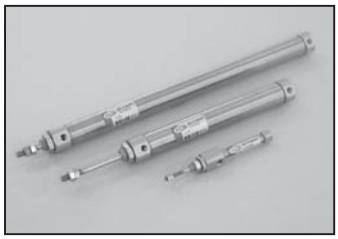
Air Cylinder
Series ACP/UACP
Bore Size: ϕ6, ϕ10, ϕ16



- Long life
- Low breakaway
- Bumper equipped
- Built-in magnet
- Compact light weignt design
- Copper-free (optional)

Action	Series	Bore Size (mm)	Port Size ACP	Port Size UACP	Standard Stroke ACP(Metric)	Standard Stroke UACP(Inch)	Operating Pressure kgf/cm² (psi)
Double Acting/Single Rod	(U)ACP	ϕ6	M5×0.8	10-32 UNF	5~100mm	0.5~2″	1.2~7.09 (7~100)
		ϕ10			5~150mm	0.5~6″	0.6~7.0 (9~100)
		ϕ16			5~200mm	0.5~8″	
Double Acting/Double Rod	(U)ACPW	ϕ6	M5×0.8	10-32 UNF	10~60mm	0.5~2″	1.5~7.0 (21~100)
		ϕ10			10~100mm	0.5~4″	1.0~7.0 (21~100)
		ϕ16					
Single Acting/Single Rod	(U)ACPS	ϕ6	M5×0.8	10-32 UNF	15, 30, 45, 60mm	0.5, 1.0, 1.5, 2.0″	2.0~7.0 (28.5~100)
		ϕ10					1.5~7.0 (21~100)
		ϕ16					

How to Order

( ) ACP ( ) B 16 — 30 S R ( ) — W5 ( )

1 2 3 4 5 6 7 8 9 10

1 Series
Blank : Metric(PT)
U : NPT(UNF)

2 Air Cylinder
Built-in Magnet, Rubber Cushions are Standard
Blank : Double Acting /Single Rod
W : Double Acting /Double Rod
S : Single Acting /Single Rod

3 Mounting
B : Basic Type
L : Axial Foot Type
F : Rod Side Flange Type
D : Double Clevis Type (Except for ϕ6)

4 Bore Size mm(inch)
6 : ϕ6 (1/4 Nom.)
10 : ϕ10 (3/8 Nom.)
16 : ϕ16 (5/8 Nom.)

5 Stroke
ACP Series : mm
UACP Series : Hundreths of an inch.
(Example: 1″⇒0100, 1½″→0150)
ϕ6 : 5,10,15,20,25,30,35,40,45, 50,60,75,100(mm)
ϕ10 : 5,10,15,20,25,30,35,40,45, 50,60,75,100,125,150(mm)
ϕ16 : 5,10,15,20,25,30,35,40,45, 50,60,75,100,125,150,175, 200(mm)

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

7 Port Location on Head Cover

Symbol \ Bore size	ϕ6	ϕ10, ϕ16
R	-	In-line
Blank	In-line	Rear Port

8 Option
Blank : Standard Type
XC16 : Copper-Free

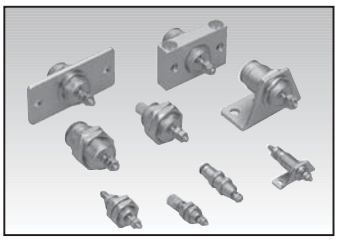
9 Applicable Auto Switch
(Band mounted type)
Blank : Without Switch
W5 : Reed Switch(Lead wire of 0.5m)
W5L : Reed Switch(Lead wire of 3m)

10 Number of Switches
Blank : 2 pcs.
S : 1 pc.
n : n pcs.

Specifications / Standard Type

Action		Double Acting Single Rod
Fluid		Air
Proof Pressure		10.5kgf/cm² (150 psi)
Max. Operating Pressure		7.0kgf/cm² (100 psi)
Min. Operating Pressure	ϕ6	1.2kgf/cm² (17 psi)
	ϕ10, ϕ16	0.6kgf/cm² (9 psi)
Ambient and Fluid Temperature		5~60℃ (40~140℉)
Cushion		Rubber Cushion (Standard)
Lubrication		None (Non-Lube)
Piston Speed		50~750 mm/sec(2~30 inch/sec)

Panel Mounting Cylinder
Series APM
Bore Size: ϕ6, ϕ10, ϕ15



- Higher shock-absorbency
- Extremely durable
- Various nipple options

How to Order

APM B 6 — 10 — N4 — B

1 2 3 4 5 6

1 Panel Mounting Cylinder

2 Mounting
- B : Standard
- S : Block Insertion
- L : Foot Mount
- F : Flange Mount
- P : Plate Mount

3 Bore Size(㎜)
- 6 : Ø6
- 10 : Ø10
- 15 : Ø15

4 Cylinder Strokes(㎜)
- 5 : 5㎜
- 10 : 10㎜
- 15 : 15㎜

※Note) Hose (tube) nipple attachment is not available for the block insertion type.

5 Hose (Tube) Nipple Attachment
Blank : No Nipple

Category	TYPE	Tube O.D	Tube I.D
H4	Cap Type	Ø4	Ø2
H5		Ø4	Ø2.5
H6		Ø6	Ø4
N4	Barb Type	Ø4	Ø2
N5		Ø4	Ø2.5
N6		Ø6	Ø4

※ Refer to the table attached for specific properties and size

6 Rod End Shape
- Blank : Male Thread
- B : No Thread

Specifications

Category	Bore Size(mm)		
	Ø6	Ø10	Ø15
Fluid	Air		
Acting	Single Acting(Spring Return)		
Proof Pressure	1.05Mpa(10.7kgf/㎠)		
Max. Supply Pressur	0.7Mpa(7.1kgf/㎠)		
Min. Operation Pressure	0.2Mpa(2.0kgf/㎠)	0.15Mpa(1.5kgf/㎠)	
Ambient and Fluid Temperature	-10~70℃(No Freeze)		
Rod End Shape	Male Thread(Standard)		
Thread Tolerance	KS Class 2		
Standard Stroke Tolerance	5, 10, 15mm / 0~+1.0mm		
Lubrication	Not required(Non-lube)		
Piston Speed	50~500mm/sec		
Cushion	N/A		

Spring Force

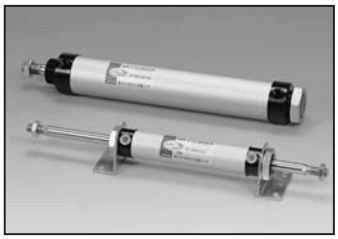
(Unit: N)

Bore Size(mm)	Strokes (mm)		
	5	10	15
Ø6	4.36/1.47	4.33/1.47	4.21/1.47
Ø10	6.66/2.94	7.55/2.94	7.45/2.45
Ø15	11.86/6.57	12.35/5.40	12.70/5.78

Note) The retrieval of spring is indicated as start of retrieval / end of retrieval of the piston.

Air Cylinder
Series AS

Bore Size: ϕ20, ϕ25, ϕ30, ϕ40



- Long life
- Position sensors
- Corrosion resistant aluminum
- Bumper equipped(air cushion optional)

Action	Series	Bore Size (mm)	Port Size Rc(PT)	Standard Stroke(mm)*	Operating Pressure kgf/cm²(psi)
Double Acting/Single Rod	AS	ϕ20	1/8	25, 50, 75, 100, 125, 150, 200, 250, 300	0.5~9.9(7~140)
		ϕ25			
		ϕ30			
		ϕ40	1/4		
Double Acting/Double Rod	ASW	ϕ20	1/8	25, 50, 75, 100, 125, 150, 200, 250, 300	0.5~9.9(7~140)
		ϕ25			
		ϕ30			
		ϕ40	1/4		
Double Acting/ Non-Rotating Piston Rod	ASK	ϕ20	1/8	25, 50, 75, 100, 125, 150, 200, 250, 300	0.5~9.9(7~140)
		ϕ25			
		ϕ30			
		ϕ40	1/4		
Single Acting/Single Rod	AS-S	ϕ20	1/8	25,50,75,100,125,150,	1.8~9.9(25~140)
		ϕ25		25,50,75,100,125,150,	
		ϕ30		25, 50,75,100,125,150,200	
		ϕ40	1/4	25, 50,75,100,125,150,200,250	

* Long stroke for double action : 301 mm or more

How to Order

AS ◯ **L** **N** **25** — **100** **CJ** — **W5** ◯

1 2 3 4 5 6 7 8

1 Series(Built-in Magnet)
- Blank : Double Acting/Single Rod
- W : Double Acting/ Double Rod
- K : Double Acting/Non-Rotating Rod

2 Mounting
- B : Basic Type
- L : Foot Mount
- F : Front Flange
- G : Rear Flange
- C : Single Clevis
- D : Double Clevis
- T : Rear Trunnion
- U : Front Trunnion

3 Type
- Blank : Lubricated
- N : Non-Lube
- H : Low pressure Hydraulic
- A : Air-Cushion (Non-Lube Type Only)

4 Bore Size (mm)
- 20 : ϕ20
- 25 : ϕ25
- 30 : ϕ30
- 40 : ϕ40

5 Stroke (mm)
- ※ Refer to the upside table

6 Suffix Symbol for Cylinder
- Rod Boot J : Nylon Tarpaulin (JJ:Double)
- K : Neoprene Cloth (JJ:Double)
- Action S : Single acting(Spring Return)
- ※ Cushion C : Rubber Cushion Single acting type cannot be accepted

7 Applicable Auto switches
- Blank : Without Auto Switch
- W5 : Reed Switch (Lead Wire of 0.5m)
- W5L : Reed Switch (Lead Wire of 3m)

8 Number of Switches
- Blank: 2 pcs
- S : 1 pc
- # : Enter Required Number of Switches.

Order Made Option

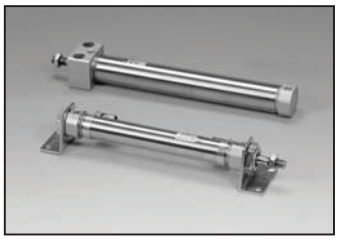
- XC 8 : Adjustable Stroke / Extension Adjustable Type
- XC 9 : Adjustable Stroke / Retraction Adjustable Type
- XC10 : Dual Stroke Cylinder / Double Rod Type
- XC11 : Dual Stroke Cylinder / Single Rod Type
- T : Single Acting Spring Extended
- XB6 : High Temperature Cylinder
- XC1 : Boss Cut
- X105 : Cap End Lock Cylinder
- XC6 : Stainless Steel Rod
- XC12 : Tandem Air Cylinder

Specifications/Standard Type

Type		Lubricated, Non-Lube	Air-Hydro
Medium		Air	L.P Oil
Proof Pressure		15kgf/cm²(213psi)	
Max. Operating Pressure		9.9kgf/cm²(140psi)	
Min.Operating Pressure	Double Acting	0.5kgf/cm²(7psi)	1.8kgf/cm²(25psi)
	Single Acting	1.8kgf/cm²(25psi)	-
Ambient and Fluid Temperature		5~60℃(40~140 ℉)	
Piston Speed		50~500 mm/s	0.5~300 mm/s
Cushion		None(Rubber Cushion, Air Cushion Optional)	
Stroke Tolerance (mm)		~250 : $^{+1.0}_{0}$, 251~500 : $^{+1.4}_{0}$	
Mounting		Basic, Foot, Front Flange, Rear Flange, Single Clevis, Double Clevis, Rear Trunnion, Front Trunnion	

Air Cylinder
Series AX

Bore Size: ϕ20, ϕ25, ϕ32, ϕ40



- Long life
- Low breakaway
- Numerous mounting options
- Designed for non-lubricated service

Action	Series	Bore Size (mm)	Port Size Rc(PT)	Standard Stroke(mm)*1 Standard	Standard Stroke(mm)*1 Max. Stroke	Operating Pressure kgf/cm²(psi)
Double Acting/Single Rod	AX	ϕ20	1/8	25, 50, 75, 100, 125, 150, 200, 250, 300	1,000	0.5~9.9(7~140)
		ϕ25				
		ϕ32				
		ϕ40	1/4			
Double Acting/Double Rod	AXW	ϕ20	1/8	25, 50, 75, 100, 125, 150, 200, 250, 300	1,000	0.5~9.9(7~140)
		ϕ25				
		ϕ32				
		ϕ40	1/4			
Double Acting/ Non-Rotating Piston Rod	AXK	ϕ20	1/8	25, 50, 75, 100, 125, 150, 200, 250, 300	1,000	0.5~9.9(7~140)
		ϕ25				
		ϕ32				
		ϕ40	1/4			
Double Acting/Direct Mount	AXR	ϕ20	1/8	25, 50, 75, 100, 125, 150	1,000	0.5~9.9(7~140)
		ϕ25		25, 50, 75, 100, 125, 150, 200		
		ϕ32		25, 50, 75, 100, 125, 150, 200		
		ϕ40	1/4	25, 50, 75, 100, 125, 150, 200 , 250, 300		
Double Acting/ Non-Rotating Piston Rod	AXRK	ϕ20	1/8	25, 50, 75, 100, 125, 150, 200, 250, 300	1,000	0.5~9.9(7~140)
		ϕ25				
		ϕ32				
		ϕ40	1/4			
Single Acting/Single Rod	AXS	ϕ20	1/8	25,50,75,100,125,150,		1.8~9.9(25~140)*2
		ϕ25				
		ϕ32		25, 50,75,100,125,150,200		
		ϕ40	1/4	25, 50,75,100,125,150,200,250		

*1. Long stroke for double action : 501 mm or more
*2. In case of spring extended type, min. operating pressure is 2.3 kgf/cm²(32psi)

How to Order

AX ○ **L** **40** – **150** ○ **A** **J** – ○ – **W5** ○

1 2 3 4 5 6 7 8 9 10

1 Series
- Blank : Double Acting/Single Rod
- W : Double Acting/Double Rod
- K : Non-Rotating Piston Rod Type
- R : Direct Mounting Type

2 Mounting
- B : Basic Type
- L : Axial Foot Type
- F : Rod Side Flange Type
- G : Head Side Flange Type
- C : Single Clevis Type
- D : Double Clevis Type
- T : Head Side Trunnion Type
- U : Rod Side Trunnion Type
- E : Integrated Clevis Type
- BZ : Boss-Cut Basic Type
- FZ : Boss-Cut Flange Type
- UZ : Boss-Cut Trunnion Type

3 Bore Size(mm)
- 20 : ϕ20
- 25 : ϕ25
- 32 : ϕ32
- 40 : ϕ40

4 Stroke(mm)
- ※ Refer to the upside table

5 Action
- Blank : Double Action
- S : Single Acting Spring Return
- T : Single Acting Spring Extended

6 Cushion
- Blank : Rubber Cushion
- A : Air Cushion
- ※ Compact(Boss-cut)type:Rubber Cushion Only

7 Rod Boot Option
- Blank : Without Boot
- J : Nylon Tarpaulin (60℃,140°F)
- K : Neoprene Cloth(110℃,230°F)
- ※ The Max. Ambient Temperature of Rod Boot Only

8 Special Option
- Blank : Standard Type
- XC16 : Copper-Free

9 Applicable Auto Switches
(Band Mounted Type)
- Blank : Without Auto Switch
- W5 : Reed Switch(Lead Wire of 0.5m)
- W5L : Reed Switch(Lead Wire of 3m)

10 Number of Switches
- Blank : 2 pcs.
- S : 1 pc.
- # : Enter Required Number of Switches.

PART No. of Mounting Bracket

Bore Size(mm)	ϕ20	ϕ25	ϕ32	ϕ40
※Axial foot	TCM-L020B	TCM-L032B		TCM-L040B
Flange	TCM-F020B	TCM-F032B		TCM-F040B
Single Clevis	TCM-C020B	TCM-C032B		TCM-C040B
Double Clevis	TCM-D020B	TCM-D032B		TCM-D040B
Trunnion(With nut)	TCM-T020B	TCM-T032B		TCM-T040B

※ 2 pcs. Required Per Cylinder

PART No. of Auto Switch Mounting Band

Auto Switch Model	Bore Size(mm) ϕ20	ϕ25	ϕ32	ϕ40
W5	TBM2-020	TBM2-025	TBM2-032	TBM2-040

Specifications / Standard Type

Action	Double Acting/Single Rod
Fluid	Air
Proof Pressure	14kgf/cm² (200 psi)
Max. Operating Pressure	9.9kgf/cm²(140 psi)
Min. Operating Pressure	0.5kgf/cm²(7 psi)
Ambient and Fluid Temperature	-10~70 ° C (14~160 °F)
Lubrication	None (Non-Lube)
Thread Tolerance	KS 2 Class
Stroke Tolerance	$^{+1.4}_{0}$ mm

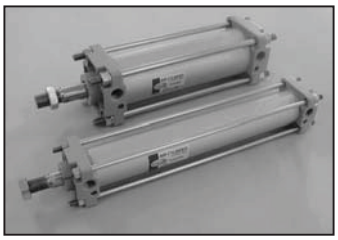
Order Made Option

- XC 8 : Adjustable Stroke Cylinder / Extension Adjustable Type
- XC 9 : Adjustable Stroke Cylinder / Retraction Adjustable Type
- XC10 : Dual Stroke Cylinder / Double Rod Type
- XC11 : Dual Stroke Cylinder / Single Rod Type
- XC12 : Tandem Type Air Cylinder

Air Cylinder

Series AM

Bore Size: ϕ40, ϕ50, ϕ63, ϕ80, ϕ100



- Built-in air cushion
- Designed for long life & high speed
- Wide stroke & bore sizes available

Action	Series	Bore Size (mm)	Port Size Rc(PT)	Standard Stroke (mm)	Type	Operating Pressure kgf/cm²(psi)*1
Double Acting/Single Rod	AM	ϕ40	1/4	~500	· Lubricated · Non-Lubricated · Low Pressure Hydraulic	0.5~9.9(7~140)
		ϕ50	3/8	~600		
		ϕ63	3/8	~600		
		ϕ80	1/2	~700		
		ϕ100	1/2	~700		
Double Acting/Double Rod	AMW	ϕ40	1/4	~500	· Lubricated · Non-Lubricated · Low Pressure Hydraulic	0.5~9.9(7~140)
		ϕ50	3/8	~600		
		ϕ63	3/8	~600		
		ϕ80	1/2	~700		
		ϕ100	1/2	~700		
Double Acting/ Non-Rotating Piston Rod	AMK	ϕ40	1/4	~500	· Non-Lubricated	0.5~9.9(7~140)
		ϕ50	3/8	~600		
		ϕ63	3/8	~600		

*1. In case of spring extended type, min. Operating pressure is 1.0~9.9 kgf/cm²(14~140psi)

How to Order

AM ◯ L N 50 — 150 ◯ — ◯ — ◯ — W3 ◯

1 2 3 4 5 6 7 8 9 10

1 Series
(Built-in Magnet)
Blank : Double Acting/Single Rod
W : Double Acting/Double Rod Type
K : Non-Rotating Piston Rod Type

2 Mounting
B : Basic Type
L : Foot
F : Front Flange
G : Rear Flange
C : Single Clevis
D : Double Clevis
T : Center Trunnion

3 Type
N : Non-Lubricated(BASIC)
H : Low Pressure Hydraulic
F : Iron Tube

4 Bore Size(mm)
40 : ϕ40
50 : ϕ50
63 : ϕ63
80 : ϕ80
100 : ϕ100

5 Stroke(mm)
※ Refer to the upside table

6 Rod Boot Option
Blank : None
Rod Boot / J : Nylon Tarpaulin (JJ:Double)
K : Neoprene Cloth (KK:Double)

7 Cushion
Blank : Both End
N : None
H : Head End
R : Rod End
※ Low Pressure Hydraulic : Standard type is without cushion.

8 Special Option
Blank : Standard Type
XC16 : Copper-Free

9 Applicable Auto Switches
Blank : Without Auto Switch
W3 : Reed Switch(Lead Wire of 0.5m)
W3L : Reed Switch(Lead Wire of 3m)

10 Number of Switches
Blank : 2 pcs.
S : 1 pc.
: Enter Required Number of Switches.

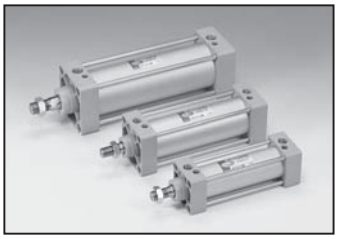
Order Made Option

XC 8 : Adjustable Stroke Cylinder / Extension Adjustable Type
XC 9 : Adjustable Stroke Cylinder / Retraction Adjustable Type
XC10 : Dual Stroke Cylinder / Double Rod Type
XC11 : Dual Stroke Cylinder / Single Rod Type
XC4 : With Scraper
XB5 : Oversized Rod
X105 : Cap End Lock Cylinder
XC12 : Tandem Type Air Cylinder
XB6 : High Temperature Cylinder
XC6 : Stainless Steel Rod
X104 : With Coil Scraper

Specifications / Standard Type

Type	Lube, Non-lube	Low Pressure Hydraulic
Fluid	Air	L.P.Oil
Proof Pressure	15kgf/cm² (213 psi)	
Max. Operating Pressure	9.9kgf/cm² (140 psi)	
Min. Operating Pressure	0.5kgf/cm²(7 psi)	1.0kgf/cm²(14 psi)
Ambient and Fluid Temperature	5~60°C (40~140 °F)	
Piston Speed	50~500mm/s	0.5~300mm/s
Cushion	Air Cushion	Not Available
Stroke Tolerance (mm)	~250 : $^{+1.0}_{0}$,251~1,000 : $^{+1.4}_{0}$, 1,001~1,500 : $^{+1.8}_{0}$	
Mounting	Basic, Foot, Front Flange, Rear Flange, Single Clevis, Double Clevis, Center Trunnion	

Air Cylinder
Series AM2
Bore Size: ϕ40, ϕ50, ϕ63, ϕ80, ϕ100



- Improved energy absorption
- Improved cushion capacity
- Increased kinetic energy absorption

Action	Series	Bore Size (mm)	Port Size Rc(PT)	Standard Stroke (mm)	Type	Operating Pressure kgf/cm²(psi)*1
Double Acting/Single Rod	AM	ϕ40	1/4	~500	· Lubricated · Non-Lubricated · Low Pressure Hydraulic	0.5~9.9(7~140)
		ϕ50	3/8	~600		
		ϕ63	3/8	~600		
		ϕ80	1/2	~700		
		ϕ100	1/2	~700		
Double Acting/Double Rod	AMW	ϕ40	1/4	~500	· Lubricated · Non-Lubricated · Low Pressure Hydraulic	0.5~9.9(7~140)
		ϕ50	3/8	~600		
		ϕ63	3/8	~600		
		ϕ80	1/2	~700		
		ϕ100	1/2	~700		
Double Acting/ Non-Rotating Piston Rod	AMK	ϕ40	1/4	~500	· Non-Lubricated	0.5~9.9(7~140)
		ϕ50	3/8	~600		
		ϕ63	3/8	~600		

*1. In case of spring extended type, min. Operating pressure is 1.0~9.9 kgf/cm²(14~140psi)

How to Order

AM D2 B H 50 – 150 N – XC16 – W3 S

1 2 3 4 5 6 7 8 9 10

1 Series
- Blank : Metric(PT)
- D : NPT

2 Magnet
- Blank : Without Magnet
- D : Built-in Magnet

3 Mounting
- B : Basic
- L : Foot
- F : Rod Side Flange
- G : Head Side Flange
- C : Single Rear Clevis
- D : Double Rear Clevis
- T : Center Trunnion

4 Type
- N : Non-Lube(BASIC)
- F : Iron Tube

5 Bore Size
- ϕ40 : 40mm
- ϕ50 : 50mm
- ϕ63 : 63mm
- ϕ80 : 80mm
- ϕ100 : 100mm

6 Standard Stroke
- ϕ40 : 25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350
- ϕ50, ϕ63 : 25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600
- ϕ80, ϕ100 : 25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700

7 Suffix Symbol for Cylinder
- Bellows J : Lubricated
- K : Neoprene Cloth
- N : Non-Cushion
- R : Rod End Air Cushion
- H : Head End Air Cushion
- Blank : Both End Air Cushion

8 Series
- Blank : Standard Type
- XC16 : Copper-Free

9 Applicable Auto Switches
- Blank : None
- W3 : Existing Plug Point Auto Switch
- W2PL : Intense-Magnetism-Resistant Type

10 Number of Switches
- Blank : 2 pcs
- S : 1 pc
- n : n pcs

Specifications / Standard Type

Type	Lube, Non-lube	Low Pressure Hydraulic
Fluid	Air	L.P.Oil
Proof Pressure	15kgf/cm² (213 psi)	
Max. Operating Pressure	9.9kgf/cm² (140 psi)	
Min. Operating Pressure	0.5kgf/cm²(7 psi)	1.0kgf/cm²(14 psi)
Ambient and Fluid Temperature	5~60°C (40~140 °F)	
Piston Speed	50~500mm/s	0.5~300mm/s
Cushion	Air Cushion	Not Available
Stroke Tolerance (mm)	~250 : $^{+1.0}_{0}$,251~1,000 : $^{+1.4}_{0}$, 1,001~1,500 : $^{+1.8}_{0}$	
Mounting	Basic, Foot, Front Flange, Rear Flange, Single Clevis, Double Clevis, Center Trunnion	

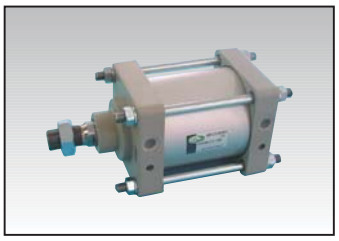
Order Made Option

- XC 8 : Adjustable Stroke Cylinder / Extension Adjustable Type
- XC 9 : Adjustable Stroke Cylinder / Retraction Adjustable Type
- XC10 : Dual Stroke Cylinder / Double Rod Type
- XC11 : Dual Stroke Cylinder / Single Rod Type
- XB6 : High Temperature Cylinder

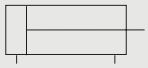
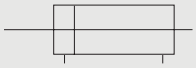
Air Cylinder

Series AL/ALX

Bore Size: ϕ125, ϕ140, ϕ160, ϕ180, ϕ 200, ϕ250, ϕ300



- Wide variety of stroke and bore ranges
- Designed for long life and high speed operation
- Built-in air cushion

Action	Series	Bore Size (mm)	Port Size Rc(PT)	Standard Stroke (mm)*1	Braking Accuracy	Operating Pressure kgf/cm² (psi)*1
Double Acting/Single Rod 	ALX	ϕ125	1/2	~1000	Aluminum Tube Nose Solid	0.5 ~ 9.9 (7 ~ 140)
		ϕ140	1/2	~1000		
		ϕ160	3/4	~1200		
	AL	ϕ180	3/4	~2000	Iron Tube Nose Separator	
		ϕ200	3/4	~2000		
		ϕ250	1	~2000		
		ϕ300	1	~2000		
Double Acting/Double Rod 	ALXW	ϕ125	1/2	~1000	Aluminum Tube Nose Solid	0.5 ~ 9.9 (7 ~ 140)
		ϕ140	1/2	~1000		
		ϕ160	3/4	~1200		
	ALW	ϕ180	3/4	~2000	Iron Tube Nose Separator	
		ϕ200	3/4	~2000		
		ϕ250	1	~2000		
		ϕ300	1	~2000		

How to Order

AL X ◯ D L ◯ N 160 – 300 RJ ◯ – W3 ◯

1 2 3 4 5 6 7 8 9 10 11 12

1 Series
- Blank : ϕ125, ϕ140, ϕ160, ϕ180, ϕ200, ϕ250, ϕ300 : Nose Separator
- X : ϕ125, ϕ140, ϕ160 : Nose Solid

2 Rod Option
- Blank : Single Rod
- W : Double Rod

3 Magnet
- Blank : Without Magnet
- D : Built-in Magnet (ϕ125, ϕ140, ϕ160 only)

4 Mounting
- B : Basic
- L : Foot
- F : Rod Side Flange
- G : Head Side Flange
- C : Single Rear Clevis
- D : Double Rear Clevis
- T : Center Trunnion

5 Tube Material
- ϕ180~ϕ300
- Blank : Aluminum Tube (Standard)
- F : Iron Tube
- ϕ180~ϕ300
- Blank : Iron Tube(Standard)
- ※ Iron Tube:Not available with Auto switch

6 Type
- Blank : Lubricated
- N : Non-Lube
- H : Low Pressure Hydraulic (Except Series AL)

7 Bore size
- 125 : ϕ125mm
- 140 : ϕ140mm
- 160 : ϕ160mm
- 180 : ϕ180mm
- 200 : ϕ200mm
- 250 : ϕ250mm
- 300 : ϕ300mm

8 Stroke (mm)
- ※ Refer to the upside table

9 Suffix Symbol for Cylinder
- Blank : Without Boot /Both End Air Cushion
- J : Nylon Tarpoulin (JJ:Double Rod)
- K : Neoprene Cloth (KK:Double)
- R : Rod End Air Cushion
- H : Head End Air Cushion
- N : Non-Cushion

10 Series
- Blank : Standard Type
- XC16 : Copper-Free

11 Applicable Auto Switches
- Blank : None
- W3 : Reed Switch (Lead wire of 0.5m)
- W3L : Reed Switch (Lead wire of 3m)

12 Number of Switches
- Blank : 2 pcs
- S : 1 pc
- # : Enter Required Number of Switches

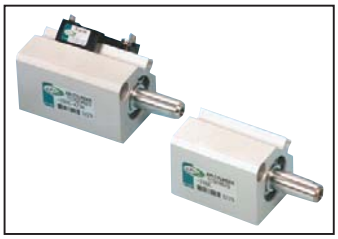
Specifications/Standard Type

Type	Lube, Non-lube	Low Pressure Hydraulic
Fluid	Air	L.P.Oil
Proof Pressure	16kgf/cm²(227psi)	
Max.Operating Pressure	9.9kgf/cm²(140psi)	
Min.Operating Pressure	0.5kgf/cm²(7psi)	0.6kgf/cm²(8.5psi)
Ambient and Fluid Temperature	5~60℃(40~140°F)	
Piston Speed	50~500mm/s	0.5~200mm/s
Cushion	With Air Cushion	Non Cushion
Stroke Tolerance (mm)	~250 $^{+1.0}_{0}$ 251~1000 $^{+1.4}_{0}$ 1001~1500 $^{+1.8}_{0}$	
Mounting	Basic, Foot, Front Flange, Rear Flange, Single Clevis, Double Clevis, Center Trunnion	

Order Made Option

- XC 8 : Adjustable Stroke / Extension Adjustable Type
- XC 9 : Adjustable Stroke / Retraction Adjustable Type
- XC10 : Dual stroke / Double Rod Type
- XC11 : Dual stroke / Single Rod Type
- X104 : With Coil Scraper
- XB5 : Oversized Rod Cylinder
- XC6 : Stainless Steel Rod
- XB6 : High Temperature Cylinder

Compact Cylinder
Series AQ/UAQ
Bore Size: ϕ12, ϕ16, ϕ20, ϕ25



- Space saving design
- Compact and light weight
- 10 bore sizes
- Auto switch adaptable
- Suitable for special applications

Bore Size (mm)	Port Size		Stroke(mm) *1					
	AQ/ADQ	UAQ/UADQ	Doube Acting			Single Acting		
	Rc(PT)	UNF/NPT	Single Rod	Double Rod	Non Rotating	Rear Boss Mount	Spring Return	Spring Extended
ϕ12	M5×0.8	10~32 UNF	5, 10, 15 20, 25, 30	N/A	N/A	5, 10, 15 20, 25, 30	N/A	N/A
ϕ16	M5×0.8	10~32 UNF						
ϕ20	M5×0.8	10~32 UNF	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, 75	5, 10, 15, 20, 25 30, 35, 40, 45, 50, 75	5, 10	5, 10
ϕ25	M5×0.8	10~32 UNF					N/A	N/A

*1. Intermediat Stroke : A spacer of 5, 10, 15 and 20 mm is used for intermediate strokes between 55 and 100 mm stroke (for example 55, 60, 65 etc.)
[Example : AQB50-55D is produced by installing 20 mm spacer in AQB50-75D]
*Note : At 5mm StrokePort Sizes is AQ/ADQ@ M5×0.8 UAQ/UADQ@ 10-32UNF.

How to Order

	1	2	3	4	5	6	7	8	9	10	11	12
Standard Type		A Q	W	B	20	30	D	C				
With Auto Switch		ADQ	W	B	20	30	D	C		W4	S	

1 Series
Blank : Metric(PT)
U : NPT

2 Magnet
Blank : Without Magnet
D : Built-in Magnet

3 Model
Blank : Single Rod
W : Double Rod
K : Non-Rotating

4 Type
B : Through Hole (Standard Type)
A : Both Ends Tapped

5 Bore Size
12 : ϕ12mm (1/2inch)
16 : ϕ16mm (5/8inch)
20 : ϕ20mm (3/4inch)
25 : ϕ25mm (1inch)

6 Cylinder Stroke(mm)
∴ Refer to the upside table

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

8 Body Option
Blank: Standard
C : Rubber Cushion
M : Rod End Male Thread
F : Rear Boss Mount

9 Special Option
Blank : Standard Type
XC16 : Copper-Free

10 Applicable Auto Switches
Blank :Without Auto Switch
W4 : Reed Switch (Lead wire of 0.5m)
W4L : Reed Switch (Lead wire of 3m)

11 Number of Switches
Blank : 2 pcs.
S : 1 pc.
: Enter Required Number of Switches.

12 Long Stroke Swffix Symbol for Long Stroke

Bore Size	Long Stroke	Symbol
20	51st~	TC 180
25		TC 335

Order Made Option

XC 8 : Adjustable Stroke Cylinder / Extension Adjustable Type
XC 9 : Adjustable Stroke Cylinder / Retraction Adjustable Type
XC10 : Dual Stroke Cylinder / Double Rod Type
XC11 : Dual Stroke Cylinder / Single Rod Type
X163 : Coil Scraper (Metal scraper) Type

Standard/Specifications

Fluid	Air
Max. Operating Pressure	9.9kgf/cm² (140 psi)
Ambient and Fluid Temperature	-10~70℃ (15~160 °F)
Lubrication	Not Required
Cushion	None
Rod End Thread	Female (Standard Type)
Stroke Tolerance	$^{+1.0}_{0}$ mm (0.039 inch)
Mounting	Through Hole (Standard)
Piston Speed	50~500 mm/sec (2~20 inch/sec)

Body Option/Available

● - Standard ○ - Optional

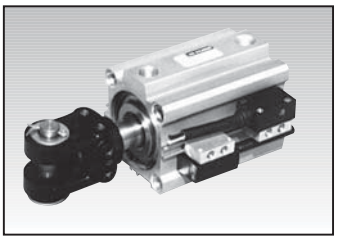
Type	Action	Code	Single Rod								Double Rod			
			Blank	M	C	CM	F	FM	FC	FCM	Blank	M	C	CM
Standard Type	Double Acting	ϕ12~ϕ20	●	●	●	○	●	●	●	○	●	●	●	●
		ϕ25	●	●	●	●	●	●	●	●	●	●	●	●
	Single Acting	Spring return Spring extended	●	●	N/A	N/A	●	●	N/A	N/A	N/A	N/A	N/A	N/A
With Auto Switch	Double Acting	ϕ12		●			●	●	N/A	N/A	N/A	N/A	N/A	N/A
		ϕ10~ϕ25	●	●	●	○	●	●	●	○	●	○	○	○

Note : Single Acting(Spring return / Spring extended) is optional.
C : Rubber Cushion, M : Rod End Male Thread, F : Rear Boss Mount

Compact Cylinder for Intense-Magnetic

Series ADQCP

Bore Size: ϕ50, ϕ63



- For welding machines/intense magnetic field
- Space saving compact design

Cylinder Specifications

Type	ADQCP
Fluid	Air
Bore Size (mm)	ϕ50 , ϕ63
Max. Operating Pressure	9.9kgf/cm² (140 psi)
Proof Pressure	15kgf/cm² (213 psi)
Ambient Fliuid Temperture	5~60°c (40~140°F)
Thread end Tolerance	KS Grade 2
Stroke Tolerance	+1.0 mm

How to Order

ADQCP 50 – 40 D – Y – ○ – W□ Z S

1 2 3 4 5 6 7 8 9

1 Series
Compact Cylinder for Intense-Magnetic Resistant

2 Bore Size (mm)
50 : ϕ50
63 : ϕ63

3 Standard Stroke(mm)
50 : 25, 30, 35, 40, 45, 50
63 : 25, 30, 35, 40, 45, 50

4 Double Acting : D

5 Rod End Options
Blank : Without Attachment
Y : With Double Knuckle Clevis

6 Special Option
Blank : Standard Type
XC16 : Copper-Free

7 Reed Auto Switches
Blank : Without Auto Switch
W6 : 120VAC, OFF lighting
W7 : 24VDC, 120VAC, ON Lighting

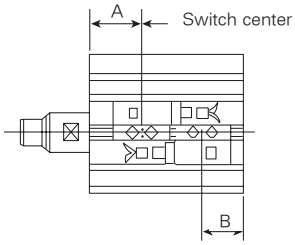
8 Switch Lead Wire Length
L : 3m
Z : 5m

9 Number of Switches
Blank : 2 pcs.
S : 1 pc.
: Enter Required Number of Switches.

Minimum Stroke for Mounting Intense-Magnetism Resistant Switch.

Switch Mounting Position / Cylinder Type Bore	With 1 Switch	With 2 Switches		
		Same Surface	Different Surfaces	Different Surfaces
Required Stroke(mm)	25	30	25	

Auto Switch Mounting Position (Stroke End)



Type \ Bore	ϕ50		ϕ63	
	A	B	A	B
Distance(mm)	33.5	22.5	37.5	24

Compact Cylinder

Series AQ2/UADQ2

Bore Size : ϕ12, ϕ16, ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63, ϕ80, ϕ100, ϕ125

- Auto switch mounting allows for flexible designing requirements.
- Long stroke, availavle.

Bore Size (mm)	Port Size		Stroke(mm) *1				
	AQ2/ADQ2	UAQ2/UADQ2	Doube Acting			Single Acting	
	Rc(PT)	UNF/NPT	Single Rod	Double Rod	Non Rotating	Spring Return	Spring Extended
ϕ12	M5×0.8	10~32 UNF	5, 10, 15, 20, 25, 30, (35, 40, 45, 50)	5, 10, 15, 20, 25, 30	N/A	5, 10	5, 10
ϕ16	M5×0.8	10~32 UNF					
ϕ20	M5×0.8	10~32 UNF	5, 10, 15, 20 25, 30, 35, 40, 45, 50	N/A		N/A	N/A
ϕ25	M5×0.8	10~32 UNF				5, 10	5, 10
ϕ32	1/8	1/8	*5, 10, 15, 20, 25 30, 35, 40, 45, 50, 75, 100, 125, 150, 175, 200, 250, 300	*5, 10, 15, 20, 25 30, 35, 40, 45, 50, 75, 100	*5, 10, 15, 20, 25 30, 35, 40, 45, 50, 75, 100		
ϕ40	1/8	1/8					N/A
ϕ50	1/4	1/4	10, 15, 20, 25 30, 35, 40, 45, 50, 75, 100, 125, 150, 175, 200, 250, 300	10, 15, 20, 25 30, 35, 40, 45, 50, 75, 100	5, 10, 15, 20, 25 30, 35, 40, 45, 50, 75, 100	5, 10, 15, 20	
ϕ63	1/4	1/4				N/A	
ϕ80	3/8	3/8			N/A		
ϕ100	3/8	3/8					
ϕ125	3/8	3/8	10, 20, 30,40, 50, 75, 100, 125, 150	N/A			

*1. Intermediat Stroke : A spacer of 5, 10, 15 and 20 mm is used for intermediate strokes between 55 and 100 mm stroke (for example 55, 60, 65 etc.)
[Example : AQ2B50-55D is produced by installing 20 mm spacer in AQ2B50-75D]

*Note : At ϕ32-5mm StrokePort Sizes is AQ2@ M5×0.8 UAQ2@ 10-32UNF.(Non-Built in Magnet only)

※ ( ) : long stroke.

How to Order

Standard Type: **A Q2 W B 20 - 30 D C**

With Auto Switch: **ADQ2 W B 20 - 30 D C W4 S**

1 2 3 4 5 6 7 8 9 10 11

1 Series
- Blank : Metric(PT)
- U : NPT

2 Magnet
- Blank : Without Magnet
- D : Built-in Magnet

3 Model
- Blank : Single Rod
- W : Double Rod
- K : Non-Rotating

4 Type & Mounting
- B : Through Hole (Standard Type)
- A : Both Ends Tapped
- D : Double clevis(Both end tapped)
- F : Rod side flange(Both end tapped)
- G : Head side flange(Both end tapped)
- L : Foot(Both end tapped)

5 Bore Size
- 12 : ϕ12mm (1/2inch)
- 16 : ϕ16mm (5/8inch)
- 20 : ϕ20mm (3/4inch)
- 25 : ϕ25mm (1inch)
- 32 : ϕ32mm (1 1/4inch)
- 40 : ϕ40mm (1 5/8inch)
- 50 : ϕ50mm (2inch)
- 63 : ϕ63mm (2 1/2inch)
- 80 : ϕ80mm (3 1/4inch)
- 100 : ϕ100mm (4inch)
- 125 : ϕ125mm (5inch)

6 Cylinder Stroke(mm)
- ∴ Refer to the upside table

7 Action
- D : Double Acting
- S : Single Acting/Spring Return
- T : Single Acting/Spring Extended

8 Body Option
- Blank : Standard
- C : Rubber Cushion
- M : Rod End Male Thread
- F : Rear Boss Mount

9 Special Option
- Blank : Standard Type
- XC16 : Copper-Free

10 Applicable Auto Switches
- Blank : Without Auto Switch
- W4 : Reed Switch
- W8V : Reed Switch(Vertical Type)
- W8H : Reed Switch(Horizontal Type)
- W9V : Solid State Swithc (Vertical Type)
- W9H : Solid State Swithc (Horizontal Type)
- W9HN : Solid State Swithc (3 Wire, NPN)
- W9HP : Solid State Swithc (3 wire, PNP)

※ Standard auto switch lead wire length is 1m.
3m lead available on all models by adding a "L" suffix to the part number. (ex:W8HL,W9VL)

11 Number of Switches
- Blank : 2 pcs.
- S : 1 pc.
- # : Enter Required Number of Switches.

Order Made Option

- XC 8 : Adjustable Stroke Cylinder / Extension Adjustable Type
- XC 9 : Adjustable Stroke Cylinder / Retraction Adjustable Type
- XC10 : Dual Stroke Cylinder / Double Rod Type
- XC11 : Dual Stroke Cylinder / Single Rod Type
- X163 : Coil Scraper (Metal scraper) Type

Specifications

Type	Air Pressure(Non-Lubrication)Type
Fluid	Air
Proof Pressure	1.5MPa (217psi)
Max. Operation Pressure	1.0MPa (142psi)
Ambient and Fluid Temperature	-10℃ ~ 70℃ (14~158℉)(Non Freezing)
Cushion	None
Rod End Thread	Female Thread
Rod End Thread Tolerance	KS Class 2
Stroke Tolerance	$^{+1.0}_{0}$
Mounting	Through Hole(Standard)
Piston Speed	50 ~ 500 mm/s

※ Cautions

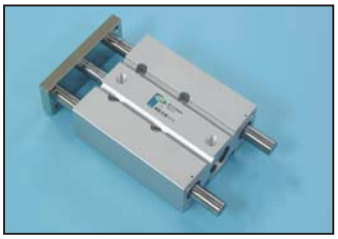
Production of middle stroke

By installing spacer in the cylinder of standard stroke, it is possible to produce middle stroke at every 1mm.
Ex) For AQ2WB16-27D, spacer with width of 3mm is installed in the cylinder of standard stroke AQ2WB16-30D.

Guide Compact Cylinder

Series AG

Bore Size: ϕ12, ϕ16, ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63, ϕ80, ϕ100



● Exclusive grease use, dust generation is minimized when cylinder is acting.

Action	Series	Bore Size (mm)	Port Size AG	Port Size UAG	Standard Stroke (mm) *1	Description	Operating Pressure kgf/cm² (psi)
Slide Bearing / Double Acting	AGM / UAGM	ϕ12	M5×0.8	10-32 UNF	10, 20, 30, 40, 50, 75, 100	Suitable for Stopper / Rubber Cushion at Both Sides	0.12~9.9 (2~140)
		ϕ16					
		ϕ20	Rc(PT) 1/8	NPT 1/8	20, 30, 40, 50, 100		0.1~9.9 (1.4~140)
		ϕ25					
		ϕ32			25, 50, 75, 100, 125,150		
		ϕ40					
		ϕ50	Rc(PT) 1/4	NPT 1/4			
		ϕ63					
		ϕ80	Rc(PT) 3/8	NPT 3/8			
		ϕ100					
Ball Bearing / Double Acting	AGL / UAGL	ϕ12	M5×0.8	10-32 UNF	10, 20, 30, 40, 50, 75, 100	Suitable for Hitting & Pushing / Rubber Cushion at Both Sides	0.12~9.9 (2~140)
		ϕ16					
		ϕ20	Rc(PT) 1/8	NPT 1/8	20, 30, 40, 50, 100		0.1~9.9 (1.4~140)
		ϕ25					
		ϕ32			25, 50, 75, 100, 125, 150		
		ϕ40					
		ϕ50	Rc(PT) 1/4	NPT 1/4			
		ϕ63					
		ϕ80	Rc(PT) 3/8	NPT 3/8			
		ϕ100					

*1. Intermediate Stroke : A spacer of 5, 10, 15 and 20 mm is used for intermediate stroke (for example 55, 60, 65 etc.)
[Example : AGM50-55 is produced by installing 20 mm spacer in AGM50-75]

How to Order

( ) AG (M) (40) — (75) — ( ) — (W4) ( ) ( )

1 2 3 4 5 6 7 8

1 Port
(Built-in Magnet)
Blank : Metric(PT)
U : NPT, UNF

2 Types of Bearings
M : Slide Bearing(Suitable for Stopper)
L : Ball Bearing Bushing (Suitable for Lifting/ Pushing)

3 Bore Size(inch)
12 : ϕ 12mm(1/2 Nom.)
16 : ϕ 16mm(5/8 Nom.)
20 : ϕ 20mm(3/4 Nom.)
25 : ϕ 25mm(1 Nom.)
32 : ϕ 32mm(1 1/4 Nom.)
40 : ϕ 40mm(1 5/8 Nom.)
50 : ϕ 50mm(2 Nom.)
63 : ϕ 63mm(2 1/2 Nom.)
80 : ϕ 80mm(3 1/4 Nom.)
100 : ϕ 100mm(4 Nom.)

4 Cylinder Stroke(mm)
※ Refer to the upside table

5 Option
Blank : Standard
XC16 : Copper-Free

6 Type of Auto Switches
Blank : Without Auto Switch
[Reed Switch]
W4 : W4(2 wire DC24V, AC100V) (ϕ32~ϕ100)
W13 : W13(2 wire, DC24V, AC100V) (ϕ12~ϕ25)
[Solid State Switch]
W1H : W1H(3 wire system, DC24V) (ϕ12~ϕ25 only)

7 Lead Wire Length
Blank : 0.5m
L : 3m

8 Number of Switches
Blank : 2 Pcs.
S : 1 Pc.

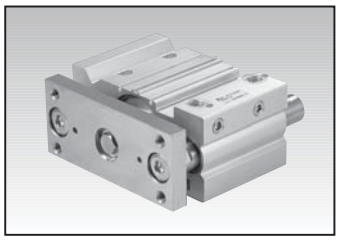
Standard Specifications

Operation	Double Acting	
Fluid	Air	
Proof Pressure	15.3kgf/cm² (217 psi)	
Max. Operating Pressure	9.9kgf/cm²(142 psi)	
Min. Operating Pressure	ϕ12, ϕ16	1.2kgf/cm² (17 psi)
	ϕ25~ϕ100	1.0kgf/cm² (14 psi)
Ambient and Fluid Temperature	-10~+60℃ (14~140 °F)	
Piston Speed	50~500mm/sec (2~20 inch/sec)	
Cushion	Rubber Cushion at Both Sides	
Lubrication	Non-Lubrication	
Stroke Tolerance	$^{+1.5}_{0}$ mm	

Guide Compact Cylinder

Series NGQ

Bore Size: ϕ12, ϕ16, ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63, ϕ80, ϕ100



- Exclusive grease use, dust eneration is minimized when cylinder is acting.
- High precision and prevention of rotation.
- Side port

Action	Series	Bore Size (mm)	Port Size AG	Port Size UAG	Standard Stroke (mm) *1	Description	Operating Pressure kgf/cm² (psi)
Slide Bearing / Double Acting	NGQ / UNGQ	ϕ12	M5×0.8	10-32 UNF	10, 20, 30, 40, 50,75, 100, 125, 150, 175, 200	Suitable for Stopper / Rubber Cushion at Both Sides	0.12~9.9 (2~140)
		ϕ16					
		ϕ20	Rc(PT) 1/8	NPT 1/8	20, 30, 40, 50, 100, 125, 150, 175, 200, 250, 300		0.1~9.9 (1.4~140)
		ϕ25					
		ϕ32			25, 50, 75, 100, 125,150, 175, 200, 250, 300		
		ϕ40					
		ϕ50	Rc(PT) 1/4	NPT 1/4			
		ϕ63					
		ϕ80	Rc(PT) 3/8	NPT 3/8	25, 50, 75, 100, 125,150, 175, 200		
		ϕ100					
Ball Bearing / Double Acting	AGL / UAGL	ϕ12	M5×0.8	10-32 UNF	10, 20, 30, 40, 50,75, 100, 125, 150, 175, 200	Suitable for Hitting & Pushing / Rubber Cushion at Both Sides	0.12~9.9 (2~140)
		ϕ16					
		ϕ20	Rc(PT) 1/8	NPT 1/8	20, 30, 40, 50, 100, 125, 150, 175, 200, 250, 300		0.1~9.9 (1.4~140)
		ϕ25					
		ϕ32			25, 50, 75, 100, 125,150, 175, 200, 250, 300		
		ϕ40					
		ϕ50	Rc(PT) 1/4	NPT 1/4			
		ϕ63					
		ϕ80	Rc(PT) 3/8	NPT 3/8	25, 50, 75, 100, 125,150, 175, 200		
		ϕ100					

*1. Intermediate Stroke : A spacer of 5, 10, 15 and 20 mm is used for intermediate stroke (for example 55, 60, 65 etc.)
[Example : NGQM50-55 is produced by installing 20 mm spacer in NGQM50-75]

How to Order

NGQ M 40 — 75 — ○ — W8 ○ ○

1 2 3 4 5 6 7 8

1 Port
(Built-in Magnet)
Blank : Metric(PT)
U : NPT, UNF

2 Types of Bearings
M : Slide Bearing(Suitable for Stopper)
L : Ball Bearing Bushing (Suitable for Lifting/ Pushing)

3 Bore Size(inch)
12 : ϕ 12mm(1/2 Nom.)
16 : ϕ 16mm(5/8 Nom.)
20 : ϕ 20mm(3/4 Nom.)
25 : ϕ 25mm(1 Nom.)
32 : ϕ 32mm(1 1/4 Nom.)
40 : ϕ 40mm(1 5/8 Nom.)
50 : ϕ 50mm(2 Nom.)
63 : ϕ 63mm(2 1/2 Nom.)
80 : ϕ 80mm(3 1/4 Nom.)
100 : ϕ 100mm(4 Nom.)

4 Cylinder Stroke(mm)
※ Refer to the upside table

5 Option
Blank : Standard
XC16 : Copper-Free

6 Type of Auto Switches
Blank : Without Auto Switch
[Reed Switch]
W4 : W4(2 wire DC24V, AC100V) (ϕ32~ϕ100)
W2P : Magnetism resistant switch (ϕ32~ϕ100)
W8H(V) : (2 wire, DC24V, AC100V) (ϕ12~ϕ25)
[Solid State Switch]
W9H(V): (2(3) wire system, DC24V) (ϕ12~ϕ25 only)

7 Lead Wire Length
Blank : 0.5m
L : 3m

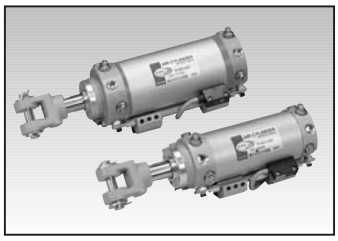
8 Number of Switches
Blank : 2 Pcs.
S : 1 Pc.

Standard Specifications

Operation	Double Acting	
Fluid	Air	
Proof Pressure	15.3kgf/cm² (217 psi)	
Max. Operating Pressure	9.9kgf/cm²(142 psi)	
Min. Operating Pressure	ϕ12, ϕ16	1.2kgf/cm² (17 psi)
	ϕ25~ϕ100	1.0kgf/cm² (14 psi)
Ambient and Fluid Temperature	-10~+60℃ (14~140 °F)	
Piston Speed	50~500mm/sec (2~20 inch/sec)	
Cushion	Rubber Cushion at Both Sides	
Lubrication	Non-Lubrication	
Stroke Tolerance	$^{+1.5}_{0}$ mm	

Clamp Cylinder
Series AJ/AJM

Bore Size: ϕ32, ϕ50, ϕ63, ϕ80



- Two types of clevis widths are available (16.5mm, 19.5mm / Except ϕ32)
- Compact and light weight
- Non lube type
- Possible to disassemble
- Built in speed controller

Action	Series	Bore Size (mm)	Port Size Rc(PT)	Standard Stroke (mm)	Description	Operating Pressure kgf/cm²(psi)
Standard Type	AJ	ϕ32	1/4	~300	With Metal Scraper	0.5~9.9(7~140)
		ϕ50		25, 50, 75, 100, 125, 150		
		ϕ63	3/8			
		ϕ80	1/2	50,75,100,125,150 ,175,200,250,300		
Intense-Magnetism Resistant Auto Switch	AJM	ϕ32	1/4	~300	With Metal Scraper	0.5~9.9(7~140)
		ϕ50		25, 50, 75, 100, 125, 150		
		ϕ63	3/8			

How to Order

AJ G A 50 — 100 Y — ○ — ○ — W□ ○

1 2 3 4 5 6 7 8

1 Series
- Blank : Without Magnet
- G : Built-in Magnet (Standand)
- M : With Intense - Magnetism Resistant auto Switch (Built-in Magnet)

2 Clevis Width

Bore Size ABC	A	B	C
32	○		
50, 63	○	○	
80	○	○	○

A : 16.5mm
$16^{+0.4}_{-0.2}$ mm
B : 19.5mm
C : 28mm

3 Bore Size(mm) / Stroke(mm)
- 32 : ϕ32 /50, 75, 100, 125, 150, 200, 250, 300
- 50 : ϕ50/50, 75, 100, 125, 150
- 63 : ϕ63/50, 75, 100, 125, 150
- 80 : ϕ80/50, 75, 100, 125, 150, 175, 200, 250, 300

4 Accessories
- Blank : None
- Y : Double Knuckle Clevis
- I : Single Knuckle Clevis

5 Mount
- B : Limit Switch Mounting Braket
- D : Limit Switch Trip Cam(45%)
- 19 : Foot Mount
- N : Length of Red end is dirrerent

6 Special Option
- Blank : Standard Type
- XC16 : Copper-Free

7 Applicable Auto Switch

Solid State Switch
- W2P : 24VDC, For Welding Machines, Intense Magnetic fields (AJM Series Only)

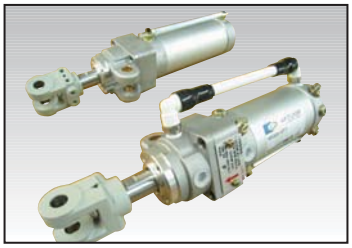
Reed Switch
- W3 : 24VDC, 100 · 200VAC (AJM Series Only)
- W6 : AC100V, OFF Lighting (AJG Series Only)
- W7 : DC24V, AC100V, ON Lighting (AJG Series Only)

8 Lead Wire Length
- Blank : 0.5m
- L : 3m
- Z : 5m

Specifications/Standard Type

Clevis width	Series AJMA/AJ○A	16.5mm
	Series AJMB/AJ○B	19.5mm
	Series AJOC	28mm
Fluid		Air
Proof Pressure		15 kgf/cm² (213 psi)
Max. Operating Pressure		9.9 kgf/cm² (140 psi)
Min. Operating Pressure		0.5 kgf/cm² (7 psi)
Ambient and Fluid Temperature		5~60℃ (14~140 °F)
Piston Speed		50~500 mm/sec
Cushion		Air-Cushion
Lubrication		Non-Lube
Thread Tolerance		KS Class 2
Stroke Length Tolerance		$^{+0.1}_{0}$ mm
Speed Controller		Built-in (Standard)
Mounting Style		Double Clevis (Basic Type Only)

Clamp Cylinder With Lock
Series ABK



- Built-in coil scraper for removing contamination on piston rod.
- Built-in air cushion and speed controller on both rod and head side.
- Locking and unlocking can be chosen by bolt / Manual unlocking.
- The same jig position as standard clamp cylinders(AJ)

How to Order

ABK	G	A	50-100	Y	○	–	B	○	–	□	□	□
1	2	3	4	5	6		7	8		9	10	11

1 Actuator Brake clamp cylinder

2 Magnetic
- Blank : without magnetic
- G : Standard magnetic resistant type
- P : Intense-magnetic resistant type

3 Clevis width
- A : 16.5mm
- B : 19.5mm

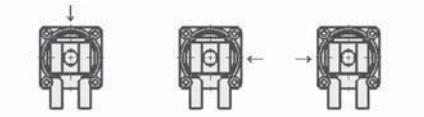
4 Bore size(mm) – stroke(mm)
- Ø50 – 50,75,100,125,150
- Ø63 – 50,75,100,125,150

5 End bracket
- Blank : without bracket
- Y : double knuckle joint

6 Mount
- B : Limit switch mount
- D : dog fitting
- 19 : Foot mount

7 Locking position
- B : Clamp side lock
- F : Unclamp side lock

8 Port position
- Blank : UPPER
- R : RIGHT
- L : LEFT



Blank : UPPER R : RIGHT L : LEFT

9 Auto switch
- Blank : without auto switch
- A54K : standard magnetic resistant reed switch
- W2P : standard magnetic resistant solid state switch
- P70R,P74R : intense-magnetic resistant reed switch

10 Number of auto switches
- Blank : 2 pcs
- S : 1 pc
- N : n pcs

11 Length of lead wire
- L : 3m
- Z : 5m

Cylinder Specifications

Actuation	Double acting, single rod
Fluid	Air
Proof pressure	1.5MPa
Maximum operating pressure	1.0MPa
Minimum operating pressure	0.2MPa
Ambient and fluid temperature	5℃ ~ 60℃
Piston speed	50~500mm/s
Cushion	Both upclamp side(head side) and clamp side(rod side)
Lubrication	Non-lube
Stroke length tolerance	0/+1.0
Speed controller	Standard
Mounting	Double clevis

※ Note) Cylinder specifications are the same as standard clamp cylinders except minimum operating pressure.

Lock Specifications

Bore size(mm)	Ø50	Ø63
Lock action	Spring lock	
Note1) Unlocking pressure	0.2MPa and more	
Note2) Locking directions	One direction(clamp side, unclamp size)	
Note3) Lock holding force N	1,519(155Kg) ± 3%	1,974(200Kg) ± 3%
Lock application	Drop prevention, Position holding	

※ Note1) For well-unlocking, we recommend air pressure of 0.5Mpa or more.
※ Note2) There is no specification differences in lock directions.
※ Note3) Locking holding force is maximum load. For your safety, we recommend 40% load out of maximum lock holding force.

Swing Clamp Cylinder
Series NSK

Bore Size: ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63

- Possible to attach Autoswitch in a tube
- Max. Operating pressure : 1Mpa
- Compact size & Good design
- Built-in coil scraper (ϕ40~ ϕ63)

How to Order

N (D) SK B 20 – 20 R P – W8* S

1 2 3 4 5 6 7 8 9

1 New Actuator Swing K(clamp) cylinder

2 Magnet
- Blank : without magnet
- D : Built-in magnet

3 Mount
- B : Through-hole/Both ends tapped common(standard)
- G : Head side flamge type

4 Bore size
- 20 : Ø20
- 25 : Ø25
- 32 : Ø32
- 40 : Ø40
- 50 : Ø50
- 63 : Ø63

5 Stroke
- 10 : 10mm/Ø20, 25, 32, 40
- 20 : 20mm/Ø20, 25, 32, 40, 50, 63
- 50 : 50mm/Ø50, 63
- ※ Refer to specification for rotation stroke.

6 Rotary direction
- R : RIGHT
- L : LEFT
- ※ Refer to dimension for rotation.

7 Rotation plate(ARM)
- Blank : Without Rotation Plate
- P : Without Rotation Plate
- ※ Not assembled

8 Applicable Auto Switch
- Blank : without auto switch
- W4 : Reed switch
- W8H(v): Reed switch-2wire
- W9H(v): Solid state switch-2wire
- W9H(v)N: Solid state switch-3wire
- W2P : Magnetic switch(Solid state type, overØ40 available)

9 (Number of Auto switch)
- Blank : 2 pcs
- S : 1 pcs
- N : n pcs

Weight (Unit : kg)

1. CYLINDER

STROK (mm)	Bore size 20	25	32	40	50	63
10	0.26	0.32	0.5	0.55	-	
20	0.29	0.35	0.54	0.6	1.1	1.44
50	-	-	-	-	1.3	1.7

2. Component Pants

1) SWING PLASTE

Park number	Weight
KP-020	0.05
KP-032	0.14
KP-050	0.19

2) FLANGE

Park number	Weight
QF-020	0.05
QF-025	0.14
QF-032	0.19

Park number	Weight
QF-040	0.24
QF-050	0.41
QF-063	0.59

Specifications

		Bore size ø20	ø25	ø32	ø40	ø50	ø63
Fluid		air					
Rod O.D		ø12	ø12	ø16	ø16	ø20	ø20
Stroke(mm)	Rotate section	9.5		15		19	
	Straight section	10, 20		10, 20		20, 50	
	TOTAL	19.5, 29.5		25, 35		39, 69	
	Tolerance	0~+1.4mm					
Rotation angle & tolerance		90±10°					
Proof pressure		15kgf/㎠					
Max.Operating pressure		9.9kgf/㎠					
Min.Operating pressure		1.0kgf/㎠					
Action		Double acting (Standard)					
Piston speed		50~200mm/sec.					
Cushion	Rod side	Rubber (Rod end)					
	Head side	None					
Ambient & Fluid temperature		-5~60℃					
Lubrication		Not nesessary (Non-Lube)					
Port size		M5×0.8		Rc(PT 1/8)		Rc(PT)1/4	
Applicable Auto switch		W8*, W9, W4(over Ø32) W2P(over Ø40)					

Theeretical OutPut (Unit : kgf)

Boresize (mm)	Rod O.D. (mm)	Operating Direction	Piston area	Operating Pressure(kgf/㎠) 2	3	4	5	6	7	8	9	10
20	12	CLAMP	2	4	6	8	10	12	14	16	18	20
		UNCLAMP	3	6	9	12	15	18	21	24	27	30
25		CLAMP	3.7	7.4	11.1	14.8	18.5	22.2	25.9	29.6	33.3	37
		UNCLAMP	4.9	9.8	14.7	19.6	24.5	29.4	34.3	39.2	44.1	49
32	16	CLAMP	6	12	18	24	30	36	42	48	54	60
		UNCLAMP	8	16	24	32	40	48	56	64	72	80
40		CLAMP	10.5	21	31.5	42	52.5	63	73.5	84	94.5	105
		UNCLAMP	12.5	25	37.5	50	62.5	75	87.5	100	112.5	125
50	20	CLAMP	16.4	32.8	49.2	65.6	82	98.4	114.8	161.2	147.6	164
		UNCLAMP	19.6	39.2	58.8	78.4	98	117.6	137.2	156.8	176.4	196
63		CLAMP	28	56	84	112	140	168	196	224	252	280
		UNCLAMP	31.1	62.2	93.3	124.4	155.5	186.6	217.7	248.8	279.9	311

※ =Pressure(kgf/㎠)

Guide Cylinder Guide Unit
Series GX/AGX

Bore Size: ϕ20, ϕ25, ϕ32, ϕ40

- Compact integration of AGX/GX series cylinder with guide rods. unit resists lateral loading and provides precise, non-rotating motion
- The AGX/GX series is equipped with a standard magnet for auto switch capability

Air Cylinder+Guide Unit

Action	Series	Bore Size (mm)	Port Size Rc(PT)	Standard Stroke (mm)	Description	Operating Pressure kgf/cm²(psi)
Air Cylinder(AX) + Guide Unit(GX)	AGX	ϕ20	1/8	25, 50, 75, 100, 125, 150, 200, 250, 300	Bushing	0.5~9.9(7~140)
		ϕ25				
		ϕ32		25, 50, 75, 100, 125, 150, 200, 250, 300, 350, 400		
		ϕ40	1/4	25, 50, 75, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500		

How to Order

- Guide Cylinder

AGX B B 40 — 150 A — W5 ( )

1 2 3 4 5 6 7 8

1 Type
Guide Cylinder
(Built-in Magnet)

2 Type of Bearing
B : Bushing Type

3 Mounting
B : Standard

4 Bore Size
20 : ϕ20mm
25 : ϕ25mm
32 : ϕ32mm
40 : ϕ40mm

5 Cylinder Stroke(mm)
※ Refer to the upside table

6 Cushion
Blank : Rubber Cushion
A : Air Cushion

7 Applicable Auto Switches
(Band mounted type / Grommet)
Blank : Without Auto Switch
W4 : Reed Switch(Lead Wire of 0.5m)
W5L : Reed Switch(Lead Wire of 3m)

8 Number of Switches
Blank : 2 pcs.
S : 1pc.
: Enter Required Number of Switches.

Guide Unit

- Guide Unit

GX B B 40 — 150

1 2 3 4

1 Type of Bearing
B : Bushing Type

2 Mounting
B : Standard

3 Applicable Bore Size
20 : ϕ20mm
25 : ϕ25mm
32 : ϕ32mm
40 : ϕ40mm

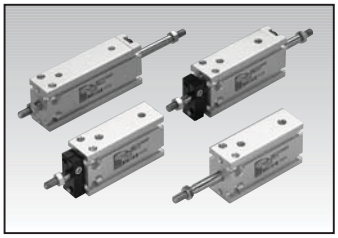
4 Cylinder Stroke(mm)
ϕ20, ϕ25: 25, 50, 75, 100, 125, 150, 200, 250, 300
ϕ32:25, 50, 75, 100, 125, 150, 200, 250, 300, 350, 400
ϕ40:25, 50, 75, 100, 125, 150, 200, 250, 300, 350, 400 ,450, 500

Specifications/Standard Type

Fluid	Air
Action	Double Acting
Proof Pressure	15kgf/cm²(213 psi)
Max. Operating Pressure	9.9kgf/cm²(140 psi)
Min. Operating Pressure	0.5kgf/cm²(7 psi)
Ambient and Fluid Temperature	-10℃~+70℃ (14~160 °F)
Lubrication	Non-Lube
Thread Tolerance	KS 2 Class
Stroke Tolerance	$^{+1.4}_{0}$ mm

Direct Mount Cylinder
Series NDM

Bore Size: ϕ10, ϕ16, ϕ20, ϕ25



- Space saving compact design
- Multiple mounting options
- Non-rotating rod type available
- Non lubricated service (standard)

Action	Series	Bore Size (mm)	Port Size	Standard Stroke (mm)	Description	Operating Pressure kgf/cm²(psi)
Double Acting/Single Rod	NDM	ϕ10	M5×0.8	5, 10, 15, 20, 25, 30,	-	0.5~7.0(7~100)
		ϕ16				
		ϕ20		5, 10, 15, 20, 25, 30, 35, 40, 45, 50		
		ϕ25				
Double Acting/Double Rod	NDMW	ϕ10	M5×0.8	5, 10, 15, 20, 25, 30,	-	
		ϕ16				
		ϕ20		5, 10, 15, 20, 25, 30, 35, 40, 45, 50		
		ϕ25				
Double Acting/ Non-Rotating Rod	NDMK	ϕ10	M5×0.8	5, 10, 15, 20, 25, 30,	Non-Rotating Accuracy:±0.8	
		ϕ16				
		ϕ20		5, 10, 15, 20, 25, 30, 35, 40, 45, 50	Non-Rotating Accuracy:±0.5	
		ϕ25				
Double Acting/ Non-Rotating/Double Rod	NDMKW	ϕ10	M5×0.8	5, 10, 15, 20, 25, 30,	Non-Rotating Accuracy:±0.8	
		ϕ16				
		ϕ20		5, 10, 15, 20, 25, 30, 35, 40, 45, 50	Non-Rotating Accuracy:±0.5	
		ϕ25				

How to Order

NDM D ○ 10 – 30 D – W8HL S

1 2 3 4 5 6 7 8

1 New Challenger Direct Mount Cylinder

2 No Symbol : No magnet included
D : Magnet included

3 Series
Blank : standard(single Rod)
W : Double Rod
K : Non-Rotating
KW : Non-Rotating(Double Rod)

4 Bore Size
10 : ϕ10
16 : ϕ16
20 : ϕ20
25 : ϕ25

5 Stroke (mm)
ϕ10,16 : 5,10,15,20,25,30st
ϕ20,25 : 5,10,15,20,25,30,40,50st

6 Operation Type
D : Double-Acting

7 Auto-switch Types
No Symbol : No auto-switch
Connection : W8(H.V)-double wiring
No Connection : W9(H.V)-double wiring (triple wiring : Optional)
Horizontal : H ; Vertical : V
※The length of lead wire is 1m (standard). Symbol "L" shall be added to the model number in case the wire is 3m. Ex : W8HL

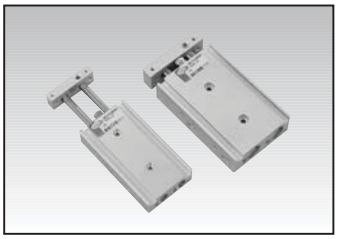
8 Auto - switch Symbol
No symbol : two switches attached
S : one switch attached

Specifications/Standard Type

Fluid	Air
Proof Pressure	10.5kgf/cm² (149 psi)
Max. Operating Pressure	7kgf/cm² (100 psi)
Ambient and Fluid Temperature	5 ~ 60℃ (14~140 °F)
Lubrication	Not Required
Cushion	Both Sides Rubber Cushion
Rod end Thread	Male Thread
Thread Tolerance	KS 2 Class
Stroke Allowance	$^{+1.0}_{0}$ mm
Mounting	Basic Type
Piston Velocity	50~500mm/sec

Double Rod Cylinder
Series ADR

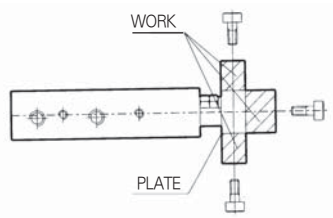
Bore Size: ϕ10, ϕ16, ϕ20, ϕ25



- High lateral load capability
- Adjustable stroke is available
- Auto switch ready
- Non-lube service standard.

Action	Series	Bore Size (mm)	Port Size	Standard Stroke (mm)	Description	Operating Pressure kgf/cm²(psi)
Double Acting/Single Rod-Ball Bushing Bearing Type	ADRL	ϕ10	M5×0.8	10,15,20,25,30,35,40,45,50,55,60,65,70,75	Built-in Magnet Bumper Cushion	1~7.0(14~100)
		ϕ16		10,15,20,25,30,35,40,45,50,55,60,65,70,75,80,85,90,95,100		
		ϕ20				
		ϕ25				
Double Acting/Single Rod-Sliding Bearing Type	ADRM	ϕ10	M5×0.8	10,15,20,25,30,35,40,45,50,55,60,65,70,75	Built-in Magnet Bumper Cushion	1~7.0(14~100)
		ϕ16		10,15,20,25,30,35,40,45,50,55,60,65,70,75,80,85,90,95,100		
		ϕ20				
		ϕ25				

Plate Can be Mounted From Three Faces



How to Order

ADR M 10 — 30 — W1□ ○ S

1 2 3 4 5 6

1 Type of Bearing
- M : Slide Bearing Type
- L : Ball Bushing Bearing Type

2 Bore Size
- 10 : ϕ10mm
- 16 : ϕ16mm
- 20 : ϕ20mm
- 25 : ϕ25mm

3 Stroke(mm)
- ※ Refer to the upside table (For non standard stroke, inquire separately)

4 Types of Auto Switches
- Blank : Without Auto Switch
- W1H : Solid State Switch (DC24V)
- W13 : Reed Switch (AC110V, DC24V)

5 Lead Wire Length
- Blank : 0.5m
- L : 3m

6 Number of Switches
- Blank : 2 pcs.
- S : 1 pc.
- # : Enter Required Number of Switches.

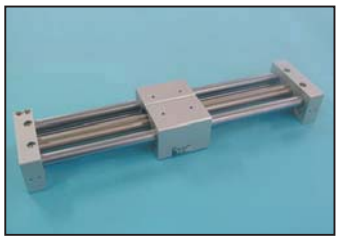
Standard Specifications

Action	Double Acting Double Rod
Fluid	Air
Max. Operating Pressure	10 kgf/cm²(142 psi)
Proof Pressure	7 kgf/cm²(100 psi)
Min. Operating Pressure	1 kgf/cm²(14 psi)
Ambient and Fluid Temperature	-10℃~+60℃ (14~140°F)
Piston Speed	30~300 mm/s
Cushion	Rubber Cushion
Lube	None(Non-Lube)
Stroke Adjustment Range	0~-5mm
Bearing	Slide bearing, Ball Bushing Bearing (Same Dimensions)

Magnet Type
Rodless Cylinder

Series AMR/UAMR

Bore Size: ϕ10, ϕ16, ϕ20, ϕ25, ϕ32, ϕ40



- Precision stainless steel body for smooth actuation
- Light weight
- Compact design
- Leak free
- Non - lubricated type standard
- Position sensing capable with guide type(G)

Action	Series	Bore Size (mm)	Port Size AMR	Port Size UAMR	Standard Stroke AMR(mm)	Standard Stroke UAMR(inch)	Operating Pressure kgf/cm²(psi)
Double Acting/ Ball Bushing Bearing Type	(U)AMRB	ϕ10	M5×0.8	10-32 UNF	50~500	0.5~12	1.5~7(21~100)
		ϕ16					
		ϕ20	Rc(PT) 1/8	NPT 1/8	100~1,500	0.5~60	
		ϕ25					
		ϕ32			100~2,000	0.5~78	
		ϕ40	Rc(PT) 1/4	NPT 1/4			
Double Acting/ Sliding Bearing Type	(U)AMRG	ϕ10	M5×0.8	10-32 UNF	50~500	0.5~20	1.5~7(21~100)
		ϕ16			50~700	0.5~30	
		ϕ20	Rc(PT) 1/8	NPT 1/8	100~1,000	0.5~40	
		ϕ25			100~1,500	0.5~60	
		ϕ32					
		ϕ40	Rc(PT) 1/4	NPT 1/4			

How to Order

( ) **AMR** **G** **H** **10** — **50** — **W1H** — ( )

1 2 3 4 5 6 7

1 Series
Blank : Metric(PT)
U : Inch(NPT)

2 Type of Bearing
B : Basic Type(Standard)
G : With Guide Type(Auto Switch Capable Cylinder)

3 Magnet Holding Power(kgf)

Dia	H	L
ϕ10	5.5	-
ϕ16	12	-
ϕ20	24	15.7
ϕ25	37	22.5
ϕ32	60	36.5
ϕ40	94	58

4 Bore Size(mm)
10: ϕ10
16: ϕ16
20: ϕ20
25: ϕ25
32: ϕ32
40: ϕ40

5 Stroke
- Metric(AMR, AMRG) : mm
- Inch(UAMR, UAMRG) : Hundredths of an inch

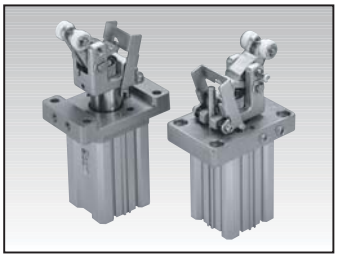
6 Applicable Auto Switches
- Solid State Type
W1H : 3-Wire(DC24V) (Lead Wire of 0.5m)
W1HL : 3-Wire(DC24V) (Lead Wire of 3m)
- Reed Switch Type
W13 : 2-Wire(AC100V,DC24V) (Lead Wire of 0.5m)
W13L : 2-Wire(AC100V,DC24V) (Lead Wire of 3m)

7 Number of Switches
Blank : 2 pcs.
S : 1 pc.
: Enter Required Number of Switches.

Standard Specificatios

Fluid		Air	
Proof Pressure		10.5kgf/cm²(149 psi)	
Max. Operating pressure		7kgf/cm²(100 psi)	
Min. Operating Pressure		2kgf/cm²(28 psi)	
Ambient and Fluid Temperature		5~60℃ (14~140°F)	
Operating Piston Speed		150 ~ 400 mm/s	
Lubrication		Non-Lube	
Cushion	Basic Type	ϕ10, ϕ16	Rubber Cushion
		ϕ20, ϕ25, ϕ32, ϕ40	Air Cushion
	With Guide Type	ϕ10, ϕ16, ϕ20, ϕ25, ϕ32, ϕ40	Rubber Cushion

Stopper Cylinder
Series NST
Bore Size: ϕ32, ϕ50



- Position may be rotated to four directions by 90° each time
- Includes a shock absorber that is easily maintained and replaced
- Single-acting, double-acting (with springs)
- Clean work environment with leak-free design for lubrication
- Auto switch capable

Specifications

Action	Single Acting, Double Acting, Double Acting(with Springs)
Fluid	Air
Proof Pressure	15kgf/cm²(1.5MPa)
Max. Operating Pressure	10kgf/cm²(1MPa)
Min. Operating Pressure	Double Acting:1kgf/cm²
	Single Acting:1kgf/cm²
Ambient and Fluid Temperature	-5℃ ~ 70℃
Lubrication	Not required
Cushion	Rubber bumper
Stroke Length Tolerance	$^{+1.4}_{0}$
Mounting	Thru hole(standard), Both ends tapped
Auto Switch	Attachable

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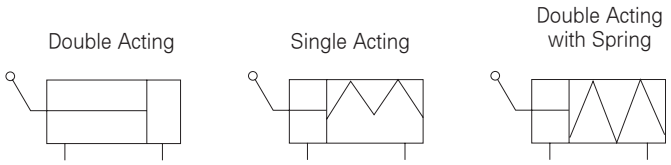


How to Order

NST LA 50 — 30 D M — P V1 — W4 S

1 2 3 4 5 6 7 8 9 10

1 NST=New Challenge Stopper Cylinder

2 LA : Lever / Standard
LB : Lever / Slim Rod Cover (only for Ø50)

3 Bore Size
50 : 50mm
63 : 63mm
80 : 80mm

4 Standard Stroke (mm)
50(Standard) : 25,30,40mm
50(Slim design) : 25,30mm
50(Squar type) : 30mm
63 : 30,40mm
80 : 30,40mm

5 Blank Type
Blank : Single-Acting
D : Double-Acting
Z : Double-Acting with springs

6 Roller
Blank : Plastic Resin (MC Nylon)
M : Cold-rolled Steel

7 Lever Lock Device (Optional)
Blank : None
SP : pallet stops passes
S : pallet stops
P : pallet passes

8 Valve Attachment (Optional)
Blank : None
V1 : AC 110V
V2 : AC 220V
V5 : DC 24V
None) V is standard for 50.

9 Auto-switch Types
Blank : No auto-switch
W4 : Auto switch Reed Type
W8H/W8V : Round auto switch Reed Type (horizontal/vertical)
W9H/W9V : Round auto switch soud state Type (Vertical Type)

10 Auto-switch Symbol
Blank : two switches attached
S : one switch attached

Stopper Cylinder
Series AST

Bore Size: ϕ50, ϕ63, ϕ80

- Stopping direction can be changed every 90˚
- Easy maintenance
- Three actuating options
  : Single, double acting and double acting with spring
- Auto switch capable

Specifications

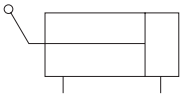
Action	Double Acting, Single Acting(Spring Extend), Double Acting with Spring
Fluid	Air
Proof Pressure	1.5MPa(213psi)
Max. Operating Pressure	1MPa(142.2psi)
Min. Operating Pressure	Double acting:1MPa(142.2psi)
	Single acting:1MPa(142.2psi)
Ambient and Fluid Temperature	-5℃ ~ 60℃(23~140℉)
Lubrication	Not required
Cushion	Rubber bumper
Stroke Length Tolerance	$^{+1.4}_{0}$
Mounting	Flange
Auto Switch	Attachable
Type	Roller Type, Direct Type

Standard Stroke

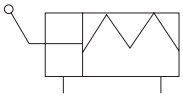
Bore Size	Standand Stroke(mm)
ϕ50	20, 25, 30, 40
ϕ63, ϕ80	30, 40

< Symbol >

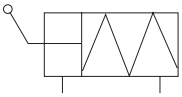
Double Acting



Single Acting



Double Acting with Spring



How to Order

AST R 50 — 30 D M — V 1 — W4 S

1 2 3 4 5 6 7 8 9

1 Type
- R : Roller
- D : Direct

2 Bore Size
- 50 : 50mm
- 63 : 63mm
- 80 : 80mm

3 Stroke
- ϕ50 : 20, 25, 30, 40
- ϕ63 : 30, 40
- ϕ80 : 30, 40

4 Action
- Blank : Single Acting
- D : Double Acting
- Z : Double Acting with Spring

5 Roller
- Blank : Material(MC Nylon)
- M : Rolled steel(SPA material)

6 Port Location

	Location	ϕ50	ϕ63,80
Blank	Port-A:on body Port-B:on flange	N/A	○
V	Port-A Port-B :on flange	○ (Standard)	○

7 Valve
- Blank : None
- 1 : With Valve(100V AC)
- 2 : With Valve(200V AC)
- 3 : With Valve(120V AC)
- 4 : With Valve(240V AC)
- 5 : With Valve(24V DC)

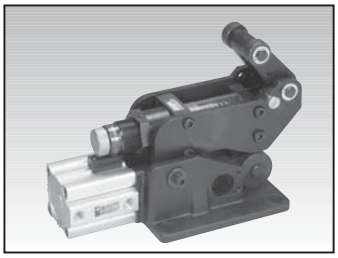
8 Type of Auto Switch
- Blank : Without Auto Switch
- W4 : Existing plug Point Auto Switch
- W8H/W8V: Existing Plug Point round auto switch (horizontal Type/ vertical Type)
- W9H/W9V: non Plug Point round auto switch (horizontal Type/ vertical Type)

Caution)
1. According to the lead line direction of the existing plug point or non plug point auto switch, it is separated into horizontal/vertical types.
2. When the lead wire length is 3m add an L to the end number of the product.
   ex) W8H: W8HL
3. W4, W8H(V):Multiple use of DC24V, AC110V / Multiple use of
   W9H(V):DC24V

9 Auto Switch
- Blank : 2pcs.
- S : 1pc.

Horizontal Stopper Cylinder
Series ASTH

Bore Size : ϕ32, ϕ50



● Vertical stopper cylinder

Specifications

Specifications

Items	Bore Size		Note
	ϕ32	ϕ50	
Fluid	Air		
Acting	Double Acting		
Mounting	Horizontal(Bottom Fiame) Mounting		
Proof Pressure	1.5Mpa(15kgf/cm²)		
Max. Operating Pressure	1.0Mpa(10kgf/cm²)		
Min, Operating Pressure	0.1Mpa(1.0kgf/cm²)		
Ambient and Fluid Temperature	-5℃ ~ 70℃ (Without Freezing)		
Lubrication	Not Required		
Pision Speed	50~500mm/sec.		
Auto Switch	W4 W8H(V) W9H(V) Auto Switch	W4 W8H(V) W9H(V) W2P	
Up&Down cylinder bore size×stroke	ϕ32×40mm	ϕ50×40mm	Fixed Stroke
Allowable Load	5~600kgf	10~1,400kgf	Different regarding to convey speed
Cushion	Rubber Cushion	Rubber Cushion	
Weight	2.5kgf	9.5kgf	Without Option Parts

Applying Shock Absorber Spec

Part No.	SB2015-B	D-A73K W8H(V)	Adjstable Type
Port Size	M20×1.5	W9H(V) W2P	
Stroke	15mm	ϕ50×40mm	
Effective Weight	1.3~285N	10~1,400kgf	
Impact Force	1,160M	6,000M	
Return Force	8~15N	Rubber Cushion	
Weight	150g	9.5kgf	

How to Order

A(D)ST (H) — **32** — (L) (M) (P) — **W4** (S)

1 2 3 4 5 6 7 8

1 Stopper Cylinder
- D : Built in magnet

2 Horizontal Type
- : Horizontal

3 Bore Size (Fixed Stroke)
- 32 : 40mm
- 50 : 50mm

4 Piping Port Location
- Blank : Right
- L : Left
- • Referena to dimension for location

5 Material on Stop Roller
- Blank : MC Nylon
- M : Rolling steel
- • Referena to dimension for location

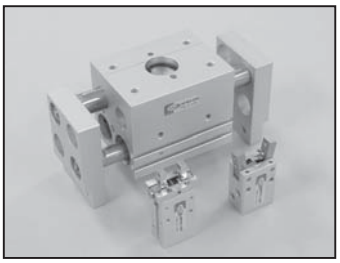
6 Pass Pin
- Blank : Without
- P : With

7 Auto Switch
- Blank : None
- W4 : Reed switch
- W8H(V) : Reed switch (round type)
- W9H(V) : Reed switch (round type)
- W2P : Iintense-magnetism resistant switch (Only for ϕ50)
- BK : Bracker (for switch mounting) (Only for ϕ50, refer to dimension)

8 The Nunber of Switch
- Blank : 2pcs
- S : 1pc

Air Chuck
Series NF

NFH2 : ϕ10, ϕ16, ϕ20, ϕ25
NFW2 : ϕ10, ϕ12, ϕ16, ϕ20, ϕ25, ϕ30
NFP2 : ϕ12, ϕ16, ϕ20, ϕ25, ϕ32, ϕ40



- Easy to mount
- Compact design
- High holding power, high accuracy

How to Order

NF H 2 — 20 D — W9H S

1 2 3 4 5

1 Air Chuck Series
N : NEW
F : Air Finger
H : Horizontal
W : Wide P : Pivot
2 : Number of fingers

2 NFH2 Bore Size
Opening/Closing Stroke(mm)

Model	Bore Size	Opening/closing Stroke
10	10	4
16	16	6
20	20	10
25	25	14

NFW2 Bore Size
Opening/Closing Stroke(mm)

Model	Bore Size	Opening/closing Stroke
10	10	10
12	12	20
16	16	30
20	20	40
25	25	50
30	30	60

NFP2 Bore Size
Opening/Closing Stroke(mm)

Model	Bore Size	Opening/closing angle
12	12	-5~15°
16	16	
20	20	-5~20°
25	25	
32	30	
40	40	

3 Action
NFH2, NFP2
D : Double acting

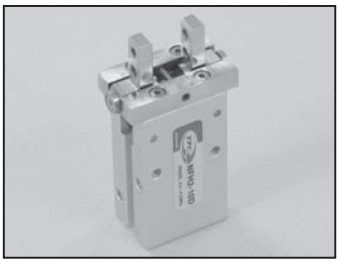
NFW2
A : Vertical Direction
B : Horizontal Direction

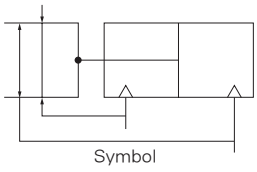
4 AUTO SWITCH Specification
Blank : without Auto Switch (Built in Magnet)
W9H : Mini Solid State Auto Switch (Horizontal)
W9V : Mini Solid State Auto Switch (Vertical)
W9HN : Solid State Switch (3wire, NPN)
W9HP : Solid State Switch (3wire, PNP)
Impossible to install Auto Switch (NFP2-12, 16)

5 Number of AUTO SWITCH
Blank : 2pcs
S : 1pc

Air Chuck
Series NFH2 (Double acting)

Bore Size: ϕ10, ϕ16, ϕ20, ϕ25



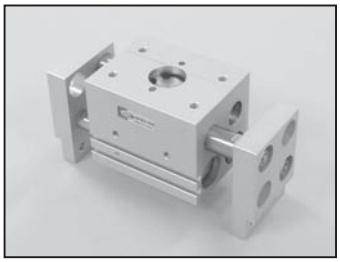


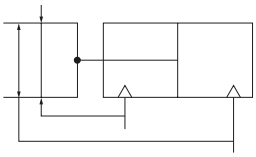
Specification

Models		NFH2-10D	NFH2-16D	NFH2-20D	NFH2-25D
Cylinder (mm)		10	16	20	25
Standard Stroke (mm)	width at closing	6	7	7	9
	width at opening	10	13	17	23
	Stroke	4	6	10	14
Theoretical gripping force(N) 1N≒0.102kgf	close	1.1	3.5	4.3	6.4
	open	1.7	4.1	6.7	10.6
Piping Method		M3	M5	M5	M5
Weight (kgf)		0.05	0.12	0.25	0.45
L(mm)		30	35	60	80
Fluid		Air	Air	Air	Air
Operating Pressure · kgf/cm²(psi)		3 ~ 7(42.6~99.5)			
Lubrication		None(Non-Lube)			
Temperature · ℃(℉)		5 ~ 60℃(41~140℉)			
Repeatability	Initial	±0.01			
	After 1 million ope	±0.1	±0.05		
Max. opening frequency		160			
Auto switch		W9H,W9V			

Air Chuck
Series NFW2

Bore Size: ϕ10, ϕ16, ϕ20, ϕ25, ϕ30





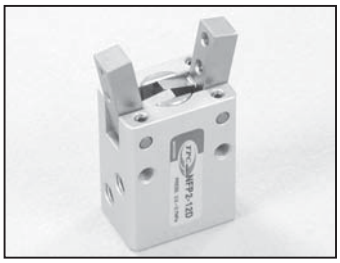
Symbol

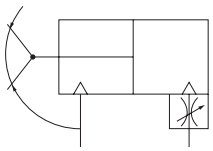
Specification

Models		NFW2-10A	NFW2-12A	NFW2-16A	NFW2-20A	NFW2-25A	NFW2-30A
Cylinder (mm)		10	12	16	20	25	30
Standard Stroke (mm)	width at closing	36	44	54	68	90	100
	width at opening	46	64	84	116	140	170
	Stroke	10	20	30	48	50	70
Theoretical gripping force(N) 1N≒0.102kgf	close	(P-0.16)×	(P-0.14)×	(P-0.09)×	(P-0.07)×	(P-0.06)×	(P-0.03)×
	open	(80-3L)	(140-5L)	(250-11L)	(320-10L)	(550-17L)	(830-18L)
Thread		M5					
Weight (kgf)		0.17	0.29	0.475	1.15	2.01	3.03
Max. gripping length		30	45	75	100	120	150
Fluid		air					
Operating Pressure · kgf/cm²(psi)		3 ~ 7(42.6~99.5psi)					
Lubrication		None					
Temperature · ℃(℉)		5 ~ 60℃(41~140℉)					
Repeatability	Initial	±0.1					
	After 1 million opeation	±0.2					
Max. operating frequency		60					
Auto Switch		W9H,W9V					

Air Chuck
Series NFP2
(Double acting)

Bore Size: ϕ10, ϕ16, ϕ20, ϕ25, ϕ32, ϕ40





Symbol

Specification

Models		NFP2-12D	NFP2-16D	NFP2-20D	NFP2-25D	NFP2-32D	NFP2-40D
Cylinder (mm)		12	16	20	25	32	40
Stroke (mm)		-5 ~ 15	-5 ~ 15	-5 ~ 20	-5 ~ 20	-5 ~ 20	-5 ~ 20
Theoretical gripping force(N) 1N≒0.102kgf	close	1.0×P/L	2.0×P/L	3.7×P/L	6.8×P/L	11.3×P/L	23.9×P/L
	open	0.75×P/L	1.5×P/L	2.8×P/L	5.7×P/L	8.8×P/L	19.5×P/L
Thread		M5	M5	M5	M5	PT1/8	PT1/8
Weight (kgf)		0.05	0.06	0.2	0.3	0.4	0.76
Soft Jaw length (mm)		45	60	70	75	85	120
Fluid		air					
Operating Pressure(kgf/cm²)psi		3 ~ 7					
Lubrication		None					
Temperature (℃(℉))		5 ~ 60℃(40~140℉)					
Repeatability	Initial	±0.1					
	After 1 million operation	±0.2					
Max. operating frequency		80	80	60	60	60	60
Auto Switch		-	-	W9H,W9V	W9H,W9V	W9H,W9V	W9H,W9V

Table Cylinder(Linear Cylinder)

Series NLCD

Bore size : ϕ6, ϕ8, ϕ12, ϕ16, ϕ20, ϕ25, ϕ32

● Multiple mounting options

How to Order

NLCD (1) 12 (2) — 50 (3) RF15 (4) R — W8H (5) S (6)

1 New Linear Cylinder Double Rod

2 Bore size(ϕmm)-Stroke(mm)
- ϕ6 :10, 20, 30, 40, 50
- ϕ8 :10, 20, 30, 40, 50, 75,
- ϕ12:10, 20, 30, 40, 50, 75,100
- ϕ16:10, 20, 30, 40, 50, 75,100,125
- ϕ20:10, 20, 30, 40, 50, 75,100,125,150
- ϕ25:10, 20, 30, 40, 50, 75,100,125,150
- ϕ32: 30, 75,100

3 Adjuster Option
1) Rubber Damper
RF : Front Side
RB : Rear Side
R : Both side(RF+RB)
Adjustable Range : 5,15,25mm
ex) RF15, RB15, R15
※ NLOD6:Unable 25mm
※ Blank:5mm ex)RF,RB,R
2) Shock-absober Attachd
SF : Front Side
SB : Rear Side
S : Both Side(SF+SB)
※ NLCD6,32 : unable shock-absober

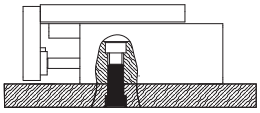
4 Type of Auto Switch
Blank : None
W8V : Reed Switch(Vertical Type)
W8H : Reed Switch(Horizontal Type)
W9H : Solid State Switch(Horizontal Type)
W9V : Solid State Switch(Vertical Type)
W9HN : Solid State Switch(3 Wire, NPN)
W9HP : Solid State Switch(3 Wire, PNP)
※ Standard auto switch lead wire length is 1m. 3m leads abailable on all models by adding a "L" suffix to the part number. (ex:W8HL, W9VL)

5 Number of Auto Switch
Blank : 2pcs
S : 1pc
n : npc

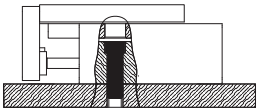
Specifications

Bore size(ϕmm)	6, 8, 12, 16, 20, 25
Fluid	Air
Operation	Double Acting
Operating Pressure	0.15~0.7Mpa(21.3~99.6psi)
Proof Pressure	1.05Mpa(152.2psi)
Ambient and Fluid Temp ℃(℉)	-10~60℃(14~140℉)
Piston Speed	50~500㎜/s
Lubrication	Non Lube
Auto Switch(Option)	Exsting plug:DC(24V)/AC(110V) Non plug:DC(24V)
Stroke length tolerance	0~+1㎜
Option(Stroke Adjust)	BOLT+Damper(Front side/Both side)/SHOCK-ABSORBER

1.Side mounting(Body Tapped)



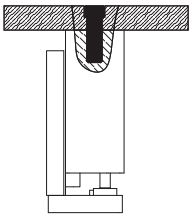
2.Side mounting(Body through hole)

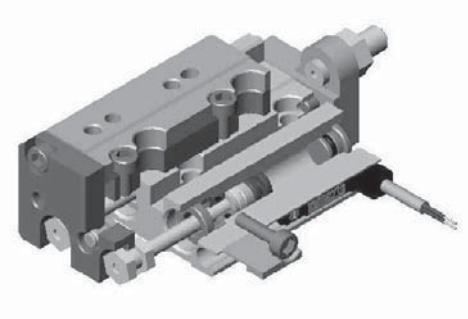


Standard Stroke

Models	Standard Stroke(mm)								
	10	20	30	40	50	75	100	125	150
ϕ6	●	●	●	●	●	—	—	—	—
ϕ8	●	●	●	●	●	●	—	—	—
ϕ12	●	●	●	●	●	●	●	—	—
ϕ16	●	●	●	●	●	●	●	●	—
ϕ20	●	●	●	●	●	●	●	●	●
ϕ25	●	●	●	●	●	●	●	●	●
ϕ32	—	—	●	—	—	●	●	—	—

3.Axial mounting(Body tapped)





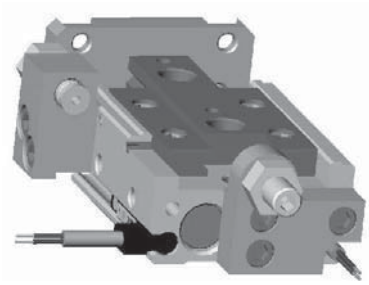
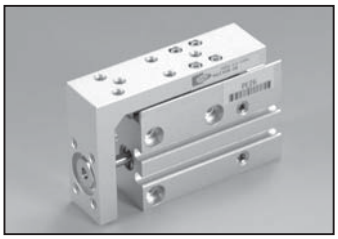


Table Cylinder(Linear Cylinder)

Series NLCS

Bore size : ϕ6, ϕ10, ϕ16



- Circulating bearings
- Universal mounting

How to Order

NLCS — 10 — 30 W8H S

1 2 3 4

1 New Linear Cylinder Single Rod

2 Bore size(ϕmm)-Stroke(mm)
- 6 - 5,10,15,20,25,30
- 10 - 5,10,15,20,25,30
- 16 - 5,10,15,20,25,30

3 Type of Auto Switch
- Blank : None
- W8H : With Contact Point(Horizontal Type)
- W8V : With Contact Point(Vertical Type)
- W9H : Without Contact Point(Horizontal Type
- W9V : Without Contact Point(Vertical Type)
- W9HN : Without Contact Point(NPN), 3wire
- W9HP : Without Contact Point(PNP), 3wire

※ When the lead wire Lenth is 3m, add an L to the end number of the product (ex:W8HL, W9VL)

4 Number of Auto Switch
- Blank : 2pcs
- S : 1pc
- n : npc

Specifications

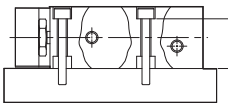
Bore size(ϕmm)	6, 10, 16
Fluid	Air
Operation	Double Acting
Operating Pressure	0.15~0.7Mpa(21.3~99.6psi)
Proof Pressure	1.05Mpa(152.2psi)
Ambient and Media Temp ℃(℉)	-10~60℃(14~140℉)
Piston Speed	50~500mm/s
Lubrication	Non Lube
Auto Switch(Option)	Exsting plug:DC(24V)/AC(110V) Non plug:DC(24V)
Stroke length tolerance	0~+1mm
Cushion	Rubber Damper(Both side)

Standard Stroke

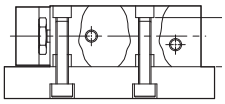
Models	Standard Stroke						
	5	10	15	20	25	30	40
NLCS6	■	■	■	■	■	■	—
NLCS10	■	■	■	■	■	■	■
NLCS16	■	■	■	■	■	■	—

Monting Possible in Various Directions

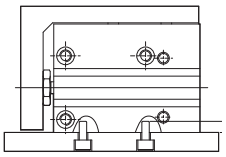
1. Side mounting(Body through hole)



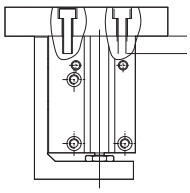
2. Side mounting(Body tapped)

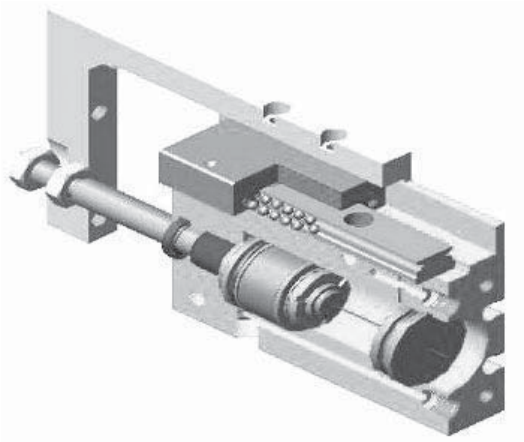


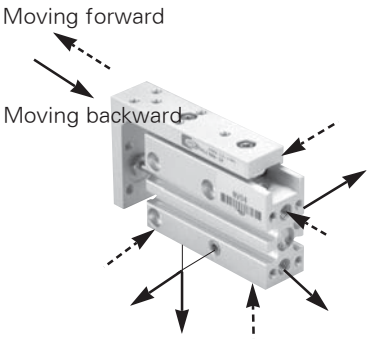
3. Bottom side mounting



4.Axial mounting(Body tapped)







Rodless Cylinder

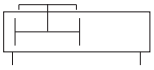
Series TCRL

Bore Size : ϕ16, ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63, ϕ80

- High rigidity, long service life
- Easy maintenance
- Various bore size
- Suitable for the widest range of operating speeds(100~2,000mm/sec)

〈 Symbol 〉

Double Acting Type



How to Order

TCRL A 16 — 1000 — S2 ◯ — UF ◯ — ① ②

1 2 3 4 5 6 7 8 9

1 TPC Rodless Cylinder
(Built in Magnet)

2 Guide Type
A : Inside Guide
B : Outside Guide

3 Bore Size
16 : 16mm
20 : 20mm
25 : 25mm
32 : 32mm
40 : 40mm
50 : 50mm
63 : 63mm
80 : 80mm

4 Stroke
Max.5,000mm

5 Auto Switch
Blank : Non-Switch
S2 : Reed Swith
(DC10V~AC220V a Combined use)
M2 : Mini Reed Swith
(DC10V~170V, AC10V~240V a Combined use)

Bore Size	SwitchType	Model
ϕ16 ~ ϕ25	QM/45/EAP	QM-45-LSU-2V
ϕ32 ~ ϕ80	QM/33 Reed 240VAC/AC	QM-33

6 Number of Auto Swithc
Blank : 2 pcs
S : 1 pcs
n : n pcs

7 Option
Blank : Non
F : Foot mount(2EA)
C : Center support(2EA)
UF : Carriage bracket front (1 set)
UR : Carriage bracket rear (1 set)
S : Swinging bridge
※1) Carriage Bracket
• Front : arm at port side
• Rear : arm at opposite port side
※2) Option UF, UR:unable use C.
※3) Option S:TCRLA type only.

8 Number of Option
Blank : 1 set
2 : 2 set
n : n set

9 The plural number of option :
① Additional option
② Additional number of option

Specifications

Bore Size	ϕ16	ϕ20	ϕ25 ~ 80
Operation Type	Bouble Acting Type		
Fluid	Air(Non-Lubrication)		
Operating Pressure Range	1.5 ~ 10kgf/cm2 (0.15 ~ 1MPa)	1 ~ 10kgf/cm² (0.1 ~ 1MPa)	
Temperature Range · ℃(℉)	-5 ~ 60℃(23~140℉)		
Piston Speed	150 ~ 2,000mm/s		100 ~ 2,000mm/s
Cushion	Cushion of Variable Type		
Magnet(For Auto Switch)	Standard		
Support Type	Basic Type		

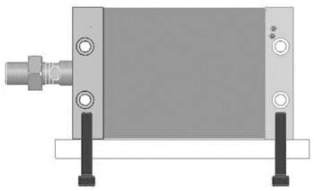
※ In the case of low temperature at the below 1.5℃, please use the air dryer.

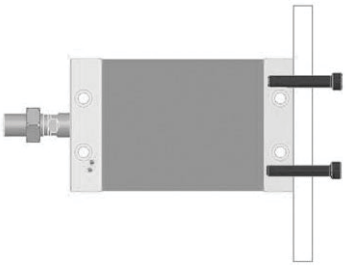
Theoretical Force (N)

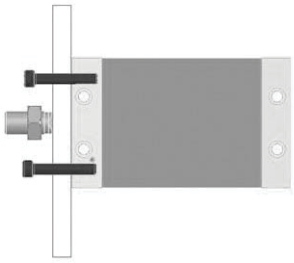
Bore size	Standard Stroke(mm)									
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ϕ16	20	40	60	80	100	120	140	160	180	200
ϕ20	31	63	94	126	157	188	220	250	280	314
ϕ25	49	98	147	196	245	294	343	390	441	490
ϕ32	80	161	241	322	402	482	563	643	724	804
ϕ40	126	251	377	502	628	754	879	1005	1130	1256
ϕ50	196	393	589	785	982	1178	1374	1570	1767	1963
ϕ63	312	623	935	1246	1558	1869	2181	2493	2804	3116
ϕ80	502	1005	1507	2010	2512	3014	3517	4019	4522	5024

Plate Cylinder
Series NP
Bore Size: ϕ50, ϕ63

- Space saving compact design
- Built-in speed controller
- Axial side port availale
- Built-in coil scrapper available
- Small auto switches available







How to Order

NP D 50-100 B V M W2P — ○ ○ — X104

1 2 3 4 5 6 7 8 9 10

1 New Chllenger Plate Cylinder

2 Magnet
- Blank : None
- D : Standard built in magnetic

3 Tube size - stroke
- 50 : 5, 10, 15,20, 25, 30, 35, 40, 45, 50, 55, 75, 100, 125, 150, 200
- 63 : 5, 10, 15,20, 25, 30, 35, 40, 45, 50, 55, 75, 100, 125, 150, 200

4 Mounting
- Blank : None
- B : Y-knuckle(rod end male thread) + head cover double clevis
- C : Y-knuckle(rod end male thread)
- E : Head side double clevis
- HB : Y-knuckle(rod end male thread) + head cover double clevis

5 Position of port
- V : Standard side port
- H : Axial side port

6 Rod end configuration
- Blank : rod end female thread
- M : rod end male thread

7 Auto switch
- Blank : None
- W2P : Magnetism resisfant switch
- W8H : Reed switch(horizontal type)
- W8V : Reed switch(vertical type)
- W9H : Solid switch(horizontal type)
- W9V : Solid switch(vertical type))

8 Lead wire
- Blank : 0.5m(only for small switches)
- L : 3m
- Z : 5m(only for W2P)

9 Auantity of auto switch
- Blank : 2pcs
- S : 1pc

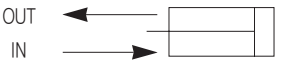
10 Coil serapper
- Blank : None
- X104 : Built in coil crapper

Specifications

Action		Double acting
Fluid		Air
Proof pressure		1.05MPa(10.53kgf/㎠)
Pressure range		0.05MPa(0.53kgf/㎠)~1.02MPa(10.43kgf/㎠)
Ambient and fluid temperature		-5~60℃
Piston speed		50~500mm/sec
Lubircation		Not required(Non-lube)
Cushion		Rubber cushion
Stroke length tolerance		$^{+1.4}_{0}$
Tube(mm)		Ø50, Ø63
Rod end configuration		Rod end female thread, rod end male thread
AUTO S/W	W2P	Magnetism resistant switch
	W8, W9	Semiconductor, electric equipment

Standard stroke

Size(mm)	Standard stroke(mm)
50	5,10,15,20,25,30,35,40,45,50,75,100,125,150,200
63	5,10,15,20,25,30,35,40,45,50,75,100,125,150,200



Theoretical Output

Size	Rod size (mm)	Operating direction	Piston area mm2	Operatng pressure(MPa) 0.2	0.3	0.4	0.5	0.6	0.7
50	20	OUT	1960	392	588	784	980	1176	1372
		IN	1646	329	494	658	823	988	1152
63	20	OUT	3117	623	935	1247	1559	1870	2182
		IN	2803	561	841	1121	1402	1682	1962

Weight (g)

Type	Standard stroke(mm) 50	75	100	125	150	Remarks
NP50	1,198	1,362	1,526	1,691	1,856	Basic weight
NP63	1,664	1,875	2,083	2,295	2,504	Basic weight

How to calculate
※ Basic weight +(additional weight stroke)
※ NP50 : 870g+(6.56g×STROKE)=
※ NP63 : 1,2450g+(8.4g×STROKE)=

Item number and weight of parts

Type		Rod type	item number	Weight(g)	Remarks
Y-knuckle	Double	Female thread	Y-NP50	325(pin included)	Ø50, 63
		Male thread	YMNP-50	280(Pin included)	Ø50, 63
Head cover clevis	Double	HYNP50, 63		485(Pin included)	All size
Rod cover clevis	Double	RYN50, 63		515(Pin included)	All size

Round Cylinder
Series ARD/UARD

Bore Size : ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63

- Compact light weight design
- High speed actuator
- Rubber bumper equipped
- ϕ80,ϕ100:Inquire separately

Action	Series	Bore Size (mm)	Port Size ARD	Port Size UARD	Standard Stroke ARD (mm)	Standard Stroke UARD(Inch)	Operating Pressure kgf/cm²(psi)
Double Acting/Single Rod	(U)ARD	ϕ20	Rc(PT) 1/8	NPT 1/8	25~350	1~14	0.5~9.9 (7~140)
		ϕ25			25~400	1~16	
		ϕ32			25~450	1~18	
		ϕ40			25~800	1~31	
		ϕ50	Rc(PT) 1/8	NPT 1/4	25~1200	1~47	
		ϕ63			25~1200	1~47	

How to Order

( ) **ARD** (B) (A) (40) — (400) — (W5) ( )

1 2 3 4 5 6 7

1 Standard
(Cylinder with Built-in Magnet)
Blank : Metric(PT)
U : Inch(NPT)

2 Mounting
B : Basic Type

3 Cushion
Blank : Rubber Cushion
A : Air Cushion

4 Bore Size(mm)
ϕ20 : 20mm
ϕ25 : 25mm
ϕ32 : 32mm
ϕ40 : 40mm
ϕ50 : 50mm
ϕ63 : 63mm

5 Stroke

Rubber cushion type	Stroke	Air cushion type	Stroke
ϕ20	25~350mm	ϕ20	25~350mm
ϕ25	25~400mm	ϕ25	25~400mm
ϕ32	25~450mm	ϕ32	25~450mm
ϕ40	25~800mm	ϕ40	25~800mm
ϕ50	25~1200mm	ϕ50	25~1200mm
ϕ63	25~1200mm	ϕ63	25~1200mm

ARD : mm
UARD : Hundredths of an inch
(Example:1″ → 0100, 41/2″ → 0450)

6 Applicable Reed Switches
Blank : Without Auto Switch
Band Mounted Type(Grommet)
W5 : (2wire DC24V)
Lead Wire of 0.5m
W5L : (2wire DC24V)
Lead Wire of 3m

7 Number of Switches
Blank : 2 pcs.
S : 1 pc.
: Enter Required Number of Switches.

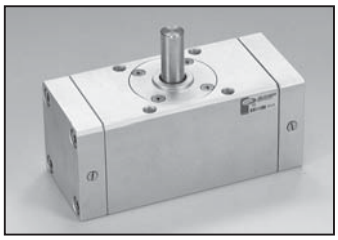
Standard Specifications

Fluid	Air
Proof Pressure	15 kgf/cm² (213 psi)
Max. Operation Pressure	9.9 kgf/cm² (140 psi)
Min. Operation Pressure	0.5 kgf/cm² (7 psi)
Ambient and Fluid Temperature	5~ 60℃ (14~140 °F)
Lubrication	None(Non-Lube)
Piston Speed	50~1000 mm/sec
Stroke Tolerance	~1000ST: $^{+1.4}_{0}$ mm /~1200ST: $^{+1.8}_{0}$ mm
Thread Tolerance	KS 2 Class
Cushion	Rubber Cushion (Air Cushion Optional)

Rotary Cylinder

Series NRP

(Rack & Pinion)



- Long durability is guaranteed by the installation of wear ring and use of low friction packing.
- Shock absorber can be installed (Low noize).
- Angle can be easily adjusted by stopper.
- Compact design.

How to Order

N□RP (1) B (2) S (3) □ (4) 50 (5) — 90 (6) □ (7) W8H (8) S (9)

1 Rotary Cyl.
- N : NEW
- Blank : basic type
- D : built-in magnet
- R : Rotary Cyl.
- P : Rack Pinion

2 Attchment Type
- B : basic type
- L : foot type

3 Axis Type
standard
- S : single axis
- W : double axes

4 Type
- Blank : air pressure type
- H : air hydro type

5 Bore Size
50, 63, 80, 100

6 Rotation Angle

Standard	90°	90°
	180°	180°
Substandard	100°	100°
	190°	190°

7 Additional Symbol
- Blank : without air cushion
- C : air cushion

8 Types of Auto Switch
- Blank : without auto switch
- W8H : auto switch with contact point
- W8V : auto switch with contact point
- W9H : auto switch without contact point
- W9V : auto switch without contact point
- W9HN : auto switch without contact point(3wire, NPN)
- W9HP : auto switch without contact point(3wire, PNP)

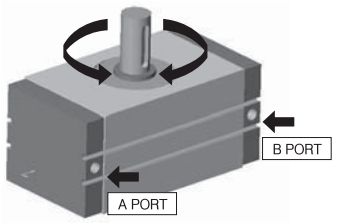
9 Quantity of Auto Switch
- Blank : 2 pcs
- S : 1 pc
- N : n pcs

Specification

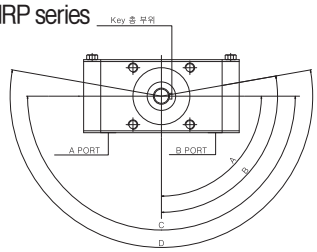
Models		NRP 50	NRP 63	NRP 80	NRP 100
Bore Size(mm)		50	63	80	100
Rotation Angle (°)	standard	90^{+4}_{0} , 180^{+4}_{0}			
	substandard	100^{+4}_{0} , 190^{+4}_{0}			
Air Chusion	standard	×			
	option	○			
Theoretic Torque(kgf · cm) (based on 5 Kgf/cm²)		103	187	377	765
Allowed Energy (kgf · cm)	without air cushion	0.475	1.14	1.52	5.225
	with air cushion	8.8	13.2	17.6	26.4
Air Supply port size		PT 1/8	PT 1/8	PT 1/4	PT 3/8
Weight of main body(kgf)	90°	1.5	2.5	4.3	8.5
	180°	1.7	3.0	5.0	9.5
Maximum Radial Load (kgf)		20	30	40	60
Maximum Thrust Load (kgf)		50	60	90	100
Rotation Time(sec)	based on90°	0.2 ~ 2	0.2 ~ 3	0.2 ~ 4	0.2 ~ 5
Fluid		air			
Pressure (kgf/cm²(psi))		1.5 ~ 10.2kgf/cm²(21.3~145psi)			
Lubrication		unnecessary			
Temperature · ℃(℉)		0 ~ 60℃(0~140℉)			
Operating Mode		double operating			
Tolerance of rotation angle		0 ~ +4°			
Auto switch type		W8H,W8V W9H, W9V			

Rotating direction and angle range

Rotating direction of NRP series: If pressed at A port, the axis revolves clockwise and if pressed at B port, counterclockwise.



Angle range of NRP series



A : Irevolving angle of Key groove 90° $^{+4°}_{0}$
B : Irevolving angle of Key groove 100° $^{+4°}_{0}$
C : Irevolving angle of Key groove 180° $^{+4°}_{0}$
D : Irevolving angle of Key groove 190° $^{+4°}_{0}$

※ 90°, 180° : standard specification,
100°, 190° : substandard specification.

Rotary Cylinder

Series NR

(Rack & Pinion Table type)

Bore Size : ϕ30, ϕ50, ϕ70, ϕ100

- Revolving rotary cylinder, double piston type(rack and pinion).
- Shock absorber can be installedle.
- Wiring is handled in single method by middle dmpty axix.
- It is possible to regulate angle as well as cushion stroke.
- An auto switch dan be attached to detect opening and closing.
- Smooth operation and high power.
- High precision.
- A variety of mounting options.

How to Order

NRT (1) **30** (2) **○** (3) — **W8H** (4) **S** (5)

1 Rotary Cyl.
- N : NEW
- R : Rotary Cyl.
- T : Table

2 Size
- 30, 50, 70, 100

3 Shock Absorber
- Blank : adjusting bolt attached
- S : Shock Absorber attached

4 Types of Auto Switch
- Blank : without auto switch
- W8H : auto switch with point of contact
- W8V : auto switch with point of contact
- W9H : auto switch without point of contact
- W9HN : auto switch without point of contact(3wire,NPN)
- W9HP : auto switch without point of contact(3wire,PNP)

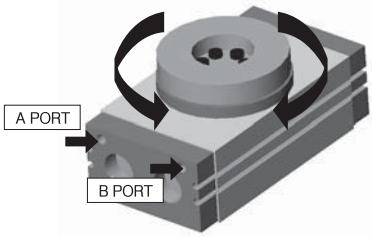
5 Quantity of Auto Switch
- Blank : 2 pcs
- S : 1 pc
- N : n pcs

Specification

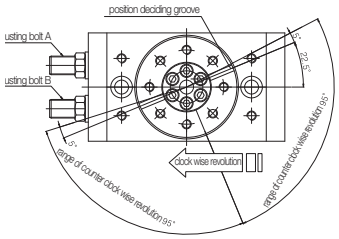
Models		NRT 30	NRT 50	NRT 70	NRT 100
Bore Size (mm)		2 × ϕ22	2 × ϕ25	2 × ϕ28	2 × ϕ32
Rotation Angle (°)		0 ~ 190°			
Cushion	adjusting bolt attached	urethane			
	shock absorber attached	shock absorber			
Theoretic Torque (kgf · cm)		31.3	51.5	75.4	102.5
Allowed Energy (kgf · cm)	without cushion	0.49	0.78	2.33	3.10
	shock absorber attached	1.041	2.639	9.68	14.08
Air Supply port size		PT1/8			
Weight of main body (kgf)		1.29	2.08	2.88	4.09
Maximum Radial Load (kgf)		20	32	34	40
Maximum Thrust Load (kgf)		37	46	49	72
Rotation Time (sec) based on 90℃	adjusting bolt attached	0.2 ~ 1.0	0.2 ~ 1.0	0.2 ~ 1.5	0.2 ~ 2.0
	shock absorber attached	0.2 ~ 0.7	0.2 ~ 0.7	0.2 ~ 1.0	0.2 ~ 1.0
Fluid		air			
Pressure · (kgf/cm²(psi))		1.5 ~ 10.2kgf/cm²(21.3~145psi)			
Lubrication		unnecessary			
Temperature · ℃(℉)		0 ~ 60℃(0~140℉)			
Operating Mode		double operating			
Precision (mm)	Initial Value	±0.05			
	After operation in 1 million times	±0.07			
Auto switch type		W8H,W9V W8H, W9V			

Rotating direction and angle range

Rotating direction of NRT series: If pressed at A port, the axis revolves clockwise and if pressed at B port, counterclockwise.



Angle range of NRP series



※ The maximum rotation range is 190°. Using shock absorber at angle adjusting part, shock absorber attaching type can receive kinetic energy of 2~5 times to that of adjusting bolt attachment.

Rotary Cylinder

Series NRC

(Rack & Pinion Compact type)

Bore Size : ϕ12, ϕ15, ϕ20, ϕ30

- Rack and pinion type rotary cylinder
- Backlash is minimized to determine the position, in high precision
- It is possible to regulate angle as well as cushion stroke
- It is possible to attach auto switch so to detect opening and closing

How to Order

NRC (1) W (2) 20 (3) — 90 (4) ○ (5) — W8H (6) ○ (7)

1 Rotary Cyl.
N : New
R : Rotary cyl.
C : Compact

2 Axis Type
Standard
S : signle axis
W : double axes

3 Size
12, 15, 20, 30

4 Rotation Angle
90 : 90°
180 : 180°

5 Cushion
Blank : without shock absorber

6 Types of Auto Switch
Blank : without auto switch
W8H : auto switch with point of contact
W8V : auto switch with point of contact
W9H : auto switch without point of contact
W9V : auto switch without point of contact
W9HN : auto switch without point of contact(3wire, NPN)
W9HP : auto switch without point of contact(3wire, PNP)

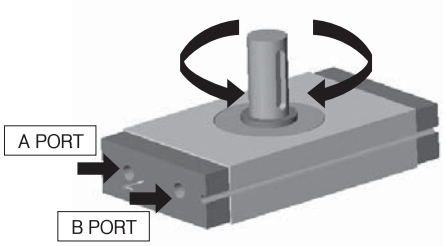
7 Quantity of Auto Switch
Blank : 2 pcs
S : 1 pc
N : n pcs

Specification

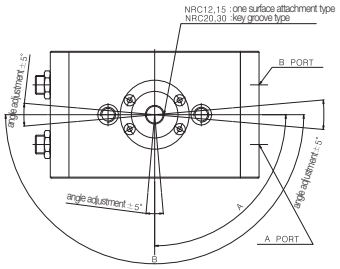
Models		NRC 12	NRC 15	NRC 20	NRC 30
Bore Size(mm)		10	13	18	20
Rotation Angle and Regulating Range(°)		90±10° 180±10°			
Cushion	adjusting bolt attached	Urethane			
	shock absorber attached	Shock absorber			
Theoetic Torque (kgf · cm) (based on P=5 Kgf/cm²)		3.1	8.0	19.1	28.3
Allowed Energy (kgf · cm)	without cushion	0.07	0.12	0.24	0.46
	shock absorber attached	0.7	1.2	2.5	3.8
Air Supply port size		M5	M5	PT 1/8	PT 1/8
Weight of main body(kgf)	90°	0.12	0.22	0.6	0.6
	180°	0.15	0.27	0.7	0.7
Maximum Radial Load (kgf)		1.5	2	5	8
Maximum thrust Load (kgf)		1.6	2	5	10
Rotation Time (sec) based on 90°	adjusting bolt attached	0.2 ~ 0.7	0.2 ~ 0.7	0.2 ~ 1	0.2 ~ 1
	shock absorber attached	0.2 ~ 0.5	0.2 ~ 0.5	0.2 ~ 0.7	0.2 ~ 0.7
Fluid		air			
Pressure · (kgf/cm²(psi))		1.5 ~ 7.1kgf/cm²(21.3~101psi)			
Lubrication		unnecessary			
Temperature · ℃(℉)		0 ~ 60℃(0~140℉)			
Operating Mode		double operating			
Auto switch type		W8H,W9H W8V, W9V			

Rotating direction and angle range

Rotating direction of NRC series: If pressed at A port, the axis revolves clockwise and if pressed at B port, counterclockwise.



Angle range of NRP series

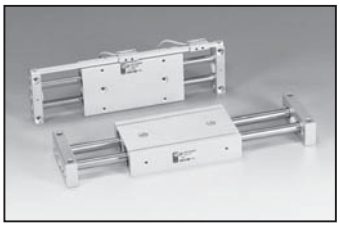


※ The range of angle adjustment is ±5°.

Slide Cylinder

Series ASL

Bore Size: ϕ12, ϕ16, ϕ20 ϕ25, ϕ32



- High accuracy
- Auto switch adaptable
- Compact type

Specifications

Models		ASL12	ASL16	ASL20	ASL25	ASL32
Cylinder (mm)		2×12	2×16	2×20	2×25	2×32
Rod (mm)		6	10	12	14	16
Standard Stroke (mm)		25, 50, 75	25, 50, 75, 100	25, 50, 75, 100	25, 50, 75, 100, 125	25, 50, 75, 100, 125, 150
Theoretical Force (kgf)		1.69×P	3.02×P	4.71×P	7.56×P	18.84×P
Piping Method		M5	M5	M5	PT 1/8	PT 1/8
Weight (kgf)		0.14 + 0.002×S.T	0.23 + 0.0035×S.T	0.5 + 0.0045×S.T	0.7 + 0.007×S.T	1.24 + 0.01×S.T
Max. Holing Force (kgf)	TUBE	0.2 ~ 0.9	0.3 ~ 2.5	0.4 ~ 4.5	0.4 ~ 6.6	0.8 ~ 11.2
	PLATE	0.1 ~ 0.5	0.1 ~ 0.8	0.2 ~ 1.4	0.2 ~ 1.8	0.3 ~ 4.1
Fluid		Air	Air	Air	Air	Air
Operating Pressure · kgf/cm²(psi)		1.5 ~ 10.2(21.3~145)				
Lubrication		None(Non-Lube)				
Temperature · ℃(℉)		5 ~ 60℃(41~140℉)				
Speed (mm/sec)		50 ~ 300				
Acting Type		Double Acting				
Switch AUTO Switch		W8H, W9H W8V, W9V				

How to Order

ASL T 12 — 50 B — W8H ○

1 2 3 4 5 6 7

1 Slide Cyl.
Built in Magnet

2 Mounting
T : Housing mounting
P : Plate mounting

3 Bore size
12 : 12m 16 : 16m
20 : 20m 25 : 25m
32 : 32m

4 Port Size(PT)
ϕ12 : 25, 50, 75
ϕ16 : 25, 50, 75, 100
ϕ20 : 25, 50, 75, 100
ϕ25 : 25, 50, 75, 100, 125
ϕ32 : 25, 50, 75, 100, 125, 150

5 Cushion
Blank : Stopper 2EA
B : Shock Absorber 2EA
BS : Shock Absorber 1EA

6 Type of Auto Switch
Blank : Appliable without auto switch
W8H : Reed Auto Switch
W9H : Solid State Auto Switch
W8V : Reed Auto Switch
W9V : Solid State Auto Switch
W9HN : Solid State Auto Switch(3wire, NPN)
W9HP : Solid State Auto Switch(3wire, PNP)

7 Number of Auto Switch
Blank : 2 pcs
S : 1 pc
N : (N) pcs

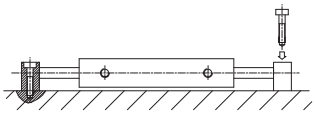
Max. Movable Weight / Non-rotating Accurancy

Models	ASL12	ASL16	ASL20	ASL25	ASL32
Max. Movable Weight	1kg	4kg	5kg	6kg	10kg
Non-rotating accurancy	±0.1°	±0.04°	±0.04°	±0.02°	±0.01°

※ Place the center of gravity of the load and center of the slide unit close during operation.

<Affixing the plate>

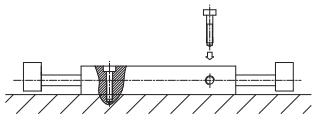
Mounting from the bottom side



Mounting from the upper side

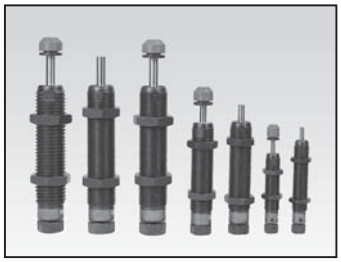
<Affixing the housing>

Mounting from the bottom side



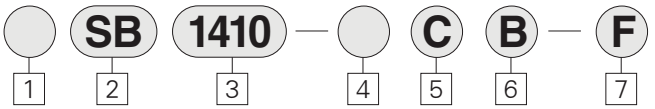
Mounting from the upper side

Shock Absorber
Series SB



● Control design

How to Order



1 A nut Standard
- Blank : mm nut (PT)
- U : Inch nut (NPT)

2 Shock Absorber
- SB : Standard(Black Coating)

3 Type of nut × Stroke

Adjustable Type

Model	Thread	Stroke(mm)
1410	M14×P1.5	10
4225	M42×P1.5	25
2015	M20×P1.5	15
4250	M42×P1.5	50
2525	M25×P1.5	25
4275	M42×P1.5	75
2725	M27×P3.0	25
6450	M64×P2.0	50
3625	M36×P1.5	25
64100	M64×P2.0	100
3650	M36×P1.5	50
64150	M64×P2.0	150

Non-Adjustable Type

Model	Thread	Stroke(mm)
1006	M10×P1.0	6
2525	M25×P2.0	25
1415	M14×P1.0	15
2530	M25×P2.0	30
1420	M14×P1.0	20
2550	M25×P2.0	50
2020	M20×P1.5	20
2580	M25×P2.0	80
2030	M20×P1.5	30
3680	M36×P1.5	80
2050	M20×P1.5	50

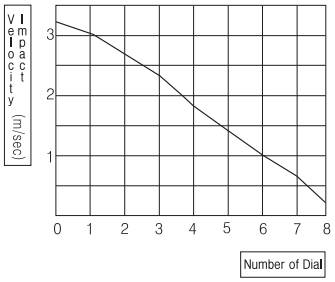
4 Option
- Blank : None
- 1 : Light Weight(only applies to compensator M10~M36 series)
- 2 : Standard(only applies to compensator M10~M36 series)
- 3 : Reinforced(only applies to compensator M14~M36 series)

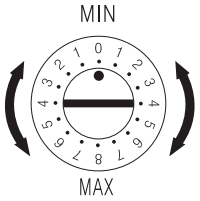
5 Cap
- Blank : None
- C : with CAP

6 Control Dial
- Blank : None
- B : control dial

7 Option
- Blank : Two Lock Nuts basis.
- F : SQUARE FLANGE (Applied to Adjustable M36~M64 series only)
- S : STOP COLLAR (Applied to Adjustable M8~M36 series only)
- U : URETHANE CAP (Applied to Adjustable M36~M64 series only)
- NK : Nickel coated

How to use Adjustable Dial





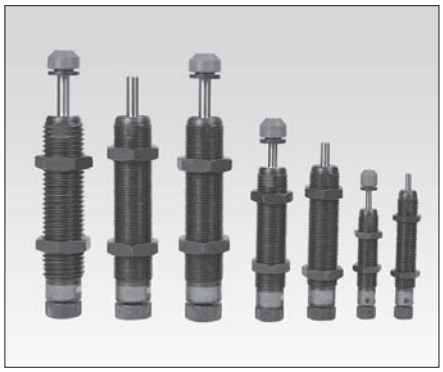
Comment) • The outer measurements are subject to change for improvements without notifications.

Directions and Applications of Advantage

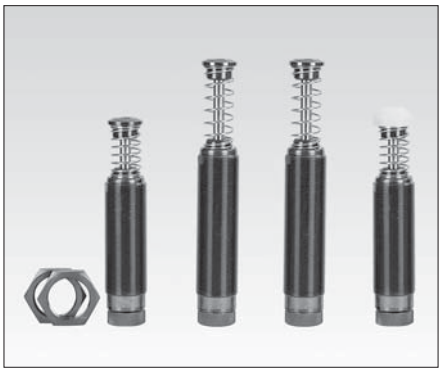
Items	Characterization	Directions	Applications	Applicable Range
SB Series Standard (Miniature · Middle-Size)	1) Using the 360'-rotating damping control dial, the range of shock absorption can be adjusted by the user according to the impact velocity. 2) Prepares for another cycle by quickly retrieving the piston road with a specially designed spring. 3) Extends the life span of the product by preventing the corrosion with finishes on the outer cylinder and corroding the chrome plating on the piston road. 4) The thermal energy is established based on the atmospheric temperature of 20℃(68°F).	1) After adjusting the damping control dial, fasten it with a wrench. 2) Check if the effective weight is within the applicable range. 3) With the insertion of a poly pad in the end button of the road, the noise decreases 3~7dB. 4) It can be attached on any location.	1. Automation Lines 2. Automobile Equipments 3. Conveyor Equipments 4. Linear Movement of Oil Insertion 5. Wrappers 6. Textile Weavers 7. Press/adherers	−20℃ ~ 60℃ (−4~140°F)
SB Series (Heavy Duty)	1) Improves the productivity by increasing the acceleration of the equipment. 2) Reduces the manufacturing cost by extending the life span of the shock-absorbing equipments. 3) Improves the operational efficiency by reducing the noise inside the manufacturing facility. 4) Improves and maintains the quality by preventing damages of the products. 5) Maximum Impact Velocity: 0.05~3.3 m/sec. 6) Range of Applicable Temperature: −20~60℃(−4~140°F). 7) When using Vitar seal and specialized oil, the range extends to −40~120℃(−40~248°F).			
SB Series long-stroke type	1) With its innovative multiple-orifice structure, it definitely stops the Robot softly when extruding the materials. 2) Maximum Impact Velocity: Less than 3.5 m/sec Maximum Applicable Temperature: −20~60℃(−4~140°F).			

Series	Basic	With cap or bumper(Option)	Lock nut	Stopper net(Option)
SB Series(Adjustable Style)	SB (Adjustable Style)	●	●	●
SB Series(Compensative)	SB (Non-dustable Style)	●	●	●

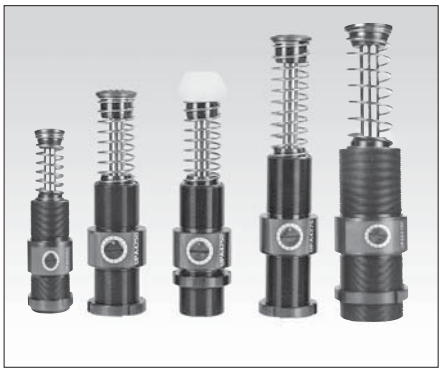
Shock Absorber



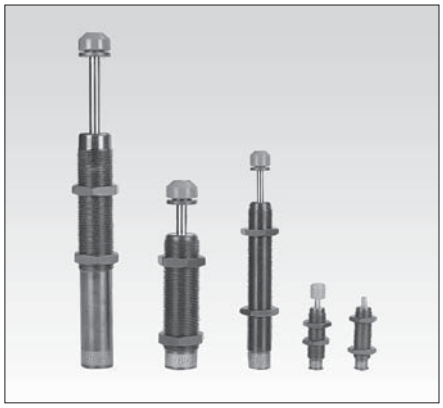
Adjustable Style SB(Small size) SB1410~2725 Series



Adjustable Style SB(Middle size) SB3625~3650 Series



Adjustable Style SB(Big size) SB4225~64150 Series



Non-Adjustable Style SB(Basic) SB1006~2525 Series

Non-Adjustable Style SB(Long-Stroke) SB2030~3680 Series

Air Hydro Converter

Series SAH

Bore Size: ϕ63, ϕ100, ϕ160

- Emergency stop.
- Intermediate stop and lock.

How to Order

SAH (1) 100 (2) – 100 (3)

1 Air Hydro Converter

2 Bore Size

3 Effective oil level stroke

Standard effective oil level stroke

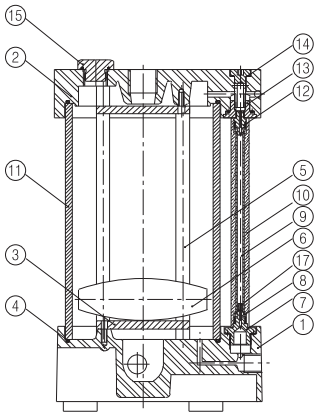
Bore Size(mm)	Effective oil level Stroke											Limited Flow
	50	100	150	200	250	300	400	500	600	700	800	(l/min)
ϕ 63	150	300	450	600	740	890	1190	1480	1780	-	-	36
ϕ 100	370	750	1120	1510	1870	2260	3010	3770	4520	-	-	88
ϕ 160	-	1830	-	3660	-	5490	7320	9150	10980	12810	14640	217

Specifications

Bore Size		ϕ63	ϕ100	ϕ160
Operating pressure · MPa(psi)		0 ~ 0.7(0~101.5psi)		
Max. Supply pressure · MPa(psi)		1.0(145.0psi)		
Ambient and fluid temperature		5 ~ 50℃(41~122℉)		
Fluid turbine oil		Turbine Oil (40 ~ 100 cSt) ISO VG 32		
Thread Rc (PT)	Air	3/8	1/2	3/4
	Oil	3/4		

※ Limited Flow : It shows the limit of converter oil level speed(0.2m/s) which can maintain stability of converter oil level.

Construction



No	Description	Port	Note
①	Body - bottom		
②	Body - top		
③	Cover		
④	O-Ring	G Port	
⑤	Lock Bolt		
⑥	Float		
⑦	Fitting		
⑧	Cap		
⑨	Oil all caps gauge Hose		
⑩	Clear all caps Pipe		Acrylic
⑪	Tube		
⑫	Fitting		
⑬	Flare nut all caps		
⑭	Fixed bolt of oil gauge	Bolt	
⑮	Plug		
⑯	Oil Cap		
⑰	Level Gauge		

Series CR/CV Clean Cylinder

Bore size : CR/CV-

ARD ϕ50, ϕ63

AQ2 ϕ12, ϕ16, ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63

AX ϕ20, ϕ16, ϕ32, ϕ40

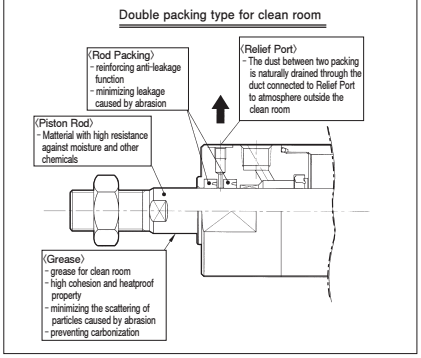
AGL ϕ12, ϕ16, ϕ20, ϕ32, ϕ40, ϕ50, ϕ63

NLCD ϕ8, ϕ16, ϕ20, ϕ25, ϕ32

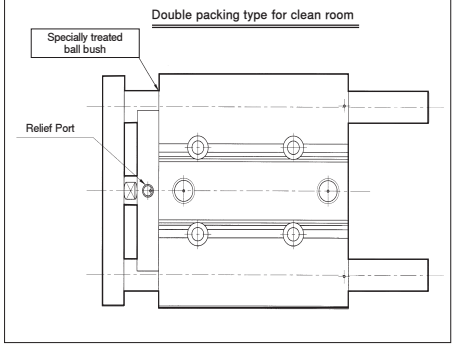
- Separated purity use in accordance with the level of particle generation.
- Preventing particle from flowing into clean room.
- Realizing high purity environment.
- Compact and light weight of clean system.

Introduction of Clean Series Cylinder

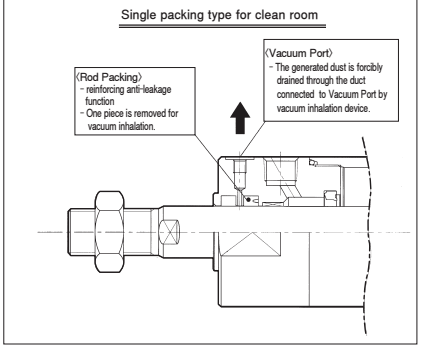
CR Type (Draining Particles)



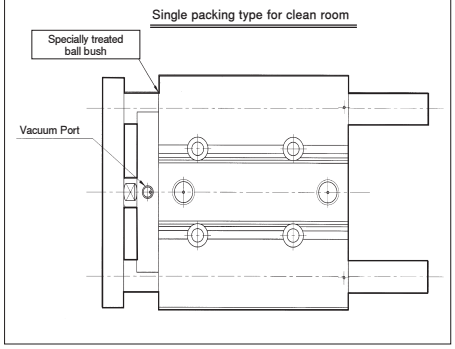
Cylinder with CR Type guide
(preventing the generation of particles)



CV Type (vacuum inhalation type)



Cylinder with CR Type guide



Division	Grease	Cylinder Structure	Bearing in the Guide Part	Material of Guide Part	Main Series
CR type	In the family line of fluorine	Couble packing open to atmosphere	–	–	ARD,AQ2,AX,NLCD
CV type	In the family line of fluorine	Single packing vacuum inhalation	–	–	
Cylinder with CR type	In the family line of fluorine	Couble packing open to atmosphere	Ball bush bearing	SUS440C+surface treatment	AGL
Cylinder with CV type	In the family line of fluorine	Single packing vacuum inhalation	Ball bush bearing	SUS440C+surface treatment	

Series Clean AX (ϕ20,25,32,40)

Series Clean NLCD (ϕ8,16,20,25,32)

Series Clean AQ2 (ϕ12,16,20,25,32,40,50,63)

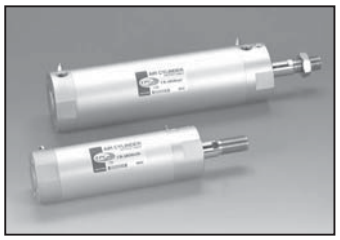
Series Clean ARD (ϕ50,63)

Series Clean AGL (ϕ12,16,20,32,40,50,63)

Clean Series Round Cylinder (Round Cylinder)

Series CR(CV)ARD

Bore size : ϕ50, ϕ63



- Low particle generation for clean room applications
- Stainless steel pistion rod(resistant to moisture and other chemicals)

How to Order

CR(CV) — ARD B A 50 — 150 — W5 □

1 2 3 4 5 6 7 8

1 Clean Series
CR : Relief Port Type
CV : Vacuum Suction Type

2 Round Cylinder
magnet, bumper, no lubrication type standard

3 Attaching Type
B : basic type
※ For foot and flange type, please contact us.

4 Cushion(Rubber cushion is basically provided.)
Blank : rubber cushion
A : air cushion

5 Bore size
50 : 50㎜
63 : 63㎜

6 Cylinder Stroke(㎜)
Please refer to the table of cylinder stroke.

7 Sorts of Auto Switch
- auto switch with contacting points
- band attaching type(grommet)
: W5
※ The length of lead wire is 0.5m (standard).
For 3m, L is added to the end of part number.
ex)W5L

8 Symbols of Auto Switch
Blank : 2 pieces attached
s : 1piece attached
n : n pieces attached

Specifications

Bore size	ϕ50, ϕ63
Models	Relief Port Type,
	Vacuum Suction Type
Operation Type	Double Acting Single Rod(Non-Lubrication)
Port Size	Rc(PT) 1/4
Fluid	Air
Proof Pressure	1.5MPa(217.6psi)
Max. Operation Pressure	1.0MPa(140.8psi)
Min. Operation Pressure	0.05MPa(7.1psi)
Ambient and Fluid Temperature · ℃(℉)	-10℃~70℃(14~158℉)(Anti Freezing)
Cushion	Rubber/Air Cushion
Thread Tolerance	KS class 2
Stroke Tolerance	~300 $^{+1.4}_{0}$ mm
Piston Speed	50~400mm/s

Table of cylinder stroke/air pressure(no lubrication type)

(Unit:㎜)

Bore Size	Cylinder Stroke
50, 63	20~300

※ For long stroke, please contact us for confirmation.

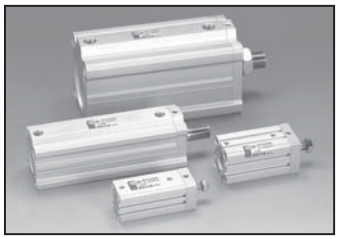
Minimum auto switch mountable stroke(mm)

Type of Auto Switch	Number of Auto Switch		
	With 2pcs		With 1pc
	Different Orientation	Same Orientation	
W5	15	50	10

Clean Series Compact Cylinder (square tube)/Double Acting, Single Rod

Series CR(CV)AQ2, ADQ2

Bore Size : ϕ12, ϕ16, ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63 ϕ80, ϕ100



- Low particle generation for clean room applications
- Stainless steel pistion rod(resistant to moisture and otehr chemicals)

How to Order

CR(CV) — A D Q 2 B 20 — 30 D M — W9HL □

(1) (2) (3) (4) (5) (6) (7) (8) (9)

1 Clean Series
CR : Relief Port Type
CV : Vacuum Suction Type

2 Attaching Auto Switch
Blank : basic type
D : attaching auto switch(built-in magnet)

3 Attaching Type
B : ϕ12, ϕ16, ϕ20, ϕ25
Penetrating hole, common tap at both ends(standard)
ϕ32, ϕ40, ϕ50, ϕ63, ϕ80, ϕ100
Penetrating hole(standard)

4 Bore Size
12 : 12㎜ 16 : 16㎜
20 : 20㎜ 25 : 25㎜
32 : 32㎜ 40 : 40㎜
50 : 50㎜ 63 : 63㎜
80 : 80㎜ 100 : 100㎜

5 Cylinder Stroke(㎜)
Please refer to the table of cylinder stroke.

6 Operating Type
D : double acting

7 Feature of Body
Blank : standard type
(female screw at the end of rod)
M : male screw at the end of rod

8 Sorts of Auto Switch
Blank : non-auto switch
(cylinder with built-in magnet)
W∗∗∗:compast auto switch(ϕ4)
※ W∗∗∗ type is basic for square tube of ϕ12~ϕ25.
※ For length of lead wire over 3m, L is added to the end of part numher. ex)W4L
※ For length of lead wire over 5m, please contact us.

9 Symbols of Auto Switch
Blank : 2 pieces attached
S : 1 pieces attached
n : n pieces attached

Specifications

Bore Size		ϕ12, ϕ16, ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63, ϕ80, ϕ100
Models		Relief Port Type,
		Vacuum Suction Type
Operation Type		Double Acting, Single Rod(Non-Lubrication)
Port Size	ϕ12~ϕ25	M5×0.8
	ϕ32	Rc(PT) 1/8(※M5×0.8 : 5st only)
	ϕ40	Rc(PT)1/8
	ϕ50, ϕ63	Rc(PT)1/4
	ϕ80, ϕ100	Rc(PT)3/8
Fluid		Air
Proof Pressure		1.5MPa(217.6psi)
Max. Operation Pressure		1.0MPa(140.8psi)
Min. Operation Pressure		0.05MPa(7.1psi)
Ambient and Fluid Temperature · ℃(℉)		-10℃~70℃(14~158℉)(Anti Freezing)
Cushion		None
		ϕ12~ϕ25 : Through Hole, Common tap at both ends
Mounting		ϕ32~ϕ100 : Through Hole
Stroke Tolerance		$^{+1.0}_{0}$ mm
Piston Speed		50~400mm/s

Table of standard stroke/air pressure(no lubrication type)

(Unit:㎜)

Bore Size	Cylinder stroke
12, 16	5, 10, 15, 20, 25, 30
20, 25	5, 10, 15, 20, 25, 30, 35, 40, 45, 50
32, 40	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100
50, 63	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100
80, 100	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100

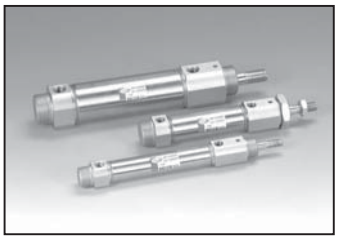
⚠ Cautions

※ Production of middle stroke
By installing spacer in the cylinder of standard stroke, it is possible to produce middle stroke at every 3mm.
Ex) For AQ2B20-37D, spacer with width of 13mm is installed in the cylinder of standard stroke AQ2B20-50D.

Clean Series Air Cylinder / Double Motion, Single Rod

Series CR(CV)AX

Bore Size : ϕ20, ϕ25, ϕ32, ϕ40



- Low particle generation for clean room applications
- Stainless steel pistion rod(resistant to moisture and otehr chemicals)

How to Order

CR(CV) — AX B 20 — 125 A — □ — W5 □

1 2 3 4 5 6 7 8 9

1 Clean Series
- CR : Relief Port Type
- CV : Vacuum Suction Type

2 Air Cylinder(double Acting, single rod)
- basic type : built-in magnet

3 Attaching Type
- B : basic type
- L : foot type in the axial direction
- F : type of flange at the rod side
- G : type of flange at the head side
- BZ : basic type of boss-cut
- FZ : flange type boss-cut

4 Bore Size
- 20 : 20㎜ 25 : 25㎜
- 32 : 32㎜ 40 : 40㎜

5 Cylinder Stroke(㎜)
- Please refer to the table of cylinder stroke.

6 Cushion
- Blank : rubber cushion type
- A : air cushion type
- ※ For boss-cut, only rubber cushion type is available.

7 Series
- Blank : standard type
- XC16 : Palpitation is impossible.

8 Sorts of Auto Switch
- no symbol : no auto switch (cylinder with built-in magnet)
- auto switch with contacting point
- - band attaching type(grommet)
- - W5

※ The standard length of lead wire is 0.5m
※ For length lead wire over 3m, L is added to the end of part number. ex)W5L
※ For length lead wire over 5m, please contact us.

9 Symbols of Auto Switch
- Blank : 2 pieces attached
- S : 1 piece attached
- n : n pieces attached

Specifications

Bore size		ϕ20, ϕ25, ϕ32, ϕ40
Models		Relief Port Type, Vacuum Suction Type
Operation Type		Double Acting, Single Rod(Non-Lubrication)
Port Size	ϕ20, 25, 32	Rc(PT) 1/8
	ϕ40	Rc(PT) 1/4
Fluid		Air
Proof Pressure		1.5MPa(217.6psi)
Max. Operation Pressure		1.0MPa(140.8psi)
Min. Operation Pressure		0.05MPa(7.1psi)
Ambient and Fluid Temperature · ℃(℉)		-10℃~70℃(14~158℉)(Anti Freezing)
Cushion		Rubber, Air Cushion
Stroke Tolerance		$^{+1.4}_{0}$ mm
Piston Speed		50~400mm/s

Table of standard strokt/air pressure(no lubrication type)

(Unit:㎜)

Bore Size	Cylinder stroke
20,25,32,40	25,50,75,100,125,150,175,200,250,300

Bracket/parts number

Bore Size	20	25	32	40
foot in the axial direction	TCM-L020B	TCM-L032B		TCM-L040B
Flange	TCM-F020B	TCM-F032B		TCM-F040B
clevis with 1 spire	TCM-C020B	TCM-C032B		TCM-C040B
clevis with 2 spire	TCM-D020B	TCM-D032B		TCM-D040B
Trunnion(attaching nut)	TCM-T020B	TCM-T032B		TCM-T040B

※ Foot must be ordered in 2 units for 1 cylinder.

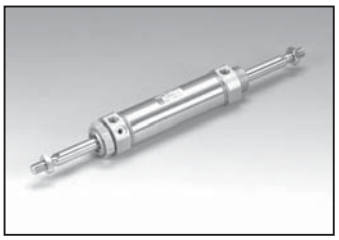
Band to attach auto switch/parts number

Type of Auto Switch	Inner diameter of tube(mm)			
	20	25	32	40
W5	TBM2-020	TBM2-025	TBM2-032	TBM2-040

Clean Air Small Cylinder / Double Acting, Double Rod

Series CR(CV)AXW

Bore Size : ϕ20, ϕ25, ϕ32, ϕ40



- Cylinder in low particle generation for clean room.
- Piston rod is made in the material quality of stainless steel to enhance resistance against moisture and other chemicals.
- Exclusive grease use, dust generation is minimized when cylinder is acting.
- Compact appearance and lightweight, easy installation.

How to Order

CR(CV) — AXW B 20 — 125 — □ — W5 □

1 2 3 4 5 6 7 8

1 Clean Series
- CR : Relief Port Type
- CV : Vacuum Suction Type

2 Air Cylinder(double acting, double rod)
basic type : built-in magnet

3 Attaching Type
- B : basic type
- L : foot type in the axial direction
- F : type of flange at the rod side

4 Bore Size
- 20 : 20㎜ 25 : 25㎜
- 32 : 32㎜ 40 : 40㎜

5 Cylinder Stroke(㎜)
Please refer to the table of cylinder stroke.

6 Cushion
- Blank : rubber cushion type
- A : air cushion type
- XC16 : Palpitation is impossible.

7 Sorts of Auto Switch
- no symbol : no auto switch (cylinder with built-in magnet)
- auto switch with contacting point
- band attaching type(grommet)
- W5
- ※ The standard length of lead wire is 0.5m
- ※ For length lead wire over 3m, L is added to the end of part number.
- ※ For length lead wire over 5m, please contact us.

8 Symbols of Auto Switch
- Blank : 2 pieces attached
- S : 1 piece attached
- n : n pieces attached

Specifications

Bore size		ϕ20, ϕ25, ϕ32, ϕ40
Models		Relief Port Type,
		Vacuum Suction Type
Operation Type		Double Acting, Double Rod(Non-Lubrication)
Port Size	ϕ20, 25, 32	Rc(PT) 1/8
	ϕ40	Rc(PT) 1/4
Fluid		Air
Proof Pressure		1.5MPa(217.6psi)
Max. Operation Pressure		1.0MPa(140.8psi)
Min. Operation Pressure		0.05MPa(7.1psi)
Ambient and Fluid Temperature · ℃(℉)		-10℃~70℃(14~158℉)(Anti Freezing)
Cushion		Rubber, Air Cushion
Stroke Tolerance		$^{+1.4}_{0}$ mm
Piston Speed		50~400mm/s

Table of standard stroke/air pressure(no lubrication type)

(Unit:㎜)

Bore Size	Cylinder strok
20,25,32,40	25,50,75,100,125,150,175,200,250,300

Bracket/parts number

Bore Size	20	25	32	40
foot in the axial direction	TCM-L020B	TCM-L032B		TCM-L040B
Flange	TCM-F020B	TCM-F032B		TCM-F040B
Trunnion(attaching nut)	TCM-T020B	TCM-T032B		TCM-T040B

※ Foot must be ordered in 2 units for 1 cylinder.

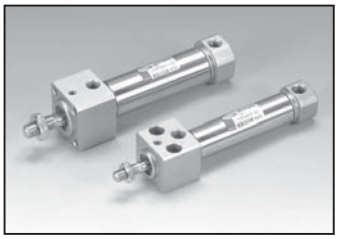
Band to attach auto switch/parts number

Type of auto switch	Inner diameter of tube(mm)			
	20	25	32	40
W5	TBM2-020	TBM2-025	TBM2-032	TBM2-040

Clean Series Air Cylinder / Direct Mount Cylinder

Series CR(CV)AXR

Bore Size : ϕ20, ϕ25, ϕ32, ϕ40



- Cylinder in low particle generation for clean room.
- Piston rod is made in the material quality of stainless steel to enhance resistance against moisture and other chemicals.
- Exclusive grease use, dust generation is minimized when cylinder is acting.
- Adjustable stroke available.

How to Order

CR(CV) — AXR A 20 — 125 — □ — W5 □

1 2 3 4 5 6 7 8

1 Clean series
CR : Relief Port Type
CV : Vacuum Suction Type

2 Air Cylinder(double acting, single rod)
basic type : built-in magnet

3 Attaching Type
A : bottom side mounting
B : front side mounting

4 Bore Size
20 : 20㎜ 25 : 25㎜
32 : 32㎜ 40 : 40㎜

5 Cylinder Stroke(㎜)
Please refer to the table of cylinder stroke.

6 Cushion
Blank : rubber cushion type
XC16 : Palpitation is impossible.

7 Sorts of Auto Switch
Blank : no auto switch
(cylinder with built-in magnet)
auto switch with contacting point
- band attaching type(grommet)
- W5
※ The standard length of lead wire is 0.5m
※ For length lead wire over 3m, L is added to the end of part number.
※ For length lead wire over 5m, please contact us.

8 Symbols of Auto Switch
Blank : 2 pieces attached
S : 1 pieces attached
n : n pieces attached

Specifications

Bore size		ϕ20, ϕ25, ϕ32, ϕ40
Models		Relief Port Type,
		Vacuum Suction Type
Operation Type		Double Acting, Single Rod(Non-Lubrication)
Port Size	ϕ20, 25, 32	Rc(PT) 1/8
	ϕ40	Rc(PT) 1/4
Fluid		Air
Proof Pressure		1.5MPa(217.6psi)
Max. Operation Pressure		1.0MPa(140.8psi)
Min. Operation Pressure		0.05MPa(7.1psi)
Ambient and Fluid Temperature · ℃(℉)		-10℃~70℃(14~158℉)(Anti Freezing)
Cushion		Rubber Cushion
Stroke Tolerance		$^{+1.4}_{0}$ mm
Piston Speed		50~400mm/s
Attaching Type		Bottom side mounting, Front side mounting

Table of standard stroke/air pressure(no lubrication type)

(Unit:㎜)

Bore Size	Cylinder stroke
20,25,32,40	25,50,75,100,125,150,175,200,250,300

Band to attach auto switch/parts number

Type of Auto Switch	Bore Size(mm)			
	20	25	32	40
W5	TBM2-020	TBM2-025	TBM2-032	TBM2-040

Clean Series Table

Series CR(CV,SC)NLCD

Bore size : ϕ25, ϕ32

- Low particle generation for clean room applications
- Stainless steel pistion rod(resistant to moisture and other chemicals)

How to Order

CR(CV,SC) — 25-50 — RF15R — W8H S

1 2 3 4 5

1 New Linear Cylinder Double Rod
CR : Relief Port Type
CV : Vacuum Suction Type
(※ ϕ32 : Semi clean type only)

2 Bore size(ϕmm)-Stroke(mm)
ϕ8 :10, 20, 30, 40, 50, 75,
ϕ16:10, 20, 30, 40, 50, 75,100,125
ϕ20:10, 20, 30, 40, 50, 75,100,125,150
ϕ25:10, 20, 30, 40, 50, 75,100,125,150
ϕ32: 30, 75,100

3 Adjuster Option
1) Rubber Damper
RF : Front Side
RB : Rear Side
R : Both Side(RF+RB)
Adjustable Range : 5,15,25mm
ex) RF15, RB15, R15
※ NLOD6:Unable 25mm
※ Blank:5mm ex)RF,RB,R
2) Shock-absober Attachd
SF : Front Side
SB : Rear Side
S : Both Side(SF+SB)
※ NLCD32 : unable shock-absober

4 Type of Auto Switch
Blank : Without Auto Switch
W4 : Reed Switch
W8V : Reed Switch(Vertical Type)
W8H : Reed Switch(Horizontal Type)
W9H : Solid State Switch(Horizontal Type)
W9V : Solid State Switch(Vertical Type)
W9HN : Solid State Switch(3 Wire, NPN)
W9HP : Solid State Switch(3 Wire, PNP)
※ Standard auto switch lead wire length is 1m. 3m leads abailable on all models by adding a "L" suffix to the part number. (ex:W8HL, W9VL)

5 Number of Auto Switch
Blank : 2pcs
S : 1pc
n : npc

Specifications

Bore size	ϕ8, ϕ16, ϕ20, ϕ25, ϕ32
Type	Relief Port Type,
	Vacuum Suction Type
	Semi-Clean Type
Operation	Double Acting
Port Size	Rc(PT) 1/4
Operating Pressure	1.5~7.1kgf/cm²(0.15~0.7MPa)
Proof Pressure	10.7kgf/cm²(1.05MPa)
Ambient and Fluid Temperature · ℃(℉)	-10℃~60℃
Piston Speed	50~500mm/s
Lubrication	Non-Lub
Auto Switch(Option)	Exsting Plug : DC(24V) / AC(110V)
	Non Plug : DC(24V)
Stroke Tolerance	$^{+1}_{0}$mm
Option(Stroke Adjust)	Bolt+Damper(Front Side / Both Side) / Shock-Absorber

Table of standard stroke/air pressure(no lubrication type)

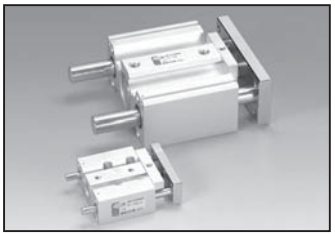
(Unit:㎜)

Bore Size	Cylinder stroke
8	10, 20, 30, 40, 50, 75
16	10, 20, 30, 40, 50, 75, 100, 125
20, 25	10, 20, 30, 40, 50, 75, 100, 125, 150
32	30, 75, 100

Clean Series Compact Guide Cylinder

Series CR(CV)AGL

Bore size : ϕ12, ϕ16, ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63



- Low particle generation for clean room applications.
- Stainless steel pistion rod(resistant to moisture and otehr chemicals

How to Order

CR(CV) — AG L 20 — 75 — W4(W∗∗) □

1 2 3 4 5 6 7

1 Clean Series
CR : Relief Port Type
CV : Vacuum Suction Type

2 Compact Cylinder with Guide
magnet, bumper, no lubrication basic feature of the type

3 Sort of Bearing
L : ball bush bearing

4 Bore Size
12 : 12㎜ 16 : 16㎜
20 : 20㎜ 25 : 25㎜
32 : 32㎜ 40 : 40㎜
50 : 50㎜ 63 : 63㎜

5 Cylinder Stroke(㎜)
Please refer to the table of cylinder stroke.

6 Sorts of Auto Switch
Blank : no auto switch
(cylinder with built-in magnet)
auto switch with contacting point
- W4(W4 in 2 or 3 lines DC 24V, AC110V)
- W13(2 lines, DC 24V, AC110V)
auto switch with contacting point
- W1H(3 lines, DC 24V)
※ The standard length of lead wire is 0.5m
※ For length lead wire over 3m, L is added to the end of part number.
ex) W13M, W1HL
(ϕ12~25 : W13M and W1H are applied.)
(ϕ32~63 : W4 is applied.)

7 Symbols of Auto Switch
Blank : 2 pieces attached
S : 1 piece attached

Specifications

Bore size		ϕ12, ϕ16, ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63
Models		Relief Port Type, Vacuum Suction Type
Operation Type		Double Acting, Single Rod(Non-Lubrication)
Port Size	ϕ12, ϕ16	M5×0.8
	ϕ20, ϕ25, ϕ32, ϕ40 ϕ	Rc(PT) 1/8
	50, ϕ63	Rc(PT) 1/4
Fluid		Air
Proof Pressure		1.5MPa(217.6psi)
Max. Operation Pressure		1.0MPa(140.8psi)
Min. Operation Pressure	ϕ12, ϕ16	0.12MPa(17.40psi)
	ϕ20~ϕ63	0.1MPa(14.50psi)
Ambient and Fluid Temperature · ℃(℉)		-10℃~60℃(14~140℉)(Anti Freezing)
Cushion		Rubber Cushion Type
Stroke Tolerance		$^{+1.5}_{0}$ mm
Piston Speed		50~400mm/s

Bore Size(㎜)	Non-Rotating Accuracy
12	±0.10°
16	
20	±0.09°
25	
32	±0.08°
40	
50	±0.06°
63	

Table of standard stroke/air pressure(no lubrication type)

(Unit:㎜)

Bore Size	Cylinder stroke
12, 16	10, 20, 30, 40, 50, 75, 100
20, 25	20, 30, 40, 50, 75, 100
32, 40, 50, 63	25, 50, 75, 100, 125, 150

⚠ Cautions

※ Production of middle stroke
By installing spacer in the cylinder of standard stroke, it is possible to produce middle stroke at every 5mm.
Ex) For AGL, spacer with width of 5mm is installed in the cylinder of standard stroke AGL20-30.