



# Introduction

Section	1	Direct	solenoid	and	solenoid	pilot o	perated	valves
36661611	I		301011010	and	301011010	photo	poratoa	varvos

Section 2 Remote air valves

Section 3 Bases according to ISO 5599

Section 4 Pressure regulators

**Precautions** 



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 - compact packaging

- speed - modularity

- repeatability - specific application modifications

- non lube service - low wattage

- ease of maintenance - 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.

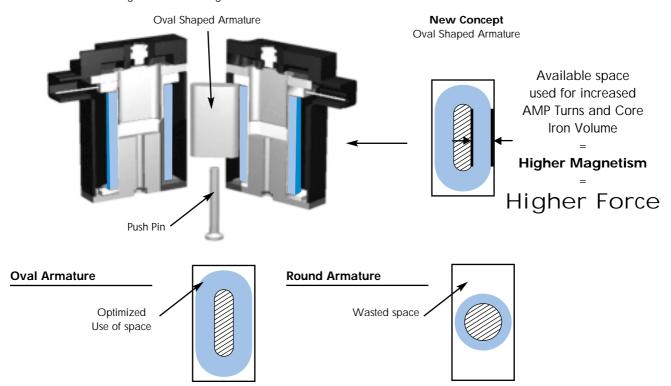
The patented Latching Solenoid is another new offering to the MAC product line. The latching solenoid provides the function of a double solenoid operated valve utilizing only one solenoid.

### 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

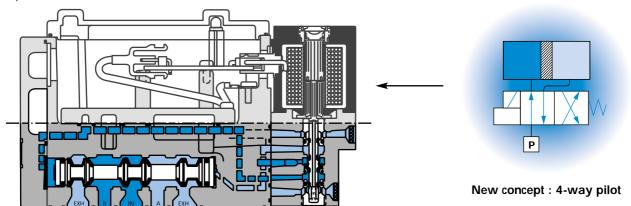
With more amp turns and core iron than conventional round armature designs, more shifting force is available to shift through contaminated air resulting in reliable shifting valves.





### 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.

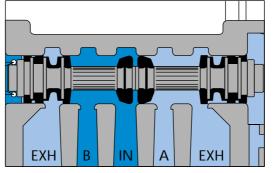


### III. MAC'SPATENDED BONDED SPOOL AND BORE - Balanced, Wiping Actin, Minimized Friction

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.

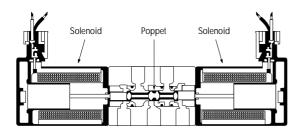


Figure 1 : Double Solenoid Poppet

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.

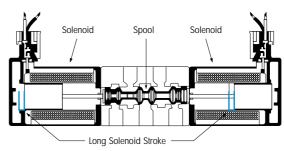


Figure 2 : Double Solenoid Spool Design

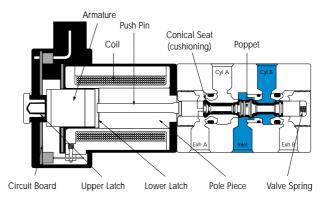


Figure 3 : Latching Solenoid Design

### 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.

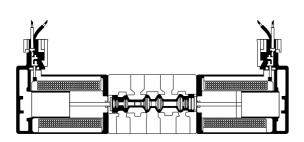
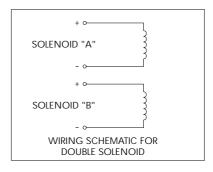


Figure 4 : Conventional Double Solenoid





#### **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.

#### 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.

Red/Black Stripe
Red
Yellow
Yellow/Black Stripe

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

(+) POS IN→A · Yellow

(+) POS IN→A · Yellow

(+) POS IN→B · Red

(-) NEG IN→A

Yellow/W/Black Stripe

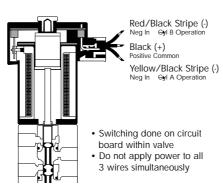
(-) NEG IN→B

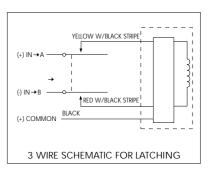
Red/W/Black Stripe

4 WIRE SCHEMATIC FOR LATCHING

Figure 6 : Three Wire Latching

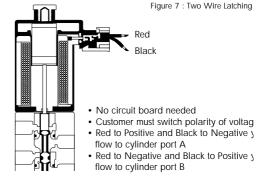
Figure 5 : Four Wire Latching





#### 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".



### **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.



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







#### 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.

- <u>Direct solenoid valves 3 ways :</u> universal The following functions are available
  - 3 ways NC
  - 3 ways NO
  - 2 ways NC - 2 ways NO
  - Selector
  - 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)

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 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) NI/min	Individual m	nounting						Manifold n	nounting										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" with pressure regu- lators	"plug-in" with	Manifold base "plug-in" with PR & FC	non "plug-in"	"plug-in"	Jub-base	Sub-base "plug-in"	Valve only – No base non "plug-in" Conform to ISO 5599/1	Conform to	
3/2 - 2/2	M5	120																			34
3/2	G1/8"	300																			36
3/2	G1/8" - M5	300																			30
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																			40
5/2 - 5/3	M5 - M7	400																			12
5/2	M5 - M7	400																			42
5/2	G1/8" - G1/4"	500																			47
5/2 - 5/3	G1/8"	1100																			
5/2	G1/8"	1100																			48
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
	G1/4" - G3/8"	1200																			92
5/2 - 5/3	G3/8" - G1/2"	3800																			93
	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



# Individual mounting Series

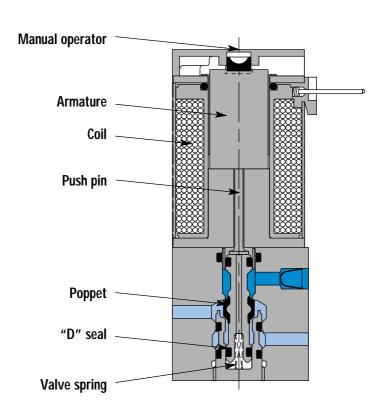
34

67 44

47

ISO 1 ISO 2

Inline



### **SERIES FEATURES**

- High force MACSOLENOID  $^{\circ}$  .
- · 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.

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



Function	Port size	Flow (	Max)	Individual ı	mounting		Series
3/2 NO-NC, 2/2 NO-NC	M5	120	NI/min	Inline			
OPERATIONAL BENEFITS							34
<ol> <li>1. 10 mm valve, direct solenoid oper</li> <li>2. Balanced poppet, immune to varia pressure.</li> <li>3. Short stroke with high flow.</li> </ol>							36
<ol> <li>Patented solenoid develops high storces.</li> </ol>	hifting						32
<ul><li>5. Powerful return spring.</li><li>6. Manual operator standard on all v</li></ul>	alves.					A ship is	37
						0	38 52
HOW TO ORDER						0	67 44
							44
Port size		Unive	ersal valve		NC ·	only valve	46
			T w		<u>L</u> Z	T T W	42
M5		34B-AB	A-G xxx-xxx		34B-A	BB-G xxx-xxx	42
SOLENOID OPERATOR ➤			VV VVV*				47
SOLENOID OPERATOR >		G X	<u>x</u> x- <u>xxx</u> * T				48
XX Voltage	X	Wire length	X Manua	al operator	XX	Electrical connection	400
AA 120 V~/2,5W	A	45 cm	1 Non-lock	•	KA	Mini connector	400
DC 24 V=/1,8W	В	60 cm	<u> </u>		KT	Mini connector with light	92
DD 24 V=/2,5W DF 24 V=/4,0W	<u></u>	90 cm	_		BA BT	Flying leads Flying leads with light	7 4
·	_				КС	Mini connector with rectifier and light	93
Note: AC voltage	ith rootifier						, 0
Note : AC voltage requires connector w * Click here for other options available	un recuner. e.						ISO 1

ISO 2







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 NI/min (Cv 0,12) – 2,5 W: 100 NI/min (Cv 0,10) – 1,8 W: 60 NI/min (Cv 0,06)

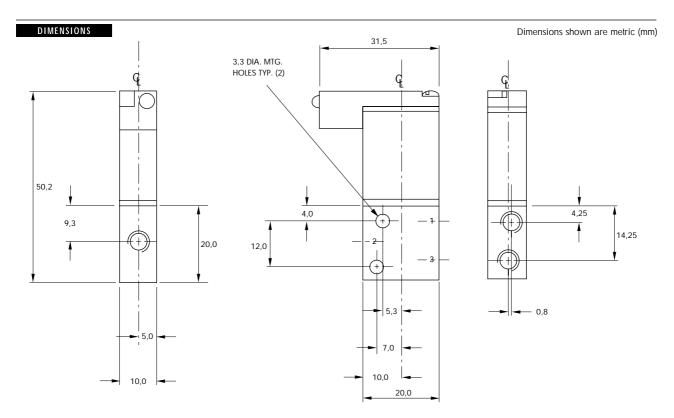
Coil : Epoxy encapsulated – 100% ED

Voltage range : -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

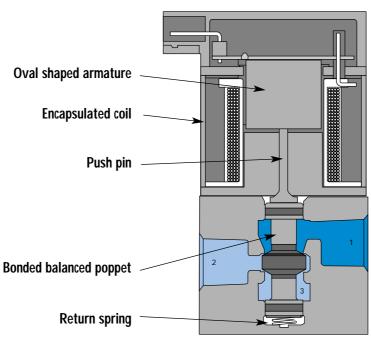
**Power:** 4 W – 2,5 W – 1,8 W

Response times : Energize : 3,4 ms (with 4 W coil) De-energize : 1,5 ms





# Individual mounting Series Inline Manifold mounting



Stacking

- 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.

Manifold base "plug-in" with **SERIES FEATURES** 

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



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

### OPERATIONAL BENEFITS

- 1. Balanced poppet, immune to variations of
- 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
	$\square$ $\uparrow$ $\downarrow$	$\square$ $\uparrow$
G1/8"	36A-ACA-J xxx-xxx	36A-ACB-J xxx-xxx

# J xxx-xxx (-G) Add "G" for ground

				J ካ			
XX	Voltage	X	Lead wire length	X	Manual operator	XX	Electrical connection
AA	120V~/5,4W	Α	45 cm	1	Non-locking	BA	Flying leads
DA	24V=/5,4W	В	60 cm	2	Locking	GA	MAC JAC solenoid plug-in
DB	12V=/5,4W	С	90 cm			GB	MAC JAC solenoid plug-in
DC	24V=/2,4W						with diode
DD	12V=/2,4W					GD	MAC JAC solenoid plug-in with light
						GG	MAC JAC solenoid plug-in rectifier

Click here for other options available.

34

47

ISO 2

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.







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,  $\Delta P=1bar$ ): G1/8": 300 NI/min (Cv 0 ,3)

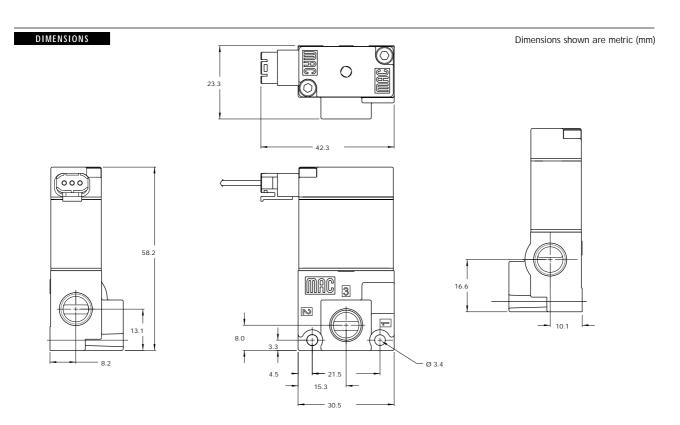
Coil: Epoxy encapsulated – Class A wires – 100% ED

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





unction	Port size	Flow (Max)	Manifold mou	ınting	Series
3/2	G1/8" - M5	300 NI/min	Stacking		
PERATIONAL BENEFITS					34
Balanced poppet, immupressure. Patented solenoid developments.					36
Short stroke with high fl Higher forces result in le					32
given flow. Powerful return spring.					37 38 52 67
HOW TO ORDER  Port size	NC only		NC stacking Jniversal poppet	NO stacking Universal poppet	44
	W CYL		W CYL	W T T T T T T T T T T T T T T T T T T T	42
G1/8"	36A-SCB		36A-SCC-J xxx-xxx	36A-SCD-J xxx-xxx	12
M5	36A-SDB-	XXX-XXX	B6A-SDC-J xxx-xxx	36A-SDD-J xxx-xxx	47
XX Voltage AA 120V-/5,4W	X Lead v A 45 cm	vire length X	Manual operator	XX Electrical connection  BA Flying leads	48
xx Voltage	T X Lead v	vire length X	Manual operator	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	
XX Voltage  AA 120V-/5,4W  DA 24V=/5,4W  DB 12V=/5,4W  DC 24V=/2,4W  DD 12V=/2,4W  Click here for other option le: - AC voltage requires	X Lead v  A 45 cm B 60 cm C 90 cm  as available.	vire length X 1 2	Manual operator	XX Electrical connection  BA Flying leads  GA MAC JAC solenoid plug-in  GB MAC JAC solenoid plug-in  with diode	400
AA 120V-/5,4W DA 24V=/5,4W DB 12V=/5,4W DC 24V=/2,4W DD 12V=/2,4W Click here for other optio ble: - AC voltage requires - The MAC JAC conn that incorporate the	x Lead v  A 45 cm  B 60 cm  C 90 cm  as available. connector with rectifier. ector is similar to the connector used "G" type solenoid. With the MAC JA by is possible. Consult factory for wash	vire length X  1 2  for valves C,	Manual operator	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	400 92 93

36A-SCB-Jxxx-xxx







Temperature range :

Protection:

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 :  $40 \mu$ 

Orifice: 3,3 mm

Flow (at 6 bar,  $\Delta P=1bar$ ): G1/8": 300 NI/min (Cv 0 ,3) – M5: 300 NI/min (Cv 0,3)

Coil : Epoxy encapsulated – Class A wires – 100% ED

IP54 (electrical connection)

Voltage range : -15% to +10% of nominal voltage

CAF" MC

-18°C to +50°C

-13% to +10% of Horillian voltage

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

CAF" MC

• Exhaust isolator : N-36003 • Tie rod (x2) : 79411

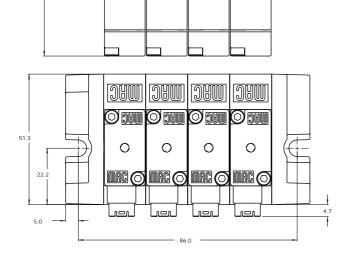
CAF" MC

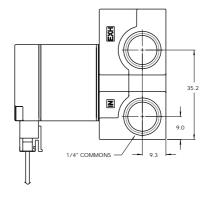
CAF NC

### DIMENSIONS

59.

Dimensions shown are metric (mm)







Function	Port size	Flow (Max)	Ma	anifold mo	unting	Series
3/2	G1/8"	300 NI/	min M	anifold base "plug-in"		
OPERATIONAL BENEFITS						34
<ol> <li>Balanced poppet, immu pressure.</li> <li>Patented solenoid devel forces.</li> </ol>						36
<ul><li>3. Short stroke with high fle</li><li>4. Higher forces result in logiven flow.</li></ul>						32
5. Powerful return spring.						37 38
						52
HOW TO ORDER						67 44
Port size		sal Valve ly Closed	Universal Valve Normally Open		Normally Closed Only	46
	Ľ,	2 1 3 W	I			42
Valve less ba		00-J xxP-xxx	36A-K00-00-J xxP-xx		36A-L00-00-J xxP-xxx	_
G1/8"	36A-JSC-	AE-J xxP-xxx	36A-KSC-AF-J xxP-xx	X	36A-LSC-AE-J xxP-xxx	47
SOLENOID OPERATO	DR ➤	J <u><b>XX</b></u> P.	- <u>xxx</u> * (-G) Ad	d "G	" for ground	48
XX Voltage  AA 120V~/5,4W		X Manual oper Non-locking	ator		Electrical connection	400
DA 24V=/5,4W DB 12V=/5,4W		2 Locking		FB E	Base plug-in with diode	- 400
DC 24V=/2,4W			_	FG E	lase plug-in with rectifier	92
* Click here for other option	ns available					
Note : AC voltage requires of	connector with rectifier.					93
•	ly: 36A-0SC-AC (Normally closed	manifold base).				ISO 1
ena piate quit requirea (port	size G1/4") : M-46003-01P.					ISO 2
						ISO 3







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 3,3 mm

Flow (at 6 bar, \( \Delta P = 1 \text{bar} \): 1,8W: 200 NI/min (Cv 0.20) - 2,4W: 200 NI/min (Cv 0,20) - 5,4W: 300 NI/min (Cv 0,30)

Coil : Epoxy encapsulated – Class A wires – 100% ED

Voltage range : -15% to +10% of nominal voltage

Protection : IP54 (electrical connection)

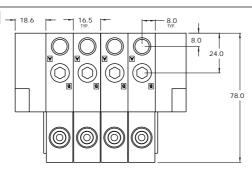
**Power**: 5,4 W – 2,4 W – 1,8 W

Option: • NPTF threads

Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002

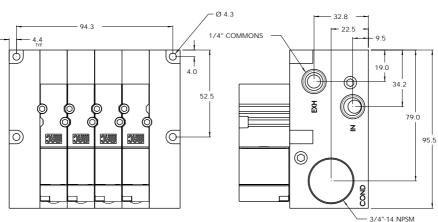
• Tie rod (x2): 79443

### 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.





Function	Port size	Flow (Max	<b>(</b> )	Manifold mo	ounting	Series
3/2	G1/8"	300 NI	/min	Manifold base "plug-in" with pressure regulators		
OPERATIONAL BENEFITS						34
<ol> <li>Balanced poppet, imm pressure.</li> <li>Patented solenoid deve forces.</li> </ol>						36
<ul><li>3. Short stroke with high</li><li>4. Higher forces result in given flow.</li></ul>						32
5. Powerful return spring.  HOW TO ORDER						37 38 52 67 44
Port size		sal Valve ly Closed	Universal Val Normally Op		Normally Closed Only	46
		1 1 3 W		<b>w</b>	$rac{1}{\sqrt{1}} \int_{1}^{2} w$	42
Valve less ba		00-J xxP-xxx	36A-K00-00-J xx		36A-L00-00-J xxP-xxx	
G1/8"		AG-J xxP-xxx	36A-KSC-AH-J xx		36A-LSC-AG-J xxP-xxx	_ 47
SOLENOID OPERATO	OR ➤	J <u>xx</u> F	P- <u>xxx</u> * (-G) <i>F</i>	Add "G	" for ground	48
XX Voltage		Manual ope	erator		Electrical connection	400
AA 120V~/5,4W  DA 24V=/5,4W		Non-locking Locking			Base plug-in Base plug-in with diode	400
DB 12V=/5,4W DC 24V=/2,4W DD 12V=/2,4W					Base plug-in with rectifier	92
* Click here for other optic Note : AC voltage requires						93
OPTIONS						ISO 1
36A-JSC-A <b>G</b> -Jxx P-xx	C manifold & regulator with slotted s C manifold & regulator with locking	tem adjustment slotted stem adjustment				ISO 2 ISO 3
J N H N T N	C manifold & regulator with knob ac O manifold & regulator with slotted s O manifold & regulator with locking O manifold & regulator with knob ac	justment tem adjustment slotted stem adjustment				150 0

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

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

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







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,  $\Delta P = 1$ bar):  $1,8W:200\ NI/min\ (Cv\ 0.20)-2,4W:200\ NI/min\ (Cv\ 0,20)-5,4W:300\ NI/min\ (Cv\ 0,30)-1,8W:300\ NI/m$ 

Coil : Epoxy encapsulated - Class A wires - 100% ED

Voltage range : -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

5,4 W - 2,4 W - 1,8 W Power:

Option: · NPTF threads

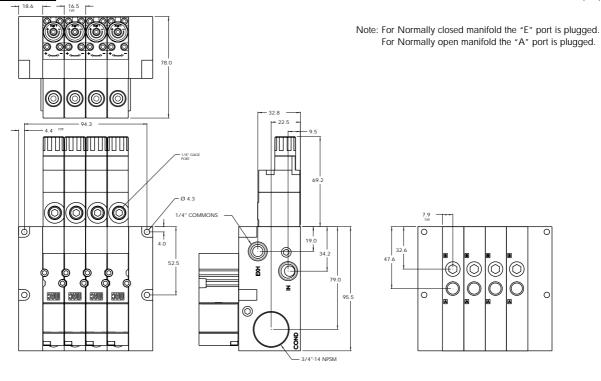
• Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002 Spare parts :

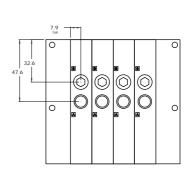
• Tie rod (x2): 79443



Dimensions shown are metric (mm)

For Normally open manifold the "A" port is plugged.







### **Individual mounting**

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

Series

32

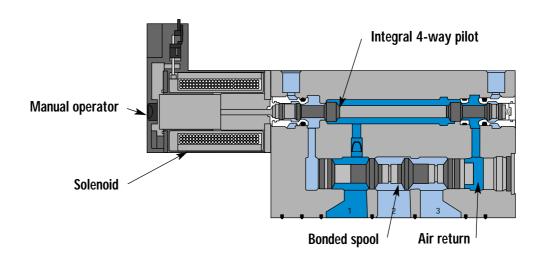
67

47

ISO 1 ISO 2

### Manifold mounting

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



### **SERIES FEATURES**

- High force MACSOLENOID  $^{\circ}$  .
- 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.

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



Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC	G1/8"	400 NI/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 NI/min).
- 4. Fast, repeatable response times.
- 5. Maximum shifting forces in both directions.



32

### HOW TO ORDER

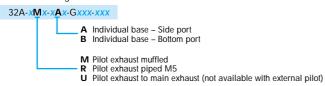
Port size	Pilot air	NO valve	NC valve	Universal valve
		10 2 12	10 2 12	10 2 12
		V3 01		□ √ 1 471 ∀3 01
Valve less base	Internal	32A-BMA-000-G <i>xxx-xxx</i>	32A-AMA-000-Gxxx-xxx	
	External	32A-BMB-000-G <i>xxx-xxx</i>	32A-AMB-000-Gxxx-xxx	32A-GMB-000-Gxxx-xxx
G1/8″	Internal	32A-BMA-HAL-Gxxx-xxx	32A-AMA-HAL-Gxxx-xxx	
	External	32A-BMB-HAM-Gxxx-xxx	32A-AMB-HAM-Gxxx-xxx	32A-GMB-HAM-Gxxx-xxx

Note: Above codes are for side port.

STANDA	ARD SOLENOID OPERATO	OR ➤	G <u>xx</u>	<u> </u>	<u>&lt;</u> *		
				յ կ՝			
XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection**
AA	120 V~/2,5W	Α	45 cm	1	Non-locking	BA	Flying leads
DA	24 V=/1,0W	В	60 cm	2	Locking	BT	Flying leads with light
DC	24 V=/1,8W	С	90 cm			KA	Mini connector
DD	24 V=/2,5W					KT	Mini connector with light
DF	24 V=/4,0W					KD	Mini connector with rectifier & light & ground

### OPTIONS

Pilot/Base Configuration :



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.







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  $^{\circ}\text{C}$  and 100  $^{\circ}\text{C})$ 

40 μ Filtration :

Temperature range : -18°C to +50°C

Orifice : 3,8 mm

G1/8": 400 NI/min (Cv 0,40) Flow (at 6 bar,  $\Delta P=1bar$ ):

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 : Energize : 5 ms (with 4 W coil) De-energize: 5 ms

• NPTF threads Options:

# DIMENSIONS Dimensions shown are metric (mm) 6.0 4.5 79.1 67.4 Ø 4.3 37.2 8.0 -8.0 - 23.1 -62.0

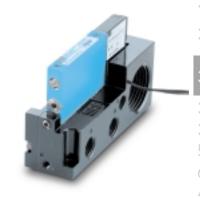
- 31.8 -



Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC	M5, M7	400 NI/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 NI/min).
- 4. Fast, repeatable response times.
- 5. Maximum shifting forces in both directions.



47

ISO 2

HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
		10 2 12 377	10 2 471 10 3 51	10 2 12 QZI
Valve less base	Internal	32A-BMA-000-G <i>xx</i> P- <i>xxx</i>	32A-AMA-000-GxxP-xxx	
	External	32A-BMB-000-G <i>xx</i> P- <i>xxx</i>	32A-AMB-000-GxxP-xxx	32A-GMB-000-G <i>xx</i> P- <i>xxx</i>
M5	Internal	32A-BMA-GAA-GxxP-xxx	32A-AMA-GAA-GxxP-xxx	
	External	32A-BMB-GAB-GxxP-xxx	32A-AMB-GAB-GxxP-xxx	32A-GMB-GAB-GxxP-xxx
M7	Internal	32A-BMA-LAA-G <i>xx</i> P- <i>xxx</i>	32A-AMA-LAA-GxxP-xxx	
	External	32A-BMB-LAB-GxxP-xxx	32A-AMB-LAB-GxxP-xxx	32A-GMB-LAB-GxxP-xxx

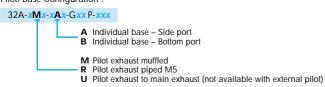
Note: Above codes are for side port.

XX	Voltage	X	Manual operator	XX	Electrical connection**
AA	120 V~/2,5W	1	Non-locking	DJ	Base plug-in
DA	24 V=/1,0W	2	Locking	DT	Base plug-in with light
DC	24 V=/1,8W			DD	Base plug-in with rectifier & light & ground
DD	24 V=/2,5W				
DF	24 V=/4 OW				

G xx P-xxx\*

### OPTIONS

Pilot/Base Configuration :



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

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.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

Flow (at 6 bar, ΔP=1bar): M5 : 350 NI/min (Cv 0,35) - M7 : 400 NI/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

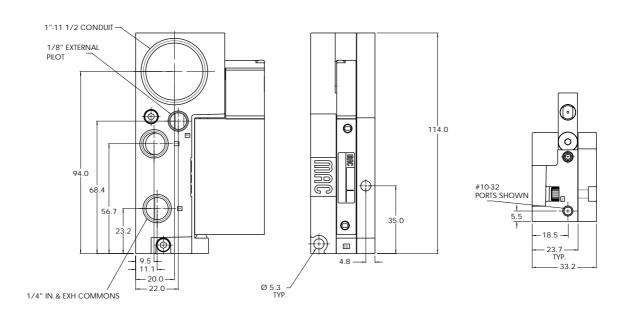
Response times : Energize : 5 ms

(with 4 W coil) 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 NI/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 NI/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
		10 2 12	10 2 12	$\begin{array}{c c} 10 & 2 & 12 \\ \hline 2 & 7 & 7 & 4 \end{array}$
Valve less base	Internal	32A-BMA-000-G <i>xxx-xxx</i>	32A-AMA-000-G <i>xxx-xxx</i>	
	External	32A-BMB-000-G <i>xxx-xxx</i>	32A-AMB-000-G <i>xxx-xxx</i>	32A-GMB-000-Gxxx-xxx
M5	Internal	32A-BMA-GJL-G <i>xxx-xxx</i>	32A-AMA-GJL-Gxxx-xxx	
	External	32A-BMB-GJM-Gxxx-xxx	32A-AMB-GJM-Gxxx-xxx	32A-GMB-GJM-Gxxx-xxx
M7	Internal	32A-BMA-LJL-Gxxx-xxx	32A-AMA-LJL-G <i>xxx-xxx</i>	
	External	32A-BMB-LJM-Gxxx-xxx	32A-AMB-LJM-Gxxx-xxx	32A-FMB-LJM-G <i>xxx-xxx</i>

Note: Above codes are for side port.

SIANDA	ARD SOLENOID OPERAT	OR ➤	$G \times XX$	<u> </u>	<u>(</u>	
				J կ <sup>ւ</sup>		
XX	Voltage	X	Wire length	X	Manual operator	X
AA	120 V~/2,5W	Α	45 cm	1	Non-locking	В
DA	24 V=/1.0W	В	60 cm	2	Locking	B

				'			
XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection**
AA	120 V~/2,5W	Α	45 cm	1	Non-locking	BA	Flying leads
DA	24 V=/1,0W	В	60 cm	2	Locking	BT	Flying leads with light
DC	24 V=/1,8W	С	90 cm			KA	Mini connector
DD	24 V=/2,5W					KT	Mini connector with light
DF	24 V=/4,0W					KD	Mini connector with
Noto : AC	voltage requires connector with	ractifiar					rectifier & light & ground

### OPTIONS

Base only:

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

Base Configuration :

32A-xMx-xJx-Gxxx-xxx

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

M Pilot exhaust muffled

Pilot exhaust nighted
 Pilot exhaust piped M5
 Pilot exhaust biped M5
 Pilot exhaust to main exhaust (not available with external pilot)

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

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.







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  $^{\circ}\text{C}$  and 100  $^{\circ}\text{C})$ 

Filtration: 40 μ

Temperature range : -18°C to +50°C

Orifice : 3,8 mm

Flow (at 6 bar,  $\Delta P=1bar$ ): M5 : 350 NI/min (Cv 0,35) - M7 : 400 NI/min (Cv 0,40)

Coil: Epoxy encapsulated – 100% ED – Class A wire

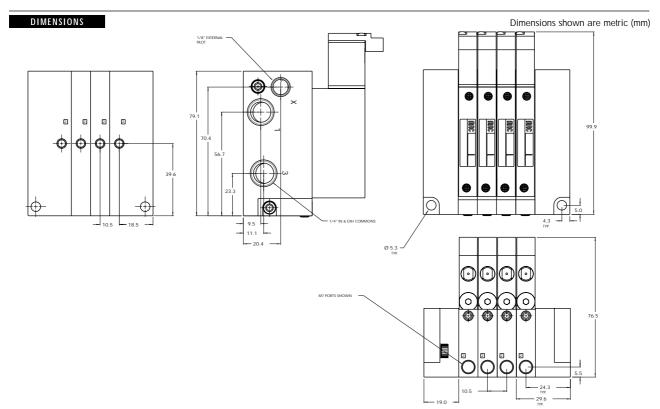
Voltage range : -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

Power: 1.0 to 4.0 W

Response times : Energize: 5 ms (with 4 W coil) De-energize: 5 ms

• NPTF threads Options:





Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC	M5, M7	400 NI/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 NI/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
		10 2 12	$ \begin{array}{c c} 10 & 2 & 471 \\ \hline 0 & 7 & 471 \\ \hline 0 & 3 & 51 \end{array} $	10 2 12 V3 61
Valve less base	Internal	32A-BMA-000-GxxP-xxx	32A-AMA-000-G <i>xx</i> P- <i>xxx</i>	
	External	32A-BMB-000-G <i>xx</i> P- <i>xxx</i>	32A-AMB-000-GxxP-xxx	32A-GMB-000-G <i>xx</i> P- <i>xxx</i>
M5	Internal	32A-BMA-GJA-GxxP-xxx	32A-AMA-GJA-GxxP-xxx	
	External	32A-BMB-GJB-GxxP-xxx	32A-AMB-GJB-GxxP-xxx	32A-GMB-GJB-GxxP-xxx
M7	Internal	32A-BMA-LJA-GxxP-xxx	32A-AMA-LJA-GxxP-xxx	
	External	32A-BMB-LJB-GxxP-xxx	32A-AMB-LJB-GxxP-xxx	32A-GMB-LJB-GxxP-xxx

Note: Above codes are for side port.

XX Voltage	X Manual operator	XX Electrical connection**
AA 120 V~/2,5W	1 Non-locking	DJ Base plug-in
DA 24 V=/1,0W	2 Locking	DT Base plug-in with light
DC 24 V=/1,8W		DD Base plug-in with rectifier & light & ground
DD 24 V=/2,5W		
DE 24 V-/4 OW		

G xx P-xxx\*

### OPTIONS

Base only:

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

Base Configuration :

### 32A-xxx-xJx-GxxP-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").

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.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

Flow (at 6 bar, ΔP=1bar): M5 : 350 NI/min (Cv 0,35) - M7 : 400 NI/min (Cv 0,40)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range : -15% to +10% of nominal voltage

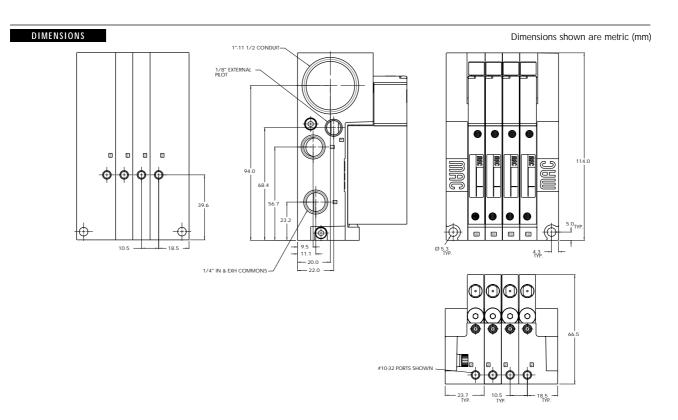
Protection: IP54 (electrical connection)

Power: 1.0 to 4.0 W

Response times : Energize : 5 ms

(with 4 W coil) De-energize : 5 ms

Options: • NPTF threads





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

### 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 NI/min).
- 4. Fast, repeatable response times.
- 5. Maximum shifting forces in both directions.



HOW TO ORDER

Port size	Pilot air	NO valve	NC valve
		$\begin{array}{c c} 10 & 2 & 12 \\ 17/5 & 3 & 17 \end{array}$	$\begin{array}{c} 10 \\ 175 \\ \hline \\ $
Valve less base	Internal	32A-BMA-000-Lxxx-xxx	32A-AMA-000-Lxxx-xxx
	External	32A-BMB-000-Lxxx-xxx	32A-AMB-000-Lxxx-xxx
M5	Internal	32A-BMA-GAL-Lxxx-xxx	32A-AMA-GAL-LXXX-XXX
	External	32A-BMB-GAM-Lxxx-xxx	32A-AMB-GAM-Lxxx-xxx
M7	Internal	32A-BMA-LAL-LXXX-XXX	32A-AMA-LAL-Lxxx-xxx
	External	32A-BMB-LAM-Lxxx-xxx	32A-AMB-LAM-LXXX-XXX

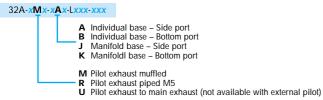
Note: Above codes are for individual base and side port.

LATCHIN	NG SOLENOID OPERATO	R ➤	L <u>xx</u> 2	<u> </u>	*		
				╵┧╴			
XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection**
DF	24 V=/4,0W	Α	45 cm	0	No operator	BA	2 Wire Flying leads
HA	24 V=/1,95W	В	60 cm		·	BJ	4 Wire Flying leads
		С	90 cm			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.

### OPTIONS

Pilot/Base Configuration :



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

<sup>\*\*</sup> Latching 32 series with non plug-in base configuration must use "B", "K" or "L" type electrical connector.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

Flow (at 6 bar, ΔP=1bar): M5 : 350 NI/min (Cv 0,35) - M7 : 400 NI/min (Cv 0,40)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range : -15% to +10% of nominal voltage

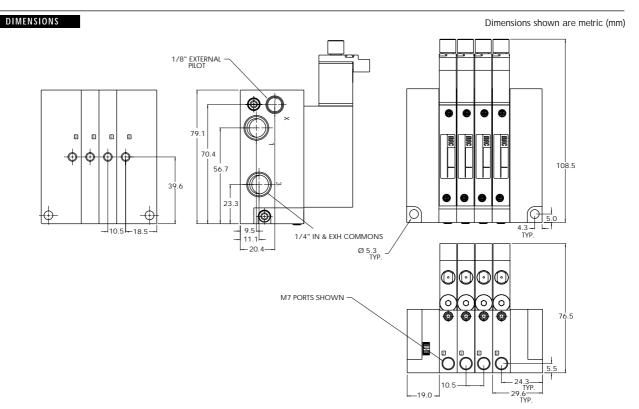
Protection : IP54 (electrical connection)

Power: 1.95 to 4.0 W

Response times : Energize : 5 ms

(with 4 W coil) De-energize : 5 ms

Options: • NPTF threads





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

### 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 NI/min).
- 4. Fast, repeatable response times.
- 5. Maximum shifting forces in both directions.



	ORDER	

Port size	Pilot air	NO valve	NC valve
		$\begin{array}{c c} 10 & 12 \\ 17/5 & 3/1 \\ \hline \end{array}$	10 175 175 175 175 175 175 175 175 175 175
Valve less base	Internal	32A-BMA-000-LxxP-xxx	32A-AMA-000-LxxP-xxx
	External	32A-BMB-000-LxxP-xxx	32A-AMB-000-LxxP-xxx
M5	Internal	32A-BMA-GAA-LxxP-xxx	32A-AMA-GAA-LxxP-xxx
	External	32A-BMB-GAB-LxxP-xxx	32A-AMB-GAB-LxxP-xxx
M7	Internal	32A-BMA-LAA-LxxP-xxx	32A-AMA-LAA-LXXP-XXX
	External	32A-BMB-LAB-LxxP-xxx	32A-AMB-LAB-LxxP-xxx

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

LATCHING SOLENOID OPERATOR ➤	L <u>xx</u> P- <u>xxx</u> *	
XX Voltage	X Manual operator	XX Electrical connection**
DF 24 V=/4,0W	<ul><li>No operator</li></ul>	DA Base/Manifold Plug-in
HA 24 V=/1,95W		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)

### OPTIONS

Manifold/Base Configuration: Base Int./Ext. Pilot : 32A-xMx-xAx-LxxP-xxx 32A-xxx-xx**A**-LxxP-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 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)\*\* M Pilot exhaust muffled P Pilot exhaust piped M5
 Pilot exhaust piped M5
 Pilot exhaust to main exhaust (not available with external pilot)

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

<sup>\*</sup> 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.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

Flow (at 6 bar, ΔP=1bar): M5 : 350 NI/min (Cv 0,35) - M7 : 400 NI/min (Cv 0,40)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range : -15% to +10% of nominal voltage

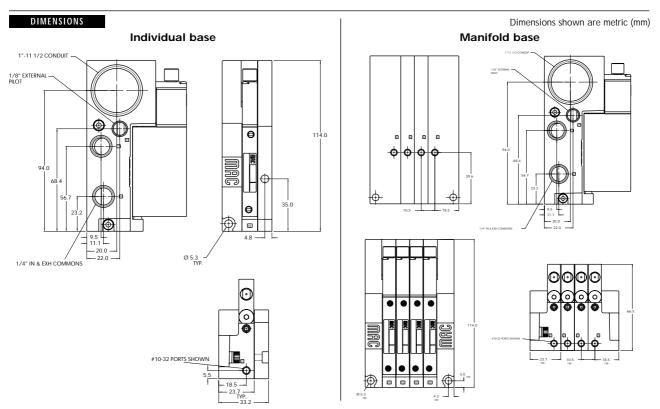
Protection: IP54 (electrical connection)

Power: 1.0 to 4.0 W

Response times : Energize : 5 ms

(with 4 W coil) De-energize : 5 ms

Options : • NPTF threads





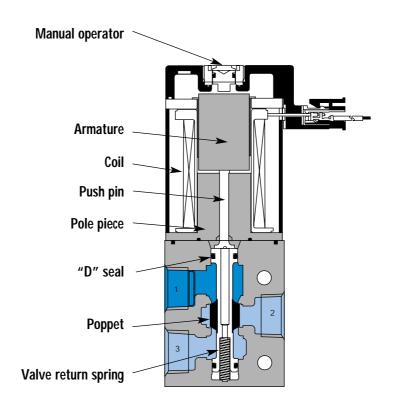
# Individual mounting Sub-base non plug-in

Series

42

47

ISO 1 ISO 2



### **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.

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



Note : AC voltage requires connector with rectifier.

\* Click here for other options available.

# Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)		Individual mounting	Series
3/2 NO-NC	G1/8" - G	1/4" 500 NI/	′min	Inline	
OPERATIONAL BENEFITS					34
<ol> <li>Balanced poppet equals c shifting forces.</li> <li>Valve shifting forces are condependent of pressure flag.</li> </ol>	onsistent and	Universal porting – 6 funct	ions in one valve.		36
High solenoid and return sensure high speed and pre     Built-in wear compensation	spring forces ecise repeatability.				32
shorter than solenoid strok 5. Constant high flow mainta			=		37
the pressure range.	-			0	38
6. Exhaust contaminants are solenoid.	isolated from the			Sept (6)	52
7. Full flow exhaust.					67
HOW TO ORDER					44
Port siz	ze	Universal	valve	NC or	nly valve 46
		:	2		2
		<u> </u>			42
G1/8	"	37A-AC0-H	XXX-XXX	37A-BC0	1 3 4 Z D-H xxx-xxx
G1/4	"	37A-AD0-H	XXX-XXX	37A-BD0	0-H xxx-xxx 47
SOLENOID OPERATOR	>	H <u>xx</u> x	- <u>XXX</u> *		48
			Υ		
XX Voltage	X W	/ire length	X Manual ope	erator XX	Electrical connection** 400
AA 120 V~/6,7W DA 24 V=/5,2W		5 cm O cm	1 Non-locking 2 Locking	MA MC	Mini connector Mini connector with light
DB 24 V=/5,2VV			Z LOCKING	BA	Flying leads 92
DC 24 V=/1,8W				BC	Flying leads with light
				HA	Mini connector with rectifier & light
					93

ISO 1







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 NI/min (Cv 0,5) – 2,4 W:350 NI/min (Cv 0,35)

Coil: Epoxy encapsulated – 100% ED

Voltage range : -15% to +10% of nominal voltage

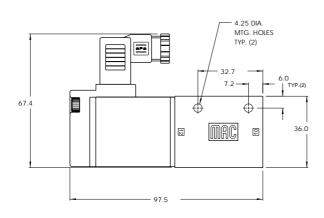
Protection : IP54 (electrical connection)

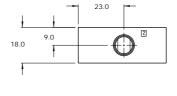
Power: 5,2 W – 2,4 W

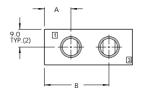
Response times : Energize : 16,9 ms (with 5,2 W coil) De-energize : 6,7 ms

Options : • NPTF ports

DIMENSIONS







Dim	А	В
1/8"	13.3	32.45
1/4"	14.7	33.7



Function	Port size	Flow (Max)	Individual mou	ınting Seri
3/2 NO-NC	G1/8" - G1	/4" 500 NI/min	Sub-base non plug-in	
PERATIONAL BENEFITS				3
<ul> <li>Balanced poppet equals shifting forces.</li> <li>Valve shifting forces are independent of pressure</li> </ul>	e consistent and	Universal porting – 6 functions i	n one valve.	3
. High solenoid and retur ensure high speed and	precise repeatability.		,	3
Built-in wear compensat shorter than solenoid str	roke.			3
Constant high flow main the pressure range.	ntained throughout			3
Exhaust contaminants a	re isolated from the			5
solenoid. Full flow exhaust.				6
HOW TO ORDER				
HOW TO ORDER				4
Port	size	Universal valv	ve	NC only valve 4
				Z , , , , , , , , , , , , , , , , , , ,
Valve le	ess base	37A-C10-H xxx-	XXX	37A-D10-H xxx-xxx
G1/	/8"	37A-CCA-H xxx-	(XX	37A-DCA-H xxx-xxx
G1/	′4"	37A-CDA-H xxx-	(XX	37A-DDA-H xxx-xxx
Olenoid operato	R <b>≻</b>	Н <u>хх</u> х-ху	(X*	4
				4
xx Voltage	X W	ire length X	Manual operator	XX Electrical connection
AA 120 V~/6,7W		cm <u>1</u>	Non-locking	MA Plug-in wire assembly
DA 24 V=/5,2W DB 24 V=/2,4W	<u>B</u> 60	<u>cm</u>	Locking	with light
DC 24 V=/1,8W			_	BA Flying leads BC Flying leads with light
			_	HA Plug-in wire assembly with
			_	rectifier & light
ote: AC voltage requires con Click here for other option				
Show here for other option	o availabio.			IS

OPTIONS

37A-0CA (1/8")

37A-0DA (1/4")

ISO 2







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 NI/min (Cv 0,5) – 2,4 W:350 NI/min (Cv 0,35)

Coil : Epoxy encapsulated – 100% ED

Voltage range : -15% to +10% of nominal voltage

10% to 110% of Hommar Tolk

Protection : IP54 (electrical connection)

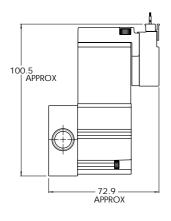
 Power :
 5,2 W - 2,4 W

 Response times :
 Energize : 16,9 r

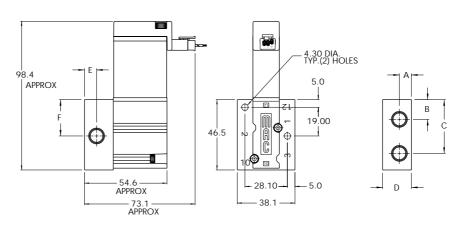
Response times : Energize : 16,9 ms (with 5,2 W coil) De-energize : 6,7 ms

Options : • NPTF ports

### DIMENSIONS



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



FLYING LEAD OPTION

Dim	А	В	С	D	E	F
1/8"	8.0	13.0	35.5	19.05	8.0	24.0
1/4"	9.5	9.5	33.3	17.00	9.5	22.5



# Individual mounting Sub-base non "plug-in" Sub-base "plug-in" with latching solenoid Sub-base/manifold base non "plug-in" with latching solenoid Sub-base/manifold base non "plug-in" with latching solenoid 3 4 Manifold mounting

67

ISO 2

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

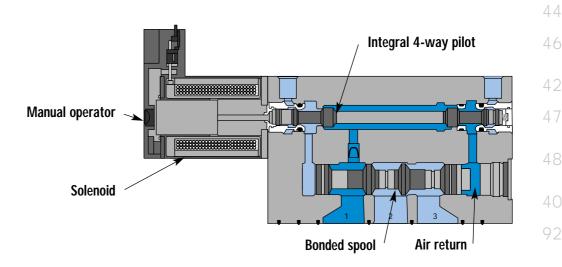
Sub-base/ manifold base non "plug-in" with latching

Manifold base

non "plug-in"

Manifold base

"plug-in"



### **SERIES FEATURES**

- $\bullet$  High force MACSOLENOID  $^{\! \otimes}.$
- 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.

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 NI/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 NI/min).
- 4. Fast, repeatable response times.
- 5. Maximum shifting forces in both directions.



47

HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
		10 2 12		10 2 12 v3 0 1
Valve less base	Internal	38A-BMA-000-G <i>xxx-xxx</i>	38A-AMA-000-Gxxx-xxx	
	External	38A-BMB-000-Gxxx-xxx	38A-AMB-000-Gxxx-xxx	38A-GMB-000-Gxxx-xxx
G1/8″	Internal	38A-BMA-BAL-Gxxx-xxx	38A-AMA-BAL-Gxxx-xxx	
	External	38A-BMB-BAM-Gxxx-xxx	38A-AMB-BAM-Gxxx-xxx	38A-GMB-BAM-Gxxx-xxx

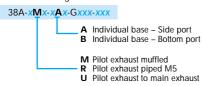
Note: Above codes are for side port.

CTANDADD COLENIOID ODEDATOD

STANDA	ARD SOLENOID OPERATO	JR ➤	G XX	<u> </u>	<u>(</u>		
XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection**
AA	120 V~/2,5W	Α	45 cm	1	Non-locking	BA	Flying leads
DA	24 V=/1,0W	В	60 cm	2	Locking	BT	Flying leads with light
DC	24 V=/1,8W	С	90 cm			KA	Mini connector
DD	24 V=/2,5W			•		KT	Mini connector with light
DF	24 V=/4,0W					KD	Mini connector with rectifier & light & ground

### OPTIONS

Pilot/Base Configuration :



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.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): G1/8" bottom port: 1200 NI/min (Cv 1,2) - G1/8" side port: 1000 NI/min (Cv 1,0)

Coil: Epoxy encapsulated – 100% ED – Class A wire

**Voltage range**: -15% to +10% of nominal voltage

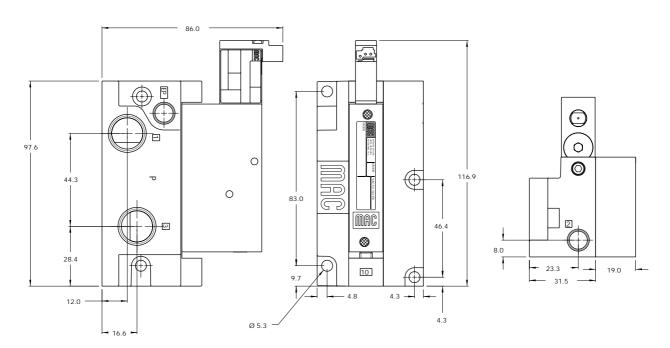
Protection: IP54 (electrical connection)

Power: 1.0 to 4.0 W

Response times: Energize: 6 ms
(with 4 W coil) De-energize: 6 ms

Options: • NPTF threads

### DIMENSIONS





Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC	G1/8″	1200 NI/min	Sub-base "plug-in"	
OPERATIONAL BENEFITS				34
<ol> <li>3-way valve with 4-way</li> <li>10 mm valve (stacks on</li> </ol>	16.5 mm centers).			36

3. High flow (up to 1200 NI/min).

4. Fast, repeatable response times.

5. Maximum shifting forces in both directions.



67

47

ISO 1 ISO 2

### HOW TO ORDER

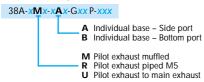
Port size	Pilot air	NO valve	NC valve	Universal valve
		10 2 47 12 47	10 2 12 \(\frac{1}{\sqrt{y}}\) \(\frac{1}{\sqrt{y}}\)	$\begin{array}{c} 10 \\ \hline \\ $
Valve less base	Internal	38A-BMA-000-G <i>xx</i> P- <i>xxx</i>	38A-AMA-000-GxxP-xxx	
	External	38A-BMB-000-G <i>xx</i> P- <i>xxx</i>	38A-AMB-000-GxxP-xxx	38A-GMB-000-G <i>xx</i> P- <i>xxx</i>
G1/8″	Internal	38A-BMA-BAA-GxxP-xxx	38A-AMA-BAA-GxxP-xxx	
	External	38A-BMB-BAB-GxxP-xxx	38A-AMB-BAB-GxxP-xxx	38A-GMB-BAB-GxxP-xxx

Note: Above codes are for side port.

STANDARD SOLENOID OPERATOR ➤	$G \times P - X \times P$	
xx Voltage	X Manual operator	XX Electrical connection**
AA 120 V~/2,5W	1 Non-locking	DJ Base plug-in
DA 24 V=/1,0W	2 Locking	DT Base plug-in with light
DC 24 V=/1,8W		DD Base plug-in with rectifier & light & ground
DD 24 V=/2,5W	-	
DF 24 V=/4 OW		

### OPTIONS

Pilot/Base Configuration :



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

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.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): G1/8" bottom port: 1200 NI/min (Cv 1,2) - G1/8" side port : 1000 NI/min (Cv 1,0)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range : -15% to +10% of nominal voltage

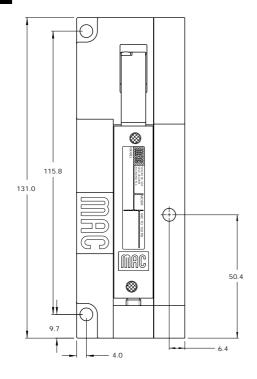
Protection: IP54 (electrical connection)

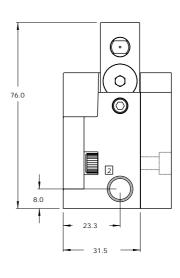
Power: 1.0 to 4.0 W

Response times : Energize : 6 ms (with 4 W coil) De-energize : 6 ms

Options: • NPTF threads

### DIMENSIONS







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)

# Direct solenoid and solenoid pilot operated valves

unction	Po	rt size	Flow (Max)		Manifold mou	nting		Series
/2 NO-NC	G	1/8″	1200 NI/	NI/min Manif				
PERATIONAL BENEFITS								34
3-way valve with 4-w 10 mm valve (stacks High flow (up to 120 Fast, repeatable resp	on 16.5 mm cente 00 NI/min).	rs).						36
Maximum shifting for		ons.						32
								37
								38
								52
								67
HOW TO ORDER								44
Port size	Pilot air	NO valve		NC valve			Universal valve	46
		10 2 12 T 3 01		10 2 12 10 3 51			10 2 12 12 V3 01	42
Valve less base	Internal	38A-BMA-000-Gxxx-xx	κχ	38A-AMA-000-Gxxx-	xxx			12
	External	38A-BMB-000-G <i>xxx-xx</i>		38A-AMB-000-Gxxx-		38	A-GMB-000-Gxxx-xxx	47
G1/8″	Internal External	38A-BMA-BJL-Gxxx-xx 38A-BMB-BJM-Gxxx-xx		38A-AMA-BJL-Gxxx-3		20	A-GMB-BJM-Gxxx-xxx	
ata . Alagua andas ana f		30A-DIVID-DIVI-GAAA-AA		30A-AIVID-DJIVI-GXXX-		30	A-GIVID-DJIVI-GXXX-XXX	48
Jote : Above codes are f STANDARD SOLEN	•	R≯ C	XXX-	XXX*				
			<u> </u>	<u> </u>				40
Walter-		V AA/i I		Name of the second second		200	Flash: **	
XX Voltage  AA 120 V~/2,5\	10/	X Wire length A 45 cm		<ul><li>X Manual oper</li><li>1 Non-locking</li></ul>	ator	XX BA	Electrical connection** Flying leads	92
DA 24 V=/1,0W		B 60 cm		2 Locking		BT	Flying leads with light	
DC 24 V=/1,8W		C 90 cm			_	KA	Mini connector	93
DD 24 V=/2,5W DF 24 V=/4,0W					-	KT KD	Mini connector with light Mini connector with	/ (
lote : AC voltage require		ctifier.			_		rectifier & light & ground	150
Click here for other op	itions available.	ion must use type "B" or "K" ele	octrical connec	tor				100
atching solenoid also av	ailable, click here.	ion musicuse type b oi K eli	con icai connec	ioi				180
ORTIONS	Ī							ISO
OPTIONS								
ase only :								
38A-000-xxx (i.e. 38A-00	00-BJL)							
lot/Base Configuratio	n:							
38А- <b>хмх-хлх</b> - <b>Сххх</b> -	XXX							
	Manifold base – Sid Manifold base – Bot							
K	iviailiioiu pase – Bol	ιστι μοι τ						







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar,  $\Delta P$ =1bar): G1/8" bottom port: 1200 NI/min (Cv 1,2) - G1/8" side port : 1000 NI/min (Cv 1,0)

Coil : Epoxy encapsulated – 100% ED – Class A wire

Voltage range : -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

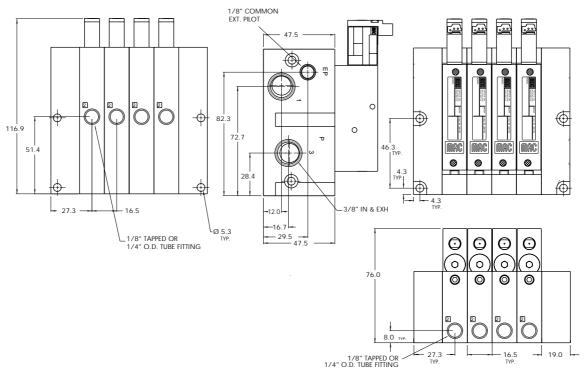
Power: 1.0 to 4.0 W

Response times : Energize : 6 ms

(with 4 W coil) De-energize : 6 ms

Options : • NPTF threads

### DIMENSIONS





Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC	G1/8"	1200 NI/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 NI/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
		10 2 112	10 2 12 12 12 12 12 12 12 12 12 12 12 12 1	10 2 12 37 37 37 3 51
Valve less base	Internal	38A-BMA-000-G <i>xx</i> P- <i>xxx</i>	38A-AMA-000-GxxP-xxx	
	External	38A-BMB-000-G <i>xx</i> P- <i>xxx</i>	38A-AMB-000-GxxP-xxx	38A-GMB-000-GxxP-xxx
G1/8″	Internal	38A-BMA-BJA-GxxP-xxx	38A-AMA-BJA-GxxP-xxx	
	External	38A-BMB-BJB-GxxP-xxx	38A-AMB-BJB-GxxP-xxx	38A-GMB-BJB-GxxP-xxx

Note: Above codes are for side port.

XX	Voltage	X	Manual operator	XX	Electrical connection**
AA	120 V~/2,5W	1	Non-locking	DJ	Base plug-in
DA	24 V=/1,0W	2	Locking	DT	Base plug-in with light
DC	24 V=/1,8W			DD	Base plug-in with rectifier & light & ground
DD	24 V=/2,5W				
DF	24 V=/4,0W				

G <u>xx</u> P-<u>xxx</u>

### OPTIONS

Base only:

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

Base Configuration :

### 38A-xxx-x**J**x-Gxx 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").

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.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): G1/8" bottom port: 1200 NI/min (Cv 1,2) - G1/8" side port : 1000 NI/min (Cv 1,0)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range : -15% to +10% of nominal voltage

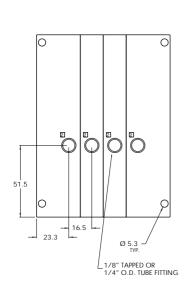
Protection: IP54 (electrical connection)

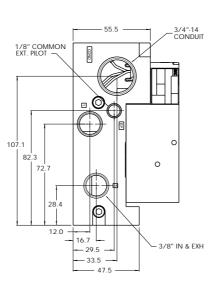
**Power:** 1.0 to 4.0 W

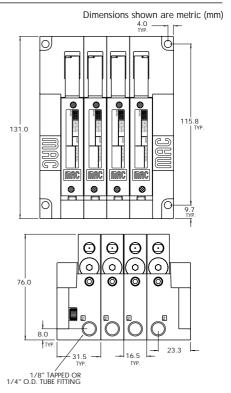
Response times : Energize : 6 ms (with 4 W coil) De-energize : 6 ms

Options: • NPTF threads

### DIMENSIONS







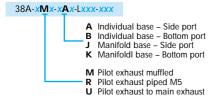


unction	Po	ort size F	low (Max)	Individual/I	Nanifold m	ounting	Ser
3/2 NO-NC	G	1/8″ 1	200 NI/min	Sub-base/ manifold base non "plug-in" with latching solenoid			
PERATIONAL BENEFITS							3
. 3-way valve with 4-wa . 10 mm valve (stacks of . High flow (up to 1200 . Fast, repeatable respo	on 16.5 mm cente O NI/min).	ers).					3
. Maximum shifting for		ons.					3
					0		3
						0	3
							5
							6
HOW TO ORDER							4
Port size	Pilot air	NO valve	1	C valve		Universal valve	4
		10 2 12 7D 371	10 .//D	2 471 471		10 2 37	4
Valve less base	Internal	38A-BMA-000-Lxxx-xxx	38A-AN	A-000-Lxxx-xxx		V3 01	4
	External	38A-BMB-000Lxxx-xxx	38A-AN	B-000-Lxxx-xxx	38	BA-GMB-000-Lxxx-xxx	4
G1/8″	Internal	38A-BMA-BAL-Lxxx-xxx	38A-AN	A-BAL-Lxxx-xxx			
	External	38A-BMB-BAM-Lxxx-xxx	38A-AM	B-BAM-Lxxx-xxx	38	SA-GMB-BAM-Lxxx-xxx	4
lote : Above codes are fo	r individual base a	and side port.					4
atching solenc	OID OPERATO	<b>₹</b>	XXX-XXX*				
			┹┰┸				4
XX Voltage		V Wire longth	X Ma	unual aparatar	XX	Electrical connection**	
XX Voltage DF 24 V=/4,0W		X Wire length A 45 cm		inual operator operator	BA	2 Wire Flying leads	9
HA 24 V=/1,95V		B 60 cm		οροιαιοι	BJ	4 Wire Flying leads	
21 1 7 1,701		C 90 cm			KA	2 Wire Plug-in Assembly	

Click here for other options available.

### OPTIONS

Pilot/Base Configuration :



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

4 Wire Plug-in Assembly 3 Wire plug-in assembly (Polarity Switching Cover)

ISO 1

ISO 2

KE

<sup>\*\*</sup> Latching 38 series with non plug-in base configuration must use "B", "K" or "L" type electrical connector.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): G1/8" bottom port: 1200 NI/min (Cv 1,2) - G1/8" side port : 1000 NI/min (Cv 1,0)

Coil : Epoxy encapsulated – 100% ED – Class A wire

Voltage range : -15% to +10% of nominal voltage

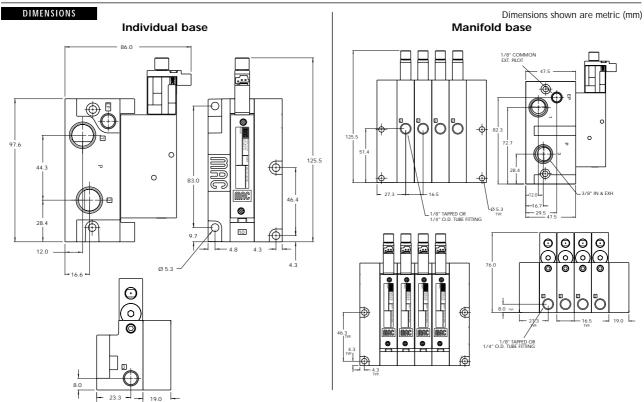
Protection: IP54 (electrical connection)

Power: 1.95 to 4.0 W

Response times : Energize : 6 ms

(with 4 W coil) De-energize : 6 ms

Options: • NPTF threads





Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
3/2 NO-NC	G1/8″	1200 NI/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 NI/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
		10 12 12 12		10 2 371 371 371
Valve less base	Internal	38A-BMA-000-LxxP-xxx	38A-AMA-000-LxxP-xxx	
	External	38A-BMB-000LxxP-xxx	38A-AMB-000-LxxP-xxx	38A-GMB-000-LxxP-xxx
G1/8″	Internal	38A-BMA-BAA-LxxP-xxx	38A-AMA-BAA-LxxP-xxx	
	External	38A-BMB-BAB-LxxP-xxx	38A-AMB-BAB-LxxP-xxx	38A-GMB-BAB-LxxP-xxx

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

LATCHING SOLENOID OPERATOR ➤	$L \times P - \times X \times X$	
XX Voltage	X Manual operator	XX Electrical connection**
DF 24 V=/4,0W	<ul><li>No operator</li></ul>	DA Base/Manifold Plug-in
HA 24 V=/1,95W		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)

### OPTIONS

Manifold/Base Configuration :

### 38A-xxx-xAx-LxxP-xxx

- Individual base Side port Individual base Bottom port

- J Manifold base Side port
  K Manifold base Side 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**-LxxP-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)\*\*
  F Plug-In Ext. 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).

Click here for other options available.

<sup>\* 2</sup> and 4 wire bases must use "D" type electrical connector.

3 wire bases must use "EA" type electrical connector.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): G1/8" bottom port: 1200 NI/min (Cv 1,2) - G1/8" side port: 1000 NI/min (Cv 1,0)

Coil: Epoxy encapsulated – 100% ED – Class A wire

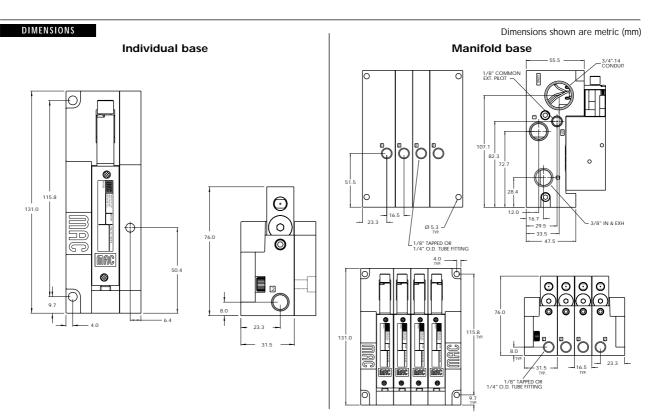
Voltage range : -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

Power: 1.95 to 4.0 W

Response times: Energize: 6 ms
(with 4 W coil) De-energize: 6 ms

Options: • NPTF threads





# Individual mounting Series

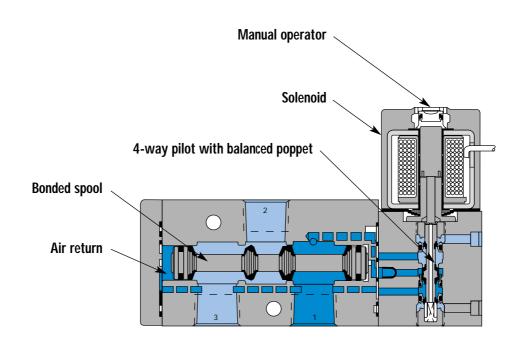
34

42

47

ISO 1 ISO 2

Inline



### **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.

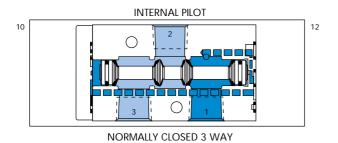
Consult "Precautions" before use, installation or service of MAC Valves..

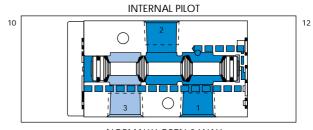






### SPOOL CONFIGURATIONS





NORMALLY OPEN 3 WAY



Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-NC	G1/8" - G1/4"	1500 NI/min	Inline	
OPERATIONAL BENEFITS				34
<ol> <li>The 4-way pilot develops maxim force both ways.</li> <li>Memory spring available.</li> </ol>	um shifting		450	36
Balanced spool, immune to variate pressure, also provides high flow			0	

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.

67

42

47

ISO 1 ISO 2

HOW TO ORDER

Port size	Pilot air	Single C	)perator	Double (	Operator
		NO Valve	NC Valve	NO Valve	NC Valve
		10 2 12 V3 01	10 2 12 12 3 51	10 2 12 17D 301	10 2 12 d/1 d/1 v 3 o 1
G1/8″	Internal	52A-31-C0A-XX-X-XXX	52A-11-C0A-XX-X-XXX	52A-41-C0A-XX-X-xxx-xxx	52A-21-C0A-XX-X- <i>xxx-xxx</i>
G1/4"		52A-31-D0A-XX-X- <b>xxx</b> - <b>xxx</b>	52A-11-D0A-XX-X- <b>xxx</b> - <b>xxx</b>	52A-41-D0A-XX-X- <b>xxx</b> - <b>xxx</b>	52A-21-D0A-XX-X- <b>xxx</b> - <b>xxx</b>
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"	•	52A-31-D0B-XX-X-xxx	52A-11-D0B-XX-X-xxx	52A-41-D0B-XX-X-xxx	52A-21-D0B-XX-X- <i>xxx</i> - <i>xxx</i>

SC	OLENC	OID OPERATOR ➤		DM-D XX	<b>X</b> - <b>XX</b>	<u>(</u> *		
					J ५ <sup>-</sup>			
	XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection
	JA	110 V~/50Hz	Α	45 cm (Flying leads)	1	Non-locking	KA	Square connector
	JB	220 V~/50Hz	В	60 cm (Flying leads)	2	Locking	KD	Square connector with light
	JC	24 V~/50Hz	J	Connector			JB	Rectangular connector
	FB	24 V=/1,8W					JD	Rectangular connector with
	DA	24 V=/5,4W						light
	DF	24 V=/12,7W					BA	Flying leads
SC	OLENC	DID OPERATOR ➤		GM-G XX	x- <u>x</u> x>	<b>(</b> * *		

SOLENOID OPERATOR ➤		GM-G <u>xx</u>	X- <u>X</u> X)	<u>&lt;</u> **		
			J			
xx Voltage	X	Wire length	X	Manual operator	XX	Electrical connection
DC 24 V=/1,8W	Α	45 cm	1	Non-locking	BA	Flying leads
DD 24 V=/2,5W	В	60 cm	2	Locking	BT	Flying leads with light
DF 24 V=/4W	С	90 cm			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

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







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 NI/min (Cv 1,2) – G1/4": 1500 NI/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

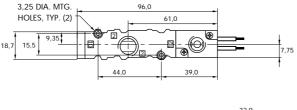
= 1,8 to 12,7 W

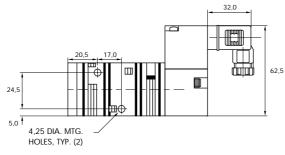
**Response times :** 24V=/5,4W Energize: 7,3 ms De-energize: 5,3 ms

110V~/50Hz Energize: 8-12 ms De-energize: 7-11 ms

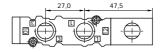
Options : • NPTF threads

### DIMENSIONS











# Individual mounting Series

Manual operator

Solenoid

4-way pilot with balanced poppet

Bonded spool

Air return

### **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 function.
- · 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.

93 ISO 1

ISO 2

34

67 44

42

47



ction		Port size	Flow (Max)	Individual mounting	]	Serie
2 NO-NC, 2/2	2 NO-NC	G3/4" - G1"	20000 NI/min	Inline		
RATIONAL BENEF						34
The 4-way pilot de force both ways. Memory spring av Balanced spool, in	vailable.	ů,			· 40 ·	36
pressure, also pro Short stroke with h	ovides high f			6		32
Bonded spool with		friction, shifting		6	9 0	3
Bonded spool with in a glass-like finis Pilot with balance	ished bore. ed poppet, hi	igh flow, short		6	30	37
Bonded spool with in a glass-like finis Pilot with balance and consistent res Wiping effect elin	ished bore. ed poppet, hi sponse times	igh flow, short		G		3 i 3 i 5 2
Bonded spool with in a glass-like finis Pilot with balance and consistent res Wiping effect elin	ished bore. ed poppet, hi sponse times minates sticki	igh flow, short		G CONT		38 52 6
Bonded spool with a glass-like finis Pilot with balance and consistent res Wiping effect elin HOW TO ORDER	ished bore. ed poppet, hi sponse times minates sticki	igh flow, short ing.		G CONTRACTOR		38 52
Bonded spool with a glass-like finis Pilot with balance and consistent res Wiping effect elin HOW TO ORDER	ished bore. ed poppet, hi sponse times minates sticki	igh flow, short ing.	Operator NC Valve	Double NO Valve	Operator NC Valve	38 52 61 44
Bonded spool with n a glass-like finis pilot with balance and consistent res Wiping effect elin HOW TO ORDER	ished bore. ed poppet, hi sponse times minates sticki	igh flow, short i. ing. Single C			•	38 52 6 44 40
Bonded spool with n a glass-like finis Pilot with balance and consistent res Wiping effect elin HOW TO ORDER Port size  F	ished bore. ed poppet, hi sponse times minates sticki	igh flow, short ing.  Single C			NC Valve	38 52 6 44 46
Bonded spool with in a glass-like finis Pilot with balance and consistent res Wiping effect elin HOW TO ORDER	ished bore. ed poppet, hi sponse times minates sticki  Pilot air	sigh flow, short is. ing.  Single C	NC Valve	NO Valve	NC Valve	38 52 6
Bonded spool with a glass-like finis Pilot with balance and consistent res Wiping effect elin HOW TO ORDER  Port size F	ished bore. ed poppet, hi sponse times minates sticki  Pilot air	sigh flow, short ing.  Single Control  NO Valve  To Tarring  67A-Cx-CAA-DM-Dxxx-xxx	NC Valve  10 2 12 27 27 27 27 27 27 27 27 27 27 27 27 27	NO Valve  10 12 12 12 12 14 15 16 17 17 17 17 17 17 17 17 17 17 17 17 17	NC Valve  10 2 12 73 73 73 73 74 75 75 75 75 75 75 75 75 75 75 75 75 75	38 52 6 44 46

JOLLIN	SID OI LINTION >		טיווט	<u> </u>	<b>L</b>		
				╧┹	-		
XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection
JA	110 V~/50Hz	Α	45 cm	1	Non-locking	KA	Square connector
JB	220 V~/50Hz	В	60 cm	2	Locking	KD	Square connector with light
JC	24 V~/50Hz	J	Connector	- "		JB	Rectangular connector
FB	24 V=/1,8W					JD	Rectangular connector with
DA	24 V=/5,4W						light
DF	24 V=/12,7W	_				BA	Flying leads

<sup>\*</sup> Click here for other options available.

### OPTIONS

Spool type :

### 67A-XX-CAA-DM-Dxxx-yzz

G Single operator universal spool H Double operator universal spool

### Port configuration :

### 67A-XX-C**X**A-DM-Dxxx-xxx

A Standard pilot exhaust
 B Pilot exhaust to main exhaust\*
 C Pilot exhaust out adapter\*
 \* Must use DU pilot

### Spool return :

### 67A-CX-CAA-DM-Dxxx-yzz

1 Standard return 2 Standard return with memory spring

### Pilot style :

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

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

ISO 1







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 NI/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

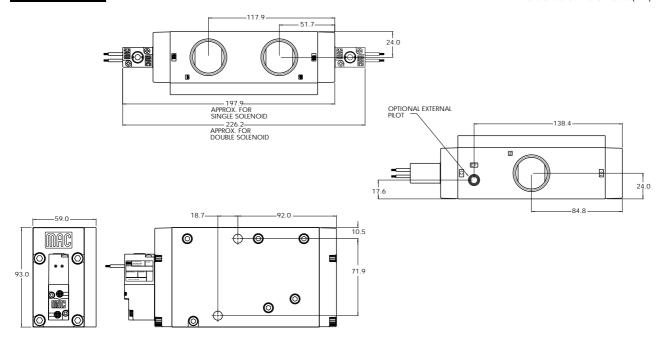
= 12.7 to 1.0 W

Response times : Energize : 29 ms

(with 5,4 W coil) De-energize :21 ms

Options: • NPTF threads

### DIMENSIONS





# Individual mounting Series Inline

34

47

ISO 1 ISO 2

Armature
Coil
Push Pin

"D" seal
Valve spring

4 Balanced poppets

### **SERIES FEATURES**

- High force MACSOLENOID  $^{\! \otimes}.$
- 10mm direct operated.
- # 10-32 or M5 ports.
- Rated for lubricated or non-lubricated service.
- Cylinder ports in valve or in circuit bar.



Function		Port size	Flow (M	ax)		Individual M	lounting		Series
5/2		M5	100 ľ	NI/min		Inline			
OPERATIO	NAL BENEFITS								34
2. Balance pressure	valve, direct solenoid operate ed poppet, immune to variatio re. troke with high flow.							145	36
<ol><li>The pat forces.</li></ol>	tented solenoid develops high	shifting							32
6. Flow is	s specifically adjusted on each il operator standard on all valv							31:1	37
77 77 47	. oporator stariadi a ori ali vali	00.						G .	38
								0	52 67
HOW	TO ORDER								44
	Port size		Univer	sal val	ve	For us	se with ex	xternal flow controls	46
			m N	Î			ا المبد		70
			EB V 6	∳ ∳/ <sub>T</sub> PEA	<u> </u>		""[_ EB`	T V OVEA	42
	M5		44B-ABA	-G xxx-	XXX		44B-BE	BA-G xxx-xxx	47
SOLENC	OID OPERATOR ➤		G <u>xx</u>	<u>X-X</u>	XX <sup>*</sup>				47
				J 5					48
XX	Voltage		Wire length	X	•	erator	XX	Electrical connection	
DA DC	24 V=/1W 24 V=/1,8W		45 cm 60 cm				KA KT	Mini connector  Mini connector with light	400
DD	12 V=/2,5W		oo un		Locking		BA	Flying leads	100
DF	24 V=/4,0W						ВТ	Flying leads with light	92
* Click he	ere for other options available.								
LATCHIN	NG SOLENOID ➤		L <u>x</u> x	<u>X-X</u>	XX <sup>*</sup>				93
				╛╏					
XX	Voltage	X	Wire length	X	Manual ope	erator	XX	Electrical connection	ISO 1
DF	24 V=/4,0W	Α	45 cm	0	·		BA	2 Wire flying leads	ISO 2
HA	24 V=/1,95W		60 cm	_			BJ	4 Wire flying leads	ISO 3
		С	90 cm	_			KA KE	2 Wire plug-in assembly 4 Wire plug-in assembly	130 3
* Click he	ere for other options available.						LA	3 Wire plug-in assembly (Polarity switching cover)	







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)

Ø 3,3 MTG. HOLES

Filtration : 40 µ

Temperature range : -18°C to +50°C

Orifice: 1,8 mm

Flow (at 6 bar, \( \Delta P = 1 \text{bar} \): 4 W: 100 NI/min (Cv 0,10) - 2,5 W: 80 NI/min (Cv 0,08) - 1,8 W: 60 NI/min (Cv 0,06) - 1,0W: 50 NI/min (Cv 0,05)

Coil : Epoxy encapsulated – Class A wires – 100% ED

Voltage range : -15% to +10% of nominal voltage

Protection : IP54 (electrical connection)

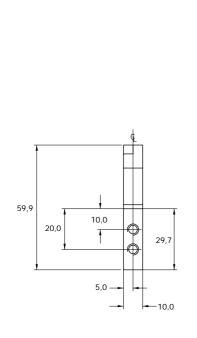
Power: 4 W - 2,5 W - 1,8 W - 1,0 W

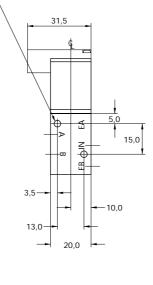
Response times : Energize :3,4 ms

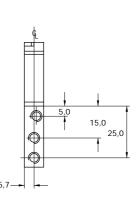
(with 4 W coil) De-energize : 1,5 ms

Note: • Valve and coil are not interchangeable.

### DIMENSIONS

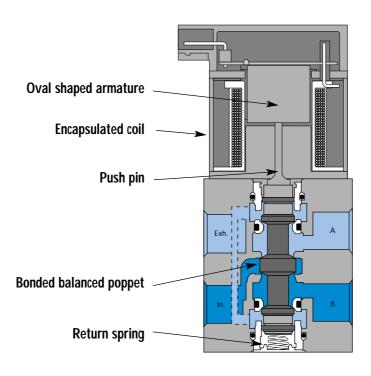








# Inline Series Inline Manifold mounting Stacking Manifold base "plug-in" with pressure ressure ressure ressure ressure ressure ressure ressure flow controls with PR & FC



### **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.



Function	Port size	Flow	(Max)	Individual mounting	Serie
1/2	G1/8″	- M5 300	O NI/min	Inline	
PERATIONAL BENEFITS	_				34
<ul> <li>Balanced poppet, im pressure.</li> <li>Patented solenoid de forces.</li> </ul>					36
Short stroke with high Higher forces result in				6	32
given flow. Powerful return spring	g.				37
				A	38
				(0)	52
					6
HOW TO ORDER					44
Po	ort size	Withou	ut flow controls	With	flow controls
		A 	A B B B	<u> </u>	A B B B B B B B B B B B B B B B B B B B
G	G1/8"	46A-	AC1-J xxx-xxx	46A-A	AC2-J xxx-xxx
	M5	46A-	AD1-J xxx-xxx	46A-A	AD2-J xxx-xxx 4
OLENOID OPERA			(XX-XXX* (-G) A		
XX Voltage  AA 120 V~/5,4	W A	Wire length 45 cm	X Manual ope  1 Non-locking	erator XX BA	Electrical connection 4( Flying leads
DA 24 V=/5,4W	I B	60 cm	2 Locking	GA	MAC JAC solenoid plug-in
DB 12 V=/5,4W DC 24 V=/2,4W		90 cm		GB	MAC JAC solenoid plug-in with diode
DD 12 V=/2,4W				GD	MAC JAC solenoid plug-in
				GG	with light  MAC JAC solenoid plug-in with rectifier
	res connector with rectifier.		annonate the UCU huma adversald.	A/Sile also NAAC IAC	IS
is possible. Cons	onnector is similar to the coluble ult factory for washdown m	inector used for valves that in odification number.	corporate the "G" type solenoid. \	viin the Mac Jac, wash	down capability
OPTIONS	1				10
OPTIONS					IS

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

46A-**AC**1-Jxxx-xxx

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

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







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,  $\Delta P$ =1bar):  $1,8W:200\;NI/min\;(Cv\;0,20)-2,4W:200\;NI/min\;(Cv\;0,20)-5,4W:300\;NI/min\;(Cv\;0,30)$ 

Coil : Epoxy encapsulated - Class A wires - 100% ED

Voltage range : -15% to +10% of nominal voltage

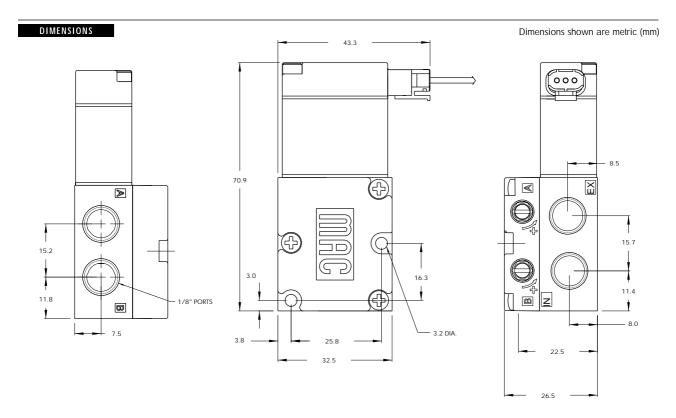
Protection: IP54 (electrical connection)

5,4W - 2,4W - 1,0W

Power: Response times : 7,20 ms

Energize : De-energize : 4,20ms

• NPTF threads Options:





unction	Port size	Flow	(Max)	Manifold Mounting	Series
1/2	G1/8"	- M5 300	O NI/min	Stacking	
PERATIONAL BENEFITS	_				34
<ul> <li>Balanced poppet, im pressure.</li> <li>Patented solenoid de forces.</li> </ul>					36
<ul> <li>Short stroke with high</li> <li>Higher forces result in given flow.</li> </ul>					32
. Powerful return spring	g.				37
					38
					52
					67
HOW TO ORDER	I				44
Po	ort size	Withou	t flow controls	With flow controls	46
		<b>A</b>	A B W	A B B W	42
C	61/8"	46A-	SC1-J XXX-XXX	46A-SC2-J XXX-XXX	42
M5		46A-5	SD1-J xxx-xxx	46A-SD2-J xxx-xxx	47
Solenoid Opera	TOR >	J <u>x</u>	<u>xx-xxx</u> * (-G) A	dd "G" for ground	48
XX Voltage	X	Wire length	X Manual op		onnection 40
AA 120 V~/5,4\ DA 24 V=/5,4\		45 cm 60 cm	1 Non-locking 2 Locking	BA Flying leads GA MAC JAC sole	noid plug-in
DB 12 V=/5,4W		90 cm		GB MAC JAC soler with diode	noid plug-in 92
DC 24 V=/2,4W DD 12 V=/2,4W				GD MAC JAC soler	noid plug-in
				GG MAC JAC sole	noid plug-in 93
Click here for other op Jote : - AC voltage requi	ntions available.			with rectifier	 ISC
- The MAC JAC co	onnector is similar to the con ult factory for washdown mo	nector used for valves that incodification number.	corporate the "G" type solenoid.	With the MAC JAC, washdown capability	100
•	ort size 1/4") : M-46001-01				150
(po	,				ISC







Filtration :

Fluid: Compressed air, vacuum, inert gases

40 μ

Pressure range : Vacuum to 8 bar

**Lubrication :** Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Temperature range : -18°C to +50°C

Orifice: 3,3 mm

Flow (at 6 bar, \( \Delta P = 1 \text{bar} \): 1,8W: 200 NI/min (Cv 0,20) - 2,4W: 200 NI/min (Cv 0,20) - 5,4W: 300 NI/min (Cv 0,30)

Coil : Epoxy encapsulated – Class A wires – 100% ED

Voltage range : -15% to +10% of nominal voltage

-13% to +10% of Hollinar 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

WITH FLOW CONTROLS

5.0

152.0

WITHOUT FLOW CONTROLS

152.0

152.0

WITHOUT FLOW CONTROLS

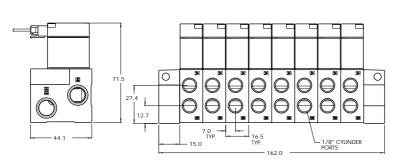
152.0

152.0

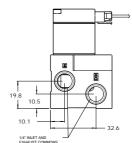
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WITHOUT FLOW CONTROLS

Dimensions shown are metric (mm)



0 0 0 0 0 0 0 0



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



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

# Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	G1/8"	300 NI/min	Manifold base "plug-in"	
PERATIONAL BENEFITS	_			34
<ul> <li>Balanced poppet, impressure.</li> <li>Patented solenoid deforces.</li> </ul>				36
<ul><li>Short stroke with high</li><li>Higher forces result in given flow.</li></ul>				32
given now. . Powerful return sprinç	g.			37
				38
				52
				67
HOW TO ORDER	1			44
	Port size		Model number	
	1 011 3120		Weder Hamber	46
			THU THE	
	Valve less base		46A-L00-00-J xxP-xxx	42
	G1/8"		46A-LSB-AC-J xxP-xxx	47
SOLENOID OPERA	TOR ➤	J <u>xx</u> P-x <u>x</u>	(-G) Add "G" for ground	
				48
XX Voltage		X Manual operator	XX Electrical connection	4.00
AA 120V~/5,4V DA 24V=/5,4W		1 Non-locking 2 Locking	FA Base plug-in FB Base plug-in with diode	400
DB 12V=/5,4W DC 24V=/2,4W		Looking	FG Base plug-in with rectifier	92
·				/ _
	tions available. es connector with rectifier.			93
OPTIONS				ISO
46A-LSB-AC-JxxP-x	XX			ISO
L	Side cylinder ports Bottom cylinder ports			ISO
L Bas	se only – no valve se mount body se mount body with gage port			







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 :  $\frac{40~\mu}{-18^{\circ}\text{C to } +50^{\circ}\text{C}}$  Temperature range :  $-18^{\circ}\text{C to } +50^{\circ}\text{C}$ 

Orifice: 3,3 mm

Flow (at 6 bar, ΔP=1bar): 1,8W: 200 NI/min (Cv 0,20) – 2,4W: 200 NI/min (Cv 0,20) – 5,4W: 300 NI/min (Cv 0,30)

Coil : Epoxy encapsulated – Class A wires – 100% ED

Voltage range : -15% to +10% of nominal voltage

-15% to +10% of Horillian voltage

Protection : IP54 (electrical connection)

Power: 5,4W - 2,4W - 1,0W

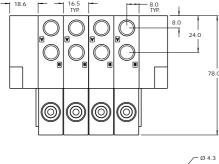
Response times : Energize : 7,20 ms
De-energize : 4,20ms

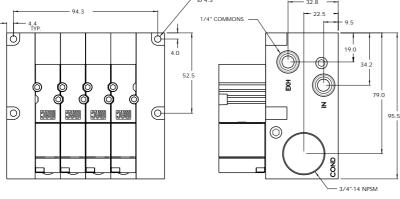
Options: • NPTF threads

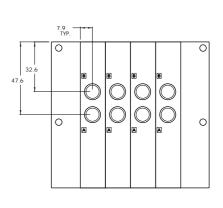
Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002

• Tie rod (x2): 79443

### DIMENSIONS









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

# Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	G1/8"	300 NI/min	Manifold base "plug-in" with pressure regulators	
PERATIONAL BENEFITS	3			34
Balanced poppet, im pressure.      Patented solenoid de				36
forces.  Short stroke with high Higher forces result in				32
given flow.  Powerful return spring	g.			37
				38
				52
				67
HOW TO ORDER	1			
HOW TO ORDER				44
	Port size		Model number	46
			A B B B	42
	Valve less base		46A-L00-00-J xxP-xxx	
	G1/8″		46A-LSB-AJ-J xxP-xxx	47
SOLENOID OPERA	TOR ➤	J <u>xx</u> P- <u>xx</u>	(-G) Add "G" for ground	48
<b>XX</b> Voltage		X Manual operator	XX Electrical connection	400
AA 120V~/5,4V DA 24V=/5,4W		<ul><li>Non-locking</li><li>Locking</li></ul>	FA Base plug-in  FB Base plug-in with diode	400
DB 12V=/5,4W			FG Base plug-in with rectifier	92
DC 24V=/2,4W	<u>'</u>			/ _
Click here for other op ote : AC voltage require	otions available. es connector with rectifier.			93
OPTIONS				100
46A- <b>L</b> SB-A <b>J</b> -JxxP-x	xx			ISO
ī	Regulator with adjusting knob Regulator with slotted stem			ISO
G	Regulator with slotted stem  Regulator with slotted stem with lock	nut		ISO
L Bas	se only – no valve se mount body se mount body with gage port			







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)

 $\textbf{Filtration}: \hspace{1.5cm} 40 \; \mu$ 

Temperature range : -18°C to +50°C

Orifice: 3,3 mm

Flow (at 6 bar, \( \Delta P = 1 \text{bar} \): 1,8W: 200 NI/min (Cv 0,20) - 2,4W: 200 NI/min (Cv 0,20) - 5,4W: 300 NI/min (Cv 0,30)

Coil : Epoxy encapsulated – Class A wires – 100% ED

De-energize :

Voltage range : -15% to +10% of nominal voltage

10% to 110% of Hollinia Voltage

 Protection :
 IP54 (electrical connection)

 Power :
 5,4W - 2,4W - 1,0W

Response times : Energize : 7,20 ms

Options: • NPTF threads

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

• Replacement regulators : PR46A-OAAA (slotted stem)

PR46A-OBAA (adjusting knob)

PR46A-OCAA (slotted stem with locknut)

Regulating range options : • PR46A-xxx.

0

b

Q

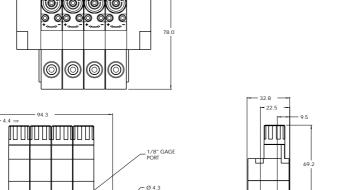
0

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

4,20ms

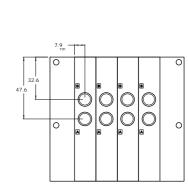
### DIMENSIONS

Dimensions shown are metric (mm)



0

- 3/4"-14 NPSM





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

Function	Port size	Flow (Max	) Manifold mounting	Series
4/2	G1/8″	300 NI	Manifold base "plug-in" with flow controls	
OPERATIONAL BENEFITS	_			34
<ol> <li>Balanced poppet, impressure.</li> <li>Patented solenoid deforces.</li> </ol>				36
<ul><li>3. Short stroke with hig</li><li>4. Higher forces result in the strong flavor.</li></ul>				32
given flow. 5. Powerful return sprin	ng.			37
				38
				52
				67
HOW TO ORDER	I			44
	Port size		Model number	46
			A B B W	42
	Valve less base		46A-L00-00-J xxP-xxx	
	G1/8″		46A-LSB-AD-J xxP-xxx	47
SOLENOID OPERA	NTOR ➤	J <u>XX</u> F	2-xxx (-G) Add "G" for ground	48
XX Voltage		X Manual ope	rator XX Electrical connection	
AA 120V~/5,4V DA 24V=/5,4W		<ul><li>Non-locking</li><li>Locking</li></ul>	FA Base plug-in FB Base plug-in with diode	400
DB 12V=/5,4W DC 24V=/2,4W	V		FG Base plug-in with rectifier	92
* Click here for other op Note : AC voltage requir	ptions available. res connector with rectifier.			93
OPTIONS				100 1
46A- <b>L</b> SB-A <b>J</b> -J <b>x</b> xP- <b>x</b>				ISO 1
	Side cylinder ports  Bottom cylinder ports			ISO 2
<b>0</b> Ba: <b>L</b> Ba:	ise only – no valve use mount body use mount body with gage port			ISO 3







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 3,3 mm

Flow (at 6 bar, ΔP=1bar): 1,8W: 200 NI/min (Cv 0,20) – 2,4W: 200 NI/min (Cv 0,20) – 5,4W: 300 NI/min (Cv 0,30)

Coil : Epoxy encapsulated – Class A wires – 100% ED

Voltage range : -15% to +10% of nominal voltage

10% to 7 10% of Homman Voltage

 Protection :
 IP54 (electrical connection)

 Power :
 5,4W - 2,4W - 1,0W

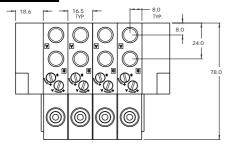
Response times : Energize : 7,20 ms
De-energize : 4,20ms

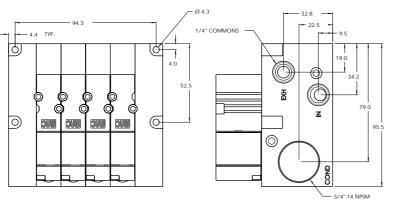
Options : • NPTF threads

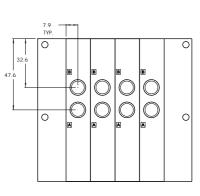
Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002

• Tie rod (x2): 79443

# DIMENSIONS









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

Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	G1/8″	300 NI/min	Manifold base "plug-in" with PR & FC	
OPERATIONAL BENEFITS				34
<ul><li>. Balanced poppet, im pressure.</li><li>! Patented solenoid de forces.</li></ul>				36
Short stroke with high     Higher forces result in				32
given flow. . Powerful return sprin	g.			37 38 52
HOW TO ORDER	I			67 44
	Port size		Model number	46
			A B B W	42
	Valve less base G1/8"		46A-LSB-AK-J xxP-xxx	47
SOLENOID OPERA	TOR ➤	J <u>xx</u> P- <u>xx</u>	(-G) Add "G" for ground	48
XX Voltage  AA 120V~/5,4V  DA 24V=/5,4W	N	Manual operator  Non-locking  Locking	XX Electrical connection  FA Base plug-in	400
DB 12V=/5,4W DC 24V=/2,4W		2 Locking	FB Base plug-in with diode FG Base plug-in with rectifier	92
Click here for other op lote : AC voltage require	otions available. es connector with rectifier.			93
F H O Bas L Bas	Regulator with adjusting knob & flow Regulator with slotted stem & flow co I Regulator with slotted stem with lockrose only – no valve se mount body with gage port	ntrols		ISO ISO ISO







Fluid: Compressed air, vacuum, inert gases

Vacuum to 8 bar Pressure range :

Lubrication : Not required, if used  $\,$  select a medium aniline point lubricant (between 80  $^{\circ}\text{C}$  and 100  $^{\circ}\text{C})$ 

Filtration : 40 μ

Temperature range : -18°C to +50°C

Orifice: 3,3 mm

Flow (at 6 bar,  $\Delta P = 1 bar$ ): 1,8W: 200 NI/min (Cv 0,20) - 2,4W: 200 NI/min (Cv 0,20) - 5,4W: 300 NI/min (Cv 0,30)

Coil : Epoxy encapsulated - Class A wires - 100% ED

-15% to +10% of nominal voltage Voltage range :

De-energize :

Protection: IP54 (electrical connection)

5,4W - 2,4W - 1,0W Power:

Response times : Energize: 7,20 ms 4,20ms

· NPTF threads Options:

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

• Replacement regulators : PR46A-OAAA (slotted stem)

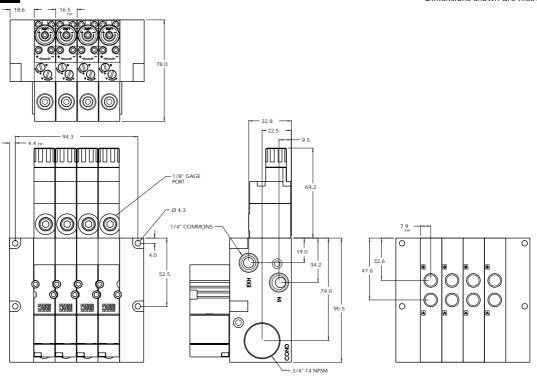
PR46A-OBAA (adjusting knob)

PR46A-OCAA (slotted stem with locknut)

Regulating range options : • PR46A-xxxA

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

## DIMENSIONS





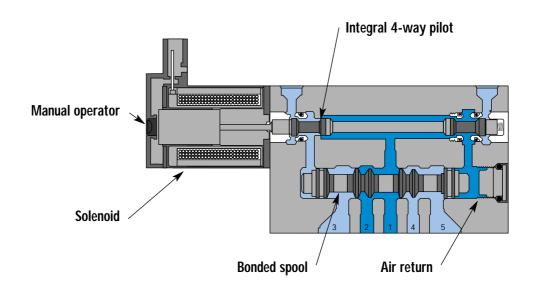
# Individual mounting Series non "plug-in" "plug-in" Manifold mounting Sub-base/ manifold base non "plug-in" with latching Sub-base/ manifold base "plug-in" with latching

67 44

42

47

ISO 2



# **SERIES FEATURES**

• High force MACSOLENOID®.

Manifold base Manifold base non "plug-in"

"plug-in"

- 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.

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



24 V=/2,5W

24 V=/4,0W

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.

90 cm

# Direct solenoid and solenoid pilot operated valves

Function		Port size	Flow (Max)	Individual mo	ounting	Series
5/2, 5/3		M5, M7	400 NI/min	Sub-base non "plug-in"		
OPERATIONAL BEN	IEFITS				_	34
<ol> <li>4-way valve wii</li> <li>10 mm valve (s</li> <li>High flow (up to</li> <li>Fast repeatable</li> </ol>	tacks on 10,5 o 400 NI/min)	mm centres).				36
<ul><li>5. Maximum shifti</li><li>6. Long life.</li></ul>					a sala	32
					8	37
					0.0	38
						52
						67
HOW TO ORD	ER					44
SINGLE PRESS	URF MODEL	S				
Port size	Pilot air	5/2 Single solenoid	5/2 Double soleno	id 5/3 Closed centi	re 5/3 Open centre	46
		12 2 4 14 T	12 2 4 14 17D 14	12 2 4 MD 11 11 13	<del>᠘</del>	42
Valve less	Internal	42A-AMA-000-Gxxx-xxx	42A-BMA-000-Gxxx-x	xx 42A-EMA-000-Gxxx-	3 1 5 42A-FMA-000-GXXX-XXX	-
base	External	42A-AMD-000-Gxxx-xxx	42A-BMD-000-Gxxx-x	42A-EMD-000-Gxxx-	42A-FMD-000-Gxxx-xxx	47
M5	Internal	42A-AMA-GAL-Gxxx-xxx	42A-BMA-GAL-Gxxx-x	42A-EMA-GAL-GXXX	42A-FMA-GAL-Gxxx-xxx	_
	External	42A-AMD-GAM-Gxxx-xxx	42A-BMD-GAM-Gxxx-)			- 48
M7	Internal	42A-AMA-LAL-Gxxx-xxx	42A-BMA-LAL-Gxxx-x			_
	External	42A-AMD-LAM-Gxxx-xxx	42A-BMD-LAM-Gxxx-x	42A-EMD-LAM-Gxxx	-xxx 42A-FMD-LAM-Gxxx-xxx	- 400
DUAL PRESSUR	E MODELS					400
Port size		Pilot air	5/2 Single solenoi	d 5/2 Double solen	oid 5/3 Pressure centre	92
			14 2 12 12 5 0 7 0 3	14 2 12 5 0 7 0 3	12 4 9 9 W	
Valve less b	ase Int	ernal Supply #3 port	42A-CMB-000-Gxxx-x	42A-DMB-000-Gxxx-		93
		Supply #5 port	42A-CMC-000-Gxxx-x	42A-DMC-000-Gxxx-	xxx 42A-HMC-000-Gxxx-xxx	-
	Ex	ternal	42A-CMD-000-Gxxx-x	42A-DMD-000-Gxxx-	xxx 42A-HMD-000-Gxxx-xxx	- ISO 1
M5	Int	ernal Supply #3 port	42A-CMB-GAL-Gxxx-x	xx 42A-DMB-GAL-Gxxx-	42A-HMB-GAL-Gxxx-xxx	ISO 2
		Supply #5 port	42A-CMC-GAL-Gxxx-x	xx 42A-DMC-GAL-Gxxx-	42A-HMC-GAL-Gxxx-xxx	_ ISO (
		ternal	42A-CMD-GAM-GXXX-X			_
M7	Int	ernal Supply #3 port	42A-CMB-LAL-Gxxx-xx			_
		Supply #5 port	42A-CMC-LAL-GXXX-XX			_
	Ex	ternal	42A-CMD-LAM-Gxxx-x	xx 42A-DMD-LAM-Gxxx-	-xxx 42A-HMD-LAM-Gxxx-xxx	_
STANDARD SC	DLENOID OF	PERATOR ➤	G <u>xx</u> x- <u>xx</u> x	<u>(</u> * 		
XX Volta	_	X Wire leng		Manual operator	XX Electrical connection	
DC 24 V=	-/2,5W /1,8W	A 45 cm B 60 cm		Non-locking Locking	BA Flying leads BT Flying leads with light	_
DD 24 V=	/2 5W	C 90 cm			KA Mini connector	_

KD

Mini connector

Mini connector with light Mini connector with rectifier & light & ground







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

Flow (at 6 bar, ΔP=1bar): M7: 400 NI/min (Cv 0,4) – M5: 350 NI/min (Cv 0,35)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range : -15% to +10% of nominal voltage

\_\_\_\_\_\_

Protection : IP54 (electrical connection)

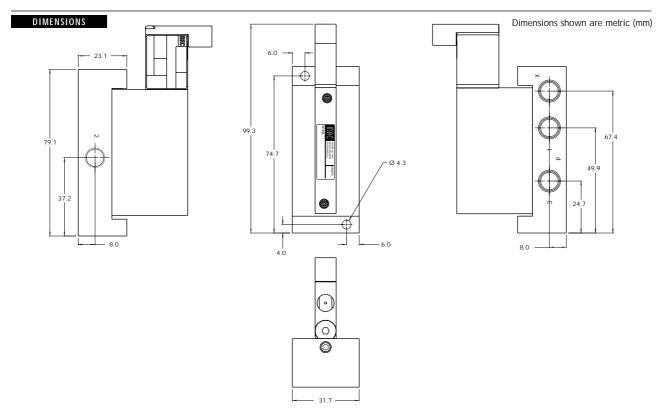
 Power :
 1.0 to 4.0 W

 Response times :
 Energize : 5 ms

(with 24V 4 W coil) De-energize : 5 ms

Options: • NPTF threads

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





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.

# Direct solenoid and solenoid pilot operated valves

nction		Port size	Flow (Max)	Individual mounting	
/2, 5/3		M5, M7	400 NI/min	Sub-base "plug-in"	
RATIONAL BE	NEFITS				
4-way valve wi	, ,	•			
10 mm valve (s	o 400 NI/min	).			
Fast repeatable Maximum shifti Long life.					
HOW TO ORD	ER				
NGLE PRESS	URE MODE	LS (LED STANDARD EXCE	PT FOR SINGLE SOLENOID	S)	
Port size	Pilot air	5/2	5/2	5/3	5/3
		Single solenoid	Double solenoid	Closed centre	Open centre
		12 2 4 14 14 14 14 14 14 14 14 14 14 14 14 1	12 2 4 14 14 21 21 21 21 21 21 21 21 21 21 21 21 21		3 1 5
Valve less	Internal	42A-AMA-000-GxxP-xxx	42A-BME-000-GxxP-xGA	42A-EME-000-GxxP-xGA	42A-FME-000-GxxP-xGA
base	External	42A-AMD-000-GxxP-xxx	42A-BMH-000-GxxP-xGA	42A-EMH-000-GxxP-xGA	42A-FMH-000-GxxP-xGA
M5	Internal	42A-AMA-GAA-GxxP-xxx	42A-BME-GAC-GxxP-xGA	42A-EME-GAC-GxxP-xGA	42A-FME-GAC-GxxP-xGA
	External	42A-AMD-GAB-GxxP-xxx	42A-BMH-GAD-GxxP-xGA	42A-EMH-GAD-GxxP-xGA	42A-FMH-GAD-GxxP-xGA
M7	Internal	42A-AMA-LAA-GxxP-xxx	42A-BME-LAC-GxxP-xGA	42A-EME-LAC-GxxP-xGA	42A-FME-LAC-GxxP-xGA
	External	42A-AMD-LAB-GxxP-xxx	42A-BMH-LAD-GxxP-xGA	42A-EMH-LAD-GxxP-xGA	42A-FMH-LAD-GxxP-xGA
JAL PRESSUI	re models	(LED STANDARD EXCEPT	FOR SINGLE SOLENOIDS)		
Port size	e	Pilot air	5/2	5/2	5/3
			Single solenoid	Double solenoid	Pressure centre
			14 172 10 10 10 10 10 10 10 10 10 10 10 10 10		
Valve less b	pase In	ternal Supply #3 port	42A-CMB-000-GxxP-xxx	42A-DMF-000-GxxP-xGA	42A-HMF-000-GxxP-xGA
	_	Supply #5 port	42A-CMC-000-GxxP-xxx	42A-DMG-000-GxxP-xGA	42A-HMG-000-GxxP-xGA
	Ex	dernal	42A-CMD-000-GxxP-xxx	42A-DMH-000-GxxP-xGA	42A-HMH-000-GxxP-xGA
M5	In	ternal Supply #3 port	42A-CMB-GAA-GxxP-xxx	42A-DMF-GAC-GxxP-xGA	42A-HMF-GAC-GxxP-xGA
		Supply #5 port	42A-CMC-GAA-GxxP-xxx	42A-DMG-GAC-GxxP-xGA	42A-HMG-GAC-GxxP-xGA
	Ex	kternal	42A-CMD-GAB-GxxP-xxx	42A-DMH-GAD-GxxP-xGA	42A-HMH-GAD-GxxP-xGA
M7	In	ternal Supply #3 port	42A-CMB-LAA-GxxP-xxx	42A-DMF-LAC-GxxP-xGA	42A-HMF-LAC-GxxP-xGA
		Supply #5 port	42A-CMC-LAA-GxxP-xxx	42A-DMG-LAC-GxxP-xGA	42A-HMG-LAC-GxxP-xGA
	Ex	kternal	42A-CMD-LAB-GxxP-xxx	42A-DMH-LAD-GxxP-xGA	42A-HMH-LAD-GxxP-xGA
ANDARD SO	OLENOID O	PERATOR ➤	G <u>xx</u> P- <u>xxx</u> *		
xx Volt	-	X	Manual operator		al connection
	/~/2,5W		Non-locking	Double solenoid GA Base plug	& 3 position models
		7			
DC 24 V=	/1,8W /2,5W		Locking	Single solenoid i	

 $\label{lem:consult "Precautions" before use, installation or service of MAC Valves..$ 







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

Flow (at 6 bar, ΔP=1bar): M7: 400 NI/min (Cv 0,4) – M5: 350 NI/min (Cv 0,35)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range : -15% to +10% of nominal voltage

Protection : IP54 (electrical connection)

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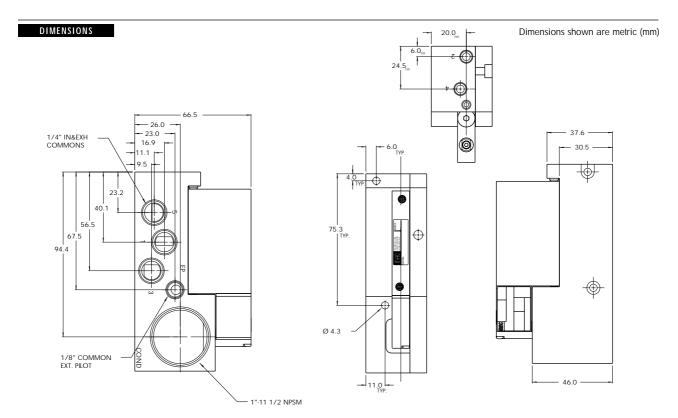
 Power :
 1.0 to 4.0 W

 Response times :
 Energize : 5 m

Response times: Energize: 5 ms (with 24V 4 W coil) De-energize: 5 ms

Options : • NPTF ports

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





Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	M5, M7	400 NI/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 NI/min).
- 4. Fast repeatable response times.
- 5. Maximum shifting forces in both directions.
- 6. Long life.



42

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
		12 2 4 14 17D 14 315	12 2 4 14 17D T 3 15	12 2 4 14 15 MM TO THE TOTAL T	12 2 4 14 15 17 17 17 17 17 17 17 17 17 17 17 17 17
Valve less	Internal	42A-AMA-000-Gxxx-xxx	42A-BMA-000-Gxxx-xxx	42A-EMA-000-G <i>xxx-xxx</i>	42A-FMA-000-G <i>xxx-xxx</i>
base	External	42A-AMD-000-Gxxx-xxx	42A-BMD-000-Gxxx-xxx	42A-EMD-000-G <i>xxx-xxx</i>	42A-FMD-000-Gxxx-xxx
M5	Internal	42A-AMA-GJL-Gxxx-xxx	42A-BMA-GJL-Gxxx-xxx	42A-EMA-GJL-Gxxx-xxx	42A-FMA-GJL-Gxxx-xxx
	External	42A-AMD-GJM-Gxxx-xxx	42A-BMD-GJM-Gxxx-xxx	42A-EMD-GJM-Gxxx-xxx	42A-FMD-GJM-Gxxx-xxx
M7	Internal	42A-AMA-LJL-Gxxx-xxx	42A-BMA-LJL-Gxxx-xxx	42A-EMA-LJL-Gxxx-xxx	42A-FMA-LJL-Gxxx-xxx
	External	42A-AMD-LJM-Gxxx-xxx	42A-BMD-LJM-Gxxx-xxx	42A-EMD-LJM-Gxxx-xxx	42A-FMD-LJM-Gxxx-xxx

#### DUAL PRESSURE MODELS (MIDDLE STATION MANIFOLDS WITH SIDE PORTS)

DOTE TRESSORE WODELS (WIDDLE STATION WITH SIDE TOKTS)							
Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre			
		$ \begin{array}{c c} 14 & 4 & 2 \\ \hline 170 & 4 & 7 & 3 \end{array} $	14 1/D 4 2 12 5 0 0 0 3	12 2 4 14 MMD 14			
Valve less base	Internal Supply #3 port	42A-CMB-000-Gxxx-xxx	42A-DMB-000-Gxxx-xxx	42A-HMB-000-Gxxx-xxx			
	Supply #5 port	42A-CMC-000-Gxxx-xxx	42A-DMC-000-Gxxx-xxx	42A-HMC-000-Gxxx-xxx			
	External	42A-CMD-000-Gxxx-xxx	42A-DMD-000-Gxxx-xxx	42A-HMD-000-Gxxx-xxx			
M5	Internal Supply #3 port	42A-CMB-GJL-Gxxx-xxx	42A-DMB-GJL-Gxxx-xxx	42A-HMB-GJL-Gxxx-xxx			
	Supply #5 port	42A-CMC-GJL-Gxxx-xxx	42A-DMC-GJL-Gxxx-xxx	42A-HMC-GJL-Gxxx-xxx			
	External	42A-CMD-GJM-Gxxx-xxx	42A-DMD-GJM-Gxxx-xxx	42A-HMD-GJM-Gxxx-xxx			
M7	Internal Supply #3 port	42A-CMB-LJL-Gxxx-xxx	42A-DMB-LJL-Gxxx-xxx	42A-HMB-LJL-Gxxx-xxx			
	Supply #5 port	42A-CMC-LJL-Gxxx-xxx	42A-DMC-LJL-Gxxx-xxx	42A-HMC-LJL-Gxxx-xxx			
	External	42A-CMD-LJM-Gxxx-xxx	42A-DMD-LJM-Gxxx-xxx	42A-HMD-LJM-Gxxx-xxx			

## STANDARD SOLENOID OPERATOR ➤

				-				
				_	1_			
XX	Voltage	X	Wire length	2	X	Manual operator	XX	Electrical connection
AA	120 V~/2,5W	Α	45 cm		1	Non-locking	BA	Flying leads
DC	24 V=/1,8W	В	60 cm		2	Locking	BT	Flying leads with light
DD	24 V=/2,5W	С	90 cm				KA	Mini connector
DF	24 V=/4,0W						KT	Mini connector with light
Note · - A	C voltage requires connector wit	h rectifier					KD	Mini connector with

G xxx-xxx

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.

rectifier & light & ground







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

Flow (at 6 bar, ΔP=1bar): M7: 400 NI/min (Cv 0,4) – M5: 350 NI/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

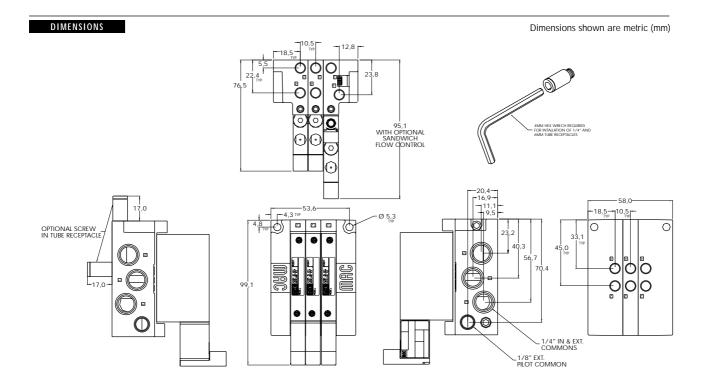
Response times : Energize : 5 ms

(with 24V 4 W coil) 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





Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	M5, M7	400 NI/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 NI/min).
- 4. Fast repeatable response times.
- 5. Maximum shifting forces in both directions.
- 6. Long life.



HOW TO ORDER

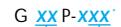
# SINGLE PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
		12 2 4 14 77D T 14 315	12 2 4 14 17 D T T T T	12 2 4 14 MTD 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 MDD 14 14 17 17 17 17 17 17 17 17 17 17
Valve less	Internal	42A-AMA-000-GxxP-xxx	42A-BME-000-GxxP-xxx	42A-EME-000-GxxP-xxx	42A-FME-000-GxxP-xxx
base	External	42A-AMD-000-GxxP-xxx	42A-BMH-000-GxxP-xxx	42A-EMH-000-GxxP-xxx	42A-FMH-000-GxxP-xxx
M5	Internal	42A-AMA-GJA-GxxP-xxx	42A-BME-GJC-GxxP-xxx	42A-EME-GJC-GxxP-xxx	42A-FME-GJC-GxxP-xxx
	External	42A-AMD-GJB-GxxP-xxx	42A-BMH-GJD-GxxP-xxx	42A-EMH-GJD-GxxP-xxx	42A-FMH-GJD-GxxP-xxx
M7	Internal	42A-AMA-LJA-GxxP-xxx	42A-BME-LJC-GxxP-xxx	42A-EME-LJC-GxxP-xxx	42A-FME-LJC-GxxP-xxx
	External	42A-AMD-LJB-GxxP-xxx	42A-BMH-LJD-GxxP-xxx	42A-EMH-LJD-GxxP-xxx	42A-FMH-LJD-GxxP-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
		14 17D 100 0 0 0 3	14 17D 10 10 10 10 10 10 10 10 10 10 10 10 10	12 MD 14 MD 17 3 1 5
Valve less base	Internal Supply #3 port	42A-CMB-000-GxxP-xxx	42A-DMF-000-GxxP-xxx	42A-HMF-000-GxxP-xxx
	Supply #5 port	42A-CMC-000-GxxP-xxx	42A-DMG-000-GxxP-xxx	42A-HMG-000-GxxP-xxx
	External	42A-CMD-000-GxxP-xxx	42A-DMH-000-GxxP-xxx	42A-HMH-000-GxxP-xxx
M5	Internal Supply #3 port	42A-CMB-GJA-GxxP-xxx	42A-DMF-GJC-GxxP-xxx	42A-HMF-GJC-GxxP-xxx
	Supply #5 port	42A-CMC-GJA-GxxP-xxx	42A-DMG-GJC-GxxP-xxx	42A-HMG-GJC-GxxP-xxx
	External	42A-CMD-GJB-GxxP-xxx	42A-DMH-GJD-GxxP-xxx	42A-HMH-GJD-GxxP-xxx
M7	Internal Supply #3 port	42A-CMB-LJA-GxxP-xxx	42A-DMF-LJC-GxxP-xxx	42A-HMF-LJC-GxxP-xxx
	Supply #5 port	42A-CMC-LJA-GxxP-xxx	42A-DMG-LJC-GxxP-xxx	42A-HMG-LJC-GxxP-xxx
	External	42A-CMD-LJB-GxxP-xxx	42A-DMH-LJD-GxxP-xxx	42A-HMH-LJD-GxxP-xxx

STANDARD SOLENOID OPERATOR ➤



XX	Voltage	X	Manual operator	XX	Electrical connection
AA	120 V~/2,5W	1	Non-locking	Doub	le solenoid & 3 position models
DC	24 V=/1,8W	2	Locking	GA	Base plug-in
DD	24 V=/2,5W			Single	e solenoid models
DF	24 V=/4,0W			DJ	Base plug-in
	ere for other options available.			DM DD	Base plug-in with ground pin Base plug-in with rectifier & light & ground

Above numbers are middle station manifold with side ports

<sup>\*\*</sup> 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.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

Flow (at 6 bar, ΔP=1bar): M7: 400 NI/min (Cv 0,4) – M5: 350 NI/min (Cv 0,35)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range : -15% to +10% of nominal voltage

Protection : IP54 (electrical connection)

- II 34 (ciccincal connecti

 Power :
 1.0 to 4.0 W

 Response times :
 Energize : 5 ms

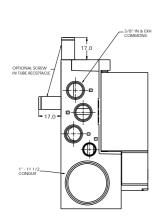
(with 24V 4 W coil) De-energize: 5 ms

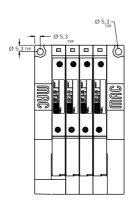
Options: • NPTF threads • Sandwich flow controls: FC42A-AB

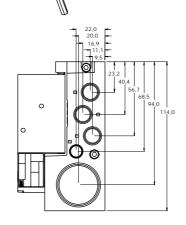
• Sandwich regulator : see "regulators" section • Isolator disk for inlet and exhaust: 28454

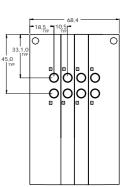
• Valve blanking plate : M-42004 • Plug-in wire protector : 24180

# DIMENSIONS











Function	Port size	Flow	(Max)		Nanifold mounting	Series
5/2	M5, M7	400	NI/min	Sub-base/ manifold base non "plug-in" with latching solenoid		
OPERATIONAL BENEFITS						34
<ol> <li>4-way valve with 4-way</li> <li>10 mm valve (stacks of a High flow (up to 400)</li> <li>Fast repeatable responses</li> </ol>	on 10,5 mm centres). NI/min).				- A	36
<ul><li>5. Maximum shifting force</li><li>6. Long life.</li></ul>					9	32
					N. 30	37
						38
						52
HOW TO ORDER					q	67
HOW TO ORDER	100510					44
SINGLE PRESSURE N						46
Port size	Pilot air		Ę	5/2 Single pressure		_
				120 7 27		42
Valve less base	Internal		4	2A-AMA-000-Lxxx-xxx		4.7
	External		4	2A-AMD-000-Lxxx-xxx		<del></del>
M5	Internal			2A-AMA-GAL-LXXX-XXX		
M7	External Internal			2A-AMD-GAM-LXXX-XXX 2A-AMA-LAL-LXXX-XXX		48
1417	External			2A-AMD-LAM-Lxxx-xxx		
DUAL PRESSURE MC	— ——— ——— DDELS					400
Port size	Pilot air			5/2 Dual pressure		92
				12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17		
Valve less base	Internal Supply #3 port			42A-CMB-000-Lxxx-xxx		93
	Supply #5 port			42A-CMC-000-Lxxx-xxx		ISO
	External			42A-CMD-000-Lxxx-xxx		
M5	Internal Supply #3 port			42A-CMB-GAL-LXXX-XXX 42A-CMC-GAL-LXXX-XXX		150
	Supply #5 port External	<del>-</del> -		42A-CWC-GAL-LXXX-XXX		ISO
M7	Internal Supply #3 port	· ·		42A-CMB-LAL-LXXX-XXX		
	Supply #5 port			42A-CMC-LAL-LXXX-XXX		
	External			42A-CMD-LAM-Lxxx-xxx		
LATCHING SOLENC	OID OPERATOR ➤	L <u>X</u>	<u>X</u> X- <u>X</u> X	<u>X</u> *		
			<u> </u>			
XX Voltage	X	Wire length	X	Manual operator	XX Electrical conne	ection
DF 24 VDC (4,0 1) HA 24 VDC (1,95		45 cm 60 cm		No operator	BA 2 Wire Flying leads KA 2 Wire Plug-in Asser	nbly
2. 700 (1,70	<u>C</u>	90 cm	<u> </u>		LA 3 wire plug-in assem (polarity switching co	bly over)

\* 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.

4-wire plug-in assembly







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

Flow (at 6 bar, ΔP=1bar): M7: 400 NI/min (Cv 0,4) – M5: 350 NI/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

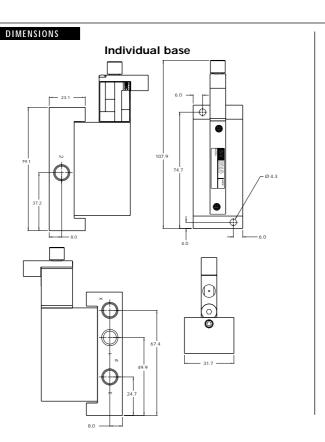
Response times : Energize : 5 ms

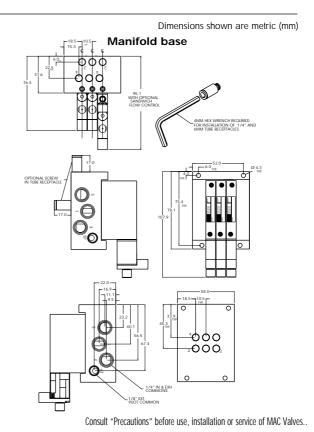
(with 24V 4 W coil) De-energize : 5 ms

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







Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2	M5, M7	400 NI/min	Sub-base/ manifold base "plug-in" with latching solenoid	
OPERATIONAL BENEFITS				34
<ol> <li>4-way valve with 4-way</li> <li>10 mm valve (stacks of a High flow (up to 400)</li> <li>Fast repeatable responses</li> </ol>	on 10,5 mm centres). NI/min).			36
<ul><li>5. Maximum shifting force</li><li>6. Long life.</li></ul>	ces in both directions.			32
				37 38
				52 67
HOW TO ORDER				44
SINGLE PRESSURE N	MODELS			
Port size	Pilot air	E/3 Sin	gle pressure	46
Port Size	Pilot all	12 2	gie pressure	_
				42
Valve less base	Internal	3 1 42A-AMA	s N-000-LxxP-xxx	4.7
	External	42A-AMI	)-000-LxxP-xxx	47
M5	Internal	42A-AMA	-GAA-LxxP-xxx	
	External		-GAB-LxxP-xxx	48
M7	Internal		-LAA-LxxP-xxx	
DUAL DESCRIPT MA	External	42A-AMI	D-LAB-LxxP-xxx	400
DUAL PRESSURE MC	DDELS			
Port size	Pilot air	5	/2 Dual pressure	92
			12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17	0.0
Valve less base	Internal Supply #3 port	42	A-CMB-000-LxxP-xxx	93
	Supply #5 port	42	A-CMC-000-LxxP-xxx	ISO
	External	42	A-CMD-000-LxxP-xxx	
M5	Internal Supply #3 port		A-CMB-GAA-LxxP-xxx	150 .
	Supply #5 port		A-CMC-GAA-LxxP-xxx	ISO :
	External		A-CMD-GAB-LxxP-xxx	
M7	Internal Supply #3 port		A-CMB-LAA-LxxP-xxx	
	Supply #5 port		A-CMC-LAA-LxxP-xxx	
LATCHING SOLENG	— External — — — — — — — — — — — — — — — — — — —	L XX P-XXX <sup>*</sup>	A-CMD-LAB-LxxP-xxx	
XX Voltage		X Manual operator	XX Electrical connection**	
DF 24 VDC/4,0\	W	No operator	DA Plug-in	
HA 24 VDC/1,95	5W	•	EA Plug-in 3 pin (polarity switching co	ver)

<sup>\*</sup> 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.







Fluid:

Compressed air, vacuum, inert gases

IInternal Pilot - 2 pos. : 1,3 to 8 bar Pressure range : 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,  $\Delta P=1bar$ ): M7: 400 NI/min (Cv 0,4) - M5: 350 NI/min (Cv 0,35)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range : -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

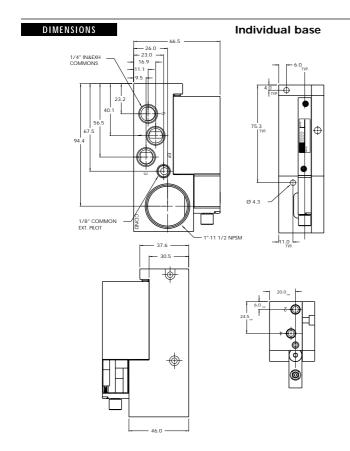
Power: 1.95 to 4.0 W Response times : Energize: 5 ms

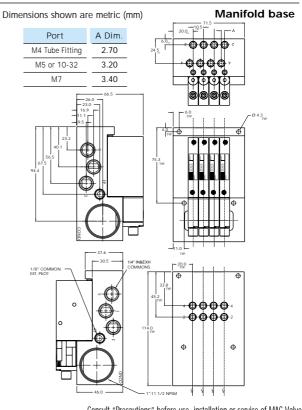
(with 24V 4 W coil) De-energize: 5 ms

Options: • NPTF threads • Sandwich flow controls : FC42A-AB

• Sandwich regulator : see "regulators" section • Isolator disk for inlet and exhaust: 28454

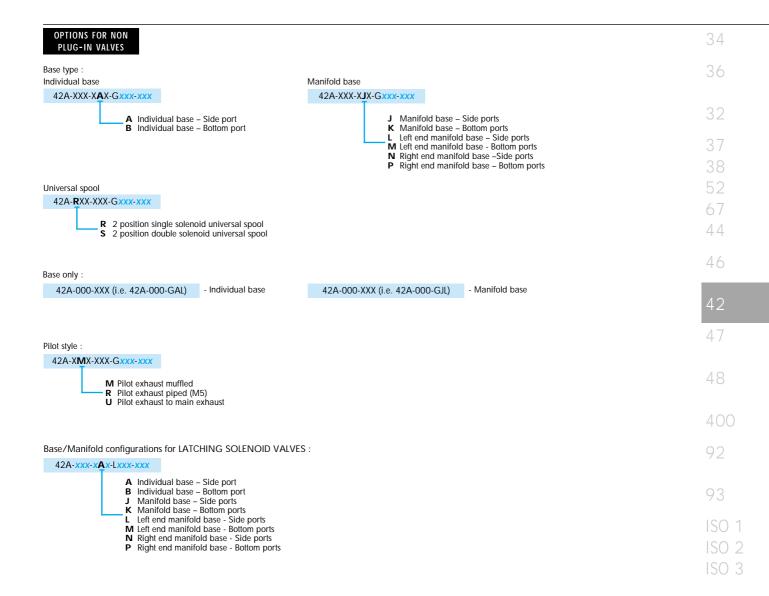
• Valve blanking plate : M-42004 • Plug-in wire protector : 24180



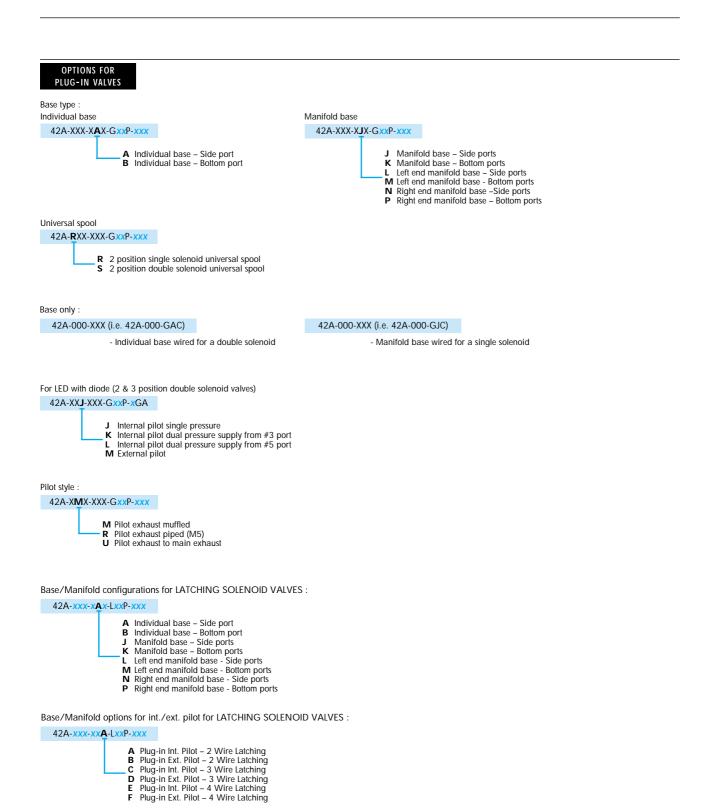


Consult "Precautions" before use, installation or service of MAC Valves...











# Individual mounting Sub-base non "plug-in" 34 Manifold mounting Stacking Manifold base "plug-in" 32 Manual operator Armature Coil Push pin 42 Pole piece

# **SERIES FEATURES**

"D" seal

**Poppet** 

**Conical seat** 

Valve return spring

- 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.

ISO 2



Function	Port size	Flow (Ma	ax)	Individual Mounting	Series
5/2	G1/8″	- G1/4" 500 N	I/min	Inline	
OPERATIONAL BENEFITS	5				34
Short stroke solenoid energization shifting     High force return spri	force. ing due to high force	<ul><li>7. Integral non-rising flow continuous models.</li><li>8. Short stroking balanced particular to the continuous flower to the continuous fl</li></ul>	coppet alows for		36
de-energization shifting. Built-in wear compensation	sation - valve stroke is	direct solenoid operation forces, minimized friction high flow in a small pack	, fast response and		32
shorter than solenoid Four bonded balance piece valve stem. End poppets seal first cushion inlet poppet, Exhaust seals are not reducing friction.	ed poppets on a one- et on conical seats and				37 38 52 67
HOW TO ORDER					44
Po	ort size	Without fl	ow controls	With flow controls	46
		12 W 13 15	14	12 W 14	42
G	G1/8"	47A-AC0-	-H xxx-xxx	47A-BCO-H xxx-xxx	
G	G1/4"	47A-AD0-	-H xxx-xxx	47A-BD0-H xxx-xxx	47
SOLENOID OPERA	X	Lead Wire length	X-XXX* X Manual op		48 connection 400
DA 24V=/5,2W DB 24V=/2,4W		45 cm 60 cm	Non-locking Locking	MA Plug-in wire  MC Plug-in wire	assembly assembly with
DC 24V=/1,8W	С	90 cm		light	92
DD 24V=/1,0W AA 120V~/6,7V				BA Flying leads BC Flying leads MT Plug-in wire rectifier & lig	assembly with
Click here for other op lote: AC voltage requires	otions available. es connector with rectifier.				ISO
atching operat	TOR ➤	L <u>xx</u>	<b>X-<u>X</u>XX</b> <sup>*</sup>		ISO
		-	Ţ <u>└</u> ̄──		ISO
XX Voltage	X	Lead Wire length	X Manual op	erator XX Electrical	connection
DA 24V=/5,2W		45 cm	No operator	BA 2 Wire Flyin	
DF 12V=/5,2W	В	60 cm	- 140 operator	BJ 4 Wire Flyin	g leads
	C	90 cm	-	LA 3 Wire Plug- (Polarity swit	in ching cover)
				MA 2 Wire Plug-	in
				ME 4 Wire Plug-	in

<sup>\*</sup> Click here for other options available.







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)

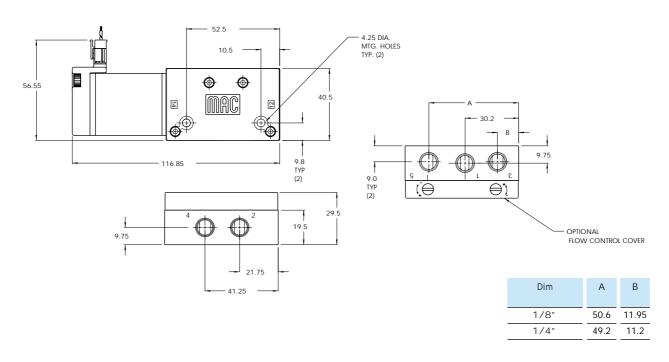
**Power**: 5,2W - 2,4W - 1,0W

Response times : Energize : 17,4 ms (with 5,2 W coil) De-energise : 3,8 ms

Options : • NPTF threads

Spare parts : • Flow control assembly : N-47004

# DIMENSIONS





Function	Port size	Flow (Ma	x)	Individual	Mounting		Series
5/2	G1/8"	- G1/4" 500 N	I/min	Sub-base non "plug-ir			
OPERATIONAL BENEFITS							34
<ol> <li>Short stroke solenoid energization shifting</li> <li>High force return spr</li> </ol>	force.	<ul><li>7. Integral non-rising flow co- inline models.</li><li>8. Short stroking balanced p</li></ul>					36
de-energization shifti 3. Built-in wear compen	sation – valve stroke is	direct solenoid operation forces, minimized friction high flow in a small pack	, fast respons				32
shorter than solenoid Four bonded balance					1	1	37
piece valve stem.  End poppets seal firs	t on conical seats and				O		38
cushion inlet poppet,	eliminating cutting.						52
<ul> <li>Exhaust seals are not reducing friction.</li> </ul>	under inlet pressure thus					-	67
HOW TO ORDER	1						
HOW TO ORDER							44
Po	ort size	Without flo	ow controls		With f	low controls	46
		12 w 1	<b>7</b>		12 W	4	
		<u>                                     </u>	<u>/</u>		<u> </u> π\ 31	▼ ▼/ <sub>T</sub>   5	42
	e less base		H xxx-xxx			10-H xxx-xxx	4 =
	61/8" 61/4"		H xxx-xxx H xxx-xxx			DB-H xxx-xxx	47
SOLENOID OPERA	TOR ➤	Н хх	<b>X-XXX</b> *				48
			T—				
VV Valtaria		\A/:	, <u>,</u>	4	V//		400
XX Voltage DA 24V=/5,2W	X	Wire length 45 cm		Manual operator  Non-locking	XX MA	Electrical connection Plug-in wire assembly	
DB 24V=/2,4W	В	60 cm		ocking	MC	Plug-in wire assembly with	92
DC 24V=/1,8W DD 24V=/1,0W		90 cm			BA	light Flying leads	
AA 120V~/6,7V					BC	Flying leads with light	93
					MT	Plug-in wire assembly with rectifier & light	70
Ollah hama famalihan an	Name and Nahila					rootmor a ngrit	ISO
oner op click nere for other op Jote: AC voltage require	tions available. s connector with rectifier.						100
ATOLUNIO ODEDA		1	*				130
ATCHING OPERAT	IOR ►	L <u>XX</u>	<b>X-<u>X</u>XX</b> *				ISO
			Ϳ <u>ͺ</u> ʹϛͺʹʹʹ				
XX Voltage	X	Lead Wire length	X	Manual operator	XX	Electrical connection	
DA 24V=/5,2W		45 cm		No operator	BA	2 Wire Flying leads	
DF 12V=/5,2W	В	60 cm			BJ	4 Wire Flying leads	
	<u>C</u>	90 cm			LA	3 Wire Plug-in (Polarity switching cover)	
					MA	2 Wire Plug-in	
					ME	4 Wire Plug-in	







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

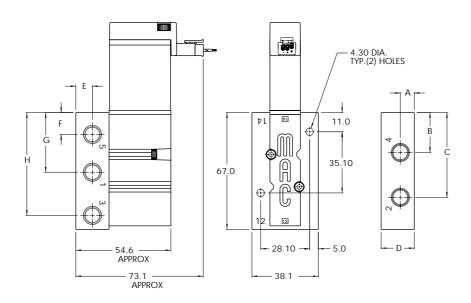
Response times : Energize : 17,4 ms (with 5,2 W coil) De-energise : 3,8 ms

Options : • NPTF threads

Spare parts : • Pressure seal body to base: 16628 • Mounting screw (x2): 35043

• Flow control assembly (x2): N-04001

# DIMENSIONS





	Port size	Flow (Ma	ax)	Manifold Mounting	Series
5/2	G1/8″	- G1/4" 500 N	II/min	Stacking	
OPERATIONAL BENEFITS					34
Short stroke solenoid energization shifting     High force return spri	force.	<ul><li>7. Integral non-rising flow c inline models.</li><li>8. Short stroking balanced direct solenoid operation</li></ul>	poppet alows for	_	36
de-energization shifting	ng forces. sation – valve stroke is	forces, minimized friction high flow in a small pack	n, fast response and		32
. Four bonded balance				12 5	37
piece valve stem.  End poppets seal first	t on conical seats and				38
cushion inlet poppet,	eliminating cutting.			- O	52
<ul> <li>Exhaust seals are not reducing friction.</li> </ul>	under inlet pressure thus				67
HOW TO ORDER	I				44
	ort size	\Mithaut fl	ou controlo	\\/:+b fl	
PC	ort size	without fi	ow controls	vvitn fi	ow controls 46
		12 w T	14	12 W	14 42
G	61/8″	47A-SC0	-H xxx-xxx	47A-TC	0-H xxx-xxx
G	61/4″	47A-SD0	-H xxx-xxx	47A-TD	0-H <b>xxx-xxx</b> 47
Solenoid Opera	TOR ➤	H <u>xx</u>	X- <u>XXX</u> *		48
OLENOID OPERAT	TOR ➤	H <u>xx</u>	<b>x</b> - <b>x</b> xx*		48
xx Voltage	X	Wire length	X Manual op		Electrical connection 40
XX Voltage DA 24V=/5,2W		Wire length 45 cm	X Manual op 1 Non-locking	erator XX MA MC	Electrical connection Plug-in wire assembly
XX Voltage DA 24V=/5,2W DB 24V=/2,4W DC 24V=/1,8W	X A B C	Wire length	X Manual op 1 Non-locking	MA MC	Electrical connection Plug-in wire assembly Plug-in wire assembly with light
XX Voltage DA 24V=/5,2W DB 24V=/2,4W DC 24V=/1,8W DD 24V=/1,0W	X A B C	Wire length 45 cm 60 cm	X Manual op 1 Non-locking	MA	Electrical connection Plug-in wire assembly Plug-in wire assembly with
XX Voltage DA 24V=/5,2W DB 24V=/2,4W DC 24V=/1,8W DD 24V=/1,0W	X A B C	Wire length 45 cm 60 cm	X Manual op 1 Non-locking	MA MC BA	Electrical connection Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with
XX Voltage DA 24V=/5,2W DB 24V=/2,4W DC 24V=/1,8W DD 24V=/1,0W AA 120V-/6,7V	X A B C	Wire length 45 cm 60 cm	X Manual op 1 Non-locking	MA MC BA BC	Electrical connection Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light
XX Voltage DA 24V=/5,2W DB 24V=/2,4W DC 24V=/1,8W DD 24V=/1,0W AA 120V-/6,7V  Click here for other op	X A B C	Wire length 45 cm 60 cm	X Manual op 1 Non-locking	MA MC BA BC	Electrical connection Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with
XX Voltage  DA 24V=/5,2W  DB 24V=/2,4W  DC 24V=/1,8W  DD 24V=/1,0W  AA 120V-/6,7V  Click here for other oplote: AC voltage requires	X A B C V  tions available. s connector with rectifier.	Wire length 45 cm 60 cm 90 cm	X Manual op 1 Non-locking 2 Locking	MA MC BA BC	Electrical connection Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads Flying leads with light Plug-in wire assembly with rectifier & light  93
XX Voltage  DA 24V=/5,2W  DB 24V=/2,4W  DC 24V=/1,8W  DD 24V=/1,0W  AA 120V-/6,7V  Click here for other op	X A B C V  tions available. s connector with rectifier.	Wire length 45 cm 60 cm 90 cm	X Manual op 1 Non-locking	MA MC BA BC	Electrical connection Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with rectifier & light  150
XX Voltage  DA 24V=/5,2W  DB 24V=/2,4W  DC 24V=/1,8W  DD 24V=/1,0W  AA 120V-/6,7V  Click here for other oplote: AC voltage requires	X A B C V  tions available. s connector with rectifier.	Wire length 45 cm 60 cm 90 cm	X Manual op 1 Non-locking 2 Locking	MA MC BA BC	Electrical connection Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads Flying leads with light Plug-in wire assembly with rectifier & light  93
DA 24V=/5,2W DB 24V=/2,4W DC 24V=/1,8W DD 24V=/1,0W AA 120V-/6,7V  Click here for other opole: AC voltage requires	X A B C V  tions available. s connector with rectifier.	Wire length 45 cm 60 cm 90 cm	X Manual op 1 Non-locking 2 Locking	MA MC BA BC MT	Electrical connection Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with rectifier & light  150
DA 24V=/5,2W DB 24V=/2,4W DC 24V=/1,8W DD 24V=/1,0W AA 120V-/6,7V  Click here for other opiole: AC voltage require:  ATCHING OPERAT  XX Voltage DA 24V=/5,2W	X A B C V  tions available. s connector with rectifier.  FOR ➤  X A	Wire length 45 cm 60 cm 90 cm  L XX  Lead Wire length 45 cm	X Manual op  1 Non-locking 2 Locking  X-XXX*	erator XX BA	Electrical connection Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with rectifier & light    SO   SO
XX Voltage  DA 24V=/5,2W  DB 24V=/2,4W  DC 24V=/1,8W  DD 24V=/1,0W  AA 120V-/6,7V  Click here for other oplote: AC voltage requires  ATCHING OPERAT	X A B C V  tions available. s connector with rectifier.  FOR ➤  X A	Wire length 45 cm 60 cm 90 cm  L XX  Lead Wire length 45 cm 60 cm	X Manual op  1 Non-locking 2 Locking  X-XXX*  X Manual op	MA MC BA BC MT  erator XX	Electrical connection Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with rectifier & light  Electrical connection 2 Wire Flying leads 4 Wire Flying leads 3 Wire Plug-in
XX Voltage  DA 24V=/5,2W  DB 24V=/2,4W  DC 24V=/1,8W  DD 24V=/1,0W  AA 120V-/6,7V  Click here for other oplote: AC voltage require:  ATCHING OPERAT  XX Voltage  DA 24V=/5,2W	X  A  B  C  V  tions available. s connector with rectifier.  TOR >  X  A  B	Wire length 45 cm 60 cm 90 cm  L XX  Lead Wire length 45 cm	X Manual op  1 Non-locking 2 Locking  X-XXX*  X Manual op	erator XX BA BJ	Electrical connection Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with rectifier & light    SO   SO







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,  $\Delta P$ =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 : Energize : 17,4 ms (with 5,2 W coil) 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) 15.8 TYP. **⊕** - ☑ + **⊕** -□+ **⊕** -□÷ € $\oplus$ $\oplus$ **DHM** OHW OHW \* E \* 4 · 6 † 4 · (i) Dim DHM DYW Ø 6.3 THRU. 0 Dim В Α 1/8″ 22.8 18.4

1/4"

24.2

19



Function	Port size	Flow (Max)	Manifold Mounting	Series
5/2	G1/8" - G1/4"	500 NI/min	Manifold base "plug-in"	
OPERATIONAL BENEFITS				34
<ol> <li>Short stroke solenoid energization shifting</li> <li>High force return spri</li> </ol>	force. inline r ing due to high force 8. Short s	troking balanced poppet alows for	n	36
de-energization shiftii 3. Built-in wear compensionshorter than solenoid	ng forces. forces, sation – valve stroke is high flo	colenoid operation with high shifting minimized friction, fast response an low in a small package.	d	32
4. Four bonded balance				37
<ul><li>piece valve stem.</li><li>5. End poppets seal first</li></ul>	t on conical seats and			38
cushion inlet poppet,	eliminating cutting. under inlet pressure thus			52
reducing friction.	under met pressure mus			67
HOW TO ORDER				44
	Port size		Model number	46
			12 W 14 14	42
	Valve less base		47A-L10-H xxP-xxx	
	G1/8" G1/4"		47A-LCJ-H xxP-xxx 47A-LDJ-H xxP-xxx	47
	0174		T/A LOS II ANI-AAA	
SOLENOID OPERAT	TOR ➤	H <u><b>xx</b></u> P- <u><b>xxx</b></u> *		48
				400
XX Voltage	X	Manual operator	XX Electrical connection	400
DA 24 V=/5,2W DB 24 V=/2,4W		Non-locking Locking	FA Base plug-in  FB Base plug-in w/ ground	92
DC 24 V=/1,8W		3	FC Base plug-in w/ LED light	
DD 24 V=/1,0W AA 120 V~/6,7V			FD Base plug-in w/ LED light w/ g FT Base plug-in w/ rectifier and li	
* Click here for other op				7.5
Note : AC voltage require		L		ISO 1
LATCHING SOLENG	OID >	L <u>xx</u> P- <u>xxx</u> *		ISO 2
				ISO 3
xx Voltage	X	Manual operator	XX Electrical connection	130 3
DA 24 V=/5,2W		No operator	FA Base plug-in w/ ground	
DF 12 V=/5,2W	<u> </u>		FB Base plug-in w/ ground & LED FC Base plug-in 4 wire w/ ground	
			FD Base Plug-in 4 wire w/ ground	

Click here for other options available.

# OPTIONS

47A-xxJ-Hxxx-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.







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)

 $\textbf{Filtration}: \hspace{1.5cm} 40 \; \mu$ 

Temperature range : -18°C to +50°C

Orifice: 4,3 mm

Flow (at 6 bar,  $\Delta P$ =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)

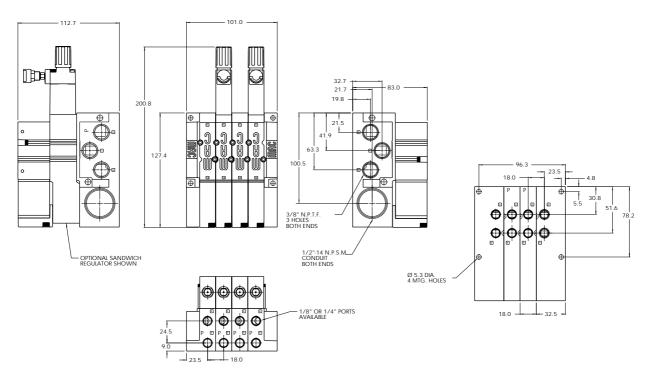
**Power:** 5,2W - 2,4W - 1,0W

Response times : Energize : 17,4 ms (with 5,2 W coil) De-energise : 3,8 ms

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

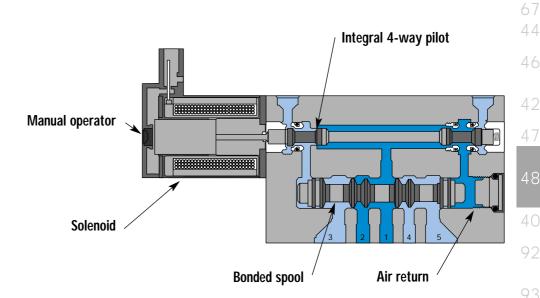
Spare parts : • Inlet/exhaust isolator: 28447 • Valve cover plate: M-47001

# DIMENSIONS





# Individual mounting Series non "plug-in" "plug-in" Manifold mounting Sub-base/ manifold base non "plug-in" with latching



# **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.

non "plug-in"

- Rectified AC voltage.
- Latching solenoid technology.

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

ISO 2



Function	Port size	Flow (Max)	Individual mounting		Series
5/2, 5/3	G1/8″	1100 NI/min	Sub-base non "plug-in"		
OPERATIONAL BENEFITS				_	3./

- 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 NI/min).
- 4. Fast repeatable response times.
- 5. Maximum shifting forces in both directions.
- 6. Long life.



0 /

36

32

37

52 67

44

46

12

47

4.0

48

100

92

93

ISO 1 ISO 2

ISO 3

# HOW TO ORDER

## SINGLE PRESSURE MODELS

JINOLL I KLJJ	OKE WODE	-5			
Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
		12 2 4 14 17 14 31 5	12 2 4 14 17	12 2 4 14 17 17 17 17 17 17 17 17 17 17 17 17 17	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17
Valve less	Internal	48A-AMA-000-Gxxx-xxx	48A-BMA-000-Gxxx-xxx	48A-EMA-000-Gxxx-xxx	48A-FMA-000-Gxxx-xxx
base	External	48A-AMD-000-G <i>xxx-xxx</i>	48A-BMD-000-Gxxx-xxx	48A-EMD-000-G <i>xxx-xxx</i>	48A-FMD-000-Gxxx-xxx
G1/8"	Internal	48A-AMA-BAL-Gxxx-xxx	48A-BMA-BAL-Gxxx-xxx	48A-EMA-BAL-Gxxx-xxx	48A-FMA-BAL-Gxxx-xxx
	External	48A-AMD-BAM-Gxxx-xxx	48A-BMD-BAM-Gxxx-xxx	48A-EMD-BAM-Gxxx-xxx	48A-FMD-BAM-Gxxx-xxx

## **DUAL PRESSURE MODELS**

DOME I RESSORE MOI	JELO			
Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
		14 17 17 10 10 10 10 10 10 10 10 10 10	14 1/D 1/D 50003	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17
Valve less base	Internal Supply #3 port	48A-CMB-000-Gxxx-xxx	48A-DMB-000-Gxxx-xxx	48A-HMB-000-Gxxx-xxx
	Supply #5 port	48A-CMC-000-Gxxx-xxx	48A-DMC-000-Gxxx-xxx	48A-HMC-000-Gxxx-xxx
	External	48A-CMD-000-Gxxx-xxx	48A-DMD-000-Gxxx-xxx	48A-HMD-000-Gxxx-xxx
G1/8"	Internal Supply #3 port	48A-CMB-BAL-Gxxx-xxx	48A-DMB-BAL-Gxxx-xxx	48A-HMB-BAL-Gxxx-xxx
	Supply #5 port	48A-CMC-BAL-Gxxx-xxx	48A-DMC-BAL-Gxxx-xxx	48A-HMC-BAL-Gxxx-xxx
	External	48A-CMD-BAM-Gxxx-xxx	48A-DMD-BAM-Gxxx-xxx	48A-HMD-BAM-Gxxx-xxx

STANDARD	SOLENOID	OPERATOR >	-

				$\top$			
				<b>┙</b> ┕			
XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection
AA	120 V~/2,5W	Α	45 cm	1	Non-locking	BA	Flying leads
DC	24 V=/1,8W	В	60 cm	2	Locking	BT	Flying leads with light
DD	24 V=/2,5W	С	90 cm			KA	Mini connector
DF	24 V=/4,0W					KT	Mini connector with light
						KD	Mini connector with rectifier & light & ground

G xxx-xxx\*

<sup>\*</sup> 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.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): 1/8" side ports: 1000 NI/min (Cv 1,0) – 1/8" bottom ports: 1100 NI/min (Cv 1.1)

Coil: Epoxy encapsulated – 100% ED – Class A wire

**Voltage range**: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

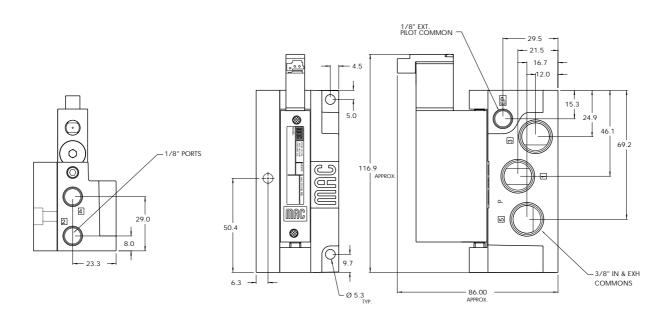
Power: 1.0 to 4.0 W

Response times : Energize : 6 ms (with 4 W coil) De-energize : 6 ms

Options : • NPTF threads • Sandwich Flow controls: FC48A-BB

• Sandwich regulator: see "regulators" section

DIMENSIONS





Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	G1/8"	1100 NI/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 NI/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)

OH CLE I KEOO	OILE IVIODEL	O (LED OIT II VET IND ENGEL I	TOR ON TOLL COLLINGIBO	/	
Port size	Pilot air	5/2 Single solenoid	5/3 Double solenoid	5/3 Closed centre	5/3 Open centre
		12 2 4 14 14 3 1 5	12 2 4 14 315	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17
Valve less	Internal	48A-AMA-000-GxxP-xxx	48A-BME-000-GxxP-xGA	48A-EME-000-GxxP-xGA	48A-FME-000-GxxP-xGA
base	External	48A-AMD-000-GxxP-xxx	48A-BMH-000-GxxP-xGA	48A-EMH-000-GxxP-xGA	48A-FMH-000-GxxP-xGA
G1/8″	Internal	48A-AMA-BAA-GxxP-xxx	48A-BME-BAC-GxxP-xGA	48A-EME-BAC-GxxP-xGA	48A-FME-BAC-GxxP-xGA
	External	48A-AMD-BAB-GxxP-xxx	48A-BMH-BAD-GxxP-xGA	48A-EMH-BAD-GxxP-xGA	48A-FMH-BAD-GxxP-xGA

## 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
		14 17 17 10 10 10 10 10 10 10 10 10 10 10 10 10	14 1/D 1/D 1000 03	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
Valve less base	Internal Supply #3 port	48A-CMB-000-GxxP-xxx	48A-DMF-000-GxxP-xGA	48A-HMF-000-GxxP-xGA
	Supply #5 port	48A-CMC-000-GxxP-xxx	48A-DMG-000-GxxP-xGA	48A-HMG-000-GxxP-xGA
	External	48A-CMD-000-GxxP-xxx	48A-DMH-000-GxxP-xGA	48A-HMH-000-GxxP-xGA
M5	Internal Supply #3 port	48A-CMB-BAA-GxxP-xxx	48A-DMF-BAC-GxxP-xGA	48A-HMF-BAC-GxxP-xGA
	Supply #5 port	48A-CMC-BAA-GxxP-xxx	48A-DMG-BAC-GxxP-xGA	48A-HMG-BAC-GxxP-xGA
	External	48A-CMD-BAB-GxxP-xxx	48A-DMH-BAD-GxxP-xGA	48A-HMH-BAD-GxxP-xGA

## STANDARD SOLENOID OPERATOR ➤

XX Voltage	X Manual operator	XX Electrical connection
AA 120 V~/2,5W	1 Non-locking	Double solenoid & 3 position models
DC 24 V=/1,8W	2 Locking	GA Base plug-in
DD 24 V=/2,5W		Single solenoid models
DF 24 V=/4,0W		DJ Base plug-in
		DT Base plug-in with LED light
		DD Base plug-in with rectifier & light & ground

<sup>\*</sup> 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.

67







Fluid: Compressed air, vacuum, inert gases

Internal pilot: 2 pos.: 1,3 to 8 bar Pressure range : - 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,  $\Delta P=1bar$ ): 1/8" side ports: 1000 NI/min (Cv 1,0) – 1/8" bottom ports : 1100 NI/min (Cv 1.1)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range : -15% to +10% of nominal voltage

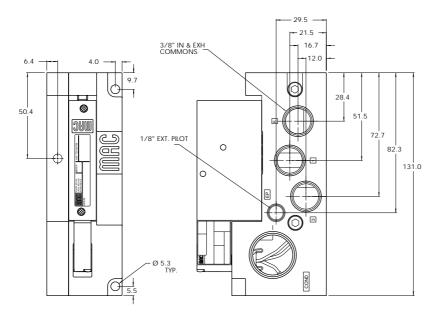
Protection: IP54 (electrical connection)

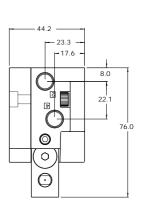
Power: 1.0 to 4.0 W Response times : Energize: 6 ms

(with 4 W coil) De-energize : 6 ms

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

DIMENSIONS







Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	G1/8"	1100 NI/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 NI/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)

JINOLL I NESS	OKE WODE	13 (MIDDLE STATION WINT	SHAGE TRESSORE MODELS (MIDDLE SHAHOA MITANI GEDS WITH SIDE FORTS)				
Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre		
		12 2 4 14 17 14 31 5	12 2 4 14 3 1 5 14	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17	12 2 4 14 17 17 17 17 17 17 17 17 17 17 17 17 17		
Valve less	Internal	48A-AMA-000-Gxxx-xxx	48A-BMA-000-Gxxx-xxx	48A-EMA-000-G <i>xxx-xxx</i>	48A-FMA-000-Gxxx-xxx		
base	External	48A-AMD-000-G <i>xxx-xxx</i>	48A-BMD-000-Gxxx-xxx	48A-EMD-000-G <i>xxx-xxx</i>	48A-FMD-000-Gxxx-xxx		
G1/8"	Internal	48A-AMA-BJL-Gxxx-xxx	48A-BMA-BJL-Gxxx-xxx	48A-EMA-BJL-Gxxx-xxx	48A-FMA-BJL-Gxxx-xxx		
	External	48A-AMD-BJM-Gxxx-xxx	48A-BMD-BJM-Gxxx-xxx	48A-EMD-BJM-Gxxx-xxx	48A-FMD-BJM-Gxxx-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
		14 4 2 12 17b 7 3	14	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17
Valve less base	Internal Supply #3 port	48A-CMB-000-Gxxx-xxx	48A-DMB-000-Gxxx-xxx	48A-HMB-000-Gxxx-xxx
	Supply #5 port	48A-CMC-000-Gxxx-xxx	48A-DMC-000-Gxxx-xxx	48A-HMC-000-Gxxx-xxx
	External	48A-CMD-000-Gxxx-xxx	48A-DMD-000-Gxxx-xxx	48A-HMD-000-Gxxx-xxx
G1/8″	Internal Supply #3 port	48A-CMB-BJL-Gxxx-xxx	48A-DMB-BJL-Gxxx-xxx	48A-HMB-BJL-Gxxx-xxx
	Supply #5 port	48A-CMC-BJL-Gxxx-xxx	48A-DMC-BJL-Gxxx-xxx	48A-HMC-BJL-Gxxx-xxx
	External	48A-CMD-BJM-Gxxx-xxx	48A-DMD-BJM-Gxxx-xxx	48A-HMD-BJM-Gxxx-xxx

#### STANDARD SOLENOID OPERATOR ➤

		<u> </u>	
xx Voltage	X Wire length	X Manual operator	XX Electrical connection
AA 120 V~/2,5W	A 45 cm	1 Non-locking	BA Flying leads
DC 24 V=/1,8W	<b>B</b> 60 cm	2 Locking	BT Flying leads with light
DD 24 V=/2,5W	<b>C</b> 90 cm		KA Mini connector
DF 24 V=/4,0W			KT Mini connector with light
			KD Mini connector with

G <u>xx</u>x-<u>x</u>xx

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

ISO 2

<sup>\*</sup> Click here for other options available. Latching solenoid also available, click here. Note: - AC voltage requires connector with rectifier.

AC Voltage requires coninector with rectiner.
 Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): 1/8" side ports: 1000 NI/min (Cv 1,0) – 1/8" bottom ports: 1100 NI/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

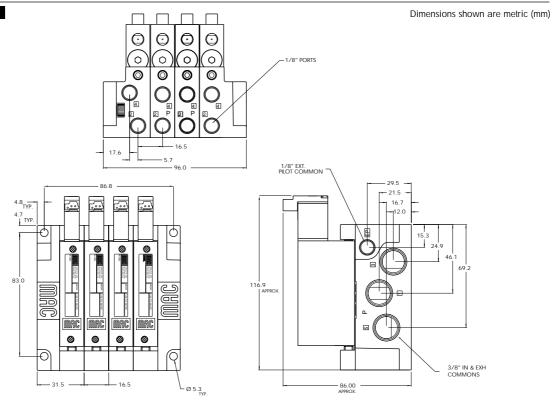
Response times : Energize : 6 ms (with 4 W coil) De-energize : 6 ms

DIMENSIONS

Options : • NPTF threads • Sandwich flow controls: FC48A-BB

• Sandwich regulator: see "regulators" section

• Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471





Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	G1/8"	1100 NI/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 NI/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)

JINOLL I KLJJK	JIL WODE	13 (LED 317 (IND) (IND EXCEL)	TOR SINGLE SOLENOIDS	7)	
Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
		12 2 4 14 14 315	12 2 4 14 17 14 3 15	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17	12 2 4 14 MOMM 17D T V V T V V T V T V T V T V T V T V T
Valve less	Internal	48A-AMA-000-GxxP-xxx	48A-BME-000-GxxP-xGA	48A-EME-000-GxxP-xGA	48A-FME-000-GxxP-xGA
base	External	48A-AMD-000-GxxP-xxx	48A-BMH-000-GxxP-xGA	48A-EMH-000-GxxP-xGA	48A-FMH-000-GxxP-xGA
M5	Internal	48A-AMA-BJA-GxxP-xxx	48A-BME-BJC-GxxP-xGA	48A-EME-BJC-GxxP-xGA	48A-FME-BJC-GxxP-xGA
	External	48A-AMD-BJB-GxxP-xxx	48A-BMH-BJD-GxxP-xGA	48A-EMH-BJD-GxxP-xGA	48A-FMH-BJD-GxxP-xGA

## DUAL PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

2071211120001121110	2220 (223 017 11 137 1113 27 021 1			
Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
		14 1/D 1 12 5 0 0 0 3	14 17D 14 17D 15 10 10 10 10 10 10 10 10 10 10 10 10 10	12 2 4 14 MP 3 1 5 3 1 5
Valve less base	Internal Supply #3 port	48A-CMB-000-GxxP-xxx	48A-DMF-000-GxxP-xGA	48A-HMF-000-GxxP-xGA
	Supply #5 port	48A-CMC-000-GxxP-xxx	48A-DMG-000-GxxP-xGA	48A-HMG-000-GxxP-xGA
	External	48A-CMD-000-GxxP-xxx	48A-DMH-000-GxxP-xGA	48A-HMH-000-GxxP-xGA
M5	Internal Supply #3 port	48A-CMB-BJC-GxxP-xxx	48A-DMF-BJC-GxxP-xGA	48A-HMF-BJC-GxxP-xGA
	Supply #5 port	48A-CMC-BJC-GxxP-xxx	48A-DMG-BJC-GxxP-xGA	48A-HMG-BJC-GxxP-xGA
	External	48A-CMD-BJD-GxxP-xxx	48A-DMH-BJD-GxxP-xGA	48A-HMH-BJD-GxxP-xGA

Above numbers are middle station manifold with side ports G <u>xx</u> P-<u>xxx</u> STANDARD SOLENOID OPERATOR ➤

XX Voltage	X Manual operator	XX Electrical connection
AA 120 V~/2,5W	1 Non-locking	Double solenoid & 3 position models
DC 24 V=/1,8W	2 Locking	GA Base plug-in
DD 24 V=/2,5W		Single solenoid models
DF 24 V=/4,0W		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.

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.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): 1/8" side ports: 1000 NI/min (Cv 1,0) – 1/8" bottom ports: 1100 NI/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 : Energize : 6 ms

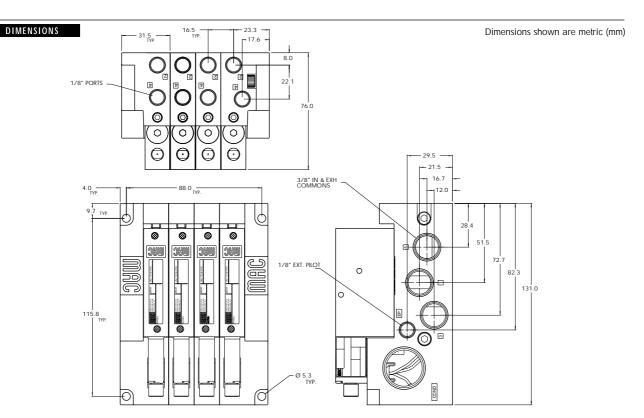
(with 4 W coil) De-energize : 6 ms

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





60 cm 90 cm

\* 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.

# Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2	G1/8"	1100 NI/min	Sub-base/ manifold base non "plug-in" with latching solenoid	
OPERATIONAL BENEFITS				34
<ol> <li>4-way valve with 4-way</li> <li>16 mm valve (stacks of a High flow (up to 1100)</li> <li>Fast repeatable responses</li> </ol>	on 16.5 mm centers). O NI/min).			36
<ul><li>5. Maximum shifting force</li><li>6. Long life.</li></ul>				32
				37 38 52 67
HOW TO ORDER				44
SINGLE PRESSURE N	MODELS			1 4
Port size	Pilot air	Sin	5/2 gle pressure	46
		12 .[7	5 14 J J J J J J J J J J J J J J J J J J	42
Valve less base		48A-Al	MA-000-Lxxx-xxx	47
	External	48A-Al	MD-000-Lxxx-xxx	
G1/8″	Internal		MA-BAL-Lxxx-xxx	48
	External	48A-AN	MD-BAM-Lxxx-xxx	
DUAL PRESSURE MO	ODELS			400
Port size	Pilot air		5/2 Dual pressure	400
			12 2 4 14 J	92
Valve less base	Internal Supply #3 port	-	48A-CMB-000-Lxxx-xxx	93
	Supply #5 port		48A-CMC-000-Lxxx-xxx	
	External	-	48A-CMD-000-Lxxx-xxx	ISO
G1/8"	Internal Supply #3 port	-	48A-CMB-BAL-LXXX-XXX	ISO
	Supply #5 port		48A-CMC-BAL-LXXX-XXX 48A-CMD-BAM-LXXX-XXX	ISO
LATCHING SOLENC	External	L <u>XX</u> X- <u>X</u> XX*	TON-UNIU-DAINI-LAAA-AXX	
L. I. O. III. TO GOLLING		<u></u>		
		<u>_</u>		
xx Voltage		-	fanual operator XX Electrical co	
DF 24 VDC/4,0V HA 24 VDC/1,95		<u> </u>	o operator BA 2 Wire flying lea BJ 4 Wire flying lea	
24 VDC/ 1,93	C 90 cm		VA 2 Wire Plug in a	

KE

2 Wire Plug-in assembly

4 Wire Plug-in assembly 3 Wire Plug-in assembly (Polarity Switching Cover)







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): 1/8" side ports: 1000 NI/min (Cv 1,0) – 1/8" bottom ports: 1100 NI/min (Cv 1.1)

Coil: Epoxy encapsulated – 100% ED – Class A wire

**Voltage range**: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

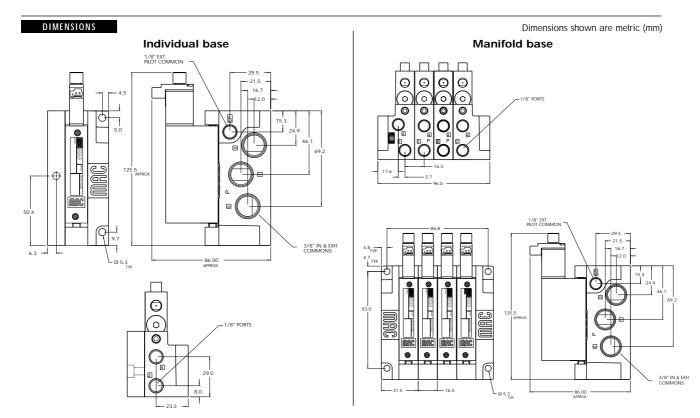
**Power:** 1.0 to 4.0 W

Response times : Energize : 6 ms (with 4 W coil) 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





Function	Port size		Flow (Max)	Individual/Manifold mounting	Series
5/2	G1/8"		1000 NI/min	Sub-base/ manifold base "plug-in" with latching solenoid	
OPERATIONAL BENEFITS				560760	34
<ol> <li>4-way valve with 4-wa</li> <li>16 mm valve (stacks or</li> <li>High flow (up to 1100</li> <li>Fast repeatable respon</li> </ol>	n 16.5 mm centers). NI/min).			1700	36
<ul><li>5. Maximum shifting force</li><li>6. Long life.</li></ul>				900	32
					37 38 52
HOW TO ORDER					67 44
SINGLE PRESSURE M	10dels				1.4
Port size	Pilot air			5/2 pressure	46
			12 77	14	42
Valve less base	Internal		48A-AMA-(	5 000-LxxP-xxx	47
	External		48A-AMD-0	000-LxxP-xxx	
G1/8″	Internal		48A-AMA-E	BAA-LxxP-xxx	10
	External		48A-AMD-E	BAB-LxxP-xxx	48
Dual Pressure MC	DELS				4.0
Port size	Pilot air			5/2	40
				Dual pressure	92
				12 2 4 14 37	/ _
Valve less base	Internal Supply #3	3 port		315 48A-CMB-000-LxxP-xxx	93
	Supply #	5 port	4	48A-CMC-000-LxxP-xxx	
	External			48A-CMD-000-LxxP-xxx	ISC
G1/8"	Internal Supply #3		4	48A-CMB-BAA-LxxP-xxx	ISO
	Supply #	5 port		48A-CMC-BAA-LxxP-xxx	
	External		4	48A-CMD-BAB-LxxP-xxx	ISO
LATCHING SOLENO	ID >		L <u><b>xx</b></u> P- <u><b>x</b>xx</u> *		
xx Voltage		Х	Manual operator	XX Electrical connection**	
<b>DF</b> 24 VDC/4,0W		0	No operator	DA Plug-in	
DN 12 VDC/4,0W	v N			EA Plug-in 3 PIN (Polarity Switching 0	Cover)

<sup>\*</sup> 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.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): 1/8" side ports: 1000 NI/min (Cv 1,0) – 1/8" bottom ports: 1100 NI/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 : Energize : 6 ms (with 4 W coil) De-energize : 6 ms

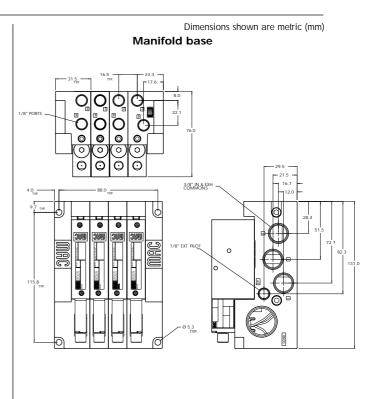
Options : • NPTF threads • Sandwich flow controls: FC48A-AB

• Sandwich regulator: see "regulators" section

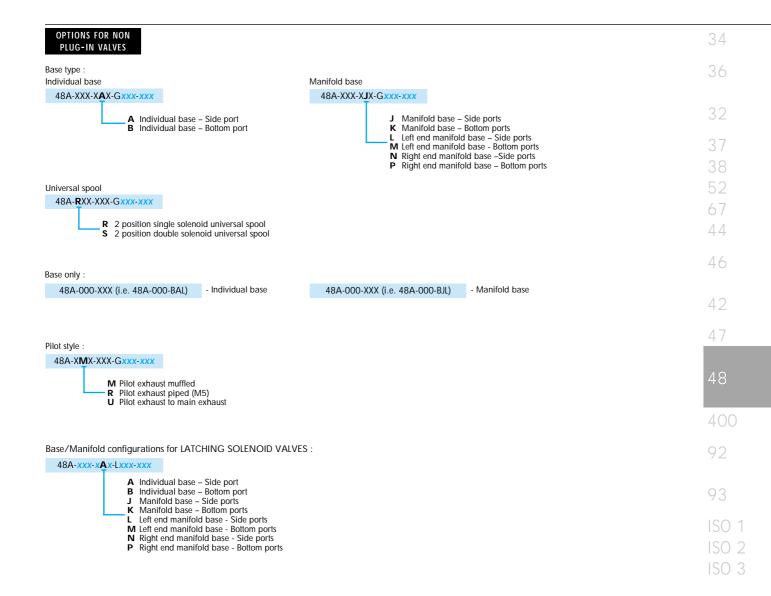
• Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471

• Plug-in wire protector : 24180

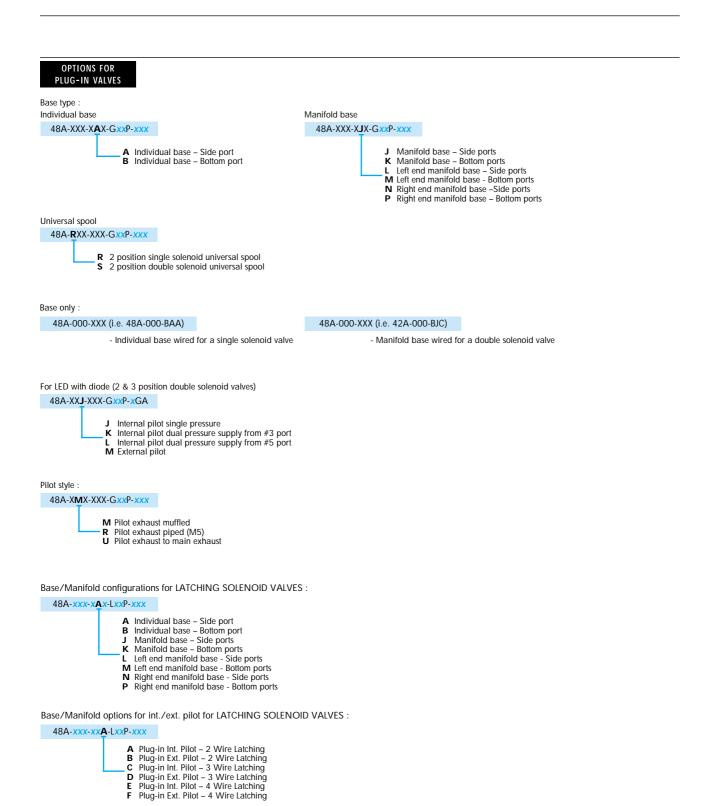
# Individual base 3/8" IN 8 EXH. PLOT 9.7 1/8" EXT. PLOT 0 5.3 1/17.6 1/18" EXT. PLOT 1/18" EXT. PLOT













# Individual mounting Series Sub-base

67

44

47

400

ISO 1 ISO 2

Solenoid

4-way pilot with balanced poppet

Bonded spool

Air return

non "plug-in"

#### **SERIES FEATURES**

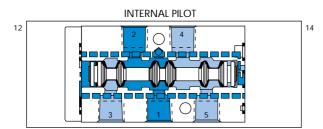
- Patented MACSOLENOID® for fastest possible response times and virtually burn-out proof AC solenoid operation.
- Optional low watt DC solenoids.
- Various manual operators.
- · Optional memory spring.
- 2 position or 3 position valve configurations.
- Internal or external pilot.



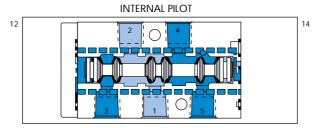




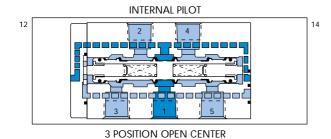
#### SPOOL CONFIGURATIONS



SINGLE OPERATOR - SINGLE INLET SHOWN WITH 12 OPERATOR ENERGIZED



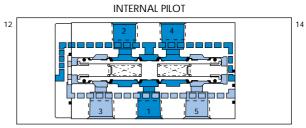
SINGLE OPERATOR - DUAL INLET SHOWN WITH 12 OPERATOR ENERGIZED



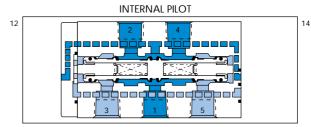
INTERNAL PILOT EXT. PILOT PORT

12

SINGLE OPERATOR - SINGLE INLET SHOWN WITH 12 OPERATOR ENERGIZED



3 POSITION CLOSED CENTER



3 POSITION PRESSURE CENTER



24V=/1,8W

24V=/2,5W

Click here for other options available. Click here for other options available 45 cm

60 cm

90 cm

# Direct solenoid and solenoid pilot operated valves

Function		Port size	Flow (Max)	Flow (Max) Individual mounting		
5/2, 5/3		G1/8" - G1/	4" 1000 NI	Inline		
OPERATIONAL BEI	NEFITS					34
<ol> <li>The 4-way pilot forces both wa</li> <li>Memory spring</li> <li>Balanced spoo</li> </ol>	ays. g available.	·			(5)	36
pressure, also 4. Short stroke w 5. Bonded spool	provides high ith high flow.	flow.				32
in a glass-like  6. Wiping effect  7. Long service li	finished bore. eliminates stic	_			C. Telling	37 38 52
					( )	67
HOW TO ORD						44
SINGLE PRESS  Port size	URE MODEI Pilot air	LS 5/2	5/2	5/3	5/3	5/3 46
		Single operator	Double operator	Closed centre	Open centre	Pressure centre
						42
G1/8″	Internal	411A-C0A-XX-XXXX-XXX	421A-C0A-XX-XXXX-XXX	451A-C0A-XX-XXXXX-XXX	461A-C0A-XX-XXXX-XXX	471A-C0A-XX-XXXX-XXX 4 7
G1/4"		411A-D0A-XX-XXXX-XXX	421A-D0A-XX-XXXX-XXX	451A-D0A-XX-XXXX-XXX	461A-D0A-XX-XXXX-XXX	471A-DOA-XX-XXXX-XXX
G1/8" G1/4"	External -	411A-COB-XX-XXXX-XXX 411A-DOB-XX-XXXXXXXXXXXX	421A-COB-XX-XXXX-XXX 421A-DOB-XX-XXXXXXXXXXXX	451A-COB-XX-XXXX-XXX 451A-DOB-XX-XXXXX-XXX	461A-COB-XX-XXXX-XXX 461A-DOB-XX-XXXX-XXX	471A-C0B-XX-XXXX-XXX 471A-D0B-XX-XXXX-XXXX 48
						THE SECOND MAN AND THE SECOND MA
Port size		(INTERNAL PILOT – Pilot air	LOT PRESSURE SUPPL	Y FROM #5 PORT) 5/2		400
1 011 3120	,	r not an	Sinç	gle operator		operator
			12 D	2 4 14 37 315	12 2	92
G1/8″		Internal		COA-XX-XXXX		-XX-Xxxx-xxx 93
G1/4" G1/8"		Evtornol		OOA-XX-XXXX-XXX COB-XX-XXXX-XXX		-XX-Xxxx-xxx -XX-Xxxx-xxx
G1/8"		External	-	OOB-XX-XXXX-XXX		-XX-XXXX-XXX
SOLENOID OF	PERATOR ➤		DM-D XXX-			150
301211013 01	LIVITOR		DIVI-D XXX	<u></u>		ISO
xx Volt	age	X Wire	e length	X Manual oper	ator XX E	lectrical connection
	/~/50Hz /~/50Hz	A 45 cm B 60 cm		1 Non-locking 2 Locking		quare connector quare connector with light
JC 24 V~	/50Hz	J Conne		2 Locking	JB R	ectangular connector
	:/1,8W :/5,4W				li	ectangular connector with ght
DF 24 V=	:/12,7W				<u>BA</u> FI	ying leads
SOLENOID OF	PERATOR ➤		GM-G XXX-	<u>XXX</u> <sup>**</sup>		
				ጎ		
XX Volt	age	X Wire	e length	X Manual oper	ator XX E	lectrical connection

Non-locking

Locking

Flying leads

Mini connector
Mini connector with light

Flying leads with light

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







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,2 mm

Flow (at 6 bar, ΔP=1bar) : 1000 NI/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)

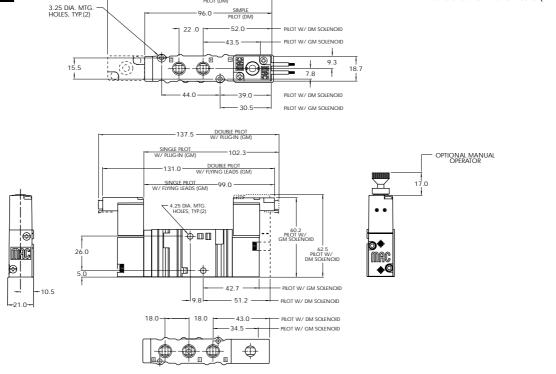
4**11**A-C0**A**-XX-X**XXX**-**XXX** 

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)





24V=/4,0W

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

# Direct solenoid and solenoid pilot operated valves

Function	Port size Flow (Max) Individual m		Individual mounting	Ser		
5/2, 5/3		G1/8" - G1/	4" 1000 NI	/min	Sub-base non "plug-in"	
OPERATIONAL BE	NEFITS					3
<ol> <li>The 4-way pilot forces both wa</li> <li>Memory spring</li> <li>Balanced spool</li> </ol>	ays. g available.	·				3
pressure, also 4. Short stroke w 5. Bonded spool	provides high ith high flow.	flow.				3
in a glass-like  6. Wiping effect  7. Long service li	finished bore. eliminates stic	•			20	3 3
77 Long oo 1100 ii					Intac	5
HOW TO ORD	DER					4
SINGLE PRESS	URE MODE	LS				5 (0.0
Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre
		12 2 4 14 D 3 1 5	12 2 4 14 175 T 4 4 7	12 2 4 14 MM 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 2 4 14 MM 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	12 2 4 14 MM A 15 A
Valve only	Internal	413A-00A-XX-XXXX-XXX	423A-00A-XX-XXXX-XXX	453A-00A-XX-XXXX-XXX	463A-00A-XX-Xxxx-xxx	473A-00A-XX-XXXX
G1/8"	External Internal	413A-00D-XX-XXXX-XXX 413A-CAA-XX-XXXXX	423A-00D-XX-Xxxx-xxx 423A-CAA-XX-Xxxx-xxx	453A-00D-XX-Xxxx-xxx 453A-CAA-XX-Xxxx-xxx	463A-00D-XX-XXXX-XXX 463A-CAA-XX-XXXX-XXX	473A-00D-XX-XXXX-XXX 473A-CAA-XX-XXXX-XXX
G1/4"		413A-DAA-XX-XXXXXXXXXX	423A-DAA-XX-Xxxx-xxx	453A-DAA-XX-Xxxx-xxx	463A-DAA-XX-XXXX-XXX	473A-DAA-XX-Xxxx-xxx
G1/8" G1/4"	External	413A-CAB-XX-XXXX-XXX 413A-DAB-XX-XXXXX-XXX	423A-CAB-XX-XXXX-XXX 423A-DAB-XX-XXXXX-XXX	453A-CAB-XX-XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	463A-CAB-XX-XXXX-XXX 463A-DAB-XX-XXXX-XXX	473A-CAB-XX-XXXX-XXX 473A-DAB-XX-XXXX-XXX
					403A-DAD-XX-XXX	473A-DAD-XX-XXX
		(INTERNAL PILOT – P				4
Port size	9	Pilot air	5/2 Si	ingle operator	5/2 Dou	ible operator
				14 4 4 15 15	12 17D 3	14 47
Valve on	ly	Internal		OA-XX-XXXX		A-XX-Xxxx-xxx
G1/8"		External Internal		OD-XX-XXXX-XXX AA-XX-XXXXX-XXX		O-XX-Xxxx-xxx A-XX-Xxxx-xxx
G1/4"		mornar		AA-XX-XXXX-XXX		A-XX-Xxxx-xxx
G1/8″		External	433A-C	AD-XX-Xxxx-xxx	443A-CA	D-XX-Xxxx-xxx
G1/4"			433A-D	AD-XX-XXXX	443A-DA	D-XX-Xxxx-xxx
SOLENOID OI	PERATOR ➤		DM-D <u>XX</u> X-	<u>XXX</u> *		[5
				7		
XX Volt	_		e length	X Manual oper		Electrical connection
	/~/50Hz /~/50Hz	A 45 cm B 60 cm		1 Non-locking 2 Locking		Square connector Square connector with light
JC 24 V~	-/50Hz	J Conne		<u> </u>	JB	Rectangular connector
	:/1,8W :/5,4W					Rectangular connector with ight
	:/12,7W				BA I	Flying leads
Solenoid of	PERATOR ➤		GM-G <u>xxx</u> -	<u>XXX</u> **		
xx Volt	ane	X Wire	e length	X Manual oper	rator XX E	Electrical connection
	/1,8W	A 45 cm	•	1 Non-locking		lying leads
DD 24V=	/2,5W	<b>B</b> 60 cm	1	2 Locking	BT F	lying leads with light
DF 24V=	/4,0W	<b>c</b> 90 cm	1		KA I	Mini connector

Mini connector
Mini connector with light

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







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,2 mm

Flow (at 6 bar, ΔP=1bar): 1000 NI/min (Cv 1.0)

1000 M7 mm (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

 $110V{\sim}/50Hz \qquad \quad Energize: 8{\text -}12 \text{ ms} \qquad \quad De\text{-energize}: 7{\text -}11 \text{ ms}$ 

For memory spring, replace by 6

Options: • NPTF threads

413A-CAA-XX-Xxxx-xxx

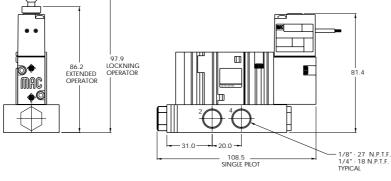
Dual pressure models, replace by **C** for pilot supply from #3 port

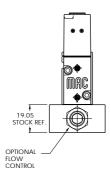
Dual pressure models, replace by C for pilot supply from #3 port
 For flow control, replace by B

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

DIMENSIONS

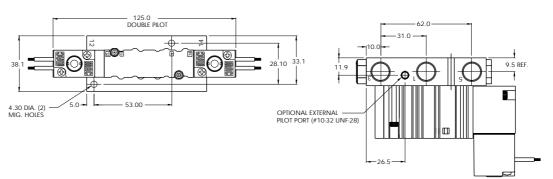
Dimensions shown are metric (mm)



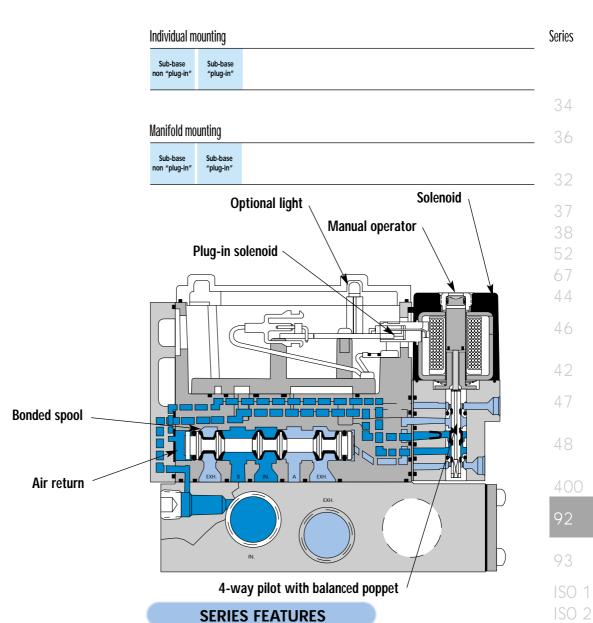


Base only:

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







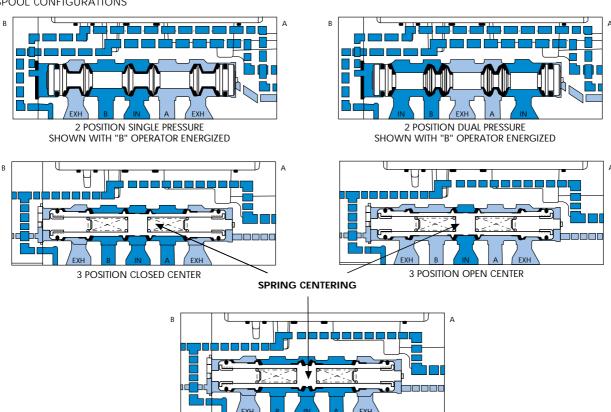
- Patented MACSOLENOID® for fastest possible response times and virtually burn-out proof AC solenoid operation.
- Optional low watt DC solenoids.
- Optional memory spring.
- Plug-in design of valves and bases for ease of maintenance.
- 2 position or 3 position valve configurations.



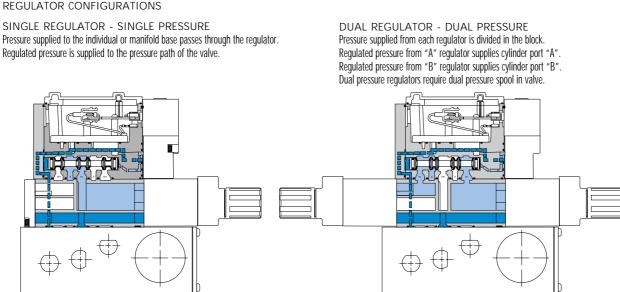




#### SPOOL CONFIGURATIONS



#### REGULATOR CONFIGURATIONS



3 POSITION SINGLE PRESSURE, PRESSURE CENTER

#### **MANIFOLD WITH REGULATOR - SINGLE PRESSURE**

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

**MANIFOLD WITH REGULATOR - DUAL PRESSURE** 



Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	G1/8" - G1/4" - G3	3/8" 1200 NI/min	Sub-base non "plug-in"	
OPERATIONAL BENEFITS				34
<ol> <li>The 4-way pilot develor forces both ways.</li> <li>Momentus spring available.</li> </ol>	-			36

- Memory spring available.
- 3. Balanced spool, immune to variations of pressure, also provides high flow.
- 4. Short stroke with high flow.

HOW TO ORDER

Port size

Valve less base

G1/8

G1/4"

G3/8"

G1/8

G1/4"

G3/8"

SINGLE PRESSURE MODELS

- 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.

Pilot air

Internal

External

5/2

Single operator

92B-ABA-000-DM-Dxxx-xxx

92B-ABA-DAG-DM-Dxxx-xxx

92B-ABA-EAG-DM-Dxxx-xxx

92B-ABA-FAG-DM-Dxxx-xxx

92B-ABA-DAH-DM-Dxxx-xxx

92B-ABA-EAH-DM-Dxxx-xxx

92B-ABA-FAH-DM-Dxxx-xxx



5/3

Open centre

92B-FBA-000-DM-Dxxx-xxx

92B-FBA-EAH-DM-Dxxx-xxx

92B-FBA-FAH-DM-Dxxx-xxx

92

92B-FBA-DAG-DM-Dxxx-xxx 92B-GBA-DAG-DM-Dxxx-xxx 92B-GBA-FAG-DM-Dxxx-xxx 92B-FBA-FAG-DM-Dxxx-xxx 92B-FBA-FAG-DM-Dxxx-xxx 92B-GBA-FAG-DM-Dxxx-xxx 92B-FBA-DAH-DM-Dxxx-xxx 92B-GBA-DAH-DM-Dxxx-xxx

5/3

Pressure centre

92B-GBA-000-DM-Dxxx-xxx

92B-GBA-EAH-DM-Dxxx-xxx

92B-GBA-FAH-DM-Dxxx-xxx

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

5/3

Closed centre

92B-EBA-000-DM-Dxxx-xxx

92B-EBA-DAG-DM-Dxxx-xxx

92B-EBA-EAG-DM-Dxxx-xxx

92B-EBA-FAG-DM-Dxxx-xxx

92B-EBA-DAH-DM-Dxxx-xxx

92B-EBA-EAH-DM-Dxxx-xxx

92B-FBA-FAH-DM-Dxxx-xxx

Port size	Pilot air	5/2 Single operator	5/2 Double operator
		B A A A A A A A A A A A A A A A A A A A	IND EXH INA
Valve less base		92B-CBA-000-DM-Dxxx-xxx	92B-DBA-000-DM-DXXX-XXX
G1/8"		92B-CBA-DAG-DM-Dxxx-xxx	92B-DBA-DAG-DM-Dxxx-xxx
G1/4"	Internal	92B-CBA-EAG-DM-Dxxx-xxx	92B-DBA-EAG-DM-Dxxx-xxx
G3/8"		92B-CBA-FAG-DM-Dxxx-xxx	92B-DBA-FAG-DM-Dxxx-xxx
G1/8″		92B-CBA-DAH-DM-Dxxx-xxx	92B-DBA-DAH-DM-Dxxx-xxx
G1/4"	External	92B-CBA-EAH-DM-Dxxx-xxx	92B-DBA-EAH-DM-D <i>xxx-xxx</i>
G3/8"		92B-CBA-FAH-DM-DXXX-XXX	92B-DBA-FAH-DM-Dxxx-xxx
			Above models are shown with side ports.

5/2

Double operator

92B-BBA-000-DM-Dxxx-xxx

92B-BBA-DAG-DM-Dxxx-xxx

92B-BBA-FAG-DM-Dxxx-xxx

92B-BBA-FAG-DM-Dxxx-xxx

92B-BBA-DAH-DM-Dxxx-xxx

92B-BBA-EAH-DM-Dxxx-xxx

92B-BBA-FAH-DM-Dxxx-xxx

#### SOLENOID OPERATOR ➤

XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection
JA	110 V~/50Hz	Α	45 cm (Flying leads)	1	Non-locking	BM	Flying leads
JB	220 V~/50Hz	В	60 cm (Flying leads)	2	Locking	BN	Flying leads with diode
JC	24 V~/50Hz	J	Connector			BP	Flying leads with M.O.V.
FB	24 V=/1,8W					BG	Flying leads with ground
DA	24 V=/5,4W					JB	Rectangular connector
DF	24 V=/12,7W					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...







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,  $\Delta P=1bar$ ) : 1/8": 1000NI/min (Cv 1.0) - 1/4": 1100 NI/min (Cv 1.1) - 3/8": 1200 NI/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

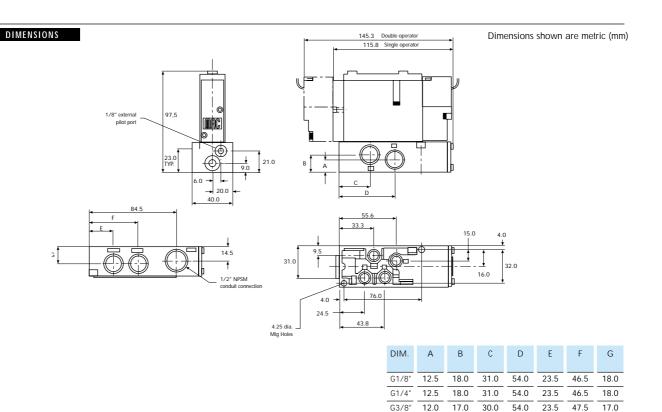
= 1,8 to 12,7 W

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

• Pilot valve DM-Dxxx-xxx • Valve blanking plate: M-92002 Spare parts :

• Pressure seal between valve and base : 16543. • Mounting screws valve to base (X2) : 35050.





Function	Po	rt size	Flow (Max)		Individual mounting	
5/2, 5/3	G1	1/8" - G1/4" - G3	/8" 1200 NI	/min	Sub-base "plug-in"	
OPERATIONAL BENEFITS						34
<ol> <li>The 4-way pilot develor forces both ways.</li> <li>Memory spring availa</li> <li>Balanced spool, immu</li> </ol>	ble.					36
pressure, also provide 4. Short stroke with high	s high flow. flow.					32
<ul><li>5. Bonded seal spool with shifting in a glass-like</li><li>6. Pilot with balanced po</li></ul>	finished bore.					37
and consistent respons	se times.					38 52
HOW TO ORDER						67 44
SINGLE PRESSURE M	IODELS					44
Port size Pilo	t air	5/2 e operator Do	5/2 uble operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre
	B B	A A A	B B A A A A A B B IN EA B IN EA	B B A B A B A B A B A B A B A B A B A B	B B A SIM	B A A A A A A A A A A A A A A A A A A A
Valve less base			AA-000-DM-DxxP-xxx	92B-EAA-000-DM-DxxP-xxx	92B-FAA-000-DM-DxxP-xxx	92B-GAA-000-DM-DxxP-xxx 4.7
G1/8"	92B-AAA-D	AA-DM-DxxP-xxx 92B-BA	A-DAA-DM-DxxP-xxx	92B-EAA-DAA-DM-DxxP-xxx	92B-FAA-DAA-DM-DxxP-xxx	92B-GAA-DAA-DM-DxxP-xxx
G1/4" Inte	rnal 92B-AAA-E	AA-DM-DxxP-xxx 92B-BA	A-EAA-DM-DxxP-xxx	92B-EAA-EAA-DM-DxxP-xxx	92B-FAA-EAA-DM-DxxP-xxx	92B-GAA-EAA-DM-DxxP-xxx
G3/8"	92B-AAA-F.	AA-DM-DxxP-xxx 92B-BA	A-FAA-DM-DxxP-xxx	92B-EAA-FAA-DM-DxxP-xxx	92B-FAA-FAA-DM-DxxP-xxx	92B-GAA-FAA-DM-DxxP-xxx 48
G1/8″	92B-AAA-D	AD-DM-DxxP-xxx 92B-BA	A-DAD-DM-DxxP-xxx	92B-EAA-DAD-DM-DxxP-xxx	92B-FAA-DAD-DM-DxxP-xxx	92B-GAA-DAD-DM-DxxP-xxx
G1/4" Exte	rnal 92B-AAA-E	AD-DM-DxxP-xxx 92B-BA	A-EAD-DM-DxxP-xxx	92B-EAA-EAD-DM-DxxP-xxx	92B-FAA-EAD-DM-DxxP-xxx	92B-GAA-EAD-DM-DxxP-xxx 400
G3/8"	92B-AAA-F	AD-DM-DxxP-xxx 92B-BA	AA-FAD-DM-DxxP-xxx	92B-EAA-FAD-DM-DxxP-xxx	92B-FAA-FAD-DM-DxxP-xxx	92B-GAA-FAD-DM-DxxP-xxx
DUAL PRESSURE MC	dels (requir	RE SANDWICH REC	Gulator – See	"REGULATORS" SEC	TION)	92
Port size	Р	ilot air	Sinç	5/2 gle operator		5/2 operator 93
			B D Inb	B A A AZZI EXH INA	B B IVE	
Valve less base			92B-CA	A-000-DM-DxxP-xxx	92B-DAA-00	O-DM-DxxP-xxx
G1/8″	<u></u>		92B-CAA	-DAA-DM-DxxP-xxx	92B-DAA-DA	A-DM-DxxP-xxx
G1/4"		nternal	92B-CA <i>A</i>	-EAA-DM-DxxP-xxx	92B-DAA-EA	A-DM-DxxP-xxx ISO
G3/8"			92B-CA <i>A</i>	-FAA-DM-DxxP-xxx	92B-DAA-FA	A-DM-DxxP-xxx
G1/8″	_		92B-CAA	-DAD-DM-DxxP-xxx	92B-DAA-DA	.D-DM-DxxP-xxx
G1/4"	E	External	92B-CAA	-EAD-DM-DxxP-xxx	92B-DAA-EA	D-DM-DxxP-xxx
G3/8"			92B-CAA	-FAD-DM-DxxP-xxx	92B-DAA-FA	D-DM-DxxP-xxx
SOLENOID OPERATO	OR ➤	DI	M-D <u>xx</u> P-	<u>XXX</u> *	Above model	s are shown with side ports.
<b>XX</b> Voltage		X	Manual opera	ator	XX Electrical co	nnection
JA 110 V~/50Hz JB 220 V~/50Hz		1	Non-locking Locking		DM Plug-in DN Plug-in with diod	
JC 24 V~/50Hz			LOCKING		DP Plug-in with M.O	
FB 24 V=/1,8W				_	DG Plug-in with diod	
DA 24 V=/5,4W DF 24 V=/12,7W				_	DJ Plug-in with M.O	.ν. α ground







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": 1000NI/min (Cv 1.0) – 1/4": 1100 NI/min (Cv 1.1) – 3/8": 1200 NI/min (Cv 1.2)

Coil: Epoxy encapsulated – class A – 100%ED (specify mod 0449)

Epony shoupsalated slass 11 100/025 (Speeny mod 01)

Voltage range : -15% to +10% of nominal voltage

Protection : IP65 (electrical connection)

Power: ~Inrush 7,6 VA Holding: 4,8 VA

Till asit 7,0 VA Till aling : 4,0 VA

 $\frac{= 1.8 \text{ to } 12.7 \text{ W}}{24 \text{V} = /5.4 \text{W}}$ 

120V~/50Hz Energize: 7-13 ms De-energize: 12-20 ms

Energize: 8 ms

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

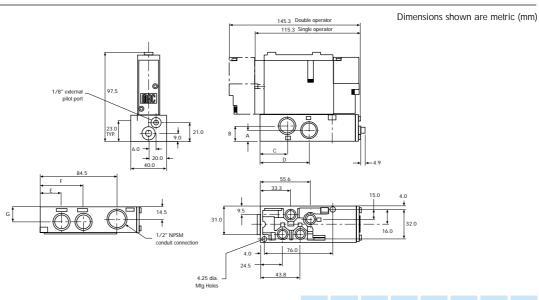
Spare parts : • Pilot valve DM-DxxP-xxx • Valve blanking plate: M-92002

• Pressure seal between valve and base : 16543. • Mounting screws valve to base (X2) : 35050.

De-energize: 7 ms

#### DIMENSIONS

Response times :



DIM.	Α	В	С	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



Series 92	2								
Function		Port size	Flow (Max)		Manifold mounting		Series		
5/2, 5/3		G1/4" - G3/	8" 1200 NI	/min	Sub-base non "plug-in"				
OPERATIONAL BENEFITS 34									
<ol> <li>The 4-way pilot develops maximum shifting forces both ways.</li> <li>Memory spring available.</li> <li>Balanced spool, immune to variations of</li> </ol>									
pressure, also pressure, also pressure, also pressure, also pressure pressu	provides high						32		
<ol><li>Bonded seal sp shifting in a gla</li></ol>	ass-like finishe	d bore.				4	37		
<ol><li>Pilot with balar and consistent</li></ol>					41	1	38		
<ul><li>7. Wiping effect e</li><li>8. Long service lif</li></ul>		king.			- 19		52		
HOW TO ORD	ER						67 44		
SINGLE PRESSU	JRE MODEI	LS							
Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre	46		
		B A A A A A A A A A A A A A A A A A A A	B B A A A	B A A A A A A A A A A A A A A A A A A A	B B A A A A A A A A A A A A A A A A A A	B B A A A A A A A A A A A A A A A A A A	42		
Valve less base		92B-ABA-000-DM-Dxxx-xxx	92B-BBA-000-DM-Dxxx-xxx	92B-EBA-000-DM-Dxxx-xxx	92B-FBA-000-DM-Dxxx-xxx	92B-GBA-000-DM-Dxxx-xxx	47		
G1/4"	Internal	92B-ABA-EJG-DM-Dxxx-xxx	92B-BBA-EJG-DM-Dxxx-xxx	92B-EBA-EJG-DM-Dxxx-xxx	92B-FBA-EJG-DM-Dxxx-xxx	92B-GBA-EJG-DM-Dxxx-xxx			
G3/8"		92B-ABA-FJG-DM-Dxxx-xxx	92B-BBA-FJG-DM-Dxxx-xxx	92B-EBA-FJG-DM-Dxxx-xxx	92B-FBA-FJG-DM-Dxxx-xxx	92B-GBA-FJG-DM-Dxxx-xxx	10		

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

Port size	Pilot air	5/2	5/2
		Single operator	Double operator
		ING EXH INA	B A A A A A A A A A A A A A A A A A A A
Valve less base		92B-CBA-000-DM-Dxxx-xxx	92B-DBA-000-DM-Dxxx-xxx
G1/4"	Internal	92B-CBA-EJG-DM-Dxxx-xxx	92B-DBA-EJG-DM-DXXX-XXX
G3/8"	-	92B-CBA-FJG-DM-Dxxx-xxx	92B-DBA-FJG-DM-Dxxx-xxx
			Above models are shown with side ports.

SOLENOID OPERATOR ➤

DM-D  $xxx-xxx^*$ 

			J ካ			
Voltage	X	Wire length	X	Manual operator	XX	Electrical connection
110 V~/50Hz	Α	45 cm	1	Non-locking	KA	Square connector
220 V~/50Hz	J	Connector	2	Locking	KD	Square connector with light
24 V~/50Hz					JB	Rectangular connector
24 V=/1,8W					JD	Rect. connector with light
24 V=/5,4W					BA	Flying leads
24 V=/12,7W					BK	Flying leads with diode

<sup>\*</sup> Click here for other options available.

End plate kit required (port size 3/8"): M-9

M-92004-01-01P (internal pilot) M-92004-02-01P (External pilot)

Inlet/exhaust Isolator disc: N-92018.

FB DA DF

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

92

ISO 1

ISO 2







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  $\mu$ 

Temperature range : -18°C to +50°C

Orifice: 6,2 mm

Flow (at 6 bar, ΔP=1bar): 1/4": 1100 NI/min (Cv1.1) – 3/8": 1200 NI/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

~iiiidsii 7,0 VA Holding . 4,0 VA

= 1,8 to 12,7 W

 Response times :
 24V=/5,4W
 Energize : 8 ms
 De-energize : 7 ms

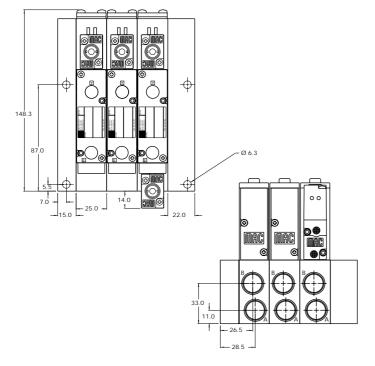
 120V~/50Hz
 Energize : 7-13 ms
 De-energize : 12-20 ms

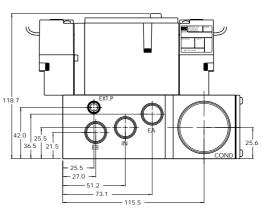
Options : • NPTF threads • Sandwich flow controls: FC92B-CA

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

#### DIMENSIONS

Dimensions shown are metric (mm)







unction		Port size	Flow (Max)		Manifold mounting		Series
5/2, 5/3		G1/4" - G3/8	3″ 1200 NI	/min	Sub-base "plug-in"		
PERATIONAL BEN	EFITS					# · ·	34
<ul><li>The 4-way pilot forces both way</li><li>Memory spring</li><li>Balanced spool</li></ul>	ys. available.	·				7	36
pressure, also p  Short stroke wit	provides high h high flow.	flow.				1	32
<ul> <li>Bonded seal sp shifting in a gla</li> <li>Pilot with balan and consistent r</li> <li>Wiping effect e</li> </ul>	iss-like finishe ced poppet, response time	ed bore. high flow; short es.					37 38 52
. Long service life HOW TO ORDE	R				40		67
INGLE PRESSU	JRE MODE	LS					46
Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre	
		B B A SZZ	B B A A A		B B A B A B A B A B A B A B A B A B A B	B A B A B A B A B A B A B A B A B A B A	42
alve less base		92B-AAA-000-DM-DxxP-xxx	92B-BAA-000-DM-DxxP-xxx	92B-EAA-000-DM-DxxP-xxx	92B-FAA-000-DM-DxxP-xxx	92B-GAA-000-DM-DxxP-xxx	4
G1/4"	Internal	92B-AAA-EJA-DM-DxxP-xxx	92B-BAA-EJA-DM-DxxP-xxx	92B-EAA-EJA-DM-DxxP-xxx	92B-FAA-EJA-DM-DxxP-xxx	92B-GAA-EJA-DM-DxxP-xxx	
G3/8"		92B-AAA-FJA-DM-DxxP-xxx	92B-BAA-FJA-DM-DxxP-xxx	92B-EAA-FJA-DM-DxxP-xxx	92B-FAA-FJA-DM-DxxP-xxx	92B-GAA-FJA-DM-DxxP-xxx	48
UAL PRESSUR	E MODELS	(REQUIRE SANDWIC	h regulator – see	"REGULATORS" SEC	TION)		40
Port size		Pilot air	Sinç	5/2 gle operator		5/2 e operator	4(
			B D	B A A A A A A A A A A A A A A A A A A A	B B B INB EI		92
Valve less ba	ise			A-000-DM-DxxP-xxx		O-DM-DxxP-xxx	
G1/4"		Internal	92B-CA/	A-EJA-DM-DxxP-xxx	92B-DAA-EJ	A-DM-DxxP-xxx	93
G3/8″			92B-CA/	A-FJA-DM-DxxP-xxx	92B-DAA-FJ	A-DM-DxxP-xxx	
OLENOID OPI	ERATOR ➤		DM-D <u>xx</u> P-	XXX	Above models are shown	with side ports and no lights.	IS
							12
							IS

Non-locking

Locking

110 V~/50Hz

220 V~/50Hz

24 V~/50Hz

24 V=/1,8W 24 V=/5,4W 24 V=/12,7W

DA

\* 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.

Plug-in

Plug-in with diode Plug-in with M.O.V.

Plug-in with diode & ground Plug-in with M.O.V. & ground

DM

DP







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,  $\Delta P=1bar$ ): 1/4": 1100 NI/min (Cv1.1) - 3/8": 1200 NI/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

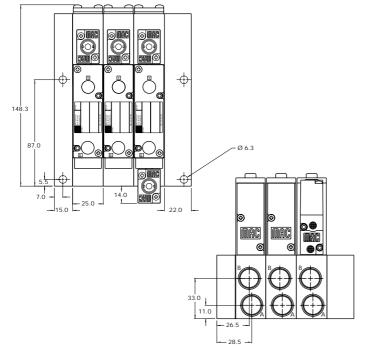
Options: • NPTF threads • Sandwich flow controls: FC92B-AA (sgl. operator), FC92B-BA (dbl. operator)

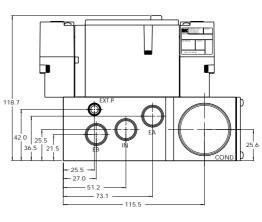
• Pilot valve: DM-DxxP-xxx • Valve blanking plate: M-92002 • Pressure seal, valve to base: 16543 Spare parts :

• Mounting screws valve to base (x2): 35050

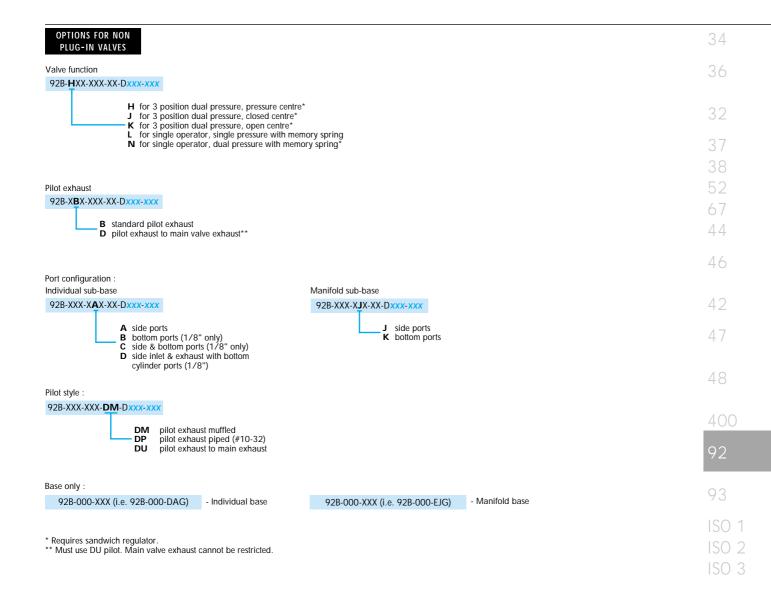
#### DIMENSIONS

Dimensions shown are metric (mm)











(Note: bases are wired for double solenoid valves)

\* Requires sandwich regulator.

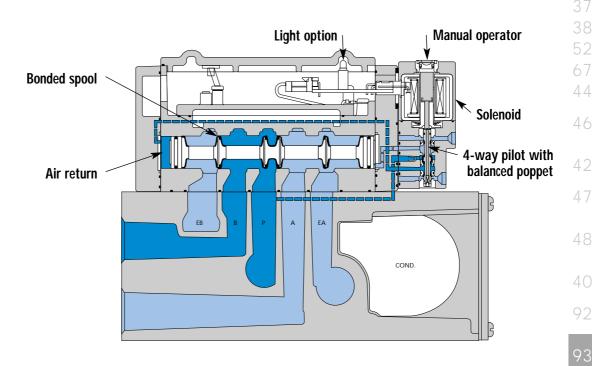
\*\* Must use DU pilot. Main valve exhaust cannot be restricted.

# Direct solenoid and solenoid pilot operated valves

#### 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-XAX-XXX-XX-DxxP-xxx A standard pilot exhaust C pilot exhaust to main valve exhaust\*\* Body electrical 92B-XX**A**-XXX-XX-DxxP-xxx A no light **B** light(s) F suppression and blocking diode with light(s) H M.O.V. with light(s) Port configuration: Manifold sub-base Individual sub-base 92B-XXX-X**A**X-XX-DxxP-xxx 92B-XXX-XJX-XX-DxxP-xxx A side ports 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") **K** bottom ports Base/manifold int./ext. pilot 92B-XXX-XX**A**-XX-DxxP-xxx A internal pilot no light internal pilot single light internal pilot double light D external pilot double light E external pilot single light F external pilot double light Pilot style : 92B-XXX-XXX-**DM**-DxxP-xxx pilot exhaust muffled pilot exhaust piped (#10-32) pilot exhaust to main exhaust Lead Wire Lengths: (manifold sub-base only) 92B-XXX-XXX-DM-Dxx**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 92B-000-XXX (i.e. 92B-000-EJA) - Manifold base



# Individual mounting Sub-base non "plug-in" Sub-base "plug-in" 3 4 Manifold mounting



Sub-base

on "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.

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

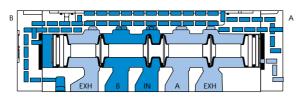
ISO 1 ISO 2



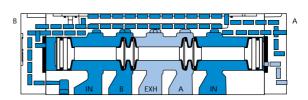




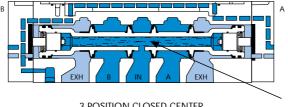
#### SPOOL CONFIGURATIONS



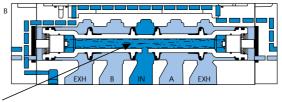
2 POSITION SINGLE PRESSURE SHOWN WITH "B" OPERATOR ENERGIZED



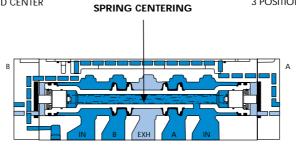
2 POSITION DUAL PRESSURE SHOWN WITH "B" OPERATOR ENERGIZED



3 POSITION CLOSED CENTER



3 POSITION OPEN CENTER

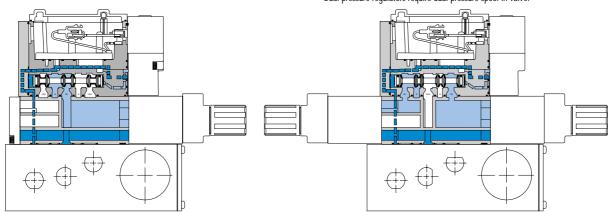


3 POSITION SINGLE PRESSURE, PRESSURE CENTER

#### **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

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

MANIFOLD WITH REGULATOR - DUAL PRESSURE



Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	G3/8" - G1/2"	3800 NI/min	Inline	

#### OPERATIONAL BENEFITS

- Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof solenoid operation.
- 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.
- Optional low wattage DC solenoid down to
   watt
- MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.



# HOW TO ORDER

#### SINGLE PRESSURE MODELS

00222001	O.L O D L.	.0			
Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
		B IN EA	B IN EA	B IN EA	B A A A A A A A A A A A A A A A A A A A
G3/8"	Internal	93A-AJ0-E0J-DM-Dxxx-xxx	93A-BJ0-E0J-DM-Dxxx-xxx	93A-EJO-EOJ-DM-Dxxx-xxx	93A-FJO-EOJ-DM-Dxxx-xxx
G1/2"		93A-AJ0-F0J-DM-Dxxx-xxx	93A-BJ0-F0J-DM-Dxxx-xxx	93A-EJO-FOJ-DM-Dxxx-xxx	93A-FJO-FOJ-DM-Dxxx-xxx
G3/8"	External	93A-AJ0-E0K-DM-Dxxx-xxx	93A-BJ0-E0K-DM-Dxxx-xxx	93A-EJO-EOK-DM-Dxxx-xxx	93A-FJ0-E0K-DM-Dxxx-xxx
G1/2"		93A-AJ0-F0K-DM-Dxxx-xxx	93A-BJ0-F0K-DM-Dxxx-xxx	93A-EJO-FOK-DM-Dxxx-xxx	93A-FJO-FOK-DM-Dxxx-xxx

#### **DUAL PRESSURE MODELS**

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/2 Pressure centre
		B A A A A A A A A A A A A A A A A A A A	B B A A A A A A A A A A A A A A A A A A	B A A A
G3/8"	Internal	93A-CJ0-E0J-DM-Dxxx-xxx	93A-DJ0-E0J-DM-Dxxx-xxx	93A-HJ0-E0J-DM-Dxxx-xxx
G1/2"		93A-CJ0-F0J-DM-Dxxx-xxx	93A-DJ0-F0J-DM-Dxxx-xxx	93A-HJ0-F0J-DM-Dxxx-xxx
G3/8"	External	93A-CJO-EOK-DM-Dxxx-xxx	93A-DJ0-E0K-DM-Dxxx-xxx	93A-HJO-EOK-DM-Dxxx-xxx
G1/2"		93A-CJO-FOK-DM-Dxxx-xxx	93A-DJ0-F0K-DM-Dxxx-xxx	93A-HJO-FOK-DM-Dxxx-xxx

SOLENOID	OPERATOR ➤		DM-D XX	<u> </u>	<u>*</u>		
				╽┧╴			
XX V	oltage	X	Wire length	X	Manual operator	XX	Electrical connection
JA 11	0 V~/50Hz	Α	45 cm (Flying leads)	1	Non-locking	KA	Square connector
JB 22	20 V~/50Hz	В	60 cm (Flying leads)	2	Locking	KD	Square connector with light
JC 24	V~/50Hz	J	Connector		<u> </u>	JB	Rectangular connector
FB 24	V=/1.8W					JD	Rectangular connector with light

DF 24 V=/12,7W\* Click here for other options available.

24 V=/5,4W

#### OPTIONS

Pilot exhaust : 93A-XJX-XXX-DM-Dxxx-xxx

J Standard pilot exhaust

K Pilot exhaust to main exhaust (use DU pilot)

Flying leads

BA







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

-18°C to +50°C Temperature range :

Orifice: 11,7 mm

Flow (at 6 bar,  $\Delta P$ =1bar) : 3800 NI/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

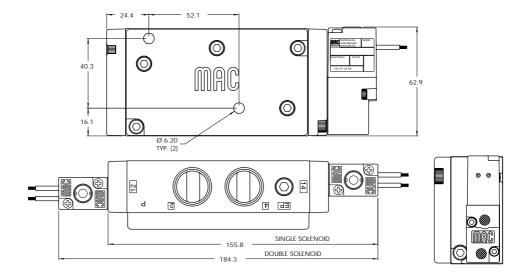
Response times : Energize :13 ms

(with 4 W coil) De-energize : 10 ms

Option: · NPTF thread

DIMENSIONS

Dimensions shown are metric (mm)





Function		Port size		Flow (Max)		Individual mo	ounting	Series
5/2, 5/3		G1/4" - C	G3/8" - G1/	/2" 3400 NI/I	min	Sub-base non "plug-in"		
OPERATIONAL BEN	NEFITS							34
Unique patente possible respo burn-out proof	nse times and solenoid oper	virtually ration.						36
<ol> <li>Balanced popp maximum shifti repeatability a</li> <li>Air only return</li> </ol>	ing forces, pre nd consistent	ecise operation.						32
also available.  4. Optional low v 1 watt.  5. MAC spool an	vattage DC so	blenoid down to					9	37 38
	nation, elimina	ates sticking and				6	B	52 67
HOW TO ORD		10/4/48 4005	0.405.007	TOLA DODTED)				44
Port size	Pilot air	LS (1/4" MODEI 5/2 Single ope		10M PORTED) 5/2 Double oper	ator	5/3 Closed centre	5/3 Open centr	46
		B B A	AZI.	B B A	<b>Å</b> 71		B B A	42
Valve less base		93A-ABA-000-DM-	Dxxx-xxx	93A-BBA-000-DM-D	XXX-XXX	93A-EBA-000-DM-DXXX-	XXX 93A-FBA-000-DM-DX	<del>xx-xxx</del> 47
G1/4"		93A-ABA-DBG-DM-	-Dxxx-xxx	93A-BBA-DBG-DM-D	XXX-XXX	93A-EBA-DBG-DM-Dxxx-	xxx 93A-FBA-DBG-DM-Dx	
G3/8"	Internal	93A-ABA-EAG-DM-	-Dxxx-xxx	93A-BBA-EAG-DM-D	XXX-XXX	93A-EBA-EAG-DM-Dxxx-	93A-FBA-EAG-DM-Dx	
G1/2"		93A-ABA-FAG-DM-	Dxxx-xxx	93A-BBA-FAG-DM-D	XXX-XXX	93A-EBA-FAG-DM-Dxxx-	93A-FBA-FAG-DM-Dx	<del>xxx-xxx</del> 48
G1/4"		93A-ABA-DBH-DM-	Dxxx-xxx	93A-BBA-DBH-DM-D	XXX-XXX	93A-EBA-DBH-DM-Dxxx-	93A-FBA-DBH-DM-Dx	XX-XXX
G3/8"	External	93A-ABA-EAH-DM-		93A-BBA-EAH-DM-D		93A-EBA-EAH-DM-Dxxx-		
G1/2″		93A-ABA-FAH-DM-		93A-BBA-FAH-DM-D		93A-EBA-FAH-DM-Dxxx-		<u> </u>
			WICH REG		EGULATC		MODELS ARE BOTTOM F	PORTED)) 92
Port size	•	Pilot air	Sing	5/2 gle operator		5/2 Double operator	5/2 Pressure centr	e
			B I∑	B A AZZI B EXH INA		INR EXH INA	B A FB IN FA	93
Valve less b	ase		93A-CBA	A-000-DM-Dxxx-xxx	ç	3A-DBA-000-DM-Dxxx-xxx	93A-HBA-000-DM-Dxxx	-XXX
G1/4"			93A-CBA	A-DBG-DM-Dxxx-xxx	9	3A-DBA-DBG-DM-Dxxx-xxx	93A-HBA-DBG-DM-Dxxx	
G3/8"		Internal	93A-CBA	A-EAG-DM-Dxxx-xxx	9	3A-DBA-EAG-DM-Dxxx-xxx	93A-HBA-EAG-DM-Dxxx	x-xxx ISO (
G1/2"			93A-CBA	A-FAG-DM-Dxxx-xxx	9	3A-DBA-FAG-DM-Dxxx-xxx	93A-HBA-FAG-DM-Dxxx	(-XXX
G1/4"			93A-CBA	A-DBH-DM-Dxxx-xxx	9	3A-DBA-DBH-DM-Dxxx-xxx	93A-HBA-DBH-DM-Dxxx	(-XXX
G3/8"		External	93A-CBA	A-EAH-DM-Dxxx-xxx	9	3A-DBA-EAH-DM-Dxxx-xxx	93A-HBA-EAH-DM-Dxxx	(-XXX
G1/2"			93A-CBA	A-FAH-DM-Dxxx-xxx	9	3A-DBA-FAH-DM-Dxxx-xxx	93A-HBA-FAH-DM-Dxxx	(-XXX
SOLENOID OF	PERATOR >		D۱	Л-D <u>xx</u> x- <u>х</u>	<u> </u>			
 			\		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		No. Electrical	
JA 110 V	age ~/50Hz	X A	Wire leng 45 cm	u i		anual operator n-locking	XX Electrical conn BM Flying leads	ection
	~/50HZ ~/50Hz	B	60 cm			king	BN Flying leads with did	ode
	/50Hz	J	Connector				BP Flying leads with M	

2<u>4 V~/50Hz</u>

24 V=/1,8W 24 V=/5,4W

FB

DA

Connector

BG

Flying leads with M.O.V.

Flying leads with ground

Rectangular connector Rectangular connector with light







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 u

Temperature range : -18°C to +50°C

Orifice: 11,7 mm

Flow (at 6 bar, ΔP=1bar): 1/4", 3/8": 3000 NI/min (Cv3.0) – 1/2": 3400 NI/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 : Energize :13 ms

(with 4 W coil) 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

DIM.

Α

В

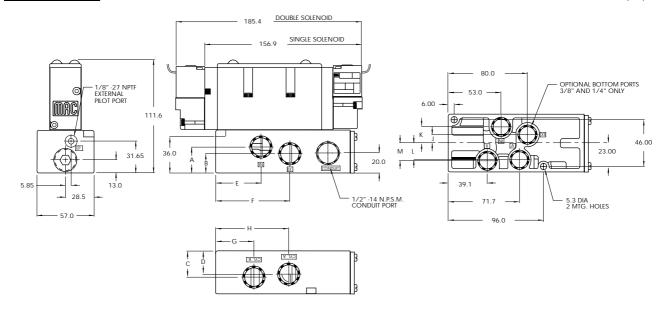
С

G3/8" 27.15 20.65 27.15 24.15 54.1 G1/2" 25.5 19.0 25.5 22.5 45.8

D

Ε

DIMENSIONS Dimensions shown are metric (mm)



7.0

8.5

Κ

14.7

16.2

L

15.0

16.5

M 16.5

DIM.

G1/4"

G3/8

Н

73.5

G

38.2

38.2

81.7

75.3



unction		Port size		Flow (Max)	Individual mount	ing
/2, 5/3		G1/4" - G	3/8" - G1/2"	3400 NI/min	Sub-base "plug-in"	
PERATIONAL BEN	IEFITS					
<ul> <li>Unique patente possible respor burn-out proof</li> <li>Balanced popp</li> </ul>	nse times and solenoid opera	virtually ation.				
maximum shifti repeatability a	ng forces, pre	cise				
<ul> <li>Air only return.</li> <li>also available.</li> </ul>		mory spring is			Merci	
. Optional low v 1 watt.	vattage DC so	lenoid down to				100
. MAC spool an	d bore combir	nation wipes			6	
away contamir		ites sticking and				1
		rvice.			-	
HOW TO ORD						
NGLE PRESSU	JRE MODEL	.S (1/4" MODELS	S ARE BOTTO	M PORTED)		
Port size	Pilot air	5/2 Single oper	ator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
		B B A T	<b>A ₫</b> 71		B B A B A B A B A B A B A B A B A B A B	
alve less base		93A-AAA-000-DM-E	DXXP-XXX	93A-BAA-000-DM-DxxP-xxx	93A-EAA-000-DM-DxxP-xxx	93A-FAA-000-DM-DxxP-xxx
G1/4"		93A-AAA-DBA-DM-[	)xxP-xxx	93A-BAA-DBA-DM-DxxP-xxx	93A-EAA-DBA-DM-DxxP-xxx	93A-FAA-DBA-DM-DxxP-xxx
G3/8″	Internal	93A-AAA-EAA-DM-I	)xxP-xxx	93A-BAA-EAA-DM-DxxP-xxx	93A-EAA-EAA-DM-DxxP-xxx	93A-FAA-EAA-DM-DxxP-xxx
G1/2″		93A-AAA-FAA-DM-[	)xxP-xxx	93A-BAA-FAA-DM-DxxP-xxx	93A-EAA-FAA-DM-DxxP-xxx	93A-FAA-FAA-DM-DxxP-xxx
G1/4"		93A-AAA-DBD-DM-E		93A-BAA-DBD-DM-DxxP-xxx	93A-EAA-DBD-DM-DxxP-xxx	93A-FAA-DBD-DM-DxxP-xxx
G3/8"	External	93A-AAA-EAD-DM-I		93A-BAA-EAD-DM-DxxP-xxx	93A-EAA-EAD-DM-DxxP-xxx	93A-FAA-EAD-DM-DxxP-xxx
G1/2"		93A-AAA-FAD-DM-[	OxxP-xxx	93A-BAA-FAD-DM-DxxP-xxx	93A-EAA-FAD-DM-DxxP-xxx	93A-FAA-FAD-DM-DxxP-xxx
JAL PRESSUR	E MODELS	(REQUIRE SAND	WICH REGUL	ator, see "regula	TORS" SECTION (1/4" MC	DDELS ARE BOTTOM PORTED))
Port size		Pilot air	!	5/2	5/2	5/3
			Single	operator	Double operator	Pressure Centre
			B B D D D D D D D D D D D D D D D D D D	A A A A A A A A A A A A A A A A A A A	B B A A A A A A A A A A A A A A A A A A	EB IN EA
Valve less ba	ase		93A-CAA-00	DO-DM-DxxP-xxx	93A-DAA-000-DM-DxxP-xxx	93A-HAA-000-DM-DxxP-xxx
G1/4"			93A-CAA-DE	BA-DM-DxxP-xxx	93A-DAA-DBA-DM-DxxP-xxx	93A-HAA-DBA-DM-DxxP-xxx
G3/8"		Internal		AA-DM-DxxP-xxx	93A-DAA-EAA-DM-DxxP-xxx	93A-HAA-EAA-DM-DxxP-xxx
G1/2"			93A-CAA-FAA-DM-DxxP-xxx		93A-DAA-FAA-DM-DxxP-xxx	93A-HAA-FAA-DM-DxxP-xxx
G1/4" G3/8"		External		BD-DM-DxxP-xxx AD-DM-DxxP-xxx	93A-DAA-DBD-DM-DxxP-xxx 93A-DAA-EAD-DM-DxxP-xxx	93A-HAA-DBD-DM-DxxP-xxx 93A-HAA-EAD-DM-DxxP-xxx

93A-CAA-FAD-DM-DxxP-xxx

Non-locking

Locking

DM-D XX P-XXX

Manual operator

93A-DAA-FAD-DM-DxxP-xxx

XX

DM

DN

DP

DG

Plug-in

Plug-in with diode

Plug-in with M.O.V.

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.

G1/2"

XX

JA

FB

DA

SOLENOID OPERATOR >

Voltage

110 V~/50Hz

220 V~/50Hz

24 V~/50Hz

24 V=/1,8W

24 V=/5,4W

24 V=/12,7W

Electrical connection

93A-HAA-FAD-DM-DxxP-xxx

Above models are shown without light.







Temperature range :

Fluid: Compressed air, vacuum, inert gases

Pressure range : Internal Pilot: 1,3 to 10 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: -18°C to +50°C

Orifice: 11,7 mm

Flow (at 6 bar,  $\Delta P$ =1bar): 1/4", 3/8": 3000 NI/min (Cv3.0) - 1/2": 3400 NI/min (Cv 3,4)

Coil: Epoxy encapsulated - 100% ED

External Pilot: Vacuum to 10 bar

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 : Energize :13 ms

(with 4 W coil) De-energize : 10 ms

Options: • NPTF thread • Sandwich regulator (see ,regulators' section)

> Sandwich flow controls FC93A-AA (screwdriver slot adjustment)

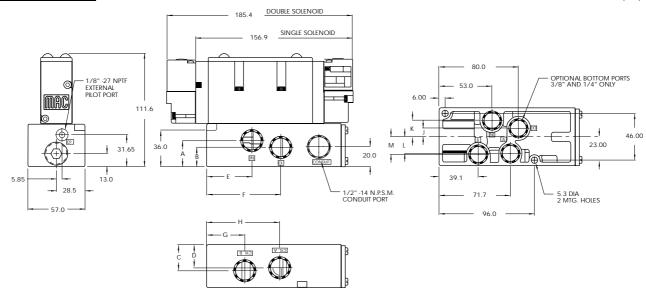
FC93A-AB (locking knob adjustment)

• Pilot valve: DM-DxxP-xxx • Valve to base pressure seal: 16622 Spare parts:

• 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.	А	В	С	D	E	F	G	Н	DIM.	J	K	L	M
G3/8" 27	7.15	20.65	27.15	24.15	54.1	81.7	38.2	73.5	G1/4"	7.0	14.7	15.0	16.5
G1/2" 25	5.5	19.0	25.5	22.5	45.8	75.3	38.2	73.5	G3/8"	8.5	16.2	16.5	17.5



24 V=/1,8W

24 V=/5,4W 24 V=/12,7W

\*\* 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.

FB

DA DF

# Direct solenoid and solenoid pilot operated valves

Function		Port size		Flow (Ma	іх)	Mani	fold mounting		Series
5/2, 5/3		G3/8" -	G1/2"	3800	NI/min		-base plug-in"		
OPERATIONAL BE	NEFITS								34
	onse times and f solenoid oper	virtually ation.					A. C.		36
maximum shif repeatability a	ting forces, preand consistent	ecise operation.							32
<ol><li>Air only return also available</li></ol>	· }.								37
<ol> <li>Optional low</li> <li>watt.</li> </ol>	wattage DC so	elenoid down to					104	ner/	38
5. MAC spool a	nd bore combi	nation wipes					(a)		52
•		ates sticking and					201		
allows for use	on non-lube se	ervice.							67
HOW TO ORE	DER								44
SINGLE PRESS	SURE MODE	LS							
Port size	Pilot air	5/2 Single ope	erator		/2 operator	5/ Closed		5/3 Open centre	46
		B B A EB IN EA	<b>1 3 2 1</b>	B B A	A A	B B A	1 3 M 3 7 1	B A A A A A A A A A A A A A A A A A A A	42
Valve less base		93A-ABA-000-DM	-Dxxx-xxx	93A-BBA-000-	-DM-Dxxx-xxx	93A-EBA-000-D	M-Dxxx-xxx	93A-FBA-000-DM-Dxxx-xxx	47
G3/8"	Internal	93A-ABA-EJG-DM	-Dxxx-xxx	93A-BBA-EJG-	-DM-Dxxx-xxx	93A-EBA-EJG-D	M-Dxxx-xxx	93A-FBA-EJG-DM-Dxxx-xxx	_
G1/2"		93A-ABA-FJG-DM	-Dxxx-xxx	93A-BBA-FJG-	-DM-Dxxx-xxx	93A-EBA-FJG-D	M-Dxxx-xxx	93A-FBA-FJG-DM-Dxxx-xxx	- 10
G3/8"	External	93A-ABA-EJH-DM	-Dxxx-xxx	93A-BBA-EJH-	-DM-Dxxx-xxx	93A-EBA-EJH-D	M-Dxxx-xxx	93A-FBA-EJH-DM-Dxxx-xxx	48
G1/2"		93A-ABA-FJH-DM	-Dxxx-xxx	93A-BBA-FJH-	-DM-Dxxx-xxx	93A-EBA-FJH-D	M-Dxxx-xxx	93A-FBA-FJH-DM-Dxxx-xxx	_
DUAL PRESSU	RE MODELS	(REQUIRE SANI	OWICH REG	ULATOR, SEI	E "REGULA	ATORS" SECTION)			40
Port size		Pilot air		5/2	_ "	5/2		5/2	
			Sin	gle operator		Double operat	or	Pressure centre	92
			B ID	B EXH INA		B B A A A	1	B A A M A A A A A A A A A A A A A A A A	93
Valve less k	oase		93A-CB/	A-000-DM-Dxxx-x	xx	93A-DBA-000-DM-Dxx	(-XXX	93A-HBA-000-DM-Dxxx-xxx	
G3/8"		Internal	93A-CB	A-EJG-DM-Dxxx-x	XX	93A-DBA-EJG-DM-Dxx	(-XXX	93A-HBA-EJG-DM-Dxxx-xxx	ISC
G1/2"			93A-CB	A-FJG-DM-Dxxx-x	xx	93A-DBA-FJG-DM-Dxx	(-XXX	93A-HBA-FJG-DM-Dxxx-xxx	
G3/8"		External	93A-CB	A-EJH-DM-Dxxx-x	XX	93A-DBA-EJH-DM-DXX		93A-HBA-EJH-DM-Dxxx-xxx	- ISC
G1/2"			93A-CB	A-FJH-DM-Dxxx-x	<u> </u>	93A-DBA-FJH-DM-Dxx	(-XXX	93A-HBA-FJH-DM-Dxxx-xxx	ISC
SOLENOID O	PERATOR ➤		D۱	И-D <u>xx</u>	<u>x-<u>x</u>xx</u>	*			
					╛┪				
XX Volt	tage	X	Wire leng	th	X	Manual operato	r XX	Electrical connection	
JA 110 V	/~/50Hz	Α	45 cm (Flying		1	Non-locking	ВМ	Flying leads	_
	/~/50Hz -/50Hz	B	60 cm (Flying Connector	leads)	2	Locking	BN KA	Flying leads with diode Square connector	_
	- / JULIZ		CONTROLLO				KA	Square connector	_

KD Square connector with light







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 NI/min (Cv 3,4) – 1/2": 3800 NI/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 : Energize :13 ms

(with 4 W coil) 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)

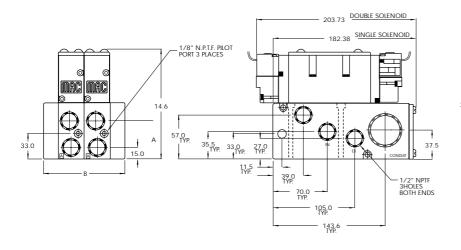
Spare parts : • Pilot valve: DM-Dxxx-xxx • Valve to base pressure seal: 16622

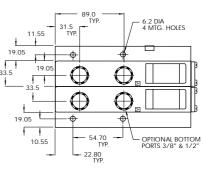
• Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249

• Inlet/exh. Isolator disc: N-93008 • Valve blanking plate: M-93002

DIMENSIONS

Dimensions shown are metric (mm)







Function		Port size	Flow (Max)	Manifold mounting	Seri	es
5/2, 5/3		G3/8" - G1/2"	3800 NI/min	Sub-base "plug-in"		
OPERATIONAL BEI	NEFITS				3	4
	nse times and v solenoid opera	rirtually ition.			3	6
maximum shift repeatability a	ing forces, pred nd consistent o	cise peration.			3	2
<ol> <li>Air only return also available</li> </ol>		<b>3</b> .			3	7
<ol> <li>Optional low v 1 watt.</li> </ol>	wattage DC sol	enoid down to		100	3	8
5. MAC spool ar	d bore combin	ation wipes		0 6	5	
,	nation, eliminat on non-lube ser	tes sticking and		100		
		vice.			6	-
HOW TO ORD					4	4
SINGLE PRESS	ure model	S			4	6
Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	
		B IN EA	B B A G	B IN EA	B B A B A B A B A B A B A B A B A B A B	2
			93A-BAA-000-DM-DxxP-xxx	93A-EAA-000-DM-DxxP-xxx	93A-FAA-000-DM-DxxP-xxx	7
Valve less base		93A-AAA-000-DM-DxxP-xxx	75A BAA 000 DIN BAAI AAA	7071 27 11 1 0 0 0 0 111 0 70 11 70 70 70	4	
Valve less base G3/8"	Internal	93A-AAA-000-DM-DxxP-xxx 93A-AAA-EJA-DM-DxxP-xxx	93A-BAA-EJA-DM-DxxP-xxx	93A-EAA-EJA-DM-DxxP-xxx	93A-FAA-EJA-DM-DxxP-xxx	,
					93A-FAA-EJA-DM-DxxP-xxx 93A-FAA-FJA-DM-DxxP-xxx	
G3/8"		93A-AAA-EJA-DM-DxxP-xxx	93A-BAA-EJA-DM-DxxP-xxx	93A-EAA-EJA-DM-DxxP-xxx	93A-FAA-EJA-DM-DxxP-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
		B A A A A A A A A A A A A A A A A A A A	INB EXH INA	B A A A A A A A A A A A A A A A A A A A
Valve less base		93A-CAA-000-DM-DxxP-xxx	93A-DAA-000-DM-DxxP-xxx	93A-HAA-000-DM-DxxP-xxx
G3/8"	Internal	93A-CAA-EJA-DM-DxxP-xxx	93A-DAA-EJA-DM-DxxP-xxx	93A-HAA-EJA-DM-DxxP-xxx
G1/2"	-	93A-CAA-FJA-DM-DxxP-xxx	93A-DAA-FJA-DM-DxxP-xxx	93A-HAA-FJA-DM-DxxP-xxx
G3/8"	External	93A-CAA-EJD-DM-DxxP-xxx	93A-DAA-EJD-DM-DxxP-xxx	93A-HAA-EJD-DM-DxxP-xxx
G1/2"	-	93A-CAA-FJD-DM-DxxP-xxx	93A-DAA-FJD-DM-DxxP-xxx	93A-HAA-FJD-DM-DxxP-xxx

SOLENOID OPERATOR ➤	DM-D <u>xx</u> P- <u>xxx</u> *	Above model numbers are shown with side ports without light.
xx Voltage	X Manual operator	XX Electrical connection
JA 110 V~/50Hz (2,9W)	1 Non-locking	DM Plug-in
JB 220 V~/50Hz (2,9W)	2 Locking	DN Plug-in with diode
JC 24 V~/50Hz (3,7W)		DP Plug-in with M.O.V.
FB 24 V=/1,8W		DG Plug-in with ground
DA 24 V=/5.4W		<u> </u>

<sup>24</sup> V=/12,7W

\* 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.

Above model numbers are shown with side ports without light.

ISO 1







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 u

Temperature range : -18°C to +50°C

Orifice : 11,7 mm

Flow (at 6 bar, ΔP=1bar): 3/8": 3400 NI/min (Cv 3,4) – 1/2": 3800 NI/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 : Energize :13 ms
(with 4 W coil) 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)

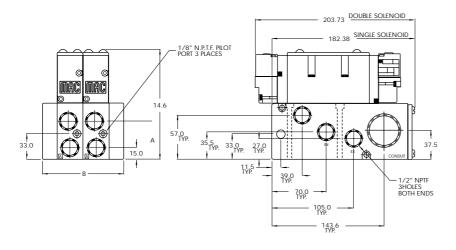
Spare parts : • Pilot valve: DM-DxxP-xxx • Valve to base pressure seal: 16622

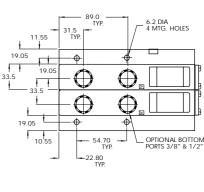
• Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249

• Inlet/exh. Isolator disc: N-93008 • Valve blanking plate: M-93002

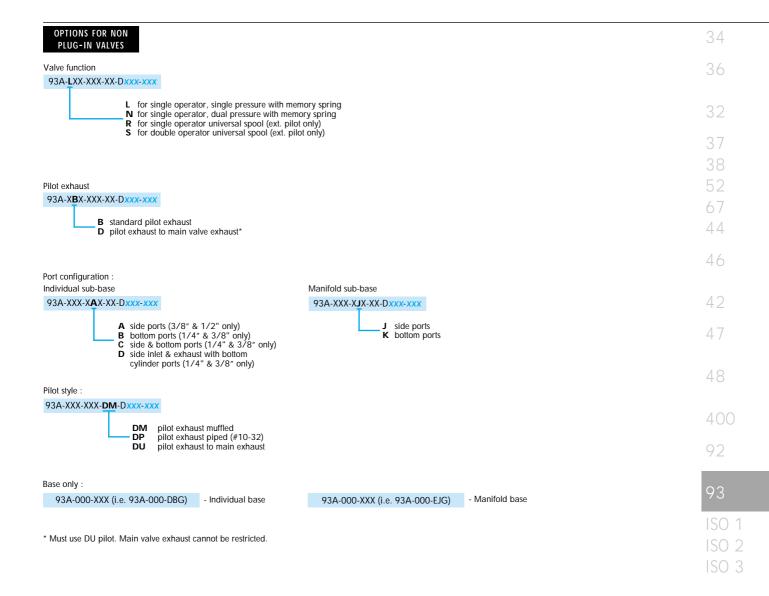
## DIMENSIONS

Dimensions shown are metric (mm)

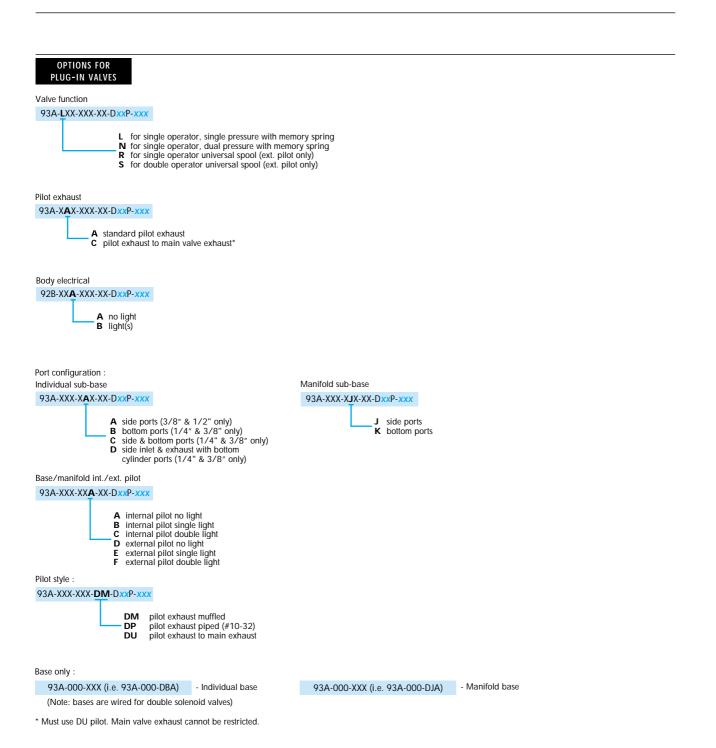




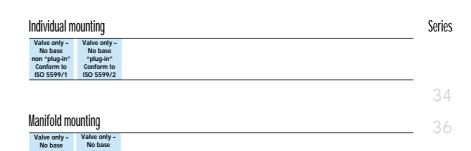


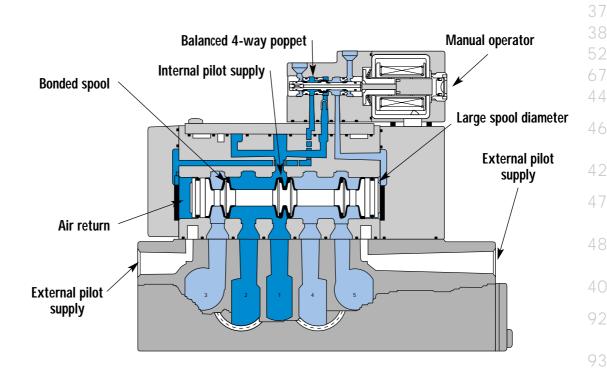












## **SERIES FEATURES**

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

ISO 2 ISO 3



Series ISO 1							
Function	Port size		Flow (Max)	Individual/Manifold mounting	Series		
5/2, 5/3	G1/4"	- G3/8″	1800 NI/min	Valve only - No base non "plug-in" Conform to ISO 5599/1			
OPERATIONAL BENEFITS					34		
Unique patented Macso possible response times out proof AC solenoid	and virtually burn-	9	sign of valves, bases and for modular assembly and ease of acce.		36		
Balanced poppet 4-way maximum shifting force repeatability and consi	s, precise		external pilot operation. supplied with common external		32		
MAC spool and bore c away contamination, e		8. Air only realso avail	eturn. Optional memory spring is able.	9	37		

HOW TO ORDER

## SINGLE PRESSURE MODELS

allows for use on non-lube service.

4. Large spool area for maximum shifting forces even at minimum operating pressure. 5. Very high flow in a compact package.

Pilot air	5/2	5/2	5/3	5/3
	Single operator	Double operator	Closed centre	Open centre
	14 4 2 12 T 5 50 1 7 3	14 4 2 12 5 \$\vert v\$ 3	14 4 2 12 34 14 15 15 15 15 15 15 15 15 15 15 15 15 15	14 4 2 3 3 4 3 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
Internal	MV-B1A-AAAA-DM-Dxxx-xxx	MV-B1A-ABAA-DM-Dxxx-xxx	MV-B1A-AEAA-DM-Dxxx-xxx	MV-B1A-AFAA-DM-Dxxx-xxx
External "12" end	MV-B1A-AAAB-DM-Dxxx-xxx	MV-B1A-ABAB-DM-Dxxx-xxx	MV-B1A-AFAB-DM-Dxxx-xxx	MV-B1A-AFAB-DM-Dxxx-xxx

9. Optional low wattage DC solenoid down to

#### **DUAL PRESSURE MODELS**

Pilot air	5/2 Single operator	5/2 Double operator	5/2 Pressure centre
	14 2 12 14 3 3 3 5 0 1 0 3 3	14 12 12 5 64 1 6 3	14 12 15 0 y 0 3
Internal From port #3	MV-B1A-ACAD-DM-Dxxx-xxx	MV-B1A-ADAD-DM-Dxxx-xxx	MV-B1A-AGAD-DM-Dxxx-xxx
Internal From port #5	MV-B1A-ACAE-DM-Dxxx-xxx	MV-B1A-ADAE-DM-Dxxx-xxx	MV-B1A-AGAE-DM-Dxxx-xxx
External From "12" end	MV-B1A-ACAB-DM-Dxxx-xxx	MV-B1A-ADAB-DM-Dxxx-xxx	MV-B1A-AGAB-DM-Dxxx-xxx

SOLENC	OID OPERATOR ➤		DM-D <u>xx</u>	X- <u>X</u> X)	<b>(</b> *		
				ᠶ᠘ᢆᢪ			
XX	Voltage	X	Lead wire length	X	Manual operator	XX	Electrical connection
JA	110 V~/50Hz	Α	45 cm	1	Non-locking	KA	Square connector
JB	220 V~/50Hz	В	60 cm	2	Locking	KD	Square connector with light
JC	24 V~/50Hz	J	Connector			JB	Rectangular connector

<sup>24</sup> V=/5,4W 24 V=/12,7W Click here for other options available.

24 V=/1,8W

Note: ISO series, valve and base are ordered separately, click here for base code.

## OPTIONS

Valve function :

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

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

Pilot style:

## MV-B1A-AXXX-**DM**-Dxxx-xxx

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

#### Spool return:

## MV-B1A-AX**A**X-XX-Dxxx-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...

Rectangular connector with light







Fluid: Compressed air, vacuum, inert gases

Vacuum to 10 bar Pressure range :

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,  $\Delta P=1bar$ ): 3/8": 1800 NI/min (Cv 1.8) – 1/4": 1600 NI/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

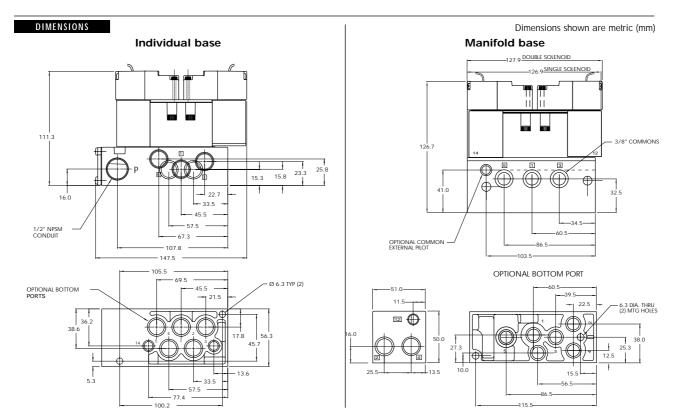
Energize:11.3 ms

Response times : (with 5,4 W coil) De-energize: 7.8 ms

Options : FCP1A-BA (screwdriver slot adjustment) · Sandwich flow controls: FCP1A-BB (locking knob adjustment)

• Sandwich regulator, see ,Regulators' section

Spare parts: • Pilot valve: DMB-Dxxx-xxx • Valve to base pressure seal: 16661





Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2, 5/3	G1/4" - G3/8"	1800 NI/min	Valve only – No base "plug-in" Conform to ISO 5599/2	
<b>OPERATIONAL BENEFITS</b>				2.4

- 1. Unique patented Macsolenoid® for fastest possible response times and virtually burnout 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
- 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
	14 4 2 12 12 12 12 12 12 12 12 12 12 12 12 12 12 1	14 4 2 12 5 \(\vert_1\) \(\vert_2\) \(\vert_3\)	14 4 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	14 2 3 3 3 3 3 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5
Internal	MV-P1A-AAAA-DM-DxxP-xxx	MV-P1A-ABAA-DM-DxxP-xxx	MV-P1A-AEAA-DM-DxxP-xxx	MV-P1A-AFAA-DM-DxxP-xxx
External "12" end	MV-P1A-AAAB-DM-DxxP-xxx	MV-P1A-ABAB-DM-DxxP-xxx	MV-P1A-AEAB-DM-DxxP-xxx	MV-P1A-AFAB-DM-DxxP-xxx

#### **DUAL PRESSURE MODELS**

Pilot air	5/2 Single operator	5/2 Double operator	5/2 Pressure centre
	14 4 2 12 14 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	14 12 12 5 69 1 6 3	$ \begin{array}{c c} 14 \\ 12 \\ 12 \\ 13 \\ 14 \\ 14 \\ 15 \\ 14 \\ 14 \\ 15 \\ 14 \\ 14 \\ 14 \\ 14 \\ 14 \\ 14 \\ 14 \\ 14$
Internal From port #3	MV-P1A-ACAD-DM-DxxP-xxx	MV-P1A-ADAD-DM-DxxP-xxx	MV-P1A-AGAD-DM-DxxP-xxx
Internal From port #5	MV-P1A-ACAE-DM-DxxP-xxx	MV-P1A-ADAE-DM-DxxP-xxx	MV-P1A-AGAE-DM-DxxP-xxx
External From "12" end	MV-P1A-ACAB-DM-DxxP-xxx	MV-P1A-ADAB-DM-DxxP-xxx	MV-P1A-AGAB-DM-DxxP-xxx

## SOLENOID OPERATOR ➤

	T +T							
λ	X Voltage	X Manual operator	XX	Electrical connection				
J	IA 110 V~/50Hz	1 Non-locking	DM	Plug-in				
J	/B 220 V~/50Hz	2 Locking	DN	Plug-in with diode				
J	IC 24 V~/50Hz		DP	Plug-in with M.O.V.				
F	EB 24 V=/1,8W		DG	Plug-in with ground				
- L	DA 24 V=/5,4W							
	DF 24 V=/12 7\M							

DM-D XX P-XXX

#### 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**-DxxP-xxx

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

## Spool return:

## MV-P1A-AX**A**X-XX-DxxP-xxx

A Standard return

B Memory spring return

D Standard return with light

D Standard return with light

Memory spring return with light

Click here for other options available.

ISO series, valve and base are ordered separately, click here for base codes.
 Ground wire regired for 30 volts or higher.







Fluid: Compressed air, vacuum, inert gases

Vacuum to 10 bar Pressure range :

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,  $\Delta P=1bar$ ): 3/8": 1800 NI/min (Cv 1.8) – 1/4": 1600 NI/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

Energize :10 ms

Response times : (with 5,4 W coil) De-energize: 9 ms

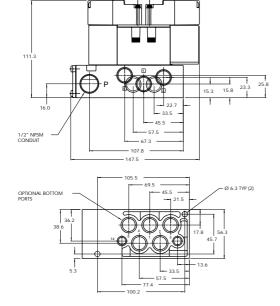
Options : FCP1A-AA (screwdriver slot adjustment) · Sandwich flow controls: FCP1A-AB (locking knob adjustment)

• Sandwich regulator, see ,Regulators' section

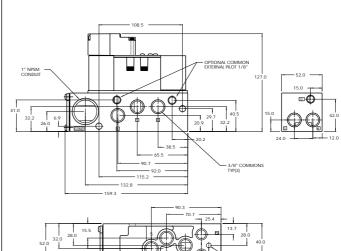
Spare parts: • Pilot valve: DMB-DxxP-xxx • Valve to base pressure seal: 16661

## DIMENSIONS

## Individual base

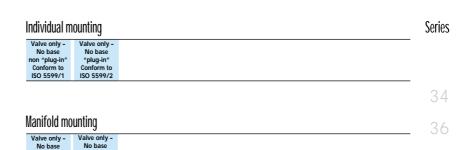


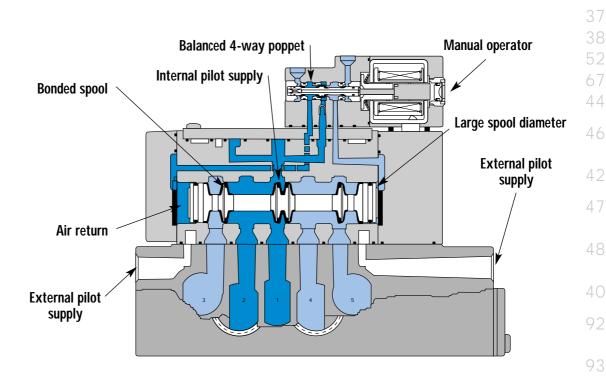
## Dimensions shown are metric (mm)



Manifold base







## **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.



unction	Port size		Flow (Max)	Individual/Manifolo	mounting	Serie
5/2, 5/3	G3/8" -	G1/2″	3000 NI/minn	Valve only – No base non "plug-in" Conform to ISO 5599/1		
PERATIONAL BENEFITS						34
<ul> <li>Unique patented Macso possible response times out proof AC solenoid of Balanced poppet 4-way</li> </ul>	and virtually burn- operation.	regulator: maintena	esign of valves, bases and s for modular assembly and ease nce. r external pilot operation.	e of		36
maximum shifting forces repeatability and consist	s, precise stent operation.		s supplied with common externa	l		32
MAC spool and bore co away contamination, el	iminates sticking and	also avai			3	3
allows for use on non-lu Large spool area for ma		<ol><li>Optional 1.0 watt.</li></ol>	low wattage DC solenoid down	to		38
even at minimum opera Very high flow in a com	ting pressure.			ì	Une .	5.
very mgn now in a con	ірасі раскаўе.					6
HOW TO ORDER						4
NGLE PRESSURE MC	DDELS					4
Pilot air	5/2 Single oper	ator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	4
	14 4 2	12 [d]	14 4 2 12 TD T T T T T T T T T T T T T T T T T T	14 4 2 12 12 12 12 12 12 12 12 12 12 12 12 1	14 4 2 12 17 1 1 12 5 7 9 7 3 7	4.
Internal	MV-B2A-AAAA-DM-	Dxxx-xxx	MV-B2A-ABAA-DM-Dxxx-xxx	MV-B2A-AEAA-DM-Dxxx-xxx	MV-B2A-AFAA-DM-Dxxx-xxx	4
morna	52,1,700,010,011					

Pilot air	5/2 Single operator	5/2 Double operator	5/2 Pressure centre
	14 12 12 12 13 14 12 13	14 4 2 12 14 5 07 1 0 3	14 12 12 12 12 12 12 12 12 12 12 12 12 12
Internal From port #3	MV-B2A-ACAD-DM-Dxxx-xxx	MV-B2A-ADAD-DM-Dxxx-xxx	MV-B2A-AGAD-DM-Dxxx-xxx
Internal From port #5	MV-B2A-ACAE-DM-Dxxx-xxx	MV-B2A-ADAE-DM-Dxxx-xxx	MV-B2A-AGAE-DM-Dxxx-xxx
External From "12" end	MV-B2A-ACAB-DM-Dxxx-xxx	MV-B2A-ADAB-DM-Dxxx-xxx	MV-B2A-AGAB-DM-Dxxx-xxx

SOLENOID OPERATOR ➤		DM-D <u>xx</u>	<u> </u>	<u>&lt;</u> *		
			J ५ 5			
xx Voltage	X	Lead wire length	X	Manual operator	XX	Electrical connection
JA 110 V~/50Hz	Α	45 cm	1	Non-locking	KA	Square connector
JB 220 V~/50Hz	В	60 cm	2	Locking	KD	Square connector with light
JC 24 V~/50Hz	J	Connector			JB	Rectangular connector
FB 24 V=/1,8W					JD	Rectangular connector with light
DA 24 V=/5,4W					BA	Flying leads

<sup>24</sup> V=/12,7W Click here for other options available.

**DUAL PRESSURE MODELS** 

Note: ISO series, valve and base are ordered separately, click here for base code.

## OPTIONS

Valve function :

## MV-B2A-AXXX-XX-Dxxx-xxx

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

Pilot style :

## MV-B2A-AXXX-**DM**-Dxxx-xxx

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

Spool return:

MV-B2A-AX**A**X-XX-Dxxx-xxx

A Standard return
B Memory spring return

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







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,  $\Delta P = 1$ bar): G3/8": 2800 NI/min (Cv 2.8) - G1/2": 3000 NI/min (Cv 3,0)

Coil: Epoxy encapsulated - class A wires - 100% ED (specify mod 0449)

Voltage range : -15% to +10% of nominal voltage

Protection: IP65 (electrical connection)

Power: ~ Inrush 7,6 VA Holding: 4,8 VA

= 12.7 to 1,0 W

Response times : 24 V=/5,4w Energize: 10 ms De-energize: 9.6 ms 110V~/50Hz

Energize: 6-15 ms De-energize: 10-17 ms

· Sandwich flow controls: FCP2A-BA (screwdriver slot adjustment) FCP2A-BB (locking knob adjustment)

52.0

64.0

• Sandwich regulator, see ,Regulators' section

• Pilot valve: DMB-Dxxx-xxx • Valve to base pressure seal: 16576 Spare parts:

• Valve mounting screws (x4): 35413

Individual base

163.9

## DIMENSIONS

6.5 DIA. 2 MTG. HOLES

Options :

## 139.0 SINGLE & DOUBLE SOLENOID 1/8" EXT. PILOT 50.5 Ф 42.0 20.0 36.0 1/2" SIDE PORTS (3) EACH SIDE 70.0 -104.0 OPTIONAL BTM.

-132.0

-139.0

Dimensions shown are metric (mm)

# -138.0 1/8 EXT. PILOT 38.0 32.0 86.0 -25.0 7.5 DIA. THRU 2 2 MTG. HOLES 98.0 - OPTIONAL BTM PORTS

38.0

<del>-</del> 74.0 -

Manifold base

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



Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2, 5/3	G3/8" - G1/2"	3000 NI/min	Valve only – No base "plug-in" Conform to	

#### OPERATIONAL BENEFITS

- 1. Unique patented Macsolenoid® for fastest possible response times and virtually burnout 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
- 8. Air only return. Optional memory spring is also available.
- 9. Optional low wattage DC solenoid down to 1.0 watt.



#### SINGLE PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
	14 4 2 12 T V T W T W 3	14 4 2 12 5 \(\vert_1\) \(\vert_2\) \(\vert_3\)	14 4 2 3 3 3 3 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	14 2 12 12 12 5 \$\frac{4}{5}\frac{2}{5}\frac{1}{5}\frac
Internal	MV-P2A-AAAA-DM-DxxP-xxx	MV-P2A-ABAA-DM-DxxP-xxx	MV-P2A-AEAA-DM-DxxP-xxx	MV-P2A-AFAA-DM-DxxP-xxx
External "12" end	MV-P2A-AAAB-DM-DxxP-xxx	MV-P2A-ABAB-DM-DxxP-xxx	MV-P2A-AEAB-DM-DxxP-xxx	MV-P2A-AFAB-DM-DxxP-xxx

#### **DUAL PRESSURE MODELS**

Pilot air	5/2 Single operator	5/2 Double operator	5/2 Pressure centre
	14 4 2 12 14 3 3 3 3 5 0 7 1 5 3 3	14 2 12 5 5 4 7 6 3	14 12 15 0 7 0 3
Internal From port #3	MV-P2A-ACAD-DM-DxxP-xxx	MV-P2A-ADAD-DM-DxxP-xxx	MV-P2A-AGAD-DM-DxxP-xxx
Internal From port #5	MV-P2A-ACAE-DM-DxxP-xxx	MV-P2A-ADAE-DM-DxxP-xxx	MV-P2A-AGAE-DM-DxxP-xxx
External From "12" end	MV-P2A-ACAB-DM-DxxP-xxx	MV-P2A-ADAB-DM-DxxP-xxx	MV-P2A-AGAB-DM-DxxP-xxx

## SOLENOID OPERATOR ➤

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

DM-D XX P-XXX

#### 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**-DxxP-xxx

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

## Spool return:

## MV-P2A-AX**A**X-XX-DxxP-xxx

A Standard return

B Memory spring return

D Standard return with light

D Standard return with light

Memory spring return with light

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

Click here for other options available.

ISO series, valve and base are ordered separately, click here for base codes.
 Ground wire regired for 30 volts or higher.







Options :

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,  $\Delta P=1bar$ ): G3/8": 2800 NI/min (Cv 2.8) - G1/2": 3000 NI/min (Cv 3,0)

Coil: Epoxy encapsulated - class A wires - 100% ED (specify mod 0449)

Voltage range : -15% to +10% of nominal voltage Protection: IP65 (electrical connection)

Power: ~ Inrush 14,8 VA Holding: 4,8 VA

= 12.7 to 1,0 W

Response times : 24 V=/5,4w Energize: 10 ms De-energize: 9.6 ms 110V~/50Hz Energize: 6-15 ms De-energize: 10-17 ms

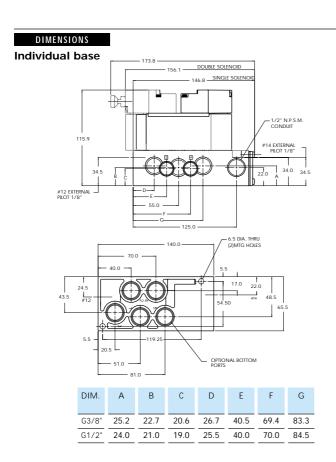
· Sandwich flow controls: FCP2A-AA (screwdriver slot adjustment)

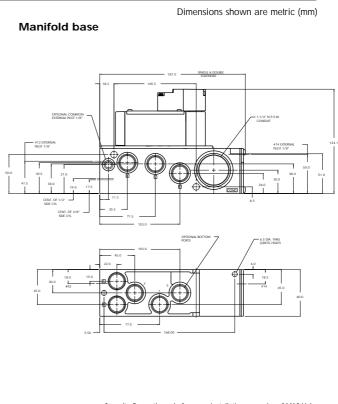
FCP2A-AB (locking knob adjustment)

• Sandwich regulator, see ,Regulators' section

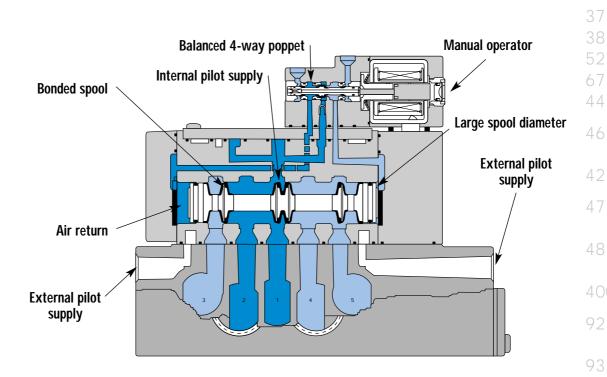
• Pilot valve: DMB-DxxP-xxx • Valve to base pressure seal: 16576 Spare parts:

• Valve mounting screws (x4): 35413





Valve only -	Valve only -		
No base	No base		
on "plug-in"	"plug-in"		
Conform to ISO 5599/1	Conform to ISO 5599/2		
130 55997 1	130 5577/2		
			3
			3
			3
anifold mo	unting		3



## **SERIES FEATURES**

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

ISO 1



unction	Port size	Flow (Max)	Individual/Manifold	mounting	Seri
/2, 5/3	G1/2" - G3/4	″ 6100 NI/min	Valve only – No base "non plug-in" Conform to ISO 5599/1		
PERATIONAL BENEFITS				- 4	3
<ul> <li>Unique patented Macso possible response times out proof AC solenoid c</li> <li>Balanced poppet 4-way</li> </ul>	and virtually burn- regi peration. mai	g-in design of valves, bases and ulators for modular assembly and e ntenance. rnal or external pilot operation.	ase of		3
maximum shifting forces repeatability and consis	, precise Mai	nifolds supplied with common exter	rnal		3
MAC spool and bore combination wipes away contamination, eliminates sticking and also available.      MAC spool and bore combination wipes also available.      Air only return. Optional memory spring is also available.					
allows for use on non-lube service.  9. Optional low wattage DC solenoid down to  1.0 watt.					3
even at minimum operate. Very high flow in a com	0 1			1	5
3	, p			2	6
HOW TO ORDER					4
INGLE PRESSURE MC	DDELS				4
Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	4
	14 4 2 12 12 12 12 12 12 12 12 12 12 12 12 12 12 1	14 4 2 12 12 12 12 12 12 12 12 12 12 12 12 12 12 1	14 4 2 12 T T T T T T T T T T T T T T T T T T T	$\begin{bmatrix} 14 & 2 & 2 & 12 \\ \hline 175 & 1 & 1 & 12 \\ \hline 25 & 5 & 2 & 3 & 3 \end{bmatrix}$	4
		31.173			
Internal	MV-B3A-AAAA-DM-Dxxx-xx	X MV-B3A-ABAA-DM-Dxxx-xxx	MV-B3A-AEAA-DM-Dxxx-xxx	MV-B3A-AFAA-DM-Dxxx-xxx	4

DUAL PRESSURE MODELS
----------------------

Pilot air	5/2 Single operator	5/2 Double operator	5/2 Pressure centre
	14 2 12 III III III III III III III III II	14 12 15 50 10 12 12	14 12 15 0 7 0 3
Internal From port #3	MV-B3A-ACAD-DM-Dxxx-xxx	MV-B3A-ADAD-DM-Dxxx-xxx	MV-B3A-AGAD-DM-Dxxx-xxx
Internal From port #5	MV-B3A-ACAE-DM-Dxxx-xxx	MV-B3A-ADAE-DM-Dxxx-xxx	MV-B3A-AGAE-DM-Dxxx-xxx
External From "12" end	MV-B3A-ACAB-DM-Dxxx-xxx	MV-B3A-ADAB-DM-Dxxx-xxx	MV-B3A-AGAB-DM-Dxxx-xxx

SOLENOID	OPERATOR ➤		DM-D <u>xx</u>	<u> </u>	*		
				┌┟┖			
XX Vo	oltage	X	Lead wire length	X	Manual operator	XX	Electrical connection
JA 110	0 V~/50Hz	Α	45 cm	1	Non-locking	KA	Square connector
JB 220	0 V~/50Hz	В	60 cm	2	Locking	KD	Square connector with light
JC 24	V~/50Hz	J	Connector			JB	Rectangular connector
FB 24	V=/1,8W					JD	Rectangular connector with light
DA 24	V=/5,4W					BA	Flying leads
<b>DF</b> 24	V=/12,7W						

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**-Dxxx-xxx

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

#### Spool return:

MV-B3A-AX**A**X-XX-Dxxx-xxx

A Standard return
B Memory spring return

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

ISO 1







Fluid: Compressed air, vacuum, inert gases

Internal pilot: 1,3 to 10 bar Pressure range :

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,  $\Delta P=1bar$ ): G1/2": 5400 NI/min (Cv 5,4) - G3/4": 6100 NI/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 Energize: 16,2 ms

Response times : (5,4 W coil) De-energize: 13,6 ms

Options : • Sandwich regulator, see ,Regulators' section

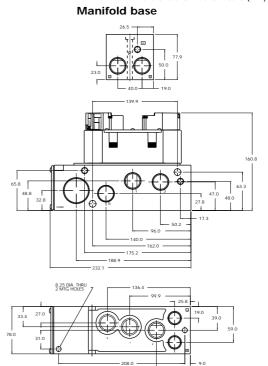
Spare parts: • Pilot valve: DMB-Dxxx-xxx • Valve to base pressure seal: 16614

• Valve mounting screws (x4): 35451

## DIMENSIONS

# Individual base DOUBLE SOLENOID W/ EXTENDED OVERRIDE SINGLE SOLENOID W/ EXTENDED OVERRIDE 175.0 33.0 27.0 23.5 29.0 98.5 127.0 - 126.0 8.3 DIA. THRU 4 MTG. HOLES 77.0 28.0 66.5 Φ $\oplus$ OPTIONAL BTM PORTS

Dimensions shown are metric (mm)





Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2, 5/3	G1/2" - G3/4"	6100 NI/min	Valve only - No base "plug-in" Conform to ISO 5599/2	

#### OPERATIONAL BENEFITS

- 1. Unique patented Macsolenoid® for fastest possible response times and virtually burnout 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
- 8. Air only return. Optional memory spring is also available.
- 9. Optional low wattage DC solenoid down to 1.0 watt.



HOW	TO	ORD	ER

#### SINGLE PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
	14 4 2 12 12 12 12 12 12 12 12 12 12 12 12 12 12 1	14 4 2 12 5 \(\vert_1\) \(\vert_2\) \(\vert_3\)	14 4 2 12 347 5 \$\frac{4}{5}\frac{7}{5}\frac{1}{5}\frac{1}{3}\frac{1}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}	14 2 12 12 12 5 \$\frac{1}{5}\frac{1}{6}\frac
Internal	MV-P3A-AAAA-DM-DxxP-xxx	MV-P3A-ABAA-DM-DxxP-xxx	MV-P3A-AEAA-DM-DxxP-xxx	MV-P3A-AFAA-DM-DxxP-xxx
External "12" end	MV-P3A-AAAB-DM-DxxP-xxx	MV-P3A-ABAB-DM-DxxP-xxx	MV-P3A-AEAB-DM-DxxP-xxx	MV-P3A-AFAB-DM-DxxP-xxx

#### **DUAL PRESSURE MODELS**

Pilot air	5/2 Single operator	5/2 Double operator	5/2 Pressure centre
	14 4 2 12 M	14 2 12 	14 12 12 13 14 14 15 15 16 17 16 17 17 17 17 17 17 17 17 17 17 17 17 17
Internal From port #3	MV-P3A-ACAD-DM-DxxP-xxx	MV-P3A-ADAD-DM-DxxP-xxx	MV-P3A-AGAD-DM-DxxP-xxx
Internal From port #5	MV-P3A-ACAE-DM-DxxP-xxx	MV-P3A-ADAE-DM-DxxP-xxx	MV-P3A-AGAE-DM-DxxP-xxx
External From "12" end	MV-P3A-ACAB-DM-DxxP-xxx	MV-P3A-ADAB-DM-DxxP-xxx	MV-P3A-AGAB-DM-DxxP-xxx

## SOLENOID OPERATOR ➤

			_	··· = <del>11</del> · <del>11</del>		
	XX	Voltage	X	Manual operator	XX	Electrical connection
	JA	110 V~/50Hz	1	Non-locking	DM	Plug-in
Ξ	JB	220 V~/50Hz	2	Locking	DN	Plug-in with diode
Ξ	JC	24 V~/50Hz			DP	Plug-in with M.O.V.
Ξ	FB	24 V=/1,8W			DG	Plug-in with ground
Ξ	DA	24 V=/5,4W				
	DE	24 \/_ /12 7\\/				

DM-D XX P-XXX

#### 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**-DxxP-xxx

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

## Spool return:

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

A Standard return

B Memory spring return

D Standard return with light

D Standard return with light

Memory spring return with light

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

Click here for other options available.

ISO series, valve and base are ordered separately, click here for base codes.
 Ground wire regired for 30 volts or higher.







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

Orifice: 14.9 mm

Flow (at 6 bar, ΔP=1bar): G1/2": 5400 NI/min (Cv 5,4) – G3/4": 6100 NI/min (Cv 6,1)

Coil: Epoxy encapsulated – class A wires – 100% ED (specify mod 0449)

1 3 1 11 3

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 Energize : 16,2 ms

Response times : Energize : 16,2 ms

De-energize : 13,6 ms

Options : • Sandwich regulator, see ,Regulators' section

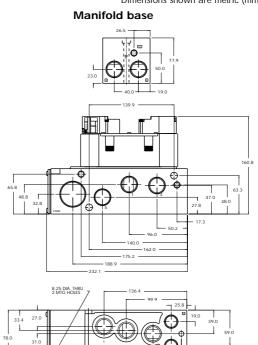
Spare parts : • Pilot valve: DMB-DxxP-xxx • Valve to base pressure seal: 16614

• Valve mounting screws (x4): 35451

## DIMENSIONS

# Individual base 29.0 29.0 23.5 23.5 28.5 31.0 48.5 48.5 193.0 166.5 107.0 69.0 31.0 24.5 69.5 54.5 158.0 158.0 158.0 158.0

Dimensions shown are metric (mm)



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



Options



Codification table for voltages / Manual operator / Electrical connection

VALVE CODE > -DM- D  $\frac{XX}{1}$   $\frac{X-X}{2}$   $\frac{XX}{3}$ 

OPTIONS AVAILABLE FOR

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



	1. VOLTAGE		4. ELECTRICAL CONNECTION
D-XX X-X XX	VOLTAGE	D-XX X-X XX	ELECTRICAL CONNECTION
DA	24V=/5,4W	BA*	Flying leads
DB	12V=/5,4W	BK*	BA with protection diode
DC	12V=/7,5W	BL*	BA with protection varistor
DD	24V=/7,3W	BM**	Flying leads (solenoid plug-in)
DE	12V=/12,7W	BN**	BM with protection diode
DF	24V=/12,7W	BP**	BM with protection varistor
DK	110V=/4,7W	BG**	BM with ground
DJ	28V=/5,2W	BH**	BM with protection diode & ground
DL	64V=/6W	BJ**	BM with protection varistor & ground
DM	36V=/5,3W	CA*	1/2" NPS conduit with flying leads
DN	6V=/6W	CM*	1/2" NPS metal conduit with flying leads
DR	90V=/6,6W	CN*	1/2" NPS metal conduit with flying leads & ground
DS	110V=/7,3W	JB	Rectangular connector
DT	75V=/5,6W	JD	Rectangular connector with light
DP	48V=/5,8W	JM	Rectangular connector, male only
FA	12V=/1,8W	KA	Square connector
FB	24V=/1,8W	КВ	Square connector with protection diode
FE	12V=/2,4W	KC	Square connector with protection varistor
FF	24V=/2,4W	KD	Square connector with light
JA	120V~/60Hz, 110V~/50Hz (2,9W)	KE	Square connector with light and protection diode
JB	240V~/60Hz, 220V~/50Hz (2,9W)	KF	Square connector with light and protection varistor
JC	24V~/60Hz, 24V~/50Hz (3,7W)	KG	Square connector with light & diode
JD	100V~/60Hz, 100V~/50Hz, 110V~60Hz (3,9W)	KJ	Square connector (male only)
JE	220V~/60Hz (3,4W)	KK	Square connector with protection diode (male only)
JF	240V~/50Hz (2,8W)	KL	Square connector with protection varistor (male only)
JG	200V~/60Hz, 200V~/50Hz (3,9W)	TA	Dual tabs with receptacles
		ТВ	TA with protection diode
	2. WIRE LENGTH	TD	TA with light
		TE	TA with light and protection diode
D-XX X-X XX	WIRE LENGTH	TJ	Dual tabs (male only)
0	No wires	TK	TJ with protection diode
Α	45 cm – 18"	TM	TJ with light
В	60 cm – 24"	TN	TJ with light and protection diode
С	90 cm – 36"	* From Lead wire len	gth options choose A through F
D	120 cm – 48"	** From Lead wire leng	gth options choose 0 through F
E	180 cm – 72"	Note: When coil is ab	ove 30 volts, a ground wire is required. Applies to option

## 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



Codification table for voltages / Manual operator / Electrical connection

VALVE CODE >  $G \underbrace{XX}_{1} \underbrace{X}_{2} \underbrace{X}_{3} \underbrace{XX}_{4}$ 

OPTIONS AVAILABLE FOR

- Solenoid valves 32, 34, 38, 42, 44, & 48 Series



	1. VOLTAGE		4. ELECTRICAL CONNECTION
G-XX X-X XX	VOLTAGE	G-XX X-X XX	ELECTRICAL CONNECTION
AA	120V~/2,5W Requires electrical connector with rectifier	BA	Flying leads
AC	24V~/4,0W Requires electrical connector with rectifier	ВВ	BA with ground wire
DA	24V=/1,0W Not available for 34 series	ВС	BA with light
DC	24V=/1,8W	BD	BA with light and ground wire
DD	24V=/2,5W	BE	BA with suppression diode
DE	24V=/3,0W	BF	BA with suppression diode and ground wire
DF	24V=/4,0W	BG	BA with suppression diode and light
DG	12V=/1,0W Not available for the 34 series	ВН	BA with suppression diode, light and ground wire
DJ	12V=/1,8W	BN	BA with suppression diode and blocking diode
DK	12V=/2,5W	BP	BA with suppression diode, blocking diode and ground
DM	12V=/3,0W		wire
DN	12V=/4,0W	BR	BA with suppresion diode, blocking diode and light
DR	6V=/1,8W	BS	BA with suppression diode, blocking diode, light and
DS	6V=/3,0W		ground wire
EB	48V=/1,8W	KA	Mini connector
EC	48V=/3,0W	KB	KA with ground
ED	120V=/2,5W	КС	KA with rectifier and light
		KD	KA with rectifier, light and ground
	2. WIRE LENGTH	KE	KA with suppression diode
		KF	KA with suppression diode and ground
G-XX X-X XX	WIRE LENGTH	KJ	Solenoid plug-in housing without wire assembly
0	No lead wires (used only with "KJ" & "KM" connectors	KM	Solenoid plug-in housing with ground pin without wire
A	45 cm – 18" coil leads		assembly
В	60 cm – 24" coil leads	KN	KA with suppression diode and blocking diode
C	90 cm – 36" coil leads	KP	KA with suppression diode, blocking diode and ground
D	120 cm - 48" coil leads	KT	KA with light
E	180 cm – 72" coil leads	KU	KA with light and ground
F	240 cm – 96" coil leads	KV	KA with suppression diode and light
G	305 cm – 120" coil leads	KW	KA with suppression diode, light and ground
Н	366 cm – 144" coil leads	KX	KA with suppression diode, blocking diode and light
1	45 cm – 18" base leads	KY	KA with suppression diode, blocking diode, light &
2	60 cm – 24" base leads		ground
3	90 cm – 36" base leads		
4	120 cm – 48" base leads	ELECTR	RICAL CONNECTION FOR PLUG-IN VALVES
5	180 cm – 72" base leads		
6	240 cm – 96" base leads	G-XX X-X XX	PLUG-IN OPTIONS
7	305 cm – 120" base leads	DC	Base/manifold plug-in with rectifier and light
		DD	Base/manifold plug-in with rectifier, light and ground
	3. MANUAL OPERATOR	DE	Base/manifold plug-in with with suppression diode
		DF	Base/manifold plug-in with suppression diode and ground
G-XX X-X XX	MANUAL OPERATOR	DJ	Base/manifold plug-in
1	Non-locking recessed	DM	Base/manifold plug-in with ground
2	Locking recessed	DT	Base/manifold plug-in with light
3	Non-locking extended	DU	Base/manifold plug-in with light and ground
4	Locking extended	DV	Base/manifold plug-in with suppression diode and light
- <b>F</b>	200ming Ontoridod	DW	Base/manifold plug-in with suppression diode, light and
			ground



Codification table for voltages / Manual operators / Electrical connections

OPTIONS AVAILABLE FOR

- Solenoid valves 52 & 400 Series



	1. VOLTAGE		4. ELECTRICAL CONNECTION
G-XX X-X XX	VOLTAGE	G-XX X-X XX	ELECTRICAL CONNECTION
DC	24 V=/1,8 W	ВА	Flying leads
DD	24 V=/2,5 W	ВВ	BA with ground wire
DE	24 V=/3,0 W	BC	BA with light parallel to leads
DF	24 V=/4,0 W	BD	BA with light parallel to leads & ground wire
DJ	12 V=/1,8 W	BE	BA with suppression diode
DK	12 V=/2,5 W	BF	BA with suppression diode & ground wire
DM	12 V=/3,0 W	BG	BA with suppression diode plus light parallel to leads
DN	12 V=/4,0 W	ВН	BA with suppression diode plus light parallel to leads & ground wire
	2. WIRE LENGTH	*BN	BA with suppression diode plus blocking diode
G-XX X-X XX	WIRE LENGTH	*BP	BA with suppression diode plus blocking diode & ground wire
0	No lead wire (use only with "KJ" & "KM" elecrical connectors)	*BR	BA with suppression diode plus blocking diode & light parallel to leads
A	45 cm = 18"	*BS	BA with suppression diode plus blocking diode & light parallel to leads & ground wire
В	60 cm = 24"		·
C D	90 cm – 36" 120 cm – 48"	BT 	BA with light on top  BA with light on top & ground wire
E	180 cm – 72"	BU	0 1 0
F	240 cm - 96"	BW	BA with suppression diode plus light on top
G	305 cm = 120"	*BX	BA with suppression diode plus light on top & ground w
Н	366 cm = 144"	*BY	BA with suppression diode plus blocking diode & light on to BA with suppression diode plus blocking diode & light o top & ground wire
	3. MANUAL OPERATOR		
G-XX X-X XX	MANUAL OPERATOR	G-XX X-X XX	SOLENOID PLUG-IN CONNECTOR WITH LEADS
1	Non-locking recessed	KA	Plug-in wire assembly
2	Locking recessed	KB	KA with ground wire
3	Non-locking extended	KE	KA with suppression diode
4	Locking extended	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 wi
		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 to
		*KY	KA with suppression diode plus blocking diode & light of



Codification table for voltages / Manual operators / Electrical connections

OPTIONS AVAILABLE FOR

- Solenoid valves 37 & 47 Series



	1. VOLTAGE	H-XX X-X XX	ELECTRICAL CONNECTION
		BL	BA with full wave rectifier & ground wire
H-XX X-X XX	VOLTAGE	BT	BA with full wave rectifier plus light
AA	120 V-/ 50Hz, 120 V-/ 60Hz (6,7 W) (use connector with rectifier)	BU	BA with full wave rectifier plus light & ground wire
AB	220 V~/ 50Hz, 220 V~/ 60Hz (5,6 W)	H-XX X-X XX	PLUG-IN CONNECTOR
	(use connector with rectifier)	FA	Base plug-in
AC	240 V~/ 50Hz, 240 V~/ 60Hz (5,8 W)	FB	FA with ground wire
	(use connector with rectifier)	FC	FA with light
AD	24 V~/ 50Hz, 24 V~/ 60Hz (7,8 W)	FD	FA with light & ground wire
	(use connector with rectifier)	FE	FA with suppression diode
DA	24 V=/5,2 W	FF	FA with suppression diode & ground wire
DB	24 V=/2,4 W	FG	FA with suppression diode & light
DC	24 V=/1,8 W	FH	FA with suppression diode plus light & ground wire
DD	24 V=/1,0 W	FK	KFA with full wave rectifier
DF	12 V=/5,2 W	FL	FA with full wave rectifier & ground wire
DG	12 V=/2,4 W	*FN	FA with suppression diode plus blocking diode
DH	12 V=/1,8 W	*FP	FA with suppression diode plus blocking diode & ground wi
DJ	12 V=/1,0 W	*FR	FA with suppression diode plus blocking diode plus light
DL	120 V=/6,3 W	*FS	FA with suppression diode plus blocking diode & light &
			ground wire
	2. WIRE LENGTH	FT	FA with full wave rectifier plus light
		FU	FA with full wave rectifier plus light & ground wire
H-XX X-X XX	WIRE LENGTH	MA	Solenoid plug-in wire assembly
0	No lead wire (use with "MJ" & "MM" connectors)	MB	MA with ground wire
Α	45 cm = 18"	MC	MA with light
В	60 cm = 24"	MD	MA with light & ground wire
С	90 cm – 36"	ME	MA with suppression diode
D	120 cm – 48"	MF	MA with suppression diode & ground wire
Ε	180 cm – 72"	MG	MA with suppression diode plus light
F	240 cm – 96"	МН	MA with suppression diode plus light & ground wire
G	305 cm = 120"	MK	MA with full wave rectifier
Н	366 cm = 144"	ML	MA with full wave rectifier & ground wire
		*MN	MA with suppression diode plus blocking diode
	3. MANUAL OPERATOR	*MP	MA with suppression diode plus blocking diode & ground wir
		*MR	MA with suppression diode plus blocking diode & light
H-XX X-X XX	MANUAL OPERATOR	*MS	MA with suppression diode plus blocking diode & light &
0	No operator		ground wire
1	Non-locking recessed	MT	MA with full wave rectifier plus light
2	Locking recessed	MU	MA with full wave rectifier plus light & ground wire
3	Non-locking extended	MJ	Plug-in housing without wire assembly ('MA' option
4	Locking extended		without wire assembly)
	·	MM	Plug-in housing without wire assembly ('MB' option
	4. ELECTRICAL CONNECTION		without wire assembly)
		KA	Mini square connector
H-XX X-X XX	ELECTRICAL CONNECTION	KB	KA with suppression diode
BA	Flying leads	KC	KA with M.O.V.
BB	BA with ground wire	KD	KA with light
ВС	BA with light	KE	KA with light & suppression diode
BD	BA with light & ground wire	KF	KA with light & M.O.V.
BE	BA with suppression diode	KJ	Mini square connector – male only
BF	BA with suppression diode & ground wire	KK	KJ with suppression diode
BG	BA with suppression diode plus light	KL	KJ with M.O.V.
ВН	BA with suppression diode plus light & ground wire	KM	KA with full wave rectifier
*BN	BA with suppression diode plus blocking diode	KN	KA with full wave rectifier & M.O.V.
*BP	BA with suppression diode plus blocking diode & ground wire	KP	KA with full wave rectifier & light
*BR	BA with suppression diode plus blocking diode & light	KR	KA with full wave rectifier plus light & M.O.V.
*BS	BBA with suppression diode plus blocking diode & light &	KS	KJ with full wave rectifier
<b>D3</b>	ground wire		is located in the lead wire
			io located in the load wife



 ${\it Codification\ table\ for\ voltages\ /\ Manual\ operators\ /\ Electrical\ connections}$ 

VALVE CODE >  $J \frac{XX}{1} \frac{X}{2} \frac{X}{3} \frac{XX}{4}$ 

OPTIONS AVAILABLE FOR

- Solenoid valves 36 and 46 Series



	1. VOLTAGE	J-XX X-X XX	MINI SQUARE PLUG-IN CONNECTORS
			9,4 MM SPACING BETWEEN PINS
J-XX X-X XX	VOLTAGE	KA	Mini plug-in
AA	120V~/5,4W	KB	Mini plug-in with diode
AC	24V=/5,4W	KC	Mini plug-in with MOV
DA	24V=/5,4W	KD	Mini plug-in with light
DB	12V=/5,4W	KE	Mini plug-in with diode and light
DC	24V=/2,4W	KF	Mini plug-in with MOV and light
DD	12V=/2,4W	KG	Mini plug-in with rectifier
DE	24V=/1,8W	KH	Mini plug-in with rectifier and light
DF	12V=/1,8W	KJ	Mini plug-in – Male only
		KK	Mini plug-in with diode - Male only
	2. WIRE LENGTH	KL	Mini plug-in with MOV - Male only
	2. WINE EERO	KM	Mini plug-in with light - Male only
J-XX X-X XX	WIRE LENGTH	KN	Mini plug-in with diode and light – Male only
A	45 cm – 18" coil leads	KP	Mini plug-in with MOV and light – Male only
В	60 cm – 24" coil leads	KR	Mini plug-in with rectifier – Male only
C	90 cm – 36" coil leads	KS	Mini plug-in with rectifier and light – Male only
D	120 cm – 48" coil leads	"Not available on ma	anifold or stacking valves
E F	180 cm – 72" coil leads	IVVVVVV	CONNECTODE FOR NON BLUE IN VALVES
	240 cm – 96" coil leads	J-XX X-X XX	CONNECTORS FOR NON PLUG-IN VALVES
P	Base plug-in		MINI SQUARE PLUG-IN CONNECTORS
			8.0 MM SPACING BETWEEN PINS
	3. MANUAL OPERATOR		ISO SPECIFICATION 15217
		LA	Mini plug-in
J-XX X-X XX	MANUAL OPERATOR	LB	Mini plug-in with diode
0	Manual operator	LC	Mini plug-in with MOV
1	Non-locking recessed	LD	Mini plug-in with light
2	Locking recessed	LE	Mini plug-in with diode and light
3	Non-locking recessed extended	LF	Mini plug-in with MOV and light
4	Locking extended	LG	Mini plug-in with rectifier
		LH	Mini plug-in with rectifier and light
	4. ELECTRICAL CONNECTION	IJ	Mini plug-in – Male only
		LK	Mini plug-in with diode - Male only
J-XX X-X XX	ELECTRICAL CONNECTION	LL	Mini plug-in with MOV - Male only
BA	Flying leads	LM	Mini plug-in with light - Male only
GA	MAC JAC solenoid plug-in	LN	Mini plug-in with diode and light – Male only
GB	MAC JAC solenoid plug-in with diode	LP	Mini plug-in with MOV and light - Male only
GC	MAC JAC solenoid plug-in with MOV	LR	Mini plug-in with rectifier – Male only
GD	MAC JAC solenoid plug-in with light	LS	Mini plug-in with rectifier and light – Male only
GE	MAC JAC solenoid plug-in with diode and light		, , , , , , , , , , , , , , , , , , ,
GF	MAC JAC solenoid plug-in with MOV and light	J-XX X-X XX	CONNECTORS FOR PLUG-IN VALVES
GG	MAC JAC solenoid plug-in with rectifier	FA	Base plug-in
GH	MAC JAC solenoid plug-in with rectifier and light	FB	Base plug-in with diode
GJ	MAC JAC solenoid plug-in – Male only	FC	Base plug-in with MOV
GK	MAC JAC solenoid plug-in with diode – Male only	FD	Base plug-in with light
GL	MAC JAC solenoid plug-in with MOV – Male only	FE	Base plug-in with diode and light
GM	MAC JAC solenoid plug-in with light – Male only	FF	Base plug-in with MOV and light
			· •
GN	MAC JAC coloneid plug-in with MOV and light - Male only	FG	Base plug-in with rectifier
GP	MAC JAC solenoid plug-in with MOV and light – Male only	FH	Base plug-in with rectifier and light
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		
	Destangular plug in Male only		
*JM	Rectangular plug-in – Male only		



Codification table for voltages / Manual operators / Electrical connections

VALVE CODE >  $L \frac{XX}{1} \frac{X-X}{2} \frac{XX}{3}$ 

OPTIONS AVAILABLE FOR

- Solenoid valves 32, 38, 42, 44, 47 & 48 Series



\*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

1. \	OLTAGE (32, 38, 42, 44, 48 SERIES)		1. VOLTAGE (47 SERIES)
- XX X-X XX	VOLTAGE	L- XX X-X XX	VOLTAGE
DF	24V=/4,0W	DA	24V=/5,2W
DN	12V=/4,0W	DF	12V=/5,2W
HA	24V=/1,95W		.2. 7.5/2.11
HE	12V=/1,95W	_	
TIL.	121-71,7344	_	
	2. W	IRE LENGTH	
- XX X-X XX	WIRE LENGTH		
0	No lead wire		
A	45 cm – 18"		
В	60 cm – 24"		
С	90 cm – 36"		
D	120 cm – 48"		
E	180 cm – 72"		
F	240 cm – 96"		
G	300 cm – 120"		
Н	365 cm – 144"		
W V V V V	AAAAUUAL ORERATOR		
- XX X-X XX 0	MANUAL OPERATOR  No operator		
0 3	No operator	4.	ELECTRICAL CONNECTOR (47 series)
0 3 4. ELECTRIC	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)		
0 3 4. ELECTRIC	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN	L- XX X-X XX	NON PLUG-IN
0 3 4. ELECTRIC -XX X-X XX BA	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads	L- XX X-X XX BA	NON PLUG-IN 2 wire flying leads
O 3 4. ELECTRIC  -XX X-X XX  BA  BB	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire	L- XX X-X XX BA BB	NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire
0 3 4. ELECTRIC	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads	L- XX X-X XX BA	NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light
O 3 4. ELECTRIC  -XX X-X XX  BA BB BC	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light	L- XX X-X XX  BA  BB  BC	NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire
O 3 4. ELECTRIC  -XX X-X XX  BA BB BC BD	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light 2 wire flying leads with light & ground wire	L- XX X-X XX  BA  BB  BC  BD	NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light 4 wire flying leads 4 wire flying leads 4 wire flying leads with ground 4 wire flying leads with ground 4 wire flying leads with light	L- XX X-X XX  BA  BB  BC  BD  BJ	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads  4 wire flying leads with ground  4 wire flying leads with light
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light & ground wire 4 wire flying leads 4 wire flying leads with ground 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 4 wire flying leads with light 5 wire flying leads with light 6 wire flying leads with light & ground wire	L- XX X-X XX  BA  BB  BC  BD  BJ  BK  BL  BM	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light  4 wire flying leads with light
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM KA	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light & ground wire 4 wire flying leads 4 wire flying leads 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 5 wire flying leads with light 6 wire flying leads with light 7 wire flying leads with light 8 ground wire 9 wire plug-in assembly	L- XX X-X XX  BA BB BC BD BJ BK BL BM EA	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light  Base plug-in 3 pin (Polarity switching cover)
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM KA KB	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light & ground wire 4 wire flying leads 4 wire flying leads 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 5 wire flying leads with light 6 wire flying leads with light 7 wire flying leads with light 8 wire flying leads with light 9 wire plug-in assembly 1 wire plug-in assembly with ground wire	L- XX X-X XX  BA BB BC BD BJ BK BL BM EA	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light  Base plug-in 3 pin (Polarity switching cover)  Base plug-in with ground
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM KA KB KC	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light & ground wire 4 wire flying leads 4 wire flying leads 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 5 wire flying leads with light 6 wire flying leads with light 7 wire flying leads with light & ground wire 8 wire plug-in assembly 9 wire plug-in assembly with ground wire 9 wire plug-in assembly with light	L- XX X-X XX  BA BB BC BD BJ BK BL BM EA FA	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light  8 wire flying leads with light & ground wire  8 Base plug-in 3 pin (Polarity switching cover)  8 Base plug-in with ground  8 Base plug-in with ground & light
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM KA KB KC KD	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light & ground wire 4 wire flying leads 4 wire flying leads with ground 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 2 wire plug-in assembly 2 wire plug-in assembly with ground wire 2 wire plug-in assembly with light	L- XX X-X XX  BA BB BC BD BJ BK BL BM EA FA FB	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light  8 wire flying leads with light & ground wire  8 Base plug-in 3 pin (Polarity switching cover)  8 Base plug-in with ground  8 Base plug-in with ground & light  8 Base plug-in 4 wire with ground
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM KA KB KC KD KE	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light 4 wire flying leads with ground 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 2 wire flying leads with light 2 wire plug-in assembly 2 wire plug-in assembly with ground wire 2 wire plug-in assembly with light 2 wire plug-in assembly with light 4 wire plug-in assembly with light 5 wire plug-in assembly with light 6 wire plug-in assembly with light 7 wire plug-in assembly with light and ground wire 9 wire plug-in assembly with light and ground wire 9 wire plug-in assembly with light and ground wire	L- XX X-X XX  BA  BB  BC  BD  BJ  BK  BL  BM  EA  FA  FB  FC	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light  8 wire flying leads with light & ground wire  8 base plug-in 3 pin (Polarity switching cover)  8 base plug-in with ground  8 base plug-in with ground  8 base plug-in 4 wire with ground  8 base plug-in 4 wire with light & ground
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM KA KB KC KD KE KF	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light 4 wire flying leads with ground 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 2 wire flying leads with light 4 wire flying leads with light 2 wire plug-in assembly 2 wire plug-in assembly with ground wire 2 wire plug-in assembly with light 2 wire plug-in assembly with light 4 wire plug-in assembly with light and ground wire 4 wire plug-in assembly 4 wire plug-in assembly 4 wire plug-in assembly 4 wire plug-in assembly with ground wire	L- XX X-X XX  BA BB BC BD BJ BK BL BM EA FA FB FC FD LA	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light  4 wire flying leads with light & ground wire  Base plug-in 3 pin (Polarity switching cover)  Base plug-in with ground  Base plug-in with ground & light  Base plug-in 4 wire with ground  Base plug-in 4 wire with light & ground  3 wire plug-in assembly (Plarity switching cover)
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM KA KB KC KD KE KF KG	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light 4 wire flying leads with ground 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 2 wire flying leads with light 4 wire flying leads with light 2 wire plug-in assembly 2 wire plug-in assembly 2 wire plug-in assembly with ground wire 2 wire plug-in assembly with light 4 wire plug-in assembly with light and ground wire 4 wire plug-in assembly 4 wire plug-in assembly 4 wire plug-in assembly with ground wire 4 wire plug-in assembly with ground wire 4 wire plug-in assembly with ground wire 4 wire plug-in assembly with light	L- XX X-X XX  BA BB BC BD BJ BK BL BM EA FA FB FC FD LA MA	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light  4 wire flying leads with light  8 wire flying leads with light & ground wire  8 ase plug-in 3 pin (Polarity switching cover)  8 ase plug-in with ground  8 ase plug-in with ground  8 ase plug-in 4 wire with ground  8 ase plug-in 4 wire with light & ground  3 wire plug-in assembly (Plarity switching cover)  2 wire plug-in assembly
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM KA KB KC KD KE KF	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light 4 wire flying leads with ground 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 2 wire flying leads with light 4 wire flying leads with light 2 wire plug-in assembly 2 wire plug-in assembly with ground wire 2 wire plug-in assembly with light 2 wire plug-in assembly with light 4 wire plug-in assembly with light and ground wire 4 wire plug-in assembly 4 wire plug-in assembly 4 wire plug-in assembly 4 wire plug-in assembly with ground wire	L- XX X-X XX  BA BB BC BD BJ BK BL BM EA FA FB FC FD LA	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light  4 wire flying leads with light & ground wire  Base plug-in 3 pin (Polarity switching cover)  Base plug-in with ground  Base plug-in with ground & light  Base plug-in 4 wire with ground  Base plug-in 4 wire with light & ground  3 wire plug-in assembly (Plarity switching cover)  2 wire plug-in assembly  2 wire plug-in assembly with ground wire
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM KA KB KC KD KE KF KG KH	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light 4 wire flying leads with ground 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 2 wire flying leads with light 4 wire flying leads with light 2 wire plug-in assembly 2 wire plug-in assembly with ground wire 2 wire plug-in assembly with light 2 wire plug-in assembly with light 4 wire plug-in assembly 4 wire plug-in assembly 4 wire plug-in assembly with ground wire 4 wire plug-in assembly with ground wire 4 wire plug-in assembly with light	L- XX X-X XX  BA  BB  BC  BD  BJ  BK  BL  BM  EA  FA  FB  FC  FD  LA  MA  MB	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light  4 wire flying leads with light  8 wire flying leads with light & ground wire  8 ase plug-in 3 pin (Polarity switching cover)  8 ase plug-in with ground  8 ase plug-in with ground  8 ase plug-in 4 wire with ground  8 ase plug-in 4 wire with light & ground  3 wire plug-in assembly (Plarity switching cover)  2 wire plug-in assembly
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM KA KB KC KD KE KF KG KH LA	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light & ground wire 4 wire flying leads with light & ground wire 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 2 wire plug-in assembly 2 wire plug-in assembly 2 wire plug-in assembly with ground wire 2 wire plug-in assembly with light 2 wire plug-in assembly with light 4 wire plug-in assembly with ground wire 4 wire plug-in assembly 4 wire plug-in assembly with ground wire 4 wire plug-in assembly with light 4 wire plug-in assembly with light 5 wire plug-in assembly with ground wire 6 wire plug-in assembly with light 7 wire plug-in assembly and ground wire 8 wire plug-in assembly (polarity switching cover)	L- XX X-X XX  BA  BB  BC  BD  BJ  BK  BL  BM  EA  FA  FB  FC  FD  LA  MA  MB  MC	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light & ground wire  Base plug-in 3 pin (Polarity switching cover)  Base plug-in with ground  Base plug-in with ground & light  Base plug-in 4 wire with ground  Base plug-in 4 wire with light & ground  3 wire plug-in assembly (Plarity switching cover)  2 wire plug-in assembly  2 wire plug-in assembly with ground wire  2 wire plug-in assembly with light  2 wire plug-in assembly with light  2 wire plug-in assembly with light
O 3  4. ELECTRIC  XX X-X XX  BA BB BC BD BJ BK BL BM KA KB KC KD KE KF KG KH LA	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light 4 wire flying leads with ground 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 2 wire plug-in assembly 2 wire plug-in assembly 2 wire plug-in assembly with ground wire 2 wire plug-in assembly with light 2 wire plug-in assembly with light 4 wire plug-in assembly with light 4 wire plug-in assembly 4 wire plug-in assembly with ground wire 4 wire plug-in assembly with ground wire 5 wire plug-in assembly with ground wire 6 wire plug-in assembly with light 7 wire plug-in assembly with ground wire 8 wire plug-in assembly and ground wire 9 wire plug-in assembly (polarity switching cover)	L- XX X-X XX  BA  BB  BC  BD  BJ  BK  BL  BM  EA  FA  FB  FC  FD  LA  MA  MB  MC  MD	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light  4 wire flying leads with light & ground wire  Base plug-in 3 pin (Polarity switching cover)  Base plug-in with ground  Base plug-in with ground & light  Base plug-in 4 wire with ground  Base plug-in 4 wire with light & ground  3 wire plug-in assembly (Plarity switching cover)  2 wire plug-in assembly  2 wire plug-in assembly with ground wire  2 wire plug-in assembly with light
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM KA KB KC KD KE KF KG KH LA	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light & ground wire 4 wire flying leads with light & ground wire 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 2 wire plug-in assembly 2 wire plug-in assembly 2 wire plug-in assembly with ground wire 2 wire plug-in assembly with light 2 wire plug-in assembly with light 4 wire plug-in assembly with ground wire 4 wire plug-in assembly 4 wire plug-in assembly with ground wire 4 wire plug-in assembly with light 4 wire plug-in assembly with light 5 wire plug-in assembly with ground wire 6 wire plug-in assembly with light 7 wire plug-in assembly and ground wire 8 wire plug-in assembly (polarity switching cover)	L- XX X-X XX  BA  BB  BC  BD  BJ  BK  BL  BM  EA  FA  FB  FC  FD  LA  MA  MB  MC  MD  ME	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light & ground wire  Base plug-in 3 pin (Polarity switching cover)  Base plug-in with ground  Base plug-in with ground & light  Base plug-in 4 wire with ground  Base plug-in 4 wire with light & ground  3 wire plug-in assembly (Plarity switching cover)  2 wire plug-in assembly  2 wire plug-in assembly with ground wire  2 wire plug-in assembly with light  2 wire plug-in assembly with light and ground wire  4 wire plug-in assembly
O 3  4. ELECTRIC  -XX X-X XX  BA BB BC BD BJ BK BL BM KA KB KC KD KE KF KG KH LA	No operator Non-locking extended  AL CONNECTOR (32, 38, 42, 44 & 48 series)  NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light 4 wire flying leads with ground 4 wire flying leads with ground 4 wire flying leads with light 4 wire flying leads with light 2 wire flying leads with light 2 wire flying leads with light 4 wire flying leads with light 2 wire plug-in assembly 2 wire plug-in assembly with ground wire 2 wire plug-in assembly with light 2 wire plug-in assembly with light 4 wire plug-in assembly 4 wire plug-in assembly with ground wire 4 wire plug-in assembly with light 4 wire plug-in assembly with light 5 wire plug-in assembly with light 6 wire plug-in assembly with light 7 wire plug-in assembly with light 8 wire plug-in assembly (polarity switching cover)	L- XX X-X XX  BA  BB  BC  BD  BJ  BK  BL  BM  EA  FA  FB  FC  FD  LA  MA  MB  MC  MD  ME	NON PLUG-IN  2 wire flying leads  2 wire flying leads with ground wire  2 wire flying leads with light  2 wire flying leads with light & ground wire  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with ground  4 wire flying leads with light  4 wire flying leads with light & ground wire  Base plug-in 3 pin (Polarity switching cover)  Base plug-in with ground  Base plug-in with ground & light  Base plug-in 4 wire with ground  3 wire plug-in assembly (Plarity switching cover)  2 wire plug-in assembly  2 wire plug-in assembly with ground wire  2 wire plug-in assembly with light  2 wire plug-in assembly with light  4 wire plug-in assembly with light and ground wire  4 wire plug-in assembly  4 wire plug-in assembly  4 wire plug-in assembly with ground wire



# 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.

#### DOM/FD DDESSES

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

## 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) NI/min	Individual n	nounting			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
<u> </u>						-		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 m	ounting	Series
Inline	Sub-base non "plug-in"	

400

67

ISO 2

ISO 3



Function	Port size	Flow (Max)	Individual mounting	Series
5/2 - 5/3	G1/8" - G1/4"	1000 NI/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.



400

67

ISO 2

ISO 3

## 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
	12 2 4 14 D T T T	12 2 4 14 3 15 14 3 15	12 2 4 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	12 2 4 14 3 15 3 15	12 2 4 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15
G1/8"	411A-COJ-RA Mod 1493	421A-COJ-RA	451A-COJ-RA	461A-COJ-RA	471A-COJ-RA
G1/4"	411A-D0J-RA Mod 1493	421A-DOJ-RA	451A-D0J-RA	461A-D0J-RA	471A-D0J-RA

## DUAL PRESSURE VALVESS

Port size	5/2 Double operator		
	$ \begin{array}{c c} 12 & 4 \\ \hline                                  $		
G1/8"	441A-COJ-RA		
G1/4"	441A-DOJ-RA		







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)

Not required, if used select a medium annine point libricant (between 80 C and 100 C)

Filtration: 40µ

 Temperature range :
 -18°C to 50°C

 Orifice :
 6.2 mm

 Orifice :
 6.2 mm

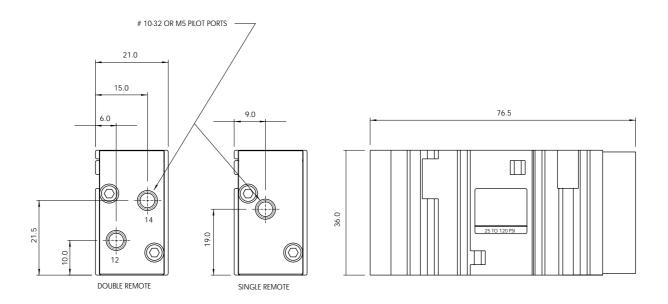
 Flow :
 1000 NI/min (Cv 1.0)

**Note**: Air signal must be ≥ main valve pressure

Option : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)





# Remote air valves

Function	Port size	Flow (Max)	Individual mounting	Series
5/2 - 5/3	G1/8" - G1/4"	1000 NI/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.



400

67

ISO 2

ISO 3

# 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
	12 2 4 14 14 3 15	12 2 4 14 14 3 15 15 15 15 15 15 15 15 15 15 15 15 15	12 2 4 14 14 II	12 2 4 14 I	12 2 4 14 14 14 13 15 15 15 15 15 15 15 15 15 15 15 15 15
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







Options :

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 NI/min (Cv 1.0)

Note : Air signal must be ≥ main valve pressure

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) #10-32 pilot port 91.7-55.0 19.05 STOCK REF DOUBLE REMOTE SINGLE REMOTE 1/8" - 27 N.P.T.F. 1/4" - 18 N.P.T.F. TYPICAL - 31.0-- 20.0-OPTIONAL FLOW CONTROLS 82.5 -ф 亩 14 9.5 REF. 28.10 33.1 38.1 ◍ 4.30 DIA. (2) 5.0 - MIG. HOLES 53.00

Individual n	nounting	Series
Inline		_

400

67

ISO 2

ISO 3

Function	Port size	Flow (Max)	Individual mounting	Series
3/2	G3/4" - G1"	20000 NI/min	Inline	

## OPERATIONAL BENEFITS

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.



400

67

ISO 2

ISO 3

#### HOW TO ORDER

Port size	Pilot air	Single (	Operator	Double Operator		
		NO Valve	NC Valve	NO Valve	NC Valve	
		10 2 12 d	10 2 12 WW 7 1 12	10 2 12 12 V3 01	10 2 12 Q	
G3/4"	Internal	67A-C3-CRA-RA	67A-A3-CRA-RA	67A-D4-CRA-RA	67A-B4-CRA-RA	
G1"	-	67A-C3-DRA-RA	67A-A3-DRA-RA	67A-D4-DRA-RA	67A-B4-DRA-RA	
G3/4"	External	67A-C3-CRB-RE	67A-A3-CRB-RE	-	-	
G1″	-	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.







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

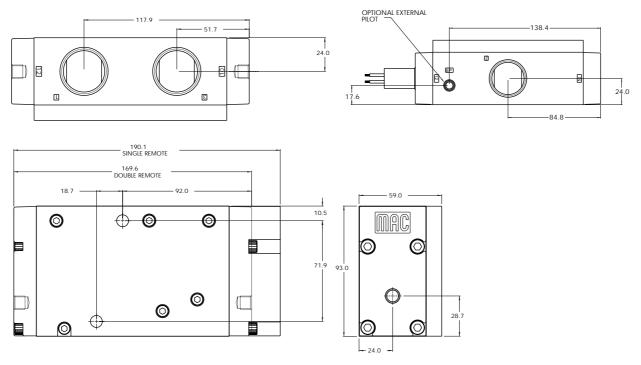
Orifice : 26.8 mm

Flow: 3/4": 14500 NI/min (Cv 14.5) - 1": 20000 NI/min (Cv 20.0)

Options : • NPTF threads

## DIMENSIONS

Dimensions shown are metric (mm)



Individual mounting	Series
Valve only - no base	
	400
Manifold mounting	67
Valve only - no base	ISO 2



Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2 - 5/3	G3/8" - G1/2"	3100 NI/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.



400

67

ISO 2

ISO 3

# HOW TO ORDER

#### SINGLE PRESSURE MODELS

Air spring	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	
	14 	14 	14 4 2 12 12	14 2 12 12 D T V V T V T G V V T	
Internal	MV-R2A-BACF	MV-R2A-BBAK	MAY DO A DE AV	MAY DO A DEALY	
External	External MV-R2A-BACG		MV-R2A-BEAK	MV-R2A-BFAK	
DUAL PRESSURE MODELS					
Air spring	5/2 Single operator	5/2 Double operator	5/3 Open centre	5/3 Pressure centre	
	14 	14 4 2 12 	14 4 2 12 	14 4 2 12 12 D 1 3 T 1 3	
Internal port #3	MV-R2A-BCCH				
Internal port #5	MV-R2A-BCCJ	MV-R2A-BDAK	MV-R2A-BHAK	MV-R2A-BGAK	
External	MV-R2A-BCCG				

Note: ISO series, valve and base are ordered separately, click here for base code.







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

Temperature range : -18°C to +50°C

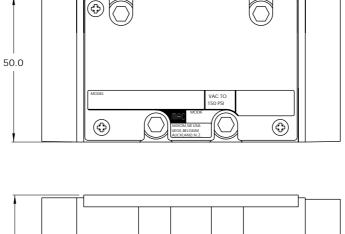
Orifice : 10,6 mm

Flow (at 6 bar, ΔP=1bar) : G3/8": 2800 NI/min – G1/2" : 3100 NI/min (Cv 3,1)

Spare parts : • Valve to base pressure seal: 16576 • Valve mounting screws (x4): 35413

## DIMENSIONS

Dimensions shown are metric (mm)



102.4

Individual mounting	Series
Valve only - no base	
	400
Manifold mounting	67
Valve only - no base	ISO 2
	ISO 3

Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2 - 5/3	G1/2" - G3/4"	6200 NI/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.



400

67

ISO 2

ISO 3

# HOW TO ORDER

#### SINGLE PRESSURE MODELS

External

Air spring	5/2 Single operator	Dou	5/2 ble operator	5/3 Closed centi	re	5/3 Open centre	
	14 15 5\v01\v01\v03	14 [D	12 5 \(\vert_1\) \(\vert_2\) \(\vert_3\)	14	12 Sw 4	14 2 12 12 12 12 12 12 12 12 12 12 12 12 1	
Internal	MV-R3A-BACF		AV DOA DDAV	MV D2A DEAV	_	MV-R3A-BFAK	
External	MV-R3A-BACG	MV-R3A-BBAK		MV-R3A-BEAK		IVIV-R3A-BFAK	
DUAL PRESSURE MODELS							
Air spring	5/2 Single operator			/2 operator		5/3 Pressure centre	
	$ \begin{array}{c c} 14 \\ - \cdot \cdot$		$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			14 4 2 12 12	
Internal port #3	MV-R3A-BCCH						
Internal port #5	MV-R3A-BCCJ		MV-R3	A-BDAK		MV-R3A-BGAK	

Note: ISO series, valve and base are ordered separately, click here for base code.

MV-R3A-BCCG







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

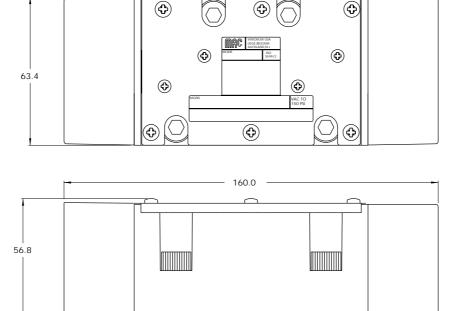
Orifice: 24 mm

Flow: G1/2": 5400 NI/min (Cv 5,4) – G3/4" : 6200 NI/min (Cv 6,2)

Spare parts : • Valve to base pressure seal: 16614 • Valve mounting screws (x4): 35451

## DIMENSIONS

Dimensions shown are metric (mm)





Section 3

Bases according to ISO 5599





		Series
Non plug-in base / manifold	Plug-in base / manifold	
		ISO 1
		ISO 2
		ISO 3



# Bases according to ISO 5599/1

Series

Non plug-in base / manifold



150 1

ISO 2

# 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.

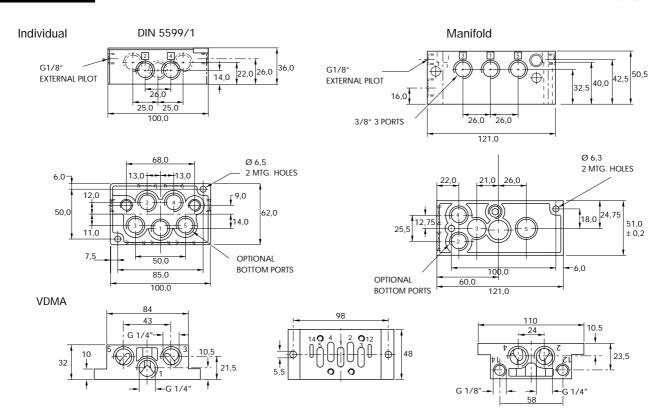
Valve blanking plate: MA1003. Inlet/exhaust isolator plug: 32835.







DIMENSIONS Dimensions shown are metric (mm)





# Bases according to ISO 5599/2

Series

Plug-in base / manifold



ISO 1

ISO 2

# HOW TO ORDER

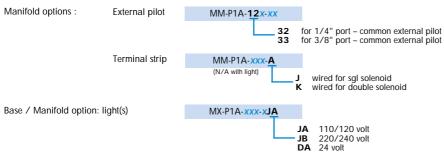
#### INDIVIDUAL BASE

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
G174	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
G3/8"	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
01/4	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
<u> </u>	Double solenoid	MM-P1A-1231-B	MM-P1A-132-B	MM-P1A-133-B

#### OPTIONS



Accessories: M-P1001

M-P1001 N-P1007-01 32835 Valve blanking plate. Manifold fastening kit. Inlet/exhaust isolator plug.



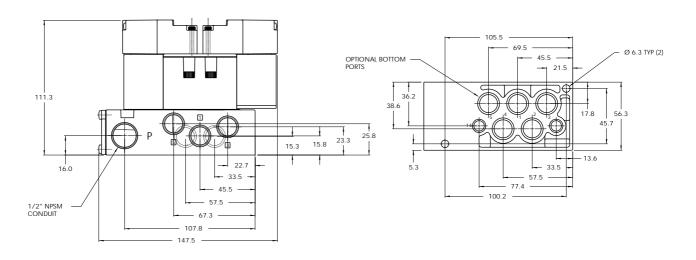


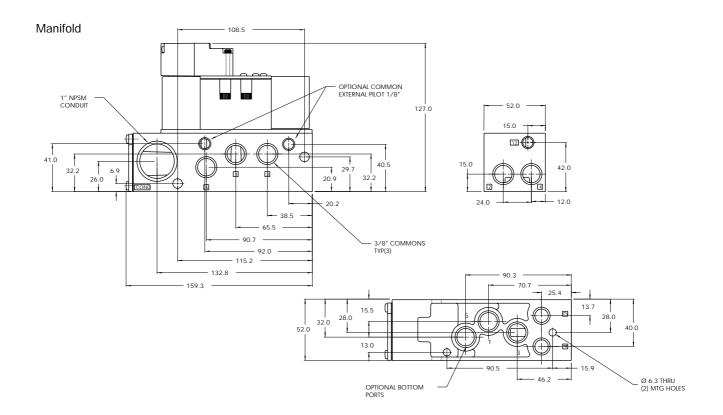


DIMENSIONS

Dimensions shown are metric (mm)

#### Individual







# Bases according to ISO 5599/1

Series

Non plug-in base / manifold

ISO 1

ISO 2

ISO 3



HOW TO ORDER

# INDIVIDUAL BASE

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

# INDIVIDUAL BASE ACCORDING TO VDMA 24345

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

## MANIFOLD BASE

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

Manifold fastening kit: N-63002-01.

# MANIFOLD BASE ACCORDING TO VDMA 24345

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

End plate kit: HM-A2B-D.

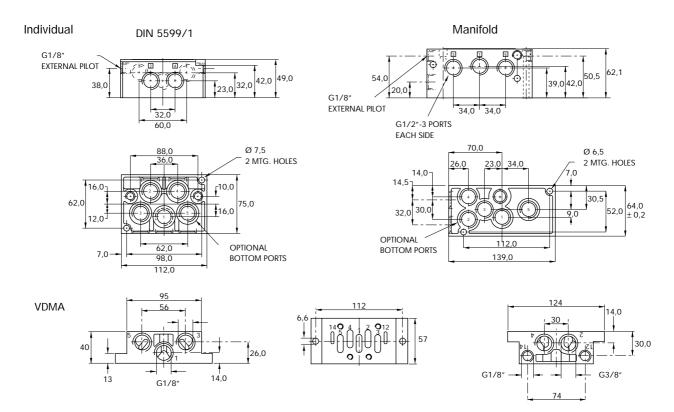
Valve blanking plate: MA2003. Inlet/exhaust isolator plug: 32839.







DIMENSIONS Dimensions shown are metric (mm)





# Bases according to ISO 5599/2

Series

Plug-in base / manifold



ISO 1

# HOW TO ORDER

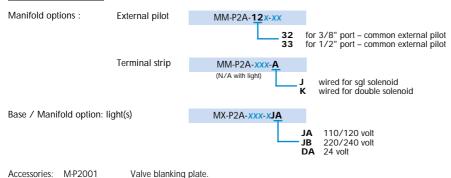
#### INDIVIDUAL BASE

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
G3/6	Double solenoid	MB-P2A-121-B	MB-P2A-122-B	MB-P2A-123-B
C1 /2"	Single solenoid	MB-P2A-131-A	MB-P2A-132-A	MB-P2A-133-A
G1/2"	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
G1/2"	Double solenoid	MM-P2A-131-B	MM-P2A-132-B	MM-P2A-133-B

#### OPTIONS



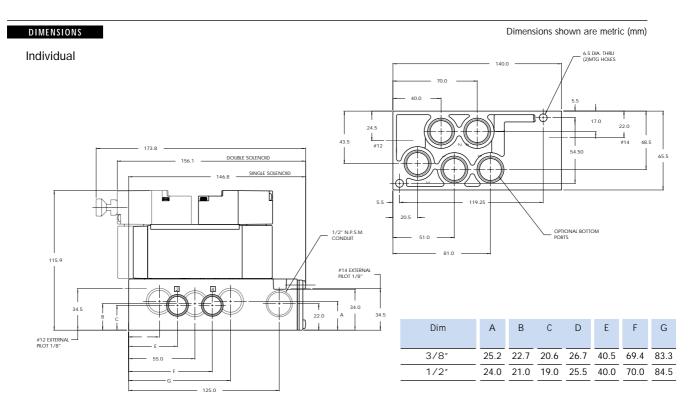
N-P2004-01 32839

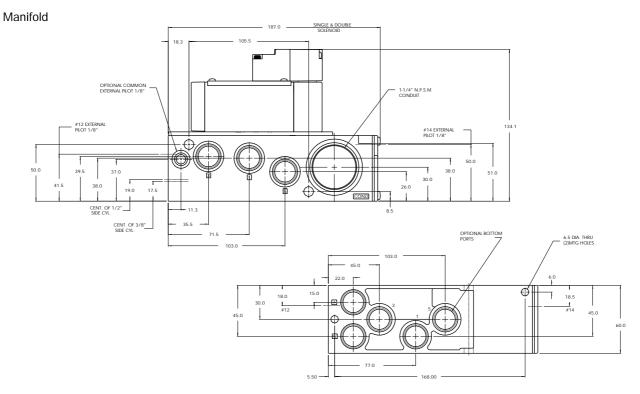
Valve blanking plate. Manifold fastening kit. Inlet/exhaust isolator plug.













# Bases according to ISO 5599/1

Series

Non plug-in base / manifold

ISO 1

ISO 2

ISO 3



# HOW TO ORDER

#### INDIVIDUAL BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G1/2"	MB-A3B-121-A	MB-A3B-123-A	MB-A3B-122-A	MB-A3B-124-A
G3/4"	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
G1/2"	HB-A3B-A	НВ-АЗВ-В

## MANIFOLD BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G1/2"	MM-A3B-121-A	MM-A3B-123-A	MM-A3B-122-A	MM-A3B-124-A
G3/4"	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
G1/2"	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.



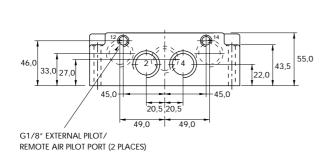


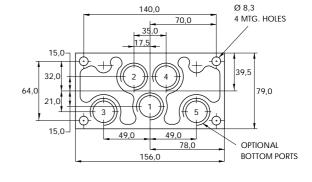


DIMENSIONS Dimensions shown are metric (mm)

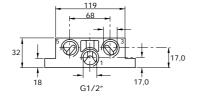
Individual

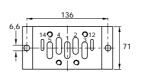
ISO DIN 5599/1

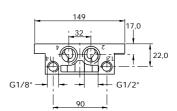


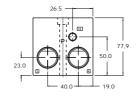


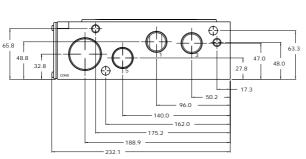
#### Manifold

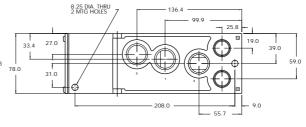














# Bases according to ISO 5599/2

Series

Plug-in base / manifold



ISO 1 ISO 2

ISO 3

# HOW TO ORDER

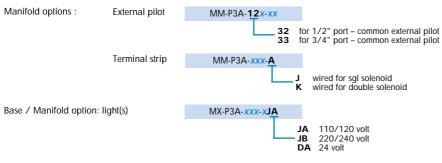
#### INDIVIDUAL BASE

Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports
G1/2"	Single solenoid	MB-P3A-121-A	MB-P3A-122-A	MB-P3A-123-A
G1/2"	Double solenoid	MB-P3A-121-B	MB-P3A-122-B	MB-P3A-123-B
	Single solenoid	MB-P3A-131-A	MB-P3A-132-A	MB-P3A-133-A
G3/4"	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
0.72	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
G3/4"	Double solenoid	MM-P3A-131-B	MM-P3A-132-B	MM-P3A-133-B

#### OPTIONS



Accessories: M-P3001

M-P3001 N-P3003-01 32845 Valve blanking plate.
Manifold fastening kit.
Inlet/exhaust isolator plug.

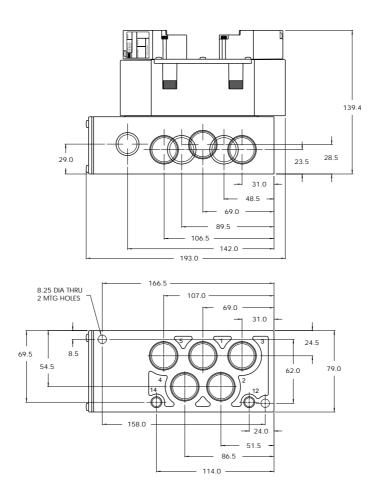






DIMENSIONS

Dimensions shown are metric (mm)





Section 4

Pressure regulators



Series

PR42A

PR47A

Sandwich pressure regulator with manual adjust knob	
Sandwich pressure regulator with manual adjust knob	
Sandwich pressure regulator with manual adjust knob	
Sandwich pressure regulator with manual adjust knob	
Sandwich pressure regulator with air pilot adjust	
Sandwich pressure regulator with manual adjust knob	
Sandwich pressure regulator with manual adjust knob	
Sandwich pressure regulator with air pilot adjust	
Sandwich pressure regulator with manual adjust knob	
Sandwich pressure regulator with manual adjust knob	
Non plug-in sandwich pressure regulator with manual adjust knob	
Non plug-in sandwich pressure regulator with air pilot adjust	
Plug-in sandwich pressure regulator with manual adjust knob	
Plug-in sandwich pressure regulator with air pilot adjust	
Non plug-in sandwich pressure regulator with manual adjust knob	
Non plug-in sandwich pressure regulator with air pilot adjust	
Plug-in sandwich pressure regulator with manual adjust knob	
Plug-in sandwich pressure regulator with air pilot adjust	
Non plug-in sandwich pressure regulator with manual adjust knob	
Non plug-in sandwich pressure regulator with air pilot adjust	
Plug-in sandwich pressure regulator with manual adjust knob	
Plug-in sandwich pressure regulator with air pilot adjust	

PR48A
PR92C
PR93A
PRA1A
PRP1A
PRP2B

PRA3C



# Pressure regulators

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

## 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.

# PR93A

OPTIONS

PR37A-F.xxx

B for slotted stem
K for slotted stem with locknut

Pressure range :

Adjustment :

PR37A-XXXA

B for 0 to 5,3 bar
C for 0 to 2 bar

PRA1A

PRP1A

PRA2D

PRP2B

DRA30

PRP3B







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 :  $40 \mu$ 

Temperature range : -18°C to +50°C

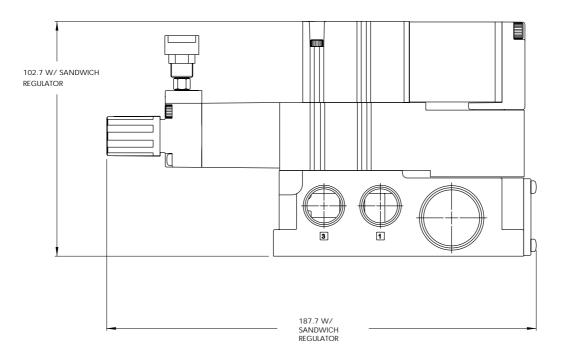
Flow (at 6 bar, ΔP=1bar) 400 NI/min (Cv 0.4)

Spare parts : • Pressure regulator (less sandwich block) : PR37A-GOAA (knob), PR37A-COAA (slotted stem), PR37A-LOAA (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)





# Pressure requlators

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.



PR93A

PRA1A

#### 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

- 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.

Valve 42A-AM D -AA A -GxxP-xxx with PR42A-AAAA Internal pilot option in base

PRP1A

External pilot option in valve

# OPTIONS

Pressure range

PR42A-AAAA A 0 to 8 bar **B** 0 to 5,3 bar C 0 to 2,7 bar







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)

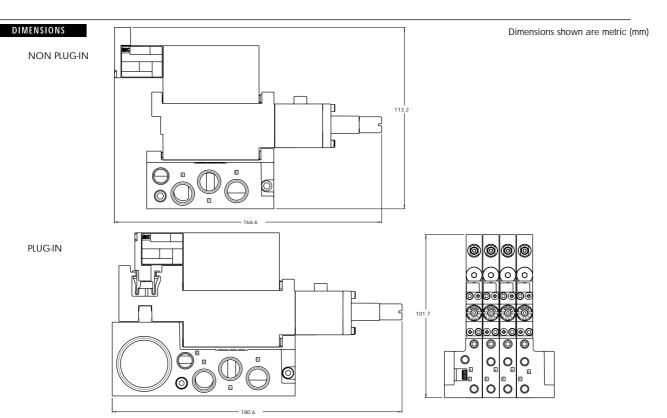
Filtration:

Temperature range : -18°C to +50°C

Flow (at 6 bar,  $\Delta P$ =1bar): 250 NI/min (Cv 0,25)

Spare parts :

Pressure regulator (less sandwich block): PR42A-C0xx
 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)





# Pressure requlators

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

PR48A

PR92C

# HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES (KNOB ADJUSTMENT)

Gauge	Single pressure
No gauge port	PR47A-EAAA
With gauge Port	PR47A-EABA

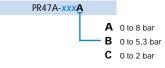
#### REGULATORS FOR "NON PLUG-IN" VALVES (KNOB ADJUSTMENT)

Gauge	Single pressure
No Gauge port	PR47A-FAAA
With Gauge Port	PR47A-FABA

PRA1A

#### OPTIONS





Adjustment for :









PRP1A

PRP2B







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:

Temperature range : -18°C to +50°C

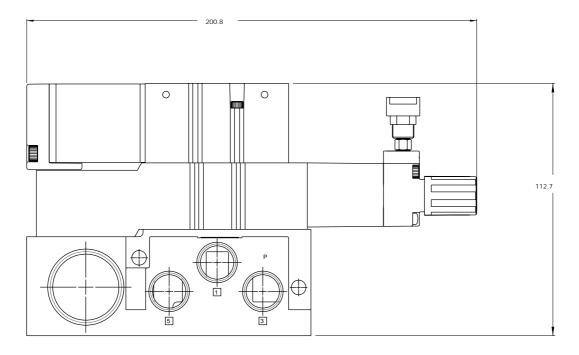
Flow (at 6 bar, ∆P=1bar): 400 NI/min (Cv 0.4))

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)





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.



PR37/

PR42A

PR47A

PR48A

### 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

PR48A-**A**xxx

A KnobD Screwdriver slot

**G** Screwdriver slot with locknut

PRA2D

PRA1A

PRP1A

# OPTIONS

Pressure range :

PR48A-xxxA

A 0 to 8 bar

B 0 to 5,3 bar

C 0 to 2 bar

Adjustment for: Plug-in regulator

Non plug-in regulator

PR48A-BXXX

B Knob
E Screwdriver slot
H Screwdriver slot with locknut

PRP2B

PRA30

DDD2B







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 :

Temperature range : -18°C to +50°C

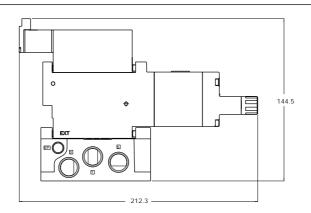
Flow (at 6 bar,  $\Delta P$ =1bar): 800 NI/min (Cv 0,8)

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)

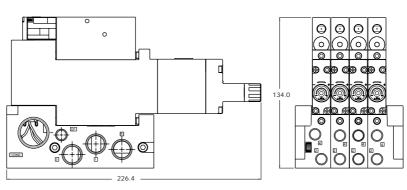
## DIMENSIONS

NON PLUG-IN



Dimensions shown are metric (mm)

PLUG-IN





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.



PR92C

PR93A

PRA1A

PRP1A

PR37A

PR42A

PR47A

PR48A

## 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)  Gauge with face perpendicular to manual operator	PR92C-EAAA PR92C-EABA	PR92C-EBAA PR92C-EBBA	PR92C-ECAA 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)  Gauge with face perpendicular to manual operator	PR92C-GAAA PR92C-GABA	PR92C-GBAA PR92C-GBBA	PR92C-GCAA PR92C-GCBA	PR92C-GDAA PR92C-GDBA	PR92C-GEBA
Gauge with face parallel to manual operator	PR92C-GACA	PR92C-GBCA	PR92C-GCCA	PR92C-GDCA	PR92C-GECA

<sup>\*</sup> For use with dual pressure valves.

## PLUG-IN OPTIONS

PR92C-**E**xxx

F for double solenoid valve

PRP2B

PRP3B







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)

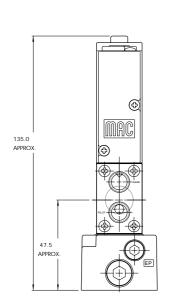
Filtration :

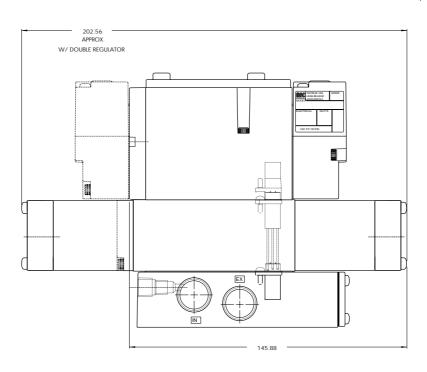
Temperature range : -18°C to +50°C

Flow (at 6 bar,  $\Delta P$ =1bar): 800 NI/min (Cv 0.8)

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-HOAA Spare parts :

## DIMENSIONS







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	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 Gauge with face	PR92C-JPAA	PR92C-JRAA	PR92C-JSAA	PR92C-JTAA
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 Gauge with face	PR92C-LPAA	PR92C-LRAA	PR92C-LSAA	PR92C-LTAA
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

## OPTIONS

Regulator less sandwich block

PR92C-XOXX

M Knob Slotted stem

S Slotted stem with locknut

#### Other adjustment

PR92C-XXXX

Slotted stem, single solenoid

Slotted stem, double solenoid В

Slotted stem, non plug-in Knob, double solenoid

Slotted stem w/ locknut, single solenoid Slotted stem w/ locknut, double solenoid Slotted stem w/ locknut, non plug-in

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

PR37A

PR92C

PR93A

PRA1A

PRP1A

<sup>-</sup> Use single pressure valve for all above models.







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:

Temperature range : -18°C to +50°C

Flow (at 6 bar,  $\Delta P = 1$ bar): 800 NI/min (Cv 0.8)

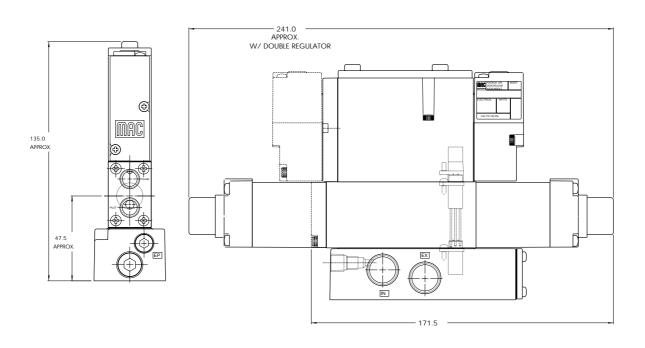
Spare parts :

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





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.



PR48A

PR47A

PR37A

PR92C

PR93A

PRA1A

PRP1A

## 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)  Gauge with face perpendicular to manual operator	PR92C-LAAA PR92C-LABA	PR92C-LBAA PR92C-LBBA	PR92C-LCAA PR92C-LCBA	PR92C-LDAA PR92C-LDBA	PR92C-LEAA PR92C-LEBA
Gauge with face parallel to manual operator	PR92C-LACA	PR92C-LBCA	PR92C-LCCA	PR92C-LDCA	PR92C-LECA

<sup>\*</sup> 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-x0xx M Knob **D** Slotted stem

Other adjustment

PR92C-xxxx

Slotted stem, single solenoid Slotted stem, double solenoid Slotted stem, non plug-in Knob, double solenoid В С

Κ

Slotted stem w/ locknut, single solenoid Slotted stem w/ locknut, double solenoid Ν R Slotted stem w/ locknut, non plug-in

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

S Slotted stem with locknut







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:

Temperature range : -18°C to +50°C

Flow (at 6 bar,  $\Delta P = 1$ bar): 800 NI/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

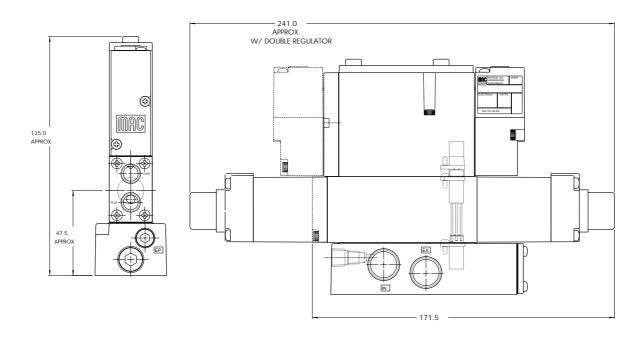
Options:

• 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





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

## 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)  Gauge with face perpendicular	PR93A-DABA	PR93A-DBBA	PR93A-DCAA PR93A-DCBA	PR93A-DDBA	PR93A-DEAA PR93A-DEBA
to manual operator					
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)  Gauge with face perpendicular to manual operator	PR93A-EAAA PR93A-EABA	PR93A-EBBA PR93A-EBBA	PR93A-ECAA PR93A-ECBA	PR93A-EDAA 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.

PR93A

PRA1A

PRP1A

PRA2D

PRP2B

PRA30

PRP3B

<sup>\*</sup> For use with dual pressure valves.







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)

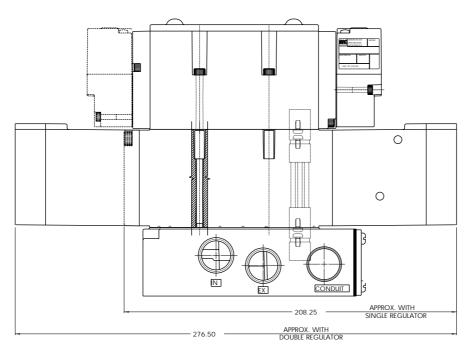
Filtration :

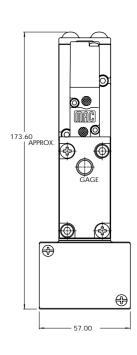
Temperature range : -18°C to +50°C

Flow (at 6 bar,  $\Delta P$ =1bar): 2400 NI/min (Cv 2.4)

 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 Spare parts :

DIMENSIONS







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

PR48A

## 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)  Gauge with face perpendicular to manual operator	PR93A-GPAA PR93A-GPBA	PR93A-GRAA PR93A-GRBA	PR93A-GSBA	PR93A-GTAA PR93A-GTBA
Gauge with face parallel to manual operator	PR93A-GPCA	PR93A-GRCA	PR93A-GSCA	PR93A-GTCA

PR93A

PRA1A

#### REGULATORS FOR "NON PLUG-IN" VALVES

REGOLATORS FOR TROTTER	00111 1712123			
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

PRP1A

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-<u>x</u>0xx

Knob Slotted stem

M Slotted stem with locknut

#### Other adjustment

PR93A-<u>xxxx</u> Α

Slotted stem, plug-in В

Slotted stern, prug-in
Slotted stern, non plug-in
Slotted stern w/ locknut, plug-in
Slotted stern w/ locknut, non plug-in

Note: Above models may be used with either single or double solenoid valves.







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:

Temperature range : -18°C to +50°C

Flow (at 6 bar,  $\Delta P = 1$ bar): 2400 NI/min (Cv 2.4)

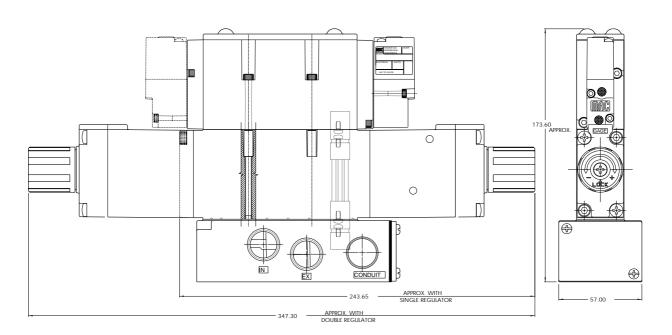
Spare parts :

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





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.



PR42/

PR37A

PR47A

PR48A

PR920

## 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

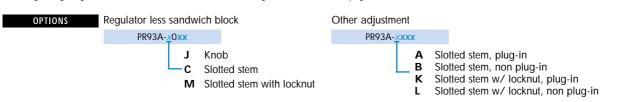
Note: above models are coded for use with single solenoid valves.

## 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)  Gauge with face perpendicular to manual operator	PR93A-HAAA PR93A-HABA	PR93A-HBBA	PR93A-HCAA PR93A-HCBA	PR93A-HDAA PR93A-HDBA	PR93A-HEBA
Gauge with face parallel to manual operator	PR93A-HACA	PR93A-HBCA	PR93A-HCCA	PR93A-HDCA	PR93A-HECA

<sup>\*</sup> For use with dual pressure valves.

Note: Regulating range for above models is 0 to 8 bar. For other ranges, see technical data page.



Note: Above models may be used with either single or double solenoid valves.

PR93A

PRA1A

PRP1A

DDAOD

PRP2

DRA30

PRP3B







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:

Temperature range : -18°C to +50°C

Flow (at 6 bar,  $\Delta P = 1$ bar): 2400 NI/min (Cv 2.4)

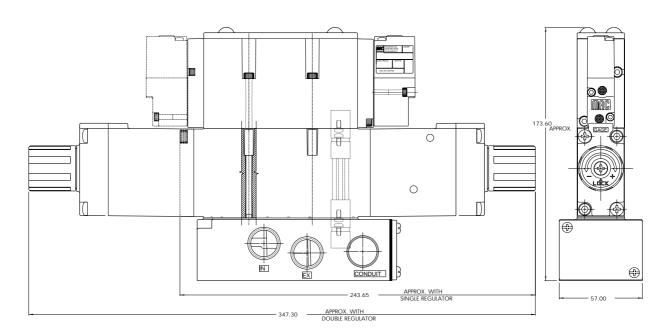
Spare parts :

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





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.



PR37A

PR47A

PR48A

PRA1A

PRP1A

## 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

<sup>\* -</sup> To be used with dual pressure valves.

Note: regulating range for above models is 0-8 bar. For other ranges see technical data page.

ADJUSTMENT OPTIONS

PRA1A-<u>xxxx</u>

- 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)

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.







 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 NI/min (Cv 1.0)

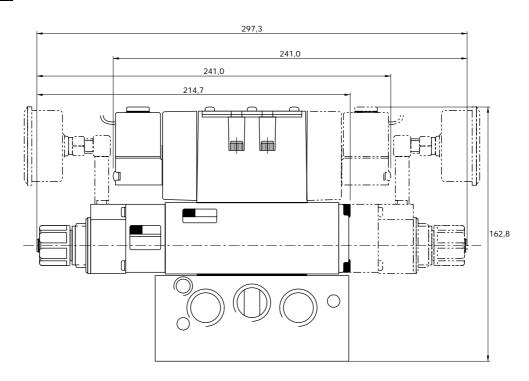
Spare parts: • Pressure regulator (less sandwich block): PRA1A-JOAA (KNOB), PRA1A-COAA (SLOTTED STEM), PRA1A-MOAA (SLOTTED STEM WITH LOCKNUT).

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 parallel)
 N-82016-05 (0-2 bar parallel)
 N-82016-06 (0-2 bar parallel)

Regulating range options: PRA1A-XXXA

Replace by B
Replace by D
Replace by B
Replace by B
Replace by B
Replace by F
Replace by H
Replace by H
Replace by J
Replace by B
Replace by J
Replace by B
Replac

DIMENSIONS





Series

Non plug-in sandwich pressure regulator with air pilot adjust

Single pressure

Single pressure

## 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.



Dual pressure

Dual pressure

PR37A

PR42A

PR47A

PR48A

PR92C

## HOW TO ORDER

#### INTERNAL PILOT

Gauge	Regulator 14 end Same regulated pressure to ports 2 and 4	Regulator 12 end Same regulated pressure to ports 2 and 4	Regulator 14 end Regulated pressure to port 4	Regulator 12 end Regulated pressure to port 2	Two regulated pressures to ports 2 and 4	
No gauge	PRA1A-DAAA	PRA1A-DCAA	PRA1A-DBAA	PRA1A-DDAA	PRA1A-DEAA	PR93A
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	PRA1A
EXTERNAL PILOT AND RE	EMOTE 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	PRP1A
No gauge	PRA1A-EAAA	PRA1A-ECAA	PRA1A-EBAA	PRA1A-EDAA	PRA1A-EEAA	PRA2D
Gauge perpendicular to regulator(s)	PRA1A-EABA	PRA1A-ECBA	PRA1A-EBBA	PRA1A-EDBA	PRA1A-EECA	
Gauge parallel	PRA1A-EADA	PRA1A-ECDA	PRA1A-EBDA	PRA1A-EDDA	PRA1A-EEEA	PRP2B

Dual pressure

to regulator(s)

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.

<sup>\* -</sup> To be used with dual pressure valves.







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)

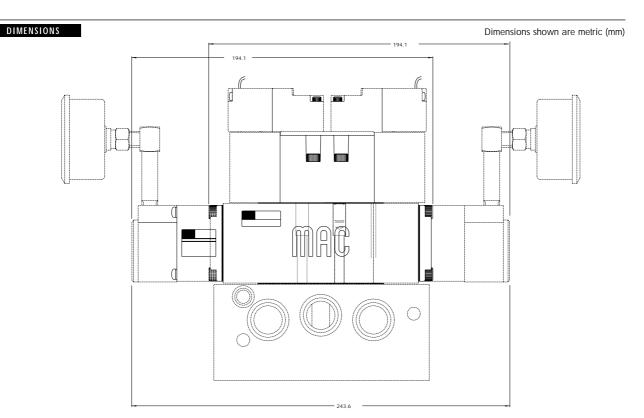
Filtration:

-18°C to 50°C Temperature range :

Flow: 1000 NI/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)





Series

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.



PR47A

PR37A

PR48A

PR920

PR93A

PRA1A

## 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

PRP1A

PRA2D

PRP2B

111 20

 $Note: Regulating \ range \ for \ above \ models \ is \ 0-8 \ bar. \ For \ other \ ranges, see \ technical \ data \ page.$ 

## ADJUSTMENT OPTIONS

PRP1A-XXXX

A for slotted stem adjustment (internal pilot)

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.
- ${\it 3. Cannot field convert from internal pilot to external pilot.}\\$
- 4. Wired for double solenoid valves.

PRP3B

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

<sup>\*</sup> For use with dual pressure valves.







 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)

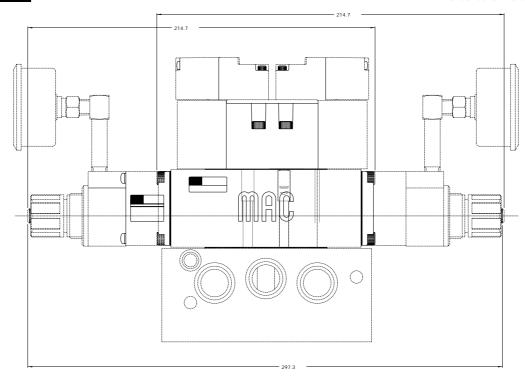
 Filtration:
 40 μ

 Temperature range:
 -18°C to +50°C

 Flow (at 6 bar, ΔP=1bar):
 1100 NI/min (Cv 1.1)

Spare parts : • Pressure regulator (less sandwich block) : PRP1A-JOKA (knob), PRP1A-COKA (slotted stem) PRP1A-MOKA (slotted stem with locknut)

## DIMENSIONS





Series

Plug-in sandwich pressure regulator with air pilot adjust

Single pressure

Regulator 14 end

Same regulated pressure Same regulated pressure

## 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.



Dual pressure

Dual regulator

Two regulated pressures

PR37A

PR47A

PR48A

## HOW TO ORDER

Gauge

## REGULATORS FOR INTERNAL PILOT

	to ports 2 and 4	to ports 2 and 4	to port 4	to port 2	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 EXTER	RNAL 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

Dual pressure

Regulator 14 end

Regulated pressure

Dual pressure

Regulator 12 end

Regulated pressure

Single pressure

Regulator 12 end

#### 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.

PR92C

PRA1A

PRP1A

PRA2D

PRP2B

DDD2R

 $<sup>^{\</sup>star}$  - To be used with dual pressure valves.







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 j

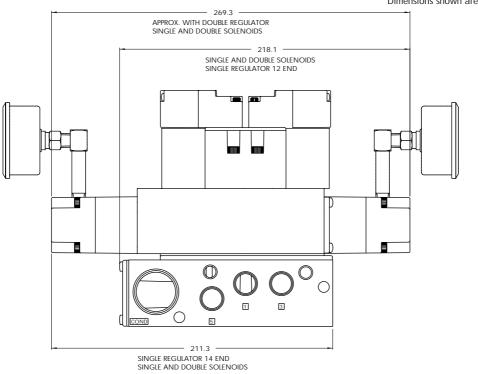
Temperature range : -18°C to +50°C

Flow (at 6 bar, ΔP=1bar): 1100 NI/min (Cv 1.1)

Spare parts : • Pressure regulator (less sandwich block): PRP1A-F0KA

• Regulator block to base mounting tie rod: 19496

## DIMENSIONS





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.



PR42/

PR47A

PR48A

PR92C

PRA1A

PRP1A

PRA2D

PRP2B

## 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	

 $^{\star}$  - To be used with dual pressure valves.

Note : regulating range for above models is 0-10 bar. For other ranges see technical data page.

ADJUSTMENT OPTIONS

PRA2D-<u>xxxx</u>

for slotted stem adjustment (internal pilot)for slotted stem adjustment (external pilot)

for slotted stem with locknut (internal pilot)

for slotted stem with locknut (external pilot)

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.

PKASU

PRP3

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







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 j

Temperature range : -18°C to 50°C

Flow: 2300 NI/min (Cv 2.3)

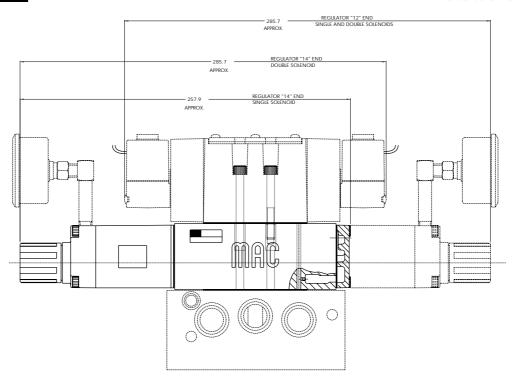
Spare parts : • Pressure regulator (less sandwich block) : PRA2D-30AA (KNOB), PRA2D-COAA (SLOTTED STEM), PRA2D-FOAA (SLOTTED STEM WITH LOCKNUT).

• 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





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.



PR37A

PR42A

PR47A

PR48A

PR92C

## 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	

<sup>\* -</sup> 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.

PR93A

PRA1A

PRP1A

PRA2D

PRP2B

PRA3C

DDD2E







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  $\mu$ 

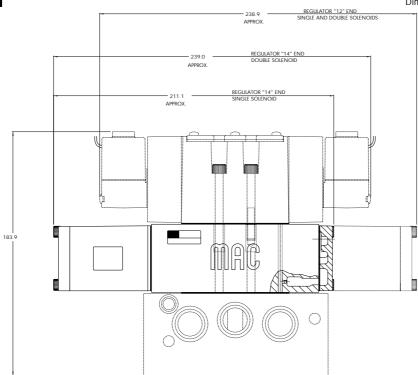
Temperature range: -18°C to 50°C

Flow: 2300 NI/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





Series

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.



PR47A

PR37A

PR48A

PR92C

## 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

<sup>\*</sup> 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-<u>xxxx</u>

**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.

PRA1A

PRP1A

PRA2D

PRP2B

PRA3(

PRP3E

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







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)

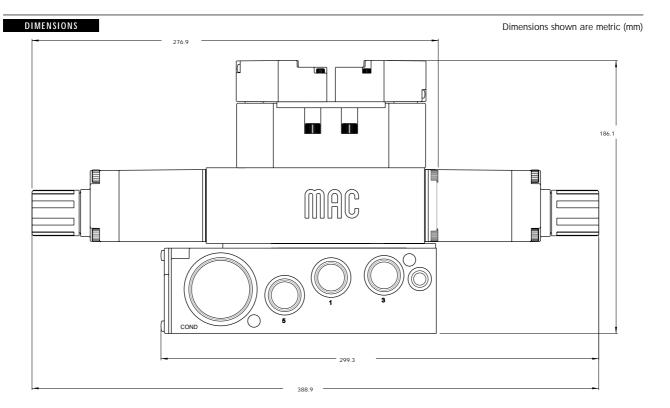
Filtration:

Temperature range : -18°C to +50°C

Flow (at 6 bar,  $\Delta P$ =1bar) 3100 NI/min (Cv 3.1)

 Pressure regulator (less sandwich block)
 Regulator block to base mounting screw: 19177
 Regulating range option: PRP2B-xxxA Spare parts :

Replace by B for 0 to 6,7 bar Replace by C for 0 to 3 bar





Series

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.



PR48A

PR92C

PR93A

PRA1A

PRP1A

PR37A

PR42A

PR47A

HOW TO ORDER

#### REGULATORS FOR INTERNAL PILOT

REGULATORS FOR INTERIOR							
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	Single pressure Regulator 12 end	Dual pressure * Regulator 14 end	Dual pressure * Regulator 12 end	Dual pressure * Dual regulator		

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	r 12 end Regulator 14 end Regulator 12 end ted pressure Regulated pressure Regulated pressure		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	

 $^{\star}$  - To be used with dual pressure valves.

#### Notes:

- 1. Valves used with above models must be external pilot models.
- $\ \, \hbox{2. Cannot field convert regulator block from single pressure to dual pressure.} \\$
- 3. Cannot field convert from internal pilot to external pilot.
- 4. Wired for double solenoid valves.

INAZD

PRP2B

PRA3C

DDD3E







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

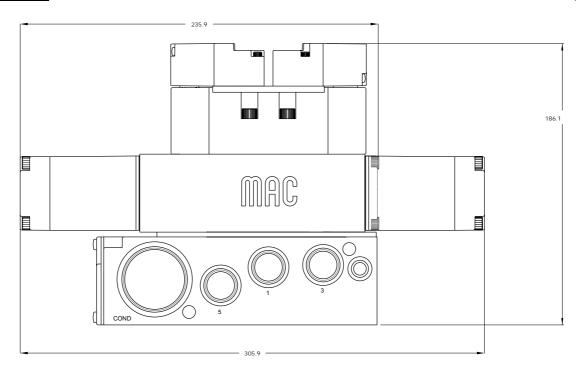
Temperature range : -18°C to +50°C

Flow (at 6 bar, ΔP=1bar): 3100 NI/min (Cv 3.1)

Spare parts : • Pressure regulator (less sandwich block): PRP2B-F0AA

• Body/block to base mounting screw: 19177

## DIMENSIONS





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.



PR47A

PR37A

PR48A

PR920

## 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	

<sup>\* -</sup> 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...

PRP1A

PRA1A

PRA2D

PRP2R

TREZD

PRA3C

DDD2E







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 j

Temperature range : -18°C to 50°C

Flow: 5400 NI/min (Cv 5.4)

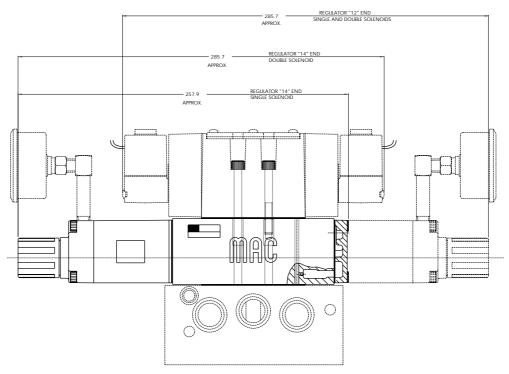
Spare parts : • Pressure regulator (less sandwich block) : PRA3C-30AA (KNOB), PRA3C-COAA (SLOTTED STEM), PRA3C-FOAA (SLOTTED STEM WITH LOCKNUT).

• 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





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.



PR37A

PR42A

PR47A

PR48A

PR92C

## 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	

PR93A

PRA1A

PRP1A

PRA2D

PRP2B

PRA3C

PRP3E

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.

<sup>\* -</sup> To be used with dual pressure valves.







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:

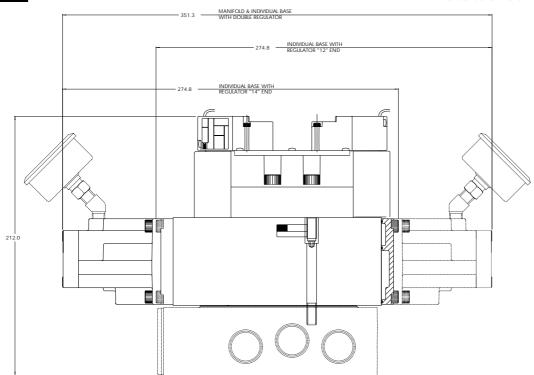
-18°C to 50°C Temperature range :

Flow: 5400 NI/min (Cv 5.4)

• Pressure regulator (less sandwich block) : PRA3C-60AA. Spare parts :

• Gauge : • Glycerine filled : N-62015-01 • Non filled : N-62016-01

DIMENSIONS





Series

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

PR47A

PR48/

PR920

## 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	PR93
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	PRA1
REGULATORS FOR EXTER	RNAL 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	PRP1
No gauge	PRP3B-BAAA	PRP3B-BEAA	PRP3B-BBAA	PRP3B-BFAA	PRP3B-BJAA	PRA2
Glycerine gauge	PRP3B-BABA	PRP3B-BEBA	PRP3B-BBBA	PRP3B-BFBA	PRP3B-BJCA	

## ADJUSTMENT OPTIONS

Non-filled gauge

PRP3B-<u>xxxx</u>

**G** for slotted stem (internal pilot)

PRP3B-BADA

- **H** for slotted stem (external pilot)
- **K** for slotted stem with locknut (internal pilot)
- for slotted stem with locknut (external pilot)

PRP3B-BEDA

#### Notes:

PRP3B-BBDA

1. Regulating range for above models is 0-10 bar. For other ranges, see technical data page.

PRP3B-BFDA

- 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.
- Wired for double solenoid valves.

PRP2B

PRP3B

PRP3B-BJEA

<sup>\*</sup> For use with dual pressure valves.







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:

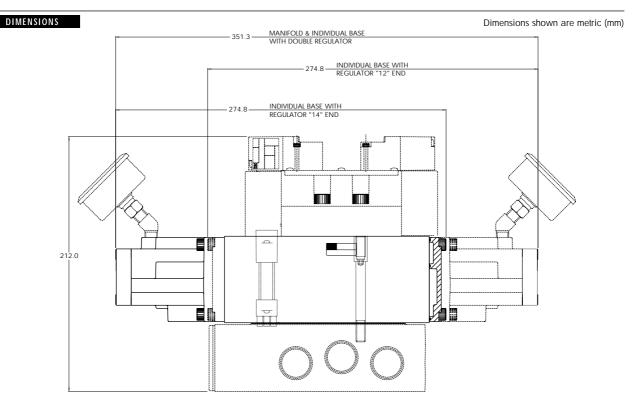
Temperature range : -18°C to +50°C

Flow (at 6 bar,  $\Delta P$ =1bar) 5400 NI/min (Cv 5.4)

Pressure regulator (less sandwich block): PRP3B-COAA (knob), PRP3B-JOAA (slotted stem), PRP3B-MOAA (slotted stem with locknut)
Regulating block to base mounting screw: 19457
Regulating range options: PRP3B-xxxA

Regulating range options: PRP3B-xxxA Spare parts :

Replace by B for 0 to 6,7 bar Replace by C for 0 to 3 bar





Series

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

PR47A

PR48A

PR92C

## 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	PR93A
	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	PRA1A
REC	GULATORS FOR EXTER	RNAL 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	PRP1A
	No gauge	PRP3B-EAAA	PRP3B-EEAA	PRP3B-EBAA	PRP3B-EFAA	PRP3B-EJAA	PRA2D
	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	PRP2B

<sup>\* -</sup> 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.

PRP3B







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 j

Temperature range : -18°C to +50°C

Flow (at 6 bar, ΔP=1bar): 5400 NI/min (Cv 5.4)

Spare parts : • Pressure regulator (less sandwich block): PRP3B-F0AA

• Regulator block to base mounting screw: 19457

