

Series AQ

Compact Cylinder : Standard Type/Double Action : Single Rod

Bore Size(mm) : Ø12, Ø16, Ø20, Ø25

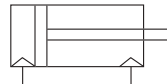
※ Ø32, Ø40, Ø50, Ø63, Ø80, Ø100 Applied AQ2 Series

- ACHIEVEMENT OF COMPACT SIZE
- SPACE SAVING CYLINDER
- COMPACT EQUIPMENT DESIGN AVAILABLE

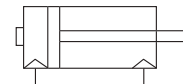


Symbol

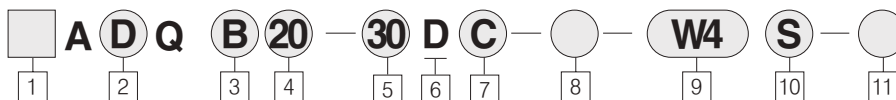
Double Acting : Single Rod



Rear Boss Mounting



How to Order



1 Series

Blank : Rc(PT)
U : NPT

2 Auto Switch Attachment

Blank : Standard type
D : Auto switch attached (Built in magnet)

3 Attachment

B : Thru hole(standard type)
A : Both end tap(refer to p.231)
D : Double clevis(standard both-end type)
F : Front flange(standard both-end type)
G : Rear flange(standard both-end type)
L : Foot(standard both-end type)
※ Attachment fittings are delivered without assembly

4 Bore Size

12 : 12mm($\frac{1}{2}$ Nom.)
16 : 16mm($\frac{3}{8}$ Nom.)
20 : 20mm($\frac{3}{4}$ Nom.)
25 : 25mm(1 Nom.)

5 Cylinder Standard Stroke(mm)

Tube internal diameter standard stroke
12,16 : 5,10,15,20,25,30
20,25 : 5,10,15,20,25,30,35,40,45,50,75,100

6 Operation Method

D : Double action type

7 body Specification

Blank : Standard type(rod end female-thread)
C : Rubber cushion attached
M : Rod end male-thread
F : Rear boss mount
I : Single knuckle joint(rod end male-thread)
Y : Double knuckle joint(rod end male-thread)
※ Possible to combine body specification(CM, CF, CI, CFI, CFY, etc)
※ Except CF for Ø12 and Ø16 cases
※ I and Y are delivered without assembly

8 Series

Blank : Standard type
※ Ø12~ Ø40 : XC16 Type is standard

9 Types of Auto Switch

Blank : None
Reed Switch
W4 : W4(Reed Switch)
※ In case of 3m lead wire, L is additionally indicated at the end of item number
ex)W4L
※ In case of 5m lead track, please contact us

10 Auto Switch Additional Symbol

Blank : 2 pcs
S : 1 pc
N : N pcs

11 In Case of Producing Long Stroke

Refer to p.229 for production of long stroke

Notice

※ Production of middle stroke
Minimum 3mm to 1mm middle stroke production is available by means of mounting spacer at standard stroke cylinder.
ex) AQB12~27D inserts 3mm wide spacer in standard cylinder AQB12~30D
ex) AQB12~29D inserts 21mm wide spacer in standard cylinder AQB12~50D

Series AQ

Notices for products

Please fully understand the notices prior to utilization, and refer to safety notice and common notice.

Warning

Assembly/Disassembly of Snap Ring

- Please use proper flyer (Attached tool of C-type snap ring) for assembly / disassembly.
- Please be cautious all the time that there is possible damage to human body or nearby equipments owing to projection of snap ring at the end of flyer (C-type snap ring) in spite of using proper flyer (Attached tool of C-type snap ring). Moreover, after checking full connection of snap ring during attachment, supply air.

Additional Component Number for Long Stroke Production

Bore Size	Long Stroke	Component Number
20	51st~	TC180
25		TC335

Item Number of Mountings

Bore Size(mm)	Foot	Flange	Double Clevis
12	QL-012	QF-012	QD-012
16	QL-016	QF-016	QD-016
20	QL-020	QF-020	QD-020
25	QL-025	QF-025	QD-025

* In case of ordering foot type, please order 2EA foot per 1EA cylinder

Item Number of Mountings

Bore Size	Foot	Flange	Double Clevis
	I-Knuckle	Y-Knuckle	Joint Pin
12	QL-012	QF-012	QD-012
	QI-012	QY-012	QP-012
16	QL-016	QF-016	QD-016
	QI-016	QY-016	QP-012
20	QL-020	QF-020	QD-020
	QI-020	QY-020	QP-020
25	QL-025	QF-025	QD-025
	QI-025	QY-025	QP-025

Weight Sheet

(Unit : g)

Bore Size (mm)	Cylinder Stroke(mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	40	47	54	61	68	75	-	-	-	-	-	-
16	61	72	83	94	105	116	-	-	-	-	-	-
20	91	112	132	152	173	193	213	234	254	274	-	-
25	118	139	160	181	203	224	245	266	287	309	-	-

Type

Bore Size(mm)			12	16	20	25
Air Pressure Type	Attachment	Penetration Hole (Standard)	○	○	○	○
		Both end Tap	○	○	○	○
	Built in Magnet		○	○	○	○
	Piping Method	Thread Type	M5× 0.8	M5× 0.8	M5× 0.8	M5× 0.8
	Rod end Male-Thread		○	○	○	○
	Rubber Cushion Attached		—	—	—	○
	Rear Boss Mount		○	○	○	○

Note1) In case of no auto switch, the thread for 5mm stroke is only M5×0.8

Standard Specifications

Type	Air Pressure (Non lube) Type
Applied Fluid	Air
Guaranteed Pressure Resistance	1.5MPa{15.3kgf/cm ² }
Maximum Pressure Applied	1.0MPa{9.9kgf/cm ² }
Ambient and Applied Fluid Temperature	5℃~60℃ (No Frozen)
Rod end Thread Allowance	KS Level 2
Stroke Length Allowance	+1.0 0
Running Piston Speed	50~500mm/s
Rubber Cushion	None
Rod end Thread	Female Thread
Attachment	Through Hole

Minimum Operation Pressure

(Unit : MPa)

Bore Size(mm)	12	16	20	25
Air Pressure (Non lube) Type	0.07	0.07	0.05	0.05

Extra Weight Sheed

(Unit : g)

Bore Size(mm)	12	16	20	25
Attachment Both end Tap Type	1	2	6	7
Rod end	Male Thread Part			
	1.5	3	6	12
Male Thread	Nut			
	1	2	4	8
Rear Boss Mount	0.7	1.3	2	3
Rubber Cushion Attached	1	2	5	4

Calculation Method

ex) AQA20-20DCM

• Standard Weight : AQB20-20D152g

• Extra Weight : Attachment both end tap type6g

Rod end male thread10g

Rubber cushion attached5g

173g

ACP

APM

AS

AX

AM2

AM

AL

ALX

AQ

ADQ

AQ2

ADQ2

AJ

AJM

ABK

ACK1

NSK

AG

NGQ

AGX

GX

NP

ADR

AMR

NDM

ARD

NST

AST

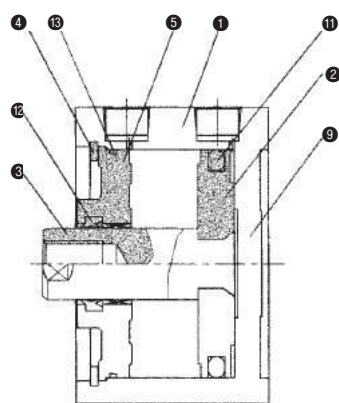
ASTH

NLCD

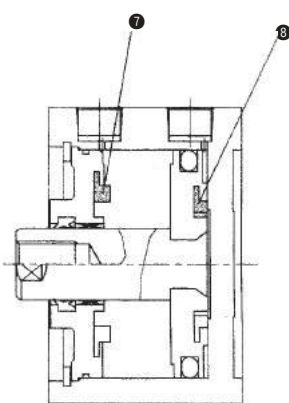
NLCS

Series AQ

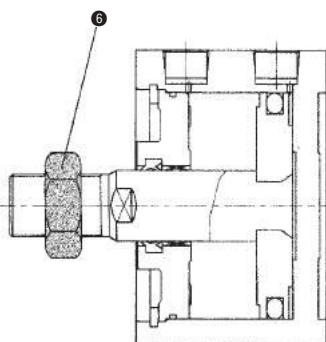
Structure Map/Component List



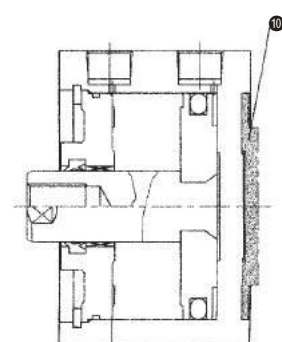
Standard Type



Rubber Cushion Attached



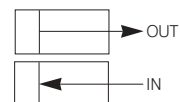
Rod end Male Thread Type



Rear Boss Mount

Theoretical Output Sheed

(Unit : N)



Bore Size (mm)	Operation Direction	Applied Pressure(MPa)		
		0.3	0.5	0.7
12	IN	25	42	59
	OUT	34	57	79
16	IN	45	75	106
	OUT	60	101	141
20	IN	71	118	165
	OUT	94	157	220
25	IN	113	189	264
	OUT	147	245	344

1N≒0.102kgf

1MPa≒10.2kgf/cm²

Component List

No.	Item Name	Material	Remark
①	Cylinder Tube	Alumunum Alloy	Hard Alumite
②	※ Piston	Alumunum Alloy	Chromite
③	※ Piston Rod	Carbon Steel	Hard Chrome Plating
④	Stop Ring	Carbon Tool Steel	Phosphate Coating
⑤	Rod Cover	Alumunum Alloy	White Hard Alumite

No.	Item Name	Material	Remark
⑥	Rod end Nut	Carbon Steel	Nickel Alloy
⑦	Bumper A	Sintered Contained Alloy	
⑧	Bumper B	Alloy Steel	Black Colored
⑨	End Plate	Carbon Steel	Nickel Alloy
⑩	Boss Mount Adapter	Aluminum Alloy	Hard Alumite

※ In case of Ø20 rubber cushion attachment, piston and piston rod (stainless steel) are equipped in one-body.

Packing List/Replacement Components/Air Pressure(no-fuel) Type

No.	Item Name	Material	Item No.			
			Ø12	Ø16	Ø20	Ø25
①	Piston Packing	NBR	TPSA-12	TPSA-16	TPSA-20	TPSA-25
②	Rod Packing	NBR	DYR-6	DYR-8	DYR-10SK-K	DYR-12
③	Gasket	NBR	C10	C14	C18	C22

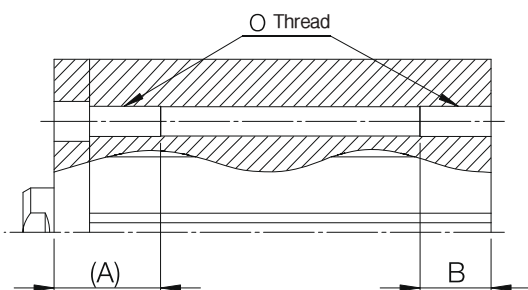
Series AQ

Additional Reference ▶ In case of Both-end Tap

Unit : mm

Index	Bore Size	O	A	B
AQA	Ø12	M4×0.7	7	7
	Ø16	M4×0.7	7	7
	Ø20	M6×1.0	10(18)	10
	Ø25	M6×1.0	10(18)	10

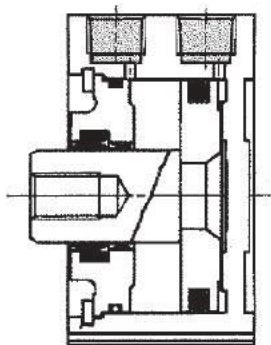
※ () : Non-Rotation Type



Copper Free Type Cylinder

AQB (Bore Size) (Stroke) D - XC16
Copper Free

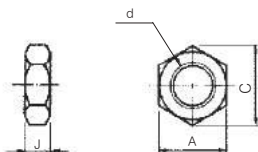
Structural Map



Specification

Acting Type	Double Action Single Rod
Bore Size	Ø12, Ø16, Ø20, Ø25
Proof Pressure	1.5MPa{15.3kgf/cm ² }
Max Operating Pressure	1.0MPa{9.9kgf/cm ² }
Running Piston Speed	50~500mm/s
Rubber Cushion	None
Piping Method	Insert Type
Attachment	Thru-Hole
Auto Switch	Available

Fittings Attached



Rod end Nut

Material : Rolled Steel

Item No.	Applied Bore Size(mm)	d	J	A	C
M5×0.8-PL	12	M5×0.8	4	8	9.2
M6×1.0-PL	16	M6×1.0	5	10	11.5
TNT-02	20	M8×1.25	5	13	15.0
TNT-03	25	M10×1.25	6	17	19.6

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

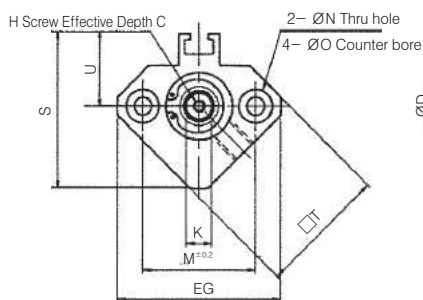
NLCS

Series AQ

Standard Type(Penetration Hole Type)/AQB

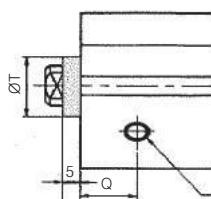
Bore Size
Ø12~ Ø25

Refer to p.231 for both-end tap



Rear Boss Mount

In Case of 75st

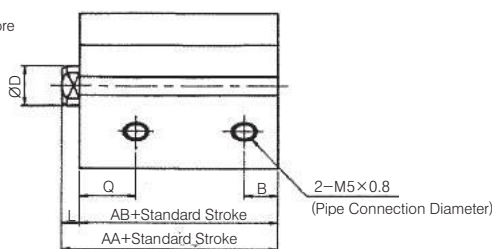
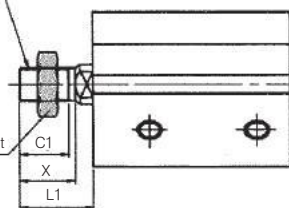


Rod End Male Thread

Bore Size (mm)	T
20	15 ⁰ _{-0.1}
25	16 ⁰ _{-0.1}

(Pipe Connection Diameter)

Rod End Nut



Rear Boss Mount (mm)

Bore Size (mm)	G	Thg
12	1.5	15 ⁰ _{-0.043}
16	1.5	20 ⁰ _{-0.052}
20	2	13 ⁰ _{-0.043}
25	2	15 ⁰ _{-0.043}

Rod end Male Thread (mm)

Bore Size (mm)	C1	X	H1	L1
12	9	10.5	M5×0.8	14
16	10	12	M6×1.0	15.5
20	12	14	M8×1.25	18.5
25	15	17.5	M10×1.25	22.5

※ 75 and 100 Stroke Range of Ø20 L1=28.5

※ 75 and 100 Stroke Range of Ø20 L1=32

※ Please inquire separately for ordering over standard stroke since overall length is changed.

Standard Type

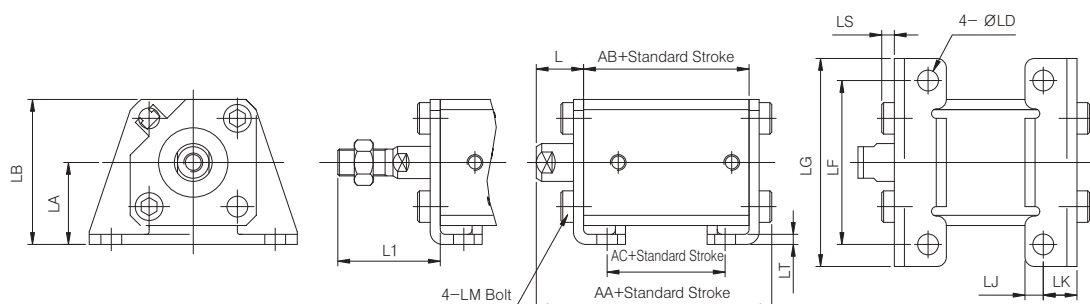
(Unit : mm)

Bore Size (mm)	Stroke Range (mm)	AA	AB	C	D	EG	B	H	K	L	M	N	ØO	Q	□T	S	U
12	5~30	20.5	17	6	6	32	5	M3×0.5	5	3.5	22	3.5	6.5 Depth 3.5	7.5	25	35.5	19.5
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	29	41.5	22.5
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	36	48	24.5
	51~75, 76~100	55.5	41	12			10.5			14.5							
25	5~50	27.5	22.5	12	12	52	5.5	M6×1.0	10	5	40	5.5	9 Depth 7	11	40	53.5	27.5
	51~75, 76~100	58.5	44	15			11			14.5							

(Note) The cylinder with rubber cushion has the same outer dimensions as standard type.

Series AQ

Foot Type/A(D)QL



Material : Carbon Steel

(Unit : mm)

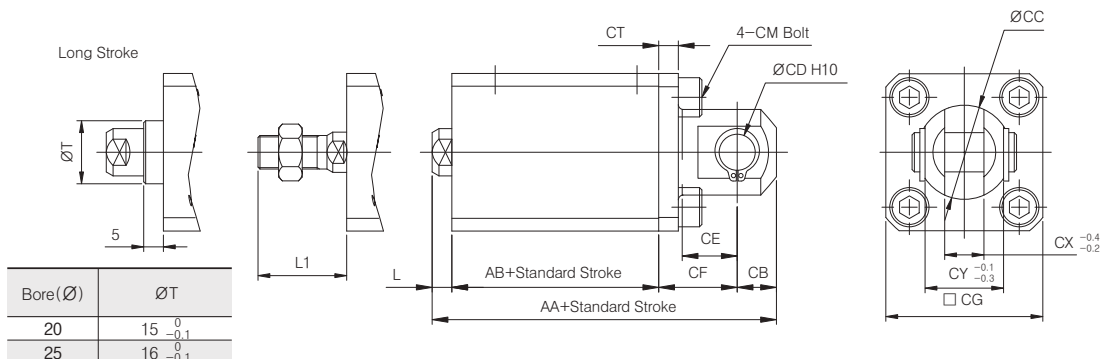
Bore Size (Ø)	Standard Stroke Range	Standard Stroke						L	L1	LA	LB	LD	LF	LG	LJ	LM	LK	LS	LT
		No Auto Switch			Auto Switch Exists														
		AA	AB	AC	AA	AB	AC												
12	5~30	35.3	17	5	46.3	28	16	13.5	24	17	29.5	4.5	34	44	4.5	M4×0.7	8	2.8	2
16	5~30	36.8	18.5	6.5	48.8	30.5	18.5	13.5	25.5	19	33.5	4.5	38	48	5	M4×0.7	8	2.8	2
20	5~50	41.2	19.5	7.5	53.2	31.5	19.5	14.5	28.5	24	42	6.6	48	62	5.8	M6×1.0	9.2	4	3.2
	51~100	62.7	41	29	62.7	41	29	14.5	28.5										
25	5~50	44.7	22.5	7.5	54.7	32.5	17.5	15	32.5	26	46	6.6	52	66	5.8	M6×1.0	10.7	4	3.2
	51~100	65.7	44	29	65.7	44	29	14.5	32										

※ For mounting parts, A-type tube is basic.

※ Indication and dimension are same as dimension of standard cylinder.

※ Double clevis and cylinder are delivered without assembly.

Double Clevis Type/A(D)QD



Bore (Ø)	ØT
20	15 ⁰ _{-0.1}
25	16 ⁰ _{-0.1}

Material : Ø12~Ø25-Carbon Steel

(Unit : mm)

Bore Size (Ø)	Standard Stroke Range	Standard Stroke				L	L1	CB	CE	CF	CG	CM	CD	CT	CX	CY	CC (Ø)
		No Auto Switch		Auto Switch Exists													
		AA	AB	AA	AB												
12	5~30	40.5	17	51.5	28	3.5	14	6	7	14	25	M4×0.7	5 ^{+0.05} ₀	4	5	10	12
16	5~30	43	18.5	55	30.5	3.5	15.5	6	10	15	29	M4×0.7	5 ^{+0.05} ₀	4	6.5	12	14
20	5~50	51	19.5	63	31.5	4.5	18.5	9	12	18	36	M6×1.0	8 ^{+0.06} ₀	5	8	16	20
	51~100	82.5	41	82.5	41	14.5	28.5										
25	5~50	57.5	22.5	67.5	32.5	5	22.5	10	14	20	40	M6×1.0	10 ^{+0.06} ₀	5	10	20	24
	51~100	88.5	44	88.5	44	14.5	32										

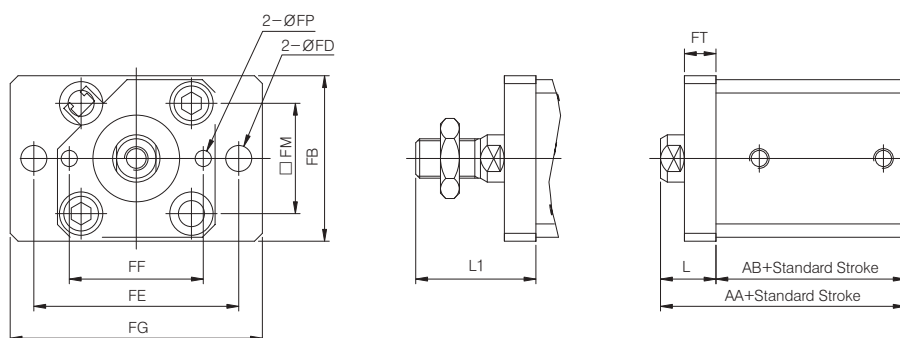
※ For mounting parts, A-type tube is basic.

※ Indication and dimension are same as dimension of standard cylinder.

※ Double clevis and cylinder are delivered without assembly.

Series AQ

Rod Side Flange Type/A(D)QF



Material : Carbon Steel

(Unit : mm)

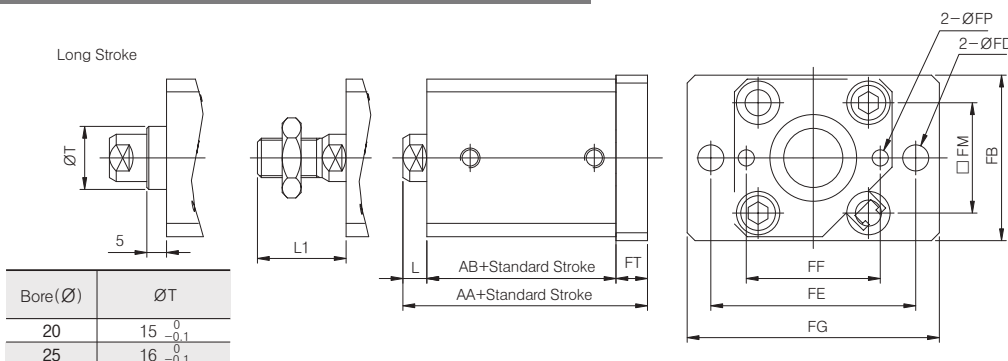
Bore Size (Ø)	Standard Stroke Range	Standard Stroke				L	L1	FB	FD	FP	FE	FF	FG	FM	FT
		No Auto Switch		Auto Switch Exists											
		AA	AB	AA	AB										
12	5~30	30.5	17	41.5	28	13.5	24	25	4.5	3.1	45	23	55	15.5	5.5
16	5~30	32	18.5	44	30.5	13.5	25.5	30	4.5	3.1	45	24	55	20	5.5
20	5~50	34	19.5	46	31.5	14.5	28.5	39	6.6	3.1	48	28	60	25.5	8
	51~100	55.5	41	55.5	41										
25	5~50	37.5	22.5	47.5	32.5	15	32.5	42	6.6	4.1	52	34	64	28	8
	51~100	58.5	44	58.5	44	14.5	32								

※ For mounting parts, A-type tube is basic.

※ Indication and dimension are same as dimension of standard cylinder.

※ Double clevis and cylinder are delivered without assembly.

Head-Side Flange/A(D)QG



Material : Carbon Steel

(Unit : mm)

Bore Size (Ø)	Standard Stroke Range	Standard Stroke				L	L1	FB	FD	FP	FE	FF	FG	FM	FT
		No Auto Switch		Auto Switch Exists											
		AA	AB	AA	AB										
12	5~30	26	17	37	28	3.5	14	25	4.5	3.1	45	23	55	15.5	5.5
16	5~30	27.5	18.5	39.5	30.5	3.5	15.5	30	4.5	3.1	45	24	55	20	5.5
20	5~50	32	19.5	44	31.5	4.5	18.5	39	6.6	3.1	48	28	60	25.5	8
	51~100	63.5	41	63.5	41	14.5	28.5								
25	5~50	35.5	22.5	45.5	32.5	5	22.5	42	6.6	4.1	52	34	64	28	8
	51~100	66.5	44	66.5	44	14.5	32								

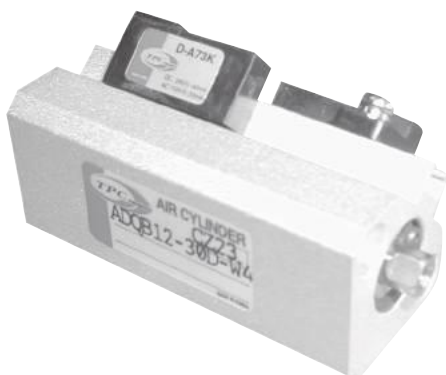
※ For mounting parts, A-type tube is basic.

※ Indication and dimension are same as dimension of standard cylinder.

※ Double clevis and cylinder are delivered without assembly.

Series **ADQ** Auto Switch Attachment

Standard Type/Double Acting : Single Rod

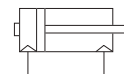
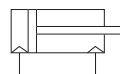


- AUTO SWITCH ATTACHED COMPACT CYLINDER
- SPACE SAVING CYLINDER
- COMPACT EQUIPMENT DESIGN AVAILABLE

Symbol

Double Action : Single Rod

Rear Boss Mount



Standard Specification

Type	Air Pressure(Non lube) Type
Applien Fluid	Air
Vicinity and Applied Fluid Temperature	5℃~60℃

Minimum Stroke for Auto Switch Attachment

Number of Auto Switch Attachment	Minimum Stroke
Attaching 1EA	5mm
Attaching 2EA	10mm

Order Form

Please refer to order form of standard type for ordering auto switch attachment.

Auto Switch Type Applied

Auto Switch Type	Lead Track Extracting Method	Indicator and function existed (indicating 1 color)
W4 Type	Grommet	

Auto Switch Specification/Rail Attaching Type

Reed Auto Switch

Auto Switch Component Number	Voltage Loaded	Maximum Loading Current & Loading Current Range (mA)	Indicating Lamp (Turning ON)	Contact Point Protecting Circuit	Applied Purpose
W4	DC24V	5~40	○	None	Relay Sequence Controller
	AC100V	5~20			

• Length of Lead Track -0.5m(Standard), 3m

ACP

APM

AS

AX

AM2

AM

AL
ALX**AQ
ADQ**AQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

NLCS

Series ADQ

Notices for products

Please fully understand the notices prior to utilization, and refer to safety notice and common notice.

! Warning

Assembly/Disassembly of Snap Ring

- Please use proper flyer (Attached tool of C-type snap ring) for assembly / disassembly.
- Please be cautious all the time that there is possible damage to human body or near-by equipments owing to projection of snap ring at the end of flyer (C-type snap ring) in spite of using proper flyer (Attached tool of C-type snap ring). Moreover, after checking full connection of snap ring during attachment, supply air.

Weight Sheet

(Unit : g)

Bore Size (mm)	Cylinder Stroke(mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	50	57	64	71	78	85	—	—	—	—	—	—
16	71	82	94	105	116	127	—	—	—	—	—	—
20	104	123	143	163	184	204	224	245	265	286	—	—
25	129	150	179	192	214	235	256	278	298	320	—	—

Extra Weight Sheet

(Unit : g)

Bore Size(mm)		12	16	20	25
Attachment Both end Tap Type		0.5	1	3	3.5
Rod end	Male Thread Part	1.5	3	6	12
Male Thread	Nut	1	2	4	8
Rear Boss Mount		0.7	1.3	2	3
Rubber Cushion Attached		1	2	5	4

Calculation Method

ex) ADQA20-20DCM

- Standard Weight : ADQB20-20D163g
 - Extra Weight : Attachment both end tap type3g
 - Rod end male thread10g
 - Rubber cushion attached5g
- 181g

Weight of Auto Switch

(Unit : g)

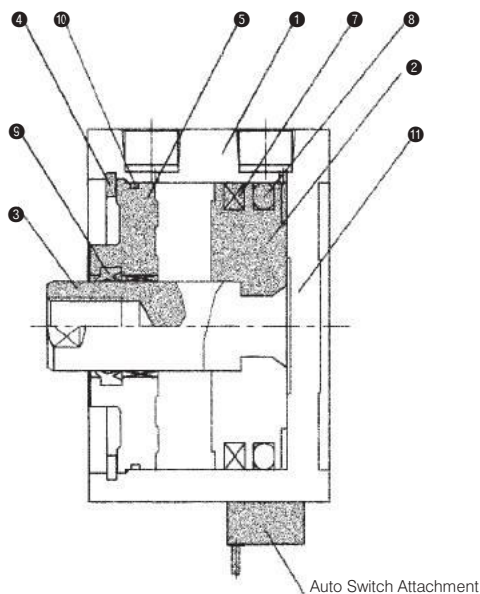
Type of Auto Switch	Auto Switch Type	Length of Lead Wire	
		0.5m	3m
Reed Auto Switch	W4	10	52

Weight of Mounting for Auto Switch

Item No.	Cylinder Internal Diameter Applied	Weight (g)
BQ-1	Ø12~ Ø25	1.5

Series ADQ

Structure Map/Component List



Component List

No.	Name of Component	Material	Remark
①	Cylinder	Aluminum Alloy	Hard Alumite
②	Piston	Aluminum Alloy	Chromite
③	Piston Rod	Stainless	Ø12~ Ø25
④	Stop Ring	Carbon Tool Steel	Phosphate Coating
⑤	Rod Cover	Aluminum Alloy	White Hard Alumite
⑥	Magnetic	—	
⑦	End Plate	Aluminum Alloy	Hard Alumite

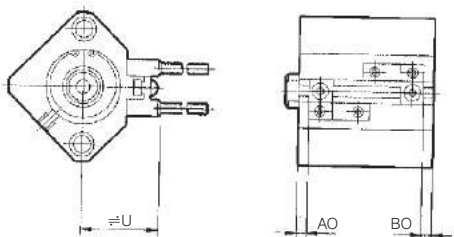
Packing List/Replacement Components/Air Pressure(Non lube) Type

No.	Item Name	Material	Item Number			
			Ø12	Ø16	Ø20	Ø25
⑧	Piston Packing	NBR	PSD-12	PSD-16	PSD-20	PSD-25
⑨	Rod Packing	NBR	DYR-6	DYR-8	DYR-10SK-K	DYR-12
⑩	Gasket	NBR	C10	C14	C18	C22

Position of Auto Switch(Stroke End)

W4

Ø12~ Ø25



Position of Auto Switch

(Unit : mm)

Bore Size (mm)	W4		
	AO	BO	U
12	5	6	19.5
16	8	5.5	22.5
20	8	7	24.5
25	8	7.5	27.5

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

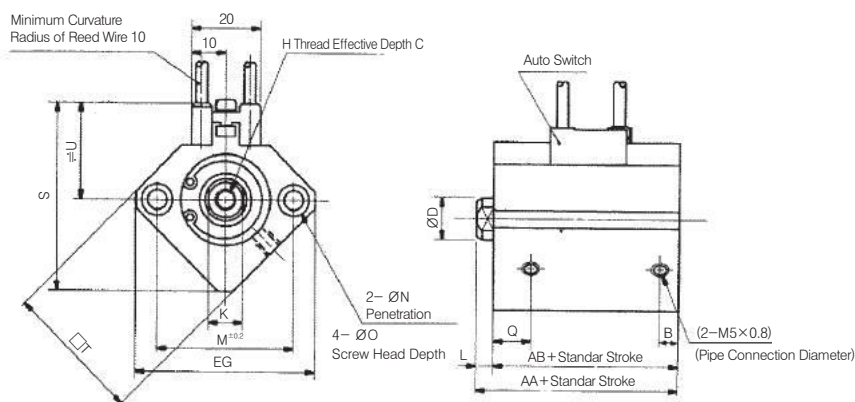
NLCD

NLCS

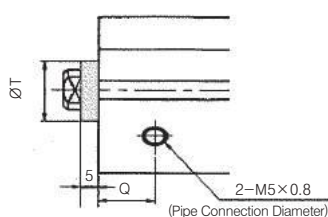
Series ADQ

Standard Type (Penetration Hole Type)/ADQB

Bore Size $\varnothing 12 \sim \varnothing 25$

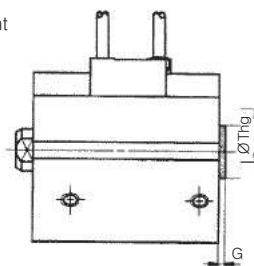


In Case of 75st



Bore Size (mm)	T
20	15 ⁰ _{-0.1}
25	16 ⁰ _{-0.1}

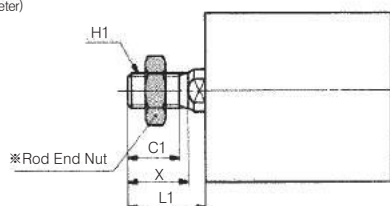
Rear Boss Mount



Rear Boss Mount (mm)

Bore Size (mm)	G	Thg
12	1.5	15 ⁰ _{-0.043}
16	1.5	20 ⁰ _{-0.052}
20	2	13 ⁰ _{-0.043}
25	2	15 ⁰ _{-0.043}

Rod End Male Thread



Rod End Male Thread Type (mm)

Bore Size (mm)	C1	X	H1	L1
12	9	10.5	M5×0.8	14
16	10	12	M6×1.0	15.5
20	12	14	M8×1.25	18.5
25	15	17.5	M10×1.25	22.5

※ 75 and 100 Stroke Range of $\varnothing 20$ L₁=28.5

※ 75 and 100 Stroke Range of $\varnothing 20$ L₁=32

※ A figure above is for the case of W4

※ Please inquire separately for ordering over standard stroke since overall length is changed.

Bore Size (mm)	Stroke Range (mm)	AA	AB	C	D	EG	B	H	K	L	M	N	ØO	Q	S	U	□T
12	5~30	31.5	28	6	6	32	6.5	M3×0.5	5	3.5	22	3.5	6.5 Depth 3.5	11	35.5	19.5	25
16	5~30	34	30.5	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
20	5~50	36	31.5	7	10	47	5.5	M5×0.8	8	4.5	36	5.5	9 Depth 7	10.5	48	24.5	36
	51~75, 76~100	55.5	41	12	12	52	10.5			14.5							
25	5~50	37.5	32.5	12	12	52	5.5	M6×1.0	10	5	40	5.5	9 Depth 7	11	53.5	27.5	40
	51~75, 76~100	58.5	44	15	12	52	11			14.5							

Note 1) Only 1EA auto switch is available for 5mm stroke.

Note 2) The cylinder with rubber cushion has the same outer dimensions as standard type.

Series AQW

Compact Cylinder : Standard Type/Double Action : Double Rod

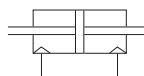
Bore Size(mm) : Ø20, Ø25



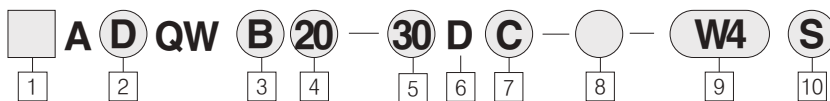
- DOUBLE ROD COMPACT CYLINDER
- SPACE SAVING CYLINDER
- COMPACT EQUIPMENT DESIGN AVAILABLE

Symbol

Double Action : Double Rod



How to Order



1 Series

Blank : Rc(PT)
U : NPT

2 Auto Switch Attachment

Blank : Standard type
D : Auto switch attached
(Built in magnet)

3 Attachment

B : Thru hole(standard type)
A : Both end tap(refor to p.231)
F : Front flange
(Both end tap : standard)
L : Foot(Both end tap : standard)
※ Mountings are delivered without assembly

4 Bore Size

20 : 20mm(3/4 Nom.)
25 : 25mm(1 Nom.)

5 Cylinder Standard Stroke(mm)

Ø20, 25 : 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

6 Operation Method

D : Double action type

7 Body Specification

Blank : Standard type
(rod end female-thread)

C : Rubber cushion attached

M : Road end male-thread

I : Single knuckle joint
(rod end male-thread)

Y : Double knuckle joint
(rod end male-thread)

※ Possible to combine body specification
(CM, CF, CI, CFI, CFY, etc)

※ I and Y are delivered without assembly

8 Series

Blank : Standard type
XC16 : Copper Free Type
※ Ø20~25 : XC16 Type is standard

9 Types of Auto Switch

Blank : None
W4 : W4(Reed Switch)

※ In case of 3m lead wire, L should be
added at the end of item number
ex)W4L

※ In case of 5m lead wire, please contact
us

10 Auto Switch Additional Symbol

Blank : 2 pcs

S : 1 pc

N : N pcs

Item Number of Mountings

Bore Size (mm)	Foot	Flange	2-spin Clavis
20	QL-020	QF-020	QD-020
25	QL-025	QF-025	QD-025

※ In case of ordering foot mounting, please order 2EA foot mounting per 1EA Cylinder.

Mounting of Auto Switch/Component Number

Bore Size (mm)	Item Number	Remark	Switch Applied
20 · 25	BQ-1	• Switch Attaching Thread (M3×0.5×8 ℓ) • Square Nut	W4

Notice

※ Production of middle stroke
Minimum 3mm to 1mm middle stroke production is available
by means of mounting spacer at standard stroke cylinder.
ex) AQWB12-27D inserts 3mm wide spacer in standard
cylinder AQWB12-30D
ex) AQWB12-29D inserts 21mm wide spacer in standard
cylinder AQWB12-50D

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

NLCS

Series AQW

Notices for products

Please fully understand the notices prior to utilization, and refer to safety notice and common notice.

! Warning

Assembly/Disassembly of Snap Ring

- Please use proper flyer (Attached tool of C-type snap ring) for assembly / disassembly.
- Please be cautious all the time that there is possible damage to human body or near-by equipments owing to projection of snap ring at the end of flyer (C-type snap ring) in spite of using proper flyer (Attached tool of C-type snap ring). Moreover, after checking full connection of snap ring during attachment, supply air.

Attachment

- Remove loading with fixing 2-face breadth part of loading-side piston rod.
- If loading-side piston rod is not firmly fixed, be cautious that connecting part (screw connecting part) of piston rod is possibly released.

Type

Bore Size(mm)			20・25
Air Pressure Type	Attachment	Thru Hole (Standard)	○
		Both end Tap	○
	Built in Magnet		○
	Piping Method	Thread Insert Type	M5× 0.8
	Rod end Male-Thread		○
	Rubber Cushion Attached		○

Standard Specification

Type	Air Pressure(Non lube) Type
Applied Fluid	Air
Proof Pressure	1.5MPa{15.3kgf/cm ² }
Max Operating Pressure	1.0MPa{9.9kgf/cm ² }
Vicinity and Applied Fluid Temperature	-10℃ ~ +70℃ (No Frozen)
Rod end Thread Allowance	KS Level 2
Stroke Length Allowable	+1.0 0
Running Piston Speed	50~500mm/s
Rubber Cushion	None
Rod end Thread	Female Thread
Attachment	Thru Hole

Minimum Operation Pressure

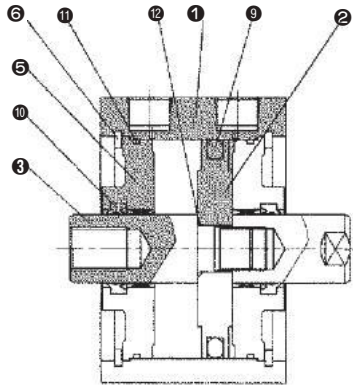
(Unit : MPa)

Bore Size(mm)	20	25
Air Pressure (Non lube) Type	0.05	0.05

Series AQW

Structure Map/Component List

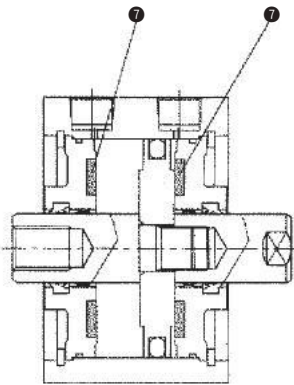
Standard Type



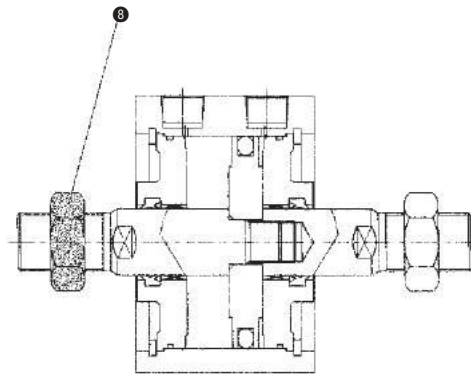
Component List

No.	Name of Component	Material	Remark
1	Cylinder Tube	Aluminum Alloy	Hard Alumite
2	Piston	Aluminum Alloy	Chromite
3	Piston Rod A	Carbon Steel	Hard Chrome Plating
4	Piston Rod B	Carbon Steel	Hard Chrome Plating
5	Rod Cover	Aluminum Alloy	White Hard Alumite
6	Stop Ring	Carbon Steel	Phosphate Coating
7	Bumper	Polyurethane	
8	Rod end Nut	Carbon Steel	Nickel Alloy

Rubber Cushion Attached



Rod end Male Thread



Seal Kits/Replacement Components/Air Pressure (non-lube) Type

No.	Component Name	Material	Component Number			
			Ø12	Ø16	Ø20	Ø25
9	Piston Packing	NBR	PSD-12	PSD-16	PSD-20	PSD-25
10	Rod Packing	NBR	DYR-6	DYR-8	DYR-10SK-K	DYR-12
11	Gasket	NBR	C10	C14	C18	C22
12	Piston Gasket		-	-	-	-

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

NLCS

Series AQW

Theoretical Output Sheet

(Unit : N)

Bore Size (mm)	Applied Pressure(MPa)		
	0.3	0.5	0.7
20	71	118	165
25	113	189	264

1N≒0.102kgf
1MPa≒10.2kgf/cm²

Weight Sheet

(Unit : g)

Bore Size (mm)	Cylinder Stroke(mm)									
	5	10	15	20	25	30	35	40	45	50
20	88	104	119	134	149	164	179	195	209	224
25	119	136	153	171	187	204	221	238	255	272

Extra Weight Sheet

(Unit : g)

Bore Size(mm)		20	25
Attachment Both end Tap Type		6	7
Rod end	Male Thread Part	10	22
	Nut	8	16
Rubber Cushion Attached		-1	-2

Calculation Method

ex) AQWA20-20DCM

- Standard Weight : AQWB20-20D134g
- Extra Weight : Attachment both end tap type6g
- Rod end male thread18g
- Rubber cushion attached.....1g

157g

Copper Free Air Cylinder

AQWB (Bore Size) (Stroke) D- XC16
Copper Free

※ Copper free is basic type for Ø20~Ø25

Specification

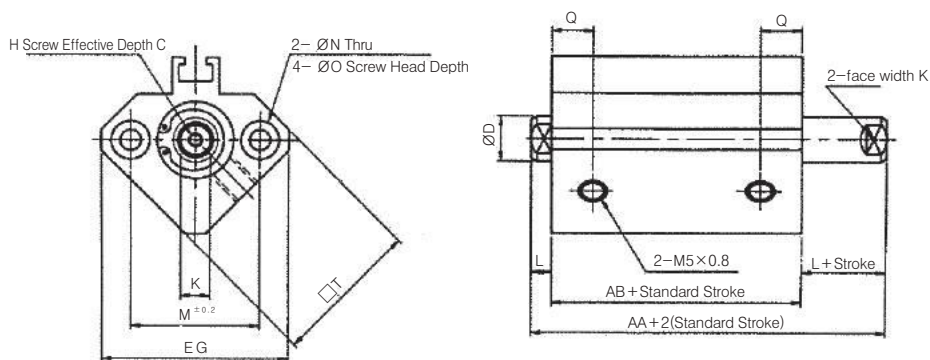
Acting Type	Double Action Single Rod
Bore Size	Ø20, Ø25
Proof Pressure	1.5MPa{15.3kgf/cm ² }
Max Operating Pressure	1.0MPa{9.9kgf/cm ² }
Running Piston Speed	50~500mm/s
Rubber Cushion	None
Piping Method	Insert Type
Attachment	Thru Hole
Auto Switch	Attachment Available

Series AQW

Standard Type (Thru Hole Type) AQWB

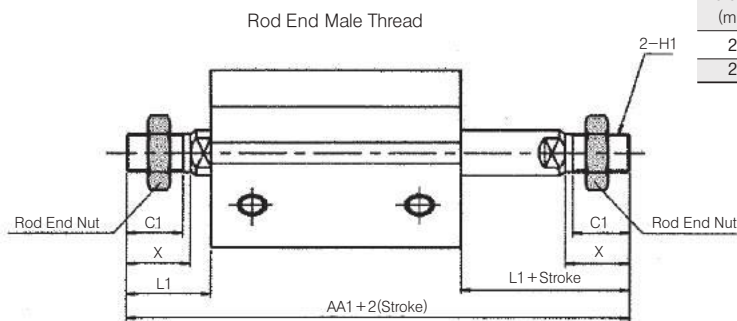
Bore Size $\varnothing 20$, $\varnothing 25$

Refer to p. 231 for both-end tap



Rod end Male Thread Type (mm)

Bore Size (mm)	AA1	C1	H1	L1	X
20	63	12	M8×1.25	18.5	14
25	74	15	M10×1.25	22.5	17.5



* In case of longer stroke than standard, please contact us.

Standard Type

(mm)

Bore Size (mm)	Stroke Range (mm)	AA	AB	C	D	EG	H	K	L	M	N	ØO	Q	□T
20	5~50	35	26	7	10	47	M5×0.8	8	4.5	36	5.5	9 Depth 7	9.5	36
25	5~50	39	29	12	12	52	M6×1.0	10	5	40	5.5	9 Depth 7	11	40

Note) The cylinder with rubber cushion has the same outer dimensions as standard type.

ACP

APM

AS

AX

AM2

AM

AL
ALX

AQ
ADQ

AQ2
ADQ2

AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

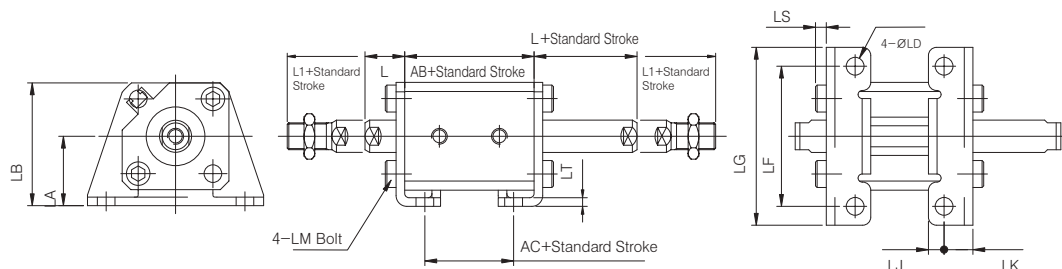
ASTH

NLCD

NLCS

Series AQW

Foot Type/A(D)QWL



Material : Carbon Steel

(Unit : mm)

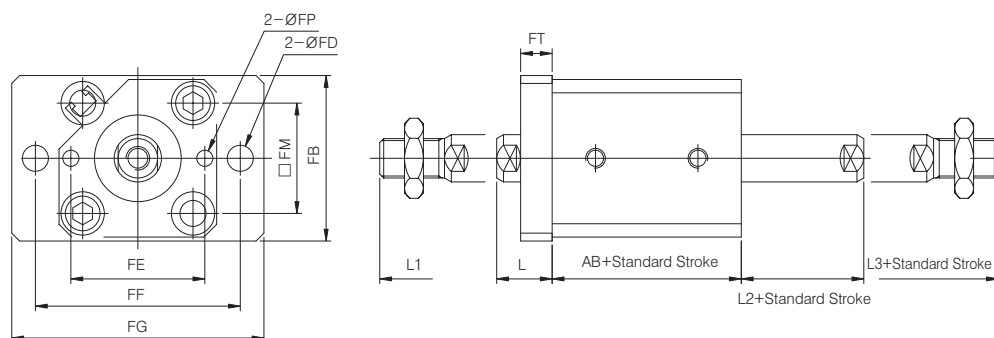
Bore Size (Ø)	Standard Stroke Range	Standard Stroke				L	L1	LA	LB	LD	LF	LG	LJ	LM	LK	LS	LT
		No Auto Switch		Auto Switch Exists													
		AA	AB	AA	AB												
20	5~30	26	14	38	26	14.5	28.5	24	42	6.6	48	62	5.8	M6×1.0	9.2	4	3.2
25	5~30	29	14	39	24	15	32.5	26	46	6.6	52	66	5.8	M6×1.0	10.7	4	3.2

※ For mounting parts, A-type is basic.

※ Dimensions not indicated are same as standard cylinder dimensions.

※ Mounting parts are not assembled in delivery.

Flange Type/A(D)QWF



Material : Carbon Steel

(Unit : mm)

Bore Size (Ø)	Standard Stroke Range	Standard Stroke		L	L1	L2	L3	FB	FD	FP	FE	FF	FG	FM	FT
		No Auto Switch	Auto Switch Exists												
		AA	AB												
20	5~30	26	38	14.5	28.5	4.5	18.5	39	6.6	3.1	28	48	60	25.5	8
25	5~30	29	39	15	32.5	5	22.5	42	6.6	4.1	34	52	64	28	8

※ For mounting parts, A-type is basic.

※ Dimensions not indicated are same as standard cylinder dimensions.

※ Mounting parts are not assembled in delivery.

Series **ADQW** Auto Switch Attachment

Standard Type/Double Acting : Double Rod

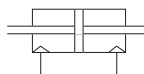
Bore Size(mm) : Ø20, Ø25



- AUTO SWITCH ATTACHED DOUBLE ROD COMPACT CYLINDER
- SPACE SAVING CYLINDER
- COMPACT EQUIPMENT DESIGN AVAILABLE

Symbol

Double Action : Double Rod



Standard Specification

Type	Air Pressure(non lube) Type
Applien Fluid	Air
Vicinity and Applied Fluid Temperature	-10℃~ +60℃(No Frozen)

For detail, please refer to page. 229p

Minimum Stroke for Auto Switch Attachment

Number of Auto Switch Attachment	Minimum Stroke
Attaching 1EA	5mm
Attaching 2EA	10mm

Weight Sheet

(Unit : g)

Bore Size (mm)	Cylinder Stroke(mm)									
	5	10	15	20	25	30	35	40	45	50
20	135	152	169	186	203	220	237	254	271	288
25	182	199	216	233	250	267	284	301	318	335

Order Form

Please refer to order form of standard type for ordering auto switch attachment.

Extra Weight Sheet

(Unit : g)

Bore Size(mm)		20	25
Attachment Both end Tap Type		3	3.5
Rod end Male Screw	Male Thread Part	10	22
	Nut	8	16
Rubber Cushion Attached		-1	-2

Calculation Method

ex) AQWA25-20DCM

- Standard Weight : ASQ2WB25-20D233g
- Extra Weight : Attachment both end tap type3.5g
- Rod end male thread22g
- Rubber cushion attached-2g

256.5g

Weight of Auto Switch (g)

Type of Auto Switch	Auto Switch Type	Length of Lead Wire	
		0.5m	3m
Contact Point Existing Auto Switch	W4 Type	10	52

Mounting of Auto Switch

Item No.	Cylinder Internal Diameter Applied	Weight (g)
BQ-1	Ø20, Ø25	1.5

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

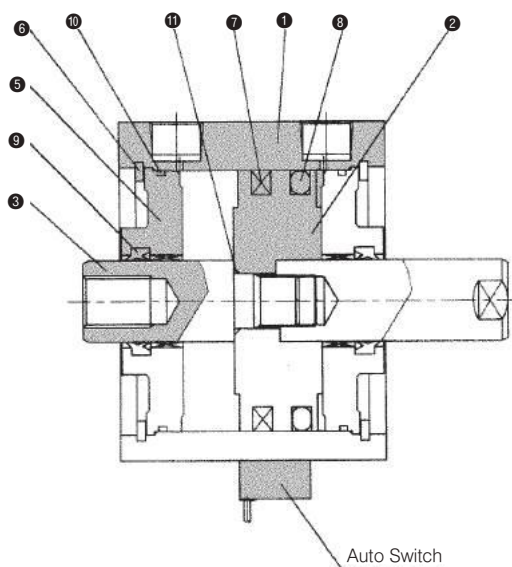
ASTH

NLCD

NLCS

Series ADQW

Structure Map/Component List



Component List

No.	Name of Component	Material	Remark
1	Cylinder Tube	Aluminum Alloy	Hard Alumite
2	Piston	Aluminum Alloy	Chromite
3	Piston Rod	Carbon Steel	Hard Chrome Plating
4	Collar	Aluminum Alloy	White Hard Alumite
5	Stop Ring	Carbon Tool Steel	Phosphate Coating
6	Magnet	NBR+Ba Ferrite	

Seal Kits/Replacement Components/Air Pressure (Non-lube) Type

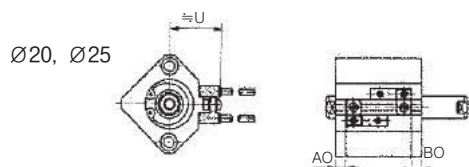
No.	Component Name	Material	Component Number			
			Ø12	Ø16	Ø20	Ø25
8	Piston Packing	NBR	PSD-12	PSD-16	PSD-20	PSD-25
9	Rod Packing	NBR	DYR-6	DYR-8	DYR-10SK-K	DYR-12
10	Gasket	NBR	C10	C14	C18	C22
11	Piston Gasket	NBR	—	—	—	—

Position of Auto Switch (Stroke end)

W4

Position of Auto Switch

(mm)



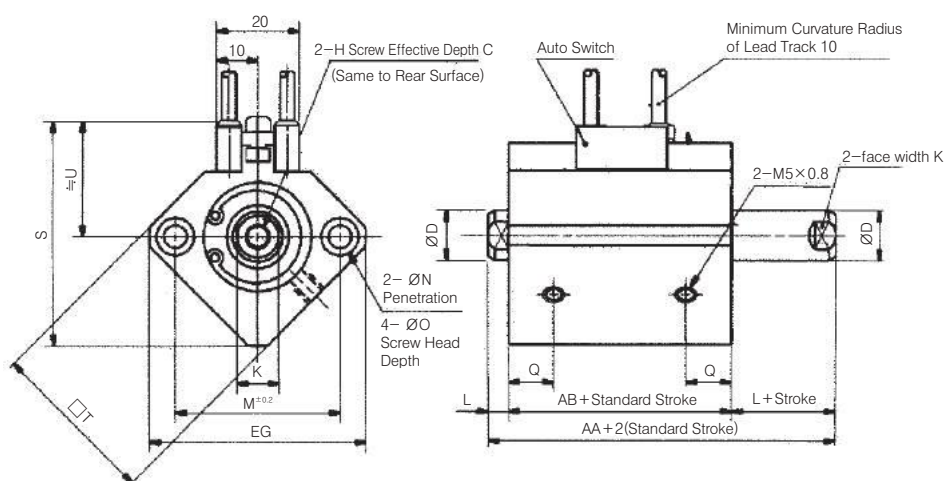
Bore Size (mm)	W4		
	AO	BO	U
20	8	13.5	24.5
25	8	13.5	27.5

Series ADQW

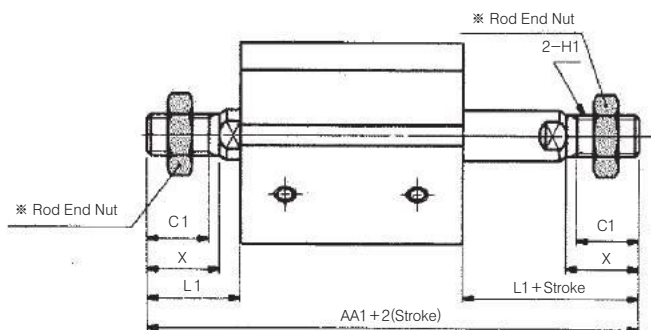
Standard Type (Thru Hole Type)/ADQWB

Bore Size $\varnothing 20, \varnothing 25$

Refer to p. 231 for both-end tap



Rod End Male Thread



Rod end Male Thread Type (mm)

Bore Size (mm)	AA1	C1	H1	L1	X
20	75	12	M8×1.25	18.5	14
25	84	15	M10×1.25	22.5	17.5

※ The figure above is for auto switch W4

※ For longer stroke than standard, please contact us.

Standard Type

(mm)

Bore Size (mm)	Stroke Range (mm)	AA	AB	C	D	EG	H	K	L	M	N	$\varnothing O$	Q	S	U	$\square T$
20	5~50	47	38	7	10	47	M5×0.8	8	4.5	36	5.5	9 Depth 7	10.5	48	24.5	36
25	5~50	49	39	12	12	52	M6×1.0	10	5	40	5.5	9 Depth 7	11	53.5	27.5	40

Note 1) Only 1EA auto switch is available for 5mm stroke.

Note 2) The cylinder with rubber cushion has the same outer dimensions as standard type.

ACP

APM

AS

AX

AM2

AM

AL

ALX

AQ

ADQ

AQ2

ADQ2

AJ

AJM

ABK

ACK1

NSK

AG

NGQ

AGX

GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

NLCS

Series AQ

Standard Type/Single Acting : Single Rod

Bore Size(mm) : $\varnothing 20$

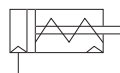


- SINGLE ACTING SINGLE ROD COMPACT CYLINDER
- SPACE SAVING CYLINDER
- COMPACT EQUIPMENT DESIGN AVAILABLE

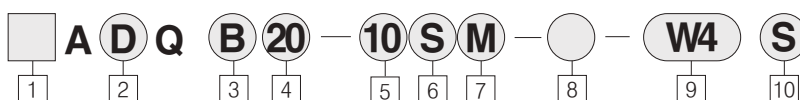
Symbol

Single Acting Type/Spring Return Type

Single Acting Type/Spring Extended Type



How to Order



1 Series

Blank : Rc(PT)
U : NPT

2 Auto Switch Attachment

Blank : Standard type
D : Auto switch attached
(Built in magnet)

3 Attachment

B : Thru hole (standard type)
A : Both end tap (refer to p.231)
D : Double clevis
(standard both end type)
F : Front flange
(standard both end type)
G : Rear flange
(standard both end type)
L : Foot (standard both-end type)
※ Mountings are delivered without assembly

4 Bore Size

20 : 20mm(3/4 Nom.)

5 Cylinder Standard Stroke(mm)

$\varnothing 20$: 5, 10

6 Operation Method

S : Spring return type
(Constant backward motion type)
T : Spring extended type
(Constant backward motion type)

7 Body Specification

Blank : Standard type
(rod end female thread)
M : Rod end male thread
F : Rear boss mount
I : single knuckle joint
(rod end male-thread)
Y : Double knuckle joint
(rod end male-thread)
※ Possible to combine body specification
(FM, FI, FY)
※ Except CF for $\varnothing 12$ and $\varnothing 16$ cases
※ I and Y are delivered without assembly

8 Series

Blank : Standard type
※ $\varnothing 12 \sim \varnothing 40$: XC16 Type is standard

9 Types of Auto Switch

Blank : None
W4 : W4(Reed Switch)
※ In case of 3m lead track, L should be
added at the end of item number
ex) W4L
※ In case of 5m lead track, please contact
us

10 Auto Switch Additional Symbol

Blank : 2 pcs
S : 1 pc
N : N pcs

Mounting of Auto Switch/Component Number of Auto Switch

Bore Size (mm)	Item Number	Remark	Switch Applied
20	BQ-1	• Switch Attaching Thread (M3×0.5×8 ℓ) • Square Nut	W4

Item Number of Mountings

Bore Size (mm)	Foot	Flange	2-spin Clavis
20	QL-020	QF-020	QD-020

※ In case of ordering foot mounting, please order 2EA per 1EA Cylinder.

Theoretical Output Sheet

Bore Size (mm)	Operation Method	Pressure Applied(MPa)			Spring Restore		Max. when rod-end allowable attaching load is horizontal
		0.3	0.5	0.7	Start	End	
20	Forward	78	141	204	16	6	6.6
	Backward Motion Type	217	378	539	24	15	

1N $\div$ 0.102kgf 1MPa $\div$ 10.2kgf/cm²

Series AQ

Notices for products

Please fully understand the notices prior to utilization, and refer to safety notice and common notice.

Warning

Assembly/Disassembly of Snap Ring

- Please use proper flyer (Attached tool of C-type snap ring) for assembly / disassembly.
- Please be cautious all the time that there is possible damage to human body or near-by equipments owing to projection of snap ring at the end of flyer (C-type snap ring) in spite of using proper flyer (Attached tool of C-type snap ring). Moreover, after checking full connection of snap ring during attachment, supply air.

Type

Bore Size(mm)			20	25
Air Pressure Type	Attachment	Thru Hole (Standard)	○	○
		Both end Tap	—	—
	Built in Magnet		○	○
	Piping Method	Thread Insert Type	M5×0.8	M5×0.8
	Rod end Male-Thread		○	○
	Rubber Cushion Attached		○	○

Standard Specification

Type	Air Pressure(no Fuel) Type
Applied Fluid	Air
Proof Pressure	1.5MPa{15.3kgf/cm ² }
Max Operating Pressure	1.0MPa{9.9kgf/cm ² }
Vicinity and Applied Fluid Temperature	-10℃ ~ +70℃ (No Frozen)
Rod end Thread Allowance	KS Level 2
Stroke Length Allowable	+1.0 0
Running Piston Speed	50~500mm/s
Rubber Cushion	None
Rod end Thread	Female Thread
Attachment	Thru Hole

Extra Weight Sheet

(Unit:g)

Bore Size(mm)		20
Attachment Both end Tap Type		6
Rod end Male Thread	Male Screw Part	6
	Nut	4
Rear Boss Mount		2

Calculation Method

ex) AQA20-10SM

- Standard Weight : AQB20-10S112g
- Extra Weight : Attachment both end tap type6g
- Rod end male thread10g

128g

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

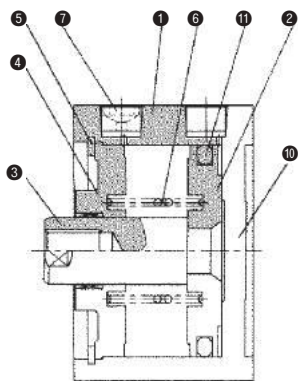
NLCD

NLCS

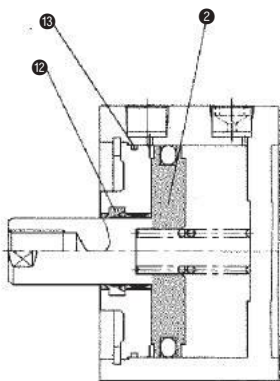
Series AQ

Structure Map/Component List

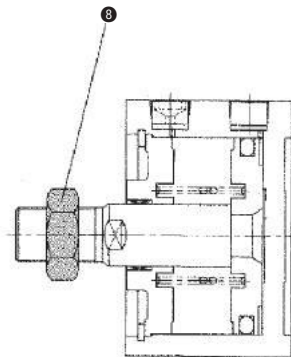
Spring Return Type



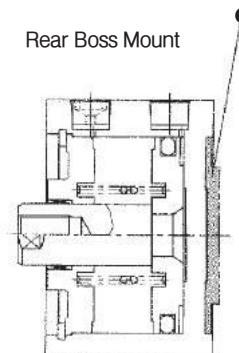
Spring Extended Type



Rod End Male Thread



Rear Boss Mount



Component List

No.	Component Name	Material	Remark
①	Cylinder Tube	Aluminum Alloy	Hard Alumite
※ ②	Piston	Aluminum Alloy	Chromite
③	Piston Rod	Carbon Steel	Hard Chrome Plating
④	Rod Cover	Aluminum Alloy	White Hard Alumite
⑤	Stop Ring	Carbon Tool Steel	Phosphate Coating
⑥	Restore Spring	Piano Wire	Galvanized Chromite
⑦	Correction Throttle Attaching Plug	Alloy	Black Galvanized Chromite
⑧	Rod end Nut	Carbon Steel	Nickel Plating
⑨	Screw Ring	Aluminum Alloy	Ø20~ Ø25, Hard Alumite
⑩	End Plate	—	—

Seal Kits/Replacement Components/Air Pressure (Non lube) Type

No.	Component Name	Material	Component Number
			Ø20
⑪	Piston Packing	NBR	PSD-20
⑫	Rod Packing	NBR	DYR-10SK-K
⑬	Gasket	NBR	C18

Copper Free Type Cylinder

AQWB (Bore Size) (Stroke) $\frac{S}{T}$ - XC16
Copper Free Type

Specification

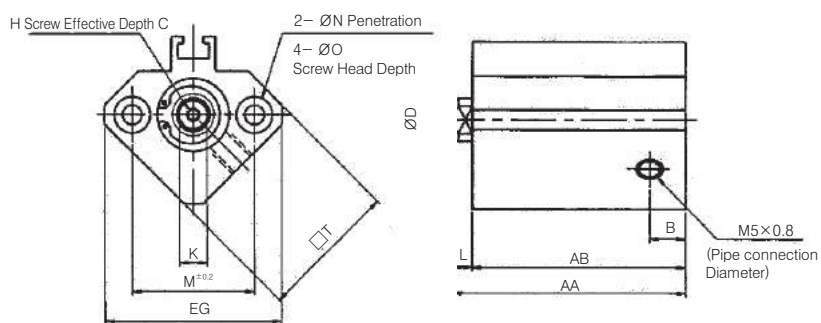
Acting Type	Double Action Single Rod
Bore	Ø20
Proof Pressure	1.5MPa{15.3kgf/cm ² }
Max Operating Pressure	1.0MPa{10.2kgf/cm ² }
Rubber Cushion	None
Piping Method	Screw Inserting Piping Type
Applied Piston Speed	50~500mm/s
Attachment	Penetration Hole
Auto Switch	Attachment Available

Series AQ

Standard Type (Thru Hole Type)/AQB

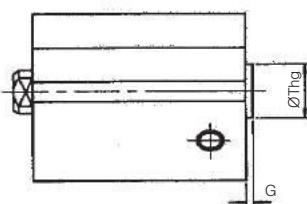
Bore Size $\varnothing 20$
Spring Return Type

Refer to p. 231 for both-end tap



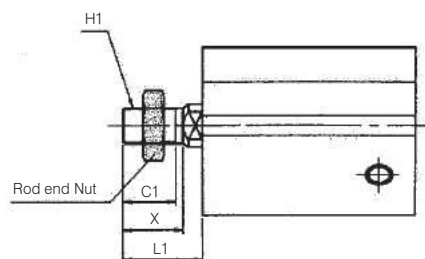
Rear Boss Mount

Rear Boss Mount Type (mm)		
Bore Size (mm)	G	Thg
20	2	13 ⁰ _{-0.043}



Rod End Male Thread

Rod end Male Thread Type (mm)				
Bore Size (mm)	C1	X	H1	L1
20	12	14	M8×1.25	18.5



※ For longer stroke than standard, please contact us.

Standard Type

(mm)

Bore Size (mm)	AA		AB		C	D	EG	B	H	K	L	M	N	ØO	□T
	5st	10st	5st	10st											
20	29	34	24.5	29.5	7	10	47	5.5	M5×0.8	8	4.5	36	5.5	9 Depth 7	36

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

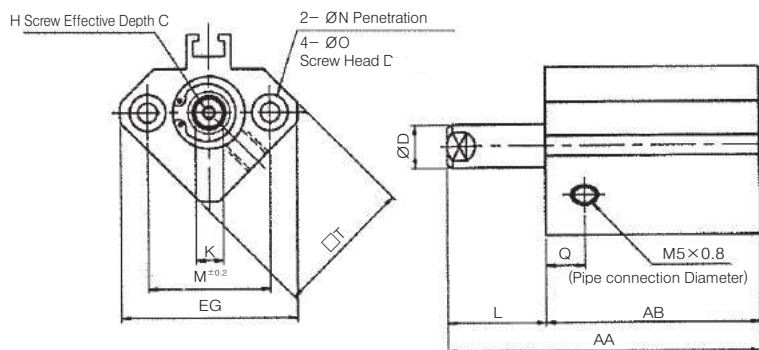
NLCS

Series AQ

Standard Type (Thru Hole Type)/AQB

Bore Size $\varnothing 20$
Spring Extended Type

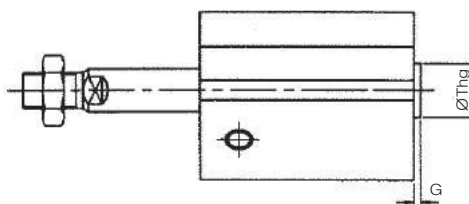
Refer to p. 231 for both-end tap



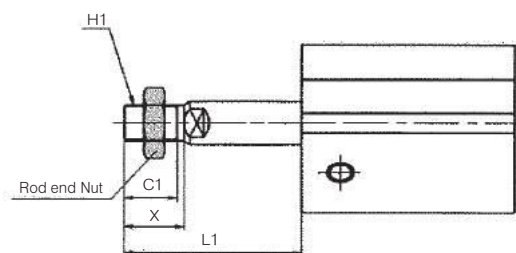
Rear boss Mounting Type (mm)

Bore Size (mm)	G	Thg
20	2	13 ⁰ _{-0.043}

Rear boss Mounting



Rod End Male Thread



Rod end Male Thread Type (mm)

Bore Size (mm)	C1	X	H1	L1	
				5st	10st
20	12	14	M8×1.25	23.5	28.5

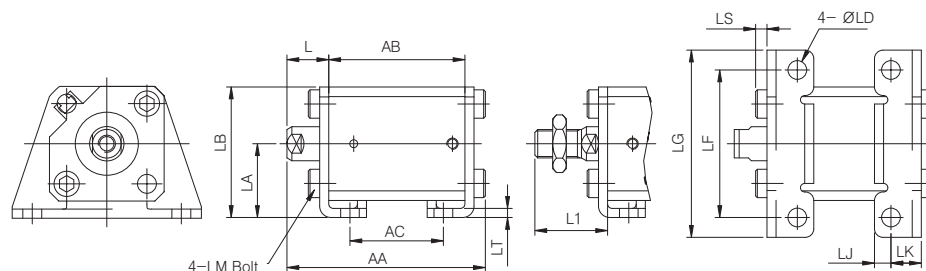
Standard Type

(mm)

Bore Size (mm)	AA		AB		C	D	EG	H	K	L		M	N	ØO	Q	□T
	5st	10st	5st	10st						5st	10st					
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

Foot Type/A(D)QL

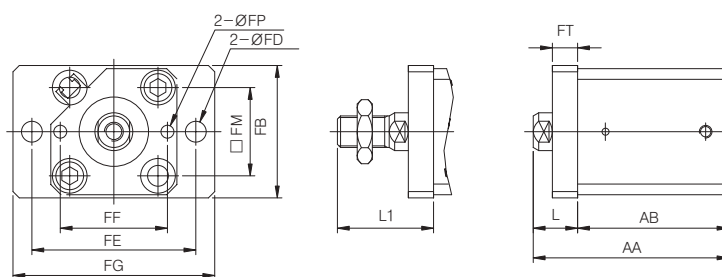


Material : Carbon Steel

(Unit : mm)

Bore Size (Ø)	Standard Stroke	No Auto Switch			With Auto Switch			L	L1	LA	LB	LD	LF	LG	LJ	LM	LK	LS	LT
		AA	AB	AC	AA	AB	AC												
20	5	46.2	24.5	12.5	58.2	36.5	24.5	14.5	28.5	24	42	6.6	48	62	5.8	M6×1.0	9.2	4	3.2
	10	51.2	29.5	17.5	63.2	41.5	29.5												

Flange Type/A(D)QF



Material : Carbon Steel

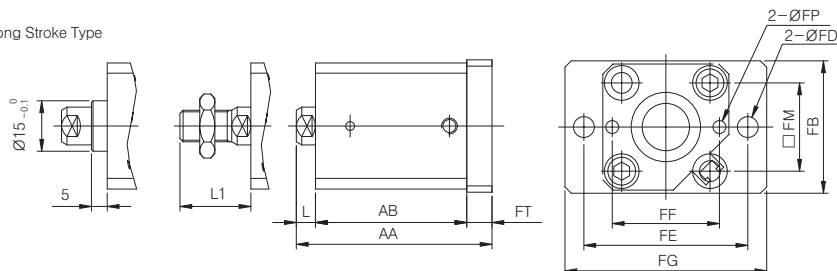
(Unit : mm)

Bore Size (Ø)	Standard Stroke	No Auto Switch		With Auto Switch		L	L1	FB	FD	FP	FE	FF	FG	FM	FT
		AA	AB	AA	AB										
20	5	39	24.5	51	36.5	14.5	28.5	39	6.6	3.1	48	28	60	25.5	8
	10	44	29.5	56	41.5										

Series AQ

Head-side Flange Type/A(D)QG

Long Stroke Type



Material : Carbon Steel

(Unit : mm)

Bore Size (Ø)	Standard Stroke	Without Auto Switch		With Auto Switch		L	L1	FB	FD	FP	FE	FF	FG	FM	FT
		AA	AB	AA	AB										
20	5	32.5	24.5	44.5	36.5	14.5	28.5	39	6.6	3.1	48	28	60	25.5	8
	10	37.5	29.5	49.5	41.5										

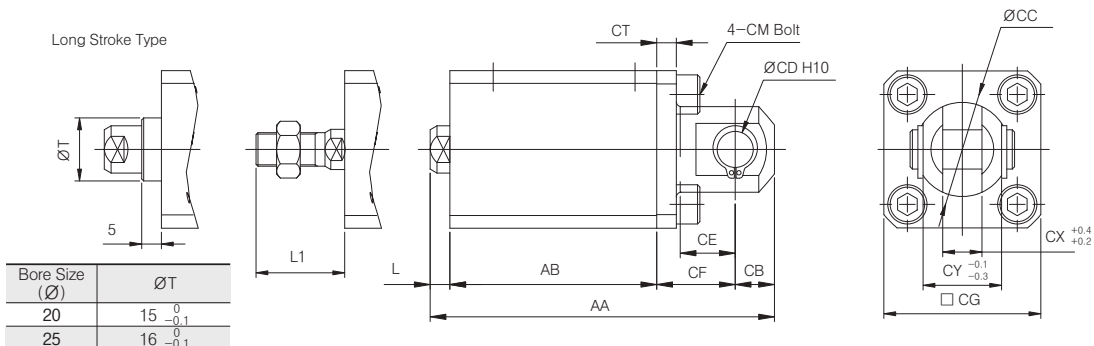
※ For mounting parts, A-type tube is basic.

※ Indication and dimension are same as dimension of standard cylinder.

※ Mounting are delivered without assembly.

Double Clevis Type/A(D)QD

Long Stroke Type



Bore Size (Ø)	ØT
20	15 ⁰ _{-0.1}
25	16 ⁰ _{-0.1}

Material : Carbon Steel

(Unit : mm)

Bore Size (Ø)	Standard Stroke	Without Auto Switch		With Auto Switch		L	L1	FB	FD	FP	FE	FF	FG	FM	FT
		AA	AB	AA	AB										
20	5	39	24.5	51	36.5	14.5	28.5	39	6.6	3.1	48	28	60	25.5	8
	10	44	29.5	56	41.5										

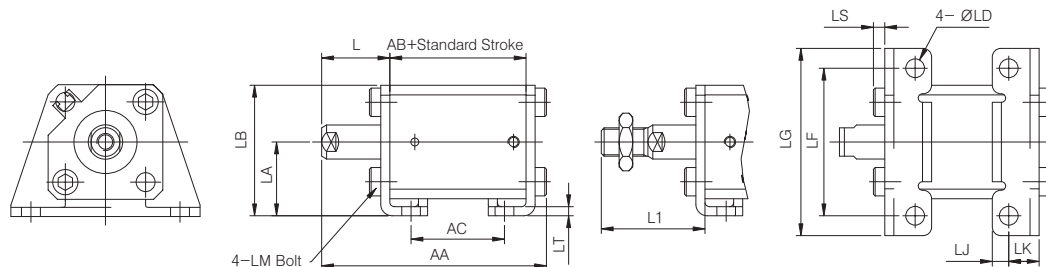
※ For mounting parts, A-type tube is basic.

※ Indication and dimension are same as dimension of standard cylinder.

※ Mounting are delivered without assembly.

Series AQ

Foot Type/A(D)QL

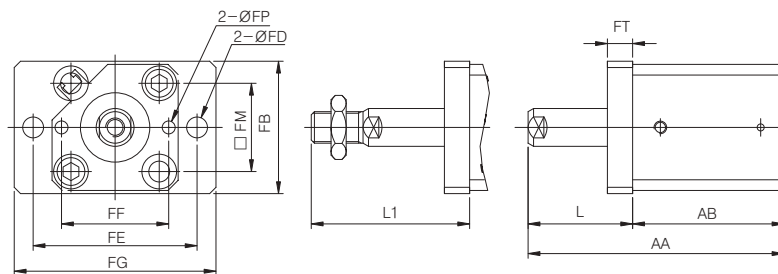


Material : Carbon Steel

(Unit : mm)

Bore Size (Ø)	Standard Stroke	Without Auto Switch			With Auto Switch			L	L1	LA	LB	LD	LF	LG	LJ	LM	LK	LS	LT
		AA	AB	AC	AA	AB	AC												
20	5	51.2	24.5	12.5	63.2	36.5	24.5	19.5	33.5	24	42	6.6	48	62	5.8	M6×1.0	9.2	4	3.2
	10	61.2	29.5	17.5	73.2	41.5	29.5	24.5	38.5										

Front Flange Type/A(D)QF



Material : Carbon Steel

(Unit : mm)

Bore Size (Ø)	Standard Stroke	Without Auto Switch		With Auto Switch		L	L1	FB	FD	FP	FE	FF	FG	FM	FT
		AA	AB	AA	AB										
20	5	44	24.5	56	36.5	19.5	33.5	39	6.6	3.1	48	28	60	25.5	8
	10	54	29.5	66	41.5	24.5	38.5								

ACP

APM

AS

AX

AM2

AM

AL

ALX

AQ

ADQ

AQ2

ADQ2

AJ

AJM

ABK

ACK1

NSK

AG

NGQ

AGX

GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

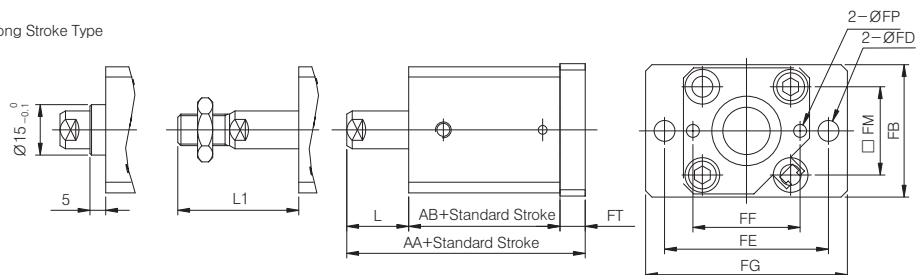
NLCD

NLCS

Series AQ

Rear Flange Type/A(D)QG

Long Stroke Type



Material : Carbon Steel

(Unit : mm)

Bore Size (Ø)	Standard Stroke	Without Auto Switch		With Auto Switch		L	L1	FB	FD	FP	FE	FF	FG	FM	FT
		AA	AB	AA	AB										
20	5	42	24.5	54	36.5	9.5	23.5	39	6.6	3.1	48	28	60	25.5	8
	10	52	29.5	64	41.5	14.5	28.5								

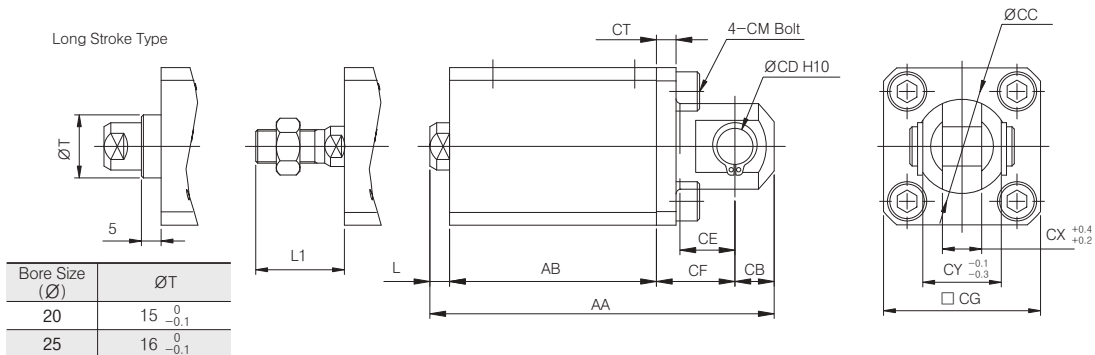
※ For mounting parts, A-type tube is basic.

※ Indication and dimension are same as dimension of standard cylinder.

※ Mounting are delivered without assembly.

Double Clevis Type/A(D)Q2D

Long Stroke Type



Material : Carbon Steel

(Unit : mm)

Bore Size (Ø)	Standard Stroke	Without Auto Switch		With Auto Switch		L	L1	CB	CE	CF	CG	CM	CD	CT	CX	CY	CC (Ø)
		AA	AB	AA	AB												
20	5~30	61	24.5	73	36.5	9.5	23.5	9	12	18	36	M6×1.0	8 ^{+0.06} ₀	5	8	16	20
	5~30	71	29.5	83	41.5	14.5	28.5										

※ For mounting parts, A-type tube is basic.

※ Indication and dimension are same as dimension of standard cylinder.

※ Mounting are delivered without assembly.

Series **ADQ2** Auto Switch Attachment

Standard Type/Single Acting : Single Rod

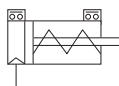
Bore Size(mm) : Ø20 (3/4Nom.)



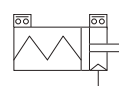
- SINGLE ACTING SINGLE-ROD AUTO SWITCH ATTACHED COMPACT CYLINDER
- SPACE SAVING CYLINDER
- COMPACT EQUIPMENT DESIGN AVAILABLE

Symbol

Single Acting/Spring Return



Single Acting/Spring Extended



Standard Specification

Type	Air Pressure(Non lube) Type
Applied Fluid	Air
Vicinity and Applied Fluid Temperature	-10°C ~ +60°C (No Frozen)

Minimum Stroke for Auto Switch Attachment

Number of Auto Switch Attachment	Minimum Stroke
Attaching 1EA	5mm
Attaching 2EA	10mm

Order Form

Please refer to order form of standard type for ordering auto switch attachment.

Weight Sheet

(Unit : g)

Workings	Bore Size (mm)	Cylinder Stroke (mm)			
		5	10	15	20
Spring Return	20	104	123	—	—
Spring Extended	20	109	127	—	—

Extra Weight Sheet

(Unit : g)

Bore Size(mm)		20
Attachment Both end Tap Type		3
Rod end	Male Thread Part	6
Male Thread	Nut	4
Rubber Cushion Attached		2

Calculation Method

ex) AQA20-10SM

- Standard Weight : AQB20-10S123g
- Extra Weight : Attachment both end tap type3g
- Rod end male thread10g

136g

Weight of Auto Switch

(Unit : g)

Type of Auto Switch	Auto Switch Type	Length of Lead Track	
		0.5m	3m
Reed Auto Switch	W4	10	52

Mounting of Auto Switch

Item Number	Cylinder Internal Diameter Applied	Weight (g)
BQ-1	Ø20	1.5

ACP

APM

AS

AX

AM2

AM

AL
ALX

AQ
ADQ

AQ2
ADQ2

AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

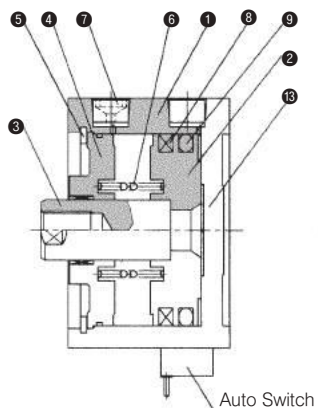
NLCD

NLCS

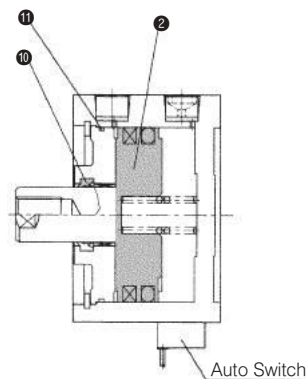
Series ADQ

Structure Map/Component List

Spring Return Type



Spring Extended Type



Component List

No.	Component Name	Material	Remark
1	Cylinder Tube	Aluminum Alloy	Hard Alumite
2	Piston	Aluminum Alloy	Chromite
3	Piston Rod	Carbon Steel	Ø20
4	Rod Cover	Aluminum Alloy	White Hard Alumite
5	Stop Ring	Carbon Tool Steel	Phosphate Coating
6	Restore Spring	Piano Wire	Galvanized Chromite

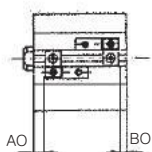
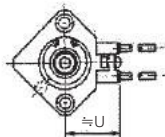
No.	Component Name	Material	Remark
7	Correction Throttle Attaching Plug	Alloy	Black Galvanized Chromite
8	Magnet	—	

Seal Kit/Replacement Components/Air Pressure (non-lube) Type

No.	Component Name	Material	Component Number
			Ø20
9	Piston Packing	NBR	PSD-20
10	Rod Packing	NBR	DYR-10SK-K
11	Gasket	NBR	C18

Position of Auto Switch (Stroke end)

Ø20



Position of Auto Switch

(Unit : mm)

Bore Size (mm)	W4		
	AO	BO	U
20	8	7	24.5

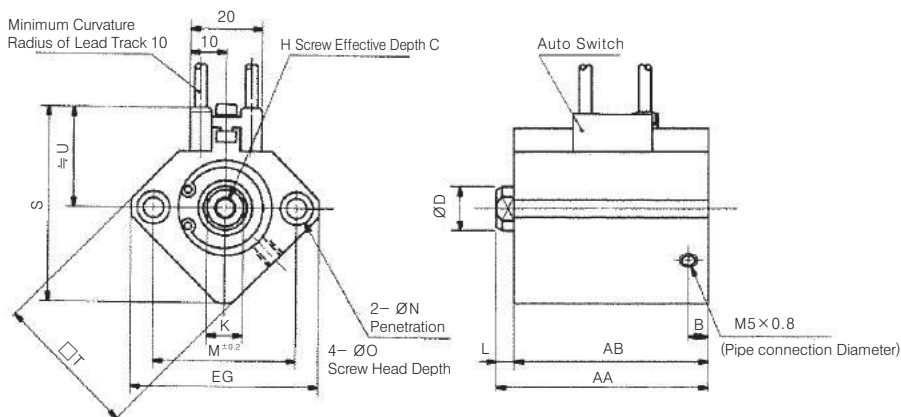
※ Only Ø20 is available for spring extended type.

Series ADQ

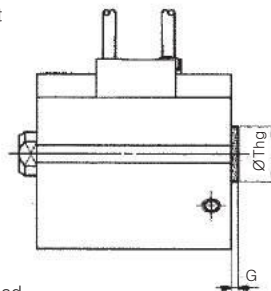
Standard Type (Thru Hole Type)/ADQB

Bore Size $\varnothing 20$
Spring Return Type

Refer to p. 231 for both-end tap



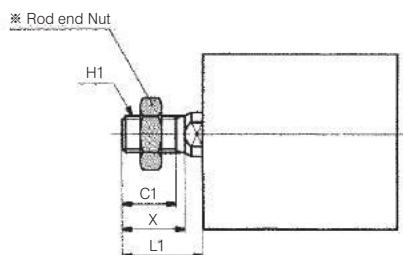
Rear Boss Mount



Rear Boss Mounting Type (mm)

Bore Size (mm)	G	Thg
20	2	13 ⁰ _{-0.043}

Rod End Male Thread



Rod end Male Thread Type (mm)

Bore Size (mm)	C1	X	H1	L1
20	12	14	M8×1.25	18.5

- ※ The dimension above is for auto switch W4 type.
※ For longer stroke than standard, please contact us.

Standard Type

(mm)

Bore Size (mm)	AA		AB		C	D	EG	B	H	K	L	M	N	ØO	S	U	□T
	5st	10st	5st	10st													
20	41	46	36.5	41.5	7	10	47	5.5	M5×0.8	8	4.5	36	5.5	9 Depth 7	48	24.5	36

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

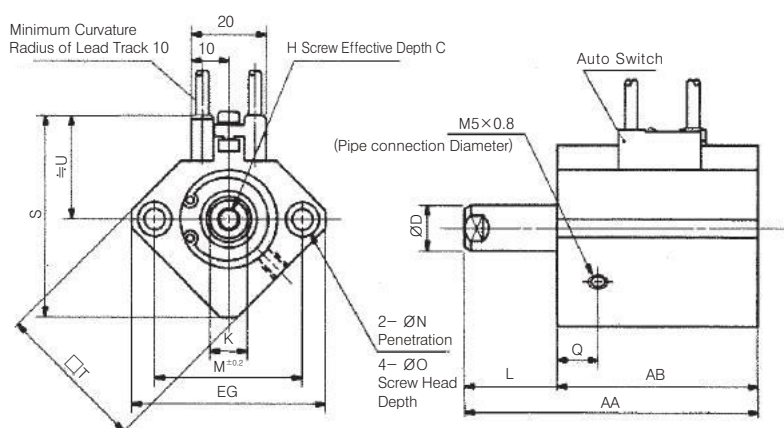
NLCS

Series ADQ

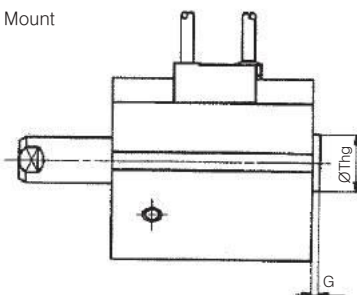
Standard Type (Thru Hole Type)/ADQ

Bore Size $\varnothing 20$
Spring Extended Type

Refer to p. 231 for both-end tap



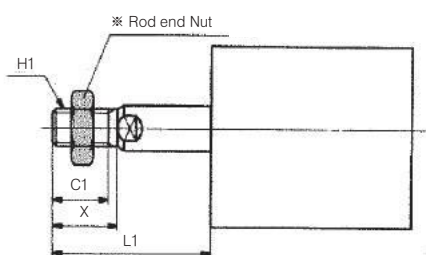
Rear boss Mount



Rear Boss Mounting Type (mm)

Bore Size (mm)	G	Thg
20	2	13 ⁰ _{-0.043}

Rod End Male Thread



Rod end Male Thread Type (mm)

Bore Size (mm)	C1	X	H1	L1	
				5st	10st
20	12	14	M8x1.25	23.5	28.5

※ The dimension above is for auto switch W4 type.
※ For longer stroke than standard, please contact us.

Standard Type

(mm)

Bore Size (mm)	AA		AB		C	D	EG	H	K	L		M	N	ØO	Q	S	U	□T
	5st	10st	5st	10st						5st	10st							
20	46	56	36.5	41.5	7	10	47	M5x0.8	8	9.5	14.5	36	5.5	9 Depth 7	10.5	48	24.5	36

Series A Q K

Non-Rod Rotation Type/Double Acting : Single Rod

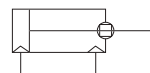
Bore Size(mm) : Ø20, Ø25



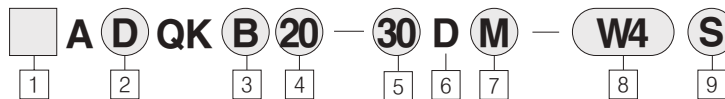
- NON ROD ROTATION COMPACT CYLINDER
- SPACE SAVING CYLINDER
- COMPACT EQUIPMENT DESIGN AVAILABLE

Symbol

Non Rod Rotating Type



How to Order



1 Series

Blank : Rc(PT)
U : NPT

2 Auto Switch Attachment

Blank : Standard type
D : Auto switch attached
(Built in magnet)

3 Attachment

B : Thru hole(standard type) Ø20
A : Both end tap

4 Bore Size

20 : 20mm(3/4 Nom.)
25 : 20mm(1 Nom.)

5 Cylinder Standard Stroke(mm)

Ø20, 25 : 5,10,15,20,25,30,35,40,45,50
• Tube internal diameter standard stroke
1mm middle stroke production in every
1mm is available by means of mounting
spacer at standard stroke cylinder.
(Possible minimum spacer : 3mm)
ex) AQKB25-37D inserts 3mm wide
spacer in standard cylinder AQKB25-
40D

6 Operation Method

D : Double action type

7 Body Specification

Blank : Standard type
(rod end female-thread)
M : Rod end male-thread
F : Rear boss mount
※ Possible to combine body specification
(FM)

8 Types of Auto Switch

Blank : None
W4 : W4(Reed Switch)
※ In case of 3m lead track, L should be
added at the end of item number
ex) W4L
(In case of 5m lead track, please contact us.)

9 Auto Switch Additional Symbol

Blank : 2 pcs
S : 1 pc
N : N pcs

Mounting of Auto Switch/Component for Auto Switch

Bore Size (mm)	Item Number	Remark	Switch Applied
20 · 25	BQ-1	• Switch Attaching Thread (M3×0.5×8 ℓ) • Square Nut	W4

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

NLCS

Series AQK

Notices for products

Please fully understand the notices prior to utilization, and refer to safety notice and common notice.

Warning

Assembly/Disassembly of Snap Ring

- Please use proper flyer (Attached tool of C-type snap ring) for assembly / disassembly.
- Please be cautious all the time that there is possible damage to human body or near-by equipments owing to projection of snap ring at the end of flyer (C-type snap ring) in spite of using proper flyer (Attached tool of C-type snap ring). Moreover, after checking full connection of snap ring during attachment, supply air.

Attachment

- Remove loading with fixing 2-face breadth part of loading-side piston rod.
- If loading-side piston rod is not firmly fixed, be cautious that connecting part (screw connecting part) of piston rod is possibly released.



- When using not rod rotating cylinder, be cautious not to apply rotation torque to piston rod, which makes non-rotation level bigger with deformation of rotation preventing guide.

Rotation Allowable Torque	20	25
kgf · cm or Less	2.0	2.5

- Use with loading on piston rod always in shaft direction.

Type

Bore Size(mm)			20	25
Air Pressure Type	Attachment	Thru Hole (Standard)	○	○
		Both end Tap	—	—
	Built in Magnet		○	○
	Piping Method	Thread Insert Type	M5×0.8	M5×0.8
	Rod end Male—Thread		○	○
	Rubber Cushion Attached		○	○

Note) In case of no auto switch, the thread for 5mm stroke is only M5×0.8

Standard Specification

Type	Air Pressure(no Fuel) Type
Applied Fluid	Air
Pressure Proof	1.5MPa{15.3kgf/cm ² }
Max Operating Pressure	1.0MPa{9.9kgf/cm ² }
Vicinity and Applied Fluid Temperature	-10℃~+70℃(No Frozen)
Rod end Thread Allowance	KS Level 2
Stroke Length Allowable	+1.0 0
Running Piston Speed	50~500mm/s
Rubber Cushion	None
Rod end Thread	Female Thread
Attachment	Thru Hole

Minimum Operation Pressure

(Unit : MPa)

Bore Size(mm)	20	25
Air Pressure (non lube) Type	0.05	0.05

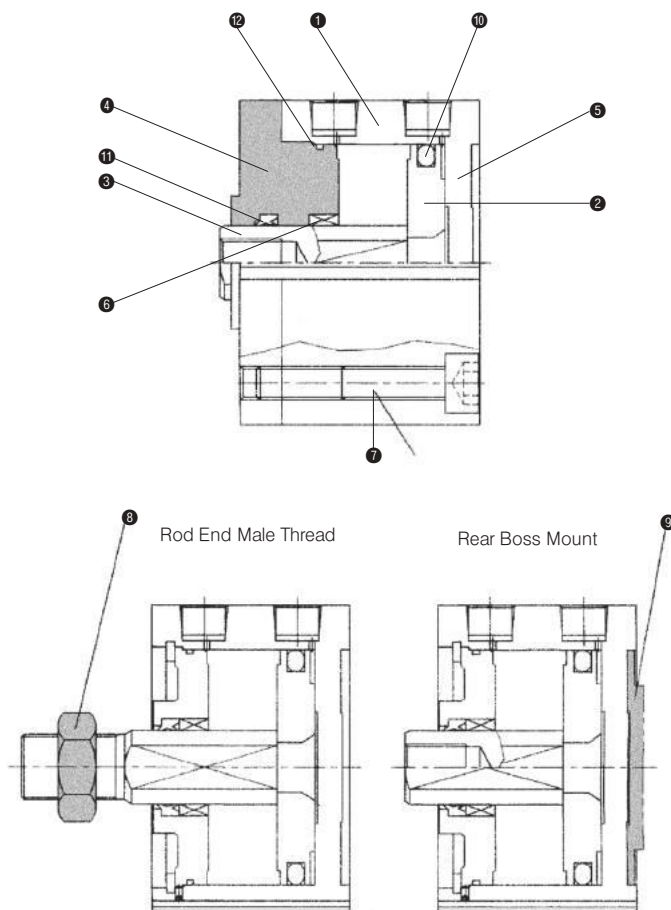
Rod Rotation Preventing Specification

Bore Size(mm)	20 · 25
Rod Rotation Preventing Level	±1°

Series AQK

Stucture Map/Components List

Standard Type (Bore Size Ø20, Ø25)



Component List

No.	Component Name	Material	Remark
①	Cylinder Tube	Aluminum Alloy	Hard Alumite
②	Piston	Aluminum Alloy	Chromite
③	Piston Rod	Stainless Steel	Hard Chrome Plating
④	Rod Cover	Aluminum Alloy	White Hard Alumite
⑤	End Plate	Aluminum Alloy	White Hard Alumite
⑥	Bush	Sintering Containing Alloy	
⑦	Hexagonal Hole Attaching Bolt	Containing Alloy	Ø20, Ø25 Nickel Plating
⑧	Rod end Nut	Carbon Steel	Nickel Plating

No.	Component Name	Material	Remark
⑨	Nut Ring	Aluminum Alloy	Hard Alumite

Seal Kits/Replacement Components/Air Pressure (non lube) Type

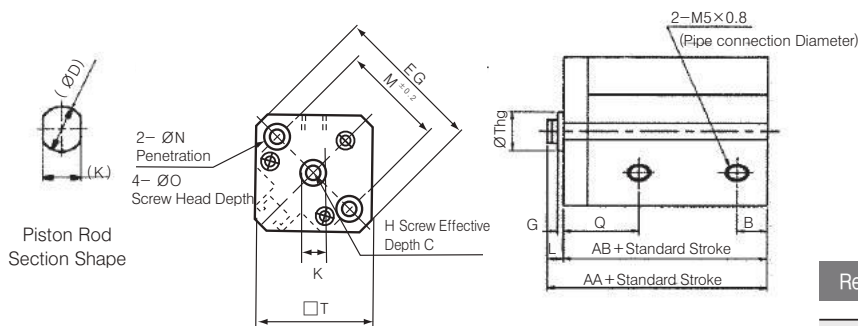
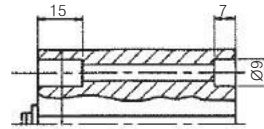
No.	Component Name	Material	Component Number	
			Ø20	Ø25
⑩	Piston Packing	NBR	PSD-20	PSD-25
⑪	Rod Packing	NBR	SORA-10	SORA-12
⑫	Gasket	NBR	C18	C22

Series AQK

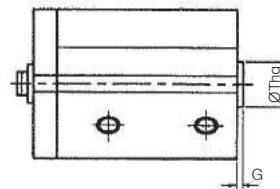
Standard Type (Thru Hole Type)/AQKB

Bore Size $\varnothing 20$, $\varnothing 25$

Both-end Tap Type



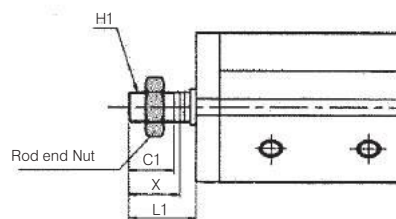
Rear Boss Mount



Rear Boss Mounting Type (mm)

Bore Size (mm)	G	Thg
20	2	13 ⁰ _{-0.043}
25	2	15 ⁰ _{-0.043}

Rod End Male Thread



Rod end Male Thread Type (mm)

Bore Size (mm)	C1	H1	L1	X
20	12	M8×1.25	18.5	14
25	15	M10×1.25	22.5	17.5

* For longer stroke than standard, please contact us.

Standard Type

(mm)

Bore Size (mm)	Stroke Range (mm)	AA	AB	C	D	EG	B	G	H	K	L	M	N	ØO	Q	□T
20	5~50	32	27.5	7	10	47	5.5	2	M5×0.8	8	4.5	36	5.5	9 Depth 7	17	36
25	5~50	35.5	30.5	12	12	52	5.5	2	M6×1.0	10	5	40	5.5	9 Depth 7	19	40

ACP

APM

AS

AX

AM2

AM

AL

ALX

AQ
ADQ

AQ2
ADQ2

AJ

AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

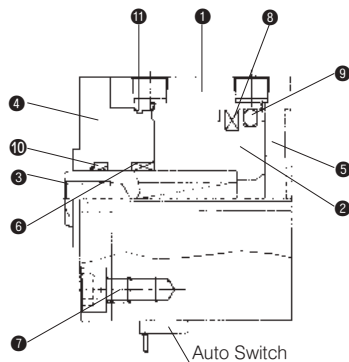
NLCD

NLCS

Series ADQK

Structure Map/Component List

Ø20, Ø25



Component List

No.	Component Name	Material	Remark
1	Cylinder Tube	Aluminum Alloy	Hard Alumite
2	Piston	Aluminum Alloy	Chromite
3	Piston Rod	Stainless Steel	Hard Chrome Plating
4	Rod Cover	Aluminum Alloy	White Hard Alumite
5	End Plate		
6	Bush	Sintering Containing Alloy	
7	Hexagonal Hole Attaching Bolt	Alloy Steel	Ø20, Ø25 Black Zinc Chromite

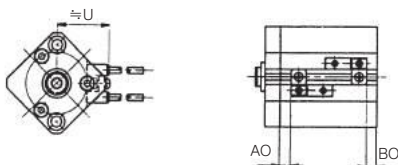
No.	Component Name	Material	Remark
7	Magnet	—	

Seal Kits/Replacement Components/Air Pressure (non lube) Type

No.	Component Name	Material	Component Number	
			Ø20	Ø25
9	Piston Packing	NBR	PSD-20	PSD-25
10	Rod Packing	NBR	SORA-10	SORA-12
11	Gasket	NBR	C18	C22

Position of Auto Switch (Stroke end)

Ø20, Ø25



Position of Auto Switch

(mm)

Bore Size (mm)	Position of Auto Switch		
	W4		
	AO	BO	U
20	8	7	24.5
25	8	7.5	27.5
32	9.5	6.5	31.5
40	13.5	9	35
50	11.5	12	41
63	14	15	47.5

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

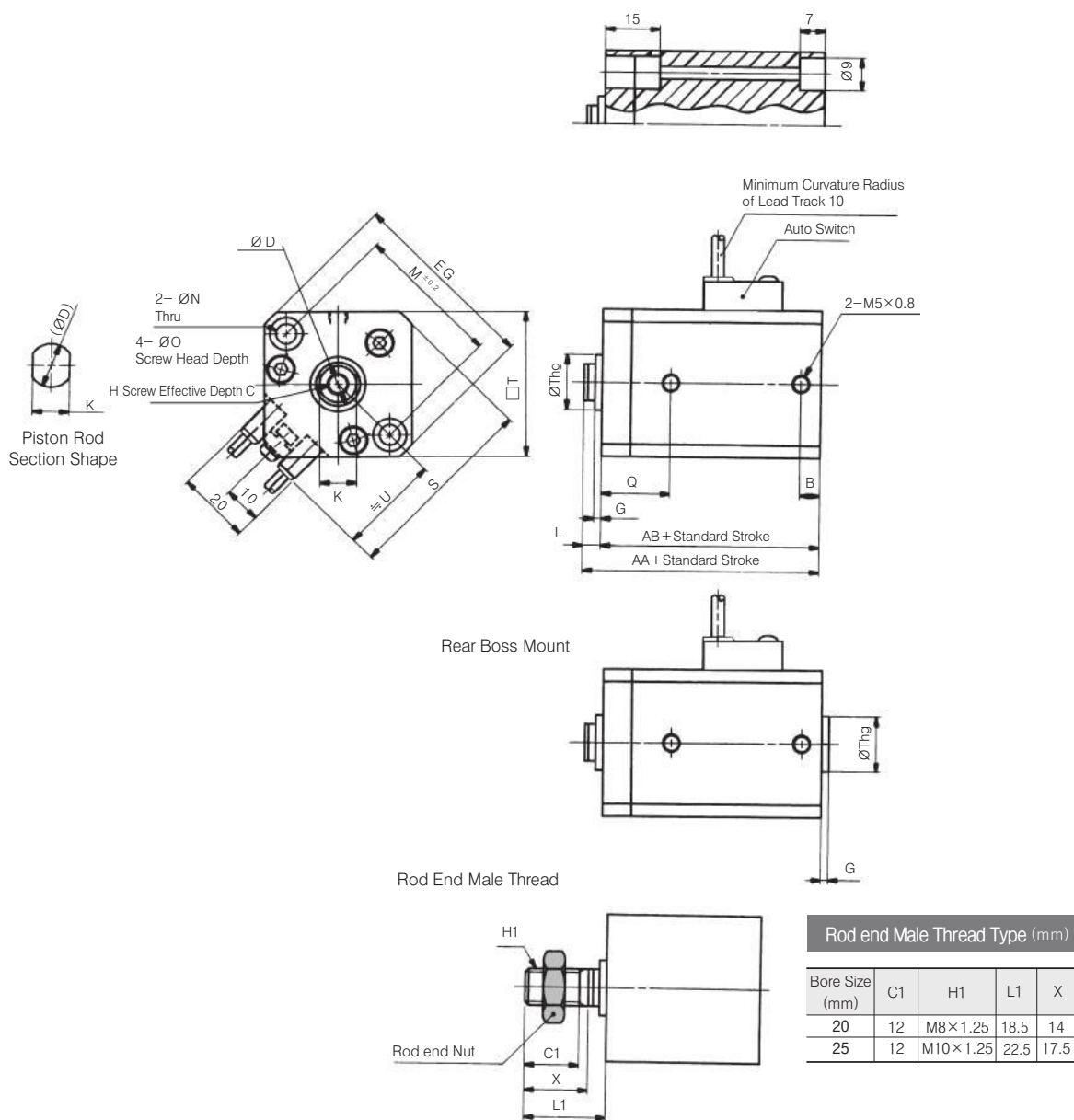
NLCD

NLCS

Series ADQK

Standard Type (Thru Hole Type) ADQKB

Bore Size $\varnothing 20$, $\varnothing 25$



* The dimension above is for the case of W4 type.

* For longer stroke than standard, please contact us.

Standard Type

(mm)

Bore Size (mm)	Stroke Range (mm)	AA	AB	C	D	EG	B	G	H	K	L	M	N	$\varnothing O$	Q	S	Thg	U	$\square T$
20	5~50	44	39.5	7	10	47	5.5	2	M5 $\times$ 0.8	8	4.5	36	5.5	9 Depth 7	18.5	48	13 $^{0}_{-0.043}$	24.5	36
25	5~50	45.5	40.5	12	12	52	5.5	2	M6 $\times$ 1.0	10	5	40	5.5	9 Depth 7	19	53.5	15 $^{0}_{-0.043}$	2.5	40

Series AQKW

Non Rod Rotating Type/Double Acting : Double Rod

Bore Size(mm) : Ø20, Ø25

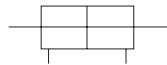
※ Refer to AQ2 Series for Ø32, Ø40, Ø50 and Ø63

- NON ROD ROTATING COMPACT CYLINDER
- SPACE SAVING CYLINDER
- COMPACT EQUIPMENT DESIGN AVAILABLE

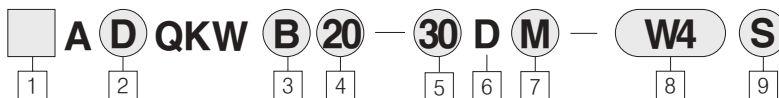


Symbol

Non Rod Rotating Type



How to Order



1 Series

Blank : Rc(PT)
U : NPT

2 Auto Switch Attachment

Blank : Standard type
D : Auto switch attached (Built in magnet)

3 Attachment

B : Thru hole(standard type)
A : Both end tap

4 Bore Size

20 : 20mm(3/4 Nom.)
25 : 25mm(1 Nom.)

5 Cylinder Standard Stroke(mm)

Ø20, 25 : 5,10,15,20,25,30,35,40,45,50
• Tube internal diameter standard stroke
1mm middle stroke production in every 1mm is available by means of mounting spacer at standard stroke cylinder. (Possible minimum production spacer : 3mm)
ex) AQKWB20-47D inserts 3mm wide spacer in standard cylinder AQKWB20-50D

6 Operation Method

D : Double action type

7 Body Specification

Blank : Standard type
(Rod end female-thread)
M : Rod end male-thread

8 Types of Auto Switch

Blank : None
(Magnet equipped cylinder)

W4 : W4(Reed Switch)

※ In case of 3m lead wire, L should be added at the end of item number
ex)W4L

※ In case of 5m lead wire, please contact us.

9 Auto Switch Additional Symbol

Blank : 2 pcs
S : 1 pc
N : N pcs

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

NLCS

Series AQKW

Mounting for Auto Switch

Bore Size (mm)	Item Number	Remark	Switch Applied
			Reed Switch
20 · 25	BQ-1	• Switch Attaching Thread (M3×0.5×8 ℓ) • Square Nut	W4

Type

Bore Size(mm)			20	25
Air Pressure Type	Attachment	Thru Hole (Standard)	○	○
		Both end Tap	-	-
	Built in Magnet		○	○
	Piping Method	Screw Insert Type	M5×0.8	M5×0.8
	Rod end Male-Thread		○	○

Note) In case of no auto switch, the thread for 5mm stroke is only M5×0.8

Standard Specification

Type	Air Pressure(Non lube) Type
Applied Fluid	Air
Pressure Proof	1.5MPa{15.3kgf/cm ² }
Max Operating Pressure	1.0MPa{9.9kgf/cm ² }
Vicinity and Applied Fluid Temperature	-10℃~+70℃(No Frozen)
Rod end Thread Allowance	KS Level 2
Stroke Length Allowable	+1.0 0
Running Piston Speed	50~500mm/s
Rubber Cushion	None
Rod end Thread	Female Thread
Attachment	Thru Hole

Minimum Operation Pressure

(Unit : MPa)

Bore Size(mm)	20	25
Air Pressure (Non lube) Type	0.05	0.05

Rod Rotation Preventing Specification

Bore Size(mm)	20	25
Road Rotation Preventing Level	±1°	±0.8°

Series AQKW

Notices for products

Please fully understand the notices prior to utilization, and refer to safety notice and common notice.

Warning

Assembly/Disassembly of Snap Ring

- Please use proper flyer (Attached tool of C-type snap ring) for assembly / disassembly.
- Please be cautious all the time that there is possible damage to human body or near-by equipments owing to projection of snap ring at the end of flyer (C-type snap ring) in spite of using proper flyer (Attached tool of C-type snap ring). Moreover, after checking full connection of snap ring during attachment, supply air.

Attachment

- Remove loading with fixing 2-face breadth part of loading-side piston rod.
- If loading-side piston rod is not firmly fixed, be cautious that connecting part (screw connecting part) of piston rod is possibly released.



- When using non rod rotating cylinder, be cautious not to apply rotation torque to piston rod, which makes non-rotation level bigger with deformation of rotation preventing guide.

Rotation Allowable Torque	20	25
kgf · cm or Less	2.0	2.5

- Use with loading on piston rod always in shaft direction.

Theoretical Output Sheet

(Unit : N)

Bore Size (mm)	Operation Direction	Applied Pressure (MPa)		
		0.3	0.5	0.7
20	IN	71	118	165
	OUT			
25	IN	113	189	264
	OUT			

Weight Sheet

(Unit : g)

Bore Size (mm)	Cylinder Stroke (mm)									
	5	10	15	20	25	30	35	40	45	50
20	102	116	132	146	162	176	—	—	—	—
25	138	155	172	189	206	223	240	257	274	291

Extra Weight Sheet

(Unit : g)

Bore Size (mm)		20	25
Attachment Both end Tap Type		—	—
Rod end Male Thread	Male Thread Part	10	22
	Nut	8	16

Calculation Method

ex) AQKWA20-20DM

- Standard Weight : AQ2KWB20-20D146g
- Extra Weight : Attachment both end tap type0g
- Rod end male thread18g

164g

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

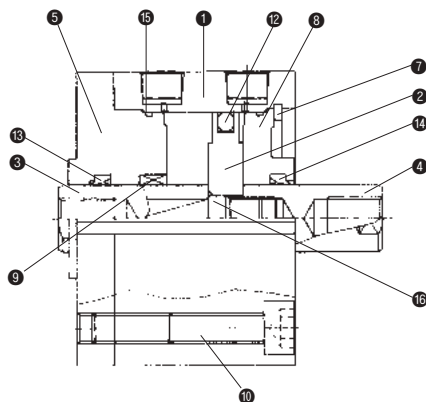
NLCD

NLCS

Series AQKW

Structure Map/Component List

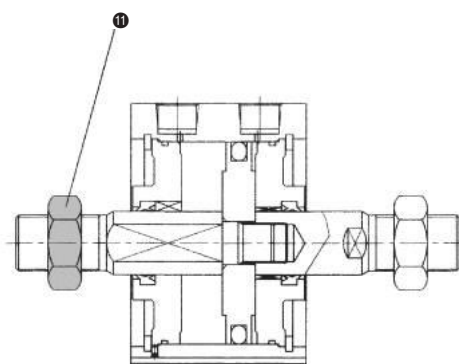
Ø20, Ø25



Component List

No.	Component Name	Material	Remark
1	Cylinder Tube	Aluminum Alloy	Hard Alumite
2	Piston	Aluminum Alloy	Chromite
3	Piston Rod A	Stainless Steel	Hard Chrome Plating
4	Piston Rod B	Carbon Steel	Hard Chrome Plating
5	Rod Cover	Aluminum Alloy	Ø20, Ø25 Black Alumite
6	Rotation Preventing Rod Cover	Aluminum Alloy	White Hard Alumite
7	Stop Cover	Carbon Tool Steel	Phosphate Coating
8	Rod Cover	Aluminum Alloy	White Hard Alumite
9	Rotation Preventing Bush	Sintering Containing Alloy	Ø20~Ø25
10	Hexagonal Hole Attaching Bolt	Alloy Steel	Ø20~Ø25, Nickel Plating
No.	Component Name	Material	Remark
11	Rod End Nut	Carbon Steel	Nickel Plating

Rod End Male Thread

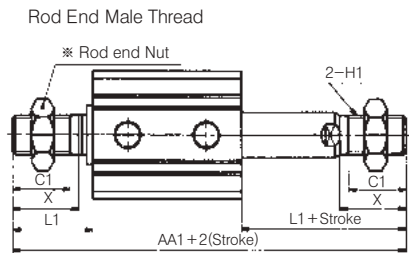
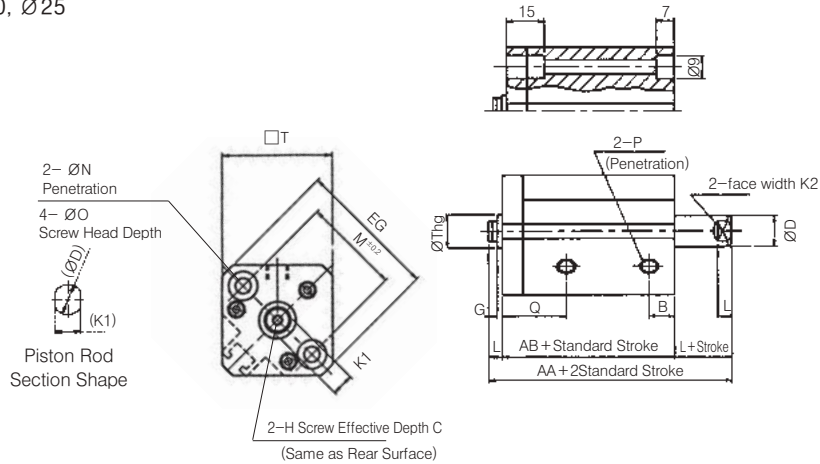


Seal Kit/Replacement Components/Air Pressure (Non lube) Type

No.	Component Name	Material	Component Number	
			Ø20	Ø25
12	Piston Packing	NBR	PSD-20	PSD-25
13	Rotation Preventing Rod Packing	NBR	SORA-10	SORA-12
14	Rod Packing	NBR	DYR-10SK-K	DYR-12
15	Gasket	NBR	C18	C22
16	Piston gasket	NBR	-	-

Series AQKW

Standard Type (Thru Hole Type) ADQKB

Bore Size $\varnothing 20, \varnothing 25$ 

Rod end Male Thread Type (mm)

Bore Size (mm)	AA1	C1	H1
20	71	12	M8×1.25
25	82	15	M10×1.25

Bore Size (mm)	L1	X
20	18.5	14
25	22.5	17.5

* For longer stroke than standard, please contact us.

Standard Type

(mm)

Bore Size (mm)	Stroke Range (mm)	AA	AB	C	D	EG	B	G	H	I	J	K1	K2	L	M	N	P	Q	Thg	W	Z	□T
20	5~50	43	34	7	10	47	9.5	2	M5×0.8	—	—	8	8	4.5	36	5.5	M5×0.8	17.5	13 ⁰ _{-0.043}	—	—	36
25	5~50	47	37	12	12	52	11	2	M6×1.0	—	—	10	10	5	40	5.5	M5×0.8	19	15 ⁰ _{-0.043}	—	—	40

ACP

APM

AS

AX

AM2

AM

AL

ALX

AQ
ADQAQ2
ADQ2

AJ

AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

NLCS

Series **ADQKW** Auto Switch Attachment

Non Rod Rotation Type/Double Acting : Double Rod

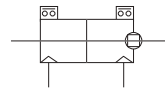
Bore Size(mm) : Ø20, Ø25



- AUTO SWITCH ATTACHED TO NON ROD ROTATION, DOUBLE ROD COMPACT CYLINDER
- SPACE SAVING CYLINDER
- COMPACT EQUIPMENT DESIGN AVAILABLE

Symbol

Non Rod Rotating Type



Standard Specification

Type	Air Pressure(Non lube) Type
Applied Fluid	Air
Vicinity and Applied Fluid Temperature	-10℃~ +60℃(No Frozen)

Minimum Stroke for Auto Switch Attachment

Number of Auto Switch Attachment	Minimum Stroke
Attaching 1EA	5mm
Attaching 2EA	10mm

Extra Weight Sheet

(Unit : g)

Bore Size(mm)		20	25
Attachment Both end Tap Type		—	—
Rod end	Male Thread Part	10	22
	Nut	8	16

Calculation Method

ex) ADQKWA20-20DM

- Standard Weight : ADQKWB20-20D.....220g
- Extra Weight : Attachment both end tap type0g
- Rod end male thread18g

238g

Order Form

Please refer to order form of standard type for ordering auto switch attachment.

Weight Sheet

(Unit : g)

Bore Size (mm)	Cylinder Stroke (mm)									
	5	10	15	20	25	30	35	40	45	50
20	169	186	203	220	237	254	—	—	—	—
25	231	248	265	282	299	316	333	350	367	384

Weight of Auto Switch

(Unit : g)

Type of Auto Switch	Auto Switch Type	Length of Lead Track	
		0.5m	3m
Reed Auto Switch	W4	10	52

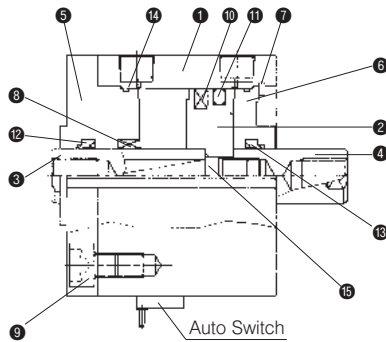
Mounting for Auto Switch

Item Number	Cylinder Internal Diameter Applied	Weight (g)
BQ-1	Ø20, Ø25	1.5

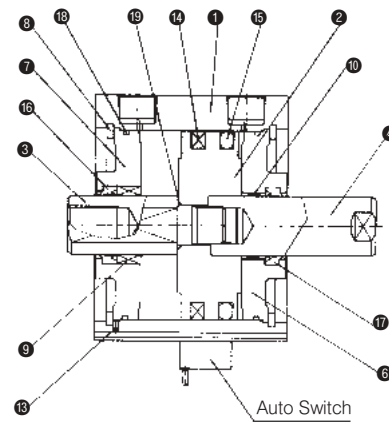
Series ADQKW

Structure Map/Component List

Ø20, Ø25



Ø32~Ø63



Component List

No.	Component Name	Material	Remark
1	Cylinder Tube	Aluminum Alloy	Hard Alumite
2	Piston	Aluminum Alloy	Chromite
3	Piston Rod A	Stainless Steel	Hard Chrome Plating
4	Piston Rod B	Stainless Steel Carbon Steel	Ø20, Ø25 Ø32~Ø63, Hard Chrome Plating
5	Rod Cover	Aluminum Alloy	White Hard Alumite
6	Rod Cover	Aluminum Alloy	White Hard Alumite
7	Stop Ring	Carbon Tool Steel	Phosphate Coating
8	Rotation Preventing Bush	Sintering Containing Alloy	Ø20~Ø63

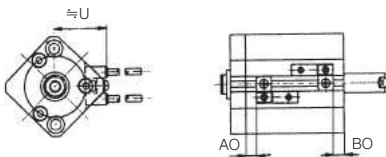
No.	Component Name	Material	Remark
9	Hexagonal Hole Attaching Bolt	Alloy Steel	Black Zinc Chromite
10	Magnet	—	

Seal Kit/Replacement Components/Air Pressure (non lube) Type

No.	Component Name	Material	Component Number	
			Ø20	Ø25
9	Piston Packing	NBR	PSD-20	PSD-25
10	Rotation Preventing Rod Packing	NBR	SORA-10	SORA-12
11	Rod Packing	NBR	DYR-10SK-K	DYR-12
12	Gasket	NBR	C18	C22
13	Piston Gasket	NBR	—	—

Position of Auto Switch (Stroke end)

Ø20, Ø25



Position of Auto Switch

(Unit : mm)

Bore Size (mm)	Position of Auto Switch		
	W4		
	AO	BO	U
20	8	13.5	24.5
25	8	13.5	27.5

ACP

APM

AS

AX

AM2

AM

AL

ALX

AQ
ADQAQ2
ADQ2

AJ

AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

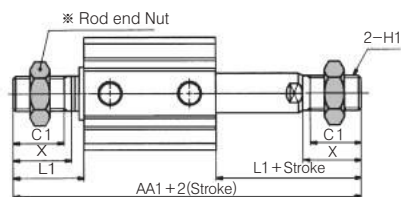
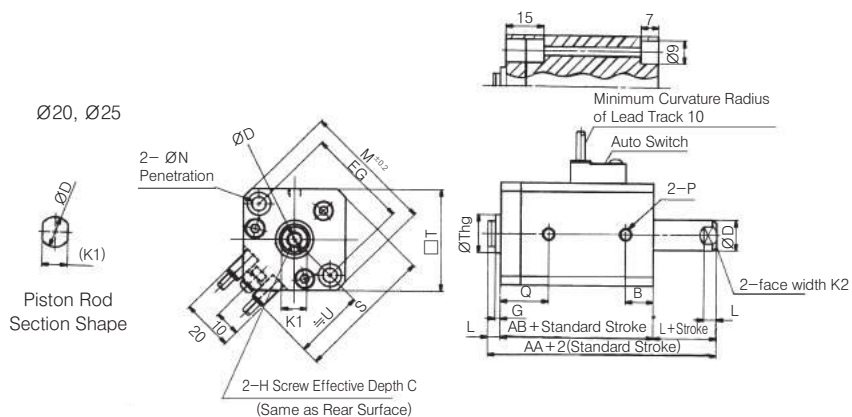
ASTH

NLCD

NLCS

Series ADQKW

Standard Type (Thru Hole Type) ADQKW

Bore Size $\varnothing 20 \sim \varnothing 32$ $\varnothing 20, 25$ 

Rod end Male Thread Type (mm)

Bore Size (mm)	AA1	C1	H1
20	83	12	M8×1.25
25	92	15	M10×1.25

Bore Size (mm)	L1	X
20	18.5	14
25	22.5	17.5

※ The dimension above is for the case of W4 type.

※ For longer stroke than standard, please contact us.

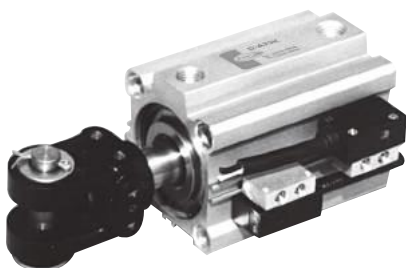
Standard Type

Bore Size (mm)	Stroke Range (mm)	AA	AB	C	D	EG	B	G	H	I	J	K1	K2	L	M	N	P	Q	S	Thg	U	□T	Z
20	5~50	55	46	7	10	47	10.5	2	M5×0.8	—	—	8	8	4.5	36	5.5	M5×0.8	18.5	48	13 ⁰ _{-0.043}	24.5	36	—
25	5~50	57	47	12	12	52	11	2	M6×1.0	—	—	10	10	5	40	5.5	M5×0.8	19	53.5	15 ⁰ _{-0.043}	27.5	40	—

Series **ADQCP**

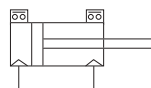
Compact Cylinder for Intense-Magnetism Resistant

Bore Size(mm) : Ø50, Ø63



- FOR WELDING MACHINE/INTENSE MAGNET FIELD
- SIZE/Ø50, Ø63

Symbol



How to Order



1 Series

Blank : Rc(PT)
U : NPT

2 Intense-Magnetism Resistant Auto Switch Attached Compact Cylinder Exclusively for Welding Machine, Coil Scraper Equipped

* CP : H Size M16×1.5
BP : H Size M18×1.5
Refer to H2 Size

3 Bore Size

50 : 50mm(2 Nom.)
63 : 63mm(2 ½ Nom.)

4 Standard Stroke(mm)

Ø50 : 25, 30, 35, 40, 45, 50
Ø63 : 25, 30, 35, 40, 45, 50

5 Double Action Type : DM

6 Rod End Option

Blank : None
Y : Double knuckle joint pin, plain washer, division pin attached(CP Type Only)

7 Series

Blank : Standard type
XC16 : Copper free

8 Types of Auto Switch

Blank : None
W6 : 120V AC, OFF Lighting
W7 : 24V DC, ON Lighting

9 Switch Lead Wire Length

L : 3m
Z : 5m

10 Auto Switch Additional Symbol

Blank : 2 pcs
S : 1 pc
N : N pcs

Components for Auto Switch

Switch Type	Component Number	
	Ø50	Ø63
W6, W7	BQP1T-050	

Standard Specification

Type	ADQCP
Applied Fluid	Air
Bore Size	Ø50, Ø63
Stroke	Refer to Standard Stroke Table
Max. Operating Pressure	1.0MPa(9.9kgf/cm ²)
Proofing Pressure	1.5MPa(15kgf/cm ²)
Vicinity and Applied Fluid Temperature	5~60℃
Rod end Thread Allowance	KS Level 2
Stroke Length Allowable	+1.0 0

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

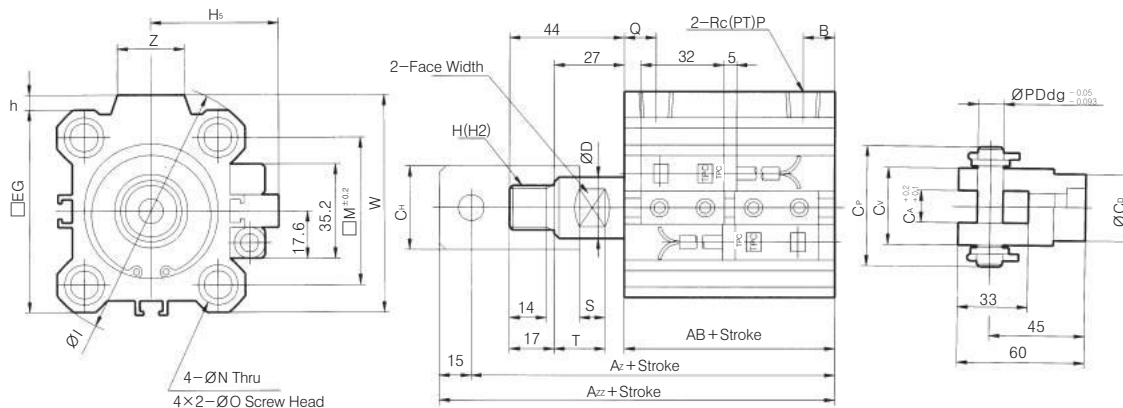
ASTH

NLCD

NLCS

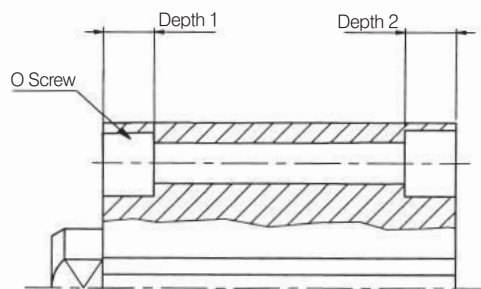
Series ADQCP

Double Knuckle Joint



Bore Size (mm)	AA	Az	Azz	AB	ØD	DEG	B	H(CP)	H2(BP)	ØI	J	K	M	ØN	ØO	P	Q	W	Z	T	S	Hs	Cp	Cv	Ca	PD	C+	C-
50	99.5	117.5	132.5	55.5	20	64	10.5	M16×1.5	M18×1.5	86	7	17	50	6.6	11Depth 8	1/4	10.5	71	22	20	10	49	55	36	16	12	30	30
63	105	123	138	61	20	77	10.5	M16×1.5	M18×1.5	103	7	17	60	9	14Depth 10.5	1/4	15	84	22	20	10	55.5	55	36	16	12	30	30

CP Type



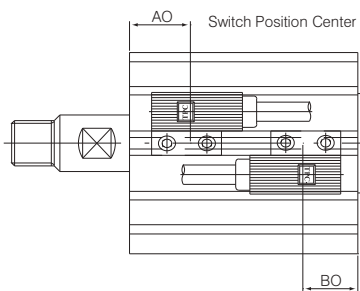
	Depth 1	Depth 2
Ø50	8	8
Ø63	10.5	11

Series ADQCP

Available Minimum Stroke For Intense-Magnetism Resistant Switch Attachment

Switch Attaching Position	Attaching at the Same Surface			
		Attaching at the Same Surface	Attaching at Rear Surface	Attaching at Rear Surface
Bore Size				
ADQCP Ø50, 63	25	30	25	

Proper Attaching Position of Auto Switch (End of Stroke)



Cylinder Type	50		63	
	AO	BO	AO	BO
ADQCP	33.5	22.5	37.5	24

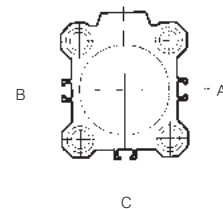
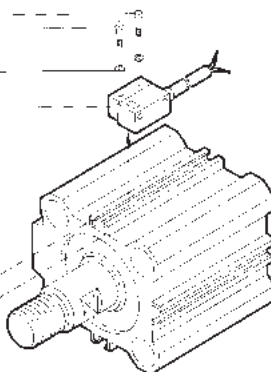
How to Attach Auto Switch

Proper Torque of Set Screw is 6 kgf · cm
M3×0.5×16

Spring Washer

Mount

Exclusive Nut



It is possible to attach auto switch at 3 positions of A, B, C.

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

NLCS

Specification **ORDER MADE**

Order Made of AQ Series Common Specification

Specification	Number	Symbol	Specification Contents
AQ	①	-XR0~XR38	Rod end Shape Changed
	②	-XC8	Variable Stroke Cylinder (Modified in Spring Return Motion)
	③	-XC9	Variable Stroke Cylinder (Modified in Spring Extended Motion)
	④	-XC10	Dual Stroke Cylinder/Double Rod Type
	⑤	-XC11	Dual Stroke Cylinder/Single Rod Type
	⑥	-X202	Overall Length is Same as Basic
	⑦	-X203	L Size of Rod Cover is Same as Basic
	⑧	-X163	Coil Scraper Equipped (Tube Overall Length Increased)

Rod End Shape Changed (Refer to p.598 for separate rod end shape pattern) -XR0~XR38



Indication Rod End Shape Pattern Symbol

Patternized for rod end shape beside standard of AQ each series

Shape Change of Running Equipment and Applied Rod End (Range of Manufacturing)

Series		Cylinder Name (Operation Method)	Shape Change Symbol of Applied Rod End
Compact Cylinder AQ	AQ	Standard Type	-XR0~XR38
	AQO-S	Standard Type	
		Spring Return Type Only	

* Dimension, allowance and finishing not existed in drawings are followed by regulation of TPC Mechatronics Co., Ltd.

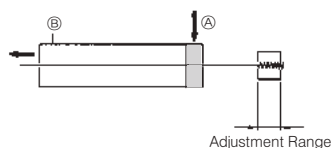
Series ORDER MADE

Dual Stroke Cylinder/Extension Adjustment Type

AQB Bore Size Stroke D-XC8

The extended stroke of the cylinder can be adjusted by the stopper on the head side from full stroke(0~10mm).

Symbols

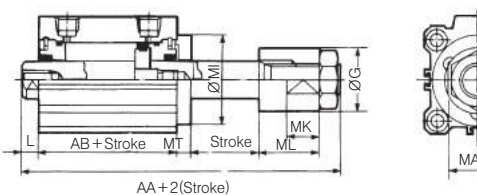


Specification

Type	Non lube
Tube Internal Diameter	Ø20
Operation Method	Double Action
Fluid Applied	Air
Stroke Adjustment Method	Stopper Adjustment
Stroke Adjustment Range	10mm
Attaching Type	Thru Hole
Minimum Pressure Applied	0.05MPa
Cushion	None

※ AQ2 Series is applied for Ø32, Ø40, Ø50, Ø63, Ø80 and Ø100

Structure/External Dimension Drawing



Bore Size (mm)	AA	AB	L	MT	MI	MA	MK	ØG	ML	Stroke Produced
20	67.5	26	4.5	8	Ø36	17	10	20	22.5	5~50

※ Dimension above is identical to AQ/standard type.

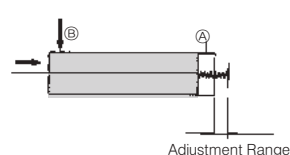
※ For longer stroke than basic, please contact us.

Dual Stroke Cylinder/Retraction Adjustment Type

AQ Attaching Bore Size Stroke D(M)-XC9

The retracted stroke of the cylinder can be adjusted from(0~10mm) by the adjusting bolt.

Symbols

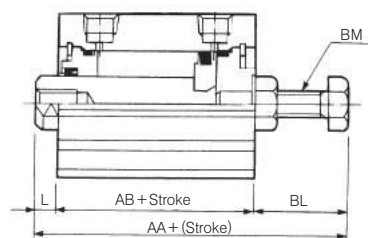


Specification

Type	Non lube
Tube Internal Diameter	Ø20
Operation Method	Double Action
Fluid Applied	Air
Stroke Adjustment Method	Adjustment Bolt Control
Stroke Adjustment Range	10mm
Attaching Type	Thru Hole(Standard), Both-end Tap
Minimum Pressure Applied	0.05MPa
Cushion	None

※ AQ2 Series is applied for Ø32, Ø40, Ø50, Ø63, Ø80 and Ø100

Structure/External Dimension Drawing



	AA	AB	L	BL	BM	
20	61(73)	26(38)	4.5	30.5	M8×1.25	5~50

※ Dimension above is identical to AQ/standard type.

※ Dimensions in () are the case of auto switch attachment.

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

NLCS

Series ORDER MADE

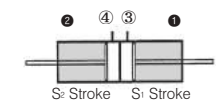
Dual Stroke Cylinder/Double Rod Type

AQB Bore Stroke S_1 + Stroke S_2 D(C), (M)-XC10

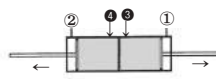
Two cylinders are constructed as one cylinder in a back-to-back configuration allowing the cylinder stroke to be controlled in the three steps.

Symbols

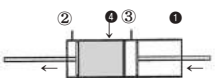
Function



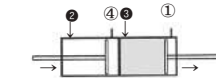
When air pressure is supplied to ports ① and ②, both S_1 and S_2 stroke retract.



When air pressure is supplied to ports ③ and ④, S_1 and S_2 strokes extend.



When air pressure is supplied to ports ① and ④, S_2 stroke extends and S_1 retracts strokes.

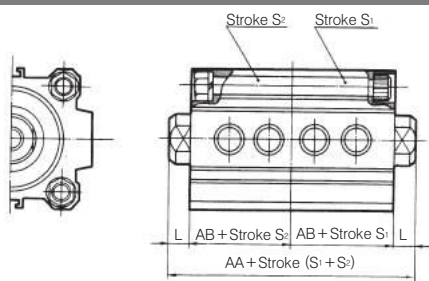


When air pressure is supplied to ports ② and ③, S_1 stroke extends and S_2 stroke retracts.

Specification

Type	Non lube
Bore Size	Ø12, Ø16, Ø20, Ø25, Ø32, Ø40, Ø50, Ø63, Ø80, Ø100
Operation Method	Double Action
Fluid Applied	Air
Attaching Type	Thru Hole

Structure/External Dimension Drawing



Bore Size (mm)	AA		AB		L	Produced Stroke S_1 and S_2 are identical
	50st or Less	75, 100st	50st or Less	75, 100st		
12	41(63)	—	17(28)	—	3.5	5~30
16	44(68)	—	18.5(30.5)	—	3.5	
20	48(72)	—	19.5(31.5)	—	4.5	5~50
25	55(75)	—	22.5(32.5)	—	5	

* Dimension in () are the case of auto switch attachment.

* Refer to Notices in p.228 for middles stroke production.

* AQ2 Series is applied for Ø32, Ø40, Ø50, Ø63, Ø80 and Ø100

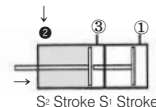
Dual Stroke Cylinder/Single Rod Type

AQB Bore Stroke S_1 + Stroke S_2 - S_1 D(M)-XC11

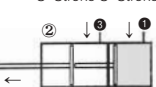
2 Cylinder head covers are directly integrated, and it is available to control cylinder stroke in 2 level as well as return, and possible to achieve double cylinder output in case of A-stroke of output-force.

Symbols

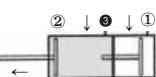
Function



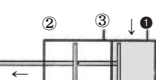
When air pressure is supplied to the ② port, both S_1 and S_2 stroke retract.



When air pressure is supplied to the ① port, the rod extends by the S_1 stroke length.



When air pressure is supplied to the ③ port, the rod operates S_2 - S_1 .



When air pressure is supplied to ①, rod moves S_1 stroke.

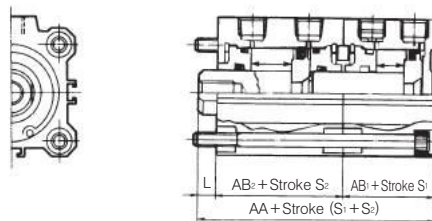
- ex) • AQB50-50+50D-XC11 → S_1 =50mm, S_2 =100mm
• AQB50-50+10D-XC11 → S_1 =50mm, S_2 =60mm

Specification

Type	Non lube
Bore Size	Ø20, Ø32, Ø40, Ø50, Ø63, Ø80, Ø100
Operation Method	Double Action
Fluid Applied	Air
Attaching Type	Thru Hole
Piston Speed	50~500mm/s

* AQ2 Series is applied for Ø32, Ø40, Ø50, Ø63, Ø80 and Ø100

Structure/External Dimension Drawing



Bore Size(mm)	AA	AB ₁	AB ₂	L
20	50(74)	19.5(31.5)	26(38)	4.5
25	56.5(76.5)	22.5(32.5)	29(39)	5

* Dimension in () are the case of auto switch attachment.

Noet1) Dimension over 75st is identical to auto switch case.

Compact Cylinder

ORDER MADE AQ Series

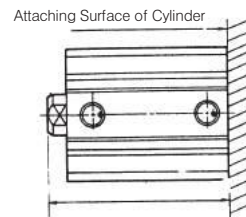
Identical Dimension of Overall Dimension to Former Series

A O Q Attachment Bore Stroke Operation Method Specification XC202

Overall length A (head side section to rod side end) and rod end female thread size in single rod of AQ series are same as previous model.

Standard Applied

Single Rod	Double Action Type (Rubber Cushion)	Ø20 (AQ2 Series is applied for Ø32, Ø40, Ø50, Ø63, Ø80, Ø100)
	Single Action Type (Spring Return/Spring Extended Type)	Ø20 (AQ2 Series is applied for Ø32, Ø40, Ø50)



Same Dimension as Previous Model

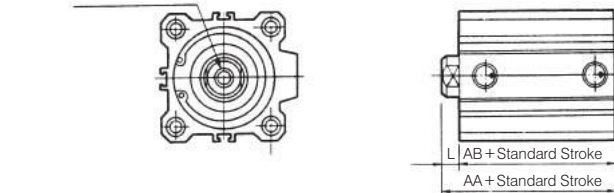
Specification is same as AQ Series basic type

External Dimension Drawing

X202

Double Action/Single Rod

H Screw Effective Depth DP

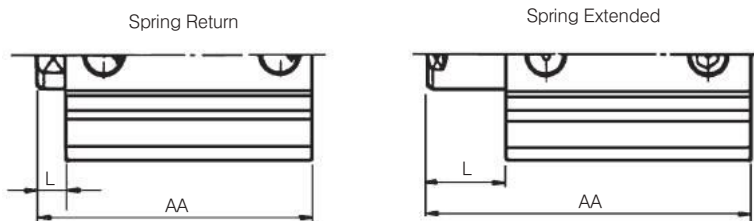


Symbol	Bore	Ø12	Ø20
	Stroke mm	5, 10 20, 30 40, 50	15, 25 35, 45
AA	25.5	23(25)	28
AB	22	19.5	24.5
L	3.5	3.5 (5.5)	35
H	M3×0.5	M5×0.8	
DP	6	7	

Note) Dimension in () is for 10-stroke case.

* Different in H and C dimension to new model AQ series.

Single Acting



Operation Method	Symbol	Ø20	
		5 st	10 st
Single Acting Spring Return	AA	28	35
	L	3.5	5.5
Single Acting Spring Extended	AA	33	45
	L	8.5	15.5

ACP

APM

AS

AX

AM2

AM

AL
ALX

AQ
ADQ

AQ2
ADQ2

AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

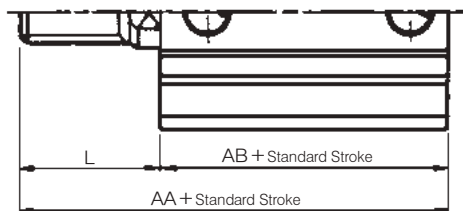
ASTH

NLCD

NLCS

Series ORDER MADE AQ

Double Action/Rod end Male Thread

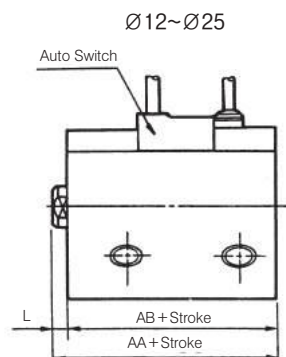


Bore Stroke mm Symbol	Ø12	Ø20	
	15, 25	10	15, 25 35, 45
AA	36	40	43
AB	22	19.5	24.5
L	14	20.5	18.5

Overall Dimension is Same as Previous Series/Auto Switch Attached

External Dimension Drawing

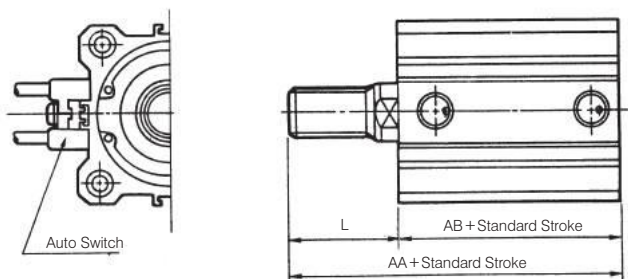
Double Action/Single Rod · Female Thread



Bore Stroke mm Symbol	Ø12	Ø20	
	15,25	5, 10 20, 30 40, 50	15, 25 35, 45
AA	36.5	38.5	43.5
AB	33	31.5	36.5
L	3.5	7	7
H	M3×0.5	M5×0.8	
DP	6	7	

* Different in H and C dimension of Ø32, Ø40 and Ø50 to new model AQ2 series.

Double Motion Type/Rod End Male Thread



Bore Stroke mm Symbol	Ø12	Ø20	
	15, 25	5, 10 20, 30 40, 50	15, 25 35, 45
AA	47	53.5	58.5
AB	33	31.5	36.5
L	14	22	22

Series ORDER MADE AQ

L Dimension at Rod Cover is Same as Previous Series

X203

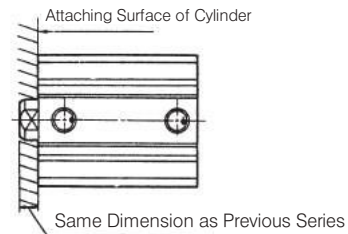
A○Q (Attachment) (Bore) - 10 (Operation Method) (Specification) -XC203

L Dimension (from rod section to rod end) and rod end female thread size in single rod of AQ series are same as previous series (old model).

Standard Applied

Single Rod	Femal Thread	Double Action Type (Rubber Cushion)	Ø20
		Single Motion Type (Spring Return/Extended)	Ø20
	Male Thread	AQ Series	

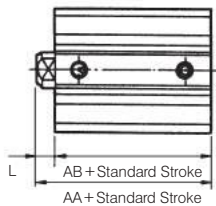
※ The bore size is the same as - X202.



Specification is same as AQ Series standard type

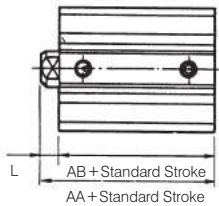
External Dimension Drawing/Just for 10mm Stroke

Double Action Type/Single Rod



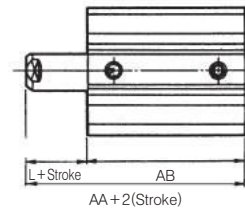
Symbol	Bore Size Ø20
AA	23
AB	19.5
L	3.5

Single Action Type/Forward



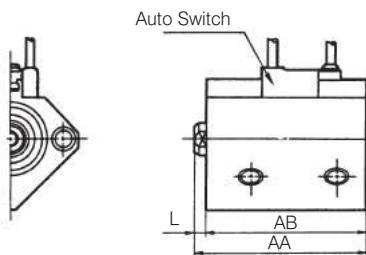
Symbol	Bore Size Ø20
AA	23
AB	19.5
L	3.5

Single Motion Type/Backward



Symbol	Bore Size Ø20
AA	23
AB	19.5
L	3.5

Auto Switch/External Dimension Drawing



Symbol	Bore	Ø20	
	Stroke mm	5, 10	15, 25
AA	20, 30	35	40
AB	40, 50	31.5	36.5
L		3.5	3.5

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQ

AGX
GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

NLCS