

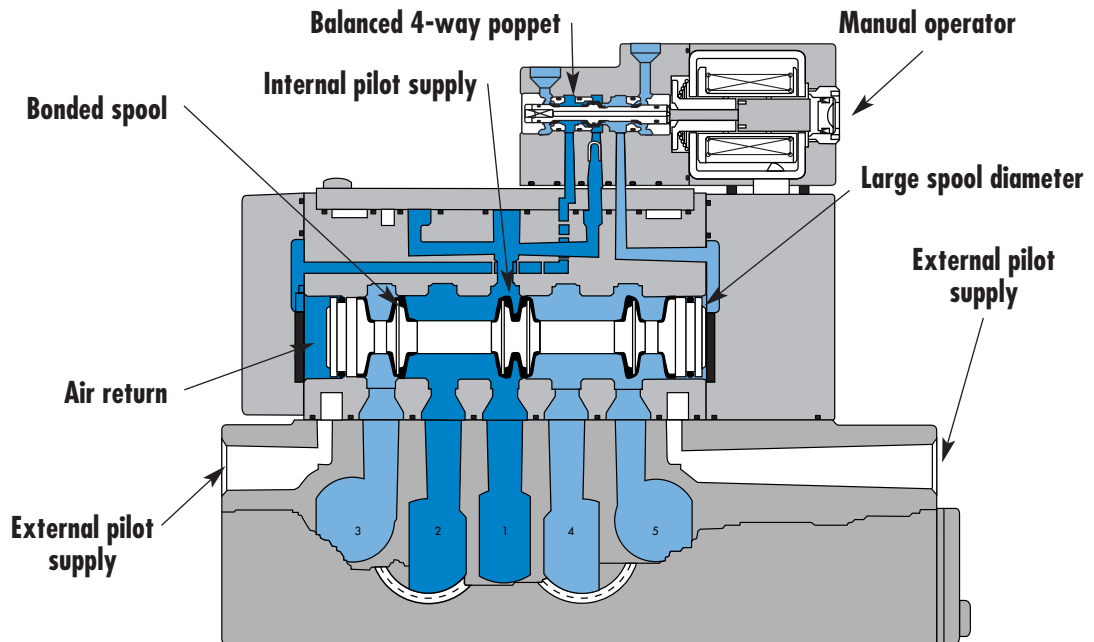
Individual mounting

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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- 33
- 34
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- 48P
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- 400
- 92
- 93
- ISO 01
- ISO 02
- ISO 1
- ISO 2
- ISO 3**

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.

Function	Port size	Flow [Max]	Individual/Manifold mounting	Series
5/2, 5/3	1/2" - 3/4"	6.1 C_v	Valve only - No base "non plug-in" Conform to ISO 5599/1	

OPERATIONAL BENEFITS

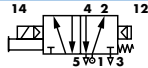
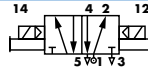
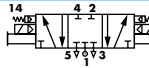
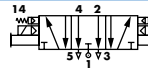
1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof AC solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. MAC spool and bore combination wipes away contamination, eliminates 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.



33
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36
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37
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52
67
69
44

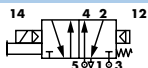
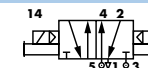
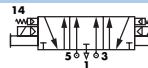
HOW TO ORDER

SINGLE PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center
Internal	 MV-B3A-AAAA-DM-DXXX-XXX	 MV-B3A-ABAA-DM-DXXX-XXX	 MV-B3A-AEAA-DM-DXXX-XXX	 MV-B3A-AFAA-DM-DXXX-XXX
External "12" end	MV-B3A-AAAB-DM-DXXX-XXX	MV-B3A-ABAB-DM-DXXX-XXX	MV-B3A-AEAB-DM-DXXX-XXX	MV-B3A-AFAB-DM-DXXX-XXX

46
42

DUAL PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure center
Internal pilot From port #3	 MV-B3A-ACAD-DM-DXXX-XXX	 MV-B3A-ADAD-DM-DXXX-XXX	 MV-B3A-AGAD-DM-DXXX-XXX
Internal pilot From port #5	MV-B3A-ACAE-DM-DXXX-XXX	MV-B3A-ADAE-DM-DXXX-XXX	MV-B3A-AGAE-DM-DXXX-XXX
External pilot From "12" end	MV-B3A-ACAB-DM-DXXX-XXX	MV-B3A-ADAB-DM-DXXX-XXX	MV-B3A-AGAB-DM-DXXX-XXX

47
48P
48
400

SOLENOID OPERATOR ▶

DM-D XXX-XXX*

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

92

93
ISO 01
ISO 02
ISO 1
ISO 2
ISO 3

* Other options available, see page 309.
Note: ISO series, valve and base are ordered separately, see page 239 for base code.

OPTIONS

Valve function :

MV-B3A-**AXXX**-XX-DXXX-XXX

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

Pilot style :

MV-B3A-AXXX-**DM**-DXXX-XXX

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

Spool return :

MV-B3A-AX**AX**-XX-DXXX-XXX

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

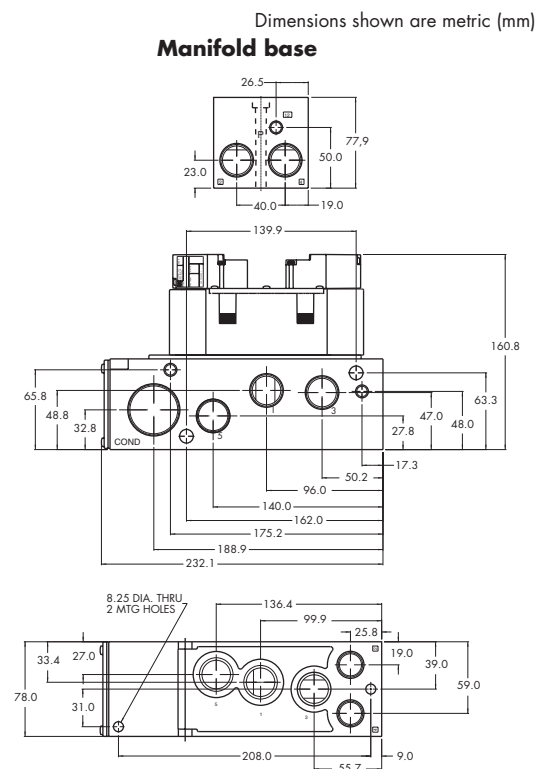
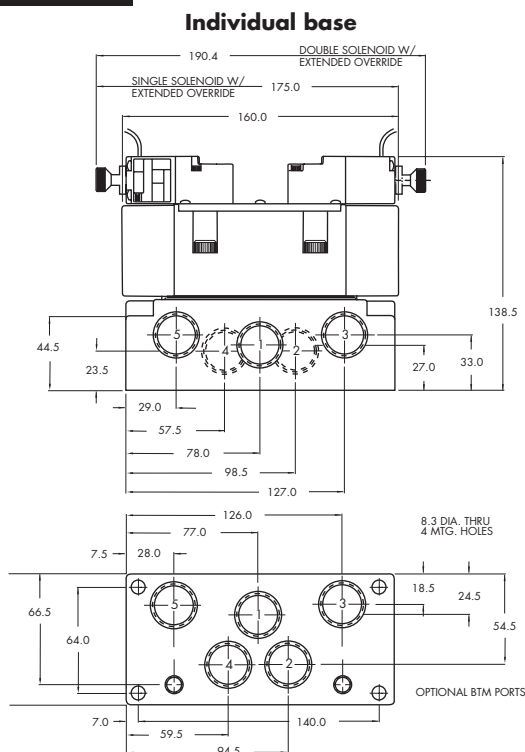
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 20 to 120 PSI External pilot : vacuum to 120 PSI
Pilot pressure :	Single/double operator : 20 to 120 PSI, 3 positions : 30 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 :	1/2": (5.4 C _v) – 3/4": (6.1 C _v)
Coil :	Class A continuous duty, #22 AWG leads
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power :	~ Inrush 7.6 VA Holding: 4.8 VA = 12.7 to 1.0 W
Response times : (5.4 W coil)	Energize : 16.2 ms De-energize : 13.6 ms

Options : • Sandwich regulator, see „Regulators’ section

Spare parts : • Pilot valve: DMB-Dxxx-xxx • Valve to base pressure seal: 16614
 • Valve mounting screws (x4): 35451

DIMENSIONS



Function	Port size	Flow [Max]	Individual/Manifold mounting	Series
5/2, 5/3	1/2" - 3/4"	6.1 C_v	Valve only - No base "plug-in" Conform to ISO 5599/2	

OPERATIONAL BENEFITS

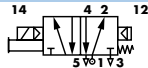
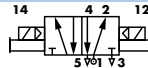
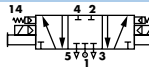

1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof AC solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. MAC spool and bore combination wipes away contamination, eliminates 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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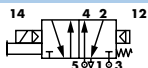
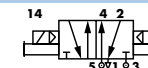
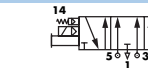
HOW TO ORDER

SINGLE PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center
Internal	 MV-P3A-AAAA-DM-DxxP-xxx	 MV-P3A-ABAA-DM-DxxP-xxx	 MV-P3A-AEAA-DM-DxxP-xxx	 MV-P3A-AFAA-DM-DxxP-xxx
External "12" end	MV-P3A-AAAB-DM-DxxP-xxx	MV-P3A-ABAB-DM-DxxP-xxx	MV-P3A-AEAB-DM-DxxP-xxx	MV-P3A-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-P3A-ACAD-DM-DxxP-xxx	 MV-P3A-ADAD-DM-DxxP-xxx	 MV-P3A-AGAD-DM-DxxP-xxx
Internal pilot From port #5	MV-P3A-ACAE-DM-DxxP-xxx	MV-P3A-ADAE-DM-DxxP-xxx	MV-P3A-AGAE-DM-DxxP-xxx
External pilot From "12" end	MV-P3A-ACAB-DM-DxxP-xxx	MV-P3A-ADAB-DM-DxxP-xxx	MV-P3A-AGAB-DM-DxxP-xxx

47
48P
48
400

SOLENOID OPERATOR ▶

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

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

* Other options available, see page 309.
Note: - ISO series, valve and base are ordered separately, see page 241 for base codes.
- Ground wire required for 30 volts or higher.

92
93

ISO 01
ISO 02
ISO 1
ISO 2
ISO 3

OPTIONS

Valve function :

MV-P3A-A**XXX**-XX-DxxP-xxx

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

Pilot style :

MV-P3A-A**XXX**-**DM**-DxxP-xxx

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

Spool return :

MV-P3A-A**XX**-**AX**-XX-DxxP-xxx

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

TECHNICAL DATA

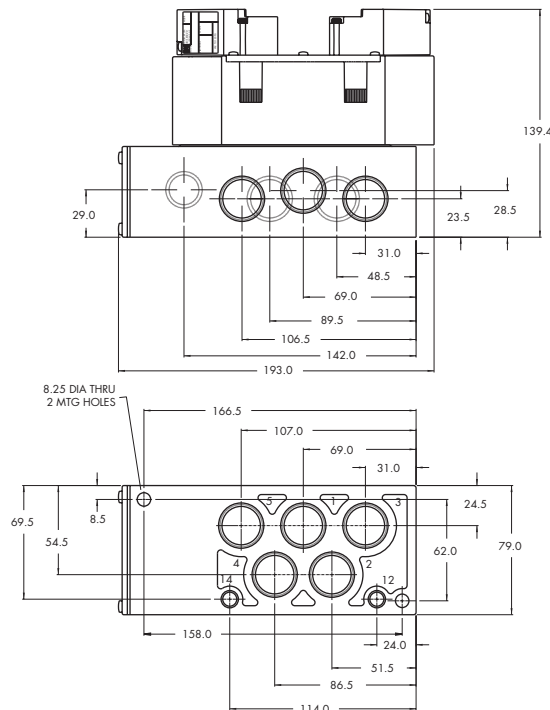
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 20 to 120 PSI External pilot : vacuum to 120 PSI
Pilot pressure :	Single/double operator : 20 to 120 PSI, 3 positions : 30 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to +50°C)
Flow :	1/2": (5.4 C _v) – 3/4": (6.1 C _v)
Coil :	Class A continuous duty, #22 AWG leads
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power :	~ Inrush 7.6 VA Holding: 4.8 VA = 12.7 to 1.0 W
Response times : (5.4 W coil)	Energize : 16.2 ms De-energize : 13.6 ms

Options : • Sandwich regulator, see „Regulators’ section

Spare parts : • Pilot valve: DMB-DxxP-xxx • Valve to base pressure seal: 16614
 • Valve mounting screws (x4): 35451

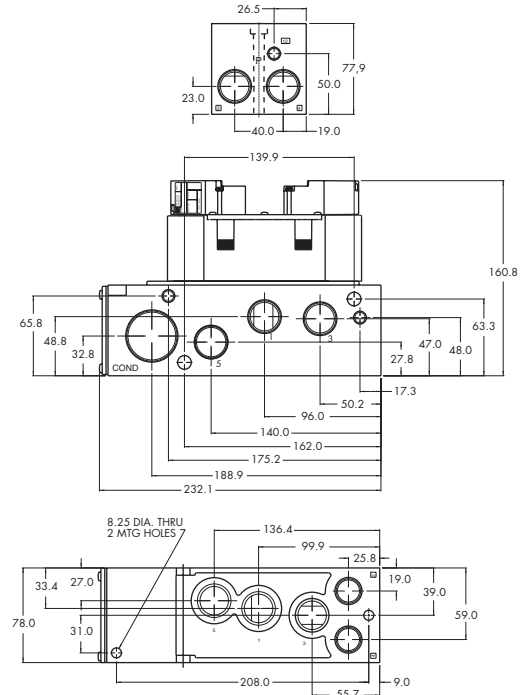
DIMENSIONS

Individual base



Dimensions shown are metric (mm)

Manifold base





Codification table for voltages / Manual operator / Electrical connection

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

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

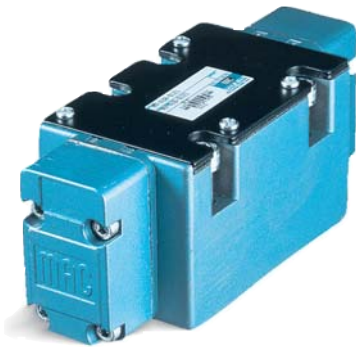
** From Lead wire length options choose 0 through F

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

Function	Port size	Flow (Max)	Individual mounting	Series
5/2 - 5/3	1/2" - 3/4"	6.3 C_v	valve only	

OPERATIONAL BENEFITS

1. Balanced spool, immune to variations of pressure.
2. Short stroke with high flow.
3. The piston (booster) provides maximum shifting forces.
4. Powerful return thanks to the combination of mechanical and air springs.
5. Bonded spool with minimum friction, shifting in a glass-like finished bore.
6. Wiping effect eliminates sticking.
7. Low leakage rate.



1100
55
56
57
58
59

HOW TO ORDER

SINGLE PRESSURE VALVES

Air spring	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center
Internal	MV-A3B-B111	-----	-----	-----
External	MV-A3B-B121	MV-A3B-B221	MV-A3B-B322	MV-A3B-B321

700
900

DUAL PRESSURE VALVES

Air spring	5/2 Single operator	5/2 Double operator	5/3 Pressure center
Internal port 3	MV-A3B-B131	-----	-----
Internal port 5	MV-A3B-B135	-----	-----
External	MV-A3B-B141	MV-A3B-B241	MV-A3B-B341

82
6300
6500
6600
2700

Note : ISO valves are delivered w/o base. See page 273 for base code.

1800
ISO 1
ISO 2
ISO 3

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator and 3 positions : 25 to 150 PSI \geq main valve pressure Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 μ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1\text{bar}$) :	1/2" - 3/4" : (6.3 C _v)
Leak rate :	100 cm ³ /min

Spare parts : • Remote air operator : R-A3004. • Pressure seal between valve and base : 16436. • Mounting screw body to base (x4) : 35416.

DIMENSIONS

Dimensions shown are metric (mm)

