	60	75	90	106	121	136	151
20	OUT	94	126	157	188	220	251	283	314
	IN	71	94	118	141	165	188	212	236

1N \approx 0.102kgf

1MPa \approx 10.2kgf/cm²

Structure/Part LIST



NO.	Part Name	Material	Quantity	Remark
1	ROD COVER	Alluminum Alloy	1	Anodizing
2	CYLINDER TUBE	Alluminum Alloy	1	Anodizing
3	PISTON	Alluminum Alloy	1	
4	END PLATE	Alluminum Alloy	1	
5	GASKET	NBR	1	
6	PISTON PACKING	NBR	1	
7	ROD PACKING	NBR	1	
8-1	PISTON ROD	Stainless Steel	1	Female thread Type (Hard chrome plating)
8-2		Stainless Steel	1	Male thread Type (Hard chrome plating)
9	SNAP RING	Carbon Steel	1	
10	MAGNET	NBR+Ba Ferrite	1	
11	BUMPER"A"	POLYURETHANE	1	Mounting on rod cover
12	BUMPER"B"	POLYURETHANE	1	Mounting on piston
13	ROD END NUT	Steel	1	Zinc white plating

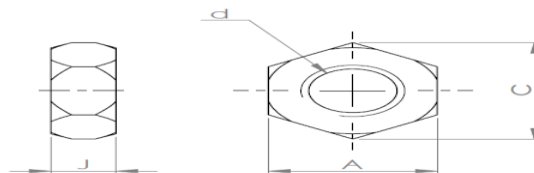
※ In case of $\varnothing 12$ or $\varnothing 16$, it is separated into PISTON and MAGNET SEAT.

※ END PLATE is not available for $\varnothing 12$, $\varnothing 16$

Note) Non-auto type - Carbon steel / Hard chrome plating. For $\varnothing 16$, stainless steel

Accessory Bracket - Rod End Nut

(Material: Rolled steel)



Part number	Applied bore size (mm)	J	d	A	C
M5x0.8-PL	12	4	M5x0.8	8	9.2
M6x1.0-PL	16	5	M6x1.0	10	11.5
TNT-02	20	5	M8x1.25	13	15

※Same as AQ2 order format.

Packing LIST/Replacement Parts/Air Pressure (non-lube) Type

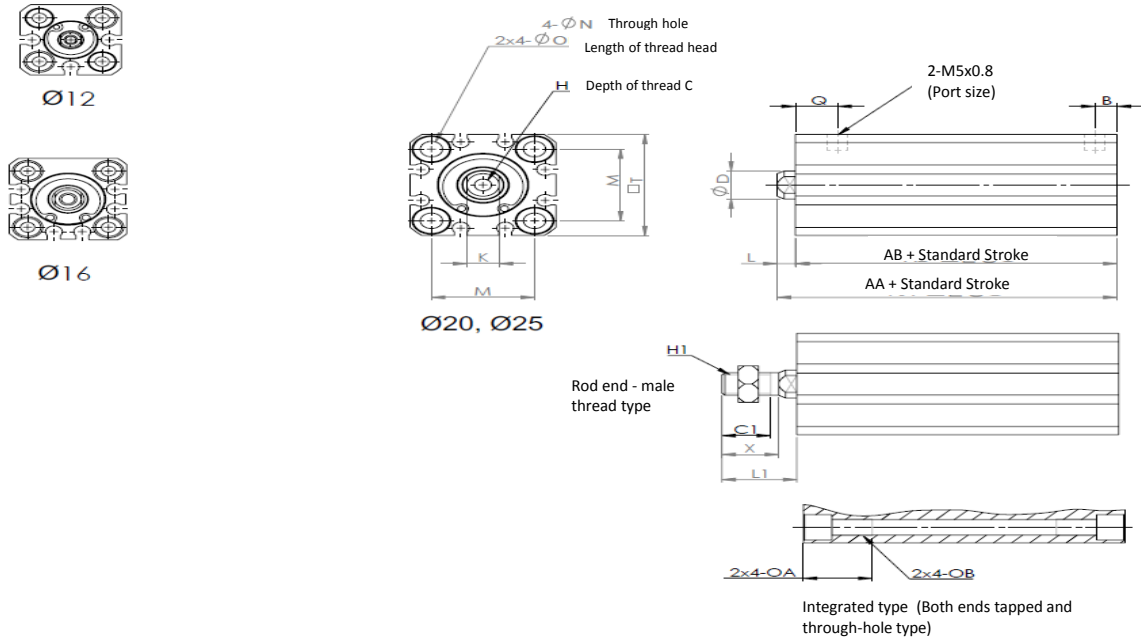
NO	Part Name	Material	Ø12	Ø16	Ø20
5	GASKET	NBR	C-10	C-14	C-18
6	PISTON PACKING	NBR	TPSA-12	TPSA-16	TPSA-20
7	ROD PACKING	NBR	DYR-6K	DYR-8K	DYR-10SK

※Same as AQ2 order format.

부착 금구류

●Mounting parts (foot type, rod side, head side flange type, etc.) are compatible with AQ2 series.

Standard Type (Through Hole Type, Both Ends Tapped)



Bore Size	Stroke (mm)	Without Auto Switch		With Auto Switch		D	K	L	T	Q	B	M	N	E	O	OA	OB
		AA	AB	AA	AB												
12	5~30	20.5	17	25.5	22	6	5	3.5	25	7.5	5	16	Ø3.5	32	Ø6.5 DP 4	11	M4x0.7
16	5~30	20.5	17	25.5	22	8	6	3.5	29	7.5	5	20	Ø3.5	38	Ø6.5 DP 4	11	M4x0.7
20	5~50	24	19.5	34	19.5	10	8	4.5	36	11	5.5	26	Ø5.5	47	Ø9 DP 7	17	M6x1.0

Bore Size	H	C
12	M3x0.5	DP 6
16	M4x0.7	DP 8
20	M5x0.8	DP 7

Rod End Male Thread TYPE				
Bore Size	L1	C1	H1	X
12	14	9	M5x0.8	11
16	15.5	10	M6x1.0	12
20	18.5	12	M8x1.25	14

※ For Ø12/Ø16-5 stroke and Ø20/Ø25-5/10 stroke cylinders without auto switch, through hole type will be applied instead of both end tapped