

# Series AQ

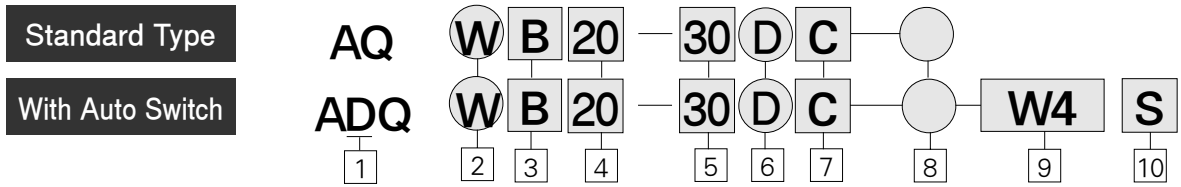
## Compact Cylinder/Double Acting, Single Acting Type

Bore Size (mm) :  $\phi 12$ ,  $\phi 16$ ,  $\phi 20$ ,  $\phi 25$ ,  $\phi 32$ ,  $\phi 40$ ,  $\phi 50$ ,  $\phi 63$ ,  $\phi 80$ ,  $\phi 100$



- SPACE SAVING DESIGN
- LIGHT WEIGHT
- 10 BORE SIZES
- AUTO SWITCH CAPABLE
- CYLINDERS FOR SPECIAL APPLICATIONS
- MANUFACTURING CERTIFIED TO ISO 9001&9002 STANDARDS

### How to Order



**1 Built-in Magnet**  
For details, Please refer to Page A-179

**2 Model**  
Blank : Single Rod  
W : Double Rod  
K : Non-Rotating

**3 Type**  
B : Through Hole (Standard Type)  
A : Both Ends Tapped  
※ For the Dimensions of "A" type please refer to page A-196

**4 Bore Size (mm)**  
12 :  $\phi 12$   
16 :  $\phi 16$

20 :  $\phi 20$   
25 :  $\phi 25$   
32 :  $\phi 32$   
40 :  $\phi 40$   
50 :  $\phi 50$   
63 :  $\phi 63$   
80 :  $\phi 80$   
100 :  $\phi 100$

**5 Cylinder Stroke (mm)**  
※ For stroke refer to page A-162

**6 Action**  
D : Double Acting  
S : Single Acting/Spring Return  
T : Single Acting/Spring Extended

**7 Body Option(See list below)**  
Blank: Standard  
C : Rubber cushion  
M : Rod end male thread  
F : Rear boss mount

**8 Special Option**  
Blank : Standard type  
XC16 : Copper-free

**9 Applicable Auto Switch**  
Blank: Without Auto Switch  
W4 : W4(Reed Switch)

※ Suffix L for lead wire exceeding 3m length.  
Example) W4L

**10 Number of Auto Switch**  
Blank : 2 pcs.  
S : 1 pc.

## Standard/Specifications

Fluid	Air
Max. Operating Pressure	1.5MPa (9.9kgf/cm <sup>2</sup> )
Ambient and Fluid Temperature	-10~70℃
Lubrication	Not Required
Cushion	None
Rod End Thread	Female (Standard Type)
Stroke Tolerance	+1.0 0 mm
Mounting	Through Hole (Standard)
Piston Speed	50~500 mm/sec

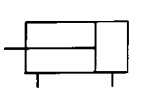
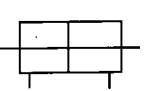
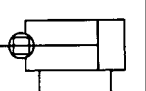
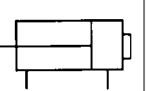
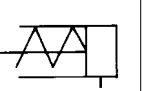
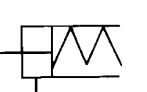
## Body Option/Available

● - Standard ○ - Optional

Type	Action	Code	Single Rod								Double Rod			
			Blank	M	C	CM	F	FM	FC	FCM	Blank	M	C	CM
Standard Type	Double Acting	φ12~φ20	●	●	●	○	●	●	●	○	●	●	●	●
		φ32~φ100	●	●	●	●	●	●	●	●	●	●	●	●
	Single Acting	Spring return	●	●	—	—	●	●	—	—	—	—	—	—
		Spring extended	—	—	—	—	—	—	—	—	—	—	—	—
With Auto Switch	Double Acting	φ12	—	●	—	—	●	●	—	—	—	—	—	—
		φ16~φ25	●	●	●	○	●	●	●	○	●	○	○	○
		φ32~φ100	●	●	●	●	●	●	●	●	●	●	●	●

Note) Single Acting(Spring return / Spring extended) is optional.

## Model/Standard Stroke

Bore Size mm	Double Acting				Single Acting	
	Single Rod Type	Double Rod Type	Non-Rotating Rod Type	Rear Boss Mount Type	Spring Return Type	Spring Extended Type
						
Standard Stroke (mm)				Standard Stroke (mm)		
φ12	5, 10, 15	—	—	5, 10, 15	—	—
φ16	20, 25, 30	—	—	20, 25, 30	—	—
φ20	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75	5, 10, 15, 20, 25, 30, 35, 40, 45, 50	5, 10, 15, 20, 25, 30, 35, 40, 45, 50	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75	5, 10	5, 10
φ25	—	—	—	—	—	—
φ32	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100, 125, 150	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100, 125, 150	5, 10	5, 10
φ40	—	—	—	—	—	—
φ50	—	—	—	—	10	10
φ63	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100, 125, 150	10, 15, 20, 25, 25, 30, 35, 40, 45, 50, 75, 100	10, 15, 20, 25, 25, 30, 35, 40, 45, 50, 75, 100	10, 15, 20, 25, 25, 30, 35, 40, 45, 50, 75, 100, 125, 150	—	—
φ80	—	—	—	—	—	—
φ100	—	—	—	—	—	—

### • Intermediate Stroke

A spacer of 5, 10, 15 and 20mm is used for intermediate strokes between 55 and 100mm stroke(55, 60, 65...).  
(Example) AQB50-55D is produced by installing 20mm spacer in AQB50-75.

## Options

Name	Applicable Type
Cushion	Rubber Cushion/Double Acting Only
Rod End Male Thread	Optional
Boss Mount	Optional
Non-Rotating Piston Rod Type	Double Acting/Single Rod Type Only

## Minimum Operating Pressure (kgf/cm<sup>2</sup>)

Type \ Bore Size (mm)	12	16	20	25	32	40	50	63	80	100
Double Acting (Single Rod)	0.7	0.7	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Single Acting (Spring Return, Spring Extended)	—	—	1.8	—	1.7	1.5	1.3	—	—	—

## Non-Rotating Rod Accuracy

Bore Size (mm)	φ20 • φ25	φ32	φ40	φ50	φ63
Non-Rotating Rod Accuracy	±1°		±0.8°		

## Theoretical Force

### Single Acting (kgf)

Action	Bore Size mm	Operating pressure (kgf/cm <sup>2</sup> )			Spring Force		
		3	5	7	Spring Extended Position	Spring Return Position	Rod and Max. Axial Load
Spring Return	20	7.8	14.1	20.3	1.6	0.6	0.67
	25	12.6	22.4	32.2	2.1	1.1	1.63
	32	21.7	37.8	53.8	2.4	1.5	1.77
	40	34.5	59.7	84.8	3.1	1.3	1.77
	50	52.9	92.1	131.4	5.5	2.5	3.1
Spring Extended	20	4.2	8.9	13.6	2.8	0.5	0.67
	25	8.3	15.8	23.4	3.0	1.0	1.63
	32	15.0	27.1	39.2	3.0	2.0	1.77
	40	28.6	49.7	70.8	3.0	2.0	1.77
	50	40.9	73.9	106.9	8.5	2.5	3.1

### Auto Switch Mounting Bracket/PART No.

Bore Size (mm)	Mounting Band	Note	Applicable Auto Switch
12 • 16 • 20 • 25	BQ-1	• Auto Switch Mounting Screw (M3×0.5×8 l) • Square Nut	W4
32 • 40 • 50 • 63 • 80 • 100	BQ-2	• Auto Switch Mounting Screw (M3×0.5×10 l) • Auto Switch Spacer • Auto Switch Mounting Nut	

## Cautions

- ① When mounting, completely flush piping, be careful that dust and chips do not enter the cylinder.
- ② The piston rod load should always be aligned with the cylinder axis.
  - Cylinder installation requires accurate alignment.
  - When used as a stopper, avoid side loading of the piston rod.
- ③ Prevent damage to the piston rod. A damaged piston rod can lead to failure of the rod packing and result in cylinder failure.
- ④ When disassembling, remove the retaining ring (C-type) with special tool. (Assembling tool for C-type retaining ring)

### Double Acting Single Rod (kgf)

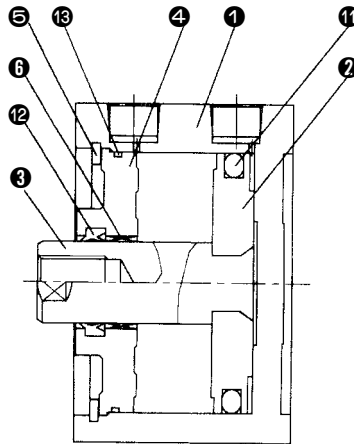
Bore size	Rod direction	Operating pressure kgf/cm <sup>2</sup>		
		3	5	7
12	IN	2.5	4.2	5.9
	OUT	3.3	5.6	7.9
16	IN	4.5	7.5	10.5
	OUT	6	10	14
20	IN	7	11.7	16.4
	OUT	9.4	15.7	21.9
25	IN	11.3	18.8	26.4
	OUT	14.7	24.5	34.3
32	IN	18	30	42
	OUT	24	40	56
40	IN	31	52	73
	OUT	37	62	87
50	IN	49	82	115
	OUT	58	98	137
63	IN	84	140	196
	OUT	93	155	218
80	IN	136	227	317
	OUT	150	251	352
100	IN	214	357	500
	OUT	236	393	550



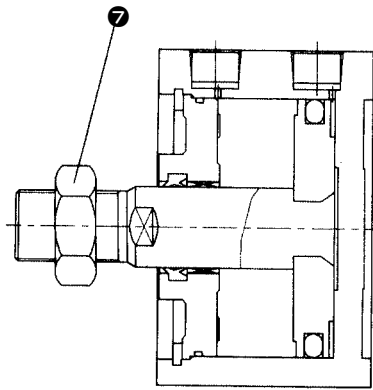
# Series AQ

## Construction/Parts List

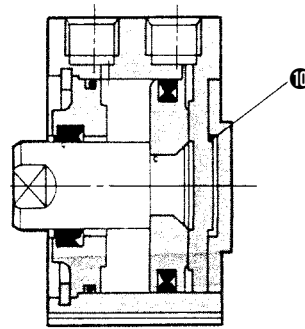
### Double Acting/Single Rod Type



Standard Type



Rod End Male Thread Type



Rear boss mount type

### Parts List

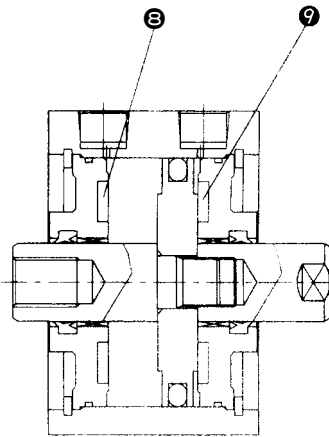
No.	Description	Material	Note
①	Cylinder Tube	Aluminum Alloy	
②	Piston	Aluminum Alloy	Chromate
③	Piston Rod	Carbon Steel	φ32~φ100, Hard chrome
④	Collar	Aluminum Bearing Alloy	φ12~φ40
		Aluminum Alloy Casting	φ50~φ100
⑤	Retaining Ring	Carbon Tool Steel	Phosphate Casting

No	Description	Material	Note
⑥	Bushing	Lead Bronze Casting	Only above φ50
⑦	Rod end nut	Carbon steel	Nickel Plated
⑧	A Bumper	Polyurethane rubber	
⑨	B Bumper	Polyurethane rubber	
⑩	Boss mount adapter	Aluminum alloy	φ20~φ100

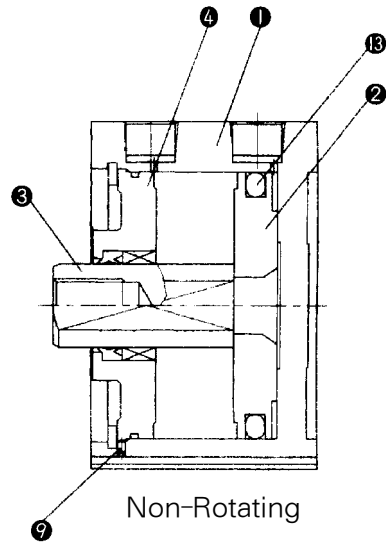
### Seals List

No	Description	Material	Parts No.									
			φ12	φ16	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
⑪	Piston packing	NBR	NLP-12	NLP-16A	NLP-20A	NLP-25A	NLP-32A	NLP-40A	NLP-50A	NLP-63A	NLP-80A	NLP-100A
⑫	Rod packing	NBR	DYR-6K	DYR-8K	DYR-10SK	DYR-12	DYR-16	PDU-16Z	PDU-20Z	PDU-20Z	PDU-25Z	PDU-30Z
⑬	Gasket	NBR	SO-013-6	C14	C18	C22	C29	C36	C46	C60	C75	C95

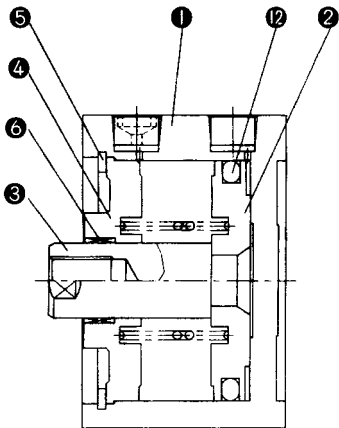
Construction/Parts List



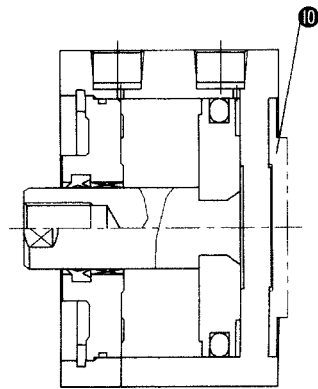
Double Rod Type



Non-Rotating



Spring Return Type



Spring Extended Type

Parts List

No.	Description	Material	Note
1	Cylinder Tube	Aluminum Alloy	
2	※ Piston	Aluminum Alloy	Chromate
3	※ Piston Rod	Carbon Steel	
4	Collar	Aluminum Bearing Alloy Aluminum Alloy Casting	
5	Retaining Ring	Carbon Tool Steel	Phosphate Coating

※  $\phi$  12~ $\phi$  25 Piston rod...One piece construction(Stainless steel)

No.	Description	Material	Note
6	Bushing	Lead Bronze Casting	Only above $\phi$ 50
7	Rod End Nut	Carbon Steel	Nickel Plating
8	A Bumper	Polyurethane Rubber	
9	B Bumper	Polyurethane Rubber	
10	Boss Mount Adapter	Aluminum Alloy	

Seals List

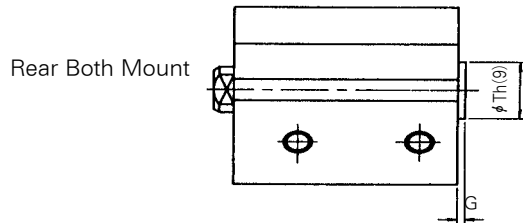
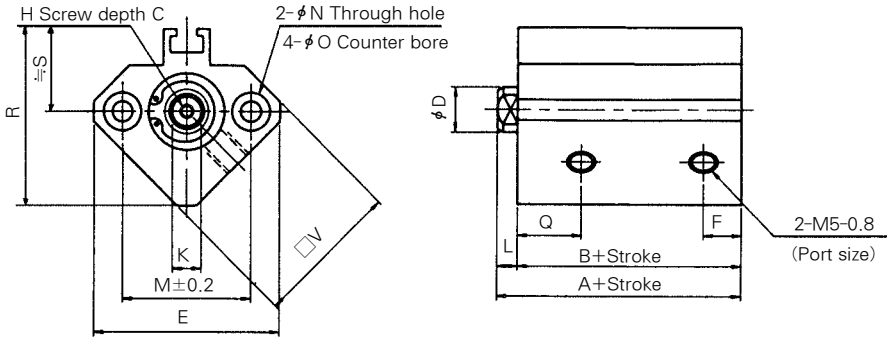
No.	Description	Material	Parts No.									
			12	16	20	25	32	40	50	63	80	100
11	Piston Packing	NBR	NLP-12	NLP-16A	NLP-20A	NLP-25A	NLP-32A	NLP-40A	NLP-50A	NLP-63A	NLP-80A	NLP-100A
12	Rod Packing	NBR	DYR-6K	DYR-8K	DYR-10SK	DYR-12	DYR-16	PDU-16Z	PDU-20Z	PDU-20Z	PDU-25Z	PDU-30Z
13	Gasket	NBR	SO-013-6	C14	C18	C22	C29	C36	C46	C60	C75	C95

# Series AQ

## Double Acting/Single Rod Type : Dimensions

Bore Size :  $\phi 12 \sim \phi 25$

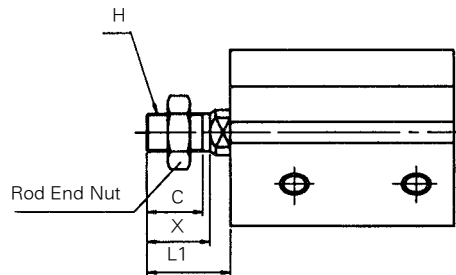
For the Dimension of "A" type (Both End Tapped) Please refer to Page A-196



**Rear Boss Mount** (mm)

Bore size (mm)	G	Th(9)
$\phi 12$	1.5	15 <sup>0</sup> <sub>-0.043</sub>
$\phi 16$	1.5	20 <sup>0</sup> <sub>-0.052</sub>
$\phi 20$	2	13 <sup>0</sup> <sub>-0.043</sub>
$\phi 25$	2	15 <sup>0</sup> <sub>-0.043</sub>

**Rod End Male Thread**



**Rod End Male Thread** (mm)

Bore size (mm)	C	X	H	L1
$\phi 12$	9	10.5	M5×0.8	14.0
$\phi 16$	10	12	M6×1.0	15.5
$\phi 20$	12	14	M8×1.25	18.5
$\phi 25$	15	17.5	M10×1.25	22.5

**Standard Type**

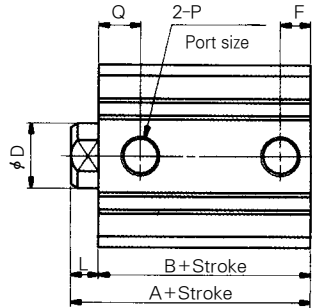
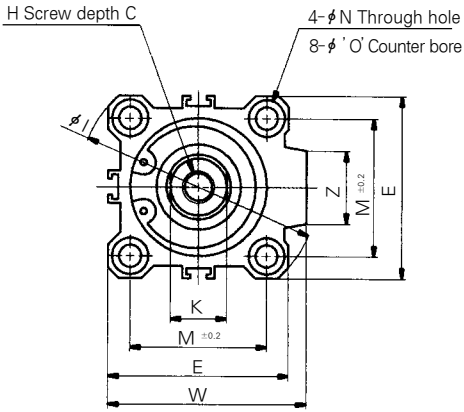
(Unit : mm)

Bore size (mm)	Stroke Range (mm)	A	B	C	D	E	F	H	K	L	M	N	$\phi O$	Q	R	S	$\square V$
$\phi 12$	5~30	20.5	17	6	6	32	5	M3×0.5	5	3.5	22	3.5	6.5 Depth 3.5	11	35.5	19.5	25
$\phi 16$	5~30	22	18.5	8	8	38	5.5	M4×0.7	6	3.5	28	3.5	6.5 Depth 3.5	10	41.5	22.5	29
$\phi 20$	5~50	24	19.5	7	10	47	5.5	M5×0.8	8	4.5	36	5.5	9 Depth 7	10.5	48	24.5	36
$\phi 25$	5~50	27.5	22.5	12	12	52	5.5	M6×1.0	10	5	40	5.5	9 Depth 7	11	53.5	27.5	40

Double Acting/Single Rod Type : Dimensions

Bore Size :  $\phi 32 \sim \phi 100$

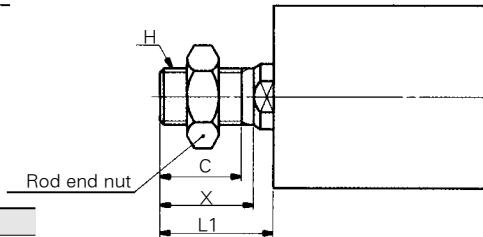
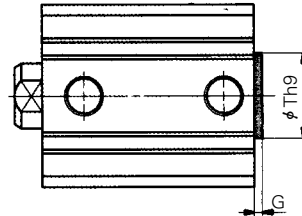
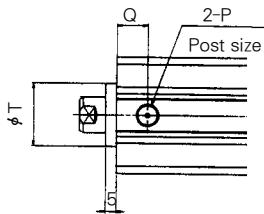
For the Dimension of "A" type (Both End Tapped) Please refer to Page A-196



Rear Boss Mount (mm)

Bore size (mm)	G	Th9
$\phi 32$	2	21 <sup>0</sup> <sub>-0.052</sub>
$\phi 40$	2	28 <sup>0</sup> <sub>-0.052</sub>
$\phi 50$	2	35 <sup>0</sup> <sub>-0.062</sub>
$\phi 63$	2	35 <sup>0</sup> <sub>-0.062</sub>
$\phi 80$	2	43 <sup>0</sup> <sub>-0.062</sub>
$\phi 100$	2	59 <sup>0</sup> <sub>-0.074</sub>

Long Stroke (125st or more)



Rod End Male Thread (mm)

Bore size(mm)	C	X	H	L1※
$\phi 32$	20.5	23.5	M14×1.5	28.5(38.5)
$\phi 40$	20.5	23.5	M14×1.5	28.5(38.5)
$\phi 50$	26	28.5	M18×1.5	33.5(43.5)
$\phi 63$	26	28.5	M18×1.5	33.5(43.5)
$\phi 80$	32.5	35.5	M22×1.5	43.5(53.5)
$\phi 100$	32.5	35.5	M26×1.5	43.5(53.5)

Bore size(mm)	T
$\phi 32$	22 <sup>0</sup> <sub>-0.052</sub>
$\phi 40$	28 <sup>0</sup> <sub>-0.052</sub>
$\phi 50, \phi 63$	35 <sup>0</sup> <sub>-0.062</sub>
$\phi 80$	43 <sup>0</sup> <sub>-0.062</sub>
$\phi 100$	59 <sup>0</sup> <sub>-0.074</sub>

※ ( ) : 125st or more

Standard Type (Unit : mm)

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	F	H	I	J	K	L	M	N	φO	P	Q	W	Z
$\phi 32$	5	30	23	13	16	45	5.5	M8×1.25	60	4.5	14	7	34	5.5	9Depth7	M×0.8 1/8 Rc(PT)	11.5	49.5	18
	10~50	40	33				7.5					17					10.5		
	75,100	62.5	45.5				12.5					12.5					58.5		
$\phi 40$	5~50	36.5	29.5	13	16	52	8	M8×1.25	69	5	14	7	40	5.5	9Depth7	M×0.8 1/8 Rc(PT)	11	57	18
	75,100	46.5	39.5				14					17					14		
	125,150	72	55				14					17					66		
$\phi 50$	10~50	38.5	30.5	15	20	64	10.5	M10×1.5	86	7	17	8	50	6.6	11Depth8	M×0.8 1/4 Rc(PT)	10.5	71	22
	75,100	48.5	40.5				14					18					14		
	125,150	73.5	55.5				14					18					80		
$\phi 63$	10~50	44	36	15	20	77	10.5	M10×1.5	103	7	17	8	60	9	14Depth10.5	M×0.8 1/4 Rc(PT)	15	84	22
	75,100	54	46				16.5					18					16.5		
	125,150	75	57				18					18					93		
$\phi 80$	10~50	53.5	43.5	21	25	98	12.5	M16×2.0	132	6	22	10	77	11	17.5Depth13.5	M×0.8 3/8 Rc(PT)	16	104	26
	75,100	63.5	53.5				19					20					19		
	125,150	86	66				19					20					112.5		
$\phi 100$	10~50	65	53	27	30	117	13	M20×2.5	156	6.5	27	12	94	11	17.5Depth13.5	M×0.8 3/8 Rc(PT)	23	123.5	26
	75,100	75	63				23					22					132.5		
	125,150	97.5	75.5				23					22					132.5		

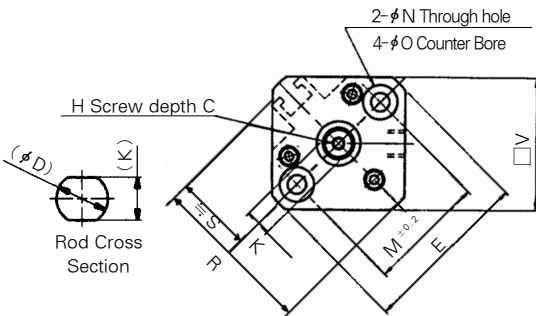
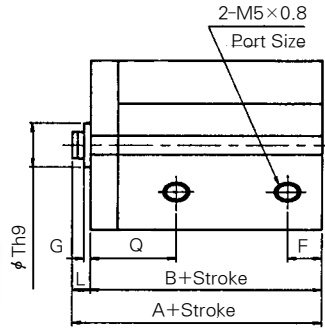
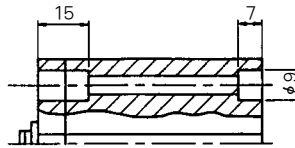
# Series AQQ

## Double Acting/Non-Rotating Piston Rod/Single Rod Type : Dimensions

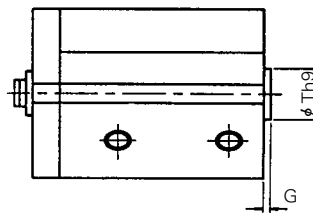
Bore Size :  $\phi 20 \sim \phi 25$

For the Dimension of "A" type (Both End Tapped) Please refer to Page A-196

### Through Hole



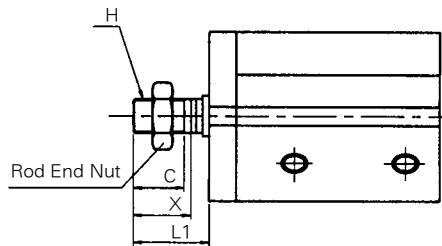
### Rear Boss Mount



#### Rear Boss Mount (mm)

Bore Size (mm)	G	Th9
$\phi 20$	2	13 <sup>0</sup> <sub>-0.043</sub>
$\phi 25$	2	15 <sup>0</sup> <sub>-0.043</sub>

### Rod End Male Thread



#### Rod End Male Thread (mm)

Bore Size (mm)	C	H	L1	X
$\phi 20$	12	M8x1.25	18.5	14
$\phi 25$	15	M10x1.25	22.5	17.5

### Standard Type

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	F	G	H	K	L	M	N	O	Q	R	S	V
$\phi 20$	5~50	32	27.5	7	10	47	5.5	2	M5x0.8	8	4.5	36	5.5	M6x1.0	17	48	24.5	36
$\phi 25$	5~50	35.5	30.5	12	12	52	5.5	2	M6x1.0	10	5	40	5.5	M6x1.0	19	53.5	27.5	40

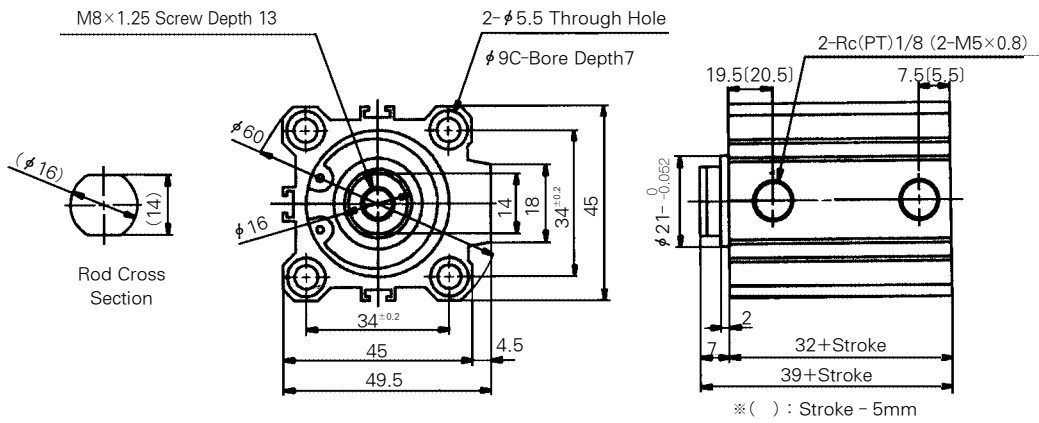
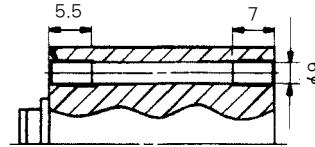


Double Acting/Non-Rotating Rod/Single Rod Type : Dimensions

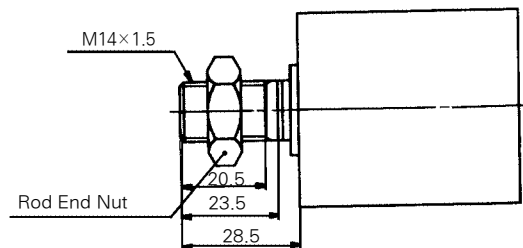
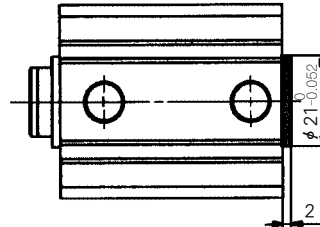
Bore Size :  $\phi 32$

For the Dimension of "A" type (Both End Tapped) Please refer to Page A-196

Through Hole



Rear Boss Mount

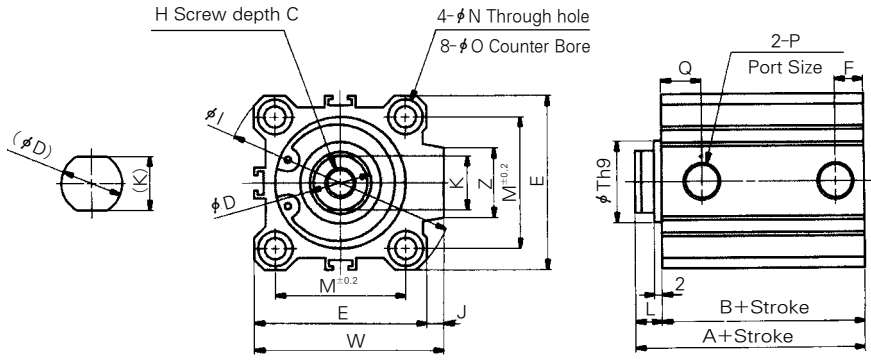


# Series AQK

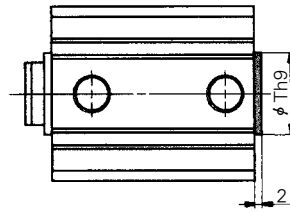
## Double Acting/Non-Rotating Piston Rod/Single Rod Type : Dimensions

Bore Size :  $\phi 40 \sim \phi 63$

For the Dimension of "A" type (Both End Tapped) Please refer to Page A-196



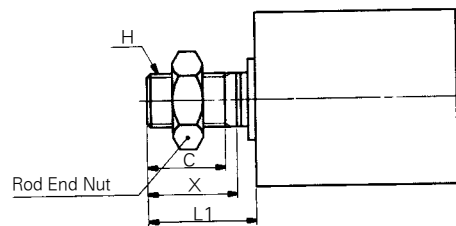
### Rear Boss Mount



### Rear Boss Mount (mm)

Bore Size (mm)	Th9
$\phi 40$	28 <sup>0</sup> <sub>-0.052</sub>
$\phi 50$	35 <sup>0</sup> <sub>-0.062</sub>
$\phi 63$	35 <sup>0</sup> <sub>-0.062</sub>

### Rod End Male Thread



### Rod End Male Thread (mm)

Bore Size (mm)	C	H	L1	X
$\phi 40$	20.5	M14×1.5	28.5	23.5
$\phi 50$	26	M18×1.5	33.5	28.5
$\phi 63$	26	M18×1.5	33.5	28.5

### Standard Type

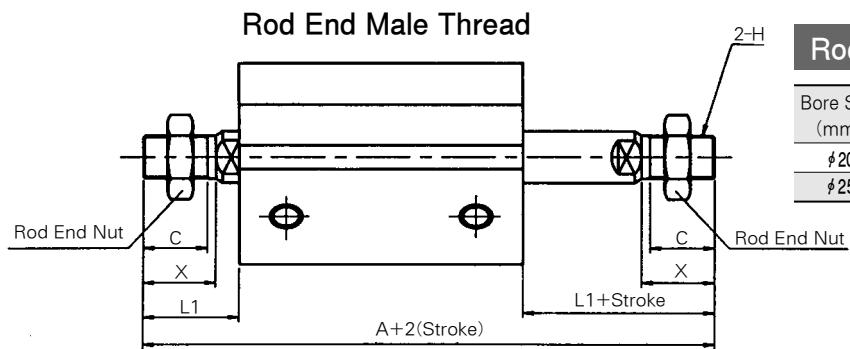
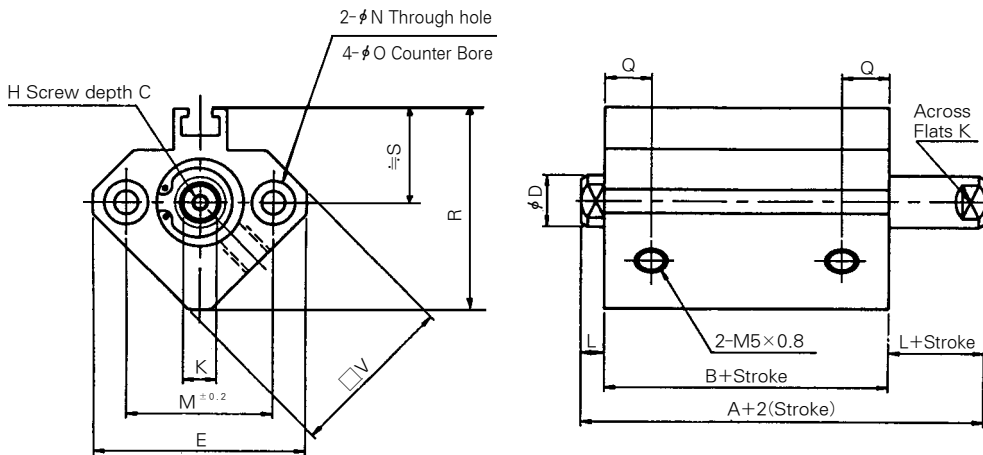
(Unit : mm)

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	F	H	I	J	K	L	M	N	φO	P	Q	Th9	W	Z
$\phi 40$	5~50	36.5	29.5	13	16	52	8	M8×1.25	69	5	14	7	40	5.5	9Depth7	Rc(PT) 1/8	11	28 <sup>0</sup> <sub>-0.052</sub>	57	18
	75, 100	46.5	39.5																	
$\phi 50$	10~50	38.5	30.5	15	20	64	10.5	M10×1.5	86	7	18	8	50	6.6	11Depth8	Rc(PT) 1/4	10.5	35 <sup>0</sup> <sub>-0.062</sub>	71	22
	75, 100	48.5	40.5																	
$\phi 63$	10~50	44	36	15	20	77	10.5	M10×1.5	103	7	18	8	60	9	14Depth10.5	Rc(PT) 1/4	15	35 <sup>0</sup> <sub>-0.062</sub>	84	22
	75, 100	54	46																	

Double Acting/Double Rod Type : Dimensions

Bore Size :  $\phi 20 \sim \phi 25$

For the Dimension of "A" type (Both End Tapped) Please refer to Page A-196



Rod End Male Thread (mm)

Bore Size (mm)	A	C	H	L1	X
$\phi 20$	63	12	M8×1.25	18.5	14
$\phi 25$	74	15	M8×1.25	22.5	17.5

Standard Type

(Unit : mm)

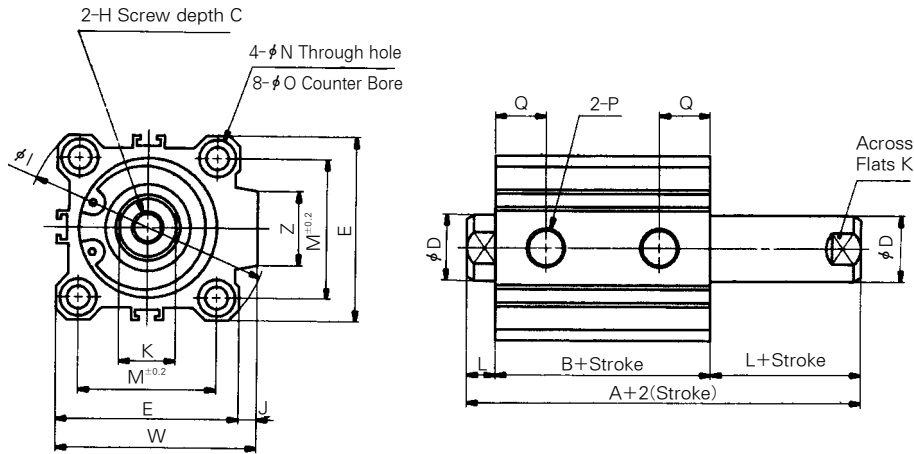
Bore size (mm)	Stroke range (mm)	A	B	C	D	E	H	K	L	M	N	$\phi O$	Q	R	S	$\square V$
$\phi 20$	5~50	35	26	7	10	47	M8×1.25	8	4.5	36	5.5	9Depth7	9.5	48	24.5	36
$\phi 25$	5~50	39	29	12	12	52	M8×1.25	10	5	40	5.5	9Depth7	11	53.5	27.5	40

# Series AQW

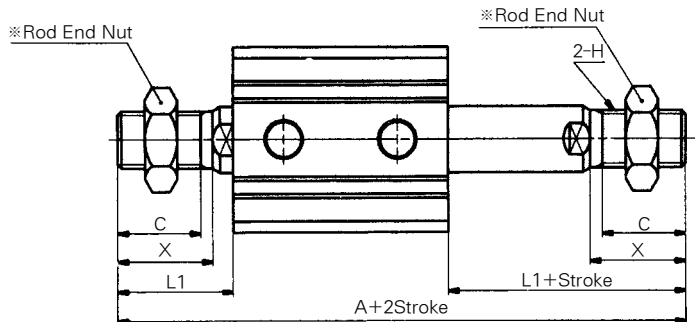
Air Cylinder

## Double Acting/Double Rod Type : Dimensions

Bore Size :  $\phi 32 \sim \phi 100$



### Rod End Male Thread



### Rod End Male Thread (mm)

Bore Size (mm)	A	C	H	L1	X
$\phi 32$	87.5	20.5	M14×1.5	28.5	23.5
$\phi 40$	97	20.5	M14×1.5	28.5	23.5
$\phi 50$	107.5	26	M18×1.5	33.5	28.5
$\phi 63$	109	26	M18×1.5	33.5	28.5
$\phi 80$	138	32.5	M22×1.5	43.5	35.5
$\phi 100$	147.5	32.5	M22×1.5	43.5	35.5

### Standard Type

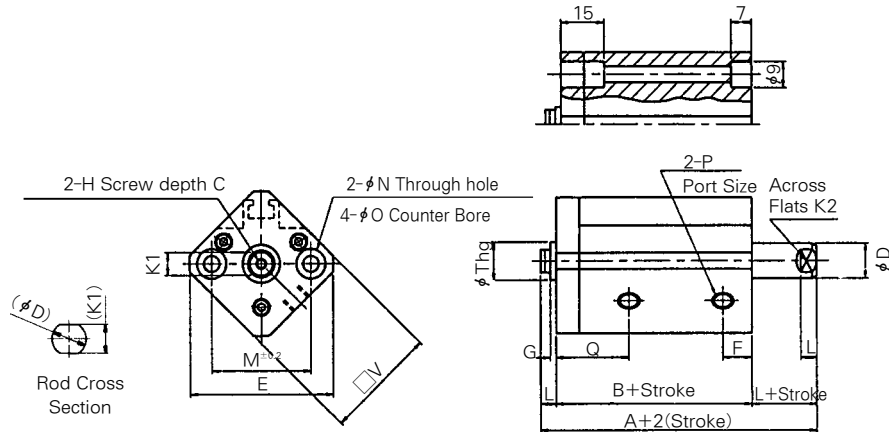
(Unit : mm)

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	H	I	J	K	L	M	N	$\phi O$	P	Q	W	Z
$\phi 32$	5	44.5	30.5	13	16	45	M8×1.25	60	4.5	14	7	34	5.5	9Depth7	M5×0.8 1/8Rc(PT)	12.5	49.5	18
	10~100																	
$\phi 40$	5~100	54	40	13	16	52	M8×1.25	69	5	14	7	40	5.5	9Depth7	M5×0.8 1/8Rc(PT)	14	57	18
$\phi 50$	10~100	56.5	40.5	15	20	64	M10×1.5	86	7	17	8	50	6.6	11Depth8	M5×0.8 1/4Rc(PT)	14	71	22
$\phi 63$	10~100	58	42	15	20	77	M10×1.5	103	7	17	8	60	9	14Depth10.5	M5×0.8 1/4Rc(PT)	15.5	84	22
$\phi 80$	10~100	71	51	21	25	98	M16×2.0	132	6	22	10	77	11	17Depth13.5	M5×0.8 3/8Rc(PT)	18	104	26
$\phi 100$	10~100	84.5	60.5	27	30	117	M20×2.5	156	6.5	27	12	94	11	17Depth13.5	M5×0.8 3/8Rc(PT)	22	123.5	26

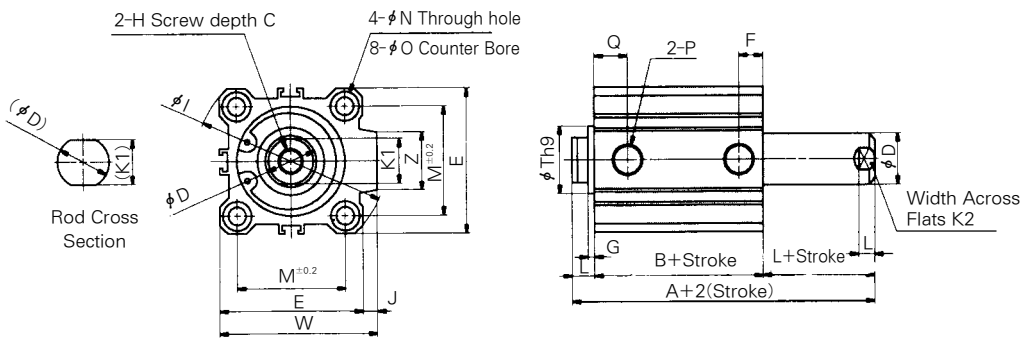
Double Acting/Non-Rotating Piston Rod/Double Rod Type : Dimensions

Bore Size :  $\phi 20 \sim \phi 25$

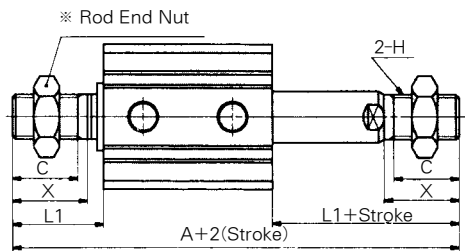
Through Hole



Bore size :  $\phi 32$



Rod End Male Thread



Rod End Male Thread (mm)

Bore Size (mm)	A	C	H
$\phi 20$	71	12	M8×1.25
$\phi 25$	82	15	M10×1.25
$\phi 32$	96.5	20.5	M14×1.25

Bore Size (mm)	L1	X
$\phi 20$	18.5	14
$\phi 25$	22.5	17.5
$\phi 32$	28.5	23.5

Standard Type

(Unit : mm)

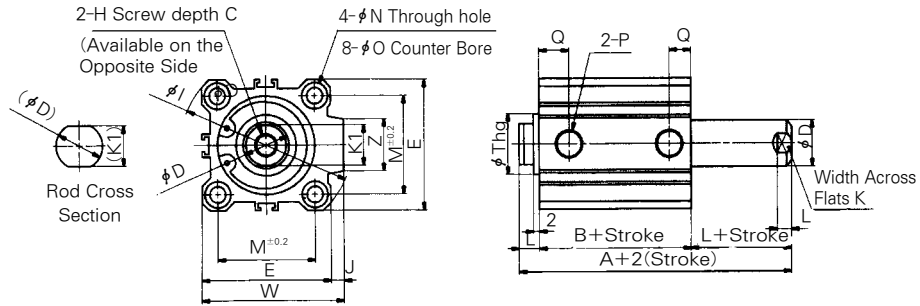
Bore size (mm)	Stroke range (mm)	A	B	C	D	E	F	G	H	I	J	K1	K2	L	M	N	P	Q	R	S	Th9	W	Z	V
$\phi 20$	5~50	43	34	7	10	47	9.5	2	M8×0.8	-	-	8	8	4.5	36	5.5	M5×0.8	17.5	48	24.5	13 <sup>0</sup> <sub>-0.043</sub>	-	-	36
$\phi 25$	5~50	47	37	12	12	52	11	2	M6×1.0	-	-	10	10	5	40	5.5	M8×0.8	19	53.5	27.5	15 <sup>0</sup> <sub>-0.043</sub>	-	-	40
$\phi 32$	5	53.5	39.5	13	16	45	12.5	2	M8×1.25	60	4.5	14	14	7	34	5.5	M5×0.8 Rc(PT)1/8	21.5	-	-	21 <sup>0</sup> <sub>-0.052</sub>	49.5	18	-
	10~75																							

# Series AQKW

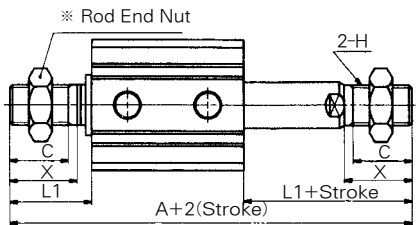
## Double Acting/Non-Rotating Rod/Double Rod Type : Dimensions

Bore Size :  $\phi 40 \sim \phi 63$

For the Dimension of "A" type (Both End Tapped) Please refer to Page A-196



### Rod End Male Thread



### Rod End Male Thread (mm)

Bore Size (mm)	A	C	H	L1	X
$\phi 40$	97	20.5	M14 $\times$ 1.5	28.5	23.5
$\phi 50$	107.5	26	M18 $\times$ 1.5	33.5	28.5
$\phi 63$	109	26	M18 $\times$ 1.5	33.5	28.5

### Standard Type

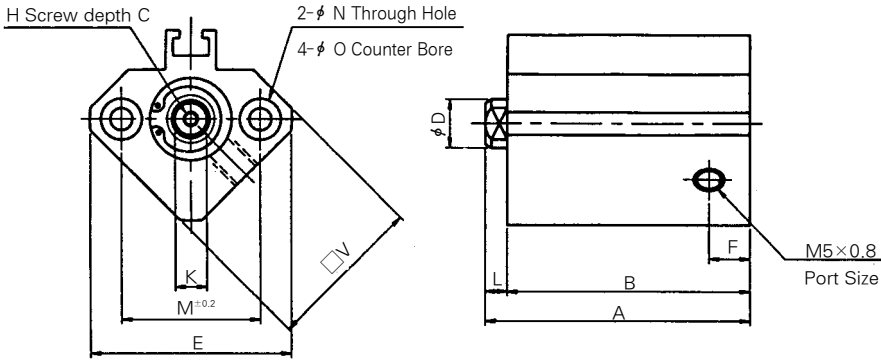
(Unit : mm)

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	H	I	J	K1	K2	L	M	N	$\phi O$	P	Q	Thg	W	Z
$\phi 40$	5~75	54	40	13	16	52	M8 $\times$ 1.25	69	5	14	14	7	40	5.5	9Depth7	Rc(PT)1/8	14	28 <sup>0</sup> <sub>-0.052</sub>	57	18
$\phi 50$	10~75	56.5	40.5	15	20	64	M10 $\times$ 1.5	86	7	18	17	8	50	6.6	11Depth8	Rc(PT)1/4	14	35 <sup>0</sup> <sub>-0.062</sub>	71	22
$\phi 63$	10~75	58	42	15	20	77	M10 $\times$ 1.5	103	7	18	17	8	50	9	14Depth10.5	Rc(PT)1/4	15.5	35 <sup>0</sup> <sub>-0.062</sub>	84	22

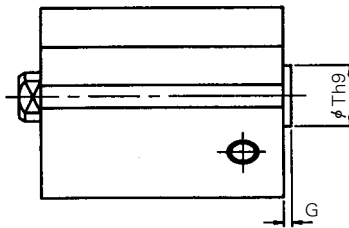
Single Acting/Spring Return Type : Dimensions

Bore Size :  $\phi 20$

For the Dimension of "A" type (Both End Tapped) Please refer to Page A-196



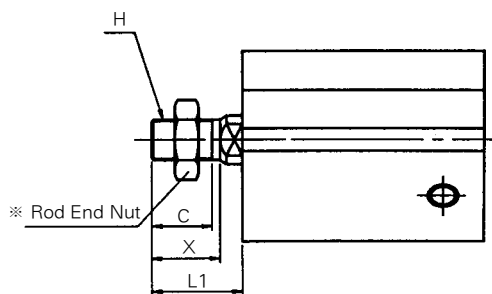
Rear Boss Mount



Rear Boss Mount (mm)

Bore Size (mm)	G	Th9
$\phi 20$	2	13 <sup>0</sup> <sub>-0.043</sub>

Rod End Male Thread



Rod End Male Thread (mm)

Bore size (mm)	C	X	H	L1
$\phi 20$	12	14	M5×0.8	18.5

Standard Type

(Unit : mm)

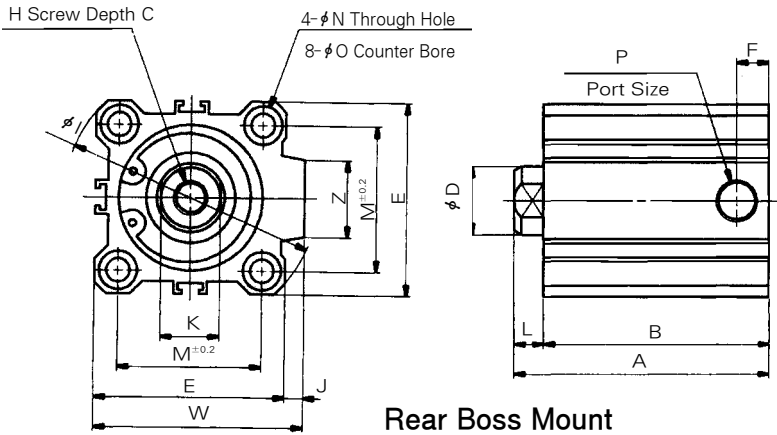
Bore size (mm)	A		B		C	D	E	F	H	K	L	M	N	$\phi O$	$\square V$
	5st	10st	5st	10st											
$\phi 20$	29	34	24.5	29.5	7	10	47	5.5	M5×0.8	8	4.5	26	5.5	9Depth7	36

# Series AQ

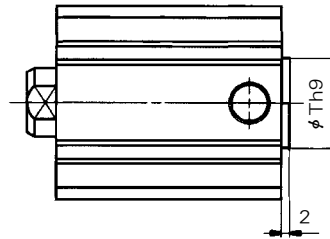
## Single Acting/Single Rod/Spring Return Type : Dimensions

Bore Size :  $\phi 32$

For the Dimension of "A" type (Both End Tapped) Please refer to Page A-196



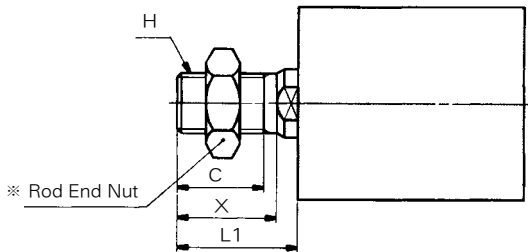
Rear Boss Mount



Rear Boss Mount (mm)

Bore Size (mm)	Th9
$\phi 32$	21 <sup>0</sup> <sub>-0.052</sub>
$\phi 40$	28 <sup>0</sup> <sub>-0.052</sub>
$\phi 50$	35 <sup>0</sup> <sub>-0.062</sub>

### Rod End Male Thread



Rod End Male Thread (mm)

Bore Size (mm)	C	X	H	L1
$\phi 32$	20.5	23.5	M14×1.5	28.5
$\phi 40$	20.5	23.5	M14×1.5	28.5
$\phi 50$	26	28.5	M18×1.5	33.5

### Standard Type

(Unit : mm)

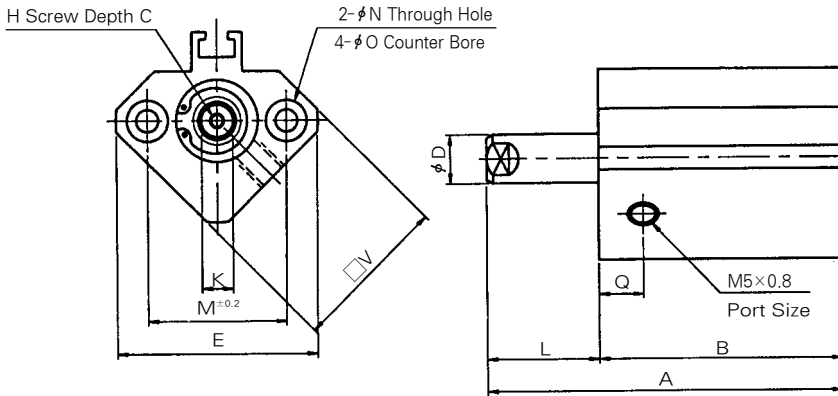
Bore Size (mm)	A		B		C	D	E	F		H	I	J	K	L	M	N	φO	P		W	Z
	5st	10st	5st	10st				5st	10st									5st	10st		
$\phi 32$	35	40	28	33	13	16	45	5.5	7.5	M8×1.25	60	4.5	14	7	34	5.5	9Depth7	M8×0.8	Rc(PT)1/8	49.5	18
$\phi 40$	41.5	46.5	34.5	39.5	13	16	52	8	8	M8×1.25	69	5	14	7	40	5.5	9Depth7	Rc(PT) 1/8		57	18
$\phi 50$	-	48.5	-	40.4	15	20	64	-	10.5	M10×1.5	86	7	17	8	50	6.6	11Depth8	-	Rc(PT) 1/4	71	22



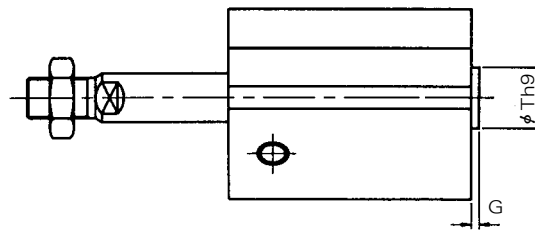
Single Acting/Single Rod/Spring Extended Type : Dimensions

Bore Size :  $\phi 20$

For the Dimension of "A" type (Both End Tapped) Please refer to Page A-196

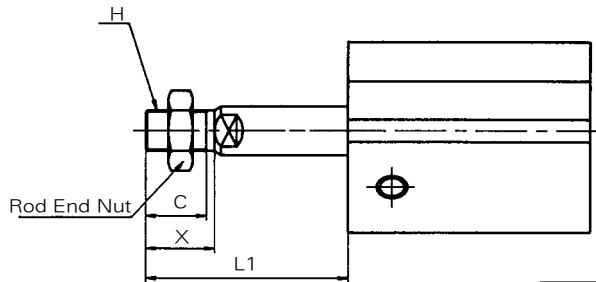


Rear Boss Mount



Rear Boss Mount (mm)		
Bore Size (mm)	G	Th9
$\phi 20$	2	$13^{0}_{-0.043}$

Rod End Male Thread



Rod End Male Thread (mm)					
Bore Size mm	C	X	H	L1	
				5st	10st
$\phi 20$	12	14	M5×0.8	23.5	28.5

Standard Type

(Unit : mm)

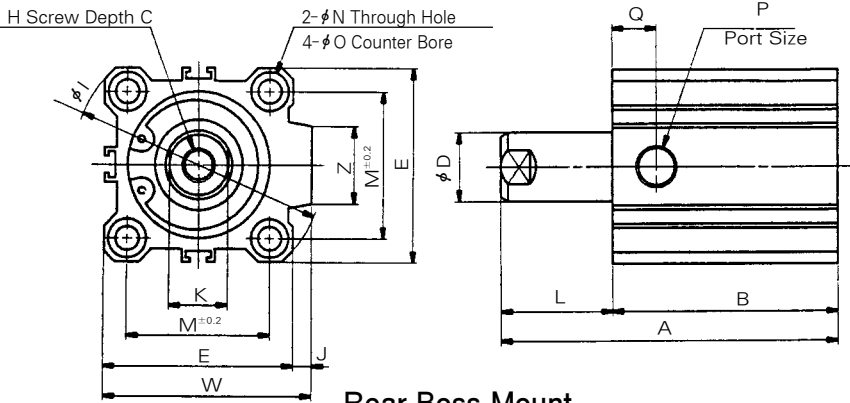
Bore Size (mm)	A		B		C	D	E	H	K	L		M	N	$\phi O$	Q	□V
	5st	10st	5st	10st						5st	10st					
$\phi 20$	34	44	24.5	29.5	7	10	47	M5×0.8	8	9.5	14.5	36	5.5	9 Depth 7	10.5	36

# Series AQ

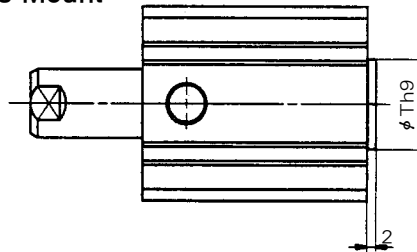
## Single Acting/Single Rod/Spring Extend Type : Dimensions

Bore Size :  $\phi 32 \sim \phi 50$

For the Dimension of "A" type (Both End Tapped) Please refer to Page A-196



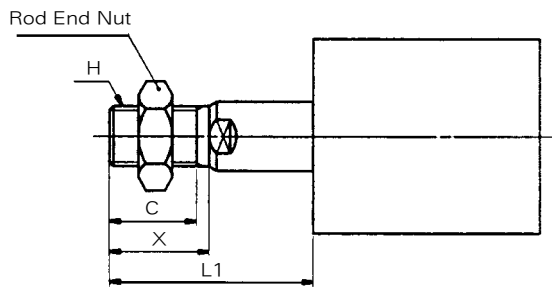
Rear Boss Mount



Rear Boss Mount (mm)

Bore Size (mm)	Th9
$\phi 32$	21 <sup>0</sup> <sub>-0.052</sub>
$\phi 40$	28 <sup>0</sup> <sub>-0.052</sub>
$\phi 50$	35 <sup>0</sup> <sub>-0.062</sub>

### Rod End Male Thread



Rod End Male Thread (mm)

Bore Size (mm)	C	X	H	L1		
				5st	10st	20st
$\phi 32$	20.5	23.5	M14×1.5	33.5	38.5	-
$\phi 40$	20.5	23.5	M14×1.5	33.5	38.5	-
$\phi 50$	26	28.5	M18×1.5	-	43.5	53.5

### Standard Type

(Unit : mm)

Bore Size (mm)	A		B		C	D	E	H	I	J	K	L		M	N	φO	P		Q		W	Z
	5st	10st	5st	10st								5st	10st				5st	10st	5st	10st		
$\phi 32$	40	50	28	33	13	16	45	M8×1.25	60	4.5	14	12	17	34	5.5	9 Depth 7	M5×0.8	NPT 1/8	11.5	10.5	49.5	18
$\phi 40$	46.5	56.5	34.5	39.5	13	16	52	M8×1.25	69	5	14	12	17	40	5.5	9 Depth 7	Rc(PT) 1/8	-	11	11	57	18
$\phi 50$	-	58.5	-	40.5	15	20	64	M10×1.5	86	7	17	-	18	50	6.6	11 Depth 8	-	Rc(PT) 1/4	-	10.5	71	22