

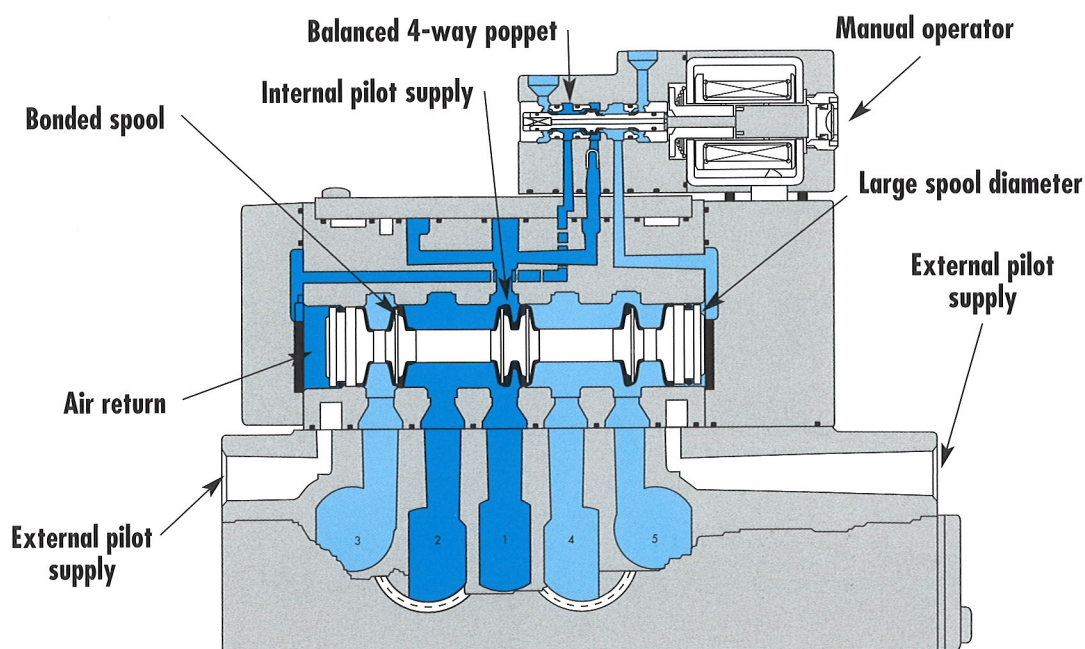
Individual mounting

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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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.

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48P

48

400

92

93

ISO 01

ISO 02

ISO 1

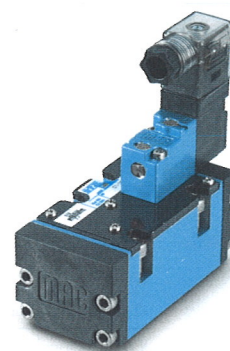
ISO 2

ISO 3

Function	Port size	Flow [Max]	Individual/Manifold mounting	Series
5/2, 5/3	G3/8" - G1/2"	3000 NI/minn	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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48P

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400

92

93

ISO 01

ISO 02

ISO 1

ISO 2

ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
Internal	MV-B2A-AAAA-DM-DXXX-XXX	MV-B2A-ABAA-DM-DXXX-XXX	MV-B2A-AEAA-DM-DXXX-XXX	MV-B2A-AFAA-DM-DXXX-XXX
External "12" end	MV-B2A-AAAB-DM-DXXX-XXX	MV-B2A-ABAB-DM-DXXX-XXX	MV-B2A-AEAB-DM-DXXX-XXX	MV-B2A-AFAB-DM-DXXX-XXX

DUAL PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure centre
Internal From port #3	MV-B2A-ACAD-DM-DXXX-XXX	MV-B2A-ADAD-DM-DXXX-XXX	MV-B2A-AGAD-DM-DXXX-XXX
Internal From port #5	MV-B2A-ACAE-DM-DXXX-XXX	MV-B2A-ADAE-DM-DXXX-XXX	MV-B2A-AGAE-DM-DXXX-XXX
External From "12" end	MV-B2A-ACAB-DM-DXXX-XXX	MV-B2A-ADAB-DM-DXXX-XXX	MV-B2A-AGAB-DM-DXXX-XXX

SOLENOID OPERATOR ►

DM-D XXX-XXX*

XX Voltage	X Lead wire length	X Manual operator	XX Electrical connection
JA 110 V~/50Hz	A 45 cm	1 Non-locking	KA Square connector
JB 220 V~/50Hz	B 60 cm	2 Locking	KD Square connector with light
JC 24 V~/50Hz	J Connector		JB Rectangular connector
FB 24 V=/1,8W			JD Rectangular connector with light
DA 24 V=/5,4W			BA Flying leads
DF 24 V=/12,7W			

* Other options available, see page 299.

Note: ISO series, valve and base are ordered separately, see page 233 for base code.

OPTIONS

Valve function :

MV-B2A-XXX-XX-DXXX-XXX

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

Pilot style :

MV-B2A-XXX-DM-DXXX-XXX

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

Spool return :

MV-B2A-AX-XX-DXXX-XXX

- A Standard return
- B Memory spring return

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 1,3 to 8 bar External pilot : vacuum to 8 bar
Pilot pressure :	Single operator and 3 positions : 1,3 to 8 bar double operator : 2 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	10.5 mm
Flow (at 6 bar, $\Delta P=1$ bar) :	G3/8": 2800 NI/min (Cv 2.8) - G1/2": 3000 NI/min (Cv 3,0)
Coil :	Epoxy encapsulated – class A wires – 100% ED (specify mod 0449)
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 12.7 to 1,0 W
Response times :	24 V=5,4w Energize : 10 ms De-energize : 9.6 ms 110V~/50Hz Energize : 6-15 ms De-energize : 10-17 ms

Options :

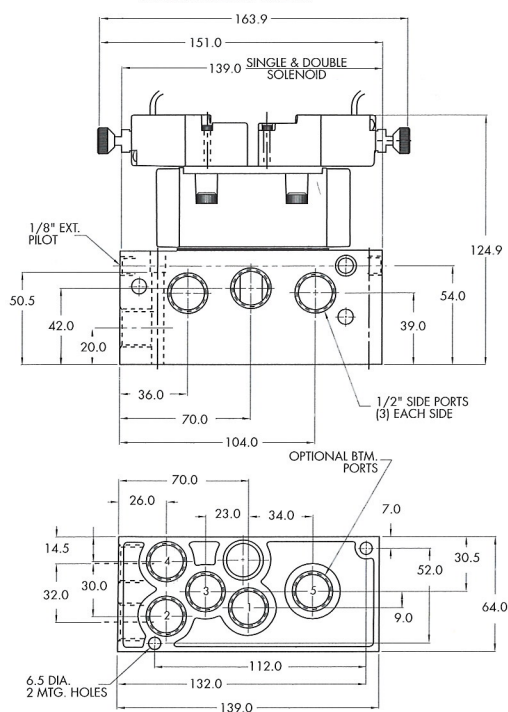
- Sandwich flow controls: FCP2A-BA (screwdriver slot adjustment)
FCP2A-BB (locking knob adjustment)
- Sandwich regulator, see „Regulators“ section

Spare parts :

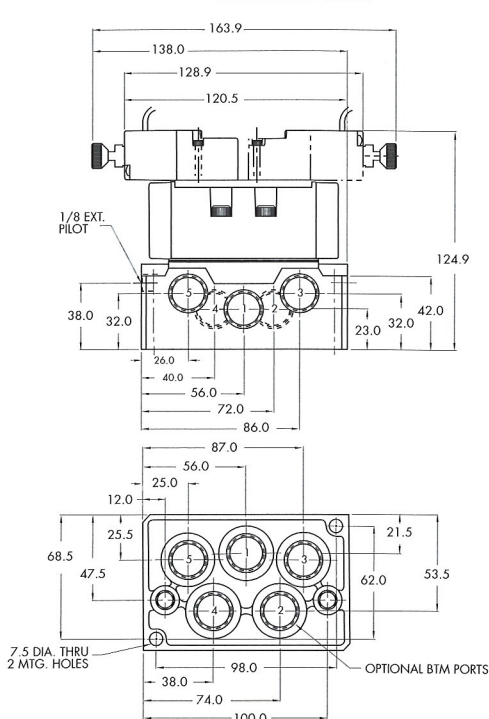
- Pilot valve: DMB-Dxxx-xxx • Valve to base pressure seal: 16576
- Valve mounting screws (x4): 35413

DIMENSIONS

Individual base



Manifold base

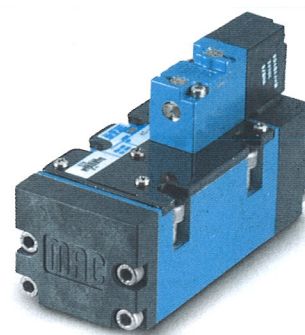


Dimensions shown are metric (mm)

Function	Port size	Flow [Max]	Individual/Manifold mounting	Series
5/2, 5/3	G3/8" - G1/2"	3000 NI/min	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.



HOW TO ORDER

SINGLE PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
Internal	MV-P2A-AAAA-DM-DxxP-xxx	MV-P2A-ABAA-DM-DxxP-xxx	MV-P2A-AEAA-DM-DxxP-xxx	MV-P2A-AFAA-DM-DxxP-xxx
External "12" end	MV-P2A-AAAB-DM-DxxP-xxx	MV-P2A-ABAB-DM-DxxP-xxx	MV-P2A-AEAB-DM-DxxP-xxx	MV-P2A-AFAB-DM-DxxP-xxx

DUAL PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure centre
Internal From port #3	MV-P2A-ACAD-DM-DxxP-xxx	MV-P2A-ADAD-DM-DxxP-xxx	MV-P2A-AGAD-DM-DxxP-xxx
Internal From port #5	MV-P2A-ACAE-DM-DxxP-xxx	MV-P2A-ADAE-DM-DxxP-xxx	MV-P2A-AGAE-DM-DxxP-xxx
External From "12" end	MV-P2A-ACAB-DM-DxxP-xxx	MV-P2A-ADAB-DM-DxxP-xxx	MV-P2A-AGAB-DM-DxxP-xxx

SOLENOID OPERATOR ►

DM-D **XX** P-**XXX***

XX Voltage	X Manual operator	XX Electrical connection
JA 110 V~/50Hz	1 Non-locking	DM Plug-in
JB 220 V~/50Hz	2 Locking	DN Plug-in with diode
JC 24 V~/50Hz		DP Plug-in with M.O.V.
FB 24 V=/1,8W		DG Plug-in with ground
DA 24 V=/5,4W		
DF 24 V=/12,7W		

* Other options available, see page 299.

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-P2A-**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-P2A-**AXXX**-**DM**-DxxP-xxx

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

Spool return :

MV-P2A-**AXXX**-XX-DxxP-xxx

- A** Standard return
B Memory spring return
D Standard return with light
E Memory spring return with light

TECHNICAL DATA

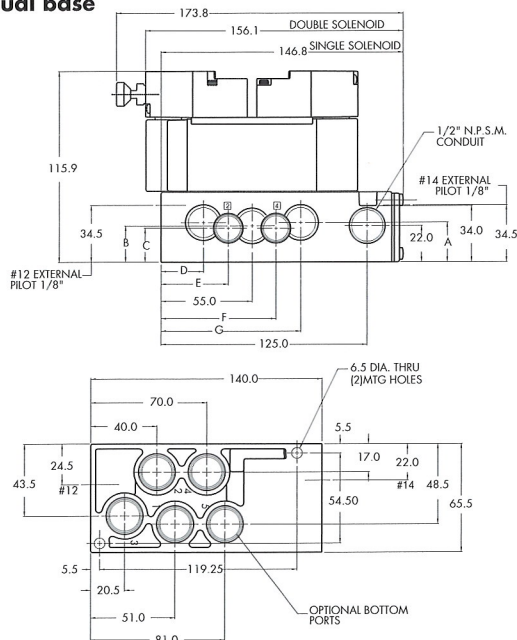
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 1,3 to 8 bar External pilot : vacuum to 8 bar
Pilot pressure :	Single operator and 3 positions : 1,3 to 8 bar double operator : 2 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	10.5 mm
Flow (at 6 bar, ΔP=1bar) :	G3/8": 2800 NI/min (Cv 2.8) - G1/2": 3000 NI/min (Cv 3,0)
Coil :	Epoxy encapsulated – class A wires – 100% ED (specify mod 0449)
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 14,8 VA Holding: 4,8 VA = 12.7 to 1,0 W
Response times :	24 V~/5,4w Energize : 10 ms De-energize : 9.6 ms 110V~/50Hz Energize : 6-15 ms De-energize : 10-17 ms

- Options :
- Sandwich flow controls: FCP2A-AA (screwdriver slot adjustment)
FCP2A-AB (locking knob adjustment)
 - Sandwich regulator, see 'Regulators' section

- Spare parts :
- Pilot valve: DMB-DxxP-xxx • Valve to base pressure seal: 16576
 - Valve mounting screws (x4): 35413

DIMENSIONS

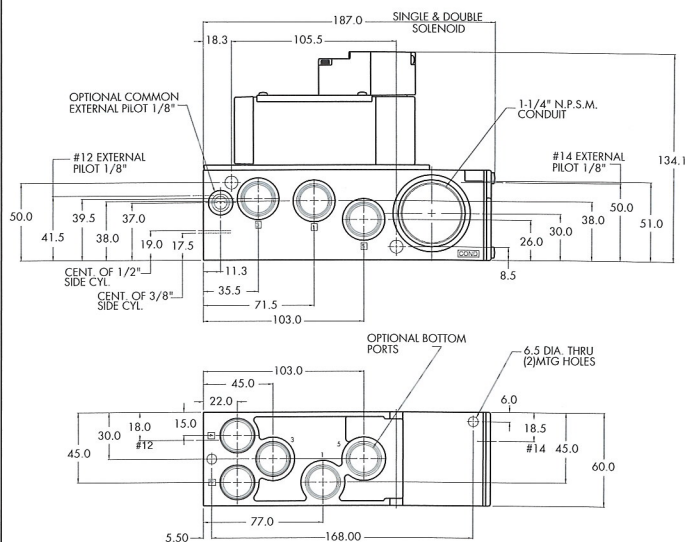
Individual base



DIM.	A	B	C	D	E	F	G
G3/8"	25.2	22.7	20.6	26.7	40.5	69.4	83.3
G1/2"	24.0	21.0	19.0	25.5	40.0	70.0	84.5

Manifold base

Dimensions shown are metric (mm)



Non plug-in base / manifold



ISO 01

ISO 02

ISO 1

ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G3/8"	MB-A2B-121	MB-A2B-123	MB-A2B-122	MB-A2B-124
G1/2"	MB-A2B-131	MB-A2B-133	MB-A2B-132	MB-A2B-134

INDIVIDUAL BASE ACCORDING TO VDMA 24345

Port size	Side ports	Bottom ports
G3/8"	HB-A2B-A	HB-A2B-B

MANIFOLD BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G3/8"	MM-A2B-121	MM-A2B-123	MM-A2B-122	MM-A2B-124
G1/2"	MM-A2B-131	MM-A2B-133	MM-A2B-132	MM-A2B-134

Manifold fastening kit : N-63002-01.

MANIFOLD BASE ACCORDING TO VDMA 24345

Port size	Side ports
G3/8"	HM-A2B-C

End plate kit: HM-A2B-D.

Valve blanking plate: MA2003.

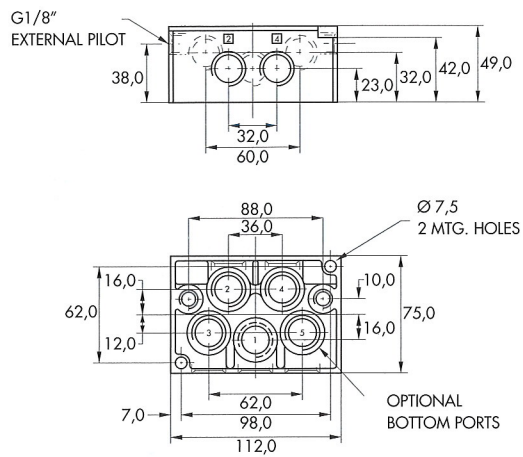
Inlet/exhaust isolator plug: 32839.

DIMENSIONS

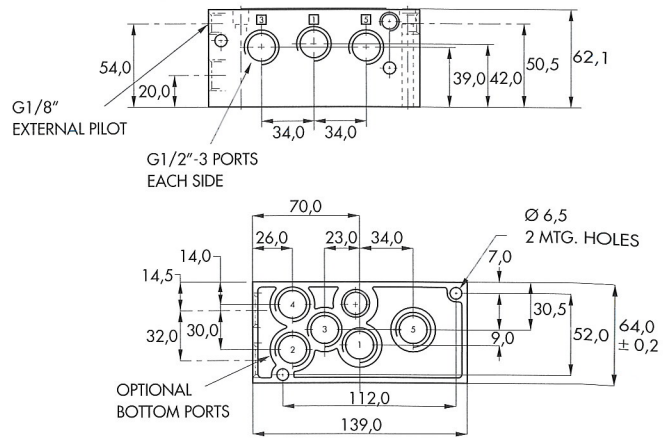
Dimensions shown are metric (mm)

Individual

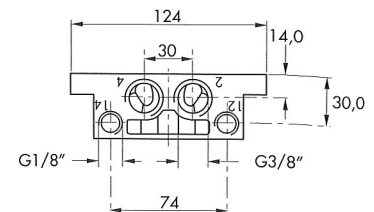
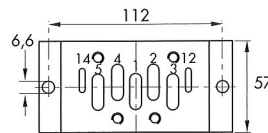
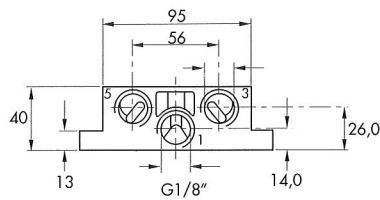
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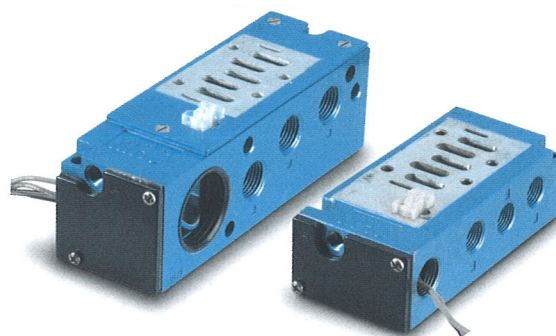
Manifold



VDMA



Plug-in base / manifold



ISO 01

ISO 02

ISO 1

ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports
G3/8"	Single solenoid	MB-P2A-121-A	MB-P2A-122-A	MB-P2A-123-A
	Double solenoid	MB-P2A-121-B	MB-P2A-122-B	MB-P2A-123-B
G1/2"	Single solenoid	MB-P2A-131-A	MB-P2A-132-A	MB-P2A-133-A
	Double solenoid	MB-P2A-131-B	MB-P2A-132-B	MB-P2A-133-B

MANIFOLD BASE

Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports
G3/8"	Single solenoid	MM-P2A-121-A	MM-P2A-122-A	MM-P2A-123-A
	Double solenoid	MM-P2A-121-B	MM-P2A-122-B	MM-P2A-123-B
G1/2"	Single solenoid	MM-P2A-131-A	MM-P2A-132-A	MM-P2A-133-A
	Double solenoid	MM-P2A-131-B	MM-P2A-132-B	MM-P2A-133-B

OPTIONS

Manifold options :

External pilot

MM-P2A-12x-xx

32

33

for 3/8" port – common external pilot
for 1/2" port – common external pilot

Terminal strip

MM-P2A-xxx-A
(N/A with light)

J

K

wired for sgl solenoid
wired for double solenoid

Base / Manifold option: light(s)

MX-P2A-xxx-JA

JA

JB

DA

110/120 volt
220/240 volt
24 volt

Accessories:

M-P2001

N-P2004-01

32839

Valve blanking plate.

Manifold fastening kit.

Inlet/exhaust isolator plug.

Dimensions shown are metric (mm)

[illegible]

Technical drawing of a 1000 Series Solenoid Valve, showing front and side views with dimensions and labels.

Front View Dimensions:

- Overall Width: 187.0
- Overall Height: 134.1
- Top Section Width: 105.5
- Top Section Height: 18.3
- Bottom Section Width: 103.0
- Bottom Section Height: 51.0
- Distance from Left Face to Center of 1/2" Side Cyl: 41.5
- Distance from Left Face to Center of 3/8" Side Cyl: 38.0
- Distance from Left Face to Center of 1/2" Side Cyl: 39.5
- Distance from Left Face to Center of 3/8" Side Cyl: 37.0
- Distance from Left Face to Center of 1/2" Side Cyl: 19.0
- Distance from Left Face to Center of 3/8" Side Cyl: 17.5
- Distance from Left Face to Center of 1/2" Side Cyl: 11.3
- Distance from Left Face to Center of 3/8" Side Cyl: 35.5
- Distance from Left Face to Center of 1/2" Side Cyl: 71.5
- Distance from Left Face to Center of 3/8" Side Cyl: 103.0
- Distance from Left Face to Center of 1/2" Side Cyl: 8.5
- Distance from Left Face to Center of 3/8" Side Cyl: 26.0
- Distance from Left Face to Center of 1/2" Side Cyl: 30.0
- Distance from Left Face to Center of 3/8" Side Cyl: 38.0
- Distance from Left Face to Center of 1/2" Side Cyl: 50.0
- Distance from Left Face to Center of 3/8" Side Cyl: 51.0

Side View Dimensions:

- Overall Width: 168.0
- Overall Height: 60.0
- Top Section Width: 103.0
- Top Section Height: 22.0
- Bottom Section Width: 77.0
- Bottom Section Height: 5.50
- Distance from Left Face to Center of 1/2" Side Cyl: 45.0
- Distance from Left Face to Center of 3/8" Side Cyl: 30.0
- Distance from Left Face to Center of 1/2" Side Cyl: 18.0
- Distance from Left Face to Center of 3/8" Side Cyl: 15.0
- Distance from Left Face to Center of 1/2" Side Cyl: 3.0
- Distance from Left Face to Center of 3/8" Side Cyl: 5.0
- Distance from Left Face to Center of 1/2" Side Cyl: 18.5
- Distance from Left Face to Center of 3/8" Side Cyl: 45.0
- Distance from Left Face to Center of 1/2" Side Cyl: 6.0
- Distance from Left Face to Center of 3/8" Side Cyl: 18.5
- Distance from Left Face to Center of 1/2" Side Cyl: 45.0
- Distance from Left Face to Center of 3/8" Side Cyl: 60.0

Labels:

- SINGLE & DOUBLE SOLENOID
- OPTIONAL COMMON EXTERNAL PILOT 1/8"
- 1-1/4" N.P.S.M. CONDUIT
- #12 EXTERNAL PILOT 1/8"
- #14 EXTERNAL PILOT 1/8"
- CENT. OF 1/2" SIDE CYL.
- CENT. OF 3/8" SIDE CYL.
- OPTIONAL BOTTOM PORTS
- 6.5 DIA. THRU (2) MTG HOLES