PILOT OPERATED SOLENOID VALVES

PC/RC2,5,13 Series

Rubber Seal,Sub-base/In-line Mounting

Notice :

PC/RC5, 13 series

- We will stop supplying the wiring type "L" (Lead Wire Type) as order basis on June 30th, 2010. As replacement, please use the wiring type "SP" or "UP" (Connector with Lead Wire Type).
- We will stop supplying the latching type as order basis on September 30th, 2011 or parts stock consumption period. As replacement, please use the double solenoid type.

Parker KURODA

ENGINEERING YOUR SUCCESS.

PC series/Rubber seal, Sub-base mounting type
RC series/Rubber seal, In-line mounting type

Standardized series featuring low power consumption 0.5W
Minimized heat generation of solenoid valve and saving energy.

Electrical connection
Plug-in & lead wire as standard plug-in with cabtyre cable option.

Vacuum and Dual supply available
External pilot valve type.

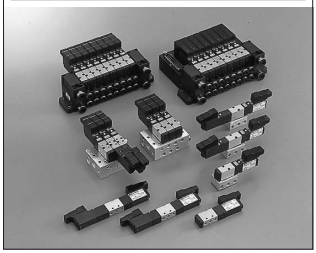
Captured pilot exhaust as standard

Manual override standard
Non-lock type (Standard), Lock type (Option)

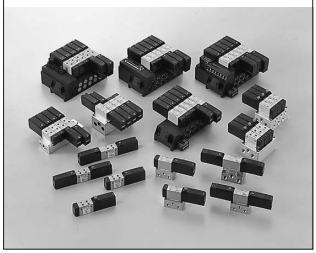
Effective area : 2mm², 4mm² and 12mm²

Latch type solenoid version
Serves as double solenoid valve with single solenoid dimensions.

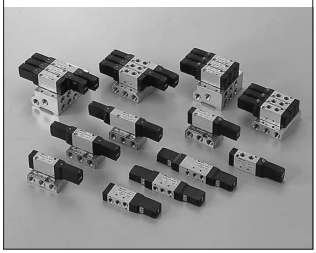
PC・RC2 series
Width : 10mm,
Effective area : 2mm²



PC・RC5 series
Width : 15mm,
Effective area : 4mm²



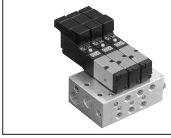
PC・RC13 series
Width : 18mm,
Effective area : 12mm²



PC2 Pilot operated/Sub-base mounting

PC2 Pilot operated type P.15

Manifold P.20

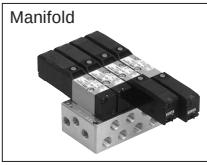


PC5 Pilot operated/Sub-base mounting

PC5 Pilot operated type P.33

PCL5 Latch type P.101

Manifold P.46

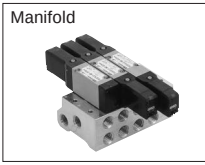


PC13 Pilot operated/Sub-base mounting

PC13 Pilot operated type P.81

PCL13 Latch type P.114

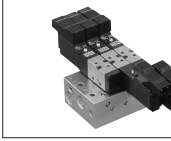
Manifold P.88



RC2 Pilot operated/In-line mounting

RC2 Pilot operated type P.24

Manifold P.29



RC5 Pilot operated/In-line mounting

RC5 Pilot operated type P.63

RCL5 Latch type P.101

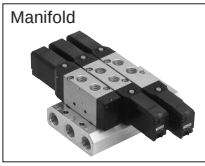
Manifold P.72

RC13 Pilot operated/In-line mounting

RC13 Pilot operated type P.91

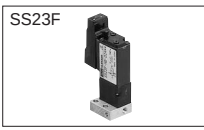
RCL13 Latch type P.114

Manifold P.98

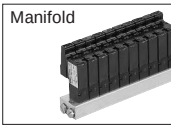


SS23F Direct acting/Sub-base mounting

SS23F P.123



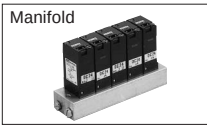
Manifold P.125



SS23J Direct acting/Sub-base mounting

SS23J P.127

Manifold P.129



Latch Type Solenoid Valve

PCL5, 13 series/Rubber seal, Sub-base mounting type
RCL5, 13 series/Rubber seal, In-line mounting type

Space-saving

Functions of double solenoid are available on one-end solenoid.
Compact design equal to single solenoid.
(PCL5 and 13 series are of the same configuration.)

Wire-saving

All the wires are one-side.
3-wire specifications of "+" , "—" and "Common".
Lead wire and plug-in connector with lead wire.

PCL・RCL5

PCL・RCL13

Latch Type Solenoid Valve

PCL5 Pilot operated/Sub-base mounting

PCL5

P.101

Manifold

P.108

RCL5 Pilot operated/In-line mounting

RCL5

P.101

Manifold

P.111

PCL13 Pilot operated/Sub-base mounting

PCL13

P.114

Manifold

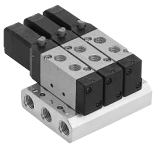
P.119

RCL13 Pilot operated/In-line mounting

RCL13

P.114

Manifold



P.121

FOR SAFETY USE

Be sure to read the following instructions before use.
For common and individual instructions, refer to the text of this catalog.

The following safety precautions are provided to prevent damage and danger to personnel and to provide instructions on the correct usage of this product. These precautions are classified into 3 categories "CAUTION", "WARNING" and "DANGER" according to the degree of possible injury or damage and the degree of impendence of such injury or damage.
Be sure to comply with all precautions along with JIS B8370 (※1) and ISO 4414 (※2), as they include important content regarding safety.

CAUTION :	WARNING :	DANGER :
Indicates a potentially hazardous situation which may arise due to improper handling or operation and could result in personal injury or property-damage-only accidents.	Indicates a potentially hazardous situation which may arise due to improper handling or operation and could result in serious personal injury or death.	Indicates an impending hazardous situation which may arise due to improper handling or operation and could result in serious personal injury or death.

(※1) JIS B8370 : General Rules for Pneumatic Systems

(※2) ISO 4414 : Pneumatic fluid power-General rules relating to systems

WARNING

- The applicability of pneumatic equipment to the intended system should be judged by the pneumatic system designer or the personnel who determined specifications for such system.

  As operating conditions for products contained in this catalog are diversified, the applicability of pneumatic equipment to the intened system should be determined by the pneumatic system designer or the personnel who determined specifications for such system after conducting an analysis or testing as necessary.

  The system designer shall be responsible for assuring the intended system performance and safety.

  Before making a system, the system designer should thoroughly examine all specifications for such a system and also take into consideration the possibility of any trouble with the equipment.

- The pneumatic equipment should be handled by persons who have sufficient knowledge and rich experience.

  Inproper handling of compressed air will result in danger.

  Assembling, operation and maintenance of machinery using pneumatic equipment should be performed by persons who have sufficient knowledge and rich experience.

- Never operate machinery nor remove the equipment until safety is assured.
  - Before checking or servicing machinery and equipment, be sure to check that steps for prevention of dropping or runaway of the driven component have been completely taken.
  - When removing the equipment, make sure that the above-mentioned safety measures have been done beforehand. Then turn off air supply and power to the system and purge compressed air in the system.
  - When restarting machinery and equipment, check that proper prevention of malfunction has been provided for and then restart carefully.

- When using the pneuatic equipment in he folowing conditions or environments, take the proper safety measures and consult KURODA beforehand.
  - Conditions and environments other than specified and outdoor use.
  - Applications to nuclear power equipment, railroads, aircraft, vehicles, medical equipment, equipment connected with food and drink, amusement facilities and safety devices such as emergency interruption devices, clutch/brake circuits for a press and the likes.
  - Applications which require extreme safety and will also greatly affect men and property.

SOLENOID VALVES/COMMON INSTRUCTIONS ①

Be sure to read them before use.
Also refer to Par. "For Safety Use" and instructions mentioned for each series of solenoid valves.

DESIGN

⚠ WARNING

- Stopping actuator at intermediate position

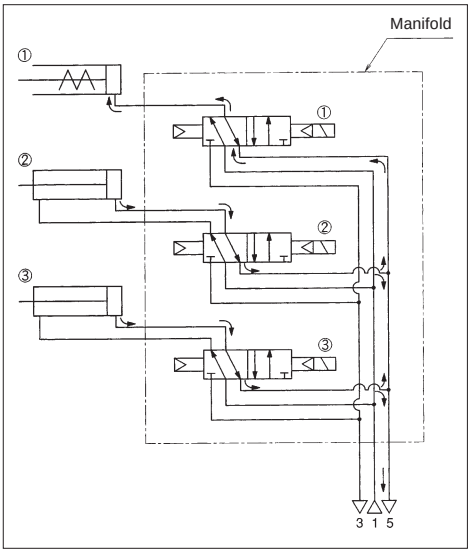
When stopping the actuator at an intermediate position using a solenoid valve listed in this catalog, it is difficult to stop it accurately because of the compressibility of air, unlike a hydraulic cylinder can dose.
In addition, as the solenoid valve and air cylinder allow a certain degree of air leak, they cannot stop at the fixed position for a long period of time according to circumstances.
When it is required to stop them at the fixed position for a long period of time, contact KURODA.

- Influence of back pressure when using at manifold.

For example, when a solenoid valve of 3-position exhaust center type is used at the manifold, the back pressure comes from the exhaust side of the solenoid valve into the actuator, sometimes causing a trouble.
So, take proper countermeasures by using an individual exhaust type manifold etc.

[Example of phenomenon]

When solenoid valves ② and ③ switch simultaneously in the following case (see Fig. below), the exhaust air of double-acting cylinders ② and ③ passes through the exhaust port of the manifold, and it is applied from solenoid valve ① to single-acting cylinder ① as a back pressure.
When the exhaust flow of the double-acting cylinder is large and the exhaust capacity from the exhaust port is not sufficient, the back pressure may sometimes exceed the minimum operating pressure of single-acting cylinder ①, resulting in the mechanical error of the cylinder.
It can be solved by using an individual exhaust system for solenoid valve ①.



DESIGN

⚠ WARNING

- Keeping pressure (including vacuum)

As the solenoid valve is designed to allow a certain degree of air leak, it cannot be used to keep pressure (including vacuum) in a pressure vessel etc.

- Do not use for emergency shutoff valves.

Solenoid valves listed in this catalog are not designed for use in emergency shutoff valves and other safety applications.
When using the solenoid valve for such applications, provide an independent means to assure safety.

- Exhausting residual air

Provide a residual air exhausting function in due consideration of maintenance and inspection. Doing maintenance and inspection without exhausting residual air may sometimes malfunction the actuator.
When using a 3-position closed center type solenoid valve, compressed air is shut in between solenoid valve and actuator even if residual air from the air supply side to the solenoid valve is exhausted.
Therefore, provide a means to exhaust the residual air pressure separately.

- Use in vacuum

When using a solenoid valve for diverting vacuum and other applications, check specifications for the valve and select a proper one that can be used in vacuum.
In order to prevent sucking foreign matters from the suction pad and exhaust port, provide an inline filter between the suction pad and solenoid valve and at the exhaust port.

- Applying current continuously for long time

When using a solenoid valve while applying current to it continuously for a long period of time, contact KURODA beforehand.

- Avoid applying current simultaneously.

When using a double-solenoid valve while applying current to it continuously for a long period of time, do not apply current to both solenoids simultaneously ; otherwise the coil may be burnt out or the main valve may malfunction.

- Remodeling the solenoid valve

Do not remodel the solenoid valve.

SOLENOID VALVES/COMMON INSTRUCTIONS ③

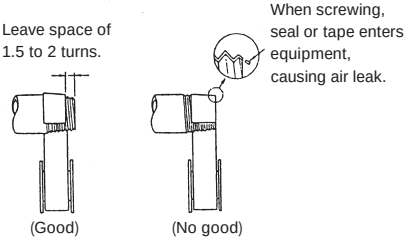
Be sure to read them before use.
Also refer to Par. "For Safety Use" and instructions mentioned for each series of solenoid valves.

PIPING

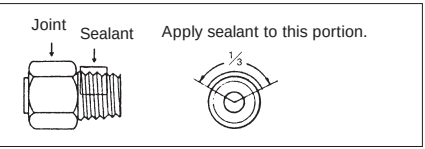
⚠ CAUTION

- Before piping
  Thoroughly flush the inside of each pipe to remove chips, coolant, dust, etc. before piping.

- How to wind a seal tape
  When winding a seal tape around the threaded portion, leave space of 1.5 to 2 thread turns.



- How to apply liquid sealant
  When applying liquid sealant to the threaded portion, apply a proper amount to about 1/3 of the periphery of the threaded portion and then screw it.



- Screw of pipe and joint
  When screwing the pipe and joint, use care to prevent chips and sealant from entering the pipe and joint.
  Tighten them within a proper range of tightening torque.

Port size	Tightening torque (N・m)
M3	0.3～ 0.5
M5	1.5～ 2.0
R , Rc 1/8	7.0～ 9.0
R , Rc 1/4	12 ～14
R , Rc 3/8	22 ～24
R , Rc 1/2	28 ～30
R , Rc 3/4	28 ～30
R , Rc1	36 ～38
R , Rc1 1/4	40 ～42
R , Rc1 1/2	48 ～50

PIPING

⚠ CAUTION

- Avoid wrong piping.
  When connecting a pipe to a solenoid valve, be careful not to mistake the supply port by referring to the nameplate affixed to the product or the product catalog.

- When using a 3-position closed center type solenoid valve :
  Thoroughly check the piping between solenoid valve and actuator for air leak.

USABLE TUBE

⚠ CAUTION

- Use KURODA nylon tubes and polyurethane tubes for instant fittings.
  When using tubes made by other company, be careful of diametral accuracy.
  There are some commercially available tubes which do not satisfy the diametral accuracy.

- When using a tube, do not bend it extremely near the fitting.
  There is a possibility of breaking the tube (buckling).
  When using a tube by bending, use it at the minimum bending radius or more.

- When using with any other fluid than air, consult KURODA.

FITTING AND DETACHING A TUBE

⚠ CAUTION

Fitting a tube

- When using a tube, cut it at right angles axially by using the special tool (tube cutter/TC-16). If the tube is deformed by cutting with scissors, nipper, etc., it will become the cause of air leak or deflation.
- Fully insert the tube up to the tube end.
- Pull the tube lightly to check that it does not come off from the fitting.

Detaching the tube

- Draw out the tube, while pushing in the release ring in parallel. Be sure to remove the residual pressure before drawing out the tube.
- When reusing the detached tube, cut off the bitten portion.

SOLENOID VALVES/COMMON INSTRUCTIONS ②

Be sure to read them before use.
Also refer to Par. "For Safety Use" and instructions mentioned for each series of solenoid valves.

DESIGN

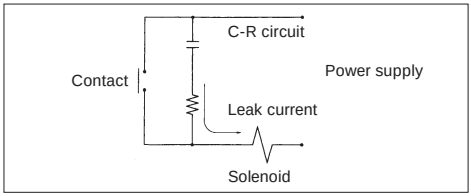
⚠ CAUTION

- Applying current momentarily

  When using a double-solenoid type valve, apply current for the prescribed period of time (0.1 sec.). If current is not applied for the prescribed period of time, the solenoid valve may not perform the diverting action acording to circumstances.

- Leak current

  When a C-R element is used in the contact protective circuit (surge voltage protection), leak current will flow through the C-R element.
  If thid leak current becomes large, a malfunction will occur.
  Therefore, reduce leak current to less than 1 mA.



- Use at low temperature

  When using a solenoid valve at 5℃or below, provide an air dryer or other proper means to prevent moisture from solidifying or freezing.

- Use with air blow

  When using a solenoid valve with air blow, select a direct-operated type or external pilot type solenoid valve.
  When an internal pilot type solenoid valve is used, it may not perform the diverting action due to a pressure drop at the time of air blow.
  When an external pilot type solenoid valve is used, supply compressed air within the specified pressure range to the pilot port.

- Mounting position and direction

  A solenoid valve can be mounted in any position and direction as a general.
  However, a metal seal type double-solenoid valve and a 3-position solenoid valve should be mounted so that the spool may be horizontal.

- Shock and vibration

  Reduce shocks and vibrations applied to the solenoid valve to less than the prescribed value. (refer to specifications.)
  Applying shocks and vibrations exceeding the prescribed value may rsult in a malfunction of the solenoid valve.

SELECTION

⚠ WARNING

- Refer to specifications.

  Solenoid valves listed in this catalog are designed for compressed air.
  When using other fluid than compressed air, contact KURODA beforehand.
  Do not use a solenoid valve at pressure and temperature outside the range of specifications, otherwise resulting in a breakdown or malfunction.

MOUNTING

⚠ WARNING

- When mounting the solenoid valve, firmly fix it while using care to prevent the stationary part and joint from loosening.

  If the solenoid valve is mounted with insufficient strength, it may sometimes come off.

- Do not start the system until it is ensured that equipment works properly.

  After mounting the solenoid valve, connect power supply and then perform a functional test and a leak test. Check that it has been correctly mounted and works properly, before starting the system.

- Coating with paint

  When coating the resin portion with paint, it may be adversely affected by paint and solvent. For the propriety of painting, contact KURODA beforehand.
  Do not peel off the nameplate affixed on the solenoid valve and do not erase or smear out the letter on it.

- Provide space for maintenance and inspection.

⚠ CAUTION

- Fit an air muffler to the exhaust port of the solenoid valve.

  Dust or foreign matter that enters it may cause a malfunction of the solenoid valve.

- Do not wipe off the model name inscribed on a nameplate etc. with organic solvent.

  The inscribed indication may be erased.

SOLENOID VALVES/COMMON INSTRUCTIONS ④

Be sure to read them before use.
Also refer to Par. "For Safety Use" and instructions mentioned for each series of solenoid valves.

WIRING

⚠ WARNING

- When doing wiring work, be sure to turn off compressed air and power supplies beforehand.
  Wiring work without turning off air and power supplies may cause an electric shock or malfunction ; this sometimes results in an injury to the human body or a damage to property.
- Avoid mis-wiring.
  Some solenoid valves have polarity : Those operating on DC with built-in indicator light and those equipped with surge protective circuit.
  When wiring to a solenoid valve, check whether or not it has polarity.
  For a solenoid valve having polarity, check the lead wire color and symbol of the polarity by the catalog or actual article beforehand and then make correct wiring.
  Mis-wiring will result in the following problems :
  <Where no polarity protective diode is incorporated :>
  Wiring to the wrong polarity will burn out the diode in the solenoid valve, the switching element on the control unit side or the power supply unit.
  <Where a polarity protective diode is provided :>
  Wiring to the wrong polarity will not cause the solenoid valve to perform a diverting action.
- Avoid applying stress and tensile force to lead wire repeatedly.
  Wiring made in such a manner that stress and tensile force are repeatedly applied to the lead wire will result in the breaking of wire. Provide some degree of margin for wiring.
- Check that there is no insulation failure.
  If an insulation failure occurs in the lead wire connection, extension cable and terminal base, an excess flows to the switching element of the solenoid valve or control unit, sometimes resulting in a damage.
- Do not mistake applied voltage.
  Mistake in applied voltage in case of wiring to a solenoid valve will cause an operation failure or burn out the coil.
- After completion of wiring, check for wrong connection before turning on power.

OPERATING ENVIRONMENTS

⚠ DANGER

- Do not use solenoid valve in a explosive environment.

⚠ WARNING

- Do not use a solenoid valve in atmospheres containing corrosive gases, chemicals, seawater, water and vapor and in places where a solenoid valve contacts these matters.
- Do not use a solenoid valve in a place where vibrations or shocks are directly applied to it.
- When a solenoid valve is exposed to the direct sunlight, fit a protective cover to the solenoid valve.
- When a solenoid valve is located around a heat source, shut off the radiant heat.
- When installing a solenoid valve in the control panel, take proper heat-radiating measures so that the inside temperature may be kept within the specified temperature range.
- When using a solenoid valve in a place where it is exposed to welding spatters, provide a protective cover or other proper prevention.
  Welding spaters may burn out the plastic parts of the solenoid valve, sometimes resulting in a fire.

SOLENOID VALVES/COMMON INSTRUCTIONS ⑤

Be sure to read them before use.
Also refer to Par. "For Safety Use" and instructions mentioned for each series of solenoid valves.

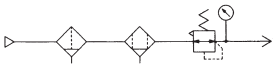
QUALITY OF AIR

⚠ WARNING

- Use pure air.
  Compressed air containing corrosive gases, chemicals, salt, etc. causes a breakdown or operation failure. So do not use such air.

⚠ CAUTION

- Fit an air filter with filtration of 5μm or fine.
- Install an air dryer.
  Compressed air containing much drainage causes the operation failure of pneumatic equipment. Install an air dryer, lower the temperature and reduce drainage.
- Take proper countermeasures against sludge.
  If sludge produced in compressor oil enters pneumatic equipment, it will cause the operation failure of pneumatic equipment.
  It is recommendable to use compressor oil (NISSEKI FAIRCALL A28, IDEMITSU DAPHUNY SUPER CS68) featuring minimized sludge production or use a coalescing filter to prevent sludge from entering the pneumatic equipment.



LUBRICATION

⚠ CAUTION

- Solenoid valves listed in this catalog are non-lubrication.
  The non-lubricated solenoid valve can be used without lubrication, but can be used with lubrication.
  When using it with lubrication, do not discontinue supplying oil. Otherwise, the applied lubricant may run off, sometimes resulting in an operation failure.
  When using a lubricant, Class 1 turbine oil ISO VG 32 (containning additive) is recommended.
  Do not use other oils (spindle oil, machine oil, etc.), otherwise causing a damage to the sealed part.

MAINTENANCE AND INSPECTION

⚠ WARNING

- Inspection before maintenance
  First check that load drop prevention has been provided.
  Then shut off air and power supplies to the system and exhaust residual air in the system beforehand.
  For a 3-position closed center type solenoid valve, compressed air is sealed between solenoid valve and cylinder.
  Exhaust this residual compressed air.
- Inspection after maintenance
  When restarting the system, check that preventive measures against flying-out of the actuator have been taken. Then connect compressed air supply to the pneumatic system, and perform a proper functional test and a leak test to check that it works safely without fail, before starting the system.
- Operation at low frequency
  To prevent an operation failure, perform the switching action of the solenoid valve once per 30 days. (Be careful of air supply.)
- Manual operation
  When the solenoid valve is manually operated, the system connected to it is also operated. Make sure safety before operation.
  When the solenoid valve is operated by means of the locking button, be sure to release the button.
  If the solenoid valve is operated without releasing the locking button, the solenoid valve is held to ON status. As a result, the system dose not normally operate, sometimes causing a danger.
- Disassembly of solenoid valve
  When disassembling the solenoid valve, contact KURODA beforehand.

⚠ CAUTION

- Draining
  To keep the quality of air to a certain level, drain the air filter at periodical intervals.

PC・RC2, 5, 13 SERIES/INDIVIDUAL INSTRUCTIONS ①

Be sure to read them before use.
Also refer to Par. "For Safety Use" and common instructions.

WIRING SPECIFICATIONS

CAUTION

● **L type**

Lead wire

(AWG26 length 300 mm : PC・RC2
AWG22 length 300 mm : PC・RC5 , PC・RC13 , PCL・RCL5 , PCL・ RCL13)

● **SP type**

Connector with lead wire (with indicator light & surge suppressor)

(AWG26 length 500 mm : PC・RC2
AWG22 length 500 mm : PC・RC5 , PC・RC13 , PCL・RCL5 , PCL・ RCL13)

● **UP type**

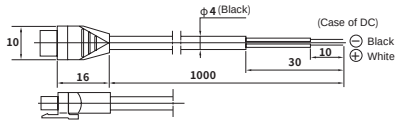
Connector with lead wire (with indicator light & surge suppressor)

(AWG26 length 500 mm : PC・RC2
AWG22 length 500 mm : PC・RC5 , PC・RC13 , PCL・RCL5 , PCL・ RCL13)

● **Connector with cabtyre cable (Option)**

Available only for SP type and UP type valves. This connector is used in common with the PC・RC2, 5 and 13.
Length : 1000 mm

Model No.	PC5-CB10



● **Lead wire color**

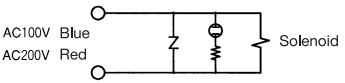
Wiring type	AC100/110V	AC200/220V	DC
L	Blue	Red	Black
SP , UP	Blue	Red	+ : Red, − : Black
SP , UP (For PCL & RCL)	—	—	−a : Yellow, +COM : Red, −b : Black
SP , UP (With cabtyre cable)	White, Black	White, Black	+ : White, − : Black
LK	—	—	+ : Red, − : Black

INTERNAL CIRCUIT OF SP & UP TYPE

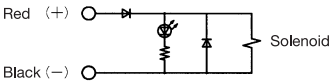
CAUTION

• **PC・RC2, 5, 13**

Case of AC

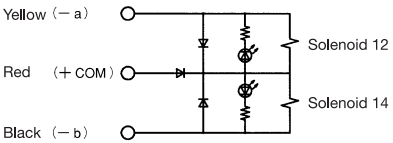


Case of DC



For DC power supply, make correct connection in accordance with polarity mark ⊕⊖ on lamp cover.
Since the HW type valves are not provided with the diode or preventing reversed connection, do not mistake polarity ⊕⊖ when marking connections.

• **PCL・RCL5, 13**



SPECIAL WIRING TYPE

CAUTION

• **Downward wiring type (PC・RC2)**

Wiring can also be taken out from the base side. Consult KURODA.

• **Wiring type on port 2・4 side with manifold mounted (PC・RC2, 5)**

Wiring (solenoid) with manifold mounted can also be set to port 2・4 side. (Except MFX-PV2 and MFX-RV2) For MF-TCF, wiring can be set to the opposite side of pot 2. consult KURODA.

PC・RC2, 5, 13 SERIES/INDIVIDUAL INSTRUCTIONS ②

Be sure to read them before use.
Also refer to Par. "For Safety Use" and common instructions.

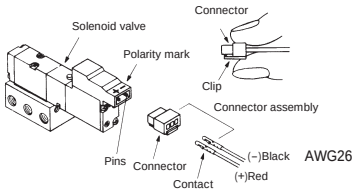
HOW TO USE CONNECTORS

⚠ CAUTION

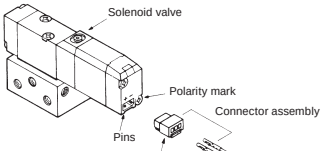
• How to attach and detach a connector

When attaching a connector, pinch the clip with your finger and insert the connector into the pin straight to the end. When detaching a connector, pinch the clip with your finger and pull out the connector straight.

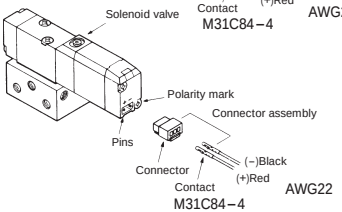
PC・RC2



PC・RC5,13



PCL・RCL5,13

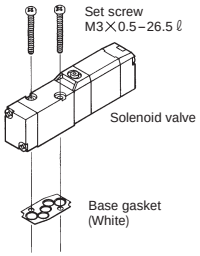


COMBINATION OF SOLENOID VALVE AND BASE GASKET

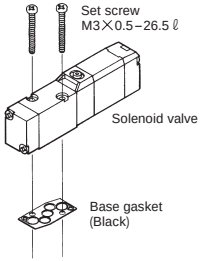
⚠ CAUTION

• PC・RC5

Individual pilot air exhaust (Standard)

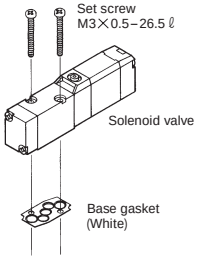


Captured pilot air exhaust (Option)

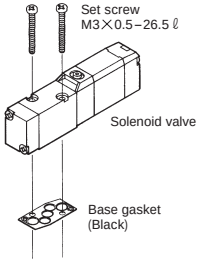


• PCL・RCL5

Individual pilot air exhaust (Standard)



Captured pilot air exhaust (Option)



ASSEMBLY OF VALVES TO SUB-BASE OR MANIFOLD

When assemble valves to the sub-base or manifold, do so with appropriate tightening torque is shown below.

Valve	Screw size	Bit No.	Tightening torque (N・m)
PC2 RC2 series	Cross-recessed head machine screw M1.7×17ℓ	# 0	0.1 ～ 0.12
PC5 RC5 series	Cross-recessed head machine screw M3×22ℓ	# 2	0.6 ～ 0.7
PC13 RC13 series	Cross-recessed head machine screw M3×30ℓ	# 2	0.6 ～ 0.7
SS23F	Cross-recessed head machine screw M2×38ℓ×3s	# 0	0.08 ～ 0.1
SS23J	Cross-recessed head machine screw M2.6×37ℓ×5s	# 1	0.25 ～ 0.3

• Draining

To keep the quality of air to a certain level, drain the air filter at periodical intervals.

PC・RC2, 5, 13 SERIES/INDIVIDUAL INSTRUCTIONS ③

Be sure to read them before use.
Also refer to Par. "For Safety Use" and common instructions.

MANUAL OVERRIDE

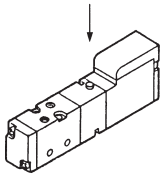
⚠ CAUTION

•PC・RC2, 5, 13

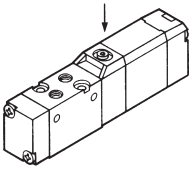
Non-lock type

Push the manual override with a sharp-pointed tool and the valve will shift to energized position.

PC・RC2



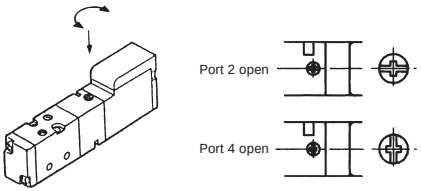
PC・RC5、13



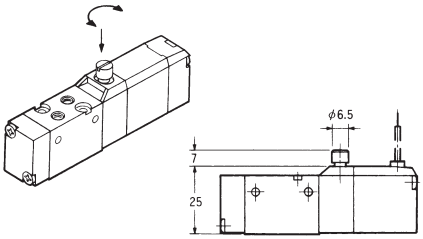
Lock type

Push the manual override with a slotted screwdriver, and the valve will shift to energized position. Rotating the manual override keeping push by 90 degree clockwise will lock the valve, at energized position.

PC・RC2



PC・RC5,13



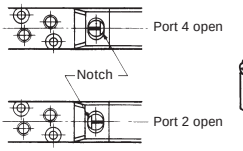
MANUAL OVERRIDE

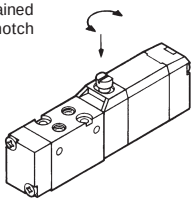
⚠ CAUTION

•PCL・RCL5,13

PCL・RCL5,13

Rotate the manual override by 180 degree with your finger tip or a slotted screwdriver and then push it, and the following state will be obtained according to the position of the notch on the manual override.





PC·RC2, 5, 13 SERIES/INDIVIDUAL INSTRUCTIONS ④

Be sure to read them before use.
Also refer to Par. "For Safety Use" and common instructions.

CAPTURED PILOT AIR EXHAUST THROUGH MANIFOLD

CAUTION

- Connect the manifold so that pilot air exhaust port (port Y) pressure may be lower than permissible back pressure.

Supply pressure (Port 1)	Permissible back pressure (port Y)
0.2MPa	0.04MPa
0.3	0.07
0.4	0.1
0.5	0.13
0.6	0.16
0.7	0.19
0.8	0.22

- When operating five or more solenoid valves simultaneously on a manifold of 10 or more stations, pipe them in such a manner that air is suplied from ports 1 and 3/5 on both sides of the manifold.

EXTERNAL PILOT PRESSURE

CAUTION

- When using with an external pilot, be sure to supply the external pilot pressure at the same pressure or more as the main valve pressure.
  Using at lower pressure than the main valve pressure causes an operation failure.
- When supplying pressure, first supply to the external pilot pressure and then to the main valve pressure.
  When shutting off pressure and exhaust air, first shut off the main valve pressure and then the external pilot pressure to exhaust air.
  Reversing this order results in a mechanical error.

FLOW RATE

Flow rate can be calculated from the following formula ;
For values in the sonic velocity zone, find out from the attached table.

① $P_H \leqq 2P_L$ (Subsonic velocity zone)

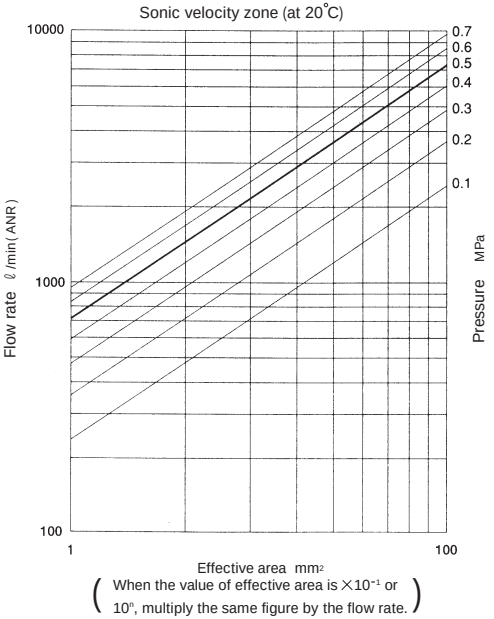
$$Q = 240 \times S \times \sqrt{P_L \times (P_H - P_L)} \times \sqrt{\frac{293}{T_H}}$$

② $P_H \geqq 2P_L$ (Sonic velocity zone)

$$Q = 120 \times S \times P_H \times \sqrt{\frac{273}{T_H}}$$

Q	: Flow rate	ℓ /min (ANR)
S	: Effective area of orifice	mm^2
P_H	: Pressure on upper stream	MPa abs
P_L	: Pressure on down stream	MPa abs
T_H	: Absolute temperature on upper stream	K

(Note) Absolute pressure (MPa) = Supply pressure + 0.100 (MPa)



EFFECTIVE AREA

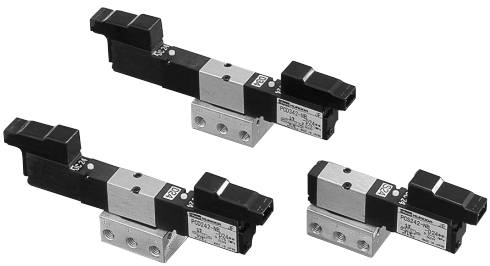
Effective areas mentioned in this catalog are measured between ports 1→2 or 4 in accordance with JIS (JAPANESE INDUSTRIAL STANDARD) B8374/8375.

PILOT OPERATED SOLENOID VALVE

PC2 Series

Rubber Seal/Sub-base Mounting type

PCC232	2-position Single solenoid Normal close
PCO232	2-position Single solenoid Normal open
PCS242	2-position Single solenoid
PCD242	2-position Double solenoid
PCD342	3-position Closed center
PCE342	3-position Exhaust center
PCO342	3-position Pressure center



SPECIFICATIONS

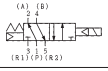
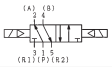
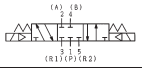
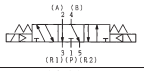
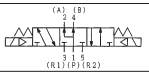
Model No.	Unit	PCC232 PCO232	PCS242	PCD242	PCD342 PCE342	PCO342
Fluid		Non-lubricated/ lubricated air				
Port size		M5				
Effective area (Cv)	mm^2	1.8 (0.1)			0.8 (0.044)	0.4 (0.022)
Ambient temperature	^oC	– 5 ～ 50				
Operating pressure range	MPa	0.2 ～ 0.7 (– 0.1 ～ 0.7)				
Maximum frequency	Cycle/min	600			300	
Response time at 0.5MPa	s	ON 0.010 OFF 0.018		ON 0.008	ON 0.008 OFF 0.028	
Rated voltage	V	DC24,12				
Permissible voltage fluctuation	%	+10, –15				
Grade of insulation		JIS grade B				
Power consumption	W	L type : 0.5			SP,UP type : 0.55	
Wiring		Lead wire (L), Connector with lead wire (SP, UP)				
Mass	g	50	46	66	68	

(Note) • ( ) shows the pressure range of main spool with external pilot range 0.2 to 0.7 MPa. External pilot pressure should be higher than main supply.
• Add 0.02 second to OFF time when using SP or UP, LK type.
Response time data obtained and presented in accordance with JIS B8375.
• When using it at temperature of 5°C or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

ORDERING INSTRUCTIONS

PCS242		–	M5	–	D24	SP	L
①	②		③		④	⑤	⑥

①Function

PCC232	
PCO232	
PCS242	
PCD242	
PCD342	
PCE342	
PCO342	

②Special specification

No mark	Standard
V	External pilot (valve body ported) Capturedexhaust of pilot
Z	External pilot (sub-base ported) Capturedexhaust of pilot

(Note) Z : PCC232 and PCO232 only

③Port size

M5	M5×0.8
NB	Without sub-base

④Voltage

D24	DC 24V
D12	DC 12V

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)
LK	Lead wire (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector.
MP, NP and LK types are made to order.

For wiring instructions, refer to Page 11.

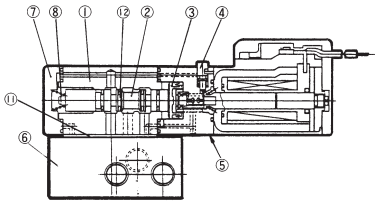
⑥Manual override

No mark	Standard (Non-lock)
L	With locking button

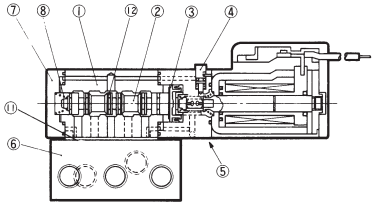
(Note) L : Made to order

CONSTRUCTIONS AND MAIN COMPONENTS

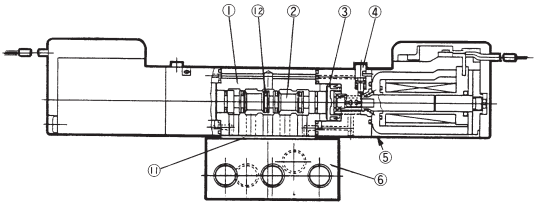
PCC232, PCO232



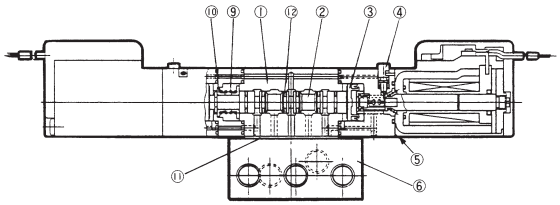
PCS242



PCD242



PCD342, PCE342, PCO342



No.	Description	Material
①	Body	Aluminium alloy
②	Spool assembly	—
③	Piston	Synthetic resins
④	Manual override	Synthetic resins
⑤	Pilot valve	—
⑥	Sub-base	Aluminium alloy
⑦	End cover	Synthetic resins
⑧	Return spring S	Stainless steel
⑨	Return spring 3P	Stainless steel
⑩	Spring retainer	Synthetic resins
⑪	Base gasket	NBR
⑫	Seal packing	NBR

OPTIONAL PARTS AND SPARE PARTS

Connector with lead wire

PC2 - [D24] - [CL5]
①　②

①Voltage
D24 : DC24V,12V

②Lead wire length
CL5 : 500mm (Standard)
CL10 : 1000mm
CL20 : 2000mm
CL30 : 3000mm

Sub-base

PC2 - SB [5] [X] - [M5]
①　②　③

①Number of port
3 : 3-port
5 : 5-port

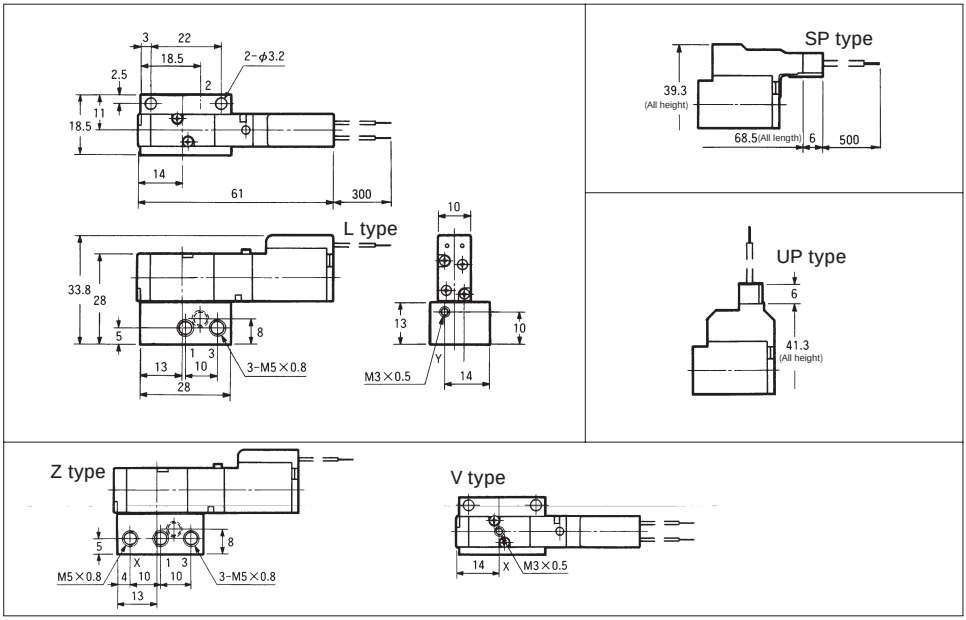
②Special specification
No mark : Individual exhaust
X : Individual exhaust, external pilot
(For PCC232Z and PCO232Z)

③Port size
M5 : M5×0.8
01 : Rc 1/8

DIMENSIONS

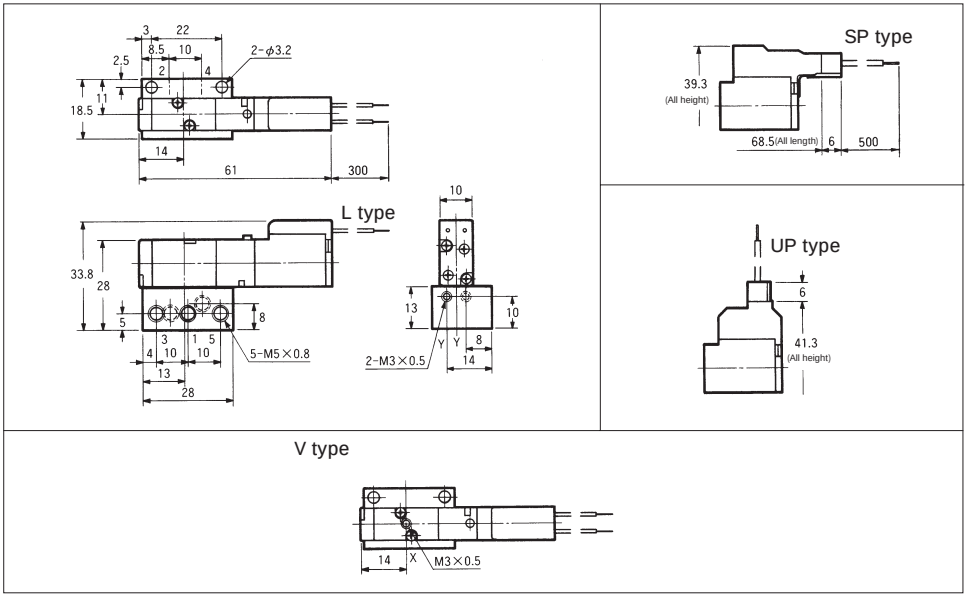
● PCC232, PCO232

(Unit : mm)



● PCS242

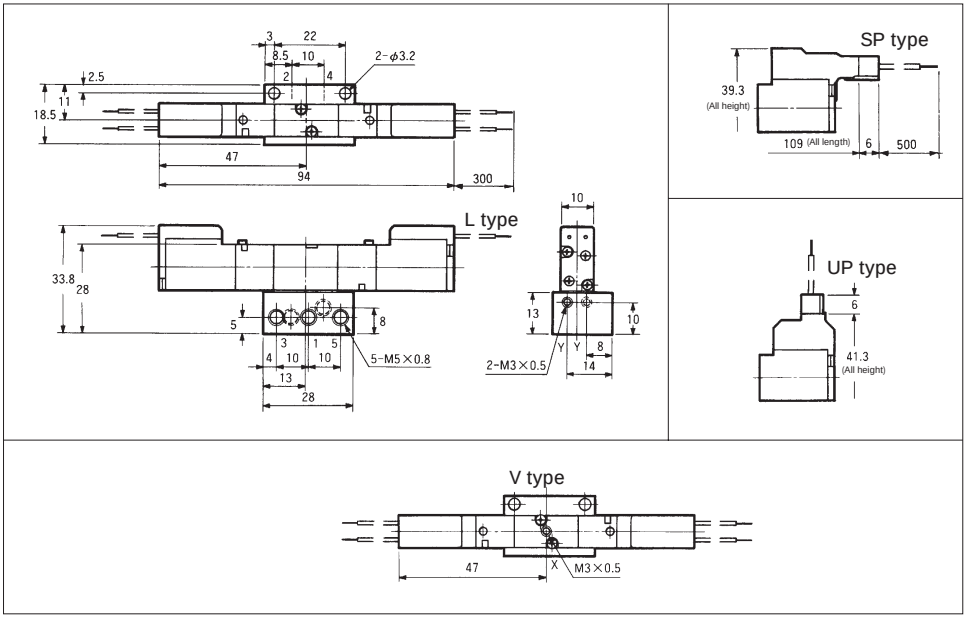
(Unit : mm)



DIMENSIONS

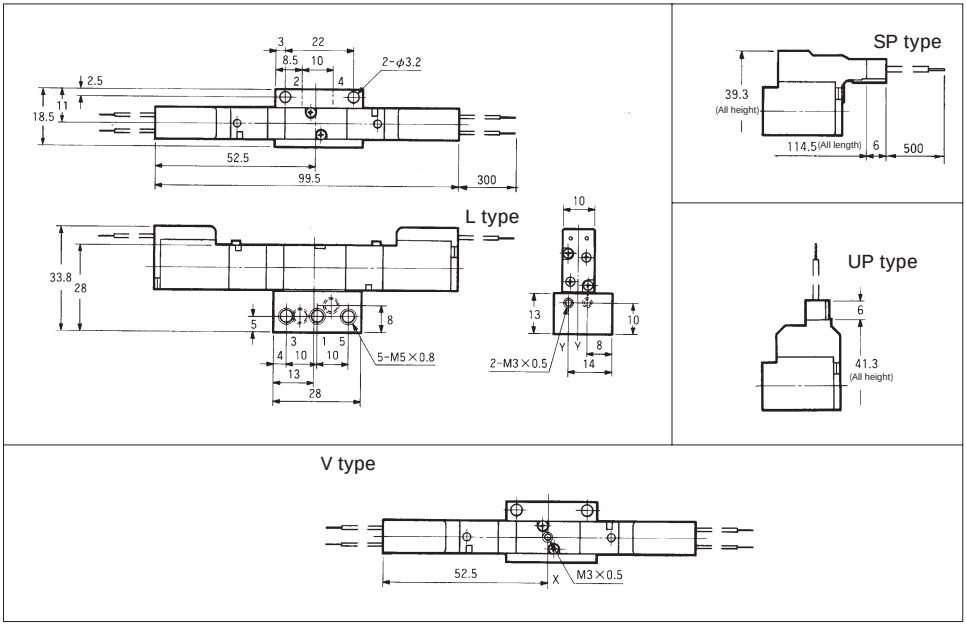
● PCD242

(Unit : mm)



● PCD342, PCE342, PCO342

(Unit : mm)



INDIVIDUAL WIRING TYPE MANIFOLD

MF○-PV2

Bar type

MFS□-PV2 (Captured exhaust of pilot, Common SUP, Captured EXH, Ports 1 & 3/5 on both sides)

MFX□-PV2 (Captured exhaust of pilot, Common SUP, Common EXH, Common external pilot, Ports 1 & 3 on both sides)

MANIFOLD SPECIFICATIONS

		MFS□-PV2	MFX□-PV2
Type of manifold		Captured exhaust of pilot Common SUP, Captured EXH (Ports 1 & 3/5 on both sides)	Captured exhaust of pilot Common SUP, Common EXH Common external pilot (Ports 1 & 3 on both sides)
Port size	Port 1	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)
	Port 3/5	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)
	Port 2 & 4	M5	M5
	Port X	—	M5
	Port Y	M5	M5
Number of stations		2 ~ 20	2 ~ 20
Mountable solenoid valve		PCC232※-NB-※ PCO232※-NB-※ PCS242※-NB-※ PCD242※-NB-※ PCD342※-NB-※ PCE342※-NB-※ PCO342※-NB-※	PCC232Z-NB-※ PCO232Z-NB-※
Blank plate		PC2-BP	

PIPING

- Connect the exhaust so that pilot air exhaust port (Port Y) pressure may be lower than permissible back pressure.
- When operating five or more solenoid valves simultaneously on a manifold of 10 or more stations, pipe them in such a manner that air is supplied from port 1 on both sides of the manifold and air is drawn off from ports 3/5 and Y on both sides of the manifold.

●Permissible back pressure of port Y

(Unit : MPa)

Supply pressure (port 1)	Permissible back pressure (port Y)
0.2	0.04
0.3	0.07
0.4	0.1
0.5	0.13
0.6	0.16
0.7	0.19
0.8	0.22

OPTIONAL PARTS & SPARE PARTS

Parts name	Model No.
Blank plate	PC2-BP

ORDERING INSTRUCTIONS

Manifold

①Type of manifold

	Ports 2 & 4
MFS	Body side ported
MFX	Body side ported (Common external pilot)

②Number of stations

2	2 station
⋮	⋮
20	20 station

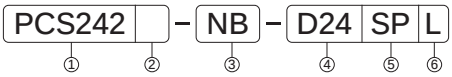
③Manifold function

PV2	Common SUP, Captured EXH (Ports 1 & 3/5 on both sides)

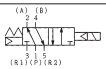
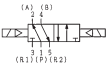
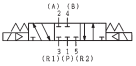
④Size of ports 2 & 4

M5	M5×0.8

Mountable solenoid valve



①Function

PCC232	
PCO232	
PCS242	
PCD242	
PCD342	
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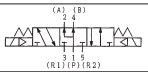
PCO342	

②Special specification

No mark	Standard
V	External pilot (valve body ported) Captured exhaust of pilot
Z	External pilot (sub-base ported) Captured exhaust of pilot

(Note) Z : PCC232 and PCO232 only

③Port size

NB	Without sub-base

④Voltage

D24	DC 24V
D12	DC 12V

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)
LK	Lead wire (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector.
MP, NP and LK types are made to order.

For wiring instructions, refer to Page 11.

⑥Manual override

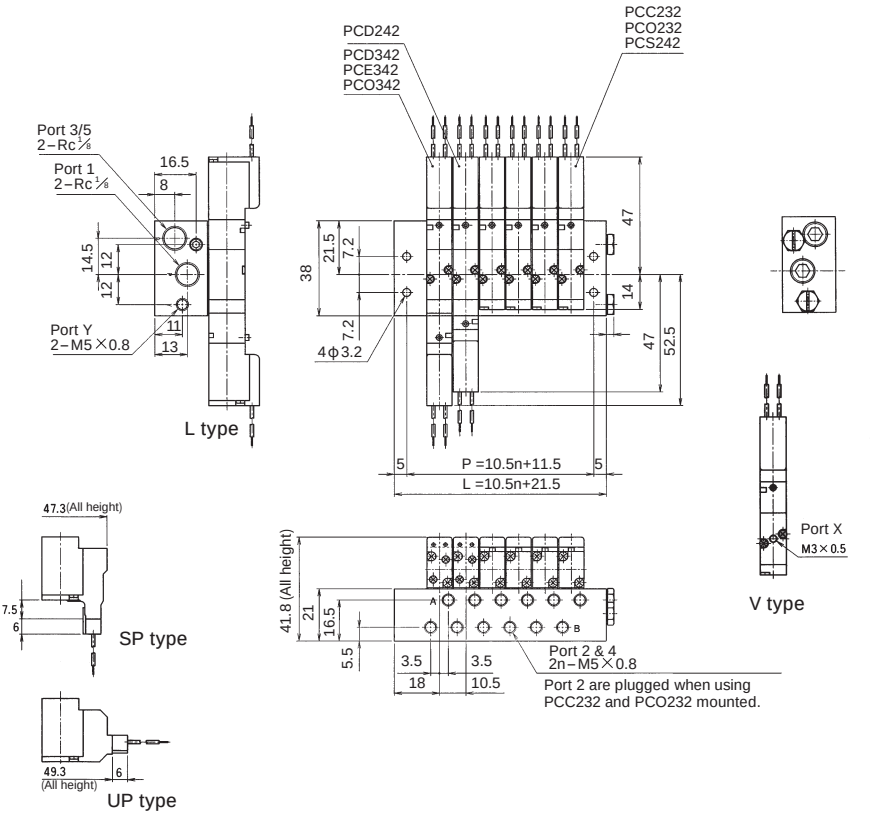
No mark	Standard (Non-lock)
L	With locking button

(Note) L : Made to order

DIMENSIONS

● MFS□−PV2

(Unit : mm)



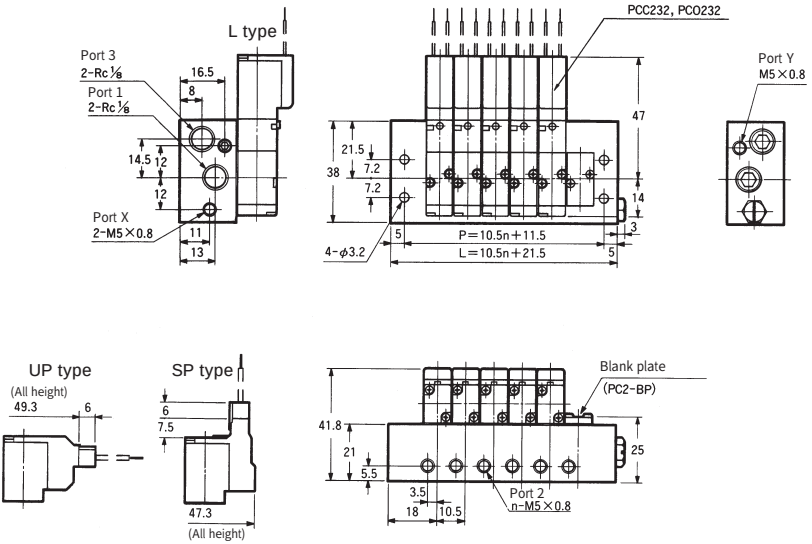
n	P	L	n	P	L
—	—	—	11	127	137
2	32.5	42.5	12	137.5	147.5
3	43	53	13	148	158
4	53.5	63.5	14	158.5	168.5
5	64	74	15	169	179
6	74.5	84.5	16	179.5	189.5
7	85	95	17	190	200
8	95.5	105.5	18	200.5	210.5
9	106	116	19	211	221
10	116.5	126.5	20	221.5	231.5

n : Number of stations

DIMENSIONS

● MFX□-PV-2

(Unit : mm)



n	P	L	n	P	L
—	—	—	11	127	137
2	32.5	42.5	12	137.5	147.5
3	43	53	13	148	158
4	53.5	63.5	14	158.5	168.5
5	64	74	15	169	179
6	74.5	84.5	16	179.5	189.5
7	85	95	17	190	200
8	95.5	105.5	18	200.5	210.5
9	106	116	19	211	221
10	116.5	126.5	20	221.5	231.5

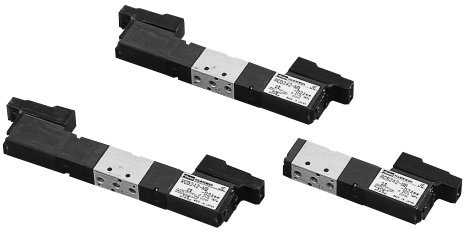
n : Number of stations

PILOT OPERATED SOLENOID VALVE

RC2 Series

Rubber Seal/In-line Mounting type

RCC232	2-position Single solenoid Normal close
RCO232	2-position Single solenoid Normal open
RCS242	2-position Single solenoid
RCD242	2-position Double solenoid
RCD342	3-position Closed center
RCE342	3-position Exhaust center
RCO342	3-position Pressure center



SPECIFICATIONS

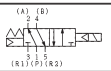
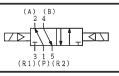
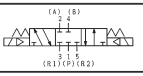
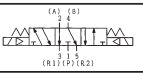
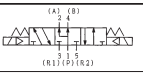
Model No.	Unit	RCC232 RCO232	RCS242	RCD242	RCD342 RCE342	RCO342
Fluid		Non-lubricated/ lubricated air				
Port size		M3				
Effective area (Cv)	mm^2	2 (0.11)			0.8 (0.044)	0.4 (0.022)
Ambient temperature	℃	−5～50				
Operating pressure range	MPa	0.2～0.7(−0.1～0.7)				
Maximum frequency	Cycle/min	600			300	
Response time at 0.5MPa	s	ON 0.010 OFF 0.018		ON 0.008	ON 0.008 OFF 0.028	
Rated voltage	V	DC24 , 12				
Permissible voltage fluctuation	%	+10 , −15				
Grade of insulation		JIS grade B				
Power consumption	W	L type：0.5 SP, UP type：0.55				
Wiring		Lead wire (L), Connector with lead wire (SP, UP)				
Mass	g	30	30	50	52	

(Note) ・( ) shows the pressure range of main spool with external pilot range 0.2 to 0.7 MPa. External pilot pressure should be higher than main supply.
・Add 0.02 second to OFF time when using SP or UP, LK type.
Response time data obtained and presented in accordance with JIS B8375.
・When using it at temperature of 5°C or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

ORDERING INSTRUCTIONS

RCS242	①	–	M3	②	–	D24	③	SP	④	L	⑤

①Function

PCC232	
PCO232	
PCS242	
PCD242	
PCD342	
PCE342	
PCO342	

②Special specification

No mark	Standard
V	External pilot (valve body ported) Captured exhaust of pilot

(Note) Z：RCC232 and RCO232 only

③Port size

M3	M3×0.5

④Voltage

D24	DC24V
D12	DC12V

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)
LK	Lead wire (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector.
MP, NP and LK types are made to order.
For wiring instructions, refer to Page 11.

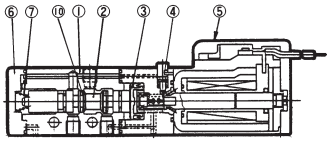
⑥Manual override

No mark	Standard (Non-lock)
L	With locking button

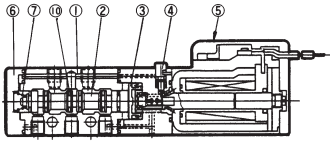
(Note) L：Made to order

CONSTRUCTIONS AND MAIN COMPONENTS

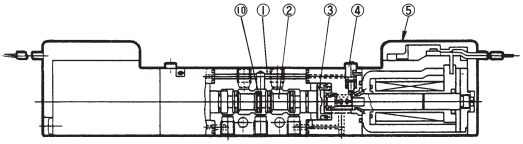
RCC232, RCO232



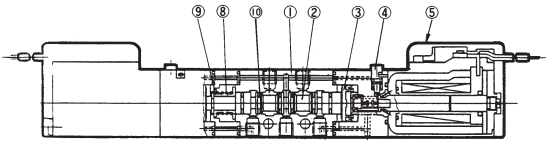
RCS242



RCD242



RCD342, RCE342, RCO342



No.	Description	Material
①	Body	Aluminium alloy
②	Spool assembly	Aluminium alloy
③	Piston	Synthetic resins
④	Manual override	Synthetic resins
⑤	Pilot valve	—
⑥	End cover	Synthetic resins
⑦	Return spring S	Stainless steel
⑧	Return spring 3P	Stainless steel
⑨	Spring retainer	Synthetic resins
⑩	Seal packing	NBR

OPTIONAL PARTS AND SPARE PARTS

Connector with lead wire

PC2-[D24]-[CL5]
①　②

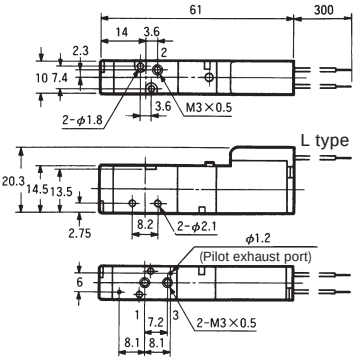
①Voltage
D24：DC24V, 12V

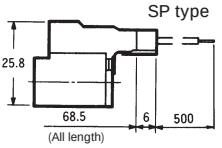
②Lead wire length
CL5 ： 500mm（Standard）
CL10：1000mm
CL20：2000mm
CL30：3000mm

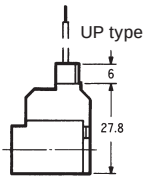
DIMENSIONS

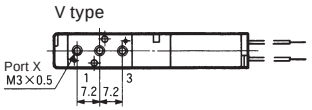
●RCC232, RCO232

(Unit : mm)



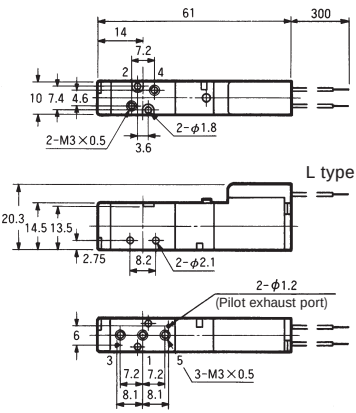


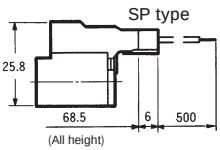


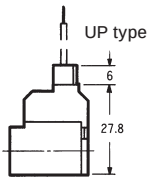


●RCS242

(Unit : mm)



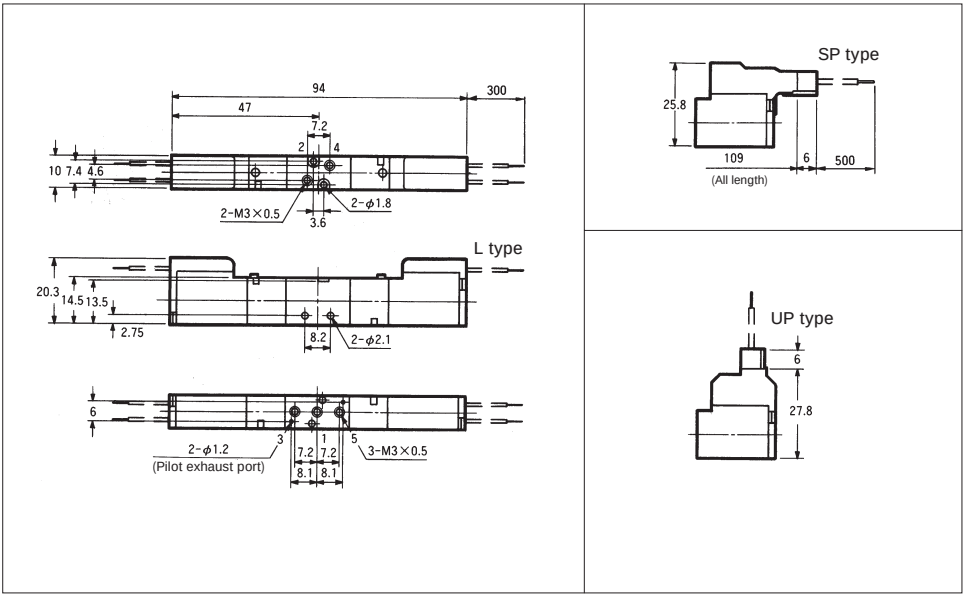




DIMENSIONS

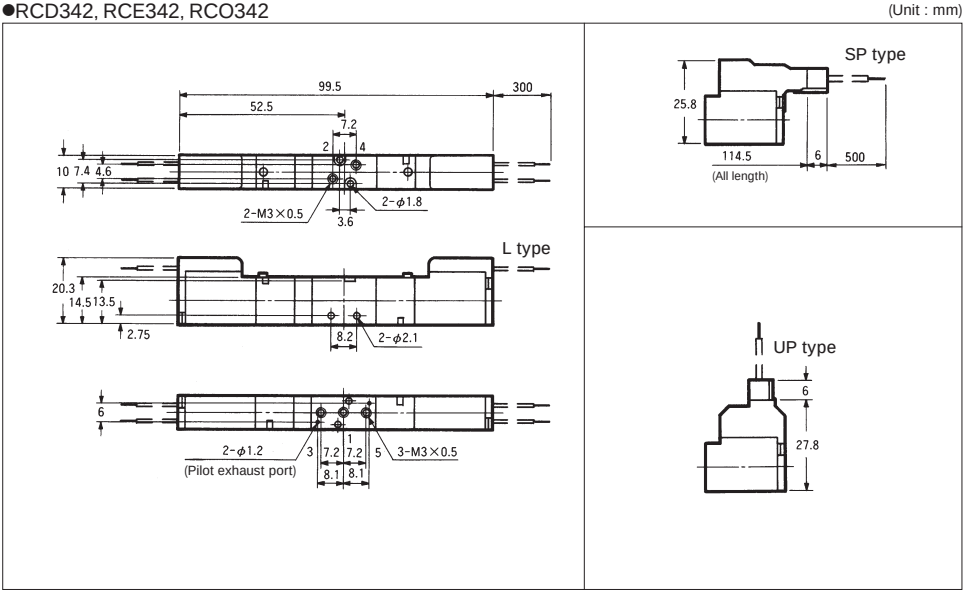
●RCD242

(Unit : mm)



●RCD342, RCE342, RCO342

(Unit : mm)

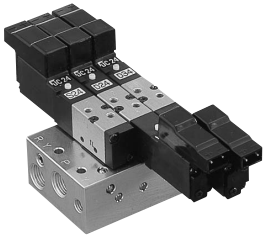


INDIVIDUAL WIRING TYPE MANIFOLD

MF○-RV2

Bar type

MFU□-RV2	Captured exhaust of pilot Common SUP, Captured EXH Ports 1 & 3/5 on both sides
MFX□-RV2	Captured exhaust of pilot Common SUP, Common EXH Common external pilot Ports 1 & 3 on both sides



MANIFOLD SPECIFICATIONS

		MFU□-RV2	MFX□-RV2
Type of manifold		Captured exhaust of pilot Common SUP, Captured EXH (Ports 1 & 3/5 on both sides)	Captured exhaust of pilot Common SUP, Common EXH Common external pilot (Ports 1 & 3 on both sides)
Port size	**Port 1**	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)
	Port 3/5	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)
	Port 2 & 4	M3	M3
	Port X	—	M5
	Port Y	M5	M5
Number of stations		2～20	2～20
Mountable solenoid valve		RCC232-※-※-※-MF RCO232-※-※-※-MF RCS242-※-※-※-MF RCD242-※-※-※-MF RCD342-※-※-※-MF RCE342-※-※-※-MF RCO342-※-※-※-MF	RCC232V-※-※-※-MF RCO232V-※-※-※-MF
Blank plate		PC2-BP	

PIPING

- Connect the exhaust so that pilot air exhaust port (Port Y) pressure may be lower than permissible back pressure.
- When operating five or more solenoid valves simultaneously on a manifold of 10 or more stations, pipe them in such a manner that air is supplied from port 1 on both sides of the manifold and air is drawn off from ports 3/5 and Y on both sides of the manifold.

●Permissible back pressure of port Y

(Unit : MPa)

Supply pressure (port 1)	Permissible back pressure (port Y)
0.2	0.04
0.3	0.07
0.4	0.1
0.5	0.13
0.6	0.16
0.7	0.19
0.8	0.22

OPTIONAL PARTS & SPARE PARTS

Parts name	Model No.
Blank plate	PC2-BP

ORDERING INSTRUCTIONS

Manifold

MFU | 2 | – | RV2 | – | M3

① ② ③ ④

①Type of manifold

	Ports 2 & 4
MFU	Body side ported
MFX	Body side ported (Common external pilot)

②Number of stations

2	2 station
⋮	⋮
20	20 station

③Manifold function

RV2	Common SUP, Captured EXH (Ports 1 & 3/5 on both sides)

④Size of ports 2 & 4

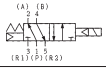
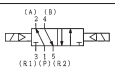
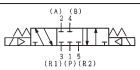
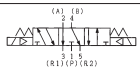
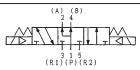
M3	M3×0.5

Mountable solenoid valve

RCS242 | | – | M3 | – | D24 | SP | L | – | MF

① ② ③ ④ ⑤ ⑥ ⑦

①Function

PCC232	
PCO232	
PCS242	
PCD242	
PCD342	
PCE342	
PCO342	

②Special specification

No mark	Standard
V	External pilot (valve body ported) Captured exhaust of pilot

(Note) V : RCC232 and RCO232 only

③Port size

M3	M3×0.5

④Voltage

D24	DC24V
D12	DC12V

⑥Manual override

No mark	Standard (Non-lock)
L	With locking button

(Note) L : Made to order

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)
LK	Lead wire (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector. MP, NP and LK types are made to order. For wiring instructions, refer to Page 11.

⑦For mounting on manifold

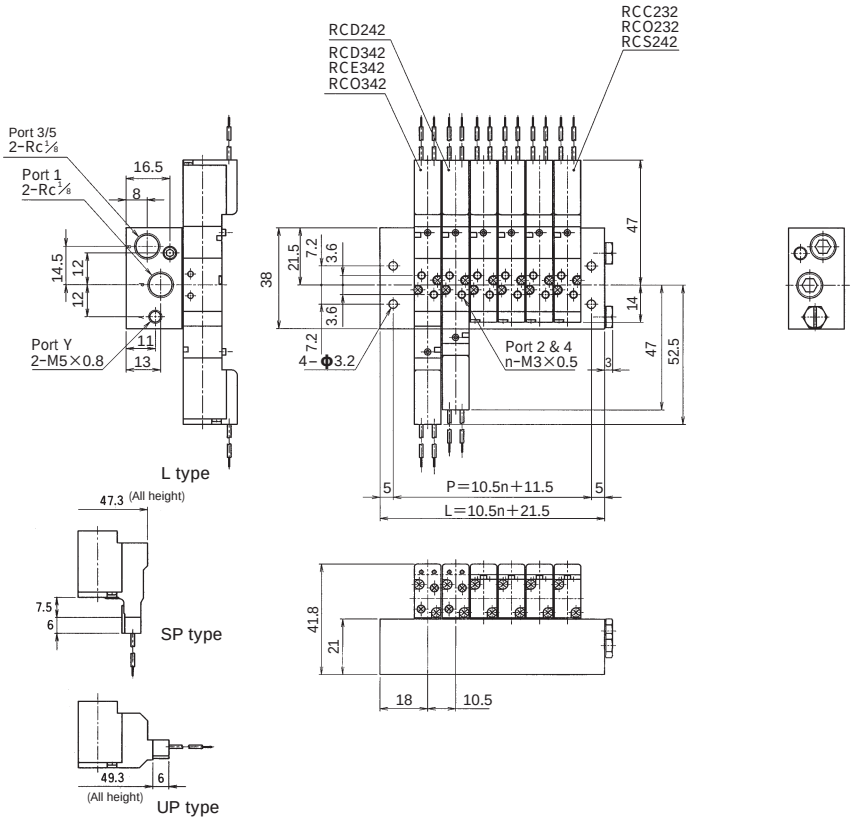
MF	For mounting on manifold

(Note) A gasket & two mounting screws come with valve.

DIMENSIONS

●MFU□－RV2

(Unit : mm)



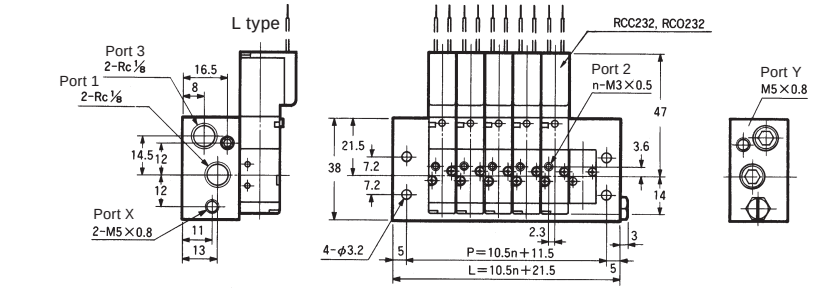
n	P	L	n	P	L
—	—	—	11	127	137
2	32.5	42.5	12	137.5	147.5
3	43	53	13	148	158
4	53.5	63.5	14	158.5	168.5
5	64	74	15	169	179
6	74.5	84.5	16	179.5	189.5
7	85	95	17	190	200
8	95.5	105.5	18	200.5	210.5
9	106	116	19	211	221
10	116.5	126.5	20	221.5	231.5

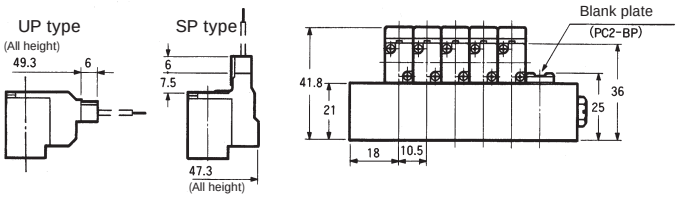
n：Number of stations

DIMENSIONS

●MFX□−RV2

(Unit : mm)





n	P	L	n	P	L
—	—	—	11	127	137
2	32.5	42.5	12	137.5	147.5
3	43	53	13	148	158
4	53.5	63.5	14	158.5	168.5
5	64	74	15	169	179
6	74.5	84.5	16	179.5	189.5
7	85	95	17	190	200
8	95.5	105.5	18	200.5	210.5
9	106	116	19	211	221
10	116.5	126.5	20	221.5	231.5

n : Number of stations

PILOT OPERATED SOLENOID VALVE

PC5 Series

Rubber Seal/Sub-base Mounting type

PCC235	2-position Single solenoid Normal close
PCO235	2-position Single solenoid Normal open
PCS245	2-position Single solenoid
PCD245	2-position Double solenoid
PCD345	3-position Closed center
PCE345	3-position Exhaust center
PCO345	3-position Pressure center
Latch type	
PCL245	2-position Latching solenoid

For latch type see Page 101.

SPECIFICATIONS

0.5W type

Model No.			Unit	PCC235	PCO235	PCS245	PCD245	PCD345	PCE345	PCO345
Fluid				Non-lubricated/ lubricated air						
Port size				M5, Rc 1/8						
Effective area (Cv)			mm²	3.7 (0.2) : M5 4 (0.22) : Rc 1/8				2.2 (0.12) : M5 2.5 (0.14) : Rc 1/8		
Ambient temperature			℃	−5〜50						
Minimum operating pressure			MPa	0.15			0.1	0.15		
Operating pressure range			MPa	0.2〜0.7						
Maximum frequency			Cycle/min	900（L type）720（SP & UP type）						
Response time	L type	ON	s	0.02		0.02	0.015	0.02		
		OFF		0.025		0.025	—	0.03		
	SP & UP type	ON		0.02		0.02	0.015	0.02		
		OFF		0.04		0.04	—	0.045		
Rated voltage			V	DC24						
Permissible voltage fluctuation			%	+10, −15						
Power consumption			W	0.5						
Grade of insulation				JIS grade B						
Wiring				Lead wire (L), Connector with lead wire (SP, UP)						
Mass	L type	NB	g	62		62	94	103		
		M5		106		106	138	147		
		Rc 1/8		118		118	150	159		
	SP & UP type	NB		62		62	94	103		
		M5		106		106	138	147		
		Rc 1/8		118		118	150	159		

(Note) ・When using it at temperature of 5°C or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

SPECIFICATIONS
Standard type

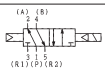
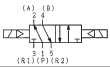
Model No.				Unit	PCC235	PCO235	PCS245	PCD245	PCD345	PCE345	PCO345
Fluid					Non-lubricated/ lubricated air						
Port size					M5 , Rc 1/8						
Effective area (Cv)				mm²	3.7 (0.2) : M5 4 (0.22) : Rc 1/8				2.2 (0.12) : M5 2.5 (0.14) : Rc 1/8		
Ambient temperature				℃	−5～50						
Minimum operating pressure				MPa	0.15			0.1	0.15		
Operating pressure range				MPa	0.2～0.8						
Maximum frequency				Cycle/min	AC：900 DC：1200（L type）900（SP & UP type）						
Response time	DC	L type	ON	s	0.016		0.016	0.012	0.012		
			OFF		0.020		0.020	—	0.022		
		SP & UP type	ON		0.016		0.016	0.012	0.012		
			OFF		0.035		0.03	—	0.04		
	AC L	50Hz	ON		0.01		0.014	0.008	0.008		
			OFF		0.037		0.037	—	0.047		
	SP UP	60Hz	ON		0.01		0.014	0.008	0.008		
			OFF		0.03		0.03	—	0.04		
Rated voltage				V	AC100／110 , 200／220 DC24 DC12						
Permissible voltage fluctuation				%	AC±10 DC$^{+10}_{-15}$						
Rated frequency				Hz	50／60						
Power consumption	AC	Holding	50Hz	VA	2.5（100／200）						
			60Hz		2.0（100／200）						
		Inlush	50Hz		2.9（100／200）						
			60Hz		2.5（100／200）						
Power consumption DC				W	1.8						
Grade of insulation					JIS grade B						
Wiring					Lead wire (L), Connector with lead wire (SP, UP)						
Mass	L type		NB	g	62		62	94	103		
			M5		106		106	138	147		
			Rc 1/8		118		118	150	159		
	SP & UP type		NB		62		62	94	103		
			M5		106		106	138	147		
			Rc 1/8		118		118	150	159		

(Note)・When using it at temperature of 5°C or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

ORDERING INSTRUCTIONS

PCS245	①	–	M5	③	–	D24	④	SP	⑤	LB	⑥

①Function

PCC235	
PCO235	
PCS245	
PCD245	
PCD345	
PCE345	
PCO345	

②Special specification

No mark	Standard (Individual exhaust of pilot)
Y	Captured exhaust of pilot
U	External pilot (valve body ported) Individual exhaust of pilot
V	External pilot (valve body ported) Captured exhaust of pilot
X	External pilot (sub-base ported) Individual exhaust of pilot
Z	External pilot (sub-base ported) Captured exhaust of pilot

(Note) X & Z：PCC235 and PCO235 only

③Port size

M5	M5×0.8
01	Rc1/8
NB	Without sub-base

④Voltage

100	AC100/110V
200	AC200/220V
D24	DC24V
D12	DC12V
H24	DC24V 0.5W type

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector.
MP, NP and LK types are made to order.
For wiring instructions, refer to Page 11.

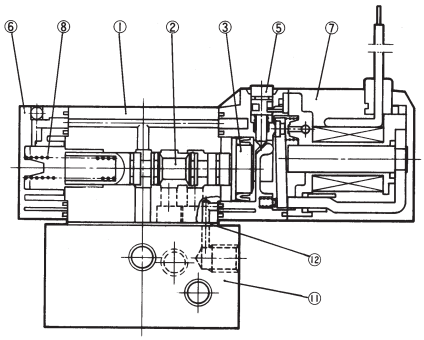
⑥Manual override

No mark	Standard (Non-lock)
LB	With locking button

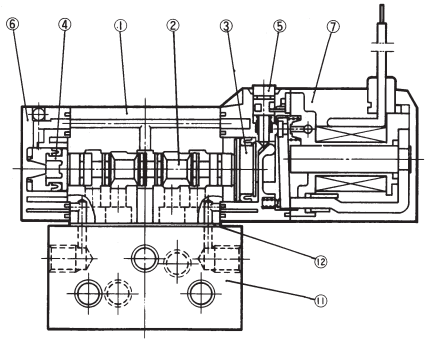
(Note) LB：Made to order

CONSTRUCTIONS AND MAIN COMPONENTS

PCC235, PCO235



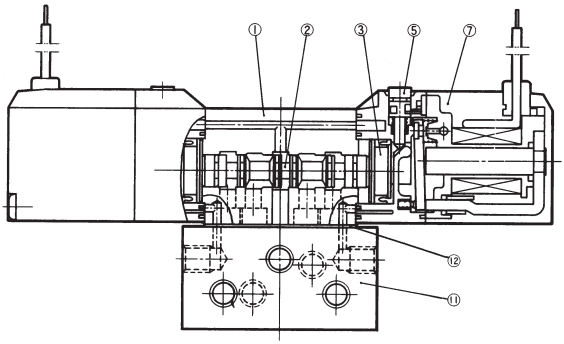
PCS245



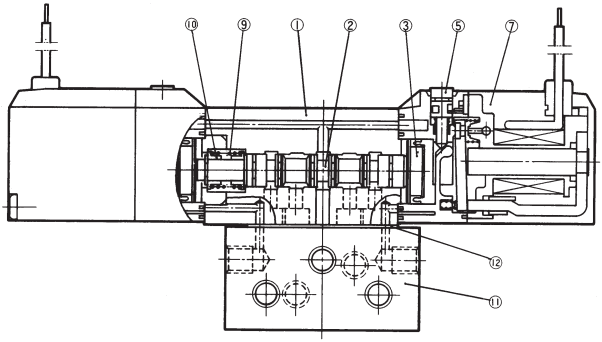
No.	Description	Material
①	Body	Aluminium alloy
②	Spool assembly	—
③	Piston D	Synthetic resins
④	Piston S	Synthetic resins
⑤	Manual override	Synthetic resins
⑥	End cover	Synthetic resins
⑦	Pilot valve	—
⑧	Return spring S	Stainless steel
⑨	Return spring 3P	Stainless steel
⑩	Spring retainer	Synthetic resins
⑪	Sub-base	Aluminium alloy
⑫	Base gasket	NBR

CONSTRUCTIONS

PCD245



PCD345, PCE345, PCO345



OPTIONAL PARTS AND SPARE PARTS

Connector with lead wire

PC5－D24－CL5
①　②

①Voltage

100：AC100/110V
200：AC200/220V
D24：DC24V, 12V

②Lead wire length

CL5　：500mm (Standard)
CL10　：1000mm
CL20　：2000mm
CL30　：3000mm
CL50　：5000mm

Connector with cabtyre cable

PC5－CB10　Cable length　1000mm

Sub-base

PC5－SB 5 Y－M5
①　②　③

①Number of port

3：3-port
5：5-port

②Special specification

No mark：Individual exhaust
X　：Individual exhaust, external pilot (For PCC235X and PCO235X)
Y　：Captured exhaust
Z　：Captured exhaust, external pilot (For PCC235Z and PCO235Z)

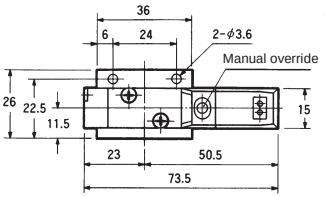
③Port size

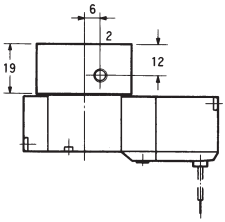
M5：M5×0.8
01：Rc1/8

DIMENSIONS

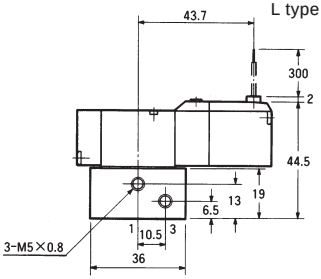
●PCC235※-M5, PCO235※-M5

(Unit：mm)

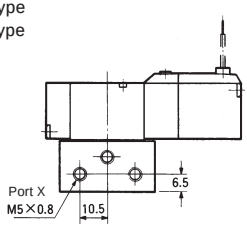




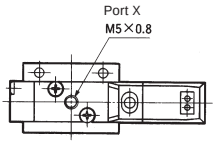
L type



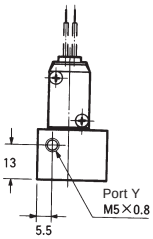
X type
Z type



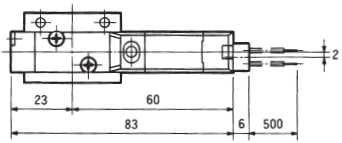
U type
V type

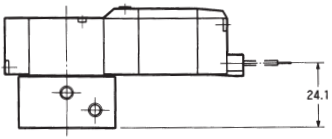


Y type

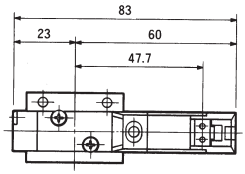


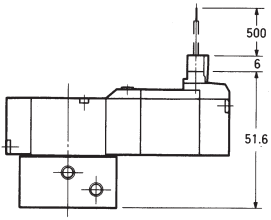
SP type





UP type

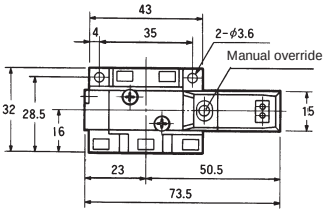


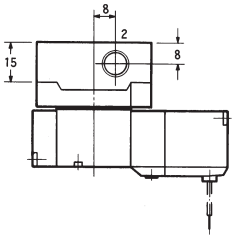


DIMENSIONS

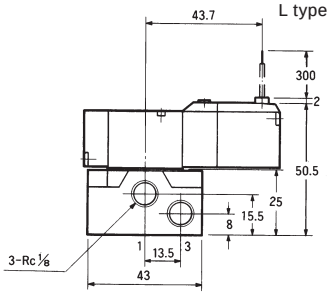
●PCC235※-01, PCO235※-01

(Unit：mm)

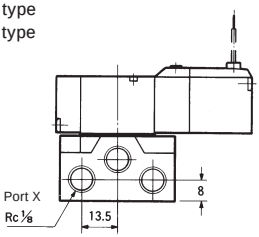




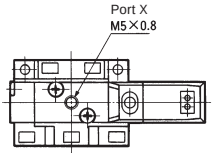
L type



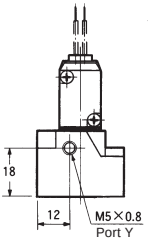
X type
Z type



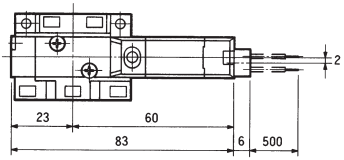
U type
V type

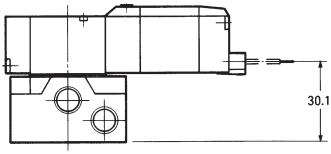


Y type

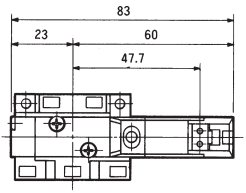


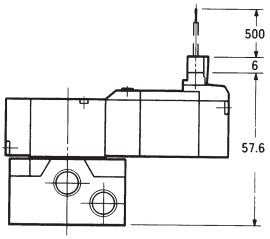
SP type





UP type

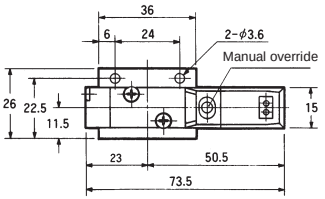


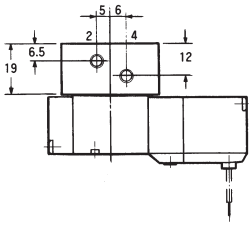


DIMENSIONS

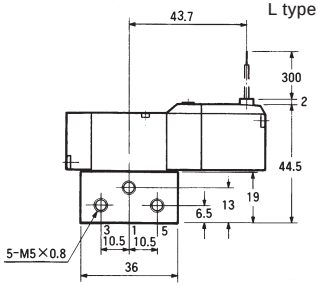
●PCS245※-M5

(Unit：mm)

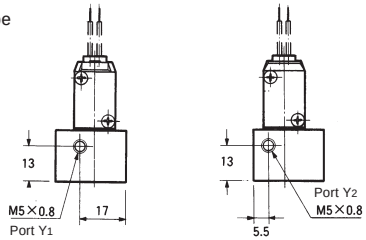




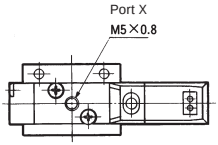
L type



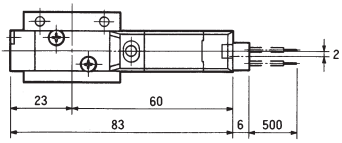
Y type

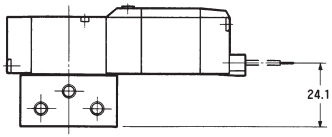


U type
V type

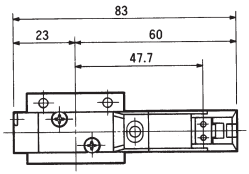


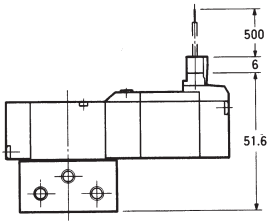
SP type





UP type

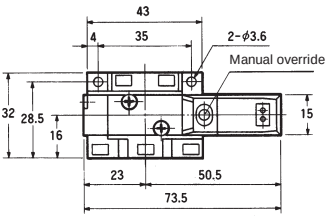


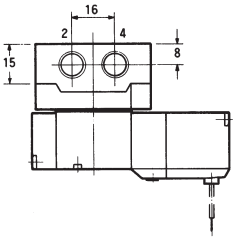


DIMENSIONS

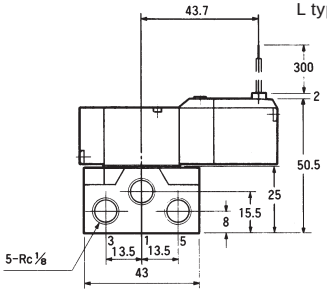
●PCS245※-01

(Unit：mm)

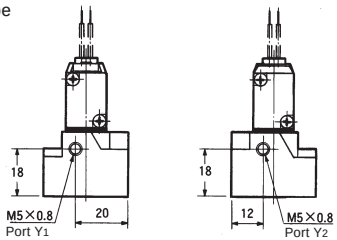




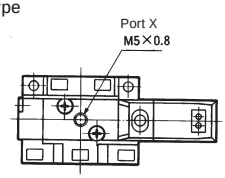
L type



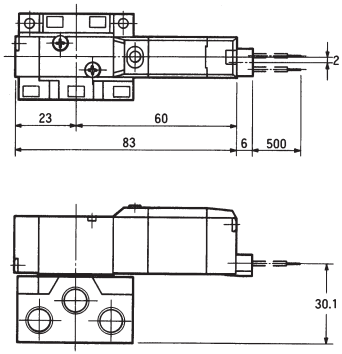
Y type



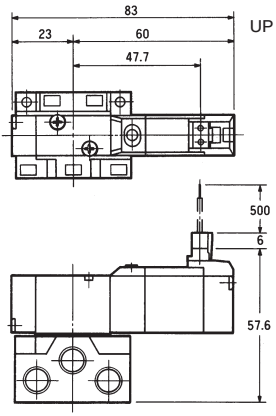
U type
V type



SP type



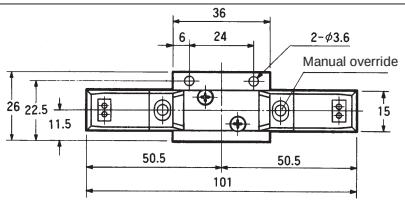
UP type

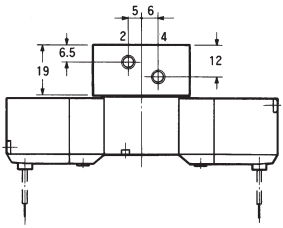


DIMENSIONS

●PCD245※-M5

(Unit：mm)





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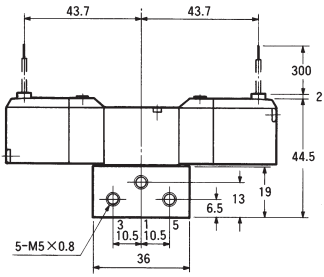

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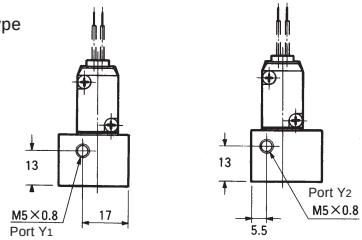
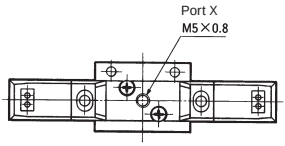
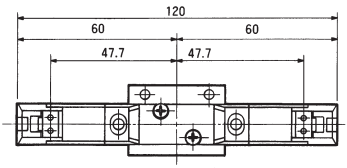


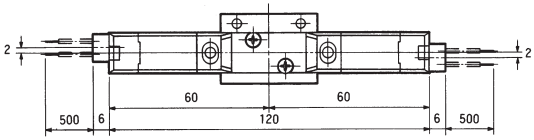
U type
V type

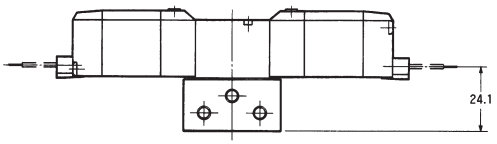


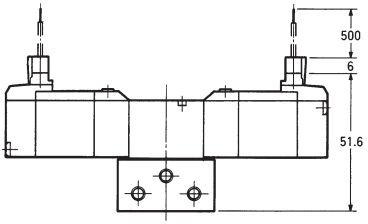
UP type

SP type





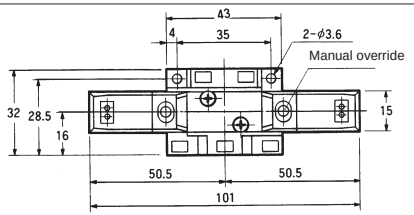


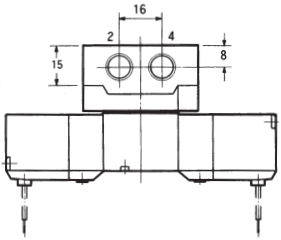


DIMENSIONS

●PCD245※-01

(Unit：mm)





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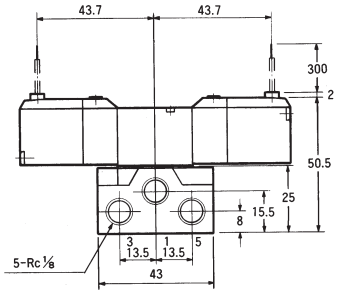

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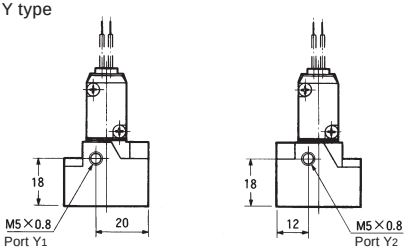
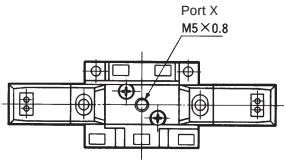
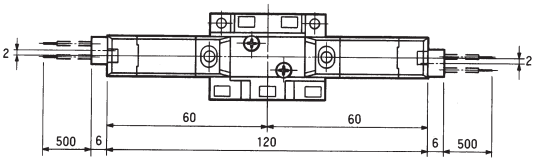


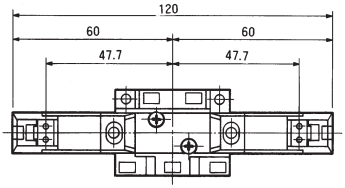
U type
V type

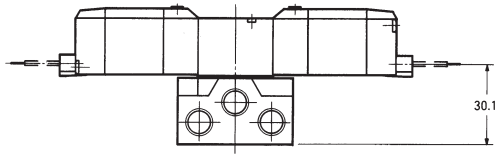


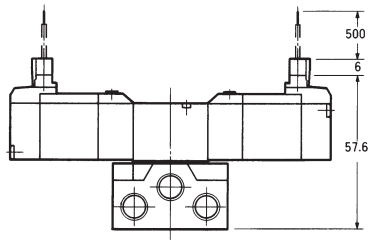
UP type

SP type





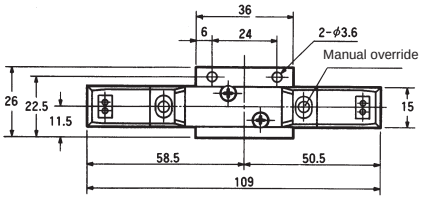


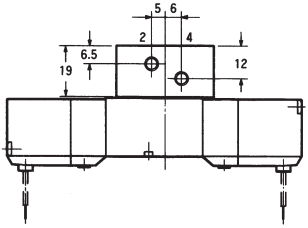


DIMENSIONS

●PCD345※-M5, PCE345※-M5, PCO345※-M5

(Unit：mm)





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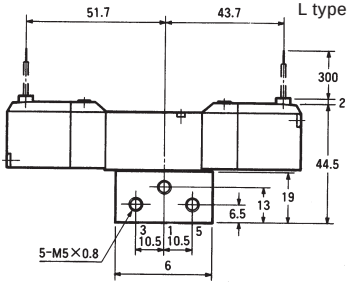

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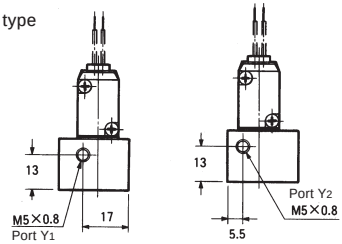
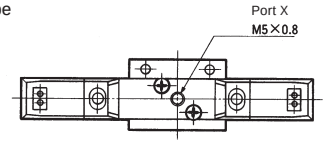


U type
V type



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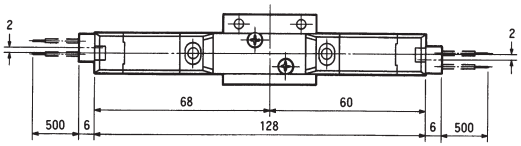
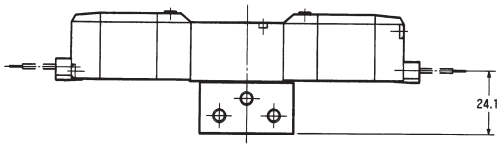
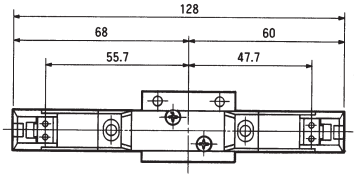
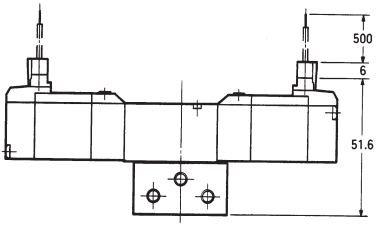




UP type

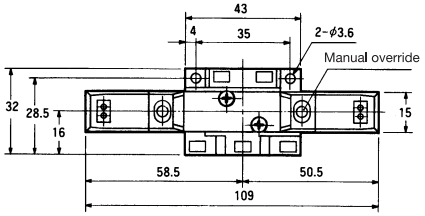


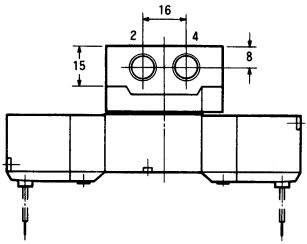


DIMENSIONS

●PCD345※-01, PCE345※-01, PCO345※-01

(Unit：mm)





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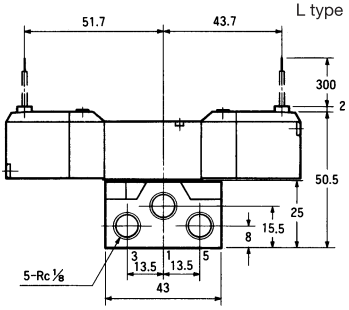
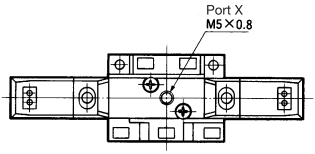
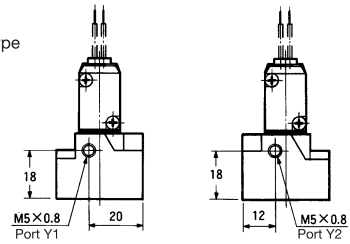


U type
V type

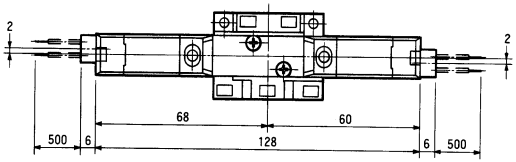


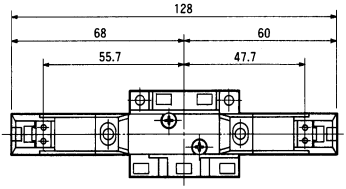
Y type

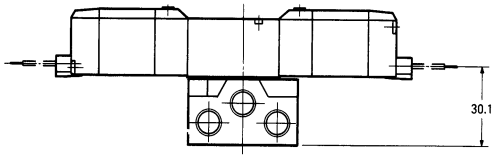


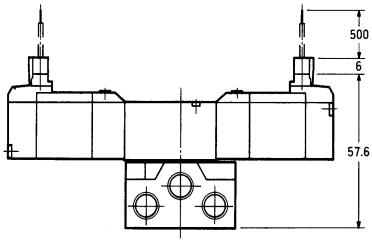
UP type

SP type









INDIVIDUAL WIRING TYPE MANIFOLD

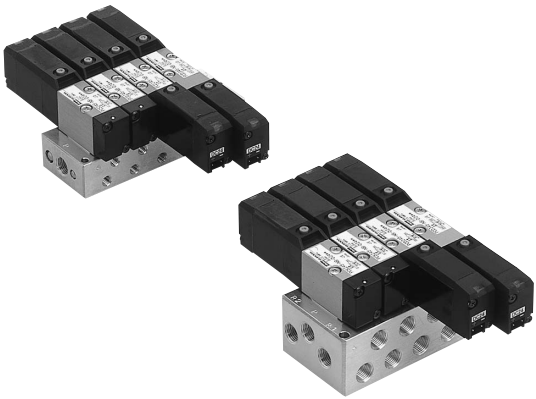
MF○-P○5

Bar type

MFS□-PC5	Common SUP, Common EXH Ports 1, 3 & 5 on both sides
MFS□-PD5	Common SUP, Common EXH Ports 1, 3 & 5 on one side
MFS□-PI5	Common SUP, Individual EXH Ports 1 on one side
MFX□-PC5	Common SUP, Common EXH Common external pilot Ports 1 & 3 on both sides
MFX□-PD5	Common SUP, Common EXH Common external pilot Ports 1 & 3 on one side

Captured exhaust of pilot type manifold

MFS□-PY5	Common SUP, Common EXH Ports 1, 3 & 5 on both sides
MFS□-PV5	Common SUP, Captured EXH Ports 1 & 3/5 on both sides
MFX□-PY5	Common SUP, Common EXH Common external pilot Ports 1 & 3 on both sides



MANIFOLD SPECIFICATIONS

		MFS□-PC5	MFS□-PD5	MFS□-PI5	MFS□-PY5	MFS□-PV5
Type of manifold		Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)	Common SUP, Common EXH (Ports 1, 3 & 5 on one side)	Common SUP, Individual EXH (Port 1 on one side)	Captured exhaust of pilot Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)	Captured exhaust of pilot Common SUP, Captured EXH (Ports 1 & 3/5 on both sides)
Port size	**Port 1**	Rc 1/8 (Both sides)	Rc 1/8 (One side)	Rc 1/8 (One side)	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)
	Port 3 & 5	Rc 1/8 (Both sides)	Rc 1/8 (One side)	M5 (Valve body ported)	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)
	Port 2 & 4	Rc 1/8, C4, C6	M5	M5	M5, Rc	C4, C6
	Port X	—	—	—	—	—
	Port Y	—	—	—	M5 (Both sides)	Rc 1/8 (Both sides)
Number of stations		2～20	2～20	2～20	2～20	2～20
Mountable solenoid valve		PCC235(U)-NB-※ PCO235(U)-NB-※ PCS245(U)-NB-※ PCD245(U)-NB-※ PCD345(U)-NB-※ PCE345(U)-NB-※ PCO345(U)-NB-※		PCC235-R5-※ PCO235-R5-※ PCS245-R5-※ PCD245-R5-※ PCD345-R5-※ PCE345-R5-※ PCO345-R5-※	PCC235Y(V)-NB-※ PCO235Y(V)-NB-※ PCS245Y(V)-NB-※ PCD245Y(V)-NB-※ PCD345Y(V)-NB-※ PCE345Y(V)-NB-※ PCO345Y(V)-NB-※	
Blank plate		PC5-BP			PY5-BP	

MANIFOLD SPECIFICATIONS

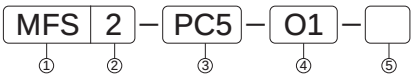
		MFX□-PC5	MFX□-PD5	MFX□-PY5
Type of manifold		Common SUP, Common EXH Common external pilot (Ports 1 & 3 on both sides)	Common SUP, Common EXH Common external pilot (Ports 1 & 3 on one side)	Captured exhaust of pilot Common SUP, Common EXH (Ports 1 & 3 on both sides)
Port size	**Port 1**	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)
	Port 3	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)
	Port 2	Rc 1/8	M5	M5、Rc 1/8
	Port X	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)
	Port Y	—	—	M5 (Both sides)
Number of stations		2～20	2～20	2～20
Mountable solenoid valve		PCC235X-NB-※ PCO235X-NB-※		PCC235Z-NB-※ PCO235Z-NB-※
Blank plate		PC5-BP		PY5-BP

OPTIONAL PARTS AND SPARE PARTS

Part name		Model No.
Blank plate	**For individual exhaust of pilot**	PC5-BP
	For captured exhaust of pilot	PY5-BP

ORDERING INSTRUCTIONS

Manifold



①Type of manifold

	Ports 2 & 4
MFS	Body side ported
MFX	Body side ported (Common external pilot)

②Number of stations

2	2 station
⋮	⋮
20	20 station

③Manifold function

PC5	Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)
PD5	Common SUP, Common EXH (Ports 1, 3 & 5 on one side)
PI5	Common SUP, Individual EXH (Port 1 on one side)
PY5	Common SUP, Common EXH Captured exhaust of pilot (Ports 1, 3 & 5 on both sides)
PV5	Common SUP, Captured EXH Captured exhaust of pilot (Ports 1 & 3/5 on both sides)

④Size of ports 2 & 4

M5	M5×0.8
01	Rc 1/8
C4	With instant fitting for ϕ4 tube
C6	With instant fitting for ϕ6 tube

⑤Option

No mark	Standard
B	With bracket

(Note) Bracket is available for PCC235, PCO235 and PCS245 mounting.

ORDERING INSTRUCTIONS

Mountable solenoid valve

PCS245 [ ] – NB – D24 SP LB

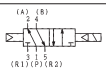
① ② ③ ④ ⑤ ⑥

①Function

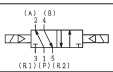
PCC235

PCO235

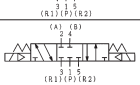
PCS245



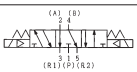
PCD245



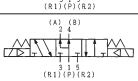
PCD345



PCE345



PCO345



②Special specification

No mark	Standard (Individual exhaust of pilot)
Y	Captured exhaust of pilot
U	External pilot (valve body ported) Individual exhaust of pilot
V	External pilot (valve body ported) Captured exhaust of pilot
X	External pilot (sub-base ported) Individual exhaust of pilot
Z	External pilot (sub-base ported) Captured exhaust of pilot

(Note) X & Z : PCC235 and PCO235 only

③Port size

NB	Without sub-base
R5	Ports 3 & 5 valve body ported (M5)

(Note) A gasket & two mounting screws come with valve.

④Voltage

100	AC100/110V
200	AC200/220V
D24	DC24V
D12	DC12V
H24	DC24V 0.5W type

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector. MP and NP types are made to order. For wiring instructions, refer to Page 11.

⑥Manual override

No mark	Standard (Non-lock)
LB	With locking button

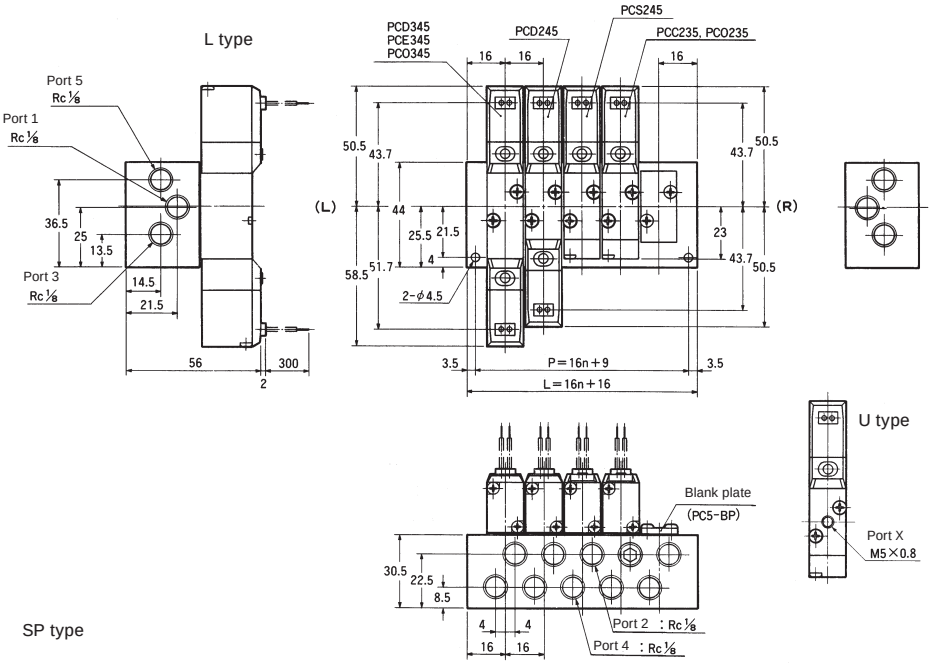
(Note) LB : Made to order

DIMENSIONS

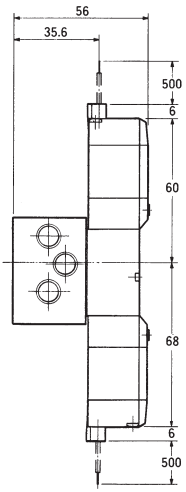
●MFS□-PC5-01

(Unit：mm)

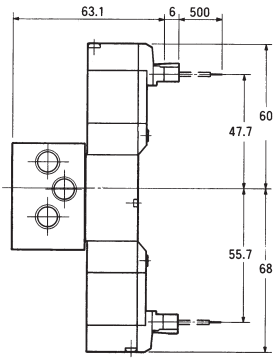
(Note) Standard manifold is plugged on " R " (Right) side ports.



SP type



UP type



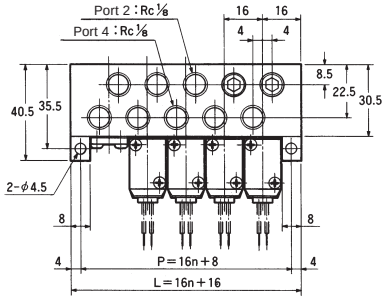
n	P	L	n	P	L
—	—	—	11	185	192
2	41	48	12	201	208
3	57	64	13	217	224
4	73	80	14	233	240
5	89	96	15	249	256
6	105	112	16	265	272
7	121	128	17	281	288
8	137	144	18	297	304
9	153	160	19	313	320
10	169	176	20	329	336

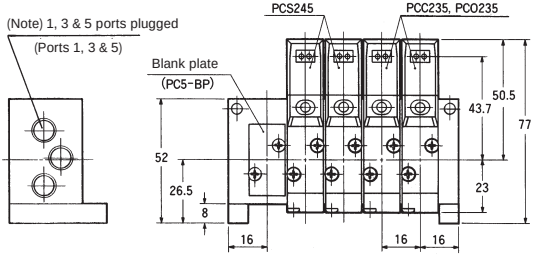
n：Number of stations

DIMENSIONS

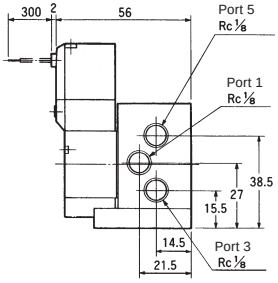
●MFS□-PC5-01-B

(Unit : mm)

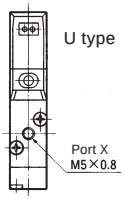




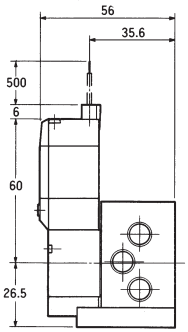
L type



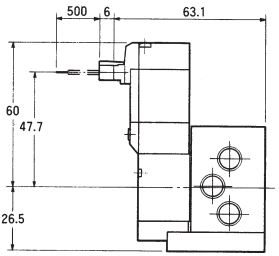
U type



SP type



UP type



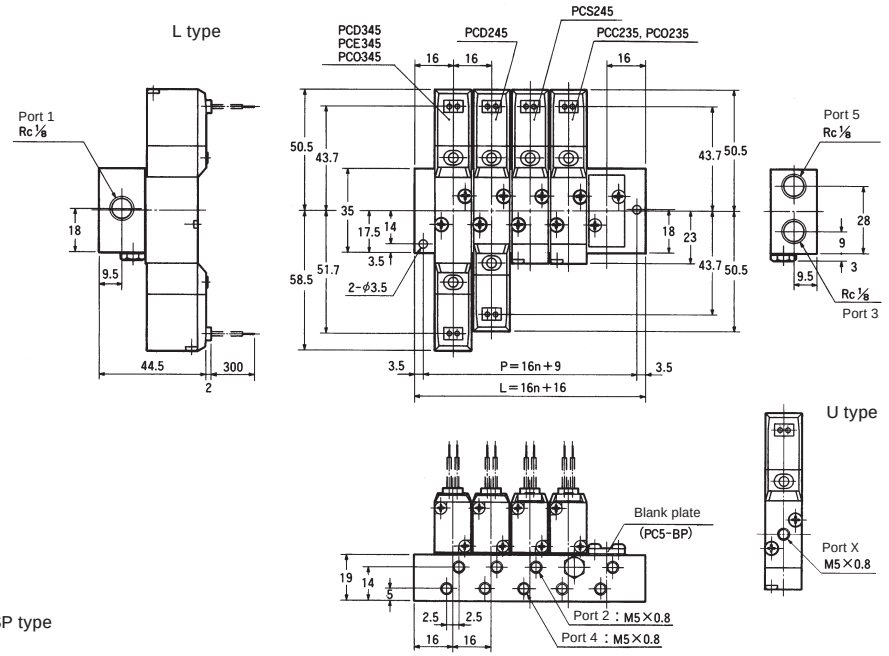
n	P	L	n	P	L
—	—	—	11	184	192
2	40	48	12	200	208
3	56	64	13	216	224
4	72	80	14	232	240
5	88	96	15	248	256
6	104	112	16	264	272
7	120	128	17	280	288
8	136	144	18	296	304
9	152	160	19	312	320
10	168	176	20	328	336

n : Number of stations

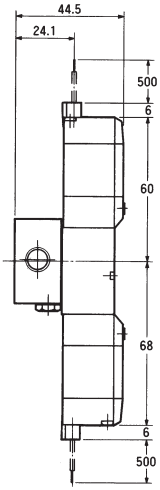
DIMENSIONS

●MFS□-PD5-M5

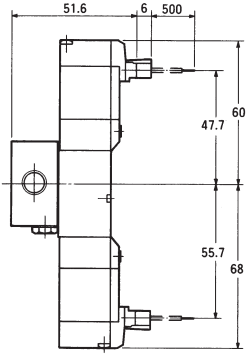
(Unit：mm)



SP type



UP type



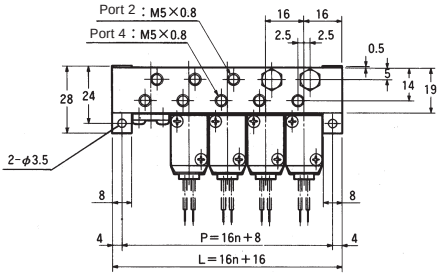
n	P	L	n	P	L
—	—	—	11	185	192
2	41	48	12	201	208
3	57	64	13	217	224
4	73	80	14	233	240
5	89	96	15	249	256
6	105	112	16	265	272
7	121	128	17	281	288
8	137	144	18	297	304
9	153	160	19	313	320
10	169	176	20	329	336

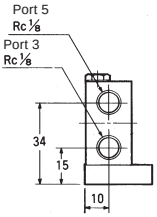
n：Number of stations

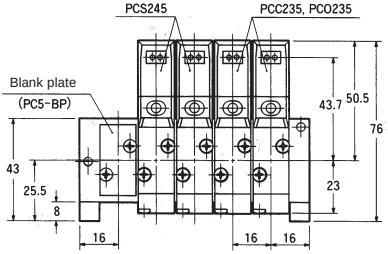
DIMENSIONS

●MFS□-PD5-M5-B

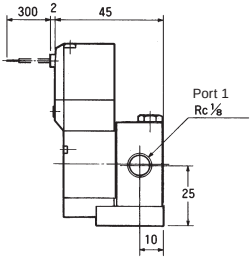
(Unit：mm)

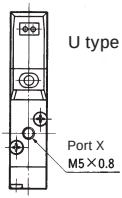




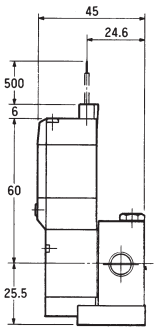


L type

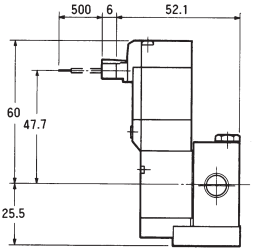




SP type



UP type



n	P	L	n	P	L
—	—	—	11	184	192
2	40	48	12	200	208
3	56	64	13	216	224
4	72	80	14	232	240
5	88	96	15	248	256
6	104	112	16	264	272
7	120	128	17	280	288
8	136	144	18	296	304
9	152	160	19	312	320
10	168	176	20	328	336

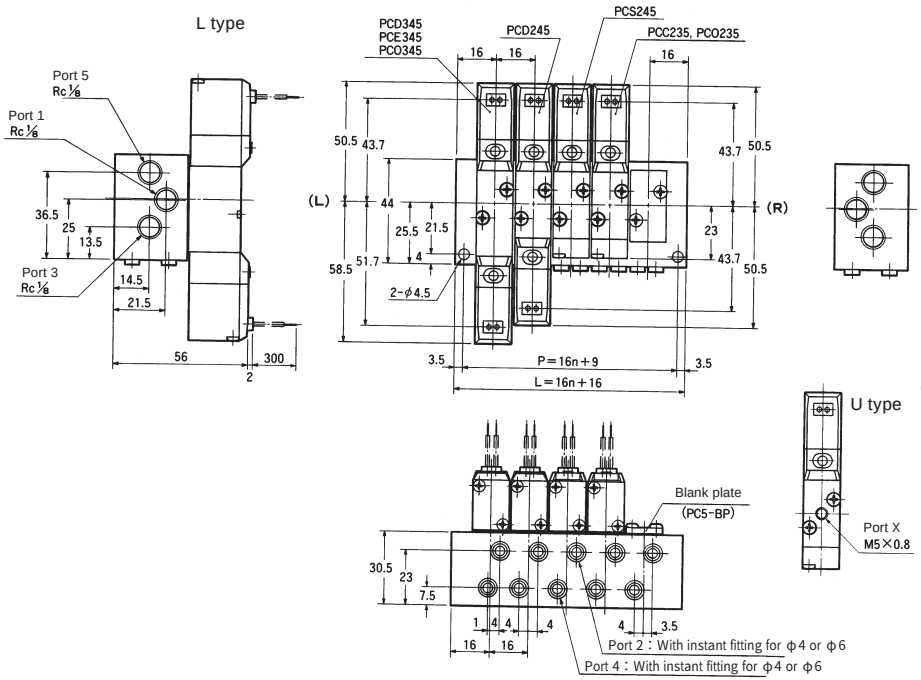
n：Number of stations

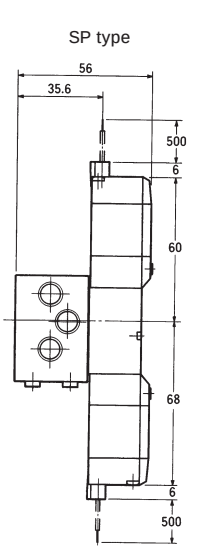
DIMENSIONS

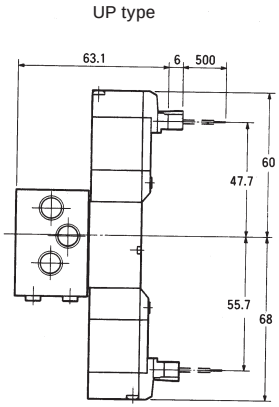
●MFS□-PC5-C4, C6

(Unit：mm)

(Note) Standard manifold is plugged on " R " (Right) side ports.







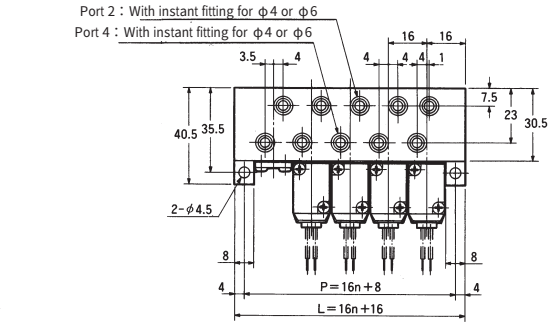
n	P	L	n	P	L
—	—	—	11	185	192
2	41	48	12	201	208
3	57	64	13	217	224
4	73	80	14	233	240
5	89	96	15	249	256
6	105	112	16	265	272
7	121	128	17	281	288
8	137	144	18	297	304
9	153	160	19	313	320
10	169	176	20	329	336

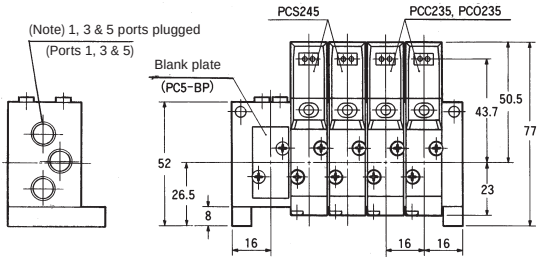
n：Number of stations

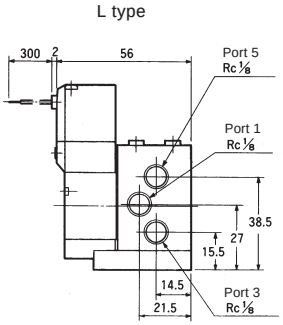
DIMENSIONS

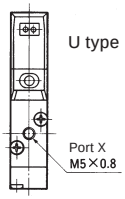
●MFS□-PC5-C4, C6-B

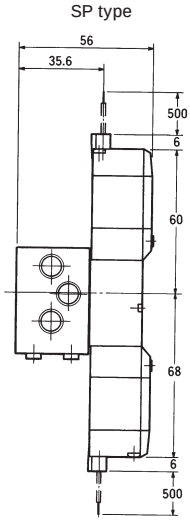
(Unit：mm)

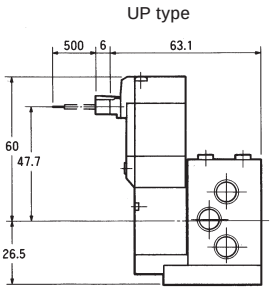












n	P	L	n	P	L
—	—	—	11	184	192
2	40	48	12	200	208
3	56	64	13	216	224
4	72	80	14	232	240
5	88	96	15	248	256
6	104	112	16	264	272
7	120	128	17	280	288
8	136	144	18	296	304
9	152	160	19	312	320
10	168	176	20	328	336

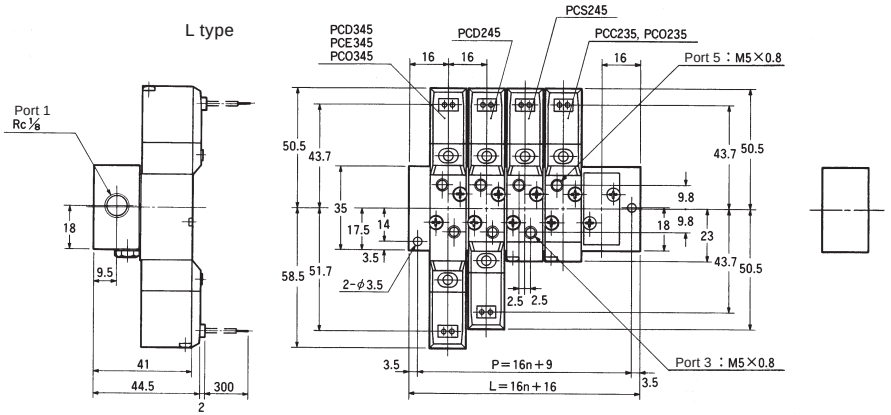
n：Number of stations

DIMENSIONS

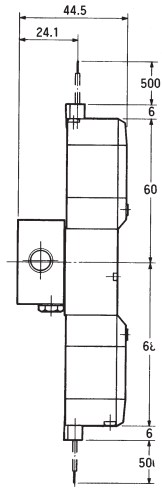
●MFS□-PI5-M5

(Unit：mm)

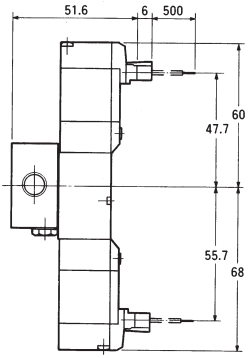
L type



SP type



UP type



n	P	L	n	P	L
—	—	—	11	185	192
2	41	48	12	201	208
3	57	64	13	217	224
4	73	80	14	233	240
5	89	96	15	249	256
6	105	112	16	265	272
7	121	128	17	281	288
8	137	144	18	297	304
9	153	160	19	313	320
10	169	176	20	329	336

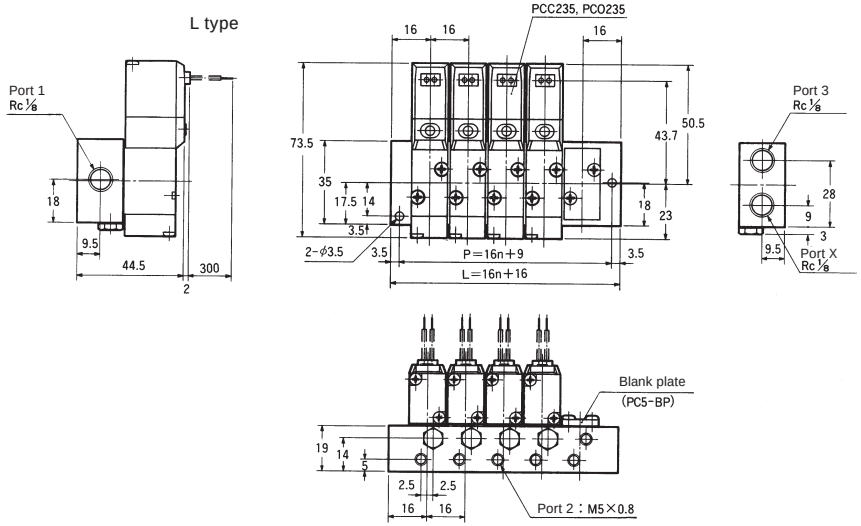
n：Number of stations

DIMENSIONS

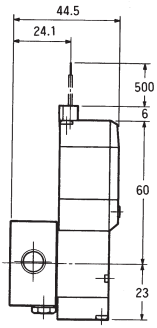
●MFX□-PD5-M5

(Unit：mm)

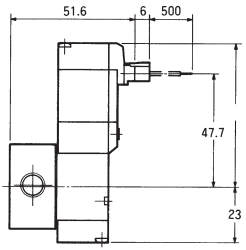
L type



SP type



UP type



n	P	L	n	P	L
—	—	—	11	185	192
2	41	48	12	201	208
3	57	64	13	217	224
4	73	80	14	233	240
5	89	96	15	249	256
6	105	112	16	265	272
7	121	128	17	281	288
8	137	144	18	297	304
9	153	160	19	313	320
10	169	176	20	329	336

n：Number of stations

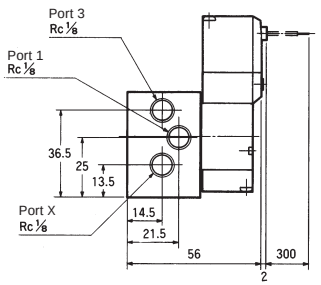
DIMENSIONS

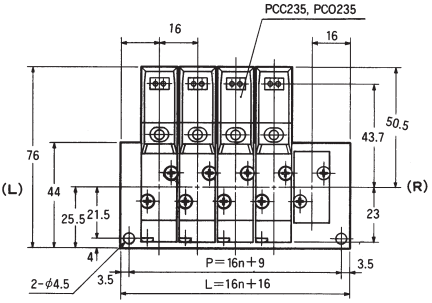
●MFX□-PC5-01

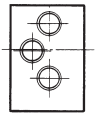
(Unit：mm)

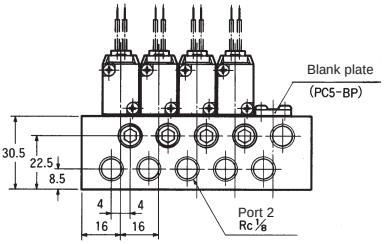
(Note) Standard manifold is plugged on " R " (Right) side ports.

L type

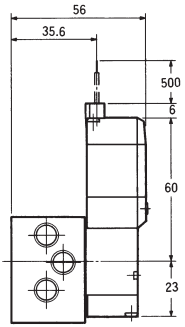




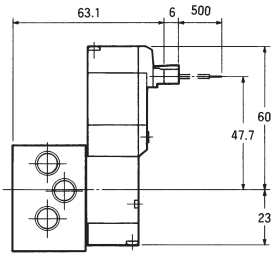




SP type



UP type



n	P	L	n	P	L
—	—	—	11	185	192
2	41	48	12	201	208
3	57	64	13	217	224
4	73	80	14	233	240
5	89	96	15	249	256
6	105	112	16	265	272
7	121	128	17	281	288
8	137	144	18	297	304
9	153	160	19	313	320
10	169	176	20	329	336

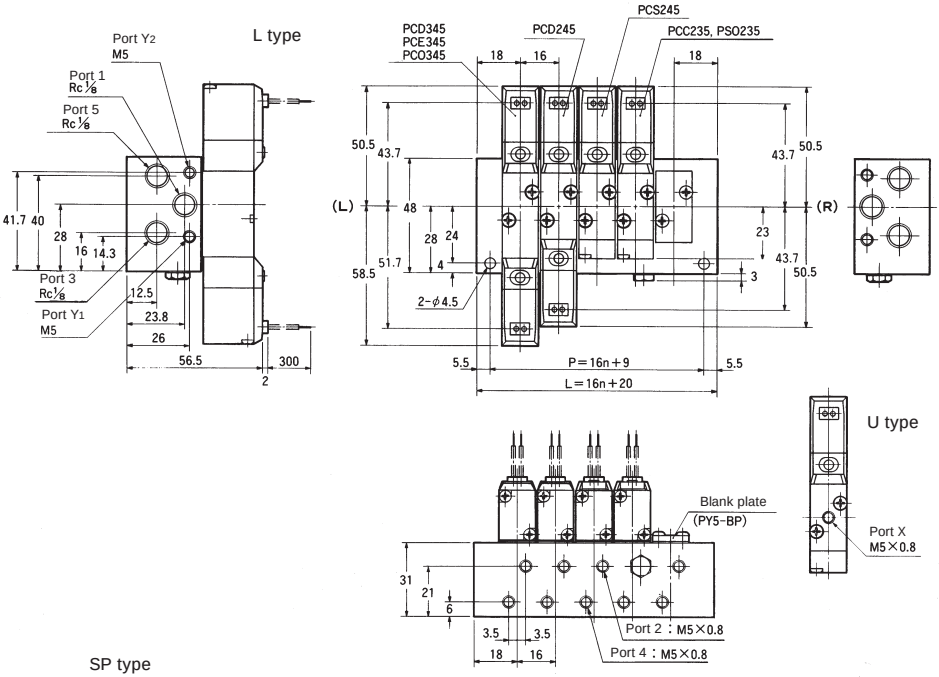
n：Number of stations

DIMENSIONS

●MFS□-PY5-M5

(Unit：mm)

(Note) Standard manifold is plugged on " R " (Right) side ports.



n	P	L	n	P	L
—	—	—	11	185	196
2	41	52	12	201	212
3	57	68	13	217	228
4	73	84	14	233	244
5	89	100	15	249	260
6	105	116	16	265	276
7	121	132	17	281	292
8	137	148	18	297	308
9	153	164	19	313	324
10	169	180	20	329	340

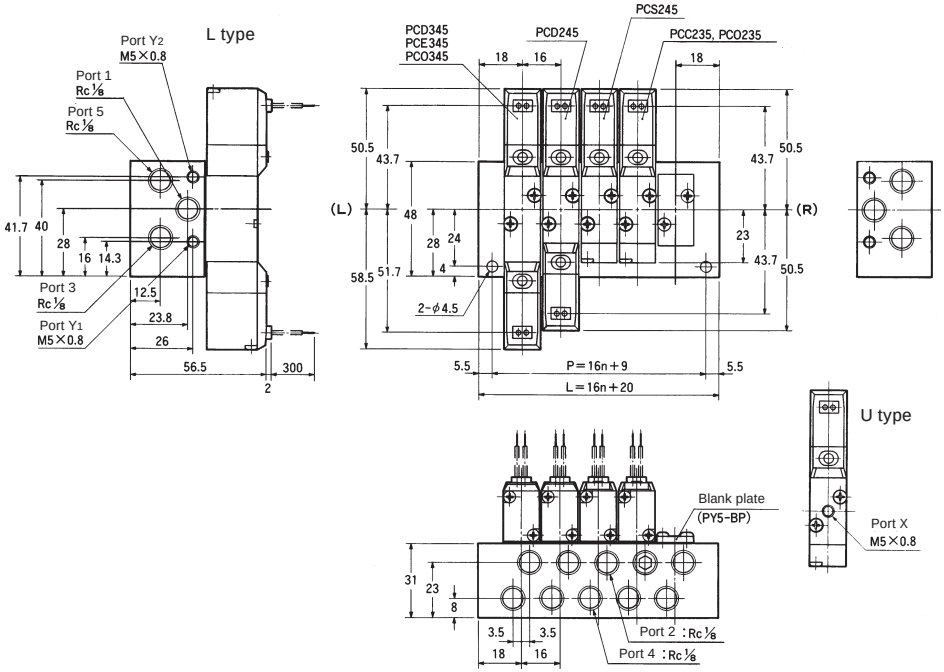
n：Number of stations

DIMENSIONS

●MFS□-PY5-01

(Unit：mm)

(Note) Standard manifold is plugged on " R " (Right) side ports.



n	P	L	n	P	L
—	—	—	11	185	196
2	41	52	12	201	212
3	57	68	13	217	228
4	73	84	14	233	244
5	89	100	15	249	260
6	105	116	16	265	276
7	121	132	17	281	292
8	137	148	18	297	308
9	153	164	19	313	324
10	169	180	20	329	340

n：Number of stations

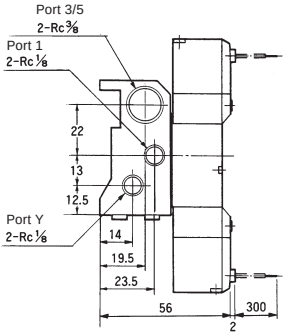
DIMENSIONS

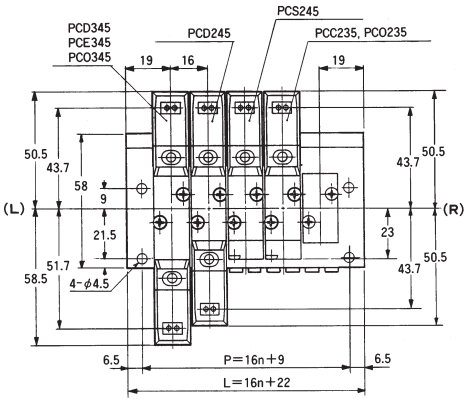
●MFS□-PV5-C4, C6

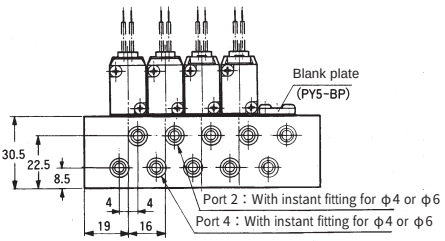
(Unit：mm)

(Note) Standard manifold is plugged on " R " (Right) side ports.

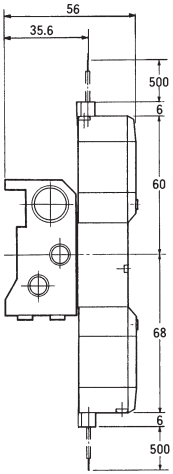
L type



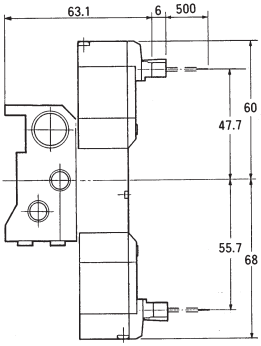




SP type



UP type



n	P	L	n	P	L
—	—	—	11	185	198
2	41	54	12	201	214
3	57	70	13	217	230
4	73	86	14	233	246
5	89	102	15	249	262
6	105	118	16	265	278
7	121	134	17	281	294
8	137	150	18	297	310
9	153	166	19	313	326
10	169	182	20	329	342

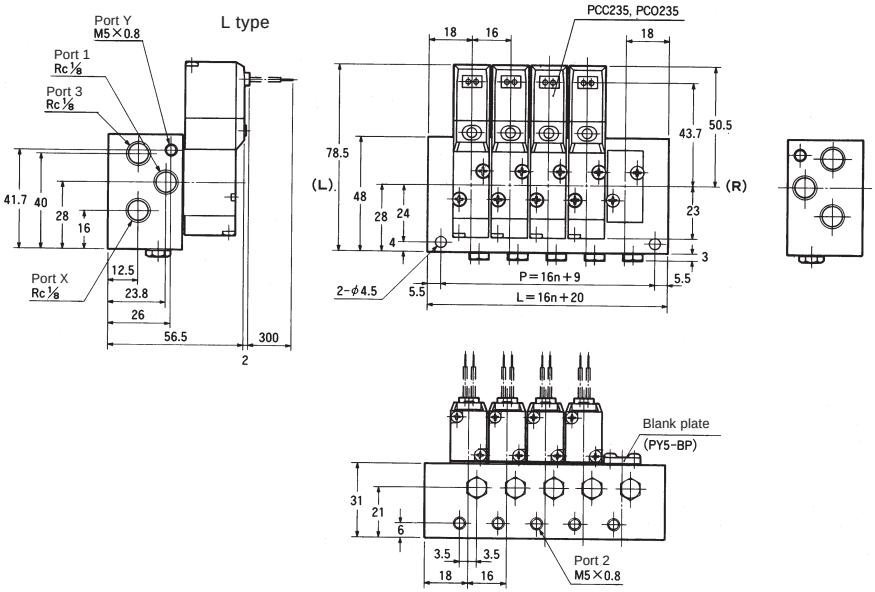
n：Number of stations

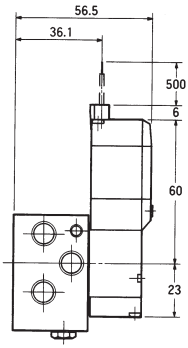
DIMENSIONS

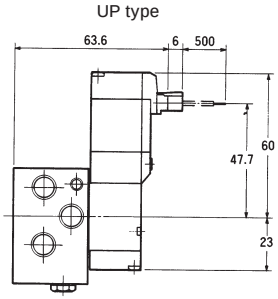
●MFX□-PY5-M5

(Unit：mm)

(Note) Standard manifold is plugged on " R " (Right) side ports.







n	P	L	n	P	L
—	—	—	11	185	196
2	41	52	12	201	212
3	57	68	13	217	228
4	73	84	14	233	244
5	89	100	15	249	260
6	105	116	16	265	276
7	121	132	17	281	292
8	137	148	18	297	308
9	153	164	19	313	324
10	169	180	20	329	340

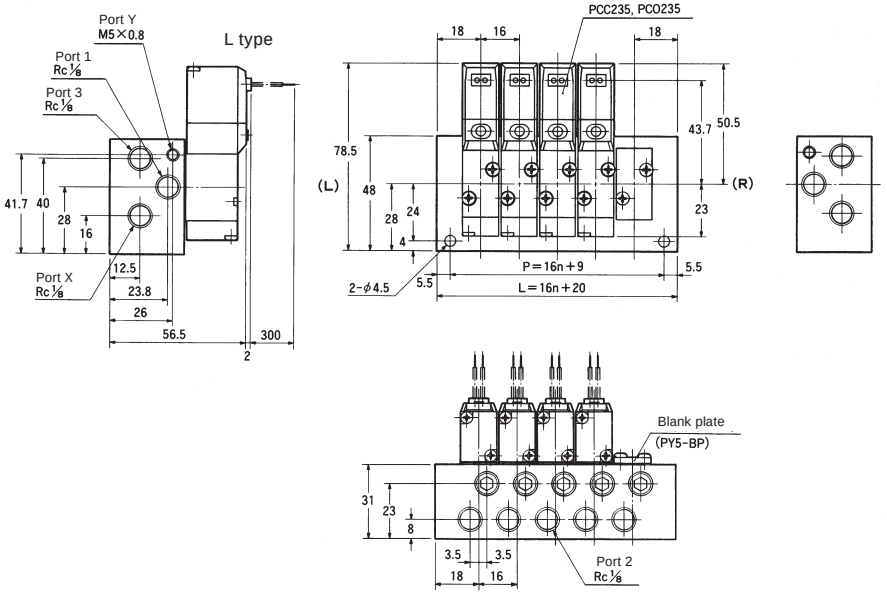
n：Number of stations

DIMENSIONS

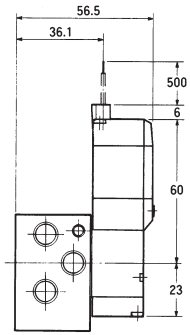
●MFX□-PY5-01

(Unit：mm)

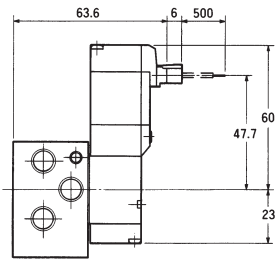
(Note) Standard manifold is plugged on " R " (Right) side ports.



SP type



UP type



n	P	L	n	P	L
—	—	—	11	185	196
2	41	52	12	201	212
3	57	68	13	217	228
4	73	84	14	233	244
5	89	100	15	249	260
6	105	116	16	265	276
7	121	132	17	281	292
8	137	148	18	297	308
9	153	164	19	313	324
10	169	180	20	329	340

n：Number of stations

PILOT OPERATED SOLENOID VALVE

RC5 Series

Rubber Seal/In-line Mounting type

RCC235	2-position Single solenoid Normal close
RCO235	2-position Single solenoid Normal open
RCS245	2-position Single solenoid
RCD245	2-position Double solenoid
RCD345	3-position Closed center
RCE345	3-position Exhaust center
RCO345	3-position Pressure center
Latch type	
RCL245	2-position Latching solenoid

For latch type see Page 101.

SPECIFICATIONS

0.5W type

Model No.			Unit	RCC235	RCO235	RCS245	RCD245	RCD345	RCE345	RCO345
Fluid				Non-lubricated/ lubricated air						
Port size				M5						
Effective area (Cv)			mm²	4 (0.22)				2.2 (0.12)		
Ambient temperature			°C	−5∼50						
Minimum operating pressure			MPa	0.15			0.1	0.15		
Operating pressure range			MPa	0.2∼0.7						
Maximum frequency			Cycle/min	900 (L type) 720 (SP & UP type)						
Response time	L type	ON	s	0.02		0.02	0.015	0.02		
		OFF		0.025		0.025	—	0.03		
	SP & UP type	ON		0.02		0.02	0.015	0.02		
		OFF		0.04		0.04	—	0.045		
Rated voltage			V	DC24						
Permissible voltage fluctuation			%	+10, −15						
Power consumption			W	0.5						
Grade of insulation				JIS grade B						
Wiring				Lead wire (L), Connector with lead wire (SP, UP)						
Mass	L type		g	62		62	94	103		
	SP & UP type			62		62	94	103		

(Note) • When using it at temperature of 5°C or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

SPECIFICATIONS
Standard type

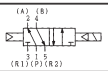
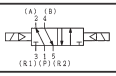
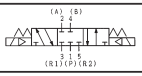
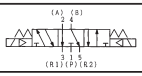
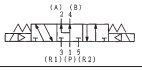
Model No.				Unit	RCC235	RCO235	RCS245	RCD245	RCD345	RCE345	RCO345
Fluid					Non-lubricated/ lubricated air						
Port size					M5						
Effective area (Cv)				mm²	4 (0.22)				2.2 (0.12)		
Ambient temperature				℃	−5～50						
Minimum operating pressure				MPa	0.15			0.1	0.15		
Operating pressure range				MPa	0.2～0.8						
Maximum frequency				Cycle/min	AC：900　DC：1200（L type）900（SP & UP type）						
Response time	DC	L type	ON	s	0.016		0.016	0.012	0.012		
			OFF		0.020		0.020	—	0.022		
		SP & UP type	ON		0.016		0.016	0.012	0.012		
			OFF		0.035		0.03	—	0.04		
	AC L SP UP	50Hz	ON		0.01		0.014	0.008	0.008		
			OFF		0.037		0.037	—	0.047		
		60Hz	ON		0.01		0.014	0.008	0.008		
			OFF		0.03		0.03	—	0.04		
Rated voltage				V	AC100/110, 200/220　DC24　DC12						
Permissible voltage fluctuation				%	AC±10　DC$^{+10}_{-15}$						
Rated frequency				Hz	50/60						
Power consumption	AC	Holding	50Hz	VA	2.5（100/200）						
			60Hz		2.0（100/200）						
		Inlush	50Hz		2.9（100/200）						
			60Hz		2.5（100/200）						
Power consumption DC				W	1.8						
Grade of insulation					JIS grade B						
Wiring					Lead wire (L), Connector with lead wire (SP, UP)						
Mass	L type			g	62		62	94	103		
	SP & UP type				62		62	94	103		

(Note)・When using it at temperature of 5℃ or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

ORDERING INSTRUCTIONS

RCS245		–	M5	–	D24	SP	LB	–	B
	①		②		③	④	⑤	⑥		⑦

①Function

RCC235	
RCO235	
RCS245	
RCD245	
RCD345	
RCE345	
RCO345	

②Special specification

No mark	Standard (Individual exhaust of pilot)
U	External pilot (valve body ported) Individual exhaust of pilot

(Note) U：PCC235 and PCO235 only

③Port size

M5	M5×0.8

④Voltage

100	AC100/110V
200	AC200/220V
D24	DC24V
D12	DC12V
H24	DC24 0.5W type

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector.
MP and NP types are made to order.
For wiring instructions, refer to Page 11.

⑥Manual override

No mark	Standard (Non-lock)
LB	With locking button

(Note) LB：Made to order

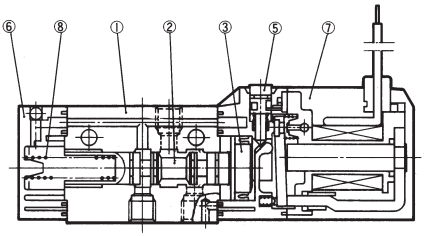
⑦Option

B	With bracket

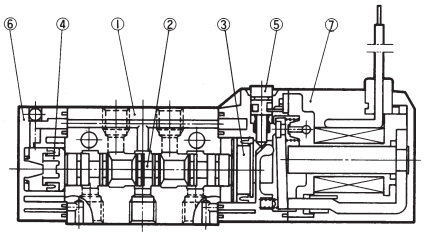
(Note) B：RCC235, RCO235 and RCS245 only

CONSTRUCTIONS AND MAIN COMPONENTS

RCC235, RCO235



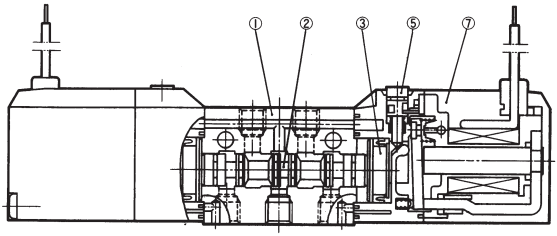
RCS245



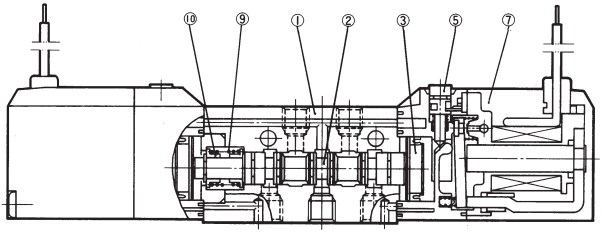
No.	Description	Material
①	Body	Aluminium alloy
②	Spool assembly	—
③	Piston D	Synthetic resins
④	Piston S	Synthetic resins
⑤	Manual override	Synthetic resins
⑥	End cover	Synthetic resins
⑦	Pilot valve	—
⑧	Return spring S	Stainless steel
⑨	Return spring 3P	Stainless steel
⑩	Spring retainer	Synthetic resins

CONSTRUCTIONS

RCD245



RCD345, RCE345, RCO345



OPTIONAL PARTS AND SPARE PARTS

Connector with lead wire

PC5-D24-CL5
① ②

①Voltage
100：AC100/110V
200：AC200/220V
D24：DC24V, 12V

②Lead wire length
CL5 ： 500mm（Standard）
CL10：1000mm
CL20：2000mm
CL30：3000mm
CL50：5000mm

Bracket

Parts name	Model No.
Bracket	PC5-B

Connector with cabtyre cable

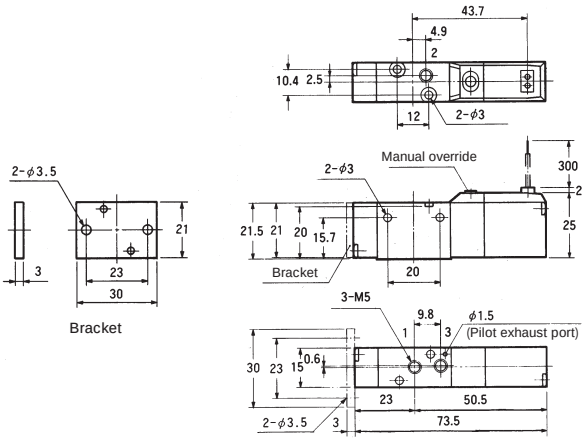
PC5-CB10 Cable length 1000mm

DIMENSIONS

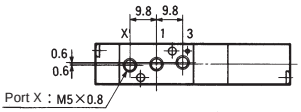
●RCC235, RCO235

(Unit：mm)

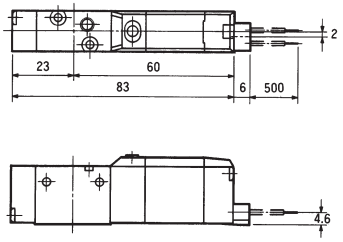
L **type**



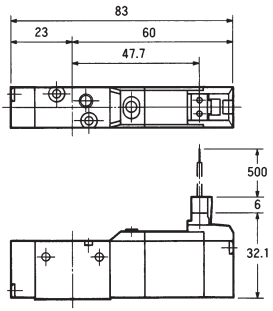
U **type**



SP **type**



UP **type**

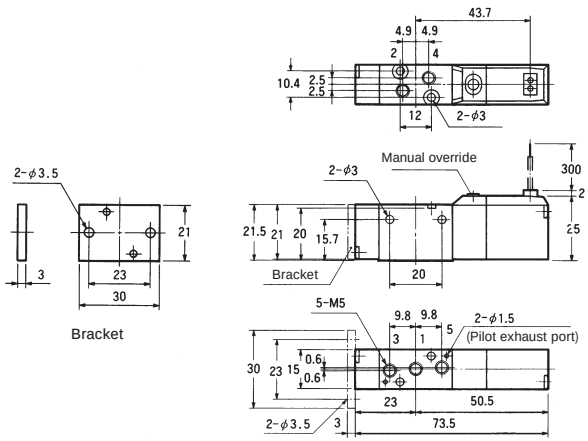


DIMENSIONS

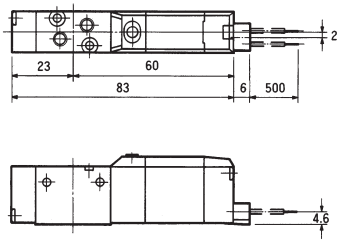
●RCS245

(Unit：mm)

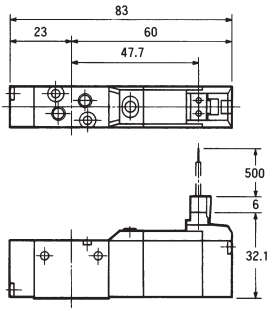
L **type**



SP **type**



UP **type**

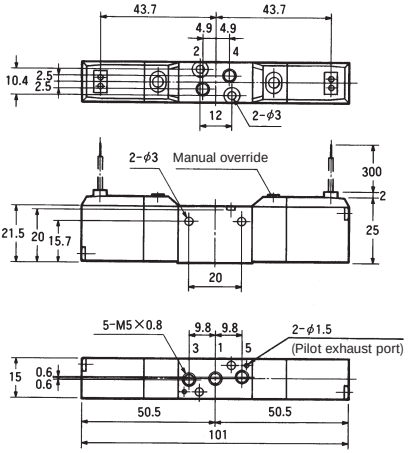


DIMENSIONS

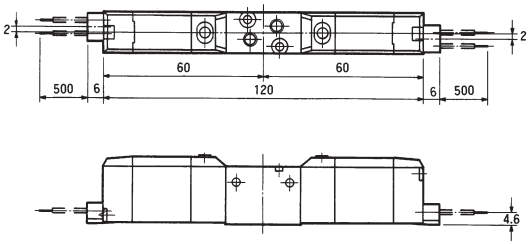
●RCD245

(Unit：mm)

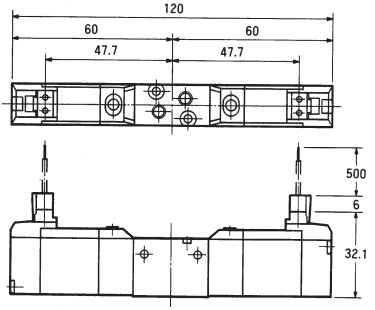
L **type**



SP **type**



UP **type**

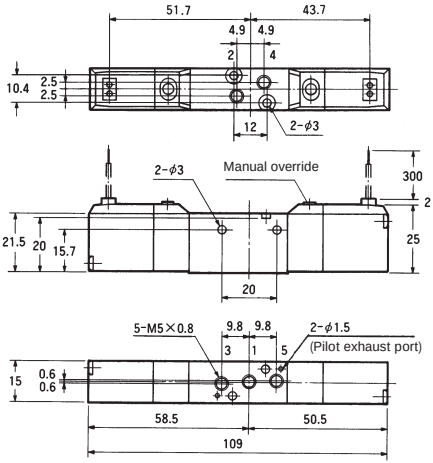


DIMENSIONS

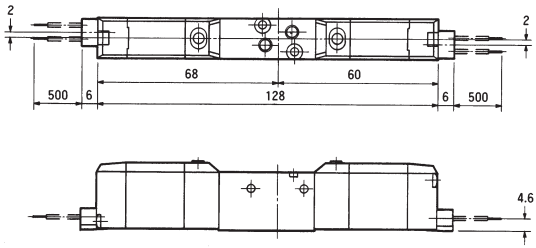
●RCD345, RCE345, RCO345

(Unit : mm)

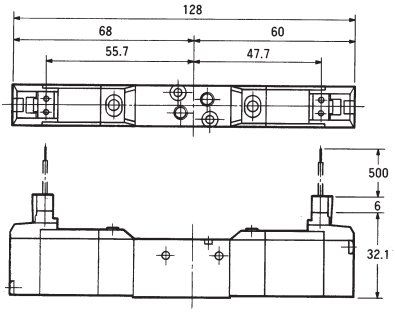
L **type**



SP **type**



UP **type**



INDIVIDUAL WIRING TYPE MANIFOLD

MF○-R○5

Bar type

MFU□-RC5	(Common SUP, Common EXH Ports 1, 3 & 5 on both sides)
MFU□-RD5	(Common SUP, Common EXH Ports 1, 3 & 5 on one side)
MFX□-RC5	(Common SUP, Common EXH Common external pilot Ports 1 & 3 on both sides)
MFX□-RD5	(Common SUP, Common EXH Common external pilot Ports 1 & 3 on one side)
Captured exhaust of pilot type manifold	
MFU□-RY5	(Common SUP, Common EXH Ports 1, 3 & 5 on both sides)
MFX□-RY5	(Common SUP, Common EXH Common external pilot Ports 1 & 3 on both sides)

MANIFOLD SPECIFICATIONS

Type of manifold		MFU□-RC5 Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)	MFU□-RD5 Common SUP, Common EXH (Ports 1, 3 & 5 on one side)	MFU-RY5 Captured exhaust of pilot Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)
Port size	Port 1	Rc 1/8 (Both sides)	Rc 1/8 (One side)	Rc 1/8 (Both sides)
	Port 3 & 5	Rc 1/8 (Both sides)	Rc 1/8 (One side)	Rc 1/8 (Both sides)
	Port 2 & 4	M5	M5	M5
	Port X	—	—	—
	Port Y	—	—	M5
Number of stations		2～20	2～20	2～20
Mountable solenoid valve		RCC235-※-※-MF RCO235-※-※-MF RCS245-※-※-MF RCD245-※-※-MF RCD345-※-※-MF RCE345-※-※-MF RCO345-※-※-MF		RCC235Y-※-※-MF RCO235Y-※-※-MF RCS245Y-※-※-MF RCD245Y-※-※-MF RCD345Y-※-※-MF RCE345Y-※-※-MF RCO345Y-※-※-MF
Blank plate		PC5-BP		RC5-BP

MANIFOLD SPECIFICATIONS

Type of manifold		MFX□-RC5	MFX□-RD5	MFX□-RY5
		Common SUP, Common EXH Common external pilot (Ports 1 & 3 on both sides)	Common SUP, Common EXH Common external pilot (Ports 1 & 3 on one side)	Captured exhaust of pilot Common SUP, Common EXH Common external pilot (Ports 1 & 3 on both sides)
Port size	Port 1	Rc 1/8 (Both sides)	Rc 1/8 (One side)	Rc 1/8 (Both sides)
	Port 3	Rc 1/8 (Both sides)	Rc 1/8 (One side)	Rc 1/8 (Both sides)
	Port 2	M5	M5	M5
	Port X	Rc 1/8 (Both sides)	Rc 1/8 (One side)	Rc 1/8 (Both sides)
	Port Y	—	—	M5 (Both sides)
Number of stations		2～20	2～20	2～20
Mountable solenoid valve		RCC235U-※-※-MF RCO235U-※-※-MF		RCC235V-※-※-MF RCO235V-※-※-MF
Blank plate		PC5-BP		PY5-BP

OPTIONAL PARTS AND SPARE PARTS

Part name		Model No.
Blank plate	For individual exhaust of pilot	PC5-BP
	For captured exhaust of pilot	PY5-BP

ORDERING INSTRUCTIONS

Manifold

MFU | 2 – RC5 – M5

① ② ③ ④

①Type of manifold

	Ports 2 & 4
MFU	Body side ported
MFX	Body side ported (Common external pilot)

②Number of stations

2	2 station
⋮	⋮
20	20 station

③Manifold function

RC5	Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)
RD5	Common SUP, Common EXH (Ports 1, 3 & 5 on one side)
RY5	Common SUP, Common EXH Captured exhaust of pilot (Ports 1, 3 & 5 on both sides)

④Size of ports 2 & 4

M5	M5×0.8

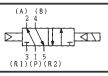
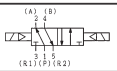
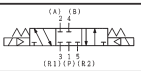
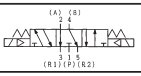
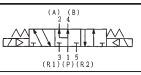
ORDERING INSTRUCTIONS

Mountable solenoid valve

RCS245 [ ] – M5 – D24 SP LB – MF

① ② ③ ④ ⑤ ⑥ ⑦

①Function

RCC235	
RCO235	
RCS245	
RCD245	
RCD345	
RCE345	
RCO345	

②Special specification

No mark	Standard (Individual exhaust of pilot)
Y	Captured exhaust of pilot
U	External pilot (Manifold ported) Individual exhaust of pilot
V	External pilot (Manifold ported) Captured exhaust of pilot

(Note) U & V : RCC235 and RCO235 only

③Port size

M5	M5×0.8

④Voltage

100	AC100/110V
200	AC200/220V
D24	DC24V
D12	DC12V
H24	DC24V 0.5W type

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector.
MP and NP types are made to order.
For wiring instructions, refer to Page 11.

⑥Manual override

No mark	Standard (Non-lock)
LB	With locking button

(Note) LB : Made to order

⑦For mounting on manifold

MF	For mounting on manifold

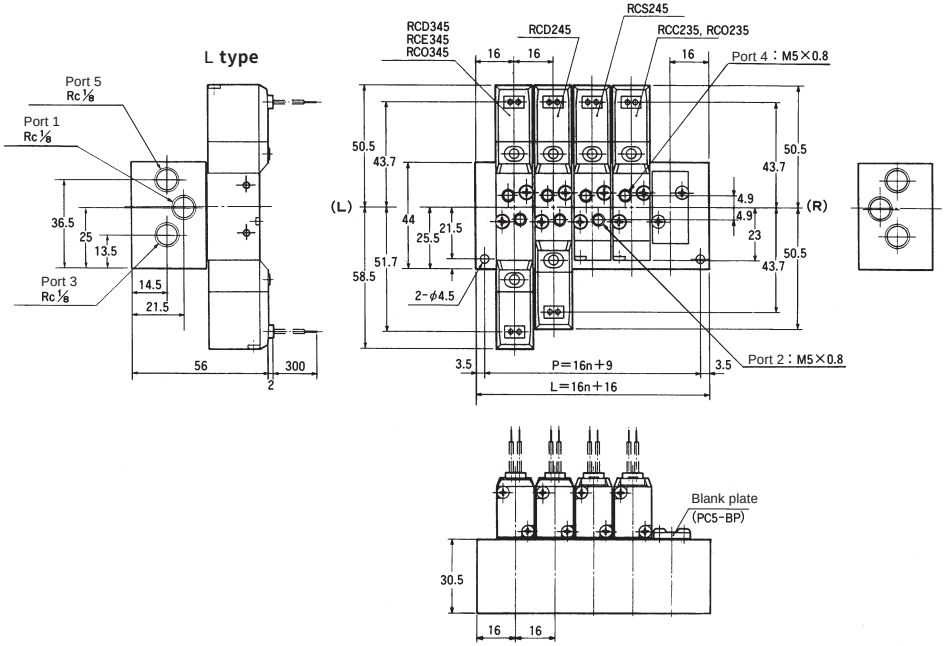
(Note) A gasket & two mounting screws come with valve.

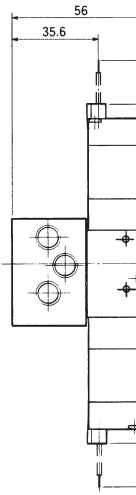
DIMENSIONS

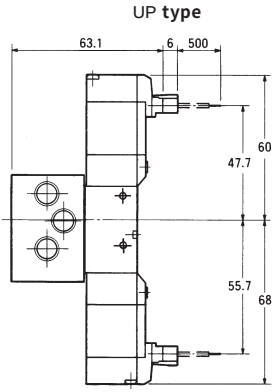
●MFU□-RC5-M5

(Unit : mm)

(Note) Standard manifold is plugged on " R " (Right) side ports.







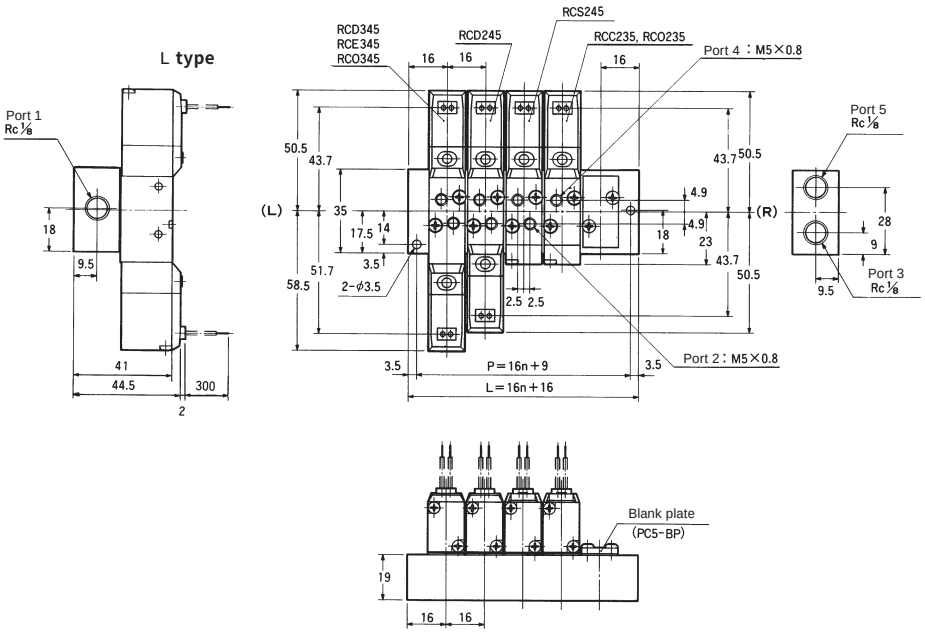
n	P	L	n	P	L
—	—	—	11	185	192
2	41	48	12	201	208
3	57	64	13	217	224
4	73	80	14	233	240
5	89	96	15	249	256
6	105	112	16	265	272
7	121	128	17	281	288
8	137	144	18	297	304
9	153	160	19	313	320
10	169	176	20	329	336

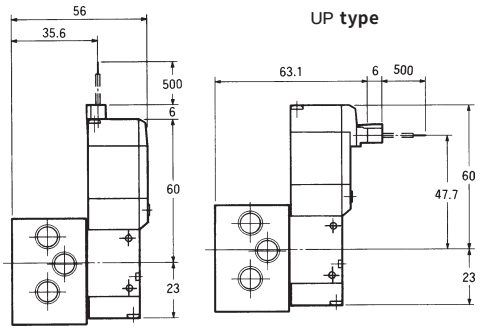
n : Number of stations

DIMENSIONS

●MFU□-RD5-M5

(Unit：mm)





n	P	L	n	P	L
—	—	—	11	185	192
2	41	48	12	201	208
3	57	64	13	217	224
4	73	80	14	233	240
5	89	96	15	249	256
6	105	112	16	265	272
7	121	128	17	281	288
8	137	144	18	297	304
9	153	160	19	313	320
10	169	176	20	329	336

n：Number of stations

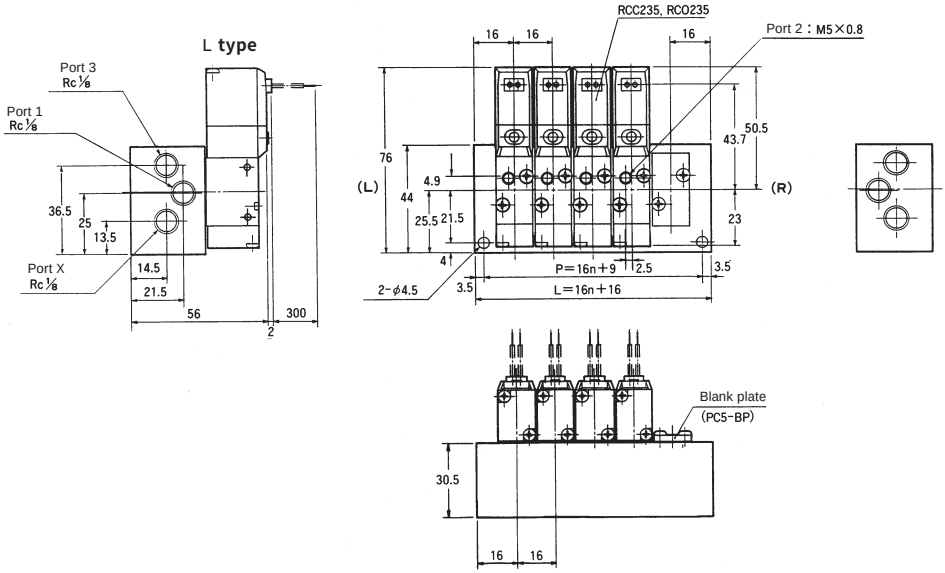
DIMENSIONS

●MFX□-RC5-M5

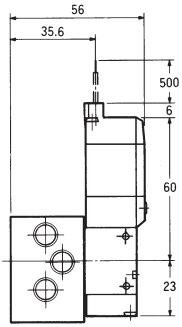
(Unit : mm)

(Note) Standard manifold is plugged on " R " (Right) side ports.

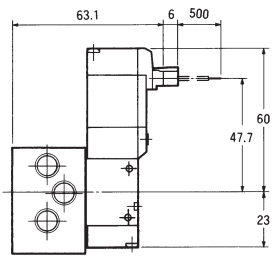
L **type**



SP **type**



UP **type**



n	P	L	n	P	L
—	—	—	11	185	192
2	41	48	12	201	208
3	57	64	13	217	224
4	73	80	14	233	240
5	89	96	15	249	256
6	105	112	16	265	272
7	121	128	17	281	288
8	137	144	18	297	304
9	153	160	19	313	320
10	169	176	20	329	336

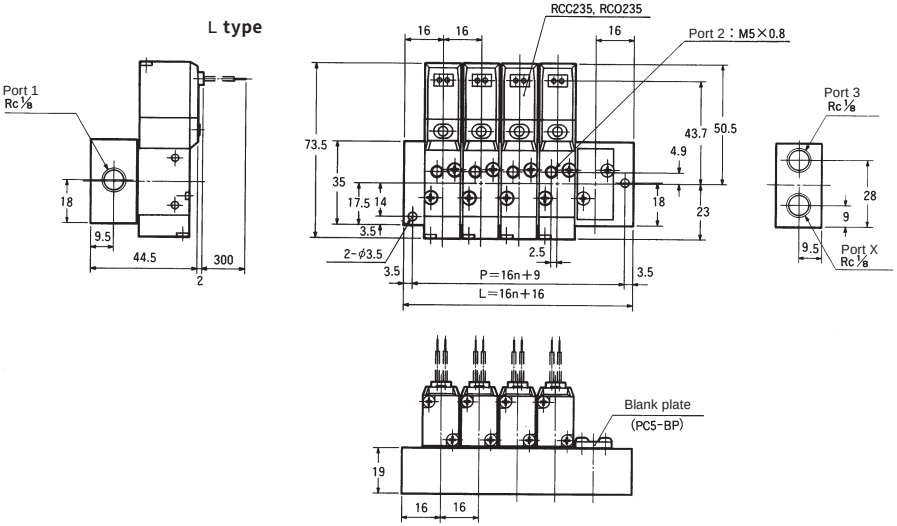
n : Number of stations

DIMENSIONS

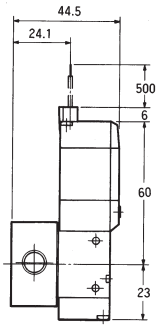
●MFX□-RD5-M5

(Unit：mm)

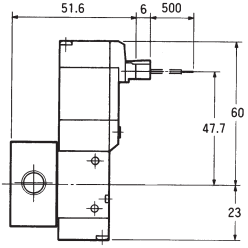
L **type**



SP **type**



UP **type**



n	P	L	n	P	L
—	—	—	11	185	192
2	41	48	12	201	208
3	57	64	13	217	224
4	73	80	14	233	240
5	89	96	15	249	256
6	105	112	16	265	272
7	121	128	17	281	288
8	137	144	18	297	304
9	153	160	19	313	320
10	169	176	20	329	336

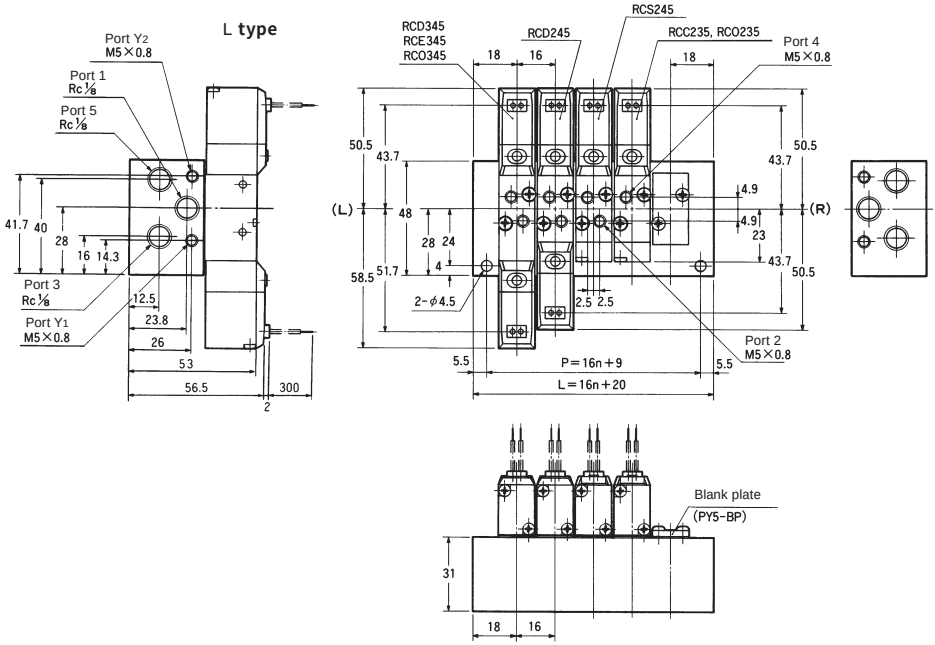
n：Number of stations

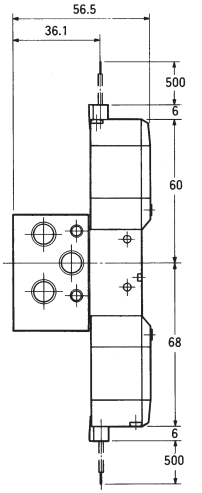
DIMENSIONS

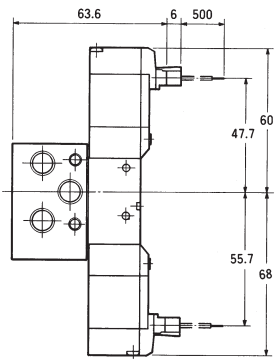
●MFU□-RY5-M5

(Unit : mm)

(Note) Standard manifold is plugged on " R " (Right) side ports.







n	P	L	n	P	L
—	—	—	11	185	196
2	41	52	12	201	212
3	57	68	13	217	228
4	73	84	14	233	244
5	89	100	15	249	260
6	105	116	16	265	276
7	121	132	17	281	292
8	137	148	18	297	308
9	153	164	19	313	324
10	169	180	20	329	340

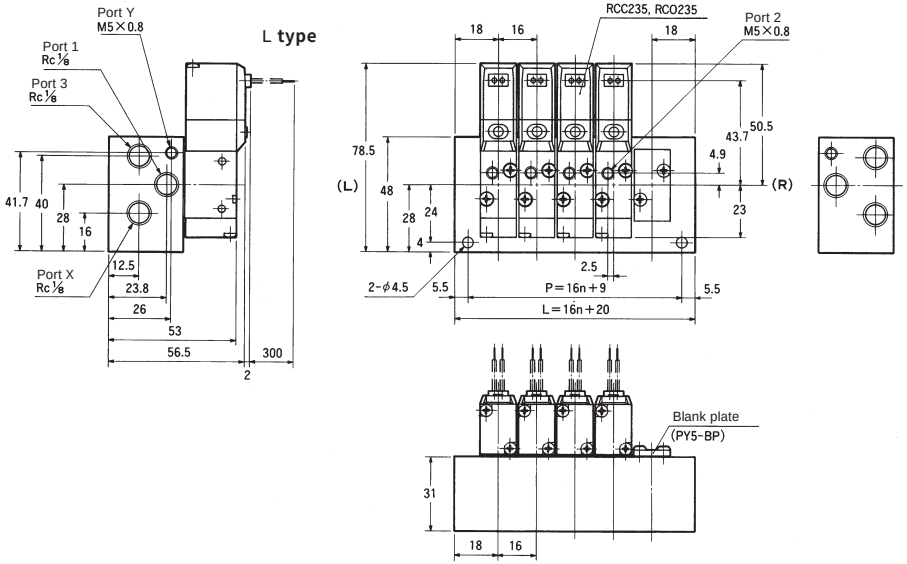
n : Number of stations

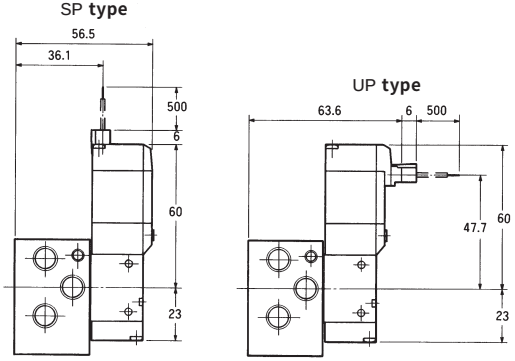
DIMENSIONS

●MFX□-RY5-M5

(Unit：mm)

(Note) Standard manifold is plugged on " R " (Right) side ports.





n	P	L	n	P	L
—	—	—	11	185	196
2	41	52	12	201	212
3	57	68	13	217	228
4	73	84	14	233	244
5	89	100	15	249	260
6	105	116	16	265	276
7	121	132	17	281	292
8	137	148	18	297	308
9	153	164	19	313	324
10	169	180	20	329	340

n：Number of stations

PILOT OPERATED SOLENOID VALVE

PC13 Series

Rubber Seal/Sub-base Mounting type

PCS2413	2-position Single solenoid
PCD2413	2-position Double solenoid
PCD3413	3-position Closed center
PCE3413	3-position Exhaust center
PCO3413	3-position Pressure center

Latch type

PCL2413	2-position Latching solenoid

For latch type see Page 114.

SPECIFICATIONS

0.5W type

Model No.			Unit	PCS2413	PCD2413	PCD3413	PCE3413	PCO3413
Fluid				Non-lubricated/ lubricated air				
Port size				Rc 1/4				
Effective area (Cv)			mm²	12 (0.66)		7.5 (0.41)		5 (0.28)
Ambient temperature			℃	−5〜50				
Minimum operating pressure			MPa	0.15	0.1	0.15		
Operating pressure range			MPa	0.2〜0.7				
Maximum frequency			Cycle/min	240				
Response time	L type	ON	s	0.035	0.020	0.025		
		OFF		0.025	—	0.035		
	SP & UP type	ON		0.035	0.020	0.025		
		OFF		0.040	—	0.050		
Rated voltage			V	DC24				
Permissible voltage fluctuation			%	+10, −15				
Power consumption			W	0.5				
Grade of insulation				JIS grade B				
Wiring				Lead wire (L), Connector with lead wire (SP, UP)				
Mass	L type	NB	g	95	127	144		
		Rc 1/4		179	211	228		
	SP & UP type	NB		95	127	144		
		Rc 1/4		179	211	228		

(Note) • When using it at temperature of 5°C or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

SPECIFICATIONS
Standard type

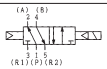
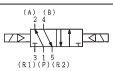
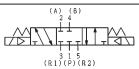
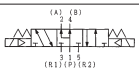
Model No.				Unit	PCS2413	PCD2413	PCD3413	PCE3413	PCO3413
Fluid					Non-lubricated/ lubricated air				
Port size					Rc1/4				
Effective area (Cv)				mm²	12 (0.66)		7.5 (0.41)		5 (0.28)
Ambient temperature				°C	−5～50				
Minimum operating pressure				MPa	0.15	0.1	0.15		
Operating pressure range				MPa	0.2～0.8				
Maximum frequency				Cycle/min	240				
Response time	DC	L type	ON	s	0.020	0.015	0.015		
			OFF		0.022	—	0.032		
		SP & UP type	ON		0.020	0.015	0.015		
			OFF		0.037	—	0.047		
	AC L	50Hz	ON		0.020	0.015	0.015		
			OFF		0.022	—	0.032		
	SP UP	60Hz	ON		0.020	0.015	0.015		
			OFF		0.022	—	0.032		
Rated voltage				V	AC100／110　200／220　DC24　DC12				
Permissible voltage fluctuation				%	AC±10　DC$^{+10}_{-15}$				
Rated frequency				Hz	50／60				
Power consumption	AC	Holding	50Hz	VA	2.5（100／200）				
			60Hz		2.0（100／200）				
		Inlush	50Hz		2.9（100／200）				
			60Hz		2.5（100／200）				
Power consumption DC				W	1.8				
Grade of insulation					JIS grade B				
Wiring					Lead wire (L), Connector with lead wire (SP, UP)				
Mass	L type		NB	g	95	127	144		
			Rc1/4		179	211	228		
	SP & UP type		NB		95	127	144		
			Rc1/4		179	211	228		

(Note) • When using it at temperature of 5°C or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

ORDERING INSTRUCTIONS

PCS2413	U	–	02	–	D24	SP	LB
①	②		③		④	⑤	⑥

①Function

PCS2413	
PCD2413	
PCD3413	
PCE3413	
PCO3413	

②Special specification

No mark	Standard (Individual exhaust of pilot)
Y	Captured exhaust of pilot

③Port size

02	Rc 1/4
NB	Without sub-base

④Voltage

100	AC100/110V
200	AC200/220V
D24	DC24V
D12	DC12V
H24	DC24V 0.5W type

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector.
MP and NP types are made to order.
For wiring instructions, refer to Page 11.

⑥Manual override

No mark	Standard (Non-lock)
LB	With locking button

(Note) LB : Made to order

OPTIONAL PARTS AND SPARE PARTS

Connector with lead wire

PC5–D24–CL5
① ②

①Voltage
100 : AC100/110V
200 : AC200/220V
D24 : DC24V, 12V

②Lead wire length
CL5 : 500mm (Standard)
CL10 : 1000mm
CL20 : 2000mm
CL30 : 3000mm
CL50 : 5000mm

Connector with cabtyre cable

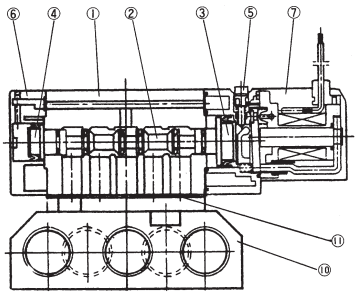
PC5–CB10 Cable length 1000mm

Sub-base

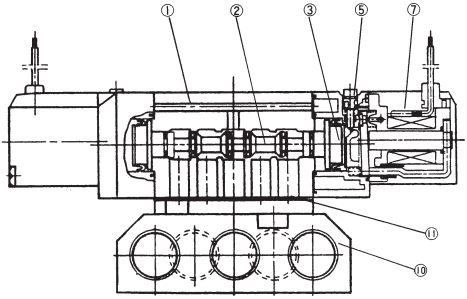
Part name	Model No.
Sub-base	PC13-SB-502

CONSTRUCTIONS AND MAIN COMPONENTS

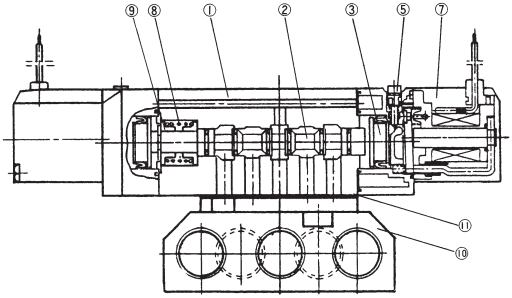
PCS2413



PCD2413



PCD3413, PCE3413, PCO3413



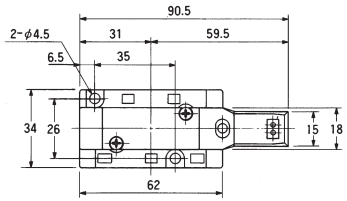
No.	Description	Material
①	Body	Aluminium alloy
②	Spool assembly	—
③	Piston D	Synthetic resins
④	Piston S	Synthetic resins
⑤	Manual override	Synthetic resins
⑥	End cover	Synthetic resins
⑦	Pilot valve	—
⑧	Return spring 3P	Stainless steel
⑨	Spring retainer	Synthetic resins
⑩	Sub-base	Aluminium alloy
⑪	Base gasket	NBR

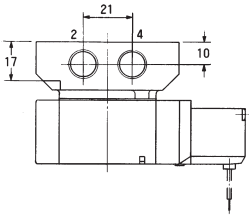
DIMENSIONS

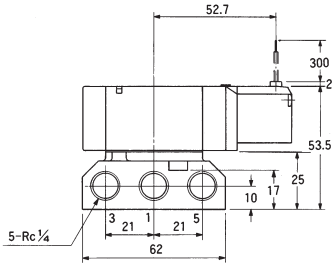
●PCS2413

(Unit : mm)

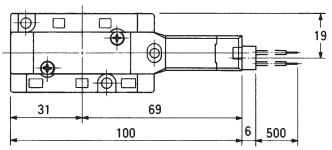
L type

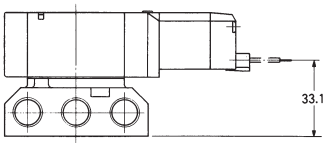




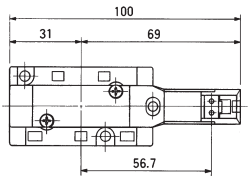


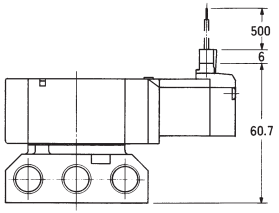
SP type





UP type



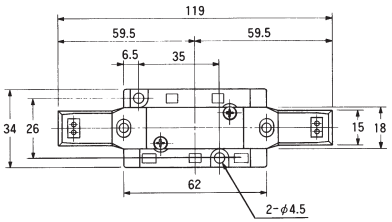


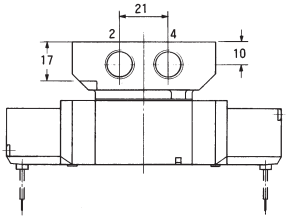
DIMENSIONS

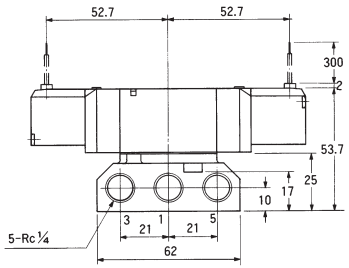
●PCD2413

(Unit：mm)

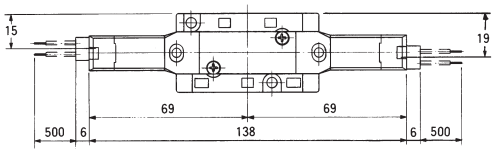
L type

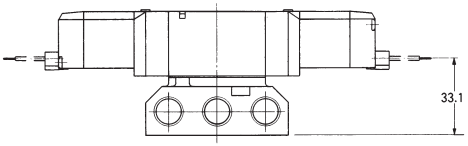




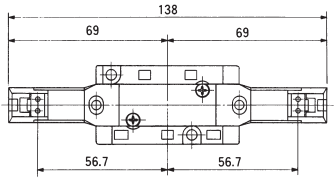


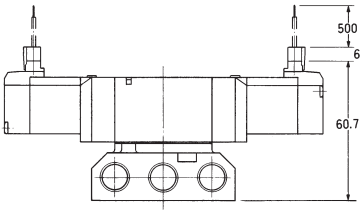
SP type





UP type



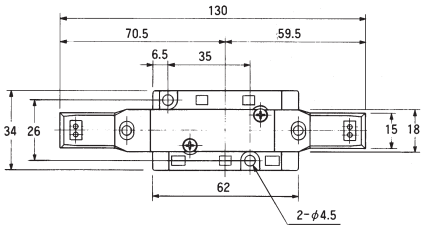


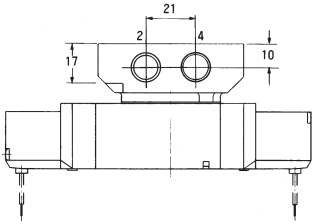
DIMENSIONS

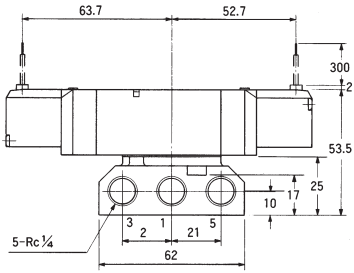
●PCD3413, PCE3413, PCO3413

(Unit : mm)

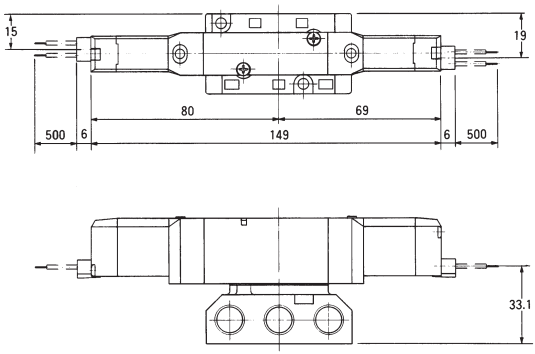
L **type**



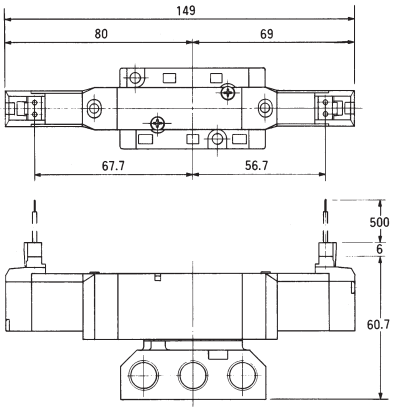




SP **type**



UP **type**



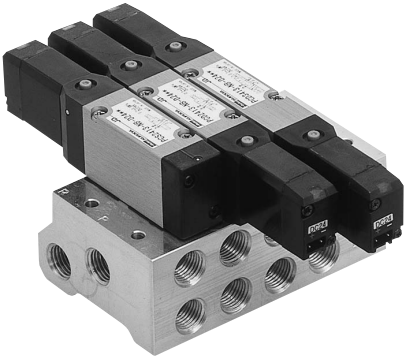
INDIVIDUAL WIRING TYPE MANIFOLD

MFS○-P13

Bar type

MFS□-PS13 (Common SUP, Captured EXH Ports 1 & 3/5 on both sides)

MFS□-PV13 (Captured exhaust of pliot Common SUP, Captured EXH Ports 1 & 3/5 on both sides)



MANIFOLD SPECIFICATIONS

		MFS□-PS13	MFS□-PV13
Type of manifold		Common SUP, Captured EXH (Ports 1 & 3/5 on both sides)	Captured exhaust of pilot Common SUP, Captured EXH (Ports 1 & 3/5 on both sides)
Port size	**Port 1**	Rc 1/4 (Both sides)	Rc 1/4 (Both sides)
	Port 3/5	Rc 1/4 (Both sides)	Rc 1/4 (Both sides)
	Port 2 & 4	Rc 1/4	Rc 1/4
Number of stations		2～10	2～10
Mountable solenoid valve		PCS2413※-NB PCD2413※-NB PCD3413※-NB PCE3413※-NB PCO3413※-NB	PCS2413Y-NB PCD2413Y-NB PCD3413Y-NB PCE3413Y-NB PCO3413Y-NB
Blank plate		PC13-BP	

OPTIONAL PARTS AND SPARE PARTS

Part name	Model No.
Blank plate	PC13-BP

ORDERING INSTRUCTIONS

Manifold

MFS | 2 | – | PS13 | – | 02

① ② ③ ④

①Type of manifold

	Ports 2 & 4
MFS	Body side ported

②Number of stations

2	2 station
⋮	⋮
10	10 station

③Manifold function

PS13	Common SUP, Captured EXH (Ports1 & 3/5 on both sides)
PV13	Common SUP, Captured EXH Captured exhaust of pilot (Ports 1 & 3/5 on both sides)

④Size of ports 2 & 4

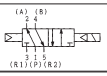
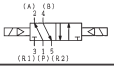
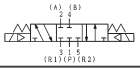
02	Rc 1/4

Mountable solenoid valve

PCS2413 | U | – | NB | – | D24 | SP | LB

① ② ③ ④ ⑤ ⑥

①Function

PCS2413	
PCD2413	
PCD3413	
PCE3413	
PCO3413	

②Special specification

No mark	Standard (Individual exhaust of pilot)
Y	Captured exhaust of pilot

③Port size

NB	Without sub-base

(Note) A gasket & two mounting screws come with valve.

④Voltage

100	AC100/110V
200	AC200/220V
D24	DC24V
D12	DC12V
H24	DC24V 0.5W type

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector. MP and NP types are made to order. For wiring instructions, refer to Page 11.

⑥Manual override

No mark	Standard (Non-lock)
LB	With locking button

(Note) LB : Made to order

DIMENSIONS

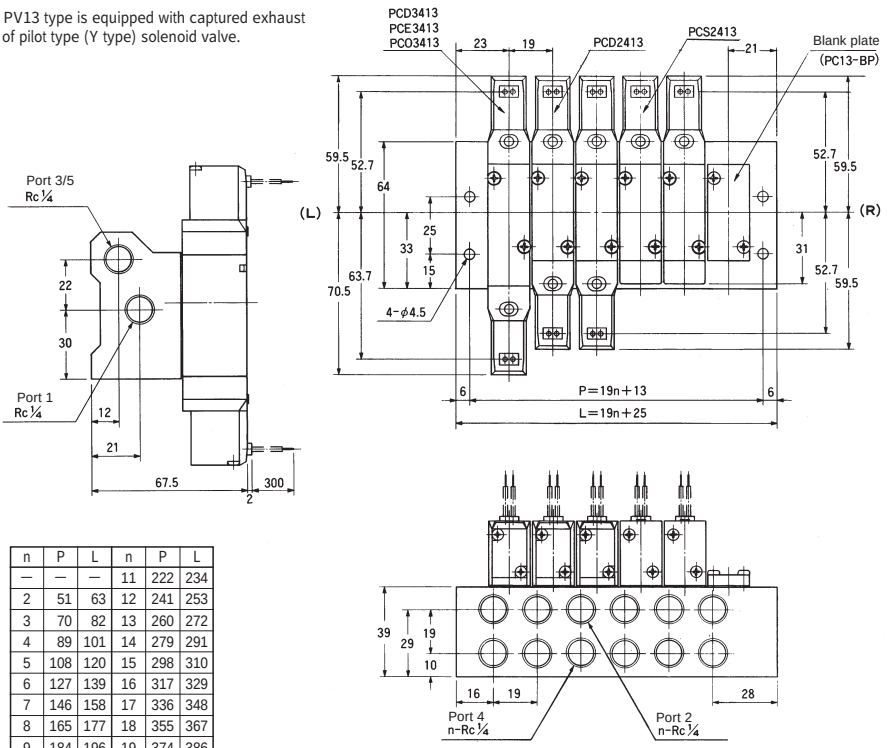
●MFS□-PS13-02, MFS□-PV13-02

(Unit：mm)

L type

(Note) Standard manifold is plugged on " R " (Right) side port.

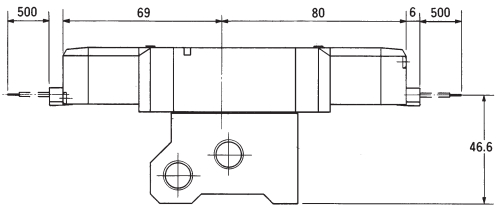
(Note) PV13 type is equipped with captured exhaust of pilot type (Y type) solenoid valve.



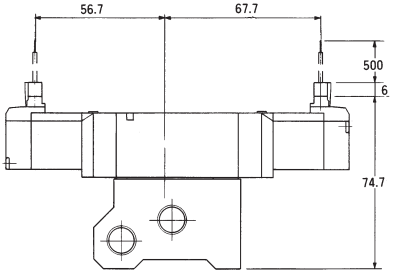
n	P	L	n	P	L
—	—	—	11	222	234
2	51	63	12	241	253
3	70	82	13	260	272
4	89	101	14	279	291
5	108	120	15	298	310
6	127	139	16	317	329
7	146	158	17	336	348
8	165	177	18	355	367
9	184	196	19	374	386
10	203	215	20	393	405

n：Number of stations

SP type



UP type



PILOT OPERATED SOLENOID VALVE

RC13 Series

Rubber Seal/In-line Mounting type

RCS2413	2-position Single solenoid
RCD2413	2-position Double solenoid
RCD3413	3-position Closed center
RCE3413	3-position Exhaust center
RCO3413	3-position Pressure center
Latch type	
RCL2413	2-position Latching solenoid

For latch type see Page 114.

SPECIFICATIONS

0.5W type

Model No.			Unit	RCS2413	RCD2413	RCD3413	RCE3413	RCO3413
Fluid				Non-lubricated/ lubricated air				
Port size				Rc 1/8				
Effective area (Cv)			mm²	12.5 (0.69)		8 (0.44)		5 (0.28)
Ambient temperature			℃	−5∼50				
Minimum operating pressure			MPa	0.15	0.1	0.15		
Operating pressure range			MPa	0.2∼0.7				
Maximum frequency			Cycle/min	240				
Response time	L type	ON	s	0.035	0.020	0.025		
		OFF		0.025	—	0.035		
	SP & UP type	ON		0.035	0.020	0.025		
		OFF		0.040	—	0.050		
Rated voltage			V	DC24				
Permissible voltage fluctuation			%	+10, −15				
Power consumption			W	0.5				
Grade of insulation				JIS grade B				
Wiring				Lead wire (L), Connector with lead wire (SP, UP)				
Mass	L type		g	90	122	137		
	SP & UP type			90	122	137		

(Note) • When using it at temperature of 5°C or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

SPECIFICATIONS
Standard type

Model No.				Unit	RCS2413	RCD2413	RCD3413	RCE3413	RCO3413
Fluid					Non-lubricated/ lubricated air				
Port size					Rc 1/8				
Effective area (Cv)				mm²	12.5 (0.69)		8 (0.44)		5 (0.28)
Ambient temperature				℃	−5～50				
Minimum operating pressure				MPa	0.15	0.1	0.15		
Operating pressure range				MPa	0.2～0.8				
Maximum frequency				Cycle/min	240				
Response time	DC	L type	ON	s	0.020	0.015	0.015		
			OFF		0.022	—	0.032		
		SP & UP type	ON		0.020	0.015	0.015		
			OFF		0.037	—	0.047		
	AC L SP UP	50Hz	ON		0.020	0.015	0.015		
			OFF		0.022	—	0.032		
		60Hz	ON		0.020	0.015	0.015		
			OFF		0.022	—	0.032		
Rated voltage				V	AC100/110 200/220 DC24 DC12				
Permissible voltage fluctuation				%	AC±10, DC$^{+10}_{-15}$				
Rated frequency				Hz	50/60				
Power consumption	AC	Holding	50Hz	VA	2.5(100/200)				
			60Hz		2.0(100/200)				
		Inlush	50Hz		2.9(100/200)				
			60Hz		2.5(100/200)				
Power consumption DC				W	1.8				
Grade of insulation					JIS grade B				
Wiring					Lead wire (L), Connector with lead wire (SP, UP)				
Mass	L type			g	90	122	137		
	SP & UP type				90	122	137		

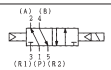
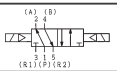
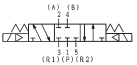
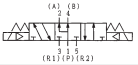
(Note) ・When using it at temperature of 5℃ or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

ORDERING INSTRUCTIONS

RCS2413 [ ] – 01 – D24 SP LB

① ② ③ ④ ⑤ ⑥

①Function

RCS2413	
RCD2413	
RCD3413	
RCE3413	
RCO3413	

②Special specification

No mark	Standard (Individual exhaust of pilot)
Y	Captured exhaust of pilot

③Port size

01	Rc 1/8

④Voltage

100	AC100/110V
200	AC200/220V
D24	DC24V
D12	DC12V
H24	DC24V 0.5W type

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector.
MP and NP types are made to order.
For wiring instructions, refer to Page 11.

⑥Manual override

No mark	Standard (Non-lock)
LB	With locking button

(Note) LB : Made to order

OPTIONAL PARTS AND SPARE PARTS

Connector with lead wire

PC5-D24 - CL5

① ②

①Voltage
100 : AC100/110V
200 : AC200/220V
D24 : DC24V, 12V

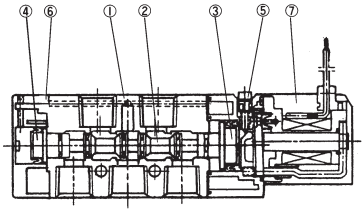
②Lead wire length
CL5 : 500mm (Standard)
CL10 : 1000mm
CL20 : 2000mm
CL30 : 3000mm
CL50 : 5000mm

Connector with cabtyre cable

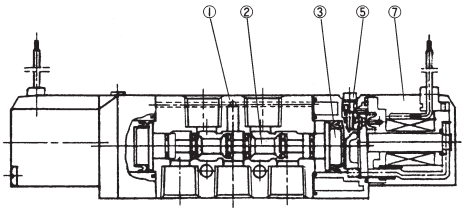
PC5-CB10 Cable length 1000mm

CONSTRUCTIONS AND MAIN COMPONENTS

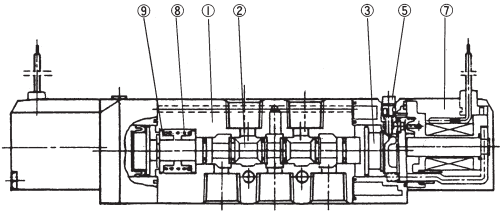
RCS2413



RCD2413



RCD3413, RCE3413, RCO3413



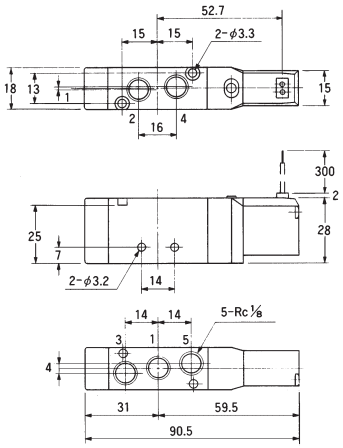
No.	Description	Material
①	Body	Aluminium alloy
②	Spool assembly	—
③	Piston D	Synthetic resins
④	Piston S	Synthetic resins
⑤	Manual override	Synthetic resins
⑥	End cover	Synthetic resins
⑦	Pilot valve	—
⑧	Return spring 3P	Stainless steel
⑨	Spring retainer	Synthetic resins

DIMENSIONS

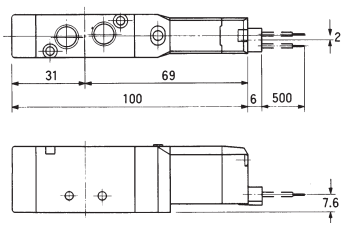
●RCS2413

(Unit：mm)

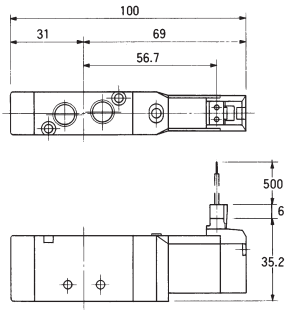
L type



SP type



UP type

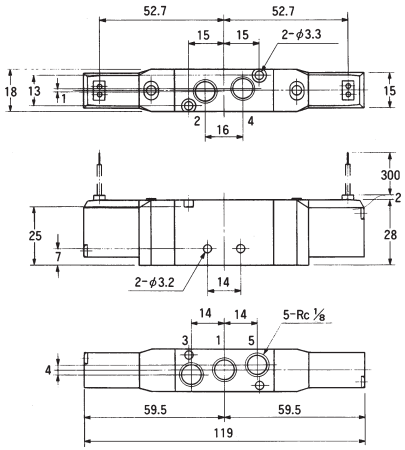


DIMENSIONS

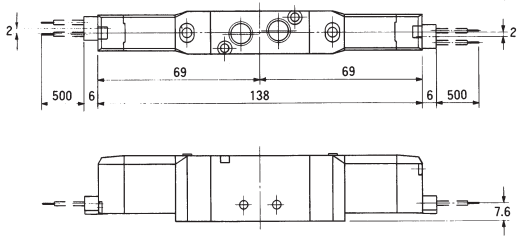
●RCD2413

(Unit：mm)

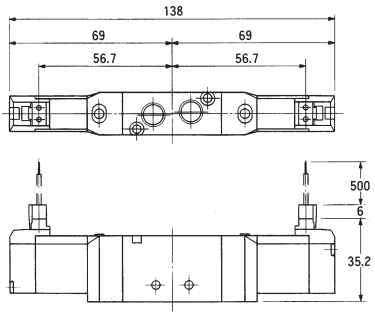
L type



SP type



UP type

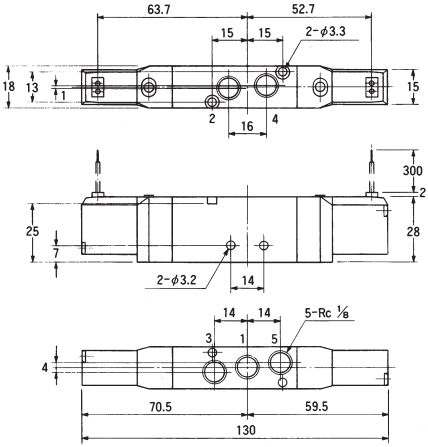


DIMENSIONS

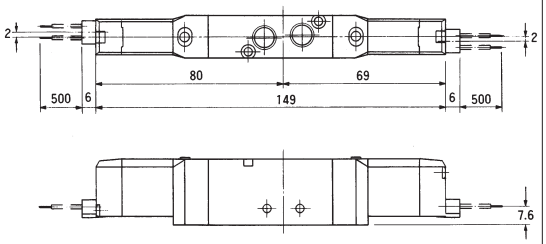
●RCD3413, RCE3413, RCO3413

(Unit：mm)

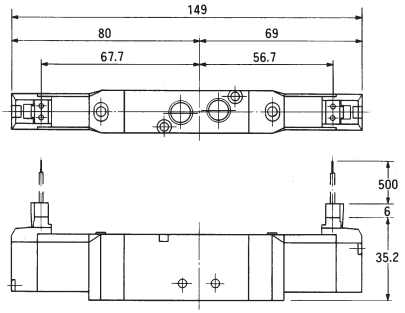
L type



SP type



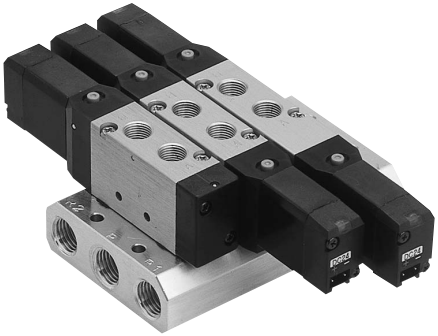
UP type



INDIVIDUAL WIRING TYPE MANIFOLD
MFU○-R13
Bar type

MFU□-RC13 (Common SUP, Common EXH Ports 1, 3 & 5 on both sides)

MFU□-RY13 (Captured exhaust of pliot Common SUP, Captured EXH Ports 1, 3 & 5 on both sides)



MANIFOLD SPECIFICATIONS

		MFU□-RC13	MFU□-RY13
Type of manifold		Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)	Captured exhaust of pilot Common SUP, Captured EXH (Ports 1, 3 & 5 on both sides)
Port size	**Port 1**	Rc 1/4 (Both sides)	Rc 1/4 (Both sides)
	Port 3 & 5	Rc 1/4 (Both sides)	Rc 1/4 (Both sides)
	Port 2 & 4	Rc 1/8 (Vave body ported)	Rc 1/8 (Vave body ported)
Number of stations		2～10	2～10
Mountable solenoid valve		RCS2413※-01-※-MF RCD2413※-01-※-MF RCD3413※-01-※-MF RCE3413※-01-※-MF RCO3413※-01-※-MF	RCS2413Y-01-※-MF RCD2413Y-01-※-MF RCD3413Y-01-※-MF RCE3413Y-01-※-MF RCO3413Y-01-※-MF
Blank plate		RC13-BP	

OPTIONAL PARTS AND SPARE PARTS

Part name	Model No.
Blank plate	RC13-BP

ORDERING INSTRUCTIONS

Manifold

MFU | 2 – RC13 – 01
① ② ③ ④

①Type of manifold

	Ports 2 & 4
MFU	Valve body ported

②Number of stations

2	2 station
⋮	⋮
10	10 station

③Manifold function

RC13	Common SUP, Common EXH (Ports1, 3 & 5 on both sides)
RY13	Common SUP, Captured EXH Captured exhaust of pilot (Ports 1, 3 & 5 on both sides)

④Size of ports 2 & 4

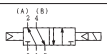
01	Rc 1/8

Mountable solenoid valve

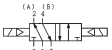
RCS2413 | | – 01 – D24 | SP | LB – MF
① ② ③ ④ ⑤ ⑥ ⑦

①Function

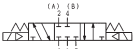
RCS2413



RCD2413



RCD3413



RCE3413

RCO3413

②Special specification

No mark	Standard (Individual exhaust of pilot)
Y	Captured exhaust of pilot

③Port size

01	Rc 1/8

④Voltage

100	AC100/110V
200	AC200/220V
D24	DC24V
D12	DC12V
H24	DC24V 0.5W type

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector. MP and NP types are made to order. For wiring instructions, refer to Page 11.

⑥Manual override

No mark	Standard (Non-lock)
LB	With locking button

(Note) LB : Made to order

⑦For mounting on manifold

MF	For mounting on manifold

(Note) A gasket & two mounting screws come with valve.

DIMENSIONS

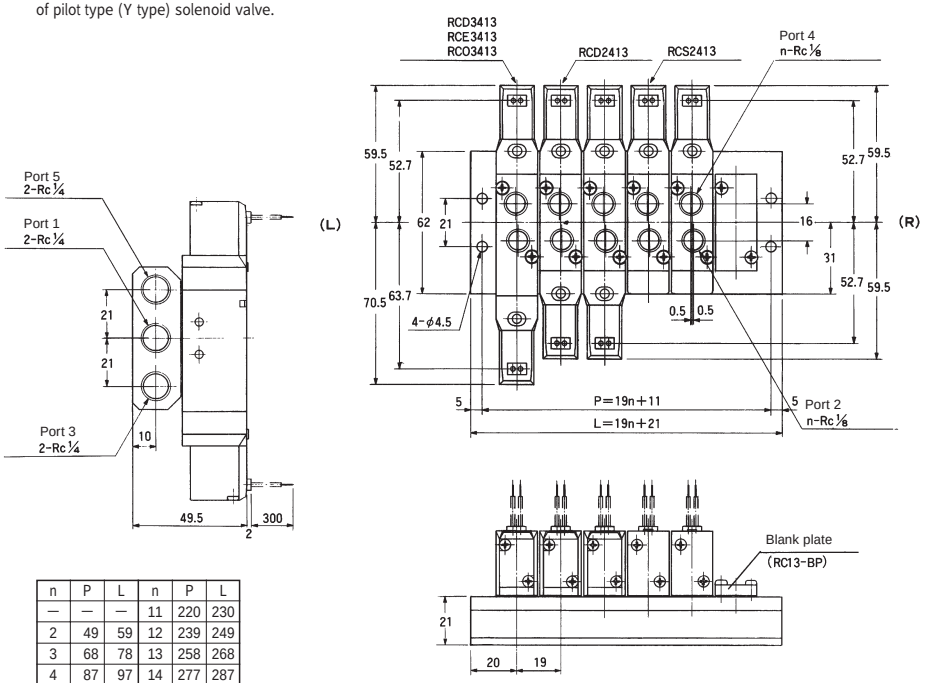
●MFU□□-RC13-01, MFU□□-RY13-01

(Unit：mm)

L type

(Note) Standard manifold is plugged on " R " (Right) side port.

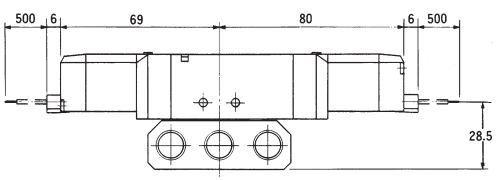
(Note) RY13 type is equipped with captured exhaust of pilot type (Y type) solenoid valve.



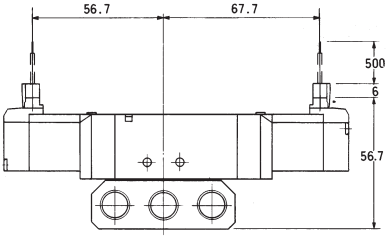
n	P	L	n	P	L
—	—	—	11	220	230
2	49	59	12	239	249
3	68	78	13	258	268
4	87	97	14	277	287
5	106	116	15	296	306
6	125	135	16	315	325
7	144	154	17	334	344
8	163	173	18	353	363
9	182	192	19	372	382
10	201	211	20	391	401

n：Number of stations

SP type



UP type



PILOT OPERATED LATCHING SOLENOID VALVE

PCL5, RCL5 Series

Rubber Seal/Sub-base, In-line Mounting type

PCL245	2-position Latching solenoid
RCL245	2-position Latching solenoid

SPECIFICATIONS

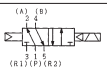
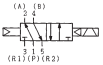
Model No.			Unit	PCL245	RCL245
Fluid				Non-lubricated/ lubricated air	
Port size				M5, Rc 1/8	M5
Effective area (Cv)			mm²	3.5 (0.19) : M5 3.8 (0.21) : Rc 1/8	3.7 (0.20)
Ambient temperature			℃	−5～50	
Minimum operating pressure			MPa	0.15	
Operating pressure range			MPa	0.2～0.7	
Maximum frequency			Cycle/min	600	
Response time	L type	ON	S	0.02	
		OFF		0.02	
	SP type	ON		0.02	
		OFF		0.02	
Min. energizing time			S	0.05	
Rated voltage			V	DC24	
Permissible voltage fluctuation			%	+10, −15	
Power consumption			W	1.8	
Grade of insulation				JIS grade B	
Wiring				Lead wire (L), Connector with lead wire (SP)	
Mass	L & SP type	NB	g	62	—
		M5		106	62
		Rc 1/8		118	—

(Note) ・When using it at temperature of 5°C or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

ORDERING INSTRUCTIONS

PCL245		–	M5	–	D24	SP
①	②		③		④	⑤

①Function

PCL245	
RCL245	

②Special specification

No mark	Standard (Individual exhaust of pilot)
Y	Captured exhaust of pilot
U	External pilot (valve body ported) Individual exhaust of pilot
V	External pilot (valve body ported) Captured exhaust of pilot

(Note) Y, U & V：PCL245 only

③Port size

M5	M5×0.8
01	Rc 1/8
NB	Without sub-base

(Note) RCL245 is M5 only

④Voltage

DC24	DC24V

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)

(Note) MP types are SP types without standard connector.
MP types are made to order.
For wiring instructions, refer to Page 11.

OPTIONAL PARTS AND SPARE PARTS

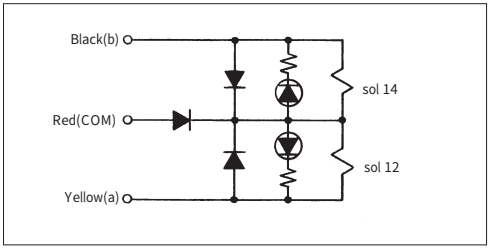
Sub-base

It is also used for PC5 in common. Refer to page 37.

Connector with lead wire

Part name	Length	Model No.
Connector with lead wire	500	PCL5-D24-CL5 (Standard)

ELECTRICAL CONNECTION OF SOLENOID

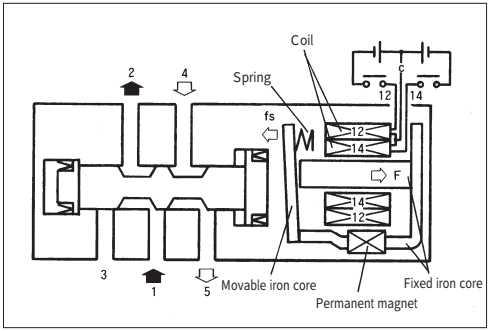


Port 4 opens when power is applied between ＋COM (red) and －sol 14 (black).

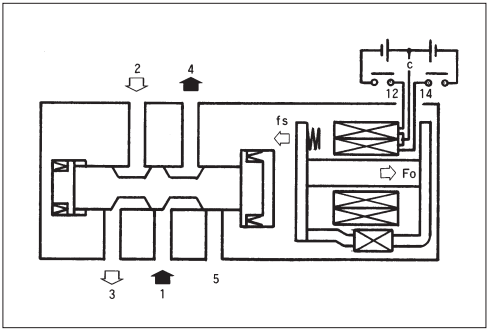
Port 2 opens when power is applied between ＋COM (red) and －sol 12 (yellow).

OPERATING PRINCIPLE

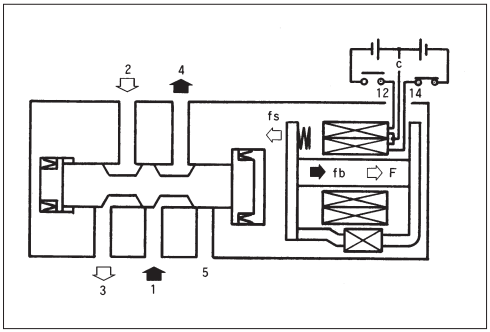
①sol 12 OFF (sol 12, sol 14 OFF)
The movable iron core keeps its position because the spring force (fs) is stronger than the permanent magnetic force (F).



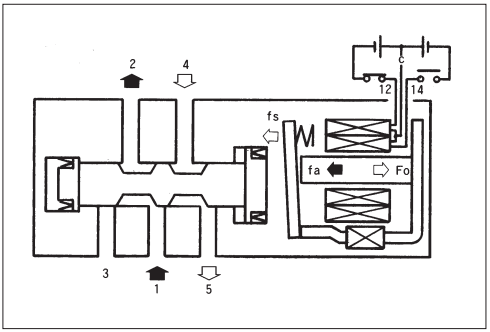
②sol 14 ON
When power is applied to sol 14, the attractive force (fb) of sol 14 is added to the permanent magnetic force (F).
So, when it is larger than the movable iron core spring force (fs), the movable iron core is attracted.



③sol 14 OFF
The movable iron core is left attracted to the fixed iro core even if power to sol 14 is off, because the workholding force (Fo) of the permanent magnet is stronger than the movable iron core spring force(fs).

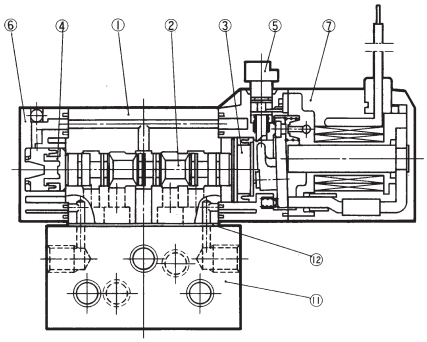


④sol 12 ON
When power is applied to sol 12, the attractive force (fa) of sol 12 acts to offset the workholding force of the permanent magnet.
As a result, the movable iron core returns to its original position by the spring force (fs).

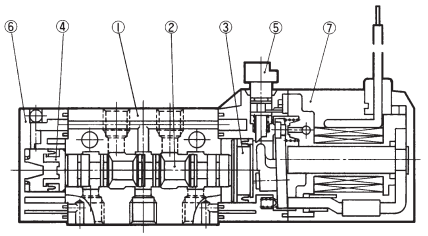


CONSTRUCTIONS

PCL245



RCL245



MAIN COMPONENTS

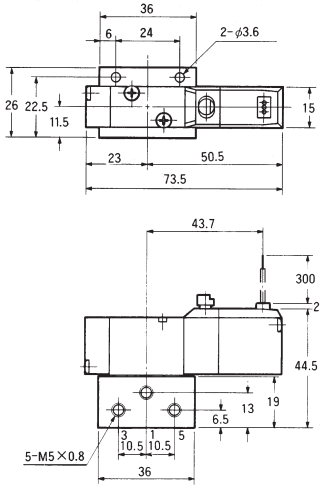
No.	Description	Material
①	Body	Aluminium alloy
②	Spool assembly	—
③	Piston D	Synthetic resins
④	Piston S	Synthetic resins
⑤	Manual override	Synthetic resins
⑥	End cover	Synthetic resins
⑦	Pilot valve	—
⑪	Sub-base	Aluminium alloy
⑫	Base gasket	NBR

DIMENSIONS

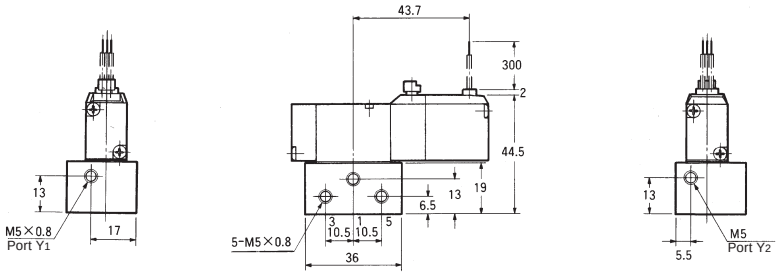
●PCL245-M5

(Unit：mm)

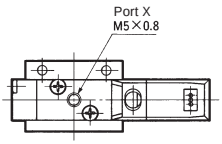
L type



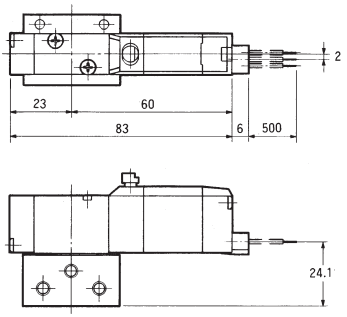
Y type



U type



SP type

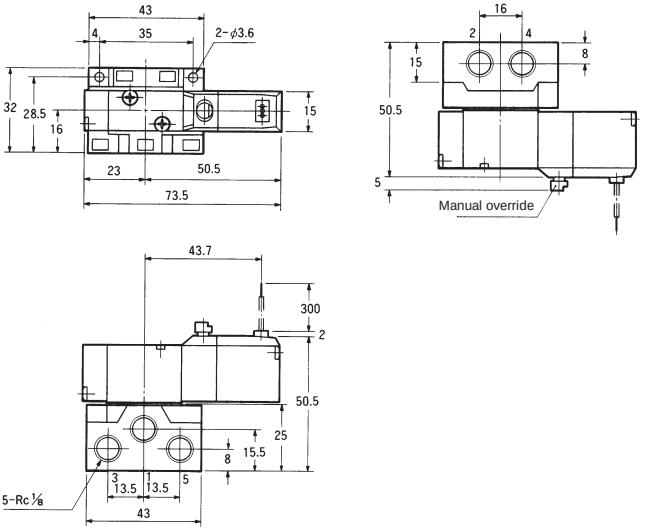


DIMENSIONS

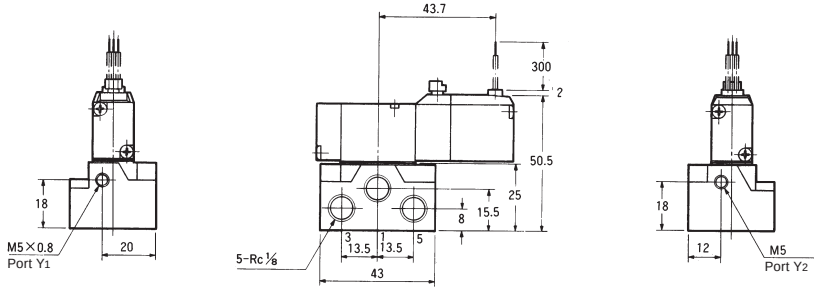
●PCL245-01

(Unit : mm)

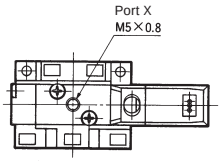
L type



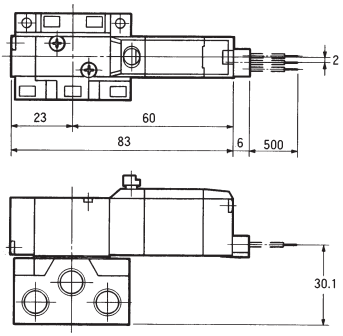
Y type



U type



SP type

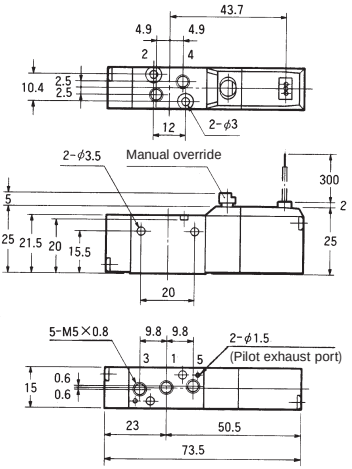


DIMENSIONS

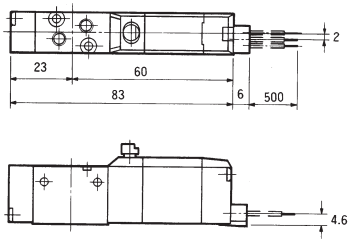
●RCL245-M5

(Unit：mm)

L type



SP type



INDIVIDUAL WIRING TYPE MANIFOLD

MFS○-P○5

Bar type

MFS□-PC5	Common SUP, Common EXH Ports 1, 3 & 5 on both sides
MFS□-PD5	Common SUP, Common EXH Ports 1, 3 & 5 on one side
MFS□-PI5	Common SUP, Individual EXH Ports 1 on one side
Captured exhaust of pilot type manifold	
MFS□-PY5	Common SUP, Common EXH Ports 1, 3 & 5 on both sides
MFS□-PV5	Common SUP, Captured EXH Ports 1 & 3/5 on both sides

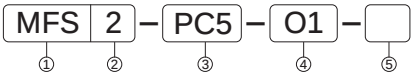
MANIFOLD SPECIFICATIONS

		MFS□-PC5	MFS□-PD5	MFS□-PI5	MFS□-PY5	MFS□-PV5
Type of manifold		Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)	Common SUP, Common EXH (Ports 1, 3 & 5 on one side)	Common SUP, Individual EXH (Port 1 on one side)	Captured exhaust of pilot Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)	Captured exhaust of pilot Common SUP, Captured EXH (Ports 1 & 3/5 on both sides)
Port size	**Port 1**	Rc 1/8 (Both sides)	Rc 1/8 (One side)	Rc 1/8 (One side)	Rc 1/8 (Both sides)	Rc 1/8 (Both sides)
	Port 3 & 5	Rc 1/8 (Both sides)	Rc 1/8 (One side)	M5 (Valve body ported)	Rc 1/8 (Both sides)	Rc 3/8 (Both sides)
	Port 2 & 4	Rc1/8, C4, C6	M5	M5	M5, Rc 1/8	C4, C6
	Port Y	—	—	—	M5 (Both sides)	Rc 1/8 (Both sides)
Number of stations		2～20	2～20	2～20	2～20	2～20
Mountable solenoid valve		PCL245※-NB-D24※ PCC235※-NB-※-※ PCO235※-NB-※-※ PCS245※-NB-※-※ PCD245※-NB-※-※ PCD345※-NB-※-※ PCE345※-NB-※-※ PCO345※-NB-※-※		PCL245※-R5-D24※ PCC235※-R5-※-※ PCO235※-R5-※-※ PCS245※-R5-※-※ PCD245※-R5-※-※ PCD345※-R5-※-※ PCE345※-R5-※-※ PCO345※-R5-※-※	PCL245※-NB-D24※ PCC235※-NB-※-※ PCO235※-NB-※-※ PCS245※-NB-※-※ PCD245※-NB-※-※ PCD345※-NB-※-※ PCE345※-NB-※-※ PCO345※-NB-※-※	
Blank plate		PC5-BP			PY5-BP	

PCL5, RCL5 Series

ORDERING INSTRUCTIONS

Manifold



①Type of manifold

	Ports 2 & 4
MFS	Body side ported

②Number of stations

2	2 station
⋮	⋮
20	20 station

③Manifold function

PC5	Common SUP, Common EXH (Ports1, 3 & 5 on both sides)
PD5	Common SUP, Common EXH (Ports1, 3 & 5 on one side)
PI5	Common SUP, Individual EXH (Port1 on one side)
PY5	Common SUP, Common EXH Captured exhaust of pilot (Ports1, 3 & 5 on both sides)
PV5	Common SUP, Captured EXH Captured exhaust of pilot (Ports1 & 3/5 on both sides)

④Size of ports 2 & 4

M5	M5×0.8
01	Rc 1/8
C4	With instant fitting for φ4 tube
C6	With instant fitting for φ6 tube

⑤Option

No mark	Standard
B	With bracket

DIMENSIONS

For dimensions, refer to the following pages.

MFS□-PD5-M5 ☞ P51
MFS□-PD5-M5-B ☞ P52
MFS□-PC5-01 ☞ P49
MFS□-PC5-01-B ☞ P50
MFS□-PC5-C4、C6 ☞ P53
MFS□-PC5-C4、C6-B ☞ P54
MFS□-PI5-M5 ☞ P55
MFS□-PY5-M5 ☞ P58
MFS□-PY5-01 ☞ P59
MFS□-PV5-C4、C6 ☞ P60

The manifolds are common to those shown on the left.
The solenoid valves PCL245 and PCS245 have the same configuration except that they are different in the manual override.

ORDERING INSTRUCTIONS

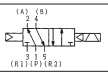
Mountable solenoid valve

PCL245 [ ] – NB – D24 SP

① ② ③ ④ ⑤

①Function

PCL245



②Special specification

No mark	Standard (Individual exhaust of pilot)
Y	Captured exhaust of pilot
U	External pilot (valve body ported) Individual exhaust of pilot
V	External pilot (valve body ported) Captured exhaust of pilot

③Port size

NB	Without sub-base
R5	Ports 3 & 5 valve body ported (M5)

(Note) A gasket & two mounting screws come with valve.

④Voltage

D24	DC24V

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector. MP and NP types are made to order.
For wiring instructions, refer to Page 11.

INDIVIDUAL WIRING TYPE MANIFOLD

MFU○-R○5

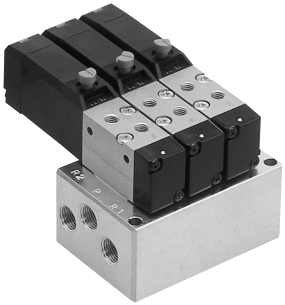
Bar type

MFU□-RC5 — Common SUP, Common EXH
Ports 1, 3 & 5 on both sides

MFU□-RD5 — Common SUP, Common EXH
Ports 1, 3 & 5 on one side

Captured exhaust of pilot type manifold

MFU□-RY5 — Common SUP, Common EXH
Ports 1, 3 & 5 on both sides



MANIFOLD SPECIFICATIONS

		MFU□-RC5	MFU□-RD5	MFU□-RY5
Type of manifold		Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)	Common SUP, Common EXH (Ports 1, 3 & 5 on one side)	Captured exhaust of pilot Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)
Port size	**Port 1**	Rc 1/8 (Both sides)	Rc 1/8 (One side)	Rc 1/8 (Both sides)
	Port 3 & 5	Rc 1/8 (Both sides)	Rc 1/8 (One side)	Rc 1/8 (Both sides)
	Port 2 & 4	M5	M5	M5
	Port Y	—	—	M5
Number of stations		2～20	2～20	2～20
Mountable solenoid valve		RCL245※-※-※-MF RCC235※-※-※-MF RCO235※-※-※-MF RCS245※-※-※-MF RCD245※-※-※-MF RCD345※-※-※-MF RCE345※-※-※-MF RCO345※-※-※-MF		
Blank plate		PC5–BP		PY5–BP

ORDERING INSTRUCTIONS

Manifold

①Type of manifold

	Ports 2 & 4
MFU	Valve body ported

②Number of stations

2	2 station
⋮	⋮
20	20 station

③Manifold function

RC5	Common SUP, Common EXH (Ports1, 3 & 5 on both sides)
RD5	Common SUP, Common EXH (Ports1, 3 & 5 on one side)
RY5	Common SUP, Common EXH Captured exhaust of pilot (Ports1, 3 & 5 on both sides)

④Size of ports 2 & 4

M5	M5×0.8

DIMENSIONS

For dimensions, refer to the following pages.

MFU□-RC5-M5 ☞ P75
MFU□-RD5-M5 ☞ P76
MFU□-RY5-M5 ☞ P79

The manifolds are common to those shown on the left.
The solenoid valves RCL245 and RCS245 have the same configuration except that they are different in the manual override.

ORDERING INSTRUCTIONS

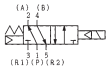
Mountable solenoid valve

RCL245 [ ] – M5 – D24 SP – MF

① ② ③ ④ ⑤ ⑥

①Function

RCL245



②Special specification

No mark	Standard
Y	Captured exhaust of pilot

③Port size

M5	M5×0.8

④Voltage

D24	DC24V

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)

(Note) MP types are SP types without standard connector.
MP types are made to order.
For wiring instructions, refer to Page 11.

⑥For mounting on manifold

MF	For mounting on manifold

(Note) A gasket & two mounting screws come with valve.

PILOT OPERATED LATCHING SOLENOID VALVE

PCL13, RCL13 Series

Rubber Seal/Sub-base, In-line Mounting type

PCL2413	2-position Latching solenoid
RCL2413	2-position Latching solenoid

SPECIFICATIONS

Model No.			Unit	PCL2413	RCL2413
Fluid				Non-lubricated/ lubricated air	
Port size				Rc 1/4	Rc 1/8
Effective area (Cv)			mm²	12 (0.66)	12.5 (0.69)
Ambient temperature			℃	−5∼50	
Minimum operating pressure			MPa	0.15	
Operating pressure range			MPa	0.2∼0.7	
Maximum frequency			Cycle/min	240	
Response time	L type	ON	s	0.025	
		OFF		0.025	
	SP type	ON		0.025	
		OFF		0.025	
Min. energizing time			s	0.05	
Rated voltage			V	DC24	
Permissible voltage fluctuation			%	+10, −15	
Power consumption			W	1.8	
Grade of insulation				JIS grade B	
Wiring				Lead wire (L), Connector with lead wire (SP)	
Mass	L & SP type	NB	g	95	—
		Rc 1/8		—	90
		Rc 1/4		179	—

(Note) • When using it at temperature of 5℃ or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

PCL13, RCL13 Series

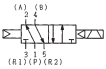
ORDERING INSTRUCTIONS

PCL2413 [ ] – 02 – D24 SP

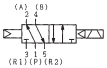
① ② ③ ④ ⑤

①Function

PCL2413



RCL2413



②Special specification

No mark	Standard
Y	Captured exhaust of pilot

③Port size

01	Rc 1/8 (RCL2413 only)
02	Rc 1/4 (PCL2413 only)
NB	Without sub-base

④Voltage

D24	DC24V

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)

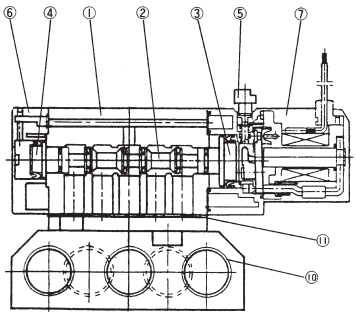
(Note) MP types are SP types without standard connector. MP types are made to order. For wiring instructions, refer to Page 11.

OPTIONAL PARTS AND SPARE PARTS

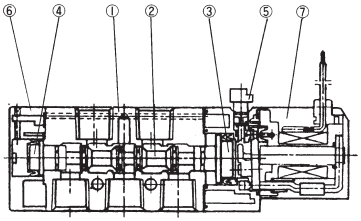
Part name	Model No.
Sub-base	PC13-SB-502
Connector with lead wire (length 500mm)	PCL5-D24-CL5 (Standard)

CONSTRUCTIONS

PCL2413



RCL2413



MAIN COMPONENTS

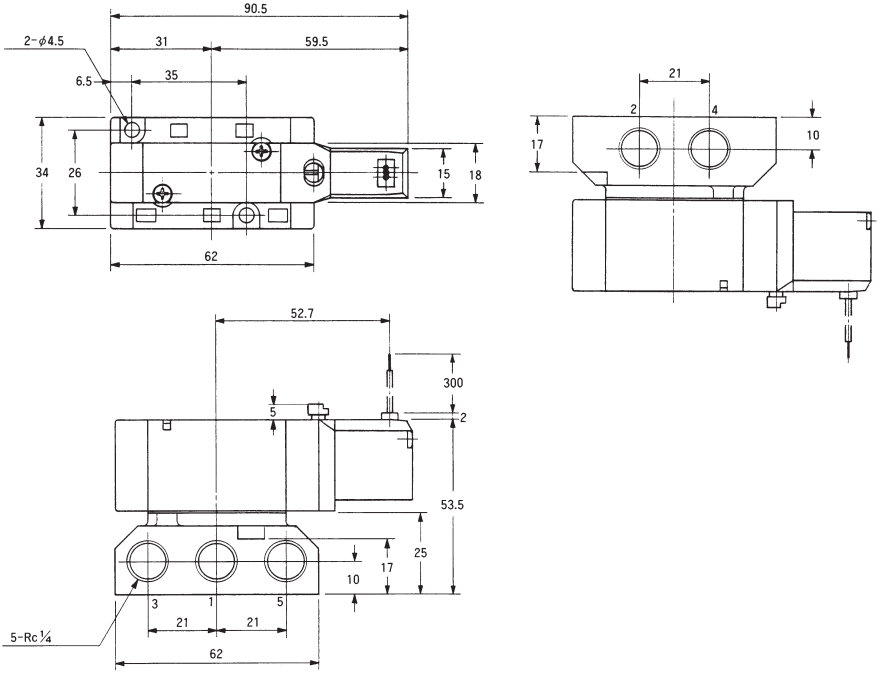
No.	Description	Material
①	Body	Aluminium alloy
②	Spool assembly	—
③	Piston D	Synthetic resins
④	Piston S	Synthetic resins
⑤	Manual override	Synthetic resins
⑥	End cover	Synthetic resins
⑦	Pilot valve	—
⑩	Sub-base	Aluminium alloy
⑪	Base gasket	NBR

DIMENSIONS

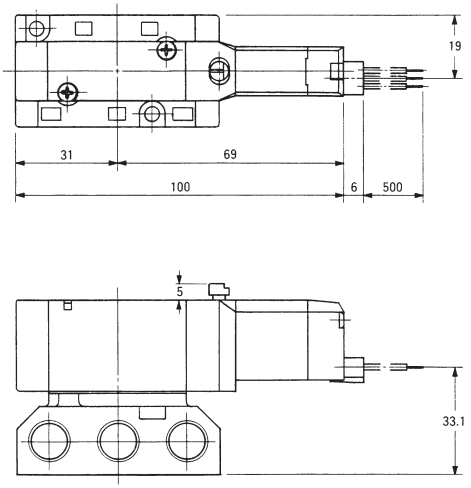
(Unit : mm)

●PCL2413

L type



SP type

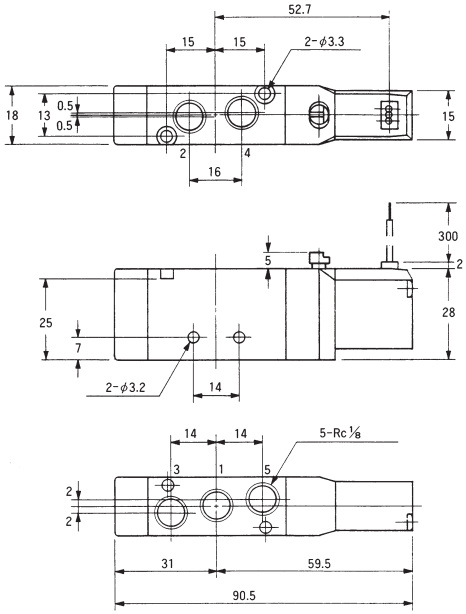


DIMENSIONS

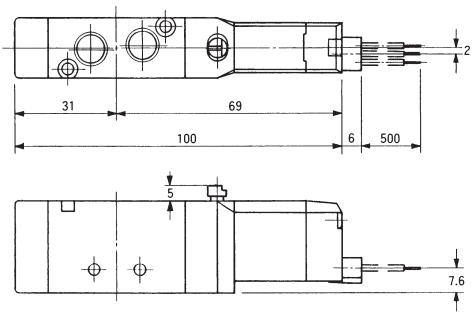
●RCL2413

(Unit：mm)

L type



SP type

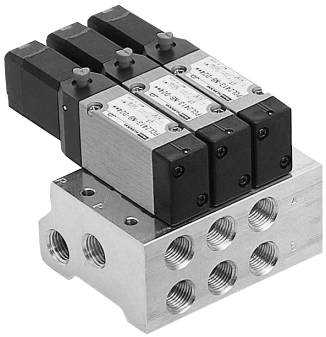


INDIVIDUAL WIRING TYPE MANIFOLD

MFS-P○13

Bar type

MFS□-PS13	Common SUP, Captured EXH Ports 1 & 3/5 on both sides
MFS□-PV13	Captured exhaust of pilot Common SUP, Captured EXH Ports 1 & 3/5 on both sides



MANIFOLD SPECIFICATIONS

		MFS□-PS13	MFS□-PV13
Type of manifold		Common SUP, Captured EXH (Ports 1 & 3/5 on both sides)	Common SUP, Captured EXH Captured exhaust of pilot (Ports 1 & 3/5 on both sides)
Port size	**Port 1**	Rc 1/4 (Both sides)	Rc 1/4 (Both sides)
	Port 3 / 5	Rc 1/4 (Both sides)	Rc 1/4 (Both sides)
	Port 2 & 4	Rc 1/4	Rc 1/4
Number of stations		2～10	2～10
Mountable solenoid valve		PCL2413 PCS2413 PCD2413 PCD3413 PCE3413 PCO3413	PCL2413Y PCS2413Y PCD2413Y PCD3413Y PCE3413Y PCO3413Y
Blank plate		PC13-BP	PC13-BP

ORDERING INSTRUCTIONS

Manifold

MFS 2 - PS13 - 02
① ② ③

①Number of stations

2	2 station
⋮	⋮
10	10 station

②Manifold function

PS13	Common SUP, Captured EXH (Ports 1 & 3/5 on both sides)
PV13	Common SUP, Captured EXH Captured exhaust of pilot (Ports 1 & 3/5 on both sides)

③Port size

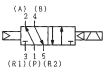
02	Rc 1/4

Mountable solenoid valve

PCL2413 [ ] - NB - D24 SP
① ② ③ ④ ⑤

①Function

PCL2413



②Special specification

No mark	Standard
Y	Captured exhaust of pilot

③Port size

NB	Without sub-base

(Note) A gasket & two mounting screws come with valve.

④Voltage

D24	DC24V

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)

(Note) MP types are SP types without standard connector.
MP types are made to order.
For wiring instructions, refer to Page 11.

DIMENSIONS

For dimensions, refer to the following pages.

MFS□-PS13-02
MFS□-PV13-02
☞ P90

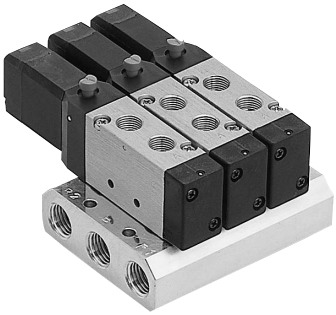
The manifolds are common to those shown on the left.
The solenoid valves PCL2413 and PCS2413 have the same configuration except that they are different in the manual override.

INDIVIDUAL WIRING TYPE MANIFOLD

MFU-R○13

Bar type

MFU□-RC13	Common SUP, Common EXH Ports 1, 3 & 5 on both sides
MFU□-RY13	Captured exhaust of pliot Common SUP, Common EXH Ports 1, 3 & 5 on both sides



MANIFOLD SPECIFICATIONS

		MFU□-RC13	MFU□-RY13
Type of manifold		Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)	Captured exhaust of pilot Common SUP, Common EXH (Ports 1, 3 & 5 on both sides)
Port size	**Port 1**	Rc 1/4 (Both sides)	Rc 1/4 (Both sides)
	Port 3 & 5	Rc 1/4 (Both sides)	Rc 1/4 (Both sides)
	Port 2 & 4	Rc 1/8 (Vave body ported)	Rc 1/8 (Vave body ported)
Number of stations		2～10	2～10
Mountable solenoid valve		RCL2413 RCS2413 RCD2413 RCD3413 RCE3413 RCO3413	RCL2413Y RCS2413Y RCD2413Y RCD3413Y RCE3413Y RCO3413Y
Blank plate		RC13-BP	RC13-BP

ORDERING INSTRUCTIONS

Manifold

MFU 2 - RC13 - 01
① ② ③

①Number of stations

2	2 station
⋮	⋮
10	10 station

②Manifold function

RC13	Common SUP, Common EXH (Ports1, 3 & 5 on both sides)
RC13	Common SUP, Captured EXH Captured exhaust of pilot (Ports 1, 3 & 5 on both sides)

③Port size

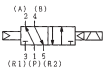
01	Rc 1/8

Mountable solenoid valve

RCL2413 [ ] - 01 - D24 SP - MF
① ② ③ ④ ⑤ ⑥

①Function

RCL2413



②Special specification

No mark	Standard
Y	Captured exhaust of pilot

③Port size

01	Rc 1/8

④Voltage

D24	DC24V

⑤Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)

(Note) MP types are SP types without standard connector.
MP types are made to order.
For wiring instructions, refer to Page 11.

⑥For mounting on manifold

MF	For mounting on manifold

(Note) A gasket & two mounting screws come with valve.

DIMENSIONS

For dimensions, refer to the following pages.

MFU□-RC13-01
MFU□-RY13-01
☞ P407

The manifolds are common to those shown on the left.
The solenoid valves RCL2413 and RCS2413 have the same configuration except that they are different in the manual override.

3-PORT DIRECT ACTING SOLENOID VALVE

SS23F

Poppet Seal/Sub-base Mounting type

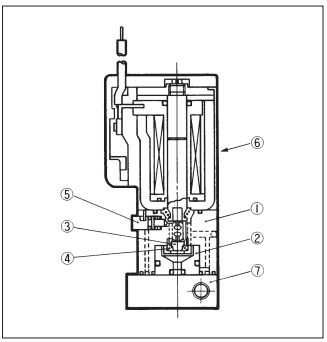
SS23F 2-position Single solenoid

SPECIFICATIONS

Model No.	Unit	SS23F
Fluid		Non-lubricated/ lubricated air
Port size		M3
Effective area (Cv)	mm^2	0.1 (0.006)
Ambient temperature	℃	−5～50
Operating pressure range	MPa	0～0.7
Maximum frequency	Cycle/min	1200
Response time at 0.5MPa	s	ON 0.005 OFF 0.005
Rated voltage	V	DC24, 12
Permissible voltage fluctuation	%	+10, −15
Grade of insulation		JIS grade B
Power consumption	W	L type：0.5 SP, UP type：0.55
Wiring		Lead wire (L), Connector with lead wire (SP, UP)
Mass	g	25

(Note) ・Apply −0.1 to 0.6 MPa when supplying positive pressure to port 1 and vacuum to port 3.
・Add 0.02 second to OFF time when using SP or UP, LK type.
Response time data obtained and presented in accordance with JIS B8375.
・When using it at temperature of 5℃ or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

CONSTRUCTIONS



MAIN COMPONENTS

No.	Description	Material
①	Pilot base	Synthetic resins
②	Body	Synthetic resins
③	Valve	NBR
④	Spring	Stainless steel
⑤	Manual override	Synthetic resins
⑥	Solenoid	—
⑦	Sub-base	Aluminium alloy

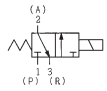
ORDERING INSTRUCTIONS

SS23F – M3 – D24 SP L

① ② ③ ④ ⑤

①Function

SS23F



②Port size

M3	M3×0.5
NB	Without sub-base

③Voltage

D24	DC24V
D12	DC12V

④Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)
LK	Lead wire (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector.
MP, NP and LK types are made to order.
For wiring instructions, refer to Page 11.

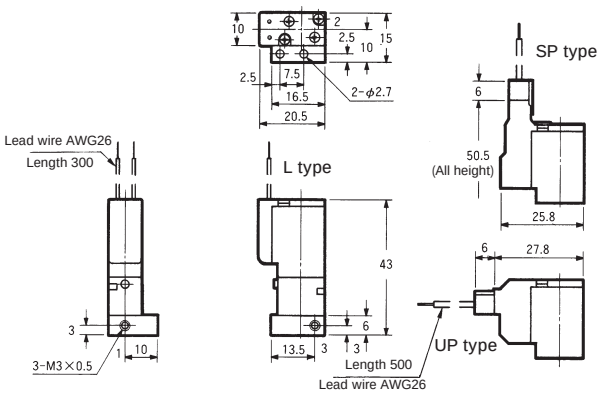
⑤Manual override

No mark	Standard (Non-lock)
L	With locking button

(Note) L : Made to order

DIMENSIONS

(Unit : mm)



INDIVIDUAL WIRING TYPE MANIFOLD

MFS-TCF

Bar type

MFS□-TCF — Common SUP, Commom EXH Ports 1 & 3 on both sides

MANIFOLD SPECIFICATIONS

		MFS□-TCF
Type of manifold		Common SUP, Common EXH (Ports 1 & 3 on both sides)
Port size	**Port 1 & 3**	M5 (Both sides)
	Port 2	M3
Number of stations		2～20
Mountable solenoid valve		SS23F-NB
Blank plate		TCF-BP

ORDERING INSTRUCTIONS

Manifold

MFS 2 – TCF – M3
① ② ③

Mountable solenoid valve

SS23F – NB – D24 SP L
① ② ③ ④ ⑤

①Number of stations

2	2 station
⋮	⋮
20	20 station

②Manifold function

TCF	Common SUP, Common EXH (Ports 1 & 3 on both sides)

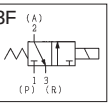
③Size of ports 2

M3	M3×0.5

When a manifold with a fitting is required, consult KURODA.

①Function

SS23F



②Port size

NB	Without sub-base

③Voltage

D24	DC24V
D12	DC12V

④Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)
LK	Lead wire (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector. MP, NP and LK types are made to order. For wiring instructions, refer to Page 11.

⑤Manual override

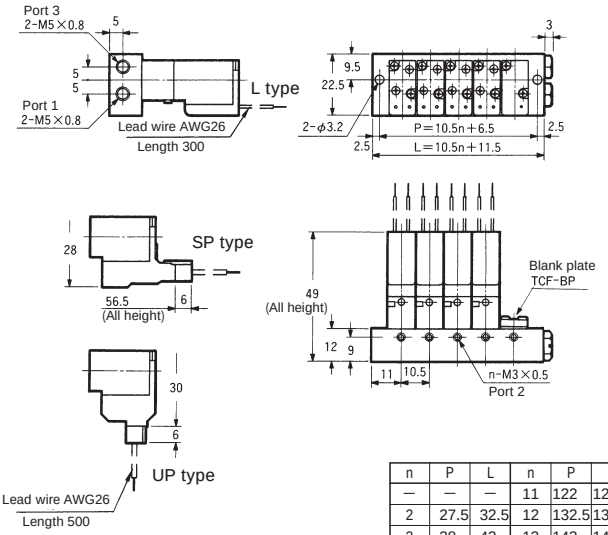
No mark	Standard (Non-lock)
L	With locking button

(Note) L : Made to order

DIMENSIONS

●MFS□-TCF

(Unit：mm)



n	P	L	n	P	L
—	—	—	11	122	127
2	27.5	32.5	12	132.5	137.5
3	38	43	13	143	148
4	48.5	53.5	14	153.5	158.5
5	59	64	15	164	169
6	69.5	74.5	16	174.5	179.5
7	80	85	17	185	190
8	90.5	95.5	18	195.5	200.5
9	101	106	19	206	211
10	111.5	116.5	20	216.5	221.5

n：Number of stations

3-PORT DIRECT ACTING SOLENOID VALVE

SS23J

Poppet Seal/Sub-base Mounting type

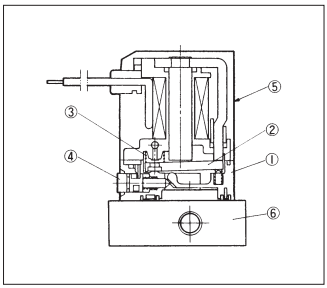
SS23J 2-position Single solenoid

SPECIFICATIONS

Model No.			Unit	SS23J	SS23J(0.5W type)
Fluid				Non-lubricated/ lubricated air	
Port size				M5	
Effective area (Cv)			mm²	0.35(0.019)	0.2(0.011)
Ambient temperature			℃	−5〜50	
Operating pressure range			MPa	0〜0.8	0〜0.7
Maximum frequency			Cycle/min	AC：900 DC：3000(L) 1500(SP, UP)	DC：2000(L) 1000(SP, UP)
Response time (SP, UP type) at 0.5MPa	DC	ON	s	0.006(0.006)	0.010(0.010)
		OFF		0.002(0.015)	0.002(0.021)
	AC	ON		0.004：50Hz 0.004：60Hz	
		OFF		0.021：50Hz 0.014：60Hz	
Rated voltage			V	AC100/110, 200/220, DC24 DC12	DC24 DC12
Permissible voltage fluctuation			%	AC±10 DC+10, −15	DC+10, −15
Rated frequency			Hz	50/60	
Power consumption (AC100/200)	Holding		VA	2.9：50Hz 2.4：60Hz	—
	Inlush			3.2：50Hz 2.9：60Hz	—
Power consumption DC				JIS grade B	
Grade of insulation			W	1.8	0.5
Wiring				Lead wire (L), Connector with lead wire (SP, UP)	
Mass			g	NB：35 M5：50	

(Note)・When using it at temperature of 5°C or below, use dry air that has passed through an air dryer to prevent condensation, freeze, etc.

CONSTRUCTIONS



MAIN COMPONENTS

No.	Description	Material
①	Pilot base	Synthetic resins
②	Plunger assembly	—
③	Return spring	Stainless steel
④	Manual override	Synthetic resins
⑤	Solenoid	—
⑥	Sub-base	Aluminium alloy

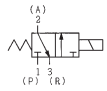
ORDERING INSTRUCTIONS

SS23J – M5 – D24 SP LB

① ② ③ ④ ⑤

①Function

SS23J



②Port size

M5	M5×0.8
NB	Without sub-base

③Voltage

100	AC100/110V
200	AC200/220V
D24	DC24V
D12	DC12V
H24	DC24V 0.5W type

④Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector. MP and NP types are made to order. For wiring instructions, refer to Page 11.

⑤Manual override

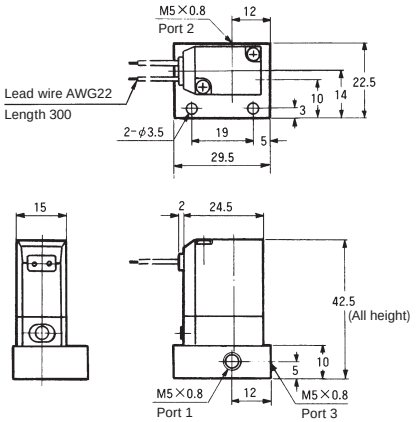
No mark	Standard (Non-lock)
LB	With locking button

(Note) LB : Made to order

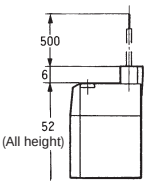
DIMENSIONS

(Unit : mm)

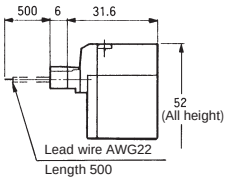
L type



SP type



UP type



INDIVIDUAL WIRING TYPE MANIFOLD

MFS-TCJ

Bar type

MFS□-TCJ — Common SUP, Common EXH
Ports 1 & 3 on both sides

MANIFOLD SPECIFICATIONS

		MFS□-TCJ
Type of manifold		Common SUP, Common EXH (Ports 1 & 3 on both sides)
Port size	**Port 1 & 3**	M5 (Both sides)
	Port 2	M5
Number of stations		2～20
Mountable solenoid valve		SS23J
Blank plate		TCJ-BP

ORDERING INSTRUCTIONS

Manifold

MFS | 2 | – | TCJ | – | M5
① ②

Mountable solenoid valve

SS23J | – | NB | – | D24 | SP | LB
① ② ③ ④ ⑤

①Number of stations

2	2 station
⋮	⋮
20	20 station

②Manifold function

TCJ	Common SUP, Common EXH (Ports 1 & 3 on both sides)

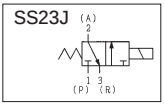
③Size of ports 2

M5	M5×0.8

When a manifold with a fitting is required, consult KURODA.

①Function

SS23J



②Port size

NB	Without sub-base

③Voltage

100	AC100/110V
200	AC200/220V
D24	DC24V
D12	DC12V
H24	DC24V 0.5W type

④Wiring

L	Lead wire
SP	Connector with lead wire (With indicator light & surge suppressor)
UP	Connector with lead wire (With indicator light & surge suppressor)
MP	Without connector of SP type (With surge suppressor)
NP	Without connector of UP type (With surge suppressor)

(Note) MP and NP types are SP and UP types without standard connector. MP and NP types are made to order. For wiring instructions, refer to Page 11.

⑤Manual override

No mark	Standard (Non-lock)
LB	With locking button

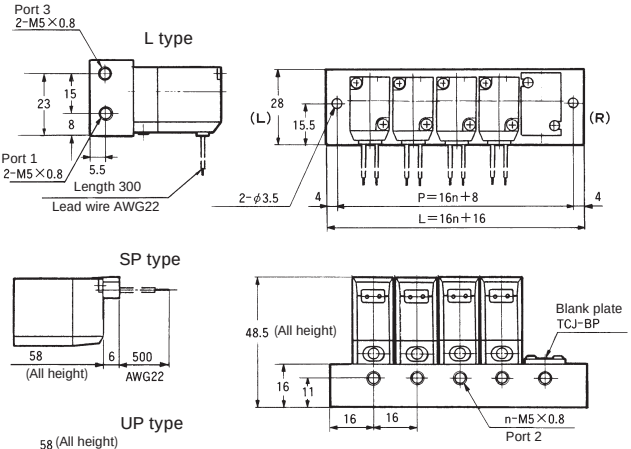
(Note) LB : Made to order

DIMENSIONS

●MFS□-TCJ

(Unit：mm)

(Note) Standard manifold is plugged on “ R ” (Right) side ports.



n	P	L	n	P	L
—	—	—	11	184	192
2	40	48	12	200	208
3	56	64	13	216	224
4	72	80	14	232	240
5	88	96	15	248	256
6	104	112	16	264	272
7	120	128	17	280	288
8	136	144	18	296	304
9	152	160	19	312	320
10	168	176	20	328	336

n：Number of stations

⚠ WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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KURODA PRECISION INDUSTRIES LTD.

Head Office： 239, Shimohirama, Saiwai-ku, Kawasaki, Kanagawa 212-8560, Japan
Telephone：044-555-3805
Fax：044-555-1479
Chicago Office： 9400 West Foster Avenue, Suite 108 Chicago, Illinois 60656 U.S.A.
Telephone：773-992-2178
Fax：773-625-8781

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