

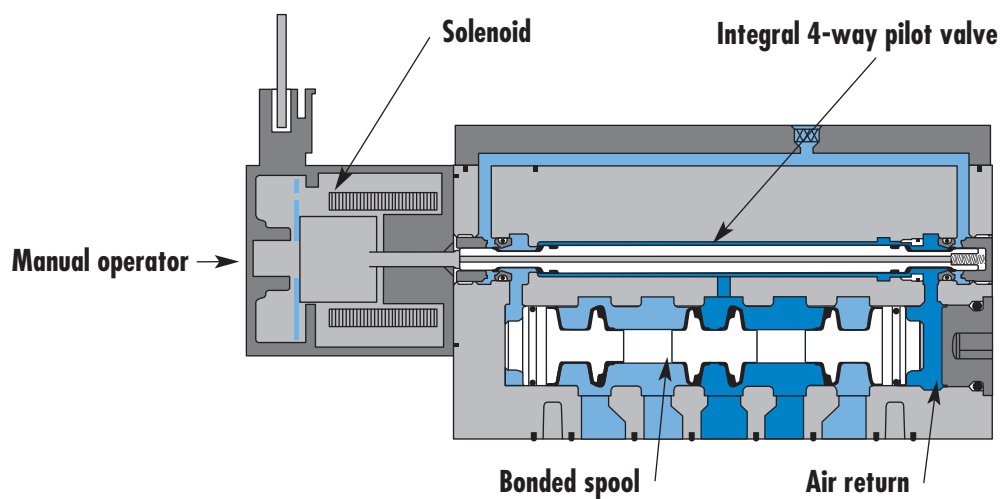
Individual mounting

Valve only -
 No base
 non "plug-in"
 Conform to
 ISO 15407/1

Series

Manifold mounting

Valve only -
 No base
 non "plug-in"
 Conform to
 ISO 15407/1



SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- 2-position, single or double operator.
- 3-position, double solenoid, open center, closed center and pressure center.
- Internal or external pilot.
- Single or dual pressure.

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48P

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400

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93

ISO 01

ISO 02

ISO 1

ISO 2

ISO 3

Function	Port size	Flow [Max]	Individual/Manifold mounting	Series
5/2, 5/3	1/8"	0.43 C_v	Valve only - No base non "plug-in" Conform to ISO 15407/1	

OPERATIONAL BENEFITS

1. Unique patented MACsolenoid® with oval shaped armature for fastest possible response times.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.
4. Large spool area for maximum shifting forces even at minimum operating pressure.
5. Very high flow in a compact package. Pilot valve and main valve in the same body.
6. Internal or external pilot operation.
7. Air only return
8. Optional low wattage DC solenoid down to 1.0 Watt.

HOW TO ORDER

SINGLE PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center
Internal	MV-A02A-AAMA-Jxxx-xxx	MV-A02A-ABMA-Jxxx-xxx	MV-A02A-AEMA-Jxxx-xxx	MV-A02A-AFMA-Jxxx-xxx
External "12" end	MV-A02A-AAMD-Jxxx-xxx	MV-A02A-ABMD-Jxxx-xxx	MV-A02A-AEMD-Jxxx-xxx	MV-A02A-AFMD-Jxxx-xxx
External "14" end	MV-A02A-AAME-Jxxx-xxx	MV-A02A-ABME-Jxxx-xxx	MV-A02A-AEME-Jxxx-xxx	MV-A02A-AFME-Jxxx-xxx

DUAL PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure center
Internal from port #3	MV-A02A-ACMB-Jxxx-xxx	MV-A02A-ADMB-Jxxx-xxx	MV-A02A-AHMB-Jxxx-xxx
Internal from port #5	MV-A02A-ACMC-Jxxx-xxx	MV-A02A-ADMC-Jxxx-xxx	MV-A02A-AHMC-Jxxx-xxx
External from "12" end	MV-A02A-ACMD-Jxxx-xxx	MV-A02A-ADMD-Jxxx-xxx	MV-A02A-AHMD-Jxxx-xxx
External from "14" end	MV-A02A-ACME-Jxxx-xxx	MV-A02A-ADME-Jxxx-xxx	MV-A02A-AHME-Jxxx-xxx

SOLENOID OPERATOR ➤

J xxx-xxx *			
XX Voltage	X Lead wire length	X Manual operator	XX Electrical connection
DA 24V=/5,4W	0 No lead wire/ connector	1 Non-locking	BA Flying leads
DB 12V=/5,4W	A 45 cm	2 Locking	JA Square connector
DC 24V=/2,4W	B 60 cm		JC Square connector with light
DD 12V=/2,4W	C 90 cm		JB Rectangular connector
DE 24V=/1,8W			JD Rectangular connector with light
DU 24V=/1,0W			KA Mini square connector
			KD Mini square connector with light

* Other options available, see page 317.

Note: - ISO series, valve and base are ordered separately, see page 229 for base codes.

- If sandwich regulator is required, valve must be ordered as external pilot. For internal pilot regulator use valve with external pilot 12 end, - for external pilot regulator, use valve with external pilot 12 or 14 end.

OPTIONS

Pilot exhaust: MV-A02A-XX X X-Jxxx-xxx

M Pilot exhaust muffled
P Pilot exhaust piped #10-32
U Pilot exhaust out main exhaust

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48P

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ISO 01

ISO 02

ISO 1

ISO 2

ISO 3

TECHNICAL DATA

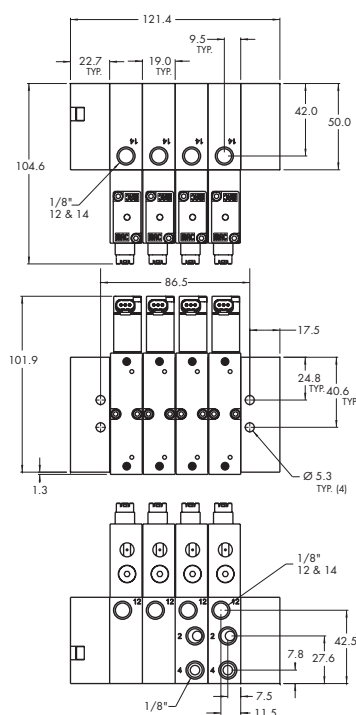
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot - 2 pos.: 20 to 120 PSI - 3 pos.: 35 to 120 PSI External Pilot: Vacuum to 120 PSI
Pilot pressure :	2 pos.: 20 to 120 PSI - 3 pos.: 35 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to +50°C)
Flow :	2 pos.: Cv 0.43 – 3 pos.: Cv 0.28
Coil :	Class A wires continuous duty, #22 AWG x 18
Voltage range :	-15% to +10% of nominal voltage
Power :	1,0 to 5,4 W

Options :

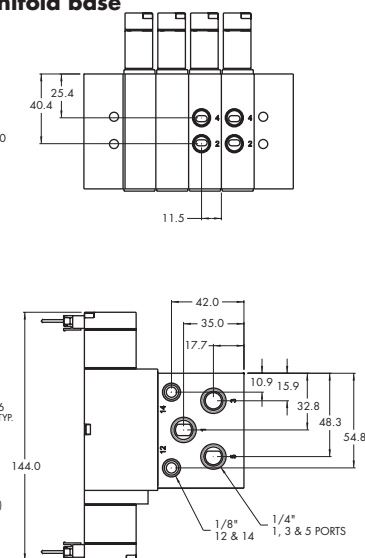
- Sandwich flow controls: FCA02A-AA (screwdriver slot adjustment).
- Sandwich pressure regulator, see 'Regulators' section

DIMENSIONS

Individual base



Manifold base



Dimensions shown are metric (mm)

Non plug-in individual / manifold base



ISO 01

ISO 02

ISO 1

ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Pilot air	Side ports	Bottom 2 & 4 ports With all side ports
1/8" NPTF	Internal	MB-A02A-111	MB-A02A-112

MANIFOLD BASE

Port size	Pilot air	Side ports	Bottom 2 & 4 ports With side 1, 3 & 5 ports
1/8" NPTF	Internal	MM-A02A-111	MM-A02A-112

Notes:

- For manifold bases external pilot is common
- A base is ordered as internal pilot and can be changed into external pilot by removing pipe plugs from the external pilot ports (individual base).
- Manifold base: same base for internal and external pilot, different end plate kits.

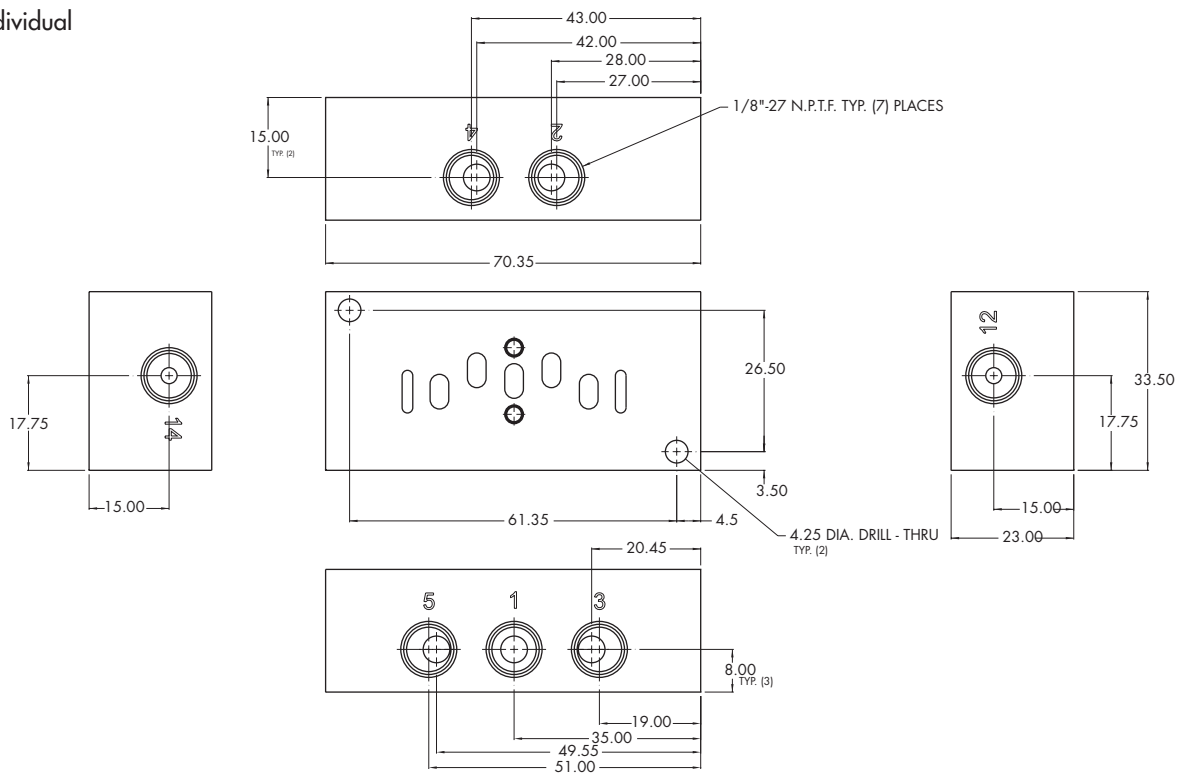
End plate kit: Internal pilot M-00018-01-01
External pilot M-00018-02-01

Inlet/exhaust isolator: 28499

DIMENSIONS

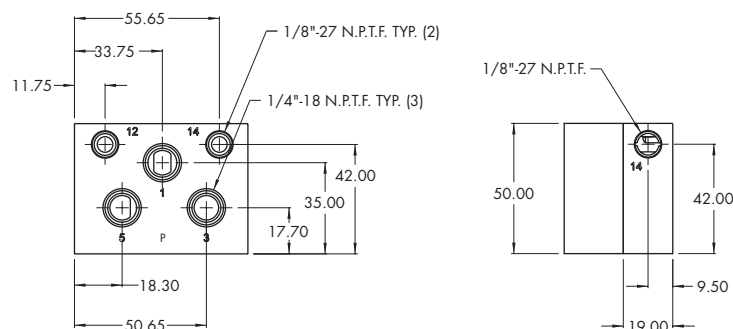
Dimensions shown are metric (mm)

Individual

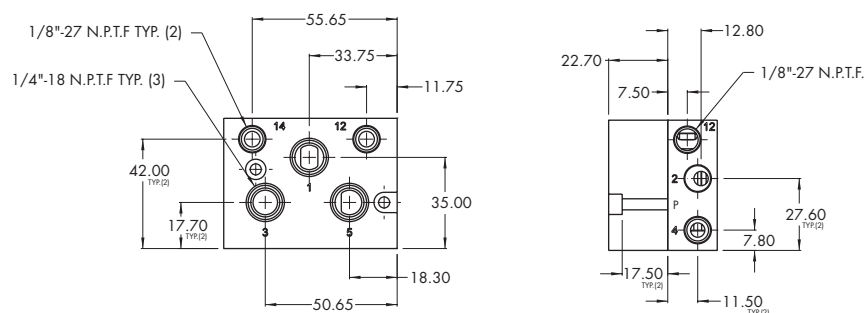


Manifold

LEFT SIDE



RIGHT SIDE



Non plug-in sandwich pressure regulator with manual adjust

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs and space in comparison with inline regulators
2. Compact all-included units
3. Large orifice provides high flow
4. Various functions available
5. Simple, reliable and solid design



PR37A

PR42B

PR46A

PR47A

PR48B

PR92C

HOW TO ORDER

Pilot	Single pressure Regulator 12 end	Dual pressure Regulator 12 end with by-pass 14 end	Dual pressure Regulator 14 end with by-pass 12 end	Dual pressure Regulator both ends
Internal	PRA02A-AAAA	PRA02A-ABAA	PRA02A-ADAA	PRA02A-AEAA
External	PRA02A-BAAA	PRA02A-BBAA	PRA02A-BDAA	PRA02A-BEAA

Above models are for manual adjust with knob
For other manual adjustments and pressure ranges, see Options.

Note: Add -9 after part number for regulator block assembled to valve.

* To be used with dual pressure valves.

PR93A

PRA01A

PRA02A

PRA1A

PRP1A

PRA2D

PRP2B

PRA3C

PRP3B

OPTIONS

Adjustments :

PRA02A - XXXX

- A** Manual adjust with knob – Internal pilot
- B** Manual adjust with knob – External pilot
- G** Manual adjust with screwdriver slot – Internal pilot
- H** Manual adjust with screwdriver slot – External pilot
- K** Manual adjust with screwdriver slot with locknut– Internal pilot
- L** Manual adjust with screwdriver slot with locknut – External pilot

Regulated Pressure range :

PRA02A - XXXX

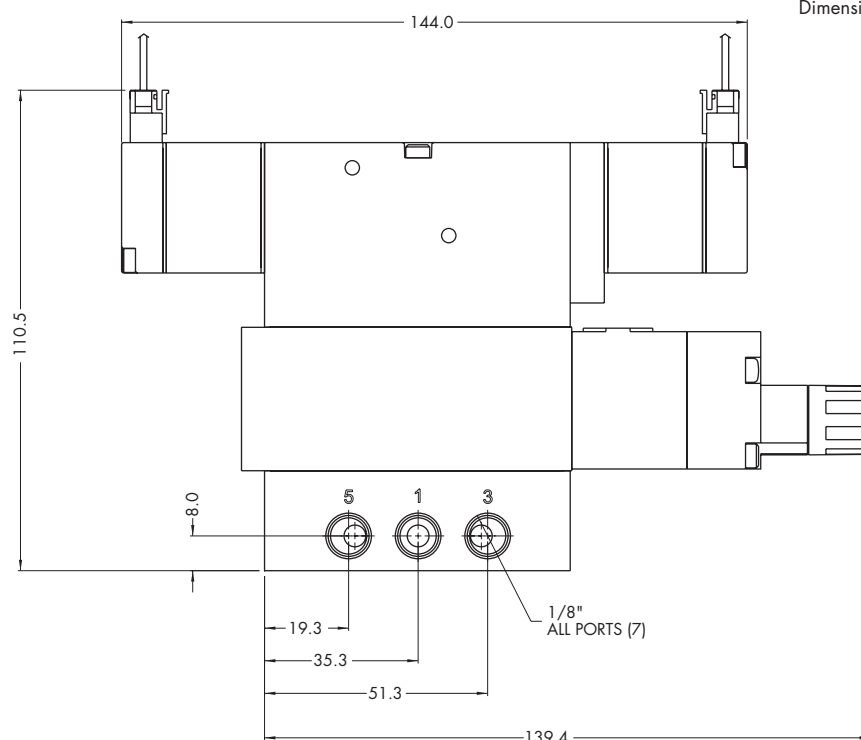
- A** 0 to 120 PSI
- B** 0 to 80 PSI
- C** 0 to 30 PSI
- D** 0 to 120 PSI "14" end - 0 to 80 PSI "12" end
- E** 0 to 120 PSI "12" end - 0 to 80 PSI "14" end
- F** 0 to 120 PSI "14" end - 0 to 30 PSI "12" end
- G** 0 to 120 PSI "12" end - 0 to 30 PSI "14" end
- H** 0 to 80 PSI "14" end - 0 to 30 PSI "12" end
- J** 0 to 80 PSI "12" end - 0 to 30 PSI "14" end

TECHNICAL DATA

Fluid :	Compressed air, inert gases
Pressure supply :	Higher than maximum regulated pressure
Regulating range :	0 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to +50°C)

DIMENSIONS

Dimensions shown are metric (mm)



Codification table for voltages / Manual operators / Electrical connections

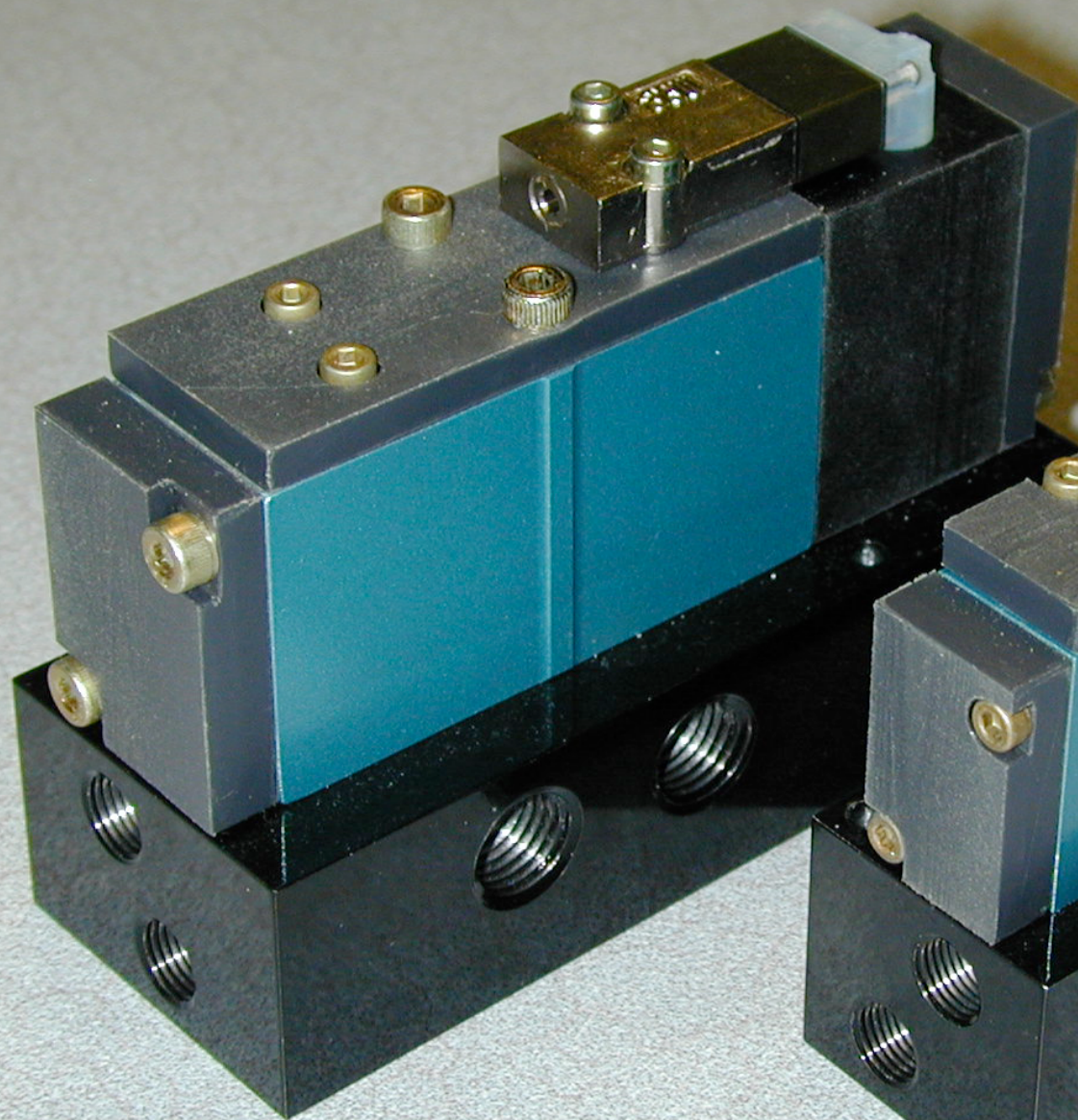
VALVE CODE ➤

J XX X-X XX
1 2 3 4

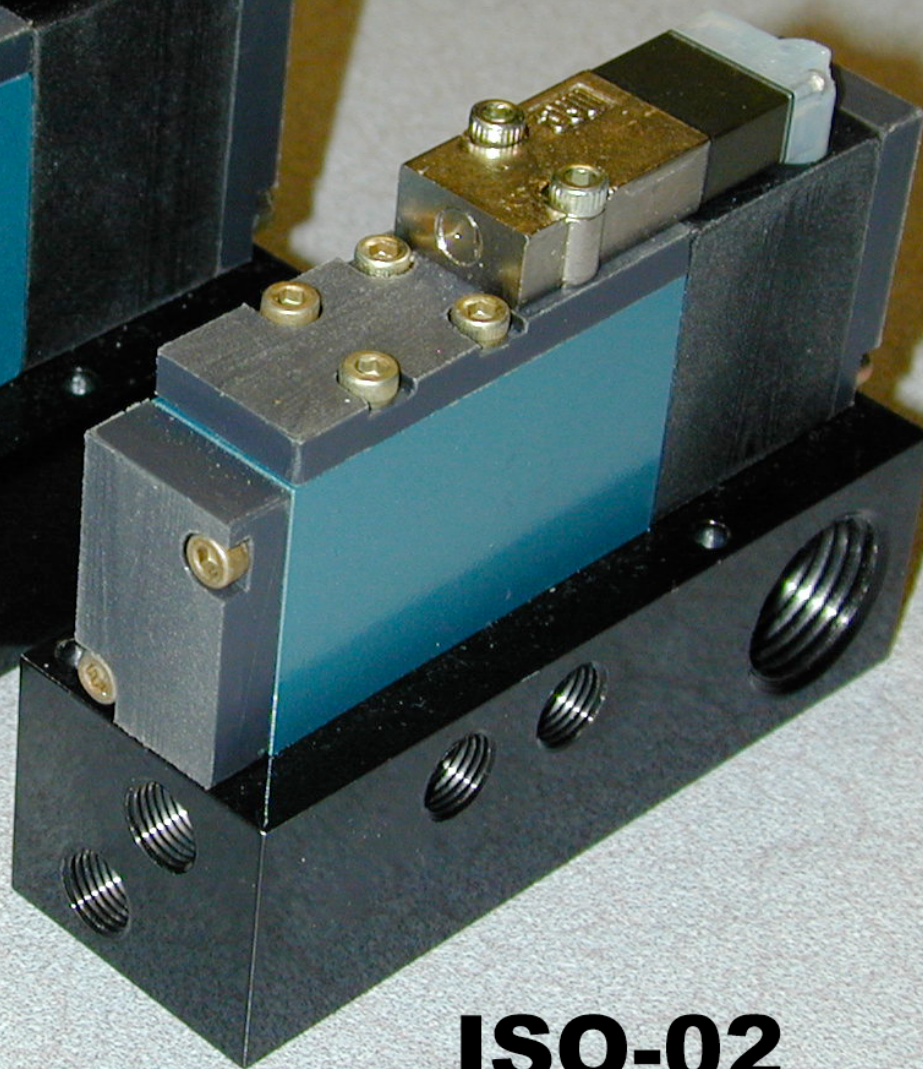
OPTIONS AVAILABLE FOR

- Solenoid valves 36, 46, ISO 01 and ISO 02 Series

1. VOLTAGE	
<i>J-XX X-X XX</i>	VOLTAGE
<i>AA</i>	120VAC (5.4W)
<i>AC</i>	24VAC (5.4W)
<i>DE</i>	24VDC (1.8W)
<i>DF</i>	12VDC (1.8W)
<i>DJ</i>	24VDC (1.3W)
<i>DL</i>	12VDC (1.3W)
<i>DR</i>	12VDC (1.0W)*
<i>DU</i>	24VDC (1.0W)*
* Not available on 36 series universal valve	
2. WIRE LENGTH	
<i>J-XX X-X XX</i>	WIRE LENGTH
<i>A</i>	18" coil leads
<i>B</i>	24" coil leads
<i>C</i>	36" coil leads
<i>D</i>	48" coil leads
<i>E</i>	72" coil leads
<i>F</i>	96" coil leads
<i>P</i>	Base plug-in
<i>O</i>	No leads (use with J, K & L type connectors)
3. MANUAL OPERATOR	
<i>J-XX X-X XX</i>	MANUAL OPERATOR
<i>0</i>	No operator
<i>1</i>	Non-locking recessed
<i>2</i>	Locking recessed
<i>3</i>	Non-locking extended
<i>4</i>	Locking extended
4. ELECTRICAL CONNECTION	
<i>J-XX X-X XX</i>	CONNECTORS FOR NON PLUG-IN VALVES
<i>BA</i>	ELECTRICAL CONNECTION
<i>GA</i>	Flying leads
<i>GB</i>	MAC JAC solenoid plug-in
<i>GC</i>	MAC JAC solenoid plug-in with diode
<i>GD</i>	MAC JAC solenoid plug-in with MOV
<i>GE</i>	MAC JAC solenoid plug-in with light
<i>GF</i>	MAC JAC solenoid plug-in with diode and light
<i>GG</i>	MAC JAC solenoid plug-in with MOV and light
<i>GH</i>	MAC JAC solenoid plug-in with rectifier
<i>GJ</i>	MAC JAC solenoid plug-in with rectifier and light
<i>GK</i>	MAC JAC solenoid plug-in - Male only
<i>GL</i>	MAC JAC solenoid plug-in with diode - Male only
<i>GM</i>	MAC JAC solenoid plug-in with MOV - Male only
<i>GN</i>	MAC JAC solenoid plug-in with light - Male only
<i>GP</i>	MAC JAC solenoid plug-in with diode and light - Male only
<i>GR</i>	MAC JAC solenoid plug-in with MOV and light - Male only
<i>GS</i>	MAC JAC solenoid plug-in with rectifier and light - Male only
<i>*JA</i>	Square Connector
<i>*JC</i>	Square Connector with light
<i>*JE</i>	Square Connector with diode
<i>*JF</i>	Square Connector with MOV
<i>*JG</i>	Square Connector with diode/light
<i>*JH</i>	Square Connector with MOV /light
<i>*JK</i>	Square Connector with Rectifier
<i>J-XX X-X XX</i>	CONNECTORS FOR NON PLUG-IN VALVES
<i>KA</i>	MINI SQUARE PLUG-IN CONNECTORS
<i>KB</i>	9.4 MM SPACING BETWEEN PINS
<i>KC</i>	Mini plug-in
<i>KE</i>	Mini plug-in with diode
<i>KF</i>	Mini plug-in with MOV
<i>KG</i>	Mini plug-in with light
<i>KH</i>	Mini plug-in with diode and light
<i>KJ</i>	Mini plug-in with MOV and light
<i>KL</i>	Mini plug-in with rectifier
<i>KN</i>	Mini plug-in with rectifier and light
<i>KP</i>	Mini plug-in - Male only
<i>KR</i>	Mini plug-in with diode - Male only
<i>KS</i>	Mini plug-in with MOV - Male only
<i>J-XX X-X XX</i>	CONNECTORS FOR NON PLUG-IN VALVES
<i>LA</i>	MINI SQUARE PLUG-IN CONNECTORS
<i>LB</i>	8.0 MM SPACING BETWEEN PINS
<i>LC</i>	ISO SPECIFICATION 15217
<i>LD</i>	Mini plug-in
<i>LE</i>	Mini plug-in with diode
<i>LF</i>	Mini plug-in with MOV
<i>LG</i>	Mini plug-in with light
<i>LH</i>	Mini plug-in with diode and light
<i>LJ</i>	Mini plug-in with MOV and light
<i>LK</i>	Mini plug-in with rectifier
<i>LL</i>	Mini plug-in with rectifier and light
<i>LM</i>	Mini plug-in - Male only
<i>LN</i>	Mini plug-in with diode - Male only
<i>LP</i>	Mini plug-in with MOV - Male only
<i>LR</i>	Mini plug-in with light - Male only
<i>LS</i>	Mini plug-in with diode and light - Male only
<i>J-XX X-X XX</i>	CONNECTORS FOR PLUG-IN VALVES
<i>FA</i>	Base plug-in
<i>FB</i>	Base plug-in with diode
<i>FC</i>	Base plug-in with MOV
<i>FD</i>	Base plug-in with light
<i>FE</i>	Base plug-in with diode and light
<i>FF</i>	Base plug-in with MOV and light
<i>FG</i>	Base plug-in with rectifier
<i>FH</i>	Base plug-in with rectifier and light



ISO-01



ISO-02

Specifications

ISO 01 and ISO 02 Series

Operating Data

Fluids:	Air or Inert Gas
Lubrication:	Not Required. But if used, a medium aniline range oil is recommended.
Safe Operating	
Temperature Range:	0° to 120°F (-18° to 50°C)
Pressure Range:	Vacuum to 120 PSI (Ext. pilot supply provided for vacuum and low pressure) 20 PSI minimum operating pressure on internal pilot. (2 position valves) 35 PSI minimum operating pressure on internal pilot (3 position valves)
Electrical:	24V, 120V: AC Voltage available by rectified DC supply. 12V and 24V: DC Voltage (1.8 to 5.4 Watts)
Above Coils:	General Purpose Class A, Continuous duty.
Coil Leads:	#22 AWG x 18"

	Single/Double Operator 2 Pos., Single Pressure
	Single/Double Operator 2 Pos., Dual Pressure
	3 Position Open Center
	3 Position Closed Center
	3 Position Dual Pressure Pressure Center

Pressure Range (PSI)			
Description		Main Valve	Pilot
2 Position Single Sol.	Internal Pilot Models	20-120	N/A
2 Position Double Sol.		20-120	N/A
2 Position Single Sol.	External Pilot Models	VAC-120	20-120
2 Position Double Sol.		VAC-120	20-120
3 Position	Internal Pilot Models	35-120	N/A
3 Position	External Pilot Models	VAC-120	35-120

Flows (Cv)

ISO 01	ISO 02
2 Position : 1.0 Cv	2 Position : 0.51 Cv
3 Position : 0.8 Cv	3 Position : 0.35 Cv

Vacuum Applications

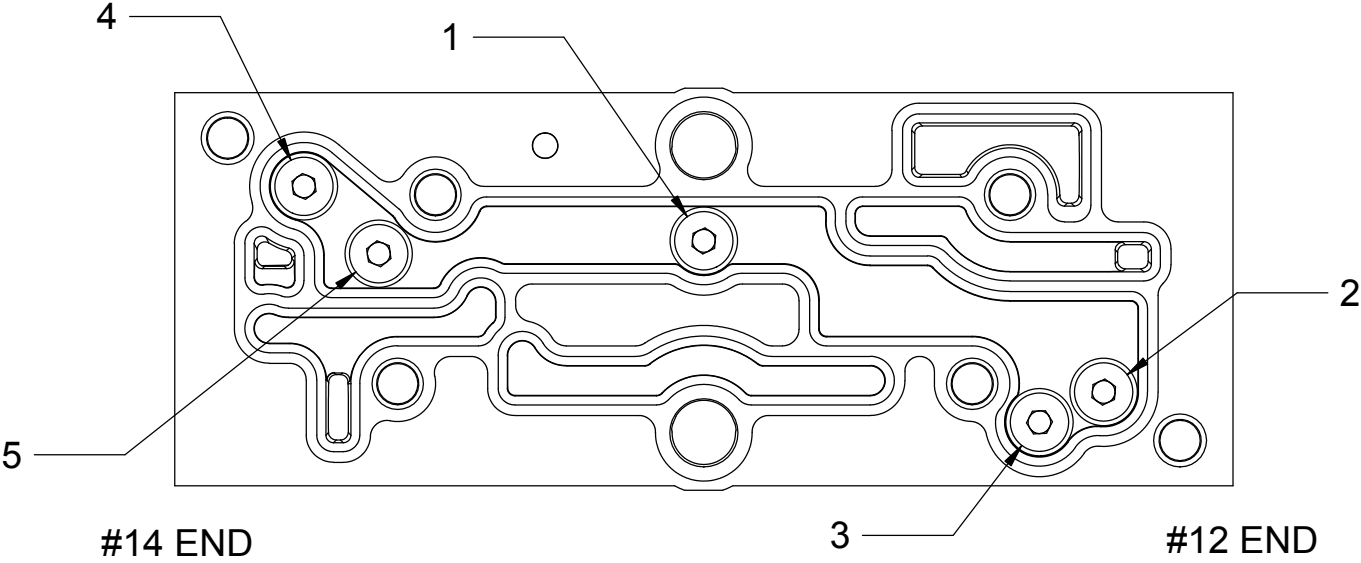
Use external pilot models only and connect the vacuum source to ports "3" and "5" and leave Port "1" open to atmosphere on single pressure models. On dual pressure models, reverse the single pressure piping.

Selector Applications (Without Regulators)

Connect the higher pressure to Port "1" and the lower pressure to either Port "3" or "5". If both pressures are below the minimum operating pressure, use an external pilot.

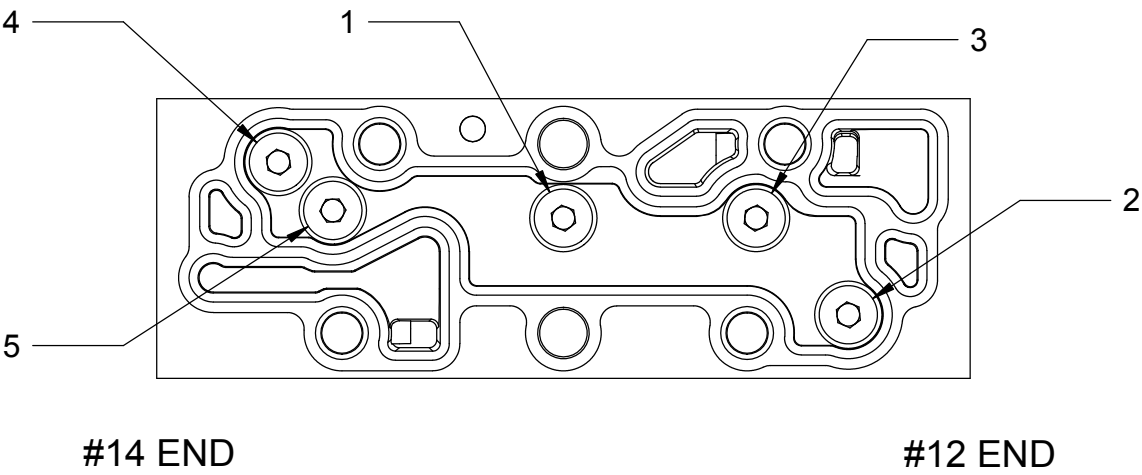


ISO #01 PLUG-IN (TOP VIEW)
CHART FOR LOCATION OF PASSAGE PLUGS
TO DETERMINE PILOT SUPPLY TO VALVE



PILOT SUPPLY	PLUG LOCATION
SINGLE PRESSURE (INTERNAL)	2 , 3 , 4 , 5
SINGLE PRESSURE (EXTERNAL #12)	1 , 3 , 4 , 5
SINGLE PRESSURE (EXTERNAL #14)	1 , 2 , 3 , 5
DUAL PRESSURE(#3 PORT)	1 , 2 , 4 , 5
DUAL PRESSURE(#5 PORT)	1 , 2 , 3 , 4

ISO #02 PLUG-IN (TOP VIEW)
CHART FOR LOCATION OF PASSAGE PLUGS
TO DETERMINE PILOT SUPPLY TO VALVE

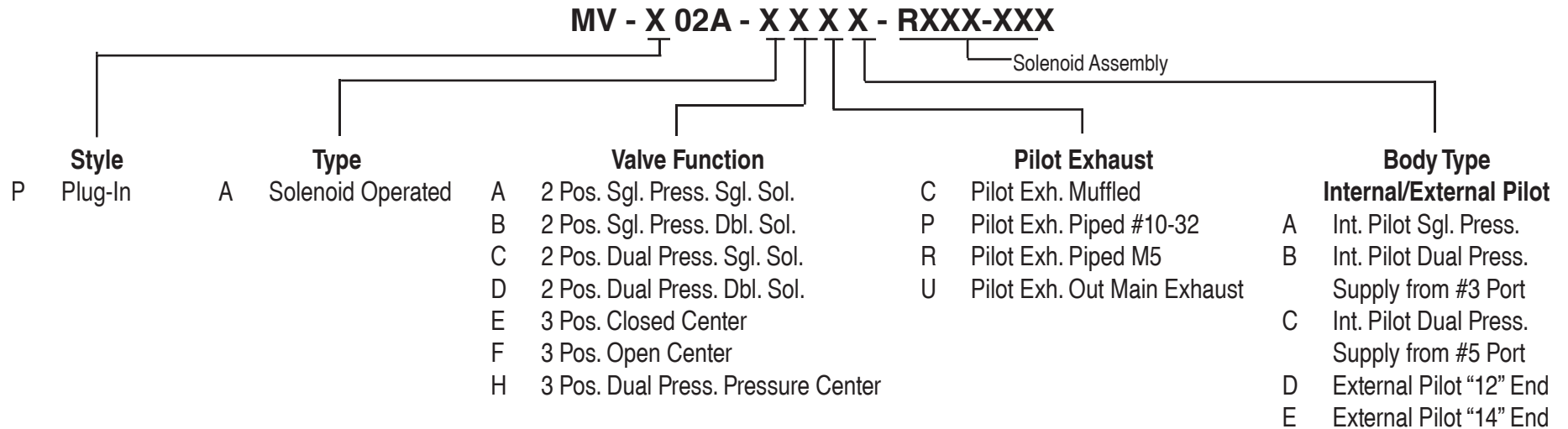


PILOT SUPPLY	PLUG LOCATION
SINGLE PRESSURE (INTERNAL)	2 , 3 , 4 , 5
SINGLE PRESSURE (EXTERNAL #12)	1 , 3 , 4 , 5
SINGLE PRESSURE (EXTERNAL #14)	1 , 2 , 3 , 5
DUAL PRESSURE(#3 PORT)	1 , 2 , 4 , 5
DUAL PRESSURE(#5 PORT)	1 , 2 , 3 , 4



How To Order ISO-02 Plug-in Valve

(ISO Standard 15407-2 Size 18)



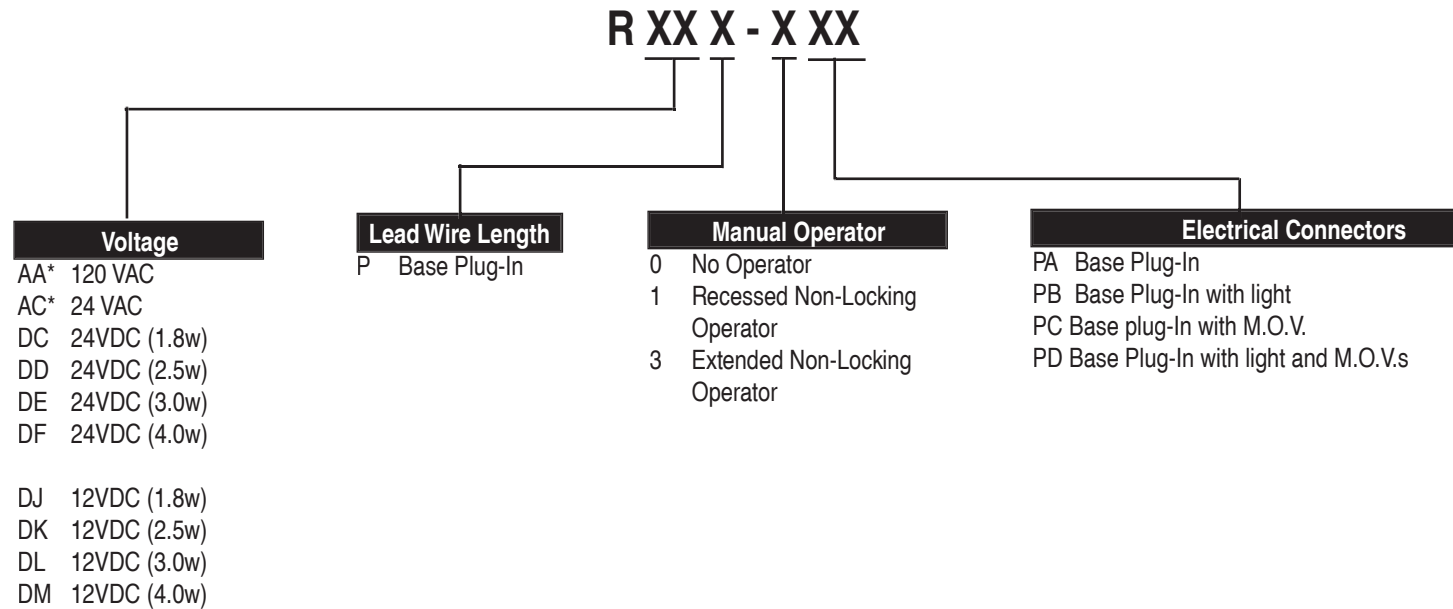
Note: If sandwich regulator is required valve must be ordered as external pilot. For internal pilot regulator use option "D". For external pilot regulator use option "D" or "E".

Note: External pilot regulator is only required when the primary pressure is below the minimum operating pressure of the valve.



How to Order

Solenoid Assembly (For ISO 01 and 02 Plug-In Valves)

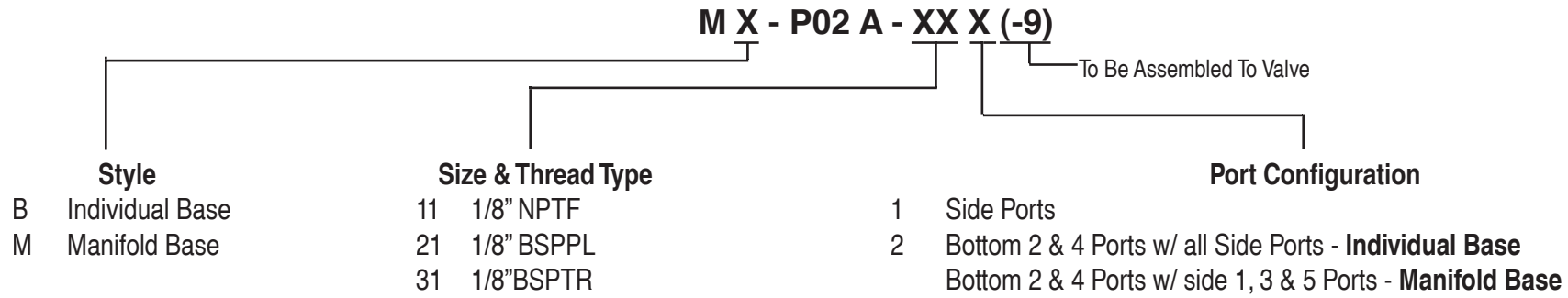


* Use either PA or PB Connector only



How To Order ISO-02 Plug-in Base/Manifold

(ISO Standard 15407-2 Size 18)



Note: For Manifold Bases External Pilot is Common

Parts

M-00021-01-01* Internal Pilot End Plate Kit
M-00021-02-01* External Pilot End Plate Kit

* Leave blank for NPTF threads, add "P" for BSPPL threads, add "T" for BSPTR threads.



How To Order ISO-02 Plug-in Regulator

(ISO Standard 15407-2 Size 18)

PRP02A - X X X X - X

