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Solenoid valve(3/2 way)

3V1 Series



Specification

Model	3V1-M5	3V1-06
Fluid	Air(to be filtered by 40 μm filter element)	
Acting	Direct acting	
Port size [Note1]	M5	1/8"
Valve type	3 port 2 position	
Lubrication	Not required	
Operating pressure	0~0.8MPa(0~114psi)	
Proof pressure	1.2MPa(175psi)	
Temperature	-20~70°C	
Orifice size	Φ1.2mm	
Material of body	Aluminum alloy	

[Note1] PT thread, G thread and NPT thread are available.

Symbol



Coil specification

Item	Specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	4.5VA	4.5VA	5.0VA	3.0W	3.0W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				
Max. frequency [Note 1]	10 cycle/sec				

[Note 1] The maximum actuation frequency is in the no-load state.

Product feature

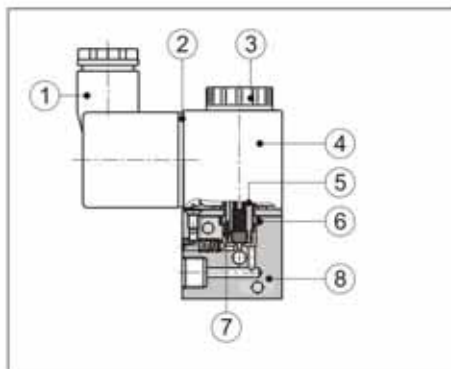
1. Direct acting type and normally closed mode, flexible in direction change.
2. No need to add oil for lubrication.
3. Several valves can be installed integrately to save installation space.
4. Affiliated manual devices are equipped to facilitate installation and debugging.
5. Several standard voltage grades are optional.

Ordering code

3V 1 06 A □ □
1 2 3 4 5 6

1 Model	2 Code	3 Port size	4 Standard voltage	5 Electrical entry	6 Thread type
3V: Solenoid valve (3/2 way)	1: 1 Series	M5: M5 06: 1/8"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet	No this code Blank: PT G: G T: NPT

Inner structure



No.	Item	No.	Item
1	Connector	5	Armature
2	Gasket	6	O-ring
3	Coil nut	7	Return spring
4	Coil	8	Body

Solenoid valve(3/2 way)

3V2 Series



Symbol



Product feature

1. Direct acting type and normally closed mode, flexible in direction change.
2. Normally closed and normally open types are optional.
3. Structure in coaxial blanking mode: leakage proof and large air flow.
4. No need to add oil for lubrication.
5. Affiliated manual devices are equipped to facilitate installation and debugging.
6. Several standard voltage grades are optional.
7. Can be used under vacuum condition.

Ordering code

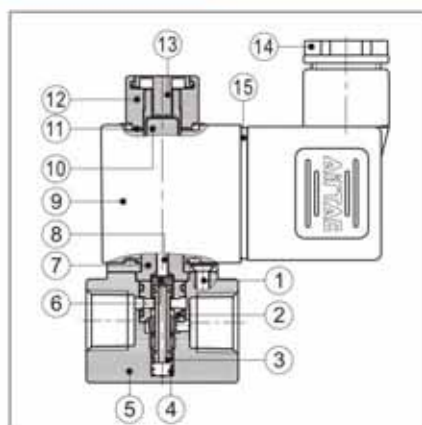
Ordering code of solenoid valve

3V 2 08 NC A □ □						
1 2 3 4 5 6 7						
① Model	② Code	③ Port size	④ Acting type	⑤ Standard voltage	⑥ Electrical entry	⑦ Thread type
3V: Solenoid valve(3/2 way)	2: 2 Series	06: 1/8" 08: 1/4"	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet	Blank: PT G: G T: NPT

Ordering code of accessories

F-3V2 FA		
1 2 3		
① Accessories code	② Valve type	③ Accessories type
F: Mounting accessories	3V2: Solenoid valve(3/2 way)	FA: FA Bracket

Inner structure



No.	Item	No.	Item
1	Pilot screw	9	Coil
2	Spacer	10	Armature
3	Spool	11	Washer
4	Spring	12	Coil nut
5	Body	13	Manual button
6	Washer	14	Connector
7	Electromagnet set	15	Gasket
8	Man drill		

Specification

Model	3V206	3V208
Fluid	Air(to be filtered by 40 μ m filter element)	
Acting	Direct acting	
Port size [Note1]	1/8"	1/4"
Valve type	3 port 2 position	
Orifice size	3.2mm ² (Cv=0.18)	3.4mm ² (Cv=0.19)
Lubrication	Not required	
Operating pressure	Common vacuum	0~0.8MPa(0~114psi) -102.2kPa~0.1MPa(-1.45~14.2psi)
Proof pressure	1.2MPa(175psi)	
Temperature	-20~70℃	
Material of body	Aluminum alloy	

[Note1] PT thread, G thread and NPT thread are available.

Coil specification

Item	Specification
Standard voltage	AC220V, AC110V, AC24V, DC24V, DC12V
Scope of voltage	AC: ± 15% DC: ± 10%
Power consumption	AC: 7VA DC: 7.0W
Protection	IP65(DIN40050)
Temperature classification	B Class
Electrical entry	Terminal, Grommet
Activating time	0.05 sec and below
Max. frequency [Note1]	10 cycle/sec

[Note1] The maximum actuation frequency is in the no-load state.

Solenoid valve(3/2 way)

3V2M Series



Symbol



Product feature

1. Direct acting type and normally closed mode, flexible in direction change.
2. Normally closed and normally open types are optional.
3. Structure in coaxial blanking mode: leakage proof and large air flow.
4. No need to add oil for lubrication.
5. Affiliated manual devices are equipped to facilitate installation and debugging.
6. Valve needs to be used with the sub-base and allows various connection combinations to save space.
7. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
8. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.
9. Can adjust the installation direction of special sub-base seal for NO or NC functions.

Ordering code

Ordering code for valve

3V2M NC A □			
1	2	3	4
① Model	② Acting type	③ Standard voltage	④ Electrical entry
3V2M: Solenoid valve(3/2 way, with manifold)	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet

Ordering code for manifold

3V2M 5F D □			
1	2	3	4
① Model	② Number of stations	③ Exhaust type	④ Thread type
3V2M: Solenoid valve(3/2 way, with manifold)	1F: 1 Stations 2F: 2 Stations 20F: 20 Stations	Blank: Centralized exhaust D: Separated exhaust	Blank: PT G: G T: NPT

[Note]: Manifold kits contains manifold, seal and screw.
The port size is only 1/8".

Ordering code for valve's group(valve+manifold)

3V2M NC A □ - 5F D □						
1	2	3	4	5	6	7
① Model	② Acting type	③ Standard voltage	④ Electrical entry	⑤ Number of stations	⑥ Exhaust type	⑦ Thread type
3V2M: Solenoid valve (3/2 way, with manifold)	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet	1F: 1 Station 2F: 2 Stations 3F: 3 Stations 20F: 20 Stations	Blank: Centralized exhaust D: Separated exhaust	Blank: PT G: G T: NPT

Ordering code for blank plate

P-3V2M-R2		
1	2	3
① Subassembly type	② Valve type	③ Accessories type
P: subassembly	3V2M: Solenoid valve(3/2 way, with manifold)	R2: Blank plate for manifold

[Note]: Blank plate kits contains blank plate and screw.

Specification

Model	3V2M
Fluid	Air(to be filtered by 40 μm filter element)
Acting	Direct acting
Port size [Note1]	1/8"
Valve type	3 port 2 position
Orifice size	1.7mm ² (Cv=0.1)
Exhaust type	Centralized exhaust, Separated exhaust
Operating pressure	0~0.8MPa(0~114psi)
Proof pressure	1.2MPa(175psi)
Temperature	-20~70℃
Material of body	Aluminum alloy

[Note1] PT thread, G thread and NPT thread are available.

Coil specification

Item	specification
Standard voltage	AC220V, AC110V, AC24V, DC24V, DC12V
Scope of voltage	AC: ± 15% DC: ± 10%
Power consumption	AC: 7VA DC: 7.0W
Protection	IP65(DIN40050)
Temperature classification	B Class
Electrical entry	Terminal, Grommet
Activating time	0.05 sec and below
Max. frequency [Note1]	10 cycle/sec

[Note1] The maximum actuation frequency is in the no-load state.

Solenoid valve(3/2 way)

3V3 Series



Specification

Model		3V308
Fluid		Air(to be filtered by 40 μm filter element)
Acting		Direct acting
Port size [Note1]		1/4"
Valve type		3 port 2 position
Orifice size		11mm ² (Cv=0.62)
Lubrication		Not required
Operating pressure	Common	0~0.8MPa(0~114psi)
	vacuum	-102.2kPa~0.1MPa(-1.45~14.2psi)
Proof pressure		1.2MPa(175psi)
Temperature		-20~70℃
Material of body		Aluminum alloy

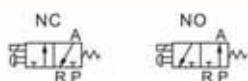
[Note1] PT thread, G thread and NPT thread are available.

Coil specification

Item	specification
Standard voltage	AC220V、AC110V、AC24V、DC24V、DC12V
Scope of voltage	AC: ± 15% DC: ± 10%
Power consumption	AC: 10VA DC: 6.5W
Protection	IP65(DIN40050)
Temperature classification	B Class
Electrical entry	Terminal, Grommet
Activating time	0.05 sec and below
Max. frequency [Note1]	10 cycle/sec

[Note1] The maximum actuation frequency is in the no-load state.

Symbol



Product feature

1. Direct acting type and normally closed mode, flexible in direction change.
2. Normally closed and normally open types are optional.
3. Structure in coaxial blanking mode: leakage proof and large air flow.
4. No need to add oil for lubrication.
5. Affiliated manual devices are equipped to facilitate installation and debugging.
6. Several standard voltage grades are optional.
7. Can be used under vacuum condition.

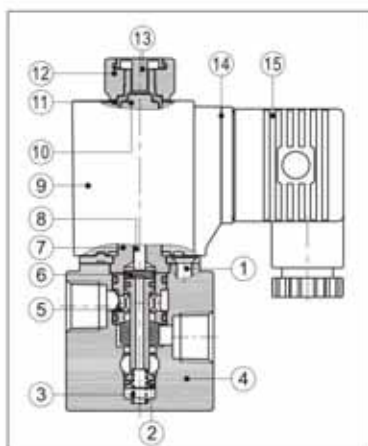
Ordering code

3V 3 08 NC A □ □

1 2 3 4 5 6 7

① Model	② Code	③ Port size	④ Acting type	⑤ Standard voltage	⑥ Electrical entry	⑦ Thread type
3V: Solenoid valve (3/2 way)	3: 3 Series	08: 1/4"	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet	Blank: PT G: G T: NPT

Inner structure



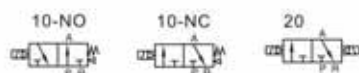
No.	Item	No.	Item
1	Pilot screw	9	Coil
2	Spool	10	Armature
3	Spring	11	Washer
4	Body	12	Coil nut
5	Washer	13	Manual button
6	Spacer	14	Gasket
7	Electromagnet set	15	Connector
8	Man drill		

Solenoid valve(3/2 way)

3V100 Series



Symbol



Specification

Model	3V110-M5	3V120-M5	3V110-06	3V120-06
Fluid	Air(to be filtered by 40 μm filter element)			
Acting	Internal pilot or external pilot			
Port size [Note1]	M5		1/8"	
Orifice size	5.5mm ² (Cv=0.31)		12.0mm ² (Cv=0.67)	
Valve type	3 port 2 position			
Lubrication [Note2]	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70℃			
Material of body	Aluminum alloy			

[Note 1] PT thread, G thread and NPT thread are available.

[Note 2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

Product feature

1. Pilot-oriented mode: Internal pilot or external pilot.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Double control solenoid valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Affiliated manual devices are equipped to facilitate installation and debugging.
7. Several standard voltage grades are optional.
8. Integrate with the manifold to save installation space.

Coil specification

Item	specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	3.5VA	3.5VA	4.0VA	2.5W	2.5W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				
Max. frequency [Note 1]	5 cycle/sec				

[Note 1] The maximum actuation frequency is in the no-load state.

Ordering code

3V 1 10 06 NO A □ □ - W

1 2 3 4 5 6 7 8 9

1 Model	2 Code	3 Valve type	4 Port size	5 Acting type	6 Standard voltage	7 Electrical entry	8 Thread type	9 Pilot type
3V:Solenoid valve (3/2 way)	1: 100 Series	10: Single solenoid	M5: M5 06: 1/8"	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet	M5 1/8"	Blank; Internal pilot
		20: Double solenoid		No this code				Without M5 thread hole W: External pilot With M5 thread hole

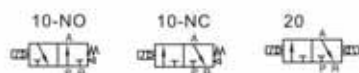
Please refer to 57 for manifold specification and the order way.

Solenoid valve(3/2 way)

3V200 Series



Symbol



Specification

Model	3V210-06	3V220-06	3V210-08	3V220-08
Fluid	Air(to be filtered by 40 μm filter element)			
Acting	Internal pilot or external pilot			
Port size [Note 1]	In=Out=1/8"		In=Out=1/4"	
Orifice size	14.0mm ² (Cv=0.78)		16.0mm ² (Cv=0.89)	
Valve type	3 port 2 position			
Lubrication [Note 2]	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70℃			
Material of body	Aluminum alloy			

[Note 1] PT thread, G thread and NPT thread are available.

[Note 2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

Product feature

1. Pilot-oriented mode: Internal pilot or external pilot.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Double control solenoid valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Affiliated manual devices are equipped to facilitate installation and debugging.
7. Several standard voltage grades are optional.
8. Integrate with the manifold to save installation space.

Coil specification

Item	specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	4.5VA	4.5VA	5.0VA	3.0W	3.0W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				
Max. frequency [Note1]	5 cycle/sec				

[Note 1] The maximum actuation frequency is in the no-load state.

Ordering code

3V 2 10 08 NO A □ □ - W

1 2 3 4 5 6 7 8 9

1 Model	2 Code	3 Valve type	4 Port size	5 Acting type	6 Standard voltage	7 Electrical entry	8 Thread type	9 Pilot type
3V: Solenoid valve (3/2 way)	2: 200 Series	10: Single solenoid	06: 1/8" 08: 1/4"	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet	Blank: PT G: G T: NPT	Blank; internal pilot
		20: Double solenoid		No this code				Without M5 thread hole W: External pilot
								With M5 thread hole

Please refer to 57 for manifold specification and the order way.

Solenoid valve(3/2 way)

3V300 Series



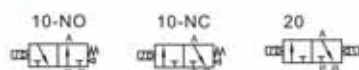
Specification

Model	3V310-08	3V320-08	3V310-10	3V320-10
Fluid	Air(to be filtered by 40 μm filter element)			
Acting	Internal pilot or external pilot			
Port size [Note 1]	In=Out=1/4"		In=Out=3/8"	
Orifice size	25.0mm ² (Cv=1.39)		30.0mm ² (Cv=1.67)	
Valve type	3 port 2 position			
Lubrication [Note2]	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70℃			
Material of body	Aluminum alloy			

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

Symbol



Product feature

1. Pilot-oriented mode: Internal pilot or external pilot.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Double control solenoid valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Affiliated manual devices are equipped to facilitate installation and debugging.
7. Several standard voltage grades are optional.
8. Integrate with the manifold to save installation space.

Coil specification

Item	specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	4.5VA	4.5VA	5.0VA	3.0W	3.0W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				
Max. frequency [Note1]	5 cycle/sec				

[Note1] The maximum actuation frequency is in the no-load state.

Ordering code

3V 3 10 10 NO A □ □ - W								
1 2 3 4 5 6 7 8 9								
① Model	② Code	③ Valve type	④ Port size	⑤ Acting type	⑥ Standard voltage	⑦ Electrical entry	⑧ Thread type	⑨ Pilot type
3V: Solenoid valve (3/2 way)	3: 300 Series	10: Single solenoid	08: 1/4" 10: 3/8"	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet	Blank: PT G: G T: NPT	Blank: Internal pilot
		20: Double solenoid		No this code				Without M5 thread hole W: External pilot
								With M5 thread hole

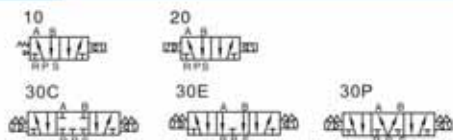
Please refer to 57 for manifold specification and the order way.

Solenoid valve(5/2 way, 5/3 way)

4V100 Series



Symbol



Product feature

1. Pilot-oriented mode: Internal pilot or external pilot.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Three position solenoid valves have three kinds of central function for your choice.
4. Double control solenoid valves have memory function.
5. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
6. No need to add oil for lubrication.
7. It is available to form integrated valve group with the base to save installation space.
8. Affiliated manual devices are equipped to facilitate installation and debugging.
9. Several standard voltage grades are optional.

Ordering code

4V 1 10 06 A □ □ - W							
1 2 3 4 5 6 7 8							
1 Model	2 Code	3 Valve type	4 Port size	5 Voltage	6 Electrical entry	7 Thread type	8 Pilot type
4V: Solenoid valve (5/2, 5/3 way)	1: 100 Series	10: Single solenoid 5/2 way	M5: M5	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet	No this code	Blank: Internal pilot
		20: Double solenoid 5/2 way					Without M5 thread hole
		30C: Double solenoid 5/3 way closed center					
		30E: Double solenoid 5/3 way exhaust center					W: External pilot
		30P: Double solenoid 5/3 way pressure center	06: 1/8"			Blank: PT G: G T: NPT	With M5 thread hole

Please refer to 58 for manifold specification and the order way.

Specification

Model	4V110-M5 4V120-M5	4V130C-M5 4V130E-M5 4V130P-M5	4V110-06 4V120-06	4V130C-06 4V130E-06 4V130P-06
Fluid	Air(to be filtered by 40 μm filter element)			
Acting	Internal pilot or external pilot			
Port size [Note1]	In=Out=M5		In=Out=1/8"	
Orifice size	5.5mm ² (Cv=0.31)	5.0mm ² (Cv=0.28)	12.0mm ² (Cv=0.67)	9.0mm ² (Cv=0.50)
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70℃			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max.frequency [Note3]	5 cycle/sec	3cycle/sec	5 cycle/sec	3 cycle/sec
Weight (g)	4V110-M5:120 4V120-M5:175	200	4V110-06:120 4V120-06:175	200

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

Coil specification

Item	specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ± 15% DC: ± 10%				
Power consumption	3.5VA	3.5VA	4.0VA	2.5W	2.5W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				

Solenoid valve

Air Cylinder

Air filter & Regulator

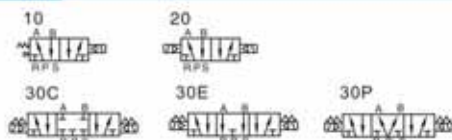
Pneumatic Contents

Solenoid valve(5/2 way, 5/3 way)

4V200 Series



Symbol



Product feature

1. Pilot-oriented mode: Internal pilot or external pilot.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Three position solenoid valves have three kinds of central function for your choice.
4. Double control solenoid valves have memory function.
5. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
6. No need to add oil for lubrication.
7. It is available to form integrated valve group with the base to save installation space.
8. Affiliated manual devices are equipped to facilitate installation and debugging.
9. Several standard voltage grades are optional.

specification

Model	4V210-06 4V220-06	4V230C-06 4V230E-06 4V230P-06	4V210-08 4V220-08	4V230C-08 4V230E-08 4V230P-08
Fluid	Air(to be filtered by 40 μm filter element)			
Acting	Internal pilot or external pilot			
Port size [Note1]	In=Out=Exhaust=1/8"		In=Out=1/4" Exhaust=1/8"	
Orifice size	14.0mm ² (Cv=0.78)	12.0mm ² (Cv=0.67)	16.0mm ² (Cv=0.89)	12.0mm ² (Cv=0.67)
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Operating pressure	1.2MPa(175psi)			
Temperature	-20~70℃			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max. frequency [Note3]	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec
Weight (g)	4V210-06:220 4V220-06:320	360	4V210-08:220 4V220-08:320	360

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

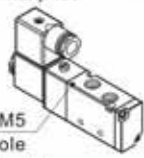
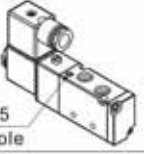
Coil specification

Item	specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	4.5VA	4.5VA	5.0VA	3.0W	3.0W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				

Ordering code

4V 2 10 08 A □ □ - W

1 2 3 4 5 6 7 8

1 Model	2 Code	3 Valve type	4 Port size	5 Voltage	6 Electrical entry	7 Thread type	8 Pilot type
4V: Solenoid valve (5/2, 5/3 way)	2: 200 Series	10: Single solenoid 5/2 way 20: Double solenoid 5/2 way 30C: Double solenoid 5/3 way closed center 30E: Double solenoid 5/3 way exhaust center 30P: Double solenoid 5/3 way pressure center	06: 1/8" 08: 1/4"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet	Blank: PT G: G T: NPT	Blank: Internal pilot  Without M5 thread hole W: External pilot  With M5 thread hole

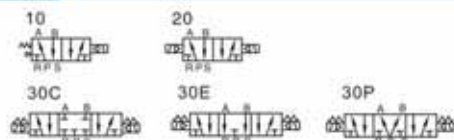
Please refer to 58 for manifold specification and the order way.

Solenoid valve(5/2 way, 5/3 way)

4V300 Series



Symbol



Product feature

1. Pilot-oriented mode: Internal pilot or external pilot.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Three position solenoid valves have three kinds of central function for your choice.
4. Double control solenoid valves have memory function.
5. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
6. No need to add oil for lubrication.
7. It is available to form integrated valve group with the base to save installation space.
8. Affiliated manual devices are equipped to facilitate installation and debugging.
9. Several standard voltage grades are optional.

Specification

Model	4V310-08 4V320-08	4V330C-08 4V330E-08 4V330P-08	4V310-10 4V320-10	4V330C-10 4V330E-10 4V330P-10
Fluid	Air (to be filtered by 40 μm filter element)			
Acting	Internal pilot or external pilot			
Port size [Note1]	In=Out=Exhaust=1/4"		In=Out=3/8" Exhaust=1/4"	
Orifice size	25.0mm ² (Cv=1.40)	18.0mm ² (Cv=1.00)	30.0mm ² (Cv=1.68)	18.0mm ² (Cv=1.00)
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max. frequency [Note3]	4 cycle/sec	3 cycle/sec	4 cycle/sec	3 cycle/sec
Weight (g)	4V310-08: 310 4V320-08: 400	450	4V310-10: 310 4V320-10: 400	450

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

Coil specification

Item	specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	4.5VA	4.5VA	5.0VA	3.0W	3.0W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				

Ordering code

4V 3 10 10 A □ □ - W							
1 2 3 4 5 6 7 8							
1 Model	2 Code	3 Valve type	4 Port size	5 Voltage	6 Electrical entry	7 Thread type	8 Pilot type
4V: Solenoid valve (5/2, 5/3 way)	3: 300 Series	10: Single solenoid 5/2 way 20: Double solenoid 5/2 way 30C: Double solenoid 5/3 way closed center 30E: Double solenoid 5/3 way exhaust center 30P: Double solenoid 5/3 way pressure center	08: 1/4" 10: 3/8"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet	Blank: PT G: G T: NPT	Blank: Internal pilot Without M5 thread hole W: External pilot With M5 thread hole

Please refer to 58 for manifold specification and the order way.

Solenoid valve(5/2 way)

4M(NAMUR) Series



Symbol



Product feature

1. Internally piloted structure.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Double control solenoid valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Install in the side plate with the surface upward, which can be used by directly connecting with the actuators.
7. Affiliated manual devices are equipped to facilitate installation and debugging.
8. Several standard voltage grades are optional.

Flow chart

Please refer to the same types of 4V series solenoid valves.

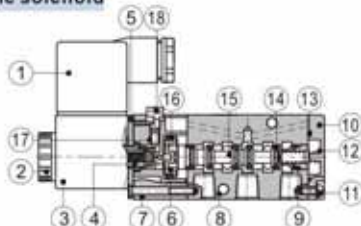
Ordering code

4M 3 10 10 A □ □
1 2 3 4 5 6 7

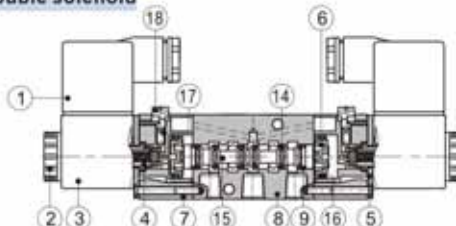
1 Model	2 Code	3 Valve type	4 Port size	5 Voltage	6 Electrical entry	7 Thread type
4M: Solenoid valve (5/2 way NAMUR type)	1: 100 Series	10: Single solenoid 20: Double solenoid	M5: M5	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet	No this code
	2: 200 Series		06: 1/8"			Blank: PT G: G T: NPT
	3: 300 Series		06: 1/8"			
			08: 1/4"			
			08: 1/4"			
			10: 3/8"			

Inner structure

Single solenoid



Double solenoid



No.	Item	No.	Item
1	Connector	10	Bottom cover
2	Coil net	11	Fixed screw
3	Coil	12	Spool spring
4	Armature	13	Bottom cover gasket
5	Fixed plate	14	Spool O-ring
6	Piston	15	Spool
7	Pilot kit	16	Piston O-ring
8	Body	17	Override spring
9	Wear ring	18	Manual override

Specification

Model	4M110-M5	4M110-06	4M210-06	4M210-08	4M310-08	4M310-10
	4M120-M5	4M120-06	4M220-06	4M220-08	4M320-08	4M320-10
Fluid	Air(to be filtered by 40 μm filter element)					
Acting	Internal pilot					
Port size [Note1]	In=Out=M5	In=Out=1/8"	In=Out=1/8"	In=1/4" Out=1/8"	In=Out=1/4"	In=3/8" Out=1/4"
Orifice size	5.5mm ² (Cv=0.31)	12.0mm ² (Cv=0.67)	14.0mm ² (Cv=0.78)	16.0mm ² (Cv=0.89)	25.0mm ² (Cv=1.40)	30.0mm ² (Cv=1.68)
Valve type	5 port 2 position					
Operating pressure	0.15~0.8MPa(21~114psi)					
Proof pressure	1.2MPa(175psi)					
Temperature	-20~70℃					
Material of body	Aluminum alloy					
Lubrication [Note2]	Not required					
Max.frequency[Note3]	5 cycle/sec			4 cycle/sec		
Weight (g)	4M110:120	4M120:175	4M210:220	4M220:320	4M310:310	4M320:400

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

Coil specification

Item	4M110	4M120	4M210	4M220	4M310	4M320
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V	DC12V
Scope of voltage	AC: ±15% DC: ±10%					
Power consumption	3.5VA	3.5VA	4.0VA	2.5W	2.5W	4.5VA
Protection	IP65(DIN40050)					
Temperature classification	B Class					
Electrical entry	Terminal, Grommet					
Activating time	0.05 sec and below					

Solenoid valve(Accessories)

Manifold



Specification

Item\Manifold Model	100M	200M	300M
Fluid	Air(to be filtered by 40 μm filter element)		
Temperature	-20~70℃		
Adaptable valve's series	3V100 Series	3V200 Series	3V300 Series

Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost.
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

Ordering code

Ordering code for manifold

3V100M 5F □		
1	2	3
1 Model	2 Number of stations	3 Thread type
3V100M: 100 Series manifold 3V200M: 200 Series manifold 3V300M: 300 Series manifold	1F: 1 station 2F: 2 station 3F: 3 station 16F: 16 station	Blank: PT G: G T: NPT

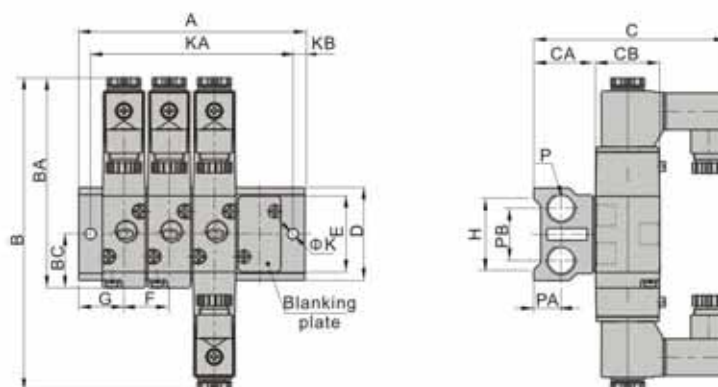
Ordering code for blank plate

P-3V100M-R2		
1	2	3
1 Kits	2 Model	3 Code
P: Kits	3V100M: 100Series manifold 3V200M: 200Series manifold 3V300M: 300Series manifold	R2: Blank plate for manifold

- [Note] 1. Ordering code contains the two parts of the manifold's and the blank plate's;
2. Manifold kits contains manifold, seal and screw;
3. Blank plate kits contains blank plate and screw.

Dimensions

With 3V solenoid valve



Model\Item	B	BA	BC	C	CA	CB	D	E	F	G	H	K	KB	P	PA	PB
3V100M	131.5	88.5	22.7	81	26	27	39	32	19	19	30	4.5	5	1/4"	11.5	22
3V200M	162.5	109	27.7	92.5	26	35	45	40	23	23	35	4.5	6	1/4"	11.5	25
3V300M	175	120	32.5	99	30	40	52	47	28	27	42	4.5	6	3/8"	13.5	28

A																
Model\Item	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
3V100M	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323
3V200M	46	69	92	115	138	161	184	207	230	253	276	299	322	345	368	391
3V300M	54	82	110	138	166	194	222	250	278	306	334	362	390	418	446	474

KA																
Model\Item	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
3V100M	28	47	66	85	104	123	142	161	180	199	218	237	256	275	294	313
3V200M	34	57	80	103	126	149	172	195	218	241	264	287	310	333	356	379
3V300M	42	70	98	126	154	182	210	238	266	294	322	350	378	406	434	462

Solenoid valve(Accessories)

Manifold



Specification

Item\Manifold Model	100M	200M	300M	400M
Fluid	Air(to be filtered by 40 μ m filter element)			
Temperature	-20~70℃			
Adaptable valve's series	4V100 Series	4V200 Series	4V300 Series	4V400 Series

Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost.
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

Ordering code

Ordering code for manifold

100M 5F □		
1	2	3
1 Model	2 Number of stations [Note1]	3 Thread type
100M:100 Series manifold 200M:200 Series manifold 300M:300 Series manifold 400M:400 Series manifold	1F: 1 Station 2F: 2 Station 3F: 3 Station 16F: 16 Station	Blank: PT G: G T: NPT

Ordering code for blank plate

P-100M-R2		
1	2	3
1 Kits model	2 Model	3 Code
P: Kits	100M: 100 Series manifold 200M: 200 Series manifold 300M: 300 Series manifold 400M: 400 Series manifold	R2: Blank plate for manifold

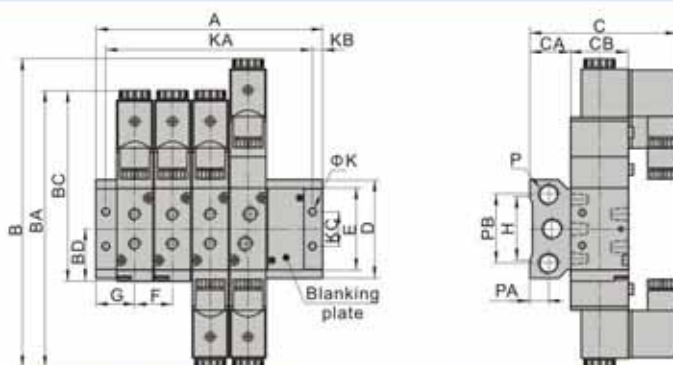
[Note1] 100M, 200M series have a maximum of 16 stations; 300M series have a maximum of 12 stations; 400M series have a maximum of 8 stations.

[Note] 1. Ordering code contains the two parts of the manifold's and the blank plate's. 2. Manifold kits contains manifold, seal and screw;

3. Blank plate kits contains blank plate and screw.

Dimensions

With 4V solenoid valve



Model\Item	B	BA	BC	BD	C	CA	CB	D	E	F	G	H	K	KB	KC	P	PA	PB
100M□F	154.5	142.5	99.5	28	79	26	27	58	43	19	19	36	4.5	5	20	1/4"	12.5	40
200M□F	189	171	117	31.7	93	27	35	61	51	23	23	38	4.5	6	21	1/4"	13	43
300M□F	208	190	135	40	99.5	31	40	75	65	28	27	54	4.5	6	26	3/8"	15	53
400M□F	243	223	168.5	57	112.5	39	50	104	94.5	35	31.5	75	5.5	7	32	1/2"	19	68

A																
Model\Item	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
100M□F	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323
200M□F	46	69	92	115	138	161	184	207	230	253	276	299	322	345	368	391
300M□F	54	82	110	138	166	194	222	250	278	306	334	362	-	-	-	-
400M□F	63	98	133	168	203	238	273	308	-	-	-	-	-	-	-	-

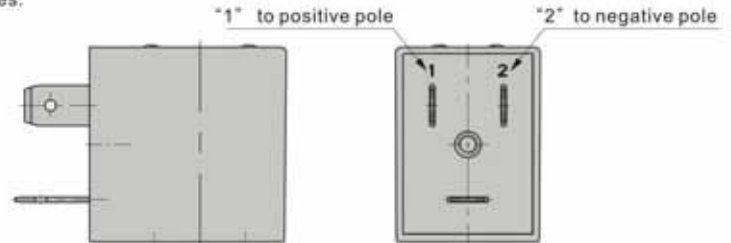
KA																
Model\Item	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
100M□F	28	47	66	85	104	123	142	161	180	199	218	237	256	275	294	313
200M□F	34	57	80	103	126	149	172	195	218	241	264	287	310	333	356	379
300M□F	42	70	98	126	154	182	210	238	266	294	322	350	-	-	-	-
400M□F	49	84	119	154	189	224	259	294	-	-	-	-	-	-	-	-

Coil

080, 092 Series

Attentions for block wiring

Coil terminal with DC specification has polar indicator lights, thus when wiring, notice positive and negative poles, "1" shall be connected to positive pole, "2" to negative pole. If the poles are connected inversely, the indicator lights will not shine but valve still actuates.



Ordering code

CD A080 A

1 2 3

1 Coil type	2 Coil's bore	3 Voltage
CD: Terminal CL: Grommet	A080: The first product of $\Phi 8.0\text{mm}$ bore) A092: The first product of $\Phi 9.0\text{mm}$ bore)	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V

080 Series

Production series	Coil type	Voltage	Coil inside connection diagram	Connector type	Connector inside connection diagram	Memo
3V100 Series 4V100 Series 4M100 Series	CDA080 Terminal	AC		PL1515T-P1	-	Applied to CDA080 AC, DC type coil
	CDA080 Terminal	DC		PL1515T-P2		Applied to CDA080 AC type coil
	CLA080 Grommet	AC		PL1515T-P3		Applied to CDA080 DC type coil
	CLA080 Grommet	DC		-	-	-

092 Series

Production series	Coil type	Voltage	Coil inside connection diagram	Connector type	Connector inside connection diagram	Memo
3V1 Series 3V200 Series 3V300 Series 4V200 Series 4V300 Series 4V400 Series 4M200 Series 4M300 Series ESV200 Series ESV300 Series ESV400 Series ESV600 Series	CDA092 Terminal	AC		4V210-005-P1	-	Applied to CDA092 AC, DC type coil
	CDA092 Terminal	DC		4V210-005-P2		Applied to CDA092 AC type coil
	CDA092 Terminal	DC		4V210-005-P3		Applied to CDA092 DC type coil
	CLA092 Grommet	AC		-	-	-
	CLA092 Grommet	DC		-	-	-
	CLA092 Grommet	DC		-	-	-

Air valve(3/2 way)

3A100 Series



Symbol



Product feature

1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Double air control valves have memory function.
3. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
4. No need to add oil for lubrication.
5. Multi-mounting helps to install and apply.
6. Integrate with the manifold to save installation space.

Specification

Model	3A110-M5	3A120-M5	3A110-06	3A120-06
Fluid	Air(to be filtered by 40 μ m filter element)			
Acting	Exterior control			
Port size [Note1]	M5		1/8"	
Orifice size	5.5mm ² (Cv=0.31)		12.0mm ² (Cv=0.67)	
Valve type	3 port 2 position			
Lubrication [Note2]	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70℃			
Material of body	Aluminum alloy			
Max. frequency [Note3]	5 cycle/sec			

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

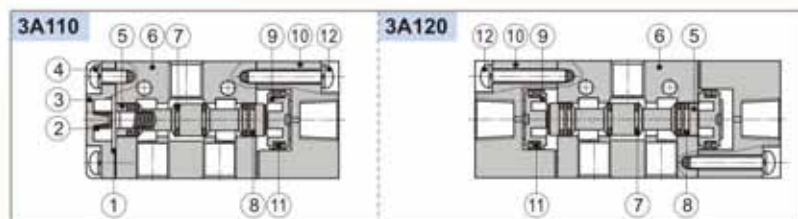
[Note3] The maximum actuation frequency is in the no-load state.

Ordering code

3A 1 10 06 NO □					
1	2	3	4	5	6
Model	Code	Valve type	Port size	Acting type	Thread type
3A: Air Valve (3/2 way)	1: 100 Series	10: Single air control 20: Double air control	M5: M5 06: 1/8"	NC: Normally close NO: Normally open No this code	M5 Blank: PT G: G T: NPT

Please refer to 86 for manifold specification and the order way.

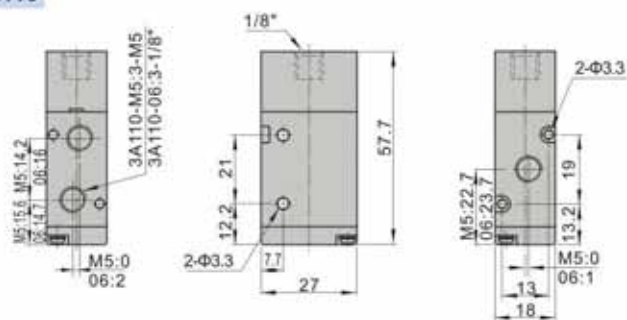
Inner structure



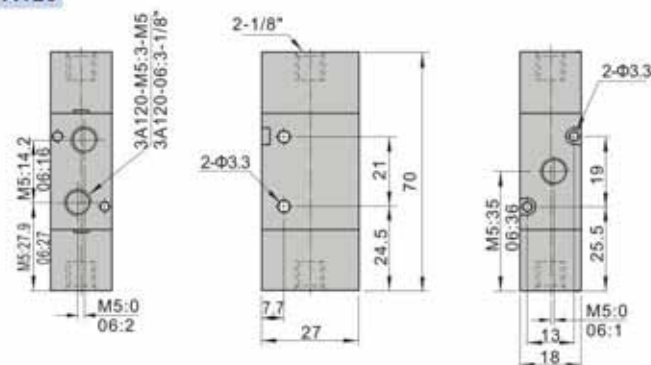
No.	Item	No.	Item	No.	Item
1	Bottom cover gasket	5	Spool	9	Piston
2	Spring	6	Body	10	Pilot body
3	Bottom cover	7	O-ring	11	Piston O-ring
4	Bottom cover screw	8	Wear ring	12	Piston screw

Dimension

3A110



3A120



Air valve(3/2 way)

3A200 Series



Symbol



Product feature

1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Double air control valves have memory function.
3. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
4. No need to add oil for lubrication.
5. Multi-mounting helps to install and apply.
6. Integrate with the manifold to save installation space.

Specification

Model	3A210-06	3A220-06	3A210-08	3A220-08
Fluid	Air(to be filtered by 40 μ m filter element)			
Acting	Exterior control			
Port size [Note1]	In=Out=1/8"		In=Out=1/4"	
Orifice size	14.0mm ² (Cv=0.78)		16.0mm ² (Cv=0.89)	
Valve type	3 port 2 position			
Lubrication [Note2]	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70℃			
Material of body	Aluminum alloy			
Max. frequency [Note3]	5 cycle/sec			

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

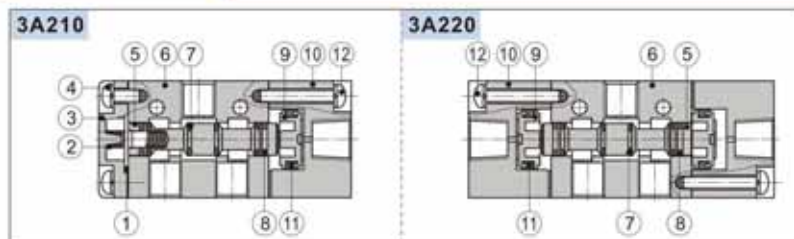
[Note3] The maximum actuation frequency is in the no-load state.

Ordering code

3A 2 10 08 NO □					
1	2	3	4	5	6
1 Model	2 Code	3 Valve type	4 Port size	5 Acting type	6 Thread type
3A: Air Valve (3/2 way)	2: 200 Series	10: Single air control 20: Double air control	06: 1/8" 08: 1/4"	NC: Normally close NO: Normally open No this code	Blank: PT G: G T: NPT

Please refer to 86 for manifold specification and the order way.

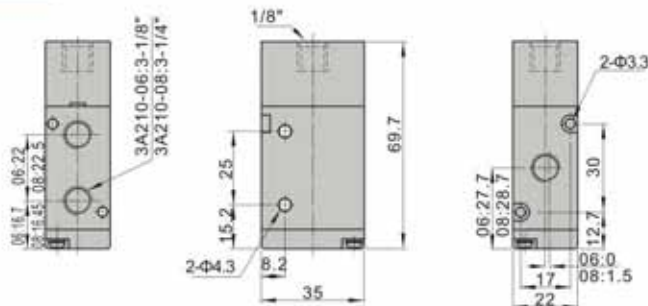
Inner structure



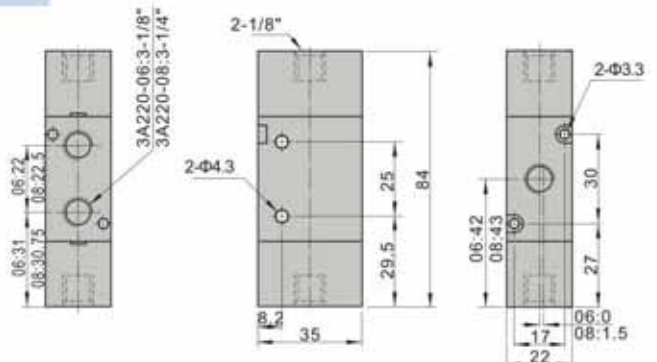
No.	Item	No.	Item	No.	Item
1	Bottom cover gasket	5	Spool	9	Piston
2	Spring	6	Body	10	Pilot body
3	Bottom cover	7	O-ring	11	Piston O-ring
4	Bottom cover screw	8	Wear ring	12	Piston screw

Dimension

3A210



3A220



Air valve(3/2 way)

3A300 Series



Symbol



Product feature

1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Double air control valves have memory function.
3. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
4. No need to add oil for lubrication.
5. Multi-mounting helps to install and apply.
6. Integrate with the manifold to save installation space.

Specification

Model	3A310-08	3A320-08	3A310-10	3A320-10
Fluid	Air(to be filtered by 40 μm filter element)			
Acting	Exterior control			
Port size [Note1]	In=Out=1/4"		In=Out=3/8"	
Orifice size	25.0mm ² (Cv=1.39)		30.0mm ² (Cv=1.67)	
Valve type	3 port 2 position			
Lubrication [Note2]	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70℃			
Material of body	Aluminum alloy			
Max. frequency [Note3]	5 cycle/sec			

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

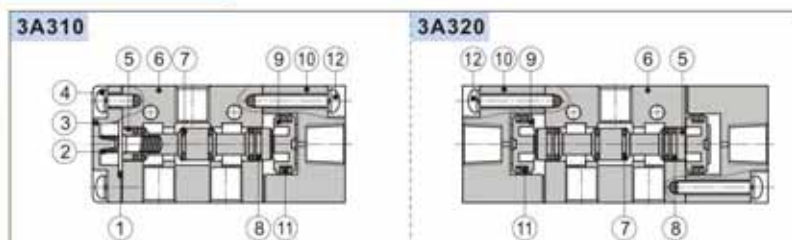
[Note3] The maximum actuation frequency is in the no-load state.

Ordering code

3A 3 10 10 NO □					
1 Model	2 Code	3 Valve type	4 Port size	5 Acting type	6 Thread type
3A: Air Valve (3/2 way)	3: 300 Series	10: Single air control 20: Double air control	08: 1/4" 10: 3/8"	NC: Normally close NO: Normally open No this code	Blank: PT G: G T: NPT

Please refer to 86 for manifold specification and the order way.

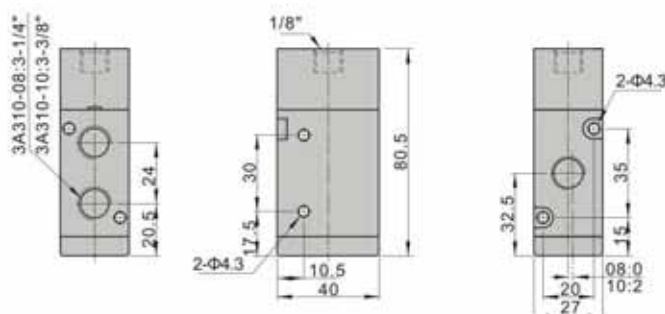
Inner structure



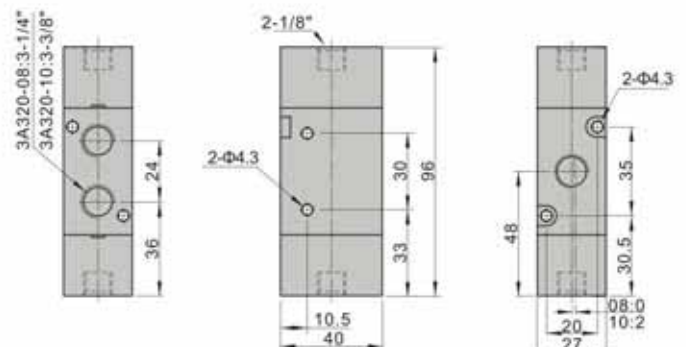
No.	Item	No.	Item	No.	Item
1	Bottom cover gasket	5	Spool	9	Piston
2	Spring	6	Body	10	Pilot body
3	Bottom cover	7	O-ring	11	Piston O-ring
4	Bottom cover screw	8	Wear ring	12	Piston screw

Dimension

3A310



3A320



Air valve(5/2 way, 5/3 way)

4A100 Series



Specification

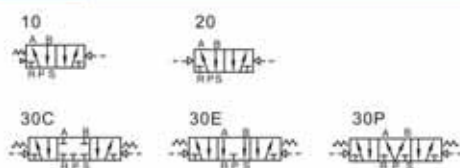
Model	4A110-M5 4A120-M5	4A130C-M5 4A130E-M5 4A130P-M5	4A110-06 4A120-06	4A130C-06 4A130E-06 4A130P-06
Fluid	Air(to be filtered by 40 μm filter element)			
Acting	Exterior control			
Port size [Note1]	In=Out=M5		In=Out=1/8"	
Orifice size	5.5mm ² (Cv=0.31)	5.0mm ² (Cv=0.28)	12.0mm ² (Cv=0.67)	9.0mm ² (Cv=0.50)
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70℃			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max. frequency [Note3]	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec
Weight (g)	4A110-M5:85 4A120-M5:140	165	4A110-06:85 4A120-06:140	165

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency of no-load state.

Symbol



Product feature

1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Three position air valves have three kinds of central function for your choice.
3. Double air control valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Integrate with the manifold to save installation space.

Ordering code

4A 1 10 06 □

1 2 3 4 5

1 Model	2 Code	3 Valve type	4 Port size	5 Thread type
4A: Air Valve(5/2, 5/3 way)	1: 100 Series	10: Single air control 5/2 way 20: Double air control 5/2 way 30C: Double air control 5/3 way closed center 30E: Double air control 5/3 way exhaust center 30P: Double air control 5/3 way pressure center	M5: M5 06: 1/8"	No this code Blank: PT G: G T: NPT

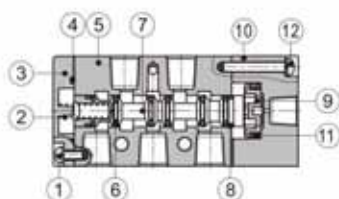
Please refer to 87 for manifold specification and the order way.

Air valve(5/2 way, 5/3 way)

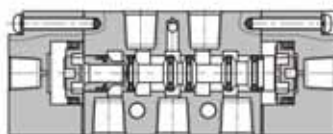
4A100 Series

Inner structure

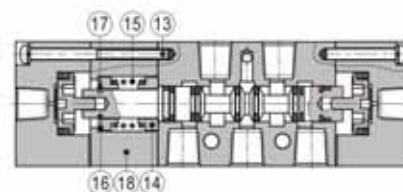
4A110



4A120



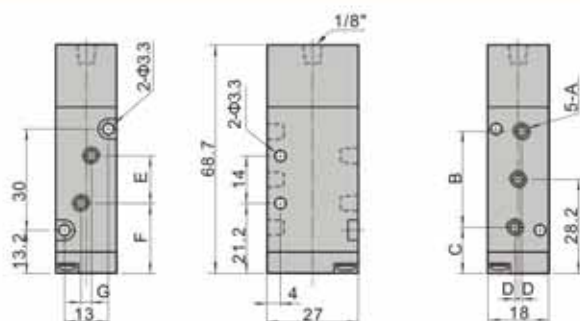
4A130C



No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item
1	Screw	3	Bottom cover	5	Body	7	Spool	9	Piston	11	O-ring	13	Screw	15	Return Spring	17	E Clip
2	Spring	4	Bottom cover gasket	6	O-ring	8	Wear ring	10	Pilot body	12	Screw	14	Spring holder	16	Spring holder	18	Side cover

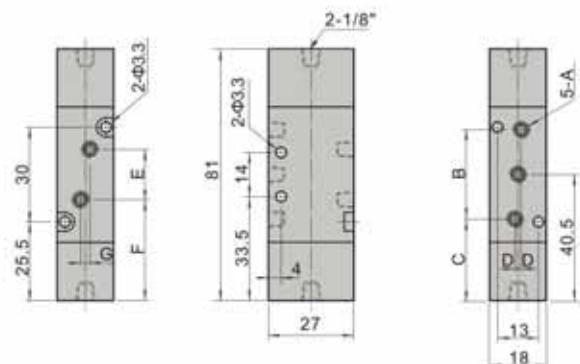
Dimension

4A110



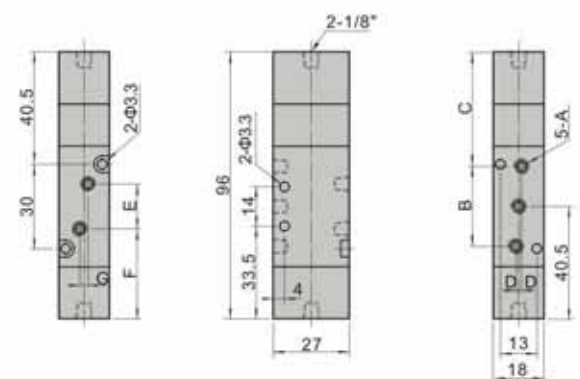
Model\Item	A	B	C	D	E	F	G
4A110-M5	M5x0.8	27	14.7	0	14	21.2	0
4A110-06	1/8"	28	14.2	1	16	20.2	3

4A120



Model\Item	A	B	C	D	E	F	G
4A120-M5	M5x0.8	27	27	0	14	33.5	0
4A120-06	1/8"	28	26.5	1	16	32.5	3

4A130



Model\Item	A	B	C	D	E	F	G
4A130-M5	M5x0.8	27	42	0	14	33.5	0
4A130-06	1/8"	28	41.5	1	16	32.5	3

Air valve(5/2 way, 5/3 way)

4A200 Series



Specification

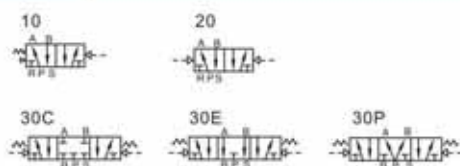
Model	4A210-06 4A220-06	4A230C-06 4A230E-06 4A230P-06	4A210-08 4A220-08	4A230C-08 4A230E-08 4A230P-08
Fluid	Air(to be filtered by 40 μm filter element)			
Acting	Exterior control			
Port size [Note1]	In=Out=Exhaust=1/8"		In=Out=1/4" Exhaust=1/8"	
Orifice size	14.0mm ² (Cv=0.78)	12.0mm ² (Cv=0.67)	16.0mm ² (Cv=0.89)	12.0mm ² (Cv=0.67)
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70℃			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max. frequency [Note3]	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec
Weight (g)	4A210-06:185 4A220-06:285	365	4A210-08:185 4A220-08:285	365

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency of no-load state.

Symbol



Product feature

1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Three position air valves have three kinds of central function for your choice.
3. Double air control valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Integrate with the manifold to save installation space.

Ordering code

4A 2 10 08 □

① ② ③ ④ ⑤

① Model	② Code	③ Valve type	④ Port size	⑤ Thread type
4A: Air Valve(5/2, 5/3 way)	2: 200 Series	10: Single air control 5/2 way 20: Double air control 5/2 way 30C: Double air control 5/3 way closed center 30E: Double air control 5/3 way exhaust center 30P: Double air control 5/3 way pressure center	06: 1/8" 08: 1/4"	Blank: PT G: G T: NPT

Please refer to 87 for manifold specification and the order way.

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

Air valve(5/2 way, 5/3 way)

4A300 Series



Specification

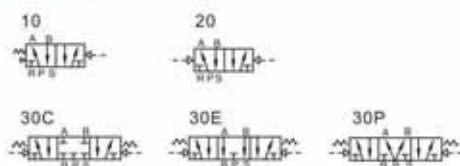
Model	4A310-08 4A320-08	4A330C-08 4A330E-08 4A330P-08	4A310-10 4A320-10	4A330C-10 4A330E-10 4A330P-10
Fluid	Air(to be filtered by 40 μm filter element)			
Acting	Exterior control			
Port size [Note1]	In=Out=Exhaust=1/4"		In=Out=3/8" Exhaust=1/4"	
Orifice size	25.0mm ² (Cv=1.40)	18.0mm ² (Cv=1.00)	30.0mm ² (Cv=1.68)	18.0mm ² (Cv=1.00)
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70℃			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max. frequency [Note3]	4 cycle/sec	3 cycle/sec	4 cycle/sec	3 cycle/sec
Weight (g)	4A310-08:275 4A320-08:365	505	4A310-10:275 4A320-10:365	505

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency of no-load state.

Symbol



Product feature

1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Three position air valves have three kinds of central function for your choice.
3. Double air control valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Integrate with the manifold to save installation space.

Ordering code

4A 3 10 10 □

1 2 3 4 5

1 Model	2 Code	3 Valve type	4 Port size	5 Thread type
4A: Air Valve(5/2, 5/3 way)	3: 300 Series	10: Single air control 5/2 way 20: Double air control 5/2 way 30C: Double air control 5/3 way closed center 30E: Double air control 5/3 way exhaust center 30P: Double air control 5/3 way pressure center	08: 1/4" 10: 3/8"	Blank: PT G: G T: NPT

Please refer to 87 for manifold specification and the order way.

Air valve(5/2 way, 5/3 way)

4A400 Series



Specification

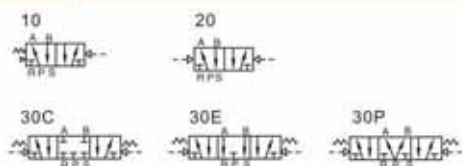
Model	4A410-15	4A420-15	4A430C-15	4A430E-15	4A430P-15
Fluid	Air(to be filtered by 40 μm filter element)				
Acting	Exterior control				
Port size [Note1]	In=Out=Exhaust= 1/2"				
Orifice size	50.0mm ² (Cv=2.79)		30.0mm ² (Cv=1.68)		
Valve type	5 port 2 position		5 port 3 position		
Operating pressure	0.15~0.8MPa(21~114psi)				
Proof pressure	1.2MPa(175psi)				
Temperature	-20~70 °C				
Material of body	Aluminum alloy				
Lubrication [Note2]	Not required				
Max. frequency [Note3]	3 cycle/sec				
Weight (g)	555	685		735	

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency of no-load state.

Symbol



Product feature

1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Three position air valves have three kinds of central function for your choice.
3. Double air control valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Integrate with the manifold to save installation space.

Ordering code

4A 4 10 15 □

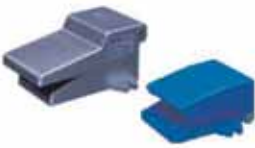
① ② ③ ④ ⑤

① Model	② Code	③ Valve type	④ Port size	⑤ Thread type
4A: Air Valve(5/2, 5/3 way)	4: 400 Series	10: Single air control 5/2 way 20: Double air control 5/2 way 30C: Double air control 5/3 way closed center 30E: Double air control 5/3 way exhaust center 30P: Double air control 5/3 way pressure center	15: 1/2"	Blank: PT G: G T: NPT

Please refer to 87 for manifold specification and the order way.

Manual, mechanical and other valves

Compendium of Manual, mechanical and other valve

Solenoid valve	P97	Product feature ● Sliding column structure ● Manual operation ● Panel-mounting ● 5/2way, 5/3 way	Photo 	P99	Product feature ● Sliding column structure ● Manual operation ● Panel-mounting ● 3/2 way	Photo 
	P100	Product feature ● Sliding column structure ● Manual operation ● Panel-mounting ● 5/2 way	Photo 	P101	Product feature ● There are several ways of internal and external thread connection ● Hand slide operation ● 3/2 way	Photo 
	P102	Product feature ● Body installation and Panel installation ● Manual operation ● With lock and without lock are optional ● 4/2 way, 4/3 way	Photo 	P104	Product feature ● Shut-off structure ● Manual control or mechanical control ● Several control set are optional ● Multi-mounting ● 3/2 way	Photo 
	P107	Product feature ● Sliding column structure ● Manual control or mechanical control ● Several control set are optional ● Multi-mounting ● 3/2 way	Photo 	P110	Product feature ● Sliding column structure ● Manual control or mechanical control ● Several control set are optional ● Multi-mounting ● 5/2 way	Photo 
	P113	Product feature ● Shut-off structure ● Manual control or mechanical control ● Several control set are optional ● Multi-mounting ● 3/2 way, 5/3 way	Photo 	P118	Product feature ● Sliding column structure ● Mechanical control ● Several control set are optional ● Multi-mounting ● 3/2 way	Photo 
	P120	Product feature ● 3F, 3FM: Direct acting (NC) ● 4F: Direct acting ● Foot pedal control ● With lock and without lock are optional ● 3F, 3FM: 3/2 way ● 4F: 5/2way	Photo 	P122	Product feature ● Allows air to exhaust and cut off air flow ● Multi-mounting ● 100, 200, 300 Series	Photo 
	P123	Product feature ● Large valid area of section ● Compact structure ● Excellence hermetical capability	Photo 	P124	Product feature ● Fitting joint and thread are optional for pilot port	Photo 

Installation and Application



1. Before installing, be sure the valve hasn't been damaged via transportation.
2. It's suggested to use the medium lubricated by 40 μm filter element. Be aware of the flow direction and port size.
3. Please notice whether the installation condition accords with technical requirements (such as "working pressure" and "scope of application temperature"), then the equipment can be installed and used.
4. Take measure to avoid vibration and frozen.
5. Before using the fittings and tubes make sure they are clean. When connecting to fittings, be sure the PTFE Thread seal tape is used correctly.
6. To keep the dust away, Never forget to install dirt-proof boot in air intake and outlet during dismounting.

Hand lever valve (5/2 way, 5/3 way)

4H Series



Specification

Model	210-06	230-06	210-08	230-08	310-08	330-08	310-10	330-10
Fluid	Air (to be filtered by 40 μm filter element)							
Operating	Manual control direct acting type)							
Port size[Note1]	In=Out =Exhaust=1/8"		In=Out=1/4"; Exhaust=1/8"		In=Out =Exhaust=1/4"		In=Out=3/8"; Exhaust=1/4"	
Orifice size	14.0mm ² (Cv=0.78)	12.0mm ² (Cv=0.67)	16.0mm ² (Cv=0.89)	12.0mm ² (Cv=0.67)	25.0mm ² (Cv=1.39)	18.0mm ² (Cv=1.00)	30.0mm ² (Cv=1.67)	18.0mm ² (Cv=1.00)
Valve type	5/2 way	5/3 way	5/2 way	5/3 way	5/2 way	5/3 way	5/2 way	5/3 way
Lubrication [Note2]	Not required							
Pressure range	0~1.0MPa(0~145psi)							
Proof pressure	1.5MPa(215psi)							
Temperature	-20~70℃							
Material body	Aluminum alloy							
Operating angle	±15°	±8.5°	±15°	±8.5°	±18°	±10°	±18°	±10°

[Note1] PT thread, G thread and NPT thread are available;

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span.
It is suggested to use ISO VG32 lubricant or the oil with the same grade.

Symbol



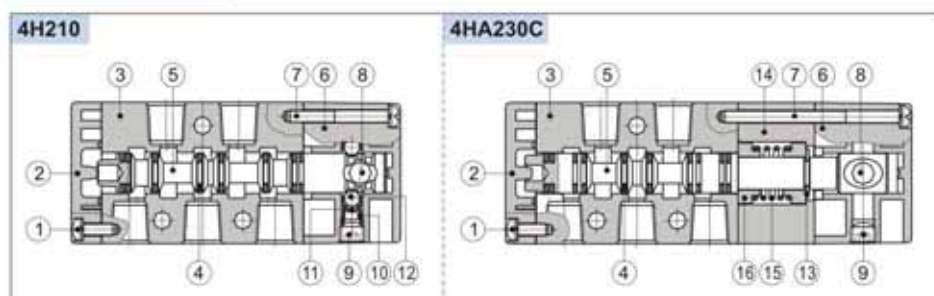
Product feature

1. Manual operation, smooth actuation, and exact and reliable orientation.
2. Sliding column structure has good tightness and light weight and is easy to install and dismount.
3. Internal hole adopts special processing technology which has little attrition friction, long service life.
4. No need to add oil for lubrication.
5. Panel-mounting makes it convenient to install and apply.

Ordering code

4H 2 30C 08 □				
1	2	3	4	5
1 Model	2 Code	3 Valve type	4 Port size	5 Thread type
4H: Manual return 4HA: Spring return	2: 200 Series 3: 300 Series	10: 5/2 Way 30C: 5/3 Way closed center 30E: 5/3 Way exhaust center	06: 1/8" 08: 1/4" 10: 3/8"	Blank: PT G: G T: NPT

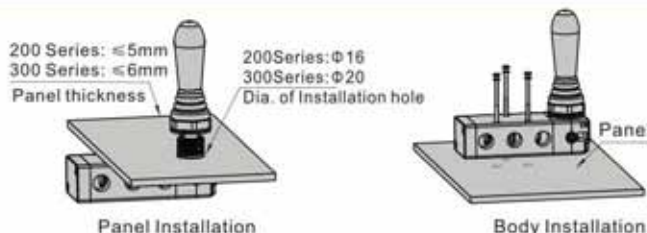
Inner structure



No.	Item	No.	Item
1	Round head screw	9	Stop screw
2	Bottom cover	10	Spring
3	Body	11	Steel ball jacket
4	O-ring	12	Steel ball
5	Spool	13	E clip
6	Top cover	14	Side cover
7	Round head cover	15	Spring
8	Axle	16	Spring holder

Installation

1. 5/3 way manual return hand lever valve is positioned by steel ball, which is convenient to switch. Please apply the proper force to avoid the position mismatch and misoperation.
2. When installed by panel, disassemble the gasket according to the practical requirement.
3. Below is the installation method for reference.
Note: Please give your attention on the panel thickness and hole dimension when installed by panel.



Solenoid valve

Air Cylinder

Air filter & Regulator

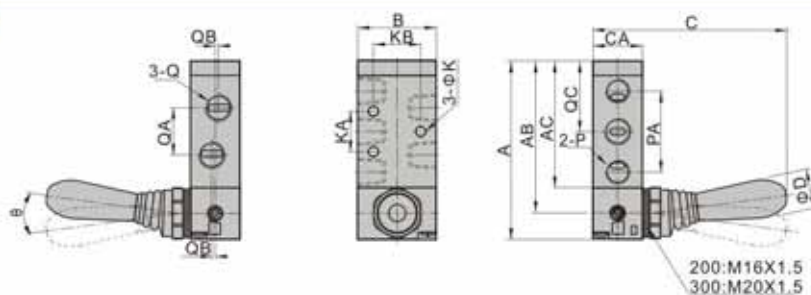
Pneumatic Contents

Hand lever valve (5/2 way, 5/3 way)

4H Series

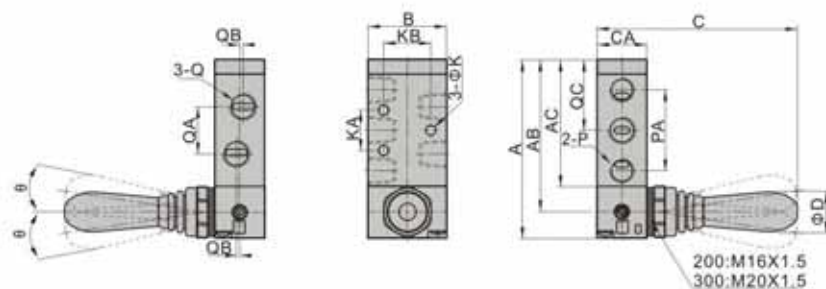
Dimensions

4H210\310, 4HA210\310



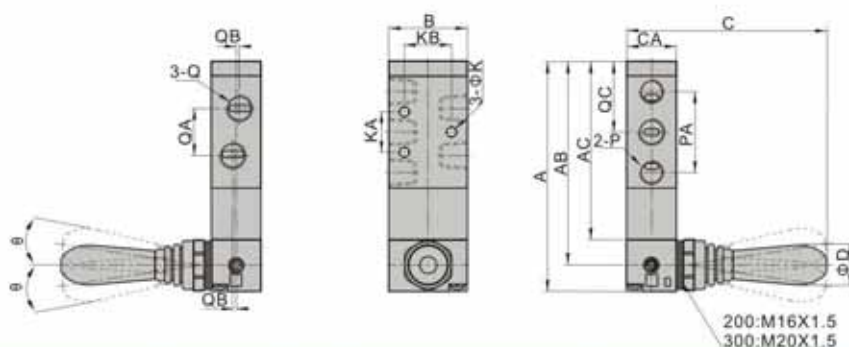
Model/Item	A	AB	AC	B	C	CA	D	K	KA	KB	P	PA	Q	QA	QB	QC	Θ
4H210-06	81.5	69.5	57.5	35	90	22	18	4.3	20	23.5	1/8"	36	1/8"	18	-	32.5	15
4HA210-06	81.5	69.5	57.5	35	90	22	18	4.3	20	23.5	1/8"	36	1/4"	21	1.5	32.5	15
4H210-08	81.5	69.5	57.5	35	90	22	18	4.3	20	23.5	1/8"	36	1/4"	21	1.5	32.5	15
4HA210-08	81.5	69.5	57.5	35	90	22	18	4.3	20	23.5	1/8"	36	1/4"	21	1.5	32.5	15
4H310-08	101	87	73	40	93.5	27	18	4.3	24	27.5	1/4"	45	1/4"	22	-	40.5	18
4HA310-08	101	87	73	40	93.5	27	18	4.3	24	27.5	1/4"	45	1/4"	22	-	40.5	18
4H310-10	101	87	73	40	93.5	27	18	4.3	24	27.5	1/4"	45	3/8"	24	2	40.5	18
4HA310-10	101	87	73	40	93.5	27	18	4.3	24	27.5	1/4"	45	3/8"	24	2	40.5	18

4H230, 4H330



Model/Item	A	AB	AC	B	C	CA	D	K	KA	KB	P	PA	Q	QA	QB	QC	Θ
4H230C-06	81.5	69.5	57.5	35	90.5	22	18	4.3	20	23.5	1/8"	36	1/8"	18	-	32.5	8.5
4H230E-06	81.5	69.5	57.5	35	90.5	22	18	4.3	20	23.5	1/8"	36	1/4"	21	1.5	32.5	8.5
4H230C-08	81.5	69.5	57.5	35	90.5	22	18	4.3	20	23.5	1/8"	36	1/4"	21	1.5	32.5	8.5
4H230E-08	81.5	69.5	57.5	35	90.5	22	18	4.3	20	23.5	1/8"	36	1/4"	21	1.5	32.5	8.5
4H330C-08	101	87	73	40	94	27	18	4.3	24	27.5	1/4"	45	1/4"	22	-	40.5	10
4H330E-08	101	87	73	40	94	27	18	4.3	24	27.5	1/4"	45	1/4"	22	-	40.5	10
4H330C-10	101	87	73	40	94	27	18	4.3	24	27.5	1/4"	45	3/8"	24	2	40.5	10
4H330E-10	101	87	73	40	94	27	18	4.3	24	27.5	1/4"	45	3/8"	24	2	40.5	10

4HA230, 4HA330



Model/Item	A	AB	AC	B	C	CA	D	K	KA	KB	P	PA	Q	QA	QB	QC	Θ
4HA230C-06	100.5	88.5	76.5	35	90.5	22	18	4.3	20	23.5	1/8"	36	1/8"	18	-	32.5	8.5
4HA230E-06	100.5	88.5	76.5	35	90.5	22	18	4.3	20	23.5	1/8"	36	1/4"	21	1.5	32.5	8.5
4HA230C-08	100.5	88.5	76.5	35	90.5	22	18	4.3	20	23.5	1/8"	36	1/4"	21	1.5	32.5	8.5
4HA230E-08	100.5	88.5	76.5	35	90.5	22	18	4.3	20	23.5	1/8"	36	1/4"	21	1.5	32.5	8.5
4HA330C-08	120	106	92	40	94	27	18	4.3	24	27.5	1/4"	45	1/4"	22	-	40.5	10
4HA330E-08	120	106	92	40	94	27	18	4.3	24	27.5	1/4"	45	1/4"	22	-	40.5	10
4HA330C-10	120	106	92	40	94	27	18	4.3	24	27.5	1/4"	45	3/8"	24	2	40.5	10
4HA330E-10	120	106	92	40	94	27	18	4.3	24	27.5	1/4"	45	3/8"	24	2	40.5	10

Push-pull valve(3/2way)

3L Series



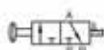
Specification

Model	3L110-06	3L210-06	3L210-08	3L310-08	3L310-10
Fluid	Air (to be filtered by 40 μm filter element)				
Operating	Manual control direct acting type)				
Port size[Note1]	1/8"		1/4"		3/8"
Orifice size	12.0mm ² (Cv=0.67)	14.0mm ² (Cv=0.78)	16.0mm ² (Cv=0.89)	25.0mm ² (Cv=1.39)	30.0mm ² (Cv=1.67)
Valve type	3/2 Way				
Lubrication [Note2]	Not required				
Pressure range	0~1.0MPa(0~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature	-20~70°C				
Material body	Aluminum alloy				

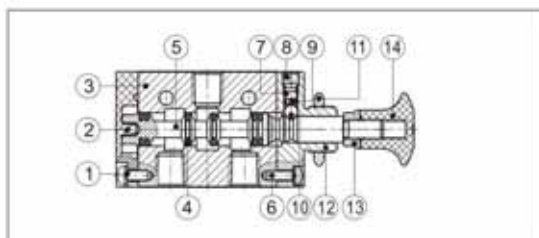
[Note1] PT thread, G thread and NPT thread are available;

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span.
It is suggested to use ISO VG32 lubricant or the oil with the same grade.

Symbol



Inner structure

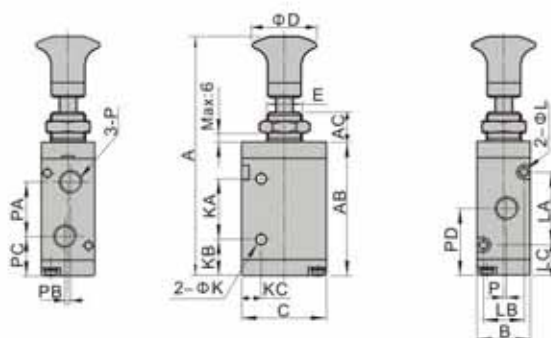


No.	Item	No.	Item	No.	Item
1	Round head screw	6	Round head screw	11	Hexagon nut
2	Bottom cover	7	Spring	12	Top cover
3	Body	8	Stop screw	13	Safety nut
4	O-ring	9	Spring base	14	Hand grip
5	Spool	10	Steel ball		

Ordering code

3L 2 10 08 □				
1 Model	2 Code	3 Valve type	4 Port size	5 Thread type
3L: 3 port 2 position push-pull valve	1: 100 Series	10: 2 position	06: 1/8"	Blank: PT G: G T: NPT
	2: 200 Series		06: 1/8"	
	3: 300 Series		08: 1/4"	

Dimensions



Item\Model	3L11006	3L21006	3L21008	3L31008	3L31010
A	87	98	98	106.5	106.5
AB	47.8	57.8	57.8	66.5	66.5
AC	10	10	10	10	10
B	18	22	22	27	27
C	27	35	35	40	40
D	25	25	25	25	25
E	M12×0.75	M14×1.0	M14×1.0	M16×1.0	M16×1.0
K	3.1	4.3	4.3	4.3	4.3
KA	21	25	25	30	30
KB	13	16	16	18	18
KC	7.7	8	8	10	10
L	3.3	3.3	3.3	4.3	4.3
LA	19	30	30	35	35
LB	13	17	17	20	20
LC	14	13.5	13.5	15.5	15.5
P	1/8"	1/8"	1/4"	1/4"	3/8"
PA	16	22.5	22.5	24	24
PB	2	0	0	0	0
PC	15.5	17.5	17.5	21	21
PD	24.5	28.5	28.5	33	33
PE	1	0	1.5	0	2

Solenoid valve

Air Cylinder

Air filter & Regulator

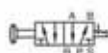
Pneumatic Contents

Push-pull valve(5/2way)

4L Series



Symbol



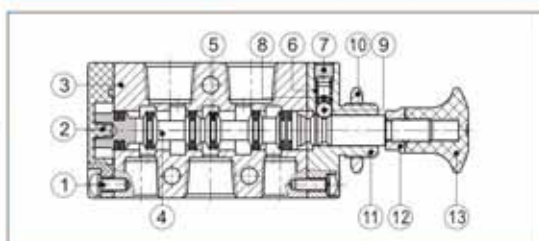
Specification

Model	4L110-06	4L210-06	4L210-08	4L310-08	4L310-10
Fluid	Air (to be filtered by 40 μm filter element)				
Operating	Manual control direct acting type				
Port size[Note1]	1/8"		1/4"		3/8"
Orifice size	12.0mm ² (Cv=0.67)	14.0mm ² (Cv=0.78)	16.0mm ² (Cv=0.89)	25.0mm ² (Cv=1.39)	30.0mm ² (Cv=1.67)
Valve type	5/2 Way				
Lubrication [Note2]	Not required				
Pressure range	0~1.0MPa(0~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature	-20~70°C				
Material body	Aluminum alloy				

[Note1] PT thread, G thread and NPT thread are available;

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span.
It is suggested to use ISO VG32 lubricant or the oil with the same grade.

Inner structure

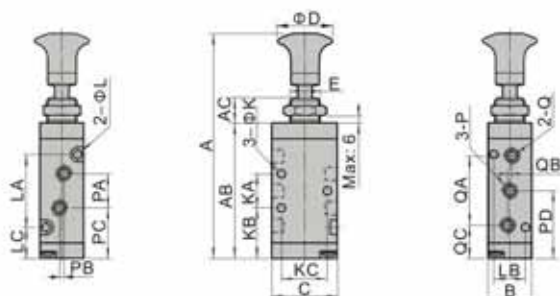


No.	Item	No.	Item	No.	Item
1	Round head screw	6	Spring	11	Top cover
2	Bottom cover	7	Stop screw	12	Safety nut
3	Body	8	Spring base	13	Hand grip
4	Spool	9	Steel ball		
5	O-ring	10	Hexagon nut		

Ordering code

4L 2 10 08 □				
1	2	3	4	5
1 Model	2 Code	3 Valve type	4 Port size	5 Thread type
4L: 5 port 2 position push-pull valve	1: 100 Series	10: 2 position	06: 1/8"	Blank: PT G: G T: NPT
	2: 200 Series		06: 1/8"	
	3: 300 Series		08: 1/4"	
			08: 1/4"	
			10: 3/8"	

Dimensions



Item\Model	4L11006	4L21006	4L21008	4L31008	4L31010
A	98	106	106	121.5	121.5
AB	58.8	65.8	65.8	81	81
AC	10	10	10	10	10
B	18	22	22	27	27
C	27	35	35	40	40
D	25	25	25	25	25
E	M12×0.75	M14×1.0	M14×1.0	M16×1.0	M16×1.0
K	3.3	4.3	4.3	4.3	4.3
KA	14	20	20	24	24
KB	22	22.5	22.5	28.5	28.5
KC	19	23.5	23.5	27.5	27.5
L	3.3	3.3	3.3	4.3	4.3
LA	30	38	38	50	50
LB	13	17	17	20	20
LC	14	13.5	13.5	15.5	15.5
P	1/8"	1/8"	1/4"	1/4"	1/4"
PA	16	18	21	22	24
PB	3	0	3	0	4
PC	21	23.5	22	29.5	28.5
PD	29	32.5	32.5	40.5	40.5
Q	1/8"	1/8"	1/8"	1/4"	3/8"
QA	28	36	36	45	45
QB	2	0	0	0	0
QC	15	14.5	14.5	18	18

Hand slide valve(3/2 way)

HSV Series



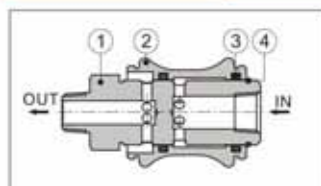
Symbol



Product feature

1. There are several ways of internal and external thread connection, suitable for the application in different pipeline systems.
2. The direction-change slides smoothly and has good hand feeling.
3. There is large effective circulating area.
4. The valve spool surface is treated with acid washing passivation, and the surface of valve body is oxidized to keep the color for a long time.

Inner structure



No.	Item
1	Valve plug
2	Body
3	O-ring
4	Clip

Specification

Model	HSV06	HSV08	HSV10	HSV15	HSV20	HSV25
Fluid	Air (to be filtered by 40 μm filter element)					
Operating	Manual control direct acting type					
Port size [Note1]	1/8"	1/4"	3/8"	1/2"	3/4"	1"
Orifice size	23.0mm ² (Cv=1.28)	40.0mm ² (Cv=2.20)	62.0mm ² (Cv=3.50)	140.0mm ² (Cv=7.80)	250.0mm ² (Cv=13.80)	392.0mm ² (Cv=21.78)
Valve type	3/2 Way					
Lubrication	Not required					
Pressure range	0~1.0MPa(0~145psi)					
Proof pressure	1.5MPa(215psi)					
Temperature	-20~70℃					
Material body	Aluminum alloy					

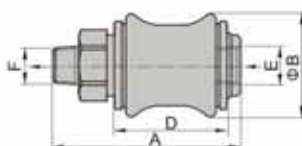
[Note1] PT thread, G thread and NPT thread are available.

Ordering code

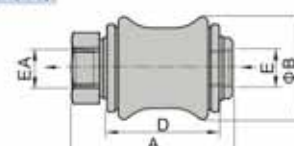
HSV 08 SS □			
1	2	3	4
1 Model	2 Port size	3 Dovt thread	4 Thread type
HSV: Hand slide valve	06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2" 20: 3/4" 25: 1"	Blank: Standard SS: Double male thread FF: Double female thread SF: Male and female thread	Blank: PT G: G T: NPT

Dimensions

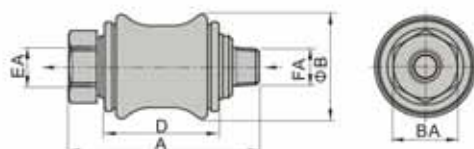
Standard



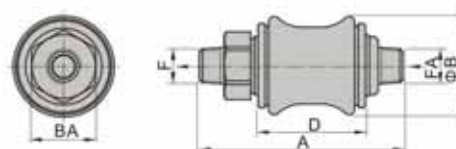
Double female thread (FF)



Male and female thread (SF)



Double male thread (SS)



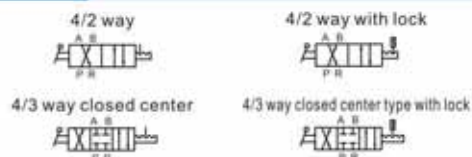
Model/Item	A				B	BA	D	E	EA	F	FA
	Standard	Doublefemalethread	Maleandfemalethread	Doublemalethread							
HSV06	50	43	50	57	27.5	17	30	1/8"	1/8"	1/8"	1/8"
HSV08	58	47	58	69	30	19	32.5	1/4"	1/4"	1/4"	1/4"
HSV10	68.5	55.5	68.5	81.5	35.5	22	39	3/8"	3/8"	3/8"	3/8"
HSV15	85.5	70.5	85.5	100.5	44	30	50	1/2"	1/2"	1/2"	1/2"
HSV20	96.5	79.5	96.5	113.5	53.5	36	58	3/4"	3/4"	3/4"	3/4"
HSV25	114.5	96.5	114.5	132.5	65.5	44	70	1"	1"	1"	1"

Hand lever valve (4/2 way, 4/3 way)

4HV, 4HVL Series



Symbol



Specification

Model	4HV2□□ -06(L)	4HV2□□ -08(L)	4HV3□□ -08(L)	4HV3□□ -10(L)	4HV4□□ -15(L)	4HV4□□ -20(L)
Fluid	Air (to be filtered by 40 μm filter element)					
Operating	Manual control direct acting type					
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"	3/4"
Orifice size	14.0mm ² (Cv=0.78)	16.0mm ² (Cv=0.89)	30.0mm ² (Cv=1.67)	33.0mm ² (Cv=1.83)	88.0mm ² (Cv=4.89)	95.0mm ² (Cv=5.27)
Valve type	4/2 Way, 4/3 Way					
Lubrication	Not required					
Pressure range	0~1.0MPa(0~145psi)					
Proof pressure	1.5MPa(215psi)					
Temperature	-20~70°C					
Operating angle	90°(4/3 Way: 45°)					

[Note1] PT thread, G thread and NPT thread are available.

Product feature

1. The direction-change turns lightly with good hand feeling and exact orientation.
2. Large effective circulating area leads to little pressure loss.
3. Panel and body installation are optional. The panel installation can be attached with installing nut.

Ordering code

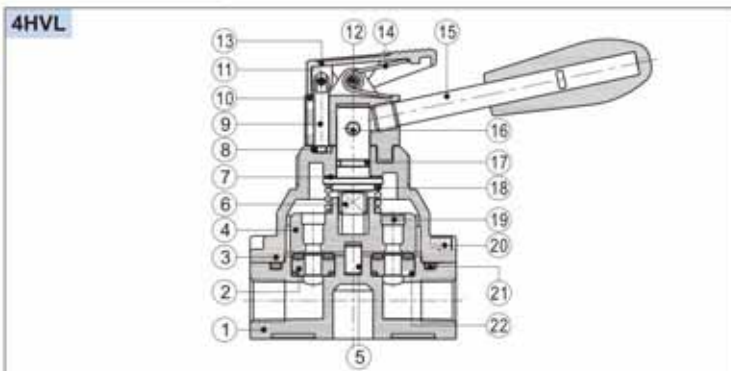
4HV 2 30 06 S L □

1 2 3 4 5 6 7

1 Model	2 Code	3 Valve type	4 Port size	5 Installation	6 Note	7 Thread type
4HV: Hand lever valve	2: 2 Series	10: 4 port 2 position 30: 4 port 3 position [Note1]	06: 1/8" 08: 1/4"	Blank: Body installation S: Panel installation [Note2]	Blank: Without lock L: With lock	Blank: PT G: G T: NPT
	3: 3 Series		08: 1/4" 10: 3/8"			
	4: 4 Series		15: 1/2" 20: 3/4"			

[Note1] 4 port 3 position only has closed center type. [Note2] The panel installation can be attached with installing nut.

Inner structure



No.	Item	No.	Item
1	Body	12	Pin one
2	Seal base	13	Front cover
3	Valve cover	14	Spring
4	Valve plug	15	Handle
5	Column pin	16	Pin two
6	Shaft	17	Shaft O-ring
7	Washer	18	Spring
8	Fixing plate	19	Iron plate
9	Lock pin	20	Fixing screw
10	Valve cap	21	Body O-ring
11	Spring pin	22	Seal base O-ring

Control valve(3/2way)

S3 Series



Symbol

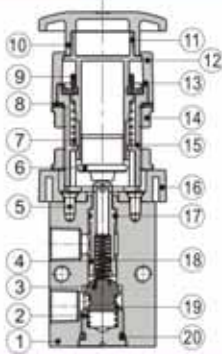


Product feature

1. The external force required by changing the direction of the series of S3B, S3R, S3L and S3V is provided by external mechanism, which can be used for position test or limit switch.
2. The series of S3PF, S3PM, S3PP, S3PL, S3Y, S3HS, S3C and S3D are operated manually, owning control joints with several structure forms and suitable for application under different conditions.
3. Shut-off structure has good tightness and is sensitive in direction changing and lubricant is not necessary.
4. Multi-mounting makes it convenient to install and apply.
5. The control joints of series of S3C, S3D, S3Y, S3R and S3L are made of metal which has long service life and more reliable and steady performance.

Inner structure

S3PM



No.	Item	No.	Item	No.	Item
1	Body	8	Clamping gasket	15	Button body
2	Bottom cover	9	Dust cover	16	Connector
3	Stopper plug	10	Button cap	17	O-ring
4	Valve core	11	Main body of button	18	Spring
5	Screw	12	Top cover	19	Spring
6	Button pressing buckle	13	Button ring	20	O-ring
7	Spring	14	Clamping nut		

Specification

Model	S3B	S3C	S3D	S3V	S3R	S3L	S3Y	S3PM	S3PP	S3PF	S3PL	S3HS
Fluid	Air (to be filtered by 40 μm filter element)											
Operating	External control direct acting type											
Port size [Note1]	05:M5 06:1/8" 08:1/4"											
Orifice size	05:2.5 mm ² (Cv=0.14) 06:8.0 mm ² (Cv=0.45) 08:12.0 mm ² (Cv=0.67)											
Valve type	3/2 Way											
Lubrication [Note2]	Not required											
Pressure range	0~1.0MPa(0~145psi)											
Proof pressure	1.5MPa(215psi)											
Temperature °C	-20~70											
Material body	Aluminum alloy											

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. It is suggested to use ISO VG32 lubricant or the oil with the same grade.

Reversal stroke

Type	Spool stroke	Button stroke	Type	Spool stroke	Roller(handle) stroke
S3B	2.4~4.0	—	S3R	2.4~3.4	5.5~7.8
S3PF	2.4~4.0	3.8~5.4	S3L	2.4~3.4	6.0~8.6
S3PP	2.4~4.0	3.8~5.4	S3V	2.4~3.8	3.4~4.8
S3PM	2.4~4.0	3.8~5.4	S3C	2.4~3.8	14.4~18.4
S3PL	2.4~4.0	5.9~7.5	S3D	2.4~3.8	7.4~9.4
S3HS	2.4~4.0	5.1~6.7			

Unit: mm

Ordering code

S3 PM 06 R □				
1	2	3	4	5
1 Valve's type	2 Model	3 Port size	4 Button color	5 Thread type
S3: S type 3/2 Way	B: Basic type	05:M5 06:1/8" 08:1/4"	No this code	M5 1/8" 1/4"
	C: Long handle type			
	D: Short handle type			
	Y: Lever type			
	R: Roller type			
	L: Roller with free return type			
	V: Vertical type			No this code
	PL: Latching type			Blank: PT G: G T: NPT
	PP: Protruding type			
	PF: Flat type			
	PM: Mushroom type		R: Red G: Green B: Black	
	HS: Selector type			

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

Control valve(3/2way)

M3 Series



Symbol

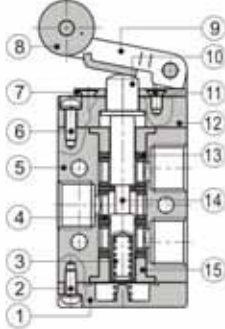


Product feature

1. Exhaust outlet locates over the (body), which is convenient to install muffler to decrease noise and pollution.
2. The external force required by direction-change of series of M3B, M3R and M3L is provided by external mechanism, which can be used for position test or stroke switch] limit switch.
3. M3C, M3D, M3Y, M3PF, M3PM, M3PP, M3PL and M3HS are operated manually, owning control joints with several structure forms and suitable for application under different conditions.
4. It is in sliding column structure that the control force is not influenced by working pressure (that is, there is no back pressure effect); internal circle is sealed with good tightness and the direction-change is sensitive.
5. No need to add oil for lubrication.
6. Multi-mounting makes it convenient to install and apply;
7. The control joints of series of M3C, M3D, M3Y, M3R, and M3L are made of metal which has long service life and more reliable and steady performance.

Inner structure

M3R210



No.	Item	No.	Item	No.	Item
1	Bottom cover	6	Screw	11	Screw
2	Screw	7	Roller holder	12	Fore cover
3	Spring	8	Roller	13	Piston O-ring
4	Spacer	9	Rotating block	14	Spool
5	Body	10	Axle	15	Positioning block

Specification

Model	M3B	M3C	M3D	M3R	M3L	M3Y	M3PM	M3PP	M3PF	M3PL	M3HS
Fluid	Air (to be filtered by 40 μm filter element)										
Operating	External control direct acting type										
Port size [Note1]	05: M5 06: 1/8" 08: 1/4"										
Orifice size	05: 2.5mm ² (Cv=0.14)										
	110 06: 8.0mm ² (Cv=0.45)										
	210 06: 9.0mm ² (Cv=0.50) 08: 12.0mm ² (Cv=0.67)										
Valve type	3/2 Way										
Lubrication [Note2]	Not required										
Pressure range	0~1.0MPa(0~145psi)										
Proof pressure	1.5MPa(215psi)										
Temperature °C	-20~70										
Material body	Aluminum alloy										

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. It is suggested to use ISO VG32 lubricant or the oil with the same grade.

Reversal stroke

Common type						Mini type		
Type	Spool stroke	Button stroke	Type	Spool stroke	Roller(handle) stroke	Type	Spool stroke	Roller stroke
M3B	2.0~3.3	—	M3R	2.0~3.0	4.6~6.8	M3B05	2.0~3.3	—
M3PF	2.0~3.3	3.8~5.1	M3L	2.0~3.0	5.0~7.8	M3R05	2.0~3.0	6.0~8.5
M3PP	2.0~3.3	3.8~5.1	M3C	2.0~3.0	11.0~16.0	M3L05	2.0~3.0	7.0~10.0
M3PM	2.0~3.3	3.8~5.1	M3D	2.0~3.0	5.5~8.0			
M3PL	2.0~3.3	5.9~7.2						
M3HS	2.0~3.3	5.1~6.4						

Unit:mm

Ordering code

Common type

M3 PM 210 06 R □

1 2 3 4 5 6

1 Valve's type	2 Model	3 Code	4 Port size	5 Button color	6 Thread type
M3: M type 3/2 Way	B: Basic type	110: 100 Series single control	06: 1/8"	No this code	Blank: PT G: G T: NPT
	C: Long handle type				
	D: Short handle type				
	Y: Lever type				
	R: Roller type				
	L: Roller with free return type	210: 200 Series single control	06: 1/8" 08: 1/4"	R: Red	
	PL: Latching type				
	PP: Protruding type				
	PF: Flat type				
	PM: Mushroom type				
HS: Selector type					

Mini type

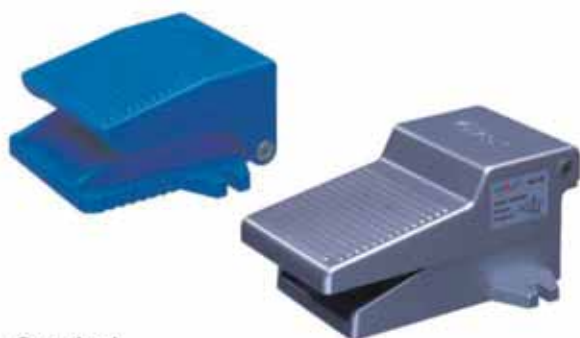
M3 R 05

1 2 3

1 Valve's type	2 Model	3 Port size
M3: M type 3/2 Way	B: Basic type R: Roller type L: Roller with free return type	05: M5

Foot pedal valve (3/2way)

3F, 3FM Series



Specification

Model	3FM210-M5	3F210-06	3FM210-06	3F210-08	3FM210-08
Fluid	Air (to be filtered by 40 μm filter element)				
Operating	Acting type controlled by foot normally closed				
Port size[Note1]	M5	1/8"	1/8"	1/4"	1/4"
Valve type	3/2 Way				
Pressure range	0~1.0MPa(0~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature	-20~70℃				
Material body	3FM:Plastic; 3F:Aluminum alloy				
Lubrication	Not required				

[Note1] PT thread, G thread and NPT thread are available.

Symbol



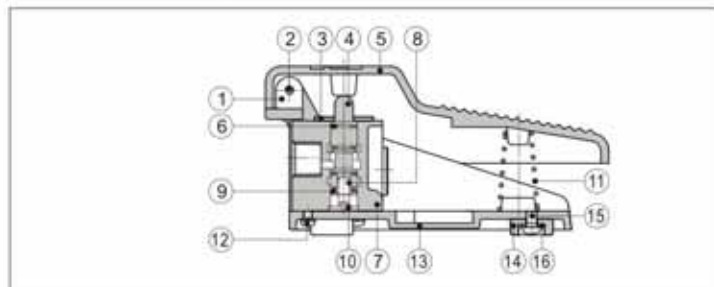
Product feature

1. Direct acting and normally closed type.
2. The 3F series has aluminum foot pedal and 3FM series has plastic foot pedal, in direct acting type, horizontal and compact structure.
3. If the duration of direction-change is long, the valves with lock may be selected.
4. The clamping framework is steady and reliable that it is easy and quick to unlock. However, with the limitation of the dimension of structure, it can not bear frequent strong impact.

Ordering code

3F210 08 L □			
1	2	3	4
1 Model	2 Port size	3 Note	4 Thread type
3FM210: 3/2 way foot pedal valve (mini type)	M5: M5 06: 1/8" 08: 1/4"	No this code	M5: 1/8" 1/4" No this code: Blank: PT G: G T: NPT
3F210: 3/2 way foot pedal valve	06: 1/8" 08: 1/4"	Blank: Without lock L: With lock	

Inner structure

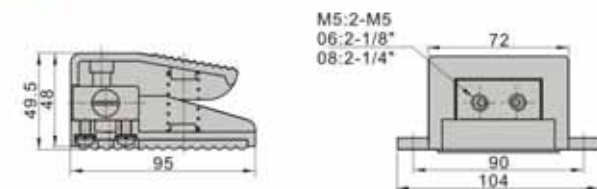


No.	Item	No.	Item	No.	Item
1	Bushing	7	Body	13	Base
2	Fixed screw	8	Spring	14	Base pad
3	Fixed plate	9	E clip	15	Fixed screw
4	Spool	10	Spring bolder	16	Clip
5	Pedal	11	Override		
6	O-ring	12	Fixed screw		

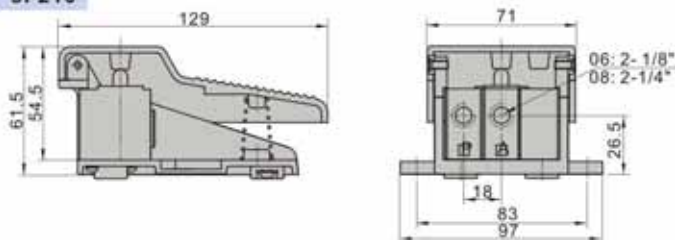
Note ⚠ Lockable type should be added grease periodically to ensure the machine can work regularly

Dimensions

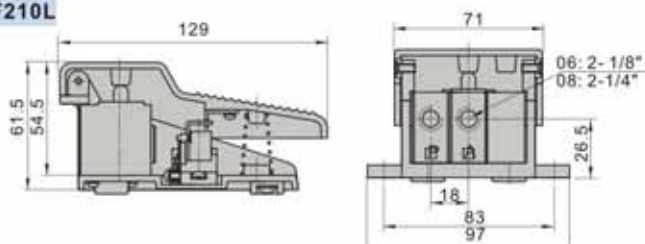
3FM210



3F210

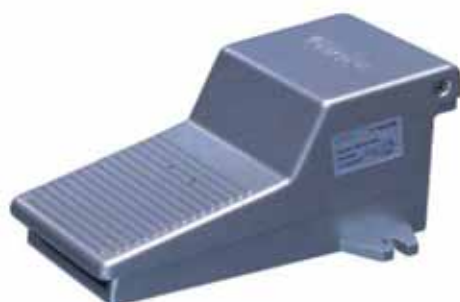


3F210L



Foot pedal valve (5/2way)

4F Series



Specification

Model	4F210-08	4F210-08L	4F210-08F	4F210-08LF
Fluid	Air (to be filtered by 40 μm filter element)			
Operating	Acting type controlled by foot			
Port size [Note1]	1/4"			
Valve type	5/2 Way			
Pressure range	0~1.0MPa(0~145psi)			
Proof pressure	1.5MPa(215psi)			
Temperature	-20~70℃			
Material body	Aluminum alloy			
Lubrication	Not required			

[Note1] PT thread, G thread and NPT thread are available.

Symbol



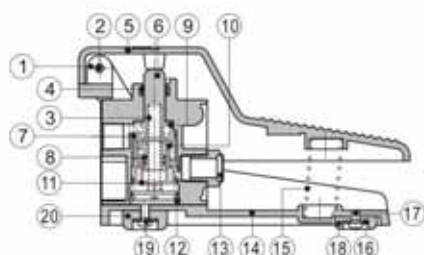
Product feature

1. The aluminum foot pedal is designed with direct acting, which is steady and reliable.
2. If the duration of direction-change is long, the valves with lock may be selected.
3. The clamping framework is steady and reliable that it is easy and quick to unlock. However, with the limitation of the dimension of structure, it can not bear frequent strong impact.
4. Plastic guard with high strength may be selected.

Ordering code

4F210 08 L □			
1	2	3	4
1 Model	2 Port size	3 Note	4 Thread type
4F210: 5/2 way foot pedal valve	08: 1/4"	Blank: Without lock L: With lock F: With guard LF: With lock and guard	Blank: PT G: G T: NPT

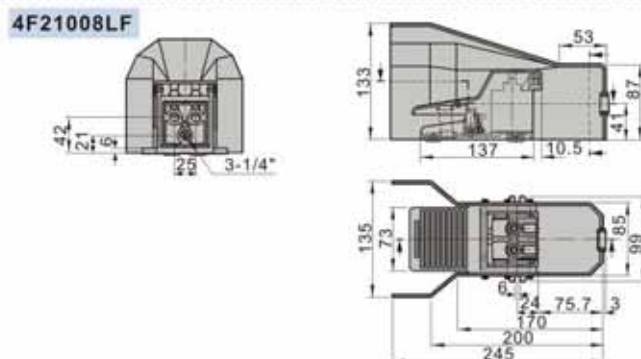
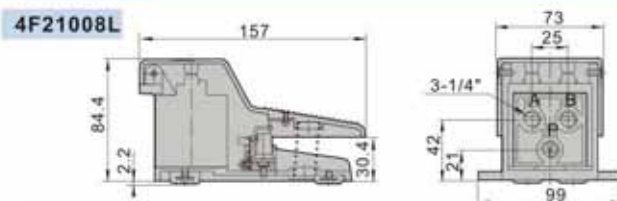
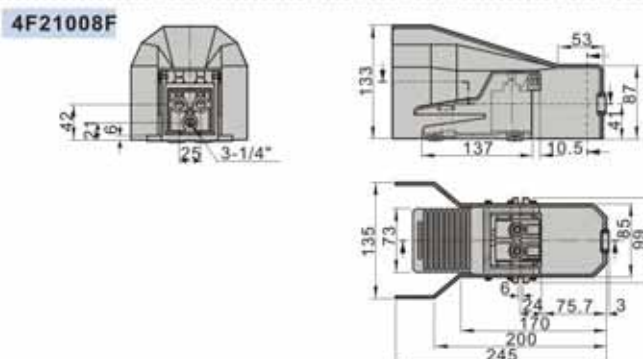
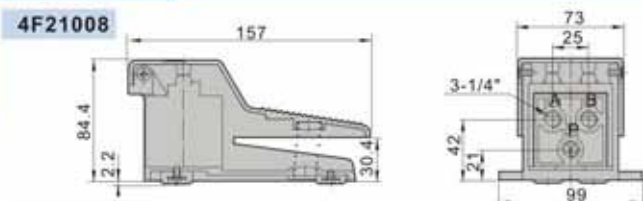
Inner structure



No.	Item	No.	Item	No.	Item	No.	Item
1	Pin	6	Spool	11	Bottom cover	16	Washer
2	Screw	7	O-ring	12	C clip	17	Screw
3	Spring	8	O-ring	13	Silencer	18	Base pad
4	E clip	9	Front cover	14	Base	19	Screw
5	Pedal	10	Piston	15	Pedal spring	20	Base pad

Note Lockable type should be added grease periodically to ensure the machine can work regularly.

Dimensions



Flow control valve

ASC Series



Specification

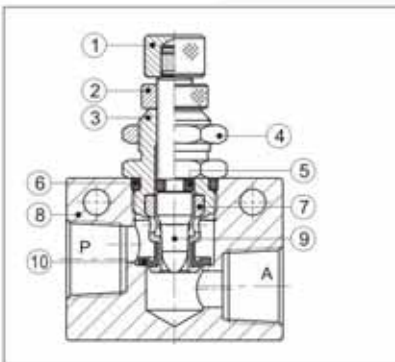
Model	ASC100-06	ASC200-08	ASC300-10	ASC300-15	
Fluid	Air (to be filtered by 40 μm filter element)				
Port size [Note1]	1/8"	1/4"	3/8"	1/2"	
Pressure range	0.05~0.95MPa(7~135psi)				
Proof pressure	1.5MPa(215psi)				
Temperature	-20~70℃				
Material body	Aluminum alloy				
Flow	Control flow	200	450	1250	1650
(L/min)	Free flow	400	800	1500	2500

[Note1] PT thread, G thread and NPT thread are available.

Symbol



Inner structure



No.	Item
1	Adjustment cap
2	Clamping cap
3	Throttle body
4	Hexagon nut
5	O-ring
6	O-ring
7	Throttle sheath
8	Body
9	Throttle column
10	Spool O-ring

Product feature

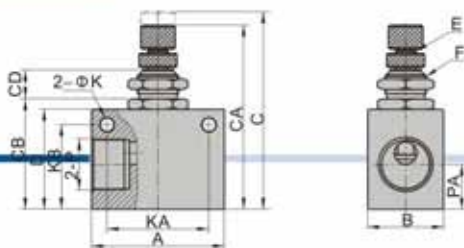
1. Small and compact structure.
2. Allows air to exhaust and cut off air flow. The adjustment screw is both sensitive and precise.
3. Can be mounted in various position to facilitate installation and application.

Ordering code

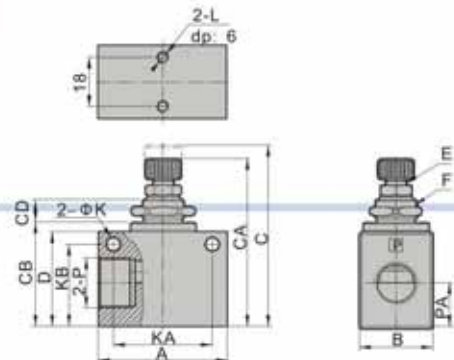
ASC 300 10 □			
1	2	3	4
Model	Code	Port size	Thread type
ASC: Flow control valve	100: 100 series	06: 1/8"	Blank: PT G: G T: NPT
	200: 200 series	08: 1/4"	
	300: 300 series	10: 3/8"	
		15: 1/2"	

Dimensions

ASC100\ASC200



ASC300



Model\Item	A	B	C	CA	CB	CD	D	E	F	K	KA	KB	L	P	PA
ASC10006	32	18	52.5	47	26	8.6	23	M6×0.5	M12×0.75	4.3	22	18	M4×0.7	1/8"	10
ASC20008	36	18	56.5	51	30	8.6	27	M6×0.5	M12×0.75	4.3	26	23	M4×0.7	1/4"	13.5
ASC30010	50	28	74	65	40.5	10	37	M8×0.75	M16×1.0	5.3	35	32	M4×0.7	3/8"	17.5
ASC30015	50	28	74	65	40.5	10	37	M8×0.75	M16×1.0	5.3	35	32	M4×0.7	1/2"	17.5

Non-return valve

NRV Series



Specification

Model	NRV06	NRV08	NRV10	NRV15	NRV20	NRV25
Fluid	Air (to be filtered by 40 μ m filter element)					
Port size [Note1]	1/8"	1/4"	3/8"	1/2"	3/4"	1"
Orifice size mm ² (Cv valve)	18(1.0)	27(1.5)	60(3.33)	73(4.06)	230(12.78)	260(14.44)
Pressure range	0.02~1.0MPa(2.9~145psi)					
Proof pressure	1.5MPa(215psi)					
Temperature	-20~70°C					
Material of body	Aluminum alloy					

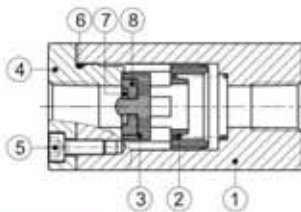
[Note1] PT thread, G thread and NPT thread are available.

Symbol



Inner structure

NRV06\NRV08



NRV10~25



No.	Item
1	Body
2	Spring
3	Spool
4	End cover
5	Screw
6	O-ring
7	Washer
8	Gasket washer
9	Bumper

Product feature

1. There are many port sizes: 1/8", 1/4", 3/8", 1/2", 3/4", 1".
2. It allows the fluid to flow in one direction **ONLY**.
3. It is prevent backflow due to sudden drop in pressure or decrease in air consumption.
4. There is large valid area of section.
5. The spool is made of POM, valve's core sealed with rubber, and it has a compact structure.

Ordering code

NRV 08 ☐		
1	2	3
1 Model	2 Port size	3 Thread type
NRV: Non-return valve	06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2" 20: 3/4" 25: 1"	Blank: PT G: G T: NPT

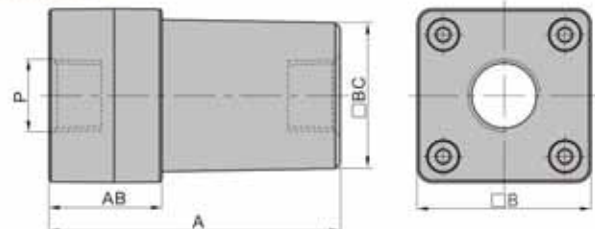
Dimensions

NRV06\NRV08



Model\Item	A	AB	B	BA	BC	P
NRV06	50	-	25	30	-	1/8"
NRV08	50	-	25	30	-	1/4"
NRV10	67	26	40	-	33.6	3/8"
NRV15	67	26	40	-	33.6	1/2"
NRV20	95	31.5	52	-	46.7	3/4"
NRV25	95	31.5	52	-	46.7	1"

NRV10~25



Fluid control valve(2/2way)

Compendium of Fluid control valve

P127	Product feature	Photo	P129	Product feature	Photo
2S Series direct-acting and normally closed	● Shut-off structure ● Width operation pressure ● Body material: SUS304 ● Adopt many fluids ● Terminal and Grommet ● 2/2 way		2S Series internally piloted and normally closed	● Piston piloted structure ● Width operation pressure ● Body material: SUS304 ● Adopt many fluids ● Terminal and Grommet ● 2/2 way	
P131	Product feature	Photo	P133	Product feature	Photo
2KS Series direct-acting and normally opened	● Shut-off structure ● Width operation pressure ● Body material: SUS304 ● Adopt many fluids ● Terminal and Grommet ● 2/2 way		2KS Series internally piloted and normally opened	● Piston piloted structure ● Width operation pressure ● Body material: SUS304 ● Adopt many fluids ● Terminal and Grommet ● 2/2 way	
P135	Product feature	Photo	P137	Product feature	Photo
2W Series direct-acting and normally closed	● Shut-off structure ● Width operation pressure ● Body material: Brass ● Adopt many fluids ● Terminal and Grommet ● 2/2 way		2W Series internally piloted and normally closed	● Piston piloted structure ● Width operation pressure ● Body material: Brass ● Adopt many fluids ● Terminal and Grommet ● 2/2 way	
P139	Product feature	Photo	P141	Product feature	Photo
2KW Series direct-acting and normally opened	● Shut-off structure ● Width operation pressure ● Body material: Brass ● Adopt many fluids ● Terminal and Grommet ● 2/2 way		2KW Series internally piloted and normally opened	● Piston piloted structure ● Width operation pressure ● Body material: Brass ● Adopt many fluids ● Terminal and Grommet ● 2/2 way	
P143	Product feature	Photo	P145	Product feature	Photo
2L Series direct-acting and normally closed	● Shut-off structure ● Width operation pressure ● Body material: SUS304 ● Adopt many fluids and higher temperature ● Terminal and Grommet ● 2/2 way		2L Series internally piloted and normally closed	● Piston piloted structure ● Width operation pressure ● Body material: SUS304 ● Adopt many fluids and higher temperature ● Terminal and Grommet ● 2/2 way	
P147	Product feature	Photo	P149	Product feature	Photo
2KL Series direct-acting and normally opened	● Shut-off structure ● Width operation pressure ● Body material: SUS304 ● Adopt many fluids and higher temperature ● Terminal and Grommet ● 2/2 way		2KL Series internally piloted and normally opened	● Piston piloted structure ● Width operation pressure ● Body material: SUS304 ● Adopt many fluids and higher temperature ● Terminal and Grommet ● 2/2 way	
P152	Product feature	Photo	P154	Product feature	Photo
2V Series	● Direct-acting and diaphragm piloted optional ● Body material: Stainless steel or brass ● Adopt many fluids ● Terminal and Grommet ● 2/2 way		2J Series angle seat valve	● Air piloted structure ● Body and pitman material: Stainless steel ● The structure of valve is angles at 45° degrees with streamline inner chamber design ● Adopt many fluids and higher temperature	

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

Installation and Application



1. Before installing, be sure the valve hasn't been damaged via transportation.
2. The coil must be pure vertical, the inlet and outlet on body must be horizontal, it's suggested to use the medium lubricated by 40 μm filter element. Be aware of the flow direction and port size.
3. Please notice whether the installation condition accords with technical requirements (such as "voltage", "actuation frequency", "working pressure" and "scope of application temperature"), then the equipment can be installed and used.
4. Take measure to avoid vibration and frozen.
5. Before using the fittings and tubes make sure they are clean. When connecting to fittings, be sure the PTFE Thread Seal Tape is used correctly.
6. To keep the dust away, Default paragraph font; Never forget to install dirt-proof boot in air intake and outlet during dismounting.

Angle seat valve(2/2 way)

2J Series



Symbol



Product feature

1. Air piloted and can be used non electric, inflammable and explosive environment. The start-up pressure is low; and the high pressure could be controlled by the low pressure.
2. The accessories such as the noumenon and slide bar are made of stainless steel, which are of excellent rustproof quality. The seals are made of Teflon and can be applied extensively in areas with high temperature and strong corrosive liquids.
3. The structure of valve is angles at 45° degrees with streamline inner chamber design. The reduced tunnel resistance allows liquid to run more smoothly thus achieving high flow. Filtration core are added at inlet port to prevent the entrance of impurities and extend life span of the seals.
4. Actuator is fitted with visual position indicator. This allows for visual checking and adjustment of flowrate.
5. Control point is made of metal insert. Mounting plate can be used to for NAMUR value.
6. The actuator part can be rotated at 360° degrees and is easily installed.

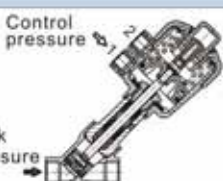
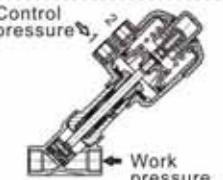
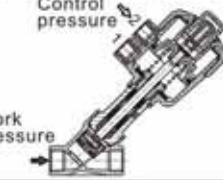
Ordering code

Specification

Model\Item		Port	Actuator size(mm)	Orifice size(mm)	Kv	Min.pilot pressure(bar)	Max.differentia pressure(bar)	Weight (kg)
2JS150 2JW150	-10	G3/8	40	15	4.4	4.8	13	0.8
	-15	G1/2						0.7
	-10	G3/8	50		4.8	4.3	16	0.8
	-15	G1/2						0.7
2JS200 2JW200	-20	G3/4	40	20	7.9	4.8	6.5	0.9
			50		8	4.3	11	0.95
			63		10	4.2	16	1.6
2JS250 2JW250	-25	G1	63	25	19	4.2	11	1.9
			80		20	5.0	16	2.5
2JS320 2JW320	-32	G1 1/4	63	32	27	4.2	6	2.5
			80		28	5.0	15	3.0
2JSK150 2JWK150	-10	G3/8	40	15	4.4	For details, please refer to normally- opened-type fluid pressure - control pressure curve	16	0.8
	-15	G1/2						
	-10	G3/8	50		4.8		16	0.8
	-15	G1/2						
2JSK200 2JWK200	-20	G3/4	40	20	7.9		16	0.9
			50		8	16	0.9	
2JSK250 2JWK250	-25	G1	50	25	14.5		16	1.2
			63		19	16	1.6	
2JSK320 2JWK320	-32	G1 1/4	63	32	27		16	2.2
			80		28	16	2.4	
2JSY150 2JWY150	-10	G3/8	40	15	4.4	For details, please refer to normally- closed-water- hammer-type fluid pressure - control pressure curve	16	0.8
	-15	G1/2						
	-10	G3/8	50		4.8		16	0.8
	-15	G1/2						
2JSY200 2JWY200	-20	G3/4	40	20	7.9		16	0.9
			50		8	16	0.9	
2JSY250 2JWY250	-25	G1	50	25	14.5		16	1.3
			63		19	16	1.7	
2JSY320 2JWY320	-32	G1 1/4	63	32	27		16	2.3

2J S K 150 15 Q50 G

1 2 3 4 5 6 7

1 Model	2 Valve body material	3 Acting type	4 Orifice size	5 Port size	6 Size of actuator	7 Thread type
2J: Angle seat valve(2/2 way)	S: SUS316L W: SUS304	Blank: No water-hammer(NC) The working medium flows to the down side of valve inlet (Flow from the bottom part to upper part of piston) 	150: Φ15mm	10: 3/8' 15: 1/2'	Q40: Φ40mm Q50: Φ50mm Q63: Φ63mm Q80: Φ80mm	G: G T: NPT
		Y: Water-hammer(NC) The working medium flows to the upper side of valve inlet (Flow from the upper part to bottom part of piston) 	200: Φ20mm	20: 3/4'		
		K: Normal opened The working medium flows to the down side of valve inlet (Flow from the bottom part to upper part of piston) 	250: Φ25mm	25: 1"		
			320: Φ32mm	32: 1 1/4"		

Preparation unit

To achieve the optimization of system performance, the first thing is to get the gas source which accords with the specifications. Preparation unit with good performance are the precondition to make sure the gas source. AirTAC has many kinds of preparation unit for your choice:

1. G series; 2. A, B series; 3. Other accessory series.



Preparation unit—GA Series

GAC Series F.R.L. combination

Symbol

No reflux valve is attached



Reflux valve is attached



Product feature

1. Oil dripping adopts gap seal structure, which makes the adjustment of oil supply more reliable.
2. Oil feed ring can only make one full turn. The quantity of oil supply, basically taking on linear distribution. The quantity of oil supply can be generally calculated according to the position of graduation ring.
3. Filling of oil while the lubricator is under pressure is made possible.
4. Special drip nozzle structure will produce negative pressure in oil dripping outlet and the mist flow is minimal.
5. Quick and reliable mounting clamps makes it convenient to install and use.
6. The performance of pressure adjustment is reliable with high precision.
7. The efficiency of eliminating moisture and solid grain is high.
8. Two drain types are available: manual drain+semi-auto drain and automatic drain.
9. Three bowl materials are available: PC, Metal and Nylon.

Specification

Model		GAC200-06	GAC200-08	GAC300-08	GAC300-10	GAC400-08	GAC400-10	GAC400-15	GAC600-20	GAC600-25
Fluid		Air								
Port size [Note1]		1/8"	1/4"	1/4"	3/8"	1/4"	3/8"	1/2"	3/4"	1"
Filtering grade		40 μm or 5 μm								
Pressure range		0.15~0.9MPa(20~130psi)								
Max. pressure		1.0MPa(145psi)								
Proof pressure		1.5MPa(215psi)								
Temperature range		-5~70℃(Unfreeze)								
Capacity of drain bowl		25CC		60CC		100CC			205CC	
Capacity of oil bowl		36CC		98CC		185CC			410CC	
Recommended lubricant		ISO VG 32 or equivalent								
Weight		750g		1300g		2390g			4600g	
Constitute	Filter	GAF200-06	GAF200-08	GAF300-08	GAF300-10	GAF400-08	GAF400-10	GAF400-15	GAF600-20	GAF600-25
	Regulator	GAR200-06	GAR200-08	GAR300-08	GAR300-10	GAR400-08	GAR400-10	GAR400-15	GAR600-20	GAR600-25
	Lubricator	GAL200-06	GAL200-08	GAL300-08	GAL300-10	GAL400-08	GAL400-10	GAL400-15	GAL600-20	GAL600-25

[Note1] PT thread, G thread and NPT thread are available.

Ordering code

GAC300 □ 10 □ S □ W G K

1 2 3 4 5 6 7 8 9

1 Model	2 Bowl material	3 Port size	4 Drain type	5 Type code	6 Pressure gauge	7 Filtering grade	8 Thread type	9 Code of reflux valve
GAC200:GA200 Series F.R.L unit	Blank: PC bowl	06: 1/8" 08: 1/4"	Blank: Semi-auto drain +Manual drain A: Automatic drain	S: Standard L: Lower pressure [Note1]	Blank: Circular N: No gauge	Blank: 40 μm W: 5 μm	Blank: PT (MPa/psi) G: G (bar/MPa) T: NPT (psi/bar)	Blank: No reverse flow valve is attached K: Reverse flow valve is attached [Note2]
GAC300:GA300 Series F.R.L unit	C: Metal bowl	08: 1/4" 10: 3/8"						
GAC400:GA400 Series F.R.L unit	N: Nylon bowl	08: 1/4" 10: 3/8" 15: 1/2"						
GAC600:GA600 Series F.R.L unit	C: Metal bowl	20: 3/4" 25: 1"						

[Note1] The maximum work pressure of lower pressure type is 0.4MPa(58psi); [Note2] Please refer to page 179 for details of reflux valve.

Inner structure

GAC200				GAC600				No.	Item	No.	Item
								1	GA series filter	3	GA series regulator
								2	Bracket	4	GA series lubricator

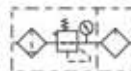
Preparation unit——GA Series

GAFC Series FR.L. combination



Symbol

No reflux valve is attached



Reflux valve is attached



Product feature

1. Quick and reliable mounting clamps makes it convenient to install and use.
2. The performance of pressure adjustment is reliable with high precision.
3. The efficiency of eliminating moisture and solid grain is high.
4. Two drain types are available: manual drain+semi-auto drain and automatic drain.
5. Three bowl materials are available: PC, Metal and Nylon.

Specification

Model		GAFC200-06	GAFC200-08	GAFC300-08	GAFC300-10	GAFC400-08	GAFC400-10	GAFC400-15	GAFC600-20	GAFC600-25
Fluid		Air								
Port size [Note1]		1/8"	1/4"	1/4"	3/8"	1/4"	3/8"	1/2"	3/4"	1"
Filtering grade		40 μ m or 5 μ m								
Pressure range		0.15~0.9MPa(20~130psi)								
Max. pressure		1.0MPa(145psi)								
Proof pressure		1.5MPa(215psi)								
Temperature range		-5~70℃(Unfreeze)								
Capacity of drain bowl		25CC		60CC		100CC		205CC		
Capacity of oil bowl		36CC		98CC		185CC		410CC		
Recommended lubricant		ISO VG 32 or equivalent								
Weight		590g		1020g		1810g		3430g		
Constitute	Filter & Regulator	GAFC200-06	GAFC200-08	GAFC300-08	GAFC300-10	GAFC400-08	GAFC400-10	GAFC400-15	GAFC600-20	GAFC600-25
	Lubricator	GAL200-06	GAL200-08	GAL300-08	GAL300-10	GAL400-08	GAL400-10	GAL400-15	GAL600-20	GAL600-25

[Note1] PT thread, G thread and NPT thread are available.

Ordering code

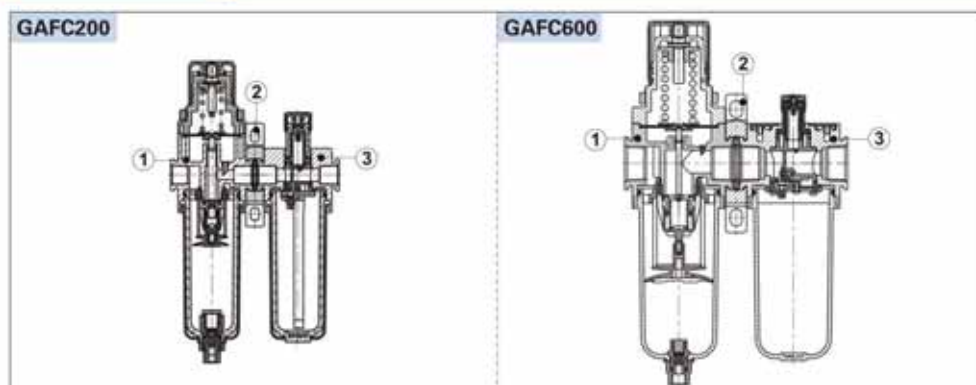
GAFC300 □ 10 □ S □ W G K

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Model	② Bowl material	③ Port size	④ Drain type	⑤ Type code	⑥ Pressure gauge	⑦ Filtering grade	⑧ Thread type	⑨ Code of reflux valve
GAFC200:GA200 Series FR.L unit	Blank: PC bowl	06: 1/8" 08: 1/4"	Blank: Semi-auto drain +Manual drain A: Automatic drain	S: Standard L: Lower pressure [Note1]	Blank: Circular N: No gauge	Blank: 40 μm W: 5 μm	Blank: PT (MPa/psi) G: G (bar/MPa) T: NPT (psi/bar)	Blank: No reverse flow valve is attached K: Reverse flow valve is attached [Note2]
GAFC300:GA300 Series FR.L unit	C: Metal bowl	08: 1/4" 10: 3/8"						
GAFC400:GA400 Series FR.L unit	N: Nylon bowl	08: 1/4" 10: 3/8" 15: 1/2"						
GAFC600:GA600 Series FR.L unit	C: Metal bowl	20: 3/4" 25: 1"						

[Note1] The maximum work pressure of lower pressure type is 0.4MPa(58psi); [Note2] Please refer to page 179 for details of reflux valve.

Inner structure



No.	Item
1	GA series filter & regulator
2	Bracket
3	GA series lubricator

Preparation unit—G Series

GPF Series Oil mist filter



Specification

Model	GPF20006	GPF20008	GPF30008	GPF30010	GPF40010	GPF40015
Fluid	Air					
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	3/8"	1/2"
Filtering grade M	0.3 μm (Capture efficiency 99.9%)					
Filtering grade D	0.01 μm (Capture efficiency 99.9%)					
Pressure range	0.15~1.0MPa					
Proof pressure	1.5MPa					
Temperature range	-5~70°C(Unfreeze)					
Bowl Material	Polycarbonate, Nylon, Metal					
Capacity of drain bowl	19CC		54.5CC		89CC	
Weight	PC bowl		207g		356g	
	Metallic bowl		238g		397g	

[Note1] PT thread, G thread and NPT thread are available.

Symbol



Product feature

1. Low pressure drop, high oil mist remove efficiency up to 99% and large drain bowl.
2. 0.3 μm and 0.01 μm filtering grade are available.
3. Two drain types are available: manual and semi-auto drain, and automatic drain.
4. To meet the needs of different environment the bowl material has Poly Carbonate, nylon and metal can be selected.
5. Monomeric products can select the bracket for installation, others can be used with F.R.L Combination.

Ordering code

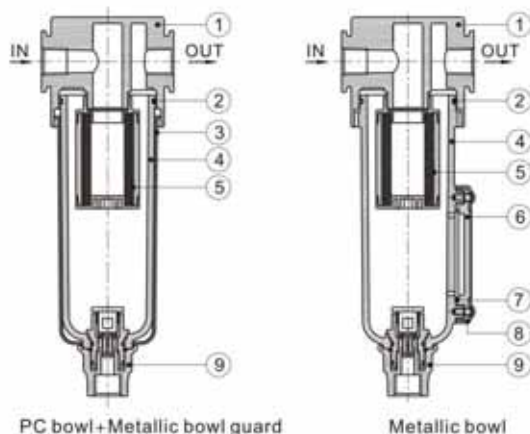
GPF300 ☐ 08 ☐ ☐ M G

1 2 3 4 5 6 7

1 Model	2 Bowl Material	3 Port size	4 Drain type	5 Accessories	6 Filtering grade	7 Thread type
GPF200: 200 Series Oil mist filter	Blank: PC bowl+Metallic bowl guard C: Metallic bowl N: Nylon bowl+Metallic bowl guard	06: 1/8" 08: 1/4"	Blank: Manual and Semi-auto drain A: Automatic drain	Blank: Bracket J: No bracket	M: 0.3 μm D: 0.01 μm	Blank: PT G: G T: NPT
GPF300: 300 Series Oil mist filter		08: 1/4" 10: 3/8"				
GPF400: 400 Series Oil mist filter		10: 3/8" 15: 1/2"				

Inner structure

GPF300



No.	Item	Material
1	Body	Aluminium alloy
2	O-ring	NBR
3	Meter cover	SPCC
4	Drain bowl	PC\nylon\aluminium alloy
5	Filter core	Polymer materials
6	Liquid meter cover	PC
7	Liquid meter seal	NBR
8	Liquid meter inside cover	SPCC
9	Drain connection	Plastic

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

Preparation unit—GA Series

GAR Series Regulator

Symbol

No reflux valve is attached



Reflux valve is attached



Product feature

1. Circular square pressure gauge which with clip and magnifier is used to save installation space.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. Balanced design is adopted for the pressure adjustment mechanism.
4. In addition to panel installation, the bracket is optional for installation.

Specification

Model	GAR200-06	GAR200-08	GAR300-08	GAR300-10	GAR400-08	GAR400-10	GAR400-15	GAR600-20	GAR600-25
Fluid	Air								
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/4"	3/8"	1/2"	3/4"	1"
Pressure range	0.05~0.9MPa(7~130psi)								
Max. pressure	1.0MPa(145psi)								
Proof pressure	1.5MPa(215psi)								
Temperature range	-20~70°C								
Weight	170g		300g		570g		1390g		

[Note1] PT thread, G thread and NPT thread are available.

Ordering code

GAR300 10 S □ □ G K

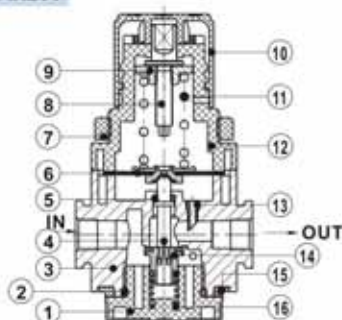
① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Port size	③ Type code	④ Accessories	⑤ Pressure gauge	⑥ Thread type	⑦ Code of reflux valve
GAR200:GA200 Series regulator	06: 1/8" 08: 1/4"	S: Standard L: Lower pressure [Note1]	Blank: Bracket J: No bracket	Blank: Circular N: No gauge	Blank: PT (MPa/psi) G: G (bar/MPa) T: NPT (psi/bar)	Blank: No reverse flow valve is attached K: Reverse flow valve is attached [Note2]
GAR300:GA300 Series regulator	08: 1/4" 10: 3/8"					
GAR400:GA400 Series regulator	08: 1/4" 10: 3/8" 15: 1/2"					
GAR600:GA600 Series regulator	20: 3/4" 25: 1"					

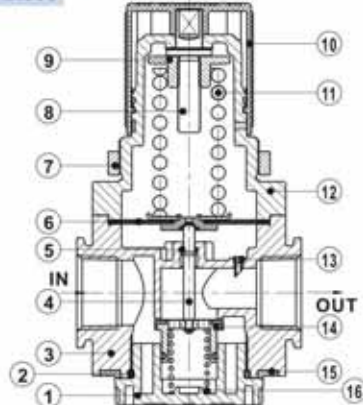
[Note1] The maximum work pressure of lower pressure type is 0.4MPa(58psi); [Note2] Please refer to page 179 for details of reflux valve.

Inner structure

GAR200



GAR600



No.	Item	Material
1	Valve cap	Aluminum alloy (GR600) \ POM (others)
2	O-ring	NBR
3	Body	Aluminum alloy
4	Spool	Brass (GR600) \ POM (others)
5	O-ring	NBR
6	Diaphragm	NBR
7	Fixed ring	Aluminum alloy (GR600) \ POM (others)
8	Adjusting spindle	Steel
9	Regulator nut	Steel
10	Pressure knob	POM
11	Pressure spring	SWPB
12	Adjusting seat	Aluminum alloy (GR600) \ POM (others)
13	Feed back tube	POM
14	Pressure plug	Aluminum alloy & steel
15	Bottom cover	POM
16	Spring	SWPB

Preparation unit—A,B series

Compendium of A,B Series preparation unit

P181	Product feature	Photo	P183	Product feature	Photo
AC, BC Series F.R.L Unit	●The efficiency of water separating is high ●The pressure loss is low ●The flow of miststart is low ●Convenient for installation and application ●AC/BC series is optional ●High-strength plastic shields is optional ●Port size: 1/8" 1/4" 3/8" 1/2"		AFC, BFC Series F.R.L Unit	●The efficiency of water separating is high ●The pressure loss is low ●The flow of miststart is low ●Convenient for installation and application ●AFC/BFC series is optional ●High-strength plastic shields is optional ●Port size: 1/8" 1/4" 3/8" 1/2"	
P185	Product feature	Photo	P187	Product feature	Photo
AFR, BFR Series Filter-Regulator	●The efficiency of water separating is high ●The pressure loss is low ●With fixing bracket convenient for use ●AFR/BFR series is optional ●High-strength plastic shields is optional ●Port size: 1/8" 1/4" 3/8" 1/2"		AF, BF Series Filter	●The pressure loss is low ●High-strength plastic shields is optional ●The filter precision includes 5μm and 40μm(optional) ●AF/BF series is optional ●Port size: 1/8" 1/4" 3/8" 1/2"	
P188	Product feature	Photo	P190	Product feature	Photo
AR, BR Series Regulator	●Adjusting pressure steadily ●Faceplate fixing and bracket fixing is optional ●Standard type, lower pressure type is optional ●AR/BR series is optional ●Port size: 1/8" 1/4" 3/8" 1/2"		AL, BL Series Lubricator	●The flow of miststart is low ●The pressure loss is low ●High-strength plastic shields is optional ●AL/BL series is optional ●Port size: 1/8" 1/4" 3/8" 1/2"	

Installation and application



1. Check whether the components have been damaged during transportation before installing and using.
2. Pay attention to whether the flow direction of air (notice "→" direction) and thread type are correct.
3. Please notice whether installation condition accords with technical requirements (such as "working pressure" and "applied temperature range").
4. The medium used or installation environment shall be noticed. The matters with chlorine, carbon compound, aromatic compound and oxidizing acid and alkali shall be avoided to prevent the damage of bowl and oil bowl.
5. Regularly clean or change filter core. Lubricators and regulators shall be in descending order.
6. Keep dust away. The dust cover shall be installed in intake and outlet when the device is dismantled and stored.

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

Preparation unit—A, B Series

AC、BC Series F.R.L. Combination

Symbol



Product feature

1. The structure is delicate and compact, which is convenient for installation and application.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. The pressure loss is low and the efficiency of water separating is high.
4. The quantity of oil dripping can be directly observed through transparent check-dome.
5. In addition to standard type, lower pressure type is optional (The highest adjustable pressure is 0.4MPa).

Specification

Model		Ac1500	AC2000	BC2000	BC3000	BC4000
Fluid		Air				
Port size [Note1]		1/8"	1/4"	1/4"	3/8"	1/2"
Filtering grade		40 μm or 5 μm				
Pressure range		Semi-auto and automatic drain:0.15~0.9MPa(20~130Psi) Manual drain:0.05~0.9MPa(7~130Psi)				
Max. pressure		1.0MPa(145Psi)				
Proof pressure		1.5MPa(215Psi)				
Temperature range		-5~70°C(unfreeze)				
Capacity of drain bowl		15CC		60CC		
Capacity of oil bowl		25CC		90CC		
Recommended lubricant		ISO VG 32 or equivalent				
Weight		700g		900g		
Constitute	Filter	AF1500	AF2000	BF2000	BF3000	BF4000
	Regulator	AR1500	AR2000	BR2000	BR3000	BR4000
	Lubricator	AL1500	AL2000	BL2000	BL3000	BL4000

[Note1] PT thread, G thread and NPT thread are available.

Ordering code

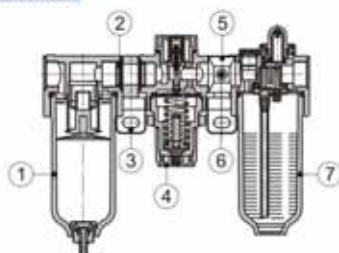
AC 2000 M □ □ 1 W □

1 2 3 4 5 6 7 8

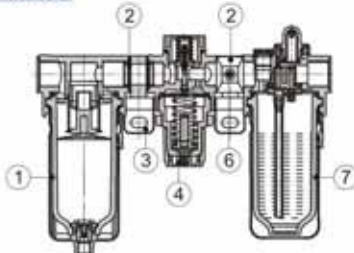
1 Model	2 Port size	3 Drain type	4 Type code	5 Pressure gauge	6 Scale	7 Filtering grade	8 Thread type
AC: A Series F.R.L unit	1500: 1/8" 2000: 1/4"	Blank: Semi-auto drain M: Manual drain	Blank: Standard (0.9MPa) L: Lower pressure (0.4MPa)	Blank: Pressure gauge N: No pressure gauge	1: MPa 2: psi 3: bar 4: kgf/cm ² & psi	Blank: 40 μm W: 5 μm	Blank: PT (Scale: MPa or kgf/cm ² & psi) G: G(Scale: bar) T: NPT(Scale: psi)
BC: B Series F.R.L unit	2000: 1/4" 3000: 3/8" 4000: 1/2"	Blank: Semi-auto drain M: Manual drain A: Automatic drain					

Inner structure

AC Series



BC Series

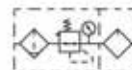


No.	Item	No.	Item
1	AF, BF Series filter	5	A, B Series fix kit
2	A, B Series gasket	6	Screw
3	A, B Series bracket	7	AL, BL Series lubricator
4	AR, BR Series regulator		

Preparation unit—A, B Series

AFC、BFC Series FR.L. Combination

Symbol



Product feature

1. The structure is delicate and compact, which is convenient for installation and application.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. The pressure loss is low and the efficiency of water separating is high.
4. The quantity of oil dripping can be directly observed through transparent check dome.
5. In addition to standard type, lower pressure type is optional (The highest adjustable pressure is 0.4MPa).

Specification

Model		AFC1500	AFC2000	BFC2000	BFC3000	BFC4000
Fluid		Air				
Port size [Note1]		1/8"	1/4"	1/4"	3/8"	1/2"
Filtering grade		40 μ m or 5 μ m				
Pressure range		Semi-auto and automatic drain:0.15~0.9MPa(20~130Psi) Manual drain:0.05~0.9MPa(7~130Psi)				
Max. pressure		1.0MPa(145Psi)				
Proof pressure		1.5MPa(215Psi)				
Temperature range		-5~70°C(unfreeze)				
Capacity of drain bowl		15CC		60CC		
Capacity of oil bowl		25CC		90CC		
Recommended lubricant		ISO VG 32 or equivalent				
Weight		500g		700g		
Constitute	Filter-Regulator	AFR1500	AFR2000	BFR2000	BFR3000	BFR4000
	Lubricator	AL1500	AL2000	BL2000	BL3000	BL4000

[Note1] PT thread, G thread and NPT thread are available.

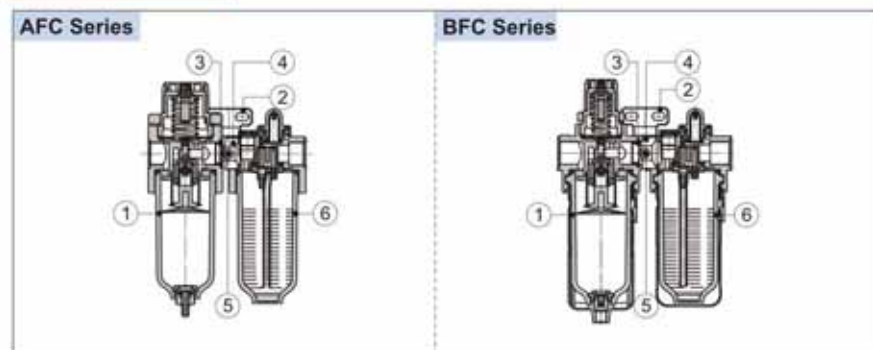
Ordering code

AFC 2000 M ☐ ☐ 1 W ☐

1 2 3 4 5 6 7 8

1 Model	2 Port size	3 Drain type	4 Type code	5 Pressure gauge	6 Scale	7 Filtering grade	8 Thread type
AFC: A Series FR.L unit	1500: 1/8" 2000: 1/4"	Blank: Semi-auto drain M: Manual drain	Blank: Standard (0.9MPa)	Blank: Pressure gauge	1: MPa 2: psi 3: bar 4: kgf/cm ² & psi	Blank: 40 μm W: 5 μm	Blank: PT (Scale: MPa or kgf/cm ² & psi) G: G(Scale:bar) T: NPT(Scale:psi)
BFC: B Series FR.L unit	2000: 1/4" 3000: 3/8" 4000: 1/2"	Blank: Semi-auto drain M: Manual drain A: Automatic drain	L: Lower pressure (0.4MPa)	N: No pressure gauge			

Inner structure



No.	Item
1	AFR, BFR Series filter & regulator
2	A, B Series bracket
3	A, B Series gasket
4	A, B Series fixed kit
5	Screw
6	AL, BL Series lubricator

Preparation unit—A, B Series

AFR、BFR Series Filter & regulator



Symbol



Product feature

1. The structure is delicate and compact, which is convenient for installation and application.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. The pressure loss is low and the efficiency of water separating is high;
4. In addition to standard type, lower pressure type is optional(The highest adjustable pressure is 0.4MPa).

Specification

Model	AFR1500	AFR2000	BFR2000	BFR3000	BFR4000
Fluid	Air				
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"
Filtering grade	40 μm or 5 μm				
Pressure range	Semi-auto and automatic drain:0.15~0.9MPa(20~130Psi) Manual drain:0.05~0.9MPa(7~130Psi)				
Max. pressure	1.0MPa(145Psi)				
Proof pressure	1.5MPa(215Psi)				
Temperature range	-5~70°C(unfreeze)				
Capacity of drain bowl	15CC		60CC		
Weight	260g		400g		

[Note1] PT thread, G thread and NPT thread are available.

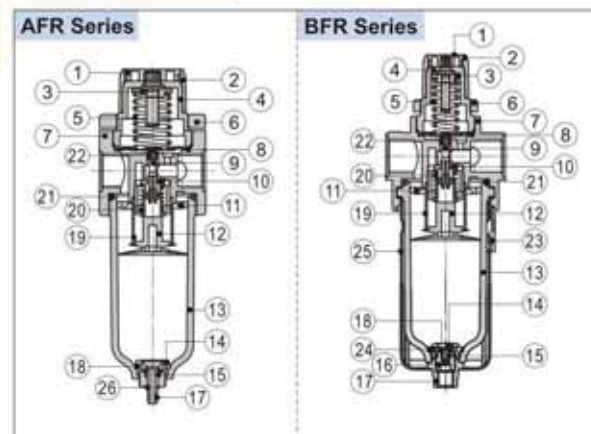
Ordering code

AFR 2000 M ☐ ☐ ☐ 1 W ☐

1 2 3 4 5 6 7 8 9

1 Model	2 Port size	3 Drain type	4 Type code	5 Accessories	6 Pressure gauge	7 Scale	8 Filtering grade	9 Thread type
AFR: A Series Filter & regulator	1500: 1/8" 2000: 1/4"	Blank: Semi-auto drain M: Manual drain	Blank: Standard (0.9MPa) L: Lower pressure (0.4MPa)	Blank: Bracket J: No bracket	Blank: Pressure gauge N: No pressure gauge	1: MPa 2: psi 3: bar 4: kgf/cm ² & psi	Blank: 40 μm W: 5 μm	Blank: PT (Scale: Mpa or kgf/cm ² & psi) G: G(Scale:bar) T: NPT(Scale:psi)
BFR: B Series Filter & regulator	2000: 1/4" 3000: 3/8" 4000: 1/2"	Blank: Semi-auto drain M: Manual drain A: Automatic drain						

Inner structure



No.	Item	Material	No.	Item	Material
1	Push button	POM	14	Drain kit	POM
2	Adjusting button	POM	15	Return spring	Stainless steel
3	Adjusting nut	Steel	16	Drain seat	POM
4	Adjusting seat	POM	17	Drain pillar	POM
5	Adjusting spring	SWC	18	Drain O-ring	NBR
6	Fixed ring	POM	19	Filter element	5 μm Makrolon fiber 40 μm Agglomerated by bronze grain
7	Body	Aluminum alloy	20	Return spring	Stainless steel
8	Diaphragm	SUS304 & rubber	21	Drain bowl O-ring	NBR
9	Balance needle	POM	22	Needle O-ring	NBR
10	Needle gasket	Aluminum alloy & rubber	23	Bowl guard switch	POM
11	Air guider	POM	24	Gasket	POM
12	Umbrella baffle	POM	25	Bowl guard	PA66
13	Drain bowl	PC	26	Clip	Spring steel

Preparation unit—A, B Series

AF, BF Series Filter



Symbol



Product feature

AF Series

1. The structure is delicate and compact.
2. The pressure loss is low and the efficiency of water separating is high;
3. The filter precision includes 5 μ m and 40 μ m(optional);

BF Series

1. The pressure loss is low and the efficiency of water separating is high.
2. The bowl has high-strength plastic shields outside, which is more safe and reliable to use.
3. The filter precision includes 5 μ m and 40 μ m (optional).

Specification

Model	AF1500	AF2000	BF2000	BF3000	BF4000
Fluid	Air				
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"
Filtering grade	40 μ m or 5 μ m				
Pressure range	Semi-auto and automatic drain: 0.15~1.0MPa(20~145Psi) Manual drain: 0~1.0MPa(0~145Psi)				
Proof pressure	1.5MPa(215Psi)				
Temperature range	-5~70°C(unfreeze)				
Capacity of drain bowl	15CC		60CC		
Weight	140g		330g		

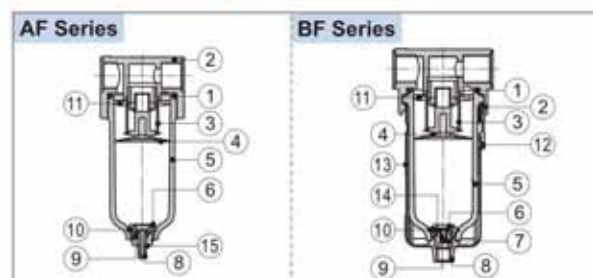
[Note1] PT thread, G thread and NPT thread are available.

Ordering code

AF 2000 M W □				
1	2	3	4	5
1 Model	2 Port size	3 Drain type [Note]	4 Filtering grade	5 Thread type
AF: A Series Filter	1500: 1/8" 2000: 1/4"	Blank: Semi-auto drain M: Manual drain	Blank: 40 μ m W: 5 μ m	Blank: PT G: G T: NPT
BF: B Series Filter	2000: 1/4" 3000: 3/8" 4000: 1/2"	Blank: Semi-auto drain M: Manual drain A: Automatic drain		

[Note1] The drain modes of different series are different.
Please refer to P182 for details.

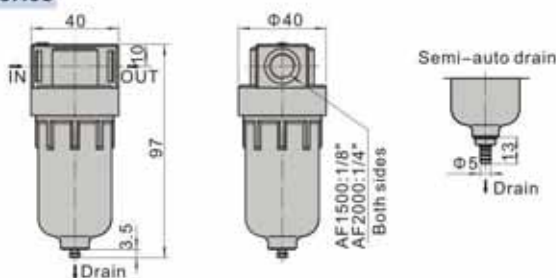
Inner structure



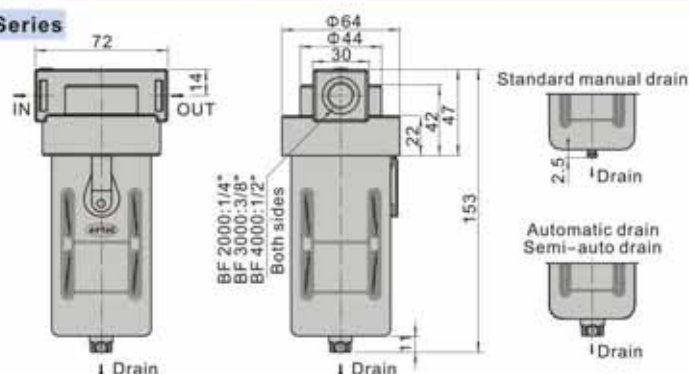
No.	Item	Material	No.	Item	Material
1	Drain bowl O-ring	NBR	8	Drain pillar	POM
2	Body	Aluminum alloy	9	Return spring	Stainless steel
3	Filter element	5 μ m: Makrolon fiber 40 μ m: Agglomerated by bronze grain	10	Gasket	POM
4	Umbrella baffle	POM	11	Air guider	POM
5	Drain bowl	PC	12	Bowl guard switch	POM
6	Drain kit	POM	13	Bowl guard	PA6
7	Drain seat	POM	14	Drain seat O-ring	NBR
			15	Clip	Spring steel

Dimensions

AF Series



BF Series



Preparation unit—A, B Series

AR、BR Series Regulator



Symbol



Product feature

1. The structure is delicate and compact, which is convenient for installation and application.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. In addition to standard type, lower pressure type is optional (The highest adjustable pressure is 0.4MPa).

Specification

Model	AR1500	AR2000	BR2000	BR3000	BR4000
Fluid	Air				
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"
Pressure range	0.05–0.9MPa(7–130Psi)				
Max. pressure	1.0MPa(145Psi)				
Proof pressure	1.5MPa(215Psi)				
Temperature range	–20–70°C				
Weight	200g		230g		

[Note1] PT thread, G thread and NPT thread are available.

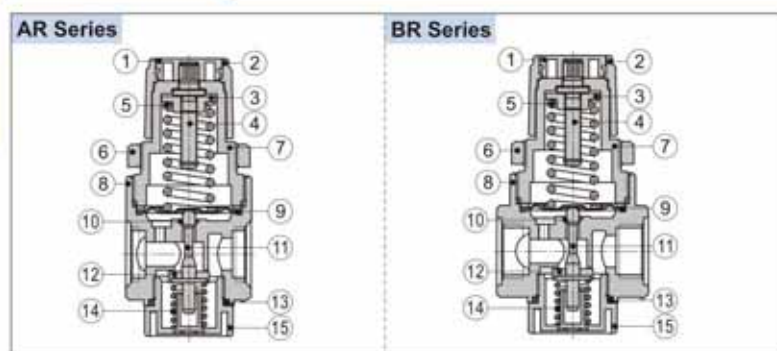
Ordering code

AR 2000 L ☐ ☐ 1 ☐

1 2 3 4 5 6 7

1 Model	2 Port size	3 Type code	4 Accessories	5 Pressure gauge	6 Scale	7 Thread type
AR: A Series Regulator	1500: 1/8" 2000: 1/4"	Blank: Standard (0.9MPa) L: Lower pressure (0.4MPa)	Blank: Bracket J: No bracket	Blank: Pressure gauge N: No pressure gauge	1: MPa 2: psi 3: bar 4: kgf/cm ² & psi	Blank: PT (Scale: Mpa or kgf/cm ² & psi) G: G(Scale: bar) T: NPT(Scale: psi)
BR: B Series Regulator	2000: 1/4" 3000: 3/8" 4000: 1/2"					

Inner structure



No.	Item	Material
1	Push button	POM
2	Adjusting button	POM
3	Adjusting nut	Steel
4	Adjusting pillar	Steel
5	Adjusting spring	SWC
6	Fixed ring	POM
7	Adjusting seat	POM
8	Body	Aluminum alloy
9	Diaphragm	SUS304 & rubber
10	Needle O-ring	NBR
11	Balance needle	POM
12	Needle gasket	Aluminum alloy & rubber
13	Cap O-ring	NBR
14	Return spring	Stainless steel
15	Regulator cap	POM

Preparation unit—A, B Series

AL, BL Series Lubricator



Symbol



Product feature

1. The structure is delicate and compact.
2. The quantity of oil dripping can be directly observed through transparent inspection sheet.
3. BL has high-strength plastic shields, which is more safe and reliable to use.
4. The pressure loss and the flow of miststart is low.

Specification

Model	AL1500	AL2000	BL2000	BL3000	BL4000
Fluid	Air				
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"
Pressure range	0.05~1.0MPa(7~145Psi)				
Proof pressure	1.5MPa(215Psi)				
Temperature range	-5~70°C(unfreeze)				
Capacity of oil bowl	25CC		90CC		
Recommended lubricant	ISO VG 32 or equivalent				
Weight	170g		250g		

[Note1] PT thread, G thread and NPT thread are available.

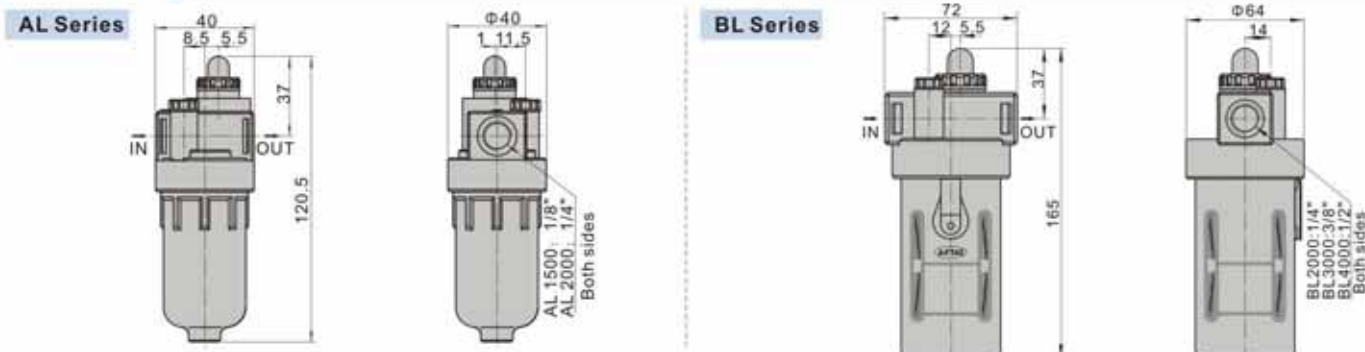
Ordering code

AL 2000		
1	2	3
1 Model	2 Port size	3 Thread type
AL: A Series Lubricator	1500: 1/8" 2000: 1/4"	Blank: PT G: G T: NPT
BL: B Series Lubricator	2000: 1/4" 3000: 3/8" 4000: 1/2"	

Inner structure

AL Series			BL Series		
No.	Item	Material	No.	Item	Material
1	Drip pipe	PC	13	Ball	Stainless steel
2	Dripper O-ring	NBR	14	Lubricator fixed plate	SPCC
3	Oil adjusting dial	POM	15	Oil bowl O-ring	NBR
4	Adjusting ring	NBR	16	Body	Aluminum alloy
5	Lubricator seat	POM	17	Oil filling nut O-ring	NBR
6	Partition	PU	18	Oil filling plug	Steel
7	Lubricator kit gasket	NBR	19	Needle spring	Stainless steel
8	Adjustor	HDPE	20	Injector pin	Bronze
9	Return spring	Stainless steel	21	Check-dome	PC
10	Oil bowl	PC	22	Bowl guard switch	POM
11	Sunk tube	PU	23	Bowl guard	PA6
12	Lubricator kit	POM			

Dimensions



Preparation unit—Other series

ADW Series dripleg drain



Symbol



Product feature

1. The float is with lever structure. Low position enables more stable drain.
2. The bowl made of High intensity PC and covered by steel case is safer to use.
3. Double strainer guarantees the operation of the drainer.
4. Inlet with large port size prevents accumulation of particles or rust.
5. The drainage bowl with large capacity can keep more rust and dirt than general drains.
6. The drain is equipped with large float and sensitive to control.
7. The bowl with large size can store a certain amount of water which reduces discharging time and extends the service life.

Specification

Model	ADW400-10	ADW400-15
Fluid	Air	
Pressure range	0.15~1.0MPa(22~145psi)	
Max. pressure	1.0MPa(145psi)	
Proof pressure	1.5MPa(215psi)	
Temperature range	-5~70℃(Unfreezeing)	
Port size [Note1]	IN=3/8"	IN=1/2"

[Note1] PT thread, G thread and NPT thread are available.

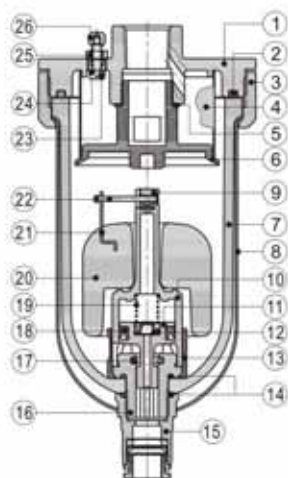
Ordering code

ADW 400 10 □

1 2 3 4

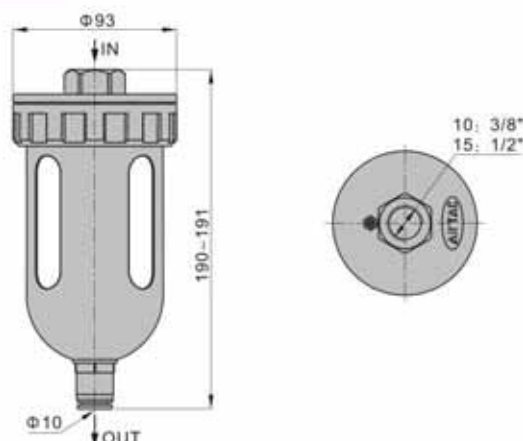
1 Model	2 Series code	3 Port size	4 Thread type
ADW: Dripleg drain	400: 400 Series	10: 3/8" 15: 1/2"	Blank: PT G: G T: NPT

Inner structure and material of major parts



No.	Item	Material	No.	Item	Material
1	Body	Aluminum alloy	14	O-ring	NBR
2	O-ring	NBR	15	Drain joint set	
3	Body nut	Aluminum alloy	16	Drain baffle	POM
4	Filter gauze	Stainless steel	17	O-ring	VITON
5	Fixed ring	NBR	18	O-ring	NBR
6	Filter	POM	19	Spring	Spring steel
7	Drain bowl	PC	20	Float	PU rigid foam
8	Bowl guard	08F	21	Link iron	Stainless steel
9	Valve	Stainless steel & rubber	22	Lever	Stainless steel
10	Piston	Aluminum alloy	23	Adjustable screw	Stainless steel
11	Float	PC+ABS	24	Gasket	EPDM
12	Silencer	Agglomerated by brass grain	25	Balance needle seat	Stainless steel
13	Filter element	Stainless steel & rubber	26	Screw	Steel

Dimensions



Installation and application

1. ADW400 series are applicable to following air compressing equipments: air storage tank, dryer, filter, and piping.
2. Minimum 300mm room is required if the bottom end of above-mentioned equipments being connected with a (1/2") joint.
3. Using a 1/2" hand lever valve between the air compressing equipment and the inlet of ADW400 is good for maintenance.
4. The air displacement of the air compressing equipment can't be lower than 182 L/min.
5. Make sure the drain is vertical downward and the drain pipe is not bended upside.
6. Do not use acidoid or volatile oil gas (hydrochloric acid, petrol, methylbenzene, etc.) to clean the PC bowl. This may cause break.
7. Push the hexagon nut of the body to release the residual pressure before dissembling the PC bowl and metal protection case to avoid any injury or harm.

ISO15552 Standard cylinder

SAI Series



Specification

Bore size(mm)		32	40	50	63	80	100	125	160	200		
Acting type		Double acting										
Fluid		Air(to be filtered by 40 μm filter element)										
Mounting type	SAI	Basic	FA	FB	CA	CB	CR	LB	TC	FTC	TCM1	TCM2
	SAID, SAIJ	Basic	FA	LB	TC	FTC	TCM1	TCM2				
Operating pressure		0.15~1.0MPa(22~145psi)(1.5~10.0bar)										
Proof pressure		1.5MPa(215psi)(15bar)										
Temperature ℃		-20~70										
Speed range mm/s		30~800						30~500				
Stroke tolerance		0~250 ^{+1.0} ₀		251~1000 ^{+1.5} ₀			1001~1500 ^{+2.0} ₀					
Cushion type		Variable cushion										
Adjustable cushion stroke		27		30		36		40		50		
Port size [Note1]		1/8"		1/4"		3/8"		1/2"		3/4"		

[Note1] PT thread, G thread and NPT thread are available.

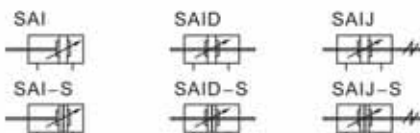
Add) Refer to P338 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)																	Max.std stroke	Max. stroke				
32	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500		1000	1800				
40	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	1200	1800		
50	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1200	1800
63	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	1800
80	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	1800
100	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	1800
125	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	1800
160	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	2000
200	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	2000

[Note] Consult us for non-standard stroke.

Symbol



Product feature

1. ISO15552 (original ISO6431) standard cylinder;
2. The piston seal is composed of two Y-shape one-way seal structure, which has compensation function, long service life and low start-up pressure;
3. The 米-shaped aluminum pipe without tie rod has good corrosion resistance. With sensor switch groove on the two sides of body;
4. The buffer adjustment of cylinder is smooth and steady;
5. Cylinders and accessories for installation with several specifications are optional.

Ordering code

SAI 160	□ × 50	S	□	□	□			
SAID160	□ × 50	S	□	□	□			
SAIJ 160	□ × 50-20	S	□	□	□			
1	2	3	4	5	6	7	8	9

① Model	② Bore size	③ Rod Material	④ Stroke	⑤ Adjustable stroke	⑥ Magnet	⑦ Mounting type[Note1]	⑧ Seals Material	⑨ Thread type
SAI: Double acting type	32 40 50 63 80 100 125 160 200	Blank: Medium carbon steel A: SUS420J2 B: SUS304	Refer to stroke table for details	No this code	Blank: Without magnet S: With magnet	Blank	Blank: TPU H: Viton N: NBR	Blank: PT G: G T: NPT
						LB		
						FA		
						FB		
						CA		
						CB		
SAID: Double rod type						CR		
						FTC		
						TC		
SAIJ: Adjustable stroke type				10 20 30 40 50 75 100		Blank		
						LB		
						FA		
						FTC		
						TC		

[Note1] CR is used with CB; FTC, TC are used with TCM1, TCM2.

Solenoid valve

Air Cylinder

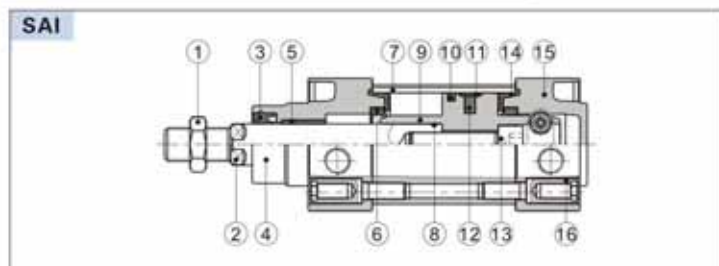
Air filter & Regulator

Pneumatic Contents

ISO15552 Standard cylinder

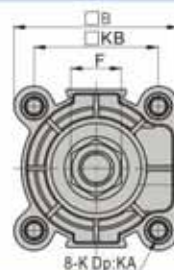
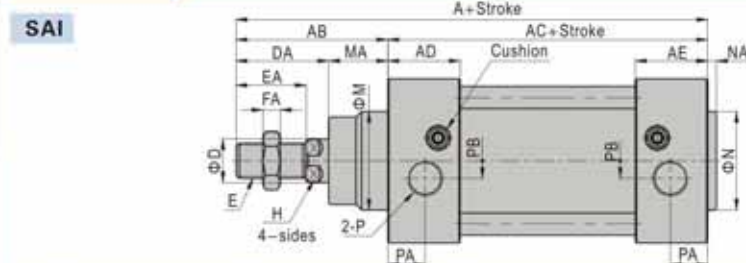
SAI Series

Inner structure and material of major parts



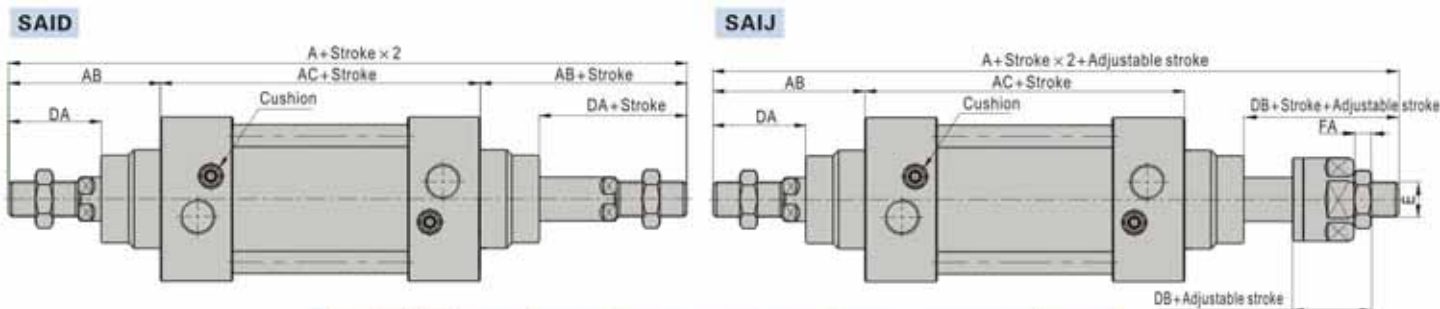
NO.	Item	Material
1	Rod nut	Carbon steel\Stainless steel
2	Piston rod	Carbon steel with 20μm chrome plated or Stainless steel
3	Front cover packing	TPU
4	Front cover	Aluminum alloy
5	Bushing	Wear resistant material
6	Cushion O-ring	TPU
7	Barrel	Aluminum alloy
8	O-ring	NBR
9	Piston	Aluminum alloy
10	Piston Seal	TPU
11	Wear ring	Wear resistant material
12	Magnet	Plastic(Φ 100 and below)\Rubber(Others)
13	Bolt	Carbon steel
14	Buffer gasket	TPU
15	Back cover	Aluminum alloy
16	Screw	Carbon steel\Stainless steel

Dimensions



Bore size\Item	A	AB	AC	AD	AE	B	D	DA	E	EA	F	FA	M	MA	H	K(Without TC)	K(With TC)	KA(Without TC)	KA(With TC)	KB	N	NA	P	PA	PB
32	142	48	94	27.5	27.5	47	12	29	M10×1.25	22	17	6	30	19	10	M6	M5	16	14	32.5	30	3	1/8"	13	5.5
40	159	54	105	32	32	53	16	33	M12×1.25	24	17	7	35	21	13	M6	M5	16	16	38	35	3.5	1/4"	17	6
50	175	69	106	31	31	65	20	42	M16×1.5	32	23	8	40	27	17	M8	M6	16	16	46.5	40	3.5	1/4"	15.5	7.5
63	190	69	121	33	33	75	20	42	M16×1.5	32	23	8	45	27	17	M8	M6	16	16	56.5	45	4	3/8"	16.5	7.5
80	214	86	128	33	33	95	25	53	M20×1.5	40	26	10	45	33	22	M10	M8	17	16	72	45	4	3/8"	16.5	9
100	229	91	138	37	37	115	25	55	M20×1.5	40	26	10	55	36	22	M10	M8	17	16	89	55	4	1/2"	18.5	9.5
125	279	119	160	46	46	140	32	74	M27×2.0	54	41	13.5	60	45	27	M12	M12	20	20	110	60	4	1/2"	23	14
160	332	152	180	50	50	180	40	94	M36×2.0	72	55	18	65	58	36	M16	M16	24	24	140	65	4	3/4"	25	15
200	347	167	180	50	50	220	40	100	M36×2.0	72	55	18	75	67	36	M16	M16	24	24	175	75	5	3/4"	25	15

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.



Bore size\Item	A		AB	AC	DA	DB	E	FA
Model	SAID	SAIJ						
32	190	188	48	94	29	27	M10X1.25	6
40	213	208	54	105	33	28	M12X1.25	7
50	244	231	69	106	42	29	M16X1.5	8
63	259	246	69	121	42	29	M16X1.5	8
80	300	282.5	86	128	53	35.5	M20X1.5	10
100	320	300.5	91	138	55	35.5	M20X1.5	10
125	398	366.5	119	160	74	42.5	M27X2.0	13.5
160	484	458	152	180	94	68	M36X2.0	18
200	514	482	167	180	100	68	M36X2.0	18

Remark:

1. The dimensions of magnet type cylinder are the same as non-magnet type cylinder.
2. The unmarked dimension is the same as SAI standard type.

Standard cylinder(Tir-rod)

SC Series



Specification

Bore size(mm)	32	40	50	63	80	100
Acting type	Double acting					
Fluid	Air(to be filtered by 40 μm filter element)					
Mounting type	Basic FA FB CA CB LB TC TCM1					
Operating pressure	0.15~1.0MPa(22~145psi)(1.5~10.0bar)					
Proof pressure	1.5MPa(215psi)(15bar)					
Temperature °C	-20~70					
Speed range mm/s	30~800					
Stroke tolerance	0~250 ^{+1.0} ₀ 251~1000 ^{+1.5} ₀ 1001~1500 ^{+2.0} ₀					
Cushion type	Variable cushion					
Adjustable cushion stroke	21 28 29					
Port size [Note1]	1/8"	1/4"	3/8"	1/2"		

[Note1] PT thread, G thread and NPT thread are available.

Add) Refer to P338 for detail of sensor switch.

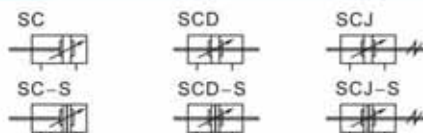
Stroke

Bore size (mm)	Standard stroke (mm)																Max.std stroke	Max. stroke			
32	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	1000	2000			
40	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000
50	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000
63	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000
80	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000
100	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000

[Note] If the stroke is ≥1600mm within the maximum stroke scope, it is treated as non-standard one.

Please contact the company for other special strokes.

Symbol



Product feature

1. Standard cylinder manufactured by our enterprise.
2. The seal of piston adopts heterogeneous two way seal structure. It's dimension is tight and it has the function of grease reservation.
3. It is tie rod cylinder. The cylinder barrel and front/rear cap is jointed by tie rods with high reliability.
4. Compared with ISO15552 standard cylinder, SC series cylinder with the same bore size is shorter.
5. The buffer adjustment of cylinder is smooth and steady.
6. Cylinders and mounting accessories with several specifications are optional.
7. The seal material with high temperature resistance is adopted to guarantee the normal operation of cylinder at 150℃.

Ordering code

SC	50 × 50	S			
SCD	50 × 50	S			
SCJ	50 × 50-20	S			

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Model	② Bore size	③ Stroke	④ Adjustable stroke	⑤ Magnet	⑥ Mounting type[Note1]	⑦ Seals Material	⑧ Thread type
SC: Double acting type	32 40 50 63 80 100	Refer to stroke table for details	No this code	Blank: Without magnet S: With magnet	Blank	Blank: TPU H: Viton N: NBR	Blank: PT G: G T: NPT
					LB		
					FA		
					FB		
					CA		
					CB		
SCD: Double rod type					TC		
					Blank		
SCJ: Adjustable stroke type			10 20 30 40 50 75 100		LB		
					FA		
					TC		
					Blank		

[Note1] The accessories are the same as SAU series, please refer to page 48~51 for details; TC is used with TCM1.

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

Mini cylinder(Stainless steel, ISO6432)

MI Series



Specification

Bore size(mm)	8	10	12	16	20	25	32	40
Acting type	Double acting, Single acting_Push, Single acting_Pull							
Fluid	Air(to be filtered by 40 μm filter element)							
Operating pressure	Double acting: 0.15~1.0MPa(22~145psi)(1.5~10.0bar) Single acting: 0.2~1.0MPa(28~145psi)(2.0~10.0bar)							
Proof pressure	1.5MPa(215psi)(15bar)							
Temperature °C	-20~70							
Speed range mm/s	Double acting: 30~800 Single acting: 50~800							
Stroke tolerance	0~150 ^{+1.0} / ₀ >150 ^{+1.5} / ₀							
Cushion type	MIC Series: Variable cushion Other series: Bumper							
Port size [Note1]	M5×0.8 1/8" 1/4"							

[Note1] PT thread, G thread thread are available.

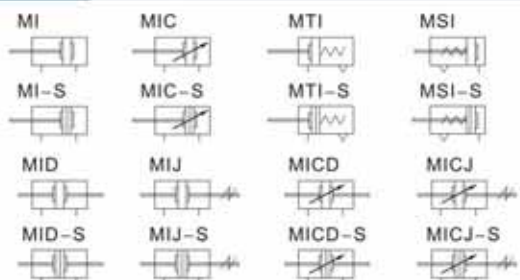
Add) Refer to P338 for detail of sensor switch.

Stroke

Bore size (mm)		Standard stroke (mm)	Max.std stroke	Max. stroke
MI	8	10 15 20 25 30 40 50 60 75 80 100 125 150	150	200
	10	10 15 20 25 30 40 50 60 75 80 100 125 150 160 175 200	200	200
	12	10 15 20 25 30 40 50 60 75 80 100 125 150 160 175 200 250	250	500
MI	16	10 15 20 25 30 40 50 60 75 80 100 125 150 160 175 200 250 300	500	600
MIC	20 25 32 40	350 400 450 500	500	800
MID	8	10 15 20 25 30 40 50 60 75 80 100	100	—
	10	10 15 20 25 30 40 50 60 75 80 100	100	—
	12	10 15 20 25 30 40 50 60 75 80 100 125 150 160 175 200	200	—
MID	16 20	10 15 20 25 30 40 50 60 75 80 100 125 150 160 175 200 250 300	300	—
	MIJ	25	10 15 20 25 30 40 50 60 75 80 100 125 150 160 175 200 250 300	300
MICD	32	10 15 20 25 30 40 50 60 75 80 100 125 150 160 175 200 250 300	500	—
MICJ	40	350 400 450 500	500	—
MSI	8 10 12	10 15 20 25 30 40 50	—	—
	16	10 15 20 25 30 40 50 60 75 80 100	—	—
	MTI	20 25 32 40	10 15 20 25 30 40 50 60 75 80 100 125 150	—

[Note] Consult us for non-standard stroke.

Symbol



Product feature

- In accordance with ISO6432 standard(Φ8~Φ25).
- Front and back cover owns fixed bumper pad which can reduce the impact of direction-change of the cylinder.
- There are several mode of back cover, which makes the installation of cylinder more convenient.
- Front and back cover and stainless steel block adopt riveted rolling packed structure to form a reliable connection.
- Piston rod and cylinder body with the material of stainless steel make the cylinder adapt general working environment with corrosivity.
- There are cylinders and accessories with several specifications for installation for your choice.

Ordering code

MI	10 × 40	S	CA				
MID	10 × 40	S					
MIJ	10 × 40-30	S					

1 2 3 4 5 6 7 8

1 Model	2 Bore size	3 Stroke	4 Adjustable stroke	5 Magnet	6 Back cover	7 Mounting type[Note1]	8 Thread type
MI: Mini cylinder(Double acting)	8 10 12 16 20 25 32 40	Refer to stroke table for details	No this code	Blank: Without magnet S: With magnet	Refer below table for details	Blank: No accessories FA: FA type SDB: SDB type LB: LB type TC: TC type	Blank: PT G: G T: NPT
MIC: Mini cylinder (Double acting with cushion)	16 20 25 32 40						
MSI: Mini cylinder(Single acting_push)							
MTI: Mini cylinder(Single acting_pull)	8 10 12 16 20 25 32 40						
MID: Mini cylinder(Double rod)							
MICD: Mini cylinder (Double rod with cushion)	16 20 25 32 40	Refer to stroke table for details	10 20 30 40 50 75 100		No this code	Blank: No accessories FA: FA type LB: LB type TC: TC type	
MIJ: Mini cylinder(Adjustable stroke)	8 10 12 16 20 25 32 40						
MICJ: Mini cylinder(Adjustable stroke with cushion)	16 20 25 32 40						

[Note1] Please refer to page 72~73 for accessory parts.

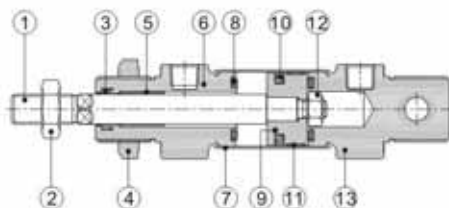
Model	Back cover	Bore size
MI MSI MTI	CA: Pivot type	Φ8~Φ25
	U: Perpendicular 90°	Φ8~Φ40
	R: Axial air-in	Φ16~Φ40
	CM: Round-end type	Φ16~Φ40
MIC	CA: Pivot type	Φ16~Φ25
	U: Perpendicular 90°	Φ16~Φ40
	CM: Round-end type	Φ16~Φ40
Others	No this code	

Mini cylinder(Stainless steel, ISO6432)

MI Series

Inner structure and material of major parts

MI-CA

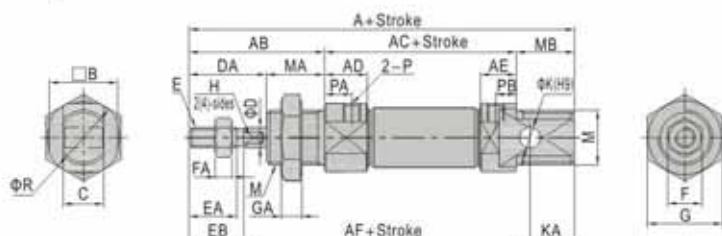


NO.	Item	Material
1	Rod	SUS304
2	Rod nut	Carbon steel
3	Front cover packing	NBR
4	Front cover nut	Carbon steel
5	Bushing	Wear resistant material
6	Front cover	Aluminum alloy
7	Barrel	SUS304(Φ8~Φ12)\SUS316L(Others)
8	Bumper	TPU
9	Piston	SUS304(Φ8~Φ12)\Aluminum alloy(Others)
10	Piston seal	NBR
11	Wear ring	Wear resistant material
12	Nut	Carbon steel
13	Back cover	Aluminum alloy

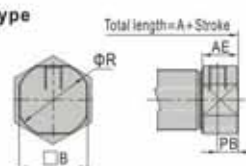
Dimensions

MI

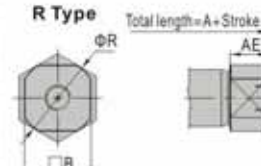
CA Type



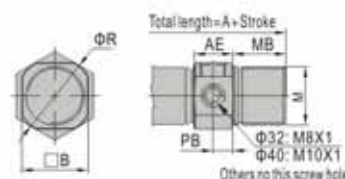
U Type



R Type



CM Type

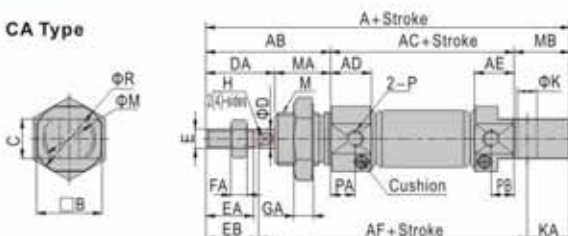


Bore size/Item	A				AB	AC	AD	AE			AF	B	C	D	DA	E	EA	EB	F	FA	G	GA	H	K	KA	M	MA	MB	P	PA	PB			R
Back cover	CA	U	R	CM				CA	U/R/CM																						CA	U/CM		
8	86	74	-	-	28	46	11.5	9.5	9.5	64	15	8	4	16	M4×0.7	10.5	12	7	2.2	17	6	-	-	4	10	M12×1.25	12	12	M5×0.8	7	5	5	17	
10	86	74	-	-	28	46	11.5	9.5	9.5	64	15	8	4	16	M4×0.7	10.5	12	7	2.2	17	6	-	-	4	10	M12×1.25	12	12	M5×0.8	7	5	5	17	
12	105	88	-	-	38	50	12.5	10.5	10.5	75	18	12	6	21	M6×1.0	14	16	10	5	22	6	5(2-Sides)	6	14	M16×1.5	17	17	M5×0.8	8	6	6	20		
16	111	94	94	111	38	56	12.5	10.5	10.5	82	20	12	6	21	M6×1.0	14.5	16	10	5	22	6	5(2-Sides)	6	13	M16×1.5	17	17	M5×0.8	8	6	6	22		
20	126	106	106	126	44	62	14.5	14.5	14.5	95	25	16	8	24	M8×1.25	18	20	12	6	29	7	6(2-Sides)	8	11	M22×1.5	20	20	1/8"	7.5	7.5	7.5	29		
25	137	114.5	115	137	50	65	16	16	16	104	30	16	10	28	M10×1.25	20.5	22	17	6	29	7	8(4-Sides)	8	11	M22×1.5	22	22	1/8"	8	8	8	33.5		
32	-	125	126	140	58	-	16.5	-	16.5	-	34.5	-	12	28	M10×1.25	17.5	20	17	6	36	7	10(4-Sides)	-	-	M30×1.5	30	14	1/8"	9	-	9	37.5		
40	-	158	158	174	69	-	22	-	22	-	42.5	-	16	34	M12×1.25	21	24	17	7	46	8	14(4-Sides)	-	-	M38×1.5	35	16	1/4"	12	-	12	46		

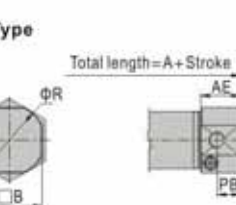
Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

MIC Φ16~Φ25

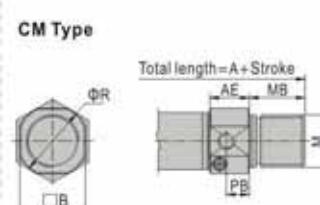
CA Type



U Type



CM Type



Bore size/Item	A		AB	AC	AD	AE		AF	B	C	D	DA	E	EA	EB	F	FA	G	GA	H	K	KA	M	MA	MB	P	PA	PB	R
Back cover	CA/CM	U				CA/CM	U																						
16	111	94	38	56	12.5	12	12	82	20	12	6	21	M6×1.0	14.5	16	10	5	22	6	5(2-Sides)	6	13	M16×1.5	17	17	M5×0.8	7.5	7	22
20	126	106	44	62	14.5	14.5	14.5	95	25	16	8	24	M8×1.25	18	20	12	6	29	7	6(2-Sides)	8	11	M22×1.5	20	20	1/8"	7.5	7.5	29
25	137	113.5	50	65	16	16	14.5	104	30	16	10	28	M10×1.25	20.5	22	17	6	29	7	8(4-Sides)	8	11	M22×1.5	22	22	1/8"	8	8	33.5

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

Mini cylinder(Stainless steel)

MA Series



Specification

Bore size(mm)		16	20	25	32	40	50	63
Acting type	MSA/MTA		Single acting					-
	MA/MAD/MAJ		Double acting					-
	MAR	-	Double acting					
	MAC/MACD/MACJ	-	Double acting with cushion					
Fluid			Air(to be filtered by 40μm filter element)					
Operating pressure	Double acting	0.15~1.0MPa(22~145psi)(1.5~10.0bar)						
	Single acting	0.2~1.0MPa(28~145psi)(2.0~10.0bar)						
Proof pressure		1.5MPa(215psi)(15bar)						
Temperature □		-20~70						
Speed range mm/s		Double acting □ 30~800 Single acting □ 50~800						
Stroke tolerance		0~150 ^{+1.0} ₀ >150 ^{+1.5} ₀						
Cushion type		MAC/MACD/MACJ Series: Variable cushion; Other series: Bumper						
Port size [Note1]		M5×0.8	1/8"		1/4"			

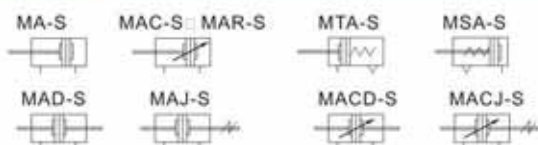
[Note1] PT thread, G thread thread and NPT thread are available.
Add) Refer to P338 for detail of sensor switch.

Stroke

Bore size (mm)		Standard stroke (mm)																						Max.std stroke	Max. stroke	
MA	16	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500	600	
MA	20	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500	800	
	25	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500	800	
MAC	32	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500	800	
MAR	40	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500	800	
MAC	50	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500	800	
MAR	63	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500	800	
MAD/MAJ	16	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	300	-	
MAD	20	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	300	-	
MAJ	25	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	300	-	
MACD	32	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500	-	
MACJ	40	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500	-	
MACD	50	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500	-	
MACJ	63	10	15	20	25	30	40	50	60	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500	-	
MSA	16	10	15	20	25	30	40	50	60	75	80	100											-	-		
	20	10	15	20	25	30	40	50	60	75	80	100	125	150											-	-
	25	10	15	20	25	30	40	50	60	75	80	100	125	150											-	-
	32	10	15	20	25	30	40	50	60	75	80	100	125	150											-	-
MTA	40	10	15	20	25	30	40	50	60	75	80	100	125	150											-	-
	16	10	15	20	25	30	40	50	60	75	80	100											-	-		
	20	10	15	20	25	30	40	50	60	75	80	100											-	-		
	25	10	15	20	25	30	40	50	60	75	80	100											-	-		
	32	10	15	20	25	30	40	50	60	75	80	100											-	-		
	40	10	15	20	25	30	40	50	60	75	80	100											-	-		

[Note] Consult us for non-standard stroke.

Symbol



Product feature

- Standard cylinder manufactured by our enterprise.
- Piston adopts heterogeneous two-way seal structure. It has compact size and has the function of grease reservation.
- Front cover has fixed bumper which can reduce the impact of direction change of the cylinder.
- There are several modes of back cover, which makes the installation of cylinder more convenient.
- Front and back cover and stainless steel block adopt riveted rolling packed structure to form a reliable connection.
- The cylinder body has stainless steel pipes with high precision to produce high strength and corrosion resistance.
- There are cylinders and mounting accessories with several specifications for your choice.
- All cylinders of this series have magnet.

Ordering code

MA	20 × 50	S	CM	☐	☐
MAD	20 × 50	S		☐	☐
MAJ	20 × 50-20	S		☐	☐
MAR	U 20 × 50	S		☐	

1 2 3 4 5 6 7 8 9

1 Model	2 Front cover	3 Bore size	4 Stroke	5 Adjustable St.	6 Magnet	7 Back cover	8 Mounting type[Note1]	9 Thread type[Note2]
MA: Mini cylinder(Double acting) MAC: Mini cylinder (Double acting with cushion) MSA: Mini cylinder(Single acting_push) MTA: Mini cylinder(Single acting_pull)	No this code	Model	Refer to stroke table for details	No this code	S: With magnet	CA: Pivot type U: Flat-end type CM: Round-end type	Blank: No accessories FA: FA type SDB: SDB type LB: LB type	Blank: PT G: G T: NPT
MAD: Mini cylinder(Double rod) MACD: Mini cylinder (Double rod with cushion)		MA 16 MSA 20 MTA 25 MAD 32 MAJ 40						
MAJ: Mini cylinder(Adjustable stroke) MACJ: Mini cylinder (Adjustable stroke with cushion)		MAC 20 MAR 25 MACD 32 MACJ 40				No this code	Blank: No accessories FA: FA type LB: LB type	
MAR: Mini cylinder (Double acting with cushion)		MACJ 50 63				No this code	No this code	
	F: Front mounting U: Up mounting							

[Note1] Please refer to page 100~101 for accessory parts.

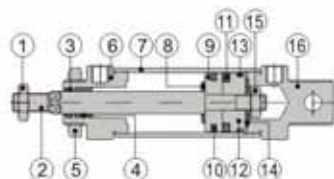
[Note2] Standard thread is blank here.

Mini cylinder(Stainless steel)

MA Series

Inner structure and material of major parts

MA-CA

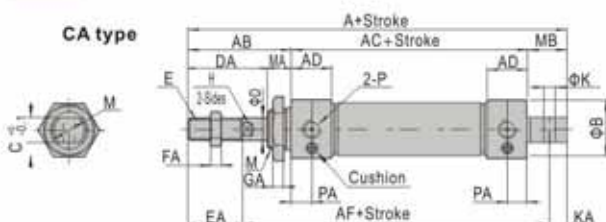


NO.	Item	Material
1	Rod nut	Carbon steel
2	Piston rod	Carbon steel with 20 μ mchrome plated
3	Front cover packing	NBR
4	Bushing	Wear resistant material
5	Front cover nut	Carbon steel
6	Front cover	Aluminum alloy
7	Barrel	Stainless steel
8	Bumper	NBR
9	Piston	Aluminum alloy
10	Piston seal	NBR
11	Magnet	Plastic
12	Magnet holder	Aluminum alloy
13	Wear ring	Wear resistant material
14	Washer	Free cutting material
15	Nut	Carbon steel
16	Back cover	Aluminum alloy

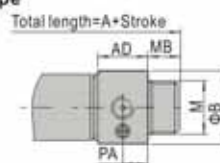
Dimensions

MA Φ16~Φ40

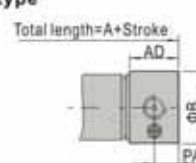
MAC Φ20~Φ40



CM type



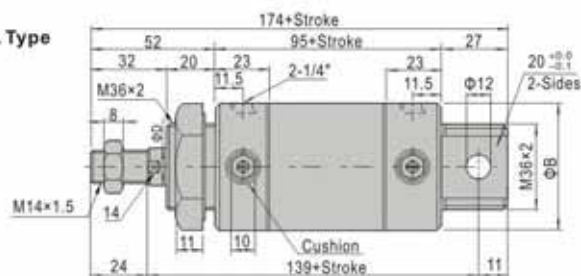
U type



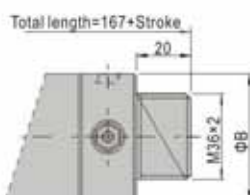
Bore size/Item	A			AB	AC	AD	AF	B	C	D	DA	E	EA	F	FA	G	GA	H	K	KA	M	MA	MB		P	PA
Back cover	CA	CM	U																				CA	CM		
16	114	114	98	38	60	10	91	21	12	6	22	M6×1.0	16	10	5	22	6	5	6	7	M16×1.5	16	16	16	M5×0.8	5
20	137	128	116	40	76	16	108	27	16	8	28	M8×1.25	20	12	6	29	7	6	8	9	M22×1.5	12	21	12	1/8"	8
25	141	134	120	44	76	16	110	30	16	10	30	M10×1.25	22	17	6	29	7	8	8	9	M22×1.5	14	21	14	1/8"	8
32	147	134	120	44	76	16	113	35	16	12	30	M10×1.25	22	17	6	32	8	10	10	12	M24×2.0	14	27	14	1/8"	8
40	149	136	122	46	76	16.5	113	41.5	20	16	32	M12×1.25	24	17	7	41	9	14	12	12	M30×2.0	14	27	14	1/8"	8

MAC Φ50\Φ63

CA Type



CM Type



U Type



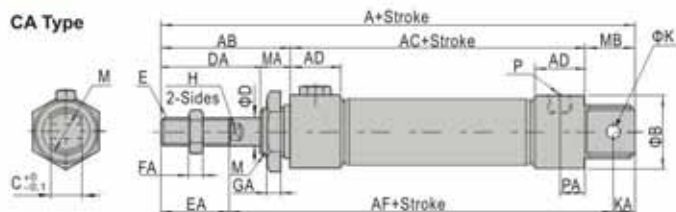
Bore size/Item	B	D
50	53	16
63	67	16

Mini cylinder(Stainless steel)

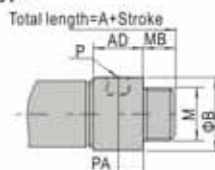
MA Series

MSA Φ16-Φ40

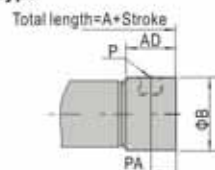
CA Type



CM Type



U Type

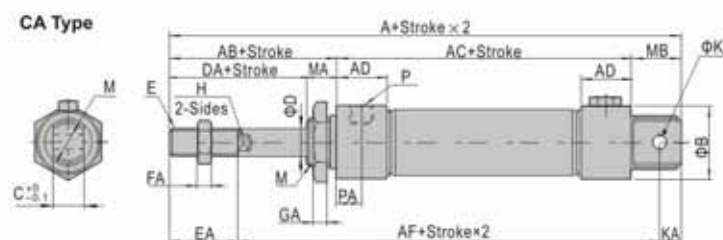


Item	A			AB			AC			AD			AF		
Back cover	CA			CM			U			-			-		
Bore size/Stroke	≤50	51~100	≥101	≤50	51~100	≥101	≤50	51~100	≥101	≤50	51~100	≥101	≤50	51~100	≥101
16	139	164	-	139	164	-	123	148	-	38	85	110	10	116	141
20	162	187	212	153	178	203	141	166	191	40	101	126	151	16	133
25	166	191	216	159	184	209	145	170	195	44	101	126	151	16	135
32	172	197	222	159	184	209	145	170	195	44	101	126	151	16	138
40	174	199	224	161	186	211	147	172	197	46	101	126	151	16.5	138

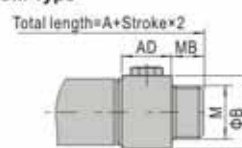
Bore size/Item	B	C	D	DA	E	EA	F	FA	G	GA	H	K	KA	M	MA	MB		P	PA
Back cover																CA	CM		
16	21	12	6	22	M6×1.0	16	10	5	22	6	5	6	7	M16×1.5	16	16	16	M5×0.8	5
20	27	16	8	28	M8×1.25	20	12	6	29	7	6	8	9	M22×1.5	12	21	12	1/8"	8
25	30	16	10	30	M10×1.25	22	17	6	29	7	8	8	9	M22×1.5	14	21	14	1/8"	8
32	35	16	12	30	M10×1.25	22	17	6	32	8	10	10	12	M24×2.0	14	27	14	1/8"	8
40	41.5	20	16	32	M12×1.25	24	17	7	41	9	14	12	12	M30×2.0	14	27	14	1/8"	8

MTA Φ16-Φ40

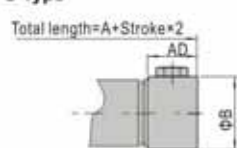
CA Type



CM Type



U Type



Item	A				AB				AC				AD				AF			
Back cover	CA				CM				U				-				-			
Bore size/Stroke	≤25	≤50	≤75	≤100	≤25	≤50	≤75	≤100	≤25	≤50	≤75	≤100	≤25	≤50	≤75	≤100	≤25	≤50	≤75	≤100
16	129	139	154	164	129	139	154	164	113	123	138	148	75	85	100	110	106	116	131	141
20	152	162	177	187	143	153	168	178	131	141	156	166	91	101	116	126	123	133	148	158
25	156	166	181	191	149	159	174	184	135	145	160	170	91	101	116	126	125	135	150	160
32	162	172	192	202	149	159	179	189	135	145	165	175	91	101	121	131	128	138	158	168
40	164	174	194	204	151	161	181	191	137	147	167	177	91	101	121	131	128	138	158	168

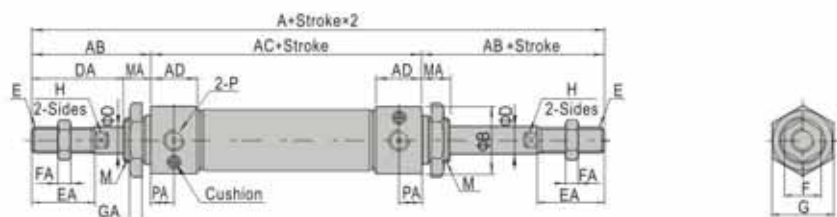
Bore size/Item	AB	AD	B	C	D	DA	E	EA	F	FA	G	GA	H	K	KA	M	MA	MB		P	PA
Back cover																		CA	CM		
16	38	10	21	12	6	22	M6×1.0	16	10	5	22	6	5	6	7	M16×1.5	16	16	16	M5×0.8	5
20	40	16	27	16	8	28	M8×1.25	20	12	6	29	7	6	8	9	M22×1.5	12	21	12	1/8"	8
25	44	16	30	16	10	30	M10×1.25	22	17	6	29	7	8	8	9	M22×1.5	14	21	14	1/8"	8
32	44	16	35	16	12	30	M10×1.25	22	17	6	32	8	10	10	12	M24×2.0	14	27	14	1/8"	8
40	46	16.5	41.5	20	16	32	M12×1.25	24	17	7	41	9	14	12	12	M30×2.0	14	27	14	1/8"	8

Mini cylinder(Stainless steel)

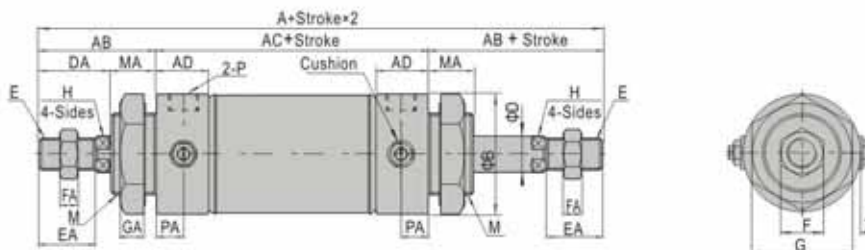
MA Series

MAD/MACD

Φ 16~Φ 40



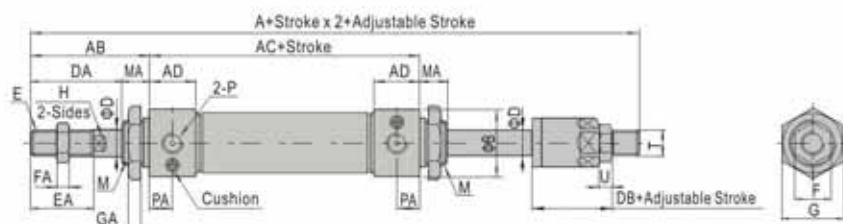
Φ 50/Φ 63



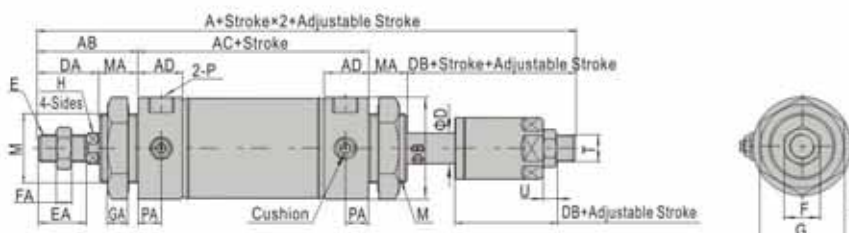
Bore size/Item	A	AB	AC	AD	B	D	DA	E	EA	F	FA	G	GA	H	M	MA	P	PA
16	136	38	60	10	21	6	22	M6×1.0	16	10	5	22	6	5	M16×1.5	16	M5×0.8	5
20	156	40	76	16	27	8	28	M8×1.25	20	12	6	29	7	6	M22×1.5	12	1/8"	8
25	164	44	76	16	30	10	30	M10×1.25	22	17	6	29	7	8	M22×1.5	14	1/8"	8
32	164	44	76	16	35	12	30	M10×1.25	22	17	6	32	8	10	M24×2.0	14	1/8"	8
40	168	46	76	16.5	41.5	16	32	M12×1.25	24	17	7	41	9	14	M30×2.0	14	1/8"	8
50	199	52	95	23	53	16	32	M14×1.5	24	19	8	46	11	14	M36×2.0	20	1/4"	11.5
63	199	52	95	23	67	16	32	M14×1.5	24	19	8	46	11	14	M36×2.0	20	1/4"	11.5

MAJ/MACJ

Φ 16~Φ 40



Φ 50/Φ 63



Bore size/Item	A	AB	AC	AD	B	D	DA	DB	E	EA	F	FA	H	M	MA	P	PA	G	GA	T	U
16	135	38	60	10	21	6	22	21	M6×1.0	16	10	5	5	M16×1.5	16	M5×0.8	5	22	6	M6×1.0	5
20	153	40	76	16	27	8	28	25	M8×1.25	20	12	6	6	M22×1.5	12	1/8"	8	29	7	M8×1.25	6
25	161	44	76	16	30	10	30	27	M10×1.25	22	17	6	8	M22×1.5	14	1/8"	8	29	7	M10×1.25	6
32	161	44	76	16	35	12	30	27	M10×1.25	22	17	6	10	M24×2.0	14	1/8"	8	32	8	M10×1.25	6
40	164	46	76	16.5	41.5	16	32	28	M12×1.25	24	17	7	14	M30×2.0	14	1/8"	8	41	9	M12×1.25	7
50	195	52	95	23	53	16	32	28	M14×1.5	24	19	8	14	M36×2.0	20	1/4"	11.5	46	11	M12×1.25	7
63	195	52	95	23	67	16	32	28	M14×1.5	24	19	8	14	M36×2.0	20	1/4"	11.5	46	11	M12×1.25	7

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

Compact cylinder

ACQ Series—Big bore size



Specification

Bore size(mm)	125	140	160
Acting type	Double acting		
Fluid	Air(to be filtered by 40 μm filter element)		
Operating pressure	0.15~1.0MPa(22~145psi)		
Proof pressure	1.5MPa(215psi)		
Temperature °C	-20~70		
Speed range mm/s	30~500		
Stroke tolerance	Stroke≤100 $+1.0$ ₀ Stroke>100 $+1.5$ ₀		
Cushion type	Bumper		
Port size [Note1]	3/8"		

[Note1] PT thread, G thread and NPT thread are available.
Add) Refer to P338 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)												Max.std stroke	Max.stroke
125														
140	10	20	30	40	50	75	100	125	150	175	200	250	300	300
160														

Note) The dimensions of non-std stroke cylinder has the same dimensions as the next longer stroke std. stroke cylinder. e.g. 35mm stroke cylinder(bore size160) has the same dimensions of 40 std. stroke cylinder, so the value of "CA" is 131mm.

Symbol



Product feature

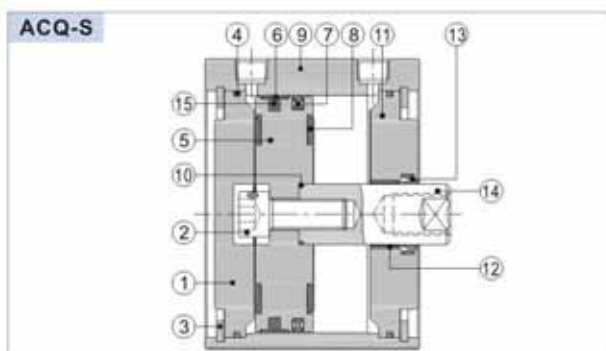
1. JIS standard is implemented.
2. C clip is adopted to connect the cylinder body and back cover or front cover to make it compact and reliable.
3. The internal diameter of the body is treated with rolling followed by the treatment of hard anodizing, forming an excellent abrasion resistance and durability.
4. The seal of piston adopts heterogeneous two-way seal structure. It has compact dimension and the function of grease reservation.
5. Compact structure can effectively save installation space.
6. There are magnetic switch slots around the cylinder body, which is convenient to install inducting switch.

Ordering code

ACQ	125 × 30	S	B	☐		
ACQD	125 × 30	S	B	☐		
ACQJ	125 × 30-30	S	B	☐		
1	2	3	4	5	6	7

1 Model	2 Bore size	3 Stroke	4 Adjustable Stroke	5 Magnet	6 Rod type	7 Thread type
ACQ: Compact cylinder (Double acting)	125 140 160	Refer to stroke table for details	No this code	S: With magnet	Blank: Female thread B: Male thread	Blank: PT G: G T: NPT
ACQD: Compact cylinder (Double rod)						
ACQJ: Compact cylinder (Adjustable stroke)			10 20 30 40 50 75 100			

Inner structure and material of major parts



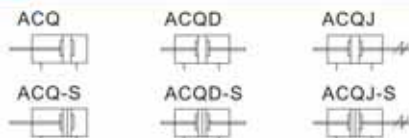
NO.	Item	Material	NO.	Item	Material
1	Back cover	Aluminum alloy	9	Body	Aluminum alloy
2	Screw	Carbon steel	10	O-ring	NBR
3	C clip	Spring steel	11	Front cover	Aluminum alloy
4	O-ring	NBR	12	Bushing	Wear resistant material
5	Piston	Aluminum alloy	13	Front cover packing	NBR
6	Wear ring	Wear resistant material	14	Piston rod	Carbon steel with 20 μm chrome plated
7	Piston seal	NBR	15	Magnet	Rubber
8	Bumper	NBR			

Compact cylinder

ACQ Series—Longer stroke



Symbol



Product feature

1. JIS standard is implemented.
2. C clip is adopted to connect the cylinder body and back cover or front cover, and riveted structure is adopted to connect piston and piston rod to make it compact and reliable.
3. The internal diameter of the body is treated with rolling followed by the treatment of hard anodizing, forming an excellent abrasion resistance and durability.
4. The seal of piston adopts heterogeneous two-way seal structure. It has compact dimension and the function of grease reservation.
5. Compact structure can effectively save installation space.
6. There are magnetic switch slots around the cylinder body, which is convenient to install inducting switch.
7. Installing accessories with various specifications are optional.

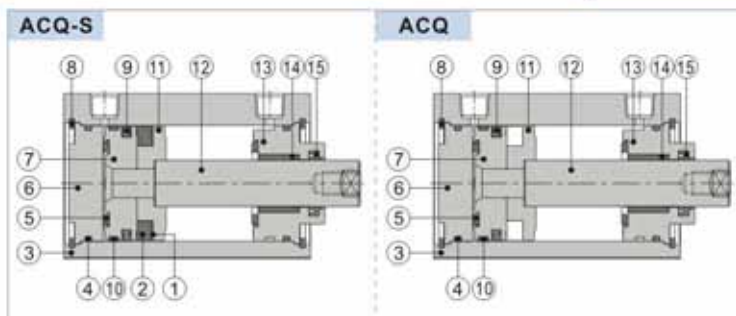
Ordering code

ACQ	50 × 150	S	B	☐	☐		
ACQD	50 × 150	S	B	☐	☐		
ACQJ	50 × 150-30	S	B	☐	☐		
1	2	3	4	5	6	7	8

1 Model	2 Bore size	3 Stroke	4 Adjustable Stroke	5 Magnet	6 Rod type	7 Mounting type [Note 1]	8 Thread type
ACQ: Compact cylinder (Double acting)	32 40 50 63 80 100	Refer to stroke table for details	No this code	Blank: Without magnet S: With magnet	Blank: Female thread B: Male thread	Blank: No accessories FA: FA type FB: FB type CB: CB type LB: LB type	Blank: PT G: G T: NPT
ACQD: Compact cylinder (Double rod)						Blank: No accessories FA: FA type FB: FB type CB: CB type LB: LB type	
ACQJ: Compact cylinder (Adjustable stroke)			10 20 30 40 50 75 100			Blank: No accessories FA: FA type FB: FB type LB: LB type	

[Note 1] Please refer to page 128-129 for accessory parts.

Inner structure and material of major parts



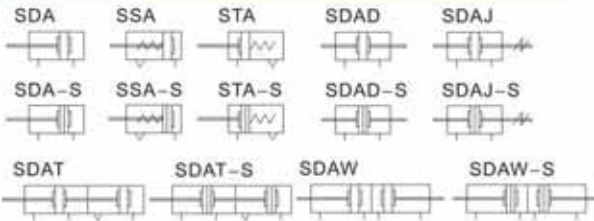
NO.	Item	Material	NO.	Item	Material
1	Magnet washer	NBR	10	Wear ring	No (Φ32)/Wear resistant material (Others)
2	Magnet	Plastic	11	Magnet holder	Aluminum alloy
3	Body	Aluminum alloy	12	Piston rod	Carbon steel with 20 μm chrome plated
4	O-ring	NBR	13	Front cover	Aluminum alloy
5	Bumper	NBR	14	Bushing	No (Φ32)/Wear resistant material (Others)
6	Back cover	Aluminum alloy	15	Front cover packing	NBR
7	Piston	Aluminum alloy			
8	C clip	Spring steel			
9	Piston seal	NBR			

Compact cylinder

SDA Series



Symbol



Product feature

1. Manufactured by our enterprise.
2. Riveted structure is adopted to connect the cylinder body and back cover, and piston and piston rod to make it compact and reliable;
3. The inner diameter of the body is treated with rolling followed by the treatment of hard anodizing, forming an excellent abrasion resistance and durability.
4. The seal of piston adopts heterogeneous two-way seal structure. It has compact dimension and the function of grease reservation.
5. Compact structure can effectively save installation space.
6. There are magnetic switch slots around the cylinder body, which is convenient to install sensor switch
7. Mounting accessories with various specifications are optional.

Ordering code

SDA 20 × 30	S	B	☐			
SDAD 20 × 30	S	B	☐			
SDAJ 20 × 30-30	S	B	☐			
①	②	③	④	⑤	⑥	⑦

① Model	② Bore size	③ Stroke	④ Adjustable Stroke	⑤ Magnet	⑥ Rod type	⑦ Thread type [Note 1]
SDA: Compact cylinder(Double acting)	12 16 20 25 32 40 50 63 80 100	Refer to stroke table for details	No this code	Blank: Without magnet S: With magnet	Blank: Female thread B: Male thread	Blank: PT G: G T: NPT
SSA: Compact cylinder(Single acting-push)	12 16 20 25 32 40 50 63					
STA: Compact cylinder(Single acting-pull)						
SDAD: Compact cylinder(Double rod)	12 16 20 25 32 40 50 63 80 100					
SDAJ: Compact cylinder(Adjustable stroke)			10 20 30 40 50 75 100			

SDAT 20×30×10 S B ☐						
1	2	3	4	5	6	7

① Model	② Bore size	③ Stroke 1	④ Stroke 2	⑤ Magnet	⑥ Rod type	⑦ Thread type [Note 1]
SDAT: Compact cylinder (Duplex type)	12 16 20 25 32 40 50 63 80 100	Refer to stroke table for details	Refer to stroke table for details	Blank: Without magnet S: With magnet	Blank: Female thread B: Male thread	Blank: PT G: G T: NPT
SDAW: Compact cylinder(Duplex-end type)						

[Note 1] Standard thread is blank here.

Specification

Bore size(mm)	12	16	20	25	32	40	50	63	80	100
Acting type	Double acting									
	Single acting_Push type、Single acting_Pull type									
Fluid	Air(to be filtered by 40 μm filter element)									
Operating pressure	Double acting 0.15~1.0MPa(22~145psi)(1.5~10.0bar) Single acting 0.2~1.0MPa(28~145psi)(2.0~10.0bar)									
Proof pressure	1.5MPa(215psi)(15bar)									
Temperature °C	-20~70									
Speed range mm/s	Double acting: 30~500 Single acting: 50~500									
Stroke tolerance	Stroke≤100 ^{+1.0} ₀ Stroke>100 ^{+1.5} ₀									
Cushion type	Bumper									
Port size [Note1]	M5×0.8 1/8" 1/4" 3/8"									

[Note1] PT thread, G thread thread and NPT thread are available.
Add) Refer to P338 for detail of sensor switch.

Stroke

Bore size (mm)			Standard stroke (mm)	Max.std stroke	Max. stroke
12	Double acting	With magnet	5 10 15 20 25 30 35 40 45 50	50	70
16		Without magnet	5 10 15 20 25 30 35 40 45 50 55 60	60	80
		Single acting	5 10 15 20 25 30	30	-
20	Double acting	With magnet	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90	90	130
		Without magnet	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 100	100	140
		Single acting	5 10 15 20 25 30	30	-
25 32	Double acting	With magnet	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 100 110 120	120	150
40 50		Without magnet	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 100 110 120 130	130	160
63		Single acting	5 10 15 20 25 30	30	-
80	Double acting	With magnet	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 100 110 120	120	150
100		Without magnet	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 100 110 120 130	130	160

- Note) 1. Please contact the company for other special strokes.
2. The dimensions of non-std stroke cylinder has the same dimensions as the next longer stroke std. stroke cylinder, e.g. 23mm stroke cylinder has the same dimensions of 25 std. stroke cylinder.

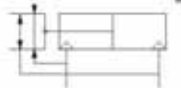
Air gripper(parallel style——ball bearing)

HFZ Series



Symbol

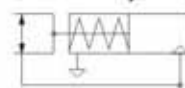
HFZ: Double acting



HFTZ: Single acting and normally opened



HFSZ: Single acting and normally closed



Gripping force and stroke

Acting type		Double acting(HFZ)							Single acting_NO (HFTZ)							Single acting_NC (HFSZ)						
Bore size		6	10	16	20	25	32	40	6	10	16	20	25	32	40	6	10	16	20	25	32	40
Gripping force per finger Effective value(N)	External	3.3	11	34	45	69	160	255	1.9	7	27	35	55	133	220	-	-	-	-	-	-	-
	Internal	6.1	17	45	68	102	195	320	-	-	-	-	-	-	-	3.7	13	38	59	87	163	270
Opening/Closing stroke(Both sides)(mm)		3	3	6	10	14	22	30	3	3	6	10	14	22	30	3	3	6	10	14	22	30
Weight (g)	F Type	24	-	-	-	-	-	-	25	-	-	-	-	-	-	25	-	-	-	-	-	-
	Others	25	56	124	236	428	729	1268	26	57	125	238	430	778	1365	26	57	125	238	430	778	1365

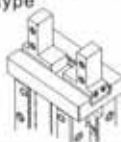
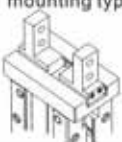
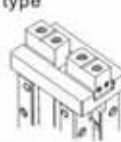
[Note] The gripping force in the above table is in the working pressure of 0.5MPa, and with a gripping point of L=20mm.

Add) Please refer to page 256 for the definition of "L".

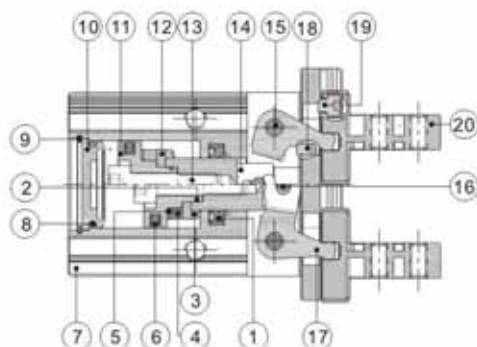
Ordering code

HFZ 20 □

1 2 3

1 Model	2 Bore size	3 Finger type			
HFZ: Air finger(Double acting)	6 10 16 20 25 32 40	Blank:Standard 			
HFSZ: Air finger (Single acting and normally closed)					
HFTZ: Air finger (Single acting and normally opened)	6	B:Side mounting type 	N:Thru.hole mounting type 	F:Bottom mounting type 	HFZ series are all attached with magnet.

Inner structure and material of major parts



NO.	Item	Material
1	Rod packing	NBR
2	O-ring	NBR
3	Bumper	TPU
4	Magnet	Sintered metal(Neodymium-iron-boron)
5	Magnet washer	NBR
6	Piston seal	NBR
7	Body	Aluminum alloy
8	O-ring	NBR
9	C clip	Spring steel
10	Back cover	Aluminum alloy
11	Piston	Aluminum alloy/Stainless steel
12	Magnet fixed flake	Stainless steel
13	Screw	Carbon steel
14	Piston rod	Aluminum alloy/Stainless steel
15	Pin	Stainless steel
16	Pin	Stainless steel
17	Curved bar	Stainless steel
18	Pin	Stainless steel
19	Countersink screw	Carbon steel
20	Assembly of clamping jaw and guide rail	Stainless steel

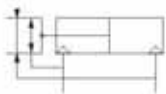
Air gripper(Mechanical parallel style)

HFP Series

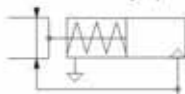


Symbol

HFP: Double acting



HFTP: Single acting and normally opened

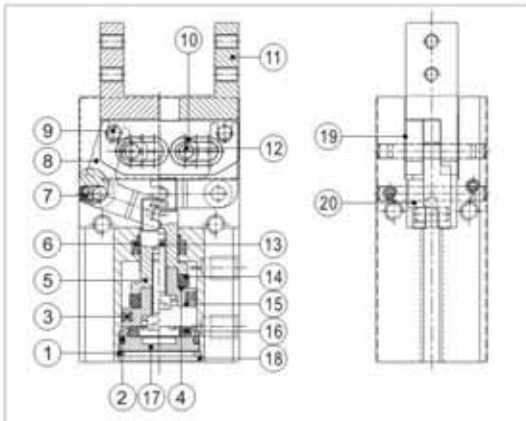


Ordering code

HFP 20		
1 Model	2 Bore size	3 Finger type
HFP: Air finger(Double acting) (mechanical parallel style)	10 16 20 25 32	Blank: Standard N: Thru.hole mounting type

[Note] HFP series are all attached with magnet.

Inner structure and material of major parts

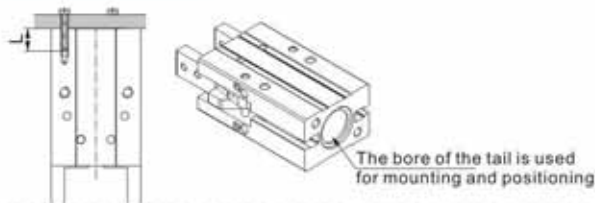


NO.	Item	Material	NO.	Item	Material
1	C clip	Spring steel	11	Gripping jaws	Stainless steel
2	O-ring	NBR	12	Pin	Stainless steel
3	Piston seal	NBR	13	Screw	Carbon steel
4	Magnet washer	NBR	14	Magnet	Sintered metal (Neodymium-iron-boron)
5	Piston rod	Aluminum alloy Stainless steel	15	Piston	Aluminum alloy Stainless steel
6	Rod packing	NBR	16	Bumper	TPU
7	Countersink screw	Carbon steel	17	Back cover	Aluminum alloy
8	Curved bar	Stainless steel	18	Body	Aluminum alloy
9	Pin	Stainless steel	19	Retaining ring	Stainless steel
10	Guide sleeve	Stainless steel	20	Stopper sleeve	Stainless steel

Installation and application

- Due to the abrupt changes, the circuit pressure is low, which will lead to the decrease of the gripping force and falling of the work-pieces. In order to avoid the harm to the human body and damage to the equipment, anti-dropping device must be equipped.
- Don't use the air gripper under strong external force and impact force.
- When install and fix the air gripper, avoid falling down, collision and damage.
- When fixing the gripping jaw parts, don't twist the gripping jaw.
- There are several kinds of installation method, and the locking torque of fastening screw must be within the prescribed torque range shown in the below chart. If the locking torque is too large, it will cause the dysfunctional. If the locking torque is too small, it will cause the position deviation and fall.

Tail installation type



Bore size	The bolts type	Max. locking moment	Max. screwed depth	The aperture of the positioning bore	The depth of the positioning bore
10	M3×0.5	1.0N.m	6mm	Φ11mm ^{+0.05} ₀	1.0mm
16	M4×0.7	2.0N.m	8mm	Φ17mm ^{+0.05} ₀	1.2mm
20	M5×0.8	4.5N.m	10mm	Φ21mm ^{+0.05} ₀	1.2mm
25	M6×1.0	7.0N.m	12mm	Φ26mm ^{+0.05} ₀	1.5mm
32	M6×1.0	7.0N.m	12mm	Φ34mm ^{+0.05} ₀	1.5mm

The installation of the front threaded hole

Bore size	The bolts type	Max. locking moment(Nm)	Max. screwed depth(mm)
10	M3×0.5	0.7	5
16	M4×0.7	2.0	8
20	M5×0.8	4.5	10
25	M6×1.0	7.0	12
32	M6×1.0	7.0	12

Surface installation type

Bore size	The bolts type	Max. locking moment (Nm)	Max. screwed depth (mm)
10	M3×0.5	1.0	6
16	M4×0.7	2.0	8
20	M5×0.8	4.5	10
25	M6×1.0	7.0	12
32	M6×1.0	7.0	12

6. Other contents of installation and operation are the same with those of HFZ. Refer to the "Installation and Operation" instruction of HFZ.

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

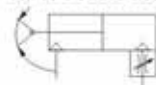
Air gripper(Angular style)

HFY Series

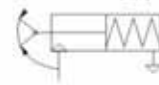


Symbol

HFY: Double acting



HFTY: Single acting and normally opened



Gripping force and stroke

Acting type		Double acting(HFY)						Single acting Normally opened(HFTY)					
Bore size		6	10	16	20	25	32	6	10	16	20	25	32
Theoretical gripping torque (N·cm)	Closed	7.4 × P	17.6 × P	90 × P	152 × P	304 × P	637 × P	5.7 × P	11.8 × P	71.2 × P	122.4 × P	252 × P	589 × P
	Opened	10.6 × P	29.4 × P	129 × P	252 × P	473 × P	904 × P	-	-	-	-	-	-
Max. length of gripping point (L)(mm)		30	30	40	60	70	85	30	30	40	60	70	85
Opening angle (°)		30 ⁺³ ₀											
Closing angle (°)		-10 ⁰ ₋₃											

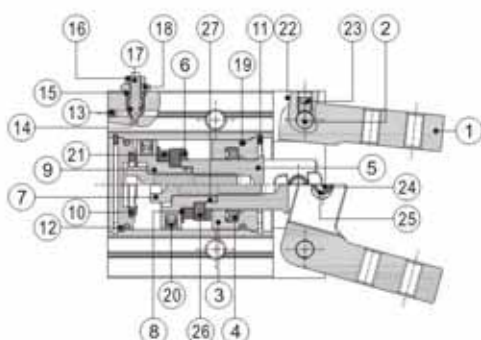
[Note] The P in the gripping torque shown in the above chart represents the actual use of air pressure.

Ordering code

HFY 20	
1	2
① Model	② Bore size
HFY: Air finger (Angle style, Double acting)	6 10 16
HFTY: Air finger (Angle style, Single acting and normally opened)	20 25 32

[Note] HFY series are all attached with magnet.

Inner structure and material of major parts



NO.	Item	Material
1	Gripping jaws	Carbon steel
2	Pin	Stainless steel
3	Front cover	Aluminum alloy
4	Rod packing	NBR
5	Piston rod	Aluminum alloy/Stainless steel
6	Bumper	TPU
7	Countersink screw	Carbon steel
8	Magnet washer	NBR
9	Piston	Aluminum alloy/Stainless steel
10	Bumper	TPU
11	C clip	Spring steel
12	Back cover	Aluminum alloy
13	Steel ball	Stainless steel
14	O-ring	NBR
15	O-ring	NBR
16	Screw cap	Carbon steel
17	Adjustable nut	Brass
18	Fixed nut	Brass
19	O-ring	NBR
20	Piston seal	NBR
21	Magnet	Sintered metal(Neodymium-iron-boron)
22	Body	Aluminum alloy
23	Countersink screw	Carbon steel
24	Pin	Stainless steel
25	Pin sheath	Stainless steel
26	Magnet fixed flake	Stainless steel
27	O-ring	NBR

Twist clamp cylinder

ACK Series



Specification

Bore size(mm)	25	32	40	50	63
Acting type	Double acting				
Fluid	Air(to be filtered by 40 μm filter element)				
Operating pressure	0.15~1.0MPa(22~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature ℃	-20~70				
Speed range mm/s	50~200				
Stroke tolerance	+1.0 0				
Rotary angle tolerance	±1.5°				
Cushion type [Note1]	No cushion				
Port size [Note2]	M5×0.8		1/8"		

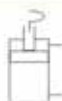
[Note1] If there is no buffering device, exhaust throttle shall be added to achieve buffering effect.

[Note2] PT thread, G thread and NPT thread are available.

Stroke

Bore size(mm)	Stroke type	90°	180°	Total stroke (90°/180°)
25	Rotation stroke	14	20	26
32	Clamping stroke	12	6	26
40	Rotation stroke	15	21	27
	Clamping stroke	12	6	27
50	Rotation stroke	15	21	29
63	Clamping stroke	14	8	29

Symbol



Product feature

1. The material of seals guarantees the reliable performance of the cylinder that is used under various conditions.
2. Three-slot guide structure leads to high guide precision.
3. There are single and double side clamping fingers can be selected (90°).
4. Levorotatory and dextrorotary are available; 90° and 180°.
5. The material of piston rod is made from special alloy steel, which has longer life after heat treatment.

Ordering code

ACK L 25 × 90 □

1 2 3 4 5

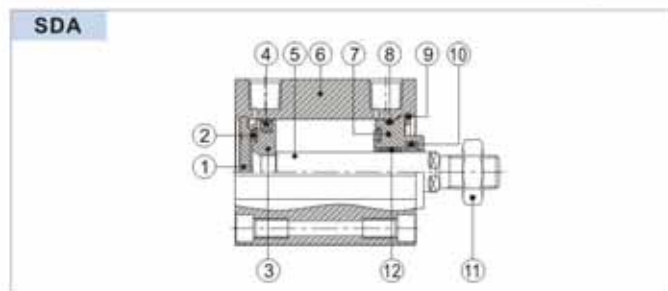
① Model	② Rotary direction	③ Bore size	④ Rotary angle	⑤ Thread type[Note1]
ACK: Twist clamp cylinder(Double acting type) ACKD: Twist clamp cylinder (Double push plate type, only for 90°)	L: Push and turn left When the piston of cylinder moves downward, the swivel arms moves anticlockwise, this is called levorotatory. 	25 32 40 50 63	90: 90° 180: 180°	Blank: PT G: G T: NPT
	R: Push and turn right When the piston of cylinder moves downward, the swivel arms moves clockwise, this is called dextrorotary. 			

[Note1] When the thread is standard, the code is blank.

Compact cylinder

SDA Series

Inner structure and material of major parts

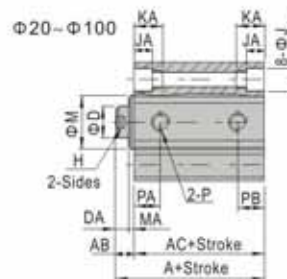
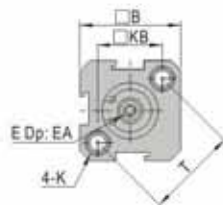
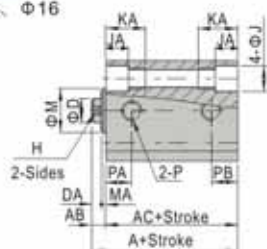


NO.	Item	Material
1	Back cover	No(Φ12, 16)/Aluminum alloy(Others)
2	Bumper	NBR
3	Piston	Brass(Φ12, 16)/Aluminum alloy(Others)
4	Piston seal	NBR
5	Piston rod	Carbon steel with 20 μm chrome plated
6	Body	Aluminum alloy
7	Front cover	Aluminum alloy
8	O-ring	NBR
9	C clip	Spring steel
10	Front cover packing	NBR
11	Piston nut	Carbon steel
12	Bushing	No(Φ12~32)/Wear resistant material(Others)

Dimensions

SDA

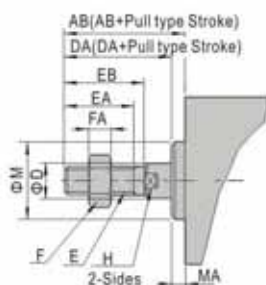
Φ12、Φ16



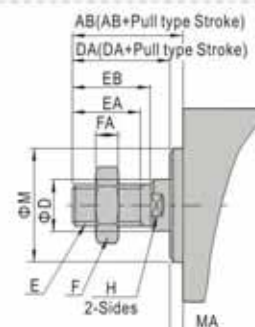
Item	A	AC	A	AC	AB	B	BA	D	DA	E	EA	H	J	JA	K	KA	KB	M	MA	P	PA				PB				T
																					St=	St>5	St=5	St>5	St=	St>5	St=5	St>5	
Bore size	Without magnet	With magnet																											
12	22	17	32	27	5	25	-	6	4	M3×0.5	6	5	6.5	4.5	M5×0.8Thru.hole:Φ4.2	12	16.2	10.2	1	M5×0.8	7.5	7.5	5	5	23				
16	24	18.5	34	28.5	5.5	29	-	6	4	M3×0.5	6	5	6.5	4.5	M5×0.8Thru.hole:Φ4.2	12	19.8	11	1.5	M5×0.8	8	8	5.5	5.5	28				
20	25	19.5	35	29.5	5.5	34	36	8	4	M4×0.7	8	6	6.5	4.5	M5×0.8Thru.hole:Φ4.2	14	24	13	1.5	M5×0.8	9	9	5.5	5.5	-				
25	27	21	37	31	6	40	42	10	4	M5×0.8	10	8	8.2	5.5	M6×1.0Thru.hole:Φ5.2	15	28	17	2	M5×0.8	9	9	5.5	5.5	-				
32	31.5	24.5	41.5	34.5	7	44	50	12	4.5	M6×1.0	12	10	8.2	5.5	M6×1.0Thru.hole:Φ5.2	16	34	22	2.5	1/8"	9	9	6.5	9	-				
40	33	26	43	36	7	52	58.5	16	4	M8×1.25	12	14	10.5	6.5	M8×1.25Thru.hole:Φ6.7	20	40	28	3	1/8"	9.5	9.5	7.5	7.5	-				
50	37	28	47	38	9	62	71.5	20	5	M10×1.5	15	17	10.5	6.5	M8×1.25Thru.hole:Φ6.7	25	48	38	4	1/4"	8	10.5	8	10.5	-				
63	41	32	51	42	9	75	84.5	20	5	M10×1.5	15	17	10.5	6.5	M8×1.25Thru.hole:Φ6.7	25	60	40	4	1/4"	9.5	12	9.5	11	-				
80	52	41	62	51	11	94	104	25	6	M14×1.5	20	22	17	11	M12×1.75Thru.hole:Φ10.4	25	74	45	5	3/8"	11.5	14.5	11.5	14.5	-				
100	63	51	73	61	12	114	124	32	7	M18×1.5	20	27	19	13	M14×2.0Thru.hole:Φ12.4	30	90	55	5	3/8"	16	20.5	16	20.5	-				

Male thread

Φ12、Φ16



Φ20~Φ100



Bore size\Item	AB	D	DA	E	EA	EB	F	FA	H	M	MA		
											SDAD	ISDAJ	Others
12	17	6	16	M5×0.8	10	12	8	4	5	10.2	1		1
16	17.5	6	16	M5×0.8	10	12	8	4	5	11	1.5		1.5
20	20.5	8	19	M6×1.0	13	15	10	5	6	13	1.5		1.5
25	23	10	21	M8×1.25	15	17	12	6	8	17	2		2
32	25	12	22	M10×1.25	15	18	17	6	10	22	3		2.5
40	35	16	32	M14×1.5	25	28	19	8	14	28	3		3
50	37	20	33	M18×1.5	25	28	27	11	17	38	4		4
63	37	20	33	M18×1.5	25	28	27	11	17	40	4		4
80	44	25	39	M22×1.5	30	33	32	13	22	45	5		5
100	50	32	45	M26×1.5	35	38	36	13	27	55	5		5

Mini free mount cylinder

MU Series



Specification

Bore size(mm)		4	6	8	10	12	16	20
Acting type		MU □ Double acting			MSU □ Single acting_Pull type			
Fluid		Air(to be filtered by 40μm filter element)						
Operating pressure	Double acting	0.15~0.7MPa(22~100psi)						
	Single acting	0.3~0.7MPa(44~100psi)			0.2~0.7MPa(29~100psi)			
Proof pressure		1.2MPa(175psi)						
Temperature □		-20~70						
Speed range mm/s		Double acting □ 30~500			Single acting □ 50~500			
Stroke tolerance		+1.0 0						
Cushion type		No			Bumper			
Port size		M3×0.5			M5×0.8			

Add) Refer to P338 for detail of sensor switch.

Stroke

Bore size (mm)		Standard stroke (mm)										Max.std stroke
4	Double acting	4 6 8 10 15 20										20
	Single acting	4 6										6
6	Double acting	4 6 8 10 15 20 25 30										30
	Single acting	4 6 8										8
8	Double acting	4 6 8 10 15 20 25 30										30
	Single acting	4 6 8 10										10
10	Double acting	4 6 8 10 15 20 25 30										30
	Single acting	4 6 8 10										10
12	Double acting	5 10 15 20 25 30 35 40 45 50										50
	Single acting	5 10										10
16	Double acting	5 10 15 20 25 30 35 40 45 50										50
	Single acting	5 10										10
20	Double acting	5 10 15 20 25 30 35 40 45 50										50
	Single acting	5 10										10

- Note) 1. Please contact the company for other special strokes.
 2. The dimensions of non-std stroke cylinder has the same dimensions as the next longer stroke std. stroke cylinder. e.g. 23mm stroke cylinder has the same dimensions of 25 std. stroke cylinder.

Symbol



Product feature

1. JIS standard is implemented.
2. Cylinder can be mounted from 4 directions, and convenient to install and use.
3. Multitudinous cylinder can be mounted side by side to save space.
4. The front end of the cylinder is designed with boss. Centering can be done easily.
5. The internal diameter of the body is treated with rolling followed by the treatment of hard anodizing, forming an excellent abrasion resistance and durability.
6. With magnet type is of the feature of position sensing.
7. There are magnetic switch slots around the cylinder body, which is convenient to install inducting switch.
8. The seal of piston adopts heterogeneous two-way seal structure. It has compact dimension and the function of grease reservation.

Ordering code

MU □ 12 × 10 S □

MSU □ 12 × 10 S □

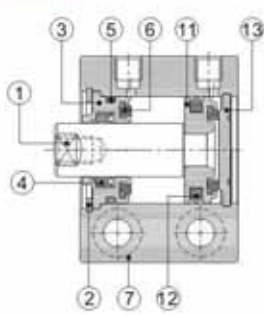
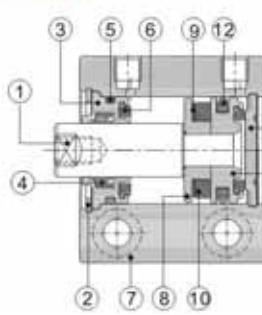
① ② ③ ④ ⑤ ⑥

① Model	② Body mounted type	③ Bore size	④ Stroke	⑤ Magnet	⑥ Rod type
MU: Mini free mount cylinder (double acting)	No this code	4	Refer to stroke table for details	No this code(Without magnet)	Blank: No thread; B: Male thread
		6			
		8			
		10			
		12			
MSU: Mini free mount cylinder (single acting-push)	Blank: Transverse mounting R: Axial mounting	16		Blank: Without magnet S: With magnet	Blank: Female thread B: Male thread
		20			

Mini free mount cylinder

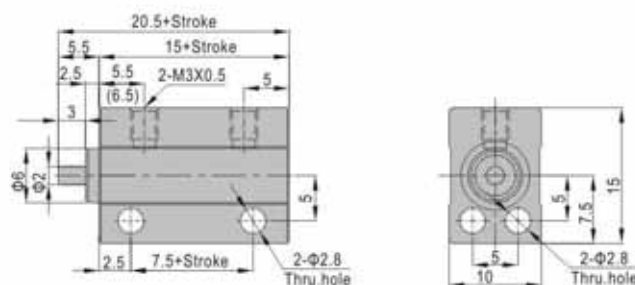
MU Series

Inner structure and material of major parts

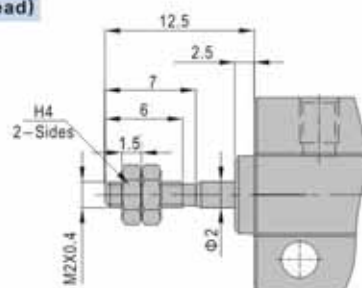
MU12		MU12-S		NO.	Item	Material
				1	Piston rod	Stainless steel or Carbon steel with 20 μm chrome plated
				2	C clip	Spring steel
				3	Front cover	Aluminum alloy
				4	Front cover packing	NBR
				5	O-ring	NBR
				6	Bumper	TPU
				7	Body	Aluminum alloy
				8	Magnet holder	Brass(Φ 12)/Aluminum alloy(Others)
				9	Magnet washer	NBR
				10	Magnet	Sintered metal (Neodymium-iron-boron)
				11	Piston	Brass(Φ 12,16)/Aluminum alloy(Others)
				12	Piston seal	NBR
				13	Back cover	No(Φ 12,16)/Aluminum alloy

Dimensions

Φ4

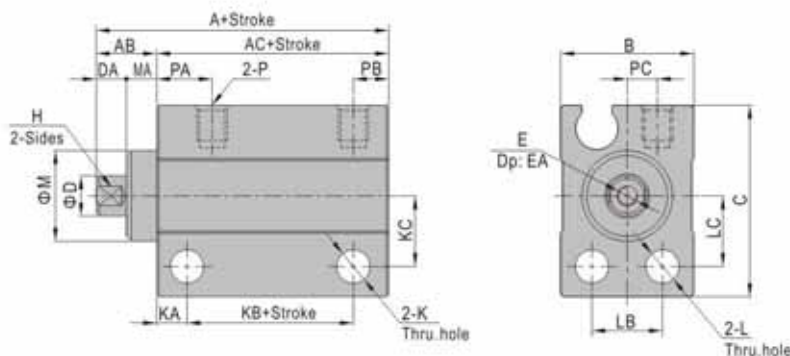


Φ4(Male thread)



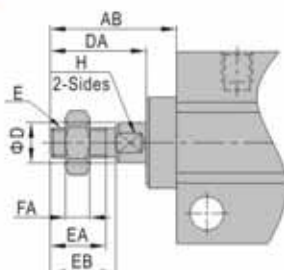
[Note] The value in the "()" is single-acting type's value.

Φ6~Φ10



Bore size/Item	A	AC	KB	A	AC	KB	AB	B	C	D		DA	E	EA	H	K	KA	KC	L	LB	LC	M	MA	P	PA	PB	PC
	With magnet			Without magnet						MU	MSU																
6	24	18	11.5	19	13	6.5	6	13	19	4	3.5	3	M2.5×0.45	5	3.5	3.3	3	7	3.3	7	9	3	M3×0.5	5.5	3.5	3	
8	24	18	11.5	19	13	6.5	6	13	21		5	3	M3×0.5	6	4.5	3.3	3	8	3.3	7	8	11	3	M3×0.5	5.5	3.5	3
10	24	18	11.5	19	13	6.5	6	13.5	22		6	3	M3×0.5	6	5	3.3	3	8.5	3.3	7	8.5	12	3	M3×0.5	5.5	3.5	3.5

Φ6~Φ10(Male thread)



Bore size/Item	AB	D(MU)	D(MSU)	DA	E	EA	EB	FA	H
6	12.5	4	3.5	9.5	M3×0.5	5.5	6.5	2.4	3.5
8	14.5	5	5	11.5	M4×0.7	7	8.5	3	4.5
10	16.5	6	6	13.5	M5×0.8	9	10.5	4	5

[Note] The unmarked dimensions are the same as Female type.

Multi-mount cylinder

MD Series

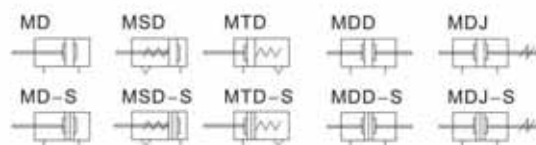


Specification

Bore size (mm)	6	10	16	20	25	32
Acting type	MD/MDD/MDJ					
	MSD/MTD					
Fluid	Air (to be filtered by 40 μm filter element)					
Operating pressure	Double acting: 0.15~1.0MPa (22~145psi)					
	Single acting: 0.2~1.0MPa (28~145psi)					
Proof pressure	1.5MPa (215psi)					
Temperature °C	-20~70					
Speed range mm/s	Double acting: 30~500 Single acting: 50~500					
Stroke tolerance	+1.0 0					
Cushion type	Bumper					
Port size [Note]	M5×0.8					
	1/8"					

[Note1] PT thread, G thread and NPT thread are available.
Add) Refer to P338 for detail of sensor switch.

Symbol



Stroke

Bore size (mm)	Standard stroke (mm)							Max.std stroke	Max.stroke
6	Double acting	5	10	15	20	25	30	35	40
	Single acting	5	10	15	20			20	-
10	Double acting	5	10	15	20	25	30	35	40
	Single acting	5	10	15	20			20	-
16	Double acting	5	10	15	20	25	30	40	50
	Single acting	5	10	15	20			20	-
20	Double acting	5	10	15	20	25	30	40	50
	Single acting	5	10	15	20			20	-
25	Double acting	5	10	15	20	25	30	40	50
	Single acting	5	10	15	20			20	-
32	Double acting	5	10	15	20	25	30	40	50
	Single acting	5	10	15	20			20	-

[Note1] 1. Please contact the company for other special strokes.
2. The dimensions of non-std stroke cylinder has the same dimensions as the next longer stroke std. stroke cylinder. e.g. 23mm stroke cylinder has the same dimensions of 25 std. stroke cylinder.

Product feature

1. Manufactured by our enterprise.
2. There are several ways to fix the cylinder and it is convenient to install and use.
3. Several cylinders can be assembled together to effectively save the installation space.
4. The guide precision of piston rod is high and no additional lubricant is needed.
5. Cylinders of various specifications are optional.
6. The seal material with high temperature resistance is adopted to guarantee the normal operation of cylinder at 150°C (Option).

Ordering code

MD 32 × 30 S ☐

MDD32 × 30 S ☐

MDJ 32 × 30-30 S ☐

1 2 3 4 5 6

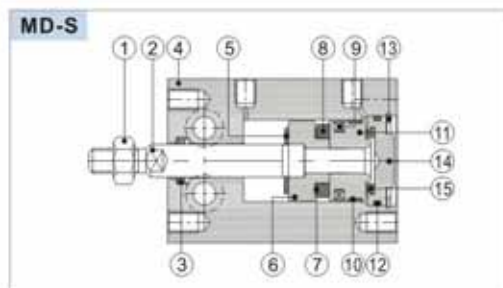
1 Model	2 Bore size	3 Stroke	4 Adjustable stroke	5 Magnet	6 Thread type [Note1]
MD: Multi-mount cylinder(Double acting type)	6 10 16 20 25 32	Refer to stroke table for details	No this code	Blank: Without magnet S: With magnet	Blank: PT G: G T: NPT
MSD: Multi-mount cylinder(Single acting-push type)					
MTD: Multi-mount cylinder(Single acting-pull type)			10 20 30		
MDD: Multi-mount cylinder(Double rod type)					
MDJ: Multi-mount cylinder(Adjustable stroke type)					

[Note1] Standard thread is blank here.

Multi-mount cylinder

MD Series

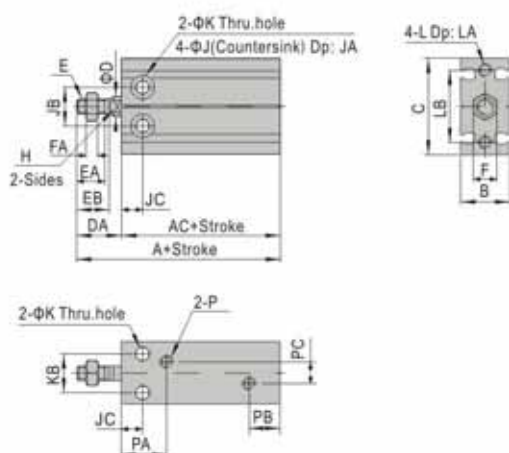
Inner structure and material of major parts



NO.	Item	Material	NO.	Item	Material
1	Rod nut	Carbon steel	9	Piston seal	NBR
2	Piston rod	Stainless steel	10	Wear ring	Wear resistant material
3	Rod packing	NBR	11	Piston	Aluminum alloy
4	Body	Aluminum alloy	12	O-ring	NBR
5	Bumper	TPU	13	C-clip	Spring steel
6	Magnet holder	Aluminum alloy	14	Back cover	Aluminum alloy
7	Magnet washer	NBR	15	Bumper	TPU
8	Magnet	Sintered metal(Neodymium-iron-boron)			

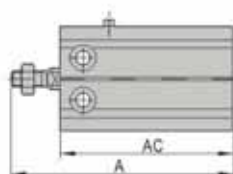
Dimensions

MD

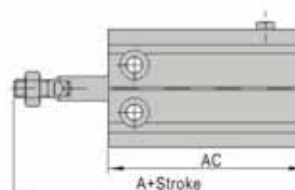


Bore size\Item	Without magnet		With magnet		B	C	D	DA	E	EA	EB	F	FA	H	J	JA	JB	JC	K	KB	L	LA	LB	P	PA	PB	PC
	A	AC	A	AC																							
6	46	33	46	33	16.5	22	3	13	M3×0.5	7	8	5.5	2.5	-	6	5	10	7	3.3	7	M3×0.5	5	17	M5×0.8	14	10	-
10	52	36	52	36	16.5	24	4	16	M4×0.7	10	11	7	2	-	6	5.5	11	7	3.3	9	M3×0.5	5	18	M5×0.8	15.5	10	-
16	46	30	56	40	20	32	6	16	M5×0.8	11	12.5	8	4	5	7.5	6.5	14	7	4.5	12	M4×0.7	5	25	M5×0.8	14.5	10	3
20	55	36	65	46	26	40	8	19	M6×1.0	12	14	10	5	6	9.5	8	16	9	5.5	16	M5×0.8	7.5	30	M5×0.8	19	11	9
25	63	40	73	50	32	50	10	23	M8×1.25	15.5	18	12	6	8	9.5	9	20	10	5.5	20	M5×0.8	8	38	M5×0.8	21.5	8.5	12
32	69	42	79	52	40	62	12	27	M10×1.25	19.5	22	17	6	10	11	11.5	24	11	6.5	24	M6×1.0	9	48	1/8"	23	12.5	13

MSD



MTD



Item	A(Without magnet)				A(With magnet)				AC(Without magnet)				AC(With magnet)			
Bore size\Stroke	5St	10St	15St	20St	5St	10St	15St	20St	5St	10St	15St	20St	5St	10St	15St	20St
6	56	61	71	76	56	61	71	76	43	48	58	63	43	48	58	63
10	62	67	77	82	62	67	77	82	46	51	61	66	46	51	61	66
16	61	66	81	86	71	76	91	96	45	50	65	70	55	60	75	80
20	70	75	90	95	80	85	100	105	51	56	71	76	61	66	81	86
25	78	83	98	103	88	93	108	113	55	60	75	80	65	70	85	90
32	84	89	104	109	94	99	114	119	57	62	77	82	67	72	87	92

Remark) The unmarked dimension is the same as MD standard type.

Multi-mount cylinder

MK Series



Specification

Bore size(mm)		6	10	16	20	25	32
Acting type	MK/MKD/MKJ	Double acting					
	MSK/MTK	Single acting					
Fluid		Air(to be filtered by 40 μ m filter element)					
Operating pressure	Double acting	0.15~1.0MPa(22~145psi)					
	Single acting	0.2~1.0MPa(28~145psi)					
Proof pressure		1.5MPa(215psi)					
Temperature °C		-20~70					
Speed range mm/s		Double acting: 30~500		Single acting: 50~500			
Stroke tolerance		+1.0 0					
Cushion type		Bumper					
Port size [Note]		M5×0.8					1/8"

[Note1] PT thread, G thread thread and NPT thread are available.

Add) Refer to P338 for detail of sensor switch.

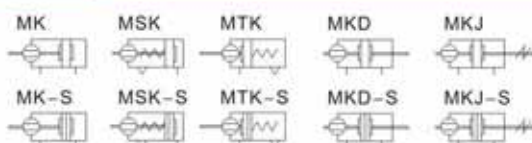
Stroke

Bore size (mm)	Standard stroke (mm)							Max.std stroke	Max.stroke
6	Double acting	5	10	15	20	25	30	35	40
	Single acting	5	10	15	20			20	-
10	Double acting	5	10	15	20	25	30	35	40
	Single acting	5	10	15	20			20	-
16	Double acting	5	10	15	20	25	30	40	50
	Single acting	5	10	15	20			20	-
20	Double acting	5	10	15	20	25	30	40	50
	Single acting	5	10	15	20			20	-
25	Double acting	5	10	15	20	25	30	40	50
	Single acting	5	10	15	20			20	-
32	Double acting	5	10	15	20	25	30	40	50
	Single acting	5	10	15	20			20	-

Note) 1. Please contact the company for other special strokes.

2. The dimensions of non-std stroke cylinder has the same dimensions as the next longer stroke std. stroke cylinder. e.g. 23mm stroke cylinder has the same dimensions of 25 std. stroke cylinder.

Symbol



Product feature

1. Manufactured by our enterprise.
2. There are several fixation ways for the cylinder, and also convenient to install and use.
3. Several cylinders can be assembled together to effectively save the installation space.
4. The guide precision of piston rod is high and no additional lubricant is needed.
5. Fixated block is attached to piston rod, which prevents it from rotating.
6. Various cylinders are available for your choice.
7. The seal material with high temperature resistance is adopted to guarantee the normal operation of cylinder at 150°C(Option).

Ordering code

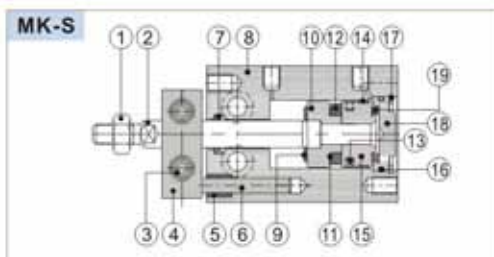
MK	32×30	S	☐
MDK	32×30	S	☐
MKJ	32×30-30	S	☐

1 2 3 4 5 6

1 Model	2 Bore size	3 Stroke	4 Adjustable stroke	5 Magnet	6 Thread type [Note1]
MK: Multi-mount cylinder(Double acting no-rotating type)	6 10 16 20 25 32	Refer to stroke table for details	No this code	Blank: Without magnet S: With magnet	Blank: PT G: G T: NPT
MSK: Multi-mount cylinder(Single acting-push no-rotating type)					
MTK: Multi-mount cylinder(Single acting-pull no-rotating type)			10 20 30		
MKD: Multi-mount cylinder(Double rod no-rotating type)					
MKJ: Multi-mount cylinder(Adjustable stroke no-rotating type)					

[Note1] Standard thread is blank here.

Inner structure and material of major parts



NO.	Item	Material	NO.	Item	Material
1	Rod nut	Carbon steel	11	Magnet washer	NBR
2	Piston rod	Stainless steel	12	Magnet	Sintered metal(Neodymium-iron-boron)
3	Screw	Carbon steel	13	Piston seal	NBR
4	No-rotating plate	Aluminum alloy	14	Wear ring	Wear resistant material
5	Bushing	Brass	15	Piston	Aluminum alloy
6	Fixed rod	Stainless steel	16	O-ring	NBR
7	Rod packing	NBR	17	C-clip	Spring steel
8	Body	Aluminum alloy	18	Back cover	Aluminum alloy
9	Bumper	TPU	19	Bumper	TPU
10	Magnet holder	Aluminum alloy			

Twin-rod cylinder

TN Series



Symbol



Product feature

1. Enterprises standard is implemented.
2. Embedded installation and fixation mode saves the installation space.
3. It is good resistance to bending and twisting moments.
4. Mounting holes on three sides facilitates multi-position mounting.
5. Bumper in front of the barrel can adjust the stroke of cylinder and relieve impact.
6. Standard configuration of this series has magnet and the type without magnet is not available.

Ordering code

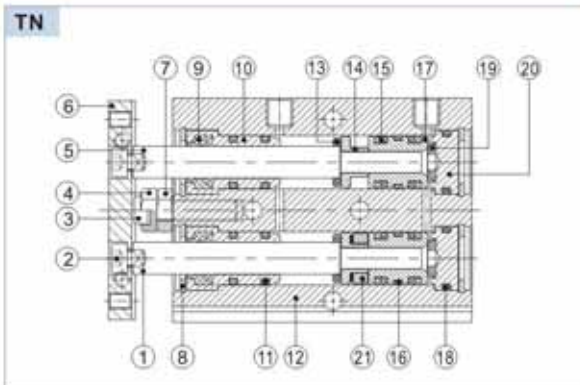
TN 20 × 50 S □

1 2 3 4 5

1 Model	2 Bore size	3 Stroke	4 Magnet [Note1]	5 Thread type [Note 2]
TN: Twin-rod cylinder (Double acting type)	10 16 20 25 32	Refer to stroke table for details	S: With magnet	Blank: PT G: G T: NPT

[Note1] TN Series are all with magnet. [Note2] When the thread is standard, the code is blank.

Inner structure and material of major parts



NO.	Item	Material	NO.	Item	Material
1	Piston rod B	Φ32 S45C Other SUS304	12	Body	Aluminum alloy
2	Screw	Carbon steel	13	Bumper	TPU
3	Bumper	POM	14	Magnet holder	Φ10 SUS303 Other Aluminum alloy
4	Adjustable nut	Carbon steel	15	Piston seal	NBR
5	Piston rod A	S45C	16	Wear ring	Wear resistant material
6	Fixing plate	Free cutting steel	17	Piston	Φ10 SUS303 Other Aluminum alloy
7	Screw	Carbon steel	18	Seal ring	NBR
8	C clip	Spring steel	19	Bumper	TPU
9	Wiper seal	NBR	20	Back cover	Aluminum alloy
10	Front cover	Aluminum alloy	21	Magnet	Sintered metal(Neodymium-iron-boron)
11	O-ring	NBR			

Specification

Bore size(mm)	10	16	20	25	32
Acting type	Double acting				
Fluid	Air(to be filtered by 40 μm filter element)				
Operating pressure	0.15~1.0MPa(22~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature °C	-20~70				
Speed range mm/s	30~500				
Adjustable stroke mm	-10~0				
Stroke tolerance	≤100 ^{+1.0} ₀ >100 ^{+1.5} ₀				
Cushion type	Bumper				
Non-rotating tolerance [Note1]	±0.4°				
Port size [Note2]	M5×0.8				
	1/8"				

[Note1] Retract position.

[Note2]PT thread, G thread and NPT thread are available.

Add) Refer to P338 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)															Max.std stroke
10	10	20	30	40	50	60	70	80	90	100						100
16	10	20	30	40	50	60	70	80	90	100	125	150	175	200		200
20	10	20	30	40	50	60	70	80	90	100	125	150	175	200		200
25	10	20	30	40	50	60	70	80	90	100	125	150	175	200		200
32	10	20	30	40	50	60	70	80	90	100	125	150	175	200		200

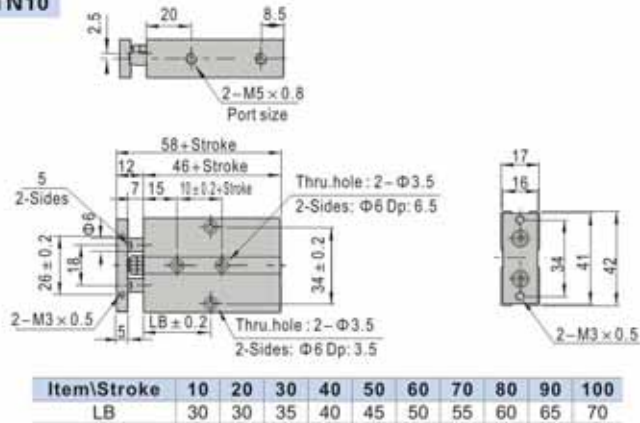
[Note] When the stroke less then or equal to 100mm, The dimensions of non-std stroke cylinder has the same dimensions as the next longer stroke std. stroke cylinder. e.g. 35mm stroke cylinder has the same dimensions of 40 std. stroke cylinder.

Twin-rod cylinder

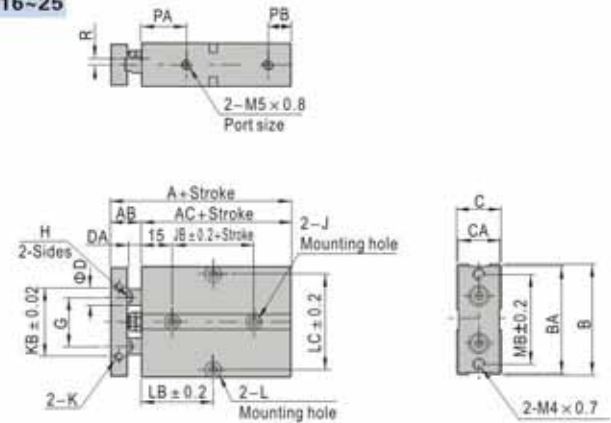
TN Series

Dimensions

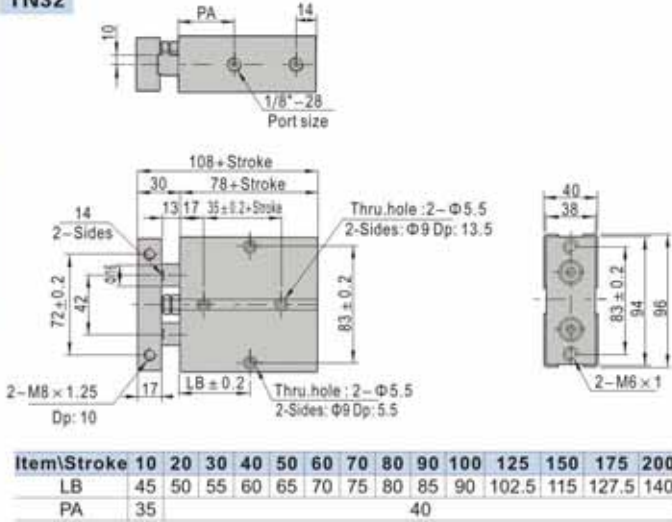
TN10



TN16~25



TN32



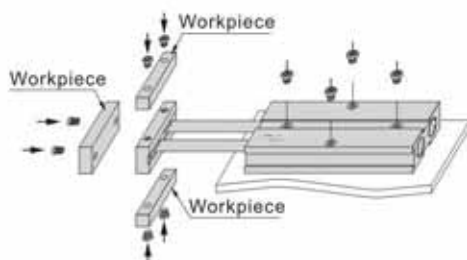
Bore size\Item	A	AB	AC	B	BA	C	CA	D	DA	G	H	J
16	68	15	53	54	53	21	20	8	7	24	6	Both sides: Φ7.5Dp:7.5Thru hole: Φ4.5
20	78	20	58	62	61	25	24	10	10	28	8	Both sides: Φ7.5Dp:7.5Thru hole: Φ4.5
25	81	19	62	73	72	30	29	12	9	34	10	Both sides: Φ7.5Dp:7.5Thru hole: Φ4.5

Bore size\Item	JB	K	KB	PA	PB	L	LC	MB	R
16	20	M4×0.7Dp:5	34	22	11	Both sides: Φ8Dp:4.5Thru hole: Φ4.5	47	47	3
20	20	M4×0.7Dp:5	44	25	12	Both sides: Φ8Dp:4.5Thru hole: Φ4.5	55	55	3.5
25	30	M4×0.7Dp:6	56	27	12	Both sides: Φ8Dp:4.5Thru hole: Φ4.5	66	66	6

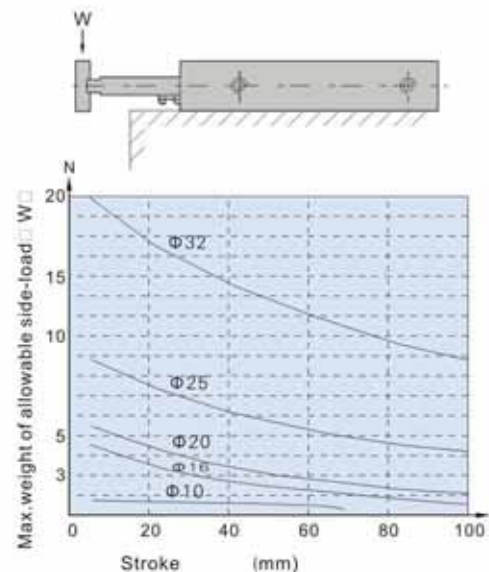
Bore size\Item	LB														
Stroke≤	10	20	30	40	50	60	70	80	90	100	125	150	175	200	
16	30	35	40	45	50	55	60	65	70	75	87.5	100	112.5	125	
20	35	35	40	45	50	55	60	65	70	75	87.5	100	112.5	125	
25	40	40	45	50	55	60	65	70	75	80	92.5	105	117.5	130	

Installation and application

1. How to mount workpiece:



2. Max. weight of allowable side-load



Twin-rod cylinder

TR Series



Symbol



Product feature

1. JIS standard is implemented.
2. The non-rotating precision is high and deflection of the end of piston rod is low, which is suitable for precise guide.
3. It adopts lengthening type sliding supporting guide. No additional lubricant is needed and it has good performance of guide.
4. Mounting holes on three sides facilitates multi-position mounting.
5. It is good resistance to bending and twisting moments.
6. Except for the axial, each side of the cylinder has installation orifices to provide several installation and fixation ways for the customers.
7. There are two groups of air intake and outlet at two sides of the cylinder for the actual selection.
8. Bumper in front of the barrel can adjust the stroke of cylinder and relieve impact.
9. Standard configuration of this series has magnet and the type without magnet is not available.

Ordering code

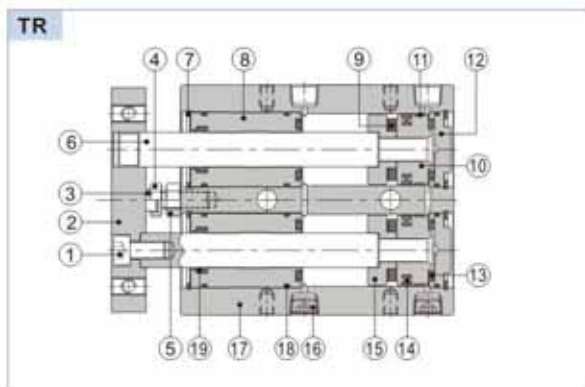
TR 20×50 S □

1 2 3 4 5

1 Model	2 Bore size	3 Stroke	4 Magnet [Note1]	5 Thread type [Note 2]
TR: Twin-rod cylinder (Double acting type)	6 10 16 20 25 32	Refer to stroke table for details	S: With magnet	Blank: PT G: G T: NPT

[Note1] TR Series are all with magnet. [Note2] When the thread is standard, the code is blank.

Inner structure and material of major parts



NO.	Item	Material	NO.	Item	Material
1	Screw	Carbon steel	10	Piston	Φ6,10 SUS304
2	Fixing plate	Aluminum alloy		Other	Aluminum alloy
3	Bumper	POM	11	Wear ring	Nylon 6
4	Screw	Free cutting steel	12	Back cover	Aluminum alloy
5	Nut	Carbon steel	13	Bumper	TPU
6	Piston rod	Φ25,32 Carbon steel	14	Piston seal	NBR
	Other	SUS304	15	Magnet holder	Φ6,10 SUS304
7	C clip	Spring steel		Other	Aluminum alloy
8	Front cover	Aluminum alloy	16	Screw	Carbon steel
	Φ32	Plastic	17	Body	Aluminum alloy
9	Magnet	Sintered metal (Neodymium-iron-boron)	18	Back cover O-ring	NBR
	Other		19	Wiper seal	NBR

Specification

Bore size(mm)	6	10	16	20	25	32
Acting type	Double acting					
Fluid	Air(to be filtered by 40 μm filter element)					
Operating pressure	0.15~1.0MPa(22~145psi)					
Proof pressure	1.5MPa(215psi)					
Temperature °C	-20~70					
Speed range mm/s	30~500					
Adjustable stroke mm	-5~0					
Stroke tolerance	≤100 ^{+1.0} ₀ >100 ^{+1.5} ₀					
Cushion type	Bumper					
Non-rotating tolerance [Note1]	±0.2°	±0.15°				±0.1°
Port size [Note2]	M5×0.8				1/8"	

[Note1] Retract position.

[Note2]PT thread, G thread and NPT thread are available.

Add) Refer to P338 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)															Max.std stroke
6	10	20	30	40	50											50
10	10	20	30	40	50	60	70	80	90	100						100
16	10	20	30	40	50	60	70	80	90	100	125	150	175	200		200
20	10	20	30	40	50	60	70	80	90	100	125	150	175	200		200
25	10	20	30	40	50	60	70	80	90	100	125	150	175	200		200
32	10	20	30	40	50	60	70	80	90	100	125	150	175	200		200

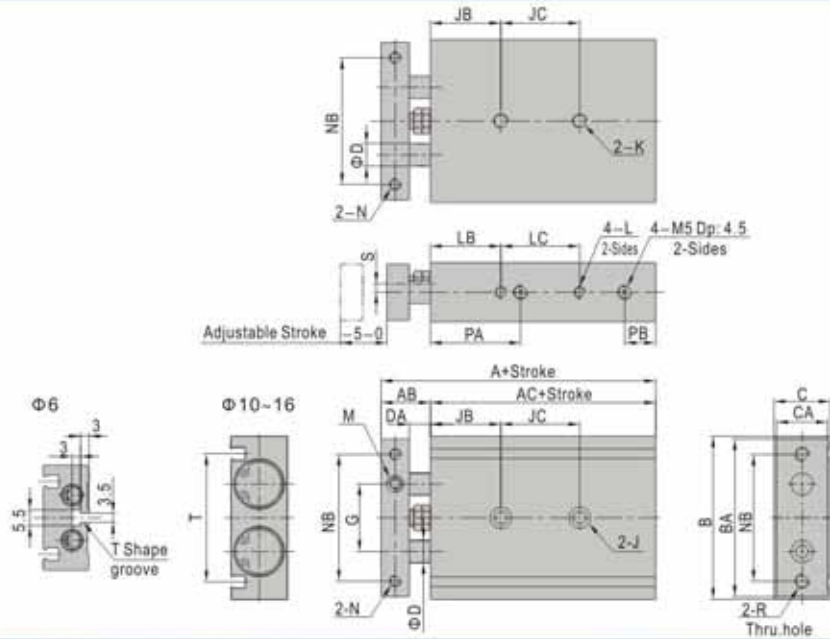
[Note] When the stroke less then or equal to 100mm, The dimensions of non-std stroke cylinder has the same dimensions as the next longer stroke std. stroke cylinder. e.g. 35mm stroke cylinder has the same dimensions of 40 std. stroke cylinder.

Twin-rod cylinder

TR Series

Dimensions

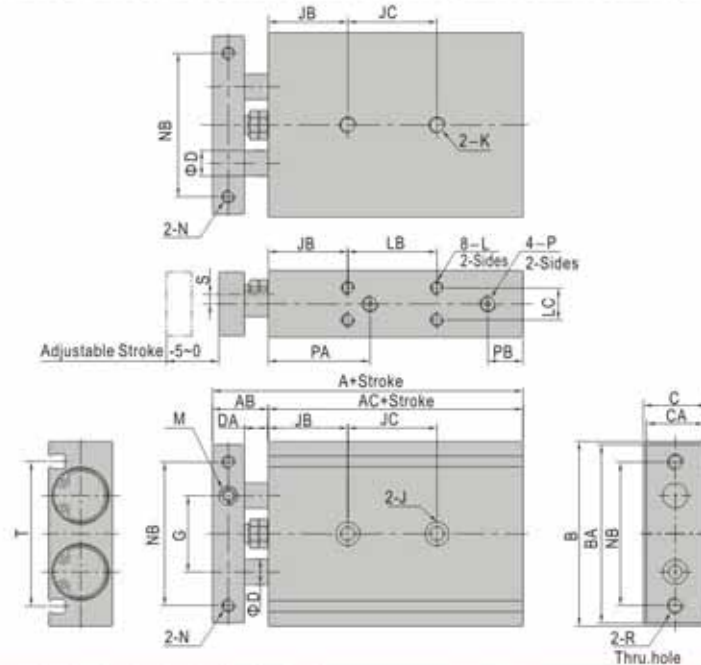
TR6~16



Bore size\Item Stroke											JC LC								T
	A	AB	AC	B	BA	C	CA	D	DA	G	10-25	30-50	60-80	90-100	125	150	175	200	
6	58.5	13.5	45	37	35	16	14	4	8	16	JC=10+Stroke/2 LC=13+Stroke		-	-	-	-	-	-	26
10	72	17	55	46	44	17	15	6	9	20	30	40	50	60	-	-	-	-	36.5
16	79	19	60	58	56	20	18	8	9	25	25	35	45	55	65	75	145	145	46.5

Bore size\Item Stroke	J				JB	K	L	LB	M	N	NB	PA	PB	R	S
6	One side: $\Phi 6.5$ Dp:3.5Thru. hole: $\Phi 3.5$				13	-	M3×0.5Dp:4.5	10	M3×0.5	M3×0.5Thru. hole	28	24.5	6.5	M3×0.5	4.5
10	One side: $\Phi 6.5$ Dp:3.5Thru. hole: $\Phi 3.5$				20	M4×0.7Dp:7	M3×0.5Dp:5	20	M5×0.8	M3×0.5Thru. hole	35	30	8	M4×0.7	3.5
16	One side: $\Phi 8.0$ Dp:4.5Thru. hole: $\Phi 4.5$				30	M5×0.8Dp:8	M4×0.7Dp:5	30	M6×1.0	M4×0.7Thru. hole	45	38	8	M5×0.8	5

TR20~32



Bore size\Item Stroke											JC LB								P	PA	PB
	A	AB	AC	B	BA	C	CA	D	DA	G	JB	10-25	30-50	60-100	125	150	175	200			
20	94	24	70	64	62	25	23	10	12	28	30	30	40	60	80	80	100	100	M5×0.8	46	9
25	96	24	72	80	78	30	28	12	12	35	30	30	40	60	80	80	100	100	1/8"	43	9
32	112	30	82	98	96	38	36	16	14	44	30	40	50	70	90	90	110	110	1/8"	53	10

Bore size\Item Stroke	J				K	L	LC	M	N	NB	R	S	T
20	One side: $\Phi 9.5$ Dp:5.5Thru. hole: $\Phi 5.5$				M6×1.0Dp:10	M4×0.7Dp:7	9.5	M8×1.25	M4×0.7Dp:6	50	M5×0.8	6.5	52
25	One side: $\Phi 11$ Dp:6.5Thru. hole: $\Phi 7$				M8×1.25Dp:12	M5×0.8Dp:7	13	M8×1.25	M5×0.8Dp:7.5	60	M6×1.0	9	61
32	One side: $\Phi 11$ Dp:6.5Thru. hole: $\Phi 7$				M8×1.25Dp:12	M5×0.8Dp:7	20	M10×1.5	M5×0.8Dp:8	75	M6×1.0	11.5	73

Tri-rod cylinder

TCL,TCM Series



Symbol



Product feature

1. JIS standard is implemented.
2. Two guides of special bearing steel and linear bearing or bronze bearing guide are used to prevent rotating. They can bear high torque and radial load.
★Note: Steel ball linear bearing: It is suitable for elevation action of cylinder or the situation requiring high precision and high bearing ability, especially for the situation requiring low friction action process.
Bronze sliding bearing: It is suitable for the action that has radial load resistance. Compared with normal cylinder of same use, the horizontal impact resistance is doubled and it has stronger torsion rigidity.
3. Drive unit and guide unit are in the same barrel that no additional accessories are needed with minimal space required. The air intake is optional and it is convenient to install.
4. The bottom, back side and fixing plate of main body respectively has two exact orientation orifices (See ΦPA orifice and the orifice in XX point), which can provide orientation installation with high precision for the special situation.
5. Options of switch mounting with provision 4 mounting slots.
6. Special design of main body provides multi-mount;

Ordering code

TC M 50×50 S □

1 2 3 4 5 6

1 Model	2 Bearing type	3 Bore size	4 Stroke	5 Magnet [Note1]	6 Thread type [Note 2]
TC: Tri-rod cylinder (Double acting type)	M: Bronze bearing	6	Refer to stroke table for details	S: With magnet	Blank: PT G: G T: NPT
		10			
		12			
		16			
		20			
		25			
	L: Linear bearing M: Bronze bearing	32			
		40			
		50			
		63			
		80			
		100			

[Note1] TC Series are all with magnet. [Note2] When the thread is standard, the code is blank.

Specification

Bore size(mm)	6	10	12	16	20	25	32	40	50	63	80	100	
Acting type	Double acting												
Fluid	Air(to be filtered by 40 μ m filter element)												
Operating pressure	0.15~0.7MPa(22~100psi)						0.15~1.0MPa(22~145psi)						
Proof pressure	1.2MPa(175psi)						1.5MPa(215psi)						
Temperature ℃	-20~70												
Speed range mm/s	50~500						30~500			50~400			
Stroke tolerance	≤100 ^{+1.0} ₀ >100 ^{+1.5} ₀												
Cushion type	Bumper												
Non-rotating tolerance [Note1]	TCL	-						±0.08°	±0.07°	±0.06°	±0.05°	±0.04°	
	TCM	±0.1°						±0.10°	±0.09°	±0.08°	±0.06°	±0.05°	
Port size [Note2]	M3×0.5						M5×0.8		1/8"		1/4"		3/8"

[Note1] Retract position.

[Note2]PT thread, G thread and NPT thread are available.

Add) Refer to P338 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)	Max.std stroke
6	5 10 15 20	20
10	5 10 15 20 25 30	30
12	10 20 25 30 40 50 60 70 75 80 90 100 125 150	150
16	10 20 25 30 40 50 60 70 75 80 90 100 125 150 175 200	200
20 25	20 25 30 40 50 60 70 75 80 90 100 125 150 175 200 225 250	250
32 40 50 63	25 30 40 50 60 70 75 80 90 100 125 150 175 200 225 250	250
80 100	25 30 40 50 60 70 75 80 90 100 125 150 175 200 225 250	250

[Note] When the discrepancy between non-standard stroke and standard stroke is 1~5mm, The dimensions of non-std stroke cylinder has the same dimensions as the next longer stroke std. stroke cylinder. e.g. 86mm stroke cylinder has the same dimensions of 90 std. stroke cylinder. But 84mm stroke cylinder should be ordered by non-standard stroke.

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

Slide table cylinder

STW Series

Specification

Bore size(mm)	10	16	20	25	32
Acting type	Double acting				
Fluid	Air(to be filtered by 40μm filter element)				
Operating pressure	0.15~1.0MPa(22~145psi)(1.5~10bar)				
Proof pressure	1.5MPa(215psi)(15bar)				
Temperature	-20~70				
Speed range mm/s	30~500				
Stroke tolerance	Strokes≤100 ^{+1.0} ₀ Stroke>100 ^{+1.5} ₀				
Cushion type	Shock absorber				
Non-rotating tolerance [Note1]	±0.1°	±0.05°			±0.03°
Port size [Note2]	M5×0.8				1/8"

[Note1] Retract position.

[Note2]PT thread, G thread and NPT thread are available.

Add) Refer to P338 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)								Max.std stroke
10	25	50	75	100					100
16	25	50	75	100	125	150	175	200	200
20	25	50	75	100	125	150	175	200	200
25	25	50	75	100	125	150	175	200	200
32	25	50	75	100	125	150	175	200	200

[Note] Consult us for non-standard stroke.



Symbol



Product feature

- Both body and fixing plates can be installed.
- Three sets of air inlet and outlet are available for customer to choose and convenient for piping.
- The structure of double-piston rod provides the good performance of anti-bending and anti-torsion and can bear relatively stronger movement radial and load.
- Buffer device such as the integrated shock absorber can effectively slowdown impact velocity and extend life.

Ordering code

STW B 25 x 50 S □

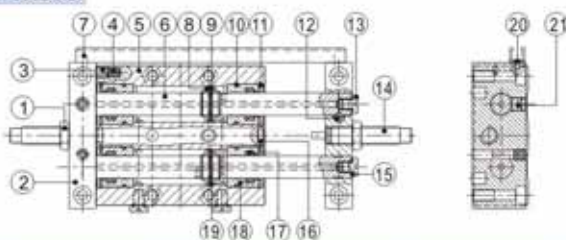
1 2 3 4 5 6

1 Model	2 Mounting type	3 Bore size	4 Stroke	5 Magnet	6 Thread type [Note1]
STW: Slide table cylinder (Double acting type)	A: Fixing plate mounted	10 16 20 25 32	Refer to stroke table for details	S: With magnet	Blank: PT G: G T: NPT
	B: Body mounted				

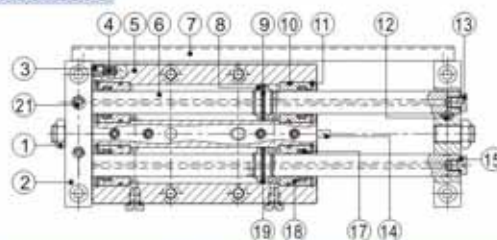
[Note1] When the thread is standard, the code is blank.

Inner structure and material of major parts

STWA16X25S



STWA16X50~200S



	Item	Material		Item	Material	NO.	Item	Material	NO.	Item	Material
1	Hexagon nut	Carbon steel	6	Piston rod	Carbon steel	11	C clip	Spring steel	17	O-ring	NBR
2	Fixing plate	Aluminum alloy	7	Sensor switch mounting rail	Aluminum alloy	12	Pin	Carbon steel	18	Front cover	Aluminum alloy
3	Washer	NBR		13	Plug screw	Carbon steel	19	Piston seal	NBR		
4	Magnet	Sintered metal	8	Piston	Aluminum alloy	14	Shock absorber	Combination	20	Screw	Carbon steel
		(Neodymium-iron-boron)	9	NBR	15	O-ring	NBR	21	Countersink screw	Carbon steel	
5	Body	Aluminum alloy	10	NBR	16	Bumper	Carbon steel				

Compact slide cylinder

HLH Series

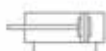


Specification

Bore size(mm)	6	10	16	20
Guide rail width mm	5	7	9	12
Acting type	Double acting			
Fluid	Air(to be filtered by 40μm filter element)			
Operating pressure	0.15~0.7MPa(22~100psi)(1.5~7.0bar)			
Proof pressure	1.2MPa(175psi)(12.0bar)			
Temperature	-20~70			
Speed range mm/s	50~500			
Allowable kinetic energy J	0.008	0.025	0.05	0.1
Stroke tolerance	+1.0 0			
Cushion type	Bumper			
Sensor switches [Note1]	CM5H, DMSH(S)			
Port size	M5×0.8			

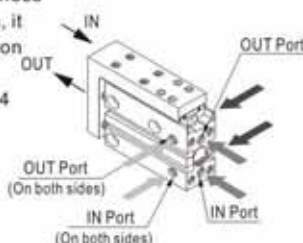
[Note1] Refer to P338 for detail of sensor switch.

Symbol



Product feature

1. Miniature linear roller ball bearing integrated with cylinder.
2. With the excellent straightness and non-rotation precision, it is more suitable for precision assembly.
3. Mounting is possible from 4 directions.
4. Piping is possible from 3 directions.



Stroke

Bore size (mm)	Standard stroke (mm)											Max.std stroke
6	5	10	15	20	25	30						30
10	5	10	15	20	25	30	40	50				50
16	5	10	15	20	25	30	40	50	60			60
20	5	10	15	20	25	30	40	50	60			60

[Note] Consult us for non-standard stroke.

Ordering code

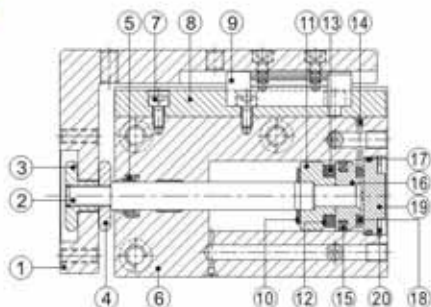
HLH 20 x 30 S

1 2 3 4

1 Model	2 Bore size	3 Stroke	4 Magnet
HLH: Compact slide cylinder(Double acting type)	6 10 16 20	Refer to stroke table for details	S: With magnet

Inner structure and material of major parts

HLH



NO.	Item	Material	NO.	Item	Material
1	Slide table	Aluminum alloy	12	Magnet washer	NBR
2	Piston rod	Stainless steel	13	Magnet	Sintered metal (Neodymium-iron-boron)
3	Hexagon nut	Carbon steel	14	Steel ball	SUS304
4	Hexagon nut	Carbon steel	15	Piston seal	NBR
5	Rod seal	NBR	16	Piston	Aluminum alloy
6	Body	Aluminum alloy	17	O-ring	NBR
7	Screw	Carbon steel	18	Bumper	TPU
8	Linear guide	Stainless steel	19	Back cover	Aluminum alloy
9	Slide block		20	C clip	Spring steel
10	Bumper	TPU			
11	Magnet holder	Aluminum alloy			

Compact slide cylinder(Recirculating linear ball bearing)

HLQ、HLQL Series



Specification

Bore size(mm)	6	8	12	16	20	25
Guide rail width(mm)	10	10	7	9	9	12
Number of guide rail	Single guide rail		Double guide rail			
Acting type	Double acting					
Fluid	Air(to be filtered by 40 μm filter element)					
Operating pressure	0.15~0.7MPa(22~100psi)(1.5~7.0bar)					
Proof pressure	1.2MPa(175psi)(12.0bar)					
Temperature °C	-20~70					
Speed range mm/s	50~500					
Stroke tolerance	Stroke≤100 ^{+1.0} ₀ Stroke>100 ^{+1.5} ₀					
Cushion type	Bumper(Both ends), Shock absorber					
Sensor switches	CMSS, DMSH(S)					
Port size [Note1]	M5 x 0.8				1/8"	

[Note1] PT thread, G thread, NPT thread are available.

Refer to P338 for detail of sensor switch.

Symbol



Stroke

Bore size (mm)	Standard stroke (mm)											Max.std stroke
6	10	20	30	40	50							50
8	10	20	30	40	50	75						75
12	10	20	30	40	50	75	100					100
16	10	20	30	40	50	75	100	125				125
20	10	20	30	40	50	75	100	125	150			150
25	10	20	30	40	50	75	100	125	150			150

[Note] Consult us for non-standard stroke.

Ordering code

HLQ 20 × 30 S AS □

1 2 3 4 5 6

1 Model	2 Bore Size	3 Stroke	4 Magnet	5 Adjuster option [Note1]	6 Thread type [Note2]
HLQ: Compact slide cylinder (Double acting type) (Recirculating linear ball bearing) HLQL: Symmetrical Compact slide cylinder (Double acting type) (Recirculating linear ball bearing)	6 8 12 16 20 25	Refer to stroke table for details	S: With magnet	Blank: Without adjuster(Basic type)	Blank: PT G: G T: NPT
				A: Adjustable rubber stopper(Both ends) 	
				B: Shock absorber(Both ends) 	
				AS: Adjustable rubber stopper(Extension) 	
				BS: Shock absorber(Extension) 	
				AF: Adjustable rubber stopper(Retractio) 	
				BF: Shock absorber(Retractio) 	

[Note1] B type, BS type, BF type are unavailable for bore size of Φ6. [Note2] When the thread is standard, the code is blank.

Compact slide cylinder(Recirculating linear ball bearing) HLQ、HLQL Series

Table 1: Maximum allowable kinetic energy(Emax)
Maximum allowable applied load(Wmax)

Model	Max. allowable kinetic energy Emax(J)			Max. allowable applied load Wmax(N)
	Basic type	Rubber stopper type	Shock absorber type	
HLQ6	0.01	0.01	-	4
HLQ8	0.024	0.024	0.048	8
HLQ12	0.05	0.05	0.1	15
HLQ16	0.1	0.1	0.2	30
HLQ20	0.13	0.13	0.26	40
HLQ25	0.22	0.22	0.44	70

Table 2: Maximum allowable moment(Nm).
Correction value for center position distance of moment(mm)

Bore size	Stroke	Static moment			Dynamic moment			Correction value	
		Mpo _{max}	Myo _{max}	Mro _{max}	Mp _{max}	My _{max}	Mr _{max}	A	B
6	10	3.3	3.8	2.6	0.7	0.7	0.6	30	7
	20	3.3	3.8	2.6	0.7	0.8	0.6	40	
	30	3.3	3.8	2.6	0.7	0.8	0.6	50	
	40	7.2	7.9	3.6	1.3	1.3	0.6	60	
	50	12.4	12.7	4.7	1.8	1.8	0.6	70	
8	10	10.1	9.1	8.8	2.5	2.5	2.0	30	7
	20	10.1	9.1	8.8	2.6	2.6	2.0	40	
	30	10.1	9.1	8.8	2.8	2.8	2.0	50	
	40	12.4	10.8	10.1	3.4	3.4	2.3	60	
	50	23.6	24.8	13.9	4.4	4.4	2.1	70	
12	75	32.8	35.3	16.4	4.6	4.6	1.8	95	11
	10	8.5	8.5	13.6	2.5	2.5	4	32	
	20	8.5	8.5	13.6	2.5	2.5	4	44	
	30	8.5	8.5	13.6	2.5	2.5	4	54	
	40	8.5	8.5	13.6	2.5	2.5	4	62	
16	50	8.5	8.5	13.6	2.5	2.5	4	72	12
	75	52.3	52.3	85.6	18.9	18.9	13	115	
	100	53.9	53.9	86.9	19.5	19.5	13	142	
	10	33.6	33.6	35.2	8.4	8.4	8.8	49	
	20	33.6	33.6	35.2	8.4	8.4	8.8	49	
20	30	33.6	33.6	35.2	8.4	8.4	8.8	59	14
	40	33.6	33.6	35.2	8.4	8.4	8.8	69	
	50	33.6	33.6	35.2	8.4	8.4	8.8	79	
	75	70.2	70.2	62.5	28.1	28.1	25	120	
	100	76.6	76.6	62.5	38.3	38.3	25	150	
25	125	78	78	62.5	39	39	25	175	17
	10	34.8	34.8	36.8	8.7	8.7	9.2	53	
	20	34.8	34.8	36.8	8.7	8.7	9.2	53	
	30	34.8	34.8	36.8	8.7	8.7	9.2	63	
	40	34.8	34.8	36.8	8.7	8.7	9.2	73	
20	50	34.8	34.8	36.8	8.7	8.7	9.2	83	14
	75	70.2	70.2	74.5	28.1	28.1	29.7	123	
	100	76.6	76.6	74.5	38.3	38.3	29.7	157	
	125	78	78	74.5	39	39	29.7	178	
	150	98.4	98.4	74.5	49.2	49.2	29.7	210	
25	10	56.7	56.7	51	16.2	16.2	17	60	17
	20	56.7	56.7	51	16.2	16.2	17	60	
	30	56.7	56.7	51	16.2	16.2	17	70	
	40	56.7	56.7	51	16.2	16.2	17	80	
	50	56.7	56.7	51	16.2	16.2	17	90	
25	75	122.5	122.5	138.5	49	49	55.4	130	17
	100	173.8	173.8	138.5	79	79	55.4	168	
	125	217	217	138.5	108.6	108.6	55.4	205	
	150	221.8	221.8	138.5	110.9	110.9	55.4	230	

Note: Symbol and unit

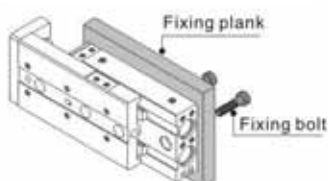
Symbol	Item	Unit
A, B	Correction value for center position distance of moment	mm
a	Acceleration of inertia	-
E	Kinetic energy	J
Ea	Allowable kinetic energy	J
Emax	Maximum allowable kinetic energy	J
g	Acceleration of gravity g=9.81	m/s ²
K	Mounting work coefficient	-
L1, L2, L3	Overhang	mm
Mp, My, Mr	Dynamic moment(Pitch, Yaw, Roll)	Nm
Mp _{max} , My _{max} , Mr _{max}	Maximum allowable dynamic moment (Pitch, Yaw, Roll)	Nm
Mpo, Myo, Mro	Static moment(Pitch, Yaw, Roll)	Nm
Mpo _{max} , Myo _{max} , Mro _{max}	Maximum allowable static moment (Pitch, Yaw, Roll)	Nm
Va	Average speed	mm/s
W	Applied load	N
Wmax	Maximum allowable applied load	N
β	Applied load coefficient	-

Installation and application

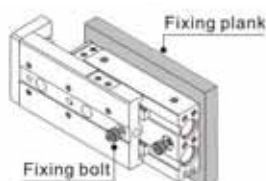
1. How to mount cylinder:

1.1) Cylinder can to be mounted from 3 directions

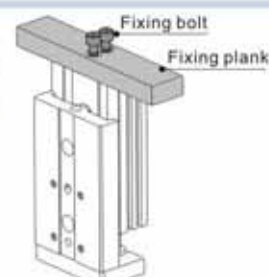
Vertical Mounting(Body thread holes)



Vertical Mounting(Body through holes)



Axial Mounting (Body thread holes)



1.2) When mounting a compact slide cylinder, screws of appropriate length should be used and tightened properly within the maximum tightening torque.

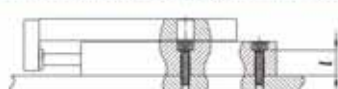
If screws are tightened beyond designed limits, malfunction may occur. If they are tightened insufficiently, it may result in sliding or falling off from its position.

Vertical Mounting(Body thread holes)



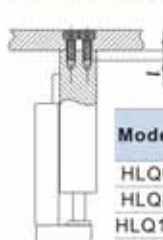
Model	Bolt used	Max. tightening torque (Nm)	Max. screw-in depth(mm)
HLQ6	M4 × 0.7	2.1	8
HLQ8	M4 × 0.7	2.1	8
HLQ12	M5 × 0.8	4.4	10
HLQ16	M6 × 1.0	4.4	10
HLQ20	M6 × 1.0	7.4	12
HLQ25	M8 × 1.25	18.0	16

Vertical Mounting(Body through holes)



Model	Bolt used	Max. tightening torque (Nm)	Max. screw-in depth(mm)
HLQ6	M3 × 0.5	1.2	8.0
HLQ8	M3 × 0.5	1.2	9.6
HLQ12	M4 × 0.7	2.8	13.4
HLQ16	M5 × 0.8	5.7	16.7
HLQ20	M5 × 0.8	5.7	22.0
HLQ25	M6 × 1.0	10.0	27.0

Axial Mounting(Body thread holes)



Model	Bolt used	Max. tightening torque (Nm)	Max. screw-in depth(mm)
HLQ6	M2.5 × 0.45	0.5	3.5
HLQ8	M3 × 0.5	0.9	4.0
HLQ12	M4 × 0.7	2.1	6.0
HLQ16	M5 × 0.8	4.4	7.0
HLQ20	M5 × 0.8	4.4	8.0
HLQ25	M6 × 1.0	7.4	10.0

Compact slide cylinder(Roller bearing)

HLS, HLSSL Series



Specification

Bore size(mm)	6	8	12	16	20	25
Acting type	Double acting					
Fluid	Air(to be filtered by 40 μm filter element)					
Operating pressure	0.15~0.7MPa(22~100psi)(1.5~7.0bar)					
Proof pressure	1.2MPa(175psi)(12.0bar)					
Temperature °C	-20~70					
Speed range mm/s	50~500					
Stroke tolerance	Stroke ≤ 100 ^{+1.0} ₀ Stroke > 100 ^{+1.5} ₀					
Cushion type	Bumper(Both ends), Shock absorber					
Sensor switches	CMSS, DMSH(S)					
Port size [Note1]	M5 × 0.8				1/8"	

[Note1] PT thread, G thread, NPT thread are available.

Refer to P338 for detail of sensor switch.

Symbol



Stroke

Bore size (mm)	Standard stroke (mm)										Max.std stroke
6	10	20	30	40	50						50
8	10	20	30	40	50	75					75
12	10	20	30	40	50	75	100				100
16	10	20	30	40	50	75	100	125			125
20	10	20	30	40	50	75	100	125	150		150
25	10	20	30	40	50	75	100	125	150		150

[Note] Consult us for non-standard stroke.

Ordering code

HLS 20 × 30 S AS □

1 2 3 4 5 6

1 Model	2 Bore Size	3 Stroke	4 Magnet	5 Adjuster option [Note1]	6 Thread type [Note2]
HLS: Compact slide cylinder (Double acting type) (Roller bearing) HLSSL: Symmetrical Compact slide cylinder (Double acting type) (Roller bearing)	6 8 12 16 20 25	Refer to stroke table for details	S: With magnet	Blank: Without adjuster(Basic type)	Blank: PT G: G T: NPT
				A: Adjustable rubber stopper(Both ends) 	
				B: Shock absorber(Both ends) 	
				AS: Adjustable rubber stopper(Extension) 	
				BS: Shock absorber(Extension) 	
				AF: Adjustable rubber stopper(Retractio 	
				BF: Shock absorber(Retractio 	

[Note1] B type, BS type, BF type are unavailable for bore size of Φ6. [Note2] When the thread is standard, the code is blank.

Rodless magnetic cylinder

RMS Series



Specification

Series name	RMS Series	RMS, RMSF Series						RMSP Series		
Bore size (mm)	10	16	20	25	32	40		16	20	32
Acting type	Double acting									
Fluid	Air (to be filtered by 40 μm filter element)									
Operating pressure	0.15–0.7MPa (22–100psi) (1.5–7bar)									
Proof pressure	1.2MPa (175psi) (12.0bar)									
Temperature °C	-20–70									
Speed range mm/s	50–400									
Stroke tolerance mm	0–250 ^{+1.0} ₀ 251–1000 ^{+1.5} ₀ 1001– ^{+2.0} ₀									
Cushion type	Bumper		Variable cushion+Fixed cushion							
Port size [Note1]	M5×0.8		1/8"		1/4"		M5×0.8		1/8"	
Safe holding force N	55	140	220	350	550	900	140	220	550	

[Note1] PT thread, G thread and NPT thread are available.

Stroke

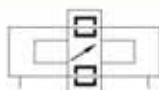
Bore size (mm)	Standard stroke (mm)															Max.std stroke	
10	50	100	150	200	250	300											1000
16	50	100	150	200	250	300	350	400	450	500							1500
20	50	100	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	2000
25	50	100	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	2500
32	50	100	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	3000
40	50	100	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	3000

[Note1] Consult us for non-standard stroke.

Product feature

1. This magnetic cylinder is basically a pneumatic rodless cylinder featuring a mobile piston fitted with annular magnets. The mobile carriage is also equipped with magnets to provide magnetic coupling (carriage/piston). The carriage slide freely along the main tube.
2. It is dust-proof as the isolation between the carriage and piston.
3. It is compact in space.
4. The non adjustable rubber bumpers and the adjustable pneumatic cushioning on both ends of the cylinder ensure the smooth action.

Symbol



Ordering code

RMS □ 20 × 200 □ □

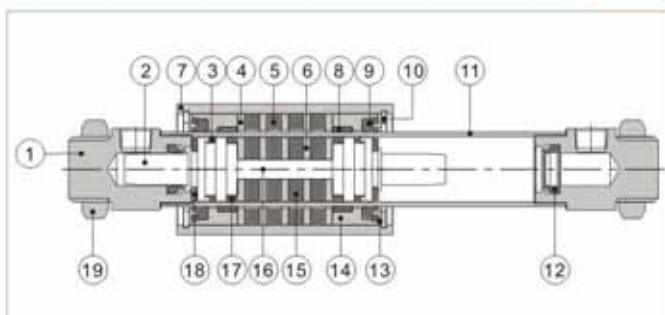
1 2 3 4 5 6

1 Model	2 Version	3 Bore size	4 Stroke	5 Mounting type [Note1]	6 Thread type [Note2]
RMS: Rodless magnetic cylinder	Blank: basic version P: P size version F: F size version	10 16 20 25 32 40 16 20 32 16 20 25 32 40	Refer to stroke table for details	Blank: non bracket LB: LB type FA: FA type	Blank: PT G: G T: NPT

[Note1] RMSF40 series do not have FA mounting accessories.

[Note2] Blank on thread code means metric M thread. There is only metric thread for Φ16. If G or NPT thread is needed, please comment.

Inner structure and material of major parts



NO.	Item	Material	NO.	Item	Material
1	End cap	Aluminum alloy	11	Barrel	Stainless steel
2	Piston	Aluminum alloy	12	Cushion O-ring	TPU
3	Piston seal	TPU	13	Washer	Stainless steel
4	Magnet washer	Carbon steel	14	Cover	Aluminum alloy
5	Magnet	Rare-earth material	15	Magnet	Rare-earth material
6	Magnet washer	Carbon steel	16	Connecting rod	Stainless steel
7	Body	Aluminum alloy	17	Wear ring	Wear resistant material
8	Wear ring	Wear resistant material	18	Bumper	NBR
9	Scraping dust ring	Plastics	19	Nut	Stainless steel
10	C Clip	Spring steel			

Rodless magnetic cylinder(With guide)

RMT Series

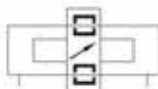


Specification

Bore size(mm)	16	20	25	32	40
Acting type	Double acting				
Fluid	Air(to be filtered by 40 μm filter element)				
Operating pressure	0.2~0.7MPa(30~100psi)(2.0~7bar) 0.25~0.7MPa(36~100psi)(2.5~7bar)				
Proof pressure	1.2MPa(175psi)(12.0bar)				
Temperature ℃	-20~70				
Speed range mm/s	50~400				
Stroke tolerance mm	0~250 ^{+1.0} ₀ 251~1000 ^{+1.5} ₀ 1001~ ^{+2.0} ₀				
Cushion type	Fixed cushion Shock absorber(Available)				
Safe holding force N	140 220 350 550 900				
Port size [Note1]	M5×0.8 1/8" 1/4"				

[Note1] PT thread, G thread and NPT thread are available.
Add) Refer to P338 for detail of sensor switch.

Symbol



Product feature

1. This magnetic cylinder is basically a pneumatic rodless cylinder featuring a mobile piston fitted with annular magnets. The mobile carriage is also equipped with magnets to provide magnetic coupling (carriage/piston). The carriage slide freely along the main tube.
2. It is dust-proof as the isolation between the carriage and piston.
3. It is compact in space.
4. The non adjustable rubber bumpers and the adjustable pneumatic cushioning on both ends of the cylinder ensure the smooth action. If shock absorber be used, the cushioning effect is more perfection.
5. Double guides ensure high precision and can endure proper side load or prejudicial load.

Stroke

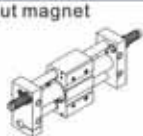
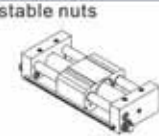
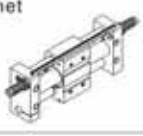
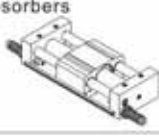
Bore size (mm)	Standard stroke (mm)																Max.std stroke
16	50	100	150	200	250	300	350	400	450	500							750
20	50	100	150	200	250	300	350	400	450	500	600	700	750	800			1000
25	50	100	150	200	250	300	350	400	450	500	600	700	750	800			1500
32	50	100	150	200	250	300	350	400	450	500	600	700	750	800			1500
40	50	100	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	1500

[Note] Consult us for non-standard stroke.

Ordering code

RMT 20 × 100 S □ □

1 2 3 4 5 6

1 Model	2 Bore size	3 Stroke	4 Magnet	5 Cushion type	6 Thread type [Note1]
RMT: Rodless magnetic cylinder(With guide)	16 20 25 32 40	Refer to stroke table for details	Blank: Without magnet 	Blank: With two adjustable nuts 	Blank: PT G: G T: NPT
			S: With magnet 	A: With two shock absorbers 	

[Note1] Blank on thread code means metric M thread. There is only metric thread for Φ16. If G or NPT thread is needed, please comment.

Rodless magnetic cylinder(With exactitude guide)

RMTL Series



Symbol



Specification

Bore size(mm)	10	16	20	25	32	40
Acting type	Double acting					
Fluid	Air(to be filtered by 40μm filter element)					
Operating pressure	0.2~0.7MPa(30~100psi)(2.0~7bar)					
Proof pressure	1.2MPa(175psi)(12.0bar)					
Temperature	-20~70					
Speed range mm/s	50~500					
Stroke tolerance mm	0~250 ^{+1.0} ₀		251~1000 ^{+1.5} ₀		1001~ ^{+2.0} ₀	
Cushion type	Fixed cushion			Shock absorber(Available)		
Safe holding force N	55	140	220	350	550	900
Port size [Note1]	M5×0.8			1/8"		1/4"

[Note1] PT thread, G thread and NPT thread are available.
Add) Refer to P338 for detail of sensor switch.

Product feature

1. This magnetic cylinder is basically a pneumatic rodless cylinder featuring a mobile piston fitted with annular magnets. The mobile carriage is also equipped with magnets to provide magnetic coupling (carriage/piston). The carriage slide freely along the main tube.
2. It is dust-proof as the isolation between the carriage and piston.
3. It is compact in space.
4. The non adjustable rubber bumpers and the adjustable pneumatic cushioning on both ends of the cylinder ensure the smooth action. If shock absorber be used, the cushioning effect is more perfection.
5. Double guides ensure high precision and can endure proper side load or prejudicial load.

Stroke

Bore size (mm)	Standard stroke (mm)																Max.std stroke
10	50	100	150	200	250	300											500
16	50	100	150	200	250	300	350	400	450	500							750
20	50	100	150	200	250	300	350	400	450	500	600	700	750	800			1000
25	50	100	150	200	250	300	350	400	450	500	600	700	750	800			1500
32	50	100	150	200	250	300	350	400	450	500	600	700	750	800			1500
40	50	100	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	1500

[Note] Consult us for non-standard stroke.

Ordering code

RMTL 20 × 100 S □ □

1 2 3 4 5 6

① Model	② Bore size	③ Stroke	④ Magnet	⑤ Cushion type [Note1]	⑥ Thread type
RMTL: Rodless magnetic cylinder (With exactitude guide)	10 16	Refer to stroke table for details	Blank: Without magnet	Blank: With two adjustable nuts	Blank: M5
	20 25 32 40		S: With magnet	A: With two shock absorbers	Blank: PT G: G T: NPT

[Note1] When A type is selected, the two adjustable nuts are added too.

Solenoid valve

Air Cylinder

Air filter & Regulator

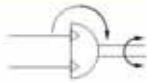
Pneumatic Contents

Rotary table cylinder

HRQ Series



Symbol



Specification

Specification	2	3	7	10	20	30	50	70	100	200
Acting type	Double rack and pinion(Double acting)									
Fluid	Air(to be filtered by 40 μm filter element)									
Operating pressure	0.15~0.7MPa(22~100psi)(1.5~7.0bar)									
With adjustment bolt										
With internal shock absorber	-									
Proof pressure	1.2MPa(175psi)(12.0bar)									
Temperature	-20~70									
Angle adjustment range	0~190°									
Repeatability	0.2°									
With adjustment bolt										
With internal shock absorber	-									
Theoretic moment (Nm)(0.5MPa)	0.2	0.33	0.63	1.1	2.2	2.8	5.0	7.5	11.0	22.0
Cushion type	Rubber bumper									
With adjustment bolt										
With internal shock absorber	Shock absorber									
Port size	M5×0.8									
End ports	1/8" [Note1]									
Side ports	M5×0.8									
Weight g	120	175	270	535	940	1260	2060	2890	4100	7650

[Note1] PT thread, G thread and NPT thread are available.

Add) Refer to P338 for detail of sensor switch.

Product feature

1. Rack and pinion design, stable functioning.
2. Double cylinder structure, double output could be achieved.
3. The manufacturing precision of working platform is high, and is easy for installation, and is of precise orientation.
4. The center of working platform has a through hole, and pipe can be located and passed through this hole;
5. Guide hole is designed on the both side of the cylinder body (10~200) or undersurface (2~7), which is simply to install.
6. Two modes of buffer could be chosen, adjustment bolt buffer and internal shock absorber, the maximum buffer energy of internal shock absorber is 3-5 times that of adjustment bolt buffer.

Maximum allowed movement energy and rotation times

Model	Maximal allowed energy (J)		Rotation times (s/90°)	
	With adjustment bolt	With internal shock absorber	With adjustment bolt	With internal shock absorber
HRQ2	0.0015	-	0.2~0.7	-
HRQ3	0.002	-	0.2~0.7	-
HRQ7	0.006	-	0.2~1.0	-
HRQ10	0.01	0.04	0.2~1.0	0.2~0.7
HRQ20	0.025	0.12	0.2~1.0	0.2~0.7
HRQ30	0.05	0.12	0.2~1.0	0.2~0.7
HRQ50	0.08	0.30	0.2~1.0	0.2~0.7
HRQ70	0.24	1.1	0.2~1.5	0.2~1.0
HRQ100	0.32	1.6	0.2~2.0	0.2~1.0
HRQ200	0.56	2.9	0.2~2.5	0.2~1.0

[Note]

- 1: The movement energy should not exceed the allowed maximum energy, or the inner accessories of product would be damaged;
- 2: When the rotation times of with shock absorber is larger than the allowed tolerance, the bigger effect will be lost.

Ordering code

HRQ 20 A □

1 2 3 4

① Model	② Specification	③ Cushion type	④ Thread type
HRQ: Rotary Table/Rack & Pinion Style	2	Blank: With adjustment bolt	No this code
	3		
	7		
	10		
	20	Blank: With adjustment bolt A: With internal shock absorber	Blank: PT G: G T: NPT
	30		
	50		
	70		
	100		
	200		

[Note] HRQ series are all attached with magnet.

Air gripper(wide style)

HFT Series



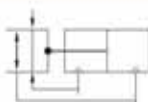
Specification

Bore size (mm)	10	16	20	25	32
Acting type	Double acting				
Fluid	Air(to be filtered by 40 μm filter element)				
Operating pressure	0.15~0.7MPa(22~100psi)		0.25~0.7MPa(35~100psi)		
Proof pressure	1.2MPa(175psi)				
Temperature	-20~70℃				
Lubrication	Cylinder: No necessary				
Cushion type	Bumper				
Repeatability	±0.1mm				
Gripping force (N)[Note1]	14	45	74	131	228
Max. frequency	40 cycle/minute				20 cycle/minute
Port size	M5×0.8				1/8"

[Note1] Pressure 0.5MPa and gripping length 40mm(Ø10 - Ø25) or 80mm(Ø32).

Add) Refer to P338 for detail of sensor switch.

Symbol



Product feature

1. Design for large workpiece.
2. Double pistons design to increase the clamping force.
3. Magnet is included in the standard configuration.
4. The gripper opening or closing can be precisely synchronized with the rack & pinion mechanism.

Stroke

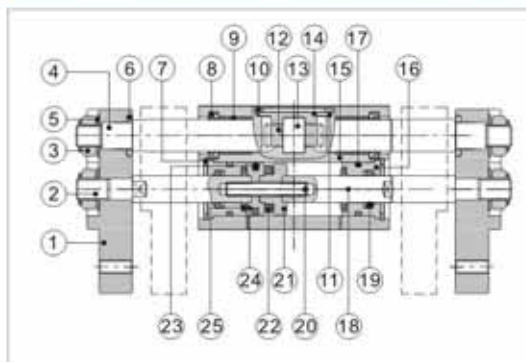
Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)
10	20 30 40 60	60
16	30 40 60 80	80
20	40 60 80 100	100
25	40 60 80 100	100
32	60 80 100 150	150

[Note] Consult us for non-standard stroke.

Ordering code

HFT 10 × 20 S □				
1 Model	2 Bore size	3 Stroke	4 Magnet	5 Thread type
HFT: Wide air gripper (Double acting)	10	20 30 40 60	S: With magnet	No this code
	16	30 40 60 80		
	20	40 60 80 100		Blank: PT G: G T: NPT
	25	40 60 80 100		
	32	60 80 100 150		

Inner structure and material of major parts



NO.	Item	Material	NO.	Item	Material
1	Faceplate	Aluminum alloy	14	Gear cover	Carbon steel
2	Piston rod A	Stainless steel	15	Body	Aluminum alloy
3	Locknut	Carbon steel	16	Front cover	Aluminum alloy
4	Leader	Stainless steel	17	O-ring	NBR
5	Washer	Spring steel	18	Piston rod B	Stainless steel
6	Gasket	Carbon steel	19	O-ring	NBR
7	C clip	Spring steel	20	Joint bole	Stainless steel
8	Dustproof ring	TPU	21	Magnet seat	Brass/Aluminum alloy
9	Bearing	Wear resistant material	22	Magnet	Sintered metal (Neodymium-iron-boron)
10	C clip	Spring steel	23	Piston O-ring	NBR
11	O-ring	NBR	24	Piston	Brass/Aluminum alloy
12	Gear	Chrome molybdenum steel	25	Bumper	TPU
13	Gear axes	Bearing steel			

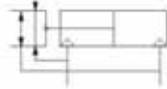
Air gripper(parallel style——ball bearing)

HFZ Series

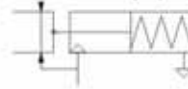


Symbol

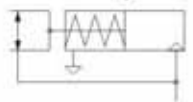
HFZ: Double acting



HFTZ: Single acting and normally opened



HFSZ: Single acting and normally closed



Gripping force and stroke

Acting type		Double acting(HFZ)							Single acting_NO (HFTZ)							Single acting_NC (HFSZ)						
Bore size		6	10	16	20	25	32	40	6	10	16	20	25	32	40	6	10	16	20	25	32	40
Gripping force per finger Effective value(N)	External	3.3	11	34	45	69	160	255	1.9	7	27	35	55	133	220	-	-	-	-	-	-	-
	Internal	6.1	17	45	68	102	195	320	-	-	-	-	-	-	-	3.7	13	38	59	87	163	270
Opening/Closing stroke(Both sides)(mm)		3	3	6	10	14	22	30	3	3	6	10	14	22	30	3	3	6	10	14	22	30
Weight (g)	F Type	24	-	-	-	-	-	-	25	-	-	-	-	-	-	25	-	-	-	-	-	-
	Others	25	56	124	236	428	729	1268	26	57	125	238	430	778	1365	26	57	125	238	430	778	1365

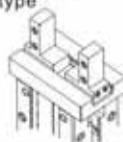
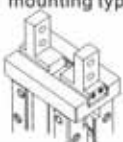
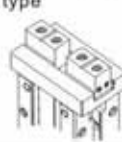
[Note] The gripping force in the above table is in the working pressure of 0.5MPa, and with a gripping point of L=20mm.

Add) Please refer to page 256 for the definition of "L".

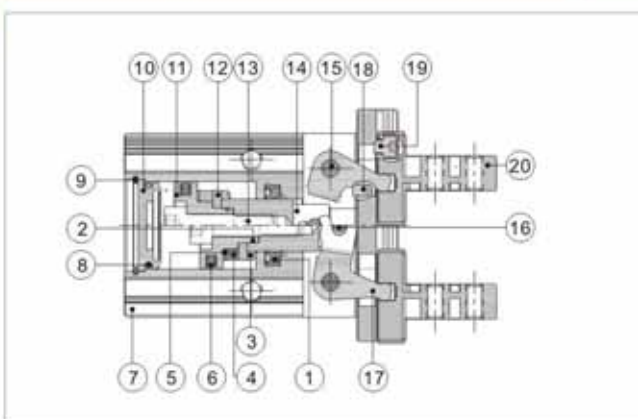
Ordering code

HFZ 20 □

1 2 3

1 Model	2 Bore size	3 Finger type			
HFZ: Air finger(Double acting)	6 10 16 20 25 32 40	Blank:Standard 			
HFSZ: Air finger (Single acting and normally closed)					
HFTZ: Air finger (Single acting and normally opened)	6	B:Side mounting type 	N:Thru.hole mounting type 	F:Bottom mounting type 	HFZ series are all attached with magnet.

Inner structure and material of major parts



NO.	Item	Material
1	Rod packing	NBR
2	O-ring	NBR
3	Bumper	TPU
4	Magnet	Sintered metal(Neodymium-iron-boron)
5	Magnet washer	NBR
6	Piston seal	NBR
7	Body	Aluminum alloy
8	O-ring	NBR
9	C clip	Spring steel
10	Back cover	Aluminum alloy
11	Piston	Aluminum alloy/Stainless steel
12	Magnet fixed flake	Stainless steel
13	Screw	Carbon steel
14	Piston rod	Aluminum alloy/Stainless steel
15	Pin	Stainless steel
16	Pin	Stainless steel
17	Curved bar	Stainless steel
18	Pin	Stainless steel
19	Countersink screw	Carbon steel
20	Assembly of clamping jaw and guide rail	Stainless steel

Air gripper(Mechanical parallel style)

HFP Series



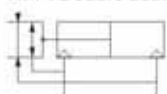
Ordering code

HFP 20 □		
1 Model	2 Bore size	3 Finger type
HFP: Air finger(Double acting) (mechanical parallel style)	10 16 20 25 32	Blank: Standard N: Thru.hole mounting type

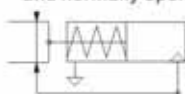
[Note] HFP series are all attached with magnet.

Symbol

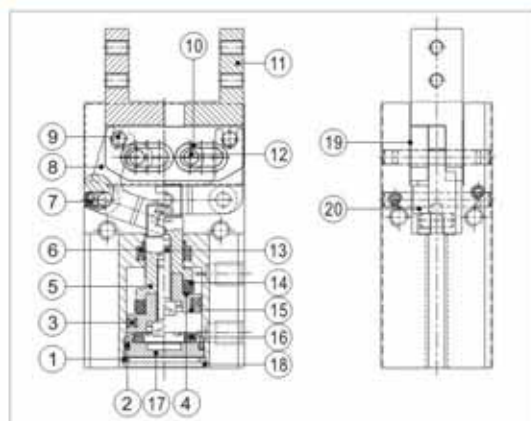
HFP: Double acting



HFTP: Single acting and normally opened



Inner structure and material of major parts

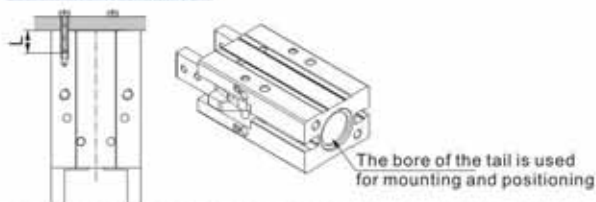


NO.	Item	Material	NO.	Item	Material
1	C clip	Spring steel	11	Gripping jaws	Stainless steel
2	O-ring	NBR	12	Pin	Stainless steel
3	Piston seal	NBR	13	Screw	Carbon steel
4	Magnet washer	NBR	14	Magnet	Sintered metal (Neodymium-iron-boron)
5	Piston rod	Aluminum alloy Stainless steel	15	Piston	Aluminum alloy Stainless steel
6	Rod packing	NBR	16	Bumper	TPU
7	Countersink screw	Carbon steel	17	Back cover	Aluminum alloy
8	Curved bar	Stainless steel	18	Body	Aluminum alloy
9	Pin	Stainless steel	19	Retaining ring	Stainless steel
10	Guide sleeve	Stainless steel	20	Stopper sleeve	Stainless steel

Installation and application

- Due to the abrupt changes, the circuit pressure is low, which will lead to the decrease of the gripping force and falling of the work-pieces. In order to avoid the harm to the human body and damage to the equipment, anti-dropping device must be equipped.
- Don't use the air gripper under strong external force and impact force.
- When install and fix the air gripper, avoid falling down, collision and damage.
- When fixing the gripping jaw parts, don't twist the gripping jaw.
- There are several kinds of installation method, and the locking torque of fastening screw must be within the prescribed torque range shown in the below chart. If the locking torque is too large, it will cause the dysfunctional. If the locking torque is too small, it will cause the position deviation and fall.

Tail installation type



Bore size	The bolts type	Max. locking moment	Max. screwed depth	The aperture of the positioning bore	The depth of the positioning bore
10	M3×0.5	1.0N.m	6mm	Φ11mm ^{+0.05} ₀	1.0mm
16	M4×0.7	2.0N.m	8mm	Φ17mm ^{+0.05} ₀	1.2mm
20	M5×0.8	4.5N.m	10mm	Φ21mm ^{+0.05} ₀	1.2mm
25	M6×1.0	7.0N.m	12mm	Φ26mm ^{+0.05} ₀	1.5mm
32	M6×1.0	7.0N.m	12mm	Φ34mm ^{+0.05} ₀	1.5mm

The installation of the front threaded hole

Bore size	The bolts type	Max. locking moment(Nm)	Max. screwed depth(mm)
10	M3×0.5	0.7	5
16	M4×0.7	2.0	8
20	M5×0.8	4.5	10
25	M6×1.0	7.0	12
32	M6×1.0	7.0	12

Surface installation type

Bore size	The bolts type	Max. locking moment (Nm)	Max. screwed depth (mm)
10	M3×0.5	1.0	6
16	M4×0.7	2.0	8
20	M5×0.8	4.5	10
25	M6×1.0	7.0	12
32	M6×1.0	7.0	12

6. Other contents of installation and operation are the same with those of HFZ. Refer to the "Installation and Operation" instruction of HFZ.

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

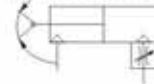
Air gripper(Angular style)

HFY Series



Symbol

HFY: Double acting



HFTY: Single acting and normally opened



Gripping force and stroke

Acting type		Double acting(HFY)						Single acting Normally opened(HFTY)					
Bore size		6	10	16	20	25	32	6	10	16	20	25	32
Theoretical gripping torque (N·cm)	Closed	7.4 × P	17.6 × P	90 × P	152 × P	304 × P	637 × P	5.7 × P	11.8 × P	71.2 × P	122.4 × P	252 × P	589 × P
	Opened	10.6 × P	29.4 × P	129 × P	252 × P	473 × P	904 × P	-	-	-	-	-	-
Max. length of gripping point (L)(mm)		30	30	40	60	70	85	30	30	40	60	70	85
Opening angle (°)		30 ⁺³ ₀											
Closing angle (°)		-10 ⁰ ₋₃											

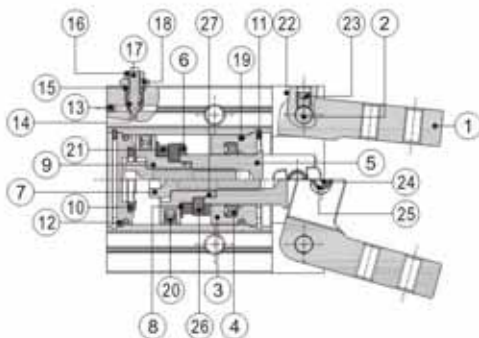
[Note] The P in the gripping torque shown in the above chart represents the actual use of air pressure.

Ordering code

HFY 20	
1	2
① Model	② Bore size
HFY: Air finger (Angle style, Double acting)	6 10 16
HFTY: Air finger (Angle style, Single acting and normally opened)	20 25 32

[Note] HFY series are all attached with magnet.

Inner structure and material of major parts



NO.	Item	Material
1	Gripping jaws	Carbon steel
2	Pin	Stainless steel
3	Front cover	Aluminum alloy
4	Rod packing	NBR
5	Piston rod	Aluminum alloy/Stainless steel
6	Bumper	TPU
7	Countersink screw	Carbon steel
8	Magnet washer	NBR
9	Piston	Aluminum alloy/Stainless steel
10	Bumper	TPU
11	C clip	Spring steel
12	Back cover	Aluminum alloy
13	Steel ball	Stainless steel
14	O-ring	NBR
15	O-ring	NBR
16	Screw cap	Carbon steel
17	Adjustable nut	Brass
18	Fixed nut	Brass
19	O-ring	NBR
20	Piston seal	NBR
21	Magnet	Sintered metal(Neodymium-iron-boron)
22	Body	Aluminum alloy
23	Countersink screw	Carbon steel
24	Pin	Stainless steel
25	Pin sheath	Stainless steel
26	Magnet fixed flake	Stainless steel
27	O-ring	NBR

Twist clamp cylinder

ACK Series



Specification

Bore size(mm)	25	32	40	50	63
Acting type	Double acting				
Fluid	Air(to be filtered by 40 μm filter element)				
Operating pressure	0.15~1.0MPa(22~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature ℃	-20~70				
Speed range mm/s	50~200				
Stroke tolerance	+1.0 0				
Rotary angle tolerance	±1.5°				
Cushion type [Note1]	No cushion				
Port size [Note2]	M5×0.8		1/8"		

[Note1] If there is no buffering device, exhaust throttle shall be added to achieve buffering effect.

[Note2] PT thread, G thread and NPT thread are available.

Stroke

Bore size(mm)	Stroke type	90°	180°	Total stroke (90°/180°)
25	Rotation stroke	14	20	26
32	Clamping stroke	12	6	26
40	Rotation stroke	15	21	27
	Clamping stroke	12	6	27
50	Rotation stroke	15	21	29
63	Clamping stroke	14	8	29

Symbol



Product feature

1. The material of seals guarantees the reliable performance of the cylinder that is used under various conditions.
2. Three-slot guide structure leads to high guide precision.
3. There are single and double side clamping fingers can be selected (90°).
4. Levorotatory and dextrorotary are available; 90° and 180°.
5. The material of piston rod is made from special alloy steel, which has longer life after heat treatment.

Ordering code

ACK L 25 × 90 □

1 2 3 4 5

① Model	② Rotary direction	③ Bore size	④ Rotary angle	⑤ Thread type[Note1]
ACK: Twist clamp cylinder(Double acting type) ACKD: Twist clamp cylinder (Double push plate type, only for 90°)	L: Push and turn left When the piston of cylinder moves downward, the swivel arms moves anticlockwise, this is called levorotatory. 	25 32 40 50 63	90: 90° 180: 180°	Blank: PT G: G T: NPT
	R: Push and turn right When the piston of cylinder moves downward, the swivel arms moves clockwise, this is called dextrorotary. 			

[Note1] When the thread is standard, the code is blank.

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

Rotary clamp cylinder

QCK Series



Specification

Bore size(mm)	12	16	20	25	32	40	50	63
Acting type	Double acting							
Fluid	Air(to be filtered by 40 μm filter element)							
Operating pressure	0.15~1.0MPa(22~145psi)(1.5~10bar)							
Proof pressure	1.5MPa(215psi)(15bar)							
Temperature	-20~70℃							
Speed range	50~200mm/s							
Rotation angle	90°							
Repeatability	±2°							
Rotation direction	Turn left or turn right							
Rotation stroke(mm)	7.5		9.5		15		19	
Clamping stroke (mm)	10	20	10	20	30	10	20	30 50
Stroke tolerance	+1.0 0							
Cushion type	Bumper							
Port size [Note1]	M5×0.8				1/8"		1/4"	

[Note1]PT thread, G thread and NPT thread are available.

Add) QCK series are all attached with magnet, please refer to Page 338 for the specific content of sensor switch.

Symbol



Product feature

1. It can be used on welding fixture, the QPQ surface treatment prevent piston rod damage by welding slag; better than chrome plated piston rod.
2. The front cover with stainless steel dust scraping ring, can keep the dust and welding slag out, and protect cylinder internal parts.
3. The mounting dimension of body is the same as ACQ series, can use ACQ series' accessories.

Ordering code

QCK L 32×10 S M FB □

1 2 3 4 5 6 7 8

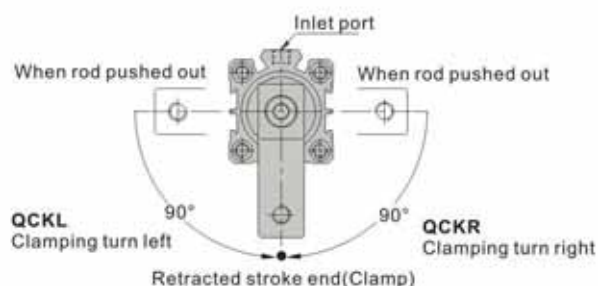
① Model	② Rotation direction	③ Bore size	④ Clamping stroke	⑤ Magnet	⑥ Rod type	⑦ Mounting type [Note1]	⑧ Thread type [Note2]
QCK: Rotary clamp cylinder	L: Push and turn left R: Push and turn right	12	10 20	S: With magnet	Blank: Taper type (with clamp arm) M: Across flat position type(without clamp arm)	Blank: No bracket FB: FB type	Blank: PT G: G T: NPT
		16	10 20 30				
		20					
		25					
		32	10 20 30 50				
		40					
		50					
		63					

[Note1] Back flange is same as ACQ series (please refer right table), if need front flange, please contact us.

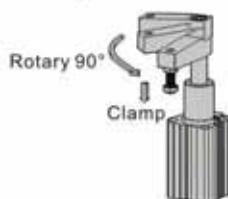
[Note2] When the thread is standard, the code is blank.

Bore size\Accessories	FB	Material	Bore size\Accessories	FB	Material
12	F-ACQ12FA	Aluminum alloy	32	F-ACQ32FA	Aluminum alloy
16	F-ACQ16FA		40	F-ACQ40FA	
20	F-ACQ20FA		50	F-ACQ50FA	
25	F-ACQ25FA		63	F-ACQ63FA	

The definition of rotation direction and angle

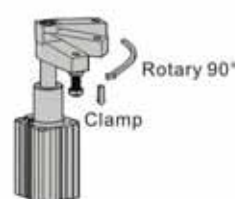


Levorotatory(QCKL):
When the piston of cylinder moves downward, the swivel arms moves anticlockwise, this is called levorotatory.



The order code is L

Dextrorotatory(QCKR):
When the piston of cylinder moves downward, the swivel arms moves clockwise, this is called dextrorotatory.



The order code is R

Cylinder joint accessory

I Knuckle



Table for I knuckle and cylinder

Cylinder	SE							SAI						
Accessory	32	40	50	63	80	100	125	32	40	50	63	80	100	125
F-M10X125I	●							●						
F-M12X125I		●							●					
F-M16X150I			●	●						●	●			
F-M20X150I					●	●						●	●	
F-M27X200I							●							●
F-M36X200I														●

Cylinder	SGC				SC/SAU				SC				JSI			
Accessory	125	160	200	250	32	40	50	63	80	100	125	160	200	250	32	40
F-M10X125I					●										●	
F-M12X125I						●										●
F-M14X150I							●	●								●
F-M16X150I									●	●						●
F-M18X150I											●	●				●
F-M20X150I										●	●					●
F-M22X150I												●	●			●
F-M26X150I													●	●		●
F-M27X200I														●		●
F-M36X200I															●	●
F-M42X200I																●

Cylinder	MI								MPG					
Accessory	8	10	12	16	20	25	32	40	6	8	10	12	16	
F-M3X050I									●					
F-M4X070I	●	●								●	●			
F-M5X080I												●	●	
F-M6X100I			●	●										
F-M8X125I					●									
F-M10X125I						●	●							
F-M12X125I								●						

Ordering code

F-M16X150 I

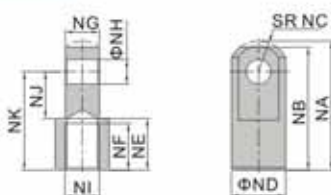
1 2 3 4

1 Accessories code	2 Screw thread	3 Thread pitch	4 Code
	M3: M3	050: 0.5mm	
	M4: M4	070: 0.7mm	
	M5: M5	080: 0.8mm	
	M6: M6	100: 1.0mm	
	M8: M8		
	M10: M10	125: 1.25mm	
	M12: M12		
	M14: M14		
	M16: M16		
	M18: M18	150: 1.5mm	
	M20: M20		
	M22: M22		
	M26: M26		
	M27: M27		
	M36: M36	200: 2.0mm	
	M42: M42		

I: I Knuckle

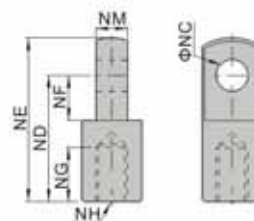
Dimensions

M14\M18\M22\M26



Type/Item	NA	NB	NC	ND	NE	NF	NG	NH	NJ	NK	NI
F-M14X150I	52.5	50	12.5	22	21	19	13.8	10	19	40	M14×1.5
F-M18X150I	66.5	64	16.5	28	27	24	19.8	14	24	50	M18×1.5
F-M22X150I	83.5	80	23.5	40	29	26	29.8	22	34	60	M22×1.5
F-M26X150I	83.5	80	23.5	40	29	26	29.8	22	34	60	M26×1.5

Others



Type/Item	NC	ND	NE	NF	NG	NH	NM
F-M3x050I	3	12	15.5	5	5	M3×0.5	3
F-M4x070I	4	16	21	6.8	8	M4×0.7	4
F-M5x080I	5	25	32	14.1	7.5	M5×0.8	6.3
F-M6x100I	6	21	28	8.5	8	M6×1.0	6
F-M8x125I	8	30	40	11	15	M8×1.25	8
F-M10x125I	10	40	50	15	20	M10×1.25	10
F-M12x125I	12	48	62	24	20	M12×1.25	12
F-M16x150I	16	64	82	32	23	M16×1.5	16
F-M20x150I	20	80	102	40	30	M20×1.5	20
F-M27x200I	30	110	139	51	45	M27×2.0	30
F-M36x200I	35	144	181	65	55	M36×2.0	35
F-M42x200I	40	168	211	85	62	M42×2.0	40

Cylinder joint accessory

Y Knuckle



Ordering code

F-M16X150 Y

1 2 3 4

1 Accessories code	2 Screw thread	3 Thread pitch	4 Code
	M3: M3	050: 0.5mm	
	M4: M4	070: 0.7mm	
	M5: M5	080: 0.8mm	
	M6: M6	100: 1.0mm	
	M8: M8		
	M10: M10	125: 1.25mm	
	M12: M12		
	M14: M14		
	M16: M16		
	M18: M18		
	M20: M20	150: 1.5mm	
	M22: M22		
	M26: M26		
	M27: M27		
	M36: M36	200: 2.0mm	
	M42: M42		

Y: Y Knuckle

Table for Y knuckle and cylinder

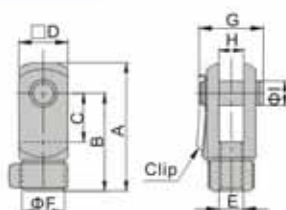
Cylinder Accessory	32	40	50	63	80	100	125	32	40	50	63	80	100	125	160	200
F-M10X125Y	●							●								
F-M12X125Y		●							●							
F-M16X150Y			●	●						●	●					
F-M20X150Y					●	●						●	●			
F-M27X200Y							●							●		
F-M36X200Y															●	●

Cylinder	SGC					SC/SAU					SC					JSI					
Accessory	125	160	200	250	32	40	50	63	80	100	125	160	200	250	32	40	50	63	80	100	125
F-M10X125Y					●										●						
F-M12X125Y						●															
F-M14X150Y																●					
F-M16X150Y							●	●													
F-M18X150Y																	●	●			
F-M20X150Y									●	●											
F-M22X150Y																			●		
F-M26X150Y																				●	
F-M27X200Y	●										●										●
F-M36X200Y		●	●									●	●								
F-M42X200Y				●										●							

Cylinder Accessory	8	10	12	16	20	25	32	40	6	8	10	12	16
F-M3X050Y									●				
F-M4X070Y	●	●								●	●		
F-M5X080Y												●	●
F-M6X100Y			●	●									
F-M8X125Y					●								
F-M10X125Y						●	●						
F-M12X125Y								●					

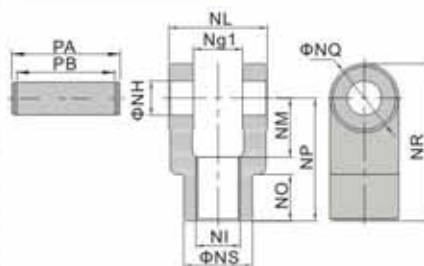
Dimensions

M10 and below



Type/Item	A	B	C	D	F
F-M3X050Y	15.5	12	5	6	6
F-M4X070Y	22	16	8	8	7
F-M5X080Y	28	21	10.2	12	10
F-M6X100Y	32	24	12	12	10
F-M8X125Y	42	32	16	16	14
F-M10X125Y	52	40	20	19	18
Type/Item	E	G	H	I	J
F-M3X050Y	M3×0.5	9	3	3	
F-M4X070Y	M4×0.7	11.5	4	4	
F-M5X080Y	M5×0.8	15.5	6.5	5	
F-M6X100Y	M6×1.0	16	6	6	
F-M8X125Y	M8×1.25	21	8	8	
F-M10X125Y	M10×1.25	25	10	10	

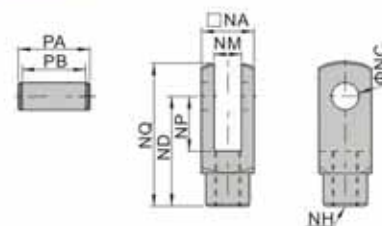
M14/M18/M22/M26



Type/Item	NG1	NH	NI	NL	NM
F-M14X150Y	14.2	10	M14×1.5	27.8	19
F-M18X150Y	20.2	14	M18×1.5	39.8	24
F-M22X150Y	30.2	22	M22×1.5	59.8	34
F-M26X150Y	30.2	22	M26×1.5	59.8	34

Type/Item	NO	NP	NQ	NR	NS	PA	PB
F-M14X150Y	17	40	22	51	22	34.6	28.8
F-M18X150Y	19	50	28	64	28	47	40.8
F-M22X150Y	20	65	40	85	40	69.2	60.8
F-M26X150Y	20	65	40	85	40	69.2	60.8

Others



Type/Item	NA	NC	ND	NP	NQ
F-M12X125Y	25.4	12	48	24	62
F-M16X150Y	32	16	64	32	80
F-M20X150Y	44.4	20	80	40	102
F-M27X200Y	54	30	110	55	139
F-M36X200Y	70	35	144	73	179
F-M42X200Y	85	40	168	86	211

Type/Item	NM	NH	PA	PB
F-M12X125Y	12	M12×1.25	32.4	26.2
F-M16X150Y	16	M16×1.5	39	32.8
F-M20X150Y	20	M20×1.5	53.4	45.2
F-M27X200Y	30	M27×2.0	64.2	54.8
F-M36X200Y	35	M36×2.0	80.2	70.8
F-M42X200Y	40.3	M42×2.0	115	93

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

Cylinder joint accessory

Floating Joint

Effectively dissolving the extra external force caused by eccentricity

Internal use of ball head structure

The internal use of ball head structure, flexible swing; axial no gap, deflection angle wide.

Angle range of partial pendulum

Ball head structure

Various thread type specifications

Thread type			
M3X0.5	M8X1.25	M16X1.5	M22X1.5(New)
M4X0.7	M10X1.25	M18X1.5	M26X1.5(New)
M5X0.8	M12X1.25	M20X1.5	M27X2.0(New)
M6X1.0	M14X1.5		M36X2.0(New)

New

Thread type can be matched with a variety of series cylinders

Table for floating joint and cylinder

Table for mounting joint and cylinder																														Cylinder										ACQ									
Cylinder		PB						MI						MA						MF						MBL						Cylinder		ACQ															
Accessory	4	6	10	12	16	8	10	12	16	20	25	32	40	16	20	25	32	40	50	63	20	25	32	40	20	25	32	40	50	63	F-M8X125F	12	16	20	25	32	40	50	63	80	100								
F-M3X050F																																																	
F-M4X070F																																																	
F-M5X080F																																																	
F-M6X100F																																																	
F-M8X125F																																																	
F-M10X125F																																																	
F-M12X125F																																																	
F-M14X150F																																																	
F-M16X150F																																																	
F-M18X150F																																																	
F-M20X150F																																																	
F-M22X150F																																																	
F-M26X150F																																																	
F-M27X200F																																																	
F-M36X200F																																																	
Cylinder		SG/SGC						SE						SAI						SAI/SC						SC/SAU						JSI																	
Accessory	125	160	200	250	32	40	50	63	80	100	125	32	40	50	63	80	100	125	160	200	32	40	50	63	80	100	125	160	200	32	40	50	63	80	100	125	160	200	250	32	40	50	63	80	100	125			
F-M10X125F																																																	
F-M12X125F																																																	
F-M14X150F																																																	
F-M16X150F																																																	
F-M18X150F																																																	
F-M20X150F																																																	
F-M22X150F																																																	
F-M26X150F																																																	
F-M27X200F																																																	
F-M36X200F																																																	

Ordering code

F - M22 X 150 F

1 2 3 4

1 Accessories code

2 Screw thread

3 Thread pitch

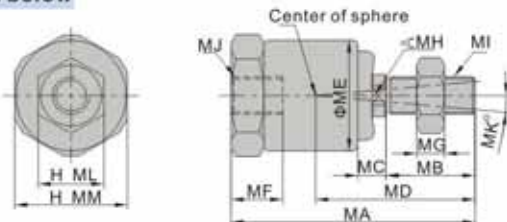
4 Code

M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M26	M27	M36
050:0.5mm	070:0.7mm	080:0.8mm	100:1.0mm	125:1.25mm	150:1.5mm	200:2.0mm								

F: Floating joint

Dimensions

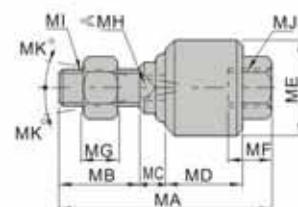
M6 and below



Type/Item	MA	MB	MC	MD	ME	MF	MG	MH	MI/MJ	ML	MM
F-M3X050F	23.5	7.5	3	15	11.8	5.5	2.4	4	M3×0.5	5.5	12
F-M4X070F	26	9.5	3	17	11.8	6	3	4	M4×0.7	7	12
F-M5X080F	34.5	13.5	3.5	22.8	13.8	8	4	6	M5×0.8	8	14
F-M6X100F	34.5	13.5	3.5	22.8	13.8	8	4	6	M6×1.0	10	14

Note: Angle compensation: $\pm 5^\circ$ Radial direction compensation: 0.5

M8 and above



Type/Item	MA	MB	MC	MD	ME	MF	MG	MH	MI/MJ	MK
F-M8X125F	51	20	6	17	24	10.5	6	8	M8×1.25	13
F-M10X125F	58	22	7	21	26	11	6	10	M10×1.25	12
F-M12X125F	58	22	8	21	28	11.5	7	12	M12×1.25	12
F-M14X150F	70	22.5	8.5	28	34.5	16	8	15	M14×1.5	12
F-M16X150F	90	27	10	41	44.5	19	8	17	M16×1.5	7
F-M18X150F	92	27	10	41	44.5	21	11	18	M18×1.5	7
F-M20X150F	102	29	13	46	53	22	10	22	M20×1.5	10
F-M22X150F	108	32	13	46	53	25	13	22	M22×1.5	5
F-M26X150F	120	32	14.5	52.5	59.5	25	13	27	M26×1.5	5
F-M27X200F	136.5	40	14.5	52.5	59.5	40	13.5	27	M27×2.0	5
F-M36X200F	194.5	60	20.5	77.5	84	54	18	36	M36×2.0	5

Cylinder joint accessory

Universal Joint



Table for universal joint and cylinder

Cylinder	SE							SAI							SAI/SC			
Accessory	32	40	50	63	80	100	125	32	40	50	63	80	100	125	160	200		
F-M10X125U	●							●										
F-M12X125U		●							●									
F-M16X150U			●	●						●	●							
F-M20X150U					●	●						●	●					
F-M27X200U							●							●				
F-M36X200U															●	●		

Cylinder	SGC				SC/SAU						JSI						
Accessory	125	160	200	250	32	40	50	63	80	100	32	40	50	63	80	100	125
F-M10X125U					●						●						
F-M12X125U						●											
F-M14X150U													●				
F-M16X150U							●	●									
F-M18X150U													●	●			
F-M20X150U									●	●							
F-M26X150U																●	
F-M27X200U	●																●
F-M36X200U		●	●														

Cylinder	ACQ									
Accessory	12	16	20	25	32	40	50	63	80	100
F-M5X080U	●									
F-M6X100U		●								
F-M8X125U			●							
F-M10X125U				●						
F-M12X125U					●	●				
F-M14X150U							●	●		
F-M16X150U										
F-M18X150U							●	●		
F-M20X150U										
F-M26X150U										●

Cylinder	MA							MF				MBL					
Accessory	16	20	25	32	40	50	63	20	25	32	40	20	25	32	40	50	63
F-M6X100U	●																
F-M8X125U		●						●					●				
F-M10X125U			●	●					●	●			●	●			
F-M12X125U					●										●		
F-M14X150U						●	●				●					●	●

Cylinder	PB					MI							
Accessory	4	6	10	12	16	8	10	12	16	20	25	32	40
F-M4X070U			●			●	●						
F-M5X080U				●	●								
F-M6X100U								●	●				
F-M8X125U										●			
F-M10X125U											●	●	
F-M12X125U													●

Ordering code

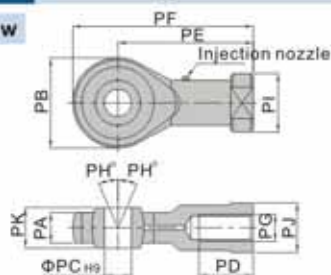
F-M10X125 U

1 2 3 4

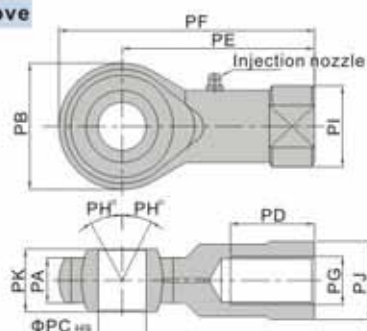
1 Accessories code	2 Screw thread	3 Thread pitch	4 Code
	M4; M4	070; 0.7mm	U: Universal joint
	M5; M5	080; 0.8mm	
	M6; M6	100; 1.0mm	
	M8; M8		
	M10; M10	125; 1.25mm	
	M12; M12		
	M14; M14		
	M16; M16		
	M18; M18	150; 1.5mm	
	M20; M20		
	M26; M26		200; 2.0mm
	M27; M27		
	M36; M36		

Dimensions

M8 and below



M10 and above



Type/Item	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK
F-M4X070U	6	18	5	10	27	36	M4×0.7	13	12.5	10	8
F-M5X080U	6	18	5	10	27	36	M5×0.8	13	12.5	10	8
F-M6X100U	6.8	20	6	12	30	40	M6×1.0	13	13	11	9
F-M8X125U	9	24	8	16	36	48	M8×1.25	13	16	14	12
F-M10X125U	11	26	10	20	43	56	M10×1.25	13	19	17	14
F-M12X125U	12	32	12	22	50	66	M12×1.25	13	22	19	16
F-M14X150U	14	36	14	28	57	75	M14×1.5	13	25	22	19
F-M16X150U	15	40	16	28	64	84	M16×1.5	15	27	22	21
F-M18X150U	16.5	46	18	30	71	94	M18×1.5	15	31	27	23
F-M20X150U	18	46	20	33	77	100	M20×1.5	15	34	30	25
F-M26X150U	22	60	25	48	94	124	M26×1.5	15	42	36	31
F-M27X200U	25	70	30	51	110	145	M27×2.0	15	50	41	37
F-M36X200U	27.5	80	35	56	125	165	M36×2.0	15	57.5	50	43

Shock absorber—ACA, ACJ Series

Compendium of ACA/ACJ Series

Excellent and stable deceleration and shock absorbing

If impacted by load,
the resistance will automatically adjust.

Three kinds of impact speed

High speed(Light load)
Middle speed(Middle load)
Low speed(Heavy load)

All threaded outer body

It is easy to install and adjust
and has good heat dissipation.

Two kinds of type

ACA: Self-compensation type shock absorber
ACJ: Adjustable type shock absorber

Three kinds of prevention crash cap



No cap



Plastic cap



Iron cap

Integrated structure

Two kinds of mounting accessories



Stop collar



Flange

Specification

Model	Stroke (mm)	Max. energy absorbed (Nm)	Max. energy absorbed/hour(Nm/h)	Max. effective mass(kg)			Max. impact speed(m/s)			Weight (g)
				High speed	Middle speed	Low speed	High speed	Middle speed	Low speed	
ACA0806	6	3	5400	5	20	25	4	2	1	12
ACA1007	7	6	14500	10	40	50	4	2	1	26
ACA1210	10	10	30000	18	60	80	4	2	1	40
ACA1215	15	14	35000	25	90	115	4	2	1	48
ACA1412	12	18	36000	30	110	150	4	2	1	70
ACA1416	16	22	39000	40	140	180	4	2	1	78
ACA1420	20	25	45000	45	155	200	4	2	1	85
ACA1616	16	35	43000	60	220	285	4	2	1	105
ACA1620	20	40	47000	70	250	325	4	2	1	115
ACA1625	25	45	51000	80	280	365	4	2	1	125
ACA2020	20	60	50000	240	660	960	4	2	1	175
ACA2025	25	65	54000	260	720	1040	4	2	1	185
ACA2030	30	70	58000	280	780	1120	4	2	1	210
ACA2040	40	80	65000	320	890	1280	4	2	1	225
ACA2525	25	100	75000	400	1100	1600	4	2	1	290
ACA2550	50	150	85000	600	1650	2400	4	2	1	370
ACA2725	25	140	85000	560	1550	2240	4	2	1	372
ACA2750	50	250	95000	1000	2780	4000	4	2	1	475
ACA3325	25	180	100000	720	2000	2880	4	2	1	596
ACA3350	50	300	120000	1200	3300	4800	4	2	1	750
ACA3625	25	220	135000	880	2400	3500	4	2	1	702
ACA3650	50	350	150000	1400	2500	5600	4	2	1	889

Model	Stroke(mm)	Max. energy absorbed (Nm)	Max. energy absorbed/hour(Nm/h)	Max. effective mass(kg)	Max. impact speed(m/s)	Weight(g)
ACJ1007	7	6	14500	50	4	28
ACJ1210	10	10	30000	80	4	43
ACJ1412	12	20	36000	160	4	75
ACJ2020	20	60	50000	960	4	189
ACJ2525	25	100	75000	1600	4	308
ACJ2550	50	150	85000	2400	4	395
ACJ2725	25	140	85000	2240	4	396
ACJ2750	50	250	95000	4000	4	510
ACJ3325	25	180	100000	2880	4	540
ACJ3350	50	300	110000	4800	4	800
ACJ3625	25	220	125000	2500	4	750
ACJ3650	50	350	130000	5600	4	950
ACJ4225	25	350	150000	5600	4	1150
ACJ4250	50	700	180000	11200	4	1420
ACJ4275	75	1050	210000	16800	4	1720

Accessories—Shock absorber

ACA, ACJ Series



Product feature

1. Excellent and stable deceleration and shock absorbing; if impacted by load, the resistance will automatically adjust.
2. Outer body of integrated structure is treated by QPQ, which has optimum corrosion and wear resistance and can withstand high pressure; it is easy to install and adjust for all threaded outer body which has good heat dissipation.
3. With high hardness stainless steel shaft, the shock absorber has better impact and corrosion resistance, and it can work under adverse conditions.
4. Special oiling process leads to stable shock absorbing.
5. Compact structure and high max. absorbed energy.
6. We use Special lubricants as buffer medium, which adapts to wide temperature range and ensures stable cushioning.

Ordering code

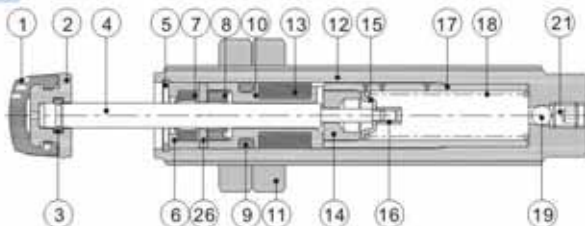
ACA 20 20 - 1 N

1 2 3 4 5

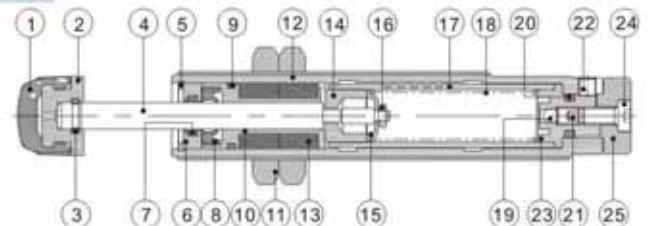
① Model	② Body male thread	③ Stroke	④ Impact speed	⑤ Prevention crash cap
ACA: Self-compensation type shock absorber	08:M8	The pecification for detail	1: High speed(Light load) 2: Middle speed(Middle load) 3: Low speed(Heavy load)	Blank: Plastic cap N: No cap
	10:M10			Blank: Plastic cap F: Iron cap N: No cap
	12:M12			Blank: Plastic cap F: Iron cap
	14:M14			Blank: Plastic cap F: Iron cap
	16:M16			Blank: Plastic cap F: Iron cap
	20:M20			Blank: Plastic cap F: Iron cap
	25:M25			Blank: Plastic cap F: Iron cap
	27:M27			Blank: Plastic cap F: Iron cap
	33:M33			Blank: Plastic cap F: Iron cap
	36:M36			Blank: Plastic cap F: Iron cap
ACJ: Adjustable type shock absorber	10:M10	Not this code	Not this code	Blank: Plastic cap N: No cap
	12:M12			Blank: Plastic cap F: Iron cap N: No cap
	14:M14			Blank: Plastic cap F: Iron cap
	20:M20			Blank: Plastic cap F: Iron cap
	25:M25			Blank: Plastic cap F: Iron cap
	27:M27			Blank: Plastic cap F: Iron cap
	33:M33			Blank: Plastic cap F: Iron cap
	36:M36			Blank: Plastic cap F: Iron cap
	42:M42			Blank: Plastic cap F: Iron cap

Inner structure and material of major parts

ACA



ACJ



No.	Item	Material	No.	Item	Material
1	Bump cap	PA66(M8)\TPU(M10~M14)\TPU or S45C(M20~M42)	14	Piston	Brass
2	Bump cap(core)	No(M8)\Cutting steel(Othres)	15	Spring seat	Spring steel
3	O-ring	NBR	16	Busher	Brass(M8~M12)\Aluminum(M20~M27)
4	Piston rod	Stainless steel(M8~M27)\S45C(M33~M42)	17	Inlet body	Cutting steel(M8~M14)\Seamless steel tube(M20~M42)
5	Clip	No(M8~M10)\Spring steel(M12~M42)	18	Spring	SWPB
6	Front cover	Brass(M8)\Cutting steel(M10)\Aluminum(M12~M42)	19	Ball	GCr15
7	Front cover gasket	No(M8)\TPU(M10~M42)	20	O-ring	NBR
8	Front cover gasket	NBR	21	Set screw	Low alloy steel
9	O-ring	NBR	22	Set screw	Low alloy steel
10	Correcting body	Brass	23	Back cover	Brass
11	Nut	SS41	24	Screw	Low alloy steel
12	Body	Cutting steel	25	Knob	Aluminum alloy
13	Accumulator	Foamex	26	Washer	SUS304(M10~M14)\No(Othres)

PLASTIC PUSH-IN FITTINGS

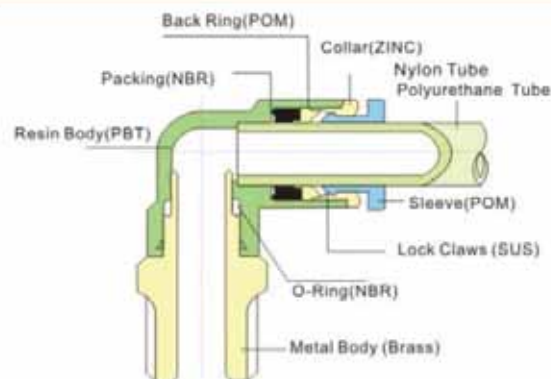


Plastic Push-In Fittings

Product Features

Pneumatic fitting is used in a variety of automation control system, automation equipment, automated machinery and so on.
The Plastic Push in Fittings are used in Pneumatic piping and come in a wide variety of models to meet all your needs in pneumatic piping.
Even after installation, the direction of the tube can be changed freely.
Nickel-Plated Metal body ensures Anti-Corrosion and Anti-Contamination.
All R and NPT threads are coated with sealant.
All cylindrical threads are equipped with standard O-ring seals.
One-Touch Fittings, Plastic Push in Fittings come in a variety of types, moulds and sizes to satisfy various tube demands.
Accept metric and inch tube, and PT®, BSPT), NPT thread.

Structure Chart



Specification

Fluid	Air, Vacuum
Operating Pressure	0~1.0Mpa
Negative Pressure	~100Kpa (10Torr)
Max Pressure	1.5Mpa
Operating Temperature	5~60° C
Applicable Tube	PU/Nylon and Polyurethane

How to Order?



1. Model
2. Tube Outer Diameter
3. Thread
4. Body Color

	Metric Size						Inch Size					
Code	4	6	8	10	12	16	5/32	3/16	1/4	5/16	3/8	1/2
Tube outer diameter mm	φ4	φ6	φ8	φ10	φ12	φ16	φ5/32	φ3/16	φ1/4	φ5/16	φ3/8	φ1/2

3. Thread Type And Size

	Metric Size									
Code	M5	M6	M8	M10	M12	M12A	M14	M16	M20	
Thread	M5×0.8	M6×1	M8×1	M10×1	M12×1.25	M12×1.5	M14×1.5	M16×1.5	M20×1.5	

	55° Taper Pipe Thread				
Code	01	02	03	04	06
Thread	R1/8	R1/4	R3/8	R1/2	R3/4

	55° G Thread				
Code	G01	G02	G03	G04	G06
Thread	G1/8	G1/4	G3/8	G1/2	G3/4

	60° American Standard taper pipe thread (NPT)					
Code	U10	N01	N02	N03	N04	N06
Thread	10-32UNF	NPT1/8	NPT1/4	NPT3/8	NPT1/2	NPT3/4

4. Body Color Blank:black A:gray

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

Plastic Push-In Fittings

PC



PC-G



PC/PC-G MODEL(ØD-T)

Tube(Inch)-Thread(NPT)			Tube(Metric)-Thread(R)			Tube(Metric)-Thread(G)	
5/32-UNF	1/4-N2	3/8-N4	04-M5	06-04	12-02	04-G01	10-G01
5/32-N1	1/4-N3	1/2-N02	04-M6	08-01	12-03	04-G02	10-G02
5/32-N2	1/4-N4	1/2-N03	04-01	08-02	12-04	04-G03	10-G03
5/32-N3	5/16-N1	1/2-N04	04-02	08-03	14-01	06-G01	10-G04
3/16-UNF	5/16-N2		04-03	08-04	14-02	06-G02	12-G02
3/16-N1	5/16-N3		04-04	10-01	14-03	06-G03	12-G03
3/16-N2	5/16-N4		06-M5	10-02	14-04	06-G04	12-G04
3/16-N3	3/8-N1		06-M6	10-03	16-02	08-G01	14-G02
1/4-UNF	3/8-N2		06-01	10-04	16-03	08-G02	14-G03
1/4-N1	3/8-N3		06-02	12-01	16-04	08-G03	14-G04
			06-03			08-G04	16-G03
							16-G04

POC



POC-G



POC/POC-G MODEL(ØD-T)

Tube(Inch)-Thread(NPT)			Tube(Metric)-Thread(R)			Tube(Metric)-Thread(G)	
5/32-UNF	1/4-N2	3/8-N4	04-M5	06-04	12-02	04-G01	10-G01
5/32-N1	1/4-N3	1/2-N02	04-M6	08-01	12-03	04-G02	10-G02
5/32-N2	1/4-N4	1/2-N03	04-01	08-02	12-04	04-G03	10-G03
5/32-N3	5/16-N1	1/2-N04	04-02	08-03	14-01	06-G01	10-G04
3/16-UNF	5/16-N2		04-03	08-04	14-02	06-G02	12-G02
3/16-N1	5/16-N3		04-04	10-01	14-03	06-G03	12-G03
3/16-N2	5/16-N4		06-M5	10-02	14-04	06-G04	12-G04
3/16-N3	3/8-N1		06-M6	10-03	16-02	08-G01	14-G02
1/4-UNF	3/8-N2		06-01	10-04	16-03	08-G02	14-G03
1/4-N1	3/8-N3		06-02	12-01	16-04	08-G03	14-G04
			06-03			08-G04	16-G03
							16-G04

PL



PL-G



PL/PL-G MODEL(ØD-T)

Tube(Inch)-Thread(NPT)			Tube(Metric)-Thread(R)			Tube(Metric)-Thread(G)	
5/32-UNF	1/4-N2	3/8-N4	04-M5	06-04	12-02	04-G01	10-G01
5/32-N1	1/4-N3	1/2-N02	04-M6	08-01	12-03	04-G02	10-G02
5/32-N2	1/4-N4	1/2-N03	04-01	08-02	12-04	04-G03	10-G03
5/32-N3	5/16-N1	1/2-N04	04-02	08-03	14-01	06-G01	10-G04
3/16-UNF	5/16-N2		04-03	08-04	14-02	06-G02	12-G02
3/16-N1	5/16-N3		04-04	10-01	14-03	06-G03	12-G03
3/16-N2	5/16-N4		06-M5	10-02	14-04	06-G04	12-G04
3/16-N3	3/8-N1		06-M6	10-03	16-02	08-G01	14-G02
1/4-UNF	3/8-N2		06-01	10-04	16-03	08-G02	14-G03
1/4-N1	3/8-N3		06-02	12-01	16-04	08-G03	14-G04
			06-03			08-G04	16-G03
							16-G04

PT



PT-G



PT/PT-G MODEL(ØD-T)

Tube(Inch)-Thread(NPT)			Tube(Metric)-Thread(R)			Tube(Metric)-Thread(G)	
5/32-UNF	1/4-N2	3/8-N4	04-M5	06-04	12-02	04-G01	10-G01
5/32-N1	1/4-N3	1/2-N02	04-M6	08-01	12-03	04-G02	10-G02
5/32-N2	1/4-N4	1/2-N03	04-01	08-02	12-04	04-G03	10-G03
5/32-N3	5/16-N1	1/2-N04	04-02	08-03	14-01	06-G01	10-G04
3/16-UNF	5/16-N2		04-03	08-04	14-02	06-G02	12-G02
3/16-N1	5/16-N3		04-04	10-01	14-03	06-G03	12-G03
3/16-N2	5/16-N4		06-M5	10-02	14-04	06-G04	12-G04
3/16-N3	3/8-N1		06-M6	10-03	16-02	08-G01	14-G02
1/4-UNF	3/8-N2		06-01	10-04	16-03	08-G02	14-G03
1/4-N1	3/8-N3		06-02	12-01	16-04	08-G03	14-G04
			06-03			08-G04	16-G03
							16-G04

Plastic Push-In Fittings



PST/PST-G MODEL(ØD-T)							
Tube(Inch)-Thread(NPT)			Tube(Metric)-Thread(R)			Tube(Metric)-Thread(G)	
5/32-UNF	1/4-N2	3/8-N4	04-M5	06-04	12-02	04-G01	10-G01
5/32-N1	1/4-N3	1/2-N02	04-M6	08-01	12-03	04-G02	10-G02
5/32-N2	1/4-N4	1/2-N03	04-01	08-02	12-04	04-G03	10-G03
5/32-N3	5/16-N1	1/2-N04	04-02	08-03	14-01	06-G01	10-G04
3/16-UNF	5/16-N2		04-03	08-04	14-02	06-G02	12-G02
3/16-N1	5/16-N3		04-04	10-01	14-03	06-G03	12-G03
3/16-N2	5/16-N4		06-M5	10-02	14-04	06-G04	12-G04
3/16-N3	3/8-N1		06-M6	10-03	16-02	08-G01	14-G02
1/4-UNF	3/8-N2		06-01	10-04	16-03	08-G02	14-G03
1/4-N1	3/8-N3		06-02	12-01	16-04	08-G03	14-G04
			06-03			08-G04	16-G03
							16-G04



PWT/PWT-G MODEL(ØD-T)							
Tube(Inch)-Thread(NPT)			Tube(Metric)-Thread(R)			Tube(Metric)-Thread(G)	
5/32-UNF	1/4-N2	3/8-N4	04-M5	06-04	12-02	04-G01	10-G01
5/32-N1	1/4-N3	1/2-N02	04-M6	08-01	12-03	04-G02	10-G02
5/32-N2	1/4-N4	1/2-N03	04-01	08-02	12-04	04-G03	10-G03
5/32-N3	5/16-N1	1/2-N04	04-02	08-03	14-01	06-G01	10-G04
3/16-UNF	5/16-N2		04-03	08-04	14-02	06-G02	12-G02
3/16-N1	5/16-N3		04-04	10-01	14-03	06-G03	12-G03
3/16-N2	5/16-N4		06-M5	10-02	14-04	06-G04	12-G04
3/16-N3	3/8-N1		06-M6	10-03	16-02	08-G01	14-G02
1/4-UNF	3/8-N2		06-01	10-04	16-03	08-G02	14-G03
1/4-N1	3/8-N3		06-02	12-01	16-04	08-G03	14-G04
			06-03			08-G04	16-G03
							16-G04



PLL/PLL-G MODEL(ØD-T)							
Tube(Inch)-Thread(NPT)			Tube(Metric)-Thread(R)			Tube(Metric)-Thread(G)	
5/32-UNF	1/4-N2	3/8-N4	04-M5	06-04	12-02	04-G01	10-G01
5/32-N1	1/4-N3	1/2-N02	04-M6	08-01	12-03	04-G02	10-G02
5/32-N2	1/4-N4	1/2-N03	04-01	08-02	12-04	04-G03	10-G03
5/32-N3	5/16-N1	1/2-N04	04-02	08-03	14-01	06-G01	10-G04
3/16-UNF	5/16-N2		04-03	08-04	14-02	06-G02	12-G02
3/16-N1	5/16-N3		04-04	10-01	14-03	06-G03	12-G03
3/16-N2	5/16-N4		06-M5	10-02	14-04	06-G04	12-G04
3/16-N3	3/8-N1		06-M6	10-03	16-02	08-G01	14-G02
1/4-UNF	3/8-N2		06-01	10-04	16-03	08-G02	14-G03
1/4-N1	3/8-N3		06-02	12-01	16-04	08-G03	14-G04
			06-03			08-G04	16-G03
							16-G04



PLF/PLF-G MODEL(ØD-T)							
Tube(Inch)-Thread(NPT)			Tube(Metric)-Thread(R)			Tube(Metric)-Thread(G)	
5/32-UNF	1/4-N2	3/8-N4	04-M5	06-04	12-02	04-G01	10-G01
5/32-N1	1/4-N3	1/2-N02	04-M6	08-01	12-03	04-G02	10-G02
5/32-N2	1/4-N4	1/2-N03	04-01	08-02	12-04	04-G03	10-G03
5/32-N3	5/16-N1	1/2-N04	04-02	08-03	14-01	06-G01	10-G04
3/16-UNF	5/16-N2		04-03	08-04	14-02	06-G02	12-G02
3/16-N1	5/16-N3		04-04	10-01	14-03	06-G03	12-G03
3/16-N2	5/16-N4		06-M5	10-02	14-04	06-G04	12-G04
3/16-N3	3/8-N1		06-M6	10-03	16-02	08-G01	14-G02
1/4-UNF	3/8-N2		06-01	10-04	16-03	08-G02	14-G03
1/4-N1	3/8-N3		06-02	12-01	16-04	08-G03	14-G04
			06-03			08-G04	16-G03
							16-G04

Solenoid valve

Air Cylinder

Air filter & Regulator

Pneumatic Contents

Plastic Push-In Fittings

PCF



PCF-G



PCF/PCF-G		MODEL(øD-T)				
Tube(Inch)-Thread(NPT)		Tube(Metric)-Thread(R)			Tube(Metric)-Thread(G)	
5/32-N1	PCF 5/16-N3	04-M5	08-01	12-03	04-G01	08-G04
5/32-N2	PCF 5/16-N4	04-01	08-02	12-04	04-G02	10-G01
3/16-N1	PCF 3/8-N1	04-02	08-03	14-02	04-G03	10-G02
3/16-N2	PCF 3/8-N2	04-03	08-04	14-03	06-G01	10-G03
1/4-N1	PCF 3/8-N3	06-M5	10-01	14-04	06-G02	10-G04
1/4-N2	PCF 3/8-N4	06-01	10-02	16-02	06-G03	12-G02
1/4-N3	PCF 1/2-N2	06-02	10-03	16-03	08-G01	12-G03
5/16-N1	PCF 1/2-N3	06-03	10-04	16-04	08-G02	12-G04
5/16-N2	PCF 1/2-N4	06-04	12-02		08-G03	14-G03
						14-G04

PMF



PMF-G



PMF/PMF-G		MODEL(øD-T)			
Tube(Inch)-Thread(NPT)		Tube(Metric)-Thread(Rc)		Tube(Metric)-Thread(G)	
5/32-N1	3/8-N3	04-01	08-04	04-G1	10-G02
3/16-N1	1/2-N2	04-02	10-01	04-G2	10-G03
3/16-N2	1/2-N3	04-03	10-02	04-G3	10-G04
1/4-N1	1/2-N4	06-01	10-03	06-G1	12-G02
1/4-N2		06-02	10-04	06-G2	12-G03
5/16-N1		06-03	12-02	06-G3	12-G04
5/16-N2		06-04	12-03	08-G1	
5/16-N3		08-01	12-04	08-G2	
3/8-N2		08-02		08-G3	

PUC



PUC	MODEL(øD)
Tube(Inch)	Tube(Metric)
5/32	04
3/16	06
1/4	08
5/16	10
3/8	12
1/2	14
	16

PUL



PUL	MODEL(øD)
Tube(Inch)	Tube(Metric)
5/32	04
3/16	06
1/4	08
5/16	10
3/8	12
1/2	14
	16

PUT



PUT	MODEL(øD)
Tube(Inch)	Tube(Metric)
5/32	04
3/16	06
1/4	08
5/16	10
3/8	12
1/2	14
	16

PY



PY	MODEL(øD)
Tube(Inch)	Tube(Metric)
5/32	04
3/16	06
1/4	08
5/16	10
3/8	12
1/2	14
	16

Plastic Push-In Fittings

PG



PG	MODEL(øD2-øD1)	
	Tube(Inch)	Tube(Metric)
	3/16-5/32	0604
	1/4-5/32	0804
	1/4-3/16	0806
	5/16-5/32	1006
	5/16-1/4	1008
	3/8-1/4	1208
	3/8-5/16	1210
	1/2-1/4	1412
	1/2-5/16	1612
	1/2-3/8	1614

PW



PW	MODEL(øD1-øD2)	
	Tube(Inch)	Tube(Metric)
	3/16-5/32	0604
	1/4-5/32	0804
	1/4-3/16	0806
	5/16-5/32	1006
	5/16-1/4	1008
	3/8-1/4	1208
	3/8-5/16	1210
	1/2-5/16	1412
	1/2-3/8	1614

PGT



PGT	MODEL(øD1-øD2)	
	Tube(Inch)	Tube(Metric)
	1/4-5/32	0604
	5/16-1/4	0806
	3/8-1/4	1006
	3/8-5/16	1008
	1/2-5/16	1208
	1/2-3/8	1210
		1610
		1412
		1612
		1614

PZA



PZA	MODEL(øD)	
	Tube(Inch)	Tube(Metric)
	5/32	04
	3/16	06
	1/4	08
	5/16	10
	3/8	12
	1/2	

PMM



PMM	MODEL(øD)	
	Tube(Inch)	Tube(Metric)
	5/32	04
	3/16	06
	1/4	08
	5/16	10
	3/8	12
	1/2	

PLM



PLM	MODEL(øD)	
	Tube(Inch)	Tube(Metric)
	5/32	04
	3/16	06
	1/4	08
	5/16	10
	3/8	12
	1/2	

PLJ



PLJ	MODEL(øD1-øD2)	
	Tube(Inch)	Tube(Metric)
	5/32	04
	3/16	06
	1/4	08
	5/16	10
	3/8	12
	1/2	16
	1/4-5/32	0604
	5/16-1/4	0806
	3/8-1/4	1008
	3/8-5/16	1210

PGJ



PGJ	MODEL(øD1-øD2)	
	Tube(Inch)	Tube(Metric)
	1/8-1/4	0604
	5/32-1/8	0804
	5/32-1/4	0806
	1/4-1/8	1006
	1/4-5/32	1008
	5/16-5/32	1206
	5/16-1/4	1208
	3/8-1/4	1210
	3/8-5/16	
	1/2-1/4	
	1/2-5/16	
	1/2-3/8	

Plastic Push-In Fittings

PH



ØD

T

PH-G



ØD

T



ØD

T



ØD

T

PH/PH-G		MODEL(ØD-T)			
Tube(Inch)-Thread(NPT)		Tube(Metric)-Thread(R)		Tube(Metric)-Thread(G)	
1/8-UNF	1/4-N3	04-M5	08-02	04-G01	10-G04
5/32-U	5/16-N1	04-M6	08-03	04-G02	12-G03
5/32-N1	5/16-N2	04-01	08-04	06-G01	12-G04
5/32-N2	5/16-N3	04-02	10-01	06-G02	
3/16-UNF	5/16-N4	06-M5	10-02	06-G03	
3/16-N1	3/8-N2	06-M6	10-03	08-G01	
3/16-N2	3/8-N3	06-01	10-04	08-G02	
3/16-N3	3/8-N4	06-02	12-02	08-G03	
1/4-UNF	1/2-N3	06-03	12-03	08-G04	
1/4-N1	1/2-N4	06-04	12-04	10-G02	
1/4-N2		08-01		10-G03	

PHF



ØD

T

PHF-G



ØD

PHF/PHF-G		MODEL(ØD-T)			
Tube(Inch)-Thread(NPT)		Tube(Metric)-Thread(R)		Tube(Metric)-Thread(G)	
1/8-UNF	5/16-N1	04-M5	08-02	04-G1	08-G04
5/32-UNF	5/16-N2	04-M6	08-03	04-G2	10-G01
5/32-N1	5/16-N3	04-01	08-04	04-G3	10-G02
3/16-UNF	5/16-N4	04-02	10-01	06-G1	10-G03
3/16-N1	3/8-N2	06-M5	10-02	06-G2	10-G04
3/16-N2	3/8-N3	06-M6	10-03	06-G3	10-G04
3/16-N3	3/8-N4	06-01	10-04	06-G4	12-G03
1/4-UNF	1/2-N3	06-02	12-02	08-G1	12-G04
1/4-N1	1/2-N4	06-03	12-03	08-G2	
1/4-N2		06-04	12-04	08-G3	
1/4-N3		08-01			

PKD



ØD1

T

PKD-G



ØD1

T

PKD/PKD-G		MODEL(ØD1-ØD2-T)			
Tube(Inch)-Thread(NPT)		Tube(Metric)-Thread(R)		Tube(Metric)-Thread(G)	
3/16-5/32-N1		0604-01		0604-G01	
1/4-5/32-N1		0804-01		0804-G01	
5/16-5/32-N2		0804-02		0804-G02	
5/16-3/16-N2		0806-01		0806-G01	
5/16-1/4-N2		0806-02		0806-G02	
3/8-1/4-N3		1006-02		1006-G02	
3/8-5/16-N3		1006-03		1006-G03	
		1008-02		1008-G02	
		1008-03		1008-G03	

PKG



ØD1

ØD2

ØD1

PKG		MODEL(ØD1-ØD2)	
Tube(Inch)		Tube(Metric)	
3/16-5/32		0604	
1/4-5/32		0804	
5/16-5/32		0806	
5/16-3/16		1006	
5/16-1/4		1008	
3/8-1/4			
3/8-5/16			

PKJ



ØD1

ØD2

ØD1

PKJ		MODEL(ØD1-ØD2)	
Tube(Inch)		Tube(Metric)	
3/16-5/32		0604	
1/4-5/32		0804	
5/16-5/32		0806	
5/16-3/16		1006	
5/16-1/4		1008	
3/8-1/4			
3/8-5/16			

Plastic Push-In Fittings

PYJ



PYJ MODEL(øD)	
Tube(Inch)	Tube(Metric)
5/32	04
3/16	06
1/4	08
5/16	10
3/8	12
1/2	

PP



PP MODEL(øD)	
Tube(Inch)	Tube(Metric)
5/32	04
3/16	06
1/4	08
5/16	10
3/8	12
1/2	16

PIJ



PIJ MODEL(øD)	
Tube(Inch)	Tube(Metric)
5/32	04
3/16	06
1/4	08
5/16	10
3/8	12
1/2	16

PPF



PPF MODEL(øD)	
Tube(Inch)	Tube(Metric)
5/32	04
3/16	06
1/4	08
5/16	10
3/8	12
1/2	16

PA



PA MODEL(øD-T)	
Tube(Metric)-Thread(NPT/PT)	Tube(Inch)-Thread(G)
04-M5	06-G01
06-01	08-G02
08-02	10-G02
10-02	10-G03
10-03	12-G03
10-03	12-G04
12-04	

PAF



PAF MODEL(øD-T)	
Tube(Metric)-Thread(NPT/PT)	Tube(Inch)-Thread(G)
04-M5	06-G01
06-01	08-G02
08-02	10-G02
10-02	10-G03
10-03	12-G03
12-03	12-G04
12-04	

NPT



NPT MODEL(øD-T)							
Tube(Inch)-Thread(NPT)		Tube(Metric)-Thread(R)			Tube(Metric)-Thread(G)		
5/32-UNF	1/4-N3	04-M5	06-04	12-02	04-G01	10-G01	
5/32-N1	5/16-N1	04-M6	08-01	12-03	04-G02	10-G02	
5/32-N2	5/16-N2	04-01	08-02	12-04	04-G03	10-G03	
3/16-UNF	5/16-N3	04-02	08-03	14-01	06-G01	10-G04	
3/16-N1	5/16-N4	04-03	08-04	14-02	06-G02	12-G02	
3/16-N2	3/8-N1	06-M5	10-01	14-03	06-G03	12-G03	
3/16-N3	3/8-N2	06-M6	10-02	14-04	08-G01	12-G04	
1/4-UNF	3/8-N3	06-01	10-03	16-01	08-G02	14-G01	
1/4-N1	3/8-N4	06-02	10-04	16-03	08-G03	16-G03	
1/4-N2	1/2-N2	06-03	12-01	16-04	08-G04	16-G04	

PWJ



PWJ MODEL(øD1-øD2)	
Tube(Inch)	Tube(Metric)
1/4-5/32	0604
5/16-1/4	0806
3/8-1/4	1008
3/8-5/16	1210

NPGT



NPGT MODEL(øD1-øD2)	
Tube(Inch)	Tube(Metric)
1/4-5/32	0604
5/16-1/4	0806
3/8-1/4	1006
3/8-5/16	1008
1/2-3/8	1208
	1210
	1610
	1412
	1612
	1614

Speed Controllers

Product Features

Speed Controllers Application:

Valve used for controlling the operation speed of a driving device.

Used for movement of machines such as cylinder ,pneumatic finger ,etc.

Feature:

Precisely permit the optimal rate of airflow for the smooth cylinder movement of driving devices.

The Compact and light body permits use in confined space .

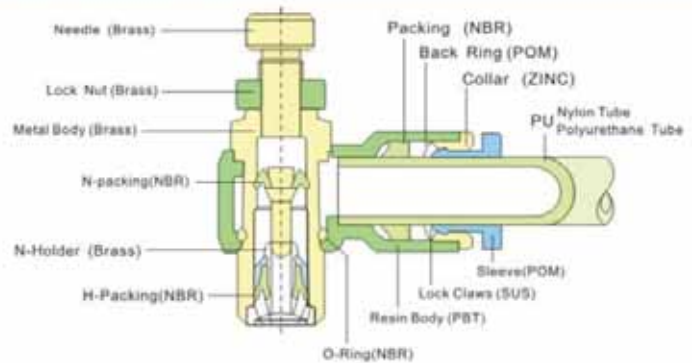
Uni-directional airflow is available for either exhaust or inlet flow control methods.

The compact design provides a comparable range of speed as the conventional speed controllers do.

All R and NPT threads are coated with sealant.

All cylindrical threads are equipped with standard O-ring seals .

Structure Chart



Specification

Fluid	Air(No other gases or liquids)	
Operating Pressure	0-150PSI	0~9.9Kgf/cm ² (0~990kpa)
Negative Pressure	7.5PSI	0.5Kgf/cm ² (50kpa)
Operating Temperature	32~140°F	0~60°C
Applicable Tube	PU Polyurethane and Nylon	

Control Way

Type	Control Out	Control In
Symbol		
	SC06-01	SC06-01B

When you order Control In type, please put B at the end of model type.
For example, SC06-01B.



SC/SC-G		MODEL(ØD-T)			
Tube(Inch)-Thread(NPT)		Tube(Metric)-Thread(R)		Tube(Metric)-Thread(G)	
1/8-UNF	1/4-N3	04-M5	08-04	04-G01	10-G02
5/32-UNF	5/16-N1	04-01	10-01	04-G02	10-G03
5/32-N1	5/16-N2	04-02	10-02	06-G01	10-G04
5/32-N2	5/16-N3	06-M5	10-03	06-G02	12-G02
3/16-UNF	5/16-N4	06-01	10-04	06-G03	12-G03
3/16-N1	3/8-N2	06-02	12-02	06-G04	12-G04
3/16-N2	3/8-N3	06-03	12-03	08-G01	
3/16-N3	3/8-N4	06-04	12-04	08-G02	
1/4-UNF	1/2-N3	08-01	4-M6	08-G03	
1/4-N1	1/2-N4	08-02	6-M6	08-G04	
1/4-N2		08-03		10-G01	



SCF		MODEL(ØD)	
Tube(Inch)		Tube(Metric)	
5/32		04	
3/16		06	
1/4		08	
5/16		10	
3/8		12	



SCJ		MODEL(ØD)	
Tube(Inch)		Tube(Metric)	
06-04		04	
08-06		06	
10-08		08	
		10	