

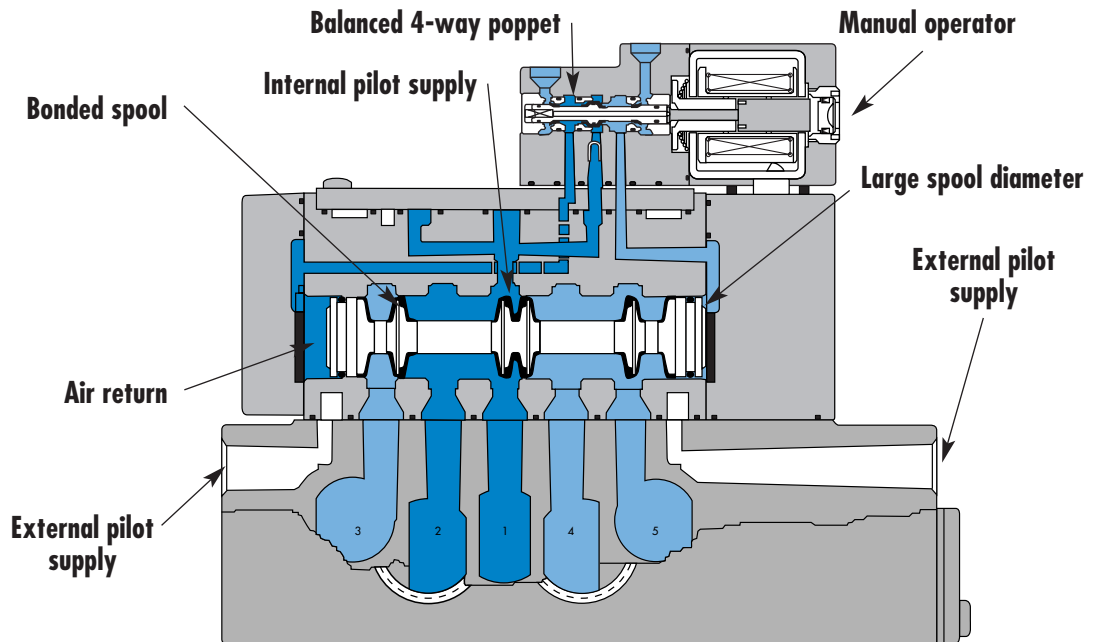
Individual mounting

Valve only - No base non "plug-in" Conform to ISO 5599/1	Valve only - No base "plug-in" Conform to ISO 5599/2
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Series

Manifold mounting

Valve only - No base non "plug-in" Conform to ISO 5599/1	Valve only - No base "plug-in" Conform to ISO 5599/2
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48P  
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**SERIES FEATURES**

- Plug-in (5599/2) and non plug-in (5599/1) models.
- 2-position, single or double operator. (Solenoid or Remote Air)
- 3-position, double solenoid, open center, closed center, and pressure center.
- Extended or recessed manual operators.
- Single pressure and dual pressure.
- Individual base or add-a-unit manifold base.
- Plug-in, sandwich, single and dual pressure regulators for both individual and manifold valves.

ISO 01  
ISO 02  
**ISO 1**  
ISO 2  
ISO 3

Function	Port size	Flow [Max]	Individual/Manifold mounting	Series
<b>5/2, 5/3</b>	<b>1/4" - 3/8"</b>	<b>1.8 C<sub>v</sub></b>	Valve only - No base non "plug-in" Conform to ISO 5599/1	

### OPERATIONAL BENEFITS

1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof AC solenoid operation.
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.
6. Plug-in design of valves, bases and regulators for modular assembly and ease of maintenance.
7. Internal or external pilot operation. Manifolds supplied with common external pilot.
8. Air only return. Optional memory spring is also available.
9. Optional low wattage DC solenoid down to 1.0 watt.



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### 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-B1A-AAAA-DM-Dxxx-xxx	MV-B1A-ABAA-DM-Dxxx-xxx	MV-B1A-AEAA-DM-Dxxx-xxx	MV-B1A-AFAA-DM-Dxxx-xxx
External "12" end	MV-B1A-AAAB-DM-Dxxx-xxx	MV-B1A-ABAB-DM-Dxxx-xxx	MV-B1A-AEAB-DM-Dxxx-xxx	MV-B1A-AFAB-DM-Dxxx-xxx

#### DUAL PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure center
Internal pilot From port #3	MV-B1A-ACAD-DM-Dxxx-xxx	MV-B1A-ADAD-DM-Dxxx-xxx	MV-B1A-AGAD-DM-Dxxx-xxx
Internal pilot From port #5	MV-B1A-ACAE-DM-Dxxx-xxx	MV-B1A-ADAE-DM-Dxxx-xxx	MV-B1A-AGAE-DM-Dxxx-xxx
External pilot From "12" end	MV-B1A-ACAB-DM-Dxxx-xxx	MV-B1A-ADAB-DM-Dxxx-xxx	MV-B1A-AGAB-DM-Dxxx-xxx

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#### SOLENOID OPERATOR ▶

### DM-D **XXX-XXX**\*

XX Voltage	X Lead wire length	X Manual operator	XX Electrical connection
<b>JA</b> 110/50, 120/60	<b>A</b> 18" (Flying leads)	<b>1</b> Non-locking recessed	<b>KA</b> Square connector
<b>JB</b> 220/50, 240/60	<b>B</b> 24" (Flying leads)	<b>2</b> Locking recessed	<b>KD</b> Square connector with light
<b>JC</b> 24/50, 24/60	<b>J</b> Connector		<b>JB</b> Rectangular connector
<b>FB</b> 24 VDC (1.8W)			<b>JD</b> Rectangular connector with light
<b>DA</b> 24 VDC (5.4W)			<b>BA</b> Flying leads
<b>DF</b> 24 VDC (12.7W)			

\* Other options available, see page 309.  
Note: ISO series, valve and base are ordered separately, see page 231 for base code.

### OPTIONS

Valve function :

MV-B1A-**AXX**-XX-Dxxx-xxx

- J** for single operator universal spool (ext. pilot only)
- K** for double operator universal spool (ext. pilot only)

Pilot style :

MV-B1A-AXX-**DM**-Dxxx-xxx

- DM** Pilot exhaust muffled
- DP** Pilot exhaust piped (#10-32)

Spool return :

MV-B1A-AX**A**X-XX-Dxxx-xxx

- A** Standard return
- B** Memory spring return

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ISO 01  
ISO 02

ISO 1

ISO 2

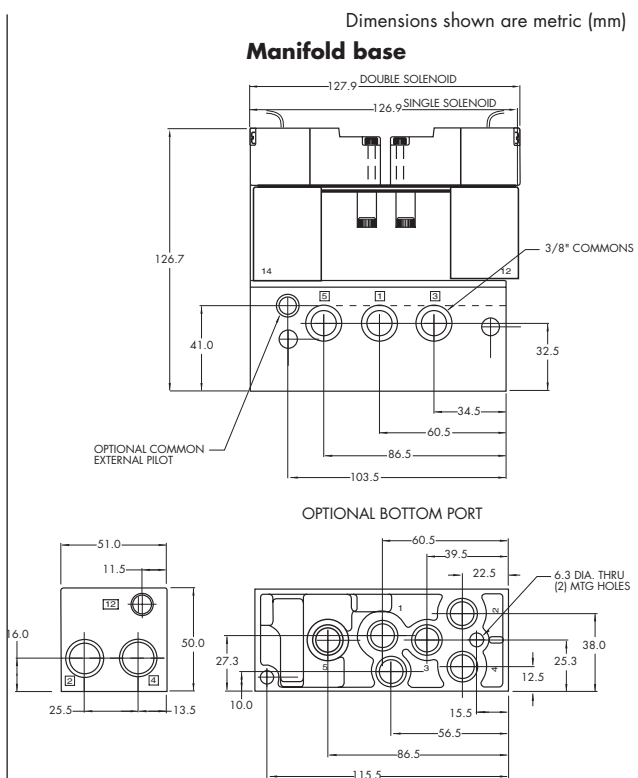
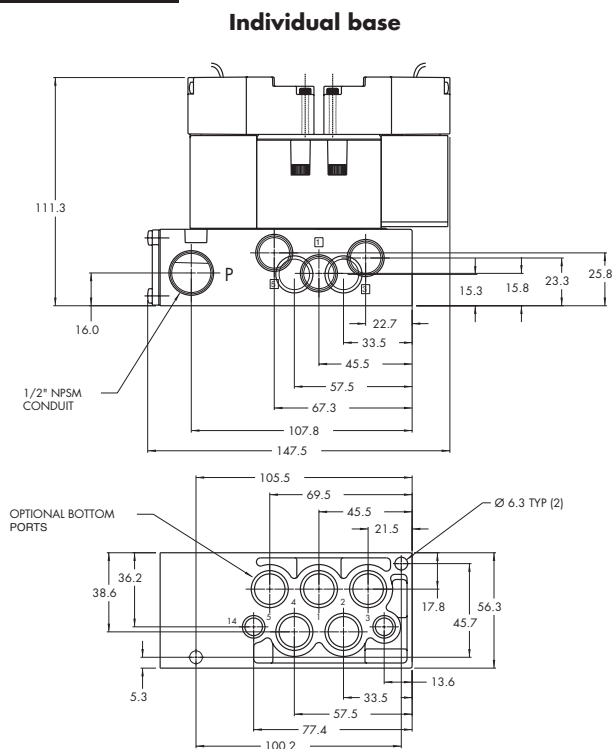
ISO 3

**TECHNICAL DATA**

<b>Fluid :</b>	Compressed air, vacuum, inert gases
<b>Pressure range :</b>	Internal pilot : 20 to 120 PSI External pilot : vacuum to 120 PSI
<b>Pilot pressure :</b>	Single/double operator : 20 to 120 PSI, 3 positions : 30 to 120 PSI
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
<b>Filtration :</b>	40 µ
<b>Temperature range :</b>	0°F to 120°F (-18°C to +50°C)
<b>Flow :</b>	3/8": (1.8 C <sub>v</sub> ) – 1/4": (1.6 C <sub>v</sub> )
<b>Coil :</b>	Class A continuous duty, #22 AWG x 18 leads
<b>Voltage range :</b>	-15% to +10% of nominal voltage
<b>Protection :</b>	Consult factory
<b>Power :</b>	~ Inrush 7.6 VA    Holding: 4.8 VA = 1 to 12.7 W
<b>Response times : (with 5,4 W coil)</b>	Energize : 11.3 ms De-energize : 7.8 ms

- Options :
- Sandwich flow controls: FCP1A-BA (screwdriver slot adjustment)  
FCP1A-BB (locking knob adjustment)
  - Sandwich regulator, see „Regulators’ section
- Spare parts :
- Pilot valve: DMB-Dxxx-xxx • Valve to base pressure seal: 16661

**DIMENSIONS**



Function	Port size	Flow [Max]	Individual/Manifold mounting	Series
<b>5/2, 5/3</b>	<b>1/4" - 3/8"</b>	<b>1.8 C<sub>v</sub></b>	Valve only - No base "plug-in" Conform to ISO 5599/2	

### OPERATIONAL BENEFITS

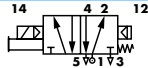
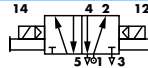
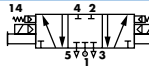
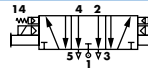
1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof AC solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. MAC spool and bore combination wipes away contamination, eliminates 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.
6. Plug-in design of valves, bases and regulators for modular assembly and ease of maintenance.
7. Internal or external pilot operation. Manifolds supplied with common external pilot.
8. Air only return. Optional memory spring is also available.
9. Optional low wattage DC solenoid down to 1.0 watt.



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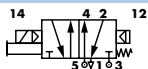
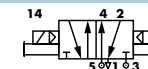
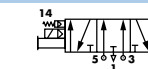
### HOW TO ORDER

#### SINGLE PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center
Internal	 MV-P1A-AAAA-DM-DxxP-xxx	 MV-P1A-ABAA-DM-DxxP-xxx	 MV-P1A-AEAA-DM-DxxP-xxx	 MV-P1A-AFAA-DM-DxxP-xxx
External "12" end	MV-P1A-AAAB-DM-DxxP-xxx	MV-P1A-ABAB-DM-DxxP-xxx	MV-P1A-AEAB-DM-DxxP-xxx	MV-P1A-AFAB-DM-DxxP-xxx

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42

#### DUAL PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure center
Internal pilot From port #3	 MV-P1A-ACAD-DM-DxxP-xxx	 MV-P1A-ADAD-DM-DxxP-xxx	 MV-P1A-AGAD-DM-DxxP-xxx
Internal pilot From port #5	MV-P1A-ACAE-DM-DxxP-xxx	MV-P1A-ADAE-DM-DxxP-xxx	MV-P1A-AGAE-DM-DxxP-xxx
External pilot From "12" end	MV-P1A-ACAB-DM-DxxP-xxx	MV-P1A-ADAB-DM-DxxP-xxx	MV-P1A-AGAB-DM-DxxP-xxx

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48P  
48  
400

#### SOLENOID OPERATOR ▶

### DM-D XX P-XXX\*

XX Voltage	X Manual operator	XX Electrical connection
<b>JA</b> 110/50, 120/60 (2.9W)	<b>1</b> Non-locking recessed	<b>DM</b> Plug-in
<b>JB</b> 220/50, 240/60 (2.9W)	<b>2</b> Locking recessed	<b>DN</b> Plug-in with diode
<b>JC</b> 24/50, 24/60 (2.9W)		<b>DP</b> Plug-in with M.O.V.
<b>FB</b> 24 VDC (1.8W)		<b>DG</b> Plug-in with ground
<b>DA</b> 24 VDC (5.4W)		
<b>DF</b> 24 VDC (12.7W)		

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\* Other options available, see page 309.  
Note: - ISO series, valve and base are ordered separately, see page 233 for base codes.  
- Ground wire required for 30 volts or higher.

### OPTIONS

Valve function :

MV-P1A-AXXX-XX-DxxP-xxx  
**J** for single operator universal spool (ext. pilot only)  
**K** for double operator universal spool (ext. pilot only)

Pilot style :

MV-P1A-AXXX-DM-DxxP-xxx  
**DM** Pilot exhaust muffled  
**DP** Pilot exhaust piped (#10-32)

Spool return :

MV-P1A-AXX-AX-XX-DxxP-xxx  
**A** Standard return  
**B** Memory spring return  
**D** Standard return with light  
**E** Memory spring return with light

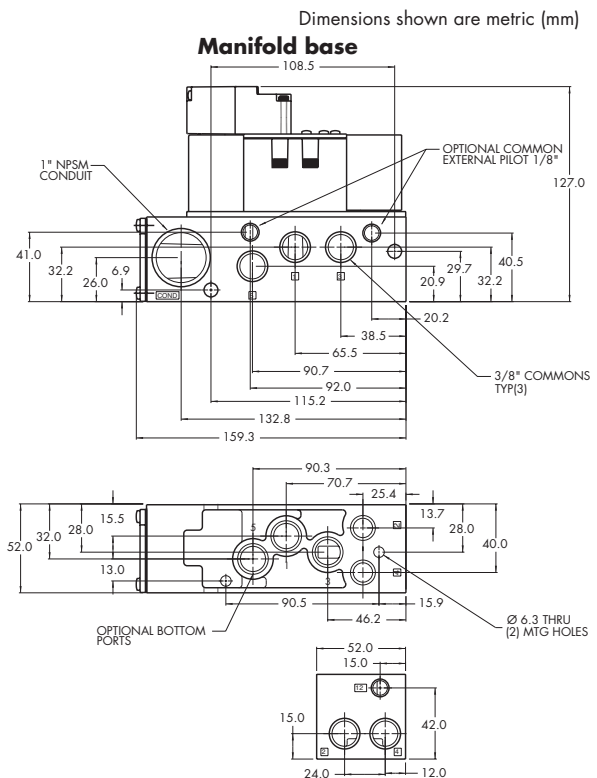
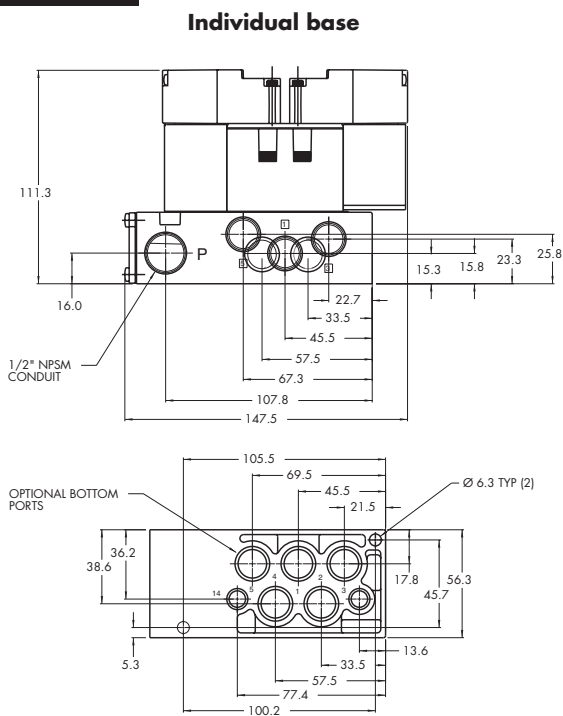
ISO 01  
ISO 02  
**ISO 1**  
ISO 2  
ISO 3

**TECHNICAL DATA**

<b>Fluid :</b>	Compressed air, vacuum, inert gases
<b>Pressure range :</b>	Internal pilot: 20 to 120 PSI External pilot : vacuum to 120 PSI
<b>Pilot pressure :</b>	Single/double operator : 20 to 120 PSI, 3 positions : 30 to 120 PSI
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
<b>Filtration :</b>	40 µ
<b>Temperature range :</b>	0°F to 120°F (-18°C to +50°C)
<b>Flow :</b>	3/8": (1.8 C <sub>v</sub> ) – 1/4": (1.6 C <sub>v</sub> )
<b>Coil :</b>	Class A continuous duty, #22 AWG x 12 base leads
<b>Voltage range :</b>	-15% to +10% of nominal voltage
<b>Protection :</b>	Consult factory
<b>Power :</b>	~ Inrush 7.6 VA    Holding: 4.8 VA = 1 to 12.7 W
<b>Response times : (with 5,4 W coil)</b>	Energize : 10 ms De-energize : 9 ms

- Options :
- Sandwich flow controls: FCP1A-AA (screwdriver slot adjustment)  
FCP1A-AB (locking knob adjustment)
  - Sandwich regulator, see „Regulators’ section
- Spare parts :
- Pilot valve: DMB-DxxP-xxx • Valve to base pressure seal: 16661

**DIMENSIONS**





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**Codification table for voltages / Manual operator / Electrical connection**

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VALVE CODE > **-DM- D XX X-X XX**  
**1 2 3 4**

**OPTIONS AVAILABLE FOR**

- Pilot operated valves 52, 67, 92, 93, 400, ISO1, ISO2, ISO3 Series

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1. VOLTAGE		4. ELECTRICAL CONNECTION	
D-XX X-X XX	VOLTAGE	D-XX X-X XX	ELECTRICAL CONNECTION
DA	24 VDC (5.4W)	BA*	Flying leads (grommet)
DB	12 VDC (5.4W)	BK*	BA with protection diode
DC	12 VDC (7.5W)	BL*	BA with protection varistor
DD	24 VDC (7.3W)	BM**	Flying leads (solenoid plug-in)
DE	12 VDC (12.7W)	BN**	BM with protection diode
DF	24 VDC (12.7W)	BP**	BM with protection varistor
DK	110 VDC (4.7W)	BG**	BM with ground
DJ	28 VDC (5.2W)	BH**	BM with protection diode & ground
DL	64 VDC (6.0W)	BJ**	BM with protection varistor & ground
DM	36 VDC (5.3W)	CA*	1/2" NPS conduit with flying leads
DN	6 VDC (6.0W)	CM*	1/2" NPS metal conduit with flying leads
DR	90 VDC (6.6W)	CN*	1/2" NPS metal conduit with flying leads & ground
DS	110 VDC (7.3W)	JB	Rectangular connector
DT	75 VDC (5.6W)	JD	JB with light
DP	48 VDC (5.8W)	JM	Rectangular connector (male only)
FA	12 VDC (1.8W)	KA	Mini square connector
FB	24 VDC (1.8W)	KB	KA with protection diode
FE	12 VDC (2.4W)	KC	KA with protection varistor
FF	24 VDC (2.4W)	KD	KA with light
JA	120/60, 110/50 (2.9W)	KE	KA with light and protection diode
JB	240/60, 220/50 (2.9W)	KF	KA with light and protection varistor
JC	24/60, 24/50 (3.7W)	KG	KA with light & diode
JD	100/60, 100/50, 110/60 (3.9W)	KJ	Mini square connector (male only)
JE	220/60 (3.4W)	KK	KJ with protection diode (male only)
JF	240/50 (2.8W)	KL	KJ with protection varistor (male only)
JG	200/60, 200/50 (3.9W)	TA	Dual tabs with receptacles
		TB	TA with protection diode
		TD	TA with light
		TE	TA with light and protection diode
		TJ	Dual tabs (male only)
		TK	TJ with protection diode
		TM	TJ with light
		TN	TJ with light and protection diode

2. WIRE LENGTH	
D-XX X-X XX	WIRE LENGTH
0	No wires
A	18"
B	24"
C	36"
D	48"
E	72"
F	96"

3. MANUAL OPERATOR	
D-XX X-X XX	MANUAL OPERATOR
0	No operator
1	Non-locking recessed
2	Locking recessed
3	Non-locking extended
4	Locking extended

\* From Lead wire length options choose A through F

\*\* From Lead wire length options choose 0 through F

Note: When coil is above 30 volts, a ground wire is required. Applies to options with flying leads.