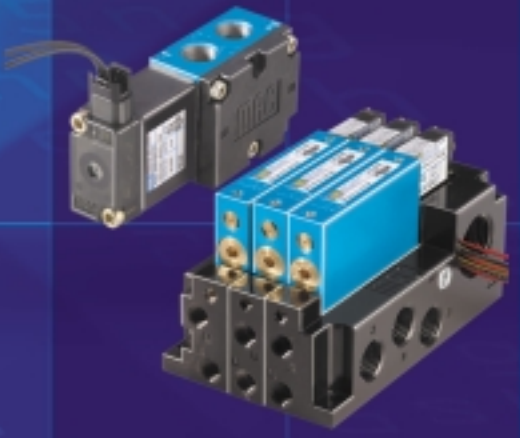
MAC

VALVES

AIR VALVES

NEW TECHNOLOGY



Introduction

MAC VALVES INC. has earned a reputation as an innovator in solenoid air valve technology as is evidenced by our numerous global patents.

MAC's designs focus on offering customers the best performing products available on the market. Some of the key features MAC's products offer are:

- reliability
- speed
- repeatability
- non lube service
- ease of maintenance
- compact packaging
- modularity
- specific application modifications
- low wattage
- broad electrical options

Many of these performance advantages are based on MAC's high shifting forces. MAC's patended oval shaped armature solenoid and 4-way pilot technologies are two new concepts which result in extremely high shifting forces in small packages.

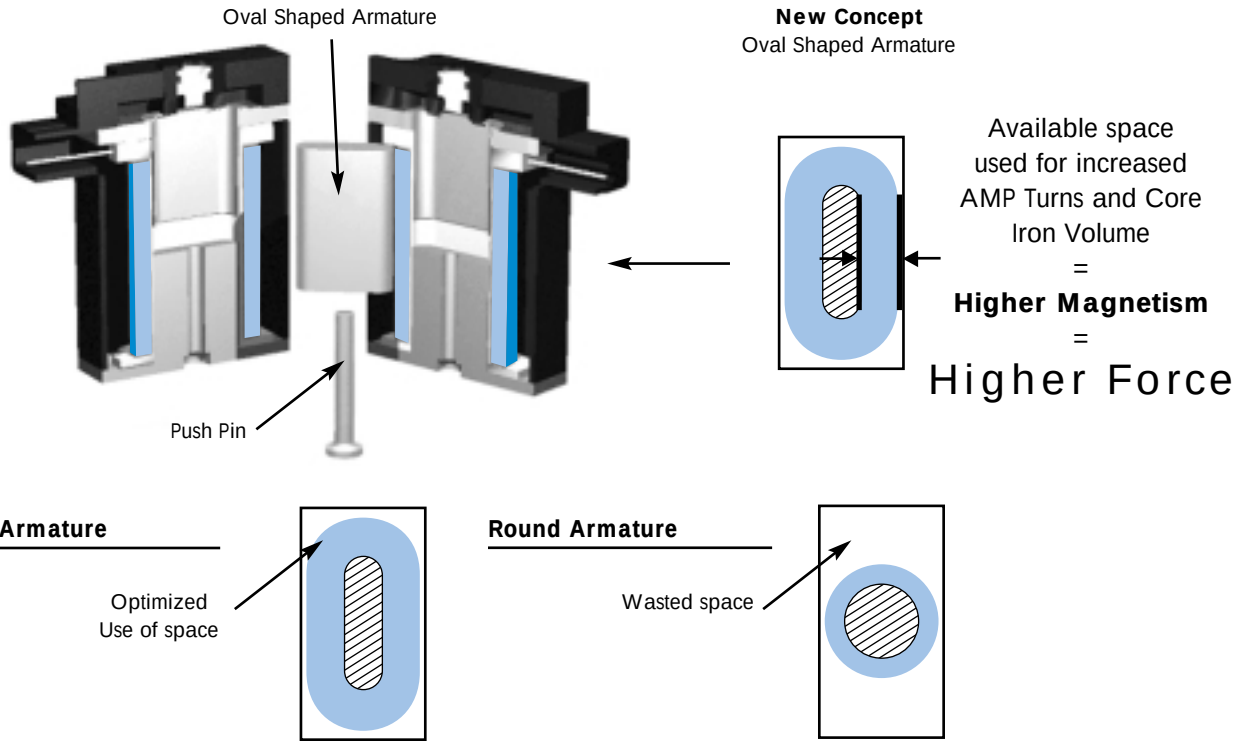
The patented Latching Solenoid is another new offering to the MAC product line. The latching solenoid provides the function of a double solenoid operated valve utilizing only one solenoid.

I. OVAL SHAPED ARMATURE SOLENOID – Maximized Shifting Forces

Compared with typical round armature solenoids, the oval shaped armature design results in much higher shifting forces due to the following:

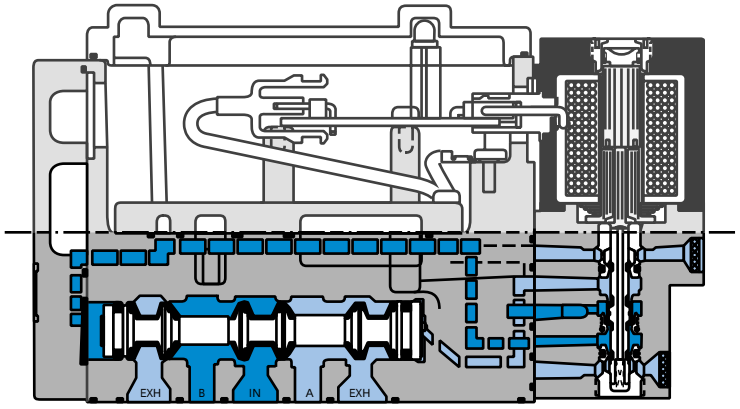
- Increased coil windings (amp turns)
- Increased core iron volume

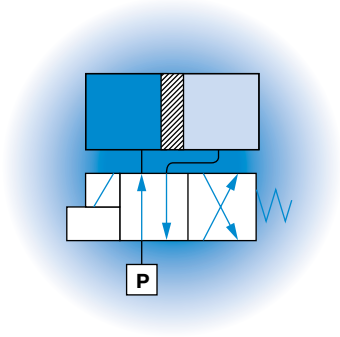
With more amp turns and core iron than conventional round armature designs, more shifting force is available to shift through contaminated air resulting in reliable shifting valves.



II. MAC's 4-WAY PILOT SYSTEM – Maximized Shifting Forces

The balanced 4-way pilot valve provides maximum shifting forces in both directions by supplying air alternately to each end section of the pool, similar to double acting rodless cylinder. This system provides maximized shifting forces, equal forces at energization and de- energization, with no resistance to shiftinf at either end. The result is increased shifting reliability and faster, more consistent response times.





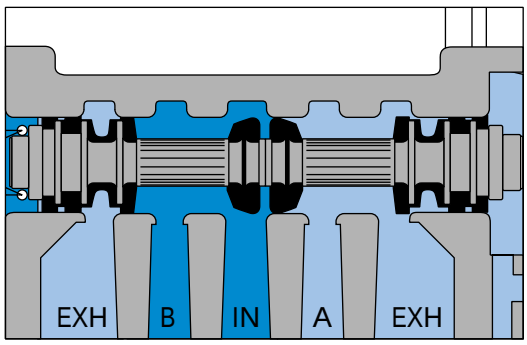
New concept : 4-way pilot

III. MAC'SPATENDED BONDED SPOOL AND BORE – Balanced, Wiping Actin, Minimized Friction

MAC invented the bonded spool and bore combination ensuring balanced operation, builtin wiping action to contend with air line contaminants with minimal friction. Precision ground and chemically hardened bonded seals control compression and eliminates creep leading to optimum sealing with minimum resistance to shifting. Built in lubricants in the rubber compound enhances non lube service and extends seal life.

A precision machined bore, roller burnished ans polished, results in hard smooth surfaces with a glasslike finish to help minimize friction and wear. The end result is exceptionally long sea life.

MAC's short stroking, lightweight aluminum spools produce fast, repeatable response times.



MAC's Bonded Spool and Bore

- Balance
- Wiping Action
- Minimized Friction
- Long Life

IV. MAC's PATENDED LATCHING SOLENOID – Eliminates one Solenoid, Simplics Wiring, Reduces Package Size

MAC's latching solenoid technology provides the function of a double solenoid operated valve utilizing only one solenoid.

Typical 2 position direct operated double solenoid valves use two solenoids with spool/bore technology. When the power is removed from either solenoid, the pool position and valve function is maintained.

With direct acting solenoid valves, poppets with their inherent short strokes are not typically used as they cannot maintain sealing position when both solenoids are deenergized. As a consequence, longer stroking spool type solenoid valves are used which results in lower shifting forces. MAC's latching solenoid technology eliminates the sealing issue with poppets when no electrical signal is applied, by maintaining solenoid force, ensuring adequate sealing, while using short stroking poppets resulting in high shifting forces.

MAC's latching solenoid only requires one solenoid and correspondingly one plug-in and one conduit wireway verus two for conventional double solenoid valve, saving space, weight and cost. An added benefit of a latching solenoid valve when mounted on a circuit bar is the additional option of side cylinder ports.

HOW IT WORKS

Unlike a spool and bore valve, a poppet valve requires that a force be continuously applied to either end of the poppet to ensure that proper sealing occurs. If another solenoid was simply added to the valve to create a double solenoid valve, power would be need to constantly applied to either solenoid for the valve function properly (see Figure 1). I the poppet valve is converted to a spool and bore type valve design, the longer stroke of the spool and solenoid would result in lower net shifting forces (see Figure 2), compromising the valves shifting reliability.

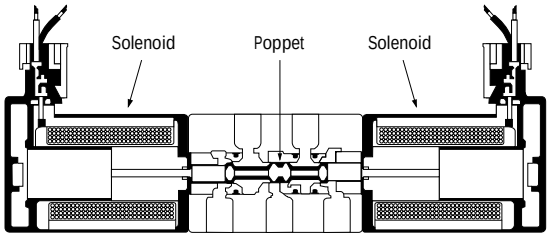


Figure 1 : Double Solenoid Poppet

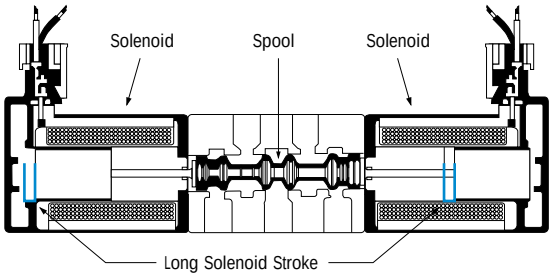


Figure 2 : Double Solenoid Spool Design

The latching solenoid overcomes these problems by introducing a powerful permanent magnet armature assembly which magnetically latches itself to the pole piece and in turn keeps the poppet sealed against the conical seats when the power is removed from the solenoid. To shift the poppet in the opposite direction, the polarity of the voltage applied to the solenoid leads is reversed and attractive force between the permanent magnet armature assembly and the pole piece is reduced. The return spring in the valve then shifts the poppet to its other sealing position and the permanent magnet armature assembly is then magnetically attracted to the upper latch. The upper latch prevents the permanent magnet armature assembly for attracting itself back to the pole piece when the voltage is removed. Reversing the polarity again to the solenoid lead wires will create a powerful attractive force between the permanent magnet armature assembly to the pole piece and away from the upper latch which will correspondingly move the poppet to the other shifted position.

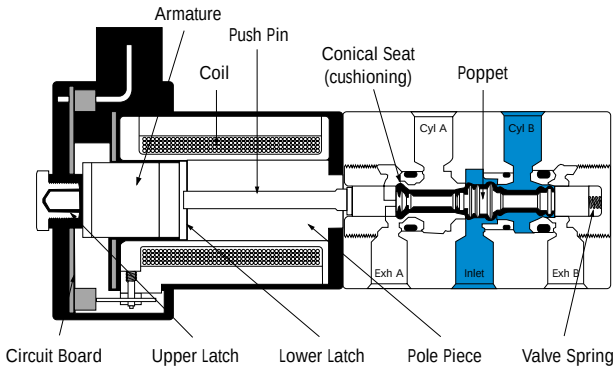


Figure 3 : Latching Solenoid Design

WIRING INSTRUCTIONS AND OPTIONS

As shown in Figure 4, a conventional double solenoid valve requires that the pair of lead wires from each solenoid be wired to an appropriate voltage source, MAC's latching solenoid technology has the option of being wired in one of the three (3) currently available methods.

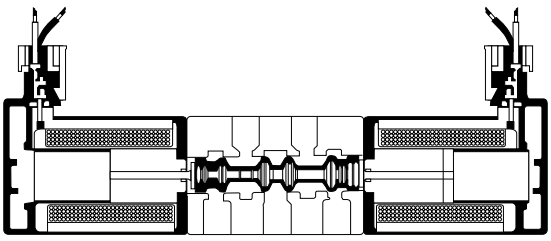
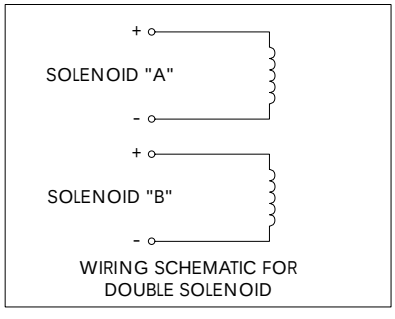
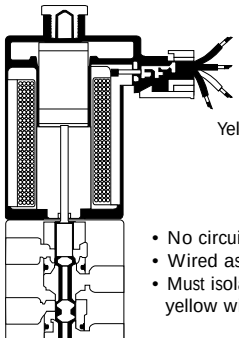


Figure 4 : Conventional Double Solenoid



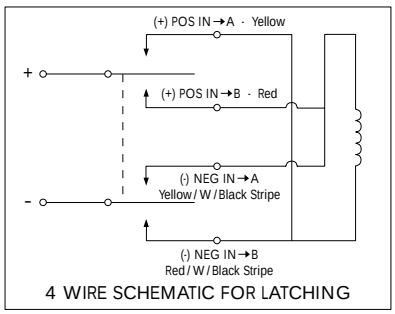
FOUR WIRE

As shown in Figure 5, the four wire method enables coil to be wired as if it were a conventional double solenoid. By connecting the yellow lead wire to positive voltage and the yellow lead wire with black stripe to negative, the valve will be open to cylinder port"A". When positive voltage is supplied to the red lead wire and negative to the red lead with a black stripe, the valve will now be open to cylinder port"B". Since the negative red and yellow lead wires are internally connected together, the supply voltage for each pair of yellow and red lead wires must be isolated from the other pair (see diagram). Also, power must not be applied to all four leads simultaneously or a short cicuit condition will occur possibly damaging the voltage source.



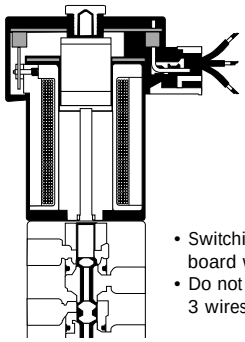
- No circuit board needed
- Wired as conventional double
- Must isolate pairs of red and yellow wires from each other

Figure 5 : Four Wire Latching



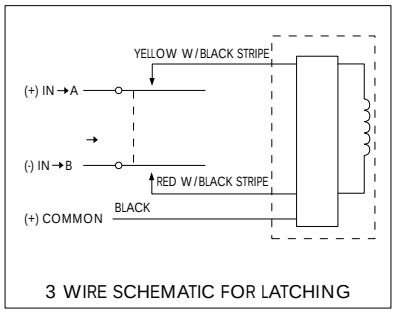
THREE WIRE

Unlike the two wire method (see Figure 7) which requires the user to provide the polarity switching circuitry, the three wire method incorporates the polarity switching circuitry within the solenoid enclosure (see Figure 6). The black lead wire provided must be connected to positive and is used as a common. When negative voltage is supplied to the yellow lead wire with a black stripe the valve will be open to cylinder port "A". When the negative voltage is removed from the yellow lead wire with the black stripe and supplied to the red lead wire with a black stripe, the valve will now be open to cylinder port "B". Applying voltage to all three wires simultaneously or with the wrong polarity will cause permanent damage to the switching circuitry in the solenoid cover, and the valve won't work.



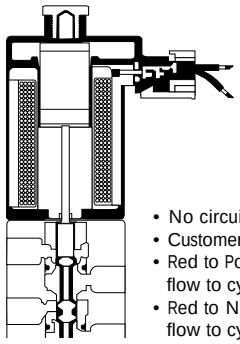
- Switching done on circuit board within valve
- Do not apply power to all 3 wires simultaneously

Figure 6 : Three Wire Latching



TWO WIRE

The two wire method shown in Figure 7, provides a black and red lead wire connected to the solenoid. The user must provide the polarity switching circuitry to these leads in order to shift the valve to its two positions. By applying positive DC voltage to the red lead wire and negative to the black, the valve will be open to cylinder port "A". When the polarity of the voltage is externally reversed to the lead wires the valve will now become open to cylinder port "B".



- No circuit board needed
- Customer must switch polarity of voltag
- Red to Positive and Black to Negative y flow to cylinder port A
- Red to Negative and Black to Positive y flow to cylinder port B

Figure 7 : Two Wire Latching

AVAILABLE OPTIONS

The 2 and 4 wire connections are available in both a flying lead and plug-in cover. The 3 wire connection is only available in the plug-in style cover. All 2 and 4 wire cover is standard. The LED will illuminate red for cylinder "A" operation and green for cylinder "B" operation.

The 3 wire connection must be used for valves connected to either a multi-pin connector or a serial manifold. See attached chart showing maximum number of solenoids per connector. Mixing single solenoids with latching solenoids on a circuit bar is possible since each station of the bar is wired for a latching coil. The circuit bar must be ordered is also available, please consult factory.

HOW TO ORDER

The numbering system for a latching solenoid differs from the numbering system for a single solenoid valve. The letter "L" within the model number indicates a latching solenoid, while the letter "G" or "H" in the same position of the model number indicates a single solenoid valve.

Introduction

Let us show you via high performance demonstration kits and animated software,

HOW MAC'S PERFORMANCE ADVANTAGES HELP MAKE YOUR EQUIPMENT MORE RELIABLE - FASTER - MORE REPEATABLE.

TLD

Traveling Lab Demonstration measures critical valve performance characteristics - *Shifting forces, Response Time, Speed, Repeatability and Flow.*

PLD

Proportional Lab Demonstration measures critical proportional regulation characteristics - *Response Time, Accuracy, Hysterisis, Repeatability and Flow.*

Animation

Animated Software shows inner workings of various Air Valves Designs - *Powerful educational tool for learning about how air valves function.*

Other MAC VALVE literature:

DESCRIPTION	CATALOG NUMBER
CURRENT TECHNOLOGY	999CTCA
BUILDING BLOCKS BROCHURE	999ADV
CIRCUIT BAR CATALOG	999CBCA
PROPORTIONAL VALVE CATALOG	999PPCA
CATALOG CD	999CCDB
SERIAL INTERFACE PRODUCTS	9999SI
MACONNECT SYSTEM	CONSULT FACTORY

Introduction

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

MAC Valves 18 month guarantee plus lifetime coil guarantee

The MAC Valves organization has established a reputation over many years for fulfilling the needs and requirements of the users of its products.
All MAC Valves are quality products specifically designed and built for long and rugged service. Therefore, all valves appearing in this catalog are guaranteed for a period of eighteen months from the original date of shipment from our factory. In addition to this eighteen month Guarantee, MAC Valves, Inc. guarantees the electrical coils on every one of the valves listed in this catalog for life. LIMITATION OF GUARANTEE: This Guarantee is limited to the replacement or rebuilding of any valve which should fail to operate properly. Valves, under the MAC Guarantee, must be returned (with or without bases) transportation prepaid and received at our factory within the Garantee period. They will be returned to the customer at the expense of MAC Valves, Inc., and will carry the same guarantee as provided under the Flat Rate Rebuild Program. DISCLAIMER OF GUARANTEE: No claims for labor, material, time, damage or transportation are allowable nor will any valve be replaced or rebuilt under this guarantee which has been damaged by the purchaser not in the normal course of its use and maintenance during the warranty period. The guarantee does not apply to loss or damage caused by fire, theft, riot, explosion, labor dispute, act of God, or other causes beyond the control of MAC Valves, Inc. MAC Valves, Inc. shall in no event be liable for remote, special or consequential damages under the MAC Guarantee, nor under any implied warranties, including the implied warranty of merchantability.
The above Guarantee is our manner of extending the engineering and service resources of the MAC Valves, Inc. organization to assure our customer long, and continued satisfaction.

The flat rate rebuild program

Valves no longer covered by the MAC Guarantee can be rebuilt under the Flat Rate Rebuild program. Our constant research and testing program is dedicated to extending the life of our valves and making them even more reliable under the most adverse operating conditions. Valves returned under this program are completely disassembled , inspected, rebuilt to current operating standards wherever possible, tested and returned within a few weeks for a nominal flat rate charge. All rebuilt valves carry for 90 days from date of shipment from our factory the same guarantee as provided for new valves.

Pneumatic functions

All valves inside the MAC product range allow for multiple pneumatic functions.
Direct solenoid and solenoid pilot operated valves could be used as 2 ways, 3 ways (NO, NC) or 4 ways.
When plugging one orifice to achieve a 2 ways function (or 3 ways), it will not affect the valve operation.

- Direct solenoid valves 3 ways : universal
  The following functions are available

  - 3 ways NC
  - 3 ways NO
  - 2 ways NC
  - 2 ways NO
  - Selector
  - Divertor

- Direct solenoid valves 4 ways :
  The following functions are available

  - 4 ways
  - 3 ways NC
  - 3 ways NO
  - 2 ways NC
  - 2 ways NO
  - Divertor

- Pilot operated valves 3 ways :
  The following functions are available

  - 3 ways NC
  - 3 ways NO
  - 2 ways NC
  - 2 ways NO
  - Selector : the highest pressure is connected to the IN port; the lowest pressure is connected to the EXH port. (Use external pilot when the highest pressure is less than 2 bar)
  - Divertor (consult factory)

- Pilot operated valves 4 & 5 ways :
  The following functions are available

  - 4 or 5 ways
  - 3 ways NC
  - 3 ways NO
  - 2 ways NC
  - 2 ways NO
  - Selector (except 3 positions)
  - Divertor (consult factory).

EVERY VALVE FULLY TESTED PRIOR TO SHIPMENT

Section 1 Direct solenoid and solenoid pilot operated valves

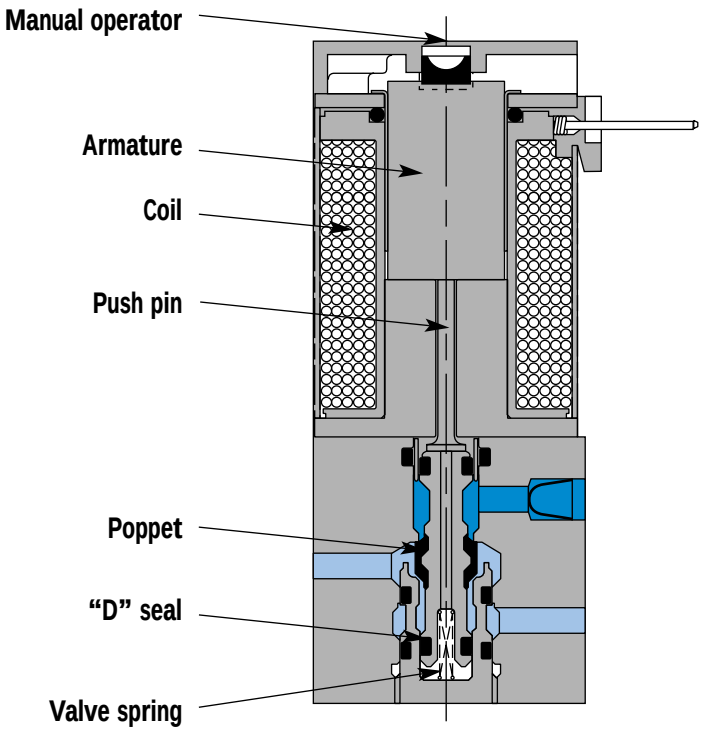
Function	Port size	Flow (Max) Nl/min	Individual mounting							Manifold mounting											Series
			Inline	Sub-base non "plug-in"	Sub-base "plug-in"	Sub-base/ manifold base non "plug-in" with latching solenoid	Sub-base/ manifold base "plug-in" with latching solenoid	Valve only – No base non "plug-in" Conform to ISO 5599/1	Valve only – No base "plug-in" Conform to ISO 5599/2	stacking	Manifold base non "plug-in"	Manifold base "plug-in"	Manifold base "plug-in" with pressure regulators	Manifold base "plug-in" with flow controls	Manifold base "plug-in" with PR & FC	Sub-base/ manifold base non "plug-in" with latching solenoid	Sub-base/ manifold base "plug-in" with latching solenoid	Sub-base non "plug-in"	Sub-base "plug-in"	Valve only – No base non "plug-in" Conform to ISO 5599/1	Valve only – No base "plug-in" Conform to ISO 5599/2	
3/2 - 2/2	M5	120	■																			34
3/2	G1/8"	300	■									■	■									36
3/2	G1/8" - M5	300								■												
3/2	G1/8"	400		■																		32
3/2	M5 - M7	400			■	■	■				■	■				■	■					
3/2	G1/8" - G1/4"	500	■	■																		37
3/2	G1/8"	1200		■	■	■	■				■	■				■	■					38
3/2 - 2/2	G1/8" - G1/4"	1500	■																			52
3/2 - 2/2	G3/4" - G1"	20000	■																			67
5/2	M5	100	■																			44
4/2	G1/8" - M5	300	■							■												46
4/2	G1/8"	300										■	■	■	■							
5/2 - 5/3	M5 - M7	400		■	■						■	■				■	■					42
5/2	M5 - M7	400				■	■									■	■					
5/2	G1/8" - G1/4"	500	■	■						■		■										47
5/2 - 5/3	G1/8"	1100		■	■						■	■										48
5/2	G1/8"	1100				■										■						
5/2	G1/8"	1000					■										■					
5/2 - 5/3	G1/8" - G1/4"	1000	■	■																		400
5/2 - 5/3	G1/8" - G1/4" - G3/8"	1200		■	■																	92
5/2 - 5/3	G1/4" - G3/8"	1200																■	■			
5/2 - 5/3	G3/8" - G1/2"	3800	■															■	■			93
5/2 - 5/3	G1/4" - G3/8" - G1/2"	3400		■	■																	
5/2 - 5/3	G1/4" - G3/8"	1800						■	■											■	■	ISO 1
5/2 - 5/3	G3/8" - G1/2"	3000						■	■											■	■	ISO 2
5/2 - 5/3	G1/2" - G3/4"	6100						■	■											■	■	ISO 3

Series 34

Individual mounting

Inline

Series



SERIES FEATURES

- High force MACSOLENOID®.
- Universal porting.
- #10-32 or M5 ports.
- Rated for lubricated or non-lubricated service.
- 10mm direct operated.
- Cylinder port in valve or in circuit bar.

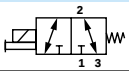
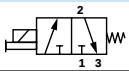
Series 34

Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-NC	M5	120 Nl/min	Inline	

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. Patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Manual operator standard on all valves.

HOW TO ORDER

Port size	Universal valve	NC only valve
		
M5	34B-ABA-G *xxx-xxx*	34B-ABB-G *xxx-xxx*

SOLENOID OPERATOR ➤ G ***XXX-XXX*** *

XX	Voltage
AA	120 V~/2,5W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking

XX	Electrical connection
KA	Mini connector
KT	Mini connector with light
BA	Flying leads
BT	Flying leads with light
KC	Mini connector with rectifier and light

Note : AC voltage requires connector with rectifier.
* Click here for other options available.

MAC

Series 3 4

100% OF PRODUCTION TESTED 100%

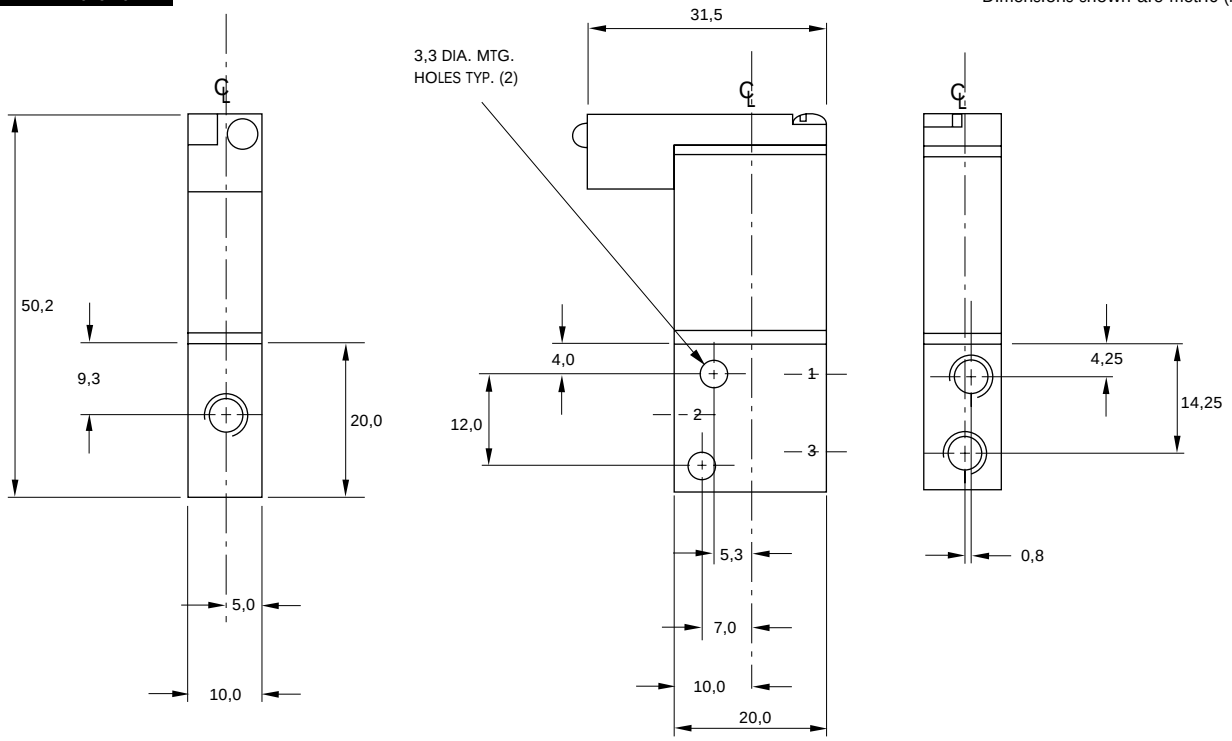
WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum 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 :	1,8 mm
Flow :	4 W : 120 Nl/min (Cv 0,12) – 2,5 W : 100 Nl/min (Cv 0,10) – 1,8 W : 60 Nl/min (Cv 0,06)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	4 W – 2,5 W – 1,8 W
Response times : (with 4 W coil)	Energize : 3,4 ms De-energize : 1,5 ms

DIMENSIONS

Dimensions shown are metric (mm)



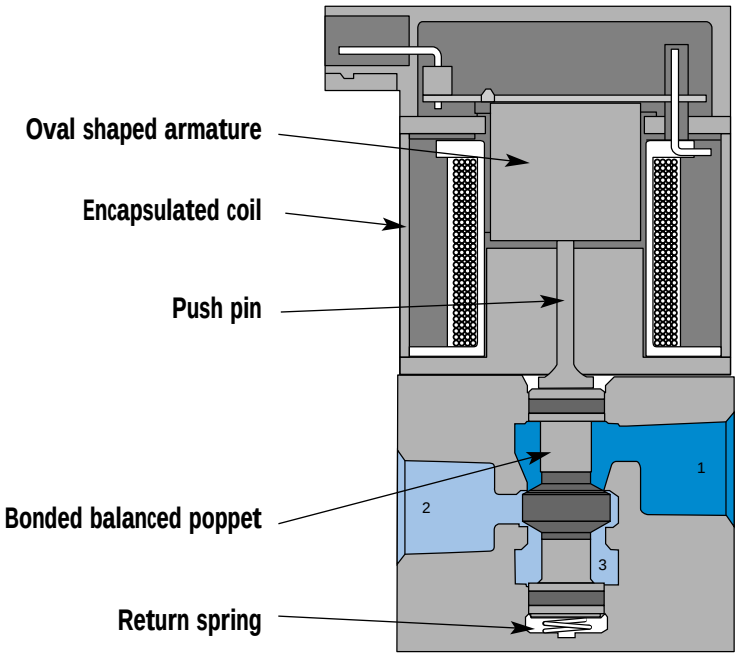
Individual mounting

Inline

Manifold mounting

Stacking	Manifold base "plug-in"	Manifold base "plug-in" with pressure regulators

Series



SERIES FEATURES

- Patented high force MACSOLENOID® for fastest possible response times.
- Bonded balanced poppet for high flow, precise repeatability, and consistent operation.
- Balanced poppet permits versatility in function — may be used as 3-way or 2-way normally open or normally closed and may be used for vacuum, divertor, or selector applications.
- Extremely high cycle rate capability.
- Use on lube or non-lube service.
- Manual overrides as standard.
- Various solenoid enclosures and plug-in connectors.
- Optional surge suppression available.
- Low wattage DC solenoids — down to 1.8 watts.
- Rectified AC voltage.

MAC

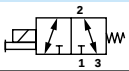
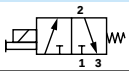
Series 36

Function	Port size	Flow (Max)	Individual mounting	Series
3 / 2	G1 / 8 "	300 Nl / min	Inline	

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Patented solenoid develops high shifting forces.
3. Short stroke with high flow.
4. Higher forces result in lower wattages for given flow.
5. Powerful return spring.

HOW TO ORDER

Port size	Universal valve	NC only valve
		
G1 / 8 "	36A-ACA-J *xxx-xxx*	36A-ACB-J *xxx-xxx*

SOLENOID OPERATOR ➤

J ***XXX-XXX**** (-G) Add "G" for ground

XX	Voltage
AA	120V~/5,4W
DA	24V=/5,4W
DB	12V=/5,4W
DC	24V=/2,4W
DD	12V=/2,4W

X	Lead wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BA	Flying leads
GA	MAC JAC solenoid plug-in
GB	MAC JAC solenoid plug-in with diode
GD	MAC JAC solenoid plug-in with light
GG	MAC JAC solenoid plug-in rectifier

* Click here for other options available.

Note : - AC voltage requires connector with rectifier.
- The MAC JAC connector is similar to the connector used for valves that incorporate the "G" type solenoid. With the MAC JAC, washdown capability is possible. Consult factory for washdown modification number.

MAC

Series 3 6

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

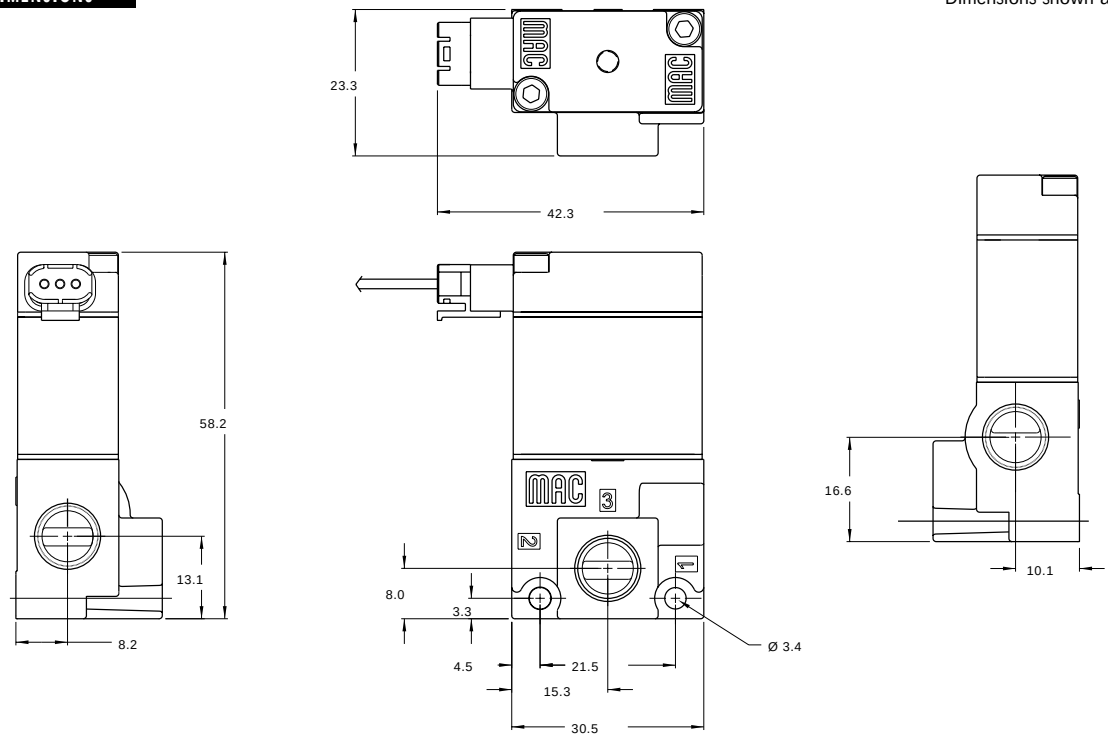
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum 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 :	3,3 mm
Flow (at 6 bar, ΔP=1bar) :	G1/8" : 300 Nl/min (Cv 0 ,3)
Coil :	Epoxy encapsulated – Class A wires – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,4 W – 2,4 W – 1,0 W

Option : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

MAC

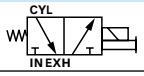
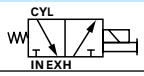
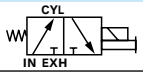
Series 36

Function	Port size	Flow (Max)	Manifold mounting	Series
3/2	G1/8" – M5	300 Nl/min	Stacking	

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Patented solenoid develops high shifting forces.
3. Short stroke with high flow.
4. Higher forces result in lower wattages for given flow.
5. Powerful return spring.

HOW TO ORDER

Port size	NC only stacking	NC stacking Universal poppet	NO stacking Universal poppet
			
G1/8"	36A-SCB-J *xxx-xxx*	36A-SCC-J *xxx-xxx*	36A-SCD-J *xxx-xxx*
M5	36A-SDB-J *xxx-xxx*	36A-SDC-J *xxx-xxx*	36A-SDD-J *xxx-xxx*

SOLENOID OPERATOR ➤

J ***XXX-XXX**** (-G) Add "G" for ground

XX	Voltage
AA	120V~/5,4W
DA	24V=/5,4W
DB	12V=/5,4W
DC	24V=/2,4W
DD	12V=/2,4W

X	Lead wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BA	Flying leads
GA	MAC JAC solenoid plug-in
GB	MAC JAC solenoid plug-in with diode
GD	MAC JAC solenoid plug-in with light
GG	MAC JAC solenoid plug-in rectifier

* Click here for other options available.

Note : - AC voltage requires connector with rectifier.
- The MAC JAC connector is similar to the connector used for valves that incorporate the "G" type solenoid. With the MAC JAC, washdown capability is possible. Consult factory for washdown modification number.

End plate kit required (port size G1/4") : M-36001-01P.

BODY TYPE OPTIONS

36A-**S**CB-J*xxx-xxx*

S Stacking body
T Stacking body with bottom inlet

MAC

Series 36

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

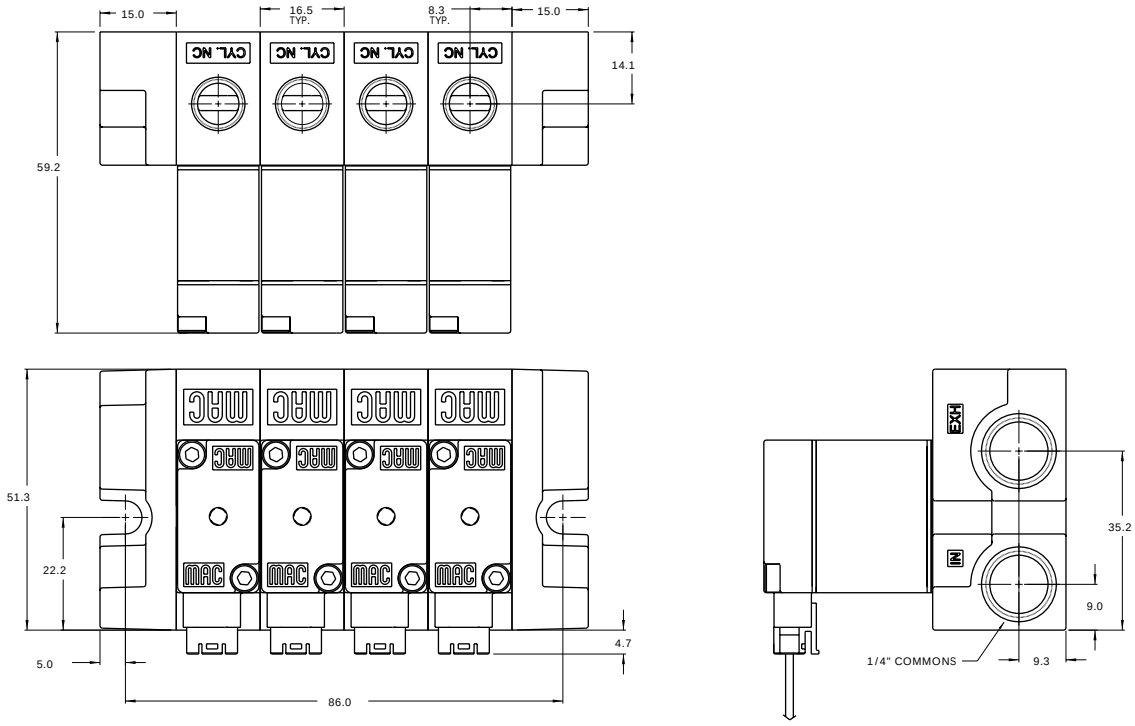
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	3,3 mm
Flow (at 6 bar, ΔP=1bar) :	G1/8" : 300 Nl/min (Cv 0 ,3) – M5 : 300 Nl/min (Cv 0,3)
Coil :	Epoxy encapsulated – Class A wires – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,4 W – 2,4 W – 1,0 W

Option : • NPTF threads

Spare parts : • Inlet & exhaust isolator plate : N-36001 • Inlet isolator : N-36002
• Exhaust isolator : N-36003 • Tie rod (x2) : 79411

DIMENSIONS

Dimensions shown are metric (mm)



Consult "Precautions" before use, installation or service of MAC Valves..

MAC

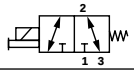
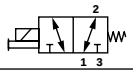
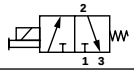
Series 36

Function	Port size	Flow (Max)	Manifold mounting	Series
3/2	G1/8"	300 Nl/min	Manifold base "plug-in"	

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Patented solenoid develops high shifting forces.
3. Short stroke with high flow.
4. Higher forces result in lower wattages for given flow.
5. Powerful return spring.

HOW TO ORDER

Port size	Universal Valve Normally Closed	Universal Valve Normally Open	Normally Closed Only
			
Valve less base	36A-J00-00-J *xx*P-*xxx*	36A-K00-00-J *xx*P-*xxx*	36A-L00-00-J *xx*P-*xxx*
G1/8"	36A-JSC-AE-J *xx*P-*xxx*	36A-KSC-AF-J *xx*P-*xxx*	36A-LSC-AE-J *xx*P-*xxx*

SOLENOID OPERATOR ➤

J ***XX*** P-***XXX**** (-G) Add "G" for ground

XX	Voltage
AA	120V~/5,4W
DA	24V=/5,4W
DB	12V=/5,4W
DC	24V=/2,4W
DD	12V=/2,4W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
FA	Base plug-in
FB	Base plug-in with diode
FG	Base plug-in with rectifier

* Click here for other options available.
Note : AC voltage requires connector with rectifier.

Example : Manifold base only : 36A-0SC-AC (Normally closed manifold base).

End plate quit required (port size G1/4") : M-46003-01P.

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67
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42
47
48
400
92
93
ISO 1
ISO 2
ISO 3

MAC

Series 3 6

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

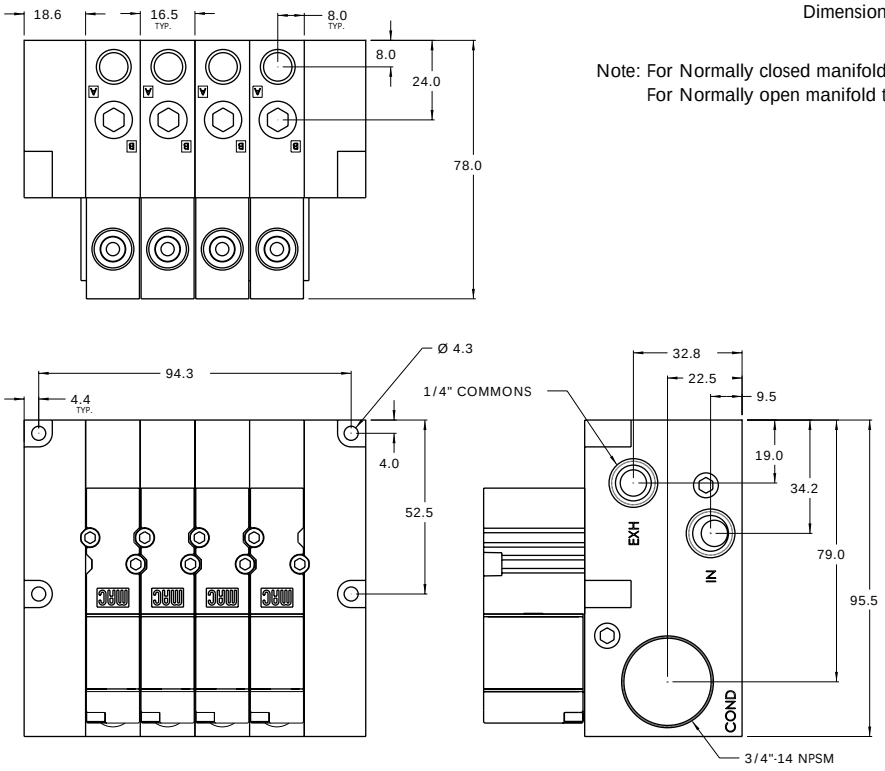
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum 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 :	3,3 mm
Flow (at 6 bar, ΔP=1bar) :	1,8W : 200 Nl/min (Cv 0.20) – 2,4W : 200 Nl/min (Cv 0,20) – 5,4W : 300 Nl/min (Cv 0,30)
Coil :	Epoxy encapsulated – Class A wires – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,4 W – 2,4 W – 1,8 W

Option : • NPTF threads

Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002
• Tie rod (x2) : 79443

DIMENSIONS



Dimensions shown are metric (mm)

Note: For Normally closed manifold the “E” port is plugged.
For Normally open manifold the “A” port is plugged.

MAC

Series 36

Function	Port size	Flow (Max)	Manifold mounting	Series
3/2	G1/8"	300 Nl/min	Manifold base "plug-in" with pressure regulators	

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Patented solenoid develops high shifting forces.
3. Short stroke with high flow.
4. Higher forces result in lower wattages for given flow.
5. Powerful return spring.

34
36
32
37
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52
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44
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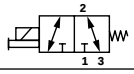
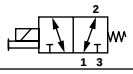
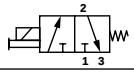
400
92
93
ISO 1
ISO 2
ISO 3

HOW TO ORDER

Port size	Universal Valve Normally Closed	Universal Valve Normally Open	Normally Closed Only
			
Valve less base	36A-J00-00-J *xx*P-*xxx*	36A-K00-00-J *xx*P-*xxx*	36A-L00-00-J *xx*P-*xxx*
G1/8"	36A-JSC-AG-J *xx*P-*xxx*	36A-KSC-AH-J *xx*P-*xxx*	36A-LSC-AG-J *xx*P-*xxx*

SOLENOID OPERATOR ➤ J ***XX*** P-***XXX**** (-G) Add "G" for ground

XX	Voltage
AA	120V~/5,4W
DA	24V=/5,4W
DB	12V=/5,4W
DC	24V=/2,4W
DD	12V=/2,4W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
FA	Base plug-in
FB	Base plug-in with diode
FG	Base plug-in with rectifier

* Click here for other options available.
Note : AC voltage requires connector with rectifier.

OPTIONS

36A-JSC-A**G**-J*xx* P-*xxx*

G NC manifold & regulator with slotted stem adjustment
S NC manifold & regulator with locking slotted stem adjustment
J NC manifold & regulator with knob adjustment
H NO manifold & regulator with slotted stem adjustment
T NO manifold & regulator with locking slotted stem adjustment
K NO manifold & regulator with knob adjustment

Note : All manifold bases are only available with a bottom cylinder port.

Example : Manifold base only : 36A-0SC-AJ (Normally closed manifold base & regulator with knob).

End plate quit required (port size G1/4") : M-46003-01P.

MAC

Series 3 6

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum 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 :	3,3 mm
Flow (at 6 bar, ΔP=1bar) :	1,8W : 200 Nl/min (Cv 0.20) – 2,4W : 200 Nl/min (Cv 0,20) – 5,4W : 300 Nl/min (Cv 0,30)
Coil :	Epoxy encapsulated – Class A wires – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,4 W – 2,4 W – 1,8 W

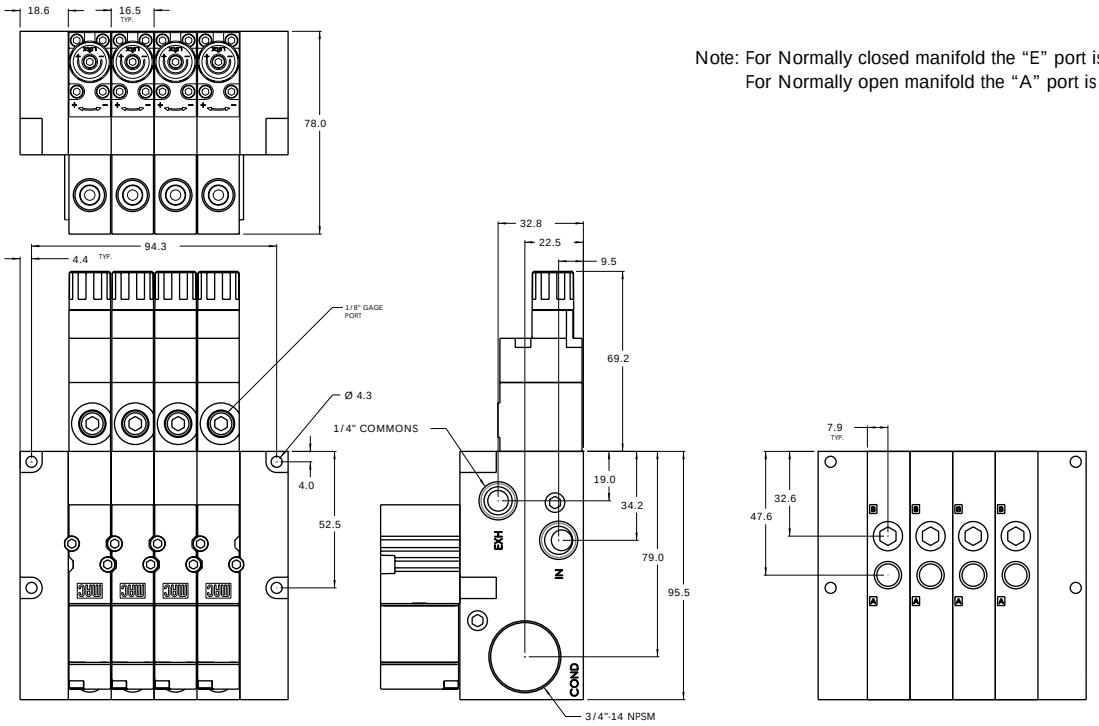
Option : • NPTF threads

Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002
• Tie rod (x2) : 79443

DIMENSIONS

Dimensions shown are metric (mm)

Note: For Normally closed manifold the “E” port is plugged.
For Normally open manifold the “A” port is plugged.



Consult “Precautions” before use, installation or service of MAC Valves..

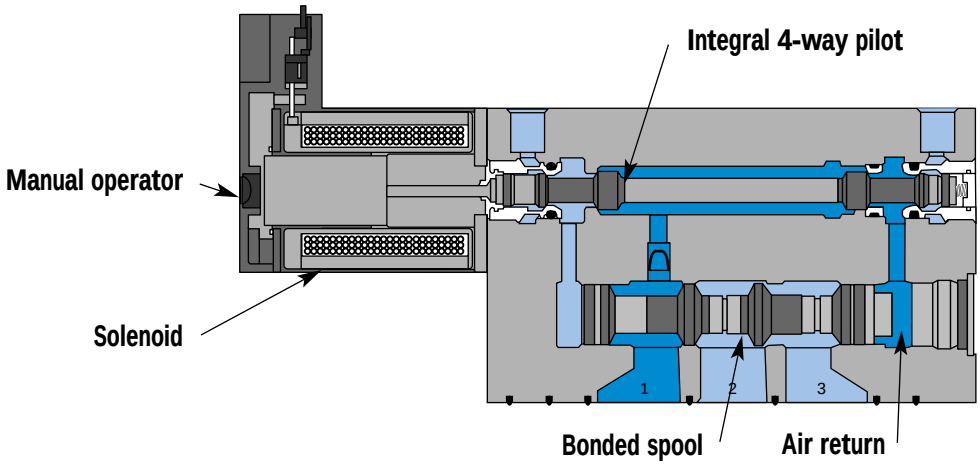
Direct solenoid and solenoid pilot operated valves

Individual mounting

Sub-base non "plug-in"	Sub-base "plug-in"	Sub-base/ manifold base non "plug-in" with latching solenoid	Sub-base/ manifold base "plug-in" with latching solenoid

Manifold mounting

Manifold base non "plug-in"	Manifold base "plug-in"	Sub-base/ manifold base non "plug-in" with latching solenoid	Sub-base/ manifold base "plug-in" with latching solenoid



SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- Internal or external pilot.
- Normally open or normally closed function.
- Universal function (external pilot).
- Rectified AC voltage.
- Larching solenoid technology.

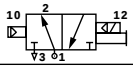
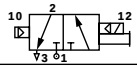
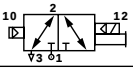
Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC	G1/8"	400 Nl/min	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

1. 3-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 10.5 mm centres).
3. High flow (up to 400 Nl/min).
4. Fast, repeatable response times.
5. Maximum shifting forces in both directions.

HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
				
Valve less base	Internal	32A-BMA-000-G*xxx*-*xxx*	32A-AMA-000-G*xxx*-*xxx*	
	External	32A-BMB-000-G*xxx*-*xxx*	32A-AMB-000-G*xxx*-*xxx*	32A-GMB-000-G*xxx*-*xxx*
G1/8"	Internal	32A-BMA-HAL-G*xxx*-*xxx*	32A-AMA-HAL-G*xxx*-*xxx*	
	External	32A-BMB-HAM-G*xxx*-*xxx*	32A-AMB-HAM-G*xxx*-*xxx*	32A-GMB-HAM-G*xxx*-*xxx*

Note : Above codes are for side port.

STANDARD SOLENOID OPERATOR ➤ G *XXX*-*XXX**

XX	Voltage
AA	120 V~/2,5W
DA	24 V=/1,0W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection**
BA	Flying leads
BT	Flying leads with light
KA	Mini connector
KT	Mini connector with light
KD	Mini connector with rectifier & light & ground

Note : AC voltage requires connector with rectifier.
* Click here for other options available.
** 32 series with non plug-in base configuration must use type "B" or "K" electrical connector.
Latching solenoid also available, click here.

OPTIONS

Pilot/Base Configuration :

32A-x**M**x-x**A**x-Gxxx-xxx

A Individual base – Side port
B Individual base – Bottom port

M Pilot exhaust muffled
R Pilot exhaust piped M5
U Pilot exhaust to main exhaust (not available with external pilot)

MAC

Series 32

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

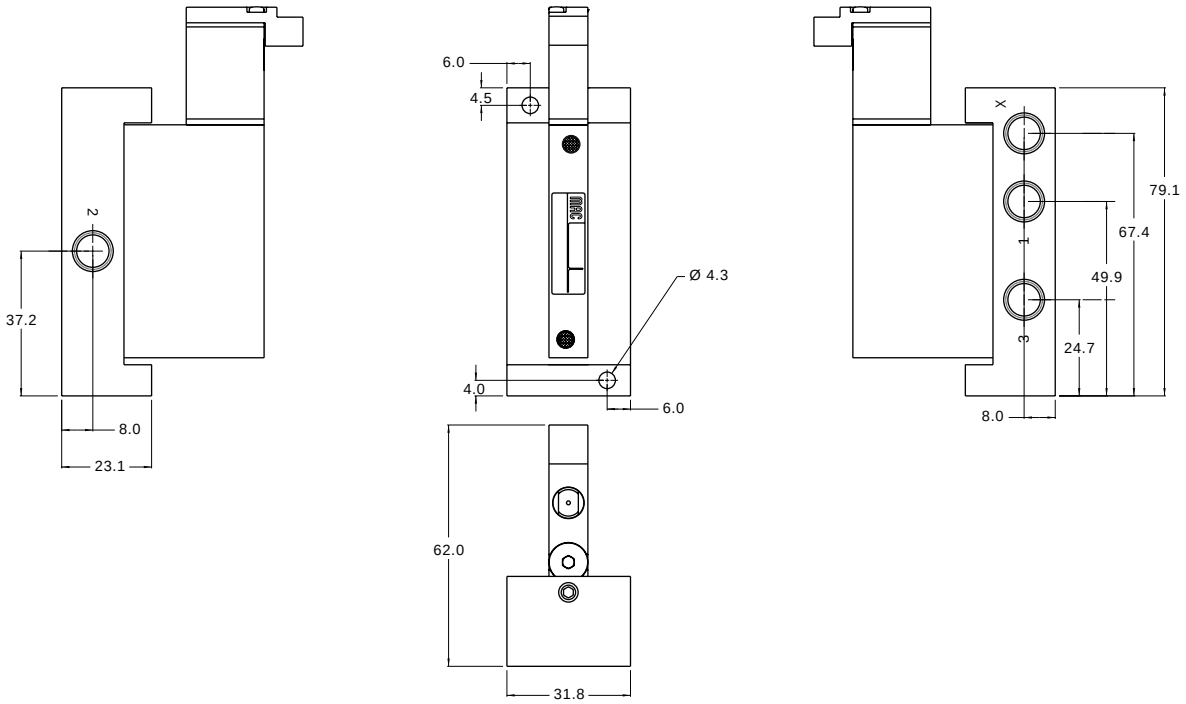
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 8 bar External Pilot : Vacuum to 8 bar
Pilot pressure :	1,3 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 :	3,8 mm
Flow (at 6 bar, ΔP=1bar) :	G1/8" : 400 Nl/min (Cv 0,40)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 5 ms De-energize : 5 ms

Options : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)



MAC

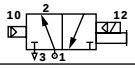
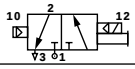
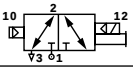
Series 32

Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC	M5, M7	400 Nl/min	Sub-base "plug-in"	

OPERATIONAL BENEFITS

1. 3-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 10.5 mm centres).
3. High flow (up to 400 Nl/min).
4. Fast, repeatable response times.
5. Maximum shifting forces in both directions.

HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
				
Valve less base	Internal	32A-BMA-000-G*xx*P-*xxx*	32A-AMA-000-G*xx*P-*xxx*	
	External	32A-BMB-000-G*xx*P-*xxx*	32A-AMB-000-G*xx*P-*xxx*	32A-GMB-000-G*xx*P-*xxx*
M5	Internal	32A-BMA-GAA-G*xx*P-*xxx*	32A-AMA-GAA-G*xx*P-*xxx*	
	External	32A-BMB-GAB-G*xx*P-*xxx*	32A-AMB-GAB-G*xx*P-*xxx*	32A-GMB-GAB-G*xx*P-*xxx*
M7	Internal	32A-BMA-LAA-G*xx*P-*xxx*	32A-AMA-LAA-G*xx*P-*xxx*	
	External	32A-BMB-LAB-G*xx*P-*xxx*	32A-AMB-LAB-G*xx*P-*xxx*	32A-GMB-LAB-G*xx*P-*xxx*

Note : Above codes are for side port.

STANDARD SOLENOID OPERATOR ➤ G *XX* P-*XXX* *

XX	Voltage
AA	120 V~/2,5W
DA	24 V=/1,0W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection**
DJ	Base plug-in
DT	Base plug-in with light
DD	Base plug-in with rectifier & light & ground

Note : AC voltage requires connector with rectifier.
* Click here for other options available.
** 32 series with plug-in base configuration must use type "D" electrical connector.
Latching solenoid also available, click here.

OPTIONS

Pilot/Base Configuration :

32A-*x***M***x*-*x***A***x*-G*xx* P-*xxx*

A Individual base – Side port
B Individual base – Bottom port

M Pilot exhaust muffled
R Pilot exhaust piped M5
U Pilot exhaust to main exhaust (not available with external pilot)

MAC

Series 32

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

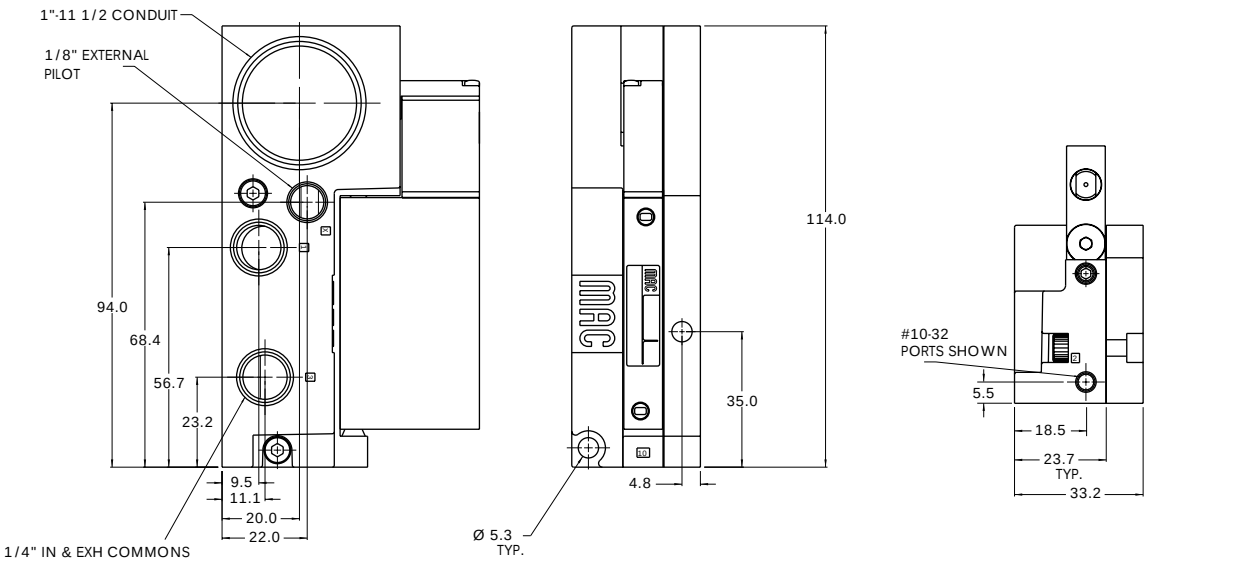
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 8 bar External Pilot : Vacuum to 8 bar
Pilot pressure :	1,3 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 :	3,8 mm
Flow (at 6 bar, ΔP=1bar) :	M5 : 350 Nl/min (Cv 0,35) - M7 : 400 Nl/min (Cv 0,40)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 5 ms De-energize : 5 ms

Options : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)

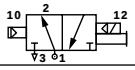
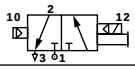
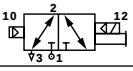


Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC	M5, M7	400 Nl/min	Manifold base non "plug-in"	

OPERATIONAL BENEFITS

1. 3-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 10.5 mm centres).
3. High flow (up to 400 Nl/min).
4. Fast, repeatable response times.
5. Maximum shifting forces in both directions.

HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
				
Valve less base	Internal	32A-BMA-000-G*xxx*-*xxx*	32A-AMA-000-G*xxx*-*xxx*	
	External	32A-BMB-000-G*xxx*-*xxx*	32A-AMB-000-G*xxx*-*xxx*	32A-GMB-000-G*xxx*-*xxx*
M5	Internal	32A-BMA-GJL-G*xxx*-*xxx*	32A-AMA-GJL-G*xxx*-*xxx*	
	External	32A-BMB-GJM-G*xxx*-*xxx*	32A-AMB-GJM-G*xxx*-*xxx*	32A-GMB-GJM-G*xxx*-*xxx*
M7	Internal	32A-BMA-LJL-G*xxx*-*xxx*	32A-AMA-LJL-G*xxx*-*xxx*	
	External	32A-BMB-LJM-G*xxx*-*xxx*	32A-AMB-LJM-G*xxx*-*xxx*	32A-FMB-LJM-G*xxx*-*xxx*

Note : Above codes are for side port.

STANDARD SOLENOID OPERATOR ➤ G *XXX*-*XXX* *

XX	Voltage
AA	120 V~/2,5W
DA	24 V=/1,0W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection**
BA	Flying leads
BT	Flying leads with light
KA	Mini connector
KT	Mini connector with light
KD	Mini connector with rectifier & light & ground

Note : AC voltage requires connector with rectifier.
* Click here for other options available.
** 32 series with non plug-in base configuration must use type "B" or "K" electrical connector.
Latching solenoid also available, click here.

OPTIONS

Base only :

32A-000-*xxx* (i.e. 32A-000-GJL)

Base Configuration :

32A-*x***M***x*-*x***J***x*-G*xxx*-*xxx*

J Manifold base – Side port
K Manifold base – Bottom port

M Pilot exhaust muffled
R Pilot exhaust piped M5
U Pilot exhaust to main exhaust (not available with external pilot)

Note : Manifold assemblies require an end plate kit : M-32003-01-01P (Internal pilot)
M-32003-02-01P (External pilot)

MAC

Series 32

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

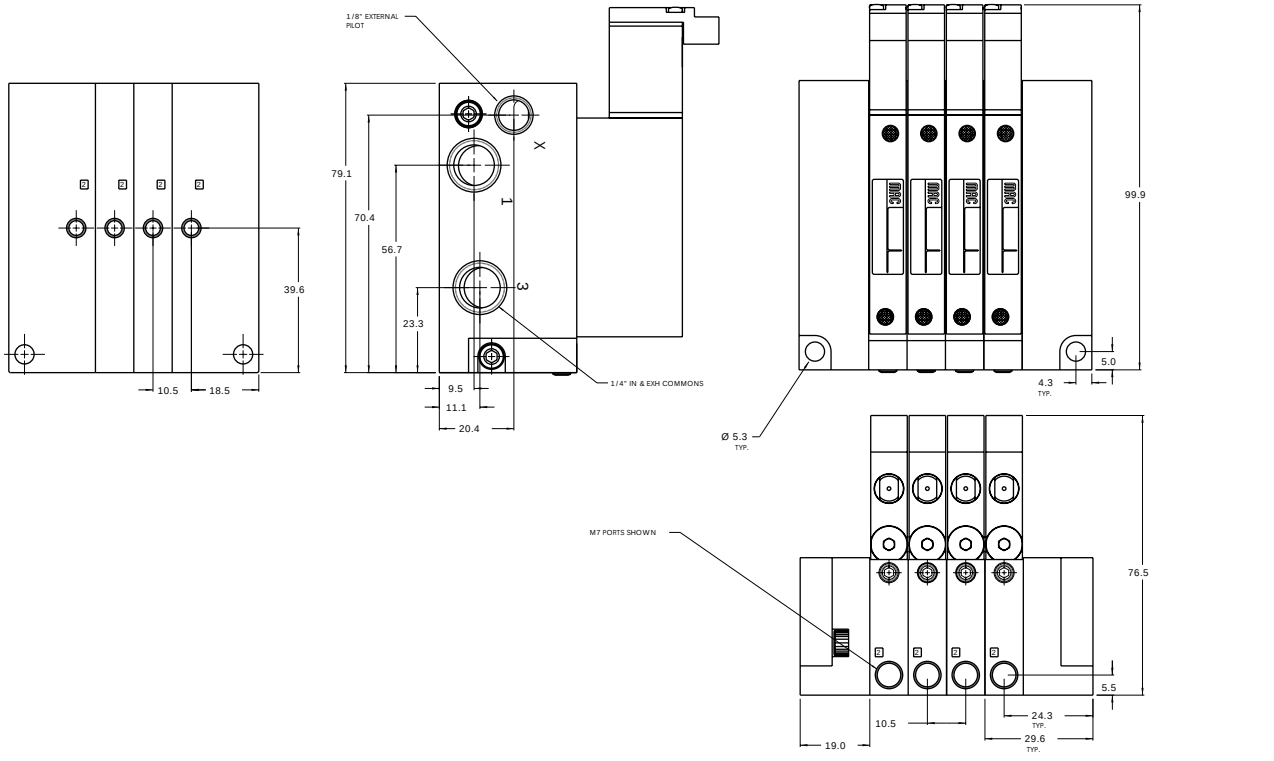
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 8 bar External Pilot : Vacuum to 8 bar
Pilot pressure :	1,3 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 :	3,8 mm
Flow (at 6 bar, ΔP=1bar) :	M5 : 350 Nl/min (Cv 0,35) - M7 : 400 Nl/min (Cv 0,40)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 5 ms De-energize : 5 ms

Options : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)



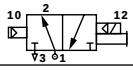
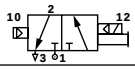
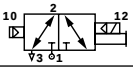
Consult "Precautions" before use, installation or service of MAC Valves..

Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC	M5, M7	400 Nl/min	Manifold base "plug-in"	

OPERATIONAL BENEFITS

1. 3-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 10.5 mm centres).
3. High flow (up to 400 Nl/min).
4. Fast, repeatable response times.
5. Maximum shifting forces in both directions.

HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
				
Valve less base	Internal	32A-BMA-000-G*xx*P-*xxx*	32A-AMA-000-G*xx*P-*xxx*	
	External	32A-BMB-000-G*xx*P-*xxx*	32A-AMB-000-G*xx*P-*xxx*	32A-GMB-000-G*xx*P-*xxx*
M5	Internal	32A-BMA-GJA-G*xx*P-*xxx*	32A-AMA-GJA-G*xx*P-*xxx*	
	External	32A-BMB-GJB-G*xx*P-*xxx*	32A-AMB-GJB-G*xx*P-*xxx*	32A-GMB-GJB-G*xx*P-*xxx*
M7	Internal	32A-BMA-LJA-G*xx*P-*xxx*	32A-AMA-LJA-G*xx*P-*xxx*	
	External	32A-BMB-LJB-G*xx*P-*xxx*	32A-AMB-LJB-G*xx*P-*xxx*	32A-GMB-LJB-G*xx*P-*xxx*

Note : Above codes are for side port.

STANDARD SOLENOID OPERATOR ➤ G *XX* P-*XXX* *

XX	Voltage
AA	120 V~/2,5W
DA	24 V=/1,0W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection**
DJ	Base plug-in
DT	Base plug-in with light
DD	Base plug-in with rectifier & light & ground

Note : AC voltage requires connector with rectifier.
* Click here for other options available.
** 32 series with plug-in base configuration must use type "D" electrical connector.
Latching solenoid also available, click here.

OPTIONS

Base only :

32A-000-*xxx* (i.e. 32A-000-GJA)

Base Configuration :

32A-*xxx*-*x***J***x*-G*xx* P-*xxx*

J Manifold base – Side port
K Manifold base – Bottom port
L Left end manifold base - Side port
M Left end manifold base - Bottom port
N Right end manifold base - Side port
P Right end manifold base - Bottom port

Note : Manifold assemblies consist of (1) left end manifold, (1) right end manifold and middle station manifolds (options "J" or "K").

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ISO 1
ISO 2
ISO 3

MAC

Series 32

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

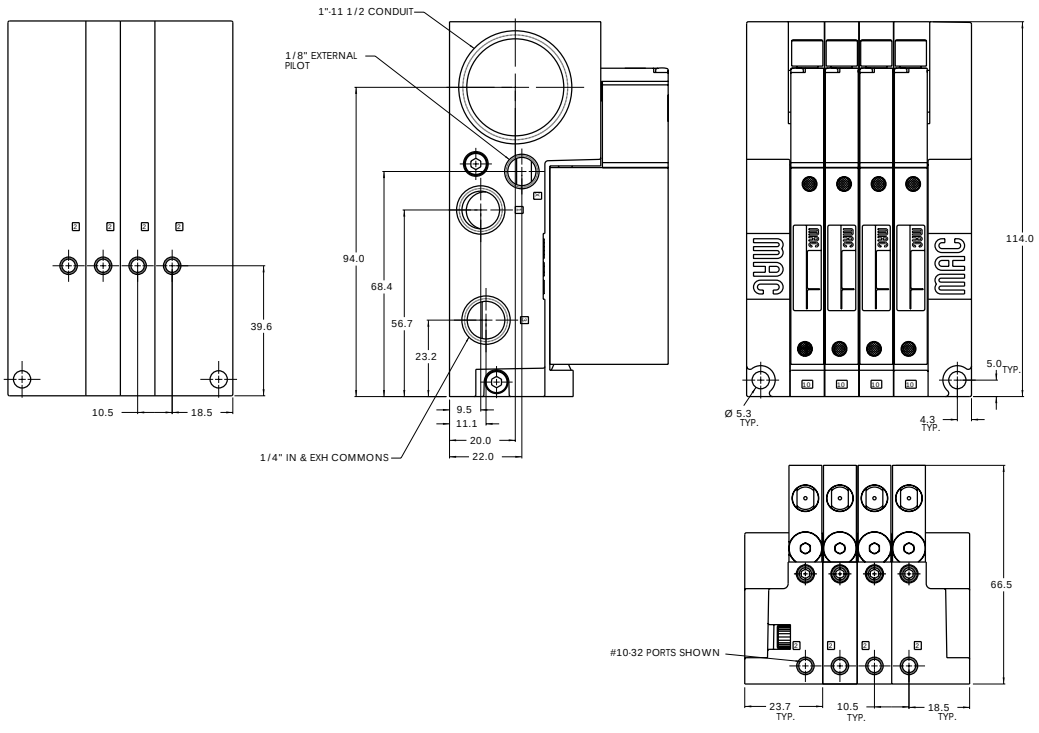
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 8 bar External Pilot : Vacuum to 8 bar
Pilot pressure :	1,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	3,8 mm
Flow (at 6 bar, ΔP=1bar) :	M5 : 350 Nl/min (Cv 0,35) - M7 : 400 Nl/min (Cv 0,40)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 5 ms De-energize : 5 ms

Options :

- NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)



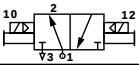
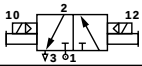
Consult “Precautions” before use, installation or service of MAC Valves..

Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
3/2 NO-NC	M5, M7	400 Nl/min	Sub-base/ manifold base non "plug-in" with latching solenoid	

OPERATIONAL BENEFITS

1. 3-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 10.5 mm centres).
3. High flow (up to 400 Nl/min).
4. Fast, repeatable response times.
5. Maximum shifting forces in both directions.

HOW TO ORDER

Port size	Pilot air	NO valve	NC valve
			
Valve less base	Internal	32A-BMA-000-L*xxx*-*xxx*	32A-AMA-000-L*xxx*-*xxx*
	External	32A-BMB-000-L*xxx*-*xxx*	32A-AMB-000-L*xxx*-*xxx*
M5	Internal	32A-BMA-GAL-L*xxx*-*xxx*	32A-AMA-GAL-L*xxx*-*xxx*
	External	32A-BMB-GAM-L*xxx*-*xxx*	32A-AMB-GAM-L*xxx*-*xxx*
M7	Internal	32A-BMA-LAL-L*xxx*-*xxx*	32A-AMA-LAL-L*xxx*-*xxx*
	External	32A-BMB-LAM-L*xxx*-*xxx*	32A-AMB-LAM-L*xxx*-*xxx*

Note : Above codes are for individual base and side port.

LATCHING SOLENOID OPERATOR ➤ L *XXX*-*XXX* *

XX	Voltage
DF	24 V=/4,0W
HA	24 V=/1,95W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
0	No operator

XX	Electrical connection**
BA	2 Wire Flying leads
BJ	4 Wire Flying leads
KA	2 Wire Plug-in Assembly
KE	4 Wire Plug-in Assembly
LA	3 Wire plug-in assembly (Polarity Switching Cover)

* Click here for other options available.
** Latching 32 series with non plug-in base configuration must use "B", "K" or "L" type electrical connector.

OPTIONS

Pilot/Base Configuration :

32A-*x***M***x*-*x***A***x*-L*xxx*-*xxx*

A Individual base – Side port
B Individual base – Bottom port
J Manifold base – Side port
K Manifoldl base – Bottom port

M Pilot exhaust muffled
R Pilot exhaust piped M5
U Pilot exhaust to main exhaust (not available with external pilot)

Note : Manifold assemblies require an end plate kit: M-32003-01-01P (internal pilot)
M-32003-02-01P (external pilot)

MAC

Series 32

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

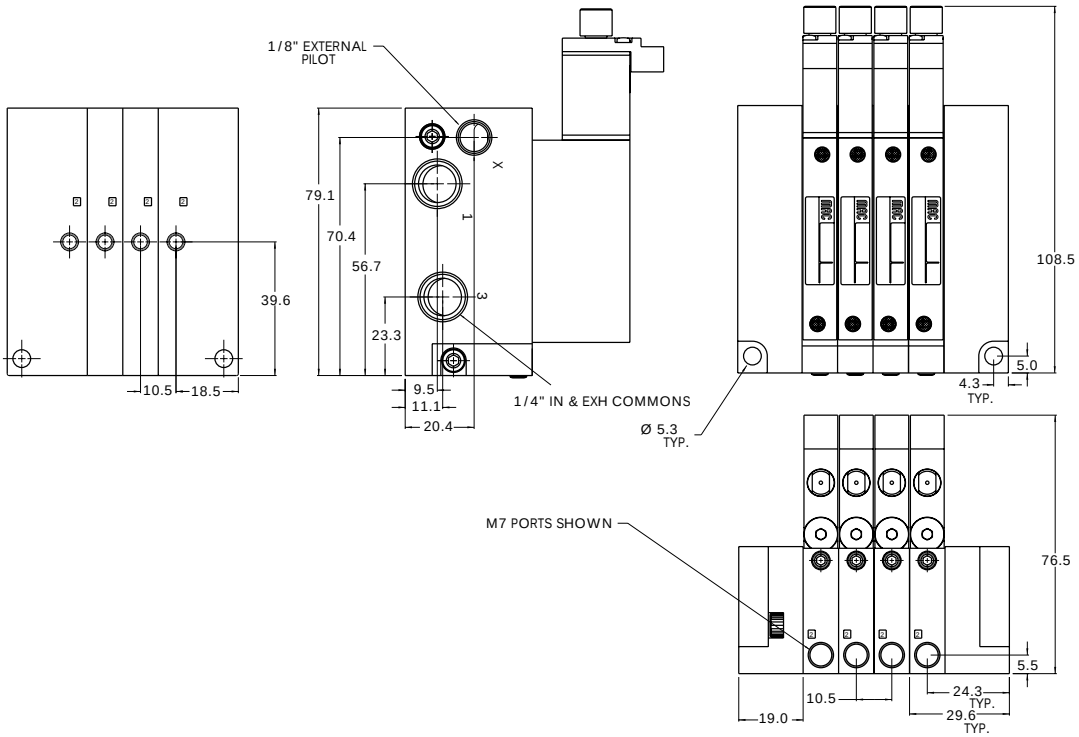
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 8 bar External Pilot : Vacuum to 8 bar
Pilot pressure :	1,3 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 :	3,8 mm
Flow (at 6 bar, ΔP=1bar) :	M5 : 350 Nl/min (Cv 0,35) - M7 : 400 Nl/min (Cv 0,40)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.95 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 5 ms De-energize : 5 ms

Options : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
3/2 NO-NC	M5, M7	400 Nl/min	Sub-base/ manifold base "plug-in" with latching solenoid	

OPERATIONAL BENEFITS

1. 3-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 10.5 mm centres).
3. High flow (up to 400 Nl/min).
4. Fast, repeatable response times.
5. Maximum shifting forces in both directions.

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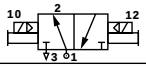
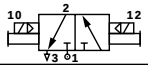
ISO 1
ISO 2
ISO 3

HOW TO ORDER

Port size	Pilot air	NO valve	NC valve
			
Valve less base	Internal	32A-BMA-000-L*xx*P-*xxx*	32A-AMA-000-L*xx*P-*xxx*
	External	32A-BMB-000-L*xx*P-*xxx*	32A-AMB-000-L*xx*P-*xxx*
M5	Internal	32A-BMA-GAA-L*xx*P-*xxx*	32A-AMA-GAA-L*xx*P-*xxx*
	External	32A-BMB-GAB-L*xx*P-*xxx*	32A-AMB-GAB-L*xx*P-*xxx*
M7	Internal	32A-BMA-LAA-L*xx*P-*xxx*	32A-AMA-LAA-L*xx*P-*xxx*
	External	32A-BMB-LAB-L*xx*P-*xxx*	32A-AMB-LAB-L*xx*P-*xxx*

Note : Above codes are for individual base and side port.

LATCHING SOLENOID OPERATOR ➤ L *XX* P-*XXX* *

XX	Voltage
DF	24 V=/4,0W
HA	24 V=/1,95W

X	Manual operator
0	No operator

XX	Electrical connection**
DA	Base/Manifold Plug-in
DB	Base/Manifold Plug-in w/Ground
DC	Base/Manifold Plug-in w/ Light
DD	Base/Manifold Plug-in w/ Light and Ground
EA	Base/Manifold Plug-in 3 Pin (Polarity Switching Cover)

* Click here for other options available.
**2 and 4 wire base must use "D" type electrical connector, 3 wire base must use "EA" type electrical connector.

OPTIONS

Manifold/Base Configuration :

32A-*x***M***x*-*x***A***x*-L*xx*P-*xxx*

A Individual base – Side port
B Individual base – Bottom port
J Manifold base – Side port
K Manifold base – Bottom port
L Left end manifold base - Side port
M Left end manifold base - Bottom port
N Right end manifold base - Side port
P Right end manifold base - Bottom port

M Pilot exhaust muffled
R Pilot exhaust piped M5
U Pilot exhaust to main exhaust (not available with external pilot)

Base Int./Ext. Pilot :

32A-*xxx*-*xx***A**-L*xx*P-*xxx*

A Plug-In Int. Pilot (2 Wire)**
B Plug-In Ext. Pilot (2 Wire)**
C Plug-In Int. Pilot (3 Wire)**
D Plug-In Ext. Pilot (3 Wire)**
E Plug-In Int. Pilot (4 Wire)**
F Plug-In Ext. Pilot (4 Wire)**

Note : Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (option J or K).

MAC

Series 32

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

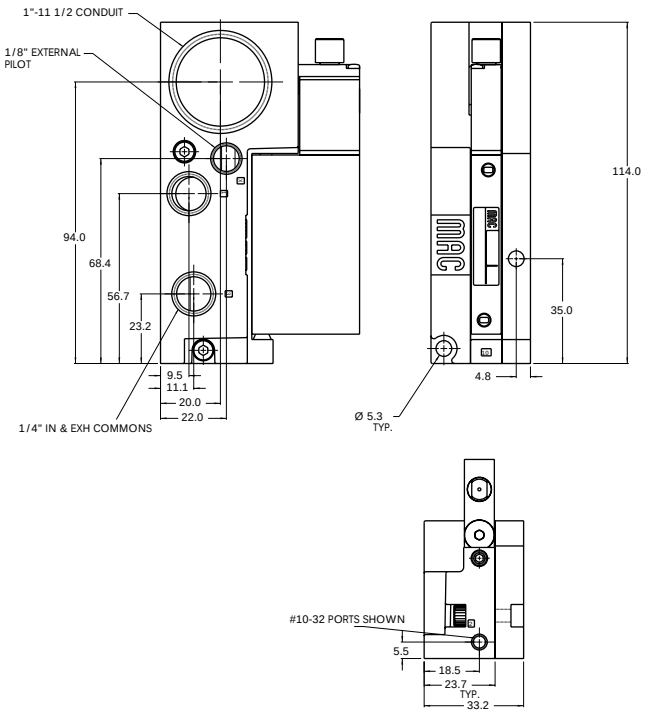
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 8 bar External Pilot : Vacuum to 8 bar
Pilot pressure :	1,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	3,8 mm
Flow (at 6 bar, ΔP=1bar) :	M5 : 350 Nl/min (Cv 0,35) - M7 : 400 Nl/min (Cv 0,40)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 5 ms De-energize : 5 ms

Options : • NPTF threads

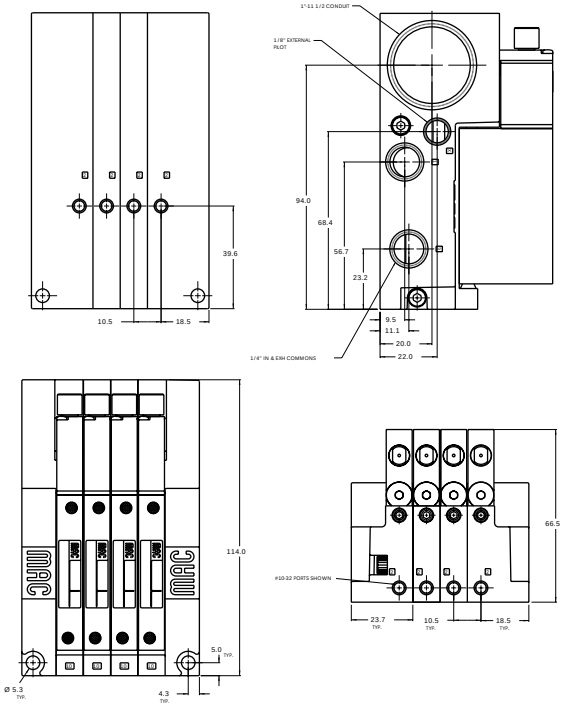
DIMENSIONS

Dimensions shown are metric (mm)

Individual base



Manifold base

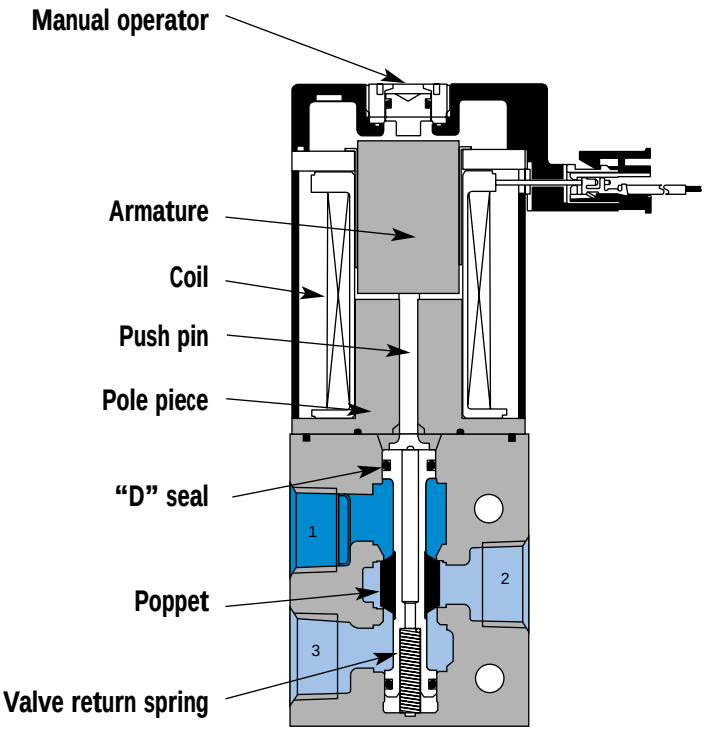


Consult "Precautions" before use, installation or service of MAC Valves..

Individual mounting

Inline	Sub-base non plug-in

Series



SERIES FEATURES

- Balanced poppet equals consistent high shifting forces.
- Valve shifting forces are consistent and independent of pressure fluctuations.
- High solenoid and return spring forces ensure high speed and precise repeatability.
- Built-in wear compensation - valve stroke is shorter than solenoid stroke.
- Constant high flow maintained throughout the pressure range.
- Exhaust contaminants are isolated from the solenoid.
- Full flow exhaust.
- Universal porting - 6 functions in one valve.

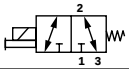
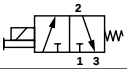
Series 37

Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC	G1/8" - G1/4"	500 Nl/min	Inline	

OPERATIONAL BENEFITS

1. Balanced poppet equals consistent high shifting forces.
2. Valve shifting forces are consistent and independent of pressure fluctuations.
3. High solenoid and return spring forces ensure high speed and precise repeatability.
4. Built-in wear compensation – valve stroke is shorter than solenoid stroke.
5. Constant high flow maintained throughout the pressure range.
6. Exhaust contaminants are isolated from the solenoid.
7. Full flow exhaust.
8. Universal porting – 6 functions in one valve.

HOW TO ORDER

Port size	Universal valve	NC only valve
		
G1/8"	37A-AC0-H *xxx-xxx*	37A-BC0-H *xxx-xxx*
G1/4"	37A-AD0-H *xxx-xxx*	37A-BD0-H *xxx-xxx*

SOLENOID OPERATOR ➤ H ***XXX-XXX*** *

XX	Voltage
AA	120 V~/6,7W
DA	24 V=/5,2W
DB	24 V=/2,4W
DC	24 V=/1,8W

X	Wire length
A	45 cm
B	60 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection**
MA	Mini connector
MC	Mini connector with light
BA	Flying leads
BC	Flying leads with light
HA	Mini connector with rectifier & light

Note : AC voltage requires connector with rectifier.
* Click here for other options available.

MAC

Series 37

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

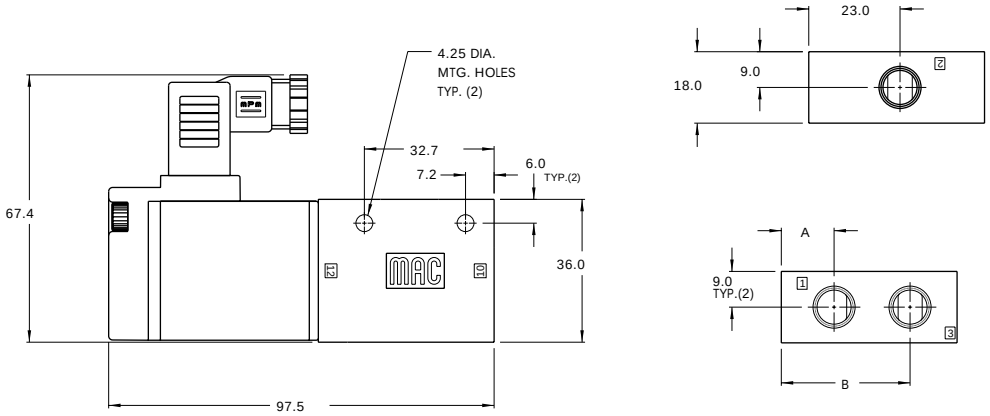
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum 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 :	4,3 mm
Flow :	5,2 W : 500 Nl/min (Cv 0,5) – 2,4 W : 350 Nl/min (Cv 0,35)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,2 W – 2,4 W
Response times : (with 5,2 W coil)	Energize : 16,9 ms De-energize : 6,7 ms

Options : • NPTF ports

DIMENSIONS

Dimensions shown are metric (mm)



Dim	A	B
1 / 8 "	13.3	32.45
1 / 4 "	14.7	33.7

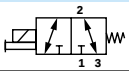
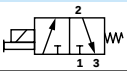
Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC	G1/8" - G1/4"	500 Nl/min	Sub-base non plug-in	

OPERATIONAL BENEFITS

1. Balanced poppet equals consistent high shifting forces.
2. Valve shifting forces are consistent and independent of pressure fluctuations.
3. High solenoid and return spring forces ensure high speed and precise repeatability.
4. Built-in wear compensation – valve stroke is shorter than solenoid stroke.
5. Constant high flow maintained throughout the pressure range.
6. Exhaust contaminants are isolated from the solenoid.
7. Full flow exhaust.
8. Universal porting – 6 functions in one valve.

HOW TO ORDER

Port size	Universal valve	NC only valve
		
Valve less base	37A-C10-H *xxx-xxx*	37A-D10-H *xxx-xxx*
G1/8"	37A-CCA-H *xxx-xxx*	37A-DCA-H *xxx-xxx*
G1/4"	37A-CDA-H *xxx-xxx*	37A-DDA-H *xxx-xxx*

SOLENOID OPERATOR ➤ H ***XXX-XXX****

XX	Voltage
AA	120 V~/6,7W
DA	24 V=/5,2W
DB	24 V=/2,4W
DC	24 V=/1,8W

X	Wire length
A	45 cm
B	60 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
MA	Plug-in wire assembly
MC	Plug-in wire assembly with light
BA	Flying leads
BC	Flying leads with light
HA	Plug-in wire assembly with rectifier & light

Note : AC voltage requires connector with rectifier.
* Click here for other options available.

OPTIONS

Base only :

37A-0CA (1/8")

37A-0DA (1/4")

MAC

Series 37

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

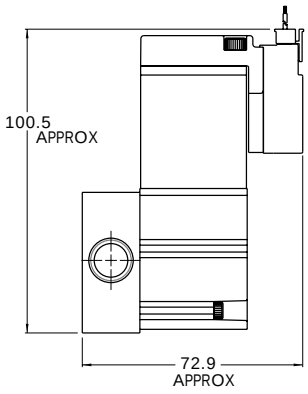
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum 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 :	4,3 mm
Flow :	5,2 W : 500 Nl/min (Cv 0,5) – 2,4 W : 350 Nl/min (Cv 0,35)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,2 W – 2,4 W
Response times : (with 5,2 W coil)	Energize : 16,9 ms De-energize : 6,7 ms

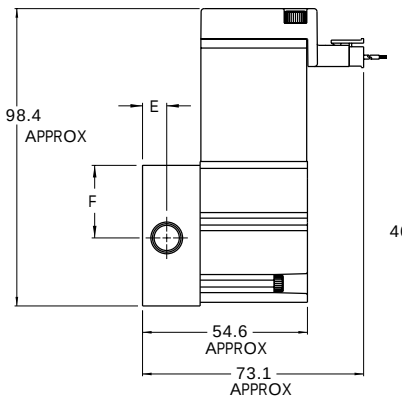
Options : • NPTF ports

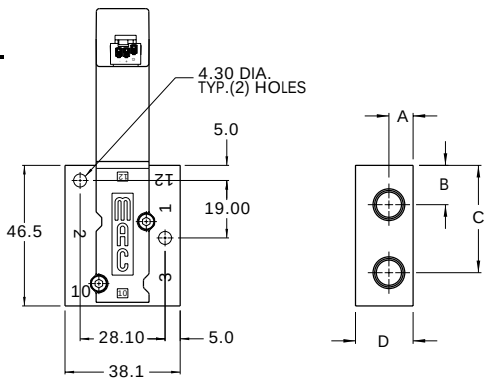
DIMENSIONS

Dimensions shown are metric (mm)



RECTIFIER COVER OPTION
(SHOWN WITH 1/4" PORTS)





FLYING LEAD OPTION
(SHOWN WITH 1/8" PORTS)

Dim	A	B	C	D	E	F
1 / 8 "	8.0	13.0	35.5	19.05	8.0	24.0
1 / 4 "	9.5	9.5			9.5	22.5

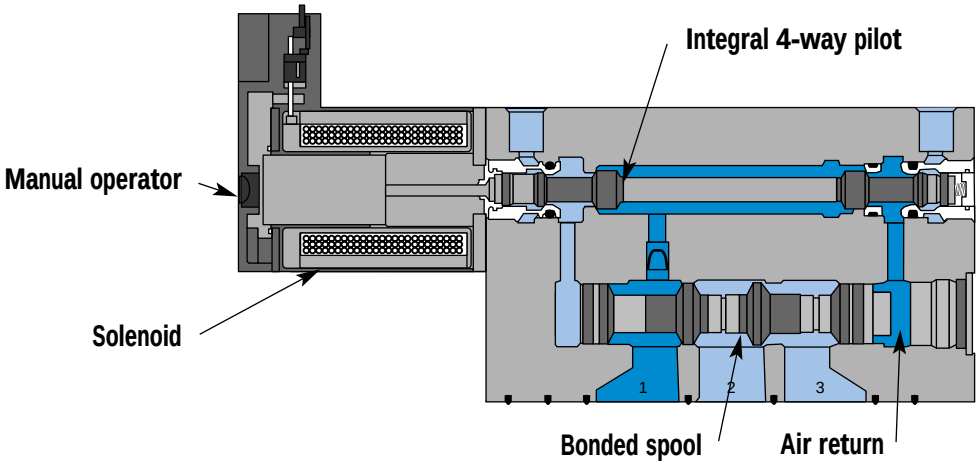
Consult "Precautions" before use, installation or service of MAC Valves..

Individual mounting

Sub-base non "plug-in"	Sub-base "plug-in"	Sub-base/ manifold base non "plug-in" with latching solenoid	Sub-base/ manifold base "plug-in" with latching solenoid

Manifold mounting

Manifold base non "plug-in"	Manifold base "plug-in"	Sub-base/ manifold base non "plug-in" with latching solenoid	Sub-base/ manifold base "plug-in" with latching solenoid



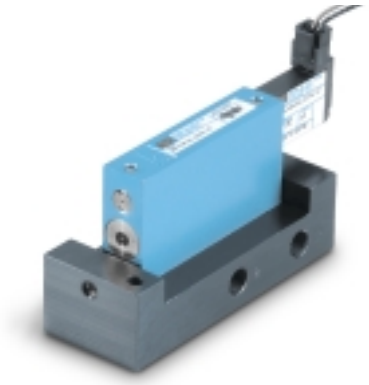
SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- Internal or external pilot.
- Normally open or normally closed function.
- Universal function (external pilot).
- Rectified AC voltage.
- Larching solenoid technology.

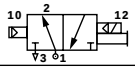
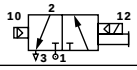
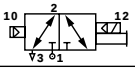
Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC	G1/8"	1200 Nl/min	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

1. 3-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1200 Nl/min).
4. Fast, repeatable response times.
5. Maximum shifting forces in both directions.



HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
				
Valve less base	Internal	38A-BMA-000-G*xxx*-*xxx*	38A-AMA-000-G*xxx*-*xxx*	
	External	38A-BMB-000-G*xxx*-*xxx*	38A-AMB-000-G*xxx*-*xxx*	38A-GMB-000-G*xxx*-*xxx*
G1/8"	Internal	38A-BMA-BAL-G*xxx*-*xxx*	38A-AMA-BAL-G*xxx*-*xxx*	
	External	38A-BMB-BAM-G*xxx*-*xxx*	38A-AMB-BAM-G*xxx*-*xxx*	38A-GMB-BAM-G*xxx*-*xxx*

Note : Above codes are for side port.

STANDARD SOLENOID OPERATOR ➤ G *XXX*-*XXX**

XX	Voltage
AA	120 V~/2,5W
DA	24 V=/1,0W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection**
BA	Flying leads
BT	Flying leads with light
KA	Mini connector
KT	Mini connector with light
KD	Mini connector with rectifier & light & ground

Note : AC voltage requires connector with rectifier.
* Click here for other options available.
** 38 series with non plug-in base configuration must use type "B" or "K" electrical connector
Latching solenoid also available, click here.

OPTIONS

Pilot/Base Configuration :

38A-*x***M***x*-*x***A***x*-G*xxx*-*xxx*

A Individual base – Side port
B Individual base – Bottom port

M Pilot exhaust muffled
R Pilot exhaust piped M5
U Pilot exhaust to main exhaust

MAC

Series 38

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

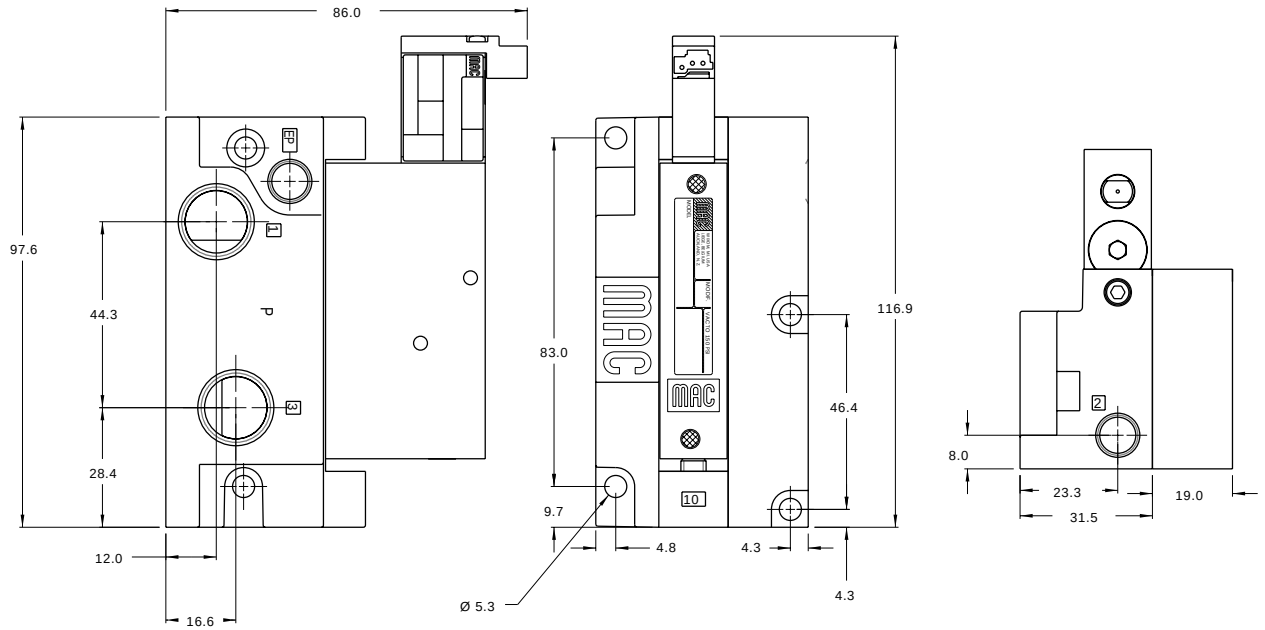
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 8 bar External Pilot : Vacuum to 8 bar
Pilot pressure :	1,3 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 :	6,0 mm
Flow (at 6 bar, ΔP=1bar) :	G1/8" bottom port: 1200 Nl/min (Cv 1,2) - G1/8" side port: 1000 Nl/min (Cv 1,0)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 6 ms De-energize : 6 ms

Options : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)

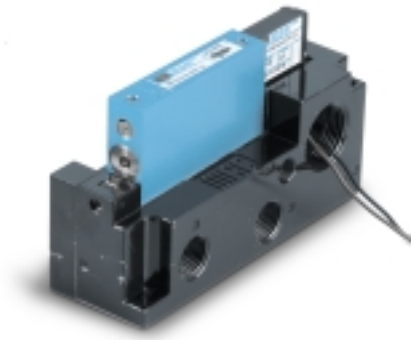


Consult "Precautions" before use, installation or service of MAC Valves..

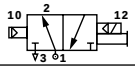
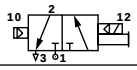
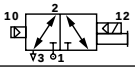
Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC	G1/8"	1200 Nl/min	Sub-base "plug-in"	

OPERATIONAL BENEFITS

1. 3-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1200 Nl/min).
4. Fast, repeatable response times.
5. Maximum shifting forces in both directions.



HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
				
Valve less base	Internal	38A-BMA-000-G*xx*P-*xxx*	38A-AMA-000-G*xx*P-*xxx*	
	External	38A-BMB-000-G*xx*P-*xxx*	38A-AMB-000-G*xx*P-*xxx*	38A-GMB-000-G*xx*P-*xxx*
G1/8"	Internal	38A-BMA-BAA-G*xx*P-*xxx*	38A-AMA-BAA-G*xx*P-*xxx*	
	External	38A-BMB-BAB-G*xx*P-*xxx*	38A-AMB-BAB-G*xx*P-*xxx*	38A-GMB-BAB-G*xx*P-*xxx*

Note : Above codes are for side port.

STANDARD SOLENOID OPERATOR ➤ G *XX* P-*XXX* *

XX	Voltage
AA	120 V~/2,5W
DA	24 V=/1,0W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection**
DJ	Base plug-in
DT	Base plug-in with light
DD	Base plug-in with rectifier & light & ground

Note : AC voltage requires connector with rectifier.
* Click here for other options available.
** 38 series with plug-in base configuration must use type "D" electrical connector.
Latching solenoid also available, click here.

OPTIONS

Pilot/Base Configuration :

38A-*x***M***x*-*x***A***x*-G*xx* P-*xxx*

A Individual base – Side port
B Individual base – Bottom port

M Pilot exhaust muffled
R Pilot exhaust piped M5
U Pilot exhaust to main exhaust

MAC

Series 38

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

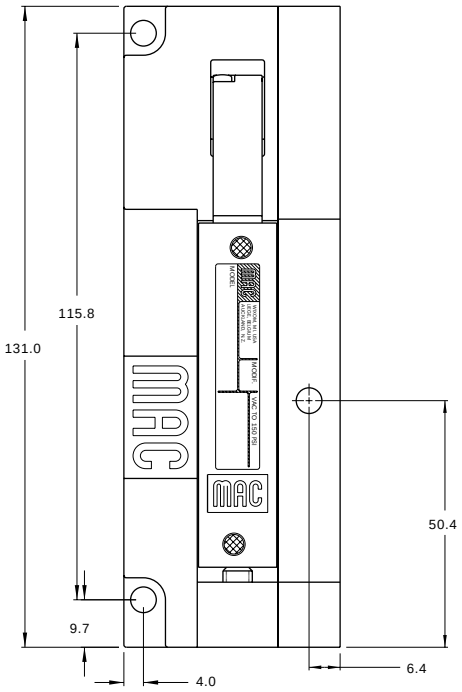
TECHNICAL DATA

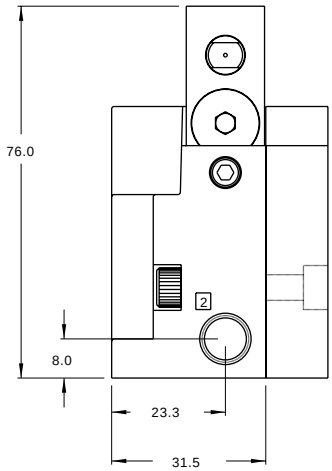
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 8 bar External Pilot : Vacuum to 8 bar
Pilot pressure :	1,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	6,0 mm
Flow (at 6 bar, ΔP=1bar) :	G1/8" bottom port: 1200 Nl/min (Cv 1,2) - G1/8" side port : 1000 Nl/min (Cv 1,0)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 6 ms De-energize : 6 ms

Options : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)





Consult "Precautions" before use, installation or service of MAC Valves..

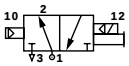
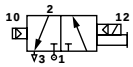
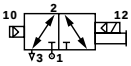
Series 38

Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC	G1/8"	1200 Nl/min	Manifold base non "plug-in"	

OPERATIONAL BENEFITS

1. 3-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1200 Nl/min).
4. Fast, repeatable response times.
5. Maximum shifting forces in both directions.

HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
				
Valve less base	Internal	38A-BMA-000-G*xxx*-*xxx*	38A-AMA-000-G*xxx*-*xxx*	
	External	38A-BMB-000-G*xxx*-*xxx*	38A-AMB-000-G*xxx*-*xxx*	38A-GMB-000-G*xxx*-*xxx*
G1/8"	Internal	38A-BMA-BJL-G*xxx*-*xxx*	38A-AMA-BJL-G*xxx*-*xxx*	
	External	38A-BMB-BJM-G*xxx*-*xxx*	38A-AMB-BJM-G*xxx*-*xxx*	38A-GMB-BJM-G*xxx*-*xxx*

Note : Above codes are for side port.

STANDARD SOLENOID OPERATOR ➤ G *XXX*-*XXX* *

XX	Voltage
AA	120 V~/2,5W
DA	24 V=/1,0W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection**
BA	Flying leads
BT	Flying leads with light
KA	Mini connector
KT	Mini connector with light
KD	Mini connector with rectifier & light & ground

Note : AC voltage requires connector with rectifier.
* Click here for other options available.
** 38 series with non plug-in base configuration must use type "B" or "K" electrical connector
Latching solenoid also available, click here.

OPTIONS

Base only :

38A-000-*xxx* (i.e. 38A-000-BJL)

Pilot/Base Configuration :

38A-*x***M***x*-*x***J***x*-G*xxx*-*xxx*

J Manifold base – Side port
K Manifold base – Bottom port

M Pilot exhaust muffled
R Pilot exhaust piped M5
U Pilot exhaust to main exhaust

Note : Manifold assemblies require an end plate kit : M-38003-01-01P (Internal pilot)
M-38003-02-01P (External pilot)

MAC

Series 38

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

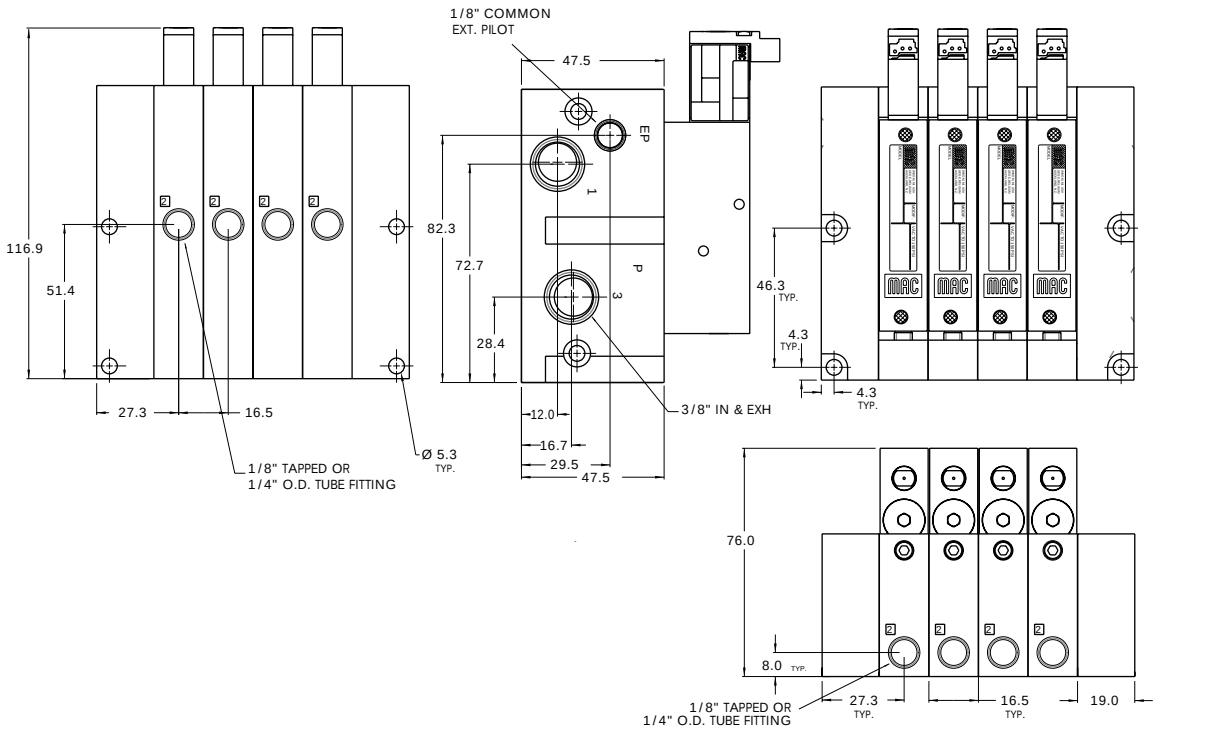
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 8 bar External Pilot : Vacuum to 8 bar
Pilot pressure :	1,3 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 :	6,0 mm
Flow (at 6 bar, ΔP=1bar) :	G1/8" bottom port: 1200 Nl/min (Cv 1,2) - G1/8" side port : 1000 Nl/min (Cv 1,0)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 6 ms De-energize : 6 ms

Options : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)



Consult "Precautions" before use, installation or service of MAC Valves..

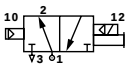
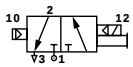
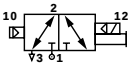
Series 38

Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC	G1/8"	1200 Nl/min	Manifold base "plug-in"	

OPERATIONAL BENEFITS

1. 3-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1200 Nl/min).
4. Fast, repeatable response times.
5. Maximum shifting forces in both directions.

HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
				
Valve less base	Internal	38A-BMA-000-G*xx*P-*xxx*	38A-AMA-000-G*xx*P-*xxx*	
	External	38A-BMB-000-G*xx*P-*xxx*	38A-AMB-000-G*xx*P-*xxx*	38A-GMB-000-G*xx*P-*xxx*
G1/8"	Internal	38A-BMA-BJA-G*xx*P-*xxx*	38A-AMA-BJA-G*xx*P-*xxx*	
	External	38A-BMB-BJB-G*xx*P-*xxx*	38A-AMB-BJB-G*xx*P-*xxx*	38A-GMB-BJB-G*xx*P-*xxx*

Note : Above codes are for side port.

STANDARD SOLENOID OPERATOR ➤ G *XX* P-*XXX* *

XX	Voltage
AA	120 V~/2,5W
DA	24 V=/1,0W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection**
DJ	Base plug-in
DT	Base plug-in with light
DD	Base plug-in with rectifier & light & ground

Note : AC voltage requires connector with rectifier.
* Click here for other options available.
** 38 series with plug-in base configuration must use type "D" electrical connector.
Latching solenoid also available, click here.

OPTIONS

Base only :

38A-000-*xxx* (i.e. 38A-000-BJA)

Base Configuration :

38A-*xxx*-x**J***x*-G*xx* P-*xxx*

J Manifold base – Side port
K Manifold base – Bottom port
L Left end manifold base - Side port
M Left end manifold base - Bottom port
N Right end manifold base - Side port
P Right end manifold base - Bottom port

Note : Manifold assemblies consist of (1) left end manifold, (1) right end manifold and middle station manifolds (options "J" or "K").

MAC

Series 38

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

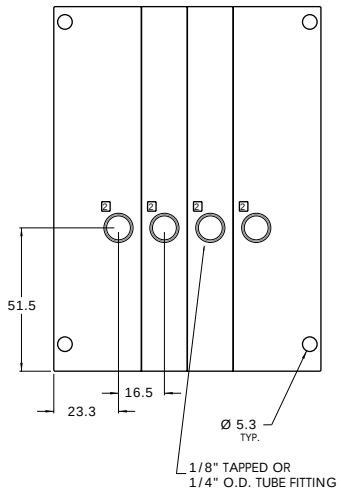
TECHNICAL DATA

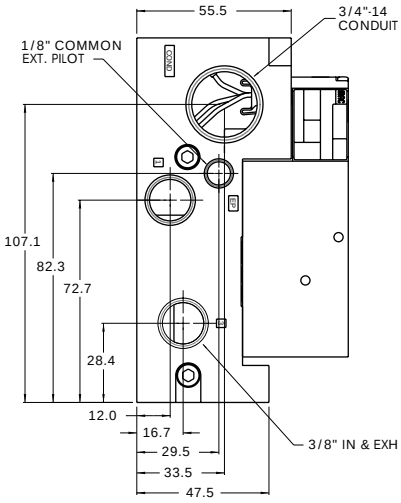
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 8 bar External Pilot : Vacuum to 8 bar
Pilot pressure :	1,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	6,0 mm
Flow (at 6 bar, ΔP=1bar) :	G1/8" bottom port: 1200 Nl/min (Cv 1,2) - G1/8" side port : 1000 Nl/min (Cv 1,0)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 6 ms De-energize : 6 ms

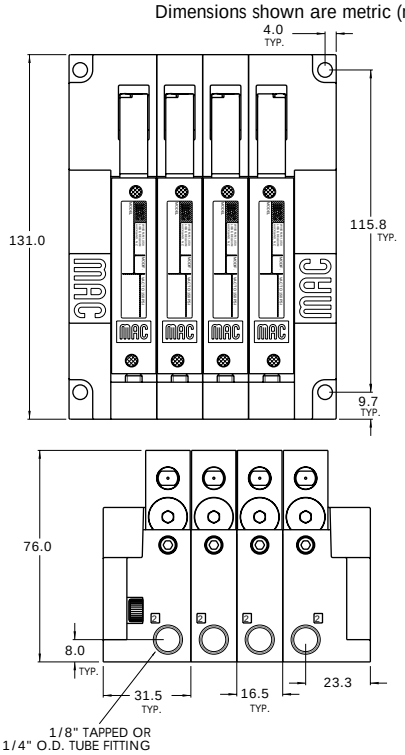
Options : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)







Consult “Precautions” before use, installation or service of MAC Valves..

MAC

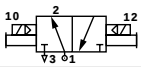
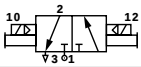
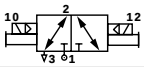
Series 38

Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
3/2 NO-NC	G1/8"	1200 Nl/min	Sub-base/ manifold base non "plug-in" with latching solenoid	

OPERATIONAL BENEFITS

1. 3-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1200 Nl/min).
4. Fast, repeatable response times.
5. Maximum shifting forces in both directions.

HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
				
Valve less base	Internal	38A-BMA-000-L*xxx*-*xxx*	38A-AMA-000-L*xxx*-*xxx*	
	External	38A-BMB-000L*xxx*-*xxx*	38A-AMB-000-L*xxx*-*xxx*	38A-GMB-000-L*xxx*-*xxx*
G1/8"	Internal	38A-BMA-BAL-L*xxx*-*xxx*	38A-AMA-BAL-L*xxx*-*xxx*	
	External	38A-BMB-BAM-L*xxx*-*xxx*	38A-AMB-BAM-L*xxx*-*xxx*	38A-GMB-BAM-L*xxx*-*xxx*

Note : Above codes are for individual base and side port.

LATCHING SOLENOID OPERATOR ➤ L *XXX*-*XXX* *

XX	Voltage
DF	24 V=/4,0W
HA	24 V=/1,95W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
0	No operator

XX	Electrical connection**
BA	2 Wire Flying leads
BJ	4 Wire Flying leads
KA	2 Wire Plug-in Assembly
KE	4 Wire Plug-in Assembly
LA	3 Wire plug-in assembly (Polarity Switching Cover)

* Click here for other options available.
** Latching 38 series with non plug-in base configuration must use "B", "K" or "L" type electrical connector.

OPTIONS

Pilot/Base Configuration :

38A-*x***M***x*-*x***A***x*-L*xxx*-*xxx*

A Individual base – Side port
B Individual base – Bottom port
J Manifold base – Side port
K Manifoldl base – Bottom port

M Pilot exhaust muffled
R Pilot exhaust piped M5
U Pilot exhaust to main exhaust

Note : Manifold assemblies require an end plate kit : M-38003-01-01P (internal pilot)
M-38003-02-01P (external pilot)

MAC

Series 38

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

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 :	1,3 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 :	6,0 mm
Flow (at 6 bar, ΔP=1bar) :	G1/8" bottom port: 1200 Nl/min (Cv 1,2) - G1/8" side port : 1000 Nl/min (Cv 1,0)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.95 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 6 ms De-energize : 6 ms

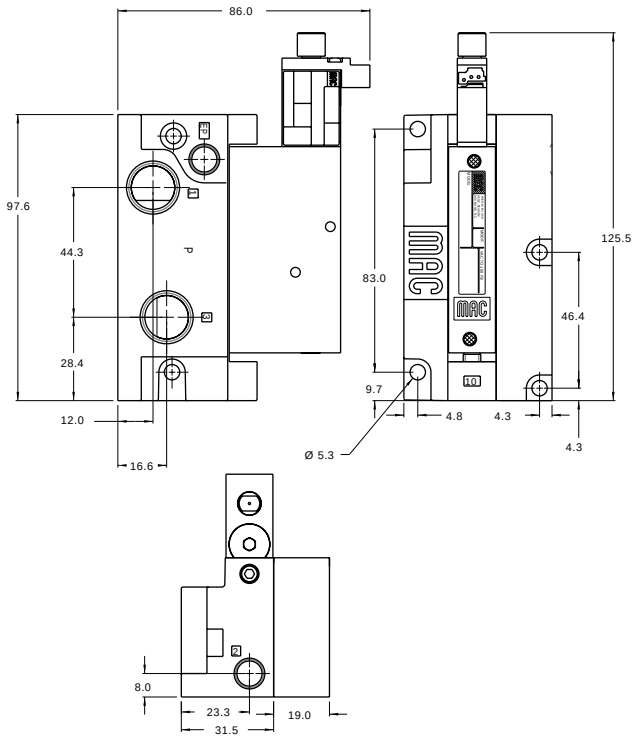
Options :

- NPTF threads

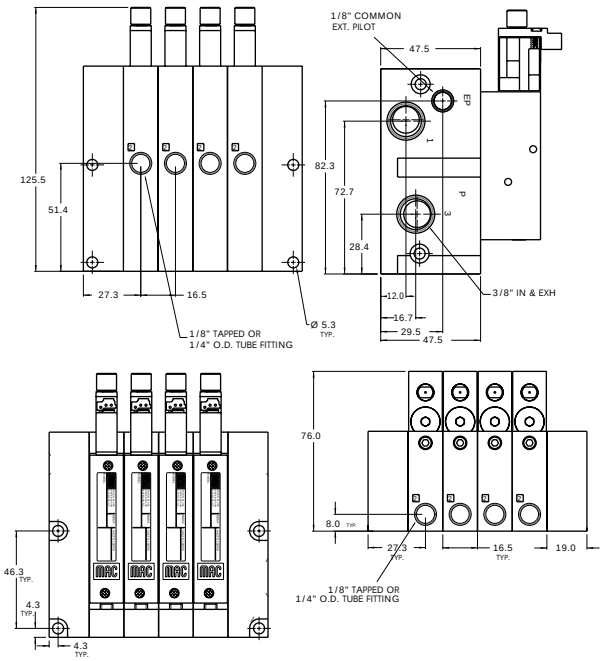
DIMENSIONS

Dimensions shown are metric (mm)

Individual base



Manifold base



Consult "Precautions" before use, installation or service of MAC Valves..

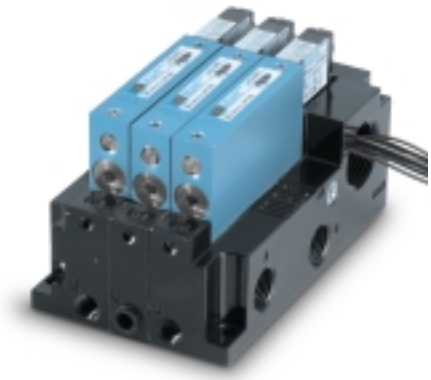
MAC

Series 38

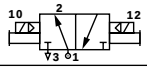
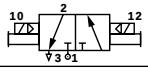
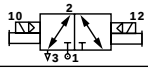
Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
3/2 NO-NC	G1/8"	1200 Nl/min	Sub-base/ manifold base "plug-in" with latching solenoid	

OPERATIONAL BENEFITS

1. 3-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1200 Nl/min).
4. Fast, repeatable response times.
5. Maximum shifting forces in both directions.



HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
				
Valve less base	Internal	38A-BMA-000-L*xx*P-*xxx*	38A-AMA-000-L*xx*P-*xxx*	
	External	38A-BMB-000L*xx*P-*xxx*	38A-AMB-000-L*xx*P-*xxx*	38A-GMB-000-L*xx*P-*xxx*
G1/8"	Internal	38A-BMA-BAA-L*xx*P-*xxx*	38A-AMA-BAA-L*xx*P-*xxx*	
	External	38A-BMB-BAB-L*xx*P-*xxx*	38A-AMB-BAB-L*xx*P-*xxx*	38A-GMB-BAB-L*xx*P-*xxx*

Note : Above codes are for individual base and side port.

LATCHING SOLENOID OPERATOR ➤ L *XX* P-*XXX* *

XX	Voltage
DF	24 V=/4,0W
HA	24 V=/1,95W

X	Manual operator
0	No operator

XX	Electrical connection**
DA	Base/Manifold Plug-in
DB	Base/Manifold Plug-in w/Ground
DC	Base/Manifold Plug-in w/ Led
DD	Base/Manifold Plug-in w/ Led and Ground
EA	Base/Manifold Plug-in 3 Pin (Polarity Switching Cover)

* Click here for other options available.
** 2 and 4 wire bases must use "D" type electrical connector.
3 wire bases must use "EA" type electrical connector.

OPTIONS

Manifold/Base Configuration :

38A-*xxx*-*x***A***x*-L*xx*P-*xxx*

- **A** Individual base – Side port
- **B** Individual base – Bottom port
- **J** Manifold base – Side port
- **K** Manifold base – Bottom port
- **L** Left end manifold base - Side port
- **M** Left end manifold base - Bottom port
- **N** Right end manifold base - Side port
- **P** Right end manifold base - Bottom port

Manifold/Base Int./Ext. Pilot : (Wire options)

38A-*xxx*-*xx***A**-L*xx*P-*xxx*

- **A** Plug-In Int. Pilot (2 Wire)**
- **B** Plug-In Ext. Pilot (2 Wire)**
- **C** Plug-In Int. Pilot (3 Wire)**
- **D** Plug-In Ext. Pilot (3 Wire)**
- **E** Plug-In Int. Pilot (4 Wire)**
- **F** Plug-In Ext. Pilot (4 Wire)**

Note : Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (option J or K).

MAC

Series 38

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

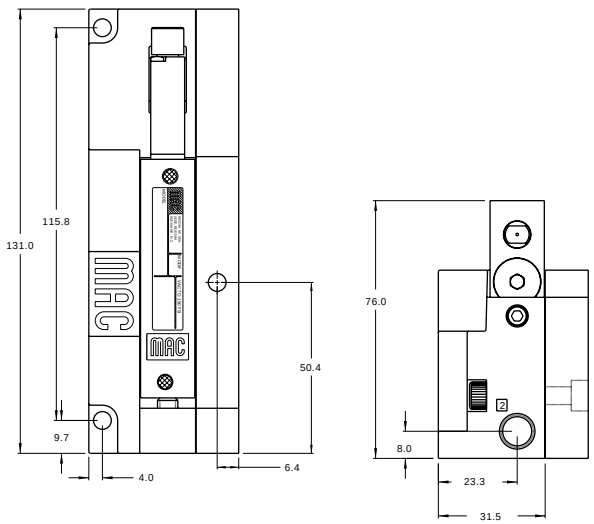
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 8 bar External Pilot : Vacuum to 8 bar
Pilot pressure :	1,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	6,0 mm
Flow (at 6 bar, ΔP=1bar) :	G1/8" bottom port: 1200 Nl/min (Cv 1,2) - G1/8" side port: 1000 Nl/min (Cv 1,0)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.95 to 4.0 W
Response times : (with 4 W coil)	Energize : 6 ms De-energize : 6 ms

Options : • NPTF threads

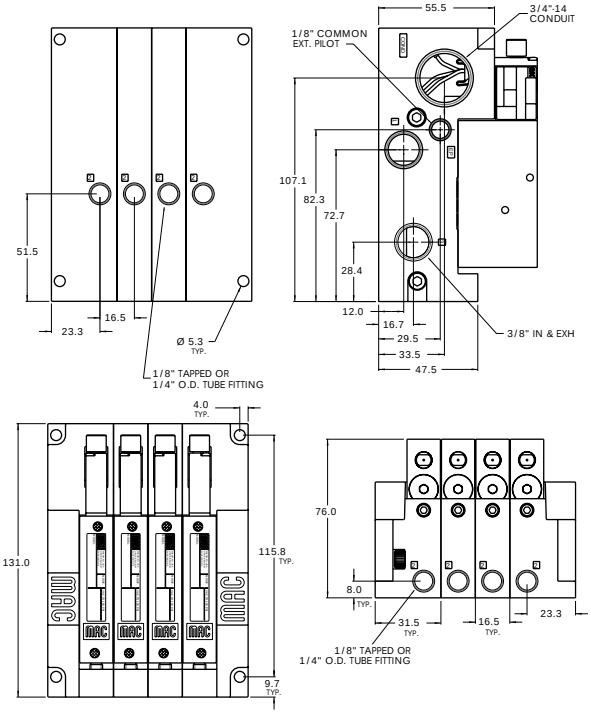
DIMENSIONS

Dimensions shown are metric (mm)

Individual base



Manifold base

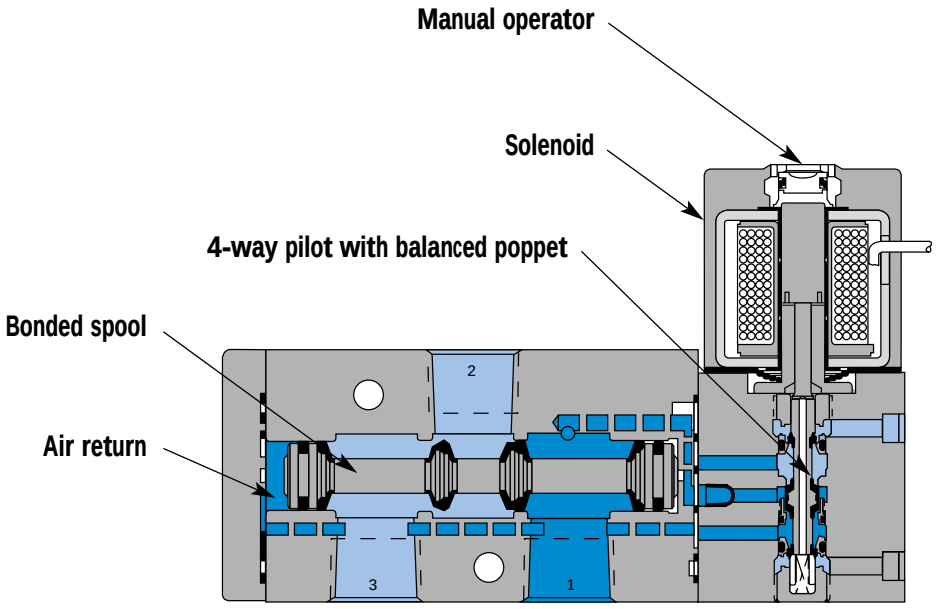


Consult "Precautions" before use, installation or service of MAC Valves..

Individual mounting

Inline

Series



SERIES FEATURES

- Patented MACSOLENOID® for fastest possible response times and virtually burn-out proof AC solenoid operation.
- Optional low watt DC solenoids.
- Various manual operators.
- Optional memory spring.
- Normally closed or normally open valve function.
- May be plugged for 2-way operation.
- Internal or external pilot.

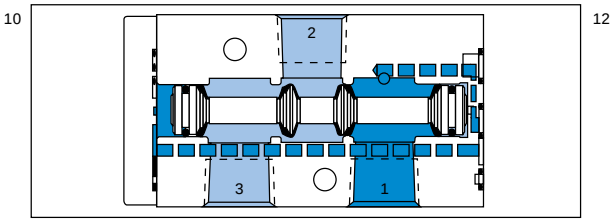
Series 52

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

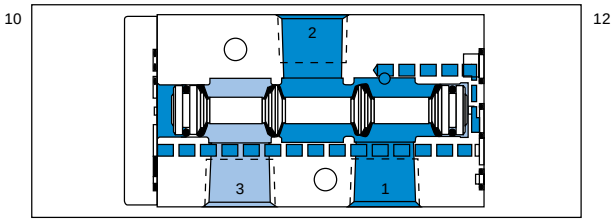
SPOOL CONFIGURATIONS

INTERNAL PILOT



NORMALLY CLOSED 3 WAY

INTERNAL PILOT



NORMALLY OPEN 3 WAY

MAC

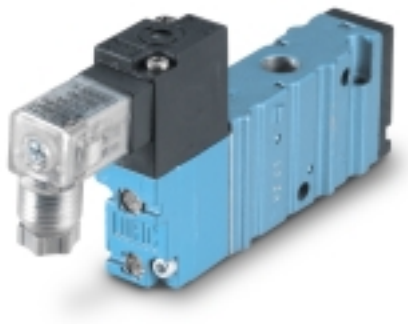
Series 52

Direct solenoid and solenoid pilot operated valves

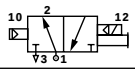
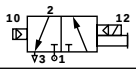
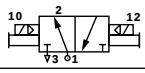
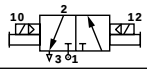
Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-NC	G1/8" - G1/4"	1500 Nl/min	Inline	

OPERATIONAL BENEFITS

1. The 4-way pilot develops maximum shifting force both ways.
2. Memory spring available.
3. Balanced spool, immune to variations of pressure, also provides high flow.
4. Short stroke with high flow.
5. Bonded spool with minimum friction, shifting in a glass-like finished bore.
6. Pilot with balanced poppet, high flow, short and consistent response times.
7. Wiping effect eliminates sticking.
8. Long service life.



HOW TO ORDER

Port size	Pilot air	Single Operator NO Valve	Single Operator NC Valve	Double Operator NO Valve	Double Operator NC Valve
					
G1/8"	Internal	52A-31-C0A-XX-X-*xxx*-*xxx*	52A-11-C0A-XX-X-*xxx*-*xxx*	52A-41-C0A-XX-X-*xxx*-*xxx*	52A-21-C0A-XX-X-*xxx*-*xxx*
G1/4"	Internal	52A-31-D0A-XX-X-*xxx*-*xxx*	52A-11-D0A-XX-X-*xxx*-*xxx*	52A-41-D0A-XX-X-*xxx*-*xxx*	52A-21-D0A-XX-X-*xxx*-*xxx*
G1/8"	External	52A-31-C0B-XX-X-*xxx*-*xxx*	52A-11-C0B-XX-X-*xxx*-*xxx*	52A-41-C0B-XX-X-*xxx*-*xxx*	52A-21-C0B-XX-X-*xxx*-*xxx*
G1/4"	External	52A-31-D0B-XX-X-*xxx*-*xxx*	52A-11-D0B-XX-X-*xxx*-*xxx*	52A-41-D0B-XX-X-*xxx*-*xxx*	52A-21-D0B-XX-X-*xxx*-*xxx*

SOLENOID OPERATOR ➤ DM-D *XXX*-*XXX**

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Wire length
A	45 cm (Flying leads)
B	60 cm (Flying leads)
J	Connector

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
KA	Square connector
KD	Square connector with light
JB	Rectangular connector
JD	Rectangular connector with light
BA	Flying leads

SOLENOID OPERATOR ➤ GM-G *XXX*-*XXX***

XX	Voltage
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BA	Flying leads
BT	Flying leads with light
KA	Mini connector
KT	Mini connector with light

* Click here for other options available.
** Click here for other options available.

OPTIONS

52A-3**1**-C0A-XX-X-*xxx*-*xxx*

For memory spring, replace by **4** (single solenoid only)

MAC

Series 52

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

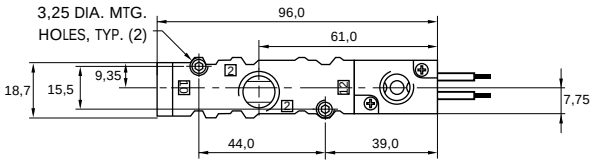
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 8 bar External Pilot : Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	7,3 mm
Flow (at 6 bar, ΔP=1bar) :	G1/8" : 1200 Nl/min (Cv 1,2) – G1/4" : 1500 Nl/min (Cv 1,5)
Coil :	Epoxy encapsulated – class A wires – 100% ED (specify mod 0449)
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (GM pilot) – IP64 (DM pilot) (electrical connection
Power :	~Inrush: 10,9 VA Holding: 7,7 VA = 1,8 to 12,7 W
Response times :	24V=/5,4W Energize: 7,3 ms De-energize: 5,3 ms 110V~/50Hz Energize: 8-12 ms De-energize: 7-11 ms

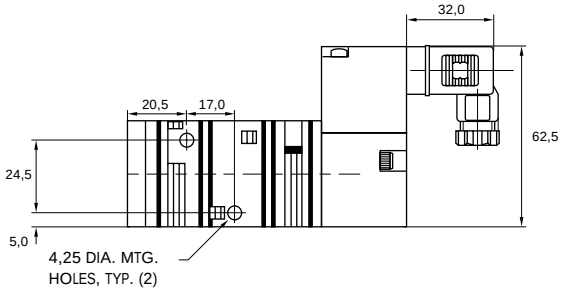
Options :

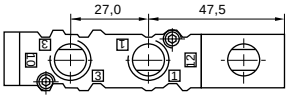
- NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)







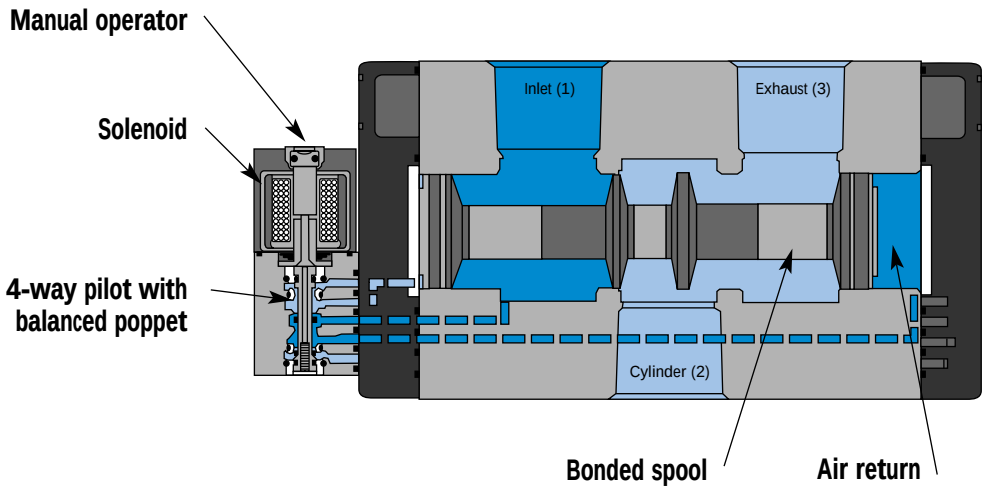
Consult “Precautions” before use, installation or service of MAC Valves..

MAC
Series 6 7

Individual mounting

Inline

Series



SERIES FEATURES

- Patented MACSOLENOID® for fastest possible response times and virtually burn-out proof AC solenoid operation.
- Optional low watt DC solenoids.
- Normally closed or normally open valve funstion.
- Optional universal spool.
- Internal or external pilot.
- Optional memory spring.
- Checked accumulator.
- Optional pilot exhaust to main valve exhaust.
- May be plugged for 2-way operation.

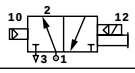
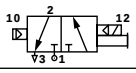
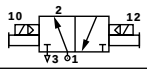
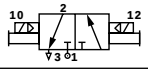
Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-NC	G3/4" - G1"	20000 Nl/min	Inline	

OPERATIONAL BENEFITS

1. The 4-way pilot develops maximum shifting force both ways.
2. Memory spring available.
3. Balanced spool, immune to variations of pressure, also provides high flow.
4. Short stroke with high flow.
5. Bonded spool with minimum friction, shifting in a glass-like finished bore.
6. Pilot with balanced poppet, high flow, short and consistent response times.
7. Wiping effect eliminates sticking.

HOW TO ORDER

Port size	Pilot air	Single Operator NO Valve	Single Operator NC Valve	Double Operator NO Valve	Double Operator NC Valve
					
G3/4"	Internal	67A-C*x*-CAA-DM-D*xxx*-*xxx*	67A-A*x*-CAA-DM-D*xxx*-*xxx*	67A-D*x*-CAA-DM-D*xxx*-*xxx*	67A-B*x*-CAA-DM-D*xxx*-*xxx*
G1"		67A-C*x*-DAA-DM-D*xxx*-*xxx*	67A-A*x*-DAA-DM-D*xxx*-*xxx*	67A-D*x*-DAA-DM-D*xxx*-*xxx*	67A-B*x*-DAA-DM-D*xxx*-*xxx*
G3/4"	External	67A-C*x*-CAB-DM-D*xxx*-*xxx*	67A-A*x*-CAB-DM-D*xxx*-*xxx*	67A-D*x*-CAB-DM-D*xxx*-*xxx*	67A-B*x*-CAB-DM-D*xxx*-*xxx*
G1"		67A-C*x*-DAB-DM-D*xxx*-*xxx*	67A-A*x*-DAB-DM-D*xxx*-*xxx*	67A-D*x*-DAB-DM-D*xxx*-*xxx*	67A-B*x*-DAB-DM-D*xxx*-*xxx*

SOLENOID OPERATOR ➤ DM-D *XXX*-*XXX**

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Wire length
A	45 cm
B	60 cm
J	Connector

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
KA	Square connector
KD	Square connector with light
JB	Rectangular connector
JD	Rectangular connector with light
BA	Flying leads

* Click here for other options available.

OPTIONS

Spool type :

67A-**X**X-CAA-DM-D*xxx*-*yzz*

- **G** Single operator universal spool
- **H** Double operator universal spool

Spool return :

67A-C**X**-CAA-DM-D*xxx*-*yzz*

- **1** Standard return
- **2** Standard return with memory spring

Port configuration :

67A-XX-C**X**A-DM-D*xxx*-*xxx*

- **A** Standard pilot exhaust
- **B** Pilot exhaust to main exhaust*
- **C** Pilot exhaust out adapter*

* Must use DU pilot

Pilot style :

67A-XX-CAA-D**M**-D*xxx*-*xxx*

- **M** Pilot exhaust muffled
- **R** Pilot exhaust piped M5
- **U** Pilot exhaust to main exhaust

34
36
32
37
38
52
67
44
46
42
47
48
400
92
93
ISO 1
ISO 2
ISO 3

MAC

Series 67

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

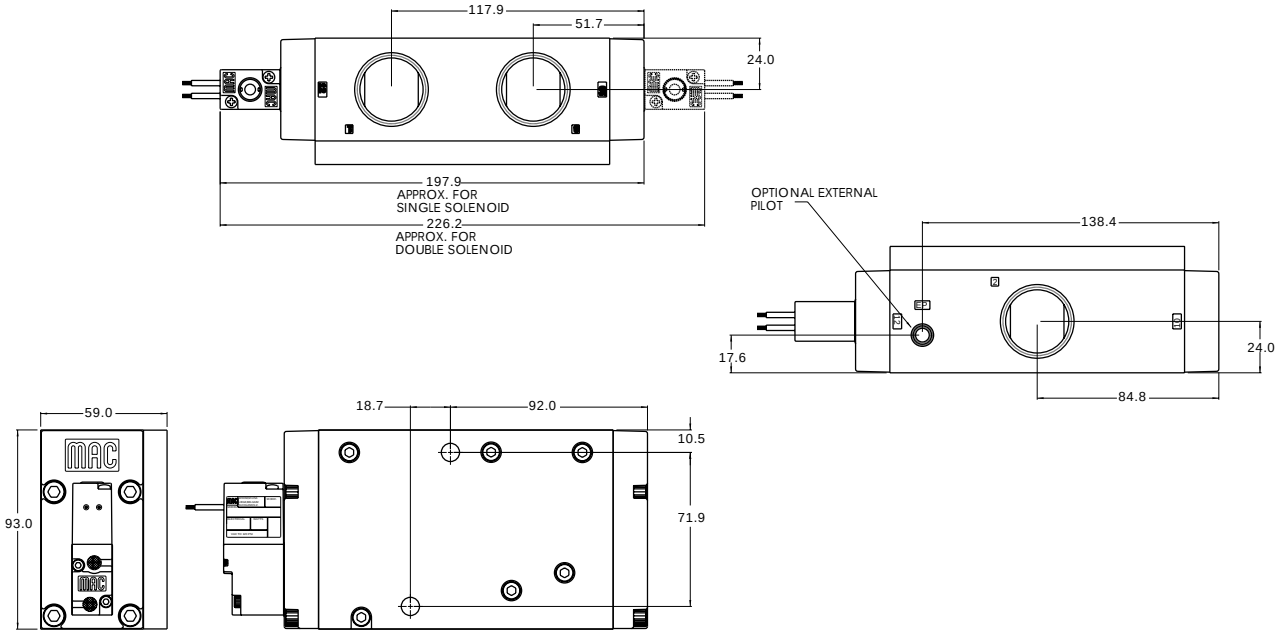
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot : 1,3 to 10 bar External Pilot : Vacuum to 10 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 :	26,8 mm
Flow (at 6 bar, ΔP=1bar) :	3/4" : 14500 Nl/min (Cv 14,5) – 1" : 20000 (Cv 20,0)
Coil :	Epoxy encapsulated – 100% ED
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 : **(with 5,4 W coil)**	Energize : 29 ms De-energize :21 ms

Options : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)

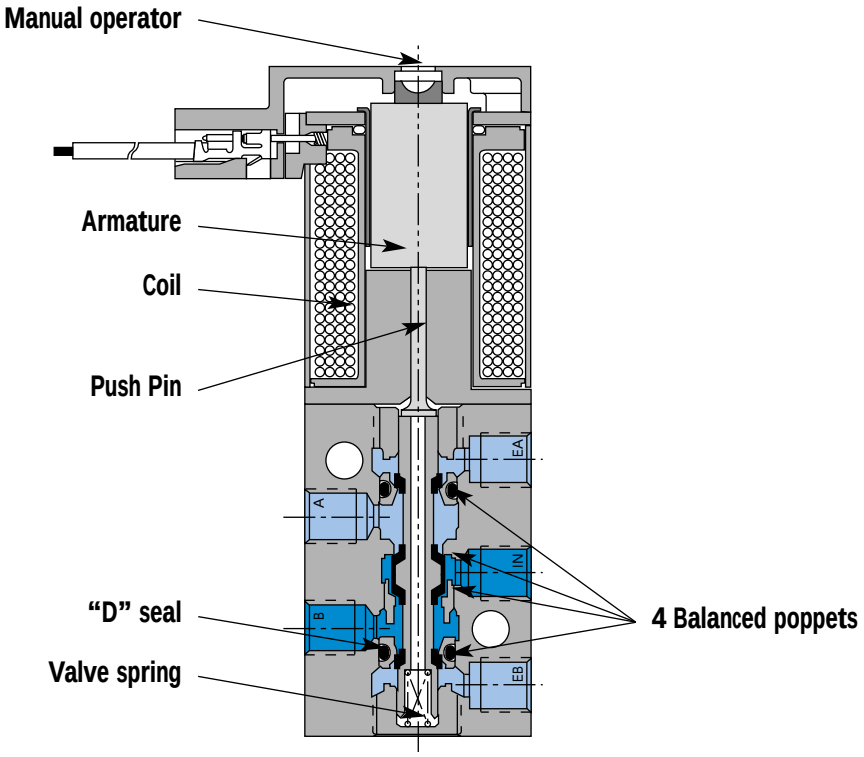


Consult “Precautions” before use, installation or service of MAC Valves..

Individual mounting

Inline

Series



SERIES FEATURES

- High force MACSOLENOID®.
- 10mm direct operated.
- # 10-32 or M5 ports.
- Rated for lubricated or non-lubricated service.
- Cylinder ports in valve or in circuit bar.

MAC

Series 44

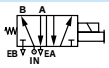
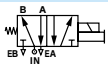
Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Individual Mounting	Series
5 / 2	M5	100 Nl/min	Inline	

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.

HOW TO ORDER

Port size	Universal valve	For use with external flow controls
		
M5	44B-ABA-G *xxx-xxx*	44B-BBA-G *xxx-xxx*

SOLENOID OPERATOR ➤ G *XXX*-*XXX* *

XX	Voltage
DA	24 V=/1W
DC	24 V=/1,8W
DD	12 V=/2,5W
DF	24 V=/4,0W

X	Wire length
A	45 cm
B	60 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
KA	Mini connector
KT	Mini connector with light
BA	Flying leads
BT	Flying leads with light

* Click here for other options available.

LATCHING SOLENOID ➤ L *XXX*-*XXX* *

XX	Voltage
DF	24 V=/4,0W
HA	24 V=/1,95W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
0	No operator

XX	Electrical connection
BA	2 Wire flying leads
BJ	4 Wire flying leads
KA	2 Wire plug-in assembly
KE	4 Wire plug-in assembly
LA	3 Wire plug-in assembly (Polarity switching cover)

* Click here for other options available.

MAC

Series 44

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

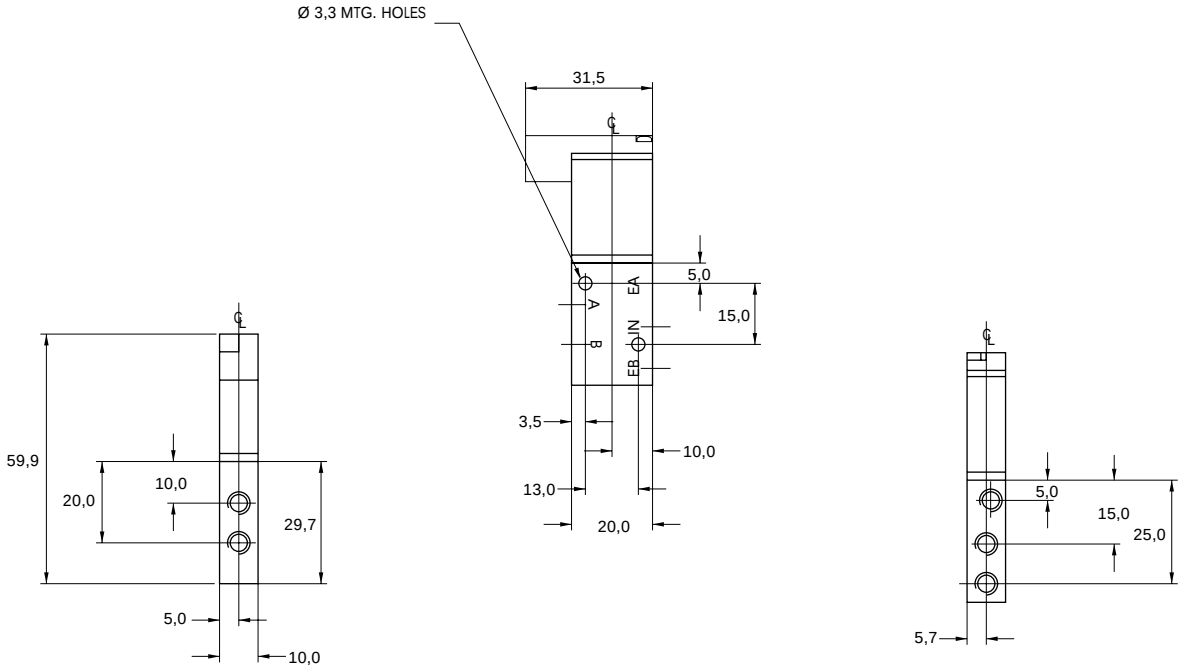
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum 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 :	1,8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 100 Nl/min (Cv 0,10) – 2,5 W : 80 Nl/min (Cv 0,08) – 1,8 W : 60 Nl/min (Cv 0,06) – 1,0W : 50 Nl/min (Cv 0,05)
Coil :	Epoxy encapsulated – Class A wires – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	4 W – 2,5 W – 1,8 W – 1,0 W
Response times : (with 4 W coil)	Energize :3,4 ms De-energize : 1,5 ms

Note : • Valve and coil are not interchangeable.

DIMENSIONS

Dimensions shown are metric (mm)

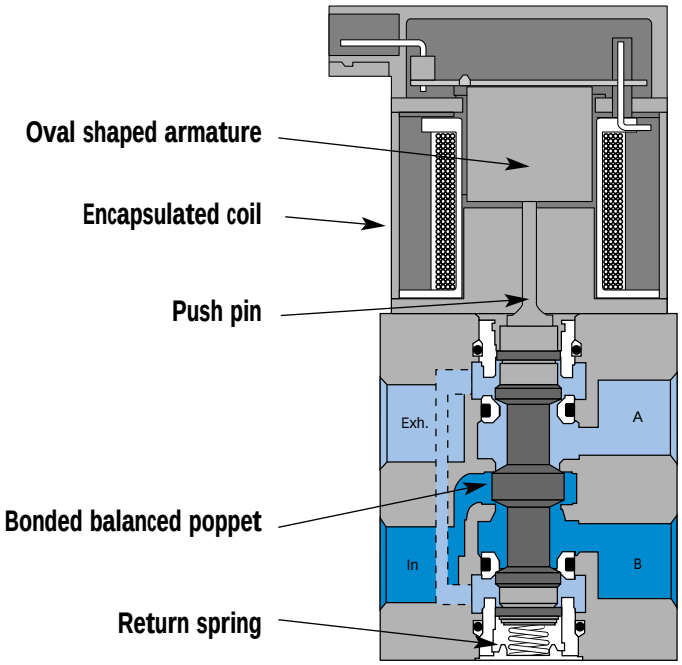


Individual mounting

Inline

Manifold mounting

Stacking	Manifold base "plug-in"	Manifold base "plug-in" with pressure regulators	Manifold base "plug-in" with flow controls	Manifold base "plug-in" with PR & FC



SERIES FEATURES

- Patented high force MACSOLENOID® for fastest possible response times.
- Bonded balanced poppet for high flow, precise repeatability, and consistent operation.
- Balanced poppet permits versatility in function — may be used as 3-way or 2-way normally open or normally closed and may be used for vacuum, divertor, or selector applications.
- Extremely high cycle rate capability.
- Use on lube or non-lube service.
- Manual overrides as standard.
- Various solenoid enclosures and plug-in connectors.
- Optional surge suppression available.
- Low wattage DC solenoids — down to 1.8 watts.
- Rectified AC voltage.

MAC

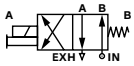
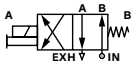
Series 46

Function	Port size	Flow (Max)	Individual mounting	Series
4 / 2	G1 / 8 " - M5	300 Nl / min	Inline	

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Patented solenoid develops high shifting forces.
3. Short stroke with high flow.
4. Higher forces result in lower wattages for given flow.
5. Powerful return spring.

HOW TO ORDER

Port size	Without flow controls	With flow controls
		
G1 / 8 "	46A-AC1-J *xxx-xxx*	46A-AC2-J *xxx-xxx*
M5	46A-AD1-J *xxx-xxx*	46A-AD2-J *xxx-xxx*

SOLENOID OPERATOR ➤

J ***XXX-XXX*** * (-G) Add "G" for ground

XX	Voltage
AA	120 V~/5,4W
DA	24 V=/5,4W
DB	12 V=/5,4W
DC	24 V=/2,4W
DD	12 V=/2,4W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BA	Flying leads
GA	MAC JAC solenoid plug-in
GB	MAC JAC solenoid plug-in with diode
GD	MAC JAC solenoid plug-in with light
GG	MAC JAC solenoid plug-in with rectifier

* Click here for other options available.

Note : - AC voltage requires connector with rectifier.
- The MAC JAC connector is similar to the connector used for valves that incorporate the "G" type solenoid. With the MAC JAC, washdown capability is possible. Consult factory for washdown modification number.

OPTIONS

46A-**AC**1-J*xxx*-*xxx*

G Use with O ring mount (body option 'D')

A 4 port body with side ports
C 4 port body with bottom ports (no side ports) – M5 ONLY
D Bottom O ring mount – All ports (no side ports)
F Bottom O ring mount – Cylinder ports only – Side inlet & exhaust

Examples : 46A-DG1-Jxxx-xxx (Bottom O ring mount – all ports)
46A-CD1-Jxxx-xxx (4 port body with bottom ports – no side ports)

MAC

Series 4 6

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

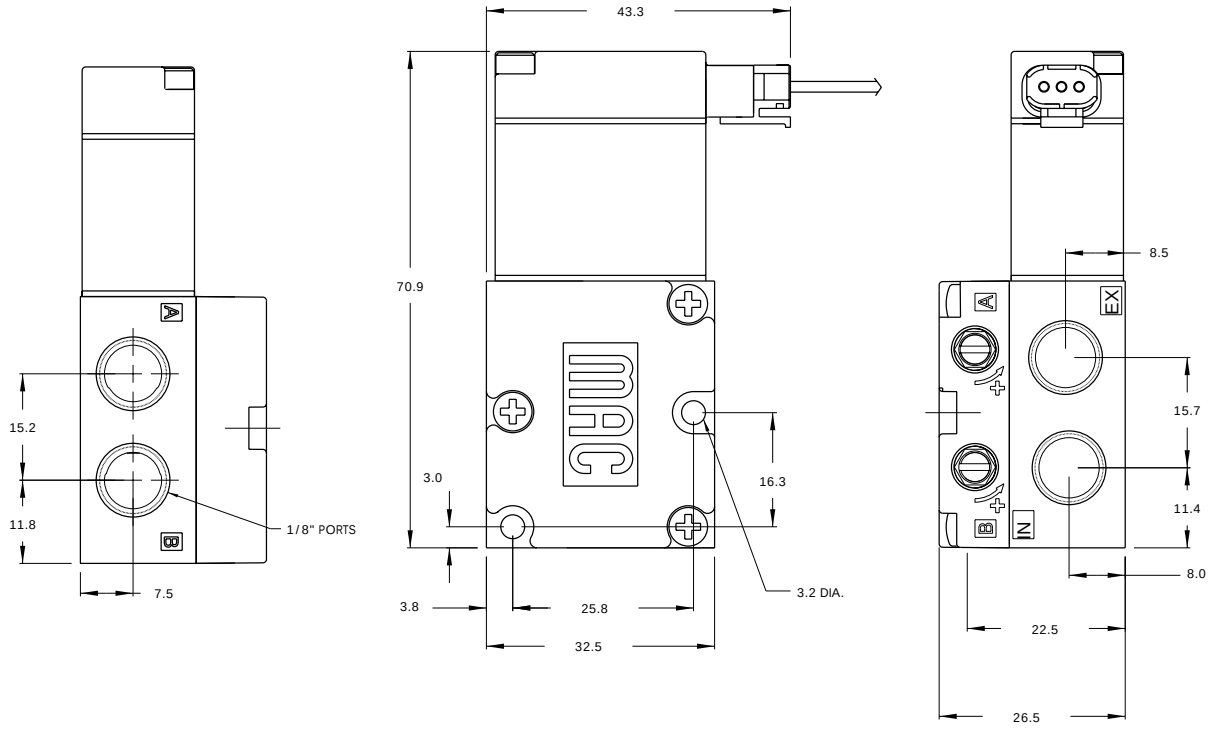
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum 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 :	3,3 mm
Flow (at 6 bar, ΔP=1bar) :	1,8W : 200 Nl/min (Cv 0,20) – 2,4W : 200 Nl/min (Cv 0,20) – 5,4W : 300 Nl/min (Cv 0,30)
Coil :	Epoxy encapsulated – Class A wires – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,4W – 2,4W – 1,0W
Response times :	Energize : 7,20 ms De-energize : 4,20ms

Options : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

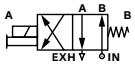
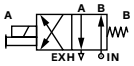
Series 46

Function	Port size	Flow (Max)	Manifold Mounting	Series
4 / 2	G1 / 8 " - M5	300 Nl / min	Stacking	

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Patented solenoid develops high shifting forces.
3. Short stroke with high flow.
4. Higher forces result in lower wattages for given flow.
5. Powerful return spring.

HOW TO ORDER

Port size	Without flow controls	With flow controls
		
G1 / 8 "	46A-SC1-J *xxx-xxx*	46A-SC2-J *xxx-xxx*
M5	46A-SD1-J *xxx-xxx*	46A-SD2-J *xxx-xxx*

SOLENOID OPERATOR ➤ J ***XXX-XXX*** * (-G) Add "G" for ground

XX	Voltage
AA	120 V~/5,4W
DA	24 V=/5,4W
DB	12 V=/5,4W
DC	24 V=/2,4W
DD	12 V=/2,4W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BA	Flying leads
GA	MAC JAC solenoid plug-in
GB	MAC JAC solenoid plug-in with diode
GD	MAC JAC solenoid plug-in with light
GG	MAC JAC solenoid plug-in with rectifier

* Click here for other options available.

Note : - AC voltage requires connector with rectifier.
- The MAC JAC connector is similar to the connector used for valves that incorporate the "G" type solenoid. With the MAC JAC, washdown capability is possible. Consult factory for washdown modification number.

End plate kit required (port size 1/4") : M-46001-01P.

MAC

Series 4 6

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

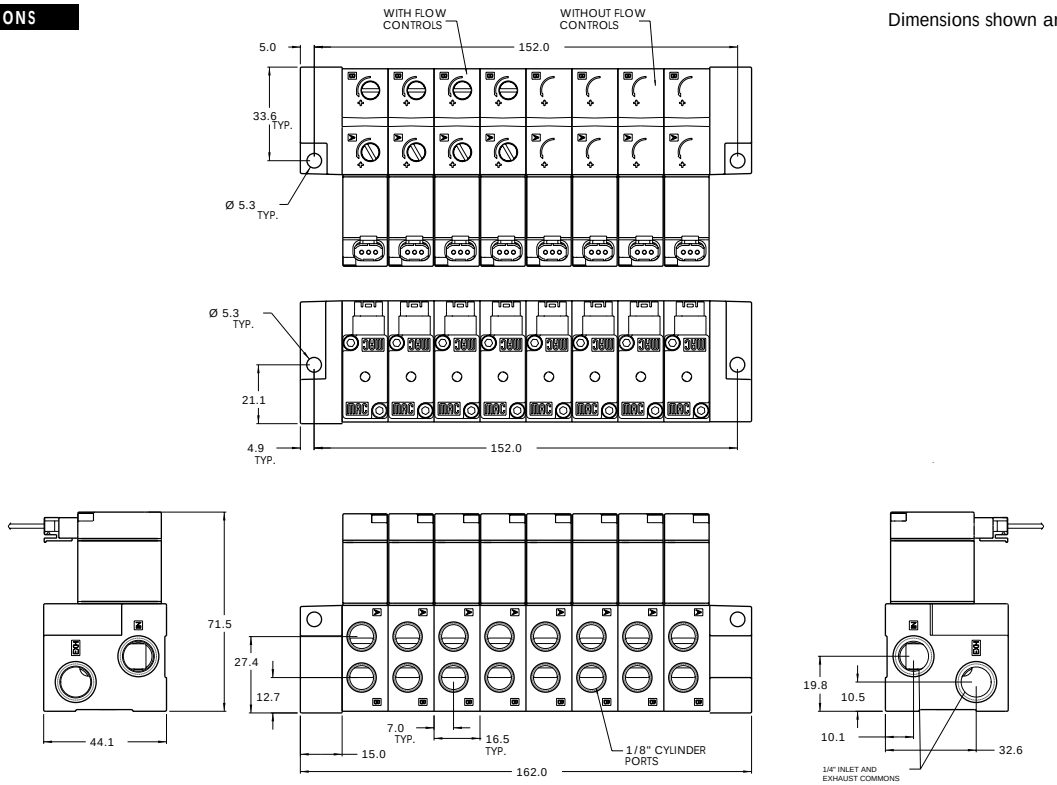
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	3,3 mm
Flow (at 6 bar, ΔP=1bar) :	1,8W : 200 Nl/min (Cv 0,20) – 2,4W : 200 Nl/min (Cv 0,20) – 5,4W : 300 Nl/min (Cv 0,30)
Coil :	Epoxy encapsulated – Class A wires – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,4W – 2,4W – 1,0W
Response times :	Energize : 7,20 ms De-energize : 4,20ms

Options : • NPTF threads

Spare parts : • Inlet isolator : 28494 • Exhaust isolator : 28493 • Tie rod (x2) : 79411

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

MAC

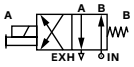
Series 46

Function	Port size	Flow (Max)	Manifold mounting	Series
4 / 2	G1 / 8 "	300 Nl / min	Manifold base "plug-in"	

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Patented solenoid develops high shifting forces.
3. Short stroke with high flow.
4. Higher forces result in lower wattages for given flow.
5. Powerful return spring.

HOW TO ORDER

Port size	Model number
	
Valve less base	46A-L00-00-J *xx*P-*xxx*
G1 / 8 "	46A-LSB-AC-J *xx*P-*xxx*

SOLENOID OPERATOR ➤ J ***XX*** P-***XXX**** (-G) Add "G" for ground

XX	Voltage
AA	120V~/5,4W
DA	24V=/5,4W
DB	12V=/5,4W
DC	24V=/2,4W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
FA	Base plug-in
FB	Base plug-in with diode
FG	Base plug-in with rectifier

* Click here for other options available.
Note : AC voltage requires connector with rectifier.

OPTIONS

46A-L**S**B-A**C**-J*xx*P-*xxx*

C Side cylinder ports
L Bottom cylinder ports

0 Base only – no valve
L Base mount body
M Base mount body with gage port

Example : base only : 46A-0SB-AC.
End plate quit required (port size G1/4") : M-46003-01P.

MAC

Series 4 6

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

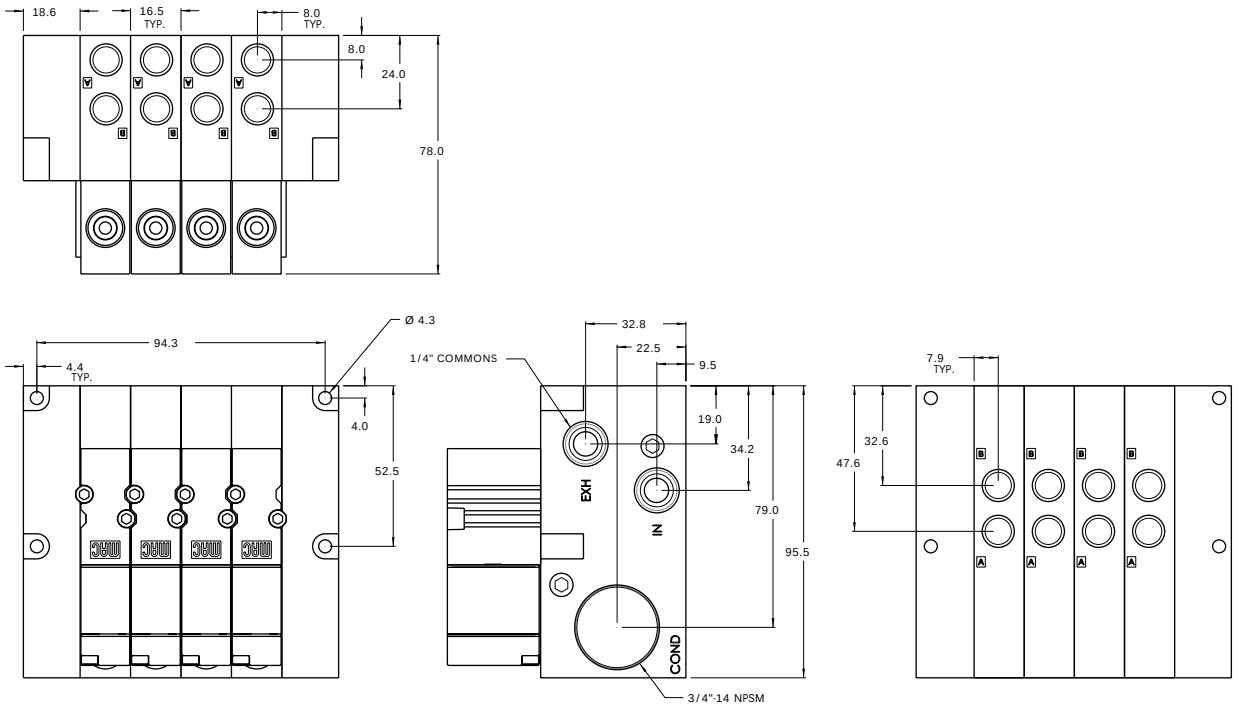
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	3,3 mm
Flow (at 6 bar, ΔP=1bar) :	1,8W : 200 Nl/min (Cv 0,20) – 2,4W : 200 Nl/min (Cv 0,20) – 5,4W : 300 Nl/min (Cv 0,30)
Coil :	Epoxy encapsulated – Class A wires – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,4W – 2,4W – 1,0W
Response times :	Energize : 7,20 ms De-energize : 4,20ms

Options : • NPTF threads

Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002
• Tie rod (x2) : 79443

DIMENSIONS

Dimensions shown are metric (mm)



Consult "Precautions" before use, installation or service of MAC Valves..

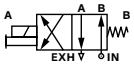
Series 46

Function	Port size	Flow (Max)	Manifold mounting	Series
4 / 2	G1 / 8 "	300 Nl / min	Manifold base "plug-in" with pressure regulators	

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Patented solenoid develops high shifting forces.
3. Short stroke with high flow.
4. Higher forces result in lower wattages for given flow.
5. Powerful return spring.

HOW TO ORDER

Port size	Model number
	
Valve less base	46A-L00-00-J *xx*P-*xxx*
G1 / 8 "	46A-LSB-AJ-J *xx*P-*xxx*

SOLENOID OPERATOR ➤ J ***XX*** P-***XXX**** (-G) Add "G" for ground

XX	Voltage
AA	120V~ / 5,4W
DA	24V= / 5,4W
DB	12V= / 5,4W
DC	24V= / 2,4W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
FA	Base plug-in
FB	Base plug-in with diode
FG	Base plug-in with rectifier

* Click here for other options available.
Note : AC voltage requires connector with rectifier.

OPTIONS

46A-**L**SB-A**J**-J*xx*P-*xxx*

- **J** Regulator with adjusting knob
- **E** Regulator with slotted stem
- **G** Regulator with slotted stem with locknut

- **0** Base only – no valve
- **L** Base mount body
- **M** Base mount body with gage port

Example : base only with regulator : 46A-0SB-AJ.
End plate quit required (port size G1/4") : M-46003-01P.

MAC

Series 4 6

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum 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 :	3,3 mm
Flow (at 6 bar, ΔP=1bar) :	1,8W : 200 Nl/min (Cv 0,20) – 2,4W : 200 Nl/min (Cv 0,20) – 5,4W : 300 Nl/min (Cv 0,30)
Coil :	Epoxy encapsulated – Class A wires – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,4W – 2,4W – 1,0W
Response times :	Energize : 7,20 ms De-energize : 4,20ms

Options : • NPTF threads

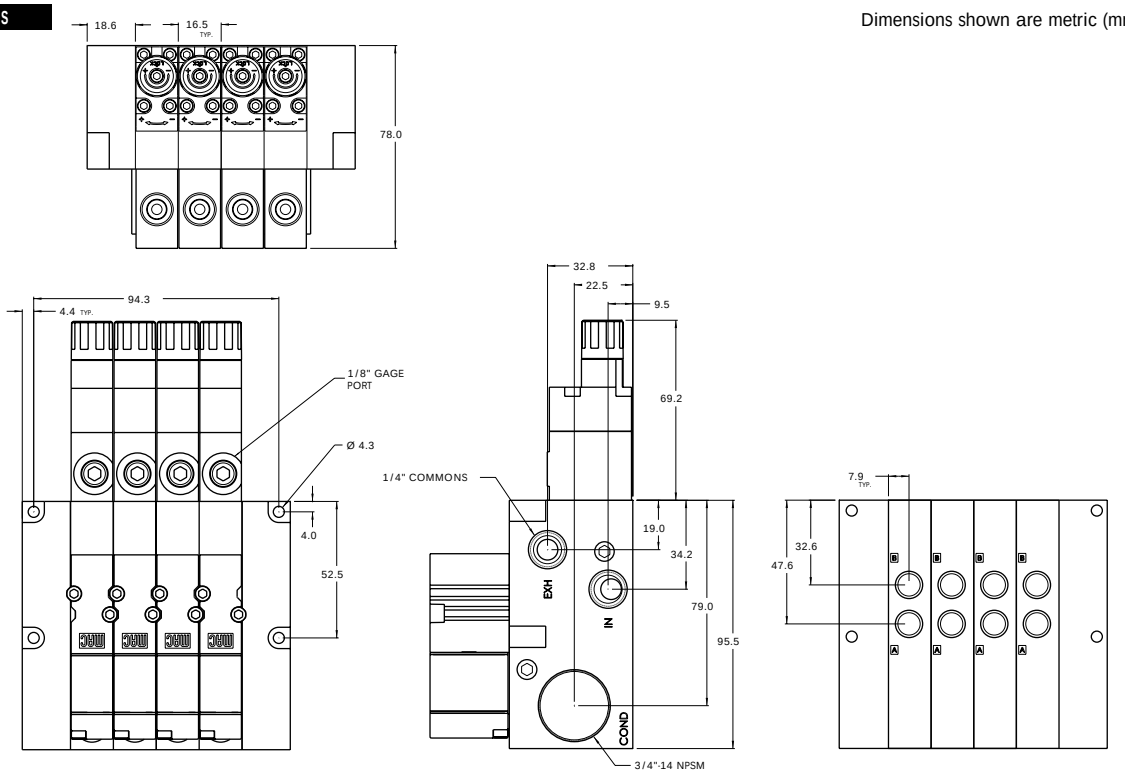
Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002 • Tie rod (x2) : 79443
• Replacement regulators : PR46A-0AAA (slotted stem)
PR46A-0BAA (adjusting knob)
PR46A-0CAA (slotted stem with locknut)

Regulating range options : • PR46A-xxx**A**

A 0 to 8 bar
B 0 to 5,3 bar
C 0 to 2 bar

DIMENSIONS

Dimensions shown are metric (mm)



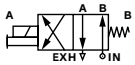
Series 46

Function	Port size	Flow (Max)	Manifold mounting	Series
4 / 2	G1 / 8 "	300 Nl / min	Manifold base "plug-in" with flow controls	

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Patented solenoid develops high shifting forces.
3. Short stroke with high flow.
4. Higher forces result in lower wattages for given flow.
5. Powerful return spring.

HOW TO ORDER

Port size	Model number
	
Valve less base	46A-L00-00-J *xx*P-*xxx*
G1 / 8 "	46A-LSB-AD-J *xx*P-*xxx*

SOLENOID OPERATOR ➤ J ***XX*** P-***XXX**** (-G) Add "G" for ground

XX	Voltage
AA	120V~ / 5,4W
DA	24V= / 5,4W
DB	12V= / 5,4W
DC	24V= / 2,4W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
FA	Base plug-in
FB	Base plug-in with diode
FG	Base plug-in with rectifier

* Click here for other options available.
Note : AC voltage requires connector with rectifier.

OPTIONS

46A-**L**SB-A**J**-J*xx*P-*xxx*

- **D** Side cylinder ports
- **M** Bottom cylinder ports

- **0** Base only – no valve
- **L** Base mount body
- **M** Base mount body with gage port

Example : base only with regulator: 46A-0SB-AD.
End plate quit required (port size G1/4") : M-46003-01P.

34
36
32
37
38
52
67
44
46
42
47
48
400
92
93
ISO 1
ISO 2
ISO 3

MAC

Series 4 6

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

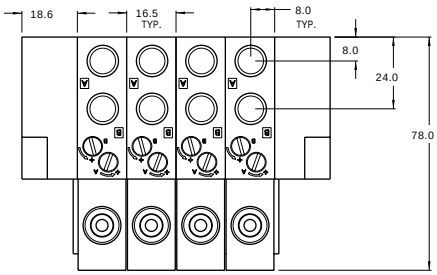
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	3,3 mm
Flow (at 6 bar, ΔP=1bar) :	1,8W : 200 Nl/min (Cv 0,20) – 2,4W : 200 Nl/min (Cv 0,20) – 5,4W : 300 Nl/min (Cv 0,30)
Coil :	Epoxy encapsulated – Class A wires – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,4W – 2,4W – 1,0W
Response times :	Energize : 7,20 ms De-energize : 4,20ms

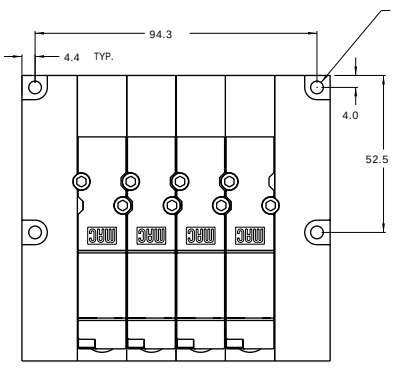
Options : • NPTF threads

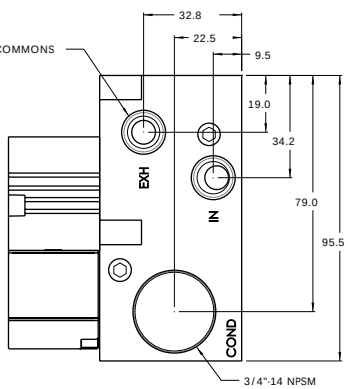
Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002
• Tie rod (x2) : 79443

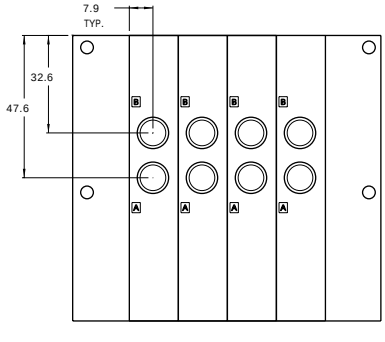
DIMENSIONS

Dimensions shown are metric (mm)









Consult "Precautions" before use, installation or service of MAC Valves..

MAC

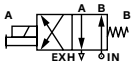
Series 46

Function	Port size	Flow (Max)	Manifold mounting	Series
4 / 2	G1 / 8 "	300 Nl / min	Manifold base "plug-in" with PR & FC	

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Patented solenoid develops high shifting forces.
3. Short stroke with high flow.
4. Higher forces result in lower wattages for given flow.
5. Powerful return spring.

HOW TO ORDER

Port size	Model number
	
Valve less base	46A-L00-00-J *xx*P-*xxx*
G1 / 8 "	46A-LSB-AK-J *xx*P-*xxx*

SOLENOID OPERATOR ➤ J ***XX*** P-***XXX**** (-G) Add "G" for ground

XX	Voltage
AA	120V~ / 5,4W
DA	24V= / 5,4W
DB	12V= / 5,4W
DC	24V= / 2,4W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
FA	Base plug-in
FB	Base plug-in with diode
FG	Base plug-in with rectifier

* Click here for other options available.
Note : AC voltage requires connector with rectifier.

OPTIONS

46A-L**S**B-A**J**-J*xx*P-*xxx*

- **K** Regulator with adjusting knob & flow controls
- **F** Regulator with slotted stem & flow controls
- **H** Regulator with slotted stem with locknut & flow controls

- **0** Base only – no valve
- **L** Base mount body
- **M** Base mount body with gage port

Example : base only with regulator : 46A-0SB-AK.
End plate quit required (port size G1/4") : M-46003-01P.

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400
92
93
ISO 1
ISO 2
ISO 3

MAC

Series 4 6

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum 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 :	3,3 mm
Flow (at 6 bar, ΔP=1bar) :	1,8W : 200 Nl/min (Cv 0,20) – 2,4W : 200 Nl/min (Cv 0,20) – 5,4W : 300 Nl/min (Cv 0,30)
Coil :	Epoxy encapsulated – Class A wires – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,4W – 2,4W – 1,0W
Response times :	Energize : 7,20 ms De-energize : 4,20ms

Options : • NPTF threads

Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002 • Tie rod (x2) : 79443

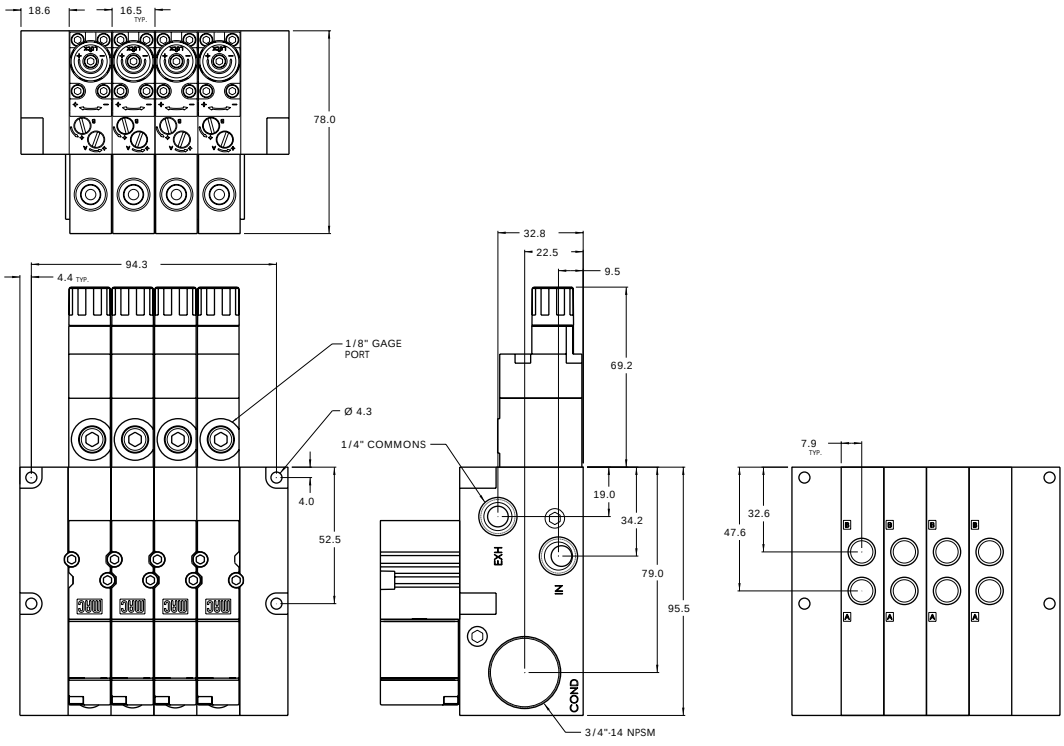
• Replacement regulators : PR46A-0AAA (slotted stem)
PR46A-0BAA (adjusting knob)
PR46A-0CAA (slotted stem with locknut)

Regulating range options : • PR46A-xxx**A**

A 0 to 8 bar
B 0 to 5,3 bar
C 0 to 2 bar

DIMENSIONS

Dimensions shown are metric (mm)

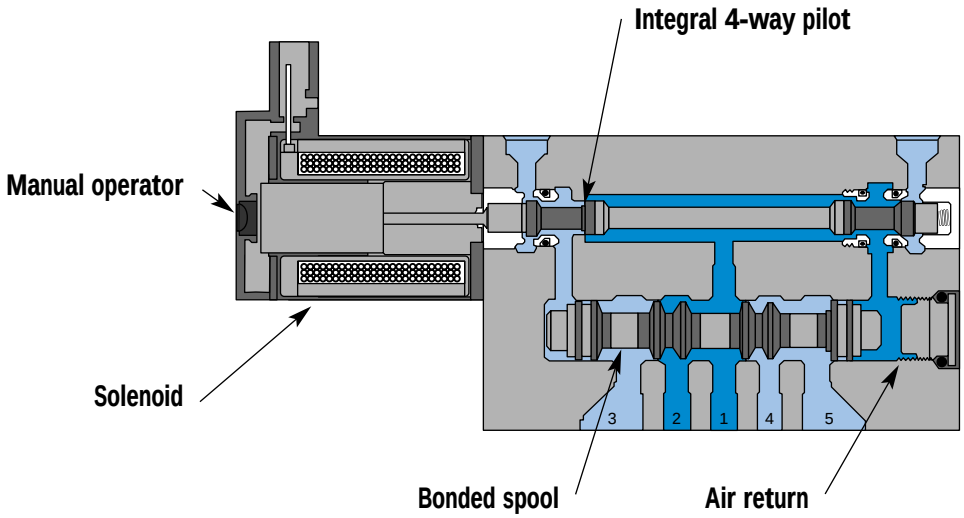


Individual mounting

Sub-base non "plug-in"	Sub-base "plug-in"	Sub-base/ manifold base non "plug-in" with latching solenoid	Sub-base/ manifold base "plug-in" with latching solenoid

Manifold mounting

Manifold base non "plug-in"	Manifold base "plug-in"	Sub-base/ manifold base non "plug-in" with latching solenoid	Sub-base/ manifold base "plug-in" with latching solenoid



SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- Single or dual pressure.
- Internal or external pilot.
- Single or double solenoid.
- 2 or 3 position.
- Rectified AC voltage.
- Latching solenoid technology.

MAC

Series 42

Direct solenoid and solenoid pilot operated valves

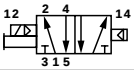
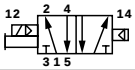
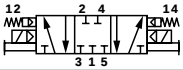
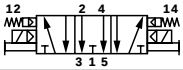
Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	M5, M7	400 Nl/min	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

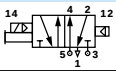
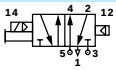
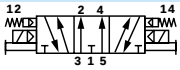
1. 4-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 10,5 mm centres).
3. High flow (up to 400 Nl/min).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
					
Valve less base	Internal	42A-AMA-000-G*xxx*-*xxx*	42A-BMA-000-G*xxx*-*xxx*	42A-EMA-000-G*xxx*-*xxx*	42A-FMA-000-G*xxx*-*xxx*
	External	42A-AMD-000-G*xxx*-*xxx*	42A-BMD-000-G*xxx*-*xxx*	42A-EMD-000-G*xxx*-*xxx*	42A-FMD-000-G*xxx*-*xxx*
M5	Internal	42A-AMA-GAL-G*xxx*-*xxx*	42A-BMA-GAL-G*xxx*-*xxx*	42A-EMA-GAL-G*xxx*-*xxx*	42A-FMA-GAL-G*xxx*-*xxx*
	External	42A-AMD-GAM-G*xxx*-*xxx*	42A-BMD-GAM-G*xxx*-*xxx*	42A-EMD-GAM-G*xxx*-*xxx*	42A-FMD-GAM-G*xxx*-*xxx*
M7	Internal	42A-AMA-LAL-G*xxx*-*xxx*	42A-BMA-LAL-G*xxx*-*xxx*	42A-EMA-LAL-G*xxx*-*xxx*	42A-FMA-LAL-G*xxx*-*xxx*
	External	42A-AMD-LAM-G*xxx*-*xxx*	42A-BMD-LAM-G*xxx*-*xxx*	42A-EMD-LAM-G*xxx*-*xxx*	42A-FMD-LAM-G*xxx*-*xxx*

DUAL PRESSURE MODELS

Port size	Pilot air		5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
					
Valve less base	Internal	Supply #3 port	42A-CMB-000-G*xxx*-*xxx*	42A-DMB-000-G*xxx*-*xxx*	42A-HMB-000-G*xxx*-*xxx*
		Supply #5 port	42A-CMC-000-G*xxx*-*xxx*	42A-DMC-000-G*xxx*-*xxx*	42A-HMC-000-G*xxx*-*xxx*
	External		42A-CMD-000-G*xxx*-*xxx*	42A-DMD-000-G*xxx*-*xxx*	42A-HMD-000-G*xxx*-*xxx*
M5	Internal	Supply #3 port	42A-CMB-GAL-G*xxx*-*xxx*	42A-DMB-GAL-G*xxx*-*xxx*	42A-HMB-GAL-G*xxx*-*xxx*
		Supply #5 port	42A-CMC-GAL-G*xxx*-*xxx*	42A-DMC-GAL-G*xxx*-*xxx*	42A-HMC-GAL-G*xxx*-*xxx*
	External		42A-CMD-GAM-G*xxx*-*xxx*	42A-DMD-GAM-G*xxx*-*xxx*	42A-HMD-GAM-G*xxx*-*xxx*
M7	Internal	Supply #3 port	42A-CMB-LAL-G*xxx*-*xxx*	42A-DMB-LAL-G*xxx*-*xxx*	42A-HMB-LAL-G*xxx*-*xxx*
		Supply #5 port	42A-CMC-LAL-G*xxx*-*xxx*	42A-DMC-LAL-G*xxx*-*xxx*	42A-HMC-LAL-G*xxx*-*xxx*
	External		42A-CMD-LAM-G*xxx*-*xxx*	42A-DMD-LAM-G*xxx*-*xxx*	42A-HMD-LAM-G*xxx*-*xxx*

STANDARD SOLENOID OPERATOR ➤

G ***XXX-XXX****

XX	Voltage
AA	120 V~/2,5W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BA	Flying leads
BT	Flying leads with light
KA	Mini connector
KT	Mini connector with light
KD	Mini connector with rectifier & light & ground

Note : AC voltage requires connector with rectifier.
* Click here for other options available.
Latching solenoid available for 5/2 valves.
Other options available for the 42 series valves, click here.

MAC

Series 42

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

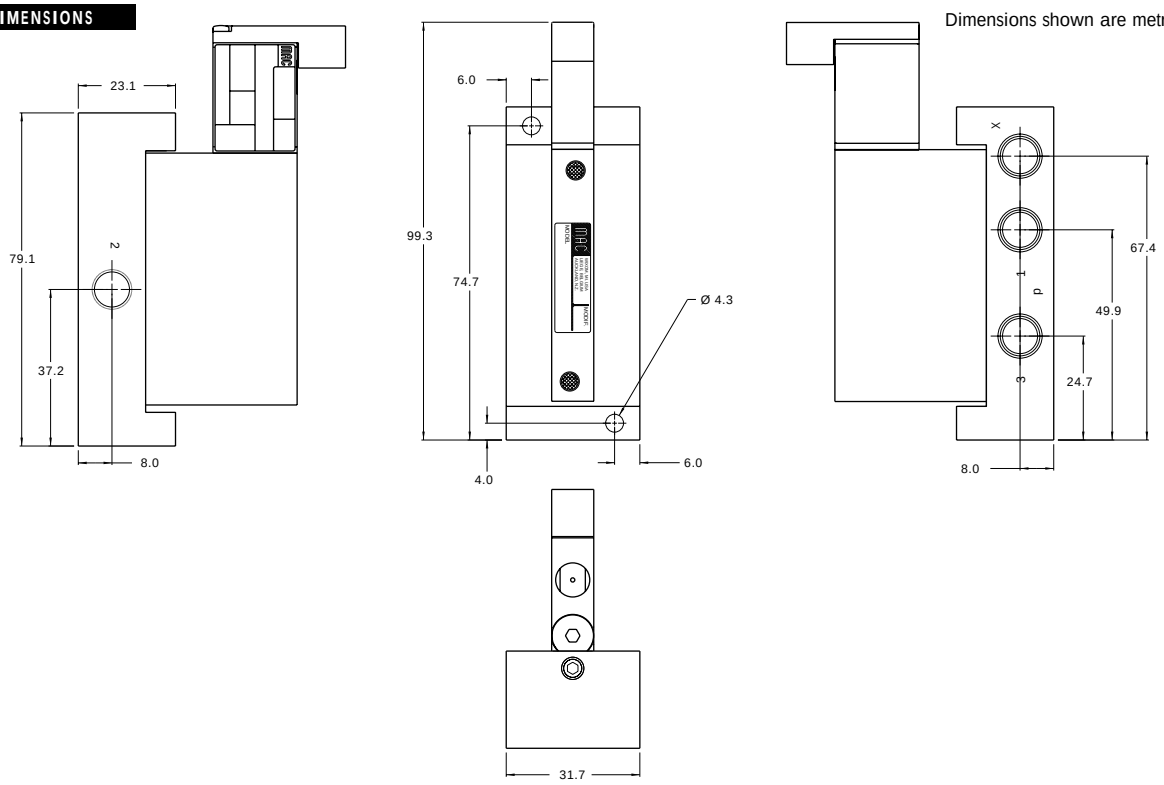
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	IInternal Pilot - 2 pos. : 1,3 to 8 bar 3 pos. : 2,3 to 8 bar External Pilot : vacuum to 8 bar
Pilot pressure :	2 position : 1,3 to 8 bar 3 position : 2,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	3,8 mm
Flow (at 6 bar, ΔP=1bar) :	M7: 400 Nl/min (Cv 0,4) – M5: 350 Nl/min (Cv 0,35)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 24V 4 W coil)**	Energize : 5 ms De-energize : 5 ms

Options :

- NPTF threads
- Sandwich flow controls : FC42A-BB
- Sandwich regulator : see 'Regulator' section

DIMENSIONS

Dimensions shown are metric (mm)



Consult "Precautions" before use, installation or service of MAC Valves..

MAC Series 42

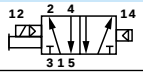
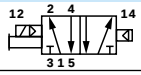
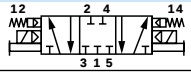
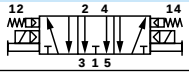
Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	M5, M7	400 Nl/min	Sub-base "plug-in"	

OPERATIONAL BENEFITS

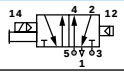
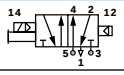
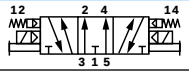
1. 4-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 10,5 mm centres).
3. High flow (up to 400 Nl/min).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.

HOW TO ORDER

SINGLE PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
					
Valve less base	Internal	42A-AMA-000-G*xx*P-*xxx*	42A-BME-000-G*xx*P-*x*GA	42A-EME-000-G*xx*P-*x*GA	42A-FME-000-G*xx*P-*x*GA
	External	42A-AMD-000-G*xx*P-*xxx*	42A-BMH-000-G*xx*P-*x*GA	42A-EMH-000-G*xx*P-*x*GA	42A-FMH-000-G*xx*P-*x*GA
M5	Internal	42A-AMA-GAA-G*xx*P-*xxx*	42A-BME-GAC-G*xx*P-*x*GA	42A-EME-GAC-G*xx*P-*x*GA	42A-FME-GAC-G*xx*P-*x*GA
	External	42A-AMD-GAB-G*xx*P-*xxx*	42A-BMH-GAD-G*xx*P-*x*GA	42A-EMH-GAD-G*xx*P-*x*GA	42A-FMH-GAD-G*xx*P-*x*GA
M7	Internal	42A-AMA-LAA-G*xx*P-*xxx*	42A-BME-LAC-G*xx*P-*x*GA	42A-EME-LAC-G*xx*P-*x*GA	42A-FME-LAC-G*xx*P-*x*GA
	External	42A-AMD-LAB-G*xx*P-*xxx*	42A-BMH-LAD-G*xx*P-*x*GA	42A-EMH-LAD-G*xx*P-*x*GA	42A-FMH-LAD-G*xx*P-*x*GA

DUAL PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air		5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
					
Valve less base	Internal	Supply #3 port	42A-CMB-000-G*xx*P-*xxx*	42A-DMF-000-G*xx*P-*x*GA	42A-HMF-000-G*xx*P-*x*GA
		Supply #5 port	42A-CMC-000-G*xx*P-*xxx*	42A-DMG-000-G*xx*P-*x*GA	42A-HMG-000-G*xx*P-*x*GA
	External		42A-CMD-000-G*xx*P-*xxx*	42A-DMH-000-G*xx*P-*x*GA	42A-HMH-000-G*xx*P-*x*GA
M5	Internal	Supply #3 port	42A-CMB-GAA-G*xx*P-*xxx*	42A-DMF-GAC-G*xx*P-*x*GA	42A-HMF-GAC-G*xx*P-*x*GA
		Supply #5 port	42A-CMC-GAA-G*xx*P-*xxx*	42A-DMG-GAC-G*xx*P-*x*GA	42A-HMG-GAC-G*xx*P-*x*GA
	External		42A-CMD-GAB-G*xx*P-*xxx*	42A-DMH-GAD-G*xx*P-*x*GA	42A-HMH-GAD-G*xx*P-*x*GA
M7	Internal	Supply #3 port	42A-CMB-LAA-G*xx*P-*xxx*	42A-DMF-LAC-G*xx*P-*x*GA	42A-HMF-LAC-G*xx*P-*x*GA
		Supply #5 port	42A-CMC-LAA-G*xx*P-*xxx*	42A-DMG-LAC-G*xx*P-*x*GA	42A-HMG-LAC-G*xx*P-*x*GA
	External		42A-CMD-LAB-G*xx*P-*xxx*	42A-DMH-LAD-G*xx*P-*x*GA	42A-HMH-LAD-G*xx*P-*x*GA

STANDARD SOLENOID OPERATOR ➤ G *XX* P-*XXX* *

XX	Voltage
AA	120 V~/2,5W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
	Double solenoid & 3 position models
GA	Base plug-in
	Single solenoid models
DJ	Base plug-in
DM	Base plug-in with ground pin
DD	Base plug-in with rectifier & light & ground

Note : AC voltage requires connector with rectifier for single solenoid only.
* Click here for other options available.
Other options available for the 42 series valves, click here.

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series 42

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

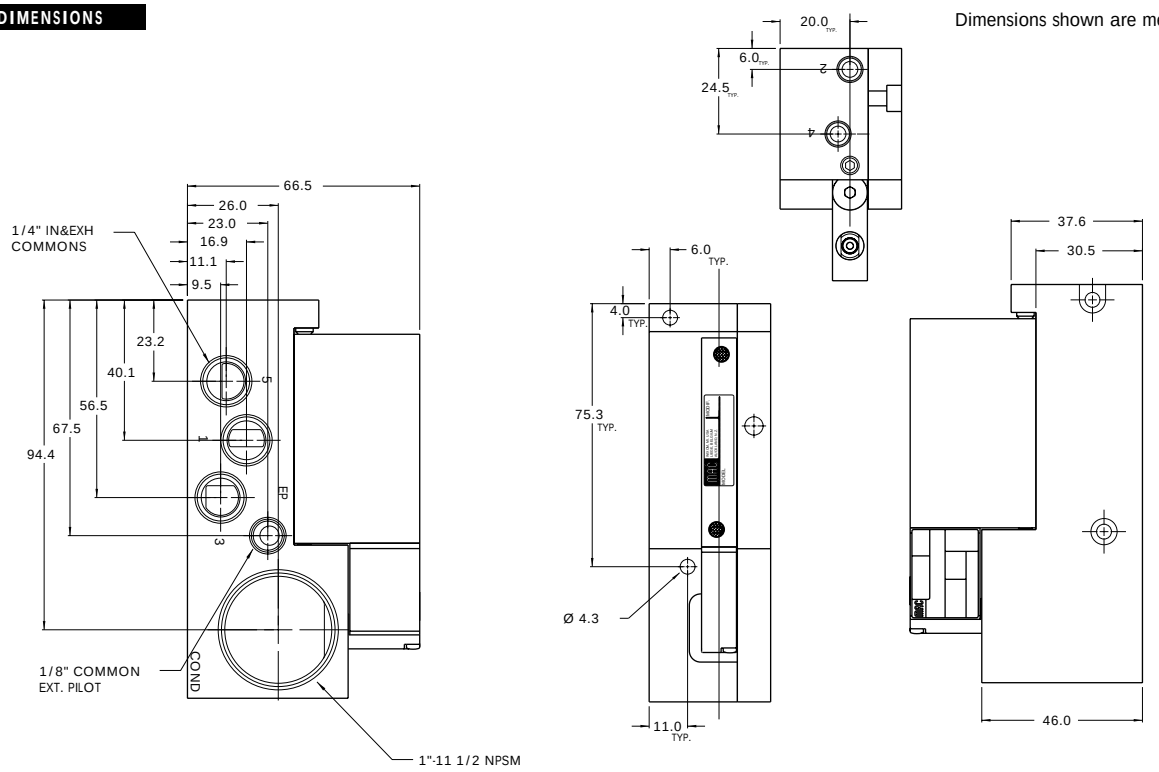
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	IInternal Pilot - 2 pos. : 1,3 to 8 bar 3 pos. : 2,3 to 8 bar External Pilot : vacuum to 8 bar
Pilot pressure :	2 position : 1,3 to 8 bar 3 position : 2,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	3,8 mm
Flow (at 6 bar, ΔP=1bar) :	M7: 400 Nl/min (Cv 0,4) – M5: 350 Nl/min (Cv 0,35)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 24V 4 W coil)**	Energize : 5 ms De-energize : 5 ms

Options :

- NPTF ports
- Sandwich flow controls : FC42A-AB
- Sandwich regulator : see 'Regulator' section

DIMENSIONS

Dimensions shown are metric (mm)



MAC

Series 42

Direct solenoid and solenoid pilot operated valves

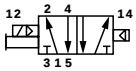
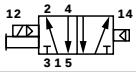
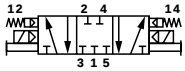
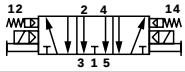
Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	M5, M7	400 Nl/min	Manifold base non "plug-in"	

OPERATIONAL BENEFITS

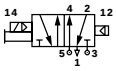
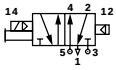
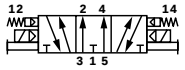
1. 4-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 10,5 mm centres).
3. High flow (up to 400 Nl/min).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.

HOW TO ORDER

SINGLE PRESSURE MODELS (MIDDLE STATION MANIFOLDS WITH SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
					
Valve less base	Internal	42A-AMA-000-G*xxx*-*xxx*	42A-BMA-000-G*xxx*-*xxx*	42A-EMA-000-G*xxx*-*xxx*	42A-FMA-000-G*xxx*-*xxx*
	External	42A-AMD-000-G*xxx*-*xxx*	42A-BMD-000-G*xxx*-*xxx*	42A-EMD-000-G*xxx*-*xxx*	42A-FMD-000-G*xxx*-*xxx*
M5	Internal	42A-AMA-GJL-G*xxx*-*xxx*	42A-BMA-GJL-G*xxx*-*xxx*	42A-EMA-GJL-G*xxx*-*xxx*	42A-FMA-GJL-G*xxx*-*xxx*
	External	42A-AMD-GJM-G*xxx*-*xxx*	42A-BMD-GJM-G*xxx*-*xxx*	42A-EMD-GJM-G*xxx*-*xxx*	42A-FMD-GJM-G*xxx*-*xxx*
M7	Internal	42A-AMA-LJL-G*xxx*-*xxx*	42A-BMA-LJL-G*xxx*-*xxx*	42A-EMA-LJL-G*xxx*-*xxx*	42A-FMA-LJL-G*xxx*-*xxx*
	External	42A-AMD-LJM-G*xxx*-*xxx*	42A-BMD-LJM-G*xxx*-*xxx*	42A-EMD-LJM-G*xxx*-*xxx*	42A-FMD-LJM-G*xxx*-*xxx*

DUAL PRESSURE MODELS (MIDDLE STATION MANIFOLDS WITH SIDE PORTS)

Port size	Pilot air		5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
					
Valve less base	Internal	Supply #3 port	42A-CMB-000-G*xxx*-*xxx*	42A-DMB-000-G*xxx*-*xxx*	42A-HMB-000-G*xxx*-*xxx*
		Supply #5 port	42A-CMC-000-G*xxx*-*xxx*	42A-DMC-000-G*xxx*-*xxx*	42A-HMC-000-G*xxx*-*xxx*
	External		42A-CMD-000-G*xxx*-*xxx*	42A-DMD-000-G*xxx*-*xxx*	42A-HMD-000-G*xxx*-*xxx*
M5	Internal	Supply #3 port	42A-CMB-GJL-G*xxx*-*xxx*	42A-DMB-GJL-G*xxx*-*xxx*	42A-HMB-GJL-G*xxx*-*xxx*
		Supply #5 port	42A-CMC-GJL-G*xxx*-*xxx*	42A-DMC-GJL-G*xxx*-*xxx*	42A-HMC-GJL-G*xxx*-*xxx*
	External		42A-CMD-GJM-G*xxx*-*xxx*	42A-DMD-GJM-G*xxx*-*xxx*	42A-HMD-GJM-G*xxx*-*xxx*
M7	Internal	Supply #3 port	42A-CMB-LJL-G*xxx*-*xxx*	42A-DMB-LJL-G*xxx*-*xxx*	42A-HMB-LJL-G*xxx*-*xxx*
		Supply #5 port	42A-CMC-LJL-G*xxx*-*xxx*	42A-DMC-LJL-G*xxx*-*xxx*	42A-HMC-LJL-G*xxx*-*xxx*
	External		42A-CMD-LJM-G*xxx*-*xxx*	42A-DMD-LJM-G*xxx*-*xxx*	42A-HMD-LJM-G*xxx*-*xxx*

STANDARD SOLENOID OPERATOR ➤ G *XXX*-*XXX**

XX	Voltage
AA	120 V~/2,5W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BA	Flying leads
BT	Flying leads with light
KA	Mini connector
KT	Mini connector with light
KD	Mini connector with rectifier & light & ground

Note : - AC voltage requires connector with rectifier.
* Click here for other options available.
Latching solenoid available for 5/2 valves.
Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").
Other options available for the 42 series valves, click here.

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series 42

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

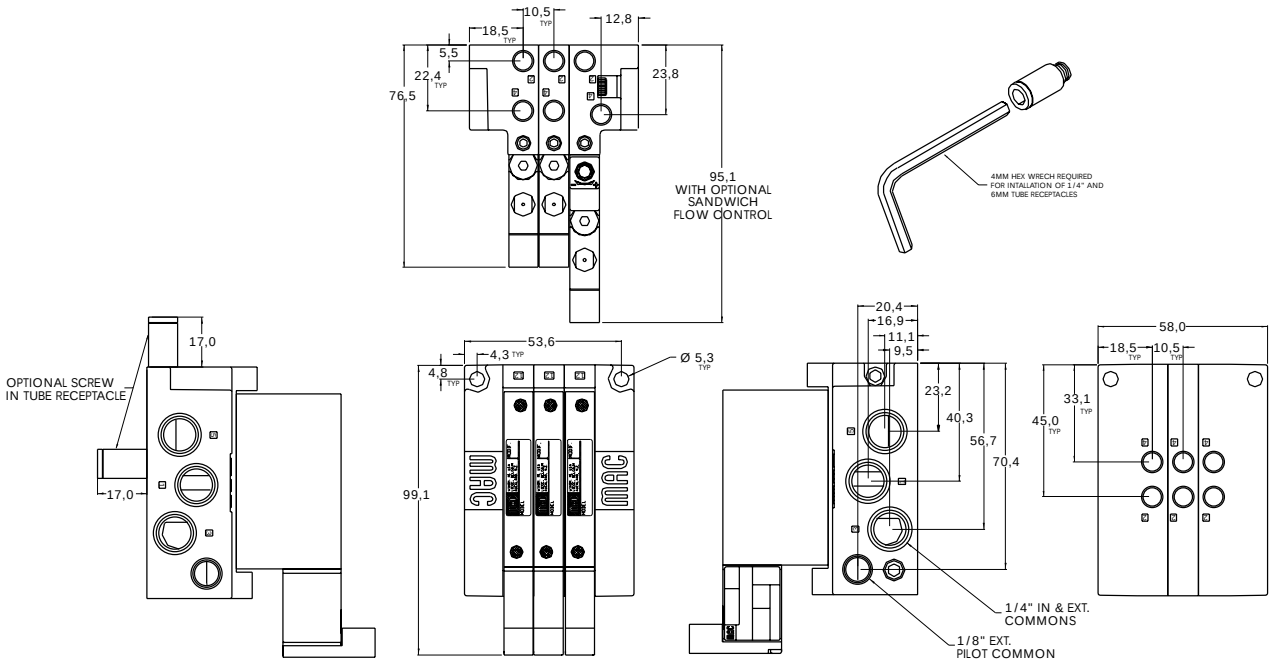
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot - 2 pos. : 1,3 to 8 bar 3 pos. : 2,3 to 8 bar External Pilot : vacuum to 8 bar
Pilot pressure :	2 position : 1,3 to 8 bar 3 position : 2,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	3,8 mm
Flow (at 6 bar, ΔP=1bar) :	M7: 400 Nl/min (Cv 0,4) – M5: 350 Nl/min (Cv 0,35)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 24V 4 W coil)**	Energize : 5 ms De-energize : 5 ms

Options :

- NPTF threads • Sandwich flow controls : FC42A-BB
- Sandwich regulator : see "regulators" section • Isolator disk for inlet and exhaust: 28454
- Valve blanking plate : M-42004

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	M5, M7	400 Nl/min	Manifold base "plug-in"	

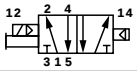
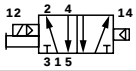
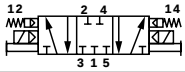
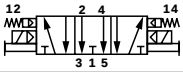
OPERATIONAL BENEFITS

1. 4-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 10,5 mm centres).
3. High flow (up to 400 Nl/min).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.

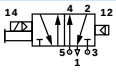
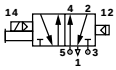
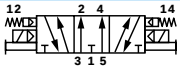
34
36
32
37
38
52
67
44
46
42
47
48
400
92
93
ISO 1
ISO 2
ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
					
Valve less base	Internal	42A-AMA-000-G*xx*P-*xxx*	42A-BME-000-G*xx*P-*xxx*	42A-EME-000-G*xx*P-*xxx*	42A-FME-000-G*xx*P-*xxx*
	External	42A-AMD-000-G*xx*P-*xxx*	42A-BMH-000-G*xx*P-*xxx*	42A-EMH-000-G*xx*P-*xxx*	42A-FMH-000-G*xx*P-*xxx*
M5	Internal	42A-AMA-GJA-G*xx*P-*xxx*	42A-BME-GJC-G*xx*P-*xxx*	42A-EME-GJC-G*xx*P-*xxx*	42A-FME-GJC-G*xx*P-*xxx*
	External	42A-AMD-GJB-G*xx*P-*xxx*	42A-BMH-GJD-G*xx*P-*xxx*	42A-EMH-GJD-G*xx*P-*xxx*	42A-FMH-GJD-G*xx*P-*xxx*
M7	Internal	42A-AMA-LJA-G*xx*P-*xxx*	42A-BME-LJC-G*xx*P-*xxx*	42A-EME-LJC-G*xx*P-*xxx*	42A-FME-LJC-G*xx*P-*xxx*
	External	42A-AMD-LJB-G*xx*P-*xxx*	42A-BMH-LJD-G*xx*P-*xxx*	42A-EMH-LJD-G*xx*P-*xxx*	42A-FMH-LJD-G*xx*P-*xxx*

DUAL PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air		5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
					
Valve less base	Internal	Supply #3 port	42A-CMB-000-G*xx*P-*xxx*	42A-DMF-000-G*xx*P-*xxx*	42A-HMF-000-G*xx*P-*xxx*
		Supply #5 port	42A-CMC-000-G*xx*P-*xxx*	42A-DMG-000-G*xx*P-*xxx*	42A-HMG-000-G*xx*P-*xxx*
	External		42A-CMD-000-G*xx*P-*xxx*	42A-DMH-000-G*xx*P-*xxx*	42A-HMH-000-G*xx*P-*xxx*
M5	Internal	Supply #3 port	42A-CMB-GJA-G*xx*P-*xxx*	42A-DMF-GJC-G*xx*P-*xxx*	42A-HMF-GJC-G*xx*P-*xxx*
		Supply #5 port	42A-CMC-GJA-G*xx*P-*xxx*	42A-DMG-GJC-G*xx*P-*xxx*	42A-HMG-GJC-G*xx*P-*xxx*
	External		42A-CMD-GJB-G*xx*P-*xxx*	42A-DMH-GJD-G*xx*P-*xxx*	42A-HMH-GJD-G*xx*P-*xxx*
M7	Internal	Supply #3 port	42A-CMB-LJA-G*xx*P-*xxx*	42A-DMF-LJC-G*xx*P-*xxx*	42A-HMF-LJC-G*xx*P-*xxx*
		Supply #5 port	42A-CMC-LJA-G*xx*P-*xxx*	42A-DMG-LJC-G*xx*P-*xxx*	42A-HMG-LJC-G*xx*P-*xxx*
	External		42A-CMD-LJB-G*xx*P-*xxx*	42A-DMH-LJD-G*xx*P-*xxx*	42A-HMH-LJD-G*xx*P-*xxx*

Above numbers are middle station manifold with side ports

STANDARD SOLENOID OPERATOR ➤ G *XX* P-*XXX**

XX	Voltage
AA	120 V~/2,5W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
	Double solenoid & 3 position models
GA	Base plug-in
	Single solenoid models
DJ	Base plug-in
DM	Base plug-in with ground pin
DD	Base plug-in with rectifier & light & ground

* Click here for other options available.
** Latching solenoid available for 5/2 valves.
Note : - AC voltage requires connector with rectifier for single solenoid only.
- Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").
Other options available for the 42 series valves, click here.

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series 42

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

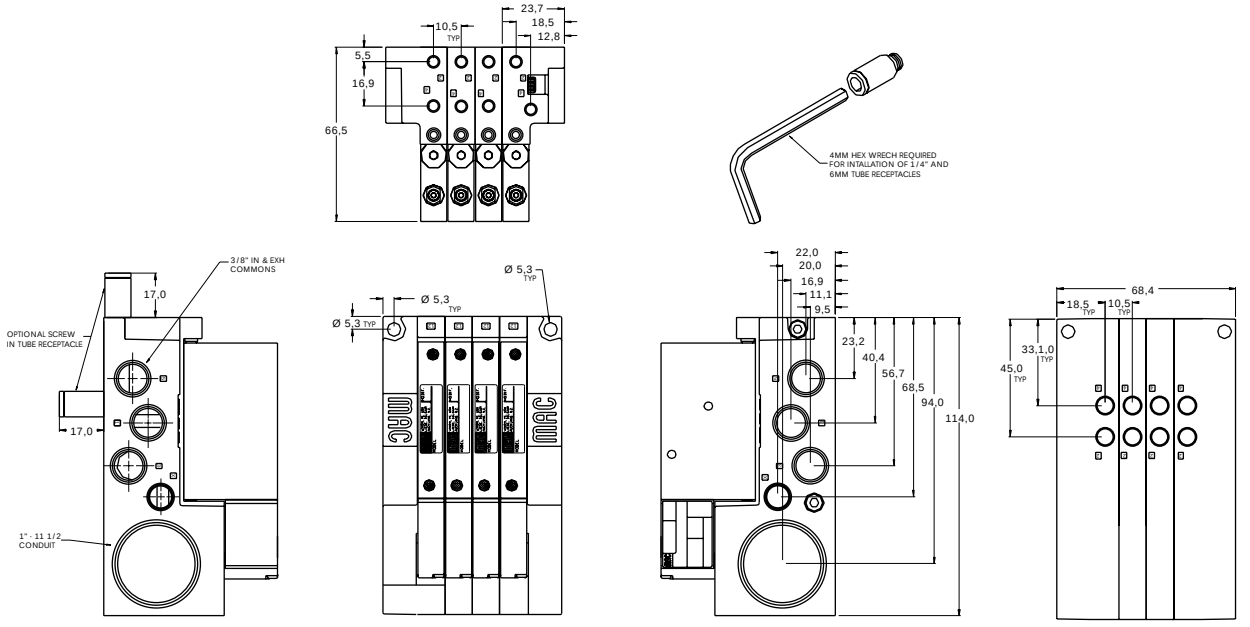
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	IInternal Pilot - 2 pos. : 1,3 to 8 bar 3 pos. : 2,3 to 8 bar External Pilot : vacuum to 8 bar
Pilot pressure :	2 position : 1,3 to 8 bar 3 position : 2,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	3,8 mm
Flow (at 6 bar, ΔP=1bar) :	M7: 400 Nl/min (Cv 0,4) – M5: 350 Nl/min (Cv 0,35)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 24V 4 W coil)**	Energize : 5 ms De-energize : 5 ms

Options :

- NPTF threads • Sandwich flow controls : FC42A-AB
- Sandwich regulator : see "regulators" section • Isolator disk for inlet and exhaust: 28454
- Valve blanking plate : M-42004 • Plug-in wire protector : 24180

DIMENSIONS

Dimensions shown are metric (mm)



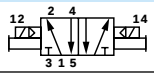
Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5 / 2	M5, M7	400 Nl/min	Sub-base/ manifold base non "plug-in" with latching solenoid	

OPERATIONAL BENEFITS

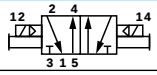
1. 4-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 10,5 mm centres).
3. High flow (up to 400 Nl/min).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5 / 2 Single pressure
		
Valve less base	Internal	42A-AMA-000-L*xxx*-*xxx*
	External	42A-AMD-000-L*xxx*-*xxx*
M5	Internal	42A-AMA-GAL-L*xxx*-*xxx*
	External	42A-AMD-GAM-L*xxx*-*xxx*
M7	Internal	42A-AMA-LAL-L*xxx*-*xxx*
	External	42A-AMD-LAM-L*xxx*-*xxx*

DUAL PRESSURE MODELS

Port size	Pilot air		5 / 2 Dual pressure
			
Valve less base	Internal	Supply #3 port	42A-CMB-000-L*xxx*-*xxx*
		Supply #5 port	42A-CMC-000-L*xxx*-*xxx*
	External		42A-CMD-000-L*xxx*-*xxx*
M5	Internal	Supply #3 port	42A-CMB-GAL-L*xxx*-*xxx*
		Supply #5 port	42A-CMC-GAL-L*xxx*-*xxx*
	External		42A-CMD-GAM-L*xxx*-*xxx*
M7	Internal	Supply #3 port	42A-CMB-LAL-L*xxx*-*xxx*
		Supply #5 port	42A-CMC-LAL-L*xxx*-*xxx*
	External		42A-CMD-LAM-L*xxx*-*xxx*

LATCHING SOLENOID OPERATOR ➤ L *XXX*-*XXX* *

XX	Voltage
DF	24 VDC (4,0 W)
HA	24 VDC (1,95 W)

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
0	No operator

XX	Electrical connection
BA	2 Wire Flying leads
KA	2 Wire Plug-in Assembly
LA	3 wire plug-in assembly (polarity switching cover)
KE	4-wire plug-in assembly

* Click here for other options available.
Note : Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").
Other options available for the 42 series valves, click here.

MAC

Series 42

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	IInternal Pilot - 2 pos. : 1,3 to 8 bar 3 pos. : 2,3 to 8 bar External Pilot : vacuum to 8 bar
Pilot pressure :	2 position : 1,3 to 8 bar 3 position : 2,3 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 :	3,8 mm
Flow (at 6 bar, ΔP=1bar) :	M7: 400 Nl/min (Cv 0,4) – M5: 350 Nl/min (Cv 0,35)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.95 to 4.0 W
Response times : **(with 24V 4 W coil)**	Energize : 5 ms De-energize : 5 ms

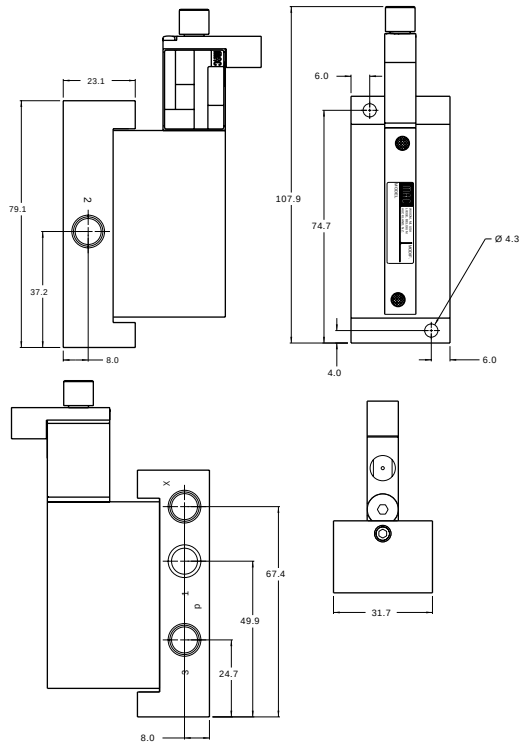
Options :

- NPTF threads • Sandwich flow controls : FC42A-BB
- Sandwich regulator : see "regulators" section • Isolator disk for inlet and exhaust: 28454
- Valve blanking plate : M-42004

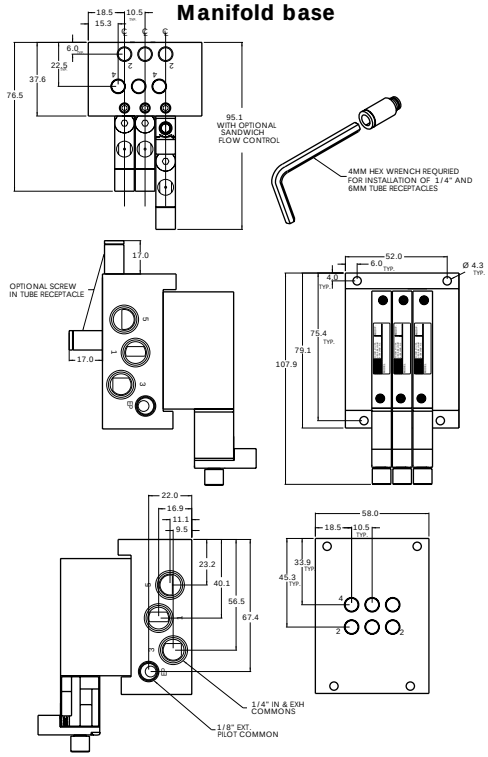
DIMENSIONS

Dimensions shown are metric (mm)

Individual base



Manifold base



Consult "Precautions" before use, installation or service of MAC Valves..

Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2	M5, M7	400 Nl/min	Sub-base/ manifold base "plug-in" with latching solenoid	

OPERATIONAL BENEFITS

1. 4-way valve with 4-way integral pilot.
2. 10 mm valve (stacks on 10,5 mm centres).
3. High flow (up to 400 Nl/min).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.

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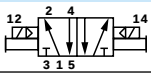
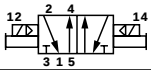
ISO 1
ISO 2
ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single pressure
		
Valve less base	Internal	42A-AMA-000-L*xx*P-*xxx*
	External	42A-AMD-000-L*xx*P-*xxx*
M5	Internal	42A-AMA-GAA-L*xx*P-*xxx*
	External	42A-AMD-GAB-L*xx*P-*xxx*
M7	Internal	42A-AMA-LAA-L*xx*P-*xxx*
	External	42A-AMD-LAB-L*xx*P-*xxx*

DUAL PRESSURE MODELS

Port size	Pilot air		5/2 Dual pressure
			
Valve less base	Internal	Supply #3 port	42A-CMB-000-L*xx*P-*xxx*
		Supply #5 port	42A-CMC-000-L*xx*P-*xxx*
	External		42A-CMD-000-L*xx*P-*xxx*
M5	Internal	Supply #3 port	42A-CMB-GAA-L*xx*P-*xxx*
		Supply #5 port	42A-CMC-GAA-L*xx*P-*xxx*
	External		42A-CMD-GAB-L*xx*P-*xxx*
M7	Internal	Supply #3 port	42A-CMB-LAA-L*xx*P-*xxx*
		Supply #5 port	42A-CMC-LAA-L*xx*P-*xxx*
	External		42A-CMD-LAB-L*xx*P-*xxx*

LATCHING SOLENOID OPERATOR ➤ L *XX* P-*XXX**

XX	Voltage
DF	24 VDC/4,0W
HA	24 VDC/1,95W

X	Manual operator
0	No operator

XX	Electrical connection**
DA	Plug-in
EA	Plug-in 3 pin (polarity switching cover)

* Click here for other options available.
** For latching solenoid 2 and 4 wire, use electrical connector DA, DB, DC or DD. For 3 wire latching, use the "EA" connector.
Other options available for the 42 series valves, click here.

MAC

Series 42

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

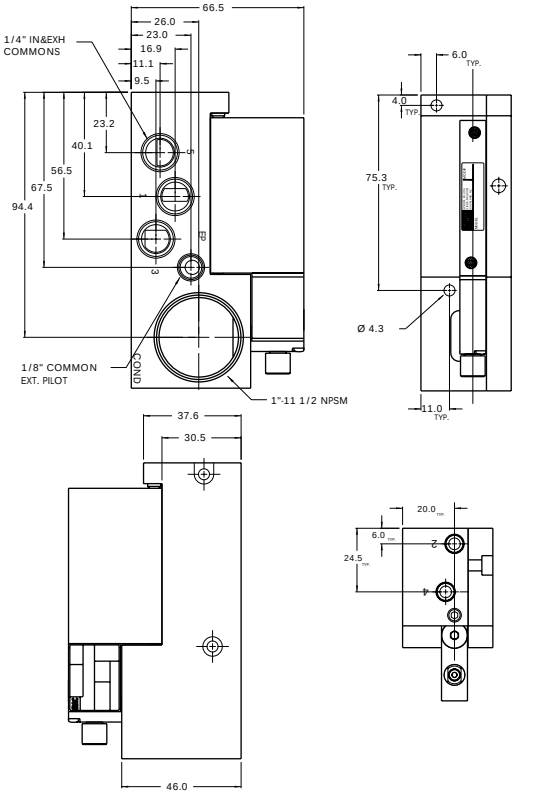
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	IInternal Pilot - 2 pos. : 1,3 to 8 bar 3 pos. : 2,3 to 8 bar External Pilot : vacuum to 8 bar
Pilot pressure :	2 position : 1,3 to 8 bar 3 position : 2,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	3,8 mm
Flow (at 6 bar, ΔP=1bar) :	M7: 400 Nl/min (Cv 0,4) – M5: 350 Nl/min (Cv 0,35)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.95 to 4.0 W
Response times : **(with 24V 4 W coil)**	Energize : 5 ms De-energize : 5 ms

Options :

- NPTF threads • Sandwich flow controls : FC42A-AB
- Sandwich regulator : see "regulators" section • Isolator disk for inlet and exhaust: 28454
- Valve blanking plate : M-42004 • Plug-in wire protector : 24180

DIMENSIONS

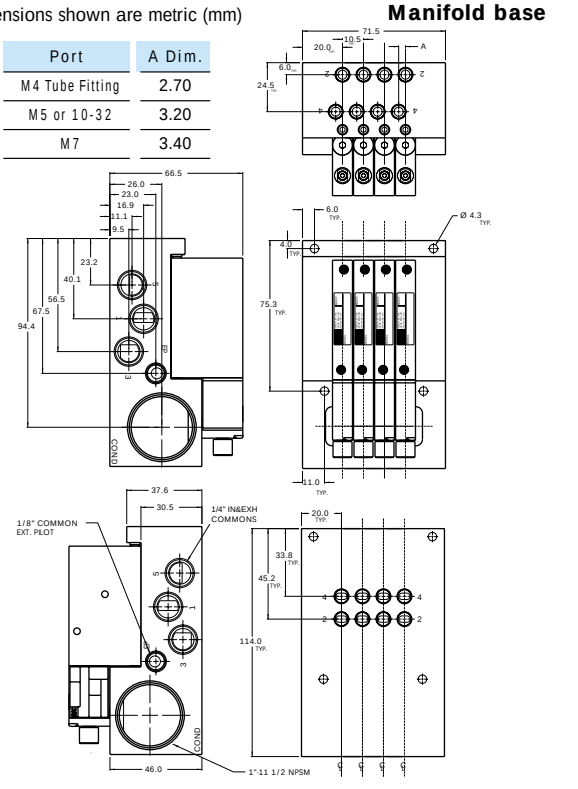
Individual base



Dimensions shown are metric (mm)

Port	A Dim.
M4 Tube Fitting	2.70
M5 or 10-32	3.20
M7	3.40

Manifold base



Consult "Precautions" before use, installation or service of MAC Valves..

OPTIONS FOR NON PLUG-IN VALVES

Base type :

Individual base

42A-XXX-X**A**X-G*xxx*-*xxx*

- **A** Individual base – Side port
- **B** Individual base – Bottom port

Manifold base

42A-XXX-X**J**X-G*xxx*-*xxx*

- **J** Manifold base – Side ports
- **K** Manifold base – Bottom ports
- **L** Left end manifold base – Side ports
- **M** Left end manifold base - Bottom ports
- **N** Right end manifold base –Side ports
- **P** Right end manifold base – Bottom ports

Universal spool

42A-**R**XX-XXX-G*xxx*-*xxx*

- **R** 2 position single solenoid universal spool
- **S** 2 position double solenoid universal spool

Base only :

42A-000-XXX (i.e. 42A-000-GAL) - Individual base

42A-000-XXX (i.e. 42A-000-GJL) - Manifold base

Pilot style :

42A-X**M**X-XXX-G*xxx*-*xxx*

- **M** Pilot exhaust muffled
- **R** Pilot exhaust piped (M5)
- **U** Pilot exhaust to main exhaust

Base / Manifold configurations for LATCHING SOLENOID VALVES :

42A-*xxx*-*x***A***x*-L*xxx*-*xxx*

- **A** Individual base – Side port
- **B** Individual base – Bottom port
- **J** Manifold base – Side ports
- **K** Manifold base – Bottom ports
- **L** Left end manifold base - Side ports
- **M** Left end manifold base - Bottom ports
- **N** Right end manifold base - Side ports
- **P** Right end manifold base - Bottom ports

OPTIONS FOR PLUG-IN VALVES

Base type :

Individual base

42A-XXX-X**A**X-G*xx*P-*xxx*

- **A** Individual base – Side port
- **B** Individual base – Bottom port

Manifold base

42A-XXX-X**J**X-G*xx*P-*xxx*

- **J** Manifold base – Side ports
- **K** Manifold base – Bottom ports
- **L** Left end manifold base – Side ports
- **M** Left end manifold base - Bottom ports
- **N** Right end manifold base –Side ports
- **P** Right end manifold base – Bottom ports

Universal spool

42A-**R**XX-XXX-G*xx*P-*xxx*

- **R** 2 position single solenoid universal spool
- **S** 2 position double solenoid universal spool

Base only :

42A-000-XXX (i.e. 42A-000-GAC)

- Individual base wired for a double solenoid

42A-000-XXX (i.e. 42A-000-GJC)

- Manifold base wired for a single solenoid

For LED with diode (2 & 3 position double solenoid valves)

42A-XX**J**-XXX-G*xx*P-*x*GA

- **J** Internal pilot single pressure
- **K** Internal pilot dual pressure supply from #3 port
- **L** Internal pilot dual pressure supply from #5 port
- **M** External pilot

Pilot style :

42A-X**M**X-XXX-G*xx*P-*xxx*

- **M** Pilot exhaust muffled
- **R** Pilot exhaust piped (M5)
- **U** Pilot exhaust to main exhaust

Base / Manifold configurations for LATCHING SOLENOID VALVES :

42A-*xxx*-*x***A***x*-L*xx*P-*xxx*

- **A** Individual base – Side port
- **B** Individual base – Bottom port
- **J** Manifold base – Side ports
- **K** Manifold base – Bottom ports
- **L** Left end manifold base - Side ports
- **M** Left end manifold base - Bottom ports
- **N** Right end manifold base - Side ports
- **P** Right end manifold base - Bottom ports

Base / Manifold options for int. / ext. pilot for LATCHING SOLENOID VALVES :

42A-*xxx*-*xx***A**-L*xx*P-*xxx*

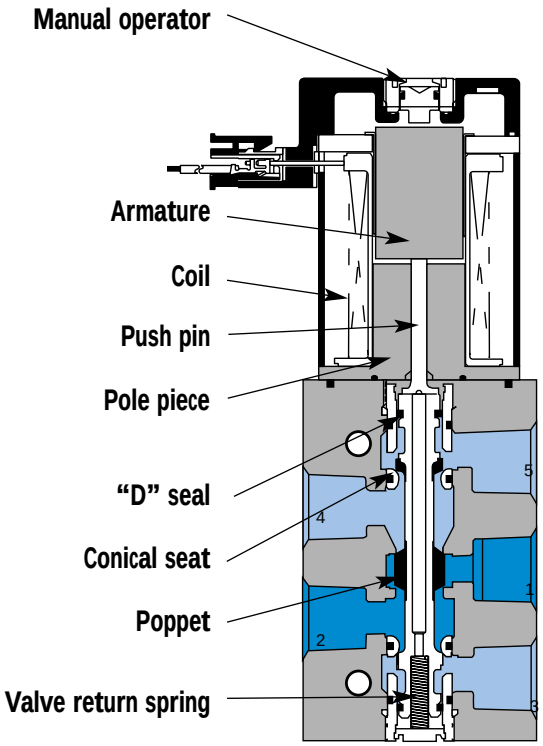
- **A** Plug-in Int. Pilot – 2 Wire Latching
- **B** Plug-in Ext. Pilot – 2 Wire Latching
- **C** Plug-in Int. Pilot – 3 Wire Latching
- **D** Plug-in Ext. Pilot – 3 Wire Latching
- **E** Plug-in Int. Pilot – 4 Wire Latching
- **F** Plug-in Ext. Pilot – 4 Wire Latching

Individual mounting

Inline	Sub-base non "plug-in"

Manifold mounting

Stacking	Manifold base "plug-in"



SERIES FEATURES

- Short stroke solenoid produces high energization shifting force.
- High force return spring due to high force solenoid maximizes both energization and de-energization shifting forces.
- Built-in wear compensation - valve stroke is shorter than solenoid stroke.
- Four (4) bonded balanced poppets on a one-piece valve stem.
- End poppets seal first on conical seats and cushion inlet poppet, eliminating cutting.
- Exhaust seals are not under inlet pressure thus reducing friction.
- Short stroking balanced poppet allows for direct solenoid operation with high shifting forces, minimized friction, fast response and high flow in a small package.

MAC

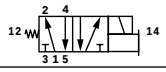
Series 47

Function	Port size	Flow (Max)	Individual Mounting	Series
5 / 2	G1 / 8 " - G1 / 4 "	500 Nl / min	Inline	

OPERATIONAL BENEFITS

1. Short stroke solenoid produces high energization shifting force.
2. High force return spring due to high force solenoid maximizes both energization and de-energization shifting forces.
3. Built-in wear compensation – valve stroke is shorter than solenoid stroke.
4. Four bonded balanced poppets on a one-piece valve stem.
5. End poppets seal first on conical seats and cushion inlet poppet, eliminating cutting.
6. Exhaust seals are not under inlet pressure thus reducing friction.
7. Integral non-rising flow controls available on inline models.
8. Short stroking balanced poppet alows for direct solenoid operation with high shifting forces, minimized friction, fast response and high flow in a small package.

HOW TO ORDER

Port size	Without flow controls	With flow controls
		
G1 / 8 "	47A-AC0-H *xxx-xxx*	47A-BC0-H *xxx-xxx*
G1 / 4 "	47A-AD0-H *xxx-xxx*	47A-BD0-H *xxx-xxx*

SOLENOID OPERATOR ➤ H *XXX-XXX* *

XX	Voltage
DA	24V=/5,2W
DB	24V=/2,4W
DC	24V=/1,8W
DD	24V=/1,0W
AA	120V~/6,7W

X	Lead Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
MA	Plug-in wire assembly
MC	Plug-in wire assembly with light
BA	Flying leads
BC	Flying leads with light
MT	Plug-in wire assembly with rectifier & light

* Click here for other options available.
Note: AC voltage requires connector with rectifier.

LATCHING OPERATOR ➤ L *XXX-XXX* *

XX	Voltage
DA	24V=/5,2W
DF	12V=/5,2W

X	Lead Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
0	No operator

XX	Electrical connection
BA	2 Wire Flying leads
BJ	4 Wire Flying leads
LA	3 Wire Plug-in (Polarity switching cover)
MA	2 Wire Plug-in
ME	4 Wire Plug-in

* Click here for other options available.

MAC

Series 47

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

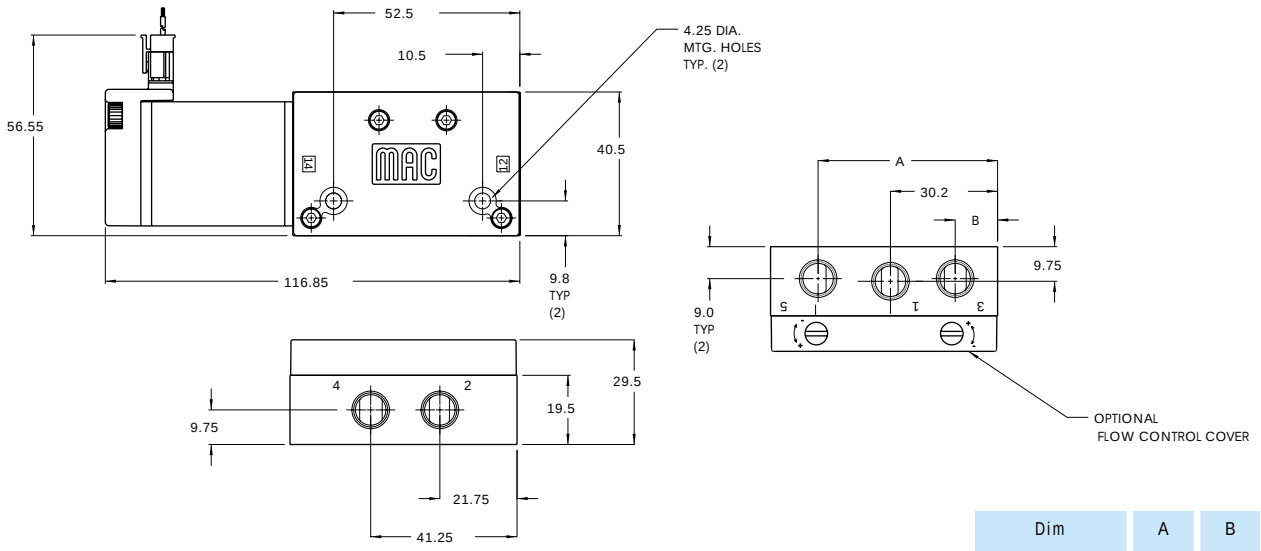
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	4,3 mm
Flow (at 6 bar, ΔP=1bar) :	5,2W : 500 Nl/min (Cv 0,50) – 2,4W : 350Nl/min (Cv 0,35) – 1,0W : 300 Nl/min (Cv 0,30)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,2W – 2,4W – 1,0W
Response times : (with 5,2 W coil)	Energize : 17,4 ms De-energise : 3,8 ms

Options : • NPTF threads

Spare parts : • Flow control assembly : N-47004

DIMENSIONS

Dimensions shown are metric (mm)

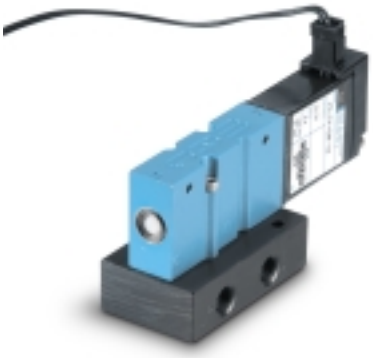


Dim	A	B
1 / 8 "	50.6	11.95
1 / 4 "	49.2	11.2

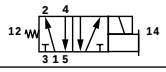
Function	Port size	Flow (Max)	Individual Mounting	Series
5 / 2	G1 / 8" - G1 / 4"	500 Nl / min	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

1. Short stroke solenoid produces high energization shifting force.
2. High force return spring due to high force solenoid maximizes both energization and de-energization shifting forces.
3. Built-in wear compensation – valve stroke is shorter than solenoid stroke.
4. Four bonded balanced poppets on a one-piece valve stem.
5. End poppets seal first on conical seats and cushion inlet poppet, eliminating cutting.
6. Exhaust seals are not under inlet pressure thus reducing friction.
7. Integral non-rising flow controls available on inline models.
8. Short stroking balanced poppet alows for direct solenoid operation with high shifting forces, minimized friction, fast response and high flow in a small package.



HOW TO ORDER

Port size	Without flow controls	With flow controls
		
Valve less base	47A-L10-H *xxx-xxx*	47A-L10-H *xxx-xxx*
G1 / 8"	47A-LCA-H *xxx-xxx*	47A-LCB-H *xxx-xxx*
G1 / 4"	47A-LDA-H *xxx-xxx*	47A-LDB-H *xxx-xxx*

SOLENOID OPERATOR ➤ H *XXX-XXX* *

XX	Voltage
DA	24V=/5,2W
DB	24V=/2,4W
DC	24V=/1,8W
DD	24V=/1,0W
AA	120V~/6,7W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
MA	Plug-in wire assembly
MC	Plug-in wire assembly with light
BA	Flying leads
BC	Flying leads with light
MT	Plug-in wire assembly with rectifier & light

* Click here for other options available.
Note: AC voltage requires connector with rectifier.

LATCHING OPERATOR ➤ L *XXX-XXX* *

XX	Voltage
DA	24V=/5,2W
DF	12V=/5,2W

X	Lead Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
0	No operator

XX	Electrical connection
BA	2 Wire Flying leads
BJ	4 Wire Flying leads
LA	3 Wire Plug-in (Polarity switching cover)
MA	2 Wire Plug-in
ME	4 Wire Plug-in

* Clic for other options available.

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ISO 3

MAC

Series 47

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

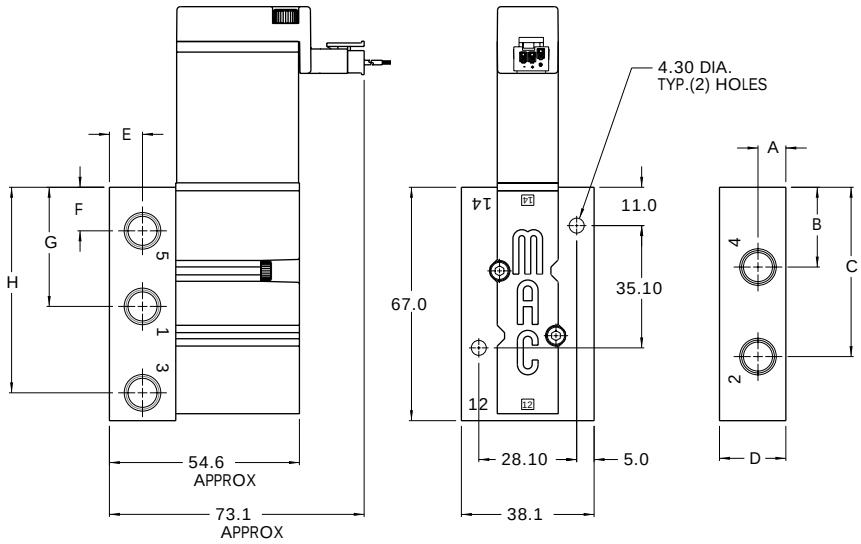
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	4,3 mm
Flow (at 6 bar, ΔP=1bar) :	5,2W : 500 NI/min (Cv 0,50) – 2,4W : 350NI/min (Cv 0,35) – 1,0W : 300 NI/min (Cv 0,30)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,2W – 2,4W – 1,0W
Response times : (with 5,2 W coil)	Energize : 17,4 ms De-energise : 3,8 ms

Options : • NPTF threads

Spare parts : • Pressure seal body to base: 16628 • Mounting screw (x2): 35043
• Flow control assembly (x2): N-04001

DIMENSIONS

Dimensions shown are metric (mm)



MAC

Series 47

Function	Port size	Flow (Max)	Manifold Mounting	Series
5 / 2	G1 / 8 " - G1 / 4 "	500 Nl / min	Stacking	

OPERATIONAL BENEFITS

1. Short stroke solenoid produces high energization shifting force.
2. High force return spring due to high force solenoid maximizes both energization and de-energization shifting forces.
3. Built-in wear compensation – valve stroke is shorter than solenoid stroke.
4. Four bonded balanced poppets on a one-piece valve stem.
5. End poppets seal first on conical seats and cushion inlet poppet, eliminating cutting.
6. Exhaust seals are not under inlet pressure thus reducing friction.
7. Integral non-rising flow controls available on inline models.
8. Short stroking balanced poppet alows for direct solenoid operation with high shifting forces, minimized friction, fast response and high flow in a small package.

HOW TO ORDER

Port size	Without flow controls	With flow controls
		
G1 / 8 "	47A-SC0-H *xxx-xxx*	47A-TC0-H *xxx-xxx*
G1 / 4 "	47A-SD0-H *xxx-xxx*	47A-TD0-H *xxx-xxx*

SOLENOID OPERATOR ➤ H *XXX-XXX* *

XX	Voltage
DA	24V=/5,2W
DB	24V=/2,4W
DC	24V=/1,8W
DD	24V=/1,0W
AA	120V~/6,7W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
MA	Plug-in wire assembly
MC	Plug-in wire assembly with light
BA	Flying leads
BC	Flying leads with light
MT	Plug-in wire assembly with rectifier & light

* Click here for other options available.
Note: AC voltage requires connector with rectifier.

LATCHING OPERATOR ➤ L *XXX-XXX* *

XX	Voltage
DA	24V=/5,2W
DF	12V=/5,2W

X	Lead Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
0	No operator

XX	Electrical connection
BA	2 Wire Flying leads
BJ	4 Wire Flying leads
LA	3 Wire Plug-in (Polarity switching cover)
MA	2 Wire Plug-in
ME	4 Wire Plug-in

* Click here for other options available.
End plate kit required: M-47013-01P (1/4" BSPP).

MAC

Series 47

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

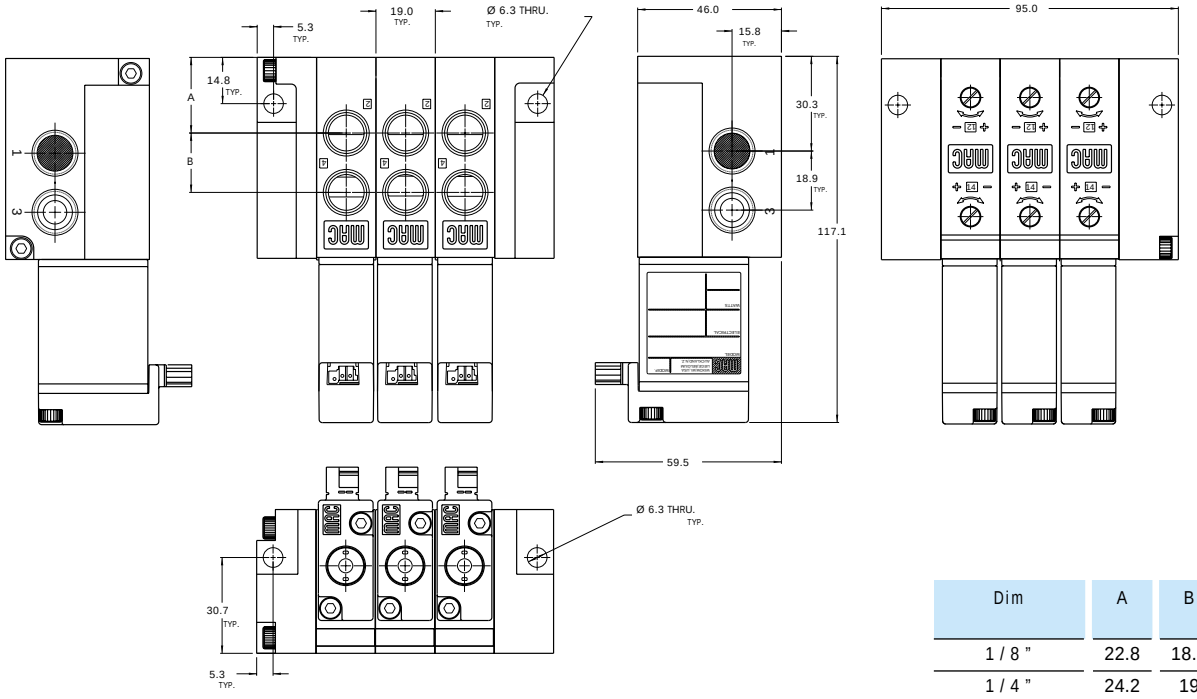
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	4,3 mm
Flow (at 6 bar, ΔP=1bar) :	5,2W : 500 Nl/min (Cv 0,50) – 2,4W : 350Nl/min (Cv 0,35) – 1,0W : 300 Nl/min (Cv 0,30)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,2W – 2,4W – 1,0W
Response times : (with 5,2 W coil)	Energize : 17,4 ms De-energise : 3,8 ms

Options : • NPTF threads

Spare parts : • Inlet isolator: 28451 • Exhaust isolator: N-47009 • Tie Rod (x2): 79057

DIMENSIONS

Dimensions shown are metric (mm)



Dim	A	B
1 / 8 "	22.8	18.4
1 / 4 "	24.2	19

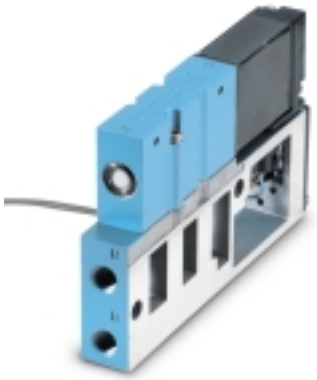
Consult "Precautions" before use, installation or service of MAC Valves..

Series 47

Function	Port size	Flow (Max)	Manifold Mounting	Series
5 / 2	G1 / 8" - G1 / 4"	500 Nl / min	Manifold base "plug-in"	

OPERATIONAL BENEFITS

1. Short stroke solenoid produces high energization shifting force.
2. High force return spring due to high force solenoid maximizes both energization and de-energization shifting forces.
3. Built-in wear compensation – valve stroke is shorter than solenoid stroke.
4. Four bonded balanced poppets on a one-piece valve stem.
5. End poppets seal first on conical seats and cushion inlet poppet, eliminating cutting.
6. Exhaust seals are not under inlet pressure thus reducing friction.
7. Integral non-rising flow controls available on inline models.
8. Short stroking balanced poppet alows for direct solenoid operation with high shifting forces, minimized friction, fast response and high flow in a small package.



HOW TO ORDER

Port size	Model number
	
Valve less base	47A-L10-H *xx*P-*xxx*
G1 / 8"	47A-LCJ-H *xx*P-*xxx*
G1 / 4"	47A-LDJ-H *xx*P-*xxx*

SOLENOID OPERATOR ➤ H *XX* P-*XXX* *

XX	Voltage
DA	24 V=/5,2W
DB	24 V=/2,4W
DC	24 V=/1,8W
DD	24 V=/1,0W
AA	120 V~/6,7W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
FA	Base plug-in
FB	Base plug-in w/ ground
FC	Base plug-in w/ LED light
FD	Base plug-in w/ LED light w/ ground
FT	Base plug-in w/ rectifier and light

* Click here for other options available.
Note : AC voltage requires connector with rectifier.

LATCHING SOLENOID ➤ L *XX* P-*XXX* *

XX	Voltage
DA	24 V=/5,2W
DF	12 V=/5,2W

X	Manual operator
0	No operator

XX	Electrical connection
FA	Base plug-in w/ ground
FB	Base plug-in w/ ground & LED
FC	Base plug-in 4 wire w/ ground
FD	Base Plug-in 4 wire w/ LED & ground

* Click here for other options available.

OPTIONS

47A-*xx***J**-H*xxx*-*xxx*

J Manifold base, side cylinders (middle station)
K Manifold base, bottom cylinders (middle station)
L Right end manifold base, side cylinders
M Right end manifold base, bottom cylinders
N Left end manifold base, side cylinders
P Left end manifold base, bottom cylinders

Fastening kit required: N-47005-01.
Note: Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds.

MAC

Series 47

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

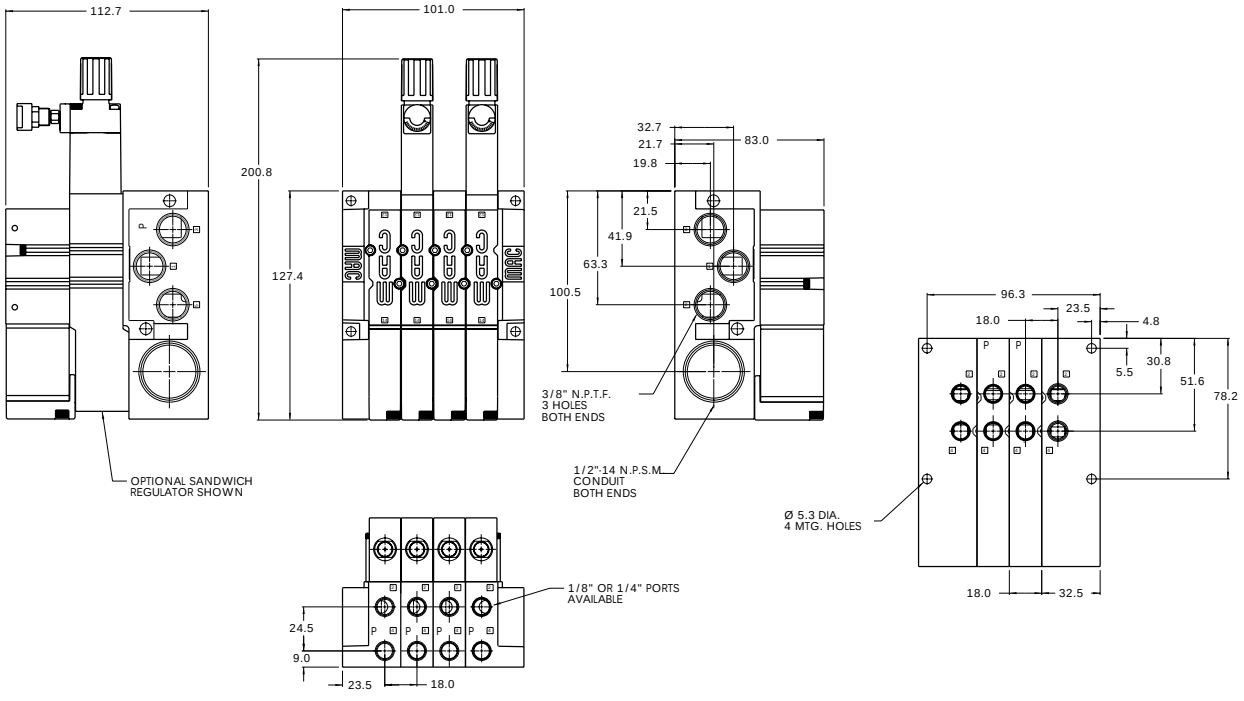
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	4,3 mm
Flow (at 6 bar, ΔP=1bar) :	5,2W : 500 NI/min (Cv 0,50) – 2,4W : 350NI/min (Cv 0,35) – 1,0W : 300 NI/min (Cv 0,30)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	5,2W – 2,4W – 1,0W
Response times : (with 5,2 W coil)	Energize : 17,4 ms De-energise : 3,8 ms

Options : • NPTF threads • Sandwich flow control: FC47A-AA

Spare parts : • Inlet/exhaust isolator: 28447 • Valve cover plate: M-47001

DIMENSIONS

Dimensions shown are metric (mm)



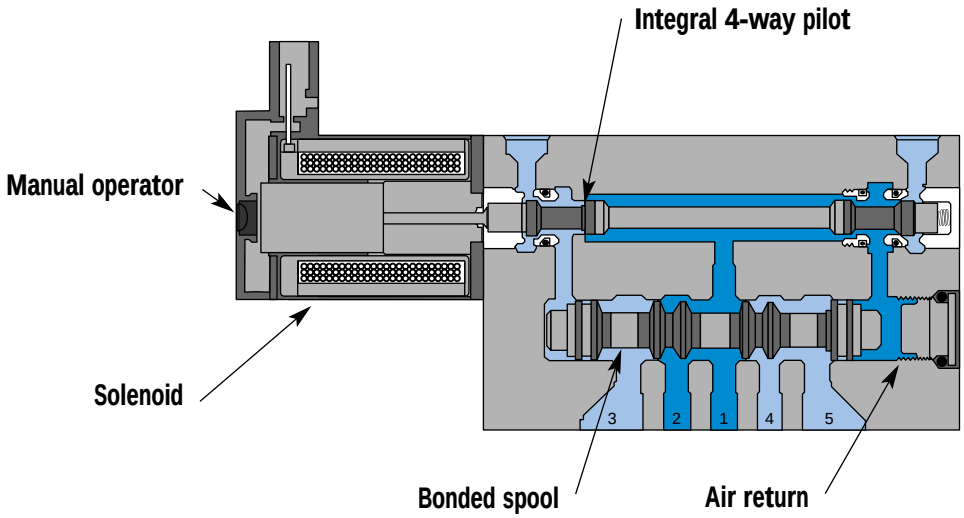
Consult “Precautions” before use, installation or service of MAC Valves..

Individual mounting

Sub-base non "plug-in"	Sub-base "plug-in"	Sub-base/ manifold base non "plug-in" with latching solenoid	Sub-base/ manifold base "plug-in" with latching solenoid

Manifold mounting

Manifold base non "plug-in"	Manifold base "plug-in"	Sub-base/ manifold base non "plug-in" with latching solenoid	Sub-base/ manifold base "plug-in" with latching solenoid



SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- Single or dual pressure.
- Internal or external pilot.
- Single or double solenoid.
- 2 or 3 position.
- Rectified AC voltage.
- Latching solenoid technology.

Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	G1/8"	1100 Nl/min	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

1. 4-way valve with 4-way integral pilot.
2. 16 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1100 Nl/min).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.

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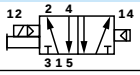
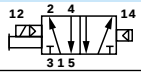
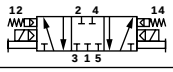
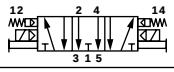
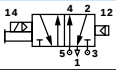
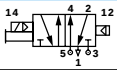
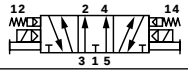
ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
					
Valve less base	Internal	48A-AMA-000-G*xxx*-*xxx*	48A-BMA-000-G*xxx*-*xxx*	48A-EMA-000-G*xxx*-*xxx*	48A-FMA-000-G*xxx*-*xxx*
	External	48A-AMD-000-G*xxx*-*xxx*	48A-BMD-000-G*xxx*-*xxx*	48A-EMD-000-G*xxx*-*xxx*	48A-FMD-000-G*xxx*-*xxx*
G1/8"	Internal	48A-AMA-BAL-G*xxx*-*xxx*	48A-BMA-BAL-G*xxx*-*xxx*	48A-EMA-BAL-G*xxx*-*xxx*	48A-FMA-BAL-G*xxx*-*xxx*
	External	48A-AMD-BAM-G*xxx*-*xxx*	48A-BMD-BAM-G*xxx*-*xxx*	48A-EMD-BAM-G*xxx*-*xxx*	48A-FMD-BAM-G*xxx*-*xxx*

DUAL PRESSURE MODELS

Port size	Pilot air		5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
					
Valve less base	Internal	Supply #3 port	48A-CMB-000-G*xxx*-*xxx*	48A-DMB-000-G*xxx*-*xxx*	48A-HMB-000-G*xxx*-*xxx*
		Supply #5 port	48A-CMC-000-G*xxx*-*xxx*	48A-DMC-000-G*xxx*-*xxx*	48A-HMC-000-G*xxx*-*xxx*
	External		48A-CMD-000-G*xxx*-*xxx*	48A-DMD-000-G*xxx*-*xxx*	48A-HMD-000-G*xxx*-*xxx*
G1/8"	Internal	Supply #3 port	48A-CMB-BAL-G*xxx*-*xxx*	48A-DMB-BAL-G*xxx*-*xxx*	48A-HMB-BAL-G*xxx*-*xxx*
		Supply #5 port	48A-CMC-BAL-G*xxx*-*xxx*	48A-DMC-BAL-G*xxx*-*xxx*	48A-HMC-BAL-G*xxx*-*xxx*
	External		48A-CMD-BAM-G*xxx*-*xxx*	48A-DMD-BAM-G*xxx*-*xxx*	48A-HMD-BAM-G*xxx*-*xxx*

STANDARD SOLENOID OPERATOR ➤

G ***XXX-XXX****

XX	Voltage
AA	120 V~/2,5W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BA	Flying leads
BT	Flying leads with light
KA	Mini connector
KT	Mini connector with light
KD	Mini connector with rectifier & light & ground

* Click here for other options available.
Latching solenoid also available, click here.
Note : AC voltage requires connector with rectifier.
Other options available for the 48 series valves, click here.

MAC

Series 4 8

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

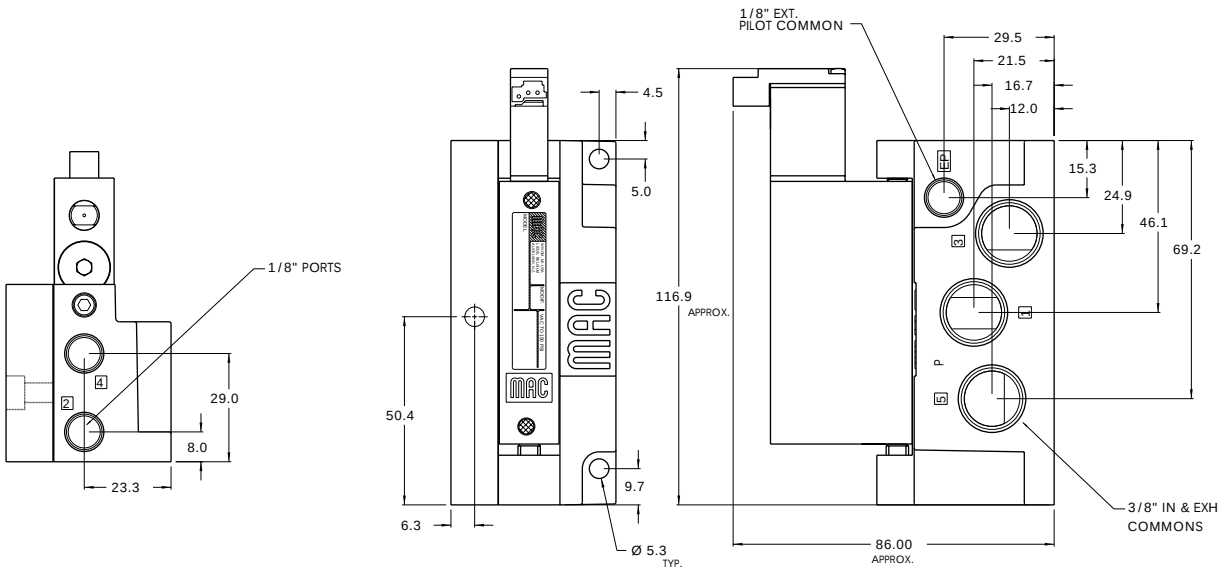
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 2 pos.: 1,3 to 8 bar - 3 pos.: 2,3 to 8 bar External pilot: vacuum to 8 bar
Pilot pressure :	2 position : 1,3 to 8 bar - 3 position : 2,3 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 :	6,0 mm
Flow (at 6 bar, ΔP=1bar) :	1/8" side ports: 1000 Nl/min (Cv 1,0) – 1/8" bottom ports : 1100 Nl/min (Cv 1.1)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 6 ms De-energize : 6 ms

Options : • NPTF threads • Sandwich Flow controls: FC48A-BB
• Sandwich regulator: see "regulators" section

DIMENSIONS

Dimensions shown are metric (mm)



Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	G1/8"	1100 Nl/min	Sub-base "plug-in"	

OPERATIONAL BENEFITS

1. 4-way valve with 4-way integral pilot.
2. 16 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1100 Nl/min).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.

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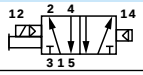
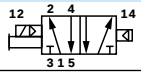
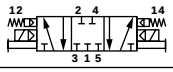
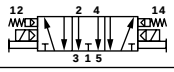
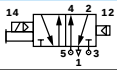
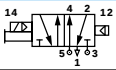
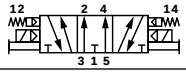
ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air	5/2 Single solenoid	5/3 Double solenoid	5/3 Closed centre	5/3 Open centre
					
Valve less base	Internal	48A-AMA-000-G*xx*P-*xxx*	48A-BME-000-G*xx*P-*x*GA	48A-EME-000-G*xx*P-*x*GA	48A-FME-000-G*xx*P-*x*GA
	External	48A-AMD-000-G*xx*P-*xxx*	48A-BMH-000-G*xx*P-*x*GA	48A-EMH-000-G*xx*P-*x*GA	48A-FMH-000-G*xx*P-*x*GA
G1/8"	Internal	48A-AMA-BAA-G*xx*P-*xxx*	48A-BME-BAC-G*xx*P-*x*GA	48A-EME-BAC-G*xx*P-*x*GA	48A-FME-BAC-G*xx*P-*x*GA
	External	48A-AMD-BAB-G*xx*P-*xxx*	48A-BMH-BAD-G*xx*P-*x*GA	48A-EMH-BAD-G*xx*P-*x*GA	48A-FMH-BAD-G*xx*P-*x*GA

DUAL PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air		5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
					
Valve less base	Internal	Supply #3 port	48A-CMB-000-G*xx*P-*xxx*	48A-DMF-000-G*xx*P-*x*GA	48A-HMF-000-G*xx*P-*x*GA
		Supply #5 port	48A-CMC-000-G*xx*P-*xxx*	48A-DMG-000-G*xx*P-*x*GA	48A-HMG-000-G*xx*P-*x*GA
	External		48A-CMD-000-G*xx*P-*xxx*	48A-DMH-000-G*xx*P-*x*GA	48A-HMH-000-G*xx*P-*x*GA
M5	Internal	Supply #3 port	48A-CMB-BAA-G*xx*P-*xxx*	48A-DMF-BAC-G*xx*P-*x*GA	48A-HMF-BAC-G*xx*P-*x*GA
		Supply #5 port	48A-CMC-BAA-G*xx*P-*xxx*	48A-DMG-BAC-G*xx*P-*x*GA	48A-HMG-BAC-G*xx*P-*x*GA
	External		48A-CMD-BAB-G*xx*P-*xxx*	48A-DMH-BAD-G*xx*P-*x*GA	48A-HMH-BAD-G*xx*P-*x*GA

STANDARD SOLENOID OPERATOR ➤ G *XX* P-*XXX* *

XX	Voltage
AA	120 V~/2,5W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
	Double solenoid & 3 position models
GA	Base plug-in
	Single solenoid models
DJ	Base plug-in
DT	Base plug-in with LED light
DD	Base plug-in with rectifier & light & ground

* Click here for other options available.
Latching solenoid also available, click here.
Note : AC voltage requires connector with rectifier - single solenoid only.
Other options available for the 48 series valves, click here.

MAC

Series 48

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

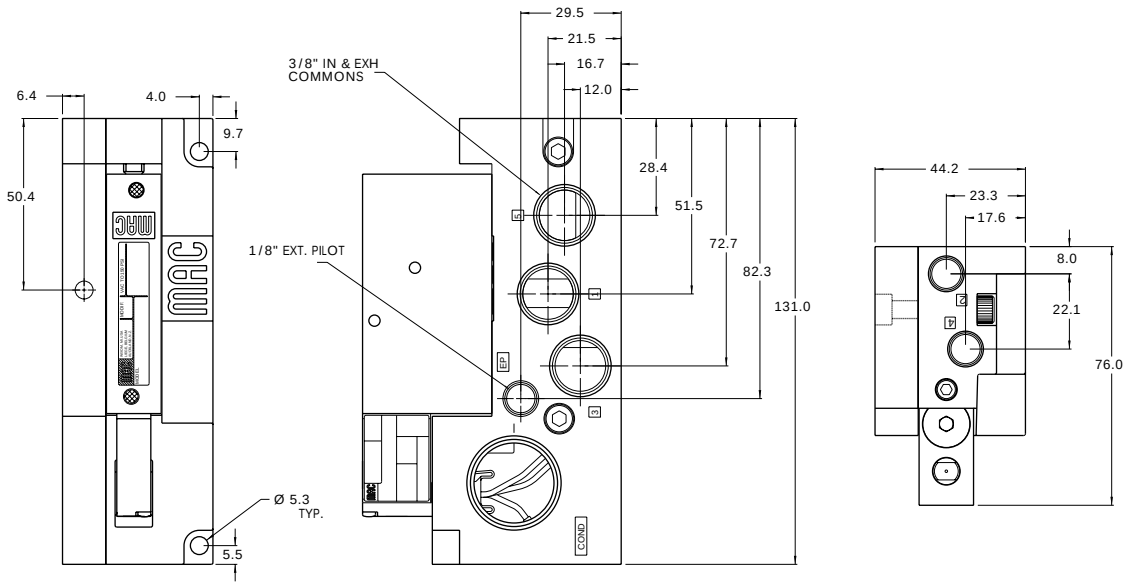
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 2 pos.: 1,3 to 8 bar - 3 pos.: 2,3 to 8 bar External pilot: vacuum to 8 bar
Pilot pressure :	2 position : 1,3 to 8 bar - 3 position : 2,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	6,0 mm
Flow (at 6 bar, ΔP=1bar) :	1/8" side ports: 1000 Nl/min (Cv 1,0) – 1/8" bottom ports : 1100 Nl/min (Cv 1.1)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 6 ms De-energize : 6 ms

Options :

- NPTF threads • Sandwich Flow controls: FC48A-AB
- Sandwich regulator: see "regulators" section

DIMENSIONS

Dimensions shown are metric (mm)



Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	G1/8"	1100 Nl/min	Manifold base non "plug-in"	

OPERATIONAL BENEFITS

1. 4-way valve with 4-way integral pilot.
2. 16 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1100 Nl/min).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.

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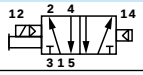
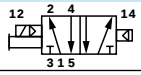
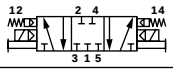
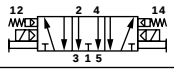
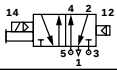
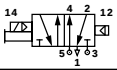
ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS (MIDDLE STATION MANIFOLDS WITH SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
					
Valve less base	Internal	48A-AMA-000-G*xxx*-*xxx*	48A-BMA-000-G*xxx*-*xxx*	48A-EMA-000-G*xxx*-*xxx*	48A-FMA-000-G*xxx*-*xxx*
	External	48A-AMD-000-G*xxx*-*xxx*	48A-BMD-000-G*xxx*-*xxx*	48A-EMD-000-G*xxx*-*xxx*	48A-FMD-000-G*xxx*-*xxx*
G1/8"	Internal	48A-AMA-BJL-G*xxx*-*xxx*	48A-BMA-BJL-G*xxx*-*xxx*	48A-EMA-BJL-G*xxx*-*xxx*	48A-FMA-BJL-G*xxx*-*xxx*
	External	48A-AMD-BJM-G*xxx*-*xxx*	48A-BMD-BJM-G*xxx*-*xxx*	48A-EMD-BJM-G*xxx*-*xxx*	48A-FMD-BJM-G*xxx*-*xxx*

DUAL PRESSURE MODELS (MIDDLE STATION MANIFOLDS WITH SIDE PORTS)

Port size	Pilot air		5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
					
Valve less base	Internal	Supply #3 port	48A-CMB-000-G*xxx*-*xxx*	48A-DMB-000-G*xxx*-*xxx*	48A-HMB-000-G*xxx*-*xxx*
		Supply #5 port	48A-CMC-000-G*xxx*-*xxx*	48A-DMC-000-G*xxx*-*xxx*	48A-HMC-000-G*xxx*-*xxx*
	External		48A-CMD-000-G*xxx*-*xxx*	48A-DMD-000-G*xxx*-*xxx*	48A-HMD-000-G*xxx*-*xxx*
G1/8"	Internal	Supply #3 port	48A-CMB-BJL-G*xxx*-*xxx*	48A-DMB-BJL-G*xxx*-*xxx*	48A-HMB-BJL-G*xxx*-*xxx*
		Supply #5 port	48A-CMC-BJL-G*xxx*-*xxx*	48A-DMC-BJL-G*xxx*-*xxx*	48A-HMC-BJL-G*xxx*-*xxx*
	External		48A-CMD-BJM-G*xxx*-*xxx*	48A-DMD-BJM-G*xxx*-*xxx*	48A-HMD-BJM-G*xxx*-*xxx*

STANDARD SOLENOID OPERATOR ➤ G *XXX*-*XXX**

XX	Voltage
AA	120 V~/2,5W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BA	Flying leads
BT	Flying leads with light
KA	Mini connector
KT	Mini connector with light
KD	Mini connector with rectifier & light & ground

* Click here for other options available.
Latching solenoid also available, click here.
Note : - AC voltage requires connector with rectifier.
- Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").
Other options available for the 48 series valves, click here.

MAC

Series 48

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

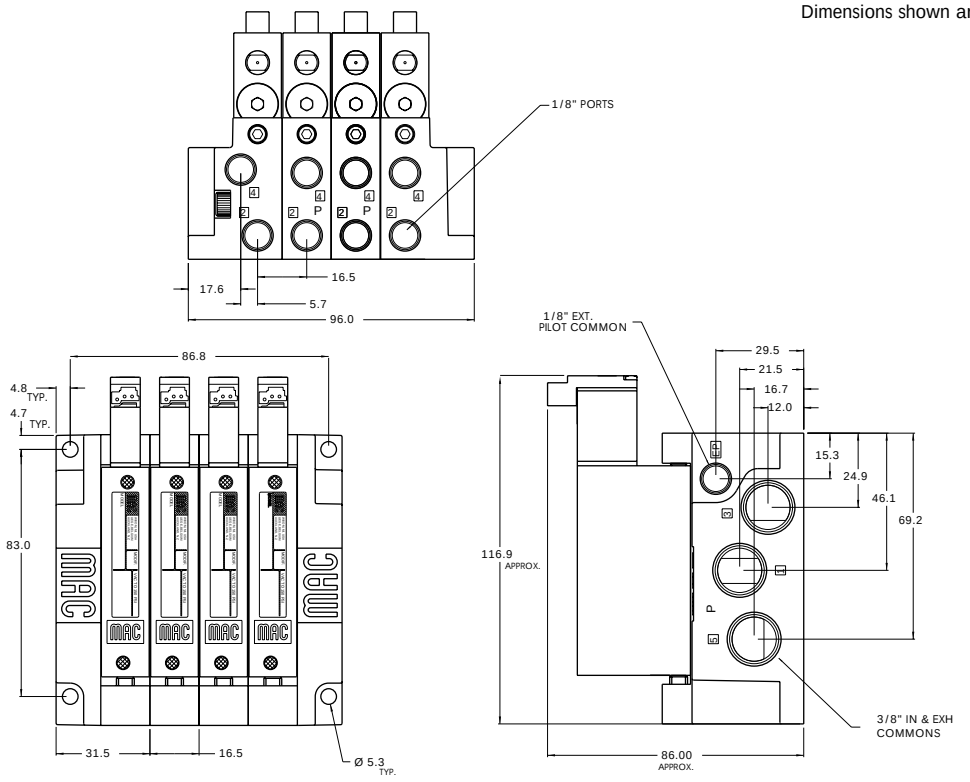
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 2 pos.: 1,3 to 8 bar - 3 pos.: 2,3 to 8 bar External pilot: vacuum to 8 bar
Pilot pressure :	2 position : 1,3 to 8 bar - 3 position : 2,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	6,0 mm
Flow (at 6 bar, ΔP=1bar) :	1/8" side ports: 1000 Nl/min (Cv 1,0) – 1/8" bottom ports : 1100 Nl/min (Cv 1.1)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 6 ms De-energize : 6 ms

Options :

- NPTF threads • Sandwich flow controls: FC48A-BB
- Sandwich regulator: see "regulators" section
- Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471

DIMENSIONS

Dimensions shown are metric (mm)



Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series 48

Direct solenoid and solenoid pilot operated valves

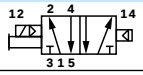
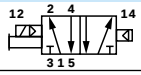
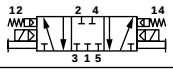
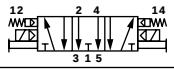
Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	G1/8"	1100 Nl/min	Manifold base "plug-in"	

OPERATIONAL BENEFITS

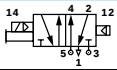
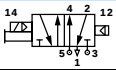
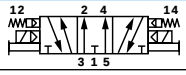
1. 4-way valve with 4-way integral pilot.
2. 16 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1100 Nl/min).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.

HOW TO ORDER

SINGLE PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
					
Valve less base	Internal	48A-AMA-000-G*xx*P-*xxx*	48A-BME-000-G*xx*P-*x*GA	48A-EME-000-G*xx*P-*x*GA	48A-FME-000-G*xx*P-*x*GA
	External	48A-AMD-000-G*xx*P-*xxx*	48A-BMH-000-G*xx*P-*x*GA	48A-EMH-000-G*xx*P-*x*GA	48A-FMH-000-G*xx*P-*x*GA
M5	Internal	48A-AMA-BJA-G*xx*P-*xxx*	48A-BME-BJC-G*xx*P-*x*GA	48A-EME-BJC-G*xx*P-*x*GA	48A-FME-BJC-G*xx*P-*x*GA
	External	48A-AMD-BJB-G*xx*P-*xxx*	48A-BMH-BJD-G*xx*P-*x*GA	48A-EMH-BJD-G*xx*P-*x*GA	48A-FMH-BJD-G*xx*P-*x*GA

DUAL PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air		5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
					
Valve less base	Internal	Supply #3 port	48A-CMB-000-G*xx*P-*xxx*	48A-DMF-000-G*xx*P-*x*GA	48A-HMF-000-G*xx*P-*x*GA
		Supply #5 port	48A-CMC-000-G*xx*P-*xxx*	48A-DMG-000-G*xx*P-*x*GA	48A-HMG-000-G*xx*P-*x*GA
	External		48A-CMD-000-G*xx*P-*xxx*	48A-DMH-000-G*xx*P-*x*GA	48A-HMH-000-G*xx*P-*x*GA
M5	Internal	Supply #3 port	48A-CMB-BJC-G*xx*P-*xxx*	48A-DMF-BJC-G*xx*P-*x*GA	48A-HMF-BJC-G*xx*P-*x*GA
		Supply #5 port	48A-CMC-BJC-G*xx*P-*xxx*	48A-DMG-BJC-G*xx*P-*x*GA	48A-HMG-BJC-G*xx*P-*x*GA
	External		48A-CMD-BJD-G*xx*P-*xxx*	48A-DMH-BJD-G*xx*P-*x*GA	48A-HMH-BJD-G*xx*P-*x*GA

Above numbers are middle station manifold with side ports

STANDARD SOLENOID OPERATOR ➤ G *XX* P-*XXX**

XX	Voltage
AA	120 V~/2,5W
DC	24 V=/1,8W
DD	24 V=/2,5W
DF	24 V=/4,0W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
	Double solenoid & 3 position models
GA	Base plug-in
	Single solenoid models
DJ	Base plug-in
DT	Base plug-in with LED light
DD	Base plug-in with rectifier & light & ground

* Click here for other options available.
Latching solenoid also available, click here.
Note : - AC voltage requires connector with rectifier.
- Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").
Other options available for the 48 series valves, click here.

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ISO 1
ISO 2
ISO 3

MAC

Series 48

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

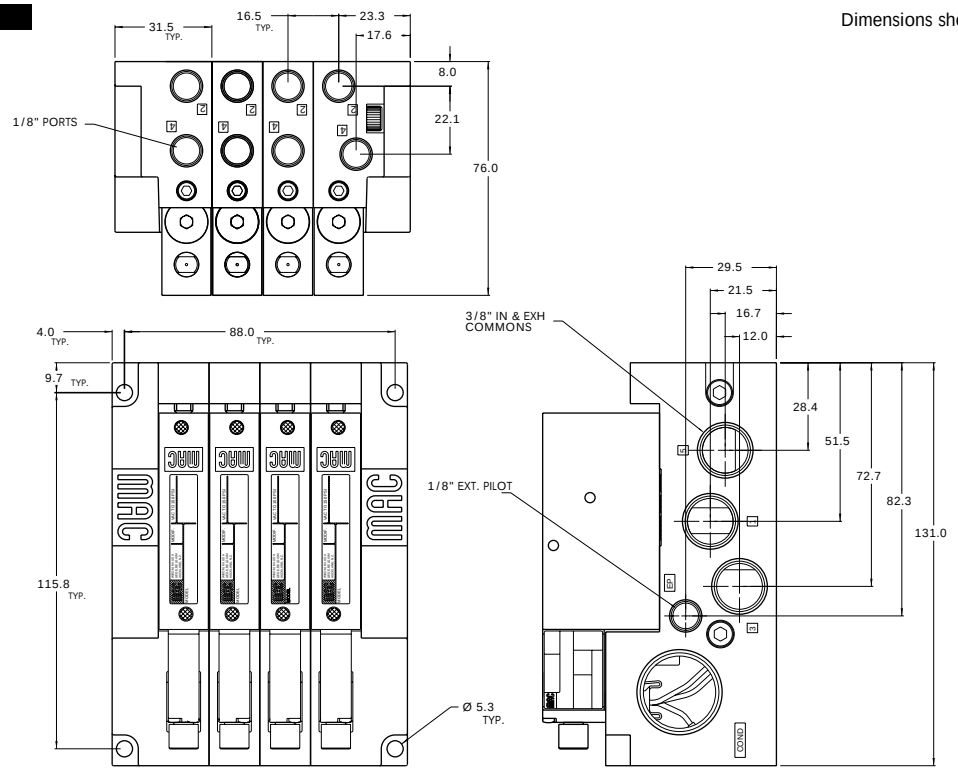
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 2 pos.: 1,3 to 8 bar - 3 pos.: 2,3 to 8 bar External pilot: vacuum to 8 bar
Pilot pressure :	2 position : 1,3 to 8 bar - 3 position : 2,3 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	6,0 mm
Flow (at 6 bar, ΔP=1bar) :	1/8" side ports: 1000 Nl/min (Cv 1,0) – 1/8" bottom ports : 1100 Nl/min (Cv 1.1)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 6 ms De-energize : 6 ms

Options :

- NPTF threads • Sandwich flow controls: FC48A-AB
- Sandwich regulator: see "regulators" section
- Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471
- Plug-in wire protector: 24180

DIMENSIONS

Dimensions shown are metric (mm)



Consult "Precautions" before use, installation or service of MAC Valves..

Series 48

Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5 / 2	G1 / 8 "	1100 Nl / min	Sub-base / manifold base non "plug-in" with latching solenoid	

OPERATIONAL BENEFITS

1. 4-way valve with 4-way integral pilot.
2. 16 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1100 Nl/min).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.

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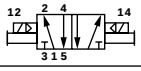
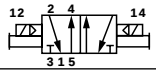
ISO 1
ISO 2
ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5 / 2 Single pressure
		
Valve less base	Internal	48A-AMA-000-L*xxx*-*xxx*
	External	48A-AMD-000-L*xxx*-*xxx*
G1 / 8 "	Internal	48A-AMA-BAL-L*xxx*-*xxx*
	External	48A-AMD-BAM-L*xxx*-*xxx*

DUAL PRESSURE MODELS

Port size	Pilot air		5 / 2 Dual pressure
			
Valve less base	Internal	Supply #3 port	48A-CMB-000-L*xxx*-*xxx*
		Supply #5 port	48A-CMC-000-L*xxx*-*xxx*
	External		48A-CMD-000-L*xxx*-*xxx*
G1 / 8 "	Internal	Supply #3 port	48A-CMB-BAL-L*xxx*-*xxx*
		Supply #5 port	48A-CMC-BAL-L*xxx*-*xxx*
	External		48A-CMD-BAM-L*xxx*-*xxx*

LATCHING SOLENOID ➤

L ***XXX-XXX*** *

XX	Voltage
DF	24 VDC/4,0W
HA	24 VDC/1,95W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
0	No operator

XX	Electrical connection
BA	2 Wire flying leads
BJ	4 Wire flying leads
KA	2 Wire Plug-in assembly
KE	4 Wire Plug-in assembly
LA	3 Wire Plug-in assembly (Polarity Switching Cover)

* Click here for other options available.

Note : Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").

Other options available for the 48 series valves, click here.

MAC

Series 48

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 2 pos.: 1,3 to 8 bar - 3 pos.: 2,3 to 8 bar External pilot: vacuum to 8 bar
Pilot pressure :	2 position : 1,3 to 8 bar - 3 position : 2,3 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 :	6,0 mm
Flow (at 6 bar, ΔP=1bar) :	1/8" side ports: 1000 Nl/min (Cv 1,0) – 1/8" bottom ports : 1100 Nl/min (Cv 1.1)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : (with 4 W coil)	Energize : 6 ms De-energize : 6 ms

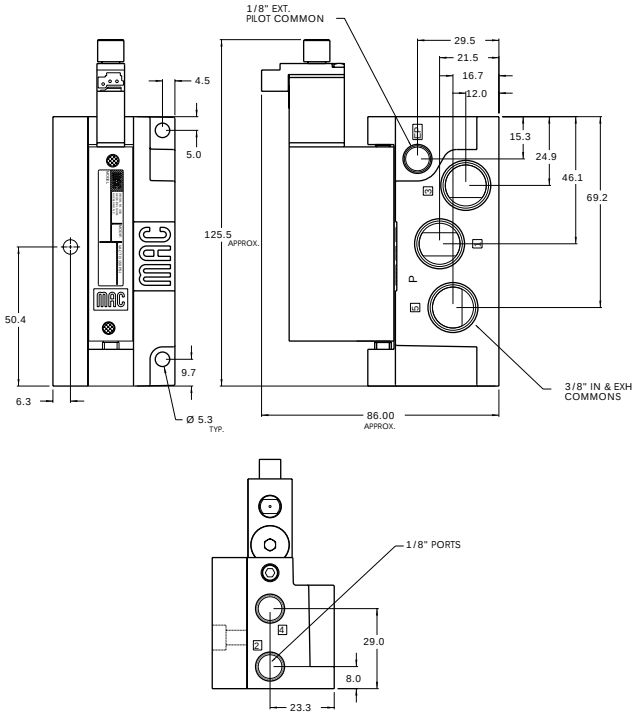
Options :

- NPTF threads • Sandwich flow controls: FC48A-BB
- Sandwich regulator: see "regulators" section
- Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471

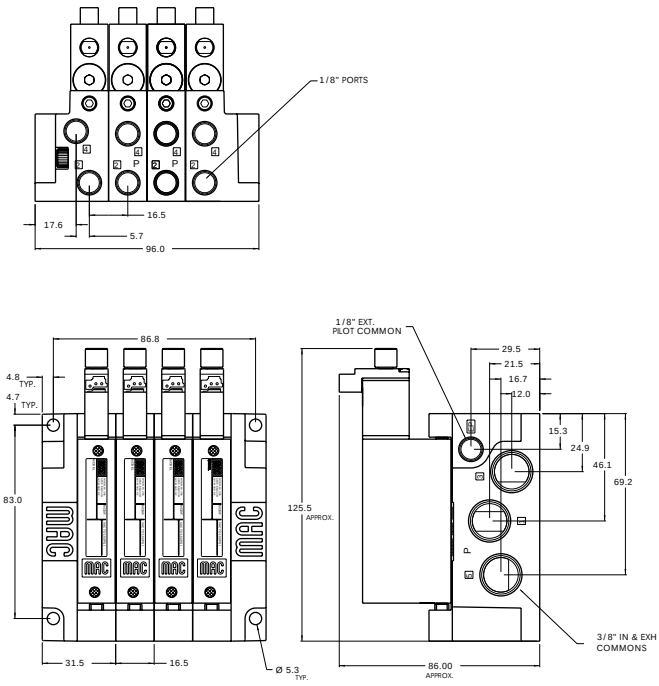
DIMENSIONS

Dimensions shown are metric (mm)

Individual base



Manifold base



Consult "Precautions" before use, installation or service of MAC Valves..

Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5 / 2	G1 / 8 "	1000 Nl/min	Sub-base/ manifold base "plug-in" with latching solenoid	

OPERATIONAL BENEFITS

1. 4-way valve with 4-way integral pilot.
2. 16 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1100 Nl/min).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.

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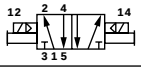
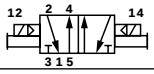
ISO 2
ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5 / 2 Single pressure
		
Valve less base	Internal	48A-AMA-000-L*xx*P-*xxx*
	External	48A-AMD-000-L*xx*P-*xxx*
G1 / 8 "	Internal	48A-AMA-BAA-L*xx*P-*xxx*
	External	48A-AMD-BAB-L*xx*P-*xxx*

DUAL PRESSURE MODELS

Port size	Pilot air		5 / 2 Dual pressure
			
Valve less base	Internal	Supply #3 port	48A-CMB-000-L*xx*P-*xxx*
		Supply #5 port	48A-CMC-000-L*xx*P-*xxx*
	External		48A-CMD-000-L*xx*P-*xxx*
G1 / 8 "	Internal	Supply #3 port	48A-CMB-BAA-L*xx*P-*xxx*
		Supply #5 port	48A-CMC-BAA-L*xx*P-*xxx*
	External		48A-CMD-BAB-L*xx*P-*xxx*

LATCHING SOLENOID ➤ L *XX* P-*XXX* *

XX	Voltage
DF	24 VDC/4,0W
DN	12 VDC/4,0W
HA	24 VDC/1,95W
HE	12 VDC/1,95W

X	Manual operator
0	No operator

XX	Electrical connection**
DA	Plug-in
EA	Plug-in 3 PIN (Polarity Switching Cover)

* Click here for other options available.
** For latching solenoid 2 and 4 wire, use electrical connector DA, DB, DC or DD. For 3 wire latching, use the "EA" connector.
Other options available for the 48 series valves, click here.

MAC

Series 48

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 2 pos.: 1,3 to 8 bar - 3 pos.: 2,3 to 8 bar External pilot: vacuum to 8 bar
Pilot pressure :	2 position : 1,3 to 8 bar - 3 position : 2,3 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 :	6,0 mm
Flow (at 6 bar, ΔP=1bar) :	1/8" side ports: 1000 Nl/min (Cv 1,0) – 1/8" bottom ports : 1100 Nl/min (Cv 1.1)
Coil :	Epoxy encapsulated – 100% ED – Class A wire
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (electrical connection)
Power :	1.0 to 4.0 W
Response times : **(with 4 W coil)**	Energize : 6 ms De-energize : 6 ms

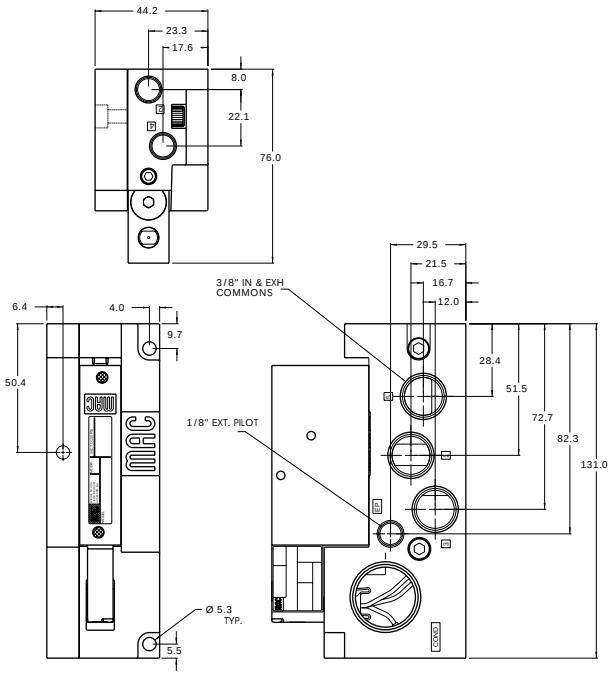
Options :

- NPTF threads • Sandwich flow controls: FC48A-AB
- Sandwich regulator: see "regulators" section
- Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471
- Plug-in wire protector : 24180

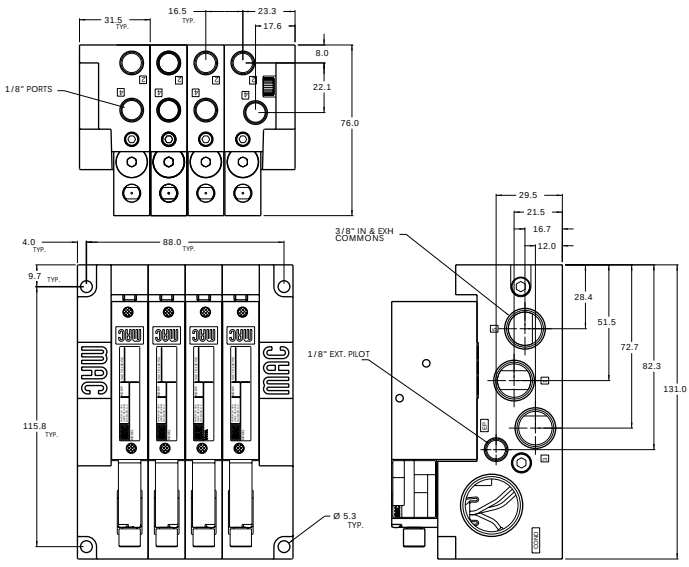
DIMENSIONS

Dimensions shown are metric (mm)

Individual base



Manifold base



OPTIONS FOR NON PLUG-IN VALVES

Base type :

Individual base

48A-XXX-X**A**X-G*xxx*-*xxx*

- **A** Individual base – Side port
- **B** Individual base – Bottom port

Manifold base

48A-XXX-X**J**X-G*xxx*-*xxx*

- **J** Manifold base – Side ports
- **K** Manifold base – Bottom ports
- **L** Left end manifold base – Side ports
- **M** Left end manifold base - Bottom ports
- **N** Right end manifold base –Side ports
- **P** Right end manifold base – Bottom ports

Universal spool

48A-**R**XX-XXX-G*xxx*-*xxx*

- **R** 2 position single solenoid universal spool
- **S** 2 position double solenoid universal spool

Base only :

48A-000-XXX (i.e. 48A-000-BAL) - Individual base

48A-000-XXX (i.e. 48A-000-BJL) - Manifold base

Pilot style :

48A-X**M**X-XXX-G*xxx*-*xxx*

- **M** Pilot exhaust muffled
- **R** Pilot exhaust piped (M5)
- **U** Pilot exhaust to main exhaust

Base / Manifold configurations for LATCHING SOLENOID VALVES :

48A-*xxx*-*x***A***x*-L*xxx*-*xxx*

- **A** Individual base – Side port
- **B** Individual base – Bottom port
- **J** Manifold base – Side ports
- **K** Manifold base – Bottom ports
- **L** Left end manifold base - Side ports
- **M** Left end manifold base - Bottom ports
- **N** Right end manifold base - Side ports
- **P** Right end manifold base - Bottom ports

OPTIONS FOR PLUG-IN VALVES

Base type :

Individual base

48A-XXX-X**A**X-G*xx*P-*xxx*

- **A** Individual base – Side port
- **B** Individual base – Bottom port

Manifold base

48A-XXX-X**J**X-G*xx*P-*xxx*

- **J** Manifold base – Side ports
- **K** Manifold base – Bottom ports
- **L** Left end manifold base – Side ports
- **M** Left end manifold base - Bottom ports
- **N** Right end manifold base –Side ports
- **P** Right end manifold base – Bottom ports

Universal spool

48A-**R**XX-XXX-G*xx*P-*xxx*

- **R** 2 position single solenoid universal spool
- **S** 2 position double solenoid universal spool

Base only :

48A-000-XXX (i.e. 48A-000-BAA)

- Individual base wired for a single solenoid valve

48A-000-XXX (i.e. 42A-000-BJC)

- Manifold base wired for a double solenoid valve

For LED with diode (2 & 3 position double solenoid valves)

48A-XX**J**-XXX-G*xx*P-*x*GA

- **J** Internal pilot single pressure
- **K** Internal pilot dual pressure supply from #3 port
- **L** Internal pilot dual pressure supply from #5 port
- **M** External pilot

Pilot style :

48A-X**M**X-XXX-G*xx*P-*xxx*

- **M** Pilot exhaust muffled
- **R** Pilot exhaust piped (M5)
- **U** Pilot exhaust to main exhaust

Base / Manifold configurations for LATCHING SOLENOID VALVES :

48A-*xxx*-*x***A***x*-L*xx*P-*xxx*

- **A** Individual base – Side port
- **B** Individual base – Bottom port
- **J** Manifold base – Side ports
- **K** Manifold base – Bottom ports
- **L** Left end manifold base - Side ports
- **M** Left end manifold base - Bottom ports
- **N** Right end manifold base - Side ports
- **P** Right end manifold base - Bottom ports

Base / Manifold options for int. / ext. pilot for LATCHING SOLENOID VALVES :

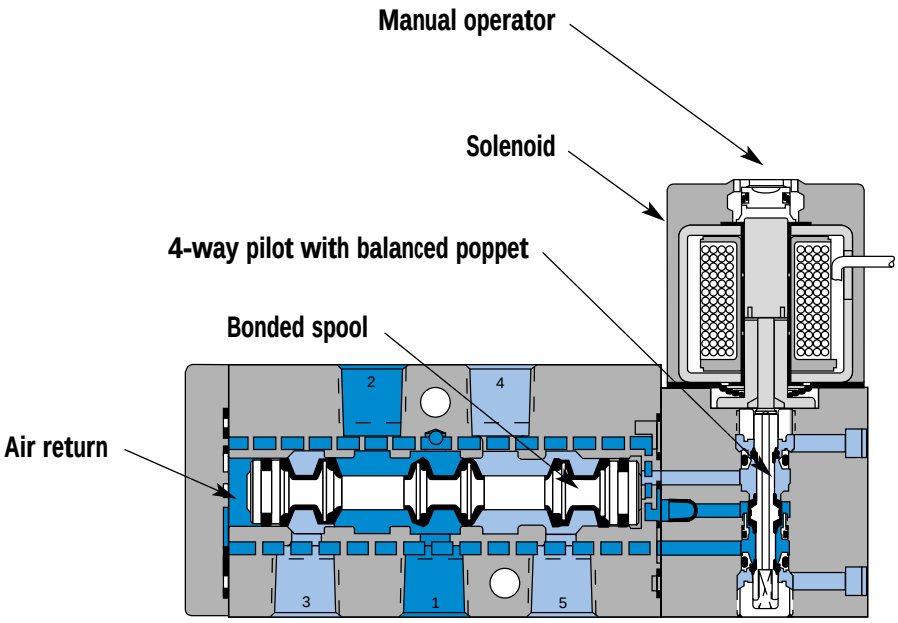
48A-*xxx*-*xx***A**-L*xx*P-*xxx*

- **A** Plug-in Int. Pilot – 2 Wire Latching
- **B** Plug-in Ext. Pilot – 2 Wire Latching
- **C** Plug-in Int. Pilot – 3 Wire Latching
- **D** Plug-in Ext. Pilot – 3 Wire Latching
- **E** Plug-in Int. Pilot – 4 Wire Latching
- **F** Plug-in Ext. Pilot – 4 Wire Latching

Individual mounting

Inline	Sub-base non "plug-in"

Series



SERIES FEATURES

- Patented MACSOLENOID® for fastest possible response times and virtually burn-out proof AC solenoid operation.
- Optional low watt DC solenoids.
- Various manual operators.
- Optional memory spring.
- 2 position or 3 position valve configurations.
- Internal or external pilot.

MAC

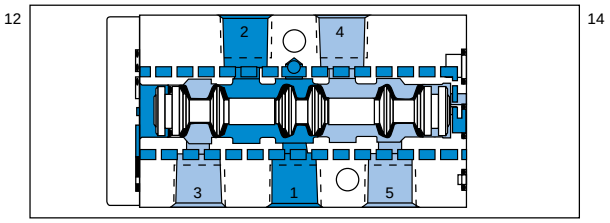
Series 400

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

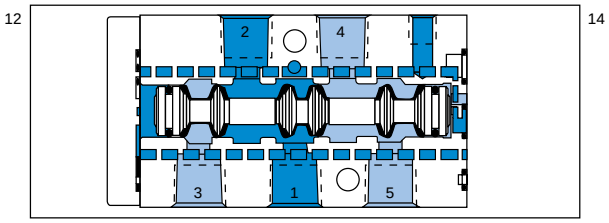
SPOOL CONFIGURATIONS

INTERNAL PILOT



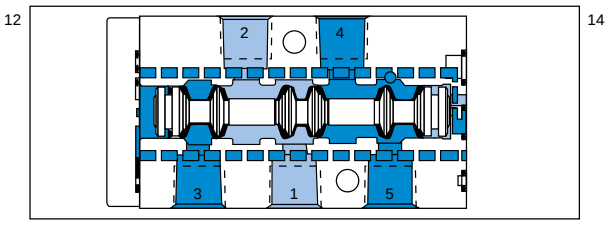
SINGLE OPERATOR - SINGLE INLET
SHOWN WITH 12 OPERATOR ENERGIZED

INTERNAL PILOT EXT. PILOT PORT



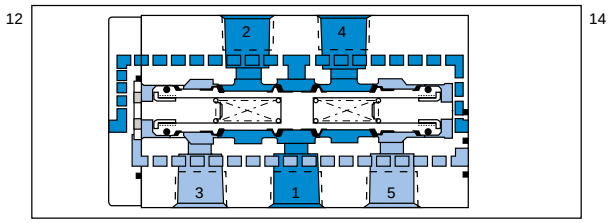
SINGLE OPERATOR - SINGLE INLET
SHOWN WITH 12 OPERATOR ENERGIZED

INTERNAL PILOT



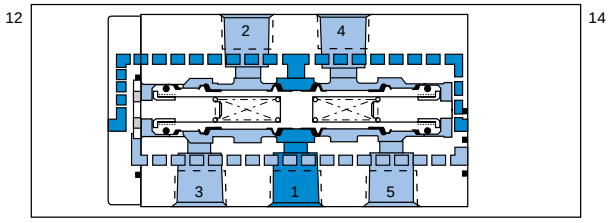
SINGLE OPERATOR - DUAL INLET
SHOWN WITH 12 OPERATOR ENERGIZED

INTERNAL PILOT



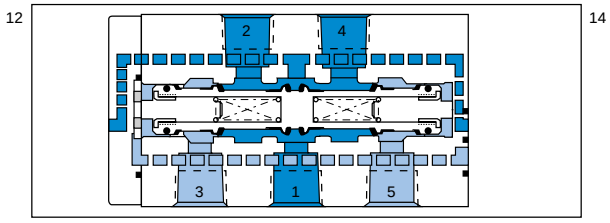
3 POSITION CLOSED CENTER

INTERNAL PILOT



3 POSITION OPEN CENTER

INTERNAL PILOT



3 POSITION PRESSURE CENTER

MAC

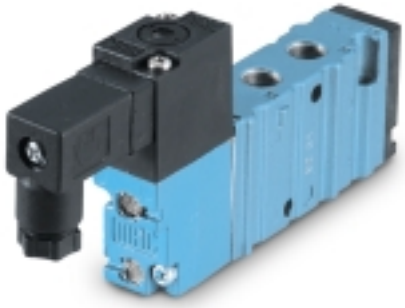
Series 400

Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Individual mounting	Series
5 / 2, 5 / 3	G1 / 8" - G1 / 4"	1000 Nl / min	Inline	

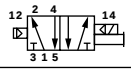
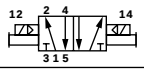
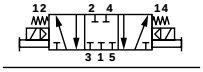
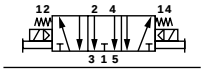
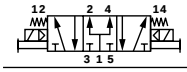
OPERATIONAL BENEFITS

1. The 4-way pilot develops maximum shifting forces both ways.
2. Memory spring available.
3. Balanced spool, immune to variations of pressure, also provides high flow.
4. Short stroke with high flow.
5. Bonded spool with minimum friction, shifting in a glass-like finished bore.
6. Wiping effect eliminates sticking.
7. Long service life.

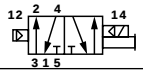
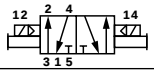


HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5 / 2 Single operator	5 / 2 Double operator	5 / 3 Closed centre	5 / 3 Open centre	5 / 3 Pressure centre
						
G1 / 8"	Internal	411A-C0A-XX-X*xxx*-*xxx*	421A-C0A-XX-X*xxx*-*xxx*	451A-C0A-XX-X*xxx*-*xxx*	461A-C0A-XX-X*xxx*-*xxx*	471A-C0A-XX-X*xxx*-*xxx*
G1 / 4"		411A-D0A-XX-X*xxx*-*xxx*	421A-D0A-XX-X*xxx*-*xxx*	451A-D0A-XX-X*xxx*-*xxx*	461A-D0A-XX-X*xxx*-*xxx*	471A-D0A-XX-X*xxx*-*xxx*
G1 / 8"	External	411A-C0B-XX-X*xxx*-*xxx*	421A-C0B-XX-X*xxx*-*xxx*	451A-C0B-XX-X*xxx*-*xxx*	461A-C0B-XX-X*xxx*-*xxx*	471A-C0B-XX-X*xxx*-*xxx*
G1 / 4"		411A-D0B-XX-X*xxx*-*xxx*	421A-D0B-XX-X*xxx*-*xxx*	451A-D0B-XX-X*xxx*-*xxx*	461A-D0B-XX-X*xxx*-*xxx*	471A-D0B-XX-X*xxx*-*xxx*

DUAL PRESSURE MODELS (INTERNAL PILOT – PILOT PRESSURE SUPPLY FROM #5 PORT)

Port size	Pilot air	5 / 2 Single operator	5 / 2 Double operator
			
G1 / 8"	Internal	431A-C0A-XX-X*xxx*-*xxx*	441A-C0A-XX-X*xxx*-*xxx*
G1 / 4"		431A-D0A-XX-X*xxx*-*xxx*	441A-D0A-XX-X*xxx*-*xxx*
G1 / 8"	External	431A-C0B-XX-X*xxx*-*xxx*	441A-C0B-XX-X*xxx*-*xxx*
G1 / 4"		431A-D0B-XX-X*xxx*-*xxx*	441A-D0B-XX-X*xxx*-*xxx*

SOLENOID OPERATOR ➤ DM-D *XXX*-*XXX* *

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Wire length
A	45 cm
B	60 cm
J	Connector

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
KA	Square connector
KD	Square connector with light
JB	Rectangular connector
JD	Rectangular connector with light
BA	Flying leads

SOLENOID OPERATOR ➤ GM-G *XXX*-*XXX* **

XX	Voltage
DC	24V=/1,8W
DD	24V=/2,5W
DF	24V=/4,0W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BA	Flying leads
BT	Flying leads with light
KA	Mini connector
KT	Mini connector with light

* Click here for other options available.
** Click here for other options available.

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series 400

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot – 2 pos. : 1,3 to 8 bar (with memory spring: 2 to 8 bar) 3 pos.: 2,3 to 8 bar External pilot : vacuum to 8 bar
Pilot pressure :	2 position: 1,3 to 8 bar (with memory spring: 2 to 8 bar) 3 position: 2,3 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 :	6,2 mm
Flow (at 6 bar, ΔP=1bar) :	1000 Nl/min (Cv 1.0)
Coil :	Epoxy encapsulated – class A wire – 100% ED (specify mod 0449)
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (GM pilot) – IP65 (DM pilot) (Electrical connection)
Power :	~Inrush : 10.9 VA Holding : 7.7 VA = 1.8 to 12.7 W
Response times :	24 V=/5.4W Energize : 7.3 ms De-energize : 5.3 ms
	110V~/50Hz Energize : 8-12 ms De-energize : 7-11 ms

Options : • NPTF threads • Namur interface (specify mod. 1080 after model)

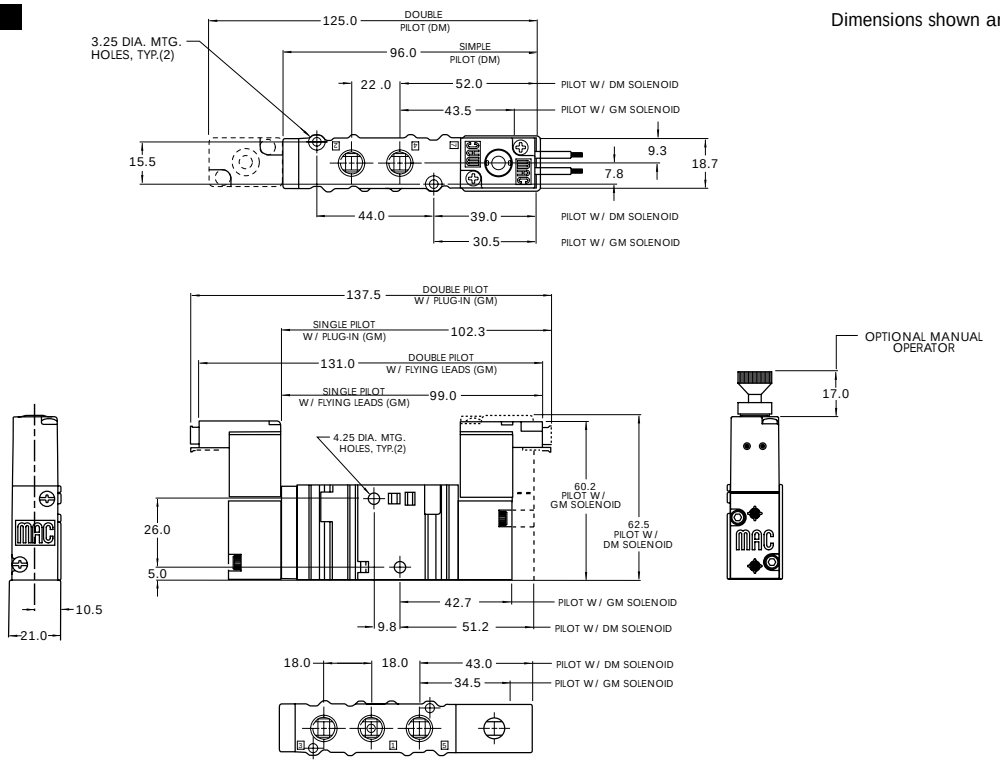
4**11**A-C0**A**-XX-X*xxx*-*xxx*

- Dual pressure models, replace by **C** for pilot supply from #3 port
- For memory spring, replace by **4** (single operator models only)
- Replace by **8** for 3 position dual pressure, pressure centre

Spare parts : • DM pilot body pressure seal: 16542 • DM pilot spacer plate: 24168-01.

DIMENSIONS

Dimensions shown are metric (mm)



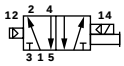
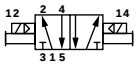
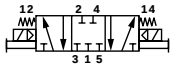
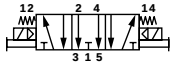
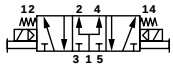
Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	G1/8" - G1/4"	1000 Nl/min	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

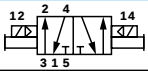
1. The 4-way pilot develops maximum shifting forces both ways.
2. Memory spring available.
3. Balanced spool, immune to variations of pressure, also provides high flow.
4. Short stroke with high flow.
5. Bonded spool with minimum friction, shifting in a glass-like finished bore.
6. Wiping effect eliminates sticking.
7. Long service life.

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre
						
Valve only	Internal	413A-00A-XX-X*xxx*-*xxx*	423A-00A-XX-X*xxx*-*xxx*	453A-00A-XX-X*xxx*-*xxx*	463A-00A-XX-X*xxx*-*xxx*	473A-00A-XX-X*xxx*-*xxx*
	External	413A-00D-XX-X*xxx*-*xxx*	423A-00D-XX-X*xxx*-*xxx*	453A-00D-XX-X*xxx*-*xxx*	463A-00D-XX-X*xxx*-*xxx*	473A-00D-XX-X*xxx*-*xxx*
G1/8"	Internal	413A-CAA-XX-X*xxx*-*xxx*	423A-CAA-XX-X*xxx*-*xxx*	453A-CAA-XX-X*xxx*-*xxx*	463A-CAA-XX-X*xxx*-*xxx*	473A-CAA-XX-X*xxx*-*xxx*
G1/4"		413A-DAA-XX-X*xxx*-*xxx*	423A-DAA-XX-X*xxx*-*xxx*	453A-DAA-XX-X*xxx*-*xxx*	463A-DAA-XX-X*xxx*-*xxx*	473A-DAA-XX-X*xxx*-*xxx*
G1/8"	External	413A-CAB-XX-X*xxx*-*xxx*	423A-CAB-XX-X*xxx*-*xxx*	453A-CAB-XX-X*xxx*-*xxx*	463A-CAB-XX-X*xxx*-*xxx*	473A-CAB-XX-X*xxx*-*xxx*
G1/4"		413A-DAB-XX-X*xxx*-*xxx*	423A-DAB-XX-X*xxx*-*xxx*	453A-DAB-XX-X*xxx*-*xxx*	463A-DAB-XX-X*xxx*-*xxx*	473A-DAB-XX-X*xxx*-*xxx*

DUAL PRESSURE MODELS (INTERNAL PILOT – PILOT PRESSURE SUPPLY FROM #5 PORT)

Port size	Pilot air	5/2 Single operator	5/2 Double operator
			
Valve only	Internal	433A-00A-XX-X*xxx*-*xxx*	443A-00A-XX-X*xxx*-*xxx*
	External	433A-00D-XX-X*xxx*-*xxx*	443A-00D-XX-X*xxx*-*xxx*
G1/8"	Internal	433A-CAA-XX-X*xxx*-*xxx*	443A-CAA-XX-X*xxx*-*xxx*
G1/4"		433A-DAA-XX-X*xxx*-*xxx*	443A-DAA-XX-X*xxx*-*xxx*
G1/8"	External	433A-CAD-XX-X*xxx*-*xxx*	443A-CAD-XX-X*xxx*-*xxx*
G1/4"		433A-DAD-XX-X*xxx*-*xxx*	443A-DAD-XX-X*xxx*-*xxx*

SOLENOID OPERATOR ➤ DM-D *XXX*-*XXX**

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Wire length
A	45 cm
B	60 cm
J	Connector

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
KA	Square connector
KD	Square connector with light
JB	Rectangular connector
JD	Rectangular connector with light
BA	Flying leads

SOLENOID OPERATOR ➤ GM-G *XXX*-*XXX***

XX	Voltage
DC	24V=/1,8W
DD	24V=/2,5W
DF	24V=/4,0W

X	Wire length
A	45 cm
B	60 cm
C	90 cm

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BA	Flying leads
BT	Flying leads with light
KA	Mini connector
KT	Mini connector with light

* Click here for other options available.
** Click here for other options available.

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series 400

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot – 2 pos. : 1,3 to 8 bar (with memory spring: 2 to 8 bar) 3 pos.: 2,3 to 8 bar External pilot : vacuum to 8 bar
Pilot pressure :	2 position: 1,3 to 8 bar (with memory spring: 2 to 8 bar) 3 position: 2,3 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 :	6,2 mm
Flow (at 6 bar, ΔP=1bar) :	1000 Nl/min (Cv 1.0)
Coil :	Epoxy encapsulated – class A wire – 100% ED (specify mod 0449)
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP54 (GM pilot) – IP65 (DM pilot) (Electrical connection)
Power :	~Inrush : 10.9 VA Holding : 7.7 VA = 1.8 to 12.7 W
Response times :	24 V=/5.4W Energize : 7.3 ms De-energize : 5.3 ms
	110V~/50Hz Energize : 8-12 ms De-energize : 7-11 ms

Options :

• NPTF threads

413A-CAA-XX-X*xxx*-*xxx*

- Dual pressure models, replace by **C** for pilot supply from #3 port
- For flow control, replace by **B**
- For memory spring, replace by **6**

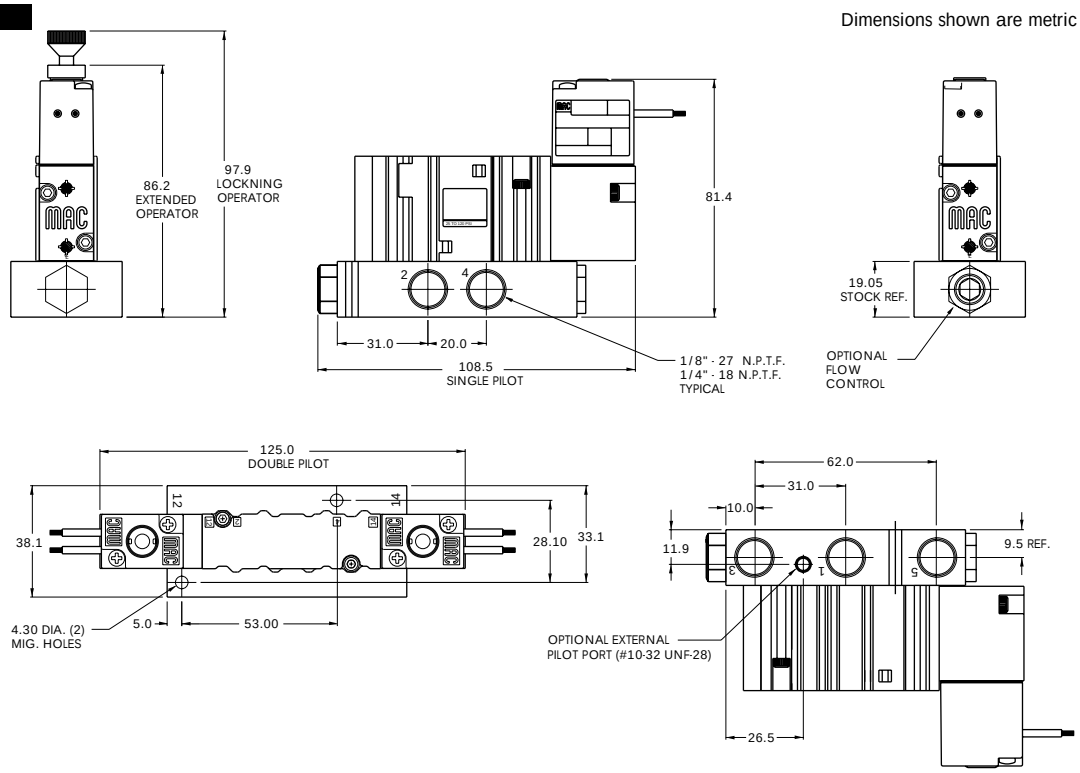
Base only :

400A-XXX (i.e. 400A-CAA)

Spare parts : • Body to base seal: 16525 • Flow control assembly: N-04001 • Body mounting screws (x2): 35043.

DIMENSIONS

Dimensions shown are metric (mm)



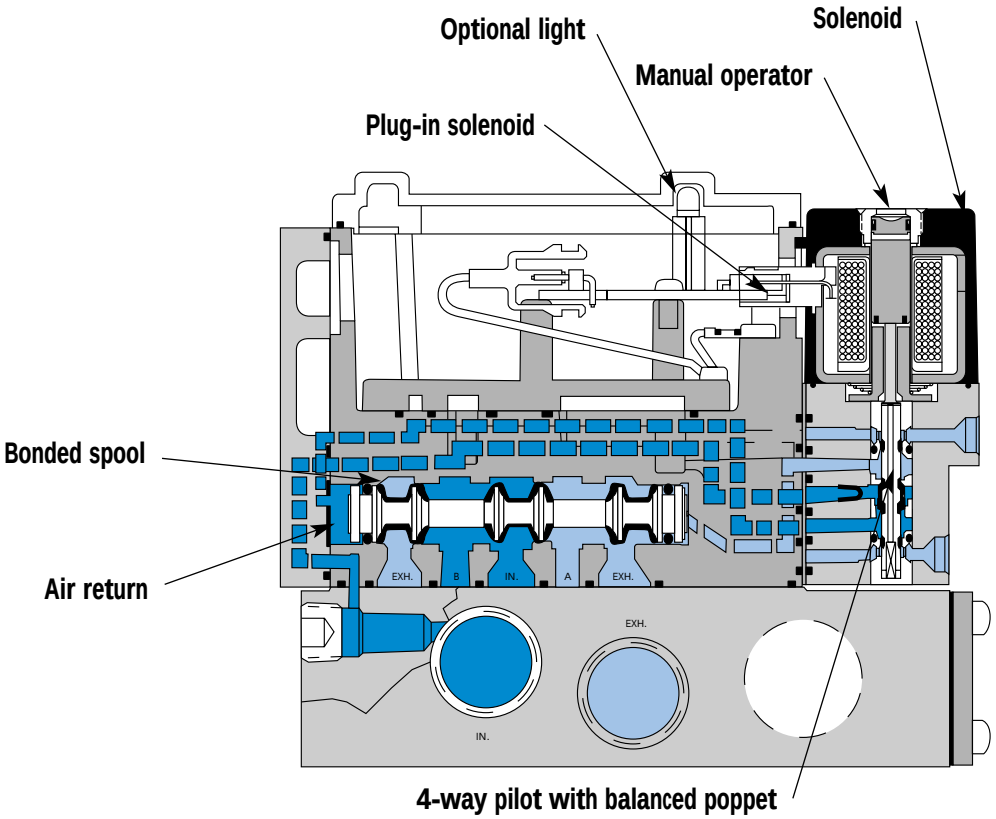
Consult "Precautions" before use, installation or service of MAC Valves..

Individual mounting

Sub-base non "plug-in"	Sub-base "plug-in"

Manifold mounting

Sub-base non "plug-in"	Sub-base "plug-in"



SERIES FEATURES

- Patented MACSOLENOID® for fastest possible response times and virtually burn-out proof AC solenoid operation.
- Optional low watt DC solenoids.
- Optional memory spring.
- Plug-in design of valves and bases for ease of maintenance.
- 2 position or 3 position valve configurations.

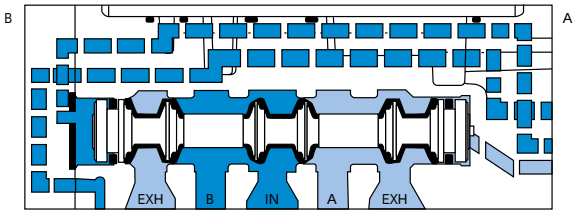
MAC

Series 92

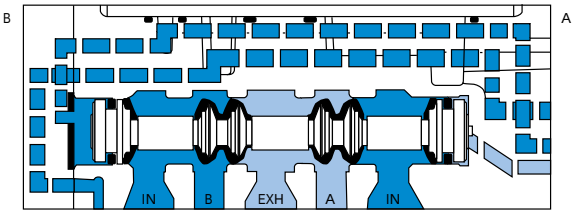
100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

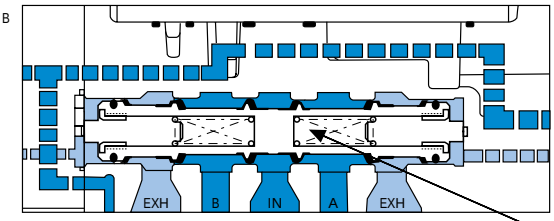
SPOOL CONFIGURATIONS



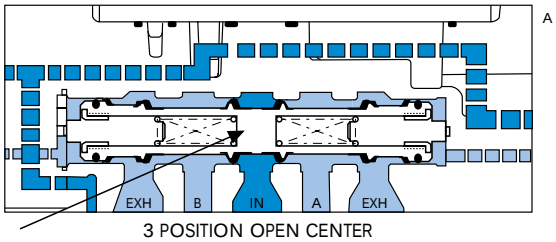
2 POSITION SINGLE PRESSURE
SHOWN WITH "B" OPERATOR ENERGIZED



2 POSITION DUAL PRESSURE
SHOWN WITH "B" OPERATOR ENERGIZED

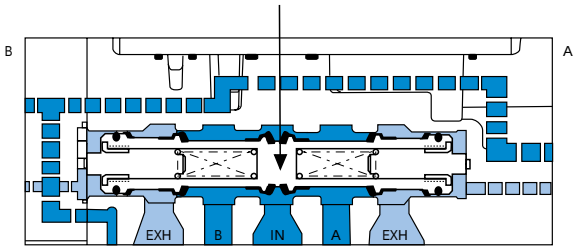


3 POSITION CLOSED CENTER



3 POSITION OPEN CENTER

SPRING CENTERING



3 POSITION SINGLE PRESSURE, PRESSURE CENTER

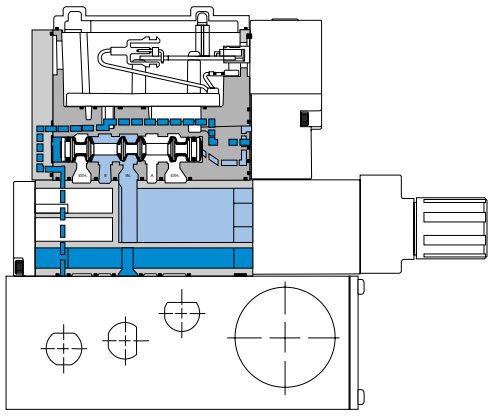
REGULATOR CONFIGURATIONS

SINGLE REGULATOR - SINGLE PRESSURE

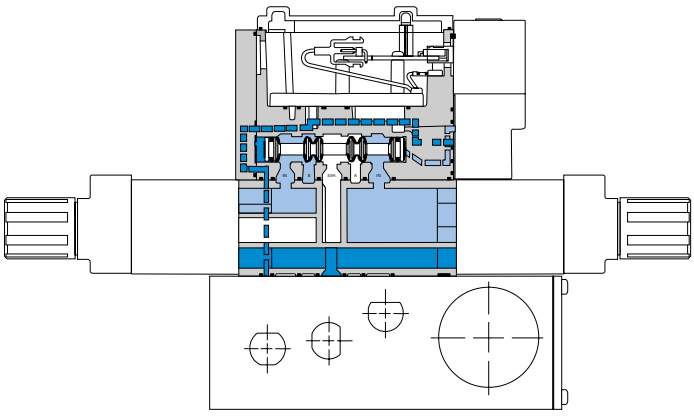
Pressure supplied to the individual or manifold base passes through the regulator.
Regulated pressure is supplied to the pressure path of the valve.

DUAL REGULATOR - DUAL PRESSURE

Pressure supplied from each regulator is divided in the block.
Regulated pressure from “A” regulator supplies cylinder port “A”.
Regulated pressure from “B” regulator supplies cylinder port “B”.
Dual pressure regulators require dual pressure spool in valve.



MANIFOLD WITH REGULATOR - SINGLE PRESSURE



MANIFOLD WITH REGULATOR - DUAL PRESSURE

Note: For both single and dual pressure, air supply to the pilot system is never regulated.

Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	G1/8" - G1/4" - G3/8"	1200 Nl/min	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

1. The 4-way pilot develops maximum shifting forces both ways.
2. Memory spring available.
3. Balanced spool, immune to variations of pressure, also provides high flow.
4. Short stroke with high flow.
5. Bonded seal spool with minimum friction, shifting in a glass-like finished bore.
6. Pilot with balanced poppet, high flow; short and consistent response times.

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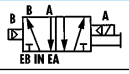
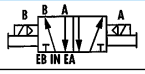
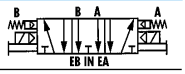
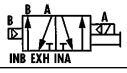
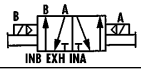
ISO 1
ISO 2
ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre
						
Valve less base		92B-ABA-000-DM-D*xxx*-*xxx*	92B-BBA-000-DM-D*xxx*-*xxx*	92B-EBA-000-DM-D*xxx*-*xxx*	92B-FBA-000-DM-D*xxx*-*xxx*	92B-GBA-000-DM-D*xxx*-*xxx*
G1/8"	Internal	92B-ABA-DAG-DM-D*xxx*-*xxx*	92B-BBA-DAG-DM-D*xxx*-*xxx*	92B-EBA-DAG-DM-D*xxx*-*xxx*	92B-FBA-DAG-DM-D*xxx*-*xxx*	92B-GBA-DAG-DM-D*xxx*-*xxx*
G1/4"	Internal	92B-ABA-EAG-DM-D*xxx*-*xxx*	92B-BBA-EAG-DM-D*xxx*-*xxx*	92B-EBA-EAG-DM-D*xxx*-*xxx*	92B-FBA-EAG-DM-D*xxx*-*xxx*	92B-GBA-EAG-DM-D*xxx*-*xxx*
G3/8"	Internal	92B-ABA-FAG-DM-D*xxx*-*xxx*	92B-BBA-FAG-DM-D*xxx*-*xxx*	92B-EBA-FAG-DM-D*xxx*-*xxx*	92B-FBA-FAG-DM-D*xxx*-*xxx*	92B-GBA-FAG-DM-D*xxx*-*xxx*
G1/8"	External	92B-ABA-DAH-DM-D*xxx*-*xxx*	92B-BBA-DAH-DM-D*xxx*-*xxx*	92B-EBA-DAH-DM-D*xxx*-*xxx*	92B-FBA-DAH-DM-D*xxx*-*xxx*	92B-GBA-DAH-DM-D*xxx*-*xxx*
G1/4"	External	92B-ABA-EAH-DM-D*xxx*-*xxx*	92B-BBA-EAH-DM-D*xxx*-*xxx*	92B-EBA-EAH-DM-D*xxx*-*xxx*	92B-FBA-EAH-DM-D*xxx*-*xxx*	92B-GBA-EAH-DM-D*xxx*-*xxx*
G3/8"	External	92B-ABA-FAH-DM-D*xxx*-*xxx*	92B-BBA-FAH-DM-D*xxx*-*xxx*	92B-EBA-FAH-DM-D*xxx*-*xxx*	92B-FBA-FAH-DM-D*xxx*-*xxx*	92B-GBA-FAH-DM-D*xxx*-*xxx*

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR – SEE "REGULATORS" SECTION)

Port size	Pilot air	5/2 Single operator	5/2 Double operator
			
Valve less base		92B-CBA-000-DM-D*xxx*-*xxx*	92B-DBA-000-DM-D*xxx*-*xxx*
G1/8"	Internal	92B-CBA-DAG-DM-D*xxx*-*xxx*	92B-DBA-DAG-DM-D*xxx*-*xxx*
G1/4"	Internal	92B-CBA-EAG-DM-D*xxx*-*xxx*	92B-DBA-EAG-DM-D*xxx*-*xxx*
G3/8"	Internal	92B-CBA-FAG-DM-D*xxx*-*xxx*	92B-DBA-FAG-DM-D*xxx*-*xxx*
G1/8"	External	92B-CBA-DAH-DM-D*xxx*-*xxx*	92B-DBA-DAH-DM-D*xxx*-*xxx*
G1/4"	External	92B-CBA-EAH-DM-D*xxx*-*xxx*	92B-DBA-EAH-DM-D*xxx*-*xxx*
G3/8"	External	92B-CBA-FAH-DM-D*xxx*-*xxx*	92B-DBA-FAH-DM-D*xxx*-*xxx*

Above models are shown with side ports.

SOLENOID OPERATOR ➤ DM-D *XXX*-*XXX**

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Wire length
A	45 cm (Flying leads)
B	60 cm (Flying leads)
J	Connector

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BM	Flying leads
BN	Flying leads with diode
BP	Flying leads with M.O.V.
BG	Flying leads with ground
JB	Rectangular connector
JD	Rectangular connector with light
KA	Square connector

* Click here for other options available.
Other options available for the 92 series valves, click here.

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series 92

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

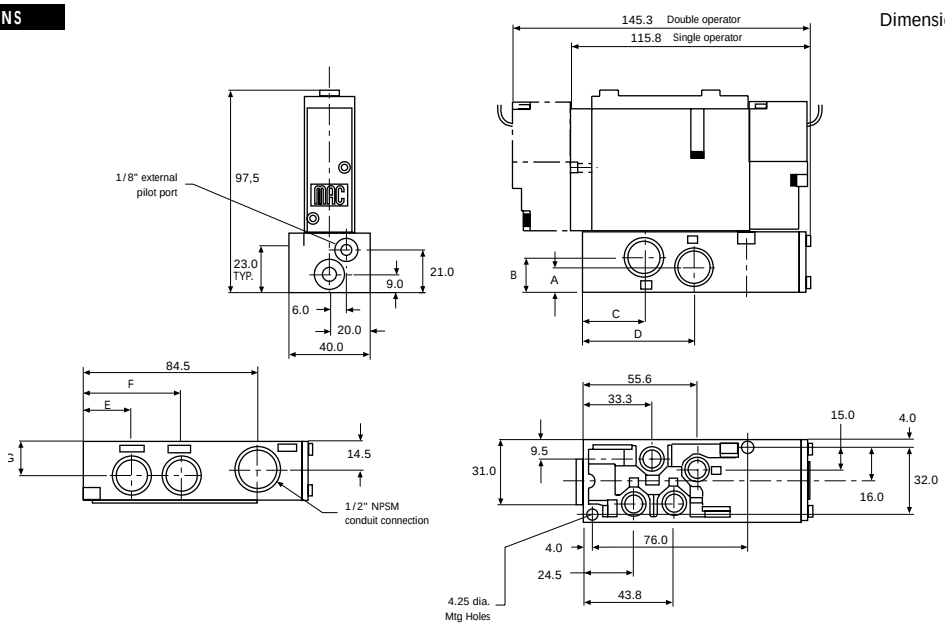
Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Internal pilot : 1,3 to 8 bar	3 position : 2,3 to 8 bar	
	External pilot : vacuum to 8 bar	3 position : 2,3 to 8 bar	
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)		
Filtration :	40 µ		
Temperature range :	-18°C to +50°C		
Orifice :	6,2 mm		
Flow (at 6 bar, ΔP=1bar) :	1/8": 1000Nl/min (Cv 1.0) – 1/4": 1100 Nl/min (Cv 1.1) – 3/8": 1200 Nl/min (Cv 1.2)		
Coil :	Epoxy encapsulated – class A – 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	
	= 1,8 to 12,7 W		
Response times :	24V=/5,4W	Energize : 8 ms	De-energize : 7 ms
	120V~/60Hz	Energize : 7-13 ms	De-energize : 12-20 ms

Options : • NPTF thread. • Sandwich flow control: FC92B-CA

Spare parts : • Pilot valve DM-Dxxx-xxx • Valve blanking plate: M-92002
• Pressure seal between valve and base : 16543. • Mounting screws valve to base (X2) : 35050.

DIMENSIONS

Dimensions shown are metric (mm)



DIM.	A	B	C	D	E	F	G
G1/8"	12.5	18.0	31.0	54.0	23.5	46.5	18.0
G1/4"	12.5	18.0	31.0	54.0	23.5	46.5	18.0
G3/8"	12.0	17.0	30.0	54.0	23.5	47.5	17.0

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series 92

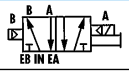
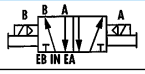
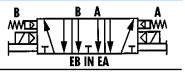
Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	G1/8" - G1/4" - G3/8"	1200 Nl/min	Sub-base "plug-in"	

OPERATIONAL BENEFITS

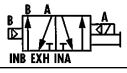
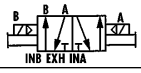
1. The 4-way pilot develops maximum shifting forces both ways.
2. Memory spring available.
3. Balanced spool, immune to variations of pressure, also provides high flow.
4. Short stroke with high flow.
5. Bonded seal spool with minimum friction, shifting in a glass-like finished bore.
6. Pilot with balanced poppet, high flow; short and consistent response times.

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre
						
Valve less base		92B-AAA-000-DM-D*xx*P-*xxx*	92B-BAA-000-DM-D*xx*P-*xxx*	92B-EAA-000-DM-D*xx*P-*xxx*	92B-FAA-000-DM-D*xx*P-*xxx*	92B-GAA-000-DM-D*xx*P-*xxx*
G1/8"	Internal	92B-AAA-DAA-DM-D*xx*P-*xxx*	92B-BAA-DAA-DM-D*xx*P-*xxx*	92B-EAA-DAA-DM-D*xx*P-*xxx*	92B-FAA-DAA-DM-D*xx*P-*xxx*	92B-GAA-DAA-DM-D*xx*P-*xxx*
G1/4"	Internal	92B-AAA-EAA-DM-D*xx*P-*xxx*	92B-BAA-EAA-DM-D*xx*P-*xxx*	92B-EAA-EAA-DM-D*xx*P-*xxx*	92B-FAA-EAA-DM-D*xx*P-*xxx*	92B-GAA-EAA-DM-D*xx*P-*xxx*
G3/8"	Internal	92B-AAA-FAA-DM-D*xx*P-*xxx*	92B-BAA-FAA-DM-D*xx*P-*xxx*	92B-EAA-FAA-DM-D*xx*P-*xxx*	92B-FAA-FAA-DM-D*xx*P-*xxx*	92B-GAA-FAA-DM-D*xx*P-*xxx*
G1/8"	External	92B-AAA-DAD-DM-D*xx*P-*xxx*	92B-BAA-DAD-DM-D*xx*P-*xxx*	92B-EAA-DAD-DM-D*xx*P-*xxx*	92B-FAA-DAD-DM-D*xx*P-*xxx*	92B-GAA-DAD-DM-D*xx*P-*xxx*
G1/4"	External	92B-AAA-EAD-DM-D*xx*P-*xxx*	92B-BAA-EAD-DM-D*xx*P-*xxx*	92B-EAA-EAD-DM-D*xx*P-*xxx*	92B-FAA-EAD-DM-D*xx*P-*xxx*	92B-GAA-EAD-DM-D*xx*P-*xxx*
G3/8"	External	92B-AAA-FAD-DM-D*xx*P-*xxx*	92B-BAA-FAD-DM-D*xx*P-*xxx*	92B-EAA-FAD-DM-D*xx*P-*xxx*	92B-FAA-FAD-DM-D*xx*P-*xxx*	92B-GAA-FAD-DM-D*xx*P-*xxx*

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR – SEE "REGULATORS" SECTION)

Port size	Pilot air	5/2 Single operator	5/2 Double operator
			
Valve less base		92B-CAA-000-DM-D*xx*P-*xxx*	92B-DAA-000-DM-D*xx*P-*xxx*
G1/8"	Internal	92B-CAA-DAA-DM-D*xx*P-*xxx*	92B-DAA-DAA-DM-D*xx*P-*xxx*
G1/4"	Internal	92B-CAA-EAA-DM-D*xx*P-*xxx*	92B-DAA-EAA-DM-D*xx*P-*xxx*
G3/8"	Internal	92B-CAA-FAA-DM-D*xx*P-*xxx*	92B-DAA-FAA-DM-D*xx*P-*xxx*
G1/8"	External	92B-CAA-DAD-DM-D*xx*P-*xxx*	92B-DAA-DAD-DM-D*xx*P-*xxx*
G1/4"	External	92B-CAA-EAD-DM-D*xx*P-*xxx*	92B-DAA-EAD-DM-D*xx*P-*xxx*
G3/8"	External	92B-CAA-FAD-DM-D*xx*P-*xxx*	92B-DAA-FAD-DM-D*xx*P-*xxx*

Above models are shown with side ports.

SOLENOID OPERATOR ➤ DM-D *XX* P-*XXX* *

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
DM	Plug-in
DN	Plug-in with diode
DP	Plug-in with M.O.V.
DG	Plug-in with diode & ground
DJ	Plug-in with M.O.V. & ground

* Click here for other options available.
Note: Ground required for 30 Volts or higher.
Other options available for the 92 series valves, click here.

MAC

Series 92

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

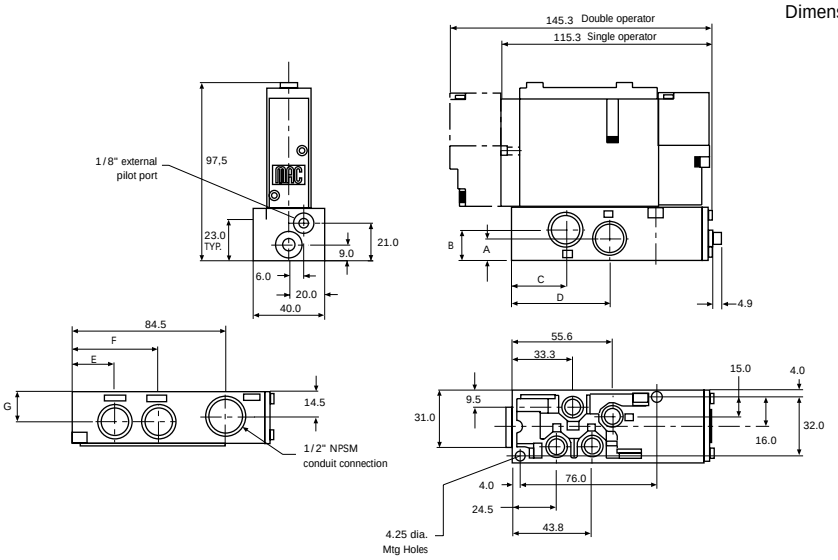
Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Internal pilot : 1,3 to 8 bar	3 position : 2,3 to 8 bar	
	External pilot : vacuum to 8 bar	3 position : 2,3 to 8 bar	
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)		
Filtration :	40 µ		
Temperature range :	-18°C to +50°C		
Orifice :	6,2 mm		
Flow (at 6 bar, ΔP=1bar) :	1/8": 1000Nl/min (Cv 1.0) – 1/4": 1100 Nl/min (Cv 1.1) – 3/8": 1200 Nl/min (Cv 1.2)		
Coil :	Epoxy encapsulated – class A – 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	
	= 1,8 to 12,7 W		
Response times :	24V=/5,4W	Energize : 8 ms	De-energize : 7 ms
	120V~/50Hz	Energize : 7-13 ms	De-energize : 12-20 ms

Options : • NPTF threads • Sandwich flow control: FC92B-AA (sgl. operator), FC92B-BA (dbl. operator)

Spare parts : • Pilot valve DM-DxxP-xxx • Valve blanking plate: M-92002
• Pressure seal between valve and base : 16543. • Mounting screws valve to base (X2) : 35050.

DIMENSIONS

Dimensions shown are metric (mm)



DIM.	A	B	C	D	E	F	G
G1/8"	12.5	18.0	31.0	54.0	23.5	46.5	18.0
G1/4"	12.5	18.0	31.0	54.0	23.5	46.5	18.0
G3/8"	12.0	17.0	30.0	54.0	23.5	47.5	17.0

Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	G1/4" - G3/8"	1200 Nl/min	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

1. The 4-way pilot develops maximum shifting forces both ways.
2. Memory spring available.
3. Balanced spool, immune to variations of pressure, also provides high flow.
4. Short stroke with high flow.
5. Bonded seal spool with minimum friction, shifting in a glass-like finished bore.
6. Pilot with balanced poppet, high flow; short and consistent response times.
7. Wiping effect eliminates sticking.
8. Long service life.

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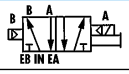
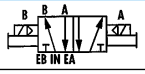
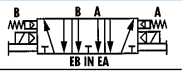
ISO 1
ISO 2
ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre
						
Valve less base		92B-ABA-000-DM-D*xxx*-*xxx*	92B-BBA-000-DM-D*xxx*-*xxx*	92B-EBA-000-DM-D*xxx*-*xxx*	92B-FBA-000-DM-D*xxx*-*xxx*	92B-GBA-000-DM-D*xxx*-*xxx*
G1/4"	Internal	92B-ABA-EJG-DM-D*xxx*-*xxx*	92B-BBA-EJG-DM-D*xxx*-*xxx*	92B-EBA-EJG-DM-D*xxx*-*xxx*	92B-FBA-EJG-DM-D*xxx*-*xxx*	92B-GBA-EJG-DM-D*xxx*-*xxx*
G3/8"		92B-ABA-FJG-DM-D*xxx*-*xxx*	92B-BBA-FJG-DM-D*xxx*-*xxx*	92B-EBA-FJG-DM-D*xxx*-*xxx*	92B-FBA-FJG-DM-D*xxx*-*xxx*	92B-GBA-FJG-DM-D*xxx*-*xxx*

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR – SEE "REGULATORS" SECTION)

Port size	Pilot air	5/2 Single operator	5/2 Double operator
			
Valve less base		92B-CBA-000-DM-D*xxx*-*xxx*	92B-DBA-000-DM-D*xxx*-*xxx*
G1/4"	Internal	92B-CBA-EJG-DM-D*xxx*-*xxx*	92B-DBA-EJG-DM-D*xxx*-*xxx*
G3/8"		92B-CBA-FJG-DM-D*xxx*-*xxx*	92B-DBA-FJG-DM-D*xxx*-*xxx*

Above models are shown with side ports.

SOLENOID OPERATOR ➤ DM-D *XXX*-*XXX**

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Wire length
A	45 cm
J	Connector

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
KA	Square connector
KD	Square connector with light
JB	Rectangular connector
JD	Rect. connector with light
BA	Flying leads
BK	Flying leads with diode

* Click here for other options available.
End plate kit required (port size 3/8"): M-92004-01-01P (internal pilot)
M-92004-02-01P (External pilot)

Inlet/exhaust Isolator disc: N-92018.
Other options available for the 92 series valves, click here.

MAC

Series 9 2

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

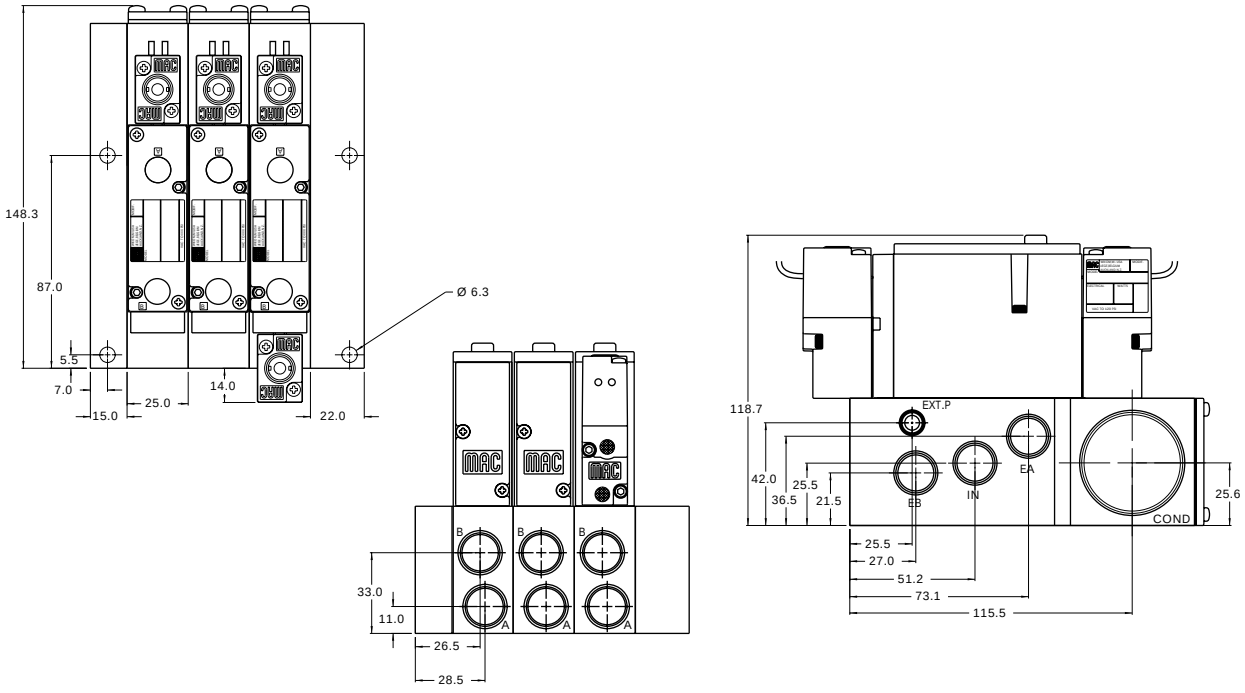
Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Internal pilot : 1,3 to 8 bar	3 position : 2,3 to 8 bar	
	External pilot : vacuum to 8 bar	3 position : 2,3 to 8 bar	
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)		
Filtration :	40 µ		
Temperature range :	-18°C to +50°C		
Orifice :	6,2 mm		
Flow (at 6 bar, ΔP=1bar) :	1/4": 1100 Nl/min (Cv1.1) – 3/8": 1200 Nl/min (Cv 1.2)		
Coil :	Epoxy encapsulated – class A – 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	
	= 1,8 to 12,7 W		
Response times :	24V=/5,4W	Energize : 8 ms	De-energize : 7 ms
	120V~/50Hz	Energize : 7-13 ms	De-energize : 12-20 ms

Options : • NPTF threads • Sandwich flow controls: FC92B-CA

Spare parts : • Pilot valve: DM-Dxxx-xxx • Valve blanking plate: M-92002 • Pressure seal, valve to base 16543

DIMENSIONS

Dimensions shown are metric (mm)



Consult "Precautions" before use, installation or service of MAC Valves..

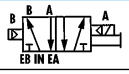
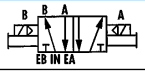
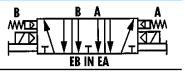
Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	G1/4" - G3/8"	1200 Nl/min	Sub-base "plug-in"	

OPERATIONAL BENEFITS

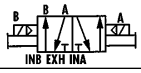
1. The 4-way pilot develops maximum shifting forces both ways.
2. Memory spring available.
3. Balanced spool, immune to variations of pressure, also provides high flow.
4. Short stroke with high flow.
5. Bonded seal spool with minimum friction, shifting in a glass-like finished bore.
6. Pilot with balanced poppet, high flow; short and consistent response times.
7. Wiping effect eliminates sticking.
8. Long service life.

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre
						
Valve less base		92B-AAA-000-DM-D*xx*P-*xxx*	92B-BAA-000-DM-D*xx*P-*xxx*	92B-EAA-000-DM-D*xx*P-*xxx*	92B-FAA-000-DM-D*xx*P-*xxx*	92B-GAA-000-DM-D*xx*P-*xxx*
G1/4"	Internal	92B-AAA-EJA-DM-D*xx*P-*xxx*	92B-BAA-EJA-DM-D*xx*P-*xxx*	92B-EAA-EJA-DM-D*xx*P-*xxx*	92B-FAA-EJA-DM-D*xx*P-*xxx*	92B-GAA-EJA-DM-D*xx*P-*xxx*
G3/8"		92B-AAA-FJA-DM-D*xx*P-*xxx*	92B-BAA-FJA-DM-D*xx*P-*xxx*	92B-EAA-FJA-DM-D*xx*P-*xxx*	92B-FAA-FJA-DM-D*xx*P-*xxx*	92B-GAA-FJA-DM-D*xx*P-*xxx*

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR – SEE "REGULATORS" SECTION)

Port size	Pilot air	5/2 Single operator	5/2 Double operator
			
Valve less base		92B-CAA-000-DM-D*xx*P-*xxx*	92B-DAA-000-DM-D*xx*P-*xxx*
G1/4"	Internal	92B-CAA-EJA-DM-D*xx*P-*xxx*	92B-DAA-EJA-DM-D*xx*P-*xxx*
G3/8"		92B-CAA-FJA-DM-D*xx*P-*xxx*	92B-DAA-FJA-DM-D*xx*P-*xxx*

Above models are shown with side ports and no lights.

SOLENOID OPERATOR ➤ DM-D *XX* P-*XXX* *

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
DM	Plug-in
DN	Plug-in with diode
DP	Plug-in with M.O.V.
DG	Plug-in with diode & ground
DJ	Plug-in with M.O.V. & ground

* Click here for other options available.
Note: Ground required for 30 Volts or higher.
End plate required (port size 3/8"): M-92004-01-01P (internal pilot)
M-92004-02-01P (external pilot)
Inlet / exhaust isolator disc: N-92018.
Other options available for the 92 series valves, click here.

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36
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37
38
52
67
44
46
42
47
48
400
92
93
ISO 1
ISO 2
ISO 3

MAC

Series 9 2

100% OF PRODUCTION TESTED 100%

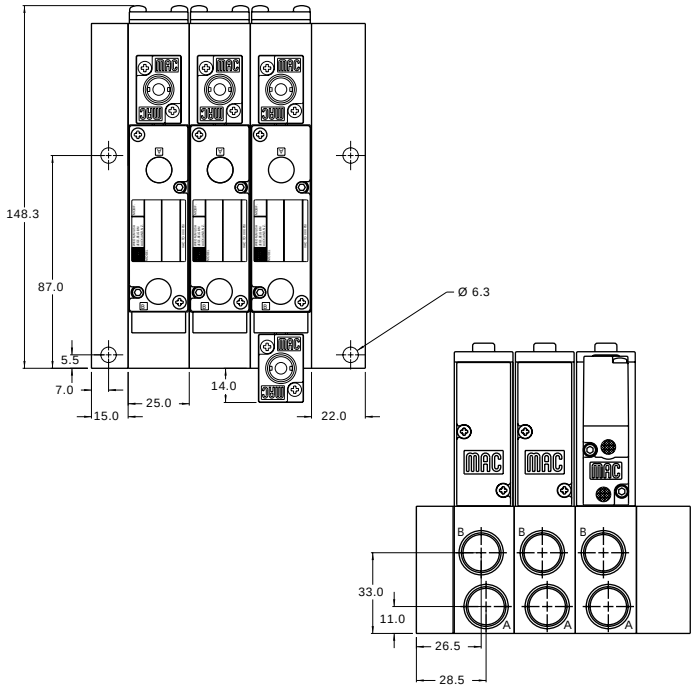
WARRANTY 18 MONTHS

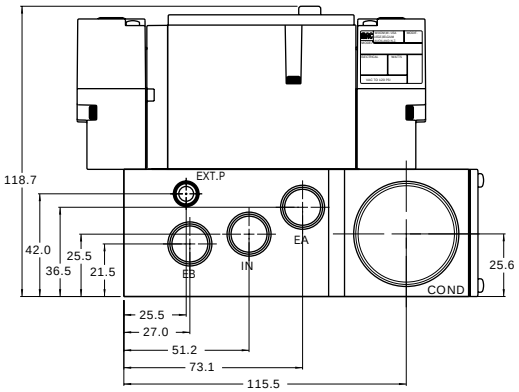
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Internal pilot : 1,3 to 8 bar	3 position : 2,3 to 8 bar	
	External pilot : vacuum to 8 bar	3 position : 2,3 to 8 bar	
Pilot pressure:	1,3 to 8 bar 3 positions 2,3 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 :	6,2 mm		
Flow (at 6 bar, ΔP=1bar) :	1/4": 1100 Nl/min (Cv1.1) – 3/8": 1200 Nl/min (Cv 1.2)		
Coil :	Epoxy encapsulated – class A – 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	
	= 1,8 to 12,7 W		
Response times :	24V=/5,4W	Energize : 8 ms	De-energize : 7 ms
	120V~/50Hz	Energize : 7-13 ms	De-energize : 12-20 ms
Options :	• NPTF threads • Sandwich flow controls: FC92B-AA (sgl. operator), FC92B-BA (dbl. operator)		
Spare parts :	• Pilot valve: DM-DxxP-xxx • Valve blanking plate: M-92002 • Pressure seal, valve to base: 16543 • Mounting screws valve to base (x2): 35050		

DIMENSIONS

Dimensions shown are metric (mm)





OPTIONS FOR NON PLUG-IN VALVES

Valve function

92B-**H**XX-XXX-XX-D*xxx*-*xxx*

- **H** for 3 position dual pressure, pressure centre*
- **J** for 3 position dual pressure, closed centre*
- **K** for 3 position dual pressure, open centre*
- **L** for single operator, single pressure with memory spring
- **N** for single operator, dual pressure with memory spring*

Pilot exhaust

92B-X**B**X-XXX-XX-D*xxx*-*xxx*

- **B** standard pilot exhaust
- **D** pilot exhaust to main valve exhaust**

Port configuration :

Individual sub-base

92B-XXX-X**A**X-XX-D*xxx*-*xxx*

- **A** side ports
- **B** bottom ports (1/8" only)
- **C** side & bottom ports (1/8" only)
- **D** side inlet & exhaust with bottom cylinder ports (1/8")

Manifold sub-base

92B-XXX-X**J**X-XX-D*xxx*-*xxx*

- **J** side ports
- **K** bottom ports

Pilot style :

92B-XXX-XXX-**DM**-D*xxx*-*xxx*

- **DM** pilot exhaust muffled
- **DP** pilot exhaust piped (#10-32)
- **DU** pilot exhaust to main exhaust

Base only :

92B-000-XXX (i.e. 92B-000-DAG) - Individual base

92B-000-XXX (i.e. 92B-000-EJG) - Manifold base

* Requires sandwich regulator.
** Must use DU pilot. Main valve exhaust cannot be restricted.

OPTIONS FOR PLUG-IN VALVES

Valve function

92B-**H**XX-XXX-XX-D*xx*P-*xxx*

- **H** for 3 position dual pressure, pressure centre*
- **J** for 3 position dual pressure, closed centre*
- **K** for 3 position dual pressure, open centre*
- **L** for single operator, single pressure with memory spring
- **N** for single operator, dual pressure with memory spring*

Pilot exhaust

92B-X**A**X-XXX-XX-D*xx*P-*xxx*

- **A** standard pilot exhaust
- **C** pilot exhaust to main valve exhaust**

Body electrical

92B-XX**A**-XXX-XX-D*xx*P-*xxx*

- **A** no light
- **B** light(s)
- **F** suppression and blocking diode with light(s)
- **H** M.O.V. with light(s)

Port configuration :

Individual sub-base

92B-XXX-X**A**X-XX-D*xx*P-*xxx*

- **A** side ports
- **B** bottom ports (1/8" only)
- **C** side & bottom ports (1/8" only)
- **D** side inlet & exhaust with bottom cylinder ports (1/8")

Manifold sub-base

92B-XXX-X**J**X-XX-D*xx*P-*xxx*

- **J** side ports
- **K** bottom ports

Base/manifold int./ext. pilot

92B-XXX-XX**A**-XX-D*xx*P-*xxx*

- **A** internal pilot no light
- **B** internal pilot single light
- **C** internal pilot double light
- **D** external pilot no light
- **E** external pilot single light
- **F** external pilot double light

Pilot style :

92B-XXX-XXX-**DM**-D*xx*P-*xxx*

- **DM** pilot exhaust muffled
- **DP** pilot exhaust piped (#10-32)
- **DU** pilot exhaust to main exhaust

Lead Wire Lengths : (manifold sub-base only)

92B-XXX-XXX-DM-D*xx***P**-*xxx*

- **P** option – 30 cm leads
- **1** option – 45 cm leads
- **2** option – 60 cm leads
- **3** option – 90 cm leads
- **4** option – 120 cm leads
- **5** option – 180 cm leads

Base only :

92B-000-XXX (i.e. 92B-000-DAA) - Individual base

(Note: bases are wired for double solenoid valves)

92B-000-XXX (i.e. 92B-000-EJA) - Manifold base

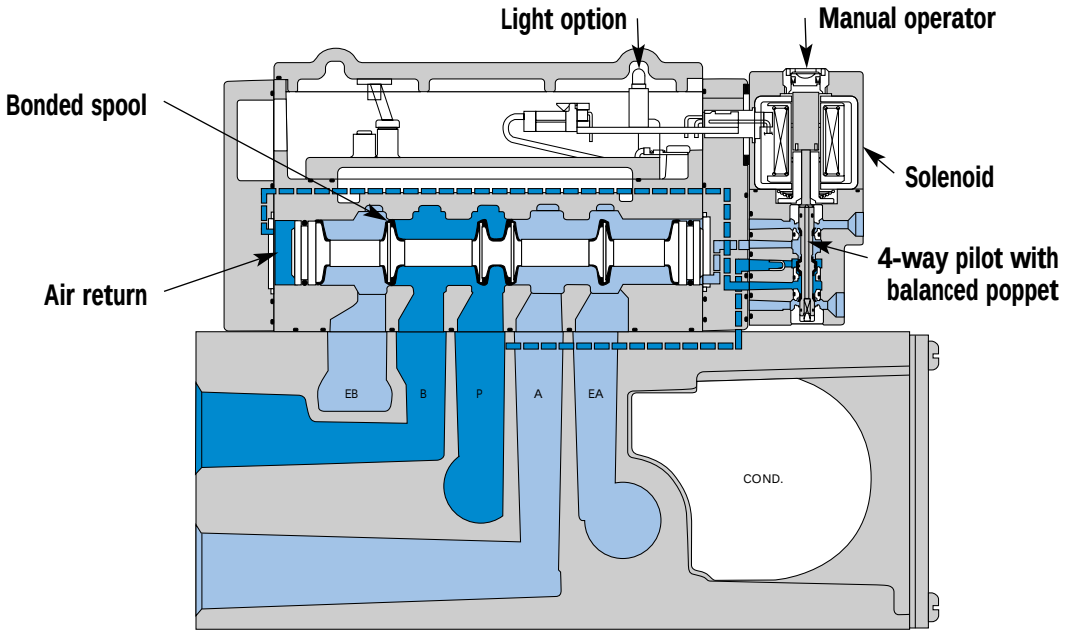
* Requires sandwich regulator.
** Must use DU pilot. Main valve exhaust cannot be restricted.

Individual mounting

Inline	Sub-base non "plug-in"	Sub-base "plug-in"

Manifold mounting

Sub-base non "plug-in"	Sub-base "plug-in"



SERIES FEATURES

- Patented MACSOLENOID® for fastest possible response times and virtually burn-out proof AC solenoid operation.
- Optional low watt DC solenoids.
- Optional memory spring.
- Plug-in design of valves and bases for ease of maintenance.
- 2 position or 3 position valve configurations.

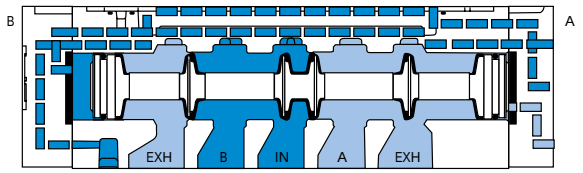
MAC

Series 93

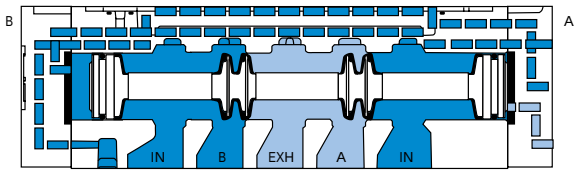
100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

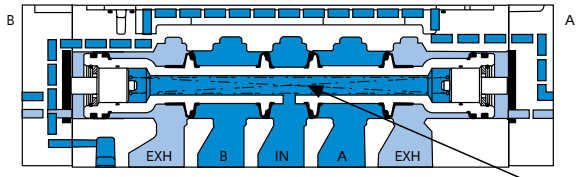
SPOOL CONFIGURATIONS



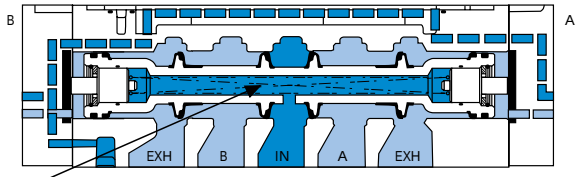
2 POSITION SINGLE PRESSURE
SHOWN WITH "B" OPERATOR ENERGIZED



2 POSITION DUAL PRESSURE
SHOWN WITH "B" OPERATOR ENERGIZED

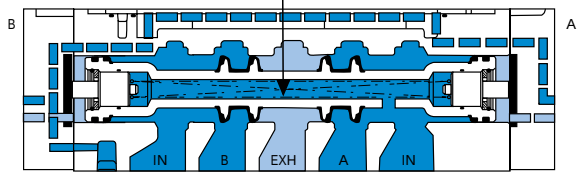


3 POSITION CLOSED CENTER



3 POSITION OPEN CENTER

SPRING CENTERING



3 POSITION SINGLE PRESSURE, PRESSURE CENTER

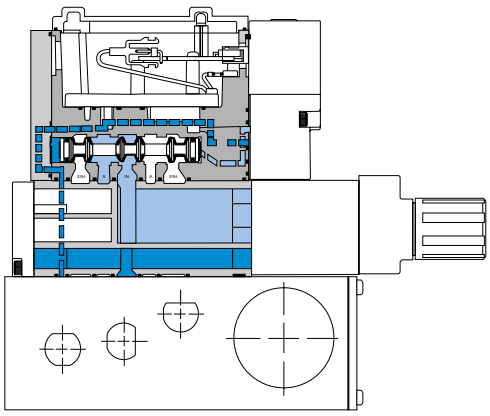
REGULATOR CONFIGURATIONS

SINGLE REGULATOR - SINGLE PRESSURE

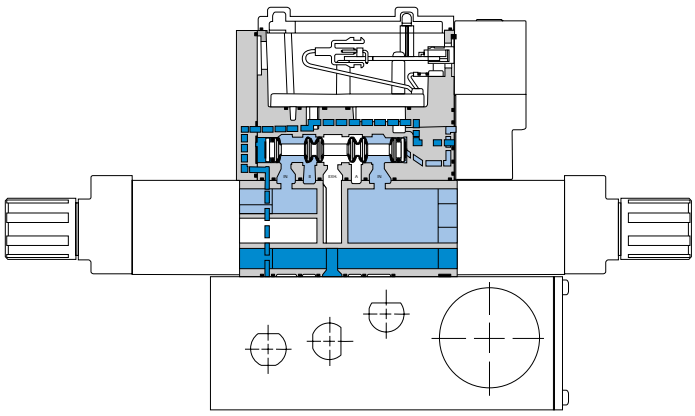
Pressure supplied to the individual or manifold base passes through the regulator.
Regulated pressure is supplied to the pressure path of the valve.

DUAL REGULATOR - DUAL PRESSURE

Pressure supplied from each regulator is divided in the block.
Regulated pressure from “A” regulator supplies cylinder port “A”.
Regulated pressure from “B” regulator supplies cylinder port “B”.
Dual pressure regulators require dual pressure spool in valve.



MANIFOLD WITH REGULATOR - SINGLE PRESSURE



MANIFOLD WITH REGULATOR - DUAL PRESSURE

Note: For both single and dual pressure, air supply to the pilot system is never regulated.

MAC

Series 93

Direct solenoid and solenoid pilot operated valves

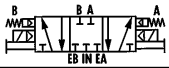
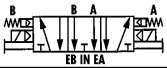
Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	G3/8" - G1/2"	3800 Nl/min	Inline	

OPERATIONAL BENEFITS

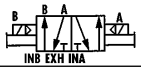
1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. Air only return. Optional memory spring is also available.
4. Optional low wattage DC solenoid down to 1 watt.
5. MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
					
G3/8"	Internal	93A-AJ0-E0J-DM-D*xxx*-*xxx*	93A-BJ0-E0J-DM-D*xxx*-*xxx*	93A-EJ0-E0J-DM-D*xxx*-*xxx*	93A-FJ0-E0J-DM-D*xxx*-*xxx*
G1/2"		93A-AJ0-F0J-DM-D*xxx*-*xxx*	93A-BJ0-F0J-DM-D*xxx*-*xxx*	93A-EJ0-F0J-DM-D*xxx*-*xxx*	93A-FJ0-F0J-DM-D*xxx*-*xxx*
G3/8"	External	93A-AJ0-E0K-DM-D*xxx*-*xxx*	93A-BJ0-E0K-DM-D*xxx*-*xxx*	93A-EJ0-E0K-DM-D*xxx*-*xxx*	93A-FJ0-E0K-DM-D*xxx*-*xxx*
G1/2"		93A-AJ0-F0K-DM-D*xxx*-*xxx*	93A-BJ0-F0K-DM-D*xxx*-*xxx*	93A-EJ0-F0K-DM-D*xxx*-*xxx*	93A-FJ0-F0K-DM-D*xxx*-*xxx*

DUAL PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/2 Pressure centre
				
G3/8"	Internal	93A-CJ0-E0J-DM-D*xxx*-*xxx*	93A-DJ0-E0J-DM-D*xxx*-*xxx*	93A-HJ0-E0J-DM-D*xxx*-*xxx*
G1/2"		93A-CJ0-F0J-DM-D*xxx*-*xxx*	93A-DJ0-F0J-DM-D*xxx*-*xxx*	93A-HJ0-F0J-DM-D*xxx*-*xxx*
G3/8"	External	93A-CJ0-E0K-DM-D*xxx*-*xxx*	93A-DJ0-E0K-DM-D*xxx*-*xxx*	93A-HJ0-E0K-DM-D*xxx*-*xxx*
G1/2"		93A-CJ0-F0K-DM-D*xxx*-*xxx*	93A-DJ0-F0K-DM-D*xxx*-*xxx*	93A-HJ0-F0K-DM-D*xxx*-*xxx*

SOLENOID OPERATOR ➤ DM-D *XXX*-*XXX**

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Wire length
A	45 cm (Flying leads)
B	60 cm (Flying leads)
J	Connector

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
KA	Square connector
KD	Square connector with light
JB	Rectangular connector
JD	Rectangular connector with light
BA	Flying leads

* Click here for other options available.

OPTIONS

Pilot exhaust : 93A-X**J**X-XXX-DM-D*xxx*-*xxx*

J Standard pilot exhaust
K Pilot exhaust to main exhaust (use DU pilot)

Other options available for the 93 series valves, click here.

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series 9 3

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

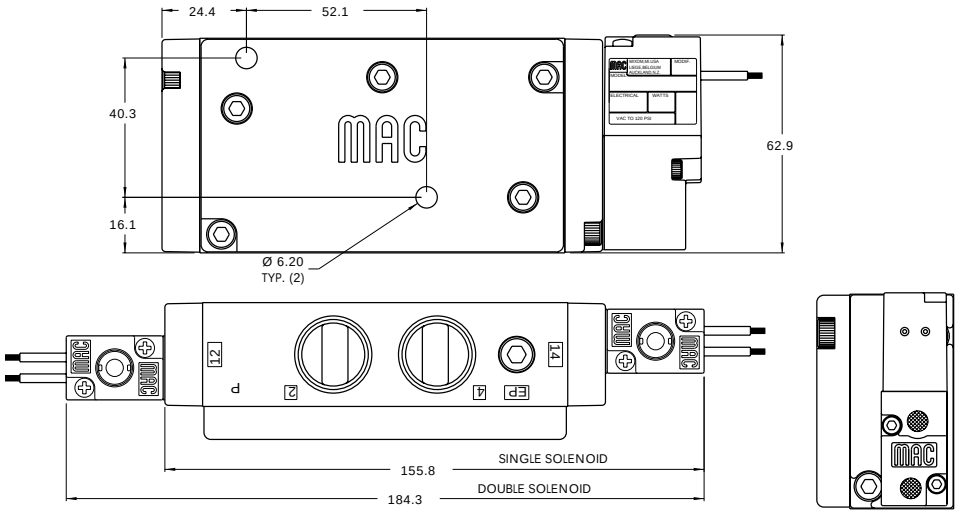
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot: 1,3 to 10 bar External Pilot: Vacuum to 10 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 :	11,7 mm
Flow (at 6 bar, ΔP=1bar) :	3800 Nl/min (Cv 3,8)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 1.8 to 12.7 W
Response times : **(with 4 W coil)**	Energize :13 ms De-energize : 10 ms

Option : • NPTF thread

DIMENSIONS

Dimensions shown are metric (mm)



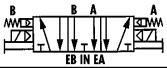
Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	G1/4" - G3/8" - G1/2"	3400 Nl/min	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. Air only return. Optional memory spring is also available.
4. Optional low wattage DC solenoid down to 1 watt.
5. MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.

HOW TO ORDER

SINGLE PRESSURE MODELS (1/4" MODELS ARE BOTTOM PORTED)

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
					
Valve less base		93A-ABA-000-DM-D*xxx-xxx*	93A-BBA-000-DM-D*xxx-xxx*	93A-EBA-000-DM-D*xxx-xxx*	93A-FBA-000-DM-D*xxx-xxx*
G1/4"	Internal	93A-ABA-DBG-DM-D*xxx-xxx*	93A-BBA-DBG-DM-D*xxx-xxx*	93A-EBA-DBG-DM-D*xxx-xxx*	93A-FBA-DBG-DM-D*xxx-xxx*
G3/8"	Internal	93A-ABA-EAG-DM-D*xxx-xxx*	93A-BBA-EAG-DM-D*xxx-xxx*	93A-EBA-EAG-DM-D*xxx-xxx*	93A-FBA-EAG-DM-D*xxx-xxx*
G1/2"	Internal	93A-ABA-FAG-DM-D*xxx-xxx*	93A-BBA-FAG-DM-D*xxx-xxx*	93A-EBA-FAG-DM-D*xxx-xxx*	93A-FBA-FAG-DM-D*xxx-xxx*
G1/4"	External	93A-ABA-DBH-DM-D*xxx-xxx*	93A-BBA-DBH-DM-D*xxx-xxx*	93A-EBA-DBH-DM-D*xxx-xxx*	93A-FBA-DBH-DM-D*xxx-xxx*
G3/8"	External	93A-ABA-EAH-DM-D*xxx-xxx*	93A-BBA-EAH-DM-D*xxx-xxx*	93A-EBA-EAH-DM-D*xxx-xxx*	93A-FBA-EAH-DM-D*xxx-xxx*
G1/2"	External	93A-ABA-FAH-DM-D*xxx-xxx*	93A-BBA-FAH-DM-D*xxx-xxx*	93A-EBA-FAH-DM-D*xxx-xxx*	93A-FBA-FAH-DM-D*xxx-xxx*

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR, SEE „REGULATORS" SECTION (1/4" MODELS ARE BOTTOM PORTED))

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/2 Pressure centre
				
Valve less base		93A-CBA-000-DM-D*xxx-xxx*	93A-DBA-000-DM-D*xxx-xxx*	93A-HBA-000-DM-D*xxx-xxx*
G1/4"	Internal	93A-CBA-DBG-DM-D*xxx-xxx*	93A-DBA-DBG-DM-D*xxx-xxx*	93A-HBA-DBG-DM-D*xxx-xxx*
G3/8"	Internal	93A-CBA-EAG-DM-D*xxx-xxx*	93A-DBA-EAG-DM-D*xxx-xxx*	93A-HBA-EAG-DM-D*xxx-xxx*
G1/2"	Internal	93A-CBA-FAG-DM-D*xxx-xxx*	93A-DBA-FAG-DM-D*xxx-xxx*	93A-HBA-FAG-DM-D*xxx-xxx*
G1/4"	External	93A-CBA-DBH-DM-D*xxx-xxx*	93A-DBA-DBH-DM-D*xxx-xxx*	93A-HBA-DBH-DM-D*xxx-xxx*
G3/8"	External	93A-CBA-EAH-DM-D*xxx-xxx*	93A-DBA-EAH-DM-D*xxx-xxx*	93A-HBA-EAH-DM-D*xxx-xxx*
G1/2"	External	93A-CBA-FAH-DM-D*xxx-xxx*	93A-DBA-FAH-DM-D*xxx-xxx*	93A-HBA-FAH-DM-D*xxx-xxx*

SOLENOID OPERATOR ➤ DM-D *XXX*-*XXX**

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Wire length
A	45 cm
B	60 cm
J	Connector

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BM	Flying leads
BN	Flying leads with diode
BP	Flying leads with M.O.V.
BG	Flying leads with ground
JB	Rectangular connector
JD	Rectangular connector with light

* Click here for other options available.
Other options available for the 93 series valves, click here.

34
36
32
37
38
52
67
44
46
42
47
48
400
92
93
ISO 1
ISO 2
ISO 3

MAC

Series 93

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot: 1,3 to 10 bar External Pilot: Vacuum to 10 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 :	11,7 mm
Flow (at 6 bar, ΔP=1bar) :	1/4", 3/8": 3000 Nl/min (Cv3.0) – 1/2": 3400 Nl/min (Cv 3,4)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 1 to 12.7 W
Response times : **(with 4 W coil)**	Energize :13 ms De-energize : 10 ms

Options :

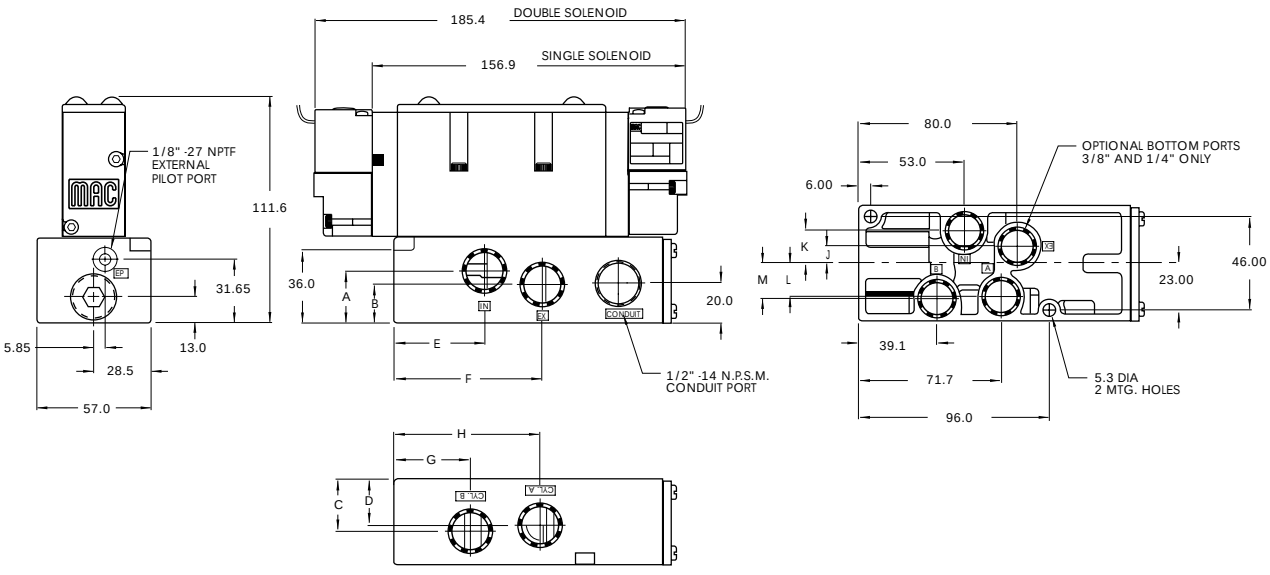
- NPTF thread • Sandwich regulator (see ‚regulators' section)
- Sandwich flow controls FC93A-BA (screwdriver slot adjustment)
  FC93A-BB (locking knob adjustment)

Spare parts :

- Pilot valve: DM-Dxxx-xxx • Valve to base pressure seal: 16622
- Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249
- Pilot valve mounting screws (x2): 35069

DIMENSIONS

Dimensions shown are metric (mm)



DIM.	A	B	C	D	E	F	G	H
G3/8"	27.15	20.65	27.15	24.15	54.1	81.7	38.2	73.5
G1/2"	25.5	19.0	25.5	22.5	45.8	75.3	38.2	73.5

DIM.	J	K	L	M
G1/4"	7.0	14.7	15.0	16.5
G3/8"	8.5	16.2	16.5	17.5

Consult "Precautions" before use, installation or service of MAC Valves..

MAC®

Series 93

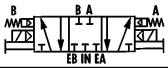
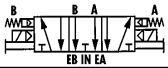
Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	G1/4" - G3/8" - G1/2"	3400 Nl/min	Sub-base "plug-in"	

OPERATIONAL BENEFITS

1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. Air only return. Optional memory spring is also available.
4. Optional low wattage DC solenoid down to 1 watt.
5. MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.

HOW TO ORDER

SINGLE PRESSURE MODELS (1/4" MODELS ARE BOTTOM PORTED)

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
					
Valve less base		93A-AAA-000-DM-D*xx*P-*xxx*	93A-BAA-000-DM-D*xx*P-*xxx*	93A-EAA-000-DM-D*xx*P-*xxx*	93A-FAA-000-DM-D*xx*P-*xxx*
G1/4"	Internal	93A-AAA-DBA-DM-D*xx*P-*xxx*	93A-BAA-DBA-DM-D*xx*P-*xxx*	93A-EAA-DBA-DM-D*xx*P-*xxx*	93A-FAA-DBA-DM-D*xx*P-*xxx*
G3/8"	Internal	93A-AAA-EAA-DM-D*xx*P-*xxx*	93A-BAA-EAA-DM-D*xx*P-*xxx*	93A-EAA-EAA-DM-D*xx*P-*xxx*	93A-FAA-EAA-DM-D*xx*P-*xxx*
G1/2"	Internal	93A-AAA-FAA-DM-D*xx*P-*xxx*	93A-BAA-FAA-DM-D*xx*P-*xxx*	93A-EAA-FAA-DM-D*xx*P-*xxx*	93A-FAA-FAA-DM-D*xx*P-*xxx*
G1/4"	External	93A-AAA-DBD-DM-D*xx*P-*xxx*	93A-BAA-DBD-DM-D*xx*P-*xxx*	93A-EAA-DBD-DM-D*xx*P-*xxx*	93A-FAA-DBD-DM-D*xx*P-*xxx*
G3/8"	External	93A-AAA-EAD-DM-D*xx*P-*xxx*	93A-BAA-EAD-DM-D*xx*P-*xxx*	93A-EAA-EAD-DM-D*xx*P-*xxx*	93A-FAA-EAD-DM-D*xx*P-*xxx*
G1/2"	External	93A-AAA-FAD-DM-D*xx*P-*xxx*	93A-BAA-FAD-DM-D*xx*P-*xxx*	93A-EAA-FAD-DM-D*xx*P-*xxx*	93A-FAA-FAD-DM-D*xx*P-*xxx*

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR, SEE „REGULATORS" SECTION (1/4" MODELS ARE BOTTOM PORTED))

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure Centre
				
Valve less base		93A-CAA-000-DM-D*xx*P-*xxx*	93A-DAA-000-DM-D*xx*P-*xxx*	93A-HAA-000-DM-D*xx*P-*xxx*
G1/4"	Internal	93A-CAA-DBA-DM-D*xx*P-*xxx*	93A-DAA-DBA-DM-D*xx*P-*xxx*	93A-HAA-DBA-DM-D*xx*P-*xxx*
G3/8"	Internal	93A-CAA-EAA-DM-D*xx*P-*xxx*	93A-DAA-EAA-DM-D*xx*P-*xxx*	93A-HAA-EAA-DM-D*xx*P-*xxx*
G1/2"	Internal	93A-CAA-FAA-DM-D*xx*P-*xxx*	93A-DAA-FAA-DM-D*xx*P-*xxx*	93A-HAA-FAA-DM-D*xx*P-*xxx*
G1/4"	External	93A-CAA-DBD-DM-D*xx*P-*xxx*	93A-DAA-DBD-DM-D*xx*P-*xxx*	93A-HAA-DBD-DM-D*xx*P-*xxx*
G3/8"	External	93A-CAA-EAD-DM-D*xx*P-*xxx*	93A-DAA-EAD-DM-D*xx*P-*xxx*	93A-HAA-EAD-DM-D*xx*P-*xxx*
G1/2"	External	93A-CAA-FAD-DM-D*xx*P-*xxx*	93A-DAA-FAD-DM-D*xx*P-*xxx*	93A-HAA-FAD-DM-D*xx*P-*xxx*

Above models are shown without light.

SOLENOID OPERATOR ➤ DM-D *XX* P-*XXX* *

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
DM	Plug-in
DN	Plug-in with diode
DP	Plug-in with M.O.V.
DG	Plug-in with ground

* Click here for other options available.
Note: Ground required for 30 Volts or higher.
Other options available for the 93 series valves, click here.

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series 93

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot: 1,3 to 10 bar External Pilot: Vacuum to 10 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 :	11,7 mm
Flow (at 6 bar, ΔP=1bar) :	1/4", 3/8": 3000 Nl/min (Cv3.0) – 1/2": 3400 Nl/min (Cv 3,4)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 1 to 12.7 W
Response times : **(with 4 W coil)**	Energize :13 ms De-energize : 10 ms

Options :

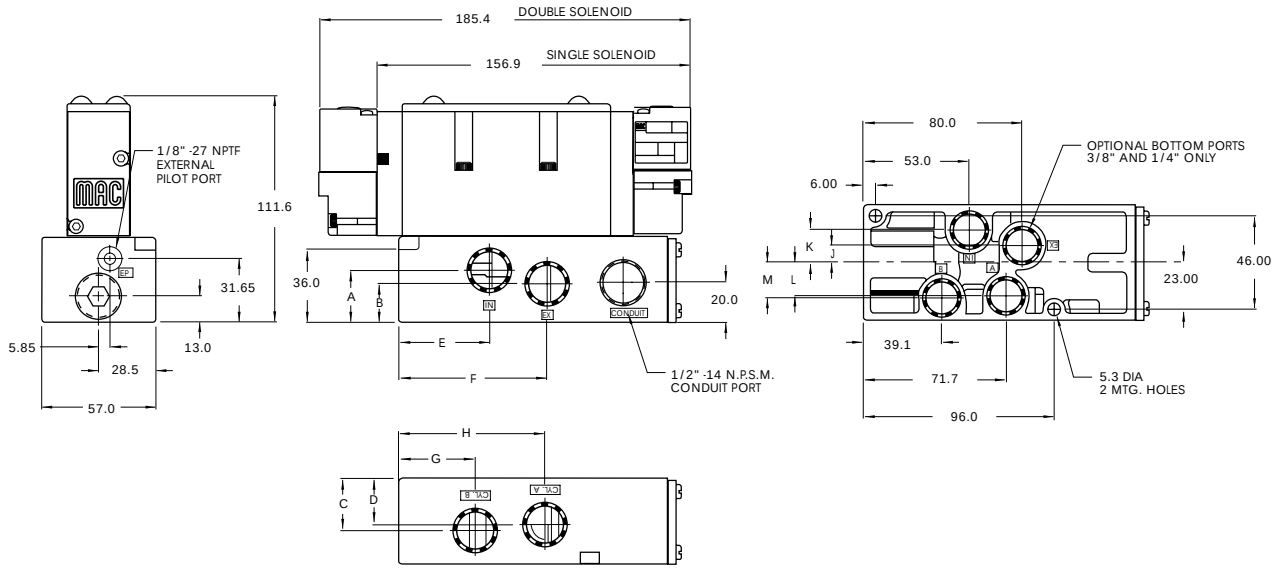
- NPTF thread • Sandwich regulator (see ‚regulators' section)
- Sandwich flow controls FC93A-AA (screwdriver slot adjustment)
  FC93A-AB (locking knob adjustment)

Spare parts :

- Pilot valve: DM-DxxP-xxx • Valve to base pressure seal: 16622
- Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249
- Pilot valve mounting screws (x2): 35069

DIMENSIONS

Dimensions shown are metric (mm)



DIM.	A	B	C	D	E	F	G	H
G3/8"	27.15	20.65	27.15	24.15	54.1	81.7	38.2	73.5
G1/2"	25.5	19.0	25.5	22.5	45.8	75.3	38.2	73.5

DIM.	J	K	L	M
G1/4"	7.0	14.7	15.0	16.5
G3/8"	8.5	16.2	16.5	17.5

Consult "Precautions" before use, installation or service of MAC Valves..

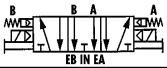
Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	G3/8" - G1/2"	3800 Nl/min	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

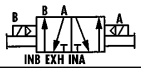
1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. Air only return. Optional memory spring is also available.
4. Optional low wattage DC solenoid down to 1 watt.
5. MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
					
Valve less base		93A-ABA-000-DM-D*xxx-xxx*	93A-BBA-000-DM-D*xxx-xxx*	93A-EBA-000-DM-D*xxx-xxx*	93A-FBA-000-DM-D*xxx-xxx*
G3/8"	Internal	93A-ABA-EJG-DM-D*xxx-xxx*	93A-BBA-EJG-DM-D*xxx-xxx*	93A-EBA-EJG-DM-D*xxx-xxx*	93A-FBA-EJG-DM-D*xxx-xxx*
G1/2"		93A-ABA-FJG-DM-D*xxx-xxx*	93A-BBA-FJG-DM-D*xxx-xxx*	93A-EBA-FJG-DM-D*xxx-xxx*	93A-FBA-FJG-DM-D*xxx-xxx*
G3/8"	External	93A-ABA-EJH-DM-D*xxx-xxx*	93A-BBA-EJH-DM-D*xxx-xxx*	93A-EBA-EJH-DM-D*xxx-xxx*	93A-FBA-EJH-DM-D*xxx-xxx*
G1/2"		93A-ABA-FJH-DM-D*xxx-xxx*	93A-BBA-FJH-DM-D*xxx-xxx*	93A-EBA-FJH-DM-D*xxx-xxx*	93A-FBA-FJH-DM-D*xxx-xxx*

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR, SEE „REGULATORS" SECTION)

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/2 Pressure centre
				
Valve less base		93A-CBA-000-DM-D*xxx-xxx*	93A-DBA-000-DM-D*xxx-xxx*	93A-HBA-000-DM-D*xxx-xxx*
G3/8"	Internal	93A-CBA-EJG-DM-D*xxx-xxx*	93A-DBA-EJG-DM-D*xxx-xxx*	93A-HBA-EJG-DM-D*xxx-xxx*
G1/2"		93A-CBA-FJG-DM-D*xxx-xxx*	93A-DBA-FJG-DM-D*xxx-xxx*	93A-HBA-FJG-DM-D*xxx-xxx*
G3/8"	External	93A-CBA-EJH-DM-D*xxx-xxx*	93A-DBA-EJH-DM-D*xxx-xxx*	93A-HBA-EJH-DM-D*xxx-xxx*
G1/2"		93A-CBA-FJH-DM-D*xxx-xxx*	93A-DBA-FJH-DM-D*xxx-xxx*	93A-HBA-FJH-DM-D*xxx-xxx*

SOLENOID OPERATOR ➤ DM-D ***XXX-XXX****

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Wire length
A	45 cm (Flying leads)
B	60 cm (Flying leads)
J	Connector

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
BM	Flying leads
BN	Flying leads with diode
KA	Square connector
KD	Square connector with light

* Click here for other options available.
End plate kit required (1/2" ports): M-93001-01-01P internal pilot.
M-93001-02-01P external pilot.
Other options available for the 93 series valves, click here.

MAC

Series 93

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot: 1,3 to 10 bar External Pilot: Vacuum to 10 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 :	11,7 mm
Flow (at 6 bar, ΔP=1bar) :	3/8“: 3400 Nl/min (Cv 3,4) – 1/2": 3800 Nl/min (Cv 3.8)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 1 to 12.7 W
Response times : **(with 4 W coil)**	Energize :13 ms De-energize : 10 ms

Options :

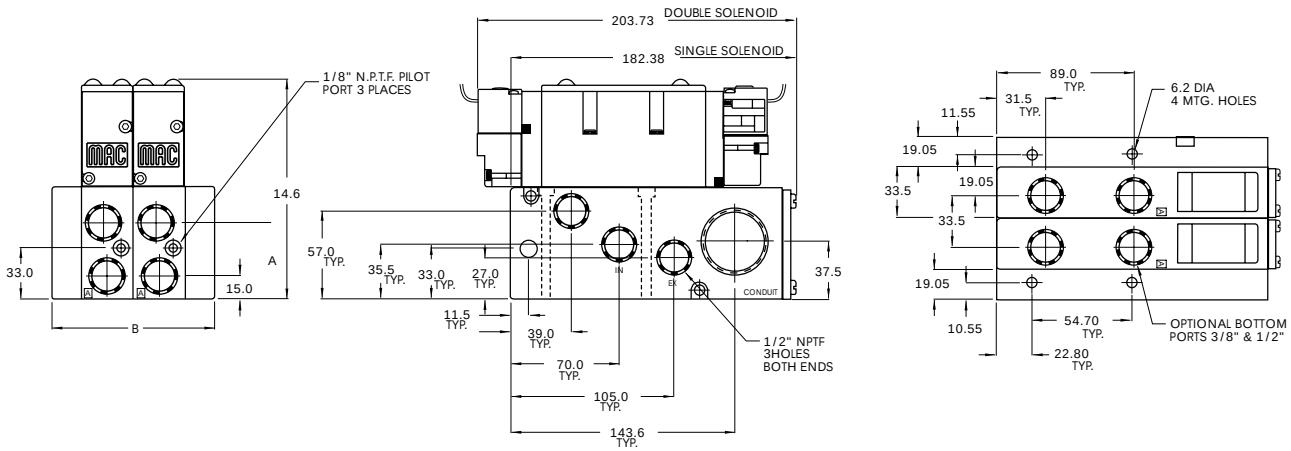
- NPTF thread • Sandwich regulator (see ‚regulators‘ section)
- Sandwich flow controls FC93A-BA (screwdriver slot adjustment), FC93A-BB (locking knob adjustment)

Spare parts :

- Pilot valve: DM-Dxxx-xxx • Valve to base pressure seal: 16622
- Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249
- Inlet/exh. Isolator disc: N-93008 • Valve blanking plate: M-93002

DIMENSIONS

Dimensions shown are metric (mm)



#	1	2	3	4	5	6	7	8	9	10
B	71.6	105.1	138.6	172.1	205.6	239.1	272.6	306.1	339.6	373.1

DIM.	A
G3/8"	47.66
G1/2"	49.32

Consult “Precautions” before use, installation or service of MAC Valves..

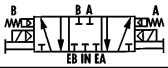
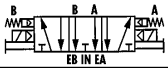
Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	G3/8" - G1/2"	3800 Nl/min	Sub-base "plug-in"	

OPERATIONAL BENEFITS

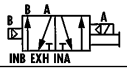
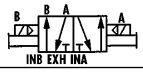
1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. Air only return. Optional memory spring is also available.
4. Optional low wattage DC solenoid down to 1 watt.
5. MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
					
Valve less base		93A-AAA-000-DM-D*xx*P-*xxx*	93A-BAA-000-DM-D*xx*P-*xxx*	93A-EAA-000-DM-D*xx*P-*xxx*	93A-FAA-000-DM-D*xx*P-*xxx*
G3/8"	Internal	93A-AAA-EJA-DM-D*xx*P-*xxx*	93A-BAA-EJA-DM-D*xx*P-*xxx*	93A-EAA-EJA-DM-D*xx*P-*xxx*	93A-FAA-EJA-DM-D*xx*P-*xxx*
G1/2"		93A-AAA-FJA-DM-D*xx*P-*xxx*	93A-BAA-FJA-DM-D*xx*P-*xxx*	93A-EAA-FJA-DM-D*xx*P-*xxx*	93A-FAA-FJA-DM-D*xx*P-*xxx*
G3/8"	External	93A-AAA-EJD-DM-D*xx*P-*xxx*	93A-BAA-EJD-DM-D*xx*P-*xxx*	93A-EAA-EJD-DM-D*xx*P-*xxx*	93A-FAA-EJD-DM-D*xx*P-*xxx*
G1/2"		93A-AAA-FJD-DM-D*xx*P-*xxx*	93A-BAA-FJD-DM-D*xx*P-*xxx*	93A-EAA-FJD-DM-D*xx*P-*xxx*	93A-FAA-FJD-DM-D*xx*P-*xxx*

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR, SEE „REGULATORS" SECTION)

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure Centre
				
Valve less base		93A-CAA-000-DM-D*xx*P-*xxx*	93A-DAA-000-DM-D*xx*P-*xxx*	93A-HAA-000-DM-D*xx*P-*xxx*
G3/8"	Internal	93A-CAA-EJA-DM-D*xx*P-*xxx*	93A-DAA-EJA-DM-D*xx*P-*xxx*	93A-HAA-EJA-DM-D*xx*P-*xxx*
G1/2"		93A-CAA-FJA-DM-D*xx*P-*xxx*	93A-DAA-FJA-DM-D*xx*P-*xxx*	93A-HAA-FJA-DM-D*xx*P-*xxx*
G3/8"	External	93A-CAA-EJD-DM-D*xx*P-*xxx*	93A-DAA-EJD-DM-D*xx*P-*xxx*	93A-HAA-EJD-DM-D*xx*P-*xxx*
G1/2"		93A-CAA-FJD-DM-D*xx*P-*xxx*	93A-DAA-FJD-DM-D*xx*P-*xxx*	93A-HAA-FJD-DM-D*xx*P-*xxx*

Above model numbers are shown with side ports without light.

SOLENOID OPERATOR ➤

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

XX	Voltage
JA	110 V~/50Hz (2,9W)
JB	220 V~/50Hz (2,9W)
JC	24 V~/50Hz (3,7W)
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
DM	Plug-in
DN	Plug-in with diode
DP	Plug-in with M.O.V.
DG	Plug-in with ground

* Click here for other options available.

End plate required (1/2" ports): M-93001-01-01P Internal pilot.
M-93001-02-01P External pilot.

Other options available for the 93 series valves, click here.

MAC

Series 93

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot: 1,3 to 10 bar External Pilot: Vacuum to 10 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 :	11,7 mm
Flow (at 6 bar, ΔP=1bar) :	3/8“: 3400 Nl/min (Cv 3,4) – 1/2": 3800 Nl/min (Cv 3.8)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 1 to 12.7 W
Response times : **(with 4 W coil)**	Energize :13 ms De-energize : 10 ms

Options :

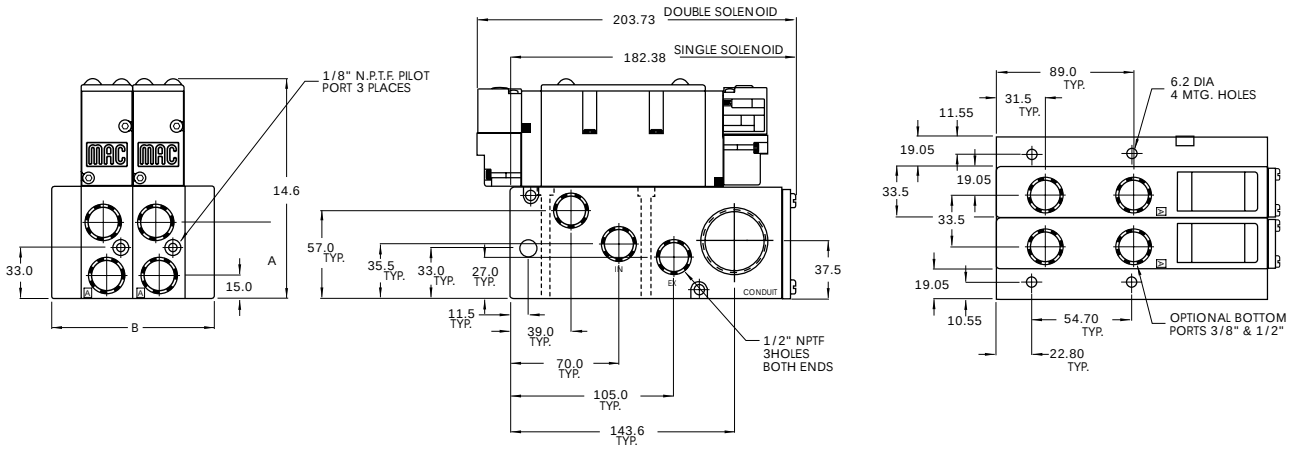
- NPTF thread • Sandwich regulator (see ‚regulators‘ section)
- Sandwich flow controls FC93A-AA (screwdriver slot adjustment), FC93A-AB (locking knob adjustment)

Spare parts :

- Pilot valve: DM-DxxP-xxx • Valve to base pressure seal: 16622
- Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249
- Inlet/exh. Isolator disc: N-93008 • Valve blanking plate: M-93002

DIMENSIONS

Dimensions shown are metric (mm)



#	1	2	3	4	5	6	7	8	9	10
B	71.6	105.1	138.6	172.1	205.6	239.1	272.6	306.1	339.6	373.1

DIM.	A
G3/8"	47.66
G1/2"	49.32

Consult “Precautions” before use, installation or service of MAC Valves..

OPTIONS FOR NON PLUG-IN VALVES

Valve function

93A-**L**XX-XXX-XX-D*xxx*-*xxx*

- **L** for single operator, single pressure with memory spring
- **N** for single operator, dual pressure with memory spring
- **R** for single operator universal spool (ext. pilot only)
- **S** for double operator universal spool (ext. pilot only)

Pilot exhaust

93A-X**B**X-XXX-XX-D*xxx*-*xxx*

- **B** standard pilot exhaust
- **D** pilot exhaust to main valve exhaust*

Port configuration :

Individual sub-base

93A-XXX-X**A**X-XX-D*xxx*-*xxx*

- **A** side ports (3/8" & 1/2" only)
- **B** bottom ports (1/4" & 3/8" only)
- **C** side & bottom ports (1/4" & 3/8" only)
- **D** side inlet & exhaust with bottom cylinder ports (1/4" & 3/8" only)

Manifold sub-base

93A-XXX-X**J**X-XX-D*xxx*-*xxx*

- **J** side ports
- **K** bottom ports

Pilot style :

93A-XXX-XXX-**DM**-D*xxx*-*xxx*

- **DM** pilot exhaust muffled
- **DP** pilot exhaust piped (#10-32)
- **DU** pilot exhaust to main exhaust

Base only :

93A-000-XXX (i.e. 93A-000-DBG) - Individual base

93A-000-XXX (i.e. 93A-000-EJG) - Manifold base

* Must use DU pilot. Main valve exhaust cannot be restricted.

OPTIONS FOR PLUG-IN VALVES

Valve function

93A-**L**XX-XXX-XX-D*xx*P-*xxx*

L for single operator, single pressure with memory spring
N for single operator, dual pressure with memory spring
R for single operator universal spool (ext. pilot only)
S for double operator universal spool (ext. pilot only)

Pilot exhaust

93A-X**A**X-XXX-XX-D*xx*P-*xxx*

A standard pilot exhaust
C pilot exhaust to main valve exhaust*

Body electrical

92B-XX**A**-XXX-XX-D*xx*P-*xxx*

A no light
B light(s)

Port configuration :

Individual sub-base

93A-XXX-X**A**X-XX-D*xx*P-*xxx*

A side ports (3/8" & 1/2" only)
B bottom ports (1/4" & 3/8" only)
C side & bottom ports (1/4" & 3/8" only)
D side inlet & exhaust with bottom cylinder ports (1/4" & 3/8" only)

Manifold sub-base

93A-XXX-X**J**X-XX-D*xx*P-*xxx*

J side ports
K bottom ports

Base/manifold int./ext. pilot

93A-XXX-XX**A**-XX-D*xx*P-*xxx*

A internal pilot no light
B internal pilot single light
C internal pilot double light
D external pilot no light
E external pilot single light
F external pilot double light

Pilot style :

93A-XXX-XXX-**DM**-D*xx*P-*xxx*

DM pilot exhaust muffled
DP pilot exhaust piped (#10-32)
DU pilot exhaust to main exhaust

Base only :

93A-000-XXX (i.e. 93A-000-DBA) - Individual base

(Note: bases are wired for double solenoid valves)

93A-000-XXX (i.e. 93A-000-DJA) - Manifold base

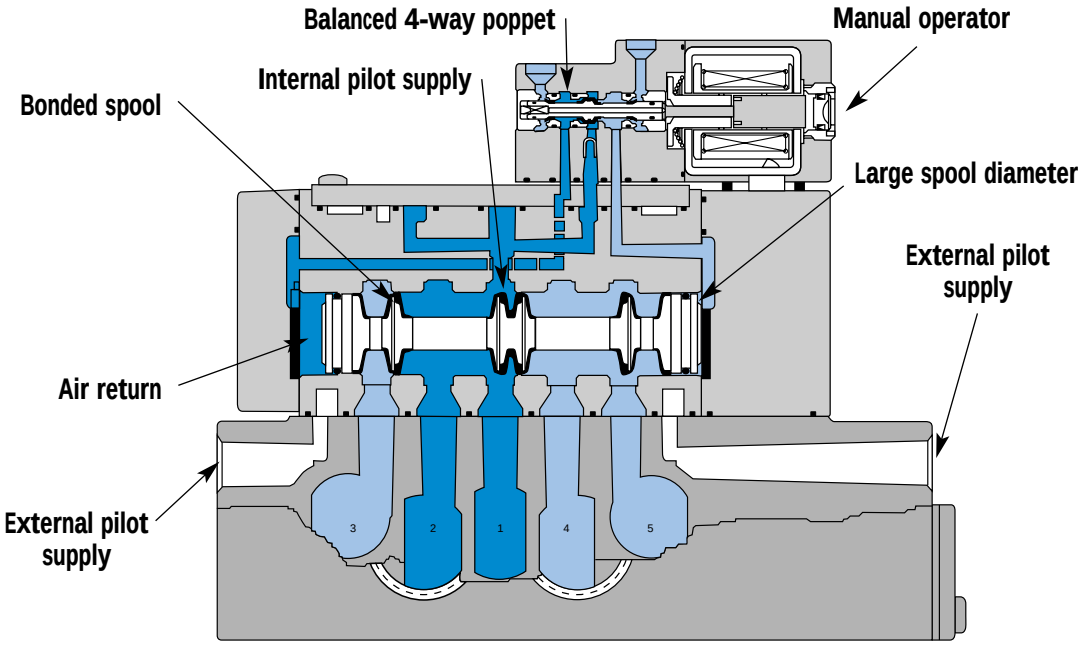
* Must use DU pilot. Main valve exhaust cannot be restricted.

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

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



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.

Series ISO 1

Direct solenoid and solenoid pilot operated valves

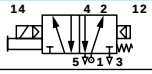
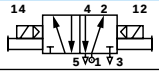
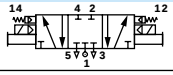
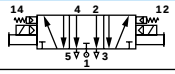
Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2, 5/3	G1/4" - G3/8"	1800 Nl/min	Valve only – No base non "plug-in" Conform to ISO 5599/1	

OPERATIONAL BENEFITS

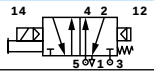
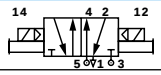
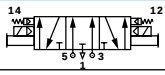
1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof AC solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. MAC spool and bore combination wipes away contamination, eliminates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

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

DUAL PRESSURE MODELS

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

SOLENOID OPERATOR ➤ DM-D *XXX*-*XXX**

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Lead wire length
A	45 cm
B	60 cm
J	Connector

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
KA	Square connector
KD	Square connector with light
JB	Rectangular connector
JD	Rectangular connector with light
BA	Flying leads

* Click here for other options available.
Note: ISO series, valve and base are ordered separately, click here for base code.

OPTIONS

Valve function :

MV-B1A-A**X**XX-XX-D*xxx*-*xxx*

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

Pilot style :

MV-B1A-AXXX-**DM**-D*xxx*-*xxx*

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

Spool return :

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

A Standard return
B Memory spring return
C Standard return with light
D Memory spring return with light

Consult "Precautions" before use, installation or service of MAC Valves..

34 36 32 37 38 52 67 44 46 42 47 48 400 92 93 ISO 1 ISO 2 ISO 3

MAC

Series ISO 1

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 10 bar
Pilot pressure :	Single / double operator : 1,3 to 10 bar 3 positions : 2 to 10 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 :	7.8 mm
Flow (at 6 bar, ΔP=1bar) :	3/8": 1800 Nl/min (Cv 1.8) – 1/4": 1600 Nl/min (Cv 1.6)
Coil :	Epoxy encapsulated – Class A wires - 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 1 to 12.7 W
Response times : **(with 5,4 W coil)**	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

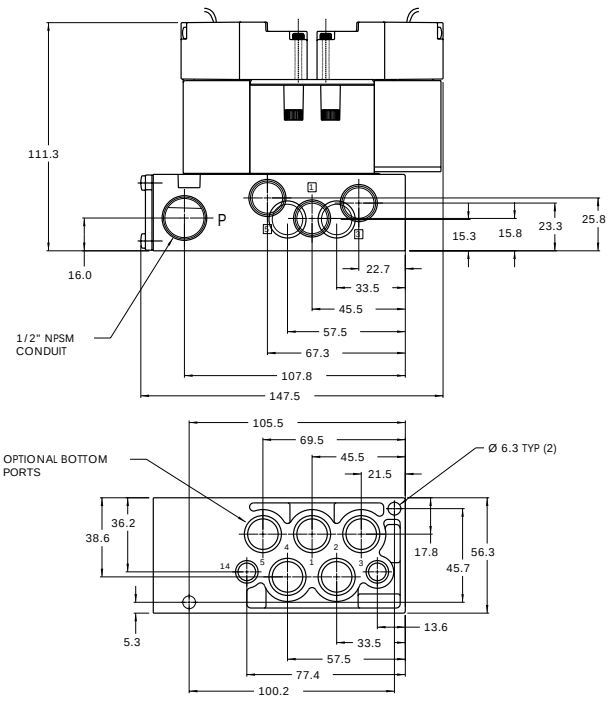
Spare parts :

- Pilot valve: DMB-Dxxx-xxx
- Valve to base pressure seal: 16661

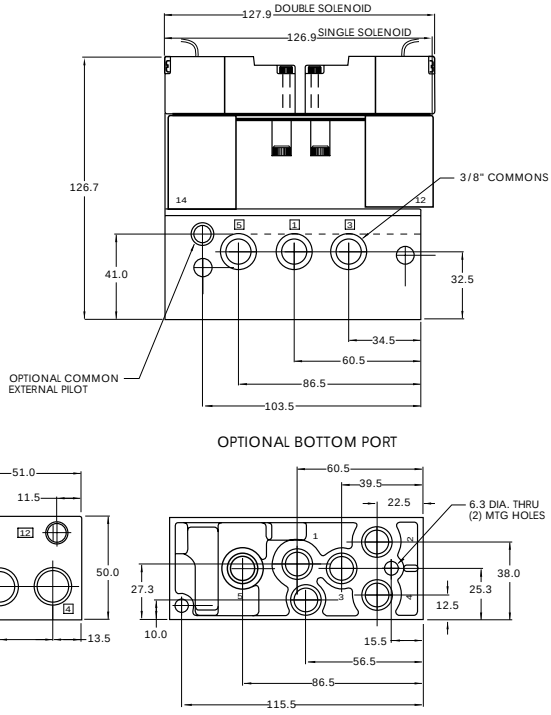
DIMENSIONS

Dimensions shown are metric (mm)

Individual base



Manifold base



Consult "Precautions" before use, installation or service of MAC Valves..

Series ISO 1

Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2, 5/3	G1/4" - G3/8"	1800 Nl/min	Valve only – No base "plug-in" Conform to ISO 5599/2	

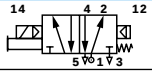
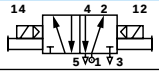
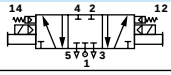
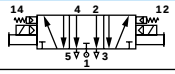
OPERATIONAL BENEFITS

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.

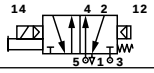
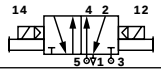
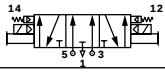
34 36 32 37 38 52 67 44 46 42 47 48 400 92 93

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-P1A-AAAA-DM-D*xx*P-*xxx*	MV-P1A-ABAA-DM-D*xx*P-*xxx*	MV-P1A-AEAA-DM-D*xx*P-*xxx*	MV-P1A-AFAA-DM-D*xx*P-*xxx*
External "12" end	MV-P1A-AAAB-DM-D*xx*P-*xxx*	MV-P1A-ABAB-DM-D*xx*P-*xxx*	MV-P1A-AEAB-DM-D*xx*P-*xxx*	MV-P1A-AFAB-DM-D*xx*P-*xxx*

DUAL PRESSURE MODELS

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

SOLENOID OPERATOR ➤ DM-D *xx* P-*xxx* *

xx	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Manual operator
1	Non-locking
2	Locking

xx	Electrical connection
DM	Plug-in
DN	Plug-in with diode
DP	Plug-in with M.O.V.
DG	Plug-in with ground

* Click here for other options available.

Note: - ISO series, valve and base are ordered separately, click here for base codes.
- Ground wire reqired for 30 volts or higher.

OPTIONS

Valve function :

MV-P1A-A**X**XX-XX-D*xx*P-*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**-D*xx*P-*xxx*

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

Spool return :

MV-P1A-AX**A**X-XX-D*xx*P-*xxx*

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

Consult "Precautions" before use, installation or service of MAC Valves..

ISO 1 ISO 2 ISO 3

MAC

Series ISO 1

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 10 bar
Pilot pressure :	Single / double operator : 1,3 to 10 bar 3 positions : 2 to 10 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 :	7.8 mm
Flow (at 6 bar, ΔP=1bar) :	3/8": 1800 Nl/min (Cv 1.8) – 1/4": 1600 Nl/min (Cv 1.6)
Coil :	Epoxy encapsulated – Class A wires - 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 1 to 12.7 W
Response times : **(with 5,4 W coil)**	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

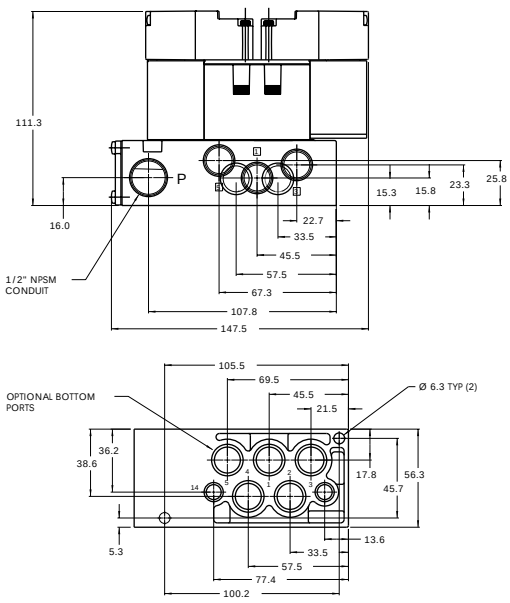
Spare parts :

- Pilot valve: DMB-DxxP-xxx
- Valve to base pressure seal: 16661

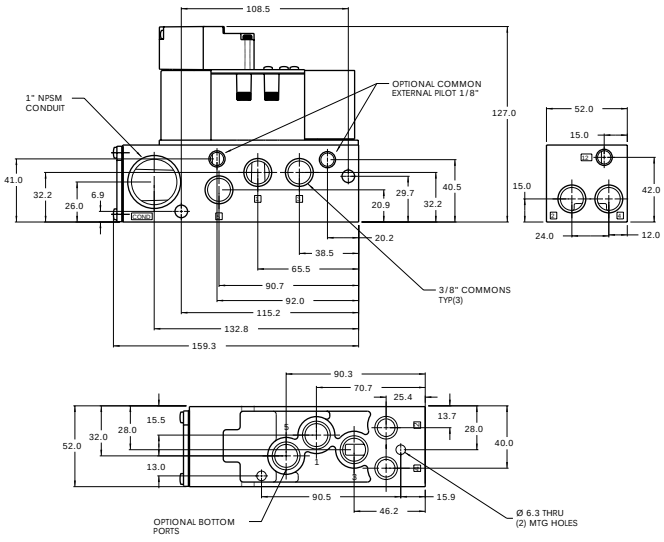
DIMENSIONS

Dimensions shown are metric (mm)

Individual base



Manifold base



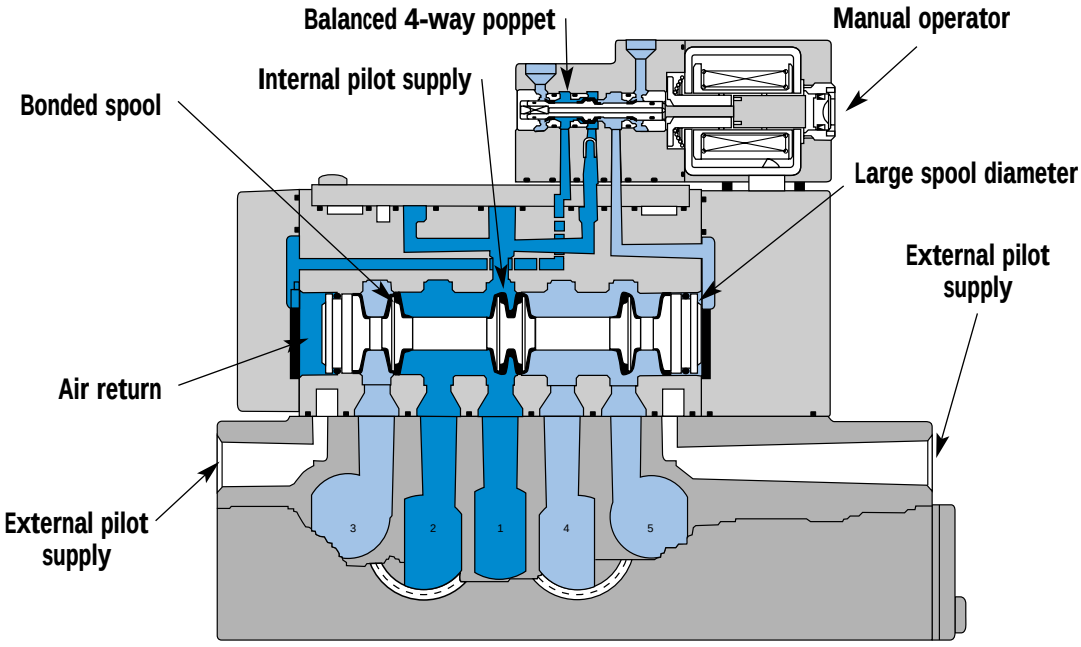
Consult "Precautions" before use, installation or service of MAC Valves..

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

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



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.

Series ISO 2

Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2, 5/3	G3/8" - G1/2"	3000 Nl/minn	Valve only – No base non "plug-in" Conform to ISO 5599/1	

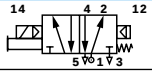
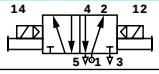
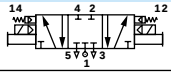
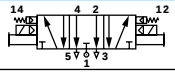
OPERATIONAL BENEFITS

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.

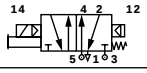
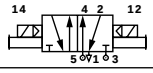
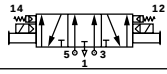
34 36 32 37 38 52 67 44 46 42 47 48 400 92 93 ISO 1 ISO 2 ISO 3

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-D*xxx*-*xxx*	MV-B2A-ABAA-DM-D*xxx*-*xxx*	MV-B2A-AEAA-DM-D*xxx*-*xxx*	MV-B2A-AFAA-DM-D*xxx*-*xxx*
External "12" end	MV-B2A-AAAB-DM-D*xxx*-*xxx*	MV-B2A-ABAB-DM-D*xxx*-*xxx*	MV-B2A-AEAB-DM-D*xxx*-*xxx*	MV-B2A-AFAB-DM-D*xxx*-*xxx*

DUAL PRESSURE MODELS

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

SOLENOID OPERATOR ➤ DM-D *XXX*-*XXX**

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Lead wire length
A	45 cm
B	60 cm
J	Connector

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
KA	Square connector
KD	Square connector with light
JB	Rectangular connector
JD	Rectangular connector with light
BA	Flying leads

* Click here for other options available.
Note: ISO series, valve and base are ordered separately, click here for base code.

OPTIONS

Valve function :

MV-B2A-A**X**XX-XX-D*xxx*-*xxx*

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

Spool return :

MV-B2A-AX**A**X-XX-D*xxx*-*xxx*

A Standard return
B Memory spring return

Pilot style :

MV-B2A-AXXX-**DM**-D*xxx*-*xxx*

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

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series ISO 2

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 1,3 to 10 bar External pilot : vacuum to 10 bar
Pilot pressure :	Single operator and 3 positions : 1,3 to 10 bar double operator : 2 to 10 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 Nl/min (Cv 2.8) - G1/2": 3000 Nl/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

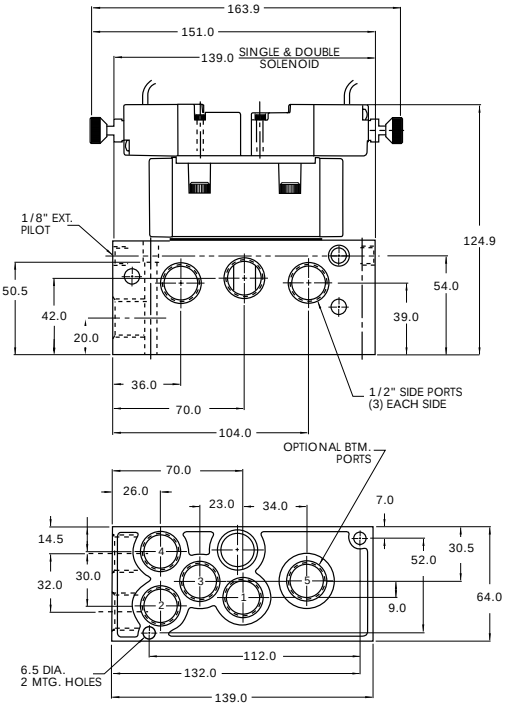
Spare parts :

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

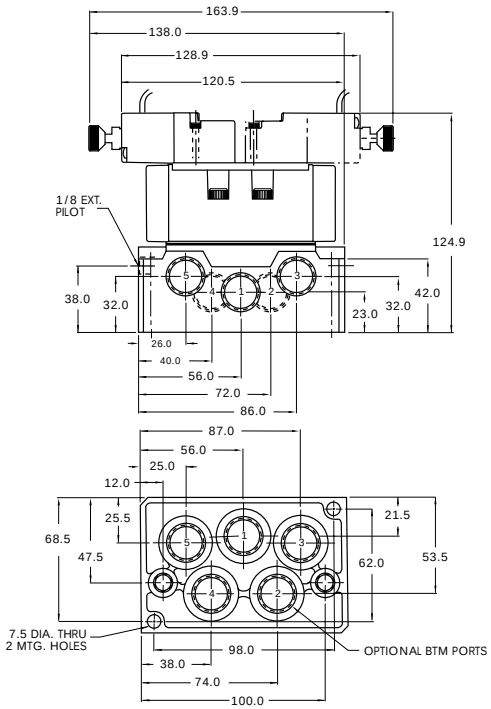
DIMENSIONS

Dimensions shown are metric (mm)

Individual base



Manifold base



Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series ISO 2

Direct solenoid and solenoid pilot operated valves

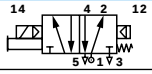
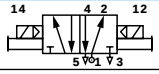
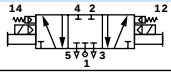
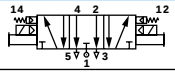
Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2, 5/3	G3/8" - G1/2"	3000 Nl/min	Valve only – No base "plug-in" Conform to ISO 5599/2	

OPERATIONAL BENEFITS

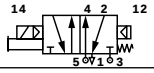
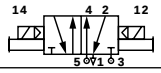
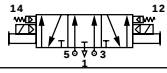
1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof AC solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. MAC spool and bore combination wipes away contamination, eliminates 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-D*xx*P-*xxx*	MV-P2A-ABAA-DM-D*xx*P-*xxx*	MV-P2A-AEAA-DM-D*xx*P-*xxx*	MV-P2A-AFAA-DM-D*xx*P-*xxx*
External "12" end	MV-P2A-AAAB-DM-D*xx*P-*xxx*	MV-P2A-ABAB-DM-D*xx*P-*xxx*	MV-P2A-AEAB-DM-D*xx*P-*xxx*	MV-P2A-AFAB-DM-D*xx*P-*xxx*

DUAL PRESSURE MODELS

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

SOLENOID OPERATOR ➤ DM-D *xx* P-*xxx* *

xx	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Manual operator
1	Non-locking
2	Locking

xx	Electrical connection
DM	Plug-in
DN	Plug-in with diode
DP	Plug-in with M.O.V.
DG	Plug-in with ground

* Click here for other options available.
Note: - ISO series, valve and base are ordered separately, click here for base codes.
- Ground wire reqired for 30 volts or higher.

OPTIONS

Valve function :

MV-P2A-A**X**XX-XX-D*xx*P-*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**-D*xx*P-*xxx*

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

Spool return :

MV-P2A-AX**A**X-XX-D*xx*P-*xxx*

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

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series ISO 2

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 1,3 to 10 bar External pilot : vacuum to 10 bar
Pilot pressure :	Single operator and 3 positions : 1,3 to 10 bar double operator : 2 to 10 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 Nl/min (Cv 2.8) - G1/2": 3000 Nl/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

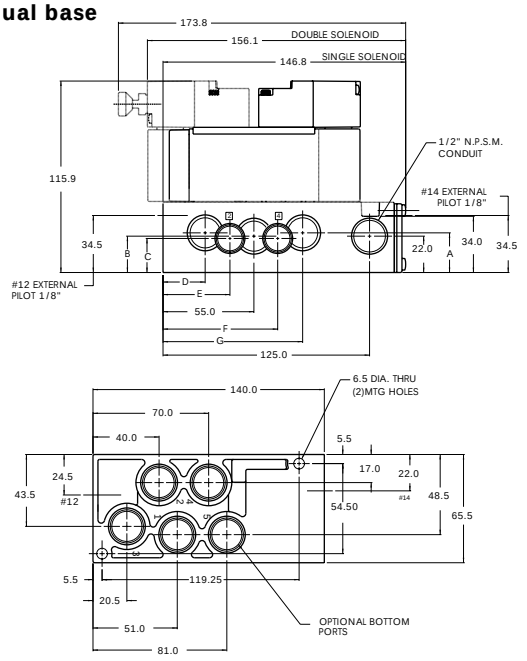
Spare parts :

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

DIMENSIONS

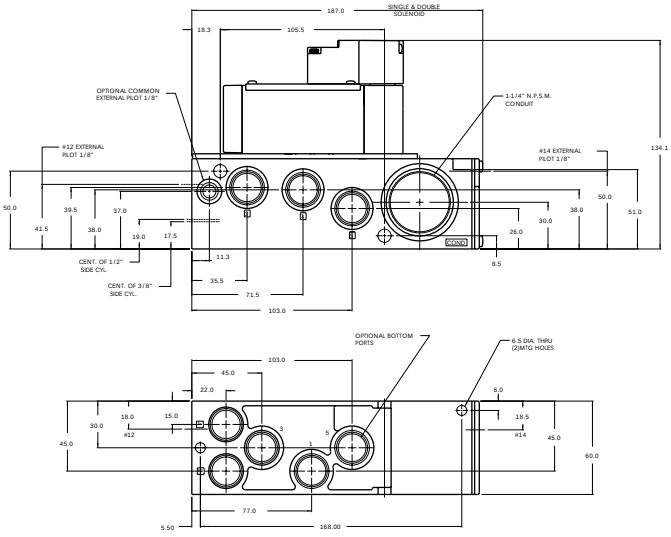
Dimensions shown are metric (mm)

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



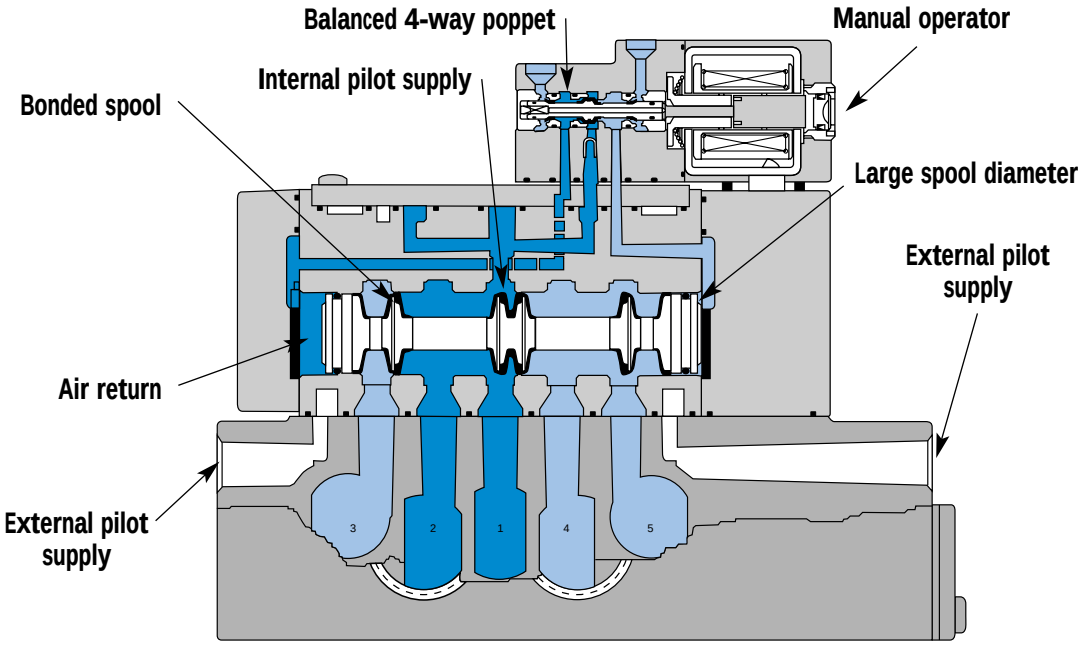
Consult "Precautions" before use, installation or service of MAC Valves..

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

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



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.

MAC

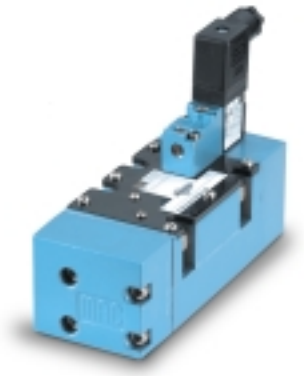
Series ISO 3

Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2, 5/3	G1/2" - G3/4"	6100 Nl/min	Valve only – No base "non plug-in" Conform to ISO 5599/1	

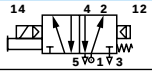
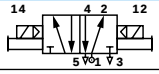
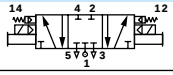
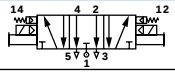
OPERATIONAL BENEFITS

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.

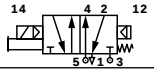
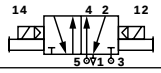
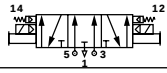


HOW TO ORDER

SINGLE PRESSURE MODELS

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

DUAL PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/2 Pressure centre
			
Internal From port #3	MV-B3A-ACAD-DM-D*xxx*-*xxx*	MV-B3A-ADAD-DM-D*xxx*-*xxx*	MV-B3A-AGAD-DM-D*xxx*-*xxx*
Internal From port #5	MV-B3A-ACAE-DM-D*xxx*-*xxx*	MV-B3A-ADAE-DM-D*xxx*-*xxx*	MV-B3A-AGAE-DM-D*xxx*-*xxx*
External From "12" end	MV-B3A-ACAB-DM-D*xxx*-*xxx*	MV-B3A-ADAB-DM-D*xxx*-*xxx*	MV-B3A-AGAB-DM-D*xxx*-*xxx*

SOLENOID OPERATOR ➤ DM-D *XXX*-*XXX**

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Lead wire length
A	45 cm
B	60 cm
J	Connector

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
KA	Square connector
KD	Square connector with light
JB	Rectangular connector
JD	Rectangular connector with light
BA	Flying leads

* Click here for other options available.
Note: ISO series, valve and base are ordered separately, click here for base code.

OPTIONS

Valve function :

MV-B3A-A**X**XX-XX-D*xxx*-*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**-D*xxx*-*xxx*

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

Spool return :

MV-B3A-AX**A**X-XX-D*xxx*-*xxx*

A Standard return
B Memory spring return

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series ISO 3

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 1,3 to 10 bar External pilot : vacuum to 10 bar
Pilot pressure :	Single operator and 3 positions : 1,3 to 10 bar double operator : 2 to 10 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 :	14.9 mm
Flow (at 6 bar, ΔP=1bar) :	G1/2": 5400 Nl/min (Cv 5,4) – G3/4": 6100 Nl/min (Cv 6,1)
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 : **(5,4 W coil)**	Energize : 16,2 ms De-energize : 13,6 ms

Options :

- Sandwich regulator, see ‚Regulators' section

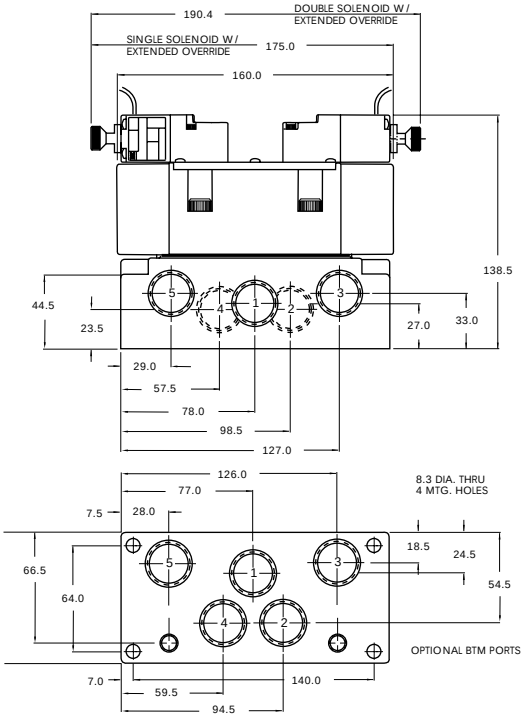
Spare parts :

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

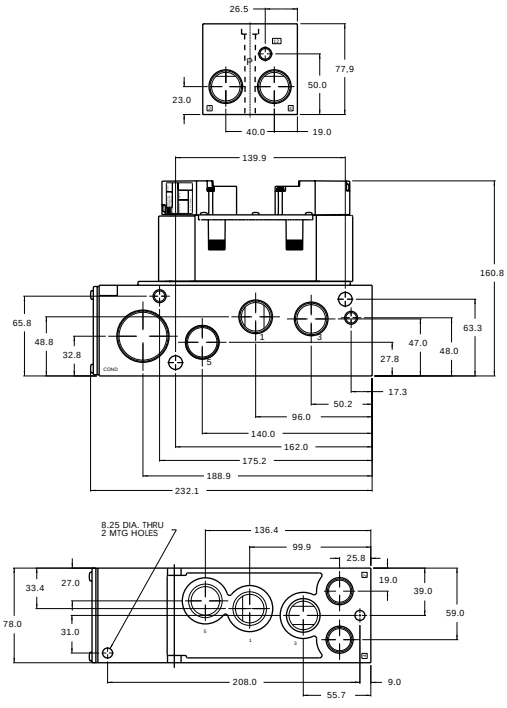
DIMENSIONS

Dimensions shown are metric (mm)

Individual base



Manifold base



Consult “Precautions” before use, installation or service of MAC Valves..

MAC

Series ISO 3

Direct solenoid and solenoid pilot operated valves

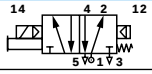
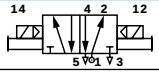
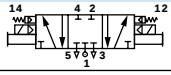
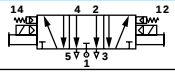
Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2, 5/3	G1/2" - G3/4"	6100 Nl/min	Valve only – No base "plug-in" Conform to ISO 5599/2	

OPERATIONAL BENEFITS

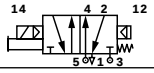
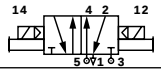
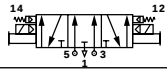
1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof AC solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. MAC spool and bore combination wipes away contamination, eliminates 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-P3A-AAAA-DM-D*xx*P-*xxx*	MV-P3A-ABAA-DM-D*xx*P-*xxx*	MV-P3A-AEAA-DM-D*xx*P-*xxx*	MV-P3A-AFAA-DM-D*xx*P-*xxx*
External "12" end	MV-P3A-AAAB-DM-D*xx*P-*xxx*	MV-P3A-ABAB-DM-D*xx*P-*xxx*	MV-P3A-AEAB-DM-D*xx*P-*xxx*	MV-P3A-AFAB-DM-D*xx*P-*xxx*

DUAL PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/2 Pressure centre
			
Internal From port #3	MV-P3A-ACAD-DM-D*xx*P-*xxx*	MV-P3A-ADAD-DM-D*xx*P-*xxx*	MV-P3A-AGAD-DM-D*xx*P-*xxx*
Internal From port #5	MV-P3A-ACAE-DM-D*xx*P-*xxx*	MV-P3A-ADAE-DM-D*xx*P-*xxx*	MV-P3A-AGAE-DM-D*xx*P-*xxx*
External From "12" end	MV-P3A-ACAB-DM-D*xx*P-*xxx*	MV-P3A-ADAB-DM-D*xx*P-*xxx*	MV-P3A-AGAB-DM-D*xx*P-*xxx*

SOLENOID OPERATOR ➤ DM-D *XX* P-*XXX* *

XX	Voltage
JA	110 V~/50Hz
JB	220 V~/50Hz
JC	24 V~/50Hz
FB	24 V=/1,8W
DA	24 V=/5,4W
DF	24 V=/12,7W

X	Manual operator
1	Non-locking
2	Locking

XX	Electrical connection
DM	Plug-in
DN	Plug-in with diode
DP	Plug-in with M.O.V.
DG	Plug-in with ground

* Click here for other options available.

Note: - ISO series, valve and base are ordered separately, click here for base codes.
- Ground wire reqired for 30 volts or higher.

OPTIONS

Valve function :

MV-P3A-A**X**XX-XX-D*xx*P-*xxx*

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

Pilot style :

MV-P3A-AXXX-**DM**-D*xx*P-*xxx*

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

Spool return :

MV-P3A-AX**A**X-XX-D*xx*P-*xxx*

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

Consult "Precautions" before use, installation or service of MAC Valves..

MAC

Series ISO 3

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 1,3 to 10 bar External pilot : vacuum to 10 bar
Pilot pressure :	Single operator and 3 positions : 1,3 to 10 bar double operator : 2 to 10 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 :	14.9 mm
Flow (at 6 bar, ΔP=1bar) :	G1/2": 5400 Nl/min (Cv 5,4) – G3/4": 6100 Nl/min (Cv 6,1)
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 :	Energize : 16,2 ms De-energize : 13,6 ms

Options :

- Sandwich regulator, see ‚Regulators' section

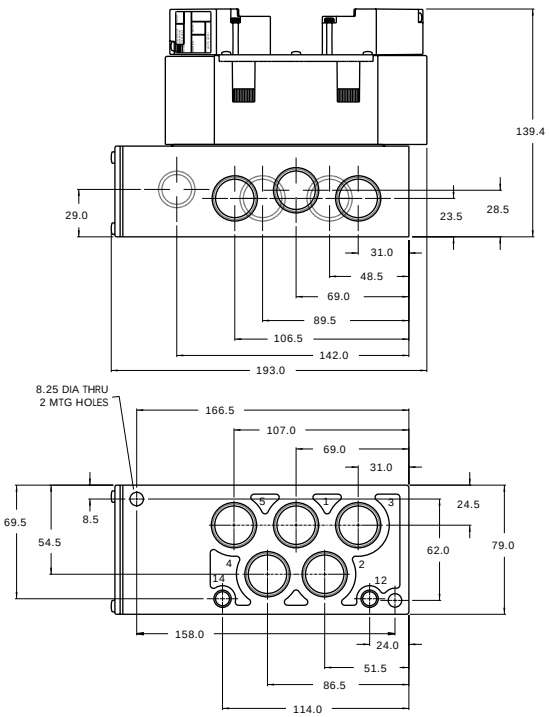
Spare parts :

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

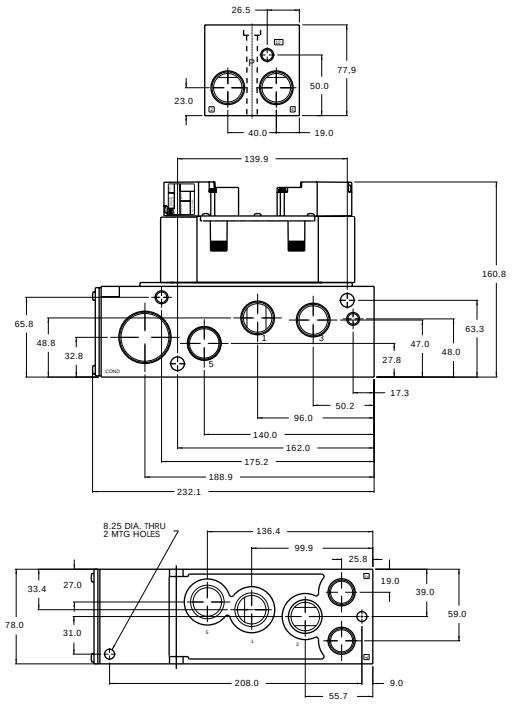
DIMENSIONS

Dimensions shown are metric (mm)

Individual base



Manifold base



Consult “Precautions” before use, installation or service of MAC Valves..

Options

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

MAC

OPTIONS

Back

1. VOLTAGE

D-XX X-X XX	VOLTAGE
DA	24V=/5,4W
DB	12V=/5,4W
DC	12V=/7,5W
DD	24V=/7,3W
DE	12V=/12,7W
DF	24V=/12,7W
DK	110V=/4,7W
DJ	28V=/5,2W
DL	64V=/6W
DM	36V=/5,3W
DN	6V=/6W
DR	90V=/6,6W
DS	110V=/7,3W
DT	75V=/5,6W
DP	48V=/5,8W
FA	12V=/1,8W
FB	24V=/1,8W
FE	12V=/2,4W
FF	24V=/2,4W
JA	120V~/60Hz, 110V~/50Hz (2,9W)
JB	240V~/60Hz, 220V~/50Hz (2,9W)
JC	24V~/60Hz, 24V~/50Hz (3,7W)
JD	100V~/60Hz, 100V~/50Hz, 110V~60Hz (3,9W)
JE	220V~/60Hz (3,4W)
JF	240V~/50Hz (2,8W)
JG	200V~/60Hz, 200V~/50Hz (3,9W)

2. WIRE LENGTH

D-XX X-X XX	WIRE LENGTH
0	No wires
A	45 cm – 18"
B	60 cm – 24"
C	90 cm – 36"
D	120 cm – 48"
E	180 cm – 72"
F	240 cm – 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

4. ELECTRICAL CONNECTION

D-XX X-X XX	ELECTRICAL CONNECTION
BA*	Flying leads
BK*	BA with protection diode
BL*	BA with protection varistor
BM**	Flying leads (solenoid plug-in)
BN**	BM with protection diode
BP**	BM with protection varistor
BG**	BM with ground
BH**	BM with protection diode & ground
BJ**	BM with protection varistor & ground
CA*	1/2" NPS conduit with flying leads
CM*	1/2" NPS metal conduit with flying leads
CN*	1/2" NPS metal conduit with flying leads & ground
JB	Rectangular connector
JD	Rectangular connector with light
JM	Rectangular connector, male only
KA	Square connector
KB	Square connector with protection diode
KC	Square connector with protection varistor
KD	Square connector with light
KE	Square connector with light and protection diode
KF	Square connector with light and protection varistor
KG	Square connector with light & diode
KJ	Square connector (male only)
KK	Square connector with protection diode (male only)
KL	Square connector with protection varistor (male only)
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

* 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.

Codification table for voltages / Manual operator / Electrical connection

VALVE CODE ➤ **G XX X-X XX**
1 2 3 4

OPTIONS AVAILABLE FOR

- Solenoid valves 32, 34, 38, 42, 44, & 48 Series

MAC

OPTIONS

Back

1. VOLTAGE

G-XX X-X XX	VOLTAGE	
AA	120V~/2,5W	Requires electrical connector with rectifier
AC	24V~/4,0W	Requires electrical connector with rectifier
DA	24V=/1,0W	Not available for 34 series
DC	24V=/1,8W	
DD	24V=/2,5W	
DE	24V=/3,0W	
DF	24V=/4,0W	
DG	12V=/1,0W	Not available for the 34 series
DJ	12V=/1,8W	
DK	12V=/2,5W	
DM	12V=/3,0W	
DN	12V=/4,0W	
DR	6V=/1,8W	
DS	6V=/3,0W	
EB	48V=/1,8W	
EC	48V=/3,0W	
ED	120V=/2,5W	

2. WIRE LENGTH

G-XX X-X XX	WIRE LENGTH
0	No lead wires (used only with "KJ" & "KM" connectors
A	45 cm – 18" coil leads
B	60 cm – 24" coil leads
C	90 cm – 36" coil leads
D	120 cm – 48" coil leads
E	180 cm – 72" coil leads
F	240 cm – 96" coil leads
G	305 cm – 120" coil leads
H	366 cm – 144" coil leads
1	45 cm – 18" base leads
2	60 cm – 24" base leads
3	90 cm – 36" base leads
4	120 cm – 48" base leads
5	180 cm – 72" base leads
6	240 cm – 96" base leads
7	305 cm – 120" base leads

3. MANUAL OPERATOR

G-XX X-X XX	MANUAL OPERATOR
1	Non-locking recessed
2	Locking recessed
3	Non-locking extended
4	Locking extended

4. ELECTRICAL CONNECTION

G-XX X-X XX	ELECTRICAL CONNECTION
BA	Flying leads
BB	BA with ground wire
BC	BA with light
BD	BA with light and ground wire
BE	BA with suppression diode
BF	BA with suppression diode and ground wire
BG	BA with suppression diode and light
BH	BA with suppression diode, light and ground wire
BN	BA with suppression diode and blocking diode
BP	BA with suppression diode, blocking diode and ground wire
BR	BA with suppresion diode, blocking diode and light
BS	BA with suppression diode, blocking diode, light and ground wire
KA	Mini connector
KB	KA with ground
KC	KA with rectifier and light
KD	KA with rectifier, light and ground
KE	KA with suppression diode
KF	KA with suppression diode and ground
KJ	Solenoid plug-in housing without wire assembly
KM	Solenoid plug-in housing with ground pin without wire assembly
KN	KA with suppression diode and blocking diode
KP	KA with suppression diode, blocking diode and ground
KT	KA with light
KU	KA with light and ground
KV	KA with suppression diode and light
KW	KA with suppression diode, light and ground
KX	KA with suppression diode, blocking diode and light
KY	KA with suppression diode, blocking diode, light & ground

ELECTRICAL CONNECTION FOR PLUG-IN VALVES

G-XX X-X XX	PLUG-IN OPTIONS
DC	Base/manifold plug-in with rectifier and light
DD	Base/manifold plug-in with rectifier, light and ground
DE	Base/manifold plug-in with with suppression diode
DF	Base/manifold plug-in with suppression diode and ground
DJ	Base/manifold plug-in
DM	Base/manifold plug-in with ground
DT	Base/manifold plug-in with light
DU	Base/manifold plug-in with light and ground
DV	Base/manifold plug-in with suppression diode and light
DW	Base/manifold plug-in with suppression diode, light and ground

Codification table for voltages / Manual operators / Electrical connections

VALVE CODE ➤ **-GM- G XX X-X XX**
1 2 3 4

OPTIONS AVAILABLE FOR

· Solenoid valves 52 & 400 Series

MAC

OPTIONS

Back

1. VOLTAGE

G-XX X-X XX	VOLTAGE
DC	24 V=/1,8 W
DD	24 V=/2,5 W
DE	24 V=/3,0 W
DF	24 V=/4,0 W
DJ	12 V=/1,8 W
DK	12 V=/2,5 W
DM	12 V=/3,0 W
DN	12 V=/4,0 W

2. WIRE LENGTH

G-XX X-X XX	WIRE LENGTH
0	No lead wire (use only with "KJ" & "KM" elecrical connectors)
A	45 cm = 18"
B	60 cm = 24"
C	90 cm – 36"
D	120 cm – 48"
E	180 cm – 72"
F	240 cm – 96"
G	305 cm = 120"
H	366 cm = 144"

3. MANUAL OPERATOR

G-XX X-X XX	MANUAL OPERATOR
1	Non-locking recessed
2	Locking recessed
3	Non-locking extended
4	Locking extended

4. ELECTRICAL CONNECTION

G-XX X-X XX	ELECTRICAL CONNECTION
BA	Flying leads
BB	BA with ground wire
BC	BA with light parallel to leads
BD	BA with light parallel to leads & ground wire
BE	BA with suppression diode
BF	BA with suppression diode & ground wire
BG	BA with suppression diode plus light parallel to leads
BH	BA with suppression diode plus light parallel to leads & ground wire
*BN	BA with suppression diode plus blocking diode
*BP	BA with suppression diode plus blocking diode & ground wire
*BR	BA with suppression diode plus blocking diode & light parallel to leads
*BS	BA with suppression diode plus blocking diode & light parallel to leads & ground wire
BT	BA with light on top
BU	BA with light on top & ground wire
BV	BA with suppression diode plus light on top
BW	BA with suppression diode plus light on top & ground wire
*BX	BA with suppression diode plus blocking diode & light on top
*BY	BA with suppression diode plus blocking diode & light on top & ground wire

G-XX X-X XX	SOLENOID PLUG-IN CONNECTOR WITH LEADS
KA	Plug-in wire assembly
KB	KA with ground wire
KE	KA with suppression diode
KF	KA with suppression diode & ground wire
KJ	Plug-in housing without wire assembly ('KA' without wire assembly)
KM	Plug-in housing without wire assembly ('KB' without wire assembly)
*KN	KA with suppression diode plus blocking diode
*KP	KA with suppression diode plus blocking diode & ground wire
KT	KA with light on top
KU	KA with light on top & ground wire
KV	KA with suppression diode plus light on top
KW	KA with suppression diode plus light & ground wire
*KX	KA with suppression diode plus blocking diode & light on top
*KY	KA with suppression diode plus blocking diode & light on top & ground wire

Note: Blocking diode is located in the lead wire

Codification table for voltages / Manual operators / Electrical connections

VALVE CODE ➤ $H\ \underset{1}{XX}\ \underset{2}{X}\text{-}\underset{3}{X}\ \underset{4}{XX}$

OPTIONS AVAILABLE FOR

- Solenoid valves 37 & 47 Series

MAC

OPTIONS

Back

1. VOLTAGE

H-XX X-X XX	VOLTAGE
AA	120 V~/ 50Hz, 120 V~/ 60Hz (6,7 W) (use connector with rectifier)
AB	220 V~/ 50Hz, 220 V~/ 60Hz (5,6 W) (use connector with rectifier)
AC	240 V~/ 50Hz, 240 V~/ 60Hz (5,8 W) (use connector with rectifier)
AD	24 V~/ 50Hz, 24 V~/ 60Hz (7,8 W) (use connector with rectifier)
DA	24 V=/5,2 W
DB	24 V=/2,4 W
DC	24 V=/1,8 W
DD	24 V=/1,0 W
DF	12 V=/5,2 W
DG	12 V=/2,4 W
DH	12 V=/1,8 W
DJ	12 V=/1,0 W
DL	120 V=/6,3 W

2. WIRE LENGTH

H-XX X-X XX	WIRE LENGTH
0	No lead wire (use with "MJ" & "MM" connectors)
A	45 cm = 18"
B	60 cm = 24"
C	90 cm – 36"
D	120 cm – 48"
E	180 cm – 72"
F	240 cm – 96"
G	305 cm = 120"
H	366 cm = 144"

3. MANUAL OPERATOR

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

4. ELECTRICAL CONNECTION

H-XX X-X XX	ELECTRICAL CONNECTION
BA	Flying leads
BB	BA with ground wire
BC	BA with light
BD	BA with light & ground wire
BE	BA with suppression diode
BF	BA with suppression diode & ground wire
BG	BA with suppression diode plus light
BH	BA with suppression diode plus light & ground wire
*BN	BA with suppression diode plus blocking diode
*BP	BA with suppression diode plus blocking diode & ground wire
*BR	BA with suppression diode plus blocking diode & light
*BS	BBA with suppression diode plus blocking diode & light & ground wire
BK	BA with full wave rectifier
BL	BA with full wave rectifier & ground wire
BT	BA with full wave rectifier plus light
BU	BA with full wave rectifier plus light & ground wire

H-XX X-X XX	PLUG-IN CONNECTOR
FA	Base plug-in
FB	FA with ground wire
FC	FA with light
FD	FA with light & ground wire
FE	FA with suppression diode
FF	FA with suppression diode & ground wire
FG	FA with suppression diode & light
FH	FA with suppression diode plus light & ground wire
FK	KFA with full wave rectifier
FL	FA with full wave rectifier & ground wire
*FN	FA with suppression diode plus blocking diode
*FP	FA with suppression diode plus blocking diode & ground wire
*FR	FA with suppression diode plus blocking diode plus light
*FS	FA with suppression diode plus blocking diode & light & ground wire
FT	FA with full wave rectifier plus light
FU	FA with full wave rectifier plus light & ground wire
MA	Solenoid plug-in wire assembly
MB	MA with ground wire
MC	MA with light
MD	MA with light & ground wire
ME	MA with suppression diode
MF	MA with suppression diode & ground wire
MG	MA with suppression diode plus light
MH	MA with suppression diode plus light & ground wire
MK	MA with full wave rectifier
ML	MA with full wave rectifier & ground wire
*MN	MA with suppression diode plus blocking diode
*MP	MA with suppression diode plus blocking diode & ground wire
*MR	MA with suppression diode plus blocking diode & light
*MS	MA with suppression diode plus blocking diode & light & ground wire
MT	MA with full wave rectifier plus light
MU	MA with full wave rectifier plus light & ground wire
MJ	Plug-in housing without wire assembly ('MA' option without wire assembly)
MM	Plug-in housing without wire assembly ('MB' option without wire assembly)
KA	Mini square connector
KB	KA with suppression diode
KC	KA with M.O.V.
KD	KA with light
KE	KA with light & suppression diode
KF	KA with light & M.O.V.
KJ	Mini square connector – male only
KK	KJ with suppression diode
KL	KJ with M.O.V.
KM	KA with full wave rectifier
KN	KA with full wave rectifier & M.O.V.
KP	KA with full wave rectifier & light
KR	KA with full wave rectifier plus light & M.O.V.
KS	KJ with full wave rectifier

Note: Blocking diode is located in the lead wire

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 and 46 Series

MAC

OPTIONS

Back

1. VOLTAGE

J-XX X-X XX	VOLTAGE
AA	120V~/5,4W
AC	24V=/5,4W
DA	24V=/5,4W
DB	12V=/5,4W
DC	24V=/2,4W
DD	12V=/2,4W
DE	24V=/1,8W
DF	12V=/1,8W

2. WIRE LENGTH

J-XX X-X XX	WIRE LENGTH
A	45 cm – 18" coil leads
B	60 cm – 24" coil leads
C	90 cm – 36" coil leads
D	120 cm – 48" coil leads
E	180 cm – 72" coil leads
F	240 cm – 96" coil leads
P	Base plug-in

3. MANUAL OPERATOR

J-XX X-X XX	MANUAL OPERATOR
0	Manual operator
1	Non-locking recessed
2	Locking recessed
3	Non-locking recessed extended
4	Locking extended

4. ELECTRICAL CONNECTION

J-XX X-X XX	ELECTRICAL CONNECTION
BA	Flying leads
GA	MAC JAC solenoid plug-in
GB	MAC JAC solenoid plug-in with diode
GC	MAC JAC solenoid plug-in with MOV
GD	MAC JAC solenoid plug-in with light
GE	MAC JAC solenoid plug-in with diode and light
GF	MAC JAC solenoid plug-in with MOV and light
GG	MAC JAC solenoid plug-in with rectifier
GH	MAC JAC solenoid plug-in with rectifier and light
GJ	MAC JAC solenoid plug-in – Male only
GK	MAC JAC solenoid plug-in with diode – Male only
GL	MAC JAC solenoid plug-in with MOV – Male only
GM	MAC JAC solenoid plug-in with light – Male only
GN	MAC JAC solenoid plug-in with diode and light – Male only
GP	MAC JAC solenoid plug-in with MOV and light – Male only
GR	MAC JAC solenoid plug-in with rectifier – Male only
GS	MAC JAC solenoid plug-in with rectifier and light – Male only
*JA	Square plug-in
*JB	Rectangular plug-in
*JC	Square plug-in with light
*JD	Rectangular plug-in with light
*JJ	Square plug-in – Male only
*JM	Rectangular plug-in – Male only

* Not available on manifold or stacking valves

J-XX X-X XX	MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS
KA	Mini plug-in
KB	Mini plug-in with diode
KC	Mini plug-in with MOV
KD	Mini plug-in with light
KE	Mini plug-in with diode and light
KF	Mini plug-in with MOV and light
KG	Mini plug-in with rectifier
KH	Mini plug-in with rectifier and light
KJ	Mini plug-in – Male only
KK	Mini plug-in with diode - Male only
KL	Mini plug-in with MOV - Male only
KM	Mini plug-in with light - Male only
KN	Mini plug-in with diode and light – Male only
KP	Mini plug-in with MOV and light – Male only
KR	Mini plug-in with rectifier – Male only
KS	Mini plug-in with rectifier and light – Male only

* Not available on manifold or stacking valves

J-XX X-X XX	CONNECTORS FOR NON PLUG-IN VALVES MINI SQUARE PLUG-IN CONNECTORS 8.0 MM SPACING BETWEEN PINS ISO SPECIFICATION 15217
LA	Mini plug-in
LB	Mini plug-in with diode
LC	Mini plug-in with MOV
LD	Mini plug-in with light
LE	Mini plug-in with diode and light
LF	Mini plug-in with MOV and light
LG	Mini plug-in with rectifier
LH	Mini plug-in with rectifier and light
LJ	Mini plug-in – Male only
LK	Mini plug-in with diode - Male only
LL	Mini plug-in with MOV - Male only
LM	Mini plug-in with light - Male only
LN	Mini plug-in with diode and light – Male only
LP	Mini plug-in with MOV and light – Male only
LR	Mini plug-in with rectifier – Male only
LS	Mini plug-in with rectifier and light – Male only

J-XX X-X XX	CONNECTORS FOR PLUG-IN VALVES
FA	Base plug-in
FB	Base plug-in with diode
FC	Base plug-in with MOV
FD	Base plug-in with light
FE	Base plug-in with diode and light
FF	Base plug-in with MOV and light
FG	Base plug-in with rectifier
FH	Base plug-in with rectifier and light

Codification table for voltages / Manual operators / Electrical connections

VALVE CODE ➤ L XX X-X XX
1 2 3 4

OPTIONS AVAILABLE FOR

· Solenoid valves 32, 38, 42, 44, 47 & 48 Series

MAC

OPTIONS

Back

1. VOLTAGE (32, 38, 42, 44, 48 SERIES)

L- XX X-X XX	VOLTAGE
DF	24V=/4,0W
DN	12V=/4,0W
HA	24V=/1,95W
HE	12V=/1,95W

1. VOLTAGE (47 SERIES)

L- XX X-X XX	VOLTAGE
DA	24V=/5,2W
DF	12V=/5,2W

2. WIRE LENGTH

L- XX X-X XX	WIRE LENGTH
0	No lead wire
A	45 cm – 18"
B	60 cm – 24"
C	90 cm – 36"
D	120 cm – 48"
E	180 cm – 72"
F	240 cm – 96"
G	300 cm – 120"
H	365 cm – 144"

3. MANUAL OPERATOR (all series)

L- XX X-X XX	MANUAL OPERATOR
0	No operator
3	Non-locking extended

4. ELECTRICAL CONNECTOR (32, 38, 42, 44 & 48 series)

L-XX X-X XX	NON PLUG-IN
BA	2 wire flying leads
BB	2 wire flying leads with ground wire
BC	2 wire flying leads with light
BD	2 wire flying leads with light & ground wire
BJ	4 wire flying leads
BK	4 wire flying leads with ground
BL	4 wire flying leads with light
BM	4 wire flying leads with light & ground wire
KA	2 wire plug-in assembly
KB	2 wire plug-in assembly with ground wire
KC	2 wire plug-in assembly with light
KD	2 wire plug-in assembly with light and ground wire
KE	4 wire plug-in assembly
KF	4 wire plug-in assembly with ground wire
KG	4 wire plug-in assembly with light
KH	4 wire plug-in assembly and ground wire
LA	3 wire plug-in assembly (polarity switching cover)

L-XX X-X XX	PLUG-IN
*DA	Base plug-in
*DB	Base plug-in with ground pin
*DC	Base plug-in with ligh
*DD	Base plug-in with light & ground pin
*EA	Base plug-in 3 pin (Plarity switching cover)

* Use these options for plug-in base with 2 or 4 wire assemblies

** Use this option for plug-in bases with 3 wire assemblies

4. ELECTRICAL CONNECTOR (47 series)

L- XX X-X XX	NON PLUG-IN
BA	2 wire flying leads
BB	2 wire flying leads with ground wire
BC	2 wire flying leads with light
BD	2 wire flying leads with light & ground wire
BJ	4 wire flying leads
BK	4 wire flying leads with ground
BL	4 wire flying leads with light
BM	4 wire flying leads with light & ground wire
EA	Base plug-in 3 pin (Polarity switching cover)
FA	Base plug-in with ground
FB	Base plug-in with ground & light
FC	Base plug-in 4 wire with ground
FD	Base plug-in 4 wire with light & ground
LA	3 wire plug-in assembly (Plarity switching cover)
MA	2 wire plug-in assembly
MB	2 wire plug-in assembly with ground wire
MC	2 wire plug-in assembly with light
MD	2 wire plug-in assembly with light and ground wire
ME	4 wire plug-in assembly
MF	4 wire plug-in assembly with ground wire
MG	4 wire plug-in assembly with light
MH	4 wire plug-in assembly and ground wire

Note: FA through FD options are fr use with plug-in manifold bases.

PRECAUTIONS
CONCERNING THE APPLICATION, INSTALLATION AND SERVICE OF MAC VALVES

The precautions below are important to be read and understood before designing into a system any MAC valve, and before installing or servicing any MAC valve. Improper use, installation or servicing of any MAC valve in some systems could create a hazard to personnel or equipment.

APPLICATION PRECAUTIONS :

INDUSTRIAL USE -

MAC valves are intended for use in industrial pneumatic and/or vacuum systems. They are not intended for consumer use or service. They are general purpose industrial valves with literally thousands of different applications in industrial systems. These products are not inherently dangerous, but they are only a component of an overall system. The system in which they are used must provide adequate safeguards to prevent injury or damage in the event failure occurs, whether it be failure of switches, regulators, cylinders, valves or any other component.

POWER PRESSES -

MAC valves are not designed nor intended to be used to operate and/or control the operation of clutch and/or brake systems on power presses. There are special products on the market for such use.

2-POSITION VALVES -

Some MAC valves are 2-position, 4-way valves. When air is supplied to the inlet port(s) of these valves, there will always be a flow path from the inlet to one of the outlets regardless of which of the two positions the valve is situated. Therefore, if pressurized air retained in the system would present a hazard in the application or servicing of the valve or system, a separate method in the system must be provided to remove the trapped air.

3- POSITION VALVES-

Some MAC valves are 3-position, 4-way valves. These valves are either double solenoid or double remote air operated.

If either of the two operators is in control, air supplied to the inlet port(s) will pass through the valve to one of the outlets as on 2-position, 4-way valves. However, if neither operator is in control, the valve moves to a center position. Listed below are the various center position functions :

A. CLOSED CENTER-

With this type valve, when in the center position all ports are blocked (inlets and exhausts) meaning the air at both outlet ports is trapped. If trapping the air in both outlet ports would present a hazard in the application or servicing, a separate method in the system must be provided to remove the trapped air or this type valve should not be used.

B. OPEN CENTER-

With this type valve, when in the center position, the inlet port(s) is blocked and the two outlet ports are open to the exhaust port(s) of the valve. If having no air in either outlet port would present a hazard in the application or servicing, this type valve should not be used.

C. PRESSURE CENTER-

With this type valve, when in the center position, the inlet port(s) is connected to both outlet ports of the valve. If having pressurized air to either or both outlet ports would present a hazard in the application or servicing of the valve or system, a separate method in the system must be
provided to remove the retained air.

OPERATING SPECIFICATIONS -

MAC valves are to be installed only on applications that meet all operating specifications described in the MAC catalog for the valve.

MANUAL OPERATORS-

Most MAC valves can be ordered with manual operators. Manual operators when depressed, are designed to shift the valve to the same position as would the corresponding solenoid or remote air pilot operator if it were activated. Care must be taken to order a type, if any, that will be safe for the physical location of the manual operator in the system. Accidental activation of a manual operator could create a dangerous situation. If intentional or accidental operation of a valve by a manual operator could create a dangerous situation then the "no operator" option should be used.

REMOTE AIR OPERATED VALVES

Pilot valves supplying signal pressure to remote air operated valves should be 3-way valves with adequate supply and exhaust capacity to provide positive pressurizing and exhausting of the pilot supply line. Pilot lines should be open to exhaust when valves are deenergized.

INSTALLATION PRECAUTIONS :

A. Do not install MAC valves on a machine without first turning off air (bleed system completely) and electricity to the machine.
B. MAC valves should only be installed by qualified, knowledgeable personnel who understand how the specific valve is to be pneumatically piped and electrically connected (where applicable). Flow paths through the valve are shown in the catalog and on the valve by use of ANSI or ISO type standard graphic symbols. Do not install unless these symbols and the valve functions and operations are thoroughly understood.

SERVICE PRECAUTIONS :

A. Do not service or remove from service any MAC valve without first shutting off both the air and electricity to the valve and making certain no pressurized air which could present a hazard is retained in the system.
B. MAC valves should only be serviced or removed from service by qualified, knowledgeable personnel who understand how the specific valve is piped and used and whether there is air retained in the connecting lines to the valve or electric power still connected to the valve.
C. MAC valves are never to be stepped on while working on a machine. Damage to the valve, or lines to the valve (either air or electrical lines) or accidental activating of a manual operator on the valve could result in a dangerous situation.

WARNING:

Under no circumstances are Mac valves to be used on power presses for air clutch and/or brake operations where failure of the valve to operate as intended could in any way jeopardize the safety of the operator or any other person. Under no circumstances are Mac valves to be used in any circuit or in any manner intended to prevent unintended operation of any machinery or other equipment where failure of the valve to operate as intended could jeopardize the safety of the operator or any other person. Air valves are not safety devices nor should they be used in safety systems of any type.

LIMITATION OF GUARANTEE

This Guarantee is limited to the replacement or rebuilding of any valve which should fail to operate properly. Valves, under the MAC Guarantee, must be returned (with or without bases) transportation prepaid and received at our factory within the Guarantee period. They will be returned to the customer at the expense of MAC Valves, Inc., and will carry the same guarantee as provided under the Flat Rate Rebuild Program.

DISCLAIMER OF GUARANTEE

No claims for labor, material, time, damage, or transportation are allowable nor will any valve be replaced or rebuilt under this guarantee which has been damaged by the purchaser not in the normal course of its use and maintenance during the warranty period. The guarantee does not apply to loss or damage caused by fire, theft, riot, explosion, labor dispute, act of God, or other causes beyond the control of MAC Valves,Inc. MAC Valves, Inc. shall in no event be liable for remote, special or consequential damages under the MAC Guarantee, nor under any implied warranties, including the implied warranty of merchantability.

The above Guarantee is our manner of extending the engineering and service resources of the MAC Valves, Inc. organization to assure our customer long, and continued satisfaction.

Section 2 Remote air valves

Function	Port size	Flow (Max) Nl/min	Individual mounting			Manifold mounting	Series
			Inline	Sub-base non "plug-in"	Valve only – no base	Valve only – no base	
5/2 - 5/3	G1/8" - G1/4"	1000					400
3/2	G3/4" - G1"	20000					67
5/2 - 5/3	G3/8" - G1/2"	3100					ISO 2
5/2 - 5/3	G1/2" - G3/4"	6200					ISO 3

Individual mounting

Inline	Sub-base non “plug-in”

Series

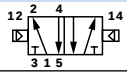
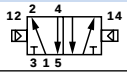
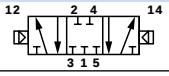
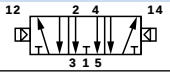
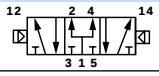
Function	Port size	Flow (Max)	Individual mounting	Series
5 / 2 – 5 / 3	G1 / 8" – G1 / 4"	1000 Nl / min	Inline	

OPERATIONAL BENEFITS

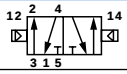
1. Balanced spool, immune to variations of pressure, also provides high flow.
2. Bonded spool with minimum friction, shifting in a glass-like finished bore.
3. Wiping effect eliminates sticking.
4. Long service life.
5. Short stroke with high flow.

HOW TO ORDER

SINGLE PRESSURE VALVES

Pilot air	5 / 2 Single operator	5 / 2 Double operator	5 / 3 Closed centre	5 / 3 Open centre	5 / 3 Pressure centre
					
G1 / 8"	411A-C0J-RA Mod 1493	421A-C0J-RA	451A-C0J-RA	461A-C0J-RA	471A-C0J-RA
G1 / 4"	411A-D0J-RA Mod 1493	421A-D0J-RA	451A-D0J-RA	461A-D0J-RA	471A-D0J-RA

DUAL PRESSURE VALVESS

Port size	5 / 2 Double operator
	
G1 / 8"	441A-C0J-RA
G1 / 4"	441A-D0J-RA

MAC

Series 400

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

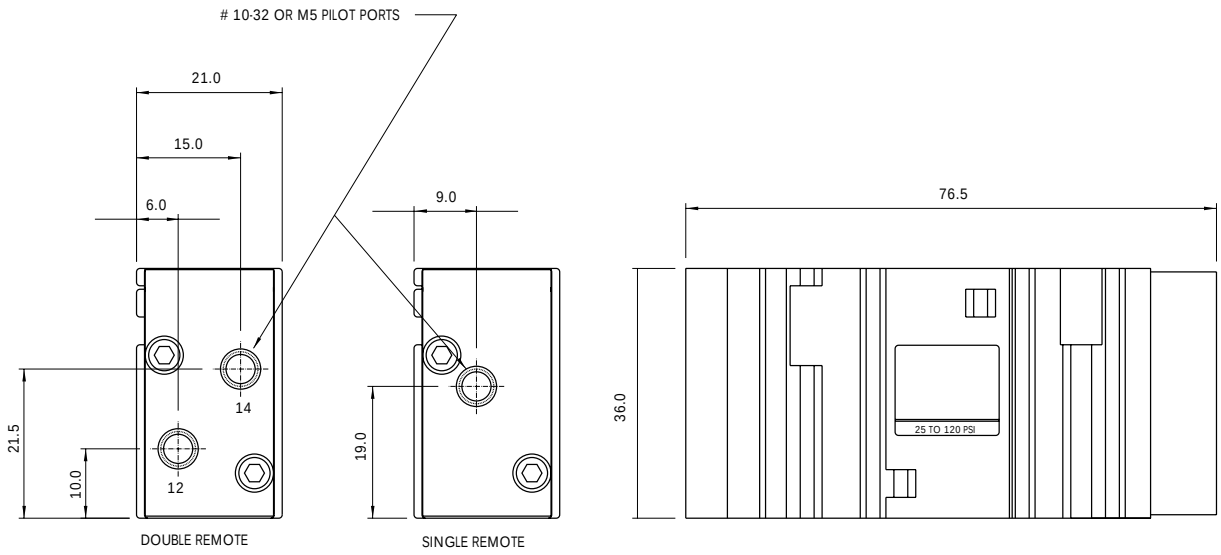
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Single operator: vacuum to 6,7 bar Double operator: vacuum to 10 bar
Air signal pressure :	Single oper.: 2.7 to 10 bar Double oper., 2 pos.: 1,3 to 10 bar, 3 pos.: 2,3 to 10 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40µ
Temperature range :	-18°C to 50°C
Orifice :	6.2 mm
Flow :	1000 Nl/min (Cv 1.0)
Note :	Air signal must be ≥ main valve pressure

Option : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)



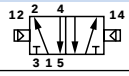
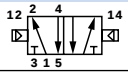
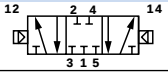
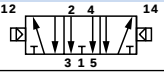
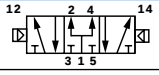
Function	Port size	Flow (Max)	Individual mounting	Series
5 / 2 – 5 / 3	G1 / 8" – G1 / 4"	1000 Nl / min	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

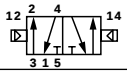
1. Balanced spool, immune to variations of pressure, also provides high flow.
2. Bonded spool with minimum friction, shifting in a glass-like finished bore.
3. Wiping effect eliminates sticking.
4. Long service life.
5. Short stroke with high flow.

HOW TO ORDER

SINGLE PRESSURE VALVES

Port size	5 / 2 Single operator	5 / 2 Double operator	5 / 3 Closed centre	5 / 3 Open centre	5 / 3 Pressure centre
					
Valve less base	413A-00J-RA	423A-00J-RA	453A-00J-RA	463A-00J-RA	473A-00J-RA
G1 / 8"	413A-CAJ-RA Mod 1493	423A-CAJ-RA	453A-CAJ-RA	463A-CAJ-RA	473A-CAJ-RA
G1 / 4"	413A-DAJ-RA Mod 1493	423A-DAJ-RA	453A-DAJ-RA	463A-DAJ-RA	473A-DAJ-RA

DUAL PRESSURE VALVESS

Port size	5 / 2 Double operator
	
G1 / 8"	443A-CAJ-RA
G1 / 4"	443A-DAJ-RA

OPTIONS

423A-C**A**J-RA

B for base with flow controls

MAC

Series 400

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

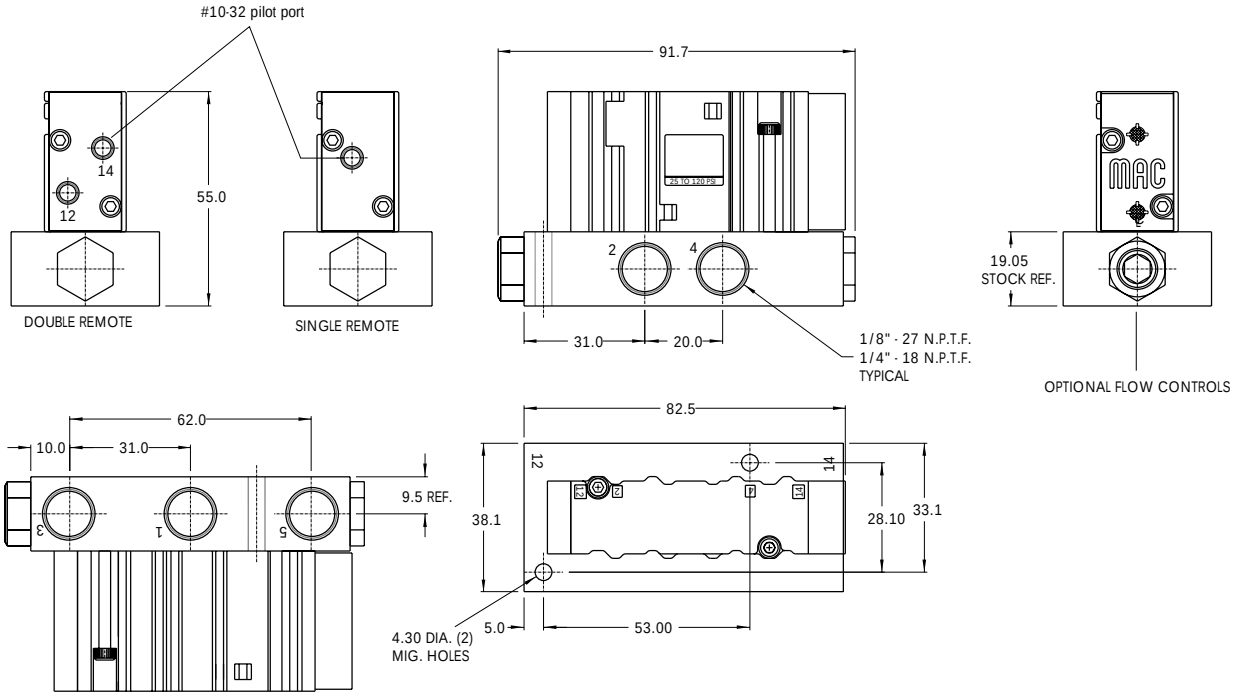
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Single operator: vacuum to 6,7 bar Double operator: vacuum to 10 bar
Air signal pressure :	Single oper.: 2.7 to 10 bar Double oper., 2 pos.: 1,3 to 10 bar, 3 pos.: 2,3 to 10 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40µ
Temperature range :	-18°C to 50°C
Orifice :	6.2 mm
Flow :	1000 Nl/min (Cv 1.0)
Note :	Air signal must be ≥ main valve pressure

Options : • NPTF threads

Spare parts : • Valve to base pressure seal: 16525 • Valve mounting screw (x2): 35043
• Flow control assembly (x2): N-04001

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Individual mounting

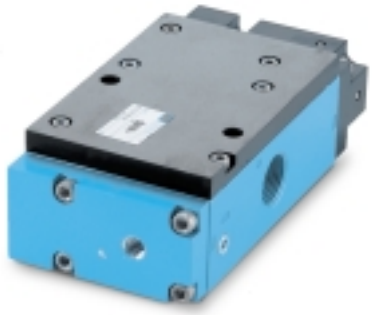
Inline

Series

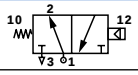
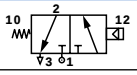
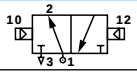
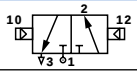
Function	Port size	Flow (Max)	Individual mounting	Series
3 / 2	G3 / 4" - G1"	20000 Nl / min	Inline	

OPERATIONAL BENEFITS

1. Balanced spool, immune to variations of pressure.
2. Powerful return forces thanks to the combiantion of mechanical and air springs.
3. Bonded spool with munimum friction, shifting in a glass like finished bore.
4. Wiping effect eliminates sticking.
5. Long service life.



HOW TO ORDER

Port size	Pilot air	Single Operator		Double Operator	
		NO Valve	NC Valve	NO Valve	NC Valve
					
G 3 / 4 "	Internal	67A-C3-CRA-RA	67A-A3-CRA-RA	67A-D4-CRA-RA	67A-B4-CRA-RA
G 1 "		67A-C3-DRA-RA	67A-A3-DRA-RA	67A-D4-DRA-RA	67A-B4-DRA-RA
G 3 / 4 "	External	67A-C3-CRB-RE	67A-A3-CRB-RE	-	-
G 1 "		67A-C3-DRB-RE	67A-A3-DRB-RE	-	-

Note : Designation 'RE' required on remote air models with main valve pressures of vacuum to 1,3 bar.
'RE' provides an external pilot and should have a pressure range of 1,3 - 5 bar. Since the external pilot supplies the air spring, it must not exceed the remote air pilot pressure.

MAC

Series 67

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

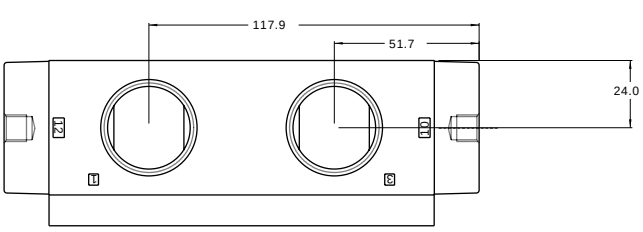
TECHNICAL DATA

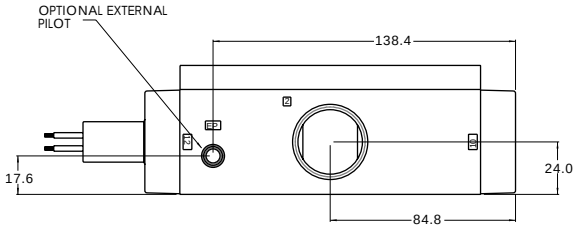
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 10 bar
Air signal pressure :	1.3 to 10 bar (must be ≥ main valve pressure)
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	26.8 mm
Flow :	3/4" : 14500 Nl/min (Cv 14.5) - 1" : 20000 Nl/min (Cv 20.0)

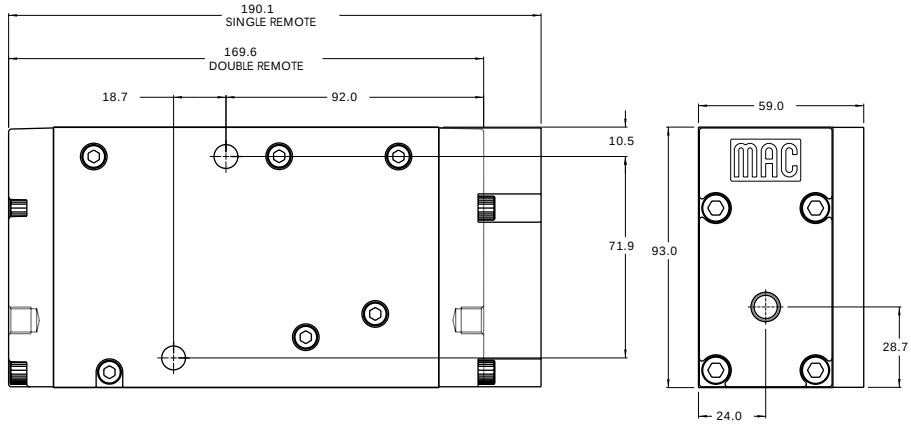
Options : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)







Consult "Precautions" before use, installation or service of MAC Valves..

Individual mounting

Valve only – no base	

Manifold mounting

Valve only – no base	

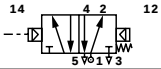
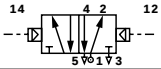
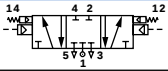
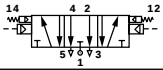
Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5 / 2 – 5 / 3	G3 / 8" – G1 / 2"	3100 Nl / min	Valve only – no base	

OPERATIONAL BENEFITS

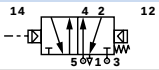
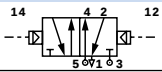
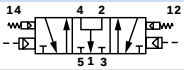
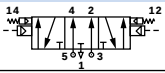
1. Balanced spool, immune to variations of pressure.
2. Powerful return forces thanks to the combination of mechanical and air springs.
3. Bonded spool with minimum friction, shifting in a glass-like finished bore.
4. Wiping effect eliminates sticking.
5. Long service life.

HOW TO ORDER

SINGLE PRESSURE MODELS

Air spring	5 / 2 Single operator	5 / 2 Double operator	5 / 3 Closed centre	5 / 3 Open centre
				
Internal	MV-R2A-BACF	MV-R2A-BBAK	MV-R2A-BEAK	MV-R2A-BFAK
External	MV-R2A-BACG			

DUAL PRESSURE MODELS

Air spring	5 / 2 Single operator	5 / 2 Double operator	5 / 3 Open centre	5 / 3 Pressure centre
				
Internal port #3	MV-R2A-BCCH	MV-R2A-BDAK	MV-R2A-BHAK	MV-R2A-BGAK
Internal port #5	MV-R2A-BCCJ			
External	MV-R2A-BCCG			

Note: ISO series, valve and base are ordered separately, click here for base code.

Series ISO 2

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

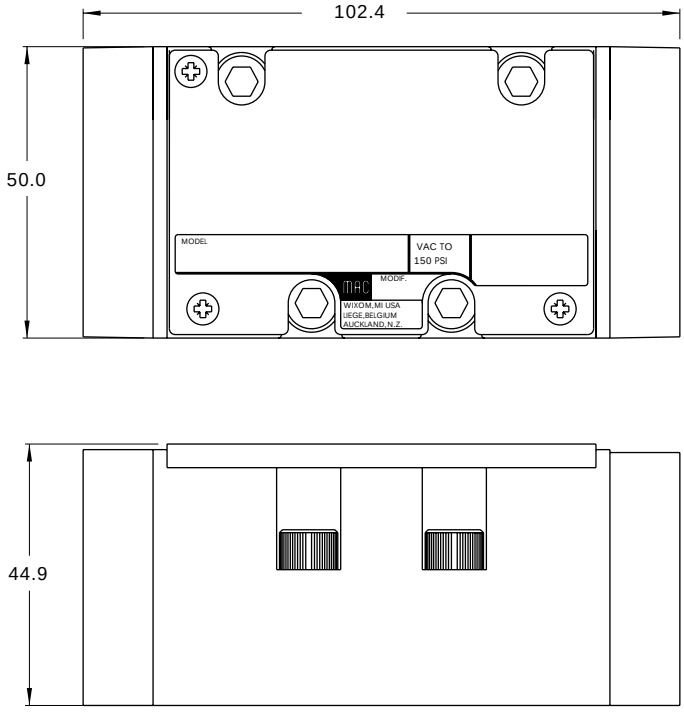
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 10 bar
Air signal pressure :	Single/double operator: 1,3 to 10 bar 3 position: 2 to 10 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 :	10,6 mm
Flow (at 6 bar, ΔP=1bar) :	G3/8": 2800 Nl/min – G1/2" : 3100 Nl/min (Cv 3,1)

Spare parts : • Valve to base pressure seal: 16576 • Valve mounting screws (x4): 35413

DIMENSIONS

Dimensions shown are metric (mm)



Consult "Precautions" before use, installation or service of MAC Valves..

Individual mounting

Valve only – no base	

Manifold mounting

Valve only – no base	

Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5 / 2 – 5 / 3	G1 / 2" – G3 / 4"	6200 Nl / min	Valve only – no base	

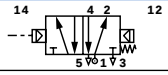
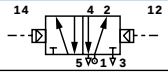
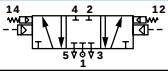
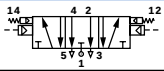
400
67
ISO 2
ISO 3

OPERATIONAL BENEFITS

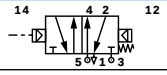
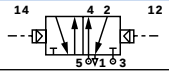
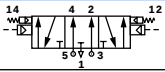
1. Balanced spool, immune to variations of pressure.
2. Powerful return forces thanks to the combination of mechanical and air springs.
3. Bonded spool with minimum friction, shifting in a glass-like finished bore.
4. Wiping effect eliminates sticking.
5. Long service life.

HOW TO ORDER

SINGLE PRESSURE MODELS

Air spring	5 / 2 Single operator	5 / 2 Double operator	5 / 3 Closed centre	5 / 3 Open centre
				
Internal	MV-R3A-BACF	MV-R3A-BBAK	MV-R3A-BEAK	MV-R3A-BFAK
External	MV-R3A-BACG			

DUAL PRESSURE MODELS

Air spring	5 / 2 Single operator	5 / 2 Double operator	5 / 3 Pressure centre
			
Internal port #3	MV-R3A-BCCH	MV-R3A-BDAK	MV-R3A-BGAK
Internal port #5	MV-R3A-BCCJ		
External	MV-R3A-BCCG		

Note: ISO series, valve and base are ordered separately, click here for base code.

Series ISO 3

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

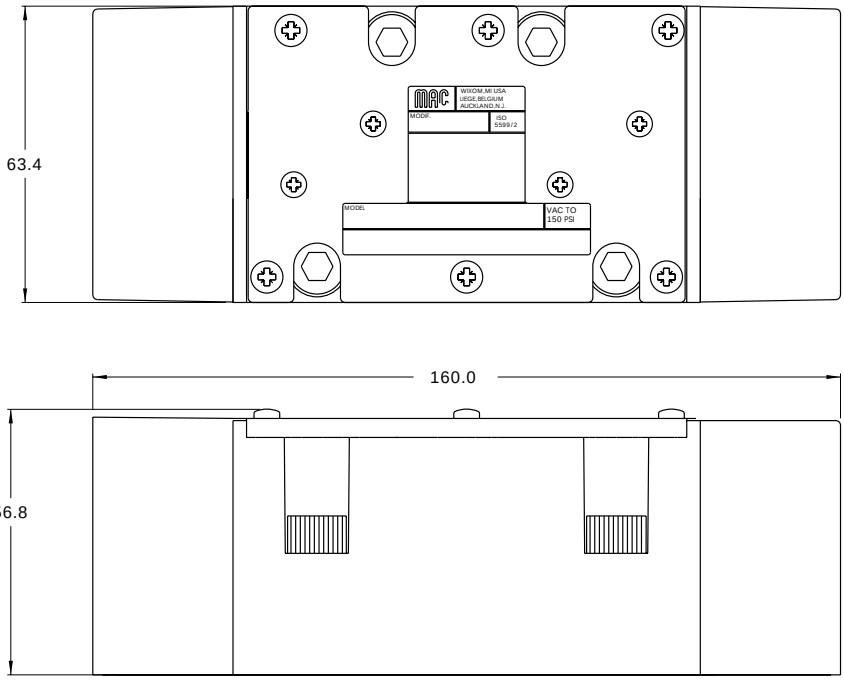
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 10 bar
Air signal pressure :	Single/double operator: 1,3 to 10 bar 3 position: 2 to 10 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 :	24 mm
Flow :	G1/2": 5400 Nl/min (Cv 5,4) – G3/4" : 6200 Nl/min (Cv 6,2)

Spare parts : • Valve to base pressure seal: 16614 • Valve mounting screws (x4): 35451

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Section 3 Bases according to ISO 5599

Bases according to ISO 5599

Series

Non plug-in base / manifold	Plug-in base / manifold	
		ISO 1
		ISO 2
		ISO 3

Non plug-in base / manifold

HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G1 / 4 "	MB-A1C-121	MB-A1C-123	MB-A1C-122	MB-A1C-124
G3 / 8 "	MB-A1C-131	MB-A1C-133	MB-A1C-132	MB-A1C-134

INDIVIDUAL BASE ACCORDING TO VDMA 24345

Port size	Side ports	Bottom ports
G1 / 4 "	HB-A1A-A	HB-A1A-B

MANIFOLD BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G1 / 4 "	MM-A1C-121	MM-A1C-123	MM-A1C-122	MM-A1C-124
G3 / 8 "	MM-A1C-131	MM-A1C-133	MM-A1C-132	MM-A1C-134

Manifold fastening kit : N-63002-01.

MANIFOLD BASE ACCORDING TO VDMA 24345

Port size	Side ports
G1 / 4 "	HM-A1A-C

End plate kit: HM-A1A-D.

Valve blanking plate: MA1003.
Inlet/exhaust isolator plug: 32835.

MAC

Series ISO 1

100% OF PRODUCTION TESTED 100%

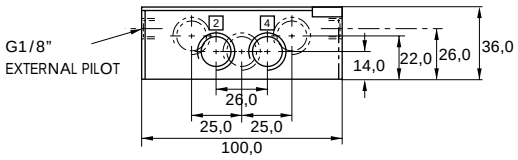
WARRANTY 18 MONTHS

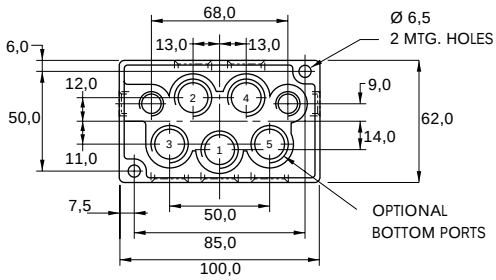
DIMENSIONS

Dimensions shown are metric (mm)

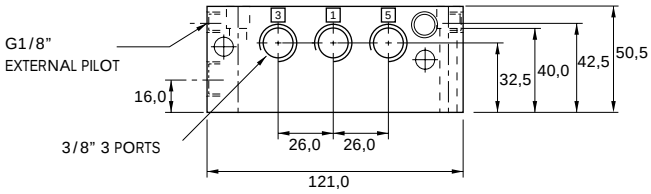
Individual

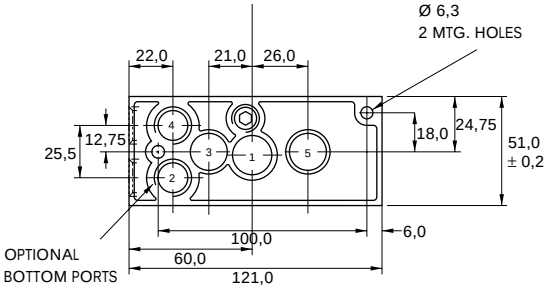
DIN 5599/1



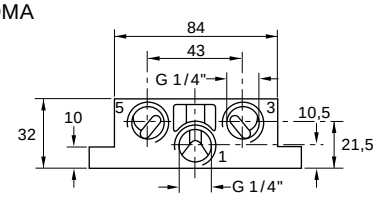


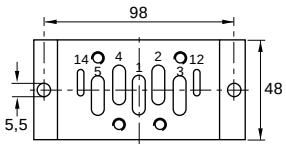
Manifold

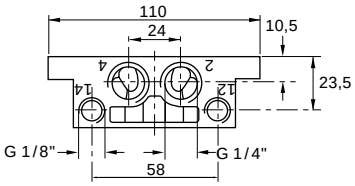




VDMA







Plug-in base / manifold

HOW TO ORDER

INDIVIDUAL BASE

Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports
G1/4"	Single solenoid	MB-P1A-121-A	MB-P1A-122-A	MB-P1A-123-A
	Double solenoid	MB-P1A-121-B	MB-P1A-122-B	MB-P1A-123-B
G3/8"	Single solenoid	MB-P1A-131-A	MB-P1A-132-A	MB-P1A-133-A
	Double solenoid	MB-P1A-1231-B	MB-P1A-132-B	MB-P1A-133-B

MANIFOLD BASE

Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports
G1/4"	Single solenoid	MM-P1A-121-A	MM-P1A-122-A	MM-P1A-123-A
	Double solenoid	MM-P1A-121-B	MM-P1A-122-B	MM-P1A-123-B
G3/8"	Single solenoid	MM-P1A-131-A	MM-P1A-132-A	MM-P1A-133-A
	Double solenoid	MM-P1A-1231-B	MM-P1A-132-B	MM-P1A-133-B

OPTIONS

Manifold options :

External pilot — MM-P1A-**12***x*-*xx*

- **32** for 1/4" port – common external pilot
- **33** for 3/8" port – common external pilot

Terminal strip — MM-P1A-*xxx*-**A** (N/A with light)

- **J** wired for sgl solenoid
- **K** wired for double solenoid

Base / Manifold option: light(s) — MX-P1A-*xxx*-*x***JA**

- **JA** 110/120 volt
- **JB** 220/240 volt
- **DA** 24 volt

Accessories:

M-P1001	Valve blanking plate.
N-P1007-01	Manifold fastening kit.
32835	Inlet/exhaust isolator plug.

MAC

Series ISO 1

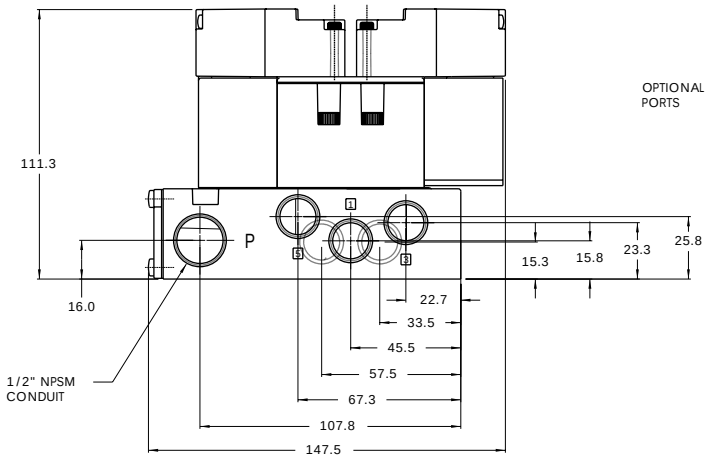
100% OF PRODUCTION TESTED 100%

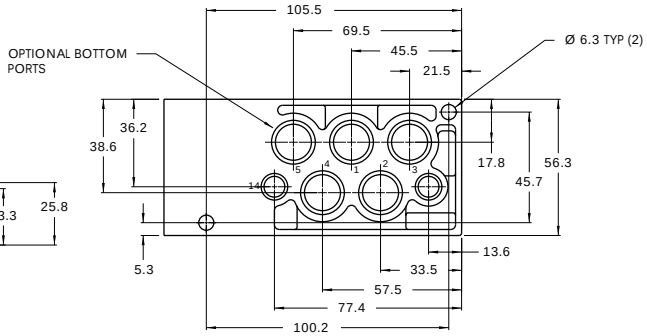
WARRANTY 18 MONTHS

DIMENSIONS

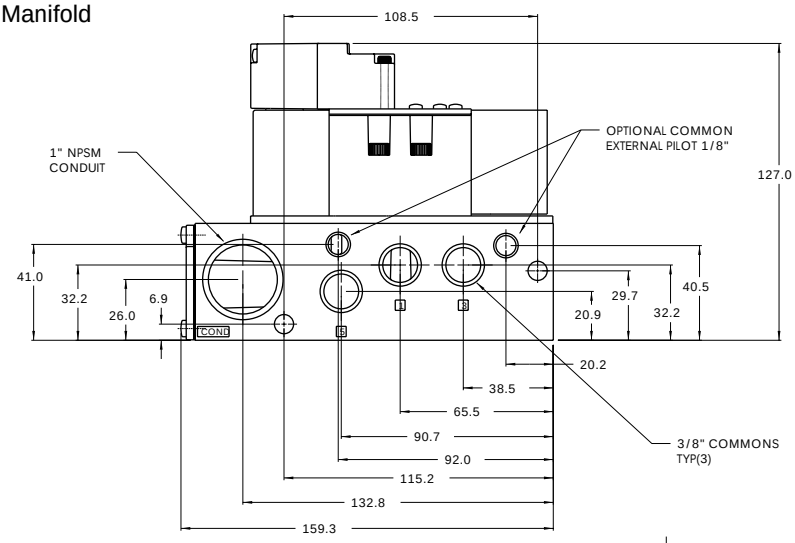
Dimensions shown are metric (mm)

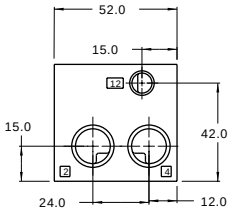
Individual

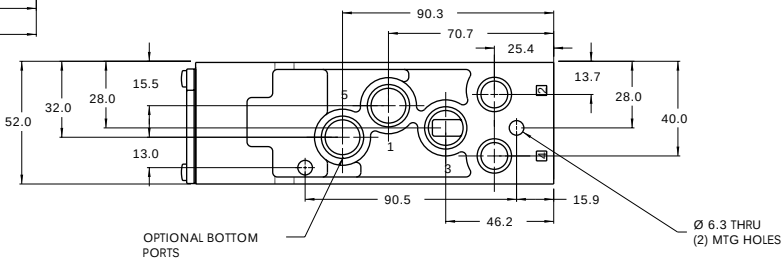




Manifold







Non plug-in base / manifold

HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G 3 / 8 "	MB-A2B-121	MB-A2B-123	MB-A2B-122	MB-A2B-124
G 1 / 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
G 3 / 8 "	HB-A2B-A	HB-A2B-B

MANIFOLD BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G 3 / 8 "	MM-A2B-121	MM-A2B-123	MM-A2B-122	MM-A2B-124
G 1 / 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
G 3 / 8 "	HM-A2B-C

End plate kit: HM-A2B-D.

Valve blanking plate: MA2003.
Inlet / exhaust isolator plug: 32839.

Series ISO 2

100% OF PRODUCTION TESTED 100%

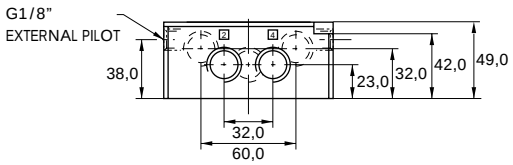
WARRANTY 18 MONTHS

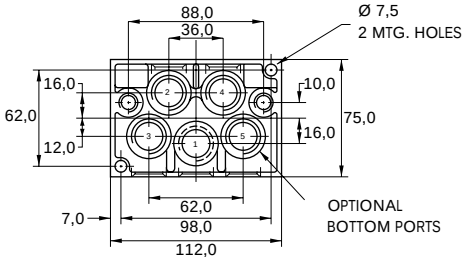
DIMENSIONS

Dimensions shown are metric (mm)

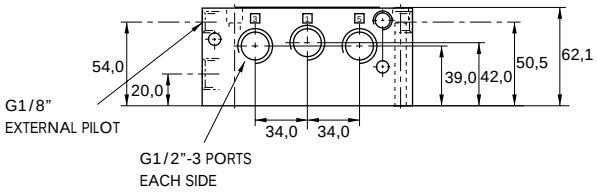
Individual

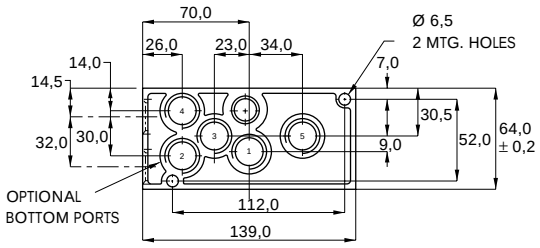
DIN 5599/1



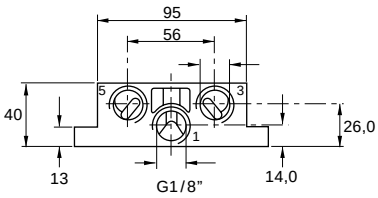


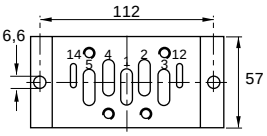
Manifold

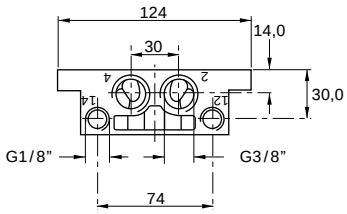




VDMA







Plug-in base / manifold

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-**12***x*-*xx*

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

Terminal strip

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

J wired for sgl solenoid
K wired for double solenoid

Base / Manifold option: light(s)

MX-P2A-*xxx*-*x***JA**

JA 110/120 volt
JB 220/240 volt
DA 24 volt

Accessories:

M-P2001	Valve blanking plate.
N-P2004-01	Manifold fastening kit.
32839	Inlet/exhaust isolator plug.

Series ISO 2

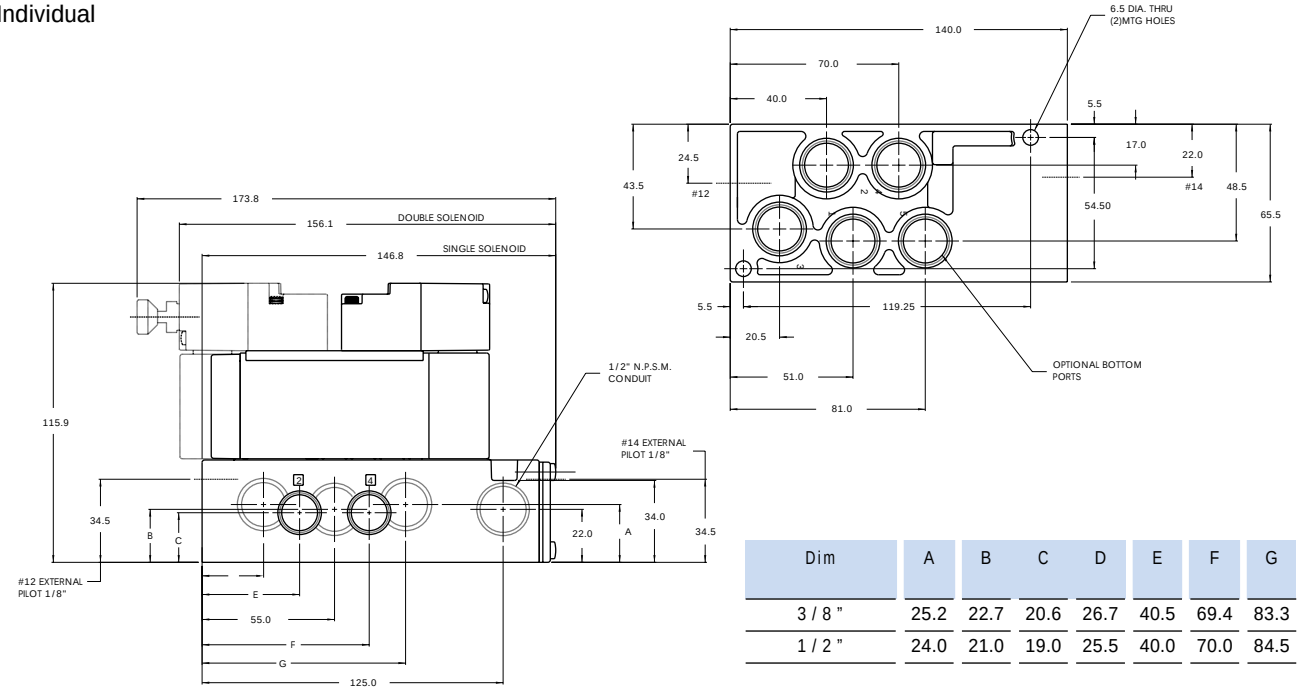
100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

DIMENSIONS

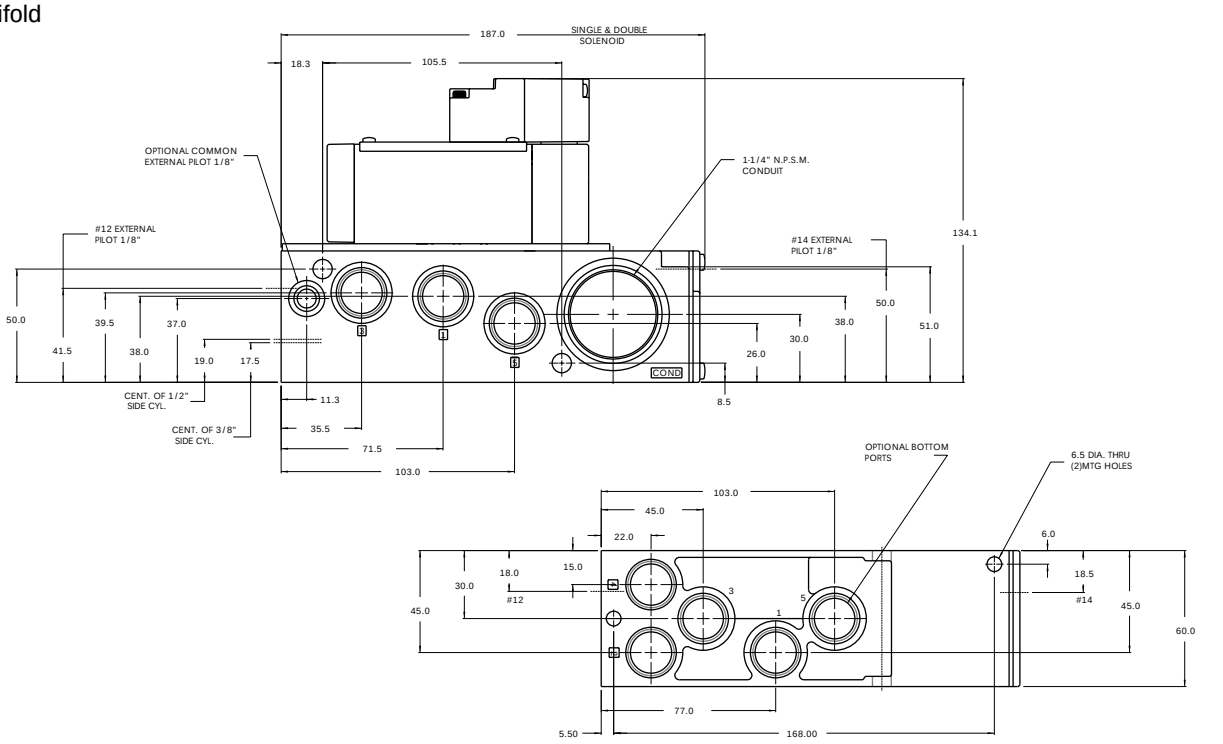
Dimensions shown are metric (mm)

Individual



Dim	A	B	C	D	E	F	G
3 / 8 "	25.2	22.7	20.6	26.7	40.5	69.4	83.3
1 / 2 "	24.0	21.0	19.0	25.5	40.0	70.0	84.5

Manifold



Bases according to ISO 5599/1

Non plug-in base / manifold

HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G 1 / 2 "	MB-A3B-121-A	MB-A3B-123-A	MB-A3B-122-A	MB-A3B-124-A
G 3 / 4 "	MB-A3B-131-A	MB-A3B-133-A	MB-A3B-132-A	MB-A3B-134-A

INDIVIDUAL BASE ACCORDING TO VDMA 24345

Port size	Side ports	Bottom ports
G 1 / 2 "	HB-A3B-A	HB-A3B-B

MANIFOLD BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G 1 / 2 "	MM-A3B-121-A	MM-A3B-123-A	MM-A3B-122-A	MM-A3B-124-A
G 3 / 4 "	MM-A3B-131-A	MM-A3B-133-A	MM-A3B-132-A	MM-A3B-134-A

Manifold fastening kit : N-63002-01.

MANIFOLD BASE ACCORDING TO VDMA 24345

Port size	Side ports
G 1 / 2 "	HM-A3B-C

End plate kit: HM-A3B-D.

Manifold fastening kit: N-P3003-01.
Valve blanking plate: M-P3001.
Inlet/exhaust isolator plug: 32845.

MAC

Series ISO 3

100% OF PRODUCTION TESTED 100%

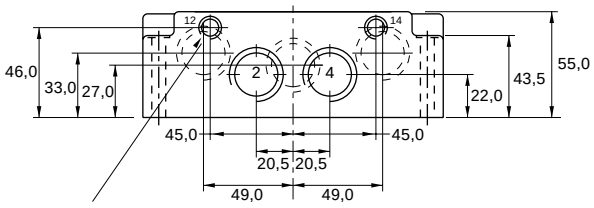
WARRANTY 18 MONTHS

DIMENSIONS

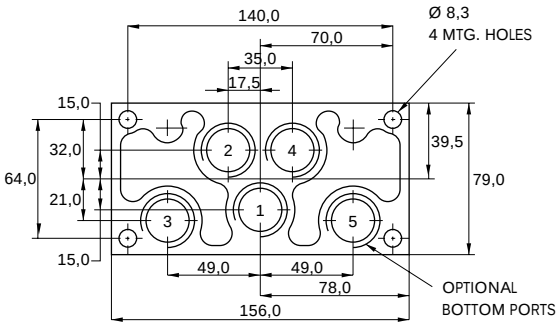
Dimensions shown are metric (mm)

Individual

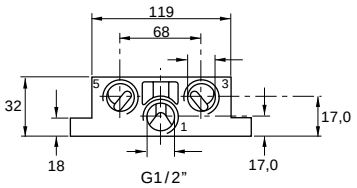
ISO DIN 5599/1

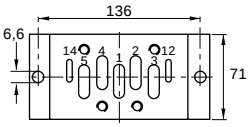


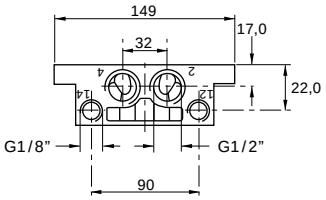
G1/8" EXTERNAL PILOT/
REMOTE AIR PILOT PORT (2 PLACES)

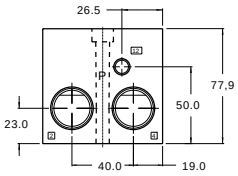


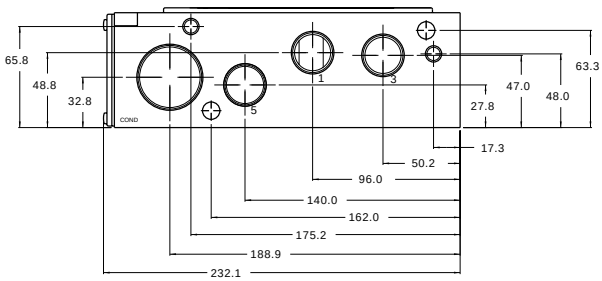
Manifold

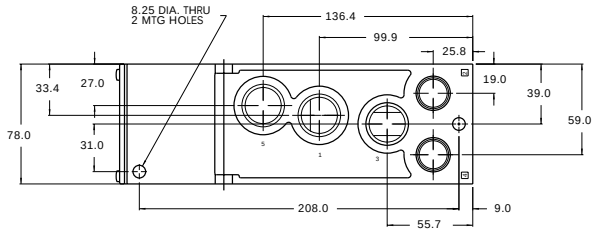












Plug-in base / manifold

HOW TO ORDER

INDIVIDUAL BASE

Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports
G1/2"	Single solenoid	MB-P3A-121-A	MB-P3A-122-A	MB-P3A-123-A
	Double solenoid	MB-P3A-121-B	MB-P3A-122-B	MB-P3A-123-B
G3/4"	Single solenoid	MB-P3A-131-A	MB-P3A-132-A	MB-P3A-133-A
	Double solenoid	MB-P3A-131-B	MB-P3A-132-B	MB-P3A-133-B

MANIFOLD BASE

Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports
G1/2"	Single solenoid	MM-P3A-121-A	MM-P3A-122-A	MM-P3A-123-A
	Double solenoid	MM-P3A-121-B	MM-P3A-122-B	MM-P3A-123-B
G3/4"	Single solenoid	MM-P3A-131-A	MM-P3A-132-A	MM-P3A-133-A
	Double solenoid	MM-P3A-131-B	MM-P3A-132-B	MM-P3A-133-B

OPTIONS

Manifold options :

External pilot — MM-P3A-**12***x*-*xx*

- **32** for 1/2" port – common external pilot
- **33** for 3/4" port – common external pilot

Terminal strip — MM-P3A-*xxx*-**A**

- **J** wired for sgl solenoid
- **K** wired for double solenoid

Base / Manifold option: light(s) — MX-P3A-*xxx*-*x***JA**

- **JA** 110/120 volt
- **JB** 220/240 volt
- **DA** 24 volt

Accessories:

M-P3001	Valve blanking plate.
N-P3003-01	Manifold fastening kit.
32845	Inlet/exhaust isolator plug.

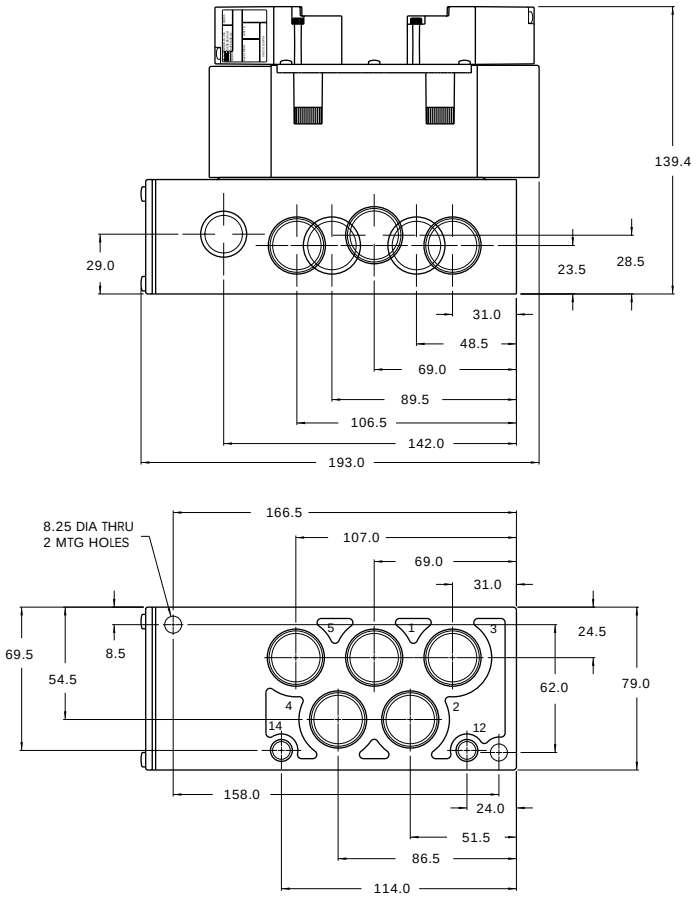
Series ISO 3

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

DIMENSIONS

Dimensions shown are metric (mm)



Section 4 Pressure regulators

Series

Sandwich pressure regulator with manual adjust knob		PR37A
Sandwich pressure regulator with manual adjust knob		PR42A
Sandwich pressure regulator with manual adjust knob		PR47A
Sandwich pressure regulator with manual adjust knob		PR48A
Sandwich pressure regulator with air pilot adjust		PR92C
Sandwich pressure regulator with manual adjust knob		
Sandwich pressure regulator with manual adjust knob		
Sandwich pressure regulator with air pilot adjust		PR93A
Sandwich pressure regulator with manual adjust knob		
Sandwich pressure regulator with manual adjust knob		
Non plug-in sandwich pressure regulator with manual adjust knob		PRA1A
Non plug-in sandwich pressure regulator with air pilot adjust		
Plug-in sandwich pressure regulator with manual adjust knob		PRP1A
Plug-in sandwich pressure regulator with air pilot adjust		
Non plug-in sandwich pressure regulator with manual adjust knob		PRA2D
Non plug-in sandwich pressure regulator with air pilot adjust		
Plug-in sandwich pressure regulator with manual adjust knob		PRP2B
Plug-in sandwich pressure regulator with air pilot adjust		
Non plug-in sandwich pressure regulator with manual adjust knob		PRA3C
Non plug-in sandwich pressure regulator with air pilot adjust		
Plug-in sandwich pressure regulator with manual adjust knob		PRP3B
Plug-in sandwich pressure regulator with air pilot adjust		

Series PR37A

Series

Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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.

HOW TO ORDER

REGULATORS FOR "NON PLUG-IN" VALVES (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure
No gauge port	PR37A-FAAA
With gauge Port (plugged)	PR37A-FABA

Note: Regulating pressure range for above models is 0 to 8 bar
For other ranges, see technical data page.

OPTIONS

Adjustment :

PR37A-F*xxx*

- **B** for slotted stem
- **K** for slotted stem with locknut

Pressure range :

PR37A-*xxx***A**

- **B** for 0 to 5,3 bar
- **C** for 0 to 2 bar

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

MAC

Series PR37A

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

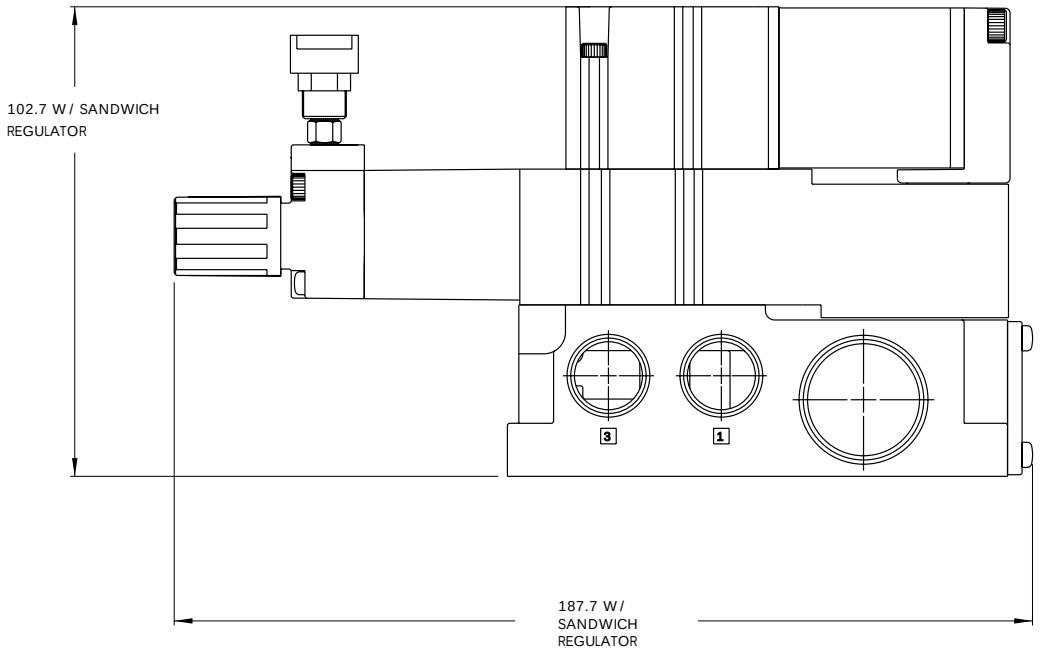
Fluid :	Compressed air, inert gases
Pressure range :	0 to 8 bar
Regulating range :	0 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Flow (at 6 bar, ΔP=1bar)	400 Nl/min (Cv 0.4)

Spare parts :

- Pressure regulator (less sandwich block) : PR37A-G0AA (knob), PR37A-C0AA (slotted stem), PR37A-L0AA (slotted stem with locknut)
- Gauges : 24177-160 (0 to 10,7 bar, 23 mm)
  24177-100 (0 to 6,7 bar, 23 mm)
  24177-060 (0 to 4 bar, 23 mm)

DIMENSIONS

Dimensions shown are metric (mm)



Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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.

HOW TO ORDER

NON PLUG-IN SANDWICH REGULATORS

Gauge	Regulator "12" end Internal pilot	Regulator "12" end External pilot
No gauge port	PR42A-BAAA	PR42A-BBAA
With gauge Port	PR42A-BABA	PR42A-BBBA

PLUG-IN SANDWICH REGULATORS

Gauge	Regulator "12" end Internal pilot	Regulator "12" end External pilot
No gauge port	PR42A-AAAA	PR42A-ABAA
With gauge Port	PR42A-AABA	PR42A-ABBA

Notes:
- External pilot regulator required only when supply pressure (primary) to the valve is below the minimum operating pressure of the 42 series valve.
- When an internal pilot regulator is used with the 42 series valve, the valve should be ordered as external pilot and the base should be ordered as internal pilot. This ensures that the pilot supply is not regulated. If an internal pilot valve and base are used with an internal pilot regulator, the pilot supply is regulated.

Example: Valve 42A-AM D -AA A -GxxP-xxx with PR42A-AAAA

- A: Internal pilot option in base
- D: External pilot option in valve

OPTIONS

Pressure range :

PR42A-AAA**A**

- **A** 0 to 8 bar
- **B** 0 to 5,3 bar
- **C** 0 to 2,7 bar

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

MAC

Series PR42A

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, inert gases
Pressure range :	0 to 8 bar
Regulating range :	0 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
Flow (at 6 bar, ΔP=1bar) :	250 Nl/min (Cv 0,25)

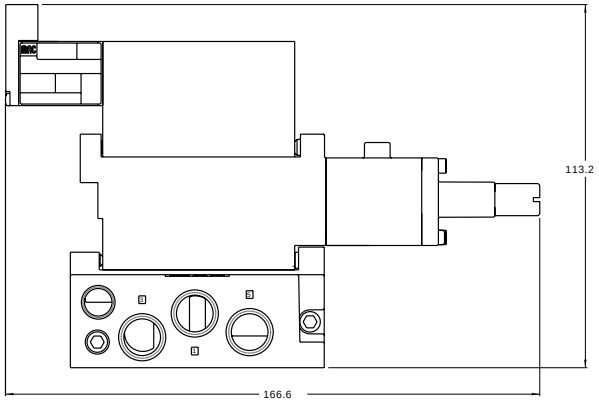
Spare parts :

- Pressure regulator (less sandwich block) : PR42A-C0xx • Gauge port plug: N-PE003
- M5 to 1/8" adapter : N-35005 • Gauge: 24177-160 (0 to 10,7 bar, 23 mm)
  24177-100 (0 to 6,7 bar, 23 mm)
  24177-060 (0 to 4 bar, 23 mm)

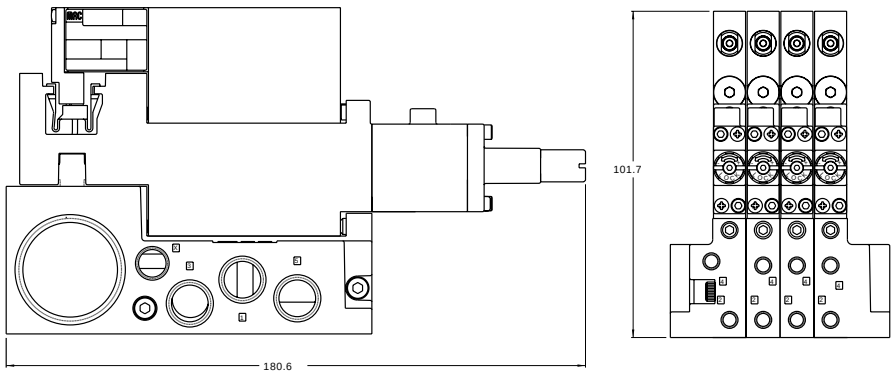
DIMENSIONS

Dimensions shown are metric (mm)

NON PLUG-IN



PLUG-IN



Consult "Precautions" before use, installation or service of MAC Valves..

Series PR47A

Series

Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES (KNOB ADJUSTMENT)

Gauge	Single pressure
No gauge port	PR47A-EAAA
With gauge Port	PR47A-EABA

REGULATORS FOR "NON PLUG-IN" VALVES (KNOB ADJUSTMENT)

Gauge	Single pressure
No Gauge port	PR47A-FAAA
With Gauge Port	PR47A-FABA

OPTIONS

Pressure range :

PR47A-*xxx***A**

- **A** 0 to 8 bar
- **B** 0 to 5,3 bar
- **C** 0 to 2 bar

Adjustment for :

Plug-in regulator

PR47A-**E***xxx*

- **E** Knob
- **A** Screwdriver slot
- **J** Screwdriver slot with locknut

Non plug-in regulator

PR47A-**F***xxx*

- **F** Knob
- **B** Screwdriver slot
- **K** Screwdriver slot with locknut

MAC

Series PR47A

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

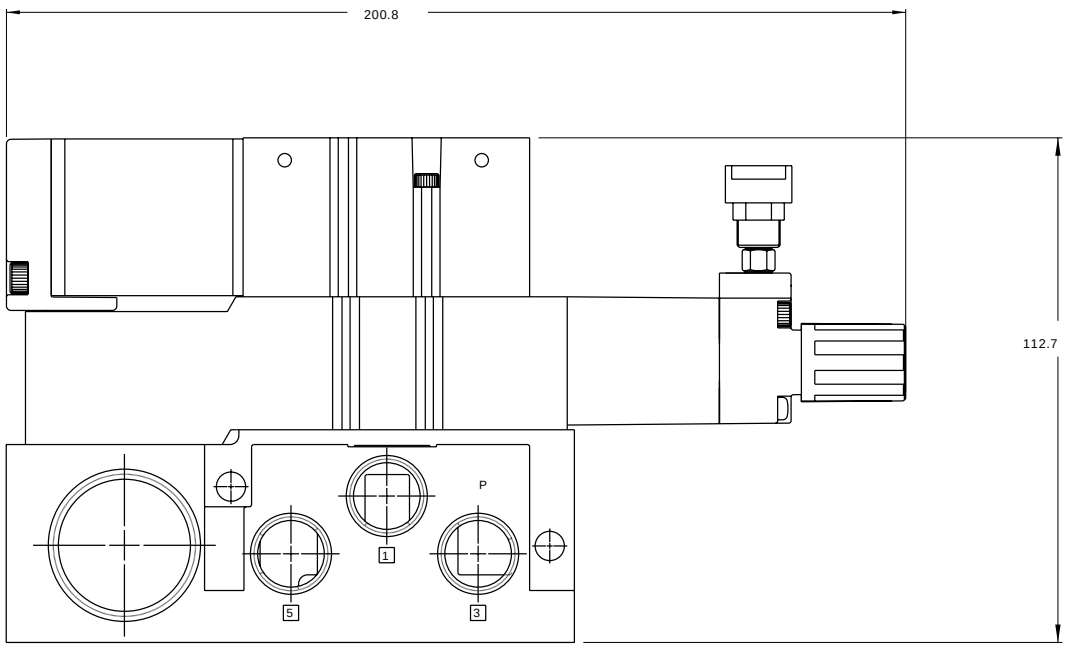
Fluid :	Compressed air, inert gases
Pressure range :	0 to 8 bar
Regulating range :	0 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Flow (at 6 bar, ΔP=1bar):	400 Nl/min (Cv 0.4))

Spare parts :

- Pressure regulator (less sandwich block) : PR47A-G0xx (knob), PR47A-C0xx (screwdriver slot), PR47A-L0xx (screwdriver slot with locknut)
- Gauge: 24177-160 (0 to 10,7 bar, 23 mm)
  24177-100 (0 to 6,7 bar, 23 mm)
  24177-060 (0 to 4 bar, 23 mm)

DIMENSIONS

Dimensions shown are metric (mm)



Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

HOW TO ORDER

NON PLUG-IN SANDWICH REGULATORS (KNOB ADJUSTMENT)

Gauge	Regulator "12" end Internal pilot	Regulator "12" end External pilot
Gauge port	PR48A-BAAA	PR48A-BBAA

PLUG-IN SANDWICH REGULATORS (KNOB ADJUSTMENT)

Gauge	Regulator "12" end Internal pilot	Regulator "12" end External pilot
Gauge port	PR48A-AAAA	PR48A-ABAA

Notes:
- External pilot regulator required only when supply pressure (primary) to the valve is below the minimum operating pressure of the 48 series valve.
- When an internal pilot regulator is used with the 48 series valve, the valve should be ordered as external pilot and the base should be ordered as internal pilot. This ensures that the pilot supply is not regulated. If an internal pilot valve and base are used with an internal pilot regulator, the pilot supply is regulated.

Example: Valve 48A-AM D -AA A -GxxP-xxx with PR48A-AAAA

- Internal pilot option in base
- External pilot option in valve

OPTIONS

Pressure range :

PR48A-*xxx***A**

- **A** 0 to 8 bar
- **B** 0 to 5,3 bar
- **C** 0 to 2 bar

Adjustment for :

Plug-in regulator

PR48A-**A***xxx*

- **A** Knob
- **D** Screwdriver slot
- **G** Screwdriver slot with locknut

Non plug-in regulator

PR48A-**B***xxx*

- **B** Knob
- **E** Screwdriver slot
- **H** Screwdriver slot with locknut

MAC

Series PR48A

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, inert gases
Pressure range :	0 to 8 bar
Regulating range :	0 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
Flow (at 6 bar, ΔP=1bar) :	800 Nl/min (Cv 0,8)

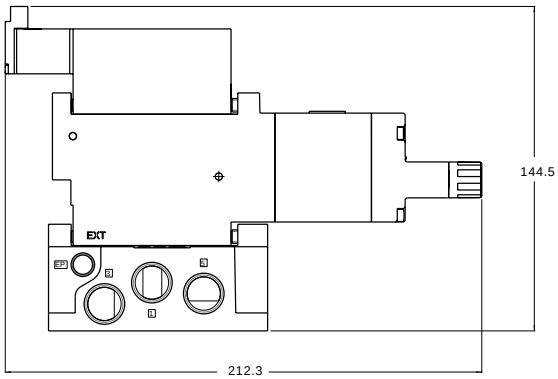
Spare parts :

- Pressure regulator (less sandwich block) : PR48A-C0xx (knob), PR48A-F0xx (screwdriver slot), PR48A-J0xx (screwdriver slot with locknut)
- Gauge: 24177-160 (0 to 10,7 bar, 23 mm)
  24177-100 (0 to 6,7 bar, 23 mm)
  24177-060 (0 to 4 bar, 23 mm)

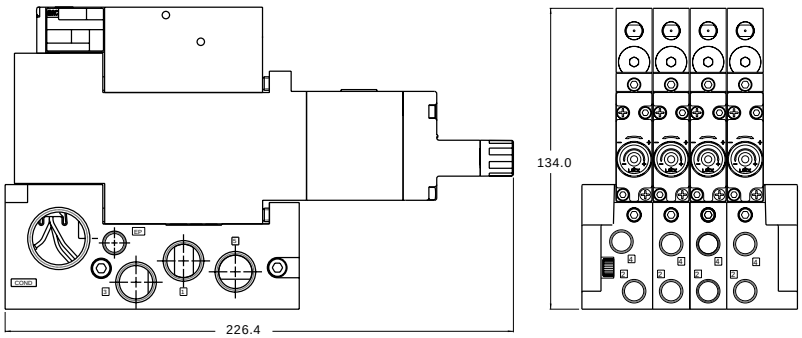
DIMENSIONS

Dimensions shown are metric (mm)

NON PLUG-IN



PLUG-IN



Consult “Precautions” before use, installation or service of MAC Valves..

Sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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.

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR92C-EAAA	PR92C-EBAA	PR92C-ECAA	PR92C-EDAA	PR92C-EEAA
Gauge with face perpendicular to manual operator	PR92C-EABA	PR92C-EBBA	PR92C-ECBA	PR92C-EDBA	PR92C-EEBA
Gauge with face parallel to manual operator	PR92C-EACA	PR92C-EBCA	PR92C-ECCA	PR92C-EDCA	PR92C-EECA

Note: above models are coded for use with single solenoid valves

REGULATORS FOR "PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR92C-GAAA	PR92C-GBAA	PR92C-GCAA	PR92C-GDAA	PR92C-GEAA
Gauge with face perpendicular to manual operator	PR92C-GABA	PR92C-GBBA	PR92C-GCBA	PR92C-GDBA	PR92C-GEBA
Gauge with face parallel to manual operator	PR92C-GACA	PR92C-GBCA	PR92C-GCCA	PR92C-GDCA	PR92C-GECA

* For use with dual pressure valves.

PLUG-IN OPTIONS

PR92C-E*xxx*

F for double solenoid valve

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

Series PR92C

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

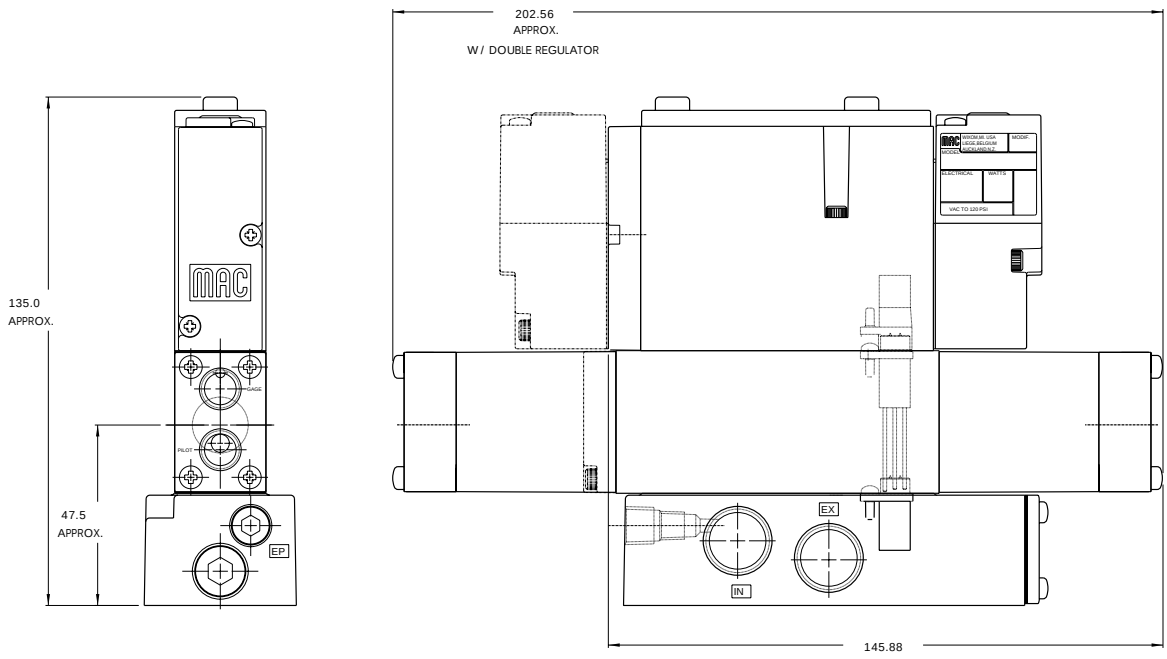
Fluid :	Compressed air, inert gases
Pressure range :	0 to 8 bar
Regulating range :	0 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Flow (at 6 bar, ΔP=1bar) :	800 Nl/min (Cv 0.8)

Spare parts :

- R-92003 : regulator end plate kit • Gauge kit 0 - 10,7 bar: N-92006-01
- R-92003-01: regulator by-pass end plate kit
- Pressure regulator (less sandwich block) : PR92C-H0AA

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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.

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES (CODED FOR KNOB ADJUSTMENT)

Gauge	Select to A port Regulator A end By-pass plate B end	Select to B port Regulator B end By-pass plate A end	Select to A port Reg. both ends A end low press. B end high press.	Select to B port Reg. both ends A end high press. B end low press.
No Gauge	PR92C-JPAA	PR92C-JRAA	PR92C-JSAA	PR92C-JTAA
Gauge with face perpendicular to manual operator	PR92C-JPBA	PR92C-JRBA	PR92C-JSBA	PR92C-JTBA
Gauge with face parallel to manual operator	PR92C-JPCA	PR92C-JRCA	PR92C-JSCA	PR92C-JTCA

Note: above models are coded for use with single solenoid valves

REGULATORS FOR "NON PLUG-IN" VALVES (CODED FOR KNOB ADJUSTMENT)

Gauge	Select to A port Regulator A end By-pass plate B end	Select to B port Regulator B end By-pass plate A end	Select to A port Reg. both ends A end low press. B end high press.	Select to B port Reg. both ends A end high press. B end low press.
No Gauge	PR92C-LPAA	PR92C-LRAA	PR92C-LSAA	PR92C-LTAA
Gauge with face perpendicular to manual operator	PR92C-LPBA	PR92C-LRBA	PR92C-LSBA	PR92C-LTBA
Gauge with face parallel to manual operator	PR92C-LPCA	PR92C-LRCA	PR92C-LSCA	PR92C-LTCA

Notes: - Regulating range for above models is 0 to 8 bar. For other ranges, see technical data page
- Use single pressure valve for all above models.

OPTIONS

Regulator less sandwich block

PR92C-*x*0*xx*

- **M** Knob
- **D** Slotted stem
- **S** Slotted stem with locknut

Other adjustment

PR92C-*xxxx*

- **A** Slotted stem, single solenoid
- **B** Slotted stem, double solenoid
- **C** Slotted stem, non plug-in
- **K** Knob, double solenoid
- **N** Slotted stem w/ locknut, single solenoid
- **P** Slotted stem w/ locknut, double solenoid
- **R** Slotted stem w/ locknut, non plug-in

MAC

Series PR92C

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, inert gases
Pressure range :	0 to 8 bar
Regulating range :	0 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
Flow (at 6 bar, ΔP=1bar):	800 Nl/min (Cv 0.8)

Spare parts :

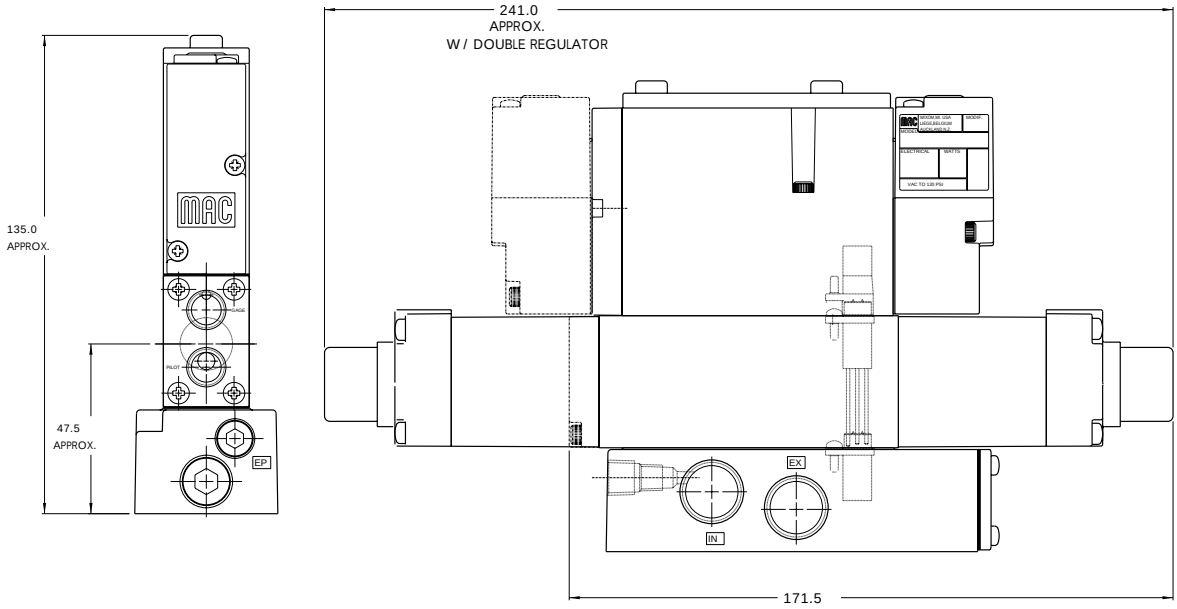
- R-92003 : end plate kit • R-92003-01: by-pass end plate kit
- Gauge kit 0 – 10,7 bar: N-92006-01 • Gauge kit 0 – 6,7 bar: N-92006-02
- Gauge kit 0-4 bar: N-92006-03

Options:

- Pressure range: PR92C-xxxA (A 0 to 8 bar)
  - B 0 to 5,3 bar
  - C 0 to 2 bar
  - D 0 to 8 bar “A” end, 0 to 5,3 bar “B” end
  - E 0 to 8 bar “B” end, 0 to 5,3 bar “A” end
  - F 0 to 8 bar “A” end, 0 to 2 bar “B” end
  - G 0 to 8 bar “B” end, 0 to 2 bar “A” end
  - H 0 to 5,3 bar “A” end, 0 to 2 bar “B” end
  - J 0 to 5,3 bar “B” end, 0 to 2 bar “A” end

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Series PR92C

Series

Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
No Gauge	PR92C-JAAA	PR92C-JBAA	PR92C-JCAA	PR92C-JDAA	PR92C-JEAA
Gauge with face perpendicular to manual operator	PR92C-JABA	PR92C-JBBA	PR92C-JCBA	PR92C-JDBA	PR92C-JEBA
Gauge with face parallel to manual operator	PR92C-JACA	PR92C-JBCA	PR92C-JCCA	PR92C-JDCA	PR92C-JECA

Note: above models are coded for use with single solenoid valves

REGULATORS FOR "PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plulled)	PR92C-LAAA	PR92C-LBAA	PR92C-LCAA	PR92C-LDAA	PR92C-LEAA
Gauge with face perpendicular to manual operator	PR92C-LABA	PR92C-LBBA	PR92C-LCBA	PR92C-LDBA	PR92C-LEBA
Gauge with face parallel to manual operator	PR92C-LACA	PR92C-LBCA	PR92C-LCCA	PR92C-LDCA	PR92C-LECA

* For use with dual pressure valves.
Note: Regulating range for above models is 0 to 8 bar. For other ranges, see technical data page.

OPTIONS

Regulator less sandwich block

PR92C-*x*0*xx*

- **M** Knob
- **D** Slotted stem
- **S** Slotted stem with locknut

Other adjustment

PR92C-*x**xxx*

- **A** Slotted stem, single solenoid
- **B** Slotted stem, double solenoid
- **C** Slotted stem, non plug-in
- **K** Knob, double solenoid
- **N** Slotted stem w/ locknut, single solenoid
- **P** Slotted stem w/ locknut, double solenoid
- **R** Slotted stem w/ locknut, non plug-in

MAC

Series PR92C

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, inert gases
Pressure range :	0 to 8 bar
Regulating range :	0 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
Flow (at 6 bar, ΔP=1bar):	800 Nl/min (Cv 0.8)

Spare parts :

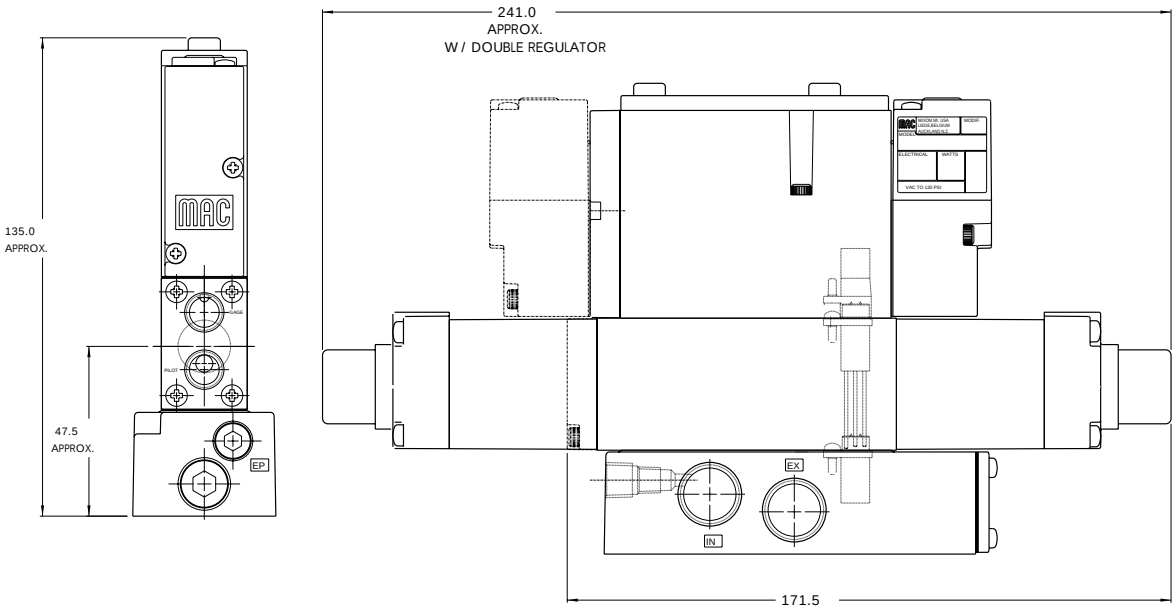
- R-92003 : end plate kit • R-92003-01: by-pass end plate kit
- Gauge kit 0 – 10,7 bar: N-92006-01 • Gauge kit 0 – 6,7 bar: N-92006-02
- Gauge kit 0-4 bar: N-92006-03

Options :

- Pressure range: PR92C-xxxA (A 0 to 8 bar)
  - B 0 to 5,3 bar
  - C 0 to 2 bar
  - D 0 to 8 bar “A” end, 0 to 5,3 bar “B” end
  - E 0 to 8 bar “B” end, 0 to 5,3 bar “A” end
  - F 0 to 8 bar “A” end, 0 to 2 bar “B” end
  - G 0 to 8 bar “B” end, 0 to 2 bar “A” end
  - H 0 to 5,3 bar “A” end, 0 to 2 bar “B” end
  - J 0 to 5,3 bar “B” end, 0 to 2 bar “A” end

DIMENSIONS

Dimensions shown are metric (mm)



Series PR93A

Series

Sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR93A-DAAA	PR93A-DBAA	PR93A-DCAA	PR93A-DDAA	PR93A-DEAA
Gauge with face perpendicular to manual operator	PR93A-DABA	PR93A-DBBA	PR93A-DCBA	PR93A-DDBA	PR93A-DEBA
Gauge with face parallel to manual operator	PR93A-DACA	PR93A-DBCA	PR93A-DCCA	PR93A-DDCA	PR93A-DECA

Note: above models are coded for use with single solenoid valves.

REGULATORS FOR "PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR93A-EAAA	PR93A-EBAA	PR93A-ECAA	PR93A-EDAA	PR93A-EEAA
Gauge with face perpendicular to manual operator	PR93A-EABA	PR93A-EBBA	PR93A-ECBA	PR93A-EDBA	PR93A-EEBA
Gauge with face parallel to manual operator	PR93A-EACA	PR93A-EBCA	PR93A-ECCA	PR93A-EDCA	PR93A-EECA

Note: Above models may be used with either single or double solenoid valves.
* For use with dual pressure valves.

MAC

Series PR93A

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

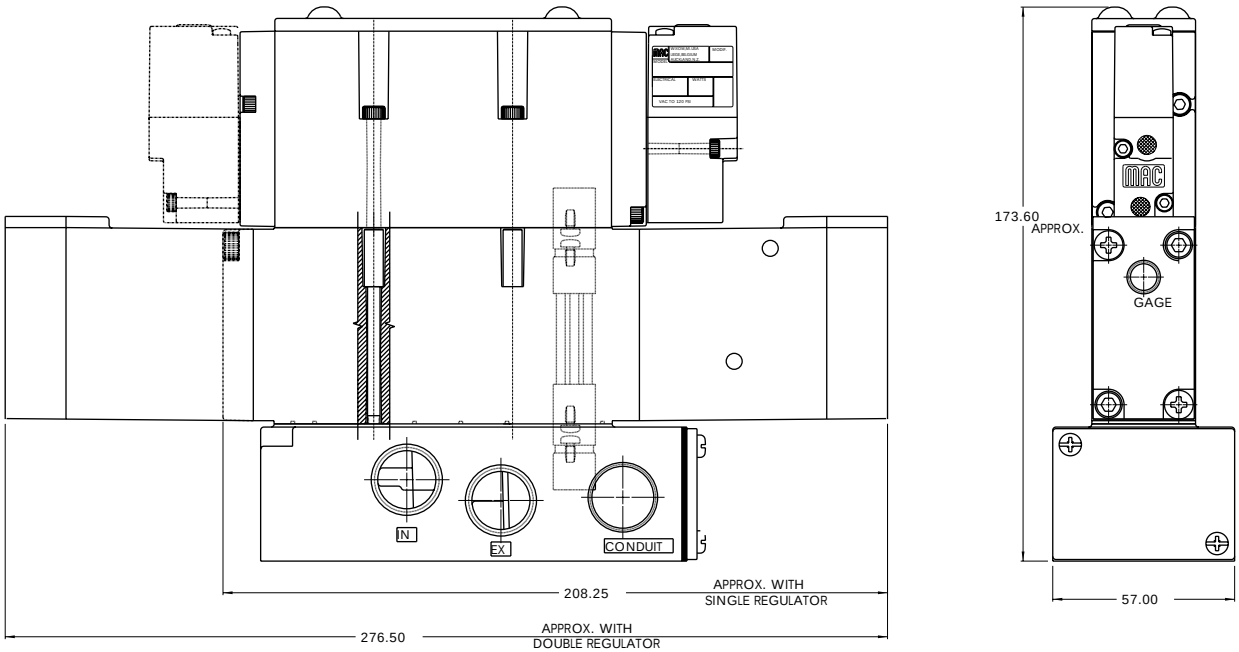
Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Flow (at 6 bar, ΔP=1bar) :	2400 Nl/min (Cv 2.4)

Spare parts :

- Regulator end plate kit: R-93004 • Regulator by-pass end plate kit: R-93004-01
- Gauge kit: N-92006-01 (0 to 10,7 bar)
- Pressure regulator (less sandwich block): PR93A-F0AA

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES (CODED FOR KNOB ADJUSTMENT)

Gauge	Select to A port Regulator A end By-pass plate B end	Select to B port Regulator B end By-pass plate A end	Select to A port Reg. both ends A end low press. B end high press.	Select to B port Reg. both ends A end high press. B end low press.
Gauge port only (plugged)	PR93A-GPAA	PR93A-GRAA	PR93A-GSAA	PR93A-GTAA
Gauge with face perpendicular to manual operator	PR93A-GPBA	PR93A-GRBA	PR93A-GSBA	PR93A-GTBA
Gauge with face parallel to manual operator	PR93A-GPCA	PR93A-GRCA	PR93A-GSCA	PR93A-GTCA

REGULATORS FOR "NON PLUG-IN" VALVES

Gauge	Select to A port Regulator A end By-pass plate B end	Select to B port Regulator B end By-pass plate A end	Select to A port Reg. both ends A end low press. B end high press.	Select to B port Reg. both ends A end high press. B end low press.
Gauge port only (plugged)	PR93A-HPAA	PR93A-HRAA	PR93A-HSAA	PR93A-HTAA
Gauge with face perpendicular to manual operator	PR93A-HPBA	PR93A-HRBA	PR93A-HSBA	PR93A-HTBA
Gauge with face parallel to manual operator	PR93A-HPCA	PR93A-HRCA	PR93A-HSCA	PR93A-HTCA

Notes: - Regulating range for above models is 0 to 8 bar. For other ranges, see technical data page
- Use single pressure valve for all above models.

OPTIONS

Regulator less sandwich block

PR93A-*x*0*xx*

- **J** Knob
- **C** Slotted stem
- **M** Slotted stem with locknut

Other adjustment

PR93A-*xxxx*

- **A** Slotted stem, plug-in
- **B** Slotted stem, non plug-in
- **K** Slotted stem w/ locknut, plug-in
- **L** Slotted stem w/ locknut, non plug-in

Note: Above models may be used with either single or double solenoid valves.

Series PR93A

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 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
Flow (at 6 bar, ΔP=1bar):	2400 Nl/min (Cv 2.4)

Spare parts :

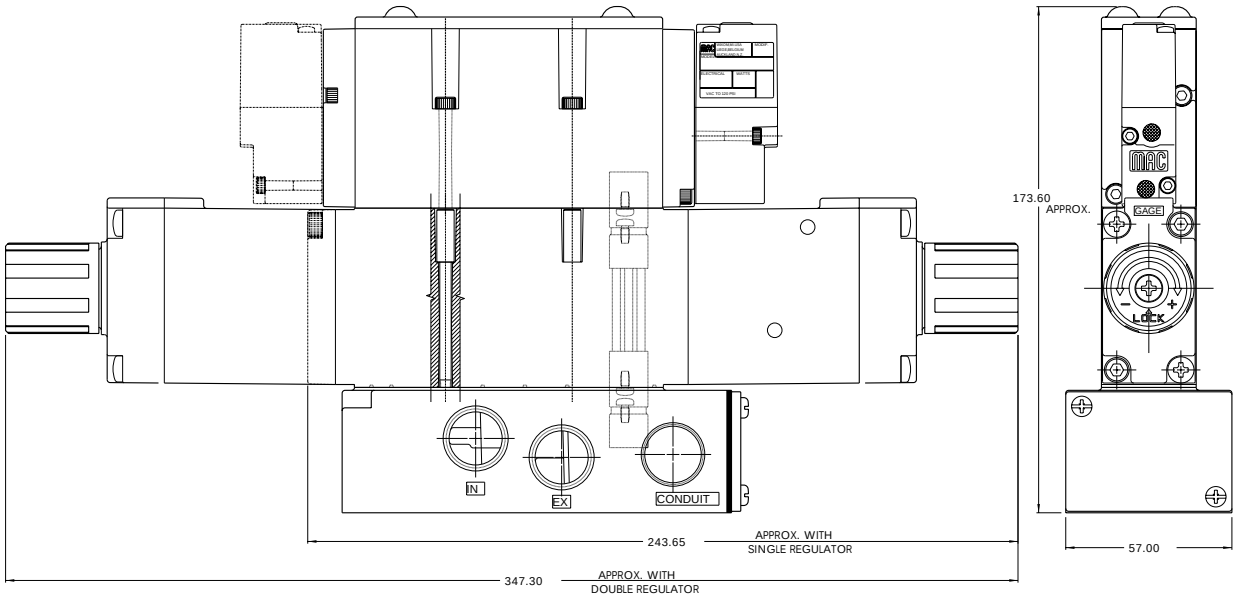
- R-93004 : end plate kit • R-93004-01: by-pass end plate kit
- Gauge kit 0 – 10,7 bar: N-92006-01 • Gauge kit 0 – 6,7 bar: N-92006-02
- Gauge kit 0-4 bar: N-92006-03

Option:

- Pressure range: PR93A-xxxA (A 0 to 8 bar)
  - B 0 to 5,3 bar
  - C 0 to 2 bar
  - D 0 to 8 bar “A” end, 0 to 5,3 bar “B” end
  - E 0 to 8 bar “B” end, 0 to 5,3 bar “A” end
  - F 0 to 8 bar “A” end, 0 to 2 bar “B” end
  - G 0 to 8 bar “B” end, 0 to 2 bar “A” end
  - H 0 to 5,3 bar “A” end, 0 to 2 bar “B” end
  - J 0 to 5,3 bar “B” end, 0 to 2 bar “A” end

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Series PR93A

Series

Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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.

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES (CODED FOR KNOB ADJUSTMENT)

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR93A-GAAA	PR93A-GBAA	PR93A-GCAA	PR93A-GDAA	PR93A-GEAA
Gauge with face perpendicular to manual operator	PR93A-GABA	PR93A-GBBA	PR93A-GCBA	PR93A-GDBA	PR93A-GEBA
Gauge with face parallel to manual operator	PR93A-GACA	PR93A-GBCA	PR93A-GCCA	PR93A-GDCA	PR93A-GECA

Note: above models are coded for use with single solenoid valves.

REGULATORS FOR "NON PLUG-IN" VALVES (CODED FOR KNOB ADJUSTMENT)

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR93A-HAAA	PR93A-HBAA	PR93A-HCAA	PR93A-HDAA	PR93A-HEAA
Gauge with face perpendicular to manual operator	PR93A-HABA	PR93A-HBBA	PR93A-HCBA	PR93A-HDBA	PR93A-HEBA
Gauge with face parallel to manual operator	PR93A-HACA	PR93A-HBCA	PR93A-HCCA	PR93A-HDCA	PR93A-HECA

* For use with dual pressure valves.
Note: Regulating range for above models is 0 to 8 bar. For other ranges, see technical data page.

OPTIONS

Regulator less sandwich block

PR93A-*x*0*xx*

- **J** Knob
- **C** Slotted stem
- **M** Slotted stem with locknut

Other adjustment

PR93A-*x*x*xx*

- **A** Slotted stem, plug-in
- **B** Slotted stem, non plug-in
- **K** Slotted stem w/ locknut, plug-in
- **L** Slotted stem w/ locknut, non plug-in

Note: Above models may be used with either single or double solenoid valves.

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

MAC

Series PR93A

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 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
Flow (at 6 bar, ΔP=1bar):	2400 Nl/min (Cv 2.4)

Spare parts :

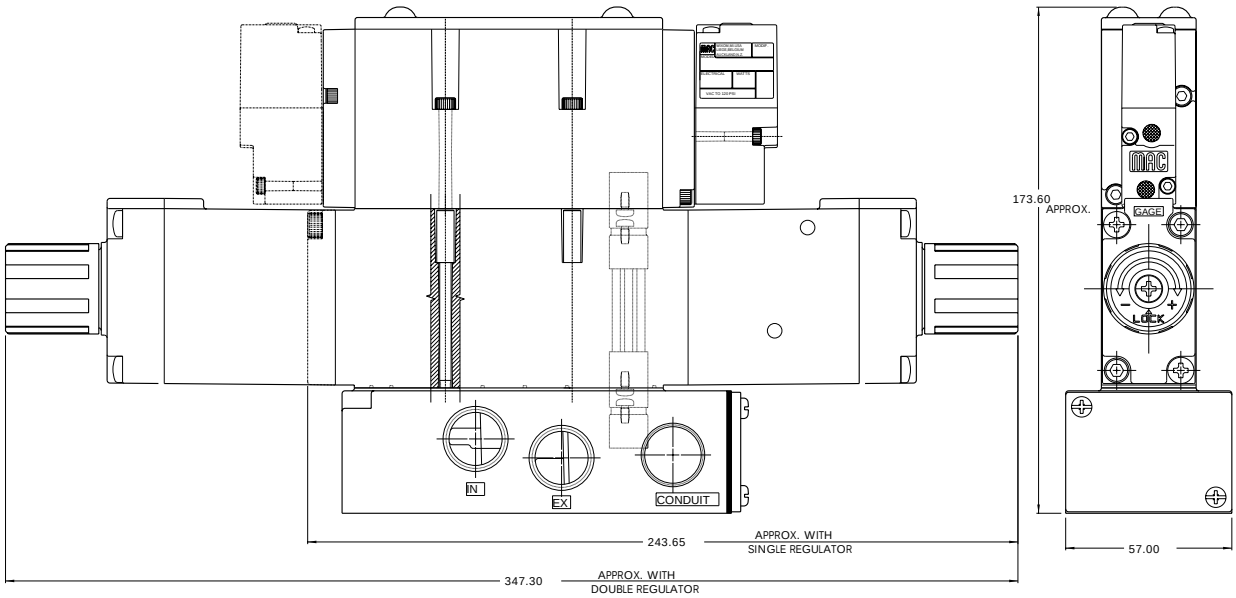
- R-93004 : end plate kit • R-93004-01: by-pass end plate kit
- Gauge kit 0 – 10,7 bar: N-92006-01 • Gauge kit 0 – 6,7 bar: N-92006-02
- Gauge kit 0-4 bar: N-92006-03

Option:

- Pressure range: PR93A-xxxA (A 0 to 8 bar)
  - B 0 to 5,3 bar
  - C 0 to 2 bar
  - D 0 to 8 bar “A” end, 0 to 5,3 bar “B” end
  - E 0 to 8 bar “B” end, 0 to 5,3 bar “A” end
  - F 0 to 8 bar “A” end, 0 to 2 bar “B” end
  - G 0 to 8 bar “B” end, 0 to 2 bar “A” end
  - H 0 to 5,3 bar “A” end, 0 to 2 bar “B” end
  - J 0 to 5,3 bar “B” end, 0 to 2 bar “A” end

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Non plug-in sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

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

HOW TO ORDER

INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA1A-GAAA	PRA1A-GCAA	PRA1A-GBAA	PRA1A-GDAA	PRA1A-GEAA
Gauge perpendicular to regulator(s)	PRA1A-GABA	PRA1A-GCBA	PRA1A-GBBA	PRA1A-GDBA	PRA1A-GECA
Gauge parallel to regulator(s)	PRA1A-GADA	PRA1A-GCDA	PRA1A-GBDA	PRA1A-GDDA	PRA1A-GEEA

EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA1A-HAAA	PRA1A-HCAA	PRA1A-HBAA	PRA1A-HDAA	PRA1A-HEAA
Gauge perpendicular to regulator(s)	PRA1A-HABA	PRA1A-HCBA	PRA1A-HBBA	PRA1A-HDBA	PRA1A-HECA
Gauge parallel to regulator(s)	PRA1A-HADA	PRA1A-HCDA	PRA1A-HBDA	PRA1A-HDDA	PRA1A-HEEA

* - To be used with dual pressure valves.
Note : regulating range for above models is 0-8 bar. For other ranges see technical data page.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block. Cannot field convert regulator block from Single Pressure to dual pressure. Body / Block to base mounting screw #35336.

ADJUSTMENT OPTIONS

PRA1A-*xxxx*

- **A** for slotted stem adjustment (internal pilot)
- **B** for slotted stem adjustment (external / remote air)
- **K** for slotted stem with locknut (internal pilot)
- **L** for slotted stem with locknut (external / remote air)

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

MAC

Series PRA1A

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 8 bar (other ranges see below)
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)
Filtration :	40 µ
Temperature range :	-18°C to 50°C
Flow :	1000 Nl/min (Cv 1.0)

Spare parts :

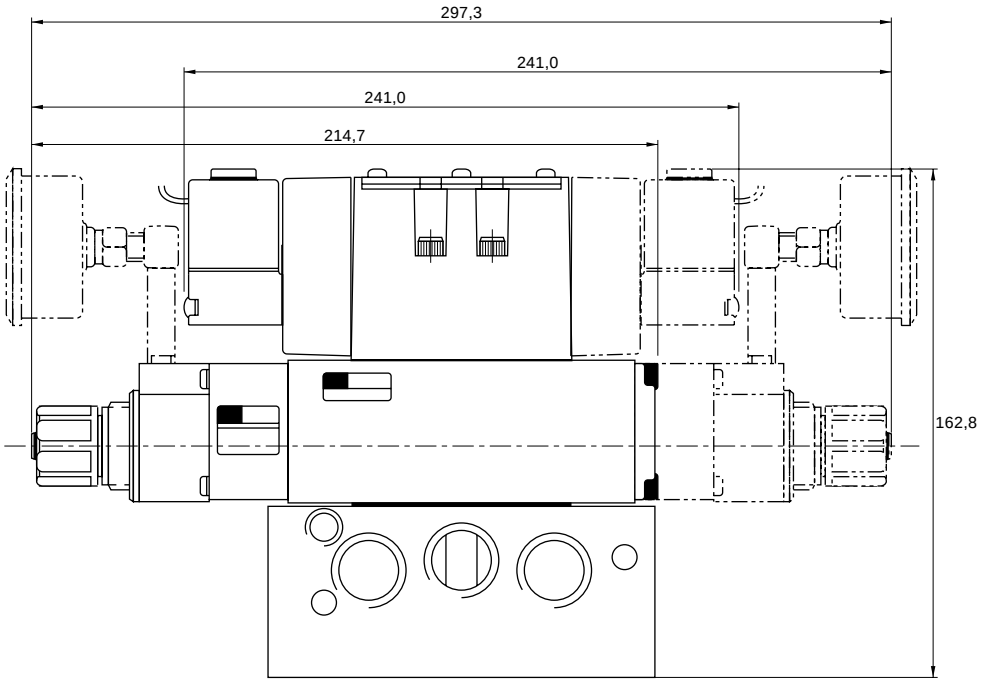
- Pressure regulator (less sandwich block) : PRA1A-J0AA (KNOB), PRA1A-C0AA (SLOTTED STEM), PRA1A-M0AA (SLOTTED STEM WITH LOCKNUT).
- Gauge : N-82016-01 (0-8 bar perpendicular)
  N-82016-02 (0-8 bar parallel)
  N-82016-03 (0-5,3 bar perpendicular)
  N-82016-04 (0-5,3 bar parallel)
  N-82016-05 (0-2 bar perpendicular)
  N-82016-06 (0-2 bar parallel)

Regulating range options : PRA1A-XXXA

Replace by B	· 0 to 5,3 bar
Replace by C	· 0 to 2 bar
Replace by D	· 0 to 8 bar on “14” end · 0 to 5,3 bar on “12” end
Replace by E	· 0 to 8 bar on “12” end · 0 to 5,3 bar on “14” end
Replace by F	· 0 to 8 bar on “14” end · 0 to 2 bar on “12” end
Replace by G	· 0 to 8 bar on “12” end · 0 to 2 bar on “14” end
Replace by H	· 0 to 5,3 bar on “14” end · 0 to 2 bar on “12” end
Replace by J	· 0 to 5,3 bar on “12” end · 0 to 2 bar on “14” end

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Series PRA1A

Series

Non plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

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

HOW TO ORDER

INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA1A-DAAA	PRA1A-DCAA	PRA1A-DBAA	PRA1A-DDAA	PRA1A-DEAA
Gauge perpendicular to regulator(s)	PRA1A-DABA	PRA1A-DCBA	PRA1A-DBBA	PRA1A-DDBA	PRA1A-DECA
Gauge parallel to regulator(s)	PRA1A-DADA	PRA1A-DCDA	PRA1A-DBDA	PRA1A-DDDA	PRA1A-DEEA

EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA1A-EAAA	PRA1A-ECAA	PRA1A-EBAA	PRA1A-EDAA	PRA1A-EEAA
Gauge perpendicular to regulator(s)	PRA1A-EABA	PRA1A-ECBA	PRA1A-EBBA	PRA1A-EDBA	PRA1A-EECA
Gauge parallel to regulator(s)	PRA1A-EADA	PRA1A-ECDA	PRA1A-EBDA	PRA1A-EDDA	PRA1A-EEEA

* - To be used with dual pressure valves.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block. Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #35336.

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

Series PRA1A

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

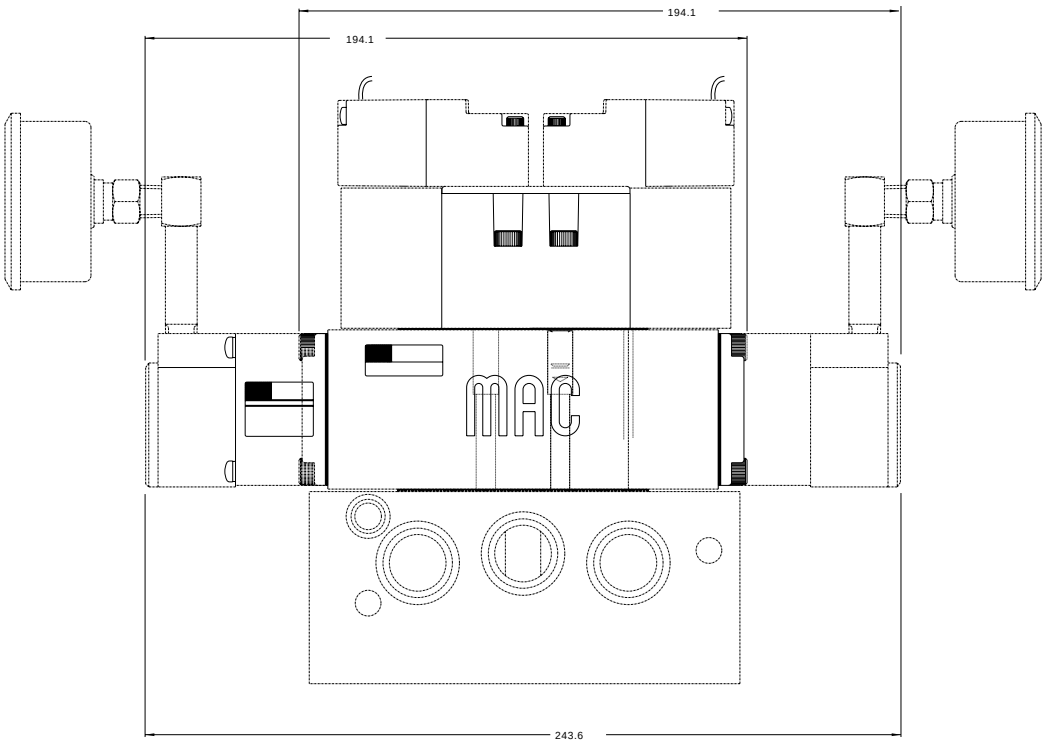
Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)
Filtration :	40 µ
Temperature range :	-18°C to 50°C
Flow :	1000 Nl/min (Cv 1.0)

Spare parts :

- Pressure regulator (less sandwich block) : PRA1A-F0AA.
- Gauge : N-82016-01 (0-8 bar perpendicular)
  N-82016-02 (0-8 bar parallel)

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Plug-in sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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.

HOW TO ORDER

REGULATORS FOR INTERNAL PILOT (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
Gauge port only	PRP1A-GAKA	PRP1A-GCKA	PRP1A-GBKA	PRP1A-GDKA	PRP1A-GEKA
Gauge perpendicular to manual operator	PRP1A-GABA	PRP1A-GCBA	PRP1A-GBBA	PRP1A-GDBA	PRP1A-GECA
Gauge parallel to manual operator	PRP1A-GADA	PRP1A-GCDA	PRP1A-GBDA	PRP1A-GDDA	PRP1A-GEEA

REGULATORS FOR EXTERNAL PILOT AND REMOTE AIR (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP1A-HAKA	PRP1A-HCKA	PRP1A-HBKA	PRP1A-HDKA	PRP1A-HEKA
Gauge perpendicular to manual operator	PRP1A-HABA	PRP1A-HCBA	PRP1A-HBBA	PRP1A-HDBA	PRP1A-HECA
Gauge parallel to manual operator	PRP1A-HADA	PRP1A-HCDA	PRP1A-HBDA	PRP1A-HDDA	PRP1A-HEEA

* For use with dual pressure valves.
Note: Regulating range for above models is 0-8 bar. For other ranges, see technical data page.

ADJUSTMENT OPTIONS

PRP1A-*xxxx*

- **A** for slotted stem adjustment (internal pilot)
- **B** for slotted stem adjustment (external/remote air)
- **K** for slotted stem with locknut (internal pilot)
- **L** for slotted stem with locknut (external/remote air)

Notes:
1. Valves used with above models must be external pilot models.
2. Cannot field convert regulator block from single pressure to dual pressure.
3. Cannot field convert from internal pilot to external pilot.
4. Wired for double solenoid valves.

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

Series PRP1A

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 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
Flow (at 6 bar, ΔP=1bar) :	1100 Nl/min (Cv 1.1)

Spare parts :

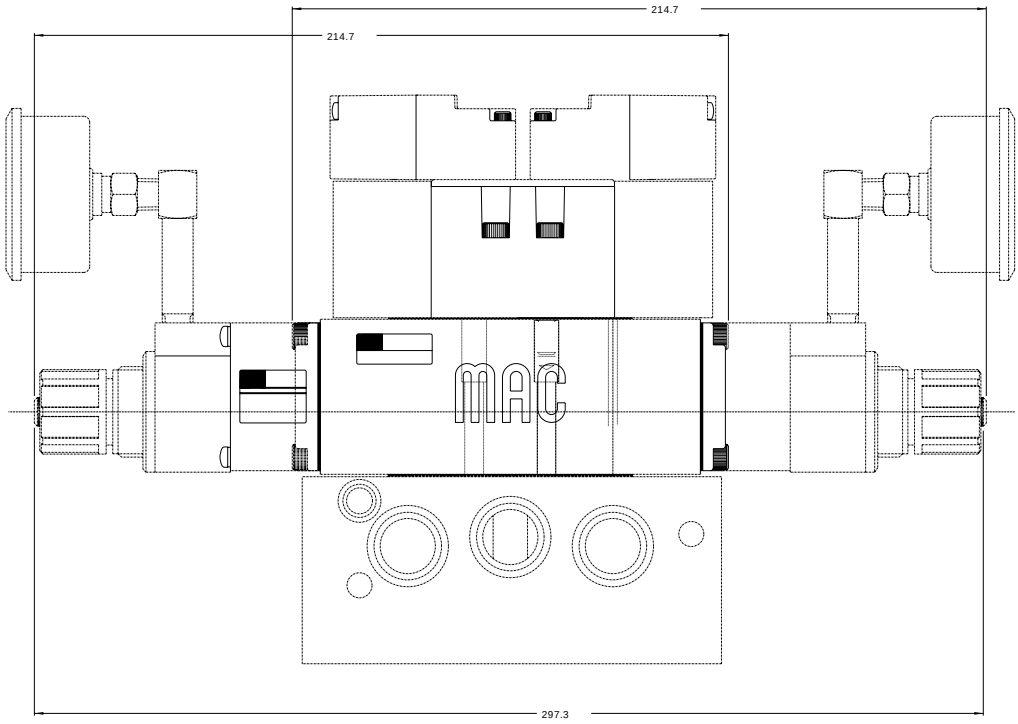
- Pressure regulator (less sandwich block) : PRP1A-J0KA (knob), PRP1A-C0KA (slotted stem) PRP1A-M0KA (slotted stem with locknut)

Regulating range options : PRP1A-XXXA

- Replace by B · 0 to 5,3 bar
- Replace by C · 0 to 2 bar
- Replace by D · 0 to 8 bar on “14” end · 0 to 5,3 bar on “12” end
- Replace by E · 0 to 8 bar on “12” end – 0 to 5,3 bar on “14” end
- Replace by F · 0 to 8 bar on “14” end – 0 to 2 bar on “12” end
- Replace by G · 0 to 8 bar on “12” end – 0 to 2 bar on “14” end
- Replace by H · 0 to 5,3 bar on “14” end – 0 to 2 bar on “12” end
- Replace by J · 0 to 5,3 bar on “12” end – 0 to 2 bar on “14” end

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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.

HOW TO ORDER

REGULATORS FOR INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
Gauge port only	PRP1A-DAKA	PRP1A-DCKA	PRP1A-DBKA	PRP1A-DDKA	PRP1A-DEKA
Gauge perpendicular to manual operator	PRP1A-DABA	PRP1A-DCBA	PRP1A-DBBA	PRP1A-DDBA	PRP1A-DECA
Gauge parallel to manual operator	PRP1A-DADA	PRP1A-DCDA	PRP1A-DBDA	PRP1A-DDDA	PRP1A-DEEA

REGULATORS FOR EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
Gauge port only	PRP1A-EAKA	PRP1A-ECKA	PRP1A-EBKA	PRP1A-EDKA	PRP1A-EEKA
Gauge perpendicular to manual operator	PRP1A-EABA	PRP1A-ECBA	PRP1A-EBBA	PRP1A-EDBA	PRP1A-EECA
Gauge parallel to manual operator	PRP1A-EADA	PRP1A-ECDA	PRP1A-EBDA	PRP1A-EDDA	PRP1A-EEEA

* - To be used with dual pressure valves.

Notes:

1. Valves used with above models must be external pilot models.
2. Cannot field convert regulator block from single pressure to dual pressure.
3. Cannot field convert from internal pilot to external pilot.
4. Wired for double solenoid valves.

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

MAC

Series PRP1A

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

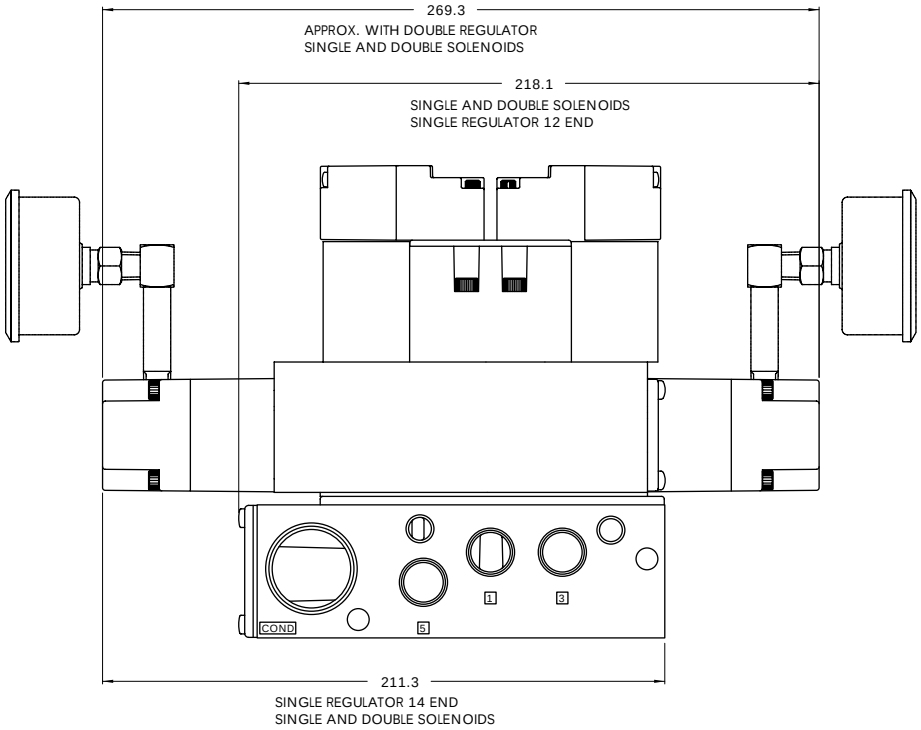
Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Flow (at 6 bar, ΔP=1bar) :	1100 Nl/min (Cv 1.1)

Spare parts :

- Pressure regulator (less sandwich block): PRP1A-F0KA
- Regulator block to base mounting tie rod: 19496

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Non plug-in sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

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

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

HOW TO ORDER

INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA2D-1AAA	PRA2D-1EAA	PRA2D-1BAA	PRA2D-1FAA	PRA2D-1JAA
Non-filled gauge on regulator(s)	PRA2D-1ADA	PRA2D-1EDA	PRA2D-1BDA	PRA2D-1FDA	PRA2D-1JEA
Non-filled gauge opposite to regulator	PRA2D-1CDA	PRA2D-1GDA	PRA2D-1DDA	PRA2D-1HDA	-----
Glycerine filled gauge on regulator(s)	PRA2D-1ABA	PRA2D-1EBA	PRA2D-1BBA	PRA2D-1FBA	PRA2D-1JCA
Glycerine filled gauge opposite to regulator	PRA2D-1CBA	PRA2D-1GBA	PRA2D-1DBA	PRA2D-1HBA	-----

EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA2D-2AAA	PRA2D-2EAA	PRA2D-2BAA	PRA2D-2FAA	PRA2D-2JAA
Non-filled gauge on regulator(s)	PRA2D-2ADA	PRA2D-2EDA	PRA2D-2BDA	PRA2D-2FDA	PRA2D-2JEA
Non-filled gauge opposite to regulator	PRA2D-2CDA	PRA2D-2GDA	PRA2D-2DDA	PRA2D-2HDA	-----
Glycerine filled gauge on regulator(s)	PRA2D-2ABA	PRA2D-2EBA	PRA2D-2BBA	PRA2D-2FBA	PRA2D-2JCA
Glycerine filled gauge opposite to regulator	PRA2D-2CBA	PRA2D-2GBA	PRA2D-2DBA	PRA2D-2HBA	-----

* - To be used with dual pressure valves.
Note : regulating range for above models is 0-10 bar.
For other ranges see technical data page.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block. Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #19177.

ADJUSTMENT OPTIONS

PRA2D-*xxxx*

- **A** for slotted stem adjustment (internal pilot)
- **B** for slotted stem adjustment (external pilot)
- **D** for slotted stem with locknut (internal pilot)
- **E** for slotted stem with locknut (external pilot)

Series PRA 2 D

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 10 bar (other ranges see below)
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)
Filtration :	40 µ
Temperature range :	-18°C to 50°C
Flow :	2300 Nl/min (Cv 2.3)

Spare parts :

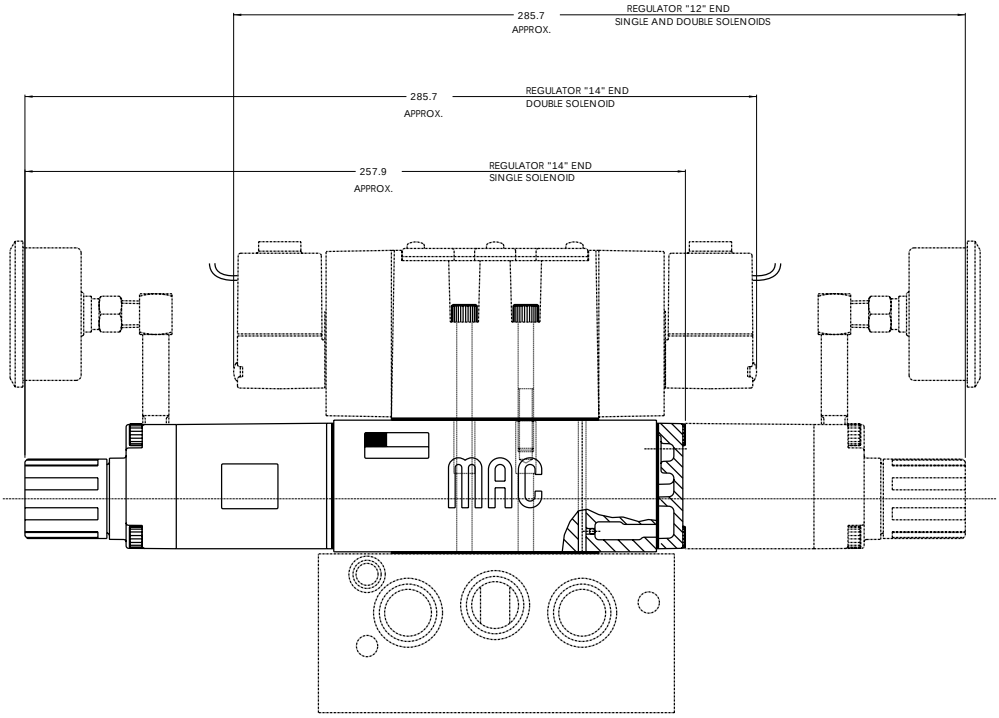
- Pressure regulator (less sandwich block) : PRA2D-30AA (KNOB), PRA2D-C0AA (SLOTTED STEM), PRA2D-F0AA (SLOTTED STEM WITH LOCKNUT).
- Gauge : • Glycerine filled : N-62015-01
  • Non filled : N-62016-01

Regulating range options : PRA2D-XXXA

- Replace by B - 0 to 6,7 bar
- Replace by C - 0 to 3 bar

DIMENSIONS

Dimensions shown are metric (mm)



Consult "Precautions" before use, installation or service of MAC Valves..

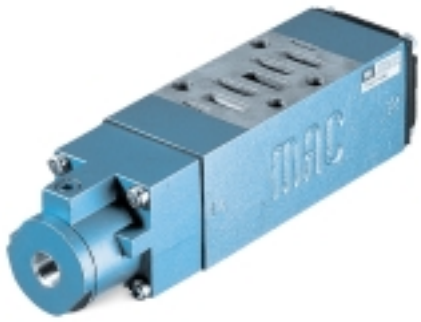
Series PRA2D

Series

Non plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

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



HOW TO ORDER

INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA2D-4AAA	PRA2D-4EAA	PRA2D-4BAA	PRA2D-4FAA	PRA2D-4JAA
Non-filled gauge on regulator(s)	PRA2D-4ADA	PRA2D-4EDA	PRA2D-4BDA	PRA2D-4FDA	PRA2D-4JEA
Non-filled gauge opposite to regulator	PRA2D-4CDA	PRA2D-4GDA	PRA2D-4DDA	PRA2D-4HDA	-----
Glycerine filled gauge on regulator(s)	PRA2D-4ABA	PRA2D-4EBA	PRA2D-4BBA	PRA2D-4FBA	PRA2D-4JCA
Glycerine filled gauge opposite to regulator	PRA2D-4CBA	PRA2D-4GBA	PRA2D-4DBA	PRA2D-4HBA	-----

EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA2D-5AAA	PRA2D-5EAA	PRA2D-5BAA	PRA2D-5FAA	PRA2D-5JAA
Non-filled gauge on regulator(s)	PRA2D-5ADA	PRA2D-5EDA	PRA2D-5BDA	PRA2D-5FDA	PRA2D-5JEA
Non-filled gauge opposite to regulator	PRA2D-5CDA	PRA2D-5GDA	PRA2D-5DDA	PRA2D-5HDA	-----
Glycerine filled gauge on regulator(s)	PRA2D-5ABA	PRA2D-5EBA	PRA2D-5BBA	PRA2D-5FBA	PRA2D-5JCA
Glycerine filled gauge opposite to regulator	PRA2D-5CBA	PRA2D-5GBA	PRA2D-5DBA	PRA2D-5HBA	-----

* - To be used with dual pressure valves.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block. Cannot field convert regulator block from Single Pressure to dual pressure. Body / Block to base mounting screw #19177.

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

Series PRA2D

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

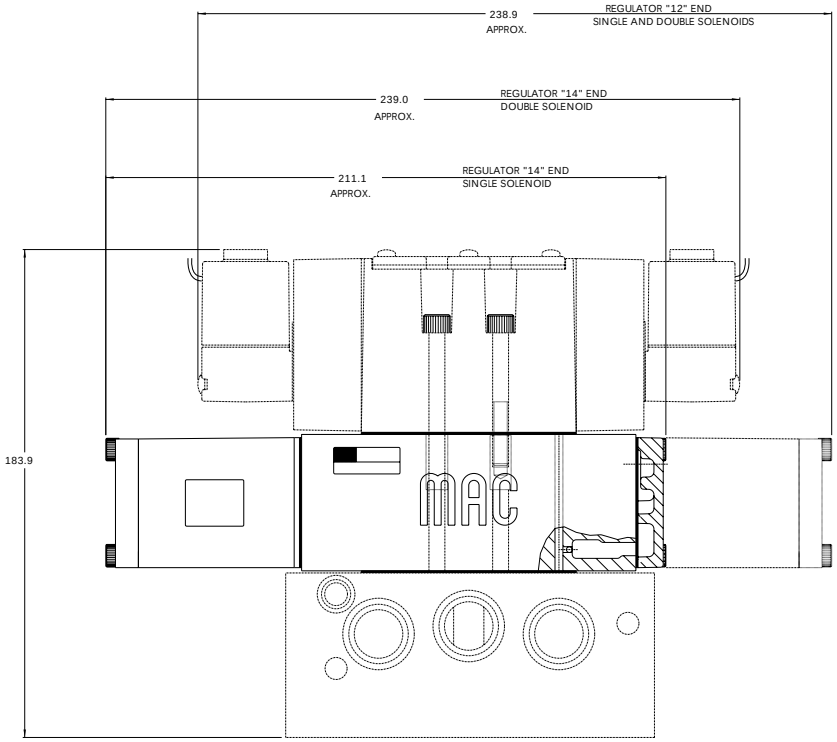
Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 10 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)
Filtration :	40 µ
Temperature range :	-18°C to 50°C
Flow :	2300 Nl/min (Cv 2.3)

Spare parts :

- Pressure regulator (less sandwich block) : PRA2D-60AA.
- Gauge :
  - Glycerine filled : N-62015-01
  - Non filled : N-62016-01

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Plug-in sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

HOW TO ORDER

REGULATORS FOR INTERNAL PILOT (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP2B-AAAA	PRP2B-AEAA	PRP2B-ABAA	PRP2B-AFAA	PRP2B-AJAA
Glycerine gauge	PRP2B-AABA	PRP2B-AEBA	PRP2B-ABBA	PRP2B-AFBA	PRP2B-AJCA
Non-filled gauge	PRP2B-AADA	PRP2B-AEDA	PRP2B-ABDA	PRP2B-AFDA	PRP2B-AJEA

REGULATORS FOR EXTERNAL PILOT AND REMOTE AIR (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP2B-BAAA	PRP2B-BEAA	PRP2B-BBAA	PRP2B-BFAA	PRP2B-BJAA
Glycerine gauge	PRP2B-BABA	PRP2B-BEBA	PRP2B-BBBA	PRP2B-BFBA	PRP2B-BJCA
Non-filled gauge	PRP2B-BADA	PRP2B-BEDA	PRP2B-BBDA	PRP2B-BFDA	PRP2B-BJEA

* For use with dual pressure valves.
Note: Regulating range for above models is 0-10 bar. For other ranges, see technical data page.

ADJUSTMENT OPTIONS

PRP1A-*xxxx*

- **G** for slotted stem (internal pilot)
- **H** for slotted stem (external pilot)
- **K** for slotted stem with locknut (internal pilot)
- **L** for slotted stem with locknut (external pilot)

Notes:
1. Valves used with above models must be external pilot models.
2. Cannot field convert regulator block from single pressure to dual pressure.
3. Cannot field convert from internal pilot to external pilot.
4. Wired for double solenoid valves.

Series PRP 2 B

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

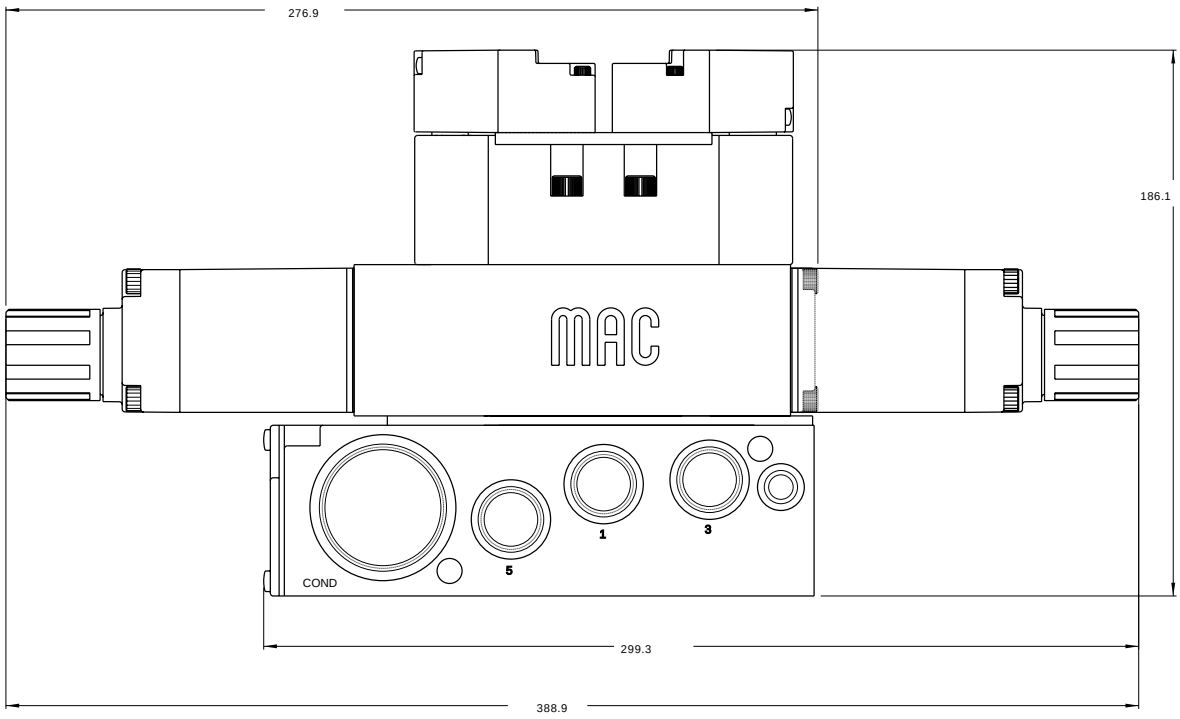
Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 10 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Flow (at 6 bar, ΔP=1bar)	3100 Nl/min (Cv 3.1)

Spare parts :

- Pressure regulator (less sandwich block) PRP2B-C0AA (knob), PRP2B-J0AA (slotted stem), PRP2B-M0AA (slotted stem with locknut)
- Regulator block to base mounting screw: 19177
- Regulating range option: PRP2B-xxxA
  - Replace by B for 0 to 6,7 bar
  - Replace by C for 0 to 3 bar

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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.

HOW TO ORDER

REGULATORS FOR INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP2B-DAAA	PRP2B-DEAA	PRP2B-DBAA	PRP2B-DFAA	PRP2B-DJAA
Glycerine gauge	PRP2B-DABA	PRP2B-DEBA	PRP2B-DBBA	PRP2B-DFBA	PRP2B-DJCA
Non-filled gauge	PRP2B-DADA	PRP2B-DEDA	PRP2B-DBDA	PRP2B-DFDA	PRP2B-DJEA

REGULATORS FOR EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP2B-EAAA	PRP2B-EEAA	PRP2B-EBAA	PRP2B-EFAA	PRP2B-EJAA
Glycerine gauge	PRP2B-EABA	PRP2B-EEBA	PRP2B-EBBA	PRP2B-EFBA	PRP2B-EJCA
Non-filled gauge	PRP2B-EADA	PRP2B-EEDA	PRP2B-EBDA	PRP2B-EFDA	PRP2B-EJEA

* - To be used with dual pressure valves.

Notes:

1. Valves used with above models must be external pilot models.
2. Cannot field convert regulator block from single pressure to dual pressure.
3. Cannot field convert from internal pilot to external pilot.
4. Wired for double solenoid valves.

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

Series PRP 2 B

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

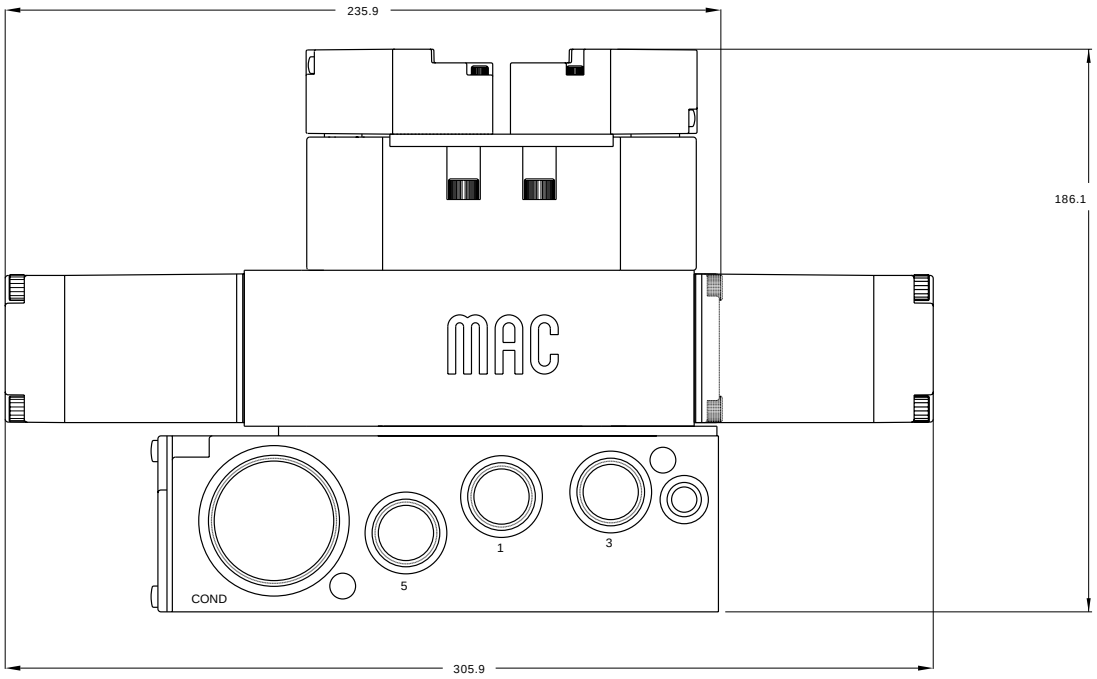
Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 10 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Flow (at 6 bar, ΔP=1bar) :	3100 Nl/min (Cv 3.1)

Spare parts :

- Pressure regulator (less sandwich block): PRP2B-F0AA
- Body/block to base mounting screw: 19177

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Series PRA3C

Series

Non plug-in sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

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

HOW TO ORDER

INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA3C-1AAA	PRA3C-1EAA	PRA3C-1BAA	PRA3C-1FAA	PRA3C-1JAA
Non-filled gauge on regulator(s)	PRA3C-1ADA	PRA3C-1EDA	PRA3C-1BDA	PRA3C-1FDA	PRA3C-1JEA
Non-filled gauge opposite to regulator	PRA3C-1CDA	PRA3C-1GDA	PRA3C-1DDA	PRA3C-1HDA	-----
Glycerine filled gauge on regulator(s)	PRA3C-1ABA	PRA3C-1EBA	PRA3C-1BBA	PRA3C-1FBA	PRA3C-1JCA
Glycerine filled gauge opposite to regulator	PRA3C-1CBA	PRA3C-1GBA	PRA3C-1DBA	PRA3C-1HBA	-----

EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA3C-2AAA	PRA3C-2EAA	PRA3C-2BAA	PRA3C-2FAA	PRA3C-2JAA
Non-filled gauge on regulator(s)	PRA3C-2ADA	PRA3C-2EDA	PRA3C-2BDA	PRA3C-2FDA	PRA3C-2JEA
Non-filled gauge opposite to regulator	PRA3C-2CDA	PRA3C-2GDA	PRA3C-2DDA	PRA3C-2HDA	-----
Glycerine filled gauge on regulator(s)	PRA3C-2ABA	PRA3C-2EBA	PRA3C-2BBA	PRA3C-2FBA	PRA3C-2JCA
Glycerine filled gauge opposite to regulator	PRA3C-2CBA	PRA3C-2GBA	PRA3C-2DBA	PRA3C-2HBA	-----

* - To be used with dual pressure valves.
Note : regulating range for above models is 0-10 bar.
For other ranges see technical data page.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block. Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #35418.

ADJUSTMENT OPTIONS

PRA3C-*xxxx*

- **A** for slotted stem adjustment (internal pilot)
- **B** for slotted stem adjustment (external pilot)
- **D** for slotted stem with locknut (internal pilot)
- **E** for slotted stem with locknut (external pilot)

Consult “Precautions” before use, installation or service of MAC Valves..

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

Series PRA3C

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 10 bar (other ranges see below)
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)
Filtration :	40 µ
Temperature range :	-18°C to 50°C
Flow :	5400 Nl/min (Cv 5.4)

Spare parts :

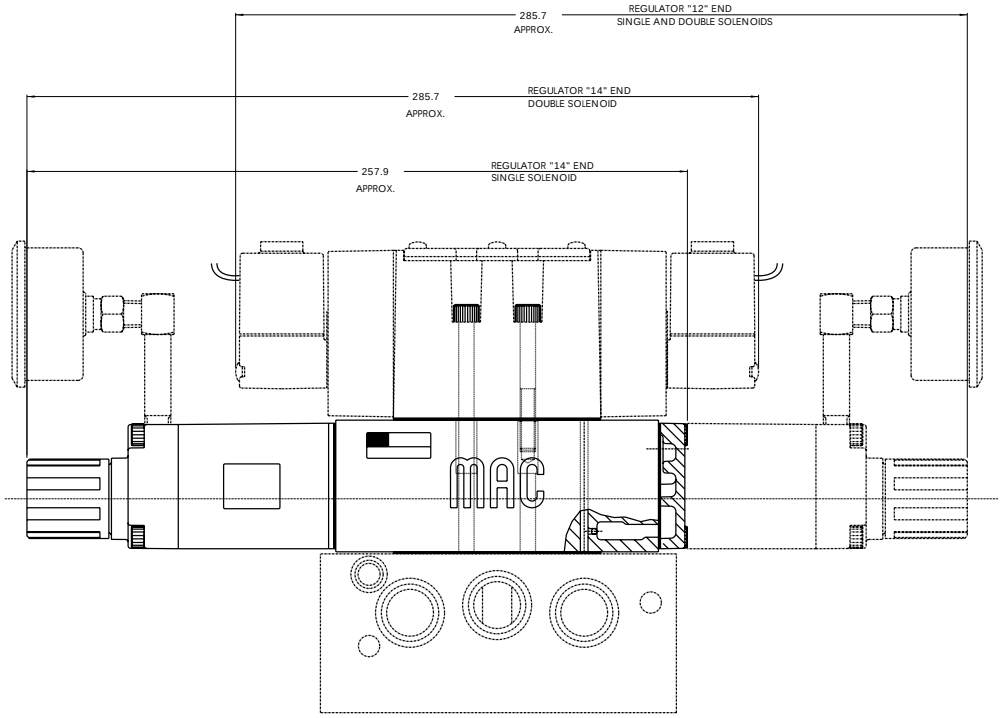
- Pressure regulator (less sandwich block) : PRA3C-30AA (KNOB), PRA3C-C0AA (SLOTTED STEM), PRA3C-F0AA (SLOTTED STEM WITH LOCKNUT).
- Gauge : • Glycerine filled : N-62015-01
  • Non filled : N-62016-01

Regulating range options : PRA3C-XXXA

- Replace by B - 0 to 6,7 bar
- Replace by C - 0 to 3 bar

DIMENSIONS

Dimensions shown are metric (mm)



Consult "Precautions" before use, installation or service of MAC Valves..

Non plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

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

HOW TO ORDER

INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA3C-4AAA	PRA3C-4EAA	PRA3C-4BAA	PRA3C-4FAA	PRA3C-4JAA
Non-filled gauge on regulator(s)	PRA3C-4ADA	PRA3C-4EDA	PRA3C-4BDA	PRA3C-4FDA	PRA3C-4JEA
Non-filled gauge opposite to regulator	PRA3C-4CDA	PRA3C-4GDA	PRA3C-4DDA	PRA3C-4HDA	-----
Glycerine filled gauge on regulator(s)	PRA3C-4ABA	PRA3C-4EBA	PRA3C-4BBA	PRA3C-4FBA	PRA3C-4JCA
Glycerine filled gauge opposite to regulator	PRA3C-4CBA	PRA3C-4GBA	PRA3C-4DBA	PRA3C-4HBA	-----

EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA3C-5AAA	PRA3C-5EAA	PRA3C-5BAA	PRA3C-5FAA	PRA3C-5JAA
Non-filled gauge on regulator(s)	PRA3C-5ADA	PRA3C-5EDA	PRA3C-5BDA	PRA3C-5FDA	PRA3C-5JEA
Non-filled gauge opposite to regulator	PRA3C-5CDA	PRA3C-5GDA	PRA3C-5DDA	PRA3C-5HDA	-----
Glycerine filled gauge on regulator(s)	PRA3C-5ABA	PRA3C-5EBA	PRA3C-5BBA	PRA3C-5FBA	PRA3C-5JCA
Glycerine filled gauge opposite to regulator	PRA3C-5CBA	PRA3C-5GBA	PRA3C-5DBA	PRA3C-5HBA	-----

* - To be used with dual pressure valves.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block. Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #35418.

PR37A
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

Series PRA3C

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

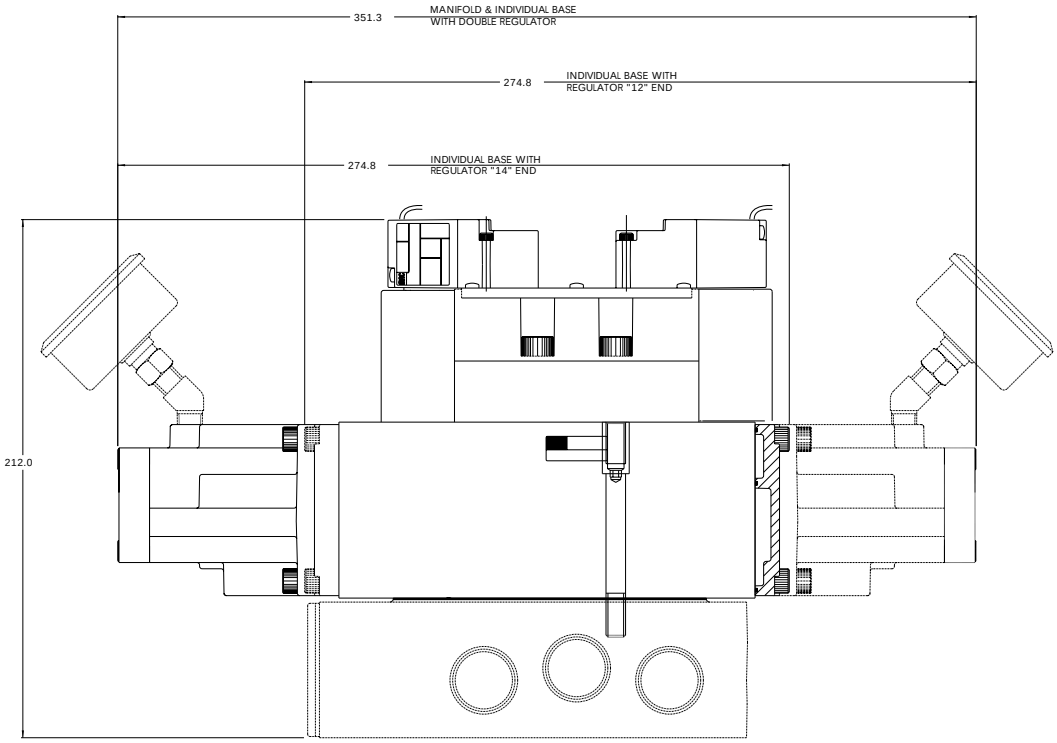
Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 10 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)
Filtration :	40 µ
Temperature range :	-18°C to 50°C
Flow :	5400 Nl/min (Cv 5.4)

Spare parts :

- Pressure regulator (less sandwich block) : PRA3C-60AA.
- Gauge :
  - Glycerine filled : N-62015-01
  - Non filled : N-62016-01

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Plug-in sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C

HOW TO ORDER

REGULATORS FOR INTERNAL PILOT (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP3B-AAAA	PRP3B-AEAA	PRP3B-ABAA	PRP3B-AFAA	PRP3B-AJAA
Glycerine gauge	PRP3B-AABA	PRP3B-AEBA	PRP3B-ABBA	PRP3B-AFBA	PRP3B-AJCA
Non-filled gauge	PRP3B-AADA	PRP3B-AEDA	PRP3B-ABDA	PRP3B-AFDA	PRP3B-AJEA

REGULATORS FOR EXTERNAL PILOT AND REMOTE AIR (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP3B-BAAA	PRP3B-BEAA	PRP3B-BBAA	PRP3B-BFAA	PRP3B-BJAA
Glycerine gauge	PRP3B-BABA	PRP3B-BEBA	PRP3B-BBBA	PRP3B-BFBA	PRP3B-BJCA
Non-filled gauge	PRP3B-BADA	PRP3B-BEDA	PRP3B-BBDA	PRP3B-BFDA	PRP3B-BJEA

* For use with dual pressure valves.

ADJUSTMENT OPTIONS

PRP3B-*xxxx*

- **G** for slotted stem (internal pilot)
- **H** for slotted stem (external pilot)
- **K** for slotted stem with locknut (internal pilot)
- **L** for slotted stem with locknut (external pilot)

Notes:
1. Regulating range for above models is 0-10 bar. For other ranges, see technical data page.
2. Valves used with above models must be external pilot models.
3. Cannot field convert regulator block from single pressure to dual pressure.
4. Cannot field convert from internal pilot to external pilot.
5. Wired for double solenoid valves.

MAC

Series PRP 3 B

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

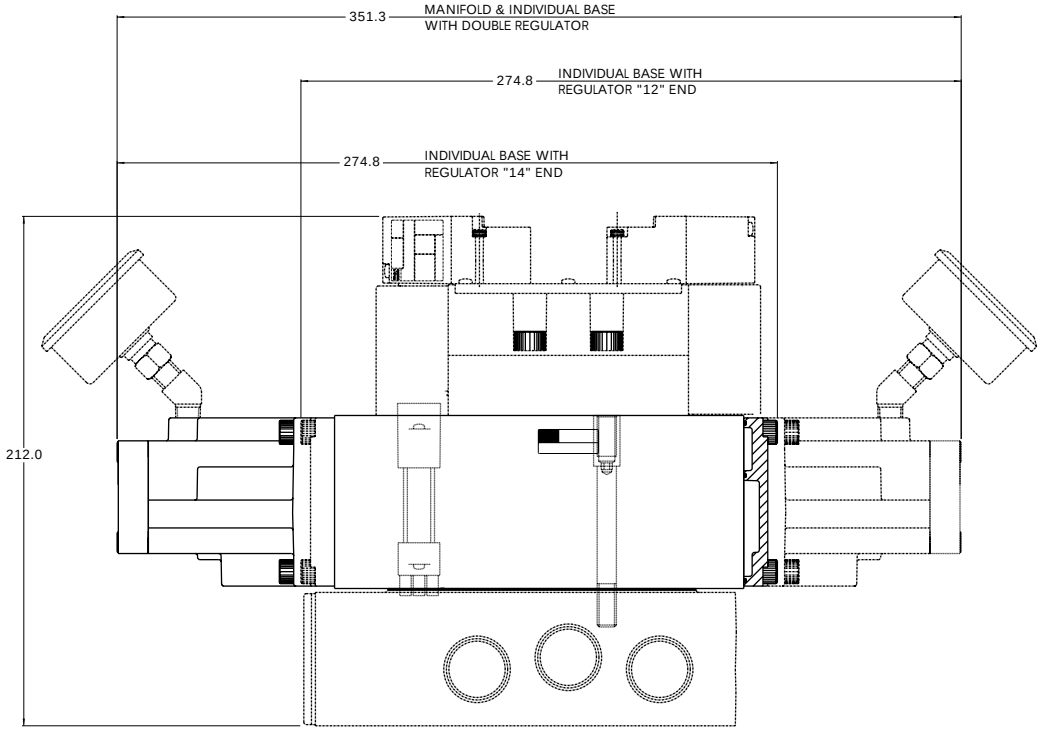
Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 10 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Flow (at 6 bar, ΔP=1bar)	5400 Nl/min (Cv 5.4)

Spare parts :

- Pressure regulator (less sandwich block): PRP3B-C0AA (knob), PRP3B-J0AA (slotted stem), PRP3B-M0AA (slotted stem with locknut)
- Regulating block to base mounting screw: 19457
- Regulating range options: PRP3B-xxxA
  - Replace by B for 0 to 6,7 bar
  - Replace by C for 0 to 3 bar

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..

Plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

1. Easy mounting: saves on installation costs 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
PR42A
PR47A
PR48A
PR92C
PR93A
PRA1A
PRP1A
PRA2D
PRP2B
PRA3C
PRP3B

HOW TO ORDER

REGULATORS FOR INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP3B-DAAA	PRP3B-DEAA	PRP3B-DBAA	PRP3B-DFAA	PRP3B-DJAA
Glycerine gauge	PRP3B-DABA	PRP3B-DEBA	PRP3B-DBBA	PRP3B-DFBA	PRP3B-DJCA
Non-filled gauge	PRP3B-DADA	PRP3B-DEDA	PRP3B-DBDA	PRP3B-DFDA	PRP3B-DJEA

REGULATORS FOR EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP3B-EAAA	PRP3B-EEAA	PRP3B-EBAA	PRP3B-EFAA	PRP3B-EJAA
Glycerine gauge	PRP3B-EABA	PRP3B-EEBA	PRP3B-EBBA	PRP3B-EFBA	PRP3B-EJCA
Non-filled gauge	PRP3B-EADA	PRP3B-EEDA	PRP3B-EBDA	PRP3B-EFDA	PRP3B-EJEA

* - To be used with dual pressure valves.

Notes:

1. Valves used with above models must be external pilot models.
2. Cannot field convert regulator block from single pressure to dual pressure.
3. Cannot field convert from internal pilot to external pilot.
4. Wired for double solenoid valves.

Series PRP 3 B

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

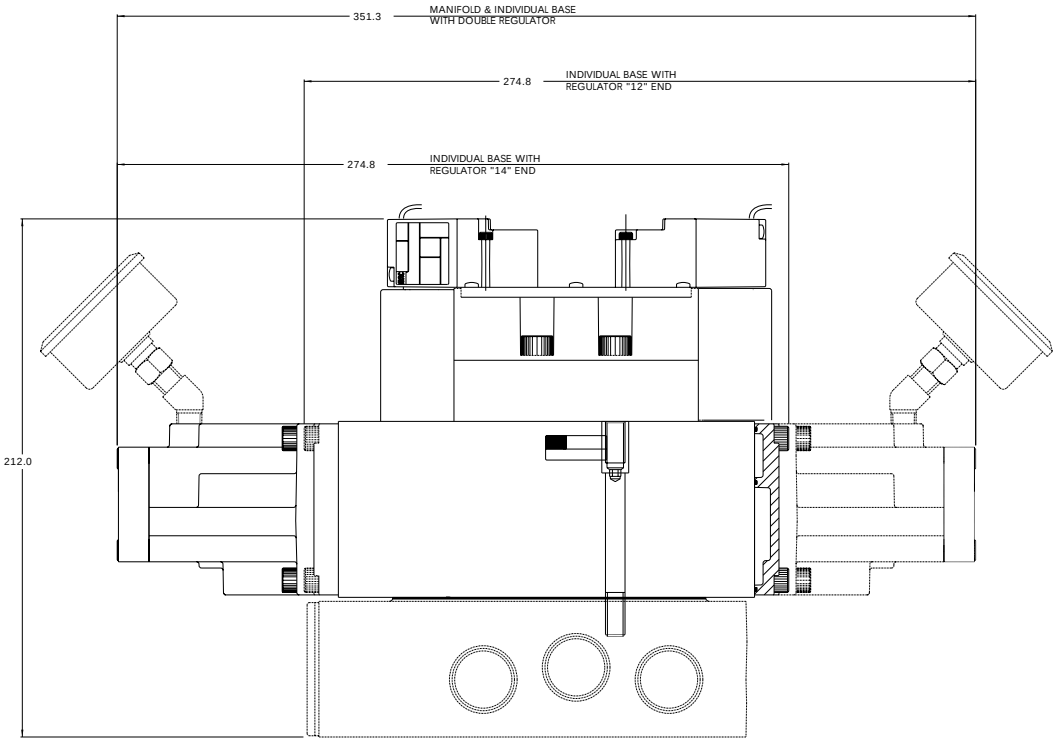
Fluid :	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 10 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Flow (at 6 bar, ΔP=1bar) :	5400 Nl/min (Cv 5.4)

Spare parts :

- Pressure regulator (less sandwich block): PRP3B-F0AA
- Regulator block to base mounting screw: 19457

DIMENSIONS

Dimensions shown are metric (mm)



Consult “Precautions” before use, installation or service of MAC Valves..