

CURRENT Technology



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Welcome to your brand new MAC VALVES catalog.

Inside you will find more than 25 different valve series to meet the majority of industrial requirements.

They have been sorted and classified in such a way that you may easily find the required valve series.

For more than 50 years, MAC has based all new valve developments upon the specifications received from customers, both users and OEM's. A lot of different modifications have been released for all fields of industry (automotive, aluminium, packaging, food, sorting, ...). Although they are not listed in this catalog, our technical sales staff will be pleased to provide all necessary information.

All our representatives have a "traveling lab demonstration" kit (TLD) to show you the specific design features of MAC Valves in terms of :

- speed
- reliability
- consistency
- repeatability

Feel free to ask for a personal demonstration, our team is at your disposal.

MAC Valves, Your Partner





MAC Valves 18 month guarantee plus lifetime coil guarantee

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

The above Guarantee is our manner of extending the engineering and service resources of the MAC Valves, Inc. organization to assure our customer long, and continued satisfaction.

The flat rate rebuild program

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

Pneumatic functions

All valves inside the MAC product range allow for multiple pneumatic functions.

Direct solenoid and solenoid pilot operated valves could be used as 2 ways, 3 ways (NO, NC) or 4 ways. When plugging one orifice to achieve a 2 ways function (or 3 ways), it will not affect the valve operation.

•	Direct so	<u>lenoid v</u>	<u>alves 3</u>	ways :	universal
	The follow	wing fun	ctions of	are ava	ilable

- 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)

- <u>Direct solenoid valves 4 ways :</u> The following functions are available
 - 4 ways
 3 ways NC
 3 ways NO
 2 ways NC
 2 ways NO
 Divertor
- <u>Pilot operated valves 4 & 5 ways :</u> 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



MAC DESIGN FEATURES

SPOOLS/BODIES

MAC flow seals are bonded to an aluminum spool, machine ground to a very close tolerance, and chemically surface hardened. The bore of the bodies is finished to a close tolerance, work hardened and polished. The result of these processes on the spool and bore keeps friction to a minimum and provides wiping action thus assuring long, stick-free consistent operation and making the spools relatively unaffected by air line contaminates.

MAC spools are of a balanced design; therefore they are not affected by back pressure or restrictions in the exhaust, permitting 3-ways to be plugged for 2-way operation and 4-ways to be plugged for 3-way or 2-way operation.

Further, the use of two seals, as illustrated, one for the exhaust and one for inlet, provides for a short stroke and high flow in a small envelope size.

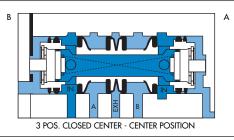
All valves utilize one piece aluminum bodies. On almost all Series valves, the bodies are die cast. The die casting technique used provides large, smooth and direct flow paths for low pressure drop.

PILOT SYSTEM

On most pilot operated valves a large checked accumulator, housed in the main valve body, supplies both pilots on double solenoid valves as well as the air/ spring return on single solenoid pilot or single remote air pilot valves. The checked accumulator assures positive, consistent shifting in both directions even with inlet pressure fluctuations and/or restrictions, and even at very low minimum pilot pressures. On internal pilot models the accumulator is supplied from the main valve inlet and protected from inlet pressure fluctuations by a check valve. The check valve is designed to bleed off the accumulator when the main supply pressure is removed. On external pilot models, the accumulator is supplied from an external pilot port. Pilot operation ensures maximum energization shifting force. An air spring ensures maximum deenergization shifting force.

3-POSITION CENTERING

MAC 3-position solenoid and remote air pilot valves are centered by a patented spring centering device or patented combination spring and pressure assisted spool design which reduces side load potential and resultant wear, and assures fast, positive return of the main spool when the pilots are de-energized due to a high shifting force.



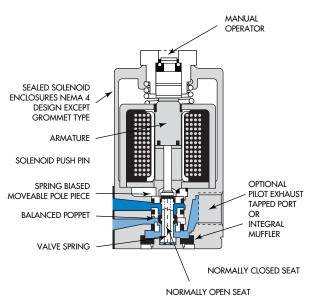
PRESSURE

SIDE

SOLENOID PILOT VALVES

Most MAC valves in this catalog are pilot operated by a patented high flow, fast response Normally Closed Only version of the compact MAC 100 Series solenoid valve (shown below). Similarly on solenoid pilot 3-way valves, another version of the 100 or 200 series is used as the pilot. These patented burnout proof solenoid pilots provide extremely fast response times to an extent not equaled in other valves

Because air pressure does the work in shifting the main spool, minimal energy is consumed by the solenoid with no limitation in size of the main valve. On 120/60 AC service the inrush current is down to .12 Amps. On DC service wattages are available down to 1.0 Watts across almost the entire product line. (The 82 Series is piloted by a version of the 35 Series. On DC service, wattages are available down to 1.8 watts.). Intrinsically safe valves are available for most series listed in this catalog. This option is for DC service only at 0.6 Watts.





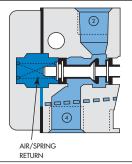
MAC DESIGN FEATURES

VIRTUALLY-BURN-OUT PROOF MACSOLENOID®

The patented spring biased floating pole piece MACSOLENOID® used on all 3-ways and 4-ways in this catalog is independent and isolated from the valve body (100 Series shown above). When voltage is applied to the coil, the pole piece is held down by the bias spring so that the magnetic attraction between the pole piece and armature results in the armature moving down against the push pin, moving the poppet from the Normally Closed (N.C.) seat to the Normally Open (N.O.) seat. After the poppet has shifted completely, the pole piece then moves upward, compressing the bias spring, until the pole piece magnetically seals with the armature. If the poppet sticks and fails to move initially, preventing the armature from moving down, the pole piece is magnetically drawn upward, compressing the bias spring, allowing the pole piece and armature to magnetically seal and subjecting the valve to maximum shifting forces. Thus the two most common causes of solenoid valve failure-failure to shift when energized, and coil burnout on AC service-are practically eliminated. The bias spring also reduces de-energized response time since it is exerting a separation force (downward force on the pole piece) between the armature and pole piece.

AIR /SPRING RETURN

Single solenoid pilot or single remote air pilot models contain a unique combination spring and air assisted differential return. Supplied from the accumulator, inlet or external pilot; it maximizes and balances the shifting forces for consistent operation and positive spool return.



NON-LUBE SERVICE

All valves in this catalog can be operated with or without air line lubrication. This is made possible through the use of the unique solenoid pilot operator, the pilot system, the spool and bore design, close tolerances and MAC's prelubrication procedures. In either case, air line filters are recommended and will extend cycle life of the valves.

COILS

MAC makes its own coils permitting flexibility in voltage requirements. If the voltage required is not listed with the valve Series desired or in the "options" section, consult the factory, we may be able to produce it. Two types of special coils are described below.

LOW WATTAGE DC-MAC provides optional low wattage DC solenoids for all the valves of this catalog down to 1.0 watts, (except for the 1300 Series which is 6.0 watts, and the 35 & 45 Series which is 1.8 watts). These low wattage options can significantly reduce power consumption, power supply capacity, control amplifier capacity and cost of all the above.

CLASS F—High temperature AC and DC coil option. Available on all AC and DC coils. On some high wattage coils listed in the catalog, Class F is required and is so noted. These higher wattage coils are specified as MOD CLSF (Class F Option). Higher wattage coils will provide extremely fast response times.

ADD-A-UNIT MANIFOLDS

Pioneered by MAC, Add-A-Unit die cast manifold bodies and bases are available. The common inlet, exhaust, and on many models the electrical conduit channel, enables bodies and bases to be added as desired. A valve gang can contain both 2- and 3- position valves, as well as solenoid, remote air pilot and manual or mechanical valves. Sections of a gang or individual valves in a gang may be isolated permitting different pressures to be fed to either end of the gang.



MAC DESIGN FEATURES

ELECTRICAL PLUG-IN CONNECTIONS

4-way plug-in models incorporate recessed, shrouded connectors in both body and base with an integral ground pin that makes connection first and breaks last. Plug-ins permit easy and fast replacement of the valve without disturbing either the electical wiring or air plumbing.

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	CAT
CIRCUIT BAR CATALOG	999
PROPORTIONAL VALVE CATALOG	999
SERIAL INTERFACE PRODUCTS	999
MACONNECT SYSTEM	CO
NEW TECHNOLOGY	999

ATALOG NUMBER

999CBCA 999PPCB 9999SI CONSULT FACTORY 999NTCB



Section 1 Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Individual	mounting			
			inline	inline hazardous location	sub-base non "plug-in"	sub-base "plug-in"	valve only
3/2 - 2/2	1/8″	0.17 Cv	P. 15				
3/2 - 2/2	# 10-32 - 1/8"	0.16 Cv					
3/2 - 2/2	# 10-32 - 1/8"	0.10 Cv					
3/2 - 2/2	1/8" - 1/4"	0.18 Cv	P. 25				
3/2 - 2/2	1/8″	0.14 Cv					
3/2 - 2/2	1/8" - 1/4"	0.5 Cv	P. 33	P. 35			
3/2 - 2/2	1/4″	0.4 Cv					
3/2 - 2/2	1/4" - 3/8"	2.2 Cv	P. 47				
3/2 - 2/2	3/8" - 1/2" - 3/4"	5.7 Cv	P. 5 I				
3/2 - 2/2	1/2" - 3/4" - 1"	17.4 Cv	P. 55				
3/2 - 2/2	1" - 1 1/4" - 1 1/2"	26.0 Cv	P. 59				
3/2 - 2/2	2" - 2 1/2"	60.0 Cv	P. 63				
4/2	# 10-32 - 1/8"	0.15 Cv	P. 67				
4/2	# 10-32 - 1/8"	0.13 Cv			P. 69		
4/2	# 10-32 - 1/8"	0.20 Cv					
4/2	# 10-32 - 1/8"	0.11 Cv					
4/2	# 10-32 - 1/8" 5/32 Pressed-in tube receptacles	0.11 Cv					
4/2	1/8" - 1/4"	0.7 Cv	P. 89				
4/2	1/8" - 1/4"	0.8 Cv					
4/2	1/8" - 1/4"	1.2 Cv	P. 95				
4/2	1/8" - 1/4" - 3/8"	1.4 Cv					
4/2 - 4/3	1/8" - 1/4" - 3/8"	1.35 Cv			P. 101	P. 103	
4/2 - 4/3	1/4" - 3/8"	1.35 Cv					
4/2 - 4/3	1/4" - 3/8" - 1/2"	3.0 Cv			P.111	P. 113	
4/2 - 4/3	3/8" - 1/2"	3.0 Cv					
4/2 - 4/3	3/8" - 1/2" - 3/4"	5.1 Cv			P. 121	P. 123	
4/2 - 4/3	3/4" - 1"	9.6 Cv			P. 131	P. 133	
4/2 - 4/3	3/4" - 1" - 1 1/4"	9.6 Cv					
4/2 - 4/3	3/4" - 1" - 1 1/4" - 1 1/2"	15.9 Cv				P. 141	
5/2 - 5/3	1/4″	1.4 Cv	P. 145				
5/2 - 5/3	1/4" - 3/8"	1.4 Cv					
5/2 - 5/3	1/4" - 3/8"	1.6 Cv					P. 159
5/2 - 5/3	3/8" - 1/2"	3.0 Cv					P. 163
5/2 - 5/3	1/2" - 3/4"	6.3 Cv					P. 167
5/2 - 5/3	1/4" - 3/8"	2.5 Cv					P. 171
5/2 - 5/3	1/2" - 3/4" - 1"	7.0 Cv					P. 175
5/2 - 5/3	1" - 1 1/4"	11.2 Cv					P. 179

stacking	sub-base non "plug-in"	sub-base with pressure regulators	sub-base hazardous	sub-base with pressure regulators and flow controls	sub-base "plug-in"	sub-base "plug-in" with pressure regulator	sub-base "plug-in" with flow	sub-base "plug-in" with regulator and flow controls	stacking body with 1 common port (inlet)	stacking body with 3 common ports	stacking body with 3 common ports and integral F.C.	stacking body with 3 common ports with common conduit	stacking body with 3 common ports with C. C. & integral exh. F. C.	, valve only	
•	"plug-in"	regulators	location	and flow controls	piog-in	regulator	controls	and flow controls	(inlet)	ports (inlet & exhausts)	and integral F.C.	with common conduit	integral exh. F. C.		
P. 17	P. 19	P.21	i ———		·	·					·				35
P. 27	1.17	1. 21				·									
	P. 29														100
	P. 37		P. 43												
		P. 39-41		·											200
							- <u> </u>								55
															56
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															58
					·										59
					·				·		·				
P.71									·						45
[. /]	P. 73	P. 75	i ———	P. 77	I										45
		1			P. 79	P.81	P. 83	P. 85	í ———						
P. 91				·											700
															900
P. 97															900
	DIOE				P 107	ı ——									82
	P. 105				P. 107	I									
	P.115				P.117	I			·						6300
	P. 125				P. 127	í ———									6500
	P. 135				P. 137										6600
				·											1300
									P. 147						
										P. 149	P. 151	P. 153	P. 155		800
														P. 159	ISO 1
														P. 163	ISO 2
														P. 167	ISO 3
							,							P. 171	MAC 12
														P. 175 P. 179	MAC 25



Individual mounting Series inline 35 Manifold mounting sub-base with pressure regulators sub stackina n "plug 100 200 55 56 57 58 59 2 **Manual operator** 45 Armature Epoxy encapsulated solenoid Push pin Spring biased moveable pole piece 700 Bonded balanced poppet 900 Spring return 82 6300 **SERIES FEATURES** 6500 • Patented MACSOLENOID[®] for fastest possible response times. 6600 • 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 1300 normally closed and may be used for vacuum, divertor, or selector applications. • Extremely high cycle rate capability. 800 • Use on lube or non-lube service. • Manual overrides as standard. **ISO 1** • Various solenoid enclosures and plug-in connectors. **ISO 2** • Optional surge suppression (M.O.V. or Diode) available. ISO 3 • Low wattage DC solenoids — down to 1.8 watts. • Pattended MACSOLENOID[®] — virtually burn-out proof on AC service. **MAC 125A**

MAC 250A MAC 500A





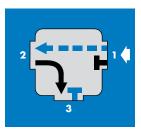
VALVE CONFIGURATIONS AVAILABLE :

The 35 Series is a miniature 3 way or 2 way valve.

This valve provides extremely fast response, long life and high flow in a surprisingly small package.

- Individual, stacking body or manifold base.
- 3 way–Normally Open or Normally Closed.
- 2 way-Normally Open or Normally Closed.
- Optional Normally Closed Only Models.
- Selectors & Divertors.

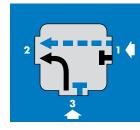
PIPING CHART FOR INDIVIDUAL MODELS



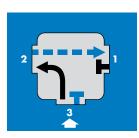
3 Way Normally Closed



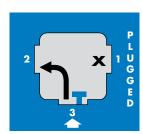
2 Way Normally Closed



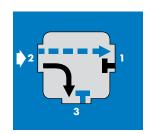
Selector



3 Way Normally Open



2 Way Normally Open



Divertor



© O Series 35	Direct s	olenoid and	solenoid pilot operal	ted valves
Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-N	NC 1/8″	0.17 C _v	inline	
 OPERATIONAL BENEFITS 1. Balanced poppet, immune to pressure. 2. Short stroke with high flow. 3. The patented solenoid development forces. 4. Powerful return spring. 5. Manual operator standard of 6. Burn-out proof solenoid on A 	r. elops high shifting on all valves.			35 100 200 55 56 57
HOW TO OKDER Port siz	ze	Universal valve	NC only valve	58
1/8" NP SOLENOID OPERATOR >	·	2 1 35A-AAA-DXXX-XXX D XX X- X X T T T		59
XX Voltage AA 120/60, 110/50 AB 240/60, 220/50 AC 24/60, 24/50 FB 24 VDC (1.8 W) DA 24 VDC (5.4 W)	A 18″	ire length X	Manual operator XX Non-locking KA Square connector Locking KD Square connector w JB Rectangular connector JD Rectangular connector BA Flying leads	or
 DF 24 VDC (12.7 W) Other options available, see OPTIONS 	 æ раде 361.			82
35A-CAX-Dxxx-xxx	10.00 se tria hardai	1 r 1		6300
└─── - WITN (∠ <i>)</i> #	# 10-32 ports in backsic	le of valve		6500
				6600
				1300
				800
		15	Consult "Precautions" page 364 before use, installation or ser	ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A MAC 500A





Fluid :	Compressed air, vacu	um, inert gases	
Pressure range :	Vacuum to 120 PSI		
Lubrication :	Not required, if used	select a medium aniline p	point lubricant (between 180°F and 210°F)
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C t	o 50°C)	
Flow (at 6 bar, ΔP=1bar) :	1.8 W : 0.08 C _v , 5.4	W : 0.15 C _v	
Coil :	General purpose class	A, continuous duty, enco	apsulated
Voltage range :	-15% to +10% of nom	inal voltage	
Protection :	Consult factory		
Power:	~ Inrush : 10.9 VA	Holding : 7.7 VA	
	= 1.8 to 12.7 W		
Response times :	24 VDC (5.4 W)	Energize : 6 ms	De-energize : 2 ms
	120/60	Energize : 3-8 ms	De-energize : 2-7 ms

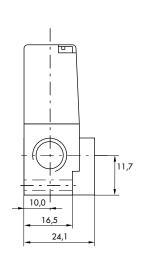
Options :

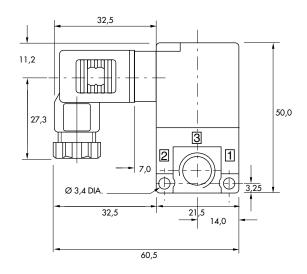
•-Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013. • Seal (between solenoid and valve body) : 16402.

 \bullet BSPP threads. \bullet High flow up to 0.25 $C_{v^{\prime}}$ according to wattage and high flow mod.

DIMENSIONS

Dimensions shown are metric (mm)





® Older D O D D O D D D D D D D D D D	irect sole	noid and solen	oid pilot operat	ed valves
Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC, 2/2 NO-NC	# 10-32, 1/8″	0.16 C _v	stacking	
OPERATIONAL BENEFITS 1. Balanced poppet, immune to vario pressure. 2. Short stroke with high flow. 3. The patented solenoid develops hi forces. 4. Powerful return spring. 5. Manual operator standard on all v 6. Burn-out proof solenoid on AC ser	high shifting valves.			35 100 200 55 56
HOW TO ORDER Port size		NC only valve	NO only valve	57
FOLI 3176		NC Only Valve	CYL	59
1/8" NPTF # 10-32 UNF SOLENOID OPERATOR >		Jimesen 35A-SAC-Dxxx-xxx 35A-SBC-Dxxx-xxx D xx x-x xx*	35A-SAD-DXXX-XXX 35A-SBD-DXXX-XXX	45
XX Voltage AA 120/60, 110/50	X Wire leng A 18" (Flying lec	-	erator XX KA Square connector	700
AB 240/60, 220/50 AC 24/60, 24/50 FB 24 VDC (1.8 W)	J Connector	2 Locking	KD Square connector with BA Flying leads	th light 900
DA 24 VDC (5.4 W) DF 24 VDC (12.7 W) Other options available, see page	 			82
nd plate kit required (Port size : 1/4 Note : upon request, manifolds are n	/4") : M-35001-01			6300
OPTIONS	nounieu ur me ruciory.			6500
35A-TXX-Dxxx-xxx - Bottom Inlet				6600
				1300
				800
		17		ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A MAC 500A





TECHNICAL DATA			
Fluid :	Compressed air, vacuum, ir	nert gases	
Pressure range :	Vacuum to 120 PSI		
Lubrication :	Not required, if used select	t a medium aniline p	oint lubricant (between 180°F and 210°F)
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to 50°	C)	
Flow (at 6 bar, $\Delta P=1 bar)$:	1.8 W : 0.12 C _v , 5.4 to12.	7 W : 0.16 C _v	
Coil :	General purpose class A, c	ontinuous duty, enca	psulated
Voltage range :	-15% to +10% of nominal v	oltage	
Protection :	Consult factory		
Power :	~ Inrush : 10.9 VA H	olding : 7.7 VA	
	= 1.8 to 12.7 W		
Response times :	24 VDC (5.4 W) E	nergize : 6 ms	De-energize : 2 ms
	120/60 E	nergize : 3-8 ms	De-energize : 2-7 ms

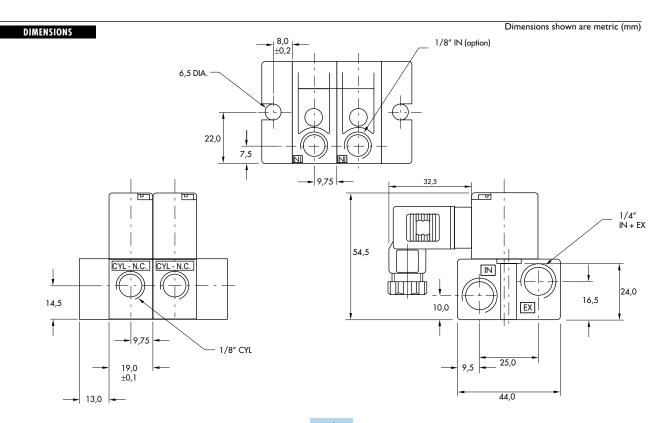
•-Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.

• Seal (between solenoid and valve body) : 16402. • Pressure seal (between valves) : 16433.

• Tie-rod (x2) : 19813. • Inlet isolator : N-35002. • Exhaust isolator : N-35003. • Inlet & Exhaust isolator : N-35001.

Options :

 \bullet BSPP threads. \bullet High flow up to 0.25 $C_{v\prime}$ according to wattage and high flow mod.



H	irec† so	lenoid and sol	lenoid pilot opera	ied valves
Series 35 Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC, 2/2 NO-NC	# 10-32, 1/8"		sub-base non "plug-in"	
 OPERATIONAL BENEFITS 1. Balanced poppet, immune to vari pressure. 2. Short stroke with high flow. 3. The patented solenoid develops h forces. 4. Powerful return spring. 5. Manual operator standard on all 6. Burn-out proof solenoid on AC se 	high shifting Valves.			35 100 200
how to order SIDE CYLINDER PORTS				55 56 57 58
Port size		Norm. closed Manifold base	Norm. open Manifold base	59
Valve less base (universal) # 10-32 UNF base 1/8" NPTF base	<u> </u>	35A-BAE-DXXX-XXX 35A-BAE-DXXX-XXX	Image: Constraint of the second sec	45
BOTTOM CYLINDER PORTS Port size		Norm. closed Manifold base	Norm. open Manifold base	700
				900
Valve less base (universal) # 10-32 UNF base 1/8" NPTF base	·	35A-B00-D xxx-xxx 35A-BGE-D xxx-xxx 35A-BFE-D xxx-xxx	35A-B00-Dxxx-xxx 35A-BGF-Dxxx-xxx 35A-BFF-Dxxx-xxx	82
SOLENOID OPERATOR >		D <u>xx x- x xx</u> .		6300
XX Voltage	X Wire	length X Manu	ual operator XX	6500
AA 120/60, 110/50 AB 240/60, 220/50 AC 24/60, 24/50		ring leads) 1 Non-loc	cking KA Square connector	r with light 1300
FB 24 VDC (1.8 W) DA 24 VDC (5.4 W) DF 24 VDC (12.7 W)				800
 Other options available, see page End plate kit required (Port size : 1/ Note : upon request, manifolds are a OPTIONS 	/4") : M-35003-01			ISO 1 ISO 2 ISO 3
35A-EXX-Dxxx-xxx - N.C. only valve	e 35A-FXX-Dx	xxx-xxx 35A - universal w/gage port	-OXX - no valve body (base only)	MAC 125A MAC 250A MAC 500A
		19	Consult "Precautions" page 364 before use, installation or	





TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar$) :	1.8 W : 0.09 C _v , 5.4 to 12.7 W : 0.1 C _v
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power :	~ Inrush : 10.9 VA Holding : 7.7 VA
	= 1.8 to 12.7 W
Response times :	24 VDC (5.4 W) Energize : 6 ms De-energize : 2 ms
	120/60 Energize : 3-8 ms De-energize : 2-7 ms

•-Solenoid operator (power \ge 5.4 W) : DXXX-XXX, including mounting screws 35013.

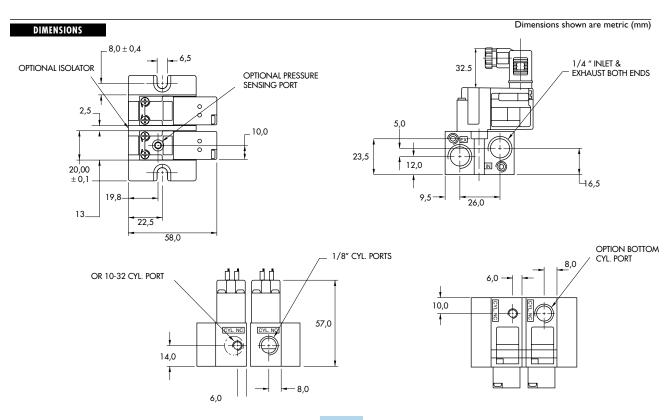
• Seal (between solenoid and valve body) : 16402. • Pressure seal (between valve and base) : 16447.

• Pressure seal (between bases) : 16461. • Tie-rod (x2) : 19753. • Inlet isolator : N-35007. • Exhaust isolator : N-35008.

• Inlet & Exhaust isolator : N-35006.

Options :

• BSPP threads. • High flow up to 0.18 Cv, according to wattage and high flow mod.



© Contraction of the series 35	Direct	solenoid a	nd solend	oid pilot o	perated valves
Function	Port size	Flow (Max)		Manifold mounting	Series
3/2 NO-NC, 2/2 NO-NC	# 10-32,	1/8" 0.10 C _v		sub-base with pressure regulators	
OPERATIONAL BENEFITS 1. Balanced poppet, immune to v pressure. 2. Short stroke with high flow. 3. The patented solenoid develop forces. 4. Powerful return spring. 5. Manual operator standard on 4 6. Burn-out proof solenoid on AC HOW TO ORDER SIDE CYLINDER PORTS	os high shifting all valves.				35 100 200 55 56 57 58
SIDE CYLINDER PORTS Port size		Norm. cle		Norm. op	en 59
Valve less base (univers # 10-32 UNF base 1/8" NPTF base	al)	Manifold C S S S S S S S S S S S S S		Manifold b CYI S5A-B00-DXX 35A-BBK-DXX 35A-BAK-DXX	т. хн х-ххх 45 х-ххх
BOTTOM CYLINDER PORTS	5	Normal	•	Marrie	700
Port size		Norm. cle Manifold	base	Norm. op Manifold b	ase
	••				м 900 хн
Valve less base (universe # 10-32 UNF base 1/8" NPTF base			хх-ххх	35A-B00-Dxx 35A-BGK-Dxx 35A-BFK-Dxx	x-xxx 82
SOLENOID OPERATOR >		D XX X	- X XX*		6300
		T	Ţ		6500
XX Voltage		Wire length	X Manual oper 1 Non-locking		e connector 6600
AA 120/60, 110/50 AB 240/60, 220/50 AC 24/60, 24/50	A J	18" (Flying leads) Connector	1Non-locking2Locking		e connector with light
FB 24 VDC (1.8 W) DA 24 VDC (5.4 W) DF 24 VDC (12.7 W)					800
* Other options available, see p End plate kit required (Port size : Note : upon request, manifolds a OPTIONS 35A-EXX-Dxxx-xxx - N.C. only var	1/4") : M-35003-C re mounted at the fo 35A		35A-OXX	no valve body (base w/re	ISO 1 ISO 2 ISO 3 MAC 125A
		2	1	Consult "Precautions" page 364 before us	a installation or convice of MAC Values





TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 μ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar)$:	1.8 W : 0.09 C _v , 5.4 to 12.7 W : 0.1 C _v
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power :	~ Inrush : 10.9 VA Holding : 7.7 VA
	= 1.8 to 12.7 W
Response times :	24 VDC (5.4 W) Energize : 6 ms De-energize : 2 ms
	120/60 Energize : 3-8 ms De-energize : 2-7 ms

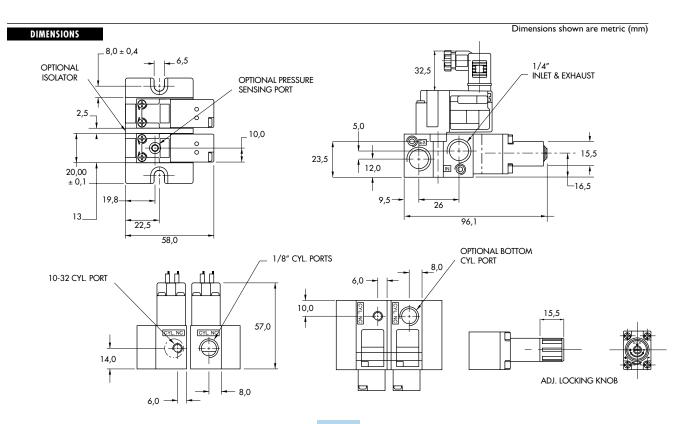
•-Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.

• Seal (between solenoid and valve body) : 16402. • Pressure seal (between valve and base) : 16447.

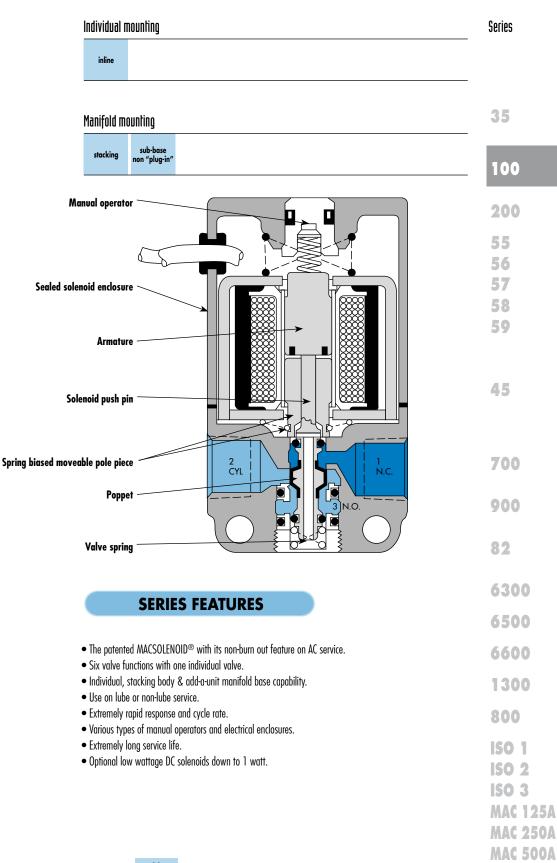
Pressure seal (between bases) : 16461.
Tie-rod (x2) : 19753.
Inlet isolator : N-35007.
Exhaust isolator : N-35006.
Pressure regulator : 35A-00M (ADJ, KNOB) - 35A-00L (SLOTTED STEM).

Options :

• BSPP threads. • High flow up to 0.18 Cv, according to wattage and high flow mod.











APPLICATION CONVERSION PROCEDURE:

INDIVIDUAL MODELS

The balanced poppet design facilitates using the same valve for 6 functions with any port being connected to vacuum, pressure or plugged. Piping is shown in the chart below.

STACKING BODY MODELS

The interchangeable function plate between the valve bodies permits selection of either 3-way Normally Closed or 3-way Normally Open operation.

MANIFOLD BASE MODELS

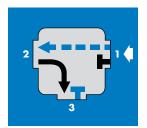
The interchangeable function plate between the valve bodies and base permits selection for 2- or 3-way, Normally Closed or Normally Open operation. On 3-way applications, one

function plate is used for both N.C. and N.O. When "3-NC" is visible on the plate, the function will be N.C. When "3-NO" is visible, the function is N.O. On 2-way applications, two separate plates are used-one for N.C., marked "2-NC"; the other for N.O., marked "2-NO". The 2-way plates block the exhaust at the valve, permitting the mixing in a stack of 3-ways and 2-ways. Changes within a stack from one function to another can be made without disturbing the plumbing.

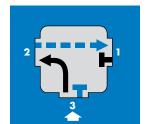
N.C. ONLY MODELS

A single purpose Normally Closed Only model is available for those applications where a greater tolerance for heavy concentrations of water, compressor products and other air line contaminants is desired.

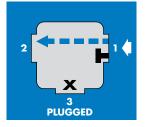
PIPING CHART FOR INDIVIDUAL MODELS



3 Way Normally Closed



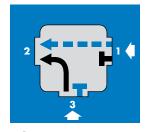
3 Way Normally Open



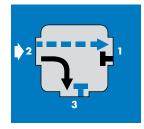
2 Way Normally Closed

2 Way

Normally Open



Selector



Divertor



Operator Energized 🔳 💻 💻 📫

© Series 100	Direct sole	enoidandso	lenoid pilot opera	ted valves
Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-NC	1/8" - 1/4"	0.18 C _v	inline	
 OPERATIONAL BENEFITS 1. Balanced poppet, immune to v pressure. 2. Short stroke with high flow. 3. The patented solenoid develop forces. 4. Powerful return spring. 5. Manual operator standard on 6. Burn-out proof solenoid on AC 	ps high shifting all valves.			35 100 200 55 56 57
HOW TO ORDER Port size		Universal valve		57
Port Size		Universal valve	NC only valve	59
		ww.		
1/8″ NPTF		1 3 111B- XXYZZ	1 3 161B-XXYZZ	
1/4" NPTF	i	113B- XXYZZ	163B- XXYZZ	45
SOLENOID OPERATOR >		<u>XX Y ZZ</u> [·]		
XX Voltage	Ŷ	Manual operator	ZZ Electrical connection	700
11 120/60, 110/50 12 240/60, 220/50	<u> </u>	Non-locking Locking	JB Rectangular connector JD Rectangular connector with light	
22 24/60, 24/50 59 24 VDC (2.5 W)			JA Square connector JC Square connector with light	900
87 24 VDC (17.1 W) 61 24 VDC (8.5 W)			BA Flying leads (18") CA Conduit 1/2" NPS	
* Other options available, see p	 page 357.			82
Notes: CHANGING FROM NORMALLY	CLOSED TO NORMALLY OPEN			6300
NORMALLY CLOSED ONLY MOI	DDELS	normally open by connecting the i	inlet to port 3 instead of port 1. tolerance for heavy concentrations of water,	6500
		hose applications where a greater t Model numbers are indicated abo		6600
				1300
				800
				ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A

MAC 500A





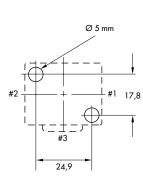
ompressed air, vacuu	m, inert gases	
acuum to 150 PSI		
lot required, if used s	select a medium aniline p	oint lubricant (between 180°F and 210°F)
0 µ		
°F to 140°F (-18°C to	o 60°C)	
.18 C _v		
eneral purpose class	A, continuous duty, enca	psulated
15% to +10% of nomi	nal voltage	
onsult factory		
Inrush : 14.8 VA	Holding : 10.9 VA	
1 to 17 W		
4 VDC (8.5 W)	Energize : 7 ms	De-energize : 2 ms
20/60	Energize : 3-8 ms	De-energize : 2-7 ms
	acuum to 150 PSI ot required, if used 0 µ F to 140°F (-18°C to 18 C _v eneral purpose class 5% to +10% of nomi onsult factory Inrush : 14.8 VA 1 to 17 W 4 VDC (8.5 W)	acuum to 150 PSI ot required, if used select a medium aniline p 0 µ F to 140°F (-18°C to 60°C) 18 C _v eneral purpose class A, continuous duty, enca 5% to +10% of nominal voltage onsult factory Inrush : 14.8 VA Holding : 10.9 VA 1 to 17 W 4 VDC (8.5 W) Energize : 7 ms

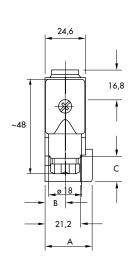
• Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 32184 and seal 16234.

Options :

• BSPP threads.

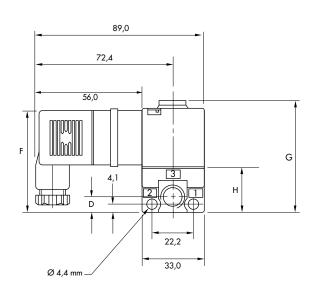
DIMENSIONS





1/8″	28.4	12.7	14.0	8.0	40.1	64.9	60.1	23.2
1/4″	29.8	13.3	12.7	9.9	40.9	65.8	60.9	24.1

Dimensions shown are metric (mm)



Consult "Precautions" page 364 before use, installation or service of MAC Valves

© Output Series 100	Direct sol	enoid and so	lenoid pilot operate	d valves
Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC, 2/2 NO	D-NC 1/8" - 1/4"	0.18 C _v	stacking	
 OPERATIONAL BENEFITS 1. Balanced poppet, immun pressure. 2. Short stroke with high flor 3. The patented solenoid de forces. 4. Powerful return spring. 5. Manual operator standar 6. Burn-out proof solenoid of 	ow. levelops high shifting ard on all valves.			35 100 200 55 56 57
Port :	size	Universal valve	NC only valve	58
				59
1/8″ 1/4″		181B- XXYZZ 183B- XXYZZ	184B-XXYZZ 185B-XXYZZ	45
SOLENOID OPERATOR		<u>XX Y ZZ</u> ⁺		
XX Voltage	Y	Manual operator	ZZ Electrical connection	700
11 120/60, 110/50 12 240/60, 220/50 22 24/60, 24/50		Non-locking Locking	JB Rectangular connector JD Rectangular connector with light RA Elving land (19")	
22 24/60, 24/50 59 24 VDC (2.5 W) 87 24 VDC (17.1 W)			BA Flying leads (18") MB Common conduit 1" NPS	900
61 24 VDC (8.5 W)				
* Other options available,				82
End plate kit required (Port "MB" option also requires e				6300
Notes: CHANGING FROM NORM	MALLY CLOSED TO NORMALLY OPE	ENI		6500
			lve body assembly. This determines whether the	6600
NORMALLY CLOSED ONLY A single purpose Normally	Closed only model is available for t		olerance for heavy concentrations of water,	1300
compressor products and ot	ther air line contaminants is desired.	d. Model numbers are indicated abov	re.	800
				ovv
				ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A

MAC 500A





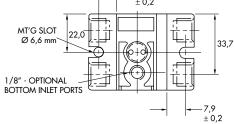
TECHNICAL DATA			
Fluid :	Compressed air, vacu	um, inert gases	
Pressure range :	Vacuum to 150 PSI		
Lubrication :	Not required, if used	select a medium aniline p	oint lubricant (between 180°F and 210°F)
Filtration :	40 µ		
Temperature range :	0°F to 140°F (-18°C to	o 60°C)	
Flow (at 6 bar, ΔP=1bar) :	0.18 C _v		
Coil :	General purpose class	A, continuous duty, enca	psulated
Voltage range :	-15% to +10% of nom	inal voltage	
Protection :	Consult factory		
Power :	~ Inrush 14.8 VA	Holding : 10.9 VA	
	DC : 1 to 17.1 W		
Response times :	24 VDC (8.5 W)	Energize : 7 ms	De-energize : 2 ms
	120/60	Energize : 3-8 ms	De-energize : 2-7 ms

Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
Function plate : N-01002. • Tie-rod (x2) : 19674. • Inlet isolator plate : N01003. • Exhaust isolator plate : N01004.

Options :

• BSPP threads. • Bottom inlet (Mod. 0210).

DIMENSIONS 56,0 16,8 ~48,0 64,2 N 27,4 +17,0 EXH 10,4 Î ø 18,0 5,2 ±0,2 25,4 13,0 12,7 24,8 ± 0,1 1/4" INLET & EXHAUST PORTS EACH END 44,0 CYL. PORT 1/8" OR 1/4" - 8,2 ± 0,2



Dimensions shown are metric (mm)

Series 100			lenoid pilot operated	
Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC, 2/2 NO-NC	1/8″	0.14 C _v	sub-base non "plug-in"	
 OPERATIONAL BENEFITS 1. Balanced poppet, immune to var pressure. 2. Short stroke with high flow. 3. The patented solenoid develops forces. 4. Powerful return spring. 5. Manual operator standard on al 6. Burn-out proof solenoid on AC so 	high shifting Il valves.			35 100 200 55 56 57
Port size		Universal valve	NC only valve	58
Valve less base 1/8″ base NPTF SOLENOID OPERATOR ≻		2 130B-XXYZZ 132B-XXYZZ XX Y ZZ*	2 170B-XXYZZ 172B-XXYZZ	59 45
XX Voltage 11 120/60, 110/50 12 240/60, 220/50 22 24/60, 24/50 59 24 VDC (2.5 W) 87 24 VDC (17.1 W)		Manual operator Non-locking Locking	ZZ Electrical connection JB Rectangular connector JD Rectangular connector with light BA Flying leads (18") MA Common conduit 1" NPS RA Conduit 3/8" NPS	700 900
61 24 VDC (8.5 W) * Other options available, see page	ge 357.			82
End plate kit required (Port size : 1 "MA" option also requires end plat				6300
OPTIONS				6500
12XB- xxyzz 2-way N.C.				6600
14XB-xxyzz 2-way N.O.				1300
102				800
N.O.), one plate for 2 Way N.C. o NORMALLY CLOSED ONLY MODE	a plate is provided betwe and one for 2 Way N.O. ELS I only model is available f	een the valve and the base. Three plates Appropriate plates, determined by the or those applications where a greater to	s are available; a reversible plate for 3 Way valves (N.C. & valve model number, are supplied automatically with the valve. plerance for heavy concentrations of water, compressor	ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A

MAC 500A





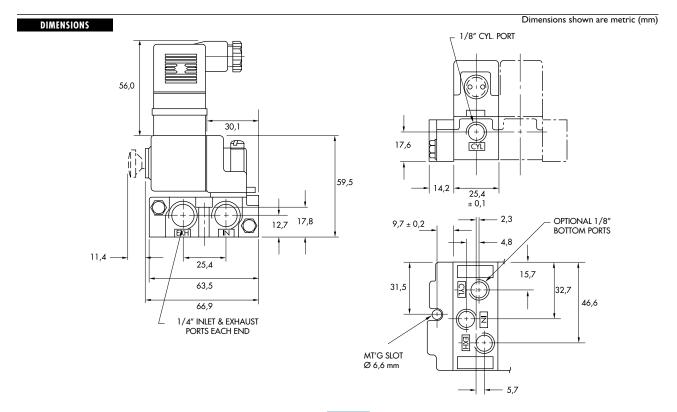
TECHNICAL DATA			
Fluid :	Compressed air, vacu	um, inert gases	
Pressure range :	Vacuum to 150 PSI		
Lubrication :	Not required, if used	select a medium aniline p	point lubricant (between 180°F and 210°F)
Filtration :	40 µ		
Temperature range :	0°F to 140°F (-18°C to	o 60°C)	
Flow (at 6 bar, $\Delta P=1 bar)$:	0.14 C _v		
Coil :	General purpose class	A, continuous duty, enco	ıpsulated
Voltage range :	-15% to +10% of nom	inal voltage	
Protection :	Consult factory		
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA	
	= 1 to 17 W		
Response times :	24 VDC (8.5 W)	Energize : 7 ms	De-energize : 2 ms
	120/60	Energize : 3-8 ms	De-energize : 2-7 ms

- Spare parts :
- Options :

Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 32184 and seal 16234.
Function plate : A2-7009.
Seal between manifold bases : 16226.
Tie-rod (x2) : 19546.

- BSPP threads. Isolation of inlet : Mod. 313P. Isolation of exhaust : Mod. 313E. Additional bottom inlet : Mod. 0210.
- Bottom cyl. port : Mod. 0009. All bottom & side ports : Mod. 0004.
- Note :

• Specify mod. number after valve model number (i.e. 132B-111BA Mod. 0210)





Individual mountino Series inline inline hazardous location 35 Manifold mounting sub-base sub-base sub-l azardous location with pressure regulators n "plug 100 200 **Manual operator** 55 56 57 Sealed solenoid enclosure 58 59 Armature 45 Solenoid push pin 700 Spring biased moveable pole piece 900 **Balanced poppet** 82 Valve spring 6300 **SERIES FEATURES** 6500 • The patented MACSOLENOID® with its non-burn out feature on AC service. 6600 • Six valve functions with one Inline valve and four valve functions with one Manifold valve. • A triple rated coil for 120/60, 110/50 or 24 VDC (6 Watt). 1300 • Inline & add-a-unit manifold capability. • Use on lube or non-lube service. 800 • Extremely rapid response and cycle rate. • Various types of manual operators and electrical enclosures. **ISO 1** • Extremely long service life. **ISO 2** • Optional low wattage DC solenoids down to 1 watt. ISO 3 **MAC 125A MAC 250A MAC 500A**





APPLICATION CONVERSION PROCEDURE:

INDIVIDUAL MODELS

The balanced poppet design facilitates using the same valve for 6 functions with any port being connected to vacuum, pressure or plugged. Piping is shown in the chart below.

MANIFOLD MODELS

The interchangeable function plate between the valve body and base permits selection for 2- or 3-way, Normally Closed or Normally Open operation, instead of through piping as shown below in the Inlines. On 3-way applications, one function plate is used for both N.C. and N.O. When "3-C" is visible on the plate, the function will be N.C. When "3-0" is visible, the function is N.O. On 2-way applications, a separate plate is used and like the 3-way plate is marked "2-C" for N.C. and "2-0" on the other side for N.O. The 2-way plates block the exhaust at the valve, permitting the mixing in a stack of

PIPING CHART FOR INDIVIDUAL MODELS

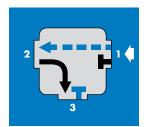
3-ways and 2-ways. Changes within a stack from one function to another can be made without disturbing the plumbing.

SPECIAL APPLICATIONS: N.C. ONLY MODELS

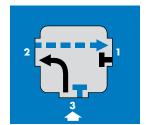
A single purpose Normally Closed Only model is available for those applications where a greater tolerance for heavy concentrations of water, compressor products and other air line contaminants is desired.

EXPLOSION PROOF MODELS

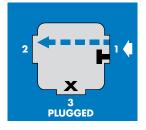
These models are designed to meet C.S.A. standards for Division 1, Class I, Groups B, C, D and Class II, Groups E, F and G (NEMA equivalent to Class I is NEMA 7; Class II is NEMA 9). Explosion proof models are available in either inline or manifold versions but only with the no operator ("O") manual operator.



3 Way Normally Closed



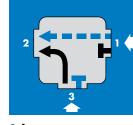
3 Way Normally Open



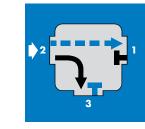
2 Way Normally Closed

2 Way

Normally Open



Selector



Divertor



Operator Energized 🗖 🗖 🗖 🛑

© Classifier 200	irect sol	enoid and so	lenoid pilot operato	ed valves
Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-NC	1/8″ - 1/4″	0.5 C _v	inline	
 OPERATIONAL BENEFITS Balanced poppet, immune to varie pressure. Short stroke with high flow. The patented solenoid develops h forces. Powerful return spring. Manual operator standard on all Burn-out proof solenoid on AC ser 	high shifting valves.			35 100 200
HOW TO ORDER			CPI é	55 56 57
Port size		Universal valve	NC only valve	58 59
1/8″ NPTF		224B- XXYZZ	274B-xxyzz 275B-xxyzz	
1/4" NPTF SOLENOID OPERATOR ➤		225B-XXYZZ XX Y ZZ *		45
XX Voltage	Y	Manual operator	ZZ Electrical connection	700
11 120/60, 110/50, 24 VDC	C (6.0 W)	Non-locking	JA Square connector	700
12 240/60, 220/50 22 24/60, 24/50 52 24 VDC (2.5 W) 78 24 VDC (24.0 W) 61 24 VDC (8.5 W)	2	Locking	JC Square connector with light BA Flying leads (18") CA Conduit 1/2" NPS	900
Other options available, see page	је 357.			82
Notes: CHANGING FROM NORMALLY CLU			Luc and Oliver and affirmed 1	6300
NORMALLY CLOSED ONLY MODEL	ELS	to normally open by connecting the ir	niet to port 3 instead of port 1.	6500
ompressor products and other air l	line contaminants is desired	d. Model numbers are indicated abov	/e.	6600
				1300
				800
				ISO 1 ISO 2 ISO 3 MAC 125A

MAC 250A MAC 500A





TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 140°F (-18°C to 60°C)
Flow (at 6 bar, ΔP=1bar) :	0.5 C _v
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power :	~ Inrush : 33 VA Holding : 19.7 VA
	= 1 to 24 W
Response times :	24 VDC (8.5 W) Energize : 15 ms De-energize : 5 ms
	120/60 Energize : 3-8 ms De-energize : 3-13 ms
Response times :	

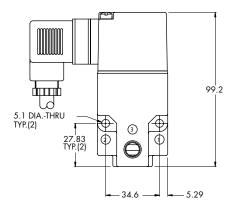
•-Solenoid operator (power ≥ 6 W) : D4-XXAAB, cover mounting screws 32222 and seal B5-6001.

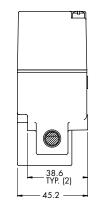
Options :

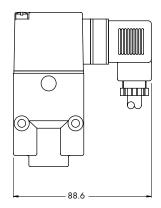
BSPP threads.

DIMENSIONS

Dimensions shown are metric (mm)







Series 200	lirect sole	noid and sole	noid pilot operat	ed valves
Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-NC	1/8" - 1/4"	0.5 C _v	inline hazardous location	
 OPERATIONAL BENEFITS Balanced poppet, immune to var pressure. Short stroke with high flow. The patented solenoid develops b forces. Powerful return spring. 	high shifting			35 100
5. Burn-out proof solenoid on AC se	ervice.			200 55
				56
HOW TO ORDER				57
HOW TO ORDER Port size		Universal valve	NC only valve	
Port size		Universal value $\mu = \int_{T} \int_{T} \int_{T} \int_{T} \int_{T} W$	NC only value $\frac{2}{1 - \frac{1}{1 - \frac{1}{3}}}$	57 58
Port size		$\begin{array}{c} 2 \\ 1 \\ 224B \\ \hline xxoea \end{array}$	274B-XX0EA	57 58 59
Port size				57 58
Port size 1/8" NPTF 1/4" NPTF SOLENOID OPERATOR > XX Voltage 11 120/60, 110/50, 24 VDC		224B-XX0EA 225B-XX0EA	274B-XX0EA	57 58 59
Port size 1/8" NPTF 1/4" NPTF SOLENOID OPERATOR ➤ XX Voltage 11 120/60, 20/50 22 24/60, 24/50 50 24 VDC (6.0 W) 55		224B-XX0EA 225B-XX0EA	274B-XX0EA	57 58 59 45
Port size 1/8" NPTF 1/4" NPTF SOLENOID OPERATOR ➤ XX Voltage 11 120/60, 110/50, 24 VDC 12 240/60, 220/50 22 24/60, 220/50 50 24 VDC (6.0 W)	C (6.0 W)	224B-XX0EA 225B-XX0EA	274B-XX0EA	57 58 59 45 700
Notes: The special version of the 200 Serie	es designed for hazardous loc ent temperature is 40°C; maxi	224B-XX0EA 225B-XX0EA 225B-XX0EA	Class I, Groups B, C & D; Class II, Groups E, F &	57 58 59 45 700 900
Port size 1/8" NPTF 1/4" NPTF SOLENOID OPERATOR ➤ XX Voltage 11 120/60, 110/50, 24 VDC 12 240/60, 220/50 22 24/60, 24/50 50 24 VDC (6.0 W) 55 12 VDC (6.0 W) 60 12 VDC (9.5 W) 61 24 VDC (8.5 W) Notes: The special version of the 200 Serie G. Maximum rated fluid and ambie Approval is limited to certain comm These valves are supplied without m	es designed for hazardous loc ent temperature is 40°C; maxi non AC & DC voltages which o manual operators. This version	224B-XX0EA 225B-XX0EA 225B-XX0EA XX XX Cations has been approved by CSA for C imum pressure is 150 p.s.i. are those designated in the table above.	Class I, Groups B, C & D; Class II, Groups E, F & . he standard individual inline or the manifold	57 58 59 45 700 900 82
Port size 1/8" NPTF 1/4" NPTF SOLENOID OPERATOR ➤ XX Voltage 11 120/60, 110/50, 24 VDC 12 240/60, 220/50 22 24/60, 24/50 50 24 VDC (6.0 W) 55 12 VDC (6.0 W) 60 12 VDC (9.5 W) 61 24 VDC (8.5 W) Notes: The special version of the 200 Serie G. Maximum rated fluid and ambie Approval is limited to certain comm These valves are supplied without m	es designed for hazardous loc ent temperature is 40°C; maxi non AC & DC voltages which a manual operators. This version be supplied as a pilot for the s	224B- <i>XX0EA</i> 225B- <i>XX0A</i> 225B- <i></i>	Class I, Groups B, C & D; Class II, Groups E, F & . he standard individual inline or the manifold	57 58 59 45 700 900 82 6300

A single purpose Normally Closed only model is available for those applications where a greater tolerance for heavy concentrations of water, compressor products and other air line contaminants is desired. Model numbers are indicated above.

800

ISO 1





TECHNICAL DATA					
Fluid :	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 150 PSI				
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)				
Filtration :	40 µ				
Temperature range :	0°F to 140°F (-18°C to 60°C)				
Flow (at 6 bar, ΔP=1bar) :	0.5 C _v				
Coil :	General purpose class A, continuous duty, encapsulated				
Voltage range :	-15% to +10% of nominal voltage				
Protection :	Consult factory				
Power :	~ Inrush : 33 VA Holding : 19.7 VA				
	= 1 to 24 W				
Response times :	24 VDC (8.5 W) Energize : 15 ms De-energize : 5 ms				
	120/60 Energize : 3-8 ms De-energize : 3-13 ms				
Response times :					

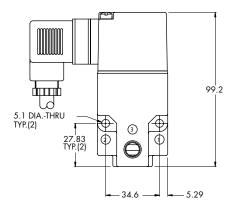
•-Solenoid operator (power ≥ 6 W) : D4-XXAAB, cover mounting screws 32222 and seal B5-6001.

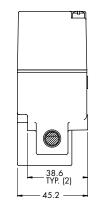
Options :

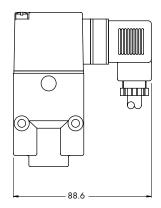
BSPP threads.

DIMENSIONS

Dimensions shown are metric (mm)







© Series 200	Direct sol	lenoid and so	lenoid pilot operat	ed valves
Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC, 2/2 NO-	NC 1/8" - 1/4"	0.5 C _v	sub-base non "plug-in"	
 OPERATIONAL BENEFITS 1. Balanced poppet, immune pressure. 2. Short stroke with high flow 3. The patented solenoid dev forces. 4. Powerful return spring. 	۷.			35 100
 Manual operator standard Burn-out proof solenoid or 				200 55 56
HOW TO ORDER				57
Port size		Universal valve	NC only valve	58
Valve less base		250B-XXYZZ	280B-XXYZZ	
1/8" base NPTF 1/4" base NPTF		256B- XXYZZ 257B- XXYZZ	286B-XXYZZ 287B-XXYZZ	45
SOLENOID OPERATOR	►		2070-74122	
XX Voltage 11 120/60, 110/50, 12 240/60, 220/50 22 24/60, 24/50	24 VDC (6.0 W) 1 22 VDC (6.0 W)	Non-locking	ZZ Electrical connection JC Square connector with light JA Square connector BA Flying leads (18")	900
52 24 VDC (2.5 W) 78 24 VDC (24.0 W) 61 24 VDC (8.5 W)			CA Conduit 1/2" NPS	82
 Other options available, s 	6300			
End plate kit required (Port si	6500			
26XB-xxyzz 206 207 - universal 2-way (Base only - 1/8") (Base only - 1/4")				6600
	2-wdy (D	ase only - 17 o j	(base only - 1/4)	1300
		PEN		800
CHANGING FROM NORMALLY CLOSED TO NORMALLY OPEN For manifold base mounted valves a plate is provided between the valve and the base. Three plates are available; a reversible plate for 3 Way valves (N.C. & N.O.), one plate for 2 Way N.C. and one for 2 Way N.O. Appropriate plates, determined by the valve model number, are supplied automatically with the valve. NORMALLY CLOSED ONLY MODELS A single purpose Normally Closed only model is available for those applications where a greater tolerance for heavy concentrations of water, compressor products and other air line contaminants is desired. Model numbers are indicated above.				

MAC 500A





Fluid :	Compressed air, vacu	uum, inert gases	
Pressure range :	Vacuum to 150 PSI		
Lubrication :	Not required, if used	select a medium aniline p	point lubricant (between 180°F and 210°F)
Filtration :	40 µ		
Temperature range :	0°F to 140°F (-18°C	to 60°C)	
Flow (at 6 bar, ΔP=1bar) :	0.5 C _v		
Coil :	General purpose clas	ss A, continuous duty, enco	ipsulated
Voltage range :	-15% to +10% of nor	ninal voltage	
Protection :	Consult factory		
Power :	~ Inrush : 33 VA	Holding : 19.7 VA	
	= 1 to 24 W		
Response times :	24 VDC (8.5 W)	Energize : 15 ms	De-energize : 5 ms
	120/60	Energize : 3-8 ms	De-energize : 3-13 ms

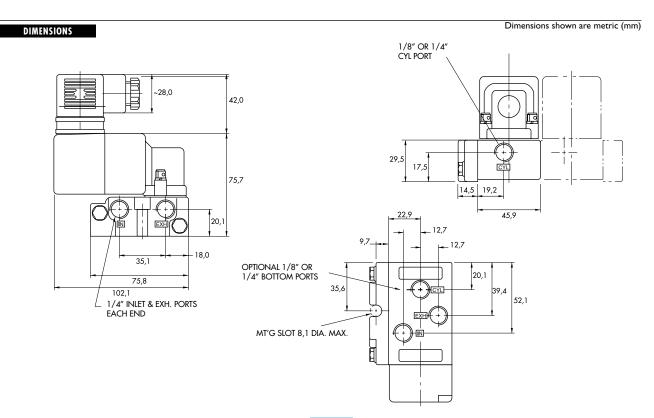
Options :

• BSPP threads. • Explosion-proof model. • Isolation of inlet : Mod. 313P. • Isolation of exhaust : Mod. 313E.

• Additional bottom inlet : Mod. 0210. • Bottom cyl. port : Mod. 0009. • All bottom & side ports : Mod. 0004.

Note :

• Specify Mod. number after valve model number (i.e. 257B-111BA Mod. 0210)



Beries 200	irect so	lenoid and so	lenoid pilot operated	valves
Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC, 2/2 NO-NC	1/4″	0.4 C _v	sub-base with pressure regulators	
OPERATIONAL BENEFITS 1. Balanced poppet, immune to varic pressure. 2. Short stroke with high flow. 3. The patented solenoid develops hi				35
forces. 4. Powerful return spring. 5. Manual operator standard on all v 6. Burn-out proof solenoid on AC ser 7. Individual pressure control to each	valves. vice.			100 200
port. HOW TO ORDER				55 56 57
Port size		Universal valve	NC only valve	58
				59
Valve less base		250B- XXYZZ	280B- XXYZZ	
1/4" base NPTF		252B-xxyzz	282B-xxyzz	45
XX Voltage 11 120/60, 110/50, 24 VDC	(6.0 W)	Y Manual operator Non-locking	ZZ Electrical connection JA Square connector	700
12 240/60, 220/50 22 24/60, 24/50 52 24 VDC (2.5 W) 78 24 VDC (24.0 W)		2 Locking	JC Square connector with light BA Flying leads (18") CA Conduit 1/2" NPS	900
61 24 VDC (8.5 W) Other options available, see page	e 357.			82
Nanifold fastening kit required : N-0	02003			6300
10DEL 2528-	In this version		ich individual valve in the stack. This common pressure passes	6500
3-Way N.C. or N.O. 6 2B- 2-Way N.C. or N.O.	plate to the	Normally Closed or Normally Open pop	ame base as the valve and is supplied through the function opet position. Through use of the appropriate function plate on rmally Closed Or Normally Open, 3-way or 2-way except for	6600
82B- 3-Way N.C. only	282B mode		exhaust ("out") port is common. Operation of the valves then	1000

282B-3-Way N.C. only

800

1300

- **ISO 1**
- ISO 2
- **ISO 3**
- MAC 125A
- **MAC 250A**

opens or closes the cylinder port (See schematic diagram next page).





Fluid :	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 150 PSI				
Lubrication :	Not required, if used	select a medium aniline p	oint lubricant (between 180°F and 210°F)		
Filtration :	40 µ				
Temperature range :	0°F to 140°F (-18°C	to 60°C)			
Flow (at 6 bar, $\Delta P=1 bar$) :	0.4 C _v				
Coil :	General purpose clas	ss A, continuous duty, enca	psulated		
Voltage range :	-15% to +10% of nor	ninal voltage			
Protection :	Consult factory				
Power :	~ Inrush : 33 VA	Holding : 19.7 VA			
	= 1 to 24 W				
Response times :	24 VDC (8.5 W)	Energize : 15 ms	De-energize : 5 ms		
	120/60	Energize : 3-8 ms	De-energize : 3-13 ms		

•-Solenoid operator (power \ge 6 W) : D4-XXAAB, cover mounting screws 32222 and seal B5-6001.

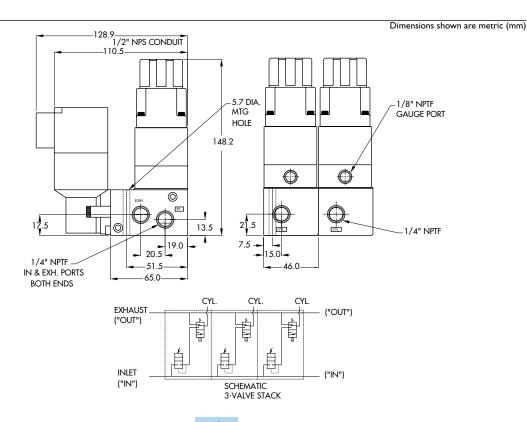
• Function plate : A2-7005. • Seal between bases (x2) : 17016-01. • Tie-rod (x2) : B4-9004. • Pressure regulator : PR02A-A0AA.

Options :

 \bullet BSPP threads. \bullet Explosion-proof model. \bullet Isolation of inlet and/or exhaust.

• Mod. PR80 (0-80 pressure range), Mod PR30 (0-30 pressure range)

DIMENSIONS





Function	Inlet & outlet port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC, 2/2 NO-NC	1/4″	0.4 C _v	sub-base with pressure regulators	
OPERATIONAL BENEFITS 1. Balanced poppet, immune to vario pressure. 2. Short stroke with high flow.				35
 The patented solenoid develops hi forces. Powerful return spring. Manual operator standard on all v 	valves.			100
 Burn-out proof solenoid on AC ser Selected pressure control to a sing 			0	200
			· · · · · ·	55 56
HOW TO ORDER				57
P	Port size		NC only valve	58
				59
	Valve		251B- xxyzz	AE
SOLENOID OPERATOR >		<u>xx y zz</u> `		45
XX Voltage 11 120/60, 110/50, 24 VDC 12 240/60, 220/50 22 24/60, 24/50	2 (6.0 W)	Manual operator Non-locking Locking	ZZ Electrical connection JA Square connector JC Square connector with light BA Flying leads (18")	700
22 24/00, 24/30 52 24 VDC (2.5 W) 78 24 VDC (24.0 W) 61 24 VDC (8.5 W)			CA Conduit 1/2" NPS	900
* Other options available, see page	∍ 357.			82
Manifold fastening kit required : N-C MODEL 251B-	SELECTED PRESSUR	RE CONTROL TO A SINGLE OL		6300
3-Way Normally Closed	all valves de-energi: valves and out the c	This version permits the alternate selection of any of the regulated pressures in the stack to one common outlet. With all valves de-energized the regulated pressure supplied to the Normally Open pressure port passes through the valves and out the corresponding port at the other end of the stack (Common Outlet Port). Pressure supplied to the common inlet port is regulated at each valve and blocked by the poppet of each valve. When a valve is shifted in the stack the Normally Open pressure is blocked and the regulated normally closed pressure of that valve is open to the common outlet. If two valves are energized at the same time the pressure at the common outlet would be that of		6500
	the stack the Norma			6600
	the energized valve common outlet. The	nearest the outlet. If the normal individual cylinder port in each	Illy open pressure port is not used it is open to exhaust from the h base is non-operative. (See schematic diagram next page).	1300
				800
				ISO 1
				ISO 2

- 150 2
- MAC 125A
- MAC 250A





id :	Compressed air, vacu	uum, inert gases	
ressure range :	Vacuum to 150 PSI		
ubrication :	Not required, if used	select a medium aniline p	point lubricant (between 180°F and 210°F)
iltration :	40 µ		
lemperature range :	0°F to 140°F (-18°C	to 60°C)	
Flow (at 6 bar, ΔP=1bar) :	0.4 C _v		
Coil :	General purpose clas	ss A, continuous duty, encc	ipsulated
Voltage range :	-15% to +10% of nor	ninal voltage	
Protection :	Consult factory		
ower :	~ Inrush : 33 VA	Holding : 19.7 VA	
	= 1 to 24 W		
Response times :	24 VDC (8.5 W)	Energize : 15 ms	De-energize : 5 ms
	120/60	Energize : 3-8 ms	De-energize : 3-13 ms

•-Solenoid operator (power \ge 6 W) : D4-XXAAB, cover mounting screws 32222 and seal B5-6001.

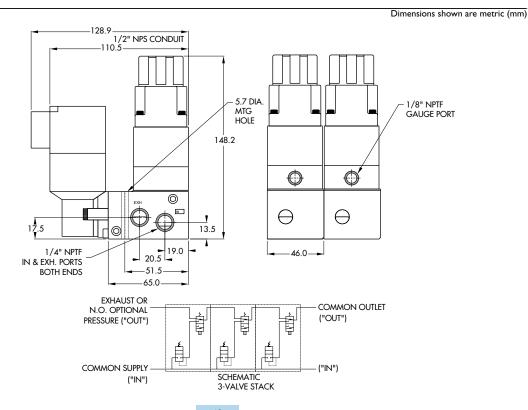
• Function plate : A2-7005. • Seal between bases (x2) : 17016-01. • Tie-rod (x2) : B4-9004. • Pressure regulator : PR02A-A0AA.

Options :

• BSPP threads. • Explosion-proof model. • Isolation of inlet and/or exhaust.

• Mod. PR80 (0-80 pressure range), Mod PR30 (0-30 pressure range)

DIMENSIONS



OPERATIONAL BENEFITS	.,		location	
3/2 NO-NC, 2/2 NO-NC	1/8″ - 1/4″	0.5 C _v	sub-base hazardous	
Function	Port size	Floш (Max)	Manifold mounting	Series
Beries 200	Direct s	olenoid and	solenoid pilot	operated valv

- 1. Balanced poppet, immune to variations of pressure.
- 2. Short stroke with high flow.
- 3. The patented solenoid develops high shifting forces.
- 4. Powerful return spring.
- 5. Burn-out proof solenoid on AC service.

HOW TO ORDER			57
Port size	Universal valve	NC only valve	58 50
			97
Valve less base	250B- XX0EA	280B- XX0EA	
1/8" base NPTF	258B- XX0EA	288B- XX0EA	45
1/4" base NPTF	259B- XX0EA	289B- XX0EA	

XX

X Voltage	
120/60, 110/50, 24 VI	C (6.0 W)
240/60, 220/50	
24/60, 24/50	
24 VDC (6.0 W)	
12 VDC (6.0 W)	
12 VDC (9.5 W)	
24 VDC (8.5 W)	
	(
te kit required (Port size :	/4″) : A2-5003-

2 <u>6</u> ХВ- ххоеа	208	209	6500
- universal 2-way	(Base only - 1/8")	(Base only - 1/4")	6600

Notes:

 The special version of the 200 Series designed for hazardous locations has been approved by CSA for Class I, Groups B, C & D; Class II, Groups E, F & G.
 1300

 Maximum rated fluid and ambient temperature is 40°C; maximum pressure is 150 p.s.i.
 1300

 Approval is limited to certain common AC & DC voltages which are those designated in the table above.
 1800

 These valves are supplied without manual operators. This version of the 200 Series can be supplied on the standard individual inline or the manifold valve body assemblies. It can also be supplied as a pilot for the 57, 58 and 59 Series (with special adapter plate # M-00012).
 800

 CHANGING FROM NORMALLY CLOSED TO NORMALLY OPEN
 ISO 1

For manifold base mounted values a plate is provided between the value and the base. Three plates are available; a reversible plate for 3 Way values (N.C. & N.O.), one plate for 2 Way N.C and one for 2 Way N.O. Appropriate plates, determined by the value model number, are supplied automatically with the value. NORMALLY CLOSED ONLY MODELS

A single purpose Normally Closed only model is available for those applications where a greater tolerance for heavy concentrations of water, compressor products and other air line contaminants is desired. Model numbers are indicated above.

ISO 2

ISO 3

e s

35

100

200

55 56

MAC 125A MAC 250A MAC 500A





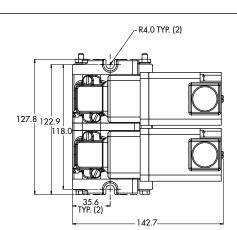
luid :	Compressed air, vacu	uum, inert gases	
Pressure range :	Vacuum to 150 PSI		
Lubrication :	Not required, if used	select a medium aniline p	oint lubricant (between 180°F and 210°F)
Filtration :	40 µ		
Temperature range :	0°F to 140°F (-18°C	to 60°C)	
Flow (at 6 bar, ΔP=1bar) :	0.5 C _v		
Coil :	General purpose clas	ss A, continuous duty, enco	psulated
Voltage range :	-15% to +10% of nor	ninal voltage	
Protection :	Consult factory		
Power :	~ Inrush : 33 VA	Holding : 19.7 VA	
	= 1 to 24 W		
Response times :	24 VDC (8.5 W)	Energize : 15 ms	De-energize : 5 ms
	120/60	Energize : 3-8 ms	De-energize : 3-13 ms

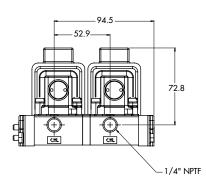
Spare parts : Options :

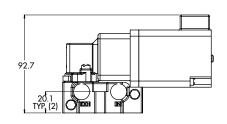
• Tie-rod (x2) : 19598.

• BSPP threads. • Isolation of inlet : Mod. 313P. • Isolation of exhaust : Mod. 313E. • Additional bottom inlet : Mod 0210.

DIMENSIONS







Dimensions shown are metric (mm)





Precision

Individual mounting	Series
	35
Manual operator Sealed solenoid enclosure	100
Ext. pilot port Pilot housing Pilot cartridge Pilot cartridge Pilot cartridge Pilot cartridge	200 55 56 57 58 59
Accumulator a ground molded, balanced spool Normally closed main spool shown	45 700 900
Air/spring return	82
SERIES FEATURES	6300 6500
• The patented MACSOLENOID® with its non-burn out feature on AC service.	6600
 Balanced spool unaffected by back pressure in the exhaust or by inlet restrictions. May be plugged for 2-way operation. 	1300
 A large checked accumulator which supplies the pilot and air/spring return for consistent shifting. Use on lube or non-lube service. 	800
 Extremely rapid response and cycle rate. Various types of manual operators and solenoid enclosures. Optional low wattage DC solenoids down to 1 watt. 	ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A MAC 500A





- 3-Way Normally Open or Normally Closed (solenoid or remote air).
- 2-Way (by plugging a port) Normally Open or Normally Closed (solenoid or remote air).
- Internal pilot or External pilot for vacuum to 30 PSI main valve pressures on solenoid or 25 on remote air operated models. Manual and mechanical operators available.

SERIES FEATURES-REMOTE AIR PILOT OPERATED VALVES

These air versions feature:

- A large checked accumulator for air/spring return.
- Balanced spool unaffected by back pressure in the exhaust or by inlet restrictions. May be plugged for 2-way operation.
- Use on lube or non-lube service.

SERIES FEATURES-REMOTE AIR PILOT, PILOT OPERATED VALVES

These special air versions have the same features as the remote air pilot operated models, but additionally feature:

- Ability to use a pilot signal pressure different from the main valve pressure. Pilot signal can be from 30 to 150 PSI, regardless of main valve pressure.
- A manual operator and position indicator standard.

SPECIAL APPLICATIONS:

- VACUUM APPLICATIONS: Connect the vacuum source to port #3 with port #1 open to atmosphere, and use external pilot on solenoid pilot operated models. On remote air pilot models, use -RE.
- SELECTOR APPLICATIONS: Pipe higher pressure to port #1 and lower pressure to port #3.
- INTERNAL PILOT: Use for main valve pressure of 30 to 150 PSI on all models. Includes ball check in the body and an M5x0.8 plug installed in the external pilot port.
- EXTERNAL PILOT: An external pilot supply is required when main valve pressures are lower than 30 psi on solenoid pilot or 25 psi on remote air pilot operated models. To convert from internal to external pilot on solenoid models simply rotate pilot housing 180 degrees and connect external pilot source. (Use either M5 or#10-32 fitting.) On remote air pilot models, specify -RE.

Series 5 5				lot operate	
inction	Port size	Flow (Max)	Individual mou	nring	Series
/2 NO-NC, 2/2 NO-NC	1/4" - 3/8"	2.2 C _v	inline		
ERATIONAL BENEFITS Balanced spool, immune to vari pressure. Short stroke with high flow. The piston (booster) provides ma	8. Pilot valv short and	effect eliminates sticking. re with balanced poppet, hig d consistent response times.	h flow,		35
shifting forces. Checked accumulator guarantee pilot pressure.	es maximum		9		100
Powerful return force thanks to t combination of mechanical and Bonded spool with minimum fric	d air springs.				200
in a glass-like finished bore.	· -				55
HOW TO ORDER					56 57
Port size	Pilot a	ir	NC valve	NO valve	58
					59
1/4″ NPTF	Interna		55B-11-PI-XXYZZ	55B-21-PI-XXYZZ	
3/8" NPTF	Interna	·	55B-12-PI-XXYZZ	55B-22-PI-XXYZZ	45
1/4" NPTF	Externa		55B-11-PE-XXYZZ	55B-21-PE- XXYZZ	
3/8" NPTF			55B-12-PE- XXYZZ	55B-22-PE- XXYZZ	
LENOID OPERATOR >		<u>XX Y ZZ</u> [•]			700
XX Voltage	Y	Manual operator	ZZ Ele	ectrical connection	
11 120/60, 110/50 12 240/60, 220/50		Non-locking Locking		tangular connector tangular connector with light	900
22 24/60, 24/50 59 24 VDC (2.5 W)		`	JA Squ	are connector are connector with light	
39 24 VDC (2.5 W) 87 24 VDC (17.1 W) 61 24 VDC (8.5 W)			BA Flyi	ng leads (18") nduit 1/2" NPS	82
Other options available, see pa	ge 357.				6300
					6500
					6600
					1300
					800
					ISO 1
					ISO 2
					ISO 3
					MAC 125
					MAC 250
					MAC 250

MAC 500A





Fluid :	Compressed air, vacu	um, inert gases					
Pressure range :	Internal pilot : 30 to 1	Internal pilot : 30 to 150 PSI					
	External pilot : vacuur	n to 150 PSI					
Pilot pressure :	30 to 150 PSI						
Lubrication :	Not required, if used	select a medium aniline p	point lubricant (between 180°F and 210°F)				
Filtration :	40 µ	40 μ					
Temperature range :	0°F to 120°F (-18°C t	0°F to 120°F (-18°C to 50°C)					
Flow (at 6 bar, ΔP=1bar) :	Norm. Closed :1/4" (1.4 C _v), 3/8″ (1.6 C _v), N	lorm. Open : 1/4″ (1.8 C _v), 3/8″ (2.2 C _v)				
Coil :	General purpose class	s A, continuous duty, enca	ıpsulated				
Voltage range :	-15% to +10% of nom	inal voltage					
Protection :	Consult factory						
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA					
	= 1 to 17 W						
Response times :	24 VDC (8.5 W)	Energize : 9 ms	De-energize : 4.8 ms				
	120/60	Energize : 5-11 ms	De-energize : 5-11 ms				

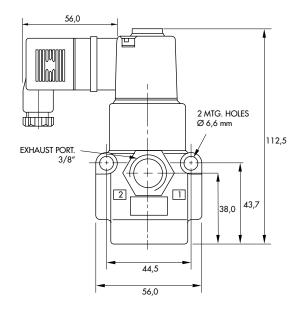
Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
 Pilot valve : PID-XXYZZ, including mounting screws 35214 and seal 16363.

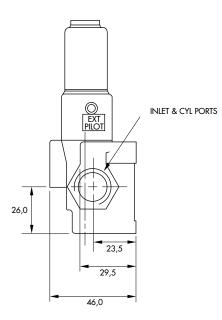
Options :

• BSPP threads.

DIMENSIONS

Dimensions shown are metric (mm)







Individual mounting Series inline 35 100 200 55 56 **Pilot valve** 57 **Function plate** Check valve 58 Ext. pilot port 59 From accumulator Pilot exhaust or remote air pilot port 45 **One piece** body FXH 3 700 **Precision ground** 900 molded, balanced Air/spring return spool To accumulator Internal pilot supply 82 6300 **SERIES FEATURES** 6500 • The patented MACSOLENOID® with its non-burn out feature on AC service. 6600 • Seven valve functions in one valve. • Balanced spool unaffected by back pressure in the exhaust or by inlet restrictions. 1300 May be plugged for 2-way operation. • A large checked accumulator which supplies the pilot and air/spring return for consistent shifting. 800 • Use on lube or non-lube service. • Various types of manual operators and solenoid enclosures. **ISO 1** • Optional low wattage DC solenoids down to 1 watt. **ISO 2 ISO 3 MAC 125A**

MAC 250A

Series 56	



- 3-Way Normally Open or Normally Closed (solenoid or remote air).
- 2-Way (by plugging a port) Normally Open or Normally Closed (solenoid or remote air).
- Internal pilot or External pilot for vacuum to 25 PSI main valve pressures on solenoid or remote air models.
- Manual and mechanical operators available.

SERIES FEATURES-REMOTE AIR PILOT OPERATED VALVES

These remote air versions feature:

- A large checked accumulator for air/spring return.
- Balanced spool unaffected by back pressure in the exhaust or by inlet restrictions. May be plugged for 2-way operation.
- Use on lube or non-lube service.
- Optional remote air pilot, pilot operated models available when application requires a pilot signal below the main valve pressure.

APPLICATION CONVERSION PROCEDURE

The balanced spool design and the unique N.C. and N.O. pilot valve function plate on solenoid models facilitate using the same valve for 7 different functions. The 7 functions are as follows:

- 3-way Normally Closed-All 3 main valve ports utilized and function plate placed with "3N.C." (3-way N.C.) visible.
- 3-way Normally Open-All 3 main valve ports utilized and function plate placed with "3N. O." (3-way N.O.) visible.

- 2-way Normally Closed-Same as 3-way N.C. but also plug port #3.
- 2-way Normally Open-Same as 3-way N.O. but also plug port #3.
- Selector-Pipe higher pressure to port #1 and lower pressure port #3.
- Internal Pilot-Utilized for main valve pressures of 25-150 PSI. Includes a check rod in the body and a 1/8'' pipe plug installed in the External Pilot port.
- External Pilot-An External Pilot supply is required when main valve pressures are lower than 25 PSI. If converting from an Internal Pilot model, remove the 1/8" pipe plug and check rod from the External Pilot port and install a 1/16" pipe plug in the check rod hole and pipe an external supply greater than 25 PSI to the External Pilot port. For vacuum service, make the vacuum connection to the port #3 and leave port #1 open to atmosphere or pressure port #1 for vacuum/pressure selector applications.

N.C.-N.O. OPERATIONS: SOLENOID MODELS:

With the pilot valve available either N.C. or N.O., simply by inverting the function plate, maximum flexibility is available in solenoid pilot operated models by using the N.C. main spool and installing the function plate for either N.C. or N.O. operation. Where an N.C. pilot function is desired with a N.O. main valve operation, a N.O. main spool option is available. **REMOTE AIR MODELS:**

On remote air pilot operated models, N.C. and N.O. main spools are both available so that a N.C. pilot signal can always be used.

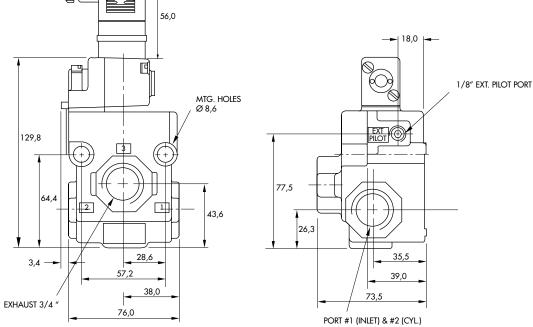
© Ogeneration Series 56	Dir	ect solenoid	and solen(oid p	ilot operated	Valves
Function	Po	ort size Flow (Ma	[XL	Individual m	nounting	Series
3/2 NO-NC, 2/2 NO	D-NC 3,	2/8" - 1/2" - 3/4" 5.7 C _v	,	inline		
OPERATIONAL BENEFITS 1. Balanced spool, immune pressure. 2. Short stroke with high flo	low.	 8. Pilot valve with balanced short and consistent response 	l poppet, high flow,			35
 Large spool area provide forces. Checked accumulator gu pilot pressure. Powerful return force that 	guarantees maxin	-				100
 Powerful return force that combination of mechan Bonded spool with minir 	nical and air spri					200
in a glass-like finished b		anng			-10	55 56
HOW TO ORDER					CO Line.	50 57
Port size	Pilot air	NC only valve			y valve	58
		NC pilot - NC spool	NO pilot - NC spo		NC pilot - NO spool	59
3/8" NPTF	–	56C-12-XXYZZ	56C-22-XXYZZ		56C-62-XXYZZ	
1/2" NPTF	Internal	56C-13-XXYZZ	56C-23-XXYZZ		56C-63-XXYZZ	45
3/4" NPTF 3/8" NPTF		56C-17- XXYZZ 56C-32- XXYZZ	56C-27-XXYZZ 56C-42-XXYZZ		<u>56C-67-xxyzz</u> 56C-72-xxyzz	
3/8" NPTF 1/2" NPTF	 External	56C-32-XXYZZ 56C-33-XXYZZ	56C-42-XXYZZ		<u>56C-72-XXYZZ</u> 56C-73-XXYZZ	—
3/4" NPTF		56C-37-XXYZZ	56C-43-XXYZZ		56C-77- XXYZZ	_
SOLENOID OPERATO			Y_ZZ *			700
			ŢŢ			900
XX Voltage		Y Manual ope	erator	ZZ	Electrical connection	
11 120/60, 110/50	50	1 Non-locking		JB F	Rectangular connector	0.0
12 240/60, 220/50	50	2 Locking	·	JD F	Rectangular connector with light	82
22 24/60, 24/50 59 24 VDC (2.5 W)	/)		-		Square connector Square connector with light	_
87 24 VDC (17.1 W	W)		-	BA F	Flying leads (18″)	6300
61 24 VDC (8.5 W) Other options available,		,	-	CA (Conduit 1/2" NPS	6500
Other ophons available,	, see page 50, .					
						6600
						1300
						800

ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A MAC 500A



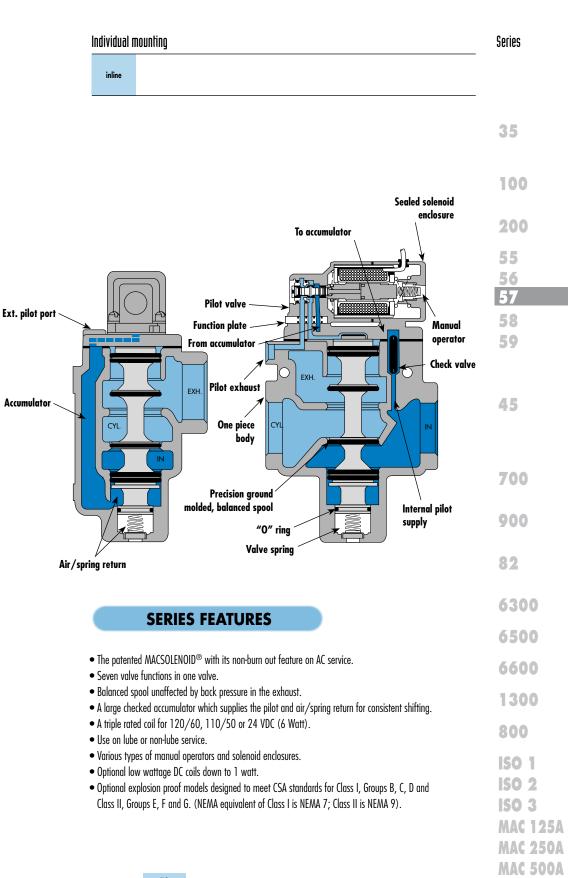


Fluid :	Compressed air, vacu	um, inert gases					
Pressure range :	Internal pilot : 25 to 1	Internal pilot : 25 to 150 PSI					
	External pilot : vacuun	n to 1 <i>5</i> 0 PSI					
Pilot pressure :	25 to 150 PSI						
Lubrication :	Not required, if used	select a medium aniline p	oint lubricant (between 180°F and 210°F)				
Filtration :	40 µ						
Temperature range :	0°F to 120°F (-18°C to	50°C)					
Flow (at 6 bar, ΔP=1bar) :	Norm. Closed :3/8" (4	4.4 C _v), 1/2″ (5.0 C _v), 3,	/4" (5.4 C _v), Norm. Open : 3/8" (4.6 C _v), 1/2" (5.1 C _v), 3/4" (5.7 C _v)				
Coil :	General purpose class	A, continuous duty, enca	psulated				
Voltage range :	-15% to +10% of nom	inal voltage					
Protection :	Consult factory						
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA					
	= 1 to 17 W						
Response times :	24 VDC (8.5 W)	Energize : 11 ms	De-energize : 10,8ms				
	120/60	Energize : 7-12 ms	De-energize : 9-14 ms				
Spare parts :		XYZZ, including function	A, cover mounting screws 32184 and seal 16234. a plate A2-7009. • Pilot mounting screws kit : N-56002.				
Options :	• BSPP threads.						
DIMENSIONS			Dimensions shown are metric (mm)				
	ŧ	56,0					



Direct solenoid and solenoid pilot operated valves





©	
Series 57	



- 3-Way Normally Open or Normally Closed (solenoid or remote air).
- 2-Way (by plugging Exhaust port), Normally Open or Normally Closed (solenoid or remote air).
- Internal pilot or External pilot for vacuum to 25 PSI main valve pressures on solenoid models.
- Manual and mechanical operators available.

SERIES FEATURES-REMOTE AIR PILOT OPERATED VALVES

The remote air versions feature:

- A large checked accumulator for air/spring return.
- Balanced spool unaffected by back pressure in the exhaust and may be plugged for 2-way operation.
- Use on lube or non-lube service.

APPLICATION CONVERSION PROCEDURE

The balanced spool design and the unique N.C. and N.O. pilot valve function plate on solenoid models facilitate using the same valve for 7 different functions. The 7 functions are as follows:

The / functions are as follows:

- 3-way Normally Closed-All 3 main valve ports utilized and function plate placed with "3-C" (3-way N.C.) visible.
- 3-way Normally Open-All 3 main valve ports utilized and function plate placed with "3-0" (3-way N.O.) visible.
- 2-way Normally Closed-Same as 3-way N.C. but also plug the Exhaust port.

- 2-way Normally Open-Same as 3-way N.O. but also plug the Exhaust port.
- Selector-Pipe higher pressure to the Inlet port and lower pressure to the Exhaust port.
- Internal Pilot-Utilized for main valve pressures of 25-150 PSI. Includes a check rod in the body and a 1/4" pipe plug installed in the External Pilot port.
- External Pilot-An External Pilot supply is required when main valve pressures are lower than 25 PSI. If converting from an Internal Pilot model, remove the 1/4" pipe plug and check rod from the External Pilot port and install a 1/8" pipe plug in the check rod hole and pipe an external supply greater than 25 PSI to the External Pilot port. For vacuum service, make the vacuum connection to the Exhaust port and leave the Inlet port open to atmosphere.

N.C.-N.O. OPERATIONS:

SOLENOID MODELS:

With the pilot valve available either N.C. or N.O., simply by inverting the function plate, maximum flexibility is available in solenoid pilot operated models by using the N.C. main spool and installing the function plate for either N.C. or N.O. operation. Where an N.C. pilot function is desired with a N.O. main valve operation, a N.O. main spool option is available.

REMOTE AIR MODELS:

On remote air pilot operated models, N.C. and N.O. main spools are both available so that a N.C. pilot signal can always be used.

Series 57		ect surenutu rtsize Flow (M		pilot operated	v a l v e s Series
			-	uar moonning	JUI105
2 NO-NC, 2/2 N	0-NC 1/	/2" - 3/4" - 1" 17.4	C _v inlin	10	
RATIONAL BENEFITS Balanced spool, immur pressure. Short stroke with high f	flow.	 8. Pilot valve with balance short and consistent response of the second s	d poppet, high flow,		35
arge spool area provi orces. Checked accumulator g ilot pressure.	guarantees maxin	-		a la	100
owerful return force the combination of mecha conded spool with min	inical and air spri			5 10	200
n a glass-like finished				25-1	55
HOW TO ORDER				The second secon	56 57
Port size	Pilot air	NC only valve	NO) only valve	58
		NC pilot - NC spool	NO pilot - NC spool	NC pilot - NO spool	59
					_
1/2" NPTF		57D-11- XXYZZ 57D-12- XXYZZ	57D-21- XXYZZ 57D-22- XXYZZ	57D-61- xxyzz 57D-62- xxyzz	45
3/4" NPTF	Internal	57D-12-XXYZZ			- 40
1/2" NPTF		57D-31-xxyzz	57D-41-xxyzz	57D-71- xxyzz	-
3/4" NPTF	External	57D-32- xxyzz	57D-42-xxyzz	57D-72- xxyzz	-
1″ NPTF		57D-33- XXYZZ	57D-43- XXYZZ	57D-73- xxyzz	- 700
LENOID OPERATO	OR ►	<u></u>	(<u>Y ZZ</u> '		
					900
XX Voltage 11 120/60, 110/	50, 24 VDC (6.0 W	Y Manual of V) 0 No operator	perator ZZ JA		
12 240/60, 220/	50	1 Non-locking	JC	Square connector with light	82
22 24/60, 24/50 52 24 VDC (2.5 V	V)	2 Locking	<u>BA</u>	, , ,	_
78 24 VDC (24.0 61 24 VDC (8.5 V	W)		EA		6300
Other options available					6500
e : Hazardous locatio	n option supplied	with no manual operator ("0"). DC	voltage not available below 6 Watts.		6600
					1300
					800
					ISO 1 ISO 2 ISO 3 MAC 125/ MAC 250



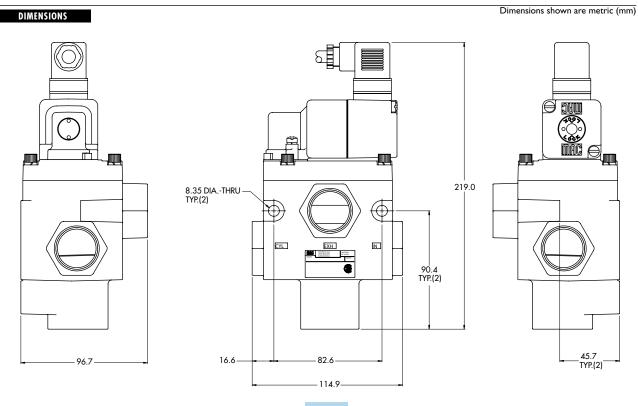


d :	Compressed air, vacu	uum, inert gases			
essure range :	Internal pilot : 25 to	1 <i>5</i> 0 PSI			
	External pilot : vacuu	m to 150 PSI			
lot pressure :	25 to 150 PSI (Not to	o exceed main valve pressu	re by more than 50 PSI)		
brication :	Not required, if used	select a medium aniline p	oint lubricant (between 180°F and 210°F)		
tration :	40 µ				
mperature range :	0°F to 120°F (-18°C	to 50°C)			
ow (at 6 bar, ΔP=1bar) :	Norm. Closed :1/2" (9.0 C _v), 3/4" (12.7 C _v), 1" (15.9 C _v), Norm. Open : 1/2" (10.0 C _v), 3/4" (13.7 C _v), 1" (17.4 C _v)				
il :	General purpose clas	ss A, continuous duty, enca	psulated		
ltage range :	-15% to +10% of nor	ninal voltage			
otection :	Consult factory				
wer:	~ Inrush : 33 VA	Holding : 19.7 VA			
	= 1 to 24 W				
esponse times :	24 VDC (8.5 W)	Energize : 23 ms	De-energize : 13ms		
	120/60	Energize : 9-16 ms	De-energize : 11-22 ms		

Solenoid operator (power ≥ 6 W) : D4-XXAAB, cover mounting screws 32222 and seal B5-6001.
Pilot valve : 250B-XXYZZ, including mounting screws 32203 and function plate A2-7005.
Check valve : 70019.

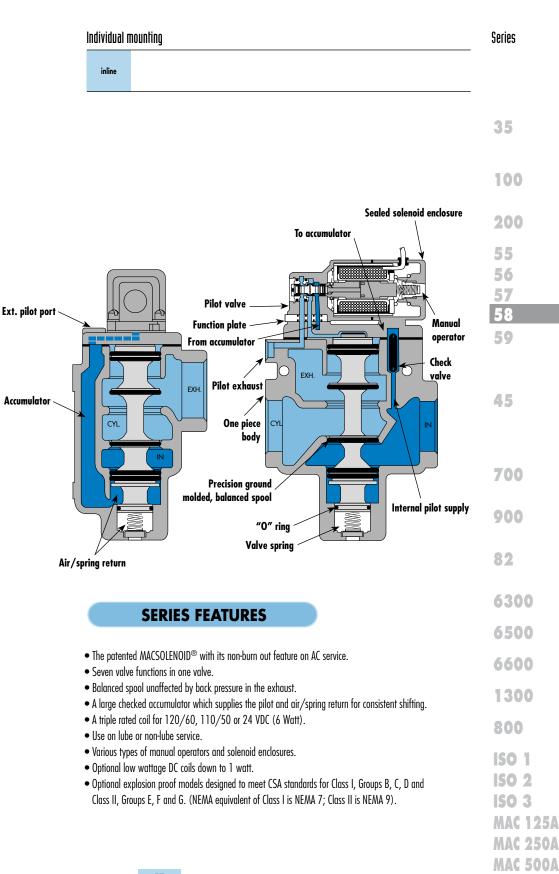
Options :

• BSPP threads.



Direct solenoid and solenoid pilot operated valves





Series 5 8	



- 3-Way Normally Open or Normally Closed (solenoid or remote air).
- 2-Way (by plugging Exhaust port), Normally Open & Normally Closed (solenoid or remote air).
- Internal pilot or External pilot for vacuum to 25 PSI main valve pressures on solenoid models.

SERIES FEATURES-REMOTE AIR PILOT OPERATED VALVES

The remote air versions feature:

- A large checked accumulator for air/spring return.
- Balanced spool unaffected by back pressure in the exhaust and may be plugged for 2-way operation.
- Use on lube or non-lube service.

APPLICATION CONVERSION PROCEDURE

The balanced spool design and the unique N.C. and N.O. pilot valve function plate on solenoid models facilitate using the same valve for 7 different functions. The 7 functions are as follows:

- 3-way Normally Closed-All 3 main valve ports utilized and function plate placed with "3-C" (3-way N.C.) visible.
- 3-way Normally Open-All 3 main valve ports utilized and function plate placed with "3-0" (3-way N.O.) visible.
- 2-way Normally Closed-Same as 3-way N.C. but also plug the Exhaust port.

- 2-way Normally Open-Same as 3-way N.O. but also plug the Exhaust port.
- Selector-Pipe higher pressure to the Inlet port and lower pressure to the Exhaust port.
- Internal Pilot-Utilized for main valve pressures of 25-150 PSI. Includes a check rod in the body and a 1/4" pipe plug installed in the External Pilot port.
- External Pilot-An External Pilot supply is required when main valve pressures are lower than 25 PSI. If converting from an Internal Pilot model, remove the 1/4" pipe plug and check rod from the External Pilot port and install a 1/8" pipe plug in the check rod hole and pipe an external supply greater than 25 PSI to the External Pilot port. For vacuum service, make the vacuum connection to the Exhaust port and leave the Inlet port open to atmosphere.

N.C.-N.O. OPERATIONS: **SOLENOID MODELS:**

With the pilot valve available either N.C. or N.O., simply by inverting the function plate, maximum flexibility is available in solenoid pilot operated models by using the N.C. main spool and installing the function plate for either N.C. or N.O. operation. Where an N.C. pilot function is desired with a N.O. main valve operation, a N.O. main spool option is available.

REMOTE AIR MODELS:

On remote air pilot operated models, N.C. and N.O. main spools are both available so that a N.C. pilot signal can always be used.

Series 58	UITECT Port size	SOLENOID AN Flow (Max)		pilot operated almounting	V a l V e s Series
2 NO-NC, 2/2 N	O-NC 1".11	/4" - 1 1/2" 26.0 C _v	inline		
		/			
ERATIONAL BENEFITS Balanced spool, immun pressure. Short stroke with high fl arge spool area provic	flow.	 Wiping effect eliminates sticking Pilot valve with balanced poppe short and consistent response tin 	et, high flow,		35
orces. Checked accumulator g pilot pressure.	guarantees maximum			- Jak	100
Powerful return force the combination of mechan Bonded spool with mini	inical and air springs.				200
n a glass-like finished k					55
				A A	56 57
HOW TO ORDER					57 58
Port size	Pilot air N	NC only valve IC pilot - NC spool	NO pilot - NC spool	only valve NC pilot - NO spool	58 59
1″ NPTF		<u>IN EXH</u> 58D-11-XXYZZ	<u>IN EXH</u> 58D-21- ХХҮZZ		_
1 1/4" NPTF	Internal	58D-12- XXYZZ	58D-22- XXYZZ	58D-62- XXYZZ	45
1 1/2" NPTF		58D-13- XXYZZ	58D-23- XXYZZ	58D-63- XXYZZ	_
1" NPTF	,	58D-31-XXYZZ	58D-41-XXYZZ	58D-71- XXYZZ	_
1 1/4" NPTF 1 1/2" NPTF	External	58D-32- XXYZZ 58D-33- XXYZZ	58D-42- XXYZZ 58D-43- XXYZZ	58D-72-xxyzz 58D-73-xxyzz	_
					700
LENOID OPERATC	JK ►	XXYZ	<u>'</u>		900
XX Voltage		Y Manual operato	r ZZ	Electrical connection	7
	50, 24 VDC (6.0 W)	0 No operator	JA	Square connector	- 82
12 240/60, 220/5 22 24/60, 24/50		1 Non-locking 2 Locking	JC BA	Square connector with light Flying leads (18″)	-
52 24 VDC (2.5 W 78 24 VDC (24.0 V			CA EA	Conduit 1/2" NPS Hazardous location	- 6300
61 24 VDC (8.5 W	V)	—			
Other options available					6500
e : Hazardous locatior	n option supplied with no	o manual operator ("0"). DC voltage i	not available below 6 Watts.		6600
					1300
					800
					ISO 1 ISO 2 ISO 3 MAC 125 MAC 250

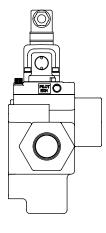


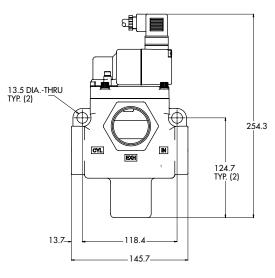


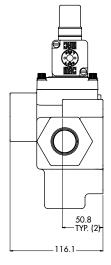
luid :	Compressed air, vacu	um, inert gases					
Pressure range :	Internal pilot : 25 to 1	Internal pilot : 25 to 150 PSI					
	External pilot : vacuur	n to 150 PSI					
ilot pressure :	25 to 150 PSI (Not to	exceed main valve pressur	e by more than 50 PSI)				
ubrication :	Not required, if used	select a medium aniline po	sint lubricant (between 180°F and 210°F)				
iltration :	40 µ						
emperature range :	0°F to 120°F (-18°C t	o 50°C)					
low (at 6 bar, ΔP=1bar) :	Norm. Closed :1" (18	.7 C _v), 1 1/4″ (23.0 C _v),	1 1/2" (24.9 C _v), Norm. Open : 1" (20.8C _v), 1 1/4" (23.8 C _v), 1 1/2" (26.0 C _v)				
Coil :	General purpose class A, continuous duty, encapsulated						
/oltage range :	-15% to +10% of nom	inal voltage					
Protection :	Consult factory						
Power :	~ Inrush : 33 VA	Holding : 19.7 VA					
	= 1 to 24 W						
Response times :	24 VDC (8.5 W)	Energize : 25 ms	De-energize : 18ms				
	120/60	Energize : 10-17 ms	De-energize : 17-22 ms				

DIMENSIONS

Dimensions shown are metric (mm)











Individual mounting	Series
inline	
	35
	100
Sealed solenoid enclosure To accumulator 、	200
Ext. pilot port	55 56 57 58
From accumulator	59
Accumulator	45
Precision ground molded, balanced spool "O" ring	700 900
Valve spring Air/spring return	82
Air / spring recorn	
SERIES FEATURES	6300
	6500
 The patented MACSOLENOID[®] with its non-burn out feature on AC service. Seven valve functions in one valve. 	6600
 Balanced spool unaffected by back pressure in the exhaust. A large checked accumulator which supplies the pilot and air/spring return for consistent shifting. 	1300
 A triple rated coil for 120/60, 110/50 or 24 VDC (6 Watt). Use on lube or non-lube service. 	800
 Ose on rube or non-rube service. Various types of manual operators and solenoid enclosures. Optional low wattage DC coils down to 1 watt. Optional explosion proof models designed to meet CSA standards for Class I, Groups B, C, D and Class II, Groups E, F and G. (NEMA equivalent of Class I is NEMA 7; Class II is NEMA 9). 	ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A MAC 500A

°	
Series 59	



- 3-Way Normally Open (solenoid) or Normally Closed (solenoid or remote air).
- 2-Way (by plugging Exhaust port), Normally Open (solenoid) & Normally Closed (solenoid or remote air).
- Internal pilot or External pilot for vacuum to 25 PSI main valve pressures on solenoid models.

SERIES FEATURES-REMOTE AIR PILOT OPERATED VALVES

The remote air versions feature:

- A large checked accumulator for air/spring return.
- Balanced spool unaffected by back pressure in the exhaust and may be plugged for 2-way operation.
- Use on lube or non-lube service.

APPLICATION CONVERSION PROCEDURE

The balanced spool design and the unique N.C. and N.O. pilot valve function plate on solenoid models facilitate using the same valve for 7 different functions. The 7 functions are as follows:

- 3-way Normally Closed-All 3 main valve ports utilized and function plate placed with "3-C" (3-way N.C.) visible.
- 3-way Normally Open-All 3 main valve ports utilized and function plate placed with "3-0" (3-way N.O.) visible.

- 2-way Normally Closed-Same as 3-way N.C. but also plug the Exhaust port.
- 2-way Normally Open-Same as 3-way N.O. but also plug the Exhaust port.
- Selector-Pipe higher pressure to the Inlet port and lower pressure to the Exhaust port.
- Internal Pilot-Utilized for main valve pressures of 25-150 PSI. Includes a check rod in the body and a 1/8" pipe plug installed in the External Pilot port.
- External Pilot-An External Pilot supply is required when main valve pressures are lower than 25 PSI. If converting from an Internal Pilot model, remove the 1/8" pipe plug from the External Pilot and remove adapter plate. Remove check rod from the body and install an 1/8" pipe plug in the check rod hole and pipe an external supply greater than 25 PSI to the External Pilot port. For vacuum service, make the vacuum connection to the Exhaust port and leave the Inlet port open to atmosphere.

N.C.-N.O. OPERATIONS: SOLENOID MODELS:

With the pilot valve available either N.C. or N.O., simply by inverting the function plate, and using the N.C. main spool, N.C or NO main valve functions are achieved.

REMOTE AIR MODELS:

On remote air pilot operated models, N.O. pilot signal must be used for a N.C. main valve function.

$2 \times 2 \times 1/2^{"}$ $60.0 \ C_{V}$ EXAMPLANC LEMENTS Balanced spool, immune to variations of pressure. Short stroke with high flow. Large spool area provides maximum shifting forces. Checked accumulator guarantees maximum pilot pressure. Powerful return force thanks to the combination of mechanical and air springs. Bonded spool with minimum friction, shifting in a glass-like finished bore.7. Wiping effect eliminates strice. 8. Powerful return force thanks to the combination of mechanical and air springs. Bonded spool with minimum friction, shifting in a glass-like finished bore.7. Wiping effect eliminates strice. 9. Wiping effect eliminates strice. Powerful return force thanks to the combination of mechanical and air springs. Bonded spool with minimum friction, shifting in a glass-like finished bore. Port sizePliot airNC only valve Det sizePort sizePliot airNC only valve NC pilot - NC spool2 "NPTFSternal 59B-13-xxrzz 2 wiping effect eliminates striceA ND FX ND FX NotingeX Notinge <td co<="" th=""><th>ppet, high flow, times. Image: Constraint of the second of the secon</th><th>00 200 55 66 57 88 59</th></td>	<th>ppet, high flow, times. Image: Constraint of the second of the secon</th> <th>00 200 55 66 57 88 59</th>	ppet, high flow, times. Image: Constraint of the second of the secon	00 200 55 66 57 88 59
Balanced spool, immune to variations of pressure. 7. Wiping effect eliminates sticts. Short stroke with high flow. 1. Wiping effect eliminates sticts. Large spool area provides maximum shifting forces. 8. Pilot valve with balanced pashort and consistent responses to the combination of mechanical and air springs. Bonded spool with minimum friction, shifting in a glass-like finished bore. Port size Port size Pilot air 2" NPTF Internol 2 1/2" NPTF Internol 2 1/2" NPTF External 2 1/2" NPTF External 59B-12-xxyzz 2 2 1/2" NPTF SyB-33-xxyzz DLENOID OPERATOR > Y XX Voltage 11 120/60, 110/50, 24 VDC (6.0 W) 2 24/60, 220/50 2 24/60, 220/50 2 24/60, 220/50 2 24/60, 220/50 2 24/0C (2.5 W) 78 24 VDC (2.5 W) 61 24 VDC (8.5 W) Other options available, see page 357.	ppet, high flow, times. Image: Constraint of the second of the secon	00 200 55 66 57 88 59	
orces. Checked accumulator guarantees maximum pilot pressure. Powerful return force thanks to the scombination of mechanical and air springs. Bonded spool with minimum friction, shifting in a glass-like finished bore. HOW TO ORDER Port size Pilot air NC only valve NC pilot - NC spool <u>LTZE</u> <u>T</u> <u>T</u> <u>T</u> <u>T</u> <u>U</u> <u>2" NPTF</u> Internal <u>59B-12-xxyzz</u> <u>2 1/2" NPTF</u> External <u>59B-32-xxyzz</u> <u>2 1/2" NPTF</u> <u>59B-33-xxyzz</u> DLENOID OPERATOR > <u>XX Voltage</u> <u>1 120/60, 110/50, 24 VDC (6.0 W)</u> <u>1 220/60, 220/50</u> <u>2 24/60, 220/50</u> <u>2 24/00, 220/50</u> <u>3 2 4 VDC (2.5 W)</u> <u>78 24 VDC (2.5 W)</u> Dther options available, see page 357.	24 58 59 50 59 59 59 59 59 59 59 59 59 59 59 59 59	200 55 56 57 88 59	
Powerful return force thanks to the combination of mechanical and air springs. Sonded spool with minimum friction, shifting in a glass-like finished bore. NC only valve NC pilot - NC spool HOW TO ORDER Pilot air NC only valve NC pilot - NC spool 2" NPTF Internal 598-12-xxrzz 2 1/2" NPTF External 598-32-xxrzz 2 1/2" NPTF External 598-33-xxrzz 2 1/2" NPTF S98-33-xxrzz VENOID OPERATOR > XX Voltage 1 120/60, 110/50, 24 VDC (6.0 W) 0 No operator 1 240/60, 220/50 2 Locking 2 2 4/50, 24/50 2 Locking 3 2 4 VDC (2.5 W) 78 78 2 4 VDC (8.5 W) 70 71 24 VDC (8.5 W) 70 72 4 VDC (8.5 W) 70 73 24 VDC (8.5 W) 70 74 VDC (8.5 W) 70	NO only valve 52 NO only valve 52 NO pilot - NC spool 52 Image: System of the system of th	5 6 7 8 9	
HOW TO ORDER Port size Pilot air NC only valve NC pilot - NC spool 2" NPTF Internal 59B-12-XXYZZ 2 1/2" NPTF Internal 59B-32-XXYZZ 2 1/2" NPTF External 59B-33-XXYZZ 2 1/2" NPTF 59B-33-XXYZZ 2 1/2" NPTF External 59B-33-XXYZZ 2 1/2" NPTF 59B-33-XXYZZ 2 1/2" NPTF 59B-33-XXYZZ 2 1/2" NPTF 59B-33-XXYZZ 2 1/2" NPTF 59B-33-XXYZZ LENOID OPERATOR > XX Voltage Y Manual oper 11 120/60, 110/50, 24 VDC (6.0 W) 0 2 2 24/60, 220/50 2 Locking 22 24/60, 24/50 2 Locking 32 24 VDC (2.5 W) 7 Non-locking 31 24 VDC (8.5 W) 0 Docking 32 24 VDC (8.5 W) 0 Docking 34 VDC (8.5 W) 0 Docking Docking	NO only valve 50 NO pilot - NC spool 50 Image: System of the system o	6 57 58 59	
Port size Pilot air NC only valve NC pilot - NC spool 2" NPTF Internal 59B-12-XXYZZ 2 1/2" NPTF 59B-13-XXYZZ 2 1/2" NPTF 59B-33-XXYZZ 2 1/2" NPTF External 59B-33-XXYZZ 59B-33-XXYZZ 2 1/2" NPTF 59B-33-XYZZ 0 No operator XX 1 1 1 20/60, 110/50, 24 VDC (6.0 W) 0 No operator 1 2 20/60, 220/50 2 Locking 2 2 24/60, 24/50 2 Locking 32 2 4 VDC (2.5 W) 7 7 Non-locking 2 4 VDC (8.5 W) 2 0 1 24 VDC (8.5 W) 2 0 24 VDC (8.5 W) 2	NO only valve NO pilot - NC spool 50 Image: Constraint of the system 59 59B-22-XXYZZ 59 59B-23-XXYZZ 41 59B-43-XXYZZ 59 59B-43-XXYZZ 59	8 9 15 700	
2" NPTF Internal 59B-12-XXYZZ 2 1/2" NPTF 59B-13-XXYZZ 2" NPTF 59B-13-XXYZZ 2" NPTF External 59B-32-XXYZZ 2 1/2" NPTF 59B-33-XXYZZ 2 1/2" NPTF 59B-33-XXYZZ 2 1/2" NPTF 59B-33-XXYZZ DLENOID OPERATOR > XX XX Voltage 11 120/60, 110/50, 24 VDC (6.0 W) 0 12 240/60, 220/50 2 22 24/60, 24/50 2 52 24 VDC (2.5 W) 78 78 24 VDC (24.0 W) 0 61 24 VDC (8.5 W) 0 Other options available, see page 357. 257	CYL CYL <td>!5 700</td>	!5 700	
2" NPTF Internal 59B-12-XXYZZ 2 1/2" NPTF 59B-13-XXYZZ 2" NPTF External 59B-32-XXYZZ 2 1/2" NPTF 59B-33-XXYZZ DLENOID OPERATOR ➤ XX 1 XX Voltage Y 1 120/60, 110/50, 24 VDC (6.0 W) 0 No operator 12 240/60, 220/50 2 Locking 2 22 24/60, 24/50 2 Locking 2 52 24 VDC (2.5 W) 2 Locking 2 61 24 VDC (8.5 W) 0 Other options available, see page 357. Other options available, see page 357.	IN EXH 59B-22-XXYZZ 59B-23-XXYZZ 59B-42-XXYZZ 59B-43-XXYZZ 59B-43-XXYZZ	700	
2" NPTF External 59B-32-XXYZZ 2 1/2" NPTF 59B-33-XXYZZ DLENOID OPERATOR ➤ XX 1 XX Voltage Y Manual oper 11 120/60, 110/50, 24 VDC (6.0 W) 0 No operator 12 240/60, 220/50 1 Non-locking 22 24/60, 24/50 2 Locking 52 24 VDC (2.5 W) 2 Locking 78 24 VDC (24.0 W) 0 61 24 VDC (8.5 W) 0 Other options available, see page 357.	59B-42-xxyzz 59B-43-xxyzz	700	
2 1/2" NPTF 59B-33-XXYZZ DLENOID OPERATOR ➤ XX Voltage XX Voltage Y Manual oper 11 120/60, 110/50, 24 VDC (6.0 W) 0 No operator 12 240/60, 220/50 1 Non-locking 22 24/60, 24/50 2 Locking 52 24 VDC (2.5 W) 2 Locking 61 24 VDC (8.5 W) Other options available, see page 357.	59B-43-xxyzz		
XX Voltage Y Manual oper 11 120/60, 110/50, 24 VDC (6.0 W) 0 No operator 12 240/60, 220/50 1 Non-locking 22 24/60, 24/50 2 Locking 52 24 VDC (2.5 W) 78 24 VDC (24.0 W) 61 24 VDC (8.5 W) 2 Dther options available, see page 357.	<u>ZZ</u> . 70		
11 120/60, 110/50, 24 VDC (6.0 W) 0 No operator 12 240/60, 220/50 1 Non-locking 22 24/60, 24/50 2 Locking 52 24 VDC (2.5 W) 2 Locking 61 24 VDC (8.5 W) 0 Other options available, see page 357.			
22 24/60, 24/50 2 Locking 52 24 VDC (2.5 W) 2 1 78 24 VDC (24.0 W) 2 1 61 24 VDC (8.5 W) 2 1 Other options available, see page 357. 2 1	JA Square connector 90	00	
Other options available, see page 357.	JC Square connector with light BA Flying leads (18") CA Conduit 1/2" NPS EA Hazardous location	2	
ote : Hazardous location option supplied with no manual operator ("0"). DC volte	63	300	
	ge not available below 6 Watts.	500	
	60	600	
	13	300	
	80	800	
	IS	50 1 50 2 50 3 1AC 12! 1AC 250	



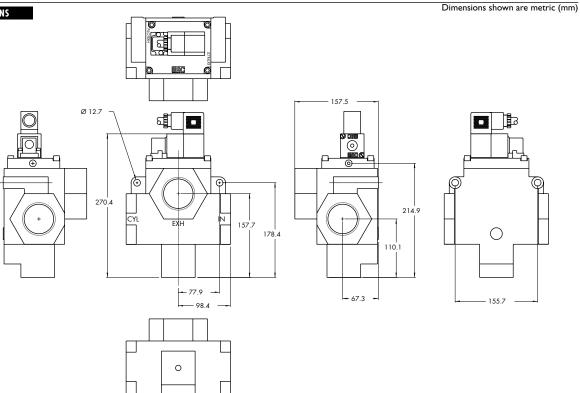


Fluid :	Compressed air, vacu	uum, inert gases	
Pressure range :	Internal pilot : 25 to	1 50 PSI	
	External pilot : vacuu	m to 150 PSI	
Pilot pressure :	25 to 150 PSI (Not to	exceed main valve pressu	re by more than 50 PSI)
Lubrication :	Not required, if used	select a medium aniline po	pint lubricant (between 180°F and 210°F)
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C	to 50°C)	
Flow (at 6 bar, ΔP=1bar) :	2" (55.0 C _v), 2 1/2"	C _v (60.0 C _v)	
Coil :	General purpose clas	s A, continuous duty, encar	osulated
Voltage range :	-15% to +10% of non	ninal voltage	
Protection :	Consult factory		
Power :	~ Inrush : 33 VA	Holding : 19.7 VA	
	= 1 to 24 W		
Response times :	24 VDC (8.5 W)	Energize : 38 ms	De-energize : 25ms
	120/60	Energize : 35-45 ms	De-energize : 25-34 ms

Options :

BSPP threads.

DIMENSIONS





Individual mounting Series sub-base on″plug-in' inline 35 Manifold mounting sub-base sub-base with pressure regulators and flow controls substacking with pressure regulators non″plug-in' 100 Manual operator 200 Armature **Epoxy encapsulated** 55 solenoid 56 57 58 Push pin 59 Spring biased moveable pole piece 45 X 700 Bonded balanced poppets 900 Spring return 82 6300 **SERIES FEATURES** 6500 • Single and double solenoid or remote air. 6600 • The patented MACSOLENOID® for fastest possible response times. • Bonded balanced poppets for high flow, precise repeatability, and consistent operation. 1300 • Balanced poppet design permits versatility in pipping. Valves can be piped as 4-way, 3-way or 2-way, normally closed or normally open or can be used for vacuum, diverter or selector applications. 800 • Use on lube or non-lube service. • Extremely high cycle rates. **ISO 1** • Extremely long service life due to unique poppet cushions. **ISO 2** • Manual overrides as standard. • Various solenoid enclosures and plug-in connectors **ISO 3** • Optional surge suppression available. **MAC 125A** • Low wattage DC solenoids — down to 1.8 watts. **MAC 250A** • Patented MACSOLENOID[®] — virtually burn-out proof on AC service. **MAC 500A**

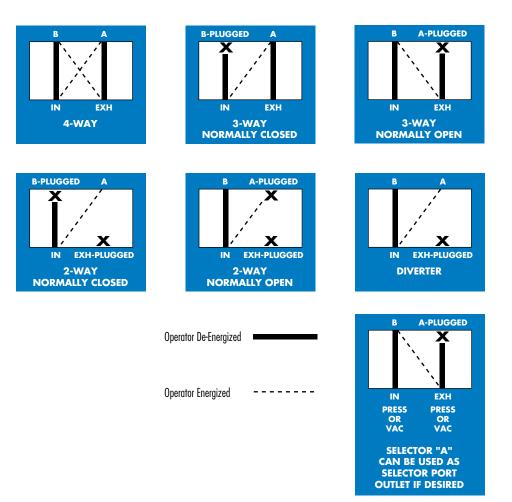




- 2-position single and double solenoid or remote air.
- Single pressure (4 or 5 ports)
- Individual, stacking and manifold base mounted models.
- Integral individual exhaust flow controls with common exhaust port.
- Integral regulators and flow controls on manifolds.

SPECIAL APPLICATIONS :

The balanced poppet design facilitates using the same valve for many functions and can be used for pressure, vacuum or plugged without the necessity of changing any parts. Pipping suggestions are shown in the chart below.



© Constant Series 45	Direct s	; o l e n o i d	and s	olenoid	pilot ope	rated valves
Function	Port size	Flow (M	/lax]	Individi	ual mounting	Series
4/2	#10-32 - 1	1/8″ 0.15	C _v	inline	e	
OPERATIONAL BENEFITS 1. Balanced poppet, immune to va pressure. 2. Short stroke with high flow. 3. The patented solenoid develops forces.					0	35
 Powerful return spring. Manual operator standard on a 	all valves.					100
6. Burn-out proof solenoid on AC	service.				03	200
					E SE	55
HOW TO ORDER					h	56 57
Port size		Single	e operator		Double operator	58
		۸۲			(Minimum DC wattage	
1/8" NPTF # 10-32 UNF			A1-D xxx-xxx B1-D xxx-xxx		45A-GA1-Dxxx-xxx 45A-GB1-Dxxx-xxx	
WITH INTEGRATED FLOW (CONTROLS					
Port size		Single	e operator		Double operator (Minimum DC wattage :	
		Â.				700
1/8″ NPTF			<u>EXH</u> ▼ ●IN A2-D <i>XXX-XXX</i>		45A-GA2-Dxxx-xxx	
# 10-32 UNF			B2-Dxxx-xxx		45A-GB2-Dxxx-xxx	900
SOLENOID OPERATOR >		D <u>xx</u>	<u>x-xx</u>	*		82
		'	J			7000
XX Voltage AA 120/60, 110/50		Vire length 8″ (Flying leads)		Manual operator	XX KA Square conr	6300
AB 240/60, 220/50 AC 24/60, 24/50		8" (Flying leads) onnector		Non-locking Locking		nector with light 6500
FB 24 VDC (1.8 W) DA 24 VDC (5.4 W)						connector with light
 DF 24 VDC (12.7 W) * Other options available, see po 	 age 361.					1300
BOTTOM PORT OPTIONS (O'RING	-					800
45A-XXX-D xxx-xxx						
—— D-Sgl. oper A —— F-Sgl. oper "A						ISO 1 ISO 2
— H-Dbl. oper /	All ports					ISO 2
J-Dbl. oper ",	A" & "B" ports					150 S MAC 125A
						MAC 125A MAC 250A
						MAC 500A
			67	Consul	t "Precautions" name 364 hefore use install	



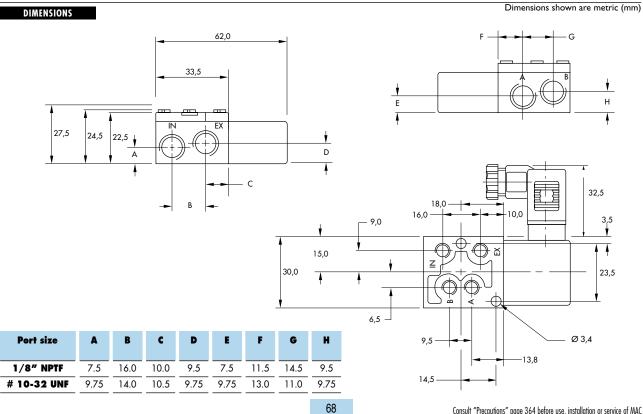


TECHNICAL DATA		
Fluid :	Compressed air, vacuum, inert gases	
Pressure range :	Vacuum to 120 PSI	
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)	
Filtration :	40 µ	
Temperature range :	0°F to 120°F (-18°C to 50°C)	
Flow (at 6 bar, ΔP=1bar) :	1.8 W : (0.1 C _v), 5.4 W : (0.15 C _v)	
Coil :	General purpose class A, continuous duty, encapsulated	
Voltage range :	-15% to +10% of nominal voltage	
Protection :	Consult factory	
Power :	~ Inrush : 10.9 VA Holding : 7.7 VA	
	= 1.8 to 12.7 W	
Response times :	24 VDC (5.4 W) Energize : 6 ms De-energize : 2 ms	
	120/60 Energize : 3-8 ms De-energize : 2-7 ms	

• Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.

• Seal (between solenoid and valve body) : 16402. • Valve cover plate with flow controls : N-45002.

• BSPP threads. • High flow up to 0.23 C_v, according to wattage and high flow Mod. • NAMUR interface - 45A-FA1DXXX-XXX and Options : required NAMUR adapter kit: N-45028-03 (for 3-way operation) - N-45028-04 (for 4-way operation).



© Olympic Series 45	Direct	solenoid	and solen	oid pilot op	erated valves
Function	Port size	Flow (Ma	IX]	Individual mounting	Series
4/2	# 10-32 - 1	/8″ 0.13 (Sv.	sub-base non"plug-in"	
 OPERATIONAL BENEFITS 1. Balanced poppet, immun pressure. 2. Short stroke with high floo 3. The patented solenoid de forces. 4. Powerful return spring. 5. Manual operator standar 6. Burn-out proof solenoid of 	w. evelops high shifting rd on all valves.			5 200	35 100 200 55 56 57
HOW TO ORDER Port s	size	Single	operator	Double operate (Minimum DC wattage	58
Valve less base 1/8" NPTF base #10-32 UNF base WITH INTEGRATED FLC	DW CONTROLS	45A-L00 45A-LAA	A B A B A B A B A B A B A B A B	45A-NBA-DXXX-X 45A-NBA-DXXX-X	xx 45
Port :	size	Single	operator	Double operate (Minimum DC wattage	or e 5,4W) 700
Valve less base			-Dxxx-xxx	45A-NO0-DXXX-X 45A-NAB-DXXX-X	
#10-32 UNF base			Dxxx-xxx	45A-NBB-Dxxx-x	xx 82
XX Voltage AA 120/60, 110/50 AB 240/60, 220/50 AC 24/60, 24/50 FB 24 VDC (1.8 W)		/ire length 3" (Flying leads) onnector	X - X XX * X Manual ope 1 Non-locking 2 Locking	KA Square co	onnector with light 6600
DA 24 VDC (5.4 W) DF 24 VDC (12.7 W)	· · · · · · · · · · · · · · · · · · ·				1300
* Other options available, OPTIONS 45A-LAA-D xxx-xxx Substitute	see page 361. "J" for 1/8″ bottom cyl	inder ports	69	Consult "Prornutions" none 364 hefore use in	800 ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A MAC 500A





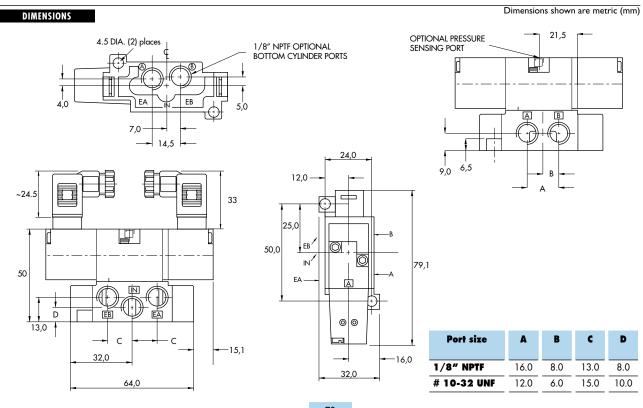
TECHNICAL DATA					
Fluid :	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 120 PSI				
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)				
Filtration :	40 μ				
Temperature range :	0°F to 120°F (-18°C to 50°C)				
Flow (at 6 bar, ΔP=1bar) :	1.8 W : (0.11 C _v), 5.4 W : (0.13 C _v)				
Coil :	General purpose class A, continuous duty, encapsulated				
Voltage range :	-15% to +10% of nominal voltage				
Protection :	Consult factory				
Power :	~ Inrush : 10.9 VA Holding : 7.7 VA				
	= 1.8 to 12.7 W				
Response times :	24 VDC (5.4 W) Energize : 6 ms De-energize : 2 ms				
	120/60 Energize : 3-8 ms De-energize : 2-7 ms				

• Solenoid operator (power \geq 5.4 W) : DXXX-XXX, including mounting screws 35013.

• Seal (between solenoid and valve body) : 16402. • Seal between base and valve : 16453. • Flow control : N-45018.

Options :

 \bullet BSPP threads. \bullet High flow up to 0.20 $C_{v^{\prime}}$ according to wattage and high flow mod.



Consult "Precautions" page 364 before use, installation or service of MAC Valves

Pathol Pathol Pathol Pathol Pathol Series 4/2 # 10-32 - 1/8" 0.20 Cg noise	© O O O O O O O O O O O O O O O O O O O	Direct solen	oid and sole	noid pilot operated	valves
CENTURE TREES 1.0 shows the velocities of speech, intruse to velocities of the speech service of the service of the speech service of the service o	Function	Port size	Flow (Max)	Manifold mounting	Series
 Solar states with high Bios Solar states with high Bios Powerk states prime; Solar states with high Bios Solar states bios Solar states bios Solar states bios<	4/2	# 10-32 - 1/8″	0.20 C _v	stacking	
Port size Single operator Double operator 58 1/8" NPTY 45A-5A1-DCXX.XXX 45A-TA1-DCXX.XXX 45A-TA1-DCXX.XXX WITH INTEGRATED FLOW CONTROLS 45A-5B1-DCXX.XXX 45A-TA1-DCXX.XXX 45A WITH INTEGRATED FLOW CONTROLS 000 000 000 000 1/8" NPTY 45A-5A1-DCXX.XXX 45A-TA1-DCXX.XXX 45A VITH INTEGRATED FLOW CONTROLS 000 000 000 1/8" NPTY 45A-5A2-DCXX.XXX 45A-TA1-DCXX.XXX 900 1/8" NPTY 45A-5A2-DCXX.XXX 45A-TB1-DCXX.XXX 900 SOLENOID OPERATOR > DXX X - X XX' 45A-TB2-DCXX.XXX 82 4A 120/60 110/50 J Connector X 63000 4A 120/60 110/50 J Connector XX 900 A 18" (Flying lood) 1 Manual operator XX 6300 4A 120/60 110/50 J Connector XX 6300 4A 120/60 110/50 J Connector XX 6300 4A 120/60 110/50 J Connector XX 6500 4A 120/60 110/50 J Connector XX 500 4A 120/60 110/50 J Connector XX 6500 4A 120/60	 Balanced poppet, immune pressure. Short stroke with high flov The patented solenoid dev forces. Powerful return spring. Manual operator standard Burn-out proof solenoid or 	w. velops high shifting d on all valves.			100 200 55 56
1.10 1.10		ize	Sinale operator	Double operator	
Image: NPTF	# 10-32 WITH INTEGRATED FLC	2 UNF	45A-SA1-Dxxx-xxx 45A-SB1-Dxxx-xxx	A → A B B B B B B A + A + A + A + A + A + A	
XX Voltage X Wire length X Manual operator XX 63.00 AA 120/60, 110/50 A 18' (Flying leads) 1 Non-locking KA Square connector 65.00 AA 24/60, 224/50 J Connector 2 Locking KA Square connector with light 65.00 DA 24 VDC (1.8 M) DF 24 VDC (1.2 M) 66.00 66.00 DF 24 VDC (12.7 W) 1300 66.00 1300 65.01 1300 • Other options available, see page 361. 1300 1300 150 1 150 2 150 3 150 1 150 2 150 3 150 1 150 2 150 3 150 3 150 3 150 3 150 3 150 3 150 3 150 3 150 3 150 3 150 3 125A 125A 125A 125A <th>1/8″ M</th> <th>NPTF</th> <th>45A-SA2-DXXX-XXX</th> <th>45A-TA2-DXXX-XXX</th> <th></th>	1/8″ M	NPTF	45A-SA2-DXXX-XXX	45A-TA2-DXXX-XXX	
	XX Voltage AA 120/60, 110/50 AB 240/60, 220/50 AC 24/60, 220/50 FB 24 VDC (1.8 W) DA 24 VDC (5.4 W) DF 24 VDC (12.7 W) * Other options available, s	X Wire length A 18" (Flying leads J Connector see page 361.	X Manual o Non-locking	KA Square connector KD Square connector with light	6300 6500 6600 1300 800 ISO 1 ISO 2 ISO 3 MAC 125A





TECHNICAL DATA			
Fluid :	Compressed air, vacuu	m, inert gases	
Pressure range :	Vacuum to 120 PSI		
Lubrication :	Not required, if used s	select a medium aniline p	point lubricant (between 180°F and 210°F)
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to	50°C)	
Flow (at 6 bar, ΔP=1bar) :	1.8 W : (0.14 C _v), 5.4	W : (0.2 C _v)	
Coil :	General purpose class	A, continuous duty, encc	apsulated
Voltage range :	-15% to +10% of nomi	nal voltage	
Protection :	Consult factory		
Power :	~ Inrush : 10.9 VA	Holding : 7.7 VA	
	= 1.8 to 12.7 W		
Response times :	24 VDC (5.4 W)	Energize : 6 ms	De-energize : 2 ms
	120/60	Energize : 3-8 ms	De-energize : 2-7 ms

• Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.

• Seal (between solenoid and valve body) : 16402. • Seal between valves : 16422. • Tie-rod (x2) : 19813.

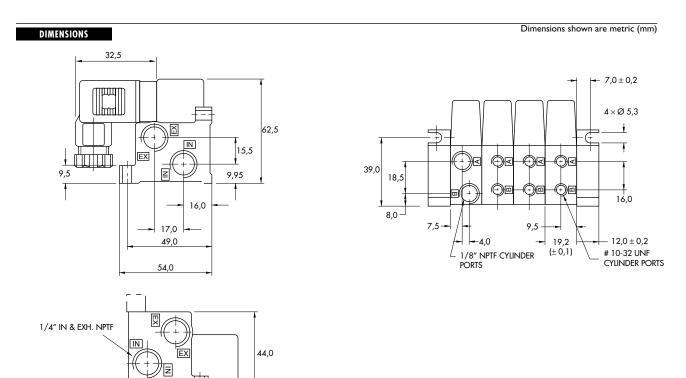
• Valve cover plate with flow controls : N-45004.

62,5

Options :

• Inlet & exhaust isolator : N-45005. Inlet isolator : N-45006. Exhaust isolator : N-45007

 \bullet BSPP threads. \bullet High flow up to 0.3 $C_{v^{\prime}}$ according to wattage and high flow mod.



Beries 45	Direct so)lenoid and so	olenoid pilot operated v	valves
Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	# 10-32 - 1 /	′8″ 0.11 C _v	sub-base non"plug-in"	
 OPERATIONAL BENEFITS 1. Balanced poppet, immune pressure. 2. Short stroke with high flov 3. The patented solenoid dev forces. 	w.			35
 Powerful return spring. Manual operator standard Burn-out proof solenoid or 	d on all valves. m AC service.			100 200
			S. O. 30,	55
HOW TO ORDER			and the	56 57
Port s	size	Single operator	Double operator (Minimum DC wattage 5.4W)	58
				59
Valve less base		45A-L00-DXXX-XXX	45A-N00-Dxxx-xxx	
1/8" NPTF base		45A-LAC-Dxxx-xxx	45A-NAC-Dxxx-xxx	45
		45A-LBC-Dxxx-xxx	45A-NBC-D <i>xxx-xxx</i>	
WITH INTEGRATED FLC		Single operator	Double operator	
		A B _	(Minimum DC wattage 5.4W)	700
Valve less base		<u>exh</u> ف in 45A-L00-D <i>xxx-xxx</i>	45A-N00-Dxxx-xxx	900
1/8" NPTF base		45A-LAD-Dxxx-xxx	45A-NAD-Dxxx-xxx	
# 10-32 UNF base		45A-LBD-D <i>xxx-xxx</i>	45A-NBD-Dxxx-xxx	82
SOLENOID OPERATOR		D <u>xx</u> x- <u>x</u> xx [·]		6300
VY Voltage	Wir	Y Mg	inval operator XX	6500
XX Voltage AA 120/60, 110/50) A 18″ (F	Flying leads) 1 Non-	n-locking KA Square connector	
AB 240/60, 220/50 AC 24/60, 24/50		ector <u>2</u> Locki	ing KD Square connector with light BA Flying leads	6600
FB 24 VDC (1.8 W) DA 24 VDC (5.4 W)			-	1300
DF 24 VDC (12.7 W) Other options available, s	·			800
	size 1/4" NPTF) : M-45008-0)1		
				ISO 1
				ISO 2
				ISO 3
				MAC 125A
				MAC 250A
		73	Consult "Proroutions" none 364 hefore use installation or service of MAC Values	MAC 500A





TECHNICAL DATA					
Fluid :	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 120 PSI				
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)				
Filtration :	40 µ				
Temperature range :	0°F to 120°F (-18°C to 50°C)				
Flow (at 6 bar, ΔP=1bar) :	1.8 W : (0.09 C _v), 5.4 W : (0.11 C _v)				
Coil :	General purpose class A, continuous duty, encapsulated				
Voltage range :	-15% to +10% of nominal voltage				
Protection :	Consult factory				
Power :	~ Inrush : 10.9 VA Holding : 7.7 VA				
	= 1.8 to 12.7 W				
Response times :	24 VDC (5.4 W) Energize : 6 ms De-energize : 2 ms				
	120/60 Energize : 3-8 ms De-energize : 2-7 ms				

• Solenoid operator (power \geq 5.4 W) : DXXX-XXX, including mounting screws 35013.

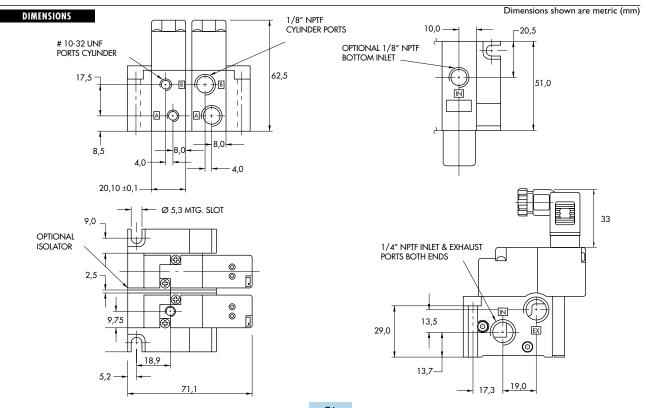
• Seal (between solenoid and valve body) : 16402. • Seal between base and valve : 16453. • Seal between bases : 16455.

• Tie-rod (x2) : 19753. • Side cover plate with flow controls : N-45016.

• Inlet & exhaust isolator : N-45008. • Inlet isolator : N-45009. • Exhaust isolator : N-45010.

Options :

• BSPP threads. • High flow up to 0.18 C_v, according to wattage and high flow Mod. • Bottom inlet : specify Mod. 0210.



© Direct Direct Series 45	solenoi	dandsolen	oid pilot op	erated valves
Function Port size	Fli	lom (Wax)	Manifold mounting	Series
4/2 # 10-3	2 - 1/8″ 0).11 C _v	sub-base with pressure regulators	
OPERATIONAL BENEFITS 1. Balanced poppet, immune to variations of pressure. 2. Short stroke with high flow. 3. The patented solenoid develops high shifting			The second	35
forces. 4. Powerful return spring. 5. Manual operator standard on all valves. 6. Burn-out proof solenoid on AC service.				100
HOW TO ORDER				55 56 57
Port size	Si	ingle operator	Double operate (Minimum DC wattag	
Valve less base 1/8" NPTF base # 10-32 UNF base	45	5A-LAJ-Dxxx-xxx 5A-LBJ-Dxxx-xxx	A A B EXH V IN 45A-N00-DXXX-X 45A-NAJ-DXXX-X 45A-NBJ-DXXX-X	xx 45
SOLENOID OPERATOR ►	D	<u>xx x- x xx</u>		
	1472		Y	700
XX Voltage X AA 120/60, 110/50 A AB 240/60, 220/50 J AC 24/60, 24/50 J	Wire length 18" (Flying leads) Connector	X Manual op 1 Non-locking 2 Locking	KA Square co	onnector with light 900
FB 24 VDC (1.8 W) DA 24 VDC (5.4 W) DF 24 VDC (12.7 W)				82
 Other options available, see page 361. End plate kit required (Port size 1/4" NPTF) : M-4 	45008-01.			6300
Options (with gauge port) : Single operator : repl Double operator : rep	ace L by M.			6500
REGULATOR OPTIONS				6600
45A-XXI-D xxx-xxx ("J" is for Adj. kr — Replace with "E" for slotted	stem			1300
Replace with "G" for locking	g slotted stem			800
				ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A MAC 500A





TECHNICAL DATA					
Fluid :	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 120 PSI				
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)				
Filtration :	40 μ				
Temperature range :	0°F to 120°F (-18°C to 50°C)				
Flow (at 6 bar, $\Delta P=1 bar)$:	1.8 W : (0.09 C _v), 5.4 W : (0.11 C _v)				
Coil :	General purpose class A, continuous duty, encapsulated				
Voltage range :	-15% to +10% of nominal voltage				
Protection :	Consult factory				
Power :	~ Inrush : 10.9 VA Holding : 7.7 VA				
	= 1.8 to 12.7 W				
Response times :	24 VDC (5.4 W) Energize : 6 ms De-energize : 2 ms				
	120/60 Energize : 3-8 ms De-energize : 2-7 ms				

• Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.

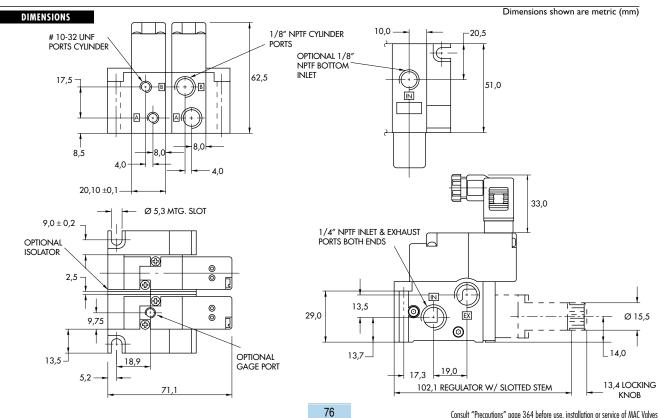
• Seal (between solenoid and valve body) : 16402. • Seal between base and valve : 16453. • Seal between bases : 16455.

• Tie-rod (x2) : 19753. • Pressure regulator : 45A-00R (Adj. Knob), 45A-00L (Slotted Stem), 45A-00M (Locking Slotted Stem).

• Inlet & exhaust isolator : N-45008. • Inlet isolator : N-45009. • Exhaust isolator : N-45010.

Options :

• BSPP threads. • High flow up to 0.18 C_v, according to wattage and high flow mod. • Bottom inlet : specify Mod. 0210.



© Constant Series 4 5	Direct s	olenoid and so	olenoid pilot opera	ted valves
Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	# 10-32 - 1/	′8″ 0.11 C _v	sub-base with pressure regulators and flow controls	
OPERATIONAL BENEFITS 1. Balanced poppet, immu pressure. 2. Short stroke with high fl 3. The patented solenoid of forces. 4. Powerful return spring. 5. Manual operator standor	low. develops high shifting		now controls	35 100
 6. Burn-out proof solenoid 				200
				55
			6 6 5	56
HOW TO ORDER				57
Port	t size	Single operator	Double operator	58
		. A B .	(Minimum DC wattage 5,4W)	59
Valve less base		45A-L00-Dxxx-xxx	45A-N00-D <i>xxx-xxx</i>	_
1/8" NPTF base		45A-LAK-Dxxx-xxx	45A-NAK-D xxx-xxx	45
# 10-32 UNF base		45A-LBK-Dxxx-xxx	45A-NBK-Dxxx-xxx	_
SOLENOID OPERATO	DR >	D <u>XX</u> X- <u>X</u> XX [*]		
				700
XX Voltage	X Wir	e length X Ma	inval operator XX	
AA 120/60, 110/5 AB 240/60, 220/5	50 A 18″ (50 J Conn		n-locking KA Square connector king KD Square connectorwit	th light 900
AC 24/60, 24/50			BA Flying leads	
FB 24 VDC (1.8 W DA 24 VDC (5.4 W DE 24 VDC (12.7 W)	()			82
DF 24 VDC (12.7 \				
* Other options available				6300
	t size 1/4" NPTF) : M-45008-0 : Single operator : replace L by			
	Double operator : replace N			6500
REGULATOR AND F.C. OPTIONS				6600
45A-XXK-D xxx-xxx	("K" option is for Adj. k			1300
	e with "F" for slotted stem a e with "H" for locking slotte			800
				ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A





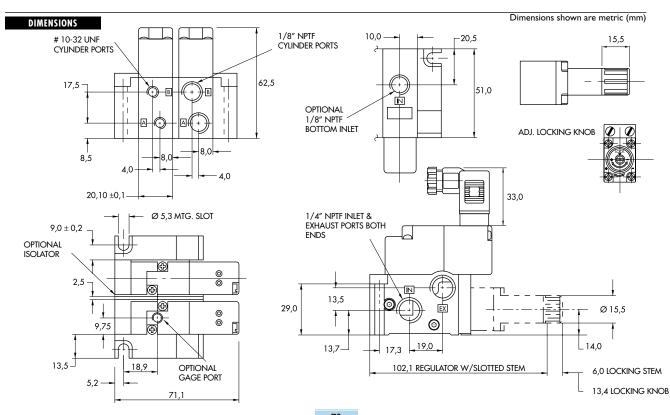
TECHNICAL DATA				
Fluid :	Compressed air, vacuum, inert gases			
Pressure range :	Vacuum to 120 PSI			
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)			
Filtration :	40 µ			
Temperature range :	0°F to 120°F (-18°C to 50°C)			
Flow (at 6 bar, $\Delta P=1 bar)$:	1.8 W : (0.09 C _v), 5.4 W : (0.11 C _v)			
Coil :	General purpose class A, continuous duty, encapsulated			
Voltage range :	-15% to +10% of nominal voltage			
Protection :	Consult factory			
Power :	~ Inrush : 10.9 VA Holding : 7.7 VA			
	= 1.8 to 12.7 W			
Response times :	24 VDC (5.4 W) Energize : 6 ms De-energize : 2 ms			
	120/60 Energize : 3-8 ms De-energize : 2-7 ms			

• Solenoid operator (power \geq 5.4 W) : DXXX-XXX, including mounting screws 35013.

Seal (between solenoid and valve body): 16402.
Seal between base and valve: 16453.
Seal between bases: 16455.
Tie-rod (x2): 19753.
Pressure regulator with flow controls: 45A-00N (Slotted Stem), 45A-00P (Locking Slotted Stem), 45A-00S(Adj. Knob).
Inlet & exhaust isolator: N-45008.
Inlet isolator: N-45009.
Exhaust isolator: N-45010.

Options :

 \bullet BSPP threads. \bullet High flow up to 0.18 C_v, according to wattage and high flow Mod. \bullet Bottom inlet : specify Mod. 0210.

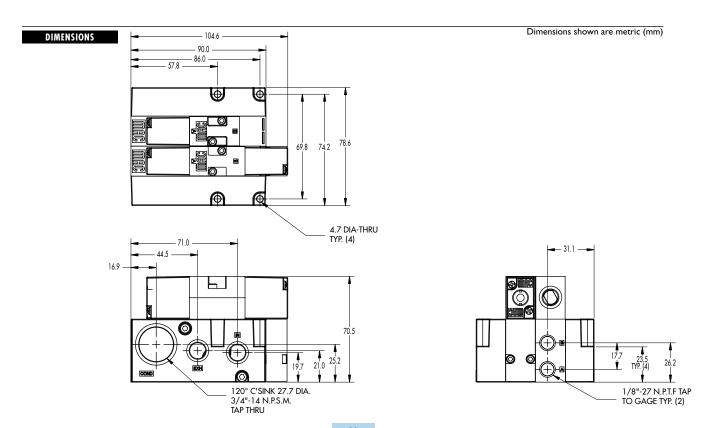


© Constant of the second secon			Anifeld mounting	
Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	# 10-32 - 1/3 5/32 Pressed-intube		Manifold base plug-in	
 OPERATIONAL BENEFITS Balanced poppet, immu pressure. Short stroke with high fluid forces. Powerful return spring. Manual operator standa 6. Burn-out proof solenoid 	low. develops high shifting ard on all valves.			35
HOW TO ORDER				200 55 56 57
Port	t size	Single operator	Double operator	58 59
Valve less base 1/8" NPTF base # 10-32 UNF base 5/32 Pressed-in to	ube receptacles	ASA-LOO-OD-DXXJ-XXX 45A-LSA-AC-DXXJ-XXX 45A-LSD-AC-DXXJ-XXX 45A-LSF-AC-DXXJ-XXX	A A B B EXH ♥ 0 IN 45A-N00-00-DxxJ-xxx 45A-NSA-BL-DxxJ-xxx 45A-NSD-BL-DxxJ-xxx 45A-NSF-BL-DxxJ-xxx	45
Note: Double operator val SOLENOID OPERATO	lves are only available with bottc DR >	om cylinder ports. D XX J-X XX *		700
XX Voltage		X Manual operator	XX Electrical connection	900
AA 120/60, 110/5 AB 240/60, 220/5 DA 24 VDC (5.4W) FA 12 VDC (1.8W) FB 24 VDC (1.8W)	50))	No operator Non-locking Locking	FM Plug-in FN Plug-in with diode FP Plug-in with M.O.V.	82
FB 24 VDC (1.8W) FE 12 VDC (2.4W) FF 24 VDC (2.4W))			6300
* Other options available				6500
OPTIONS				6600
45A-LSA-AC-DxxJ-x		• .I		1300
L	Side cylinder ports - Single Bottom cylinder ports – Sing	operator only gle or double operator		800
L M N P Exan	Base only – no valve Single solenoid - Base mour Single solenoid - Base mour Double solenoid – Base mou Double solenoid – Base mou mple: base only: 45A-0SA-AC (1 plate kit required : M-45028-01	nt body with gage port unt body unt body with gage port 1/8" NPTF wired for single operator)		ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A
		79	Consult "Precruitions" none 364 before use installation or service of J	MAC 500A





Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar$) :	1.8 W : (0.09 C _v), 5.4 W : (0.11 C _v)
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power: 120 VAC	~ Inrush : 10.9 VA Holding : 7.7 VA
: DC	= 1.8 to 12.7 W
Spare parts :	 Inlet isolator : 28477 Exhaust isolator : 28476 Tie rod (x2): 79244 Seal between bases: 16762 Seal between valve & base: 16453
Options :	• BSPP threads



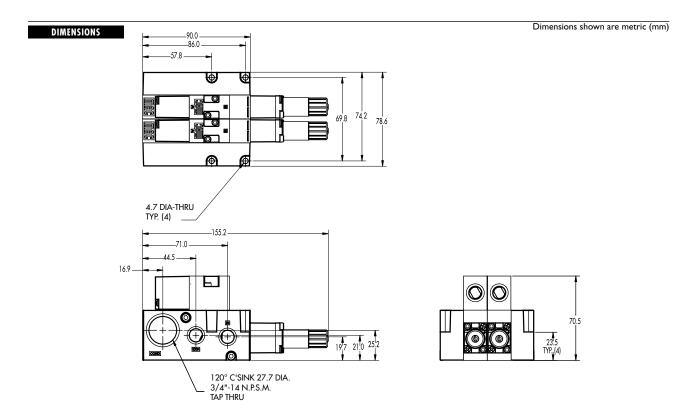
Series 4 5	Direct so	lenoid and s	olenoid pilot opera	ted valves
Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	# 10-32 - 1/8 5/32 Pressed-intube re		Manifold base plug-in with pressure regulators	
OPERATIONAL BENEFITS			regorator 2	
 Balanced poppet, immune to v pressure. 	variations of			35
2. Short stroke with high flow. 3. The patented solenoid develop	os high shifting			1
forces. I. Powerful return spring.			00	100
. Manual operator standard on . Burn-out proof solenoid on AC				P and
			2 00 2	200
				55
			Con and a second	56
HOW TO ORDER				57
	Port size		Single operator	58
				59
Valve less base			45A-L00-00-DXXJ-XXX	
1/8" NPTF base			45A-L00-00-DXXJ-XXX 45A-LSA-AJ-DXXJ-XXX	45
# 10-32 UNF base			45A-LSD-AJ-DxxJ-xxx	
5/32 Pressed-in tube re	eceptacles		45A-LSF-AJ-DxxJ-xxx	
SOLENOID OPERATOR >		D <u>XX</u> J- <u>X XX</u>		700
XX Voltage		Manual operator	XX Electrical connection	900
AA 120/60, 110/50		0 No operator	FM Plug-in	
AB 240/60, 220/50 DA 24 VDC (5.4W)		1 Non-locking 2 Locking	FN Plug-in with diode FP Plug-in with M.O.V.	82
FA 12 VDC (1.8W) FB 24 VDC (1.8W)				
FE 12 VDC (2.4W) FF 24 VDC (2.4W)				6300
Other options available, see p				6500
Note : Bottom cylinder ports only OPTIONS	v with the regulator option.			6600
45A- L SA-A J-DxxJ-xxx				
J Regu	lator with adjusting kno	b		1300
E Regu G Regu	lator with slotted stem lator with locking slotted	d stem		800
O Base	only – no valve			ISO 1
L Single	e solenoid - Base mount e solenoid - Base mount	t body t body with gage port		ISO 2
				150 3
	base only with regulator: 45 sit required : M-45028-01)A-USA-AJ		MAC 125A

MAC 250A





Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar$) :	1.8 W : (0.09 C _v), 5.4 W : (0.11 C _v)
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power: 120 VAC	~ Inrush : 10.9 VA Holding : 7.7 VA
: DC	= 1.8 to 12.7 W
Spare parts :	 Inlet isolator : 28477 Exhaust isolator : 28476 Tie rod (x2): 79244 Seal between bases: 16762 Seal between valve & base: 16453
Options :	• BSPP threads



Series 45	Direct sol	enoid and so	lenoid pilot opera	ited valves
Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	# 10-32 - 1/8" 5/32 Pressed-intube recep	0.11 C _v	Manifold base plug-in with flow controls	
OPERATIONAL BENEFITS 1. Balanced poppet, immune to pressure. 2. Short stroke with high flow. 3. The patented solenoid devel	1		10 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	35
forces. 4. Powerful return spring. 5. Manual operator standard c 6. Burn-out proof solenoid on A	on all valves.		and a second second	100
			C. C. C	200
			er o	55
			a	56
HOW TO ORDER				57
	Port size		Single operator	58
			AA B B	59
Valve less base			45A-L00-00-DxxJ-xxx	
1/8" NPTF base			45A-LSA-AD-DxxJ-xxx	45
# 10-32 UNF base 5/32 Pressed-in tube	- recentacles		45A-LSD-AD-DxxJ-xxx 45A-LSF-AD-DxxJ-xxx	
Solenoid operator >		D <u>XX</u> J-X <u>XX</u> .		700
XX Voltage AA 120/60, 110/50	X 0	Manual operator	XX Electrical connection FM Plug-in	
AB 240/60, 220/50 DA 24 VDC (5.4W) FA 12 VDC (1.8W) FB 24 VDC (1.8W)		No operator Non-locking Locking	FN Plug-in with diode FP Plug-in with M.O.V.	82
FE 12 VDC (2.4W) FF 24 VDC (2.4W)				6300
Other options available, see	е раде 361.			6500
OPTIONS				6600
45A-LSA-AD-DxxJ-xxx				1300
M Bot	ottom cylinder ports with flow	controls		800
	use only – no valve			ISO 1
L Single solenoid - Base mount body				

L Single solenoid - Base mount body
 M Single solenoid - Base mount body with gage port

Example: Base only with flow controls: 45A-0SA-AD End plate kit required : M-45028-01

ISO 2 150 3

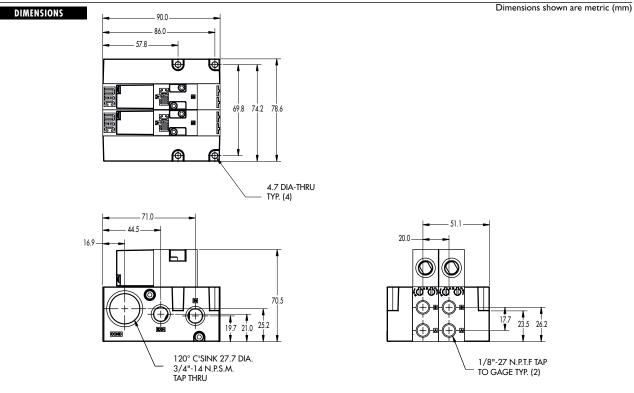
MAC 125A **MAC 250A MAC 500A**





Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar$) :	1.8 W : (0.09 C _v), 5.4 W : (0.11 C _v)
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power: 120 VAC	~ Inrush : 10.9 VA Holding : 7.7 VA
: DC	= 1.8 to 12.7 W
Spare parts :	 Inlet isolator : 28477 Exhaust isolator : 28476 Tie rod (x2): 79244 Seal between bases: 16762 Seal between valve & base: 16453
Options :	• BSPP threads

DIMENSIONS

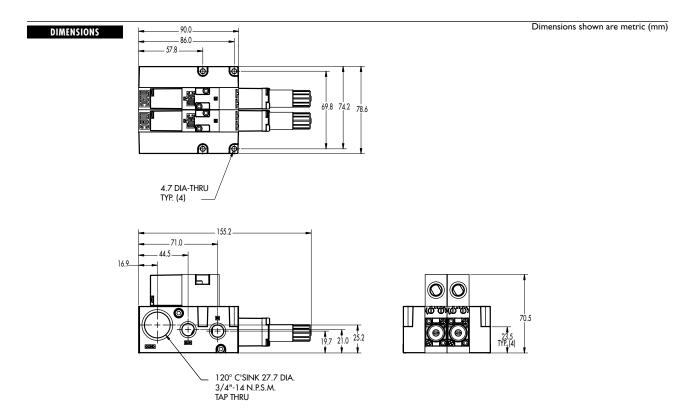


© Series 45	Direct sol	enoid and so	lenoid pilot opera	ted valves
Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	# 10-32 - 1/8" 5/32 Pressed-intube rec		Manifold base plug-in with regulator & flow controls	
 OPERATIONAL BENEFITS 1. Balanced poppet, immune pressure. 2. Short stroke with high flow 3. The patented solenoid dew forces. 4. Powerful return spring. 5. Manual operator standard 6. Burn-out proof solenoid on 	r. elops high shifting on all valves.			35 100 200 55 56
HOW TO ORDER	Port size		Single operator	57 58 59
Valve less base 1/8" NPTF base # 10-32 UNF base 5/32 Pressed-in tube	e receptacles		45A-LOO-OO-DXXJ-XXX 45A-LSA-AK-DXXJ-XXX 45A-LSD-AK-DXXJ-XXX 45A-LSF-AK-DXXJ-XXX	45
SOLENOID OPERATOR	>	D <u>xx</u> J-x <u>xx</u> .		700
XX Voltage AA 120/60, 110/50	Г Х 0		XX Electrical connection	900
AB 240/60, 220/50 DA 24 VDC (5.4W) FA 12 VDC (1.8W) FB 24 VDC (1.8W)	<u> </u>	Non-locking Locking	FN Plug-in with diode FP Plug-in with M.O.V.	82
FE 24 VDC (1.8W) FE 12 VDC (2.4W) FF 24 VDC (2.4W)				6300
* Other options available, se Note : Bottom cylinder ports	ee page 361. only available with the regulato	r & flow controls option.		6500
OPTIONS				6600
45A- L SA-A K -DxxJ-xxx	egulator with adjusting knob	& flow controls		1300
F Re H Re	egulator with slotted stem & egulator with locking slotted	flow controls stem & flow controls		800
L Sin M Sin Example	ase only – no valve ngle solenoid - Base mount ngle solenoid - Base mount e: Base only with regulator and the kit required : M-45028-01	pody with gage port		ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A MAC 500A
		85	Consult "Prequitions" name 364 before use installation or s	





Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar)$:	1.8 W : (0.09 C _v), 5.4 W : (0.11 C _v)
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power: 120 VAC	~ Inrush : 10.9 VA Holding : 7.7 VA
: DC	= 1.8 to 12.7 W
Spare parts :	 Inlet isolator : 28477 Exhaust isolator : 28476 Tie rod (x2): 79244 Seal between bases: 16762 Seal between valve & base: 16453
Options :	• BSPP threads





Individual mounting Series inline 35 Manifold mounting stacking 100 200 55 **Optional integral exhaust** 56 flow controls 57 58 Ext. pilot port 59 **Pilot housing** Sealed solenoid enclosure 45 ∉хн ſ٩ XXXXXX 700 Þ 900 Bonded flow seal spool Muffled pilot exh. Manual operator [/]Air/spring return [/]Filtered pilot supply 82 6300 **SERIES FEATURES** 6500 \bullet The patented MACSOLENOID $^{\circledast}$ with its non-burn out feature on AC service. 6600 • Air/spring return for consistent shifting on single solenoid internal pilot valves. • Use on lube or non-lube service. 1300 • Optional integral adjustable exhaust flow controls with a single common exhaust port. • Optional low wattage DC solenoids down to 1 watt. 800 • Various types of manual operators and solenoid enclosures. **ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A**

©
H
Series 700



VALVE CONFIGURATIONS AVAILABLE

The 700Series is a compact 4-way valve with a Cv of up to .8. This series provides fast response, long life and high flow not commonly found in this size valve.

- 2-Pos., single or double operator (solenoid or remote air).
- Individual body or stacking body (2 common ports).
- Integral adjustable exhaust flow control models.
- Internal pilot or external pilot for vacuum to 20 psi main valve pressures.
- Manual and mechanical operators available.

SERIES FEATURES-REMOTE AIR PILOT OPERATED VALVES

The remote air versions feature:

- Air/spring return for consistent shifting on single remote air valves for main valve pressures of 20 psi or more.
- Optional integral adjustable exhaust flow controls.

SERIES FEATURES-REMOTE AIR PILOT, PILOT OPERATED VALVES

These special air versions have the same features as the remote air pilot operated models, but additionally feature:

- Ability to use a pilot signal pressure different from the main valve pressure. Pilot signal can be from 20-150 PSI, regardless of main valve pressure.
- A manual operator/position indicator.

SPECIAL APPLICATIONS:

On all models, energizing the operator nearest the "A" port supplies pressure to cylinder port "A" and energizing the operator nearest the "B" port supplies pressure to cylinder port "B". For the following special applications additional considerations are required.

- INTERNAL PILOT-Utilized for main valve pressures equal to or greater than minimum pilot pressures. Pilot supply is fed to both the pilot valves and the air/spring return from the inlet.
- EXTERNAL PILOT-Required for all solenoid pilot operated models when main valve
 pressures are below 20 PSI on single operator or 10 PSI on double operator models.
 Single operators require MOD 158-heavy duty spring. Pipe using either an M5x0.8 or a
 #10-32 UNF fitting to the external pilot port. To convert from internal to external pilot,
 simply rotate pilot housing 180° and install heavy duty spring.
- VACUUM APPLICATIONS-Use external pilot models only, without flow controls and connect vacuum source to the exhaust port and leave the inlet open to atmosphere.
- SELECTOR APPLICATIONS-Use models without flow controls, connect the higher pressure to the inlet port and lower pressure to the exhaust port.

© Contraction of the series 700	Direct soleı	ıoidands	olenoid pilot ope	rated valves
unction	Port size	Flow (Max)	Individual mounting	Series
4/2	1/8″ - 1/4″	0.7 C _v	inline	
OPERATIONAL BENEFITS				
 Balanced spool, immune to v Short stroke with high flow. The piston (booster) provides forces. 	es maximum shifting			35
 Powerful return force thanks mechanical and air springs. Bonded spool with minimum glass-like finished bore. Wiping effect eliminates sticl 	m friction, shifting in a			100
 Wiping effect emmindres shot Pilot valve with balanced po and consistent response time Long service life. 	oppet, high flow, short			55
HOW TO ORDER			and the second s	56 57
Port size	Pilot air	Sir	ngle operator Double op	erator 58
		A		Б В
		17.		
		ビ		EXH
1/8" NPTF	Internal			EXH -XXYZZ
1/8" NPTF 1/4" NPTF	Internal		IN EXH IN	EXH -XXYZZ
1/4" NPTF 1/8" NPTF	Internal External	71	<u>IC-11-PI-XXYZZ</u> 721С-11-PI-	-xxyzz 45
1/4" NPTF		711	IN EXH IN 1C-11-PI-XXYZZ 721C-11-PI- 1C-12-PI-XXYZZ 721C-12-PI-	-xxyzz 45
1/4" NPTF 1/8" NPTF 1/4" NPTF HOW TO ORDER VALVE V	External WITH FLOW CONTROLS	711 711 711	IN EXH IN 1C-11-PI-XXYZZ 721C-11-PI- 1C-12-PI-XXYZZ 721C-12-PI- 1C-11-PE-XXYZZ 721C-11-PE 1C-12-PE-XXYZZ 721C-12-PE	
1/4" NPTF 1/8" NPTF 1/4" NPTF	External	711 711 711	IN EXH IN 1C-11-PI-XXYZZ 721C-11-PI- 1C-12-PI-XXYZZ 721C-12-PI- 1C-11-PE-XXYZZ 721C-11-PE-	
1/4" NPTF 1/8" NPTF 1/4" NPTF HOW TO ORDER VALVE V	External WITH FLOW CONTROLS	711 711 711	IN EXH IN 1C-11-PI-XXYZZ 721C-11-PI- 1C-12-PI-XXYZZ 721C-12-PI- 1C-11-PE-XXYZZ 721C-11-PE 1C-12-PE-XXYZZ 721C-12-PE 1C-12-PE-XXYZZ 721C-12-PE IC-12-PE-XXYZZ 721C-12-PE IC-12-PE-XXYZZ 721C-12-PE	
1/4" NPTF 1/8" NPTF 1/4" NPTF HOW TO ORDER VALVE V	External WITH FLOW CONTROLS	711 711 711 711 711 711	IN EXH IN 1C-11-PI-XXYZZ 721C-11-PI- 1C-12-PI-XXYZZ 721C-12-PI- 1C-11-PE-XXYZZ 721C-11-PE 1C-12-PE-XXYZZ 721C-12-PE 1C-12-PE-XXYZZ 721C-12-PE IC-12-PE-XXYZZ 721C-12-PE IC-12-PE-XXYZZ 721C-12-PE	EXH -XXYZZ -XXYZZ -XXYZZ erator B B C ZZI EXH -XXYZZ 000 900
1/4" NPTF 1/8" NPTF 1/4" NPTF HOW TO ORDER VALVE V Port size	WITH FLOW CONTROLS Pilot air	711 711 711 711 711 711	IN EXH IN 1C-11-PI-XXYZZ 721C-11-PI- 1C-12-PI-XXYZZ 721C-12-PI- 1C-11-PE-XXYZZ 721C-12-PI- 1C-12-PE-XXYZZ 721C-12-PE- IC-12-PE-XXYZZ 721C-12-PE- IC-12-PE-XXYZZ 721C-12-PE- IC-12-PE-XXYZZ 721C-12-PE- IC-12-PE-XXYZZ 721C-12-PE- IC-12-PE-XXYZZ 721C-12-PE- IC-12-PE-XXYZZ IC-12-PE- IC-12-PE-XXYZZ IC-12-PE- IC-12-PE-XXYZZ IC-12-PE-	EXH -XXYZZ -XXYZZ -XXYZZ erator B B C ZZ EXH -XXYZZ 900 -XXYZZ 0 0 0 0 0 0 0 0 0 0 0 0 0
1/4" NPTF 1/8" NPTF 1/4" NPTF HOW TO ORDER VALVE V Port size 1/8" NPTF	WITH FLOW CONTROLS Pilot air	711 711 711 711 711 711 711 711	IN EXH IN 1C-11-PI-XXYZZ 721C-11-PI- 1C-12-PI-XXYZZ 721C-12-PI- 1C-11-PE-XXYZZ 721C-11-PE- 1C-12-PE-XXYZZ 721C-12-PE 1C-12-PE-XXYZZ 721C-12-PE IC-12-PE-XXYZZ 721C-12-PE IC-12-PE-XXYZZ 721C-12-PE IC-12-PE-XXYZZ 721C-12-PE IC-12-PE-XXYZZ 721C-12-PE IC-12-PE-XXYZZ 722C-11-PE	EXH -XXYZZ -XXYZZ -XXYZZ erator B B C -XXYZZ -XXYZZ -XXYZZ -XXYZZ -XXYZZ 82

SOLENOID OPERATOR >

Х	X	Y	ZZ.
	Γ.	- ⁻	

XX	Voltage	Y Manual operator	ZZ	Electrical connection	6600
1	120/60, 110/50	Non-locking	JB	Rectangular connector	
2	240/60, 220/50	2 Locking	JD	Rectangular connector with light	_ 1300
22	24/50, 24/60	_	JA	Square connector	
59	24 VDC (2.5 W)	_	JC	Square connector with light	_
87	24 VDC (17.1 W) 24 VDC (8.5 W)	_	BA CA	Flying leads (18") Conduit 1/2" NPS	800
21	24 400 (0.3 44)		CA		
01	24 VDC (0.3 VV)	—			
	options available, see page 357.	_			ISO 1
ther	options available, see page 357.	_	<u> </u>		
ther		_			ISO 1 ISO 2
ther o	options available, see page 357.	_			
01	options available, see page 357. PTIONS) replace by 2.			150 2

6500





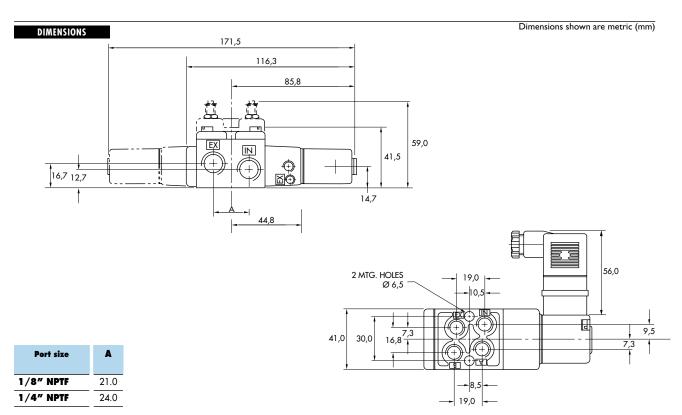
TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot : single operator : 20 to 150 PSI double operator : 10 to 150 PSI
	External pilot : vacuum to 150 PSI
Pilot pressure :	Single operator : 20 to 150 PSI Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar$) :	1/8" : (0.6 C _v), 1/4" : (0.7 C _v)
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA
	= 1 to 17.1 W
Response times :	24 VDC (8.5 W) Energize : 6.4 ms De-energize : 8.5ms
	120/60 Energize : 4-10 ms De-energize : 7-13 ms

Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
Pilot valve : PID-XXYZZ, including mounting screws 35214 and seal 16363.

- Valve cover plate with integral flow controls : N-07002.

Options :

• BSPP threads.



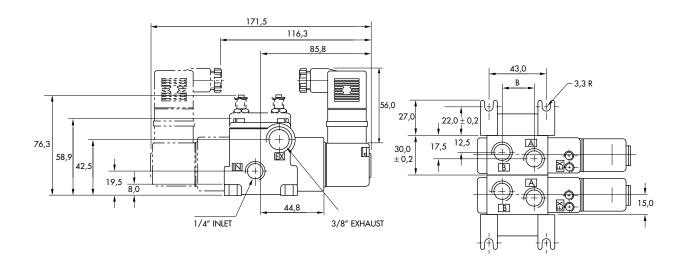
© Constant Series 700	Direct soler	ıoid and	solenoid p	ilot operated	Valves
Function	Port size	Flow (Max)	Manifold mo	unting	Series
4/2	1/8" - 1/4"	0.8 C _v	stacking		
 OPERATIONAL BENEFITS 1. Balanced spool, immune to va 2. Short stroke with high flow. 3. The piston (booster) provides forces. 4. Powerful return force thanks to mechanical and air springs. 5. Bonded spool with minimum glass-like finished bore. 6. Wiping effect eliminates stick 7. Pilot valve with balanced pop and consistent response times 8. Long service life. HOW TO ORDER 	s maximum shifting to the combination of n friction, shifting in a king. ppet, high flow, short				35 100 200 55 56 57
Port size	Pilot air	: :	Single operator	Double operator	58 59
1/8" NPTF 1/4" NPTF HOW TO ORDER VALVE V Port size 1/8" NPTF 1/8" NPTF	WITH FLOW CONTROLS Pilot air Internal		A B B C C C C C C C C C C C C C C C C C	A B B Image: Second state	45 700 900
1/4" NPTF SOLENOID OPERATOR >		<u>XX</u> Y <u>ZZ</u> *	714C-12-PI- XXYZZ	724C-12-PI-xxyzz	82
XX Voltage 11 120/60, 110/50 12 240/60, 220/50 22 24/50, 24/60 59 24 VDC (2.5 W) 87 24 VDC (17.1 W) 61 24 VDC (8.5 W) * Other options available, see	1 N 2 L	Manual operator Non-locking Locking	JB R JD R JA S JC S BA F	Electrical connection ectangular connector ectangular connector with light quare connector with light guare connector with light lying leads (18") conduit 1/2" NPS	6300 6500 6600 1300
End plate kit required (Port size	∍ 1/4") : M-07001-01-01 (internal μ M-07001-02-01 (external μ		Garada #Dava	utions" none 364 before use installation or service of MAC Val	800 ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A MAC 500A





Fluid :	Compressed air, vacu	um, inert gases	
Pressure range :	Internal pilot : single o	operator : 20 to 150 PSI	double operator : 10 to 150 PSI
	External pilot : vacuur	n to 150 PSI	
Pilot pressure :	Single operator : 20 t	o 150 PSI Double o	perator : 10 to 150 PSI
Lubrication :	Not required, if used	select a medium aniline p	oint lubricant (between 180°F to 210°F)
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C t	o 50°C)	
Flow (at 6 bar, $\Delta P=1bar)$:	1/8" : (0.7 C _v), 1/4"	: (0.8 C _v)	
Coil :	General purpose class	s A, continuous duty, enca	psulated
Voltage range :	-15% to +10% of nom	inal voltage	
Protection :	Consult factory		
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA	
	= 1 to 17.1 W		
Response times :	24 VDC (8.5 W)	Energize : 6.4 ms	De-energize : 8.5 ms
	120/60	Energize : 4-10 ms	De-energize : 7-13 ms
lesponse times :		5	5
Spare parts :	 Pilot valve : PID-XX 	YZZ, including mounting vith integral flow controls	A, cover mounting screws 35206 and seal 16234. screws 35214 and seal 16363. : N-07004. • Inlet & exhaust isolator : N-07005. • Inlet isolator : N-07006.
	• BSPP threads.		

DIMENSIONS



Port size	B
1/8" NPTF	21.0
1/4" NPTF	24.0



Individual mounting Series inline 35 Manifold mounting stacking 100 200 Sealed solenoid enclosure 55 56 **Manual operator** 57 Ä **Balanced** poppet 58 59 ππ 45 Piston 700 assembly 900 82 Air/spring return Bonded flow seal spool 6300 **SERIES FEATURES** 6500 \bullet The patented MACSOLENOID $^{\circledast}$ with its non-burn out feature on AC service. 6600 • Air/spring return on single solenoid valves. • Use for lube or non-lube service. 1300 • Optional low wattage DC solenoids down to 1 watt. • Various types of manual operators and electrical enclosures. 800 **ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A**

©
Series 900



VALVE CONFIGURATIONS AVAILABLE

The 900 Series is a small Inline 4-way valve with a Cv of up to 1.4. This series provides fast response, long life and high flow not commonly found in this size valve.

- 2-Pos., single or double operator (solenoid or remote air).
- Individual body or stacking body models.
- Manual and mechanical operators available

SERIES FEATURES-REMOTE AIR PILOT OPERATED VALVES

The remote air versions feature:

- Air/spring return on single remote air valves
- Use for lube or non-lube service.
- Optional remote air pilot, pilot operated models available when application requires a pilot signal below the main valve pressure.

SPECIAL APPLICATIONS:

On all models, energizing the "A" operator (solenoid or remote air) supplies pressure to cylinder port "A" and energizing the "B" operator supplies pressure to cylinder port "B". For the following special applications, additional piping considerations are required.

VACUUM APPLICATIONS (remote Air Models Only)-Connect the vacuum source to the Exhaust port and leave the Inlet open to atmosphere. Also specify MOD 158 which provides a heavy duty spring in lieu of air/spring.

SELECTOR APPLICATIONS-When using as a selector valve, connect the higher pressure to the Inlet port and the lower pressure to the Exhaust port. On solenaid models, the Inlet pressure must be a minimum of 25 PSI on singles or 10 PSI on doubles.

© Constant of the series 900	Direct sole	enoid and sol	enoid pilot opera	ted valves
unction	Port size	Flow (Max)	Individual mounting	Series
4/2	1/8″ - 1/4″	1.2 C _v	inline	
OPERATIONAL BENEFITS 1. Balanced spool, immune 2. Short stroke with high fla 3. Large spool area provid forces.	e to variations of pressure. ow. Jes maximum shifting			35
	imum friction, shifting in a			100
 Wiping effect eliminates Pilot valve with balances 	s sticking.			200
and consistent response 8. Long service life. HOW TO ORDER				55 56 57
Port	size	Single operator	Double operator	58
				59
1/8″	' NPTF	911B-PM- XXYZZ	921B-PM- XXYZZ	
1/4″	NPTF	912B-PM- xxyzz	922B-PM-xxyzz	45
Solenoid Operato	×R ►	<u>XX Y ZZ</u>		
XX Voltage 11 120/60, 110/50	50 Y	Manual operator	ZZ Electrical connection JB Rectangular connector	700
12 240/60, 220/50 22 24/50, 24/60	2	Locking	JD Rectangular connector with light JA Square connector	
59 24 VDC (2.5 W)			JC Square connector with light	900
87 24 VDC (17.1 W) 61 24 VDC (8.5 W)			BA Flying leads (18") CA Conduit 1/2" NPS	
Other options available,	e, see page 357.			82
				6300
				6500
				6600

1300 800

ISO 1 ISO 2

- ISO 3
- MAC 125A
- MAC 250A
- **MAC 500A**





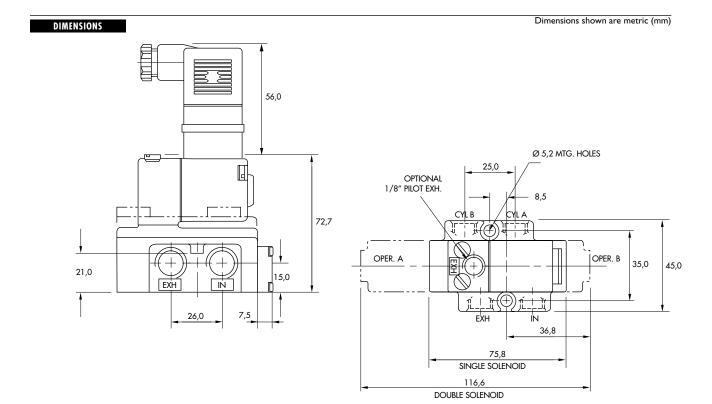
TECHNICAL DATA			
Fluid :	Compressed air, vacuu	m, inert gases	
Pressure range :	Single operator : 25 to	150 PSI Double of	perator : 10 to 150 PSI
Lubrication :	Not required, if used s	elect a medium aniline p	oint lubricant (between 180°F to 210°F)
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to	50°C)	
Flow (at 6 bar, $\Delta P=1 bar)$:	1/8" : (0.8 C _v), 1/4" :	: (1.2 C _v)	
Coil :	General purpose class	A, continuous duty, enca	psulated
Voltage range :	-15% to +10% of nomi	nal voltage	
Protection :	Consult factory		
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA	
	= 1 to 17.1 W		
Response times :	24 VDC (8.5 W)	Energize : 8 ms	De-energize : 10 ms
	120/60	Energize : 5-10 ms	De-energize : 8-15 ms

 \bullet Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.

• Pilot valve : PME-XXYZZ, including seal 16337. • Mounting screw pilot to main valve : 35219.

Options :

BSPP threads.



© Constant of the series 900	Direct sol	enoidands	olenoid pilot oper	ated valves
Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	1/8″ - 1/4″ - 3	3/8″ 1.4 C _v	stacking	
 OPERATIONAL BENEFITS Balanced spool, immune to Short stroke with high flow. Large spool area provides r forces. Powerful return force thanks mechanical and air springs. Bonded spool with minimu glass-like finished bore. Wiping effect eliminates stic 7. Pilot valve with balanced po and consistent response time Long service life. 	naximum shifting to the combination of n friction, shifting in a king. ppet, high flow, short			35 100 200 55 56

Port size	Single operator	Double operator	
			l
1/8" NPTF	913B-PM-XXYZZ	923B-PM-XXYZZ	
1/4" NPTF	914B-PM-XXYZZ	924B-PM-XXYZZ	1
3/8″ NPTF	919B-PM- XXYZZ	N/A	

SOLENOID OPERATOR ►

Х	X	Y	ZZ	*
		Т		

						70
XX	Voltage	Ŷ	Manual operator	ZZ	Electrical connection	
11	120/60, 110/50	1	Non-locking	JB	Rectangular connector	
12	240/60, 220/50	2	Locking	JD	Rectangular connector with light	- 90
22	24/50, 24/60			BA	Flying leads (18")	_
59	24 VDC (2.5 W)			MA	Common conduit 1" NPS	_
87	24 VDC (17.1 W)			RA	Conduit 3/8" NPS	_
61	24 VDC (8.5 W)					- 82

* Other options available, see page 357.

End plate kit required (Port size : 3/8") : M-09001-01. "MA" option also requires end plate kit : M-01002-01.

> 150 2 150 3 MAC 125A

6300

6500

6600

1300

800

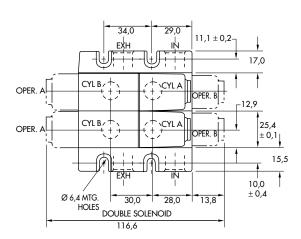
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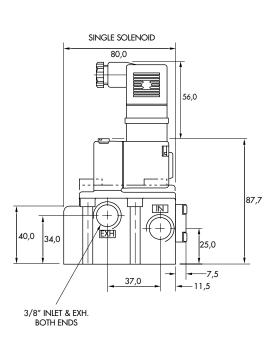




TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Single operator : 25 to 150 PSI Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1 bar)$:	1/8" : (1.2 C _v), 1/4" : (1.4 C _v), 3/8" : (1.4 C _v)
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	- -15% to +10% of nominal voltage
Protection :	Consult factory
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA
	= 1 to 17.1 W
Response times :	24 VDC (8.5 W) Energize : 8 ms De-energize : 10 ms
	120/60 Energize : 5-10 ms De-energize : 8-15 ms
Spare parts :	 Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234. Pilot valve : PME-XXYZZ, including seal 16367. • Mounting screw pilot to main valve : 35208. Pressure seal between valves : 16358. • Tie-rod (x2) : 19615. • Inlet & exhaust isolator : N-09002. • Inlet isolator : N-09004.A. Exhaust isolator : N-09003.
Options :	• BSPP threads. 7,5

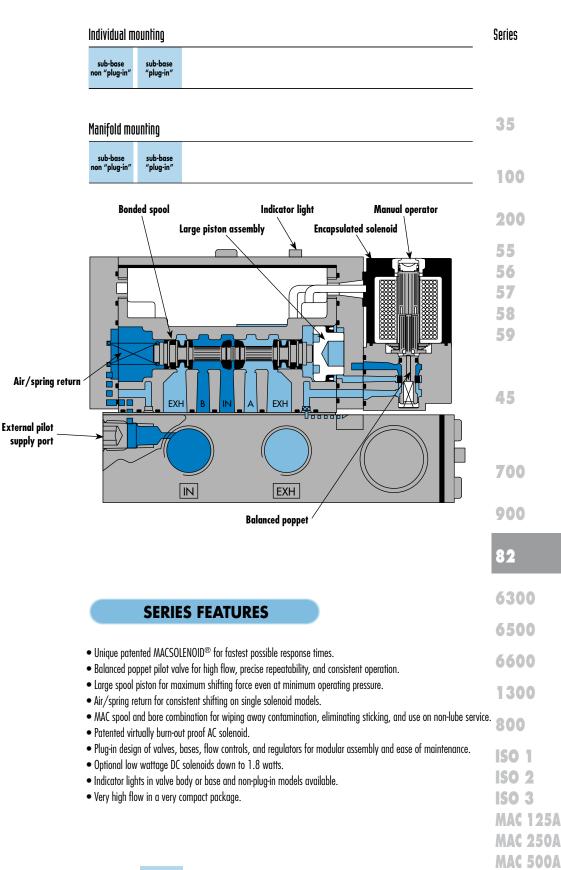
DIMENSIONS





Dimensions shown are metric (mm)

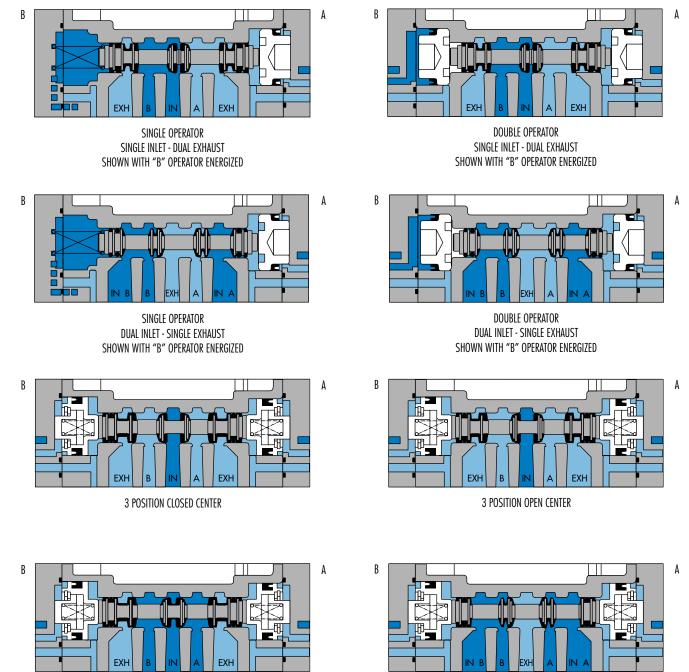








SPOOL CONFIGURATIONS



3 POSITION SINGLE PRESSURE PRESSURE CENTER

3 POSITION DUAL PRESSURE

PRESSURE CENTER

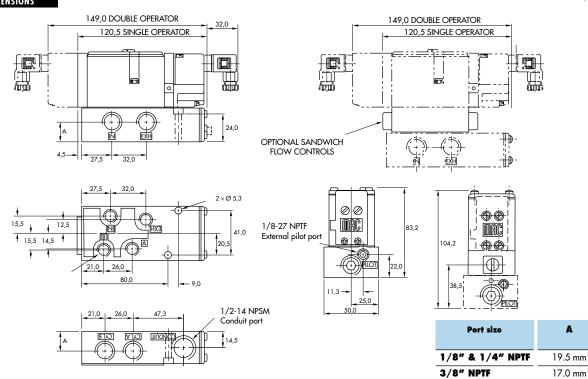
© Contraction of the series at		Direct si	olenoida	nd solend	pid pilot operated	I V a I V e S
Function		Port size	Flow (Max)		Individual mounting	Series
4/2 - 4/3		1/8" - 1/4"	- 3/8″ 1.35 C _v		sub-base non "plug-in"	
 Short stroke wit The piston (boo forces. Powerful return mechanical and Bonded spool glass-like finishe Wiping effect e 	I, immune to v th high flow. sster) provides force thanks I d air springs. with minimum ed bore. sliminates stick balanced pop response time e.	ppet, high flow, short				35 100 200 55 56 57
Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 4/3 Open center Pressure center	58
Valve less sub-base 1/8" NPTF sub-base 1/4" NPTF sub-base 3/8" NPTF	base Internal External Internal External External	A B B IVE IN EXH 82A-AB-000-TM-DXXX-XXX 82A-AB-AAA-TM-DXXX-XXX 82A-AB-AAA-TM-DXXX-XXX 82A-AB-AAA-TM-DXXX-XXX 82A-AB-BAA-TM-DXXX-XXX 82A-AB-BAA-TM-DXXX-XXX 82A-AB-BAA-TM-DXXX-XXX 82A-AB-BAA-TM-DXXX-XXX 82A-AB-BAA-TM-DXXX-XXX 82A-AB-BAA-TM-DXXX-XXX 82A-AB-CAA-TM-DXXX-XXX 82A-AB-CAA-TM-DXXX-XXX 82A-AB-CAA-TM-DXXX-XXX 82A-AB-CAA-TM-DXXX-XXX	A B B ITE IN EXH 82A-BB-000-TM-DXXX-XXX 82A-BB-AAA-TM-DXXX-XXX 82A-BB-AAA-TM-DXXX-XXX 82A-BB-AAD-TM-DXXX-XXX 82A-BB-BAA-TM-DXXX-XXX 82A-BB-BAA-TM-DXXX-XXX 82A-BB-BAA-TM-DXXX-XXX 82A-BB-BAA-TM-DXXX-XXX 82A-BB-BAA-TM-DXXX-XXX 82A-BB-CAA-TM-DXXX-XXX 82A-BB-CAA-TM-DXXX-XXX 82A-BB-CAA-TM-DXXX-XXX	Butter A B A IN EXH B2A-EB-000-TM-DXXX-XXX 82A-EB-AAA-TM-DXXX-XXX B2A-EB-AAA-TM-DXXX-XXX 82A-EB-AAA-TM-DXXX-XXX B2A-EB-BAA-TM-DXXX-XXX 82A-EB-BAD-TM-DXXX-XXX B2A-EB-CAA-TM-DXXX-XXX 82A-EB-CAA-TM-DXXX-XXX B2A-EB-CAA-TM-DXXX-XXX 82A-EB-CAA-TM-DXXX-XXX B2A-EB-CAA-TM-DXXX-XXX	But is a b is	45 xx xx xx xx xx xx xx xx xx xx xx xx xx
SOLENOID OP			D XX X-	X Manual oper	rator XX	900
AA 120/6 AB 240/6 AC 24/60	50, 110/50 50, 220/50 50, 24/50 50 (1.8 W)		Flying leads)	1 Non-locking 2 Locking	KA Square connector KD Square connector with light JB Rectangular connector JD Rectangular connector with lig	6200
DA 24 VD	DC (5.4 W) DC (12.7 W)				BA Flying leads Note : KD connector shown in photo.	6500
* Other options c	available, see	page 361.			NULE . NO CONTECTOR SHOWIN IN Proc	6600
OPTIONS						
	or dual pres	sure valves, replace A l				1300
82A-AB-000- <u>TM</u> -Dx2 - Fc - M 82A-XX-BAA-TM-Dx2	xx-xxx 	wich regulator, see pres red pilot exhaust) aust out main exhaust, r t cannot be restricted. A r B for bottom ports (1/4 r C for side and bottom	replace B by E. Also, Th Available only on single 8″ or 1/4″ only)	M pilot body is replaced pressure valves.	d by TU pilot body.	800 ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A
			1)	01	Consult "Precautions" page 364 before use, installation or service of MA	MAC 500A





External pilot : vacuum Single operator and 3	positions : 25-150 PSI [Double operator : 10-150 PSI		
Single operator and 3	positions : 25-150 PSI [
0 1	•			
Not required, if used	select a medium anilina n			
	select a mealorn annine p	point lubricant (between 180°F to 210°F)		
40 µ				
)°F to 120°F (-18°C to	o 50°C)			
/8" : (0.9 C _v), 1/4"	: (1.3 C _v), 3/8" : (1.35 C			
poxy encapsulated -	class A wires - Continuou	is duty.		
-15% to +10% of nominal voltage				
Consult factory				
- Inrush : 10.9 VA	Holding : 7.7 VA			
= 1.8 to 12.7 W				
24 VDC (5.4 W)	Energize : 9 ms	De-energize : 6 ms		
120/60	Energize : 5-12 ms	De-energize :6-13 ms		
	/8" : (0.9 C _v), 1/4" poxy encapsulated - 15% to +10% of nom Consult factory - Inrush : 10.9 VA = 1.8 to 12.7 W 24 VDC (5.4 W)	Consult factory - Inrush : 10.9 VA Holding : 7.7 VA = 1.8 to 12.7 W 24 VDC (5.4 W) Energize : 9 ms		

DIMENSIONS



© Contraction of the second se					oid pilot opera	
Function		Port size	Flow (Max)		Individual mounting	Series
4/2 - 4/3		1/8″ - 1/4″	- 3/8″ 1.35 C _v		sub-base "plug-in"	
 Short stroke with The piston (book 	, immune to v h high flow.	variations of pressure. s maximum shifting				35
mechanical and 5. Bonded spool v	l air springs. with minimum	to the combination of n friction, shifting in a			INC	100
glass-like finishe b. Wiping effect e	liminates stic					200
and consistent r 3. Long service life	esponse time	ppet, high flow, short es.			- 0	55
5. Long service life					0	56
HOW TO ORDE	R					57
Port size	Pilot air	4/2	4/2 Double executor	4/3	4/3 4/2	-
		A A B B A B A B A B A B A B A B A B A B	A A B B A B B A B A B B A B A B A B A B	Closed center	Open center Pressure	
Valve less		82A-AA-000-TM-DxxP-xDA	82A-BA-000-TM-DxxP-xDA	82A-EA-000-TM-DxxP-xDA	82A-FA-000-TM-DxxP-xDA 82A-GA-000-T/	M-DxxP-xDA
sub-base 1/8″ NPTF	Internal External	82A-AA-AAA-TM-DxxP-xDA 82A-AA-AAD-TM-DxxP-xDA	82A-BA-AAA-TM-DxxP-xDA 82A-BA-AAD-TM-DxxP-xDA	82A-EA-AAA-TM-DxxP-xDA 82A-EA-AAD-TM-DxxP-xDA	82A-FA-AAA-TM-DxxP-xDA 82A-FA-AAD-TM-DxxP-xDA 82A-GA-AAD-T	
sub-base	Internal	82A-AA-BAA-TM-DxxP-xDA	82A-BA-BAA-TM-DxxP-xDA	82A-EA-BAA-TM-D xx P- x DA	82A-FA-BAA-TM-DxxP-xDA 82A-GA-BAA-T	M-DxxP-xDA
1/4" NPTF	External	82A-AA-BAD-TM-DxxP-xDA	82A-BA-BAD-TM-DxxP-xDA	82A-EA-BAD-TM-DxxP-xDA	82A-FA-BAD-TMDXXP-XDA 82A-GA-BAD-TA	
sub-base 3/8″ NPTF	Internal External	82A-AA-CAA-TM-DxxP-xDA 82A-AA-CAD-TM-DxxP-xDA	82A-BA-CAA-TM-DxxP-xDA 82A-BA-CAD-TM-DxxP-xDA	82A-EA-CAA-TM-DxxP-xDA 82A-EA-CAD-TM-DxxP-xDA	82A-FA-CAA-TM-DxxP-xDA 82A-FA-CAD-TM-DxxP-xDA 82A-GA-CAD-T	700
			D XX P-			
				Γ, C		900
XX Volta	ıqe			X Manual oper	rator	82
AA 120/6	0, 110/50			1 Non-locking		
AC 24/60	0, 220/50 , 24/50			2 Locking		6300
DA 24 VD0	C (1.8 W) C (5.4 W)					0300
DF 24 VD0	C (12.7 W)					6500
Other options a	ıvailable, see	e page 361.				6600
OPTIONS						
82A-AA-000-TM-Dx		body replace A by C.				1300
- F	or pilot exh	naust out main exhaust i	replace A by D. For lig	ht replace A by F.		800
P	pressure val	ve only. TU replaces TN	l.	exnaust cannot be rest	ricted (NO flow controls) available v	-
		ilot exhaust replace TM essure valves, replace A		FWIGWH		ISO 1
——— - F (1	Requires sa	indwich regulator - see	pressure regulator section	ion)		150 2
32A-AA-BAA-TM-Dx	xP-xDA					ISO 3
	Replace A b	by B for bottom ports (1,	/8" or 1/4" only)			MAC 125A
- k	kepiace A b	by C for side and bottom	n ports (1/8" or 1/4" o	oniy)		MAC 250A
			41	03	Consult "Precautions" name 364 before use installation or	MAC 500A



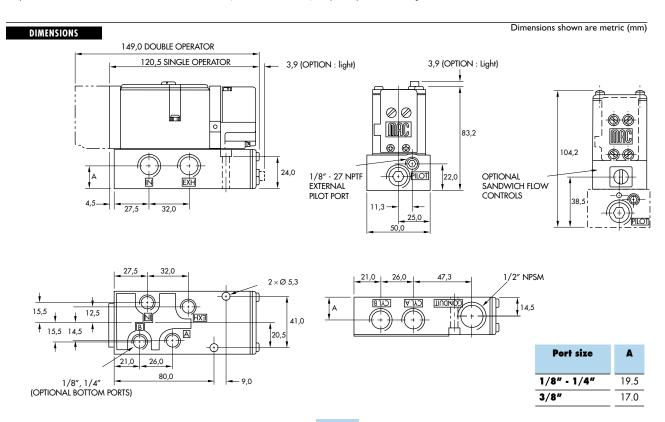


TECHNICAL DATA						
Fluid :	Compressed air, vacuum, inert gases					
Pressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI					
	External pilot : vacuum to 150 PSI					
Pilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI					
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)					
Filtration :	40 μ					
Temperature range :	0°F to 120°F (-18°C to 50°C)					
Flow (at 6 bar, $\Delta P=1 bar)$:						
Coil :	Epoxy encapsulated - class A wires - Continuous duty.					
Voltage range :	-15% to +10% of nominal voltage					
Protection :	Consult factory					
Power :	~ Inrush : 10.9 VA Holding : 7.7 VA					
	= 1.8 to 12.7 W					
Response times :	24 VDC (5.4 W) Energize : 9 ms De-energize : 6 ms					
	120/60 Energize : 5-12 ms De-energize :6-13 ms					
	120/60 Energize : 5-12 ms De-energize :6-13 ms					

Solenoid operator (power ≥ 5.4 W) : DXXP-XDA, including mounting screws 35013.
Seal between solenoid and pilot body : 16402.
Pilot valve : TM-DXXP-XDA, including seal 16447.
Mounting screw pilot to main valve : 35023.
Pressure seal between valve and base : 16446.
Mounting screw valve to base (x2) : 35211.

Options :

• BSPP threads. • Flow controls (Part N°. FC82A-AA) • Explosion-proof model. • Lights in base.



Consult "Precautions" page 364 before use, installation or service of MAC Valves

© Contraction of the series and s		Direct so	olenoida	nd solen (oid pilot operated	l valves
Function		Port size	Flow (Max)		Manifold mounting	Series
4/2 - 4/3		1/4" - 3/8"	1.35 C _v		sub-base non "plug-in"	
 Short stroke wit The piston (boo forces. 	l, immune to vo th high flow. oster) provides	ariations of pressure. maximum shifting o the combination of				35
mechanical and 5. Bonded spool glass-like finishe 6. Wiping effect e	d air springs. with minimum ed bore. diminates sticki balanced pop	friction, shifting in a ing. pet, high flow, short				100 200
8. Long service life	e.				ALC HE	55 56 57
Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 4/3 Open center Pressure center	58 59
Valve less sub-base 1/4" NPTF		Image: Constraint of the second sec	Image: Constraint of the second sec	Image: Non-Two-Dimensional statements Image: Non-Two-Dimensional statements Image: Non-Two-Dimensional statements 82A-EB-000-TM-Dixxx-xxx 82A-EB-BKA-TM-Dixxx-xxx 82A-EB-BKD-TM-Dixxx-xxx 82A-EB-BKD-TM-Dixxx-xxx 82A-EB-BKD-TM-Dixxx-xxx 82A-EB-BKD-TM-Dixxx-xxx	Image: Non-State State St	⊥ xx <u>45</u>
sub-base 3/8" NPTF	Internal External	82A-AB-CKA-TM-D <i>xxx-xxx</i> 82A-AB-CKD-TM-D <i>xxx-xxx</i>	82A-BB-CKA-TM-Dxxx-xxx 82A-BB-CKD-TM-Dxxx-xxx	82A-EB-CKD-TM-Dxxx-xxx	82A-FB-CKA-TM-Dxxx-xxx 82A-GB-CKA-TM-Dxxx-xx 82A-FB-CKD-TM-Dxxx-xxx 82A-GB-CKD-TM-Dxxx-xx	
SOLENOID OP			e length	X Manual ope	rator XX KA Square connector	900
AB 240/6 AC 24/60 FB 24 VD DA 24 VD	0, 220/50 0, 24/50 C (1.8 W) C (5.4 W) C (12.7 W)	J Conn		2 Locking	KD Square connector with light JB Rectangular connector JD Rectangular connector with light BA Flying leads	6300
		³ Other options of	available, see page 361.		Note : KD connector shown in photo.	6500
OPTIONS 82A- <u>AB</u> -000-TM-Dxx	xx-xxx					6600
r	estricted (No	aust out main exhaust r o flow controls) availab ot exhaust replace TM	le with single pressure	A pilot body is replace valve only.	d by TU pilot body. Main exhaust cannot be	1300
			by C, B by D, E by M, pressure regulator secti			800
	Replace K by Replace K by Replace K by Replace K by Replace K by	 L for bottom cyl. ports M for bottom inlet poi N for bottom inlet and P for bottom and end R for bottom and end S for selector base with 	rt d cyl. ports cyl. ports cyl. ports w/bottom in	let		ISO 1 ISO 2 ISO 3 MAC 125A

Replace K by R for bottom and end cyl. ports w/bottom inlet
 Replace K by S for selector base with side ports

Consult "Precautions" page 364 before use, installation or service of MAC Valves

MAC 250A MAC 500A





luid :	Compressed air, vacuum, inert gases
ressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI External pilot : vacuum to 150 PSI
ilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI
ubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Itration :	40 µ
emperature range :	0°F to 120°F (-18°C to 50°C)
ow (at 6 bar, ∆P=1bar) :	1/4" (1.3 C _v), 3/8" : (1.35 C _v)
oil :	Epoxy encapsulated - class A wires - Continuous duty.
oltage range :	-15% to +10% of nominal voltage
rotection :	Consult factory
ower :	~ Inrush : 10.9 VA Holding : 7.7 VA = 1.8 to 12.7 W
tesponse times :	24 VDC (5.4 W) Energize : 9 ms De-energize : 6 ms
	120/60 Energize : 5-12 ms De-energize :6-13 ms
•	 Seal between solenoid and pilot body : 16402. • Pilot valve : TM-DXXX-XXX, including seal 16447. Mounting screw pilot to main valve : 35023. • Pressure seal between valve and base : 16446. Mounting screw valve to base (x2) : 35211. • Tie-rod (x2) : 19731. •-Fastening kit : N-82005-01. • BSPP threads. • Flow controls (Part N°. FC82A-BA) • Explosion-proof model.
Options : DIMENSIONS	 Mounting screw pilot to main valve : 35023. • Pressure seal between valve and base : 16446. Mounting screw valve to base (x2) : 35211. • Tie-rod (x2) : 19731. • Fastening kit : N-82005-01. • BSPP threads. • Flow controls (Part N°. FC82A-BA) • Explosion-proof model.
	 Mounting screw pilot to main valve : 35023. • Pressure seal between valve and base : 16446. Mounting screw valve to base (x2) : 35211. • Tie-rod (x2) : 19731. • Fastening kit : N-82005-01. • BSPP threads. • Flow controls (Part N°. FC82A-BA) • Explosion-proof model. Dimensions shown are metric 174,7 DOUBLE OPERATOR 164,2 SINGLE OPERATOR 164,2 SINGLE OPERATOR 164,2 SINGLE OPERATOR 174,7 DOUBLE OPERATOR 164,2 SINGLE OPERATOR 174,7 DOUBLE OPERATOR
DIMENSIONS 32 46,0 46,0 1/8"- 27 NPTF (OPTIONAL COM 6	 Mounting screw pilot to main valve : 35023. • Pressure seal between valve and base : 16446. Mounting screw valve to base (x2) : 35211. • Tie-rod (x2) : 19731. • Fastening kit : N-82005-01. • BSPP threads. • Flow controls (Part N°. FC82A-BA) • Explosion-proof model. Dimensions shown are metric 174,7 DOUBLE OPERATOR 164,2 SINGLE OPERATOR 164,2 SINGLE OPERATOR 164,2 SINGLE OPERATOR 11/4" NPSM 0 <td< td=""></td<>

© Series 82		Direct so	olenoida	nd solend	oid pilot	operated \	/alves
Function		Port size	Flow (Max)		Manifold mounting		Series
4/2 - 4/3		1/4" - 3/8"	1.35 C _v		sub-base "plug-in"		
 Short stroke wi The piston (boc forces. Powerful return mechanical and Bonded spool glass-like finish Wiping effect effect effect 	I, immune to v th high flow. sster) provides force thanks d air springs. with minimum ed bore. sliminates sticl balanced po response time e.	ppet, high flow, short				00.6	35 100 200 55 56 57
Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	4/3 Pressure center	58
Valve less sub-base 1/4" NPTF sub-base 3/8" NPTF	base Internal External Internal External	A A B B B C C C C C C C C C C C C C	A B B D D D D D D D D D D D D D	B A B A Image: A Imag	B A B A IN EXH EXH EXH 82A-FA-000-TM-DxxP-xDA 82A-FA-BKA-TM-DxxP-xDA 82A-FA-BKD-TM-DxxP-xDA 82A-FA-BKD-TM-DxxP-xDA 82A-FA-CKA-TM-DxxP-xDA	B A B A MDE A B A IN EXH B B 82A-GA-000-TM-DxxP-xDA B B A 82A-GA-BKA-TM-DxxP-xDA B B A 82A-GA-BKD-TM-DxxP-xDA B B A 82A-GA-CKA-TM-DxxP-xDA B B A	59 45
solenoid of	PERATOR >		D <u>xx</u> P-	X DA [*]			700
AB 240/6 AC 24/60 FB 24 VD DA 24 VD	60, 110/50 60, 220/50 60, 24/50 FC (1.8 W) FC (5.4 W)			X Manual open Non-locking Locking	rator		900 82
 DF 24 VD * Other options of 	C (12.7 W) available, see	apage 361					6300
OPTIONS							6500
82A-AA-000-TM-D							6600
	For pilot ext Use TU pilot	body replace A by C. haust out main exhaust t body for pilot exhaust	to main exhaust, main	ht replace A by F. exhaust cannot be rest	ricted (No flow control	s) available with single	1300
-	pressure val For piped p	lve only. TU replaces TM ilot exhaust replace TM	1. by TP.			-	800
82A-XX-BKA-TM-D	(Requires sc xP-xDA Replace K b Replace K b Replace K b Replace K b Replace K b	essure valves, replace A andwich regulator - see by L for bottom cyl. ports by M for bottom inlet po by N for bottom inlet and by P for bottom and end by R for bottom and end by S for selector base wi	pressure regulator sect s rt d cyl. ports cyl. ports cyl. ports w/bottom in th side ports	ion)			ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A MAC 500A

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Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI
	External pilot : vacuum to 150 PSI
ilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI
ubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Itration :	40 µ
mperature range :	0°F to 120°F (-18°C to 50°C)
ow (at 6 bar, ∆P=1bar) :	1/4" (1.3 C _v), 3/8" : (1.35 C _v)
oil :	Epoxy encapsulated - class A wires - Continuous duty.
oltage range :	-15% to +10% of nominal voltage
rotection :	Consult factory
Power :	~ Inrush : 10.9 VA Holding : 7.7 VA = 1.8 to 12.7 W
Response times :	24 VDC (5.4 W) Energize : 9 ms De-energize : 6 ms
	120/60 Energize : 5-12 ms De-energize :6-13 ms
	 Mounting screw valve to base (x2) : 35211. • Tie-rod (x2) : 19731. • Fastening kit : N-82005-01. • BSPP threads. • Flow controls (Part N°. FC82A-AA) • Explosion-proof model. • Lights in base.
Dptions : DIMENSIONS	• BSPP threads. • Flow controls (Part N°. FC82A-AA) • Explosion-proof model. • Lights in base. Dimensions shown are metric
Options : DIMENSIONS	• BSPP threads. • Flow controls (Part N°. FC82A-AA) • Explosion-proof model. • Lights in base.
·	• BSPP threads. • Flow controls (Part N°. FC82A-AA) • Explosion-proof model. • Lights in base. Dimensions shown are metric 174,7 DOUBLE OPERATOR 164,2 SINGLE OPERATOR 1/4" NPSM 0PTIONAL SANDWICH 1/4" APLACES

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Consult "Precautions" page 364 before use, installation or service of MAC Valves



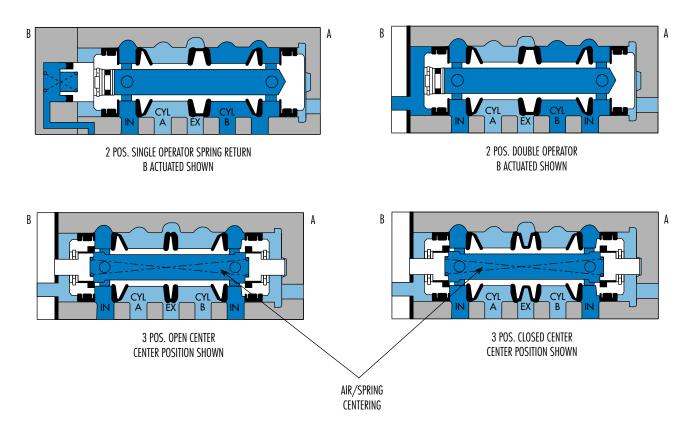
Individual mounting Series sub-base "plug-in" sub-base on "plug-in 35 Manifold mounting sub-b sub-base "plug-in" n "plug-in' 100 200 Pilot air accumulator Integral ground wire **Manual operator** Sealed solenoid enclosure 55 56 ПТ ЪГ 57 ſП ю 58 59 Air/spring return 45 CYL Α Řн Ext. pilot supply port 700 IN EXH. CONDUIT 900 Internal pilot Sealed wiring tuck space / Integral muffler Bonded flow seal spool supply ball check or **Optional pilot** 82 exhaust tapped port 6300 **SERIES FEATURES** 6500 • The patented MACSOLENOID® with its non-burn out feature on AC service. 6600 • A large checked accumulator for consistent shifting on single and double solenoid models. • A plug-in design that provides for internal or external pilot with or without lights and all electrical 1300 and air plumbing in the base — the valve portion is the same. • Non-lubricated or lubricated service. 800 • Optional low watttage DC solenoids down to 1 watt. • Optional indicator lights, and various types of manual operators. **ISO 1** • Non plug-in or external plug-in models are available. **ISO 2 ISO 3 MAC 125A**

MAC 250A MAC 500A





SPOOL CONFIGURATIONS



VALVE CONFIGURATIONS AVAILABLE

The versatile 6300 Series provides high flow, extremely fast response, and long life in a compact package and is available in the following configurations:

- 2-Pos., single or double operators (solenoid or remote air).
- 3-Pos., double operator-Closed Center, Open Center or Pressure Center (solenoid or remote air).
- Single pressure.
- Dual pressure on manifolds with sandwich regulators.
- Individual base or add-a-unit manifold base.
- Internal pilot or for Vacuum to 25 PSI main valve pressures, external pilot.
- Manual and mechanical operators available.
- All models available with sandwich regulators (Except remote air pilot).

REMOTE AIR PILOT OPERATED VALVES

These remote air versions feature:

- A larged checked accumulator for air/spring return on single remote air models.
- Non-lubricated or lubricated service.
- All piping connections, including the remote air pilot supply, in the base.

REMOTE AIR PILOT, PILOT OPERATED VALVES

These special air versions have the same features as the remote air pilot operated models, but additionally feature:

- A manual operator and indicator.
- Ability to use a pilot signal pressure different from the main valve pressure. Pilot signal can be from 20 to 150 PSIG, regardless of main valve pressure.

BBC	D	į	ſ	6	C	ŀ	
Geries 6300							

Function	Port size	Flow (Max)	Individual mounting	Series
4/2 - 4/3	1/4" - 3/8" - 1/2"	3.0 C _v	sub-base non "plug-in"	
OPERATIONAL BENEFITS				
1. Balanced spool, immun	e to variations of			35
pressure. 2. Short stroke with high fl	low			
 High shifting forces. 			and the second se	
4. Checked accumulator g	juarantees maximum			100
pilot pressure.				100
5. Powerful return force the				
combination of mechai				200
6. Bonded spool with min	imum triction, shitting			200

- bolided spool with minimum method, similar in a glass-like finished bore.
 Wiping effect eliminates sticking.
 Pilot valve with balanced poppet, high flow, short and consistent response times.

HOW TO ORDER

Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center
Valve less b	ase	6312D-000-PM- XXYZZ	6322D-000-PM- XXYZZ	6332D-000-PM- XXYZZ	6342D-000-PM- XXYZZ
sub-base	Internal	6312D-131-PM- XXYZZ	6322D-131-PM- XXYZZ	6332D-131-PM- XXYZZ	6342D-131-PM- XXYZZ
1/4" NPTF	External	6312D-141-PM- XXYZZ	6322D-141-PM- XXYZZ	6332D-141-PM- XXYZZ	6342D-141-PM- XXYZZ
sub-base	Internal	6312D-231-PM- XXYZZ	6322D-231-PM- XXYZZ	6332D-231-PM- XXYZZ	6342D-231-PM- XXYZZ
3/8″ NPTF	External	6312D-241-PM- XXYZZ	6322D-241-PM- XXYZZ	6332D-241-PM- XXYZZ	6342D-241-PM- XXYZZ
sub-base	Internal	6312D-331-PM- XXYZZ	6322D-331-PM- XXYZZ	6332D-331-PM- XXYZZ	6342D-331-PM- XXYZZ
1/2″ NPTF	External	6312D-341-PM- XXYZZ	6322D-341-PM- XXYZZ	6332D-341-PM- XXYZZ	6342D-341-PM- XXYZZ

Note : Above codes shown are for side ports.

SOLENOID OPERATOR ►

	DID OPERATOR >		<u>XX Y ZZ</u> `			8
xx	Voltage	Ŷ	Manual operator	ZZ	Electrical connection	
11	120/60, 110/50	1	Non-locking	JB	Rectangular connector	
12	240/60, 220/50	2	Locking	JD	Rectangular connector with light	- 6
22	24/60, 24/50		C C	JA	Square connector	-
59	24 VDC (2.5 W)			JC	Square connectorwith light	
87	24 VDC (17.1 W)			BA	Flying leads (18")	- 6
61	24 VDC (8.5 W)					-
)ther c	options available, see page 357.			Note : Ph	oto shown with JC connector.	6

* Other options available, see page 357.

OPTIONS	1300
6312D-XXX-PM-XXYZZ - For piped pilot exhaust replace M by P.	800
 For piped pilot exhaust replace M by P. For bottom cylinder ports (excluding 1/2"), replace by 4. For dual pressure valves (see page 293 for use with sandwich regulators), replace by 5. 	ISO 1
Note : 1. The valve less base is always the same for internal or external pilot. These options are effected in the base. 2. To order bases without the valve, choose the base from the above table, then add 6300D as a prefix. Example 6300D-131.	ISO 2
	ISO 3 MAC 125A
	MAC 125A MAC 250A

55 56

57

900

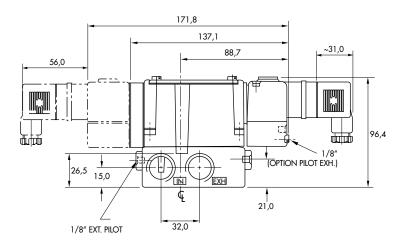




Fluid :	Compressed air, vacuur	n inert aases				
Pressure range :		perator and 3 positions :	25-150 PSI	double operator : 10-150 PSI		
·	External pilot : vacuum					
Pilot pressure :	Single operator and 3 p	positions : 25-150 PSI [Double operator : 10-150	PSI		
Lubrication :	Not required, if used se	elect a medium aniline p	oint lubricant (between 18	30°F to 210°F)		
Filtration :	40 µ					
Temperature range :	0°F to 120°F (-18°C to	50°C)				
Flow (at 6 bar, ΔP=1bar) :	1/4" (2.0 C _v), 3/8" : (2	1/4" (2.0 C _v), 3/8" : (2.6 C _v), 1/2" (3.0 C _v)				
Coil :	Epoxy encapsulated - cl	Epoxy encapsulated - class A wires - Continuous duty.				
Voltage range :	-15% to +10% of nomin	nal voltage				
Protection :	Consult factory					
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA				
	= 1 to 17.1 W					
Response times :	24 VDC (8.5 W)	Energize : 10 ms	De-energize : 11 ms			
	120/60	Energize : 4-13 ms	De-energize : 10-17 r	ns		

DIMENSIONS

Dimensions shown are metric (mm)



[©]
H
Series 6300

Function	Port size	Floш (Max)	Individual mounting	Series
4/2 - 4/3	1/4" - 3/8" - 1/2"	3.0 C _v	sub-base "plug-in"	
OPERATIONAL BENEFITS				
 Balanced spool, immuni pressure. 	e to variations of			35
 Short stroke with high fl High shifting forces. 	ow.			
 A. Checked accumulator g pilot pressure. 	uarantees maximum			100
5. Powerful return force the				1
combination of mechar 6. Bonded spool with mini	mum friction, shifting			200
in a glass-like finished b 7. Wiping effect eliminates				2
8. Pilot valve with balance	d poppet, high flow,			55
short and consistent res	ponse times.			56
HOW TO ORDER				57

HOW TO ORDER

Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center
Valve less b	ase	6311D-000-PM- XXY DA	6321D-000-PM- xxy DA	6331D-000-PM- XXY DA	6341D-000-PM- XXY DA
sub-base	Internal	6311D-111-PM- XXY DA	6321D-111-PM- xxy DA	6331D-111-PM- XXY DA	6341D-111-PM- XXY DA
1/4″ NPTF	External	6311D-121-PM- XXY DA	6321D-121-PM- XXY DA	6331D-121-PM- XXY DA	6341D-121-PM- XXY DA
sub-base	Internal	6311D-211-PM- XXY DA	6321D-211-PM- XXY DA	6331D-211-PM- XXY DA	6341D-211-PM- XXY DA
3/8″ NPTF	External	6311D-221-PM- XXY DA	6321D-221-PM- XXY DA	6331D-221-PM- XXY DA	6341D-221-PM- XXY DA
sub-base	Internal	6311D-311-PM- XXY DA	6321D-311-PM- XXY DA	6331D-311-PM- XXY DA	6341D-311-PM- XXY DA
1/2″ NPTF	External	6311D-321-PM- XXY DA	6321D-321-PM- XXY DA	6331D-321-PM- XXY DA	6341D-321-PM- XXY DA

Note : Above codes shown are for side ports without lights.

· · · · · · · · · · · · · · · · · · ·		900			
DLENOID OPERATOR >	XX Y DA				
	T_	82			
XX Voltage	Y Manual operator				
11 120/60, 110/50	1 Non-locking	6300			
12 240/60, 220/50 22 24/60, 24/50	2 Locking				
59 24 VDC (2.5 W)		6500			
87 24 VDC (17.1 W)		6500			
61 24 VDC (8.5 W)					
Other options available, see page 357.		6600			
OPTIONS		1300			
6311D-XXX-PM-xxyDA		200			
- For piped pilot exha	ust replace M by P	800			
- For bottom ports (exe	cluding 1/2"), replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light).				
- For side ports with light	ghts on base, replace by 2 (sgl. light), by 3 (dbl. light).	ISO 1			
- For lights on valve be	ody, replace by 3.				
	lves with lights on valve body (see page 293 for use with sandwich regulators	s), replace by 6.			
Note : 1. The valve less base is always the same for internal or external pilot. These options are effected in the base. 2. To order bases without the valve, choose the base from the above table, then add 6300D as a prefix. Example 6300D-111.					
		MAC 1254			
		MAC 250A			
		MAC 500A			





iluid :	Compressed air, vacu	um, inert gases	
Pressure range :	Internal pilot : single c	operator and 3 positions :	25-150 PSI double operator : 10-150 PSI
	External pilot : vacuur	n to 150 PSI	
Pilot pressure :	Single operator and 3	positions : 25-150 PSI	Double operator : 10-150 PSI
Lubrication :	Not required, if used	select a medium aniline p	oint lubricant (between 180°F to 210°F)
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C t	o 50°C)	
Flow (at 6 bar, $\Delta P=1bar)$:	1/4" (2.0 C _v), 3/8" :	(2.6 C _v), 1/2" (3.0 C _v)	
Coil :	Epoxy encapsulated -	class A wires - Continuou	s duty.
Voltage range :	-15% to +10% of nom	inal voltage	
Protection :	Consult factory		
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA	
	= 1 to 17.1 W		
Response times :	24 VDC (8.5 W)	Energize : 10 ms	De-energize : 11 ms
	120/60	Energize : 4-13 ms	De-energize : 10-17 ms

Solenoid operator (power ≥ 4 W) : D1-XXBE, cover mounting screws 35206 and seal 16234.
 Pilot valve : PME-XXYDA-BE, including seal 16337.
 Pressure seal between valve and base : 16298.

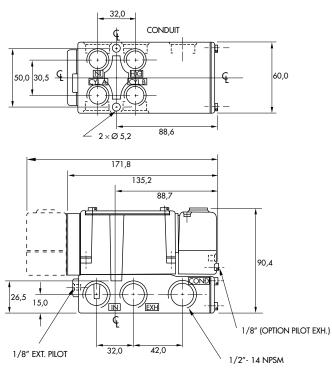
• Mounting screw valve to base (x4) : 35303.

Options :

BSPP threads.

DIMENSIONS

Dimensions shown are metric (mm)



Function	Port size	Flow (Max)	Manifold
Series 6300			
MAC	DILECI	solenoid and	5 0 1 8 11 0 1 0
e	Discol	o o lo poido pod	o o l o p o i d

Function		Port size	Flow (Max)		Manifold mounting		Series
4/2 - 4/3		3/8" - 1/2"	3.0 C _v		sub-base non "plug-in"		
OPERATIONAL BEN	IEFITS						
 Balanced spool pressure. Short stroke wit High shifting fo 	h high flow.	ariations of			<u>e</u> .*		35
 Checked accun pilot pressure. Powerful return combination of 	nulator guarar force thanks t	o the			1		100
6. Bonded spool in a glass-like fi	with minimum nished bore.	friction, shifting				.00.	200
 7. Wiping effect e 8. Pilot valve with 					A Com	al .	55
short and consi	stent response	times.			Face Face		56
HOW TO ORDI	ER						57
Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	4/3 Pressure center	58 59
							4 7
Valve less b	ase	6312D-000-PM-XXYZZ	6322D-000-PM- XXYZZ	6332D-000-PM-XXYZZ	6342D-000-PM-XXYZZ	6352D-000-PM- XXYZZ	

		IN EXH				
Valve less b	ase	6312D-000-PM- XXYZZ	6322D-000-PM- XXYZZ	6332D-000-PM- XXYZZ	6342D-000-PM- XXYZZ	6352D-000-PM- XXYZZ
sub-base	Internal	6312D-531-PM- XXYZZ	6322D-531-PM- XXYZZ	6332D-531-PM- XXYZZ	6342D-531-PM- XXYZZ	6352D-531-PM- XXYZZ
3/8″ NPTF	External	6312D-541-PM- XXYZZ	6322D-541-PM- XXYZZ	6332D-541-PM- XXYZZ	6342D-541-PM- XXYZZ	6352D-541-PM- XXYZZ
sub-base	Internal	6312D-631-PM- XXYZZ	6322D-631-PM- XXYZZ	6332D-631-PM- XXYZZ	6342D-631-PM- XXYZZ	6352D-631-PM- XXYZZ
1/2" NPTF	External	6312D-641-PM- XXYZZ	6322D-641-PM- xxyzz	6332D-641-PM- XXYZZ	6342D-641-PM- XXYZZ	6352D-641-PM- XXYZZ

<u>XX Y ZZ</u>

Note : Above codes shown are for side cylinder ports.

SOLENOID OPERATOR ►

II 120/60, 110/50 I Non-locking JB Rectangular connector 32 </th <th> XX</th> <th>Voltage</th> <th>Y</th> <th>Manual operator</th> <th>ZZ</th> <th>Electrical connection</th> <th></th>	 XX	Voltage	Y	Manual operator	ZZ	Electrical connection	
12 240/60, 220/50 2 Locking JD Rectangular connector with light 22 24/60, 24/50 JA Square connector JA Square connector 59 24 VDC (2.5 W) JC Square connector with light JA Square connector 87 24 VDC (17.1 W) BA Flying leads (18") 630	11	-	1		JB		82
59 24 VDC (2.5 W) JC Square connector with light 87 24 VDC (17.1 W) BA Flying leads (18") 630 61 24 VDC (8.5 W) Square connector with light 630	12		2	0	JD		_ • • •
87 24 VDC (17.1 W) 61 24 VDC (8 5 W) 61 24 VDC (8 5 W)	22	24/60, 24/50			JA	Square connector	_
	59	24 VDC (2.5 W)			JC	Square connector with light	_
61 24 VDC (8.5 W)	87	24 VDC (17.1 W)			BA	Flying leads (18")	- 630
	61	24 VDC (8.5 W)					_

* Other options available, see page 357.

OPTIONS

6312D-XXX-PM-xxyzz

- For piped pilot exhaust replace M by P. - For bottom cylinder ports, replace by 4. - For bottom and side cylinder ports, replace by 7.
- For dual pressure valves (see page 293 for use with sandwich regulators), replace by 5. MODIFICATIONS - MOD 0210 Bottom inlet port in addition to side inlet port - TO ORDER : 6312D-531-PM-111JA MOD 0210
- Note : 1. The valve less base is always the same for internal or external pilot. These options are effected in the manifold.
 - 2. To order manifolds without the valve, choose the manifold from the above table, then add 6300D as a prefix. Example 6300D-631.
 - 3. When ordering an external pilot connection for manifold bases, a common external pilot port is standard. One connection only is required for all the valves in the manifold whether single or double solenoid.
 - 4. Manifolds for solenoid and remote air operated valves must be ganged separately.

MAC 125A MAC 250A MAC 500A

45

700

6600

1300

800

ISO 1

ISO 2

ISO 3





iluid :	Compressed air, vacuum, inert gases
ressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI
	External pilot : vacuum to 150 PSI
ilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI
ubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
iltration :	40 µ
emperature range :	0°F to 120°F (-18°C to 50°C)
low (at 6 bar, ΔP=1bar) :	3/8" : (2.6 C _v), 1/2" (3.0 C _v)
Coil :	Epoxy encapsulated - class A wires - Continuous duty.
/oltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA = 1 to 17.1 W
Response times :	24 VDC (8.5 W) Energize : 10 ms De-energize : 11 ms
	120/60 Energize : 4-13 ms De-energize : 10-17 ms
Options : DIMENSIONS	BSPP threads. Dimensions shown are metric (
DIMENSIONS	56,0 $201,4$ $112,1$ $53,0$ $44,0$ $21,0$ $29,0$ $35,0$ $35,0$ $52,0$ $1/8" COMMON$ EXT PILOT (OPTION) $199,6$
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

∽ 2ר6,5

119,0

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of pressure.
- 2. Short stroke with high flow.
- 3. High shifting forces.
- 4. Checked accumulator guarantees maximum pilot pressure.
- 5. Powerful return force thanks to the combination of mechanical and air springs.
- 6. Bonded spool with minimum friction, shifting in a glass-like finished bore.
- 7. Wiping effect eliminates sticking.
- 8. Pilot valve with balanced poppet, high flow, short and consistent response times.

HOW TO ORDER

Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	4/3 Pressure center	
Valve less b	ase	6311D-000-PM- ххү DA	6321D-000-PM- XXY DA	6331D-000-PM- XXY DA	6341D-000-PM- XXY DA	6351D-000-PM- xxy DA	
sub-base	Internal	6311D-511-PM- XXY DA	6321D-511-PM- XXY DA	6331D-511-PM- XXY DA	6341D-511-PM- XXY DA	6351D-511-PM- xxy DA	
3/8″ NPTF	External	6311D-521-PM- XXY DA	6321D-521-PM- XXY DA	6331D-521-PM- XXY DA	6341D-521-PM- xxy DA	6351D-521-PM- XXY DA	
sub-base	Internal	6311D-611-PM- XXY DA	6321D-611-PM- XXY DA	6331D-611-PM- XXY DA	6341D-611-PM- xxy DA	6351D-611-PM- XXY DA	
1/2″ NPTF	External	6311D-621-PM- XXY DA	6321D-621-PM- XXY DA	6331D-621-PM- XXY DA	6341D-621-PM- xxy DA	6351D-621-PM- xxy DA	

Note : Above codes shown are for side cylinder ports without lights.

Solena	DID OPERATOR >	XX Y DA.	000
			900
XX	Voltage	Y Manual operator	
11	120/60, 110/50	1 Non-locking	82
12	240/60, 220/50	2 Locking	
22	24/60, 24/50		
59	24 VDC (2.5 W)		6900
87	24 VDC (17.1 W)		6300
61	24 VDC (8.5 W)		
	options available, see page 357.		650

OPTIONS

631 ID-XX2-PM-XX7DA	1000
- For piped pilot exhaust replace M by P.	1300
 For bottom cylinder ports, replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light). For side cylinder ports with light, replace by 2 (sgl. light), by 3 (dbl. light). For bottom and side cylinder ports, replace by 7 (no light), by 8 (sgl. light), by 9 (dbl. light). 	800
 For lights on valve body, replace by 3. For dual pressure valves with lights on valve body (see page 293 for use with sandwich regulators), replace by 6. 	ISO 1
MODIFICATIONS - MOD 0210 Bottom inlet port in addition to side inlet port - TO ORDER : 6311D-511-PM-111DA MOD 0210	ISO 2
Note : 1. The valve less base is always the same for internal or external pilot. These options are effected in the manifold. 2. To order manifolds without the valve, choose the manifold from the above table, then add 6300D as a prefix. Example 6300D-511.	ISO 3
 To order manifolds without the value, choose the manifold promise above table, then add oscolar as a pretix. Example oscolar-311. When ordering an external pilot connection for manifold bases, a common external pilot port is standard. One connection only is required for all the values in the manifold whether single or double solenoid. 	MAC 125A
valves in the manifold whether single or double sciencid	

- valves in the manifold whether single or double solenoid. 4. Manifolds for solenoid and remote air operated valves must be ganged separately.

35

100

200

55

56

57

58 59

45

700

6600





luid :	Compressed air, vacuum, inert gases
essure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI
	External pilot : vacuum to 150 PSI
lot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI
brication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
tration :	40 µ
emperature range :	0°F to 120°F (-18°C to 50°C)
ow (at 6 bar, ΔP=1bar) :	3/8" : (2.6 C _v), 1/2" (3.0 C _v)
oil :	Epoxy encapsulated - class A wires - Continuous duty.
oltage range :	-15% to +10% of nominal voltage
rotection :	Consult factory
ower:	~ Inrush : 14.8 VA Holding : 10.9 VA
	= 1 to 17.1 W
lesponse times :	24 VDC (8.5 W) Energize : 10 ms De-energize : 11 ms
	120/60 Energize : 4-13 ms De-energize : 10-17 ms
Options :	 Pilot valve : PME-XXYDA-BE, including seal 16337. Pressure seal between valve and base : 16396. Mounting screw valve to base (x4) : 35303. Tie-rod (x2) : 19624. Fastening kit : N-63002-01 Inlet isolator : 32839. Exhaust isolator : 28309. Blank station cover plate : M-63014. BSPP threads.
Options :	 Mounting screw valve to base (x4): 35303. • Tie-rod (x2): 19624. • Fastening kit : N-63002-01 Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads.
Options : DIMENSIONS	 Mounting screw valve to base (x4): 35303. Tie-rod (x2): 19624. Fastening kit: N-63002-01 Inlet isolator: 32839. Exhaust isolator: 28309. Blank station cover plate: M-63014.
	 Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads.
Options : DIMENSIONS	 Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads.
	 Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads.
	 Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads.
	 Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads. Dimensions shown are metric <l< td=""></l<>
·	 Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads. Dimensions shown are metric 101,0 1/2" (OPTION) 5,0 18,0 18,0 18,0 18,0 18,0 18,0 18,0 18,0 18,0 101,0
	 Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads.
	 Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads. Dimensions shown are metric
	 Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads.
·	 Mounting screw valve to base (x4) : 35303. • Tierod (x2) : 19624. • Fastening kit : N-63002-01 Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. BSPP threads.
	• Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 • Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads. Dimensions shown are metric 1/2'' (OPTION) = 5.0 18.0 18.0 101.0 100.0 1
	• Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 • Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads. Dimensions shown are metric 12° (OPTION) 5.0 18.0 101.0 101.0 101.0 12° (OPTION) 5.0 10.0
·	 Mounting screw valve to base (x4) : 35303. • Tierod (x2) : 19624. • Fastening kit : N-63002-01 Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads. Dimensions shown are metric <l< td=""></l<>
·	• Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 • Inlet isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads. Dimensions shown are metric $1/2^{e}$ (OPTION) 5.0 101.0 $1/2^{e}$ (OPTION) 5.0 10.0 101.0 $1/2^{e}$ (OPTION) 5.0 10.0 $10.$
	• Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 • Inlet isolator : 28309. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads. Dimensions shown are metric 1000 + 10000 + 1000 + 10000 + 1000 + 10000 + 10000 + 10000 + 10000 + 10000 +
·	• Mounting screw valve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 • Inlet isolator : 28399. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads. Dimensions shown are metric 18,0 18,0 10,0
	• Mounting screw volve to base (x4) : 35303. • Tie-rod (x2) : 19624. • Fastening kit : N-63002-01 • Inlet isolator : 28309. • Exhaust isolator : 28309. • Blank station cover plate : M-63014. • BSPP threads. Dimensions shown are metric $1/2^{e}$ (OPTION) 5.0 10.

1/8" COMMON EXT PILOT (OPTION)

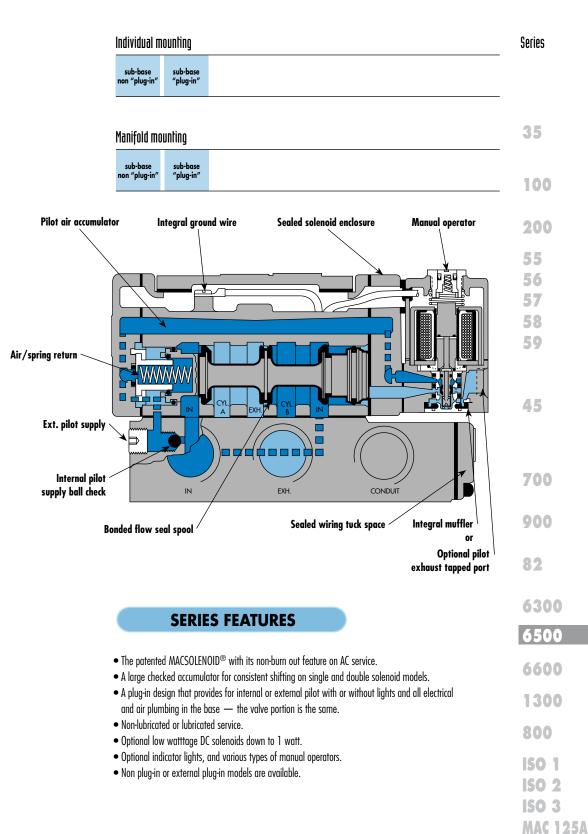
80,0

199,6

52,0 - 3/4″

- 1/2″



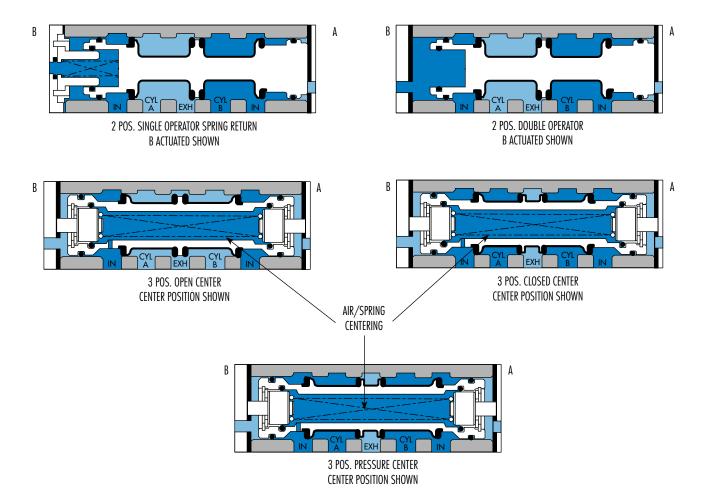


MAC 250A MAC 500A





SPOOL CONFIGURATIONS



VALVE CONFIGURATIONS AVAILABLE

The versatile 6500 Series provides high flow, extremely fast response, and long life in a compact package and is available in the following configurations:

- 2-Pos., single or double operators (solenoid or remote air).
- 3-Pos., double operator-Closed Center, Open Center or Pressure Center (solenoid or remote air).
- Single pressure or dual pressure.
- Individual base or add-a-unit manifold base.
- Internal pilot or for Vacuum to 25 PSI main valve pressures, external pilot.
- Manual and mechanical operators available.

REMOTE AIR PILOT OPERATED VALVES

- A larged checked accumulator for air/spring return on single remote air models.
- All piping connections, including the remote air pilot supply, in the base.
- Non-lubricated or lubricated service.

REMOTE AIR PILOT, PILOT OPERATED VALVES

These special air versions have the same features as the remote air pilot operated models, but additionally feature:

- A manual operator and indicator.
- Ability to use a pilot signal pressure different from the main valve pressure. Pilot signal can be from 20 to 150 PSIG, regardless of main valve pressure.

ALL MODELS AVAILABLE WITH SANDWICH TYPE REGULATORS

Series 6500	
Function Port size Flow (Max) Individual mounting	Series

Bilotton		1011 0120	יון שטוי		marriabar mobiliting		001100
4/2 - 4/3		3/8" - 1/2"	- 3/4″ 5.1 C	1	sub-base non "plug-in"		
OPERATIONAL BEN	IEFITS						
 Balanced spool pressure. 		ariations of				8	35
 Short stroke wit High shifting fo 	rces.						
. Checked accun pilot pressure.							100
 Powerful return combination of Bonded spool 	mechanical c	and air springs.					200
in a glass-like fi	nished bore.					0 10	
 Wiping effect e Pilot valve with 							55
short and consi							56
HOW TO ORDI	R						57
Port size	Pilot air	4/2	4/2	4/3	4/3	4/3	58
		Single operator	Double operato	r Closed center	Open center	Pressure center	59

PORT SIZE	Phot un	Single operator	Double operator	Glosed center	Open center	Pressure center
Valve less b	ase	6512B-000-PM- XXYZZ	6522B-000-PM- XXYZZ	6532B-000-PM- XXYZZ	6542B-000-PM- XXYZZ	6552B-000-PM- XXYZZ
sub-base	Internal	6512B-131-PM- XXYZZ	6522B-131-PM- XXYZZ	6532B-131-PM- XXYZZ	6542B-131-PM- XXYZZ	6552B-131-PM- XXYZZ
3/8″ NPTF	External	6512B-141-PM- XXYZZ	6522B-141-PM- XXYZZ	6532B-141-PM- XXYZZ	6542B-141-PM- XXYZZ	6552B-141-PM- XXYZZ
sub-base	Internal	6512B-231-PM- XXYZZ	6522B-231-PM- XXYZZ	6532B-231-PM- XXYZZ	6542B-231-PM- XXYZZ	6552B-231-PM- XXYZZ
1/2″ NPTF	External	6512B-241-PM- XXYZZ	6522B-241-PM- XXYZZ	6532B-241-PM- XXYZZ	6542B-241-PM- XXYZZ	6552B-241-PM- XXYZZ
sub-base	Internal	6512B-331-PM- XXYZZ	6522B-331-PM- XXYZZ	6532B-331-PM- XXYZZ	6542B-331-PM- XXYZZ	6552B-331-PM- XXYZZ
3/4″ NPTF	External	6512B-341-PM- XXYZZ	6522B-341-PM- XXYZZ	6532B-341-PM- XXYZZ	6542B-341-PM- XXYZZ	6552B-341-PM- XXYZZ

<u>XX Y ZZ</u>*

Note : Above codes shown are for side ports.

SOLENOID OPERATOR ►

X	Voltage	Y	Manual operator	ZZ	Electrical connection	
11	120/60, 110/50	1	Non-locking	JB	Rectangular connector	
12	240/60, 220/50	2	Locking	JD	Rectangular connector with light	63
22	24/60, 24/50			JA	Square connector	
59	24 VDC (2.5 W)			JC	Square connector with light	6
87	24 VDC (17.1 W)			BA	Flying leads (18")	- 05
61	24 VDC (8.5 W)				oto shown with JC connector.	_

OPTIONS

6512B-XX<u>X</u>-P<u>M</u>-xxyzz

- For piped pilot exhaust replace M by P. - For dual pressure valve, replace by 4.

MODIFICATIONS						
MOD. N°	DESCRIPTION	MODEL AVAILABILITY				
0002	Bottom inlet, exh. & cyl. ports (no side ports)	Available on individual base 3/8" & 1/2" only				
0004	Full side porting and additional bottom inlet, exh. & cyl. ports	Available on individual base 3/8" only				

ote :	1. The valve less base is always the same for	ISO 1
	internal or external pilot. These options are effected in the base.	ISO 2
	 Bottom ports : Refer to modification table. To order bases without the valve, choose the 	150 3
	base from the above table, then add 6500B as a prefix. Example 6500B-131.	MAC 12

45

700

900

1300

800





Compressed air, vacuum, inert gases						
Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI						
External pilot : vacuum to 150 PSI						
Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI						
Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)						
40 μ						
0°F to 120°F (-18°C to 50°C)						
3/8" : (4.5 C _v), 1/2" : (5.0 C _v), 3/4" : (5.1 C _v)						
Epoxy encapsulated - class A wires - Continuous duty						
-15% to +10% of nominal voltage						
Consult factory						
~ Inrush : 14.8 VA Holding : 10.9 VA						
= 1 to 17.1 W						
24 VDC (8.5 W) Energize : 12 ms De-energize : 12 ms						
120/60 Energize : 9-14 ms De-energize : 11-18 ms						

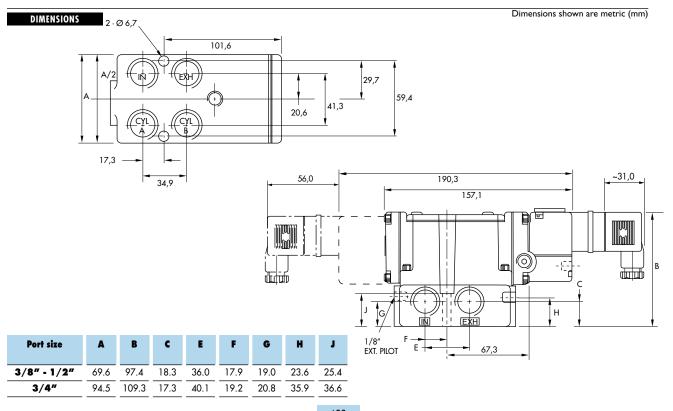
Spare parts :

Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
Pilot valve : PME-XXYZZ, including seal 16337.
Pressure seal between valve and base : 16246.
Mounting screw valve to base (x4) : 32201.

7.16 chilling co

Options :

BSPP threads.



°	
Series 65	00

unction		Port size	Flow (Max)		Individual mounting		Series
1/2 - 4/3		3/8" - 1/2"	- 3/4″ 5.1 C _v		sub-base "plug-in"		
PERATIONAL BEN	IEFITS						
 Balanced spool, pressure. Short stroke with High shifting for 	h high flow.	ariations of					35
Checked accum pilot pressure. Powerful return	nulator guarar				0		100
combination of Bonded spool v in a glass-like fit	with minimum nished bore.	friction, shifting				0	200
. Wiping effect e . Pilot valve with					0 0		55
short and consis						N	56
HOW TO ORDE	R						57
	Pilot gir			A / A	4 / 9	6 / 0	58
Port size	Pliot dir	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	4/3 Pressure center	59
							97
Valve less b	ase	6511B-000-PM- XXY DA	6521B-000-PM- XXY DA	6531B-000-PM- XXY DA	6541B-000-PM- XXY DA	6551B-000-PM- XXY DA	
sub-base	Internal	6511B-111-PM- XXY DA	6521B-111-PM- XXY DA	6531B-111-PM- XXY DA	6541B-111-PM- XXY DA	6551B-111-PM- XXY DA	45
3/8" NPTF	External	6511B-121-PM- XXY DA	6521B-121-PM- XXY DA	6531B-121-PM- ххү DA	6541B-121-PM- XXY DA	6551B-121-PM- XXY DA	
sub-base	Internal	6511B-211-PM-XXYDA	6521B-211-PM-XXYDA	6531B-211-PM-XXYDA	6541B-211-PM-XXYDA	6551B-211-PM-XXYDA	
1/2" NPTF	External	6511B-221-PM-XXYDA	6521B-221-PM-XXYDA	6531B-221-PM-XXYDA	6541B-221-PM-XXYDA	6551B-221-PM-XXYDA	
sub-base 3/4″ NPTF	Internal External	6511B-311-PM- XXY DA 6511B-321-PM- XXY DA	6521B-311-PM- XXY DA 6521B-321-PM- XXY DA	6531B-311-PM-XXYDA 6531B-321-PM-XXYDA	6541B-311-PM-XXYDA 6541B-321-PM-XXYDA	6551B-311-PM-XXYDA 6551B-321-PM-XXYDA	700
-				00010-021-FM-AATDA	00410-021-FM-AATDA	03310-321-FM-AATDA	
lote : Above code	es shown are	for side ports without ligh	ts.				900
SOLENOID OP	erator >		<u>XX</u> Y	DA			300
							82
XX Volta	ıge			Y Manual oper	rator		
XX Volta 11 120/60	0,110/50			1 Non-locking	rator		-
XX Volta 11 120/60 12 240/60 22 24/60	0, 110/50 0, 220/50 , 24/50			-	rator		6300
XX Volta 11 120/60 12 240/60 22 24/60 59 24 VD0	0, 110/50 0, 220/50			1 Non-locking	rator		-

* Other options available, see page 357.

OPTI	ONS XX-PM-xxyDA - For piped pilot exhaust replace M - For dual pressure valve replace by by 5 (sgl. light), by 6 (dbl. light). - For lights on base, replace by 2 (sg - For lights on valve body, replace by	gl. light), by 3 (dbl. light).		1300 800 ISO 1 ISO 2			
	MODIFICATIONS		Note : 1. The valve less base is always the same for internal or external pilot. These options are	ISO 3			
MOD. Nº	DESCRIPTION	MODEL AVAILABILITY	effected in the base. 2. Bottom ports : Refer to modification table.	MAC 125A			
0002	Bottom inlet, exh. & cyl. ports (no side ports)	Available on individual base 3/8" & 1/2" only	3. To order bases without the valve, choose the	MAC 250A			
0004	Full side porting and additional bottom inlet, exh. & cyl. ports	hase from the above table then add 6500B as a					

6600

Consult "Precautions" page 364 before use, installation or service of MAC Valves





Fluid :	Compressed air, vacuum, inert gases						
Pressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI External pilot : vacuum to 150 PSI						
Pilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI						
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)						
Filtration :	40 µ						
Temperature range :	0°F to 120°F (-18°C to 50°C)						
Flow (at 6 bar, ΔP=1bar	$3/8": (4.5 C_v), 1/2": (5.0 C_v), 3/4": (5.1 C_v)$						
Coil :	Epoxy encapsulated - class A wires - Continuous duty						
Voltage range :	-15% to +10% of nominal voltage						
Protection :	Consult factory						
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA = 1 to 17.1 W						
Response times :	24 VDC (8.5 W) Energize : 12 ms De-energize : 12 ms						
	120/60 Energize : 9-14 ms De-energize : 11-18 ms						
Options : DIMENSIONS	Dimensions shown are metric (mm)						
	93,9						
	A / 2 / C / C / C / C / C / C / C / C / C						
Port size	A B C D E F G H J $1/3$ $59,4$						

Consult "Precautions" page 364 before use, installation or service of MAC Valves

°
H
Series 6500

unction		Port size	Flow (Max)		Manifold mounting		Series
/2 - 4/3		3/8" - 1/2"	- 3/4″ 5.1 C _v		sub-base non "plug-in"		
PERATIONAL BEI	NEFITS						
Balanced spoo	l, immune to ve	ariations of					35
pressure. Short stroke wi	th high flow				4		
High shifting fo	orces.				-	1	
	nulator guaran	tees maximum					100
pilot pressure. Powerful return	force thanks t	o the					
		and air springs.			9	2 1	200
onded spool 1 a glass-like f		friction, shifting			Pers .		200
Viping effect e	eliminates stick						55
	balanced pop istent response	ppet, high flow,			9 m		56
		lines.					
HOW TO ORD	ER						57
Port size	Pilot air	4/2	4/2	4/3	4/3	4/3	58
		Single operator	Double operator	Closed center	Open center	Pressure center	59
Valve less k	ase	6512B-000-PM-XXYZZ	6522B-000-PM-XXYZZ	6532B-000-PM-XXYZZ	6542B-000-PM-XXYZZ	6552B-000-PM-XXYZZ	
ub-base	Internal	6512B-431-PM- XXYZZ	6522B-431-PM- XXYZZ	6532B-431-PM- XXYZZ	6542B-431-PM- XXYZZ	6552B-431-PM- XXYZZ	45
/8″ NPTF	External	6512B-441-PM- xxyzz	6522B-441-PM- XXYZZ	6532B-441-PM- xxyzz	6542B-441-PM- xxyzz	6552B-441-PM- xxyzz	
sub-base	Internal	6512B-531-PM- XXYZZ	6522B-531-PM- XXYZZ	6532B-531-PM- XXYZZ	6542B-531-PM- XXYZZ	6552B-531-PM- XXYZZ	
/2″ NPTF	External	6512B-541-PM- XXYZZ	6522B-541-PM- XXYZZ	6532B-541-PM- XXYZZ	6542B-541-PM- XXYZZ	6552B-541-PM- XXYZZ	
sub-base /4″ NPTF	Internal External	6512B-631-PM- XXYZZ 6512B-641-PM- XXYZZ	6522B-631-PM- XXYZZ 6522B-641-PM- XXYZZ	6532B-631-PM- XXYZZ 6532B-641-PM- XXYZZ			700
/ 4 NFIF		03120-041-FM-XX122	05220-041-1/0-22122			03320-041-FM-XX122	
te : Above coc	les shown are	for side cylinder ports.					900
DLENOID OF	PERATOR >		<u>XX</u> Y	<u>ZZ</u> *			900
			Тт				
				•			82
XX Volt	age 60, 110/50		Y Manual opera I Non-locking	1101	JB Rectangular of	connection	
12 240/6	50, 220/50		2 Locking		JD Rectangular c	onnector with light	6300
	D, 24/50 DC (2.5 W)				JA Square conne JC Square conne		
87 24 VD	DC (17.1 W)				BA Flying leads (18″)	6500
	DC (8.5 W)				Note : Photo shown with	JC connector.	
Other options of	available, see	page 357.					6600
OPTIONS							1300
512B-XX <u>X</u> -P <u>M-</u> XX	XYZZ						1000
ΤĽ	- For piped	d pilot exhaust replace					800
		pressure valve, replace					
		MODIFICATI	ONS			pase is always the same for	ISO 1
IOD. N°		DESCRIPTION		AVAILABILITY	effected in the		ISO 2
		with bottom cyl. ports (No end cy		all manifold models		Refer to modification table. olds without the valve, choose the	ISO 3
		d in model number plus an addit bottom inlet	ianal	all manifold models	manifold from	the above table, then add 6500B	
0364 Sg	l. pressure – side	inlet & exh. and additional bott	om inlet		as a pretix. Ex	ample 6500B-431.	MAY 125

VIIZ	Side inlet & exhaust with bottom cyl. ports (No end cyl. ports)	Available on all manifold models
0210	Porting as ordered in model number plus an additional bottom inlet	Available on all manifold models
0364	Sgl. pressure — side inlet & exh. and additional bottom inlet with bottom cyl. ports (No end cyl. ports) DUAL PRESSURE — Same as sgl. pressure except with two bottom inlets.	Available on all manifold models

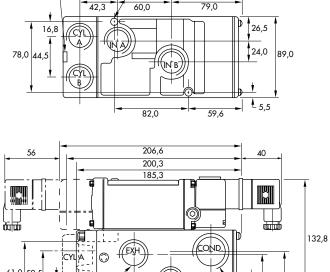
Consult "Precautions" page 364 before use, installation or service of MAC Val	ves

MAC 250A MAC 500A





Fluid :	Compressed air, vacu	um, inert gases				
Pressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI					
	External pilot : vacuur	n to 150 PSI				
Pilot pressure :	Single operator and 3	positions : 25-150 PSI	Oouble operator : 10-150) PSI		
ubrication :	Not required, if used	select a medium aniline p	oint lubricant (between 1	80°F to 210°F)		
iltration :	40 µ					
lemperature range :	0°F to 120°F (-18°C t	o 50°C)				
Flow (at 6 bar, ΔP=1bar) :	3/8" : (4.5 C _v), 1/2"	: (5.0 C _v), 3/4" : (5.1 C _v)			
Coil :	Epoxy encapsulated -	class A wires - Continuou	s duty			
Voltage range :	-15% to +10% of nom	inal voltage				
Protection :	Consult factory					
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA				
	= 1 to 17.1 W					
Response times :	24 VDC (8.5 W)	Energize : 12 ms	De-energize : 12 ms			
	120/60	Energize : 9-14 ms	De-energize : 11-18	ms		
Spare parts :	 Solenoid operator 	(power ≥ 4 W) : D1-XXA	A, cover mounting screv	ws 35206 and seal 1	6234.	
		XYZZ, including seal 163				
		lve to base (x4) : 32201 09. • Exhaust isolator : 2				
_						
Options :	 BSPP threads. 					
DIMENSIONS					Dimensions shown are metric (m	
	1/8″	EXT. PILOT	- 2ר6,7			
				-		
		42,3 60	,0 79,0	<u> </u>		



ΔŅ

41,5

3/4″

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61,0 50,5

_ 1

<u>ر___</u> ۱″

22,0 CYL B

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20,5

48,0 50,0

°
H
Series 6500

0112

0210

0364

pressure. Spect at code with high flow. High flow for the memory inclusion is priors. powedwit attra force functs to the combinition of mechanical and origins. Specified sector with minimum finition striction. prior state is being diverse in the memory inclusion. Prior state in the memory inclusion. State and state. Prior state in the memory inclusion. State and state. State and state. <th>ction</th> <th></th> <th>Port size</th> <th>Flow (Max)</th> <th></th> <th>Manifold mounting</th> <th></th> <th>Series</th>	ction		Port size	Flow (Max)		Manifold mounting		Series	
Indexed speci, immune to variations of the service in the servic	2 - 4/3		3/8" - 1/2"	- 3/4″ 5.1 C _v		sub-base "plug-in"			
resure. how with high frow: high shifting forces: how high force thanks to the ombination of mechanical and air springs, and descaped with high forces thanks to the ombination of mechanical and air springs, and descaped with high forces thanks to the ombination of mechanical and air springs, and descaped with high forces thanks to the ombination of mechanical and air springs, and descaped with high forces thanks to the ombination of mechanical and air springs, and descaped with high forces thanks to the Norma offeet effects and the bore. Norma offeet effects and the bore with high forces thanks to and consistent response times. NUTO OBJECT Port size intervent of Sills 000 PM-xarDA do Sills 000 PM-x	RATIONAL BENEFI	TS							
reaction reaction region of the first first first first for the first	alanced spool, im	nmune to v	ariations of					35	
igh at hing forces: hexeded accounded programmets maximum isoperative with bottom force thanks to the schedule accounded programmets maximum isoperative with bottom force thanks to the schedule accounded programmets maximum if programmet accounded programmets maximum if programmet accounded programmets if programmet accounded programmets maximum if programmet accounded programmets maximum if programmet accounded programet accounded programmet accounded programmet accounded		iah flow				-130			
Ind presser: Superiod term force franks to the superiod term force frank term force franks to the superiod term force frank term force franks to the superiod term force frank term force franks to the superiod term force frank term force franks to the superiod term force frank term force franks to the superiod term force frank term force franks to the superiod term	igh shifting forces	s.							
with full turn force thanks to the imbinition of machine languages of galaxike finished bore. Imbinition bore. Imbinition bore. Imbinition bore. Imbinition bore. Imbinition bore. Imbinition bore. <td< td=""><td></td><td>ator guarar</td><td>ntees maximum</td><td></td><td></td><td></td><td>1</td><td>100</td></td<>		ator guarar	ntees maximum				1	100	
norded spool with minimum friction, shifting a glassifik financias striking. Image and consistent response lines. norde strike international striker. Image and consistent response lines. Striker international striker. Norde striker. <td colsp<="" td=""><td>werful return for</td><td></td><td></td><td></td><td></td><td>Santa S</td><td></td><td></td></td>	<td>werful return for</td> <td></td> <td></td> <td></td> <td></td> <td>Santa S</td> <td></td> <td></td>	werful return for					Santa S		
a glassike finished bore. Aping effect eliminates sticking, of valve with bolanced poppet, high flow, of and consistent response times. EXPT DEDE Ter size 1 field is 1 Single operator 1 Double operator 1 Closed center 1 Open center 1 Pressure center 1 Ter size 1 field is 1 Single operator 2 Closed center 1 Open center 1 Pressure center 1 Ter size 1 Single operator 2 Closed center 1 Open center 1 Pressure center 1 Ter size 1 Single operator 2 Sile 411 PM-XXDA 6318 000 P						Charles Contract		200	
igr valke with balanced popper, high Rew, and and consistent response times. CVI TO DOEDE Part size Pilet air 1 4/2 Developerator Developerator 1 Closed center 0 Pilet air 1 Pilet air 1 1 Pilet a	a glass-like finish	hed bore.	-					200	
of and consistent response times. SS DVID ODDEX Pick air 4/2 4/3 4/3 4/3 4/3 Forestare contexponse Forestare con						6 m		55	
Part size Pilot siz 4/2 4/2 4/2 4/2 4/3 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>56</td>								56	
Port size Pilot siz Pilot siz Pilot siz Pilot siz Pilot siz Pilot size Pilot Pilot Pilot P	HOW TO ORDER							57	
Normality Single operator Deuble operator Closed center Open center Pressure center Figure center APP APP <td></td> <td>Pilot cir</td> <td>A / 2</td> <td>A / 3</td> <td>A / 3</td> <td>A / 3</td> <td>A/2</td> <td>58</td>		Pilot cir	A / 2	A / 3	A / 3	A / 3	A/2	58	
Image: Internal Image: Ima	ort size	rnor air							
Value less base 65118-000-PM-xx1DA 65218-000-PM-xx1DA 65318-000-PM-xx1DA 65318-001-PM-xx1DA 65318-001-PM-xx1DA 65318-001-PM-xx1DA 65318-001-PM-xx1DA 65318-011-PM-xx1DA 65318-011-PM-xx1DA 65318-011-PM-xx1DA 65318-511-PM-xx1DA 65318-511-PM-xx1DA 65318-521-PM-xx1DA 65318-521-PM								97	
All Parties Construction Constructin Constructin Co									
(8" NPTF External 65118-421-PM-xxrDA 65218-421-PM-xxrDA 65318-421-PM-xxrDA 65318-511-PM-xxrDA 65318-511-PM-xxrDA 65318-521-PM-xxrDA 65518-521-PM-xxrDA	Valve less base	e				6541B-000-PM- XXY DA	6551B-000-PM- XXY DA		
ub-base Internal 65118-511-PM-xxrDA 65218-511-PM-xxrDA 65318-511-PM-xxrDA 65318-511-PM-xxrDA 65318-511-PM-xxrDA 65318-521-PM-xxrDA 65318-621-PM-xxrDA								45	
2" NPTF External 65118-521-PM-xxrDA 65218-521-PM-xxrDA 65318-521-PM-xxrDA 65518-521-PM-xxrDA		<u> </u>							
ub-base Internal 6511B-611-PM-xxYDA 6521B-611-PM-xxYDA 6531B-611-PM-xxYDA 6531B-621-PM-xxYDA 6551B-621-PM-xxYDA 6551B-621-PM									
/4" NPTF External 6511B-621-PM-XXYDA 6521B-621-PM-XXYDA 6531B-621-PM-XXYDA 6551B-621-PM-XXYDA		<u> </u>							
e: Above codes shown are for side cylinder ports without lights. ENOID OPERATOR > XX YDA XX YDC (8.5 W) XX YDC (8								700	
ENOID OPERATOR > XX Y DA' 82 XX Voltage Y Manual operator 82 11 120/60, 110/50 1 Non-locking 63 12 240/60, 220/50 2 Locking 63 22 24/60, 24/50 2 Locking 63 59 24 VDC (2.5 W) 87 24 VDC (8.5 W) 64 87 24 VDC (8.5 W) 64 64 64 61 24 VDC (8.5 W) 64 64 64 61 32 VDC (8.5 W) 64 64 64 61 50 VDC (8.5 W) 64 64 64 61 50 VDC (8.5 W) 64 64 64 61 61 50 VDC (8.5 W) 64 64 64 61 62 VDC (8.5 W) 64 64 64 61 61 50 VDC (8.5 W) 64 64 64 62 70 For piped pilot exhaust replace M by P. 67 or dual pressure valve replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. l	· Above codes s	hown are							
XX Voltage Y Manual operator 65 11 120/60, 110/50 1 Non-locking 65 12 24/06, 220/50 2 Locking 65 29 24 VDC (17.1 W) 61 2 Locking 65 59 24 VDC (2.5 W) 87 2 Locking 65 61 24 VDC (17.1 W) 61 66 66 61 24 VDC (8.5 W) 66 66 66 OPTIONS 651 IB-XXX-PM-xxrDA 66 - For lights on valve body, replace M by P. - For lights on valve body, replace M by P. - For lights on manifold, replace by 2 (sgl. light), by 5 (sgl. light), by 5 (dbl. light). 86 - Son dual pressure valve replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light). - For lights on valve body, replace by 3. - For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). - Son Lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). - Son Lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light).	: Above codes s	siowii ure	for side cynnder ports win	-				900	
XX Voltage Y Manual operator 11 120/60, 110/50 1 Non-locking 6 22 24/60, 220/50 2 Locking 6 22 24/60, 24/50 2 Locking 6 59 24 VDC (2.5 W) 8 6 6 87 24 VDC (8.5 W) 6 6 9 24 VDC (8.5 W) 6 6 6 5 7 6 6 651 1B-XXX-PM-xxyDA - For piped pilot exhaust replace M by P. - For lights on valve body, replace by 3. - For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). 9 - For lights on valve body, replace by 3. - For lights on bay the same for	LENOID OPER	ATOR >		<u>XX</u> Y	DA *				
XX Voltage Y Manual operator 11 120/60, 110/50 1 Non-locking 6 22 24/60, 24/50 2 Locking 6 59 24 VDC (2.5 W) 8 2 Locking 6 87 24 VDC (8.5 W) 6 6 6 61 24 VDC (8.5 W) 6 6 6 551 IB-XXX-PM-xxyDA - For piped pilot exhaust replace M by P. - For dual pressure valve replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light). 8 - For lights on valve body, replace by 3. - For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). 1				T				80	
11 120/60, 110/50 1 Non-locking 6 12 240/60, 220/50 2 Locking 6 22 24/60, 24/50 2 Locking 6 59 24 VDC (2.5 W) 8 6 6 87 24 VDC (8.5 W) 6 6 6 61 24 VDC (8.5 W) 6 6 6 ther options available, see page 357. 6 OPTIONS 551 IB-XXX-PM-xxrDA - For piped pilot exhaust replace M by P. - For lights on valve body, replace by 3. - For dual pressure valve replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light). 8 Note: 1. The valve less base is always the same for	XX Voltaae	B			Y Manual oper	rator		U A	
22 24/60, 24/50 59 24 VDC (2.5 W) 87 24 VDC (17.1 W) 61 24 VDC (8.5 W) 61 ther options available, see page 357. OPTIONS 551 1B-XXX-PM-xxyDA - For piped pilot exhaust replace M by P. - For lights on valve body, replace by 3. - For lights on valve body, replace by 3. - For lights on manifold, replace by 2 (sgl. light), by 5 (sgl. light). - For lights on valve body, replace by 3. - For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). Note : 1. The valve less base is always the same for	11 120/60, 1	110/50							
59 24 VDC (2.5 W) 61 87 24 VDC (17.1 W) 61 61 24 VDC (8.5 W) 61 ther options available, see page 357. OPTIONS 5511B-XXX-PM-xxyDA - For piped pilot exhaust replace M by P. - For dual pressure valve replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light). - For lights on valve body, replace by 3. - For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). Note: 1. The valve less base is always the same for					2 Locking			6300	
87 24 VDC (17.1 W) 61 24 VDC (8.5 W) ther options available, see page 357. OPTIONS S51 IB-XXX-PM-xxrDA - For piped pilot exhaust replace M by P. - For lights on valve body, replace by 3. - For dual pressure valve replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light). 80 - For lights on valve body, replace by 3. - For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). Note: 1. The valve less base is always the same for	59 24 VDC (2	2.5 W)						6500	
ther options available, see page 357. 60 OPTIONS 13 5511B-XXX-PM-xxrDA 13 - For piped pilot exhaust replace M by P. - For dual pressure valve replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light). 80 - For lights on valve body, replace by 3. - For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). 15 MODIFICATIONS Note : 1. The valve less base is always the same for 15									
OPTIONS 13 \$511B-XXX-PM-xxyDA - For piped pilot exhaust replace M by P. - For dual pressure valve replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light). 80 - For lights on valve body, replace by 3. - For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). 15 MODIFICATIONS Note: 1. The valve less base is always the same for 15			page 357.					6600	
5511B-XXX-PM-xxyDA - For piped pilot exhaust replace M by P. - For dual pressure valve replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light). - For lights on valve body, replace by 3. - For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 2 (sgl. light), by 3 (dbl. light). - Iso replace by 3 (sgl. light), by 3 (dbl. light). - Iso replace by 3 (sgl. light), by 3 (dbl. light). - Iso replace by 3 (sgl. light), by 3 (dbl. light). - Iso replace by 3 (sgl. light), by 3 (dbl. light). - Iso replace by 3 (sgl. light), by 3 (dbl. light). - Iso replace by 3 (sgl. light), by 3 (dbl. light). - Iso replace by 3 (sgl. light), by 3 (dbl. light). - Iso replace by 3 (sgl. light), by 3 (dbl. light). - Iso replace by 3 (sgl. light), by 3 (dbl. light). - Iso replace by 3 (sgl. light), by 3 (dbl. light). - Iso replace by 3 (sgl. light), by 3 (s	•		r - 3						
For piped pilot exhaust replace M by P. For lights on valve body, replace by 3. For lights on manifold, replace by 2 (sgl. light), by 5 (sgl. light), by 6 (dbl. light). For lights on valve body, replace by 3. For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). Note: 1. The valve less base is always the same for	OPTIONS							1300	
- For lights on valve body, replace by 3. - For lights on valve body, replace by 3. - For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). - For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light). Note: 1. The valve less base is always the same for	6511B-XXX-PM-X	XY DA						000	
- For lights on valve body, replace by 3 For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light).					or dual pressure valve repla	ice by 4 (no light), by 5 (sgl	. light), by 6 (dbl. light).	800	
Note: 1. The valve less base is always the same for	L	— - For lig	hts on valve body, replace	by 3. 🖵 - F	or lights on manifold, replac	ce by 2 (sgl. light), by 3 (db	I. light).	ISO 1	
			MODIFICAT	IONS					
OD. N° DESCRIPTION MODEL AVAILABILITY internal or external pilot. These options are effected in the manifold. 2. Bottom ports: Refer to modification table.	OD. N°				AVAILABILITY	effected in the mar	nifold.	150 2	

Side inlet & exhaust with bottom cyl. ports (No end cyl. ports)	Available on all manifold models	3. To order manifolds without the valve, choose the
Porting as ordered in model number plus an additional bottom inlet	Available on all manifold models	manifold from the above table, then add 6500B as a prefix. Example 6500B-411.
Sgl. pressure — side inlet & exh. and additional bottom inlet with bottom cyl. ports (No end cyl. ports) DUAL PRESSURE — Same as sgl. pressure except with two bottom inlets.	Available on all manifold models	

ISO 3

MAC 125A

MAC 250A





Fluid :	Compressed air, vacuum, inert gases							
ressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI							
	External pilot : vacuum to 150 PSI							
ilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI							
ubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)							
iltration :	40 µ							
emperature range :	0°F to 120°F (-18°C to 50°C)							
low (at 6 bar, ΔP=1bar) :	3/8" : (4.5 C _v), 1/2" : (5.0 C _v), 3/4" : (5.1 C _v)							
Coil :	Epoxy encapsulated - class A wires - Continuous duty							
oltage range :	-15% to +10% of nominal voltage							
rotection :	Consult factory							
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA							
	= 1 to 17.1 W							
Response times :	24 VDC (8.5 W) Energize : 12 ms De-energize : 12 ms							
	120/60 Energize : 9-14 ms De-energize : 11-18 ms							
Options :	• BSPP threads.							
·	Dimensions shown are me	tric (
DIMENSIONS	1/8″							
	EXT. PILOT $2 \times \emptyset 6,7$							
	$\begin{array}{c} 70,3 \\ 44,3 \\ \hline \\ \hline \\ \\ \hline \\ \hline \\ \hline \\ \hline \\ \\ \hline \\ \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \hline \\$							
	$\begin{array}{c} 70,3 \\ 44,3 \\ \hline \\ \hline \\ \\ \hline \\ \hline \\ \hline \\ \hline \\ \\ \hline \\ \\ \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \hline \\$							
	$\begin{array}{c} 70,3 \\ 44,3 \\ \hline \\ \hline \\ \\ \hline \\ \hline \\ \hline \\ \hline \\ \\ \hline \\ \\ \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\$							
	$\begin{array}{c c} & & & & \\ \hline \\ \hline$							
	$\begin{array}{c c} & & & & \\ \hline \\ \hline$							

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44,5

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34,5

Å

48,0 50,0

11/4" NPSM

<u>EX</u>H

41,5

0

3/4″

CYLA

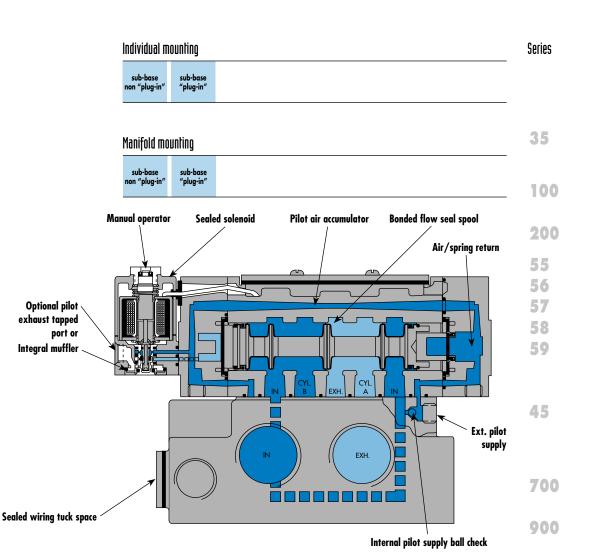
1″

22,0

1

61,0 50,5





SERIES FEATURES
The patented MACSOLENOID[®] with its non-burn out feature on AC service.
A large checked accumulator for consistent shifting on single and double solenoid models.
A plug-in design that provides for internal or external pilot with or without lights and all electrical and air plumbing in the base.
Non-lubricated or lubricated service.
Optional low watttage DC solenoids down to 1 watt.

- Optional indicator lights, and various types of manual operators.
- Non plug-in or external plug-in models are available.

MAC 250A MAC 500A

82

6300

6500

6600

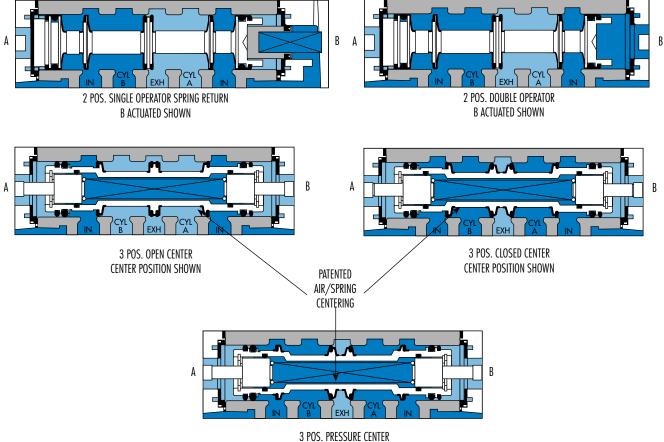
1300

800





SPOOL CONFIGURATIONS



CENTER POSITION SHOWN

VALVE CONFIGURATIONS AVAILABLE

The versatile 6600 Series provides high flow, extremely fast response, and long life in a compact package and is available in the following configurations:

- 2-Pos., single or double operators (solenoid or remote air).
- 3-Pos., double operator-Closed Center, Open Center or Pressure Center (solenoid or remote air).
- Single pressure or dual pressure.
- Individual base.
- Internal pilot or for Vacuum to 25 PSI main valve pressures, external pilot.
- \bullet Manual and mechanical operators available.

REMOTE AIR PILOT OPERATED VALVES

These remote air versions feature:

- A larged checked accumulator for air/spring return on single remote air models.
- All piping connections, including the remote air pilot supply, in the base.
- Non-lubricated or lubricated service.

REMOTE AIR PILOT, PILOT OPERATED VALVES

These special air versions have the same features as the remote air pilot operated models, but additionally feature:

- A manual operator and indicator.
- Ability to use a pilot signal pressure different from the main valve pressure. Pilot signal can be from 20 to 150 PSIG, regardless of main valve pressure.

©
E
Series 6600

4/2 - 4/3	3/4" - 1"	9.6 C _v	sub-base non "plug-in"	
Function	Port size	Flow (Max)	Individual mounting	Series

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of pressure.
- 2. Short stroke with high flow.
- 3. High shifting forces.
- 4. Checked accumulator guarantees maximum pilot pressure.
- 5. Powerful return force thanks to the combination of mechanical and air springs.
- 6. Bonded spool with minimum friction, shifting in a glass-like finished bore.
- 7. Wiping effect eliminates sticking.
- 8. Pilot valve with balanced poppet, high flow, short and consistent response times.

HOW TO ORDER

Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	4/3 Pressure center
Valve less b	ase	6612A-000-PM- XXYZZ	6622A-000-PM- XXYZZ	6632A-000-PM- XXYZZ	6642A-000-PM- XXYZZ	6652A-000-PM- XXYZZ
sub-base	Internal	6612A-231-PM- XXYZZ	6622A-231-PM- XXYZZ	6632A-231-PM- XXYZZ	6642A-231-PM- XXYZZ	6652A-231-PM- XXYZZ
3/4″ NPTF	External	6612A-241-PM- XXYZZ	6622A-241-PM- XXYZZ	6632A-241-PM- XXYZZ	6642A-241-PM- XXYZZ	6652A-241-PM- XXYZZ
sub-base	Internal	6612A-331-PM- XXYZZ	6622A-331-PM- XXYZZ	6632A-331-PM- XXYZZ	6642A-331-PM- XXYZZ	6652A-331-PM- XXYZZ
1" NPTF	External	6612A-341-PM- XXYZZ	6622A-341-PM- XXYZZ	6632A-341-PM- XXYZZ	6642A-341-PM- XXYZZ	6652A-341-PM- XXYZZ

XX Y ZZ

Note : Above codes shown are for side ports.

SOLENOID OPERATOR ►

XX	Voltage	Y	Manual operator	ZZ	Electrical connection
11	120/60, 110/50	1	Non-locking	JB	Rectangular connector
12	240/60, 220/50	2	Locking	JD	Rectangular connector with light
22	24/60, 24/50			JA	Square connector
59	24 VDC (2.5 W)			JC	Square connectorwith light
87	24 VDC (17.1 W)			BA	Flying leads (18")
61	24 VDC (8.5 W)			Note : Pho	pto shown with JC connector.

Note

* Other options available, see page 357.

OPTIONS

6612A-XX<u>X</u>-P<u>M</u>-**xxyzz**

- For piped pilot exhaust replace M by P. - For dual pressure valve, replace by 4.

MODIFICATIONS						
MOD. N°	DESCRIPTION	MODEL AVAILABILITY				
0002	Bottom inlet, exh. & cyl ports (side ports plugged)	3/4" individual base				
0004	Full side porting and additional. Bottom inlet, exh. & cyl ports	3/4" individual base				
0112	Side inlet & exhaust with bottom cyl. ports (side cyl.ports plugged)	3/4" individual base				

TO ORDER - Add the appropriate modification number after the valve number; EXAMPLE : 6612A-231-PM-111JA MOD 0002

	1300
: 1. The valve less base is always the same for internal or external pilot. These options are effected in	800
 the base. Bottom ports : Refer to modification table. To order bases without the valve, choose the base from the above table, then add 6600A as a prefix. Example 6600A-231. 	ISO 1 ISO 2
 2 position and 3 position valve bodies are not interchangeable. 	ISO 3 MAC 125A MAC 250A

35

100

200

55

56

57

700

6500

6600





TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI
	External pilot : vacuum to 150 PSI
Pilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1 bar$) :	3/4" : (9.0 C _v), 1" : (9.6 C _v)
Coil :	Epoxy encapsulated - class A wires - Continuous duty
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA
	= 1 to 17.1 W
Response times :	24 VDC (8.5 W) Energize : 18 ms De-energize : 20 ms
	120/60 Energize : 15-25 ms De-energize : 19-28 ms

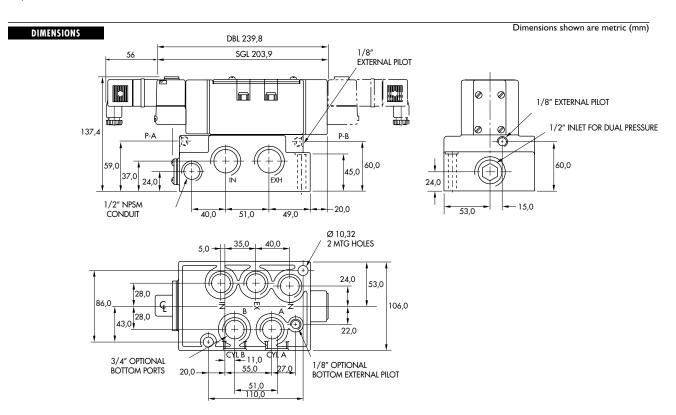
Spare parts :

• Solenoid operator (power \geq 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.

- Pilot valve : PME-XXYZZ, including seal 16337. Pressure seal between valve and base : 16436.
- Mounting screw valve to base (x4) : 35416.

Options :

BSPP threads.



e	
	\mathbf{P}
Series 🤇	5600

Function	Port size	Flow (Max)	Individual mounting	Series
4/2 - 4/3	3/4" - 1"	9.6 C _v	sub-base "plug-in"	
OPERATIONAL BENEFITS				

- 1. Balanced spool, immune to variations of pressure.
- 2. Short stroke with high flow.
- 3. High shifting forces.
- 4. Checked accumulator guarantees maximum pilot pressure.
- 5. Powerful return force thanks to the combination of mechanical and air springs.
- 6. Bonded spool with minimum friction, shifting in a glass-like finished bore.
- 7. Wiping effect eliminates sticking.
- 8. Pilot valve with balanced poppet, high flow, short and consistent response times.

HOW TO ORDER

Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	4/3 Pressure center
Valve less b	ase	6611A-000-PM- XXY DA	6621A-000-PM- XXY DA	6631A-000-PM- XXY DA	6641A-000-PM- XXY DA	6651A-000-PM- XXY DA
sub-base	Internal	6611A-211-PM- XXY DA	6621A-211-PM- XXY DA	6631A-211-PM- XXY DA	6641A-211-PM- XXY DA	6651A-211-PM- XXY DA
3/4″ NPTF	External	6611A-221-PM- XXY DA	6621A-221-PM- XXY DA	6631A-221-PM- XXY DA	6641A-221-PM- XXY DA	6651A-221-PM- XXY DA
sub-base	Internal	6611A-311-PM- XXY DA	6621А-311-РМ- ххү DА	6631A-311-PM- XXY DA	6641A-311-PM- XXY DA	6651A-311-PM- XXY DA
1" NPTF	External	6611A-321-PM- XXY DA	6621A-321-PM- XXY DA	6631A-321-PM- XXY DA	6641A-321-PM- XXY DA	6651A-321-PM- XXY DA

Note : Above codes shown are for side ports without lights.

Sie : Above	e codes shown are for side ports without lights.			700
	O OPERATOR >	XX Y DA*		900
XX I	Voltage	Y Manual (operator	
	120/60, 110/50	1 Non-locking		82
	240/60, 220/50	2 Locking		
	24/60, 24/50 24 VDC (2.5 W)			
-	24 VDC (17.1 W)			6300
-	24 VDC (8.5 W)			
)than anti	ions available, see page 357.			6500
	ions avaliable, see page 557.			
OPTI	ONS			6600
661 <u>1</u> A-X	(XX-P <u>M-xxy</u> DA			
	- For piped pilot exhaust replace M b	A P		1300
	For dual pressure valve replace by 2 For lights on base, replace by 2 (sgl For lights on valve body, replace by	t (no light), by 5 (sgl. light), by 6 . light), by 3 (dbl. light).	(dbl. light).	800
	MODIFICATIONS		Note : 1. The valve less base is always the same for internal or external pilot. These options are effected in	ISO 1
OD. N°	DESCRIPTION	MODEL AVAILABILITY	the base.	150 2
0002	Bottom inlet, exh. & cyl ports (side ports plugged)	3/4" individual base	 Bottom ports : Refer to modification table. To order bases without the valve, choose the 	150 3
0004	Full side porting and additional bottom inlet, exh. & cyl ports	3/4" individual base	base from the above table, then add 6600A as a	130 3
0112	Side inlet & exhaust with bottom cyl. ports (side cyl.ports plugged)	3/4" individual base	prefix. Example 6600A-211.4. 2 position and 3 position valve bodies are not	MAC 125
			— interchangeable.	

TO ORDER - Add the appropriate modification number after the valve number; EXAMPLE : 6611A-211-PM-111DA MOD 0002

interchangeable

35

100

200

55

56

57

700

MAC 250A





Fluid :	Compressed air, vacu	um, inert gases		
Pressure range :		operator and 3 positions : 2	25-150 PSI double	e operator : 10-150 PSI
	External pilot : vacuur	n to 150 PSI		
Pilot pressure :		-	ouble operator : 10-150 PSI	
Lubrication :	Not required, if used	select a medium aniline po	pint lubricant (between 180°F to 21	10°F)
Filtration :	40 µ			
Temperature range :	0°F to 120°F (-18°C t	o 50°C)		
Flow (at 6 bar, ΔP=1bar) :	3/4" : (9.0 C _v), 1" : ((9.6 C _v)		
Coil :	Epoxy encapsulated -	class A wires - Continuous	duty	
Voltage range :	-15% to +10% of nom			
Protection :	Consult factory			
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA		
	= 1 to 17.1 W	-		
Response times :	24 VDC (8.5 W)	Energize : 18 ms	De-energize : 20 ms	
	120/60	Energize : 15-25 ms	De-energize : 19-28 ms	
Spare parts :	 Pilot valve : PME-X 		 cover mounting screws 35206 6337. • Pressure seal between v 	
Options :	• BSPP threads.			
DIMENSIONS				Dimensions shown are metric (mn
		239,8	1/8″	
		203,9		

137,4 P-B ÷ 60,0 59,0 45,0 37,0 EXH íŃ 24,0 24,0 ł 1/2" NPSM . CONDUIT - 15,0 20,0 -53,0 51,0 40,0 -49,0 Ø 10,32 2 MTG HOLES 35,0 40,0 5,0 🗕 24,0 53,0 28,0 86,0 Ð 106,0 43,0 22,0

<u>27,0</u>

CYL<u>B</u>11,0 55,0

3/4" OPTIONAL BOTTOM PORTS

20,0-

1/8" Optional Bottom external Pilot

60,0

E
Series 6600

Function		Port size	Flow (Ma	x]	Manifold mounting	Series
4/2 - 4/3		3/4" - 1" - 1	1 1/4″ 9.6 C _v		sub-base non "plug-in"	
OPERATIONAL BEN	NEFITS					
 Balanced spool pressure. Short stroke wit 		rariations of				35
 High shifting fo Checked accurr pilot pressure. Powerful return 	rces. nulator guarar				AT	100
combination of Bonded spool in a glass-like fi	mechanical o with minimum	and air springs.				200
. Wiping effect e	liminates stick					55
 Pilot valve with short and consi 						56
HOW TO ORDE	ER				4	57
Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	4/3 58 Pressure center 59
Valve less b	ase	6612A-000-PM- XXYZZ	6622A-000-PM-XXYZZ	6632A-000-PM- XXYZZ	6642A-000-PM- XXYZZ	6652A-000-PM-XXYZZ
sub-base	Internal	6612A-431-PM- XXYZZ	6622A-431-PM- XXYZZ	6632A-431-PM- XXYZZ	6642A-431-PM- XXYZZ	6652A-431-PM- XXYZZ 45
3/4" NPTF	External	6612A-441-PM- xxyzz	6622A-441-PM- xxyzz	6632A-441-PM- xxyzz	6642A-441-PM- XXYZZ	6652A-441-PM- XXYZZ
sub-base	Internal	6612A-531-PM- XXYZZ	6622A-531-PM- XXYZZ	6632A-531-PM- xxyzz	6642A-531-PM- XXYZZ	6652A-531-PM- XXYZZ
1″ NPTF	External	6612A-541-PM- XXYZZ	6622A-541-PM- XXYZZ	6632A-541-PM- xxyzz	6642A-541-PM- XXYZZ	6652A-541-PM- XXYZZ
sub-base	Internal	6612A-631-PM- XXYZZ	6622A-631-PM- XXYZZ	6632A-631-PM- XXYZZ	6642A-631-PM- XXYZZ	6652A-631-PM-XXYZZ 700

Note : Above codes shown are for side ports.

SOLENOID OPERATOR ►

X	X	Y	Z	<u>Z</u>	
	•	Г			

XX vonage	γ Manual operator	ZZ Electrical connection
11 120/60, 110/50	1 Non-locking	JB Rectangular connector
12 240/60, 220/50	2 Locking	JD Rectangular connector with light
22 24/60, 24/50		JA Square connector
59 24 VDC (2.5 W)		JC Square connectorwith light
87 24 VDC (17.1 W)		BA Flying leads (18")
61 24 VDC (8.5 W)		Note : Photo shown with JC connector.

* Other options available, see page 357.

OPTIONS

6612A-XX<u>X</u>-P<u>M-xxy</u>DA

- For piped pilot exhaust replace M by P.
 - - For dual pressure valve, replace by 4.

	MODIFICATIONS	
MOD. N°	DESCRIPTION	MODEL AVAILABILITY
0210	1 1/4" Bottom inlet	Manifold base
0364	1 1/4" Bottom inlet, 3/4" or 1" Bottom cyl.	Manifold base
0112	Side inlet & exhaust with bottom cyl. ports (side cyl.ports plugged)	1" Manifold base

TO ORDER - Add the appropriate modification number after the valve number; EXAMPLE : 6612A-431-PM-111JA MOD 0364

- 1300 Note : 1. The valve less base is always the same for internal 800
 - or external pilot. These options are effected in the manifold. 2. Bottom ports : Refer to modification table.
 - 3. To order manifolds without the valve, choose the manifold from the above table, then add 6600A
 - as a prefix. Example 6600A-431. 4. When ordering an external pilot connection for manifold bases, a common external pilot port is standard. One connection only is required for
 - all the valves in the manifold whether single or double solenoid.
 - 5. 2 position and 3 position valve bodies are not
 - interchangeable.
- **ISO 3 MAC 125A MAC 250A MAC 500A**

ISO 1

ISO 2

900





Fluid :	Compressed air, vacu	um, inert gases					
Pressure range :	· · · ·	operator and 3 positions :	25-150 PSI	double opera	ator : 10-150 P	SI	
lossoro rungo r	External pilot : vacuur	-					
ilot pressure :		3 positions : 25-150 PSI [Double operator : 10-150) PSI			
ubrication :		select a medium aniline p					
iltration :	40 µ						
emperature range :	0°F to 120°F (-18°C t	to 50°C)					
low (at 6 bar, ΔP=1bar) :		(9.6 C _v), 1 1/4″ : (9.6 C _v)					
oil :	Epoxy encapsulated -	class A wires - Continuou	s duty				
/oltage range :	-15% to +10% of nom	ninal voltage					
rotection :	Consult factory						
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA					
	= 1 to 17.1 W						
Response times :	24 VDC (8.5 W)	Energize : 18 ms	De-energize : 20 ms				
	120/60	Energize : 15-25 ms	De-energize : 19-28	ms			
Jotions :	 BSPP threads 						
Options :	• BSPP threads.					Dimensions sl	hown are metric (mm)
Dimensions	• BSPP threads.			,		Dimensions sl	hown are metric (mm)
•	• BSPP threads.		353 DOUBLE OPERATOR	2	~31	STANDARD	
•	• BSPP threads.		353 DOUBLE OPERATOR			STANDARD COMMON E	
	BSPP threads.					STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8
dimensions	BSPP threads.				<u>~31</u>	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8 17.8 1 OPTIONAL INDIVID
DIMENSIONS			19,9 70,0 70,0		~31	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8
DIMENSIONS			19,9 70,0 70,0		<u>~31</u>	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8'
DIMENSIONS	VLA CYLB		19,9 70,0 70,0		<u>~31</u>	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8 OPTIONAL INDIVID EXTERNAL PILOT SU 1/8"
DIMENSIONS					<u>~31</u>	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8'
DIMENSIONS	Ø // A (YLB (32,0) 60,0					STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8'
DIMENSIONS	Ø // A (YLB (32,0) 60,0		19,9 70,0		40,5 50,5	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8'
	Ø // A (YL B (32,0) 60,0		19,9 70,0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	40,5 50,5	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8'
DIMENSIONS	Ø YLA (YLB (32,0) (60,0) (1) (2) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	40,5 50,5	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8 OPTIONAL INDIVID EXTERNAL PILOT SU 1/8"
	CVL B 32,0 0 ± 0,2 OPTIONAL 3/	11/4" INLET & EXHAUST		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-31 40,5 50,5 1" NPSM CONE	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8 OPTIONAL INDIVID EXTERNAL PILOT SU 1/8"
	CVL B 32,0 0 ± 0,2 OPTIONAL 3/	1 1/4" INLET & EXHAUST	19,9 70,0 (EXH 12,0 54,0 287,5	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-31 40,5 50,5 1" NPSM CONE	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8 OPTIONAL INDIVID EXTERNAL PILOT SU 1/8"
DIMENSIONS	CVL B 32,0 0 ± 0,2 OPTIONAL 3/	1 1/4" INLET & EXHAUST	19,9 70,0 (EXH 12,0 54,0 287,5		-31 40,5 50,5 1" NPSM CONIE 2 MTG H	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8 OPTIONAL INDIVID EXTERNAL PILOT SU 1/8"
DIMENSIONS	CVL B 32,0 0 ± 0,2 OPTIONAL 3/	1 1/4" INLET & EXHAUST	19,9 70,0 70,0 19,9 70,0		-31 40,5 50,5 1" NPSM CONE Ø 10,32 2 MTG F	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8 OPTIONAL INDIVIE EXTERNAL PILOT SU 1/8"
	CVL B 32,0 0 ± 0,2 OPTIONAL 3/	1 1/4" INLET & EXHAUST	19,9 70,0		-31 40,5 50,5 1" NPSM CONIE 2 MTG H	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8 OPTIONAL INDIVID EXTERNAL PILOT SU 1/8"
DIMENSIONS	CVL B 32,0 0 ± 0,2 OPTIONAL 3/	1 1/4" 1 1/4" INLET & EXHAUST 4" & 1" BOTTOM PORTS AVAILABLE 54,0 400 54,0 48.0 54,0 48.0 54,00 54,00	19,9 70,0 70,0 19,9 70,0		-31 40,5 50,5 1" NPSM CONE Ø 10,32 2 MTG F	STANDARD COMMON E	XTERNAL PILOT SUPPLY 1/8 OPTIONAL INDIVID EXTERNAL PILOT SU 1/8"

©
Series 6600

unction		Port size	Flow (Max)		Manifold mounting		Series
1/2 - 4/3		3/4" - 1" - 1	1 1/4″ 9.6 C _v		sub-base "plug-in"		
PERATIONAL BEN	EFITS						
Balanced spool,	immune to v	ariations of					35
pressure. Short stroke with	high flow				-	1000	
High shifting for	ces.				an)	1,	
Checked accum pilot pressure.	ulator guarar	ntees maximum				0	100
Powerful return					ad Low		
combination of Bonded spool v					and the	00	200
in a glass-like fir	nished bore.	-			alleler of	1	
Wiping effect el Pilot valve with l					1		55
short and consis					-	0	56
HOW TO ORDE	R				6		57
Port size	Pilot air	4/2	4/2	4/3	4/3	4/3	58
10110120		Single operator	Double operator	Closed center	Open center	Pressure center	59
<u></u>		IN & TEXH		IN © VEXH	IN & VEXH		
Valve less be	Internal	6611A-000-PM- xxyD A 6611A-411-PM- xxyD A	6621A-000-PM-XXYDA 6621A-411-PM-XXYDA	6631А-000-РМ-XXYDA 6631А-411-РМ-XXYDA	6641A-000-PM-XXYDA 6641A-411-PM-XXYDA	6651A-000-PM-XXYDA 6651A-411-PMXXYDA	45
3/4" NPTF	External	6611A-421-PM-XXYDA	6621A-421-PM-XXYDA	6631A-421-PM-XXYDA	6641A-421-PM-XXYDA	6651A-421-PM-XXYDA	43
sub-base	Internal	6611A-511-PM- XXY DA	6621A-511-PM- XXY DA	6631A-511-PM- XXY DA	6641A-511-PM- XXY DA	6651A-511-PM- XXY DA	
1" NPTF	External	6611А-521-РМ- ххү DA	6621А-521-РМ- ххү DA	6631А-521-РМ- ххү DА	6641A-521-PM- xxy DA	6651А-521-РМ- ххү DA	
sub-base	Internal	6611А-611-РМ- ххү DA	6621A-611-PM- XXY DA	6631A-611-PM- XXY DA	6641A-611-PM- XXY DA	6651A-611-PM- XXY DA	700
1/4" NPTF	External	6611A-621-PM- XXY DA	6621A-621-PM- XXY DA	6631A-621-PM- XXY DA	6641A-621-PM- XXY DA	6651A-621-PM- XXY DA	
ote : Above code	s shown are	for side cylinder ports wit	nout lights.				000
OLENOID OPI	ERATOR >		ХХ Ү	DA *			900
			Ττ				
							82
XX Volta	ge), 110/50			Y Manual oper 1 Non-locking	rator		
12 240/60	, 220/50			2 Locking			6300
59 24 VDC	24/50 C (2.5 W)						
	C (17.1 W) C (8.5 W)						6500
		257					6600
Other options a	vailable, see	page 357.					
OPTIONS							1300
6611A-XXX-P				or dual pressure valve repla	ace by 4 (no light), by 5 (sgl	, liaht), by 6 (dbl, liaht)	000
		ped pilot exhaust replace A ghts on valve body, replace	1 by r.		ce by 2 (sgl. light), by 3 (db		800

MODIFICATIONS	
DESCRIPTION	MODEL AVAILABILITY
1 1/4" Bottom inlet	Manifold base
1 1/4" Bottom inlet, 3/4" or 1" Bottom cyl.	Manifold base
Side inlet & exhaust with bottom cyl. ports (side cyl.ports plugged)	1″ Manifold base

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TO ORDER - Add the appropriate modification number after the valve number; EXAMPLE : 6611A-411-PM-111DA MOD 0364

MOD. N°

0210

0364

0112

- 2. Bottom ports : Refer to modification table. ____
 - Sottom ports: Reter to modification table.
 To order manifolds without the valve, choose the manifold from the above table, then add 6600A as a prefix. Example 6600A-411.
 When ordering an external pilot connection for manifold bases, a common external pilot port is standard. One connection only is required for all the valves in the manifold whether single or double solenoid.
 2 a position and 3 position valve badies are act **ISO 3 MAC 125A MAC 250A** 2 position and 3 position valve bodies are not interchangeable. **MAC 500A**

ISO 1

ISO 2

Consult "Precautions" page 364 before use, installation or service of MAC Valves

Note : 1. The valve less base is always the same for internal or

external pilot. These options are effected in the manifold.





Fluid :	Compressed air, vacuum, inert gases							
Pressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI External pilot : vacuum to 150 PSI							
Pilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI							
ubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)							
iltration :	40 µ							
Cemperature range :	0°F to 120°F (-18°C to 50°C)							
low (at 6 bar, ΔP=1bar) :	3/4" : (9.0 C _v), 1" : (9.6 C _v), 1 1/4" : (9.6 C _v)							
Coil :	Epoxy encapsulated - class A wires - Continuous duty							
Voltage range :	-15% to +10% of nominal voltage							
Protection :	Consult factory							
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA = 1 to 17.1 W							
Response times :	24 VDC (8.5 W) Energize : 18 ms De-energize : 20 ms							
	120/60 Energize : 15-25 ms De-energize : 19-28 ms							
Options :	BSPP threads. Dimensions shown are metric (mm)							
DIMENSIONS	Dimensions shown are metric (mm)							
Diminipiono	249,7 DOUBLE OPERATOR STANDARD COMMON EXTERNAL PILOT SUPPLY 1/8"							
	119,9 119,9 11,8 OPTIONAL INDIVIDUAL EXTERN PILOT SUPPLY PORT 1/8"							
	CVLB (VLB (32,0) 60,0 (CNDUIT (40,5) (50,5) (67,5) (81,5) (67,5) (81,5) (161,4) (
52,0	12,0-+ + 50,0 + 1" NPSM CONDUIT PORT							
108,0 ± 0,2	- INLET & EXHAUST							

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Individual mounting Series sub-base "plug-in" 35 100 Moisture and dust seal 200 Pilot valve Pilot air accumulator **Manual operator** Internal pilot supply (100 series) Ext. pilot supply 55 check valve 56 ř. 57 58 59 **Combination** air EXH. EXH. 45 and spring return EXH. 700 D 900 Electrical plug in Conduit 82 6300 **SERIES FEATURES** 6500 • The patented MACSOLENOID® with its non-burn out feature on AC service. 6600 • A large checked accumulator for consistent shifting on single and double solenoid models. • A plug-in design that provides for internal or external pilot with or without lights 1300 and all electrical in the base. • Non-lubricated or lubricated service. 800 • Optional indicator lights, and various types of manual operators. **ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A**





SOLENOID PILOT

The solenoid pilot utilized on the 1300 Series is the extremely fast and reliable, spring biased MAC 100 Series three-way manifold valve which features a high flow balanced poppet. The patented spring biased floating pole piece MACSOLENOID® of the 100 Series practically eliminates the two most common causes of solenoid valve failures: coil burnout on AC service and failure to shift. The versatility of the 100 Series permits either internal or external pilot supply. The solenoid housing incorporates a 1/8" NPTF pilot exhaust connection which can be either muffled or piped away and the extrenal pilot supply connection.

MAIN VALVE

The main valve contains a MAC all bonded, lightweight one-piece aluminium spool. All spool seals are permanently bonded, precision ground and chemically surface hardened to provide long, stick-free operation. These valves with their pressure balanced design are not affected by restrictions or back pressure in the exhaust and can be plugged for use as three-way valves. The one-piece silicon aluminium body used with any of these valves incorporates an integral accumulator.

ACCUMULATOR

A large accumulator housed in the main valve body supplies both pilots on double solenoid valves as well as the air assisted spring return on single solenoid pilot or single remote air pilot operated valves. Internally piloted, the accumulator is protected from inlet pressure fluctuations in the main valve by a check valve. The check valve is designed to bleed off the accumulator when the main supply pressure is removed. For external pilot supply operations, the check valve is reversed, blocking the internal pilot supply to the accumulator. The accumulator is then supplied through the external supply connection.

DIFFERENTIAL RETURN

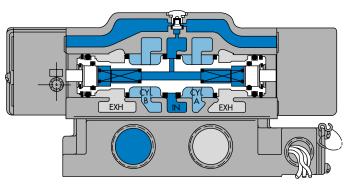
Single solenoid pilot or single air pilot operated models contain a combination spring and air assisted differential return. Supplied from the accumulator it balances the shifting forces for consistent operation and positive spool return.

BASES

The 4-port aluminium base design simplifies piping and enables the use of a single muffler or piped exhaust. They are provided with an integral electricial wiring space, sealed with a convenient access cover. The access cover also houses the optional indicator lights, available in voltages of 120/60, 110/50 or 240/60, 220/50 or 24 VDC in either single or double lights.

3-POSITION VALVES

The 1300 Series solenoid pilot 3-position valves, are centered by MAC's exclusive combination spring and pressure assisted spool design. The combination spring and air assist assures fast, positive return of the main spool when the pilots are de-energized. Available in external or internal pilot supply models, with either a closed center spool (all ports blocked) or open center spool (inlet blocked, cylinder ports open to exhaust).



3-POSITION DOUBLE SOLENOID CLOSED CENTER

H	
Series 1300	

Function	Port size	Floш (Max)	Individual mounting	Series
4/2 - 4/3	3/4" - 1" - 1 1/4" - 1 1/2"	15.9 C _v	sub-base "plug-in"	
OPERATIONAL BENEFITS				
1. Balanced spool, immun	e to variations of			35
pressure. 2. Short stroke with high f	low.		2.2	
3. High shifting forces.			all de	
 Checked accumulator g pilot pressure. 	guarantees maximum		the l	100
5. Powerful return force th	anks to the		• ((a)) B	
combination of mecha				
6. Bonded spool with min in a glass-like finished k				200
7. Wiping effect eliminate	s sticking.			55
8. Pilot valve with balance	ed poppet, high flow,		COL	
short and consistent res	ponse times.			56

HOW TO ORDER

Port size	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center
Valve less base	1301G- xxy D- xx	1303G- xxy D- xx	1307G- xxy D- xx	1308G- XXY D-XX
Sub base 3/4" NPTF	1321G- xxy D- xx	1323G- XXY D-XX	1327G- XXY D- XX	1328G- XXY D-XX
Sub base 1" NPTF	1331G- xxy D- xx	1333G- xxy D- xx	1337G- XXY D- XX	1338G- XXY D- XX
Sub base 1 1/4" NPTF	1351G- xxy D- xx	1353G- xxy D- xx	1357G- XXY D- XX	1358G- XXY D-XX
Sub base 1 1/2" NPTF	1361G- xxy D- xx	1363G- xxy D- xx	1367G- xxy D- xx	1368G- XXY D-XX

SOLENOID OPERATOR ►

<u>X</u>	<u>X</u> Y	D- 🔰	⊻ X *	
	-	-		

				— Т	_ τ	-				
										900
XX Voltage		Y	Manual ope	erator	X	Pilot air		X	Indicator light	200
11 120/60, 1		1	Non-locking		1	Internal		5	With light in base	
12 240/60, 2		2	Locking		2	External				82
22 24/60, 24,										04
59 24 VDC (2. 87 24 VDC (17										
61 24 VDC (1)										
24 100 (0.	5 11									6300
ther options avail	able, see page 357	7.								
										6500
Bases				Ľ	ight opti	ons				0000
10952-0005	3/4" BASE ASS'Y	- SGL (NE	PTF)	X	X = 1	- 110V-120V				
10952-0006	3/4" BASE ASS'Y	· ·	,			2 - 220V-240V	-			6600
10952-XX05	3/4" BASE ASS'Y					- 24V-28V	-			
10952-XX06	3/4" BASE ASS'Y						-			1300
10953-0005	1" BASE ASS'Y - S									
10953-0006	1" BASE ASS'Y - D									
10953-XX05 10953-XX06	1" BASE ASS'Y - S									800
10954-0005	1" BASE ASS'Y - D 1 1/4" BASE ASS'		<u> </u>							
10954-0005	1 1/4" BASE ASS									ISO 1
10954-XX05	1 1/4" BASE ASS'									
10954-XX06	1 1/4" BASE ASS'									150 2
10955-0005	1 1/2" BASE ASS"	Y - SGL. (I	NPTF)			vailable only on				100.0
10955-0006	1 1/2" BASE ASS"					specify MOD (150 3
10955-XX05	1 1/2" BASE ASS"					ports specify MC				MAC 12
10955-XX06	1 1/2" BASE ASS'	Y - DBL	W/LIGHT (NPTF)	EXAMPLI	: 1321G	111D-1 MOD	0002			
										MAC 25

57

700





Fluid :	Compressed air, vacu	um, inert gases	
Pressure range :	Internal pilot : single o	perator and 3 positions : 2	25-150 PSI double operator : 10-150 PSI
	External pilot : vacuur	n to 1 <i>5</i> 0 PSI	
Pilot pressure :	Single operator and 3	positions : 25-150 PSI D	Pouble operator : 10-150 PSI
Lubrication :	Not required, if used	select a medium aniline po	pint lubricant (between 180°F to 210°F)
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C t	o 50°C)	
Flow (at 6 bar, ΔP=1bar) :	3/4" : (11.5 C _v), 1" :	(13.7 C _v), 1 1/4" : (15.4	C _v), 1 1/2" : (15.9 C _v)
		·	
Coil :	Epoxy encapsulated -	class A wires - Continuous	; duty
Voltage range :	-15% to +10% of nom	inal voltage	
Protection :	Consult factory		
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA	
	= 1 to 17.1 W		
	24 VDC (8.5 W)	Energize : 20 ms	De-energize : 28 ms
Response times :			De-energize : 29-35 ms

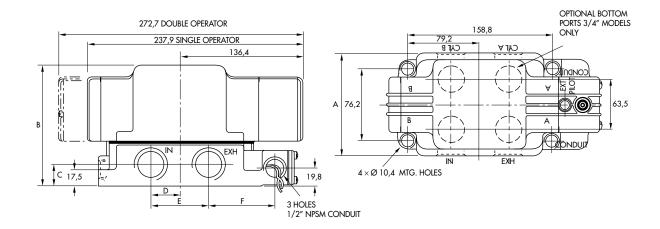
• Mounting screw valve to base (x4) : 32396.

Options :

• BSPP threads. • Lights in base.

DIMENSIONS

Dimensions shown are metric (mm)



Port size	A	B	C	D	E	F
3/4", 1" NPTF	111.3	132.4	23.8	31.7	63.5	71.4
1 1/4" NPTF	1143	148.3	30.2	38.1	76.2	65.0
1 1/2" NPTF				35.0	69.9	68.0



Individual mounting Series inline 35 Manifold mounting stacking body with 3 commo stacking body with 3 common stacking body with 3 commor stacking body with 1 common stacking bod with 3 commo rts with C. C. & ports with ports and integral F.C. port (inlet) (inlet & exhc egral exh. F. C. 100 200 Manual operator 55 Sealed solenoid **Bonded spool Piston assembly** Piston adapter One piece body enclosure 56 57 58 59 45 Air/spring return OPER. "B" OPER. "A Optional Internal pilot supply pilot exhaust 700 tapped port **External pilot option** or Integral 900 muffler 82 6300 **SERIES FEATURES** 6500 • The patented MACSOLENOID® with its non-burn out feature on AC service. 6600 • Air/spring return on single solenoid valves. • Use for lube or non-lube service. 1300 • Optional common conduit stacking valve with integral wiring space and indicator lights • Optional integral individual exhaust flow controls. 800 • Optional low wattage DC solenoids down to 1 watt. • Various types of manual operators and solenoid enclosures. **ISO 1 ISO 2 ISO 3 MAC 125A**

MAC 250A MAC 500A

°
H
Series 800



SPECIAL APPLICATIONS :

On all single pressure models, energizing the operator closest to port #5 supplies pressure to cylinder port "2" and energizing the operator closest to port #4 supplies pressure to cylinder port "3". For the following special applications, additional piping considerations are required.

EXTERNAL PILOT APPLICATIONS :

An External Pilot is only required when the main valve pressure is less than 20 PSIG on single solenoid or 10 PSIG on double solenoid valves in 2-position models, or less than 20 PSIG on 3-position double solenoid models. Also an External Pilot is required when main valve pressure is in excess of 150 PSIG.

INDIVIDUAL VALVES: The External Pilot supply is connected to the External Pilot port in the piston adapter. The valve must be an External Pilot model.

STACKING VALVES: The External Pilot supply is connected to the External Pilot ports in the end plates. The valve is the same valve for either Internal or External Pilot. The end plate must be the external pilot type.

DUAL PRESSURE (TWO INLET) APPLICATIONS :

When two pressures are required within a valve, a Dual Pressure (Inlet) model must be used. Additionally the following must be adhered to:

INDIVIDUAL VALVES: If both pressures are below the minimum, use an External Pilot supply as described above for Individual valves and connect the two pressures to ports #4 and #5. Otherwise, use an Internal Pilot model and connect the higher pressure to port #5 and the lower pressure to port #4.

STACKING VALVES: Use an External Pilot Manifold End Plate Kid, as described above for Stacking Valves and connect the two pressures to the Exhaust ports in the end plate.

MULTIPLE PRESSURES TO A STACK :

By isolating, different pressures can be supplied to each end of a stack to provide two pressures. If more than two pressures are required, a Dual Inlet Pressure Block can be installed providing 2 more inlet pressures to a stack. With the use of 1 or more of these Pressure Blocks, a stack can have virtually unlimited inlet pressures.

VACUUM APPLICATIONS :

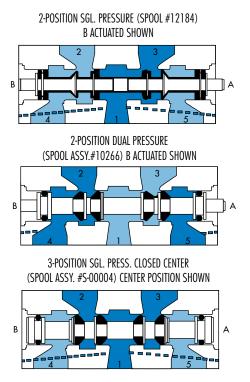
Use an External Pilot model as described under "External Pilot Applications", (Individual valve or Stacking).

For single pressure, dual exhaust type valve ports #4 & #5 (Exhausts) should be connected to the vacuum supply and port #1 (Inlet) to atmosphere. For dual pressure, single exhaust type valves, vacuum should be connected to port #1 (Inlet) and ports #4 & #5 (Exhausts) to atmosphere.

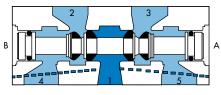
SELECTOR APPLICATIONS :

Use an External Pilot model as described above, if both pressures are below the minimum pilot pressure; otherwise use an Internal Pilot model. In either case, use a single pressure model and connect the higher pressure to port #1 (Inlet) and the lower pressure to port #4 (Exhaust) if using cylinder port #2 or to port #5 (Exhaust) if using cylinder port #3.

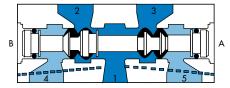
SPOOL CONFIGURATIONS



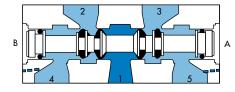
3-POSITION SGL. PRESS. OPEN CENTER (SPOOL ASSY.#S-00003) CENTER POSITION SHOWN



3-POSITION SGL. PRESS. PRESSURE CENTER (SPOOL ASSY. #S-08003) CENTER POSITION SHOWN



3-POSITION DUAL PRESS. PRESSURE CENTER (SPOOL ASSY. #S-08002) CENTER POSITION SHOWN



tion	0	Rock oizo	Clow (May)		Individual mounting		Corioo
ition 2 - 5/3		Port size	Flow (Max)		Individual mounting		Series
RATIONAL BEN	IFFITS		•				
alanced spool nort stroke wit	l, immune to vo h high flow.	ariations of pressure. maximum shifting					35
werful return echanical and	d air springs. with minimum	o the combination of friction, shifting in a			in in		100
'iping effect e	liminates sticki	ing. opet, high flow, short			2000	4 1 5 1	200
nd consistent i ng service life	response times e.				10 1 100	P	55
					26		56 57
IOW TO ORDI Port size	Pilot air	5/2	5/2	5/3	5/3	5/3	57
ort size	riioi air	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center	5/3 Pressure center	59
/4″ NPTF	Internal	811C-PM-xxyzz-152	821C-PM- <i>XXYZZ</i> -152	825C-PM- xxyzz -552	415 825C-PM- XXYZZ- 652	825C-PM- XXYZZ -852	
	External	812C-PM- XXYZZ -112	822C-PM-xxyzz-112	826C-PM- XXYZZ -512	826C-PM- xxyzz- 612	826C-PM- xxyzz- 812	45
LENOID OP	ERATOR >						
XX Volte			Y Manual opera	ntor	ZZ Electrical co	nnection	700
11 120/60, 110/50			1 Non-locking		JB Rectangular connector		/00
12 240/60, 220/50 22 24/60, 24/50 59 24 VDC (2.5 W)			2 Locking		JD Rectangular connector with light JA Square connector JC Square connector with light		900
87 24 VD	C (2.5 W) C (17.1 W) C (8.5 W)			-	BA Flying leads (18") CA Conduit 1/2" NP		200
	available, see j	 page 357.		-		5	82
		B - 3/8″ inlet and cylinder	· ports, exhaust ports 1/4'	"			
		D - NAMUR interface. ° EXAMPLE : 811C-PA	N-111CA-152 Mod. 0358	3.			6300
OPTIONS							6500
811C-PM-111CA-152							6600
- For 2 position dual pressure : replace by 2.							1300
825C-PM-111CA-852 - For 3 position dual pressure, pressure center : replace by 7.							
		o position dual pressu	e, pressore cemer . rep				800
							ISO 1
							ISO 2
							ISO 3
							MAC 12
							MAC 25



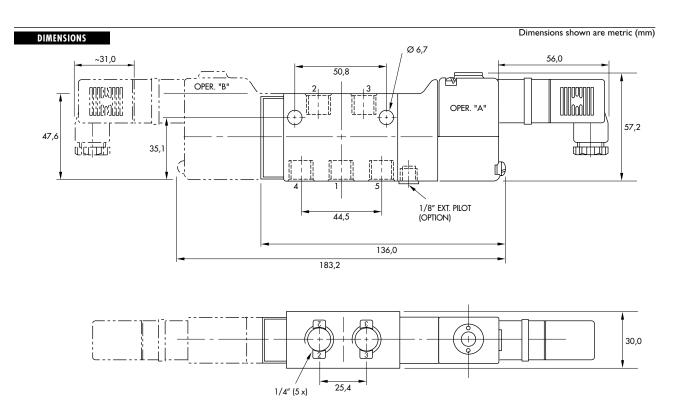


TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot : single operator and 3 positions : 20-150 PSI double operator : 10-150 PSI External pilot : vacuum to 200 PSI
Pilot pressure :	Single operator and 3 positions : 20-150 PSI Double operator : 10-150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, ΔP=1bar) :	1/4" : (1.4 C _v)
Coil :	General purpose - class A wires - Continuous duty - Encapsulated
Voltage range :	-1 <i>5%</i> to +10% of nominal voltage
Protection :	Consult factory
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA
	= 1 to 17.1 W
Response times :	24 VDC (8.5 W) Energize : 8 ms De-energize : 10 ms
	120/60 Energize : 5-11 ms De-energize : 9-16 ms

Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
Pilot valve : PME-XXYZZ, including seal 16337.
Mounting screw kit for pilot : N-08003.

Options :

• BSPP threads. • NAMUR interface. • Explosion-proof model. • Flow control/muffler (1/4") : 10951



ON	Port size	Flow (Max)		Manifold Mounting	Series
2 - 5/3	1/4″	1.4 C _v		stacking body with 1 common port (inlet)	
RATIONAL BENEFITS					
alanced spool, immune to v nort stroke with high flow. ne piston (booster) provides rces.					35
owerful return force thanks t techanical and air springs. onded spool with minimum lass-like finished bore.					100
Viping effect eliminates stick Vilot valve with balanced pop	ppet, high flow, short			. 5	200
and consistent response time ong service life.				2 0	55
					56
HOW TO ORDER		- /-	- /2	/	57
Port size	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center Pr	5/3 58 ressure center 59
1/4" NPTF	811C-PM- xxyzz -132	821C-PM- xxyzz- 132	825C-PM- XXYZZ- 532	825C-PM- XXYZZ -632 825	5C-PM- xxyzz -832
DLENOID OPERATOR >		<u> </u>	ZZ [*]		45
XX Voltage		Y Manual opera	itor	ZZ Electrical connect	tion
11 120/60, 110/50 12 240/60, 220/50		I Non-locking 2 Locking		JB Rectangular connector JD Rectangular connector w	700
12 240/60, 220/50 22 24/60, 24/50 59 24 VDC (2.5 W)		2 LOCKING		RA Conduit 3/8" NPS BA Flying leads (18")	
87 24 VDC (2.5 W) 61 24 VDC (8.5 W)					900
Other options available, see	аде 357.				82
	MANIFOLD E	ND PLATE KITS (NPTF)*	•		UA
INT. PILOT - PART N°.	EXT. PILOT - PART		MODELS USED WIT		6300
M-08001-01-01 M-00005-01-01	M-08001-02-01 M-00005-02-01		1 com. port models, stack 1 com. port models, stacks		
	1°. for BSPP threads; EXAMF				6500
te : (1) end plate kit required					6600
OPTIONS					1300
811C-PM-111BA-132	• •• • • •				
	r 2 position dual pressure	e : replace by 2.			800
825C-PM-111BA-832	r 3 position dual pressure	o pressure center : rer	alace hy 7		ISO 1
—		3, pressure cernor . rop			ISO 2
					ISO 3
					MAC 12

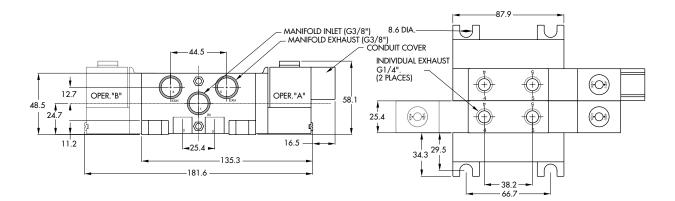
MAC 500A





	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot : single operator and 3 positions : 20-150 PSI double operator : 10-150 PSI
	External pilot : vacuum to 200 PSI
Pilot pressure :	Single operator and 3 positions : 20-150 PSI Double operator : 10-150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, ΔP=1bar) :	1/4" : (1.4 C _v)
Coil :	General purpose - class A wires - Continuous duty - Encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA
	= 1 to 17.1 W
Response times :	24 VDC (8.5 W) Energize : 8 ms De-energize : 10 ms
	120/60 Energize : 5-11 ms De-energize : 9-16 ms

DIMENSIONS



Series
35
100
200
55

8. Long service life.

HOW TO ORDER

Port size	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center	5/3 Pressure center
1/4" NPTF	811C-PM- XXYZZ -122	821C-PM-xxyzz-122	825C-PM- xxyzz -522	825C-PM- XXYZZ -622	825C-PM- XXYZZ -822
3/8″ NPTF	811C-PM- XXYZZ -123	821C-PM-xxyzz-123	825C-PM- xxyzz -523	825C-PM- XXYZZ -623	825C-PM- XXYZZ -823

<u>XX Y ZZ</u>*

SOLENOID OPERATOR ►

	Voltage	Ŷ	Manual operator	ZZ	Electrical connection
11	120/60, 110/50	1	Non-locking	JB	Rectangular connector
12	240/60, 220/50	2	Locking	JD	Rectangular connector with light
22	24/60, 24/50			RA	Conduit 3/8" NPS
59	24 VDC (2.5 W)			BA	Flying leads (18″)
87	24 VDC (17.1 W)				
61	24 VDC (8.5 W)				

* Other options available, see page 357.

	MANIFOLD END PLATE KITS (NPTF)*				
INT. PILOT - PART N°.	EXT. PILOT - PART N°.	MODELS USED WITH			
M-08001-01-01	M-08001-02-01	3 com. port or 1 com. port models, stacks of 1 thru 16 valves			
M-00005-01-01	M-00005-02-01	3 com. port or 1 com. port models, stacks of 17 or more valves			
Add letter P at end of part N°. f	or BSPP threads; EXAMPLE : M				

* Add letter ${\bm P}$ at end of part N°. for BSPP threads; ${\bm EXAMPLE}$: M-08001-01-01 ${\bm P}$ Note : (1) end plate kit required per stack.

OPTIONS		
811C-PM-111RA-122	For 2 position dual pressure : replace by 2.	
825C-PM-111RA-822		
	For 3 position dual pressure, pressure center: replace by 7.	

(*) (I

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1300

800

ISO 1 ISO 2

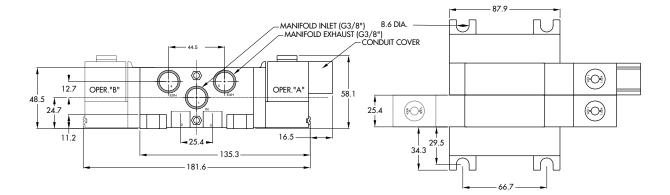
ISO 3 MAC 125A MAC 250A MAC 500A





Pressure range :		um, inert gases		
	Internal pilot : single o	operator and 3 positions :	20-150 PSI	double operator : 10-150 PSI
	External pilot : vacuur	n to 200 PSI		
ot pressure :	Single operator and 3	positions : 20-150 PSI	Double operator : 10-150	PSI
rication :	Not required, if used	select a medium aniline p	oint lubricant (between 18	30°F to 210°F)
tion :	40 µ			
erature range :	0°F to 120°F (-18°C t	o 50°C)		
r (at 6 bar, ΔP=1bar) :	1/4" : (1.4 C _v), 3/8″	: (1.4 C _v)		
:	General purpose - cla	ss A wires - Continuous d	uty - Encapsulated	
age range :	-15% to +10% of nom	inal voltage		
ction :	Consult factory			
er :	~ Inrush : 14.8 VA	Holding : 10.9 VA		
	= 1 to 17.1 W			
onse times :	24 VDC (8.5 W)	Energize : 8 ms	De-energize : 10 ms	
	120/60	Energize : 5-11 ms	De-energize : 9-16 m	S

DIMENSIONS



OPERATIONAL BENEFITS 1. Balanced spool, immune to	f			35
5/2 - 5/3	1/4" - 3/8"	1.4 C _v	stacking body with 3 common ports and integral F.C.	
Function	Port size	Flow (Max)	Manifold mounting	Series
© Constant of the series 800	Direct sole	noid and so	lenoid pilot oper	ated valves

- 3. The ۶p r) p ١g forces. 4. Powerful return force thanks to the combination of
- mechanical and air springs.
- 5. Bonded spool with minimum friction, shifting in a glass-like finished bore.
- 6. Wiping effect eliminates sticking.
- 7. Pilot valve with balanced poppet, high flow, short and consistent response times.
- 8. Long service life.

HOW TO ORDER

A 3 2 B A 3 2 B P A A B C						
I/4" NPTF 811C-PM-xxyzz-192 821C-PM-xxyzz-192 821C-PM-xxyzz-192 825C-PM-xxyzz-592 825C-PM-xxyzz-692 825C-PM-xxyzz-892	Port size			•	•	5/3 Pressure center
3/8" NPTF 811C-PM-xxyzz-193 821C-PM-xxyzz-193 825C-PM-xxyzz-593 825C-PM-xxyzz-693 825C-PM-xxyzz-893	1/4" NPTF	811C-PM- XXYZZ -192	821C-PM- XXYZZ -192	825C-PM- xxyzz -592	825C-PM- xxyzz -692	825C-PM- XXYZZ -892
,	3/8″ NPTF	811C-PM- XXYZZ -193	821C-PM- XXYZZ -193	825C-PM- xxyzz -593	825C-PM- xxyzz -693	825C-PM- XXYZZ -893

SOLENOID OPERATOR ►

XX Voltage Y Manual operator ZZ Electrical connec	on
11 120/60, 110/50 1 Non-locking JB Rectangular connector 10 24/60, 200/60 1 Non-locking JB Rectangular connector	1 1. 1 .
12 240/60, 220/50 2 Locking JD Rectangular connector v 22 24/60, 24/50 RA Conduit 3/8" NPS Conduit 3/8" NPS	n light
59 24 VDC (2.5 W) BA Flying leads (18") 87 24 VDC (17.1 W) EVEN EVEN	
61 24 VDC (8.5 W)	

* Other options available, see page 357.

	MANIFOLD END PLAT	IE KITS (NPTF)*
INT. PILOT - PART N°.	EXT. PILOT - PART N°.	MODELS USED WITH
M-08001-01-01	M-08001-02-01	3 com. port or 1 com. port models, stacks of 1 thru 16 valves
M-00005-01-01	M-00005-02-01	3 com. port or 1 com. port models, stacks of 17 or more valves

* Add letter ${\bf P}$ at end of part N°. for BSPP threads; ${\bf EXAMPLE}$: M-08001-01-01 ${\bf P}$ Note : (1) end plate kit required per stack.

OPTIONS	1300
811C-PM-111RA-192	800
- For 2 position dual pressure : replace by 2. 825C-PM-111RA-892 - For 3 position dual pressure, pressure center: replace by 7.	ISO 1 ISO 2
	ISO 3 MAC 125A
	MAC 250A

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6600

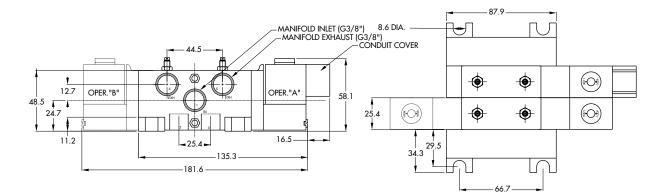
MAC 500A





Pressure range : Pilot pressure :	External pilot : vacuun	perator and 3 positions : n to 200 PSI	20-150 PSI double operator : 10-150 PSI			
Pilot pressure :		n to 200 PSI				
Pilot pressure :						
		-	Double operator : 10-150 PSI			
ubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)					
Filtration :	40 µ					
Temperature range :	0°F to 120°F (-18°C to	50°C)				
Flow (at 6 bar, ΔP=1bar) :	1/4" : (1.4 C _v), 3/8" : (1.4 Cv)					
Coil :	General purpose - cla	ss A wires - Continuous du	uty - Encapsulated			
Voltage range :	-15% to +10% of nom	inal voltage				
Protection :	Consult factory					
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA				
	= 1 to 17.1 W					
Response times :	24 VDC (8.5 W)	Energize : 8 ms	De-energize : 10 ms			
	120/60	Energize : 5-11 ms	De-energize : 9-16 ms			

DIMENSIONS



BR	D	į
Series 800		

Function	Port size	Floш (Max)	Manifold mounting	Series
5/2 - 5/3	1/4″ - 3/8″	1.4 C _v	stacking body with 3 common ports with common conduit	
OPERATIONAL BENEFITS				
1. Balanced spool, immune				35

2. Short stroke with high flow.

- 3. The piston (booster) provides maximum shifting
- forces. 4. Powerful return force thanks to the combination of
- Powerful refurn force manks to the combination o mechanical and air springs.
- 5. Bonded spool with minimum friction, shifting in a glass-like finished bore.
- 6. Wiping effect eliminates sticking.
- Pilot valve with balanced poppet, high flow, short and consistent response times.
- 8. Long service life.

HOW TO ORDER

Port size	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center	5/3 Pressure center	58 59
1/4" NPTF	811C-PM- XXYZZ -142	821C-PM- XXYZZ -142	825C-PM- xxyzz -542	825C-PM- xxyzz -642	825C-PM- XXYZZ -842	
3/8" NPTF	811C-PM-xxyzz-143	821C-PM- XXYZZ -143	825C-PM- xxyzz -543	825C-PM- xxyzz -643	825C-PM- xxyzz -843	45

SOLENOID OPERATOR ►

XX	Voltage	Y	Manual operator	ZZ	Electrical connection	70
11	120/60, 110/50	1	Non-locking	DA	Common conduit	
12	240/60, 220/50	2	Locking			_
22	24/60, 24/50					90
59	24 VDC (2.5 W)	-				70
87	24 VDC (17.1 W)	-				
61	24 VDC (8.5 W)	-				

* Other options available, see page 357.

	MODIFICATIONS				
MOD. N°	DESCRIPTION	MODEL AVAILABILITY			
0387	Indicator light 24 VDC				
0295	Indicator light 120 V/60/50	Single & double solenoid			
0296	Indicator light 240 V/60/50				

TO ORDER - Add the appropriate modification number after the valve number; EXAMPLE : 811C-PM-111DA-142 MOD 0295

MANIFOLD END PLATE KITS (NPTF)*						
INT. PILOT - PART N°.	EXT. PILOT - PART N°.	MODELS USED WITH				
M-08002-01-01	M-08002-02-01	Com. conduit models, stacks of 1 thru 16 valves				
M-00007-01-01	M-00007-02-01	Com. conduit models, stacks of 17 or more valves				

* Add letter **P** at end of part N°. for BSPP threads; **EXAMPLE** : M-08002-01-01**P** Note : (1) end plate kit required per stack.

OPTIONS

811C-PM-111DA-142

- - For 2 position dual pressure : replace by 2.

825C-PM-111DA-842

153

- - For 3 position dual pressure, pressure center : replace by 7.

MAC 250A MAC 500A

MAC 125A

1300

800

ISO 1

ISO 2

ISO 3

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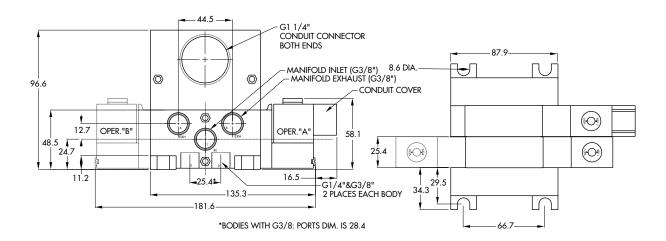
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Fluid :	Compressed air, vacu	um, inert gases				
Pressure range :	Internal pilot : single c	operator and 3 positions :	20-150 PSI	double operator : 10-150 PSI		
	External pilot : vacuur	n to 200 PSI				
Pilot pressure :	Single operator and 3	positions : 20-150 PSI	Double operator : 10-15	O PSI		
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)					
Filtration :	40 µ					
Temperature range :	0°F to 120°F (-18°C t	o 50°C)				
Flow (at 6 bar, ΔP=1bar) :	1/4" : (1.4 C _v), 3/8"	1/4" : (1.4 C _v), 3/8" : (1.4 C _v)				
	<u> </u>	·				
Coil :	General purpose - cla	ss A wires - Continuous d	uty - Encapsulated			
Voltage range :	-15% to +10% of nom	inal voltage				
Protection :	Consult factory					
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA				
	= 1 to 17.1 W					
Response times :	24 VDC (8.5 W)	Energize : 8 ms	De-energize : 10 ms			
	120/60	Energize : 5-11 ms	De-energize : 9-16 r	ns		

DIMENSIONS



5/2 - 5/3	1/4" - 3/8"	1.4 C _v	with 3 common ports with C. C. & integral exh. F. C.		
Function	Port size	Flow (Max)	Manifold mounting stacking body		Series
		Clow (May)	Manifold mounting		Corioe
Series 800					
°	Direct sol	enoid and	solenoid pilot	operated	valves

forces.

2. Short stroke with high flow.

4. Powerful return force thanks to the combination of mechanical and air springs.

1. Balanced spool, immune to variations of pressure.

3. The piston (booster) provides maximum shifting

- 5. Bonded spool with minimum friction, shifting in a glass-like finished bore.
- 6. Wiping effect eliminates sticking.
- 7. Pilot valve with balanced poppet, high flow, short and consistent response times.
- 8. Long service life.

HOW TO ORDER

Port size	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center	5/3 Pressure center	5 5
1/4" NPTF	811C-PM- xxyzz -162	821C-PM- XXYZZ -162	825C-PM- xxyzz -562	825C-PM- XXYZZ -662	825C-PM- XXYZZ -862	
3/8" NPTF	811C-PM- xxyzz -163	821C-PM- xxyzz -163	825C-PM- xxyzz -563	825C-PM- xxyzz -663	825C-PM- XXYZZ -863	4

XX Y ZZ

SOLENOID OPERATOR ►

XX	Voltage	Y	Manual operator	ZZ	Electrical connection	70
11	120/60, 110/50	1	Non-locking	DA	Common conduit	
12	240/60, 220/50	2	Locking			-
22	24/60, 24/50					90
59	24 VDC (2.5 W)					Y V
87	24 VDC (17.1 W)					
61	24 VDC (8.5 W)					
Other	options available see page 357					82

* Other options available, see page 357.

	MODIFICATIONS	
MOD. N°	DESCRIPTION	MODEL AVAILABILITY
0387	Indicator light 24 VDC	
0295	Indicator light 120 V/60/50	Single & double solenoid
0296	Indicator light 240 V/60/50	

TO ORDER - Add the appropriate modification number after the valve number; EXAMPLE : 811C-PM-111DA-162 MOD 0295

	MANIFOLD END PLATE KITS (NPTF)*			
NT. PILOT - PART N°.	EXT. PILOT - PART N°.	MODELS USED WITH		
M-08002-01-01	M-08002-02-01	Com. conduit models, stacks of 1 thru 16 valves	8	
M-00007-01-01	M-00007-02-01	Com. conduit models, stacks of 17 or more valves		

OPTIONS

811C-PM-111DA-162

- - For 2 position dual pressure : replace by 2.

825C-PM-111DA-862

- - For 3 position dual pressure, pressure center : replace by 7.

MAC 250A MAC 500A

MAC 125A

ISO 3

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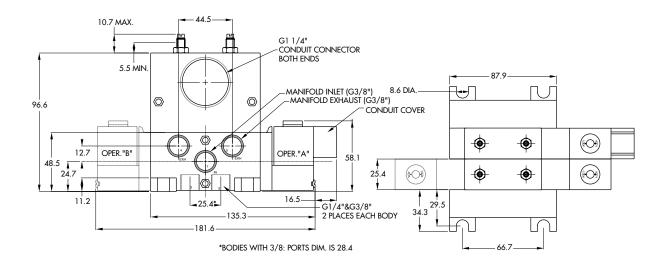
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Fluid :	Compressed air, vacu	um, inert gases					
Pressure range :	Internal pilot : single c	operator and 3 positions :	20-150 PSI	double operator : 10-150 PSI			
	External pilot : vacuun	n to 200 PSI					
Pilot pressure :	Single operator and 3	positions : 20-150 PSI	Double operator : 10-15	50 PSI			
Lubrication :	Not required, if used	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)					
Filtration :	40 µ						
Temperature range :	0°F to 120°F (-18°C to	o 50°C)					
Flow (at 6 bar, $\Delta P=1bar)$:	1/4" : (1.4 C _v), 3/8"	: (1.4 C _v)					
Coil :	General purpose - cla	ss A wires - Continuous d	uty - Encapsulated				
Voltage range :	-15% to +10% of nom	inal voltage					
Protection :	Consult factory						
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA					
	= 1 to 17.1 W						
Response times :	24 VDC (8.5 W)	Energize : 8 ms	De-energize : 10 ms				
	120/60	Energize : 5-11 ms	De-energize : 9-16 ı	ms			

DIMENSIONS





Individual mounting Series valve only 35 Manifold mounting valve only 100 200 Bonded flow seal spool Pilot air accumulator **Manual operator** 55 56 Air/spring return ſШ 57 58 59 **External pilot port** 45 Æ ⇒ 700 900 82 6300 **SERIES FEATURES** 6500 • Fastest available response time with patented MACSOLENOID®. 6600 • No-stick operation is ensured by wiping action of unique MAC spool/bore combination. • Balanced poppet pilot valve for high flow, precise repeatability, and consistent operation. 1300 • Large spool piston for high shifting force even at minimum operating pressure • Air/spring return for consistent shifting on single solenoid models. 800 • Patented virtually burn-out proof AC solenoid. • Optional low wattage DC solenoids down to 1.0 watt. 150 1 • Various manual operators & electrical connectors are available. **ISO 2** • Muffled or threaded pilot exhaust ports. • Internal of external pilot models available. **ISO 3 MAC 125A MAC 250A MAC 500A**





VALVE CONFIGURATIONS AVAILABLE

- 2-Pos., single or double operators (solenoid or remote air).
- Single or dual pressure.
- 3-Pos., double operator-closed center, open center or pressure center (solenoid or remote air).
- Individual base or add-a-unit manifold base.
- Internal pilot or external pilot (including a common external pilot or manifold models).
- Side porting and bottom porting options.

*International Standards Organization ISO Common Base Interface (ISO Std. 5599/1)

SPECIAL APPLICATION INSTRUCTIONS :

On all models, energizing the "14" operator (solenoid or remote air) connects Port #1 to Cylinder Port #4 and energizing the "12" operator connects Port #1 to Cylinder Port #2. For the following special applications, additional piping considerations are required.

EXTERNAL PILOT APPLICATIONS* - An External Pilot Supply is only required when the main valve pressure is less than 1.8 BARS on single operators (soleneoid or remote air) or 0.7 BARS on double solenoid valves only. In these cases, use an External Pilot model and supply a minimum of 1.8 BARS for single operators or a minimum of 0.7 BARS for double solenoid valves to either the "14" or "12" External Pilot Port of the valve base.

VACUUM APPLICATIONS - Use an External Pilot model as described above and also connect the vacuum source to Port #3 & 5 and leave Port#1 open to atmosphere on single pressure models. On two pressure models, reverse the single pressure piping.

SELECTOR APPLICATIONS - Use an External Pilot Model as described above if both pressures are below the minimum, otherwise use an Internal Pilot model and connect the higher pressure to Port #1 and the lower pressure to either Port #3 or 5 depending on which Cylinder Port is to be active.

TWO PRESSURE APPLICATIONS - For Internal Pilot models specify the model number for connecting either port #3 or 5, whichever is to be the higher pressure, to the Internal Pilot supply. For external Pilot models, pipe as described above for "External Pilot Application."

*Note: 1Bar = 14.5 PSIG

- Short stroke with high flow.
 The piston (booster) provides maximum shifting
- forces.
- 4. Powerful return force thanks to the combination of mechanical and air springs.
- 5. Bonded spool with minimum friction, shifting in a glass-like finished bore.
- 6. Wiping effect eliminates sticking.
- 7. Pilot valve with balanced poppet, high flow, short and consistent response times.
- 8. Long service life.

HOW TO ORDER

SINGLE PRESSURE VALVES

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center	59
		$\begin{array}{c c} 14 & 4 & 2 & 12 \\ \hline \square & & & & & \\ \hline \square & & & & & \\ \hline & & & & & \\ \hline & & & & & \\ \hline & & & &$		$\begin{array}{c}14\\ \hline \\ \hline$	
Internal	MV-A1C-A111-PM-XXYZZ	MV-A1C-A211-PM-XXYZZ	MV-A1C-A312-PM-XXYZZ	MV-A1C-A311-PM-XXYZZ	45
External	MV-A1C-A121-PM-XXYZZ	MV-A1C-A221-PM-XXYZZ	MV-A1C-A322-PM-XXYZZ	MV-A1C-A321-PM-xxyzz	•

DUAL PRESSURE VALVES

Internal port 3 MV-A1C-A131-PM-xxyzz MV-A1C-A231-PM-xxyzz MV-A1C-A231-PM-xxyzz Internal port 5 MV-A1C-A141-PM-xxyzz MV-A1C-A241-PM-xxyzz MV-A1C-A241-PM-xxyzz External MV-A1C-A141-PM-xxyzz MV-A1C-A241-PM-xxyzz MV-A1C-A241-PM-xxyzz	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure center
Internal port 5 MV-A1C-A135-PM-xxyzz MV-A1C-A232-PM-xxyzz MV-A1C-A332-PM-xxyzz				
	Internal port 3	MV-A1C-A131-PM-XXYZZ	MV-A1C-A231-PM-xxyzz	MV-A1C-A331-PM-XXYZZ
External MV-A1C-A141-PM-xxyzz MV-A1C-A241-PM-xxyzz MV-A1C-A341-PM-xxyzz	Internal port 5	MV-A1C-A135-PM-XXYZZ	MV-A1C-A232-PM-XXYZZ	MV-A1C-A332-PM-XXYZZ
	External	MV-A1C-A141-PM-XXYZZ	MV-A1C-A241-PM-XXYZZ	MV-A1C-A341-PM-XXYZZ

V V 77*

SOLENOID OPERATOR >

Voltage	Y Manual operator	ZZ Electrical connection	65
120/60, 110/50	1 Non-locking	JB Rectangular connector	
240/60, 220/50	2 Locking	JD Rectangular connector with light	66
24/60, 24/50		JA Square connector	
24 VDC (2.5 W)		JC Square connector with light	
24 VDC (17.1 W)		BA Flying leads (18")	13
24 VDC (8.5 W)			
er options available, see page 3		Note : Photo shown with JC connector.	80

OPTIONS

MV-A	IC-A1	1- <u>PM</u> -	XXYZZ

- For CNOMO pilot, consult factory.
 - ------ For universal spool replace by 6 (2 position, sgl. pressure valves only)
 - For use with single pressure sandwich regulator, replace by 5.

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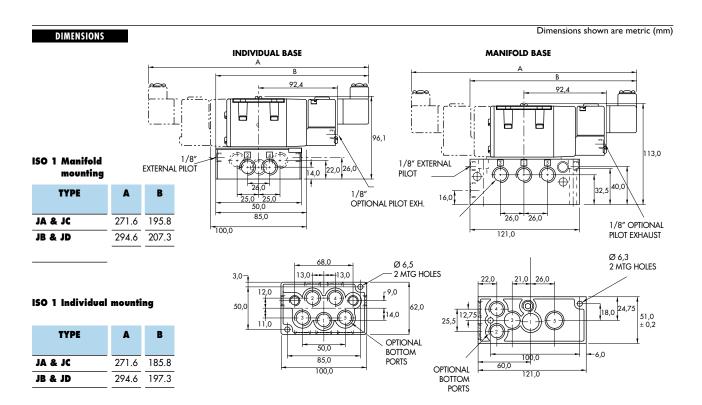


TECHNICAL DATA							
Fluid :	Compressed air, vacuum, inert gases						
Pressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI						
	External pilot : vacuum to 150 PSI						
Pilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI						
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)						
Filtration :	40 µ						
Temperature range :	0°F to 120°F (-18°C to 50°C)						
Flow (at 6 bar, $\Delta P=1bar)$:	1/4" : (1.6 C _v), 3/8" : (1.6 C _v)						
Coil :	Epoxy encapsulated - class A wires - Continuous duty						
Voltage range :	-15% to +10% of nominal voltage						
Protection :	Consult factory						
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA						
	= 1 to 17.1 W						
Response times :	24 VDC (8.5 W) Energize : 10 ms De-energize : 11 ms						
	120/60 Energize : 7-13 ms De-energize : 10-17 ms						

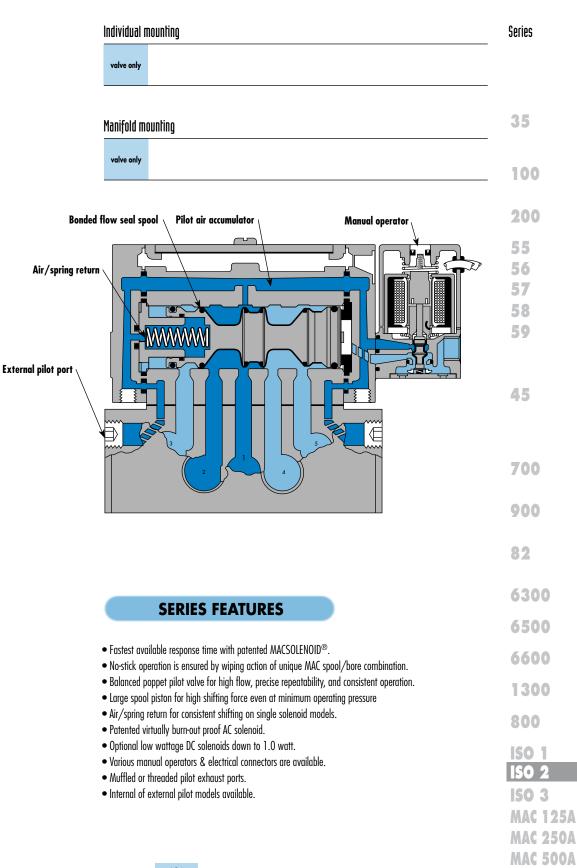
• Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.

• Pilot valve : PME-XXYZZ, including seal 16337. • Pressure seal between valve and base : 16344.

• Mounting screw valve to base (x4) : 35304.











VALVE CONFIGURATIONS AVAILABLE

- 2-Pos., single or double operators (solenoid or remote air).
- Single or dual pressure.
- 3-Pos., double operator-closed center, open center or pressure center (solenoid or remote air).
- Individual base or add-a-unit manifold base.
- Internal pilot or external pilot (including a common external pilot or manifold models).
- Side porting and bottom porting options.

*International Standards Organization ISO Common Base Interface (ISO Std. 5599/1)

SPECIAL APPLICATION INSTRUCTIONS :

On all models, energizing the "14" operator (solenoid or remote air) connects Port #1 to Cylinder Port #4 and energizing the "12" operator connects Port #1 to Cylinder Port #2. For the following special applications, additional piping considerations are required.

EXTERNAL PILOT APPLICATIONS* - An External Pilot Supply is only required when the main valve pressure is less than 1.8 BARS on single operators (soleneoid or remote air) or 0.7 BARS on double solenoid valves only. In these cases, use an External Pilot model and supply a minimum of 1.8 BARS for single operators or a minimum of 0.7 BARS for double solenoid valves to either the "14" or "12" External Pilot Port of the valve base.

VACUUM APPLICATIONS - Use an External Pilot model as described above and also connect the vacuum source to Port #3 & 5 and leave Port#1 open to atmosphere on single pressure models. On two pressure models, reverse the single pressure piping.

SELECTOR APPLICATIONS - Use an External Pilot Model as described above if both pressures are below the minimum, otherwise use an Internal Pilot model and connect the higher pressure to Port #1 and the lower pressure to either Port #3 or 5 depending on which Cylinder Port is to be active.

TWO PRESSURE APPLICATIONS - For Internal Pilot models specify the model number for connecting either port #3 or 5, whichever is to be the higher pressure, to the Internal Pilot supply. For external Pilot models, pipe as described above for "External Pilot Application."

*Note: 1Bar = 14.5 PSIG

© Contraction of the series ISO 2	Direct sole	enoid and	solenoid	pilot operate	d valves
Function	Port size	Flow (Max)	Individua	mounting & Manifold mounting	Series
5/2 - 5/3	3/8" - 1/2"	3.0 C _v	valve only		
OPERATIONAL BENEFITS Balanced spool, immune to va Short stroke with high flow. The piston (booster) provides r forces. 	naximum shifting				35
 Powerful return force thanks to mechanical and air springs. Bonded spool with minimum f glass-like finished bore. Wiping effect eliminates sticking 2 Pit in the second secon	riction, shifting in a ng.				100 200
7. Pilot valve with balanced popp and consistent response times.	bet, high flow, short		TITE		55
8. Long service life.			B	2	56
HOW TO ORDER					57
SINGLE PRESSURE VALVES					58
Pilot air	5/2 Single operator	5/2 Double operato	5/3 r Closed cent	5/3 er Open center	59
Internal	5%1\$3 MV-A2B-A111-PM-xxyzz	<u>5 ₩1 ₹3</u> MV-A2B-A211-PM- X	(YZZ MV-A2B-A312-PN	-xxyzz MV-A2B-A311-PM-xxyzz	45
External	MV-A2B-A121-PM- XXYZZ	MV-A2B-A221-PM-X	MV-A2B-A322-PM	MV-A2B-A321-PM-XXYZZ	<u>.</u>
DUAL PRESSURE VALVES					
Pilot air	5/2 Single oper	rator	5/2 Double operator	5/3 Pressure center	700
			$\begin{array}{c c} 14 & 4 & 2 & 12 \\ \hline \hline \hline \hline \hline \hline \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \hline \\ \hline \hline \\ \hline \hline \\ \hline \\ \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \\ \hline		900
Internal port 3	MV-A2B-A131-P	PM-xxyzz	MV-A2B-A231-PM- xxyzz	MV-A2B-A331-PM-XXYZZ	
Internal port 5	MV-A2B-A135-P		MV-A2B-A232-PM-XXYZZ	MV-A2B-A332-PM- XXYZZ	82
External	MV-A2B-A141-P	/M-XXYZZ	MV-A2B-A241-PM- xxyzz	MV-A2B-A341-PM-XXYZZ	
SOLENOID OPERATOR >		<u>XX Y ZZ</u>			6300
					6500
XX Voltage 11 120/60, 110/50	Y	Manual operator	ZZ JB	Electrical connection Rectangular connector	6500
12 240/60, 220/50	2	Locking	JD	Rectangular connector with light	6600
22 24/60, 24/50 59 24 VDC (2.5 W)			JA JC	Square connector Square connector with light	
87 24 VDC (17.1 W) 61 24 VDC (8.5 W)			BA	Flying leads (18")	1300
* Other options available, see p		I	Note : Pho	to shown with JC connector.	800
Note : ISO valves are delivered v	w/ 0 buse. See page 201 for bo				150 1
OPTIONS					ISO 2
MV-A2B-A111-PM-XXYZZ					150.3
	NOMO pilot, consult factor niversal spool replace by 6		ire valves onlv)		MAC 195A
	e with single pressure sand				MAC 250A
		5 / 1 / 1			MAL ZOVA

MAC 500A



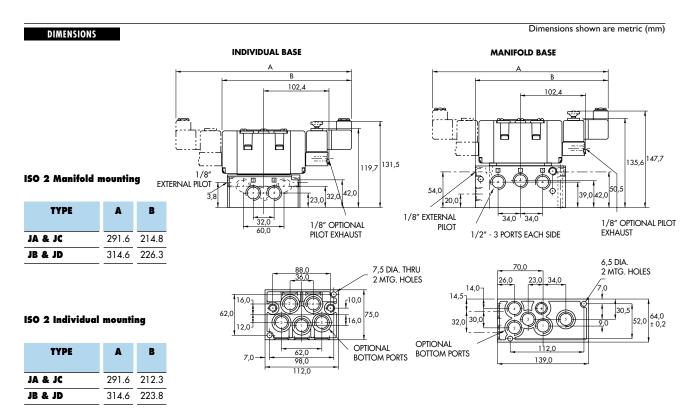


TECHNICAL DATA					
Fluid :	Compressed air, vacuum, inert gases				
Pressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI				
	External pilot : vacuum to 150 PSI				
Pilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI				
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)				
Filtration :	40 µ				
Temperature range :	0°F to 120°F (-18°C to 50°C)				
Flow (at 6 bar, $\Delta P=1bar)$:	3/8" : (3.0 C _v), 1/2" : (3.0 C _v)				
Coil :	Epoxy encapsulated - class A wires - Continuous duty				
Voltage range :	-15% to +10% of nominal voltage				
Protection :	Consult factory				
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA				
	= 1 to 17.1 W				
Response times :	24 VDC (8.5 W) Energize : 10 ms De-energize : 15 ms				
	120/60 Energize : 6-15 ms De-energize : 10-17 ms				

• Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.

• Pilot valve : PME-XXYZZ, including seal 16337. • Pressure seal between valve and base : 16351.

• Mounting screw valve to base (x4) : 35412.





Individual mounting Series valve only 35 Manifold mounting valve only 100 Bonded flow seal spool Pilot air accumulator Manual operator 200 55 Air/spring return 56 57 58 59 JU External pilot port 45 Œ Æ 700 900 82 6300 **SERIES FEATURES** 6500 • Fastest available response time with patented MACSOLENOID®. 6600 • No-stick operation is ensured by wiping action of unique MAC spool/bore combination. • Balanced poppet pilot valve for high flow, precise repeatability, and consistent operation. 1300 • Large spool piston for high shifting force even at minimum operating pressure • Air/spring return for consistent shifting on single solenoid models. 800 • Patented virtually burn-out proof AC solenoid. • Optional low wattage DC solenoids down to 1.0 watt. **ISO 1** • Various manual operators & electrical connectors are available. **ISO 2** • Muffled or threaded pilot exhaust ports. • Internal of external pilot models available. 150 R **MAC 125A MAC 250A**

MAC 500A





VALVE CONFIGURATIONS AVAILABLE

- 2-Pos., single or double operators (solenoid or remote air).
- Single or dual pressure.
- 3-Pos., double operator-closed center, open center or pressure center (solenoid or remote air).
- Individual base.
- Internal pilot or external pilot (including a common external pilot or manifold models).
- Side porting and bottom porting options.

*International Standards Organization ISO Common Base Interface (ISO Std. 5599/1)

SPECIAL APPLICATION INSTRUCTIONS :

On all models, energizing the "14" operator (solenoid or remote air) connects Port #1 to Cylinder Port #4 and energizing the "12" operator connects Port #1 to Cylinder Port #2. For the following special applications, additional piping considerations are required.

EXTERNAL PILOT APPLICATIONS* - An External Pilot Supply is only required when the main valve pressure is less than 1.8 BARS on single operators (soleneoid or remote air) or 0.7 BARS on double solenoid valves only. In these cases, use an External Pilot model and supply a minimum of 1.8 BARS for single operators or a minimum of 0.7 BARS for double solenoid valves to either the "14" or "12" External Pilot Port of the valve base.

VACUUM APPLICATIONS - Use an External Pilot model as described above and also connect the vacuum source to Port #3 & 5 and leave Port#1 open to atmosphere on single pressure models. On two pressure models, reverse the single pressure piping.

SELECTOR APPLICATIONS - Use an External Pilot Model as described above if both pressures are below the minimum, otherwise use an Internal Pilot model and connect the higher pressure to Port #1 and the lower pressure to either Port #3 or 5 depending on which Cylinder Port is to be active.

TWO PRESSURE APPLICATIONS - For Internal Pilot models specify the model number for connecting either port #3 or 5, whichever is to be the higher pressure, to the Internal Pilot supply. For external Pilot models, pipe as described above for "External Pilot Application."

*Note: 1Bar = 14.5 PSIG

© Constant of the series ISO 3	Direct sole	noid and so	olenoid pilo	t operated	v a l v e s
Function	Port size	Flow (Max)	Individual mounting	& Manifold mounting	Series
5/2 - 5/3	1/2" - 3/4"	6.3 C _v	valve only		
OPERATIONAL BENEFITS 1. Balanced spool, immune to val 2. Short stroke with high flow. 3. The piston (booster) provides reforces. 4. Powerful return force thanks to mechanical and air springs. 5. Bonded spool with minimum flow	maximum shifting o the combination of				35 100
glass-like finished bore. 6. Wiping effect eliminates sticki	ing.				200
7. Pilot valve with balanced pop and consistent response times.			20		55
8. Long service life.					56
HOW TO ORDER SINGLE PRESSURE VALVES					57 58
Pilot air	5/2	5/2	5/3	5/3	59
	Single operator	Double operator	Closed center 14 4^{2} 12 12 $5 \sqrt{3}$ 7	Open center	
Internal	MV-A3B-A111-PM-XXYZZ	MV-A3B-A211-PM-XXYZZ	MV-A3B-A312-PM- XXYZZ	MV-A3B-A311-PM-XXYZZ	45
External	MV-A3B-A121-PM-XXYZZ	MV-A3B-A221-PM- XXYZZ	MV-A3B-A322-PM-XXYZZ	MV-A3B-A321-PM-XXYZZ	-
DUAL PRESSURE VALVES					

5 0 1 0 3		56463
B-A131-PM-XXYZZ	MV-A3B-A231-PM-XXYZZ	MV-A3B-A331-PM-XXYZZ
B-A135-PM-XXYZZ	MV-A3B-A232-PM-XXYZZ	MV-A3B-A332-PM-XXYZZ
	MV-A3B-A241-PM-XXYZZ	MV-A3B-A341-PM-XXYZZ
	B-A135-PM- xxyzz B-A141-PM- xxyzz	

SOLENOID OPERATOR ►

C	Voltage	Y	Manual operator	ZZ	Electrical connection	
	120/60, 110/50	1	Non-locking	JB	Rectangular connector	
?	240/60, 220/50	2	Locking	JD	Rectangular connector with light	
2	24/60, 24/50		-	JA	Square connector	
)	24 VDC (2.5 W)	_		JC	Square connector with light	
	24 VDC (17.1 W)	_		BA	Flying leads (18")	
	24 VDC (8.5 W)	_		Note : Ph	oto shown with JC connector.	
or c	options available, see page 357.					

OPTIONS

MV-A3B-A1	11- <u>PM</u> - XXYZZ

- For CNOMO pilot, consult factory.
- - For universal spool replace by 6 (2 position, sgl. pressure valves only)
- - For use with single pressure sandwich regulator, replace by 5.

ISO 1

ISO 2



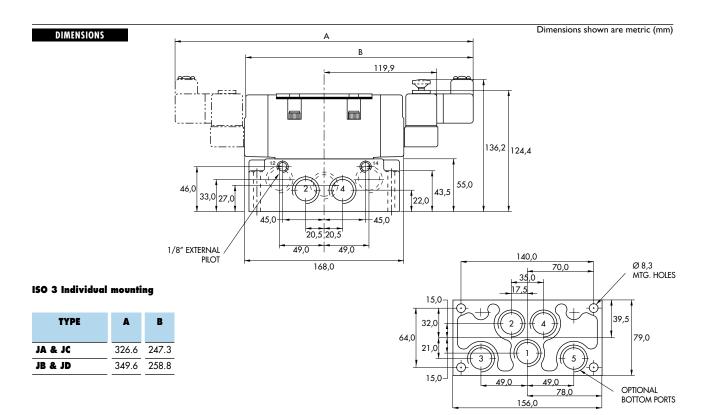


TECHNICAL DATA					
Fluid :	Compressed air, vacuum, inert gases				
Pressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI				
	External pilot : vacuum to 150 PSI				
Pilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI				
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)				
Filtration :	40 μ				
Temperature range :	0°F to 120°F (-18°C to 50°C)				
Flow (at 6 bar, $\Delta P=1bar$) :	1/2" : (6.3 C _v), 3/4" : (6.3 C _v)				
Coil :	Epoxy encapsulated - class A wires - Continuous duty				
Voltage range :	- -15% to +10% of nominal voltage				
Protection :	Consult factory				
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA				
	= 1 to 17.1 W				
Response times :	24 VDC (8.5 W) Energize : 18 ms De-energize : 20 ms				
	120/60 Energize : 15-25 ms De-energize : 19-28 ms				

 \bullet Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.

• Pilot valve : PME-XXYZZ, including seal 16337. • Pressure seal between valve and base : 16436.

• Mounting screw valve to base (x4) : 35416. • Check valve : 70002 (+M-00011).





Individual mounting	Series
valve only	
Manifold mounting	35
valve only	100
	200
	55 56 57 58 59
	45
	700
	900
	82
	6300
	6500
	6600
	1300
	800
	ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A

MAC 500A





The MAC 125 series is designed to interface with the Ford/Chrysler standard base. This series is available in the following configurations:

- single or double solenoid
- 2 or 3 position
- single or dual pressure
- with or without indicator lights
- various electrical connections and manual operations

Valves and bases must be ordered separately. These may be assembled prior to shipping by adding the suffix -9 after the valve code. **EXAMPLE**: MAC 125A-V1B1-PM-111DA-9

MAC 125A-B21A-9

SPECIAL APPLICATION INSTRUCTIONS

The 'A' cylinder port is normally open. On a spring return valve, the spring is the 'A' operator, the solenoid the 'B' operator. Energizing the 'B' operator pressurizes the 'B' port; energizing the 'A' operator pressurizes the 'A' port.

EXTERNAL PILOT APPLICATIONS

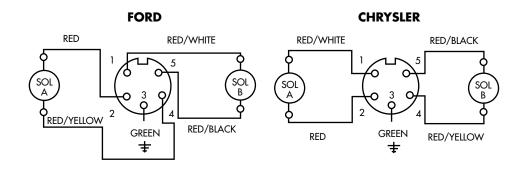
An external pilot supply is only required when the main valve pressure is less than 25 psi on single solenoid or 3 position valves and less than 10 psi on double solenoid 2 position valves. Pipe the external pilot supply to the External Pilot Port supplied in the valve base or manifold.

VACUUM APPLICATIONS

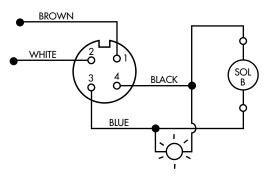
(2-Pos. Valves Only) - Use an External Pilot model as described above and also connect the vacuum source to the Exhaust Port and leave the Inlet Port open to atmosphere. The Inlet port may be connected to a pressure source to provide a selector application (vacuum/pressure).

SELECTOR APPLICATIONS

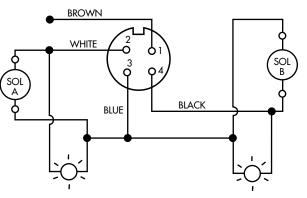
Use an External Pilot Model as described above if both pressures are below the minimum, otherwise use an Internal Pilot Model and connect the higher pressure to the Inlet Port and the lower to Port EA or EB depending on which cylinder port is to be active.



4 PIN CONNECTOR : SINGLE



4 PIN CONNECTOR : DOUBLE



2. 3. High shifting forces.

- 4. Checked accumulator guarantees maximum pilot pressure
- 5. Powerful return force thanks to the combination of mechanical and air springs.
- 6. Bonded spool with minimum friction, shifting in a glass-like finished bore. 7. Wiping effect eliminates sticking.
- 8. Pilot valve with balanced poppet, high flow, short and consistent response times.

HOW TO ORDER

SINGLE PRESSURE VALVES (WITH LIGHTS)

Electrical connector	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center
5 PIN	Internal	MAC125A-V1A2-PM-XXY-DA	MAC125A-V2A2-PM-XXY-DA	MAC125A-V5A2-PM-XXY-DA	MAC125A-V6A2-PM-XXY-DA
(Ford wired)	External	MAC125A-V1A4-PM-XXY-DA	MAC125A-V2A4-PM-XXY-DA	MAC125A-V5A4-PM-XXY-DA	MAC125A-V6A4-PM-XXY-DA
5 PIN	Internal	MAC125A-V1B2-PM-XXY-DA	MAC125A-V2B2-PM-XXY-DA	MAC125A-V5B2-PM-XXY-DA	MAC125A-V6B2-PM-XXY-DA
Chrysler wired)	External	MAC125A-V1B4-PM-XXY-DA	MAC125A-V2B4-PM-XXY-DA	MAC125A-V5B4-PM-XXY-DA	MAC125A-V6B4-PM-XXY-DA
4 PIN	Internal	MAC125A-V1G2-PM-XXY-DA	MAC125A-V2G2-PM-XXY-DA	MAC125A-V5G2-PM-XXY-DA	MAC125A-V6G2-PM-XXY-DA
MICRO	External	MAC125A-V1G4-PM-XXY-DA	MAC125A-V2G4-PM-XXY-DA	MAC125A-V5G4-PM-XXY-DA	MAC125A-V6G4-PM-XXY-DA
3 PIN	Internal	MAC125A-V1E2-PM-XXY-DA	MAC125A-V2E2-PM-XXY-DA	MAC125A-V5E2-PM-XXY-DA	MAC125A-V6E2-PM-XXY-DA
(Ford wired)	External	MAC125A-V1E4-PM-XXY-DA	MAC125A-V2E4-PM-XXY-DA	MAC125A-V5E4-PM-XXY-DA	MAC125A-V6E4-PM-XXY-DA
5 PIN MICRO	Internal	MAC125A-V1F2-PM-XXY-DA	MAC125A-V2F2-PM-XXY-DA	MAC125A-V5F2-PM-XXY-DA	MAC125A-V6F2-PM-XXY-DA
(Chrysler wired)	External	MAC125A-V1F4-PM-XXY-DA	MAC125A-V2F4-PM-XXY-DA	MAC125A-V5F4-PM-XXY-DA	MAC125A-V6F4-PM-XXY-DA

DUAL PRESSURE VALVES (WITH LIGHTS)

Electrical connector	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure center
5 PIN (Ford wired)	External	MAC125A-V3A4-PM-XXY-DA	MAC125A-V4A4-PM-XXY-DA	MAC125A-V7A4-PM-XXY-DA
5 PIN (Chrysler wired)	External	MAC125A-V3B4-PM-XXY-DA	MAC125A-V4B4-PM-XXY-DA	MAC125A-V7B4-PM-XXY-DA
4 PIN MICRO	External	MAC125A-V3G4-PM-XXY-DA	MAC125A-V4G4-PM-XXY-DA	MAC125A-V7G4-PM-XXY-DA
3 PIN (Ford wired)	External	MAC125A-V3E4-PM-XXY-DA	MAC125A-V4E4-PM-XXY-DA	MAC125A-V7E4-PM-XXY-DA
5 PIN MICRO (Chrysler wired)	External	MAC125A-V3F4-PM-xxy-DA	MAC125A-V4F4-PM-xxy-DA	MAC125A-V7F4-PM- XXY -DA
Solenoid Operator >		XX Y [۲ <u>۸</u> ۰	

_		τ.,	
xx	Voltage	Y	Manual operator
11	120/60, 110/50	1	Non-locking
12	240/60, 220/50	2	Locking
22	24/60, 24/50		
59	24 VDC (2.5 W)		
87	24 VDC (17.1 W)		
61	24 VDC (8.5 W)		

* Other options available, see page 357.

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Note : Valves are supplied without base. For base code see page 291.

171

100

200

55

56 57

58

ISO 2

MAC 250A MAC 500A

150

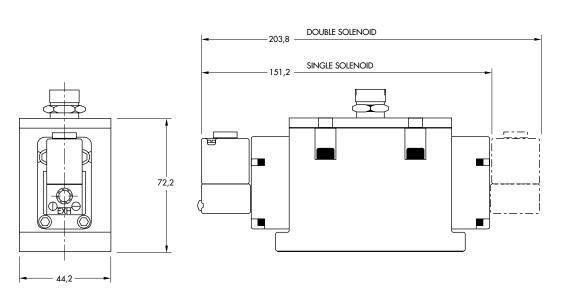




TECHNICAL DATA						
Fluid :	Compressed air, vacuum, inert gases					
Pressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI					
	External pilot : vacuum to 1.50 PSI					
Pilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI					
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)					
Filtration :	40 µ					
Temperature range :	0°F to 120°F (-18°C to 50°C)					
Flow (at 6 bar, $\Delta P=1bar)$:	1/4" : (2.2 C _v), 3/8" : (2.5 C _v)					
Coil :	Epoxy encapsulated - class A wires - Continuous duty					
Voltage range :	-15% to +10% of nominal voltage					
Protection :	Consult factory					
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA					
	= 1 to 17.1 W					

- Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
 Pilot valve : PME-XXYZZ, including seal 16337.
 Pressure seal between valve and base : 16485
- Mounting screw valve to base (x3) : 32296.

DIMENSIONS





Individual mounting	Series
valve only	
	0.5
Manifold mounting	35
valve only	100
	200
	55 56 57 58 59
	45
	700
	900
	82
	6300
	6500
	6600
	1300
	800
	ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A





The MAC 250 series is designed to interface with the Ford/Chrysler standard base. This series is available in the following configurations:

- single or double solenoid
- 2 or 3 position
- single or dual pressure
- with or without indicator lights
- various electrical connections and manual operations

Valves and bases must be ordered separately. These may be assembled prior to shipping by adding the suffix -9 after the valve code. **EXAMPLE**: MAC 250A-V1B1-PM-111DA-9

MAC 250A-B21A-9

SPECIAL APPLICATION INSTRUCTIONS

The 'A' cylinder port is normally open. On a spring return valve, the spring is the 'A' operator, the solenoid the 'B' operator. Energizing the 'B' operator pressurizes the 'B' port; energizing the 'A' operator pressurizes the 'A' port.

EXTERNAL PILOT APPLICATIONS

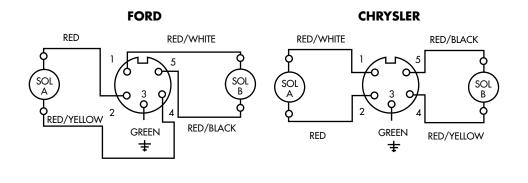
An external pilot supply is only required when the main valve pressure is less than 25 psi on single solenoid or 3 position valves and less than 10 psi on double solenoid 2 position valves. Pipe the external pilot supply to the External Pilot Port supplied in the valve base or manifold.

VACUUM APPLICATIONS

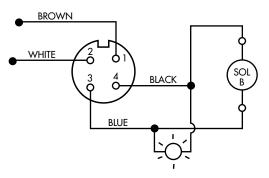
(2-Pos. Valves Only) - Use an External Pilot model as described above and also connect the vacuum source to the Exhaust Port and leave the Inlet Port open to atmosphere. The Inlet port may be connected to a pressure source to provide a selector application (vacuum/pressure).

SELECTOR APPLICATIONS

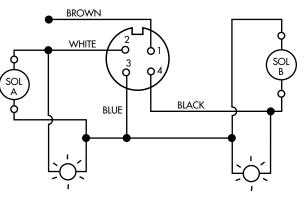
Use an External Pilot Model as described above if both pressures are below the minimum, otherwise use an Internal Pilot Model and connect the higher pressure to the Inlet Port and the lower to Port EA or EB depending on which cylinder port is to be active.



4 PIN CONNECTOR : SINGLE



4 PIN CONNECTOR : DOUBLE



Beries MAC 250	Direct sole	noid and sol	enoid pilot operate	ed valves
Function	Port size	Flow (Max)	Individual mounting & Manifold mounting	Series
5/2 - 5/3	1/2" - 3/4" - 1"	7.0 C _v	valve only	
OPERATIONAL BENEFITS 1. Balanced spool, immune to 2. Short stroke with high flow. 3. High shifting forces. 4. Checked accumulator guar pressure				35
 Powerful return force thank: mechanical and air springs Bonded spool with minimur glass-like finished bore. Wiping effect eliminates sti 	s. m friction, shifting in a			100 200
8. Pilot valve with balanced p short and consistent respon	oppet, high flow,			55

HOW TO ORDER

SINGLE PRESSURE VALVES (WITH LIGHTS)

Electrical connector	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center
5 PIN	Internal	MAC250A-V1A2-PM-XXY-DA	MAC250A-V2A2-PM-XXY-DA	MAC250A-V5A2-PM-XXY-DA	MAC250A-V6A2-PM-XXY-DA
(Ford wired)	External	MAC250A-V1A4-PM-XXY-DA	MAC250A-V2A4-PM-XXY-DA	MAC250A-V5A4-PM-XXY-DA	MAC250A-V6A4-PM-XXY-DA
5 PIN	Internal	MAC250A-V1B2-PM-XXY-DA	MAC250A-V2B2-PM-XXY-DA	MAC250A-V5B2-PM-XXY-DA	MAC250A-V6B2-PM-XXY-DA
Chrysler wired)	External	MAC250A-V1B4-PM-XXY-DA	MAC250A-V2B4-PM-XXY-DA	MAC250A-V5B4-PM-XXY-DA	MAC250A-V6B4-PM-XXY-DA
4 PIN	Internal	MAC250A-V1G2-PM-XXY-DA	MAC250A-V2G2-PM-XXY-DA	MAC250A-V5G2-PM-XXY-DA	MAC250A-V6G2-PM-XXY-DA
MICRO	External	MAC250A-V1G4-PM-XXY-DA	MAC250A-V2G4-PM-XXY-DA	MAC250A-V5G4-PM-XXY-DA	MAC250A-V6G4-PM-XXY-DA
3 PIN	Internal	MAC250A-V1E2-PM-XXY-DA	MAC250A-V2E2-PM-XXY-DA	MAC250A-V5E2-PM-XXY-DA	MAC250A-V6E2-PM-XXY-DA
(Ford wired)	External	MAC250A-V1E4-PM-XXY-DA	MAC250A-V2E4-PM-XXY-DA	MAC250A-V5E4-PM-XXY-DA	MAC250A-V6E4-PM-XXY-DA
5 PIN MICRO	Internal	MAC250A-V1F2-PM-XXY-DA	MAC250A-V2F2-PM-XXY-DA	MAC250A-V5F2-PM-XXY-DA	MAC250A-V6F2-PM-XXY-DA
Chrysler wired)	External	MAC250A-V1F4-PM-XXY-DA	MAC250A-V2F4-PM-XXY-DA	MAC250A-V5F4-PM-XXY-DA	MAC250A-V6F4-PM-XXY-DA

DUAL PRESSURE VALVES (WITH LIGHTS)

Electrical connector	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure center
5 PIN (Ford wired)	External	MAC250A-V3A4-PM-XXY-DA	MAC250A-V4A4-PM-XXY-DA	MAC250A-V7A4-PM-XXY-DA
5 PIN (Chrysler wired)	External	MAC250A-V3B4-PM-XXY-DA	MAC250A-V4B4-PM-XXY-DA	MAC250A-V7B4-PM-XXY-DA
4 PIN MICRO	External	MAC250A-V3G4-PM-XXY-DA	MAC250A-V4G4-PM-XXY-DA	MAC250A-V7G4-PM-XXY-DA
3 PIN (Ford wired)	External	MAC250A-V3E4-PM-XXY-DA	MAC250A-V4E4-PM-XXY-DA	MAC250A-V7E4-PM-XXY-DA
5 PIN MICRO (Chrysler wired)	External	MAC250A-V3F4-PM-XXY-DA	MAC250A-V4F4-PM-XXY-DA	MAC250A-V7F4-PM-XXY-DA
SOLENOID OPERATOR >		<u>xx</u> <u>Y</u> [DA *	

SOL	ENO	ID OPERATO	₹ ≻	
_				

		<u> </u>		ISO 2
ХХ	Voltage	Y	Manual operator	
11	120/60, 110/50	1	Non-locking	150 3
12	240/60, 220/50	2	Locking	
22	24/60, 24/50			MAC 125A
59	24 VDC (2.5 W)			MAC 250A
87	24 VDC (17.1 W)			MAC ZOVA
61	24 VDC (8.5 W)			MAC 500A
* 01				may Jvva

Other options available, see page 357.

Note : Valves are supplied without base. For base code see page 291.

175

56 57

58

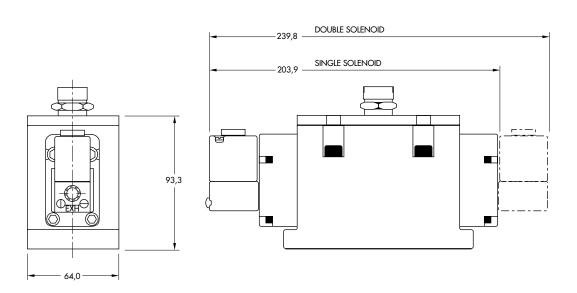




TECHNICAL DATA					
Fluid :	Compressed air, vacuum, inert gases				
Pressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI				
	External pilot : vacuum to 1.50 PSI				
Pilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI				
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)				
Filtration :	40 μ				
Temperature range :	0°F to 120°F (-18°C to 50°C)				
Flow (at 6 bar, $\Delta P=1bar)$:	1/2" : (6.3 C _v), 3/4" : (6.4 C _v), 1" : (7.0 C _v)				
Coil :	Epoxy encapsulated - class A wires - Continuous duty				
Voltage range :	-15% to +10% of nominal voltage				
Protection :	Consult factory				
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA				
	= 1 to 17.1 W				

- Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
 Pilot valve : PME-XXYZZ, including seal 16337.
 Pressure seal between valve and base : 16487
- Mounting screw valve to base (x3) : 32346.

DIMENSIONS





Individual mounting

valve only

Series
35
100
200
55 56 57 58 59
45
700
900
82
6300
6500
6600
1300
800
ISO 1 ISO 2 ISO 3 MAC 125A MAC 250A MAC 500A





The MAC 500 series is designed to interface with the Ford/Chrysler standard base. This series is available in the following configurations:

- single or double solenoid
- 2 or 3 position
- single or dual pressure
- with or without indicator lights
- various electrical connections and manual operations

Valves and bases must be ordered separately. These may be assembled prior to shipping by adding the suffix -9 after the valve code. **EXAMPLE**: MAC 500A-V1B1-PM-111DA-9

MAC 500A-B21A-9

SPECIAL APPLICATION INSTRUCTIONS

The 'A' cylinder port is normally open. On a spring return valve, the spring is the 'A' operator, the solenoid the 'B' operator. Energizing the 'B' operator pressurizes the 'B' port; energizing the 'A' operator pressurizes the 'A' port.

EXTERNAL PILOT APPLICATIONS

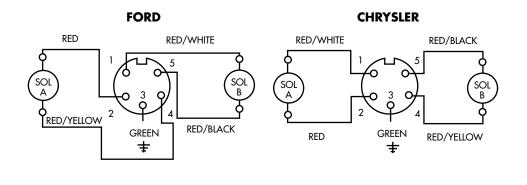
An external pilot supply is only required when the main valve pressure is less than 25 psi on single solenoid or 3 position valves and less than 10 psi on double solenoid 2 position valves. Pipe the external pilot supply to the External Pilot Port supplied in the valve base or manifold.

VACUUM APPLICATIONS

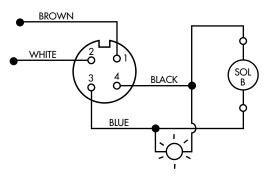
(2-Pos. Valves Only) - Use an External Pilot model as described above and also connect the vacuum source to the Exhaust Port and leave the Inlet Port open to atmosphere. The Inlet port may be connected to a pressure source to provide a selector application (vacuum/pressure).

SELECTOR APPLICATIONS

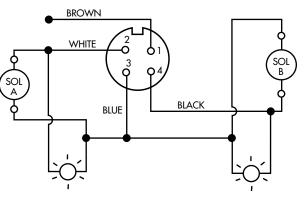
Use an External Pilot Model as described above if both pressures are below the minimum, otherwise use an Internal Pilot Model and connect the higher pressure to the Inlet Port and the lower to Port EA or EB depending on which cylinder port is to be active.



4 PIN CONNECTOR : SINGLE



4 PIN CONNECTOR : DOUBLE



unction	Port size	Flo
eries MAC 500		
BR	Direct	solenoi

S

Function		Port siz	e	Flow (Max)		Individual mounting		Series
5/2 - 5/3		1″ - 1	1/4″	11.2 C _v		valve only		
OPERATIONAL BENE	FITS							
 Balanced spool, Short stroke with High shifting ford Checked accumute 	high flow. ces.	·						35
pressure 5. Powerful return fo mechanical and	orce thanks to air springs.	the combinatio	on of					100
 Bonded spool wi glass-like finished Wiping effect eli 	bore.		in a				A 3''	200
8. Pilot valve with b	alanced pop	pet, high flow,					1 to 1	55
short and consist	ent response	times.					00	56
								57
HOW TO ORDER								
SINGLE PRESSU		•	•					58
Electrical connector	Pilot air		/2 operator	5/2 Double oper	ator	5/3 Closed center	5/3 Open center	59
					₽Î			
5 PIN	Internal		A2-PM-XXY-DA	MAC500A-V2A2-P/		MAC500A-V5A2-PM-XXY-DA	MAC500A-V6A2-PM-XXY-DA	45
(Ford wired)	External	MAC500A-V1	A4-PM- XXY -DA	MAC500A-V2A4-P/	M- XXY -DA	MAC500A-V5A4-PM-XXY-DA	MAC500A-V6A4-PM-XXY-DA	
5 PIN	Internal		B2-PM-XXY-DA	MAC500A-V2B2-PA		MAC500A-V5B2-PM-XXY-DA	MAC500A-V6B2-PM-XXY-DA	
(Chrysler wired)	External		B4-PM-XXY-DA	MAC500A-V2B4-PM		MAC500A-V5B4-PM-XXY-DA	MAC500A-V6B4-PM-XXY-DA	
4 PIN	Internal		G2-PM-XXY-DA	MAC500A-V2G2-P/		MAC500A-V5G2-PM-XXY-DA	MAC500A-V6G2-PM-XXY-DA	700
MICRO 3 PIN	External Internal		G4-PM-XXY-DA	MAC500A-V2G4-P/ MAC500A-V2E2-P/		MAC500A-V5G4-PM-XXY-DA MAC500A-V5E2-PM-XXY-DA	MAC500A-V6G4-PM- XXY -DA MAC500A-V6E2-PM- XXY -DA	
(Ford wired)	External		IE4-PM-XXY-DA	MAC500A-V2E2-P/ MAC500A-V2E4-P/		MAC500A-V5E4-PM-XXY-DA	MAC500A-V6E4-PM-XXY-DA	000
5 PIN MICRO	Internal		IF2-PM-XXY-DA	MAC500A-V2E4 17 MAC500A-V2F2-PA		MAC500A-V5F2-PM-XXY-DA	MAC500A-V6F2-PM-XXY-DA	900
(Chrysler wired)	External		IF4-PM-XXY-DA	MAC500A-V2F4-PA		MAC500A-V5F4-PM-XXY-DA	MAC500A-V6F4-PM-XXY-DA	
<u> </u>			, ,					82
DUAL PRESSURE	: VALVES (V	VIIH LIGHIS						
Electric		Pilot air		5/2 operator	D	5/2 Jouble operator		6300
			B F		B			6500
5 PIN (Ford	wired)	External	MAC500A-V	/3A4-PM- XXY -DA	MAC5	00A-V4A4-PM- XXY -DA		6600
5 PIN (Chrysi	er wired)	External	MAC500A-\	/3B4-PM-xxy-DA	MAC5	500A-V4B4-PM-xxy-DA		0000
4 PIN M	ICRO	External	MAC500A-V	/3G4-PM- xxy -DA	MAC5	00A-V4G4-PM-xxy-DA		1300
3 PIN (Ford	wired)	External	MAC500A-\	/3E4-PM- xxy -DA	MAC5	500A-V4E4-PM-XXY-DA		1300
5 PIN MICRO (Ch	rysler wired	l) External	MAC500A-\	/3F4-PM- xxy -DA	MAC5	500A-V4F4-PM- xxy- DA		800
SOLENOID OPE	RATOR >			<u>xx</u> y D)A *			ISO 1
					1			ISO 2
XX Voltag	-					inual operator		ISO 3
	<u>, 110/50</u> , 220/50					n-locking king		
22 24/60,	24/50							MAC 125A
59 24 VDC 87 24 VDC	(17.1 W)							<u>MAC 250A</u>
61 24 VDC								MAC 500A

* Other options available, see page 357. Note : Valves are supplied without base. For base code see page 291.

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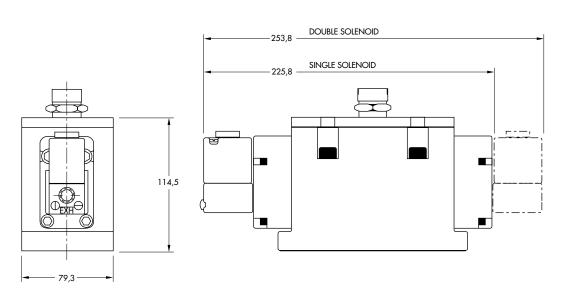




TECHNICAL DATA					
Fluid :	Compressed air, vacuum, inert gases				
Pressure range :	Internal pilot : single operator and 3 positions : 25-150 PSI double operator : 10-150 PSI				
	External pilot : vacuum to 150 PSI				
Pilot pressure :	Single operator and 3 positions : 25-150 PSI Double operator : 10-150 PSI				
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)				
Filtration :	40 μ				
Temperature range :	0°F to 120°F (-18°C to 50°C)				
Flow (at 6 bar, $\Delta P=1bar)$:	1" : (11.0 C _v), 1 1/4" : (11.2 C _v)				
Coil :	Epoxy encapsulated - class A wires - Continuous duty				
Voltage range :	-15% to +10% of nominal voltage				
Protection :	Consult factory				
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA				
	= 1 to 17.1 W				

- Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
 Pilot valve : PME-XXYZZ, including seal 16337.
 Pressure seal between valve and base : 16535
 - Mounting screw valve to base (x3) : 32434.

DIMENSIONS





Section 2 Remote air valves

Function	Port size	Flow (Max)
3/2 - 2/2	1/8″ - 1/4″	0.18 C _v
3/2 - 2/2	1/8″	0.18 C _v
3/2 - 2/2	1/4" - 3/8"	2.5 C _v
3/2 - 2/2	3/8" - 1/2" - 3/4"	6.2 C _v
3/2 - 2/2	1/2" - 3/4" - 1"	17.4 C _v
3/2 - 2/2	1" - 1 1/4" - 1 1/2"	33.5 C _v
3/2 - 2/2	2" - 2 1/2"	65.0 C _v
4/2	1/8" - 1/4"	0.7 C _v
4/2	1/8" - 1/4"	0.8 C _v
4/2	1/8" - 1/4"	1.4 C _v
4/2 - 4/3	1/8" - 1/4" - 3/8"	1.35 C _v
4/2 - 4/3	1/4" - 3/8"	1.35 C _v
4/2 - 4/3	1/4" - 3/8" - 1/2"	3.0 C _v
4/2 - 4/3	3/8" - 1/2" - 3/4"	5.1 C _v
4/2 - 4/3	3/4" - 1"	9.6 C _v
4/2 - 4/3	3/4" - 1" - 1 1/4" - 1 1/2"	15.9 C _v
5/2 - 5/3	1/4″	1.4 C _v
5/2 - 5/3	1/4" - 3/8"	1.6 C _v
5/2 - 5/3	3/8" - 1/2"	3.0 C _v
5/2 - 5/3	1/2" - 3/4"	6.3 C,

Individual m	iounting		Manifold mo	unting		Series
Inline	sub-base	valve only	stacking	sub-base	valve only	
P. 187						
				P. 189		1100
P. 193						55
P. 197						56
P. 201						57
P. 205						58
P. 209						59
P. 213						
			P. 215			700
P. 219			P. 221			900
	P. 225					
				P. 227		82
	P. 231			P. 233		6300
	P. 237			P. 239		6500
	P. 243			P. 245		6600
	P. 249					2700
P. 253						1800
		P. 257			P. 257	ISO 1
		P. 261			P. 261	ISO 2
		P. 265				ISO 3



R

e	Π	0	ľ	e	đ	į	ſ	V	9	V	6	S
		In	dividual r Inline	nounting						 	Series	
		Mi	anifold m	ounting							110	0
			sub-base		 			 		 	55 56	

ISO 1

ISO 2

ISO 3

R Series 1100	е т	0	l e	đ	İſ	V a l	V e s
Function	Port size		Flow (Max)		Individual moun	lting	Series
3/2 NO-NC, 2/2 NO-NC	1/8" - 1/4	4"	0.18 C _v		Inline		
 Balanced poppet, immune to varia pressure. Short stroke with high flow. Powerful return spring. Maximum shifting forces. 	JIIOIIS OI						1100 55 56 57 58
Port size			Universal valve			NC only valve	59
							700
1/8" NPTF 1/4" NPTF			1111A-111 1113A-111			1161A-111 1163A-111	900
Air pilot port : 1/8" NPTF.						11004 11.	82
							6300
							6500
							6600
							2700
							1800
							ISO 1
							ISO 2
							150 3





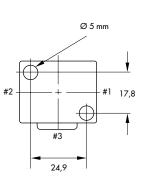
TECHNICAL DATA

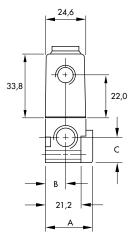
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	20 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 140°F (-18°C to 60°C)
Flow (at 6 bar, $\Delta P=1bar$) :	0.18 C _v

Options :

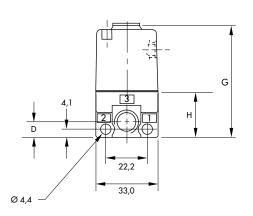
• BSPP threads.

DIMENSIONS





Dimensions	shown	are	metric	(mm)



1/8″	28.4	12.7	14.0	8.0	60.1	23.2
1/4″	29.8	13.3	12.7	9.9	60.9	24.1

R e Series 1100	Π 0	t e	3	İ ſ	V	al	V e	5
Function Port si	ze	Flow (Max)		Manifold moun	ting		Ser	ies
3/2 NO-NC, 2/2 NO-NC 1/8'	1	0.18 C _v		sub-base				
 OPERATIONAL BENEFITS 1. Balanced poppet, immune to variations of pressure. 2. Short stroke with high flow. 3. Powerful return spring. 4. Maximum shifting forces. 							1	
HOW TO ORDER					- Ban		5	8
Port size		Universal valvo	Đ		NC only valve	•	5	9
							7	00
Valve less base Sub-base 1/8" NPTF Air pilot port : 1/8" NPTF.		1130A-111 1132A-111			1170A-111 1172A-111	4	9	00
End plate kit (1/4" ports) : A2-5004-01.							8	2
11X2A-111 	v normally closed						6	300
- Replace by 4 for 2-wa	y normally open.						6	500
							6	600
							2	700
							1	800
							IS	01
							IS	0 2
							IS	03





TECHNICAL DATA

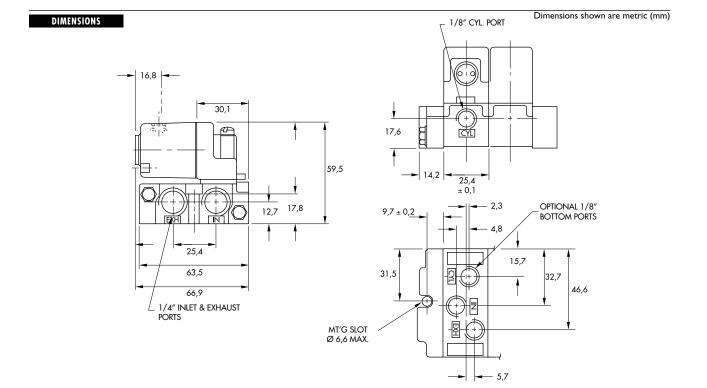
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	20 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 140°F (-18°C to 60°C)
Flow (at 6 bar, ΔP=1bar) :	1/8" : (0.18 C _v)

Spare parts :

Options :

• Function plate : A2-7009. • Pressure seal between bases : 16226. • Tie-rod (x2) : 19546.

• BSPP threads.





R	e	Π	0	ľ	e	đ	į	ſ	V	9	V	e	S
			Inc	lividual m	nounting							Series	
				Inline									
												110	0
												55	
												56	
												57	
												58	
												59	
												700)
												900)

ISO 1 ISO 2

ISO 3

R Series 55	e m o ľ	9 3	i (V)	l v e s
Function	Port size F	Тош (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-NC	1/4" - 3/8" 2	2.5 C _v	Inline	
 OPERATIONAL BENEFITS Balanced spool, immune to variatic pressure. Short stroke with high flow. The piston (booster) provides maxin shifting forces. Powerful return thanks to the combi mechanical and air springs. Bonded spool with minimum frictior in a glass-like finished bore. Wiping effect eliminates sticking. Low leakage rate. 	mum ination of			1100 55 56 57 58 50
Port size	Air spring	NC valv	re NO val	59 ve
				700 Tal Text
1/4" NPTF 3/8" NPTF 1/4" NPTF	Internal External	55B-11-R 55B-12-R 55B-11-R 55B-11-R	A 55B-21-f A 55B-22-f	RA 900
3/8" NPTF Air pilot port : 1/8" NPTF.	_ 	55B-12-F	SE 55B-22-1	RE 82
Note: Designation "RE" required on re "RE" provides an external pilot port an supplies the gir spring, it must not exc		f 25-100 PSI. Since the external		6300





TECHNICAL DATA Fluid : Compressed air, vacuum, inert gases Pressure range : Vacuum to 150 PSI Air signal pressure : 25 - 150 PSI ≥ 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 : 0°F to 120°F (-18°C to 50°C) Flow (at 6 bar, ΔP=1bar) : 1/4″ : (2.5 C_v), 3/8″ : (2.5 C_v)

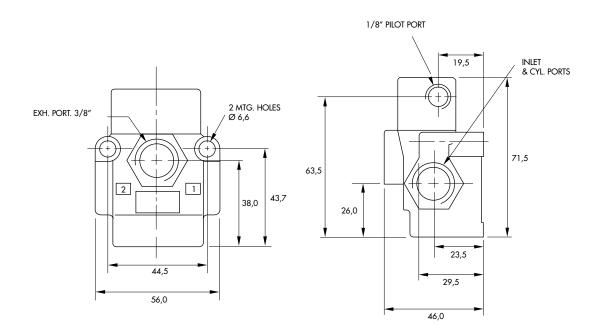
Spare parts :

Options :

• BSPP threads.

• Remote air operator : R-55001-01. • Check valve : 70061.

DIMENSIONS





R

Individual mounting Series trime 1100 55 56 50 50 50 50 50 50 50 50 50 50	е	Π	0	ŀ	е	g	i	ſ	V	a	V	e	5
Intro 55 56 57 58 59 700 900 82 6300													
55 56 57 58 59 700 900 82 6300					unting						 	Series	
56 57 58 59 700 900 82 6300											 	110	D
57 58 59 700 900 82 6300												55	
58 59 700 900 82 6300												56	
59 700 900 82 6300												57	
700 900 82 6300												58	
900 82 6300												59	
82 6300												700	
6300												900	
												82	
6500												630	D
												650	D

6600

1800

2700

ISO 1

150 2 150 3

© R Series 56	e m o	t e	j f	ſV	al ves	
Function	Port size	Flow (Max)	Indi	vidual mounting	Series	
3/2 NO-NC, 2/2 NO-NC	3/8" - 1/2" - 3/4	4" 6.2 C _v		Inline		
 OPERATIONAL BENEFITS Balanced spool, immune to variati pressure. Short stroke with high flow. The piston (booster) provides maxi shifting forces. Powerful return thanks to the comb mechanical and air springs. Bonded spool with minimum friction in a glass-like finished bore. Wiping effect eliminates sticking. Low leakage rate. 	imum sination of				1100 55 56 57 58	
HOW TO ORDER					= 0	
HOW TO ORDER Port size	Air sprin	9	NC valve	N	59 D valve	
	Air sprin	9		IP	ovalve T	
	Air sprin	g	CYL	<mark>D</mark> 56 56	0 valve <u> </u>	
Port size 3/8" NPTF 1/2" NPTF		g 		IE 56 56 56 56 56 56	C-82-RA 900	
Port size 3/8" NPTF 1/2" NPTF 3/4" NPTF 3/8" NPTF 1/2" NPTF		9		IE 56 56 56 56 56 56	C-82-RA 900 C-82-RA 5C-82-RE SC-83-RE 82	
Port size 3/8" NPTF 1/2" NPTF 3/4" NPTF 3/8" NPTF 1/2" NPTF 3/4" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on a "RE" provides an external pilot port of	Internal Internal External External remote air pilot models with and should have a pressure i	main valve pressu		IE 56 56 56 56 56 56	Valve 700 VI 700 VI 700 C-82-RA 900 C-83-RA 900 C-82-RE 82 SC-82-RE 82 SC-83-RE 82	
Port size 3/8" NPTF 1/2" NPTF 3/4" NPTF 3/8" NPTF 1/2" NPTF 3/4" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on 1	Internal Internal External External remote air pilot models with and should have a pressure i	main valve pressu		IE 56 56 56 56 56 56	C-82-RA 700 C-82-RA 900 C-87-RA 900 SC-83-RE 82 SC-87-RE 6300	
Port size 3/8" NPTF 1/2" NPTF 3/4" NPTF 3/8" NPTF 1/2" NPTF 3/4" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on a "RE" provides an external pilot port of	Internal Internal External External remote air pilot models with and should have a pressure i	main valve pressu		IE 56 56 56 56 56 56	Valve 700 V 700 V 700 C-82-RA 900 C-87-RA 900 SC-82-RE 82 SC-83-RE 6300 6500 6500	
Port size 3/8" NPTF 1/2" NPTF 3/4" NPTF 3/8" NPTF 1/2" NPTF 3/4" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on a "RE" provides an external pilot port of a	Internal Internal External External remote air pilot models with and should have a pressure i	main valve pressu		IE 56 56 56 56 56 56	Valve 700 VI 700 C-82-RA 900 C-83-RA 900 C-82-RE 82 SC-82-RE 82 SC-83-RE 6300 6500 6500	
Port size 3/8" NPTF 1/2" NPTF 3/4" NPTF 3/8" NPTF 1/2" NPTF 3/4" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on a "RE" provides an external pilot port of a	Internal Internal External External remote air pilot models with and should have a pressure i	main valve pressu		IE 56 56 56 56 56 56	Valve 700 VI 700 C-82-RA 900 C-83-RA 900 C-87-RA 82 SC-83-RE 82 SC-87-RE 6300 6500 6500 6600 2700	
Port size 3/8" NPTF 1/2" NPTF 3/4" NPTF 3/8" NPTF 1/2" NPTF 3/4" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on a "RE" provides an external pilot port of a	Internal Internal External External remote air pilot models with and should have a pressure i	main valve pressu		IE 56 56 56 56 56 56	Valve 700 VI 700 VI 700 C-82-RA 900 C-82-RE 82 SC-82-RE 82 SC-83-RE 6300 6500 6500 6600 2700 1800 1800	





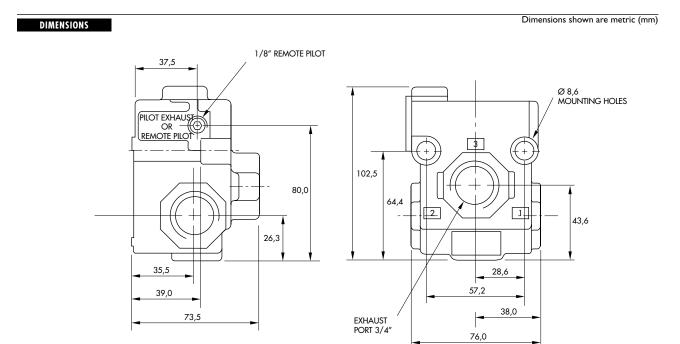
TECHNICAL DATA Fluid : Compressed air, vacuum, inert gases Pressure range : Vacuum to 150 PSI Air signal pressure : 25 - 150 PSI ≥ main valve pressure Lubrication : Not required, if used select a medium aniline point lubricant (between 180°F to 210°F) Filtration : 40 μ Temperature range : 0°F to 120°F (-18°C to 50°C) Flow (at 6 bar, ΔP=1bar) : 3/8″ : (6.0 C_v), 1/2" : (6.1 C_v), 3/4" : (6.2 C_v)

Spare parts :

Options :

• Remote air operator : R-56001. • Check valve : 70063.

• BSPP threads.





R	6	Π	0	ŀ	6	g	į	٢	V	g	V	6	S
			In	dividual m	iounting							Series	
				Inline									
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6600 2700

1800

ISO 1

ISO 2

150 3

© R Series 57	e m o	ŀ e	a i	ſ	V	3		V	e	S
Function	Port size	Flow (Max)		Individual moun	ting				Series	
3/2 NO-NC, 2/2 NO-NC	1/2" - 3/4" - 1"	17.4 C _v		Inline						
 OPERATIONAL BENEFITS 1. Balanced spool, immune to variations pressure. 2. Short stroke with high flow. 3. The piston (booster) provides maximu shifting forces. 4. Powerful return thanks to the combine mechanical and air springs. 5. Bonded spool with minimum friction, 	im ation of					5	A VO		110 55 56	0
in a glass-like finished bore.Wiping effect eliminates sticking.Low leakage rate.				4	1	el de			57	
									58	
HOW TO ORDER Port size	Air spring		NC valve		M	O valve			58 59	
	Air spring		CYL	a.	N E	CYL	¥)
	Air spring				12 57 57 57	CYL IN® F 7D-81-RA 7D-82-RA 7D-83-RA	۲ ۲ ۲		59	
Port size 1/2" NPTF 3/4" NPTF					ID 57 57 57 57 57 57 57 57	CYL T IN [®] F 7D-81-RA 7D-82-RA	ব ₩₩ X		59 700	
Port size 1/2" NPTF 3/4" NPTF 1" NPTF 1/2" NPTF 3/4" NPTF	Internal				ID 57 57 57 57 57 57 57 57	CYL T-81-RA 7D-82-RA 7D-83-RA 7D-83-RA 7D-81-RE 7D-82-RE	۲ ۲ ۲		59 700 900)
Port size 1/2" NPTF 3/4" NPTF 1" NPTF 1/2" NPTF 3/4" NPTF 3/4" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on rem "RE" provides an external pilot port and	Internal External note air pilot models with ma	nge of 25-75 PSI. Sin	DE 57D-51-RA 57D-52-RA 57D-53-RA 57D-51-RE 57D-52-RE 57D-52-RE 57D-52-RE		ID 57 57 57 57 57 57 57 57	CYL T-81-RA 7D-82-RA 7D-83-RA 7D-83-RA 7D-81-RE 7D-82-RE	۲ WW X		59 700 900 82	0
Port size 1/2" NPTF 3/4" NPTF 1" NPTF 1/2" NPTF 3/4" NPTF 3/4" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on rem	Internal External note air pilot models with ma	nge of 25-75 PSI. Sin	DE 57D-51-RA 57D-52-RA 57D-53-RA 57D-51-RE 57D-52-RE 57D-52-RE 57D-52-RE		ID 57 57 57 57 57 57 57 57	CYL T-81-RA 7D-82-RA 7D-83-RA 7D-83-RA 7D-81-RE 7D-82-RE	X X X		59 700 900 82 630	0
Port size 1/2" NPTF 3/4" NPTF 1" NPTF 1/2" NPTF 3/4" NPTF 3/4" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on rem "RE" provides an external pilot port and	Internal External note air pilot models with ma	nge of 25-75 PSI. Sin	DE 57D-51-RA 57D-52-RA 57D-53-RA 57D-51-RE 57D-52-RE 57D-52-RE 57D-52-RE		ID 57 57 57 57 57 57 57 57	CYL T-81-RA 7D-82-RA 7D-83-RA 7D-83-RA 7D-81-RE 7D-82-RE	3 W# x		59 700 900 82 630 650	
Port size 1/2" NPTF 3/4" NPTF 1" NPTF 1/2" NPTF 3/4" NPTF 3/4" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on rem "RE" provides an external pilot port and	Internal External note air pilot models with ma	nge of 25-75 PSI. Sin	DE 57D-51-RA 57D-52-RA 57D-53-RA 57D-51-RE 57D-52-RE 57D-52-RE 57D-52-RE		ID 57 57 57 57 57 57 57 57	CYL T-81-RA 7D-82-RA 7D-83-RA 7D-83-RA 7D-81-RE 7D-82-RE	3 WW x		59 700 900 82 630 650 660	
Port size 1/2" NPTF 3/4" NPTF 1" NPTF 1/2" NPTF 3/4" NPTF 3/4" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on rem "RE" provides an external pilot port and	Internal External note air pilot models with ma	nge of 25-75 PSI. Sin	DE 57D-51-RA 57D-52-RA 57D-53-RA 57D-51-RE 57D-52-RE 57D-52-RE 57D-52-RE		ID 57 57 57 57 57 57 57 57 57	CYL T-81-RA 7D-82-RA 7D-83-RA 7D-83-RA 7D-81-RE 7D-82-RE	۲ ۲ ۲		59 700 900 82 630 650 660 270	
Port size 1/2" NPTF 3/4" NPTF 1" NPTF 1/2" NPTF 3/4" NPTF 3/4" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on rem "RE" provides an external pilot port and	Internal External note air pilot models with ma	nge of 25-75 PSI. Sin	DE 57D-51-RA 57D-52-RA 57D-53-RA 57D-51-RE 57D-52-RE 57D-52-RE 57D-52-RE		ID 57 57 57 57 57 57 57 57 57	CYL T-81-RA 7D-82-RA 7D-83-RA 7D-83-RA 7D-81-RE 7D-82-RE	X X 		59 700 900 82 630 650 660 270 180	000000000000000000000000000000000000000





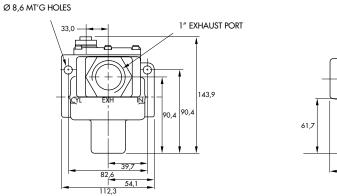
TECHNICAL DATA Fluid : Compressed air, vacuum, inert gases Pressure range : Vacuum to 150 PSI Air signal pressure : 25 - 150 PSI ≥ main valve pressure Lubrication : Not required, if used select a medium aniline point lubricant (between 180°F to 210°F) Filtration : 40 μ Temperature range : 0°F to 120°F (-18°C to 50°C) Flow (at 6 bar, ΔP=1bar) : 1/2″ : (11.0 C_v), 3/4" : (15.3 C_v), 1" : (17.4 C_v)

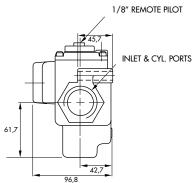
Spare parts :

Options :

- Remote air pilot block : R-59003. Check valve : 70019.
- BSPP threads.

DIMENSIONS







R	e	Π	0	ľ	e	đ	į	ſ	V	9	V	6	S
			In	dividual m	iounting	 			 		 	Series	
				Inline		 			 		 	110	0

ISO 1

150 2

ISO 3

© Contraction of the series 58	e m	0	1 6	9	a i	ſ	V	3		V	e	C
Function	Port size		Flow (Max	x]		ndividual moun	ting				Series	
3/2 NO-NC, 2/2 NO-NC	1" - 1 1/4	- 1 1/2	" 33.5 C	v		Inline						
 OPERATIONAL BENEFITS Balanced spool, immune to variation pressure. Short stroke with high flow. The piston (booster) provides maxing shifting forces. Powerful return thanks to the combin mechanical and air springs. Bonded spool with minimum friction in a glass-like finished bore. Wiping effect eliminates sticking. Low leakage rate. 	mum ination of							8			110 55 56 57	0
HOW TO ORDER											58 59	
-		Air spring		N	IC valve		N	O valve			58 59	1
HOW TO ORDER Port size 1" NPTF 1 1/4" NPTF		Air spring		IE 5 5			D 58	CYL IN O VE BD-81-RA BD-82-RA	J J ₩ X			
HOW TO ORDER Port size 1" NPTF				IE IE IE IE IE 	CYL T T T IN 0 0 EX 8D-51-RA 8D-52-RA		IE 58 58 51 51 51	CYL TIN® VE 3D-81-RA	a ww x		59 700	
HOW TO ORDER Port size 1" NPTF 1 1/4" NPTF 1 1/2" NPTF 1 1/4" NPTF 1 1/4" NPTF		Internal		IE IE IE IE IE 	CYL IN VEX 8D-51-RA 8D-52-RA 8D-51-RE 8D-53-RA		IE 58 58 51 51 51	CYL T N T BD-81-RA BD-82-RA BD-83-RA BD-81-RE BD-82-RE	X X		59 700 900)
HOW TO ORDER Port size 1" NPTF 1 1/4" NPTF 1 1/2" NPTF 1 1/4" NPTF 1 1/4" NPTF 1 1/2" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on r "RE" provides an external pilot port of the second se	remote air pilot m and should have c	Internal External odels with mai	ge of 25-75 F	1⊵ 5: 5: 5: 5 5 5 5 5 5 5 5 5	event ev		IE 58 58 51 51 51	CYL T N T BD-81-RA BD-82-RA BD-83-RA BD-81-RE BD-82-RE	X X X X		59 700 900 82	0
HOW TO ORDER Port size 1" NPTF 1 1/4" NPTF 1 1/2" NPTF 1 1/4" NPTF 1 1/4" NPTF 1 1/2" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on a	remote air pilot m and should have c	Internal External odels with mai	ge of 25-75 F	1⊵ 5: 5: 5: 5 5 5 5 5 5 5 5 5	event ev		IE 58 58 51 51 51	CYL T N T BD-81-RA BD-82-RA BD-83-RA BD-81-RE BD-82-RE	x		59 700 900 82 630	0
HOW TO ORDER Port size 1" NPTF 1 1/4" NPTF 1 1/2" NPTF 1 1/4" NPTF 1 1/4" NPTF 1 1/2" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on r "RE" provides an external pilot port of the second se	remote air pilot m and should have c	Internal External odels with mai	ge of 25-75 F	1⊵ 5: 5: 5: 5 5 5 5 5 5 5 5 5	event ev		IE 58 58 51 51 51	CYL T N T BD-81-RA BD-82-RA BD-83-RA BD-81-RE BD-82-RE	x		59 700 900 82 630 650	
HOW TO ORDER Port size 1 " NPTF 1 1/4" NPTF 1 1/2" NPTF 1 1/4" NPTF 1 1/4" NPTF 1 1/2" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on r "RE" provides an external pilot port of the start o	remote air pilot m and should have c	Internal External odels with mai	ge of 25-75 F	1⊵ 5: 5: 5: 5 5 5 5 5 5 5 5 5	event ev		IE 58 58 51 51 51	CYL T N T BD-81-RA BD-82-RA BD-83-RA BD-81-RE BD-82-RE	x		59 700 900 82 630 650 660	
HOW TO ORDER Port size 1" NPTF 1 1/4" NPTF 1 1/2" NPTF 1 1/4" NPTF 1 1/4" NPTF 1 1/2" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on r "RE" provides an external pilot port of the second pilot port pilot port pilot port of the second pilot port of the seco	remote air pilot m and should have c	Internal External odels with mai	ge of 25-75 F	1⊵ 5: 5: 5: 5 5 5 5 5 5 5 5 5	event ev		IE 58 58 51 51 51	CYL T N T BD-81-RA BD-82-RA BD-83-RA BD-81-RE BD-82-RE	x		59 700 900 82 630 650 660 270	
HOW TO ORDER Port size 1" NPTF 1 1/4" NPTF 1 1/2" NPTF 1 1/4" NPTF 1 1/4" NPTF 1 1/2" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on r "RE" provides an external pilot port of the second pilot port	remote air pilot m and should have c	Internal External odels with mai	ge of 25-75 F	1⊵ 5: 5: 5: 5 5 5 5 5 5 5 5 5	event ev		IE 58 58 51 51 51	CYL T N T BD-81-RA BD-82-RA BD-83-RA BD-81-RE BD-82-RE	x		59 700 900 82 630 650 660 270 180	000000000000000000000000000000000000000





TECHNICAL DATA Fluid : Compressed air, vacuum, inert gases Pressure range : Vacuum to 150 PSI Air signal pressure : 25 - 150 PSI ≥ 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 : 0°F to 120°F (-18°C to 50°C) Flow (at 6 bar, ΔP=1bar) : 1″ : (31.2 C_v), 1 1/4″ : (32.5 C_v), 1 1/2″ : (33.5 C_v)

Spare parts :

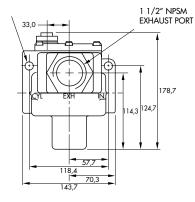
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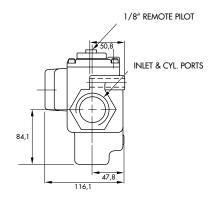
- Remote air pilot block : R-59003. Check valve : 70019.
- BSPP threads.

DIMENSIONS

Dimensions shown are metric (mm)

Ø 13,5 MT'G HOLES





Consult "Precautions" page 364 before use, installation or service of MAC Valves



R	e	Π	0	ŀ	e	đ	į	ſ	V	đ	V	6	S
			In	dividual r	nounting							Series	

Inline

J	JEIIED
	1100
	55
	56
	57
	58
	59
	700
	900
	82
	6300
	6500
	6600
	2700
	1800
	ISO 1
	150 2
	ISO 3

R Series 59	еп] 0	ţ	e	đ	į	ſ	V	a	V	e	5
Function	Port size		Flow	(Max)		Ind	ividual moun	ting			Series	
3/2 NO-NC, 2/2 NO-NC	2″ - 2 1/2	2"	65.	o c _v			Inline					
 OPERATIONAL BENEFITS 1. Balanced spool, immune to variative pressure. 2. Short stroke with high flow. 3. The piston (booster) provides maximality shifting forces. 4. Powerful return thanks to the combern mechanical and air springs. 5. Bonded spool with minimum friction in a glass-like finished bore. 6. Wiping effect eliminates sticking. 7. Low leakage rate. 	mum ination of										110 55 56 57 58	0
Port size			A	ir spring				NC valu	/e		59	
											700)
2″ NPTF				Internal				59B-52-F	RA			
2" NPTF 2 1/2" NPTF 2" NPTF				Internal External					RA RA		900)
2 1/2" NPTF								59B-52-F 59B-53-F	RA RE		900 82)
2 1/2" NPTF 2" NPTF 2 1/2" NPTF	and should have	a pressure ra	ain valve p nge of 25:	External pressures of va 75 PSI. Since	acuum to 25 F the external p			59B-52-F 59B-53-F 59B-52-F	RA RE	 	82	0
2 1/2" NPTF 2" NPTF 2 1/2" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on r "RE" provides an external pilot port of	and should have	a pressure ra	ain valve p nge of 25:	External pressures of va 75 PSI. Since	acuum to 25 F the external p	SI.		59B-52-F 59B-53-F 59B-52-F	RA RE	 	82 630	0
2 1/2" NPTF 2" NPTF 2 1/2" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on r "RE" provides an external pilot port of	and should have	a pressure ra	ain valve p nge of 25:	External pressures of va 75 PSI. Since	acuum to 25 F the external p	SI.		59B-52-F 59B-53-F 59B-52-F	RA RE		82 630 650	0
2 1/2" NPTF 2" NPTF 2 1/2" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on r "RE" provides an external pilot port of	and should have	a pressure ra	ain valve p nge of 25:	External pressures of va 75 PSI. Since	acuum to 25 F the external p	SI.		59B-52-F 59B-53-F 59B-52-F	RA RE		82 630 650 660	
2 1/2" NPTF 2" NPTF 2 1/2" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on r "RE" provides an external pilot port of	and should have	a pressure ra	ain valve p nge of 25:	External pressures of va 75 PSI. Since	acuum to 25 F the external p	SI.		59B-52-F 59B-53-F 59B-52-F	RA RE		82 630 650 660 270	
2 1/2" NPTF 2" NPTF 2 1/2" NPTF Air pilot port : 1/8" NPTF. Note: Designation "RE" required on r "RE" provides an external pilot port of	and should have	a pressure ra	ain valve p nge of 25:	External pressures of va 75 PSI. Since	acuum to 25 F the external p	SI.		59B-52-F 59B-53-F 59B-52-F	RA RE		82 630 650 660 270 180	000000000000000000000000000000000000000





TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	25 - 150 PSI ≥ 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 :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar)$:	2" : (60.0 C _v), 2 1/2" : (65.0 C _v)

Spare parts :

• BSPP threads.

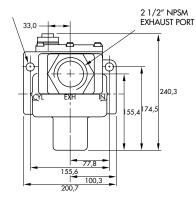
• Remote air pilot block : R-59003. • Check valve : 70019.

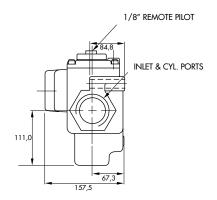
Options :

DIMENSIONS

Dimensions shown are metric (mm)

Ø 13,5 MT'G HOLES







R	6	Π	0	ŀ	6	B	i	ſ	V	D	V	9	S

Individual mounting	Series
Inline	
Manifold mounting	1100
stacking	55
	56
	57
	58
	59
	700
	900
	82
	6300
	6500
	6600
	2700
	1800
	150 1
	150 2
	150 3

Series 700		Π	0	ľ	е	3	i	ſ	V	3	V	е	5
Function	Port	size		Floш	(Max)		Ini	lividual mount	ing			Series	
4/2	1/8	- 1/4"		0.7	c _v			Inline					
 OPERATIONAL BENEFITS Balanced spool, immune to pressure. Short stroke with high flow. The piston (booster) provide shifting forces. Powerful return thanks to the mechanical and air springs Bonded spool with minimun in a glass-like finished bore Wiping effect eliminates stic Low leakage rate. 	es maximum e combination n friction, shiftir e.											110 55 56 57 58	0
HOW TO ORDER	Le la la la la la la la la la la la la la			Sing	le operator				Double ope	rator		59	_
				▲ ⊡						B B □ ▼EX		700	
1/8″ NF					1C-11-RA				721C-11- 721C-12-			900	
1/4" NF				/1	1C-12-RA				/210-12-	KA		200	
HOW TO ORDER VALVE Port siz		V CONTRC)15	Sing	le operator				Double ope	rator		82	
				▲ ⊡∑						B B II VEX		630	0
	PTF				2C-11-RA				722C-11-			650	0
1/8″ NF	TE			/ 1	2C-12-RA				722C-12-	NА			
1/8" NF 1/4" NF Air pilot port : 1/8" NPTF.	PTF												
1/4″ NF	PTF											660	0
1/4″ NF	PTF												0
1/4″ NF	PTF											660	0
1/4″ NF	PTF											660 270	0
1/4″ NF	PTF											660 270 180	0 0 0 1





Compressed air, vacuum, inert gases
Vacuum to 150 PSI
Single operator : 20 to 150 PSI ≥ main valve pressure
Double operator : 10 to 150 PSI
Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
40 µ
0°F to 120°F (-18°C to 50°C)
1/8" : (0.6 C _v), 1/4" : (0.7 C _v)

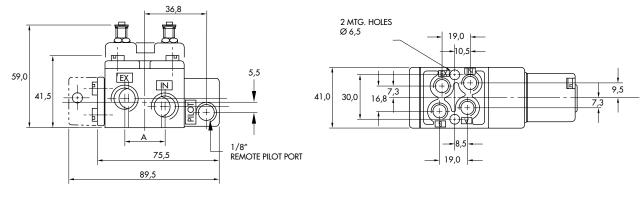
• Remote air operator : R-07002. • Valve cover plate with integral flow controls : N-07002.

Spare parts :

Options :

• BSPP threads.

DIMENSIONS





©	R e	Π	0	t	е	đ	į	ſ	V	3		V	е	9
Function	Port s	Floш	(Max)			Manifold moun	Series	Series						
4/2	1/8" - 1/4"				c _v			stacking						
 OPERATIONAL BENEFITS 1. Balanced spool, immune to pressure. 2. Short stroke with high flow. 3. The piston (booster) provide shifting forces. 4. Powerful return thanks to the mechanical and air springs 5. Bonded spool with minimum in a glass-like finished bore 6. Wiping effect eliminates stie 7. Low leakage rate. 	es maximum e combination c n friction, shiftin							The second			0000		110 55 56 57 58 59	0
Port siz	Port size							Double operator						
				A ⊡∑						B B			700	
1/8" NPTF					13C-11-RA				723C-11-	-RA			900	
1/4" NE HOW TO ORDER VALVE				/	13C-12-RA				723C-12-	-KA			200	
Port siz	Sing	le operator				Double ope	erator			82				
				▲ ⊡						B B			630	0
1/8″ NF 1/4″ NF					14C-11-RA 14C-12-RA				724C-11- 724C-12-				650	0
End plate kit (Port size 1/4") : Air pilot port : 1/8" NPTF.	M-07001-01-0 M-07001-02-0												660 270 180 150 150	0 0 1 2
													150	3



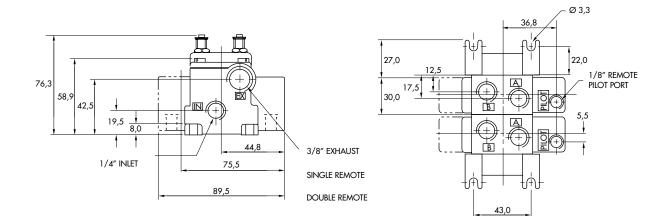


Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator : 20 to 150 PSI ≥ main valve pressure
	Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, ΔP=1bar) :	1/8" : (0.7 C _v), 1/4" : (0.8 C _v)

Spare parts :

- Remote air operator : R-07002.
 Valve cover plate with integral flow controls : N-07004.
 Pressure seal between valves : 16368.
 Tie-rod (x2) : 19674.
- Options :
- BSPP threads.

DIMENSIONS





R	e	Π	0	ŀ	e		đ	į	ſ		V	đ		V	e	5
	Individual mounting											Series				

Manifold mounting 1100 stacking 55

ISO 2 ISO 3

© Constant of the series 900	R	9	Π	0	ł	e		9	İ	ſ	V	9]	V	e	5
Function	I	Port size			Floш	(Max)			Indi	ividual mour	ting				Series	
4/2	I	1/8" -	1/4"		1.4	C _v				Inline						
 OPERATIONAL BENEFITS 1. Balanced spool, immune t 2. Short stroke with high flov 3. The piston (booster) provid forces. 4. Powerful return thanks to t 	v. des maximur he combina	m shifting										3	A		110)0
mechanical and air spring5. Bonded spool with minimu glass-like finished bore.6. Wiping effect eliminates s7. Low leakage rate.	um friction, s	shifting ir	n a										Con H		56 57	
HOW TO ORDER										alut:		EXE			58	
Port s	ize				Sing	jle operato	r				Double op	erator			59	
					A D		В								700)
1/8″ N						911B-RA					921B-I					
1/4″ N	IPTF					912B-RA					922B-I	RA			900	
Air pilot port : 1/8″ NPTF.															82	
															630)0
															650)0
															660)0
															270)0
															180)0
															ISO	1
															150	2
															150 150	





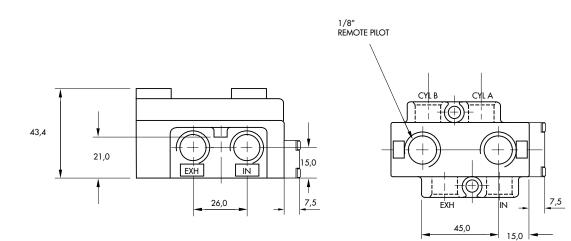
TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator : 25 to 150 PSI ≥ main valve pressure
	Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar$) :	1/8" : (0.8 C _v), 1/4" : (1.2 C _v)

• Remote air operator (single operator) : R-09002-01. • Remote air operator (double operator) : R-09002-02.

Options :

• BSPP threads.

DIMENSIONS



© Contraction of the series 900	e m o	t e a	ir Val	V e s
Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	1/8" - 1/4"	1.4 C _v	stacking	
 OPERATIONAL BENEFITS 1. Balanced spool, immune to variatio 2. Short stroke with high flow. 3. The piston (booster) provides maxim forces. 4. Powerful return thanks to the combin mechanical and air springs. 5. Bonded spool with minimum friction glass-like finished bore. 6. Wiping effect eliminates sticking. 7. Low leakage rate. 	num shifting nation of			1100 55 56 57 58 59
Port size		Single operator	Double operator	
				700
1/8" NPTF 1/4" NPTF		913B-RA 914B-RA	923B-RA 924B-RA	900
Air pilot port : 1/8″ NPTF. Manifold fastening kit (3/8" NPTI	F) : M-09001-01.			82 6300 6500 6600 2700 1800 150 1 150 2 150 3



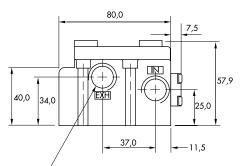


TECHNICAL DATA Fluid : Compressed air, vacuum, inert gases Pressure range : Vacuum to 150 PSI Single operator : 25 to 150 PSI ≥ main valve pressure Air signal pressure : Double operator : 10 to 150 PSI Not required, if used select a medium aniline point lubricant (between 180°F to 210°F) Lubrication : Filtration : 40 µ Temperature range : 0°F to 120°F (-18°C to 50°C) Flow (at 6 bar, $\Delta P=1bar$): 1/8" : (0.8 C_v), 1/4" : (1.2 C_v)

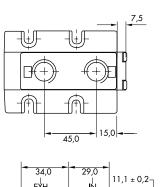
Spare parts :

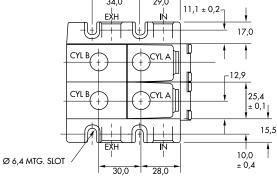
- Remote air operator (single operator): R-09002-01.
 Remote air operator (double operator): R-09002-02.
 Pressure seal between valves: 16358.
 Tie-rod (x2): 19615.
- Options :
- BSPP threads.

DIMENSIONS



3/8" INLET & EXH







R	6	Ш	0	ŀ	е	B	į	ſ	V	B	V	е	S

Individual mounting	Series
sub-base	
Manifold mounting	1100
sub-base	55
	56
	57
	58
	59
	700
	900
	82
	6300
	6500
	6600
	2700
	1800
	ISO 1
	ISO 2
	ISO 3

© Contraction of the series 82	R	e	Π	0	ľ	е	9	į	ſ	V	đ		V	e	5
Function		Port size	9		Flow (N	lax]		In	dividual mou	nting				Series	
4/2 - 4/3		1/8"	- 1/4"	- 3/8"	1.35	c _v			sub-base						
 OPERATIONAL BENEFITS 1. Balanced spool, immune pressure. 2. Short stroke with high flo 3. The piston (booster) prov shifting forces. 4. Powerful return thanks to mechanical and air sprints 5. Bonded spool with minim in a glass-like finished be 6. Wiping effect eliminates 7. Low leakage rate. 	w. ides maxin the combings. hum friction pre.	mum ination of									0	0		110 55 56 57 58	0
HOW TO ORDER										and the second sec					

HOW TO ORDER

OPTIONS

Port size	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	4/3 Pressure center
Valve less base	82A-AB-000-RA	82A-BB-000-RA	82A-EB-000-RA	82A-FB-000-RA	82A-GB-000-RA
Sub-base 1/8" NPTF	82A-AB-AAA-RA	82A-BB-AAD-RA	82A-EB-AAD-RA	82A-FB-AAD-RA	82A-GB-AAD-RA
Sub-base 1/4" NPTF	82A-AB-BAA-RA	82A-BB-BAD-RA	82A-EB-BAD-RA	82A-FB-BAD-RA	82A-GB-BAD-RA
Sub-base 3/8" NPTF	82A-AB-CAA-RA	82A-BB-CAD-RA	82A-EB-CAD-RA	82A-FB-CAD-RA	82A-GB-CAD-RA

82A-AB-000-RA For dual pressure valves, replace A by C, B by D, E by M, F by L, G by H.	

6300 6500 6600

59

700

900

2700

ISO 1

- 150 2
- **ISO 3**



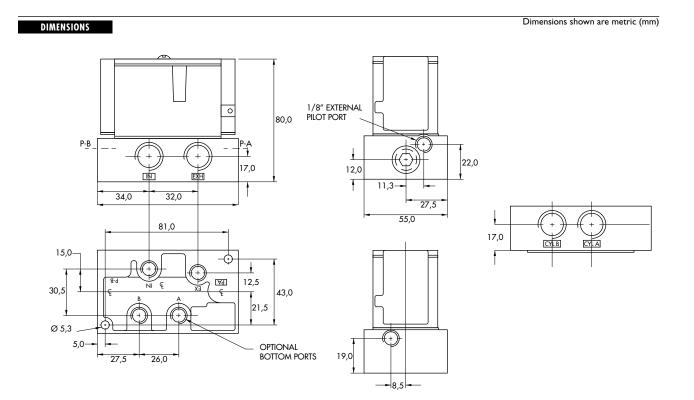


TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator and 3 positions : 25 to 150 PSI ≥ main valve pressure Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar$) :	1/8" : (0.9 C _v), 1/4" : (1.3 C _v), 3/8" : (1.35 C _v)

• Remote air adapter assy.: R-82003.

Options :

• BSPP threads.



©		R	e	Π	0	t	9	đ	į	ſ	l	/	a		V	e	5
Function			Port size)		Floш (Ma	X]		٢	1anifold moun	iting					Series	
4/2 - 4/3			1/4" -	- 3/8"		1.35 0	v			sub-base							
OPERATIONAL BEN 1. Balanced spool, pressure. 2. Short stroke with	, immune to v h high flow.										an o					110)0
 The piston (boost shifting forces. Powerful return 												P	1	10		55	
mechanical and 5. Bonded spool w	l air springs. vith minimum									5			9	1		56	
in a glass-like fi 6. Wiping effect e 7. Low leakage rat	nished bore. liminates stick									00		G	0))@		57	
. Low leakage rai	le.									C		2)			58	
HOW TO ORDE	R										Em-1					59	
Port size	Pilot air	Sir	4/2 Igle oper	rator	Doub	4/2 le operator		4/3 Closed center		4/ Open c	3 enter		4 Pressu	/3 re cento	er		
		A 			▲ ⊡		в 		A 			B 		<u>⊤</u> ♥	A বা– – বাজ	700	
Valve less base	Internal only	82A	-AB-000-TM	1-RA11	82A-BE	5-000-TM-RA11	82	A-EB-000-TM-RA11		82A-FB-000	-TM-RA11		82A-GB-0	100-TM-RA	.11	900)
Sub-base	Internal		-AB-BKA-TN			-BKA-TM-RA11		A-EB-BKA-TM-RA1		82A-FB-BKA			82A-GB-B				
1/4" NPTF	External		-AB-BKD-TM			-BKD-TM-RA11		A-EB-BKD-TM-RA1		82A-FB-BKD			82A-GB-B			0.9	
Sub-base 3/8″ NPTF	Internal External		-AB-CKA-TN -AB-CKD-TN			-CKA-TM-RA11 -CKD-TM-RA11		A-EB-CKA-TM-RA1 A-EB-CKD-TM-RA1		82A-FB-CKA 82A-FB-CKD			82A-GB-C 82A-GB-C			82	
OPTIONS							02									630)0
82A-AB-000-TM-RA	a11 or dual press	sure vo	alves, rep	olace A k	by C, B b	y D, E by N	۱, F by L	, G by H.								650)0
Manifold fasteni	ng kit : N-8	2005	-01.													660)0
																270)0

- 1800
- **ISO 1**
 - ISO 2
 - **ISO 3**



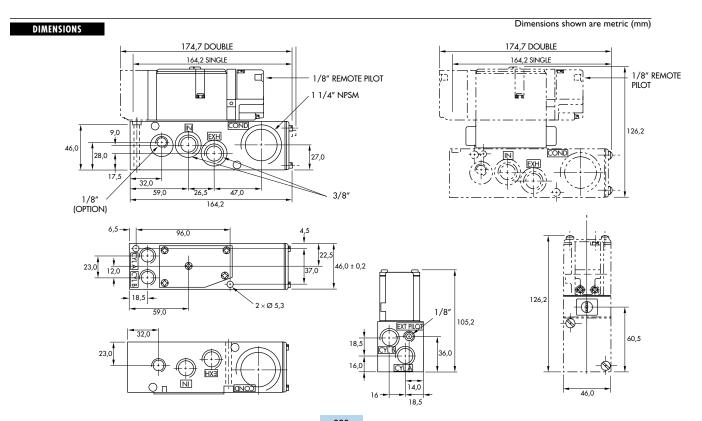


TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator and 3 positions : 25 to 150 PSI Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, ΔP=1bar) :	1/4" : (1.3 C _v), 3/8" : (1.35 C _v)

• Remote air operated pilot : TM-RA11.

Options :

• BSPP threads.





R

6	Ш	0	t –	6	D	ĺ	ſ	V	a	V	6	S

Individual mounting	Series
sub-base	
Manifold mounting	1100
sub-base	55
	56
	57
	58
	59
	700
	900
	82
	6300
	6500
	6600
	2700
	1800
	ISO 1
	150 2
	150 3

Series
1100
55
56 57
_

6. Wiping effect eliminates sticking.7. Low leakage rate.

58 59

6300

6500

6600

2700

1800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

Port size	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	
					7
Valve less base	6312D-000-RA	6322D-000-RA	6332D-000-RA	6342D-000-RA	
Sub-base 1/4" NPTF	6312D-131-RA	6322D-141-RA	6332D-141-RA	6342D-141-RA	9
Sub-base 3/8" NPTF	6312D-231-RA	6322D-241-RA	6332D-241-RA	6342D-241-RA	
Sub-base 1/2" NPTF	6312D-331-RA	6322D-341-RA	6332D-341-RA	6342D-341-RA	

OPTIONS

6312D-13<u>1</u>-RA

- - For bottom ports (excluding 1/2"), replace by 4.

Consult "Precautions" page 364 before use, installation or service of MAC Valves





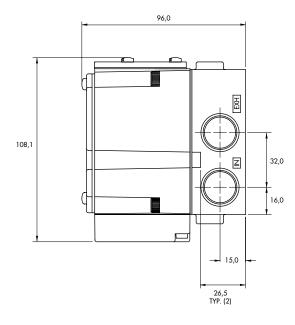
TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator and 3 positions : 25 to 150 PSI ≥ main valve pressure Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, ΔP=1bar) :	1/4" : (2.0 C _v), 3/8" : (2.6 C _v), 1/2" : (3.0 C _v)

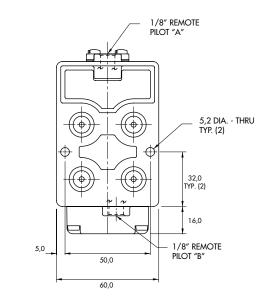
Remote air operator (A side): R-63004A.
Remote air operator (B side): R-63005A.
Seal between valve and base: 16298.
Mounting screw valve to base (x4): 35303.

Options :

• BSPP threads.

DIMENSIONS





	R	e	Π	0	ŀ	е	đ	į	ſ	V	9		V	e	5
Series 6300 Function		Port siz				(Max)		Mā	anifold mounti	Ng				Series	
4/2 - 4/3		1/4"	- 3/8"	- 1/2"	3.0	C _v			sub-base						
 OPERATIONAL BENEFITS 1. Balanced spool, immune pressure. 2. Short stroke with high floc 		ons of							e. 4	See P	. Here			110	0
 The piston (booster) prov shifting forces. Powerful return thanks to 	vides maxir								- C	1				55	
mechanical and air sprir 5. Bonded spool with minin in a glass-like finished bo	ngs. num frictio							- (B.)	in the second		F		0	56	
 6. Wiping effect eliminates 7. Low legkage rate 										1	10)). Da	3	57	

7. Low leakage rate.

4

HOW TO ORDER

Port size	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center
alve less base	6312D-000-RA	6322D-000-RA	6332D-000-RA	6342D-000-RA
Sub-base 1/4" NPTF	6312D-431-RA	6322D-441-RA	6332D-441-RA	6342D-441-RA
Sub-base 3/8" NPTF	6312D-531-RA	6322D-541-RA	6332D-541-RA	6342D-541-RA
Sub-base 1/2" NPTF	6312D-631-RA	6322D-641-RA	6332D-641-RA	6342D-641-RA

OPTIONS

6312D-43<u>1</u>-RA

- - For bottom cylinder ports, replace by 4.

Fastening kit : N-63002-01

ISO 2

ISO 3

58





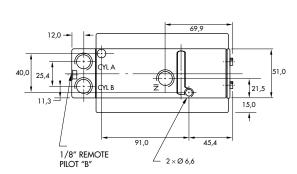
TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator and 3 positions : 25 to 150 PSI ≥ main valve pressure Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, ΔP=1bar) :	1/4" : (2.0 C _v), 3/8" : (2.6 C _v), 1/2" : (3.0 C _v)

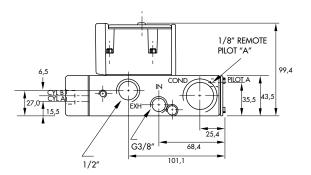
Remote air operator (A side): R-63004A.
Remote air operator (B side): R-63005A.
Seal between valve and base: 16298.
Mounting screw valve to base (x4): 35303.
Tie-rod (x2): 19624.

Options :

• BSPP threads.

DIMENSIONS







Remote air valv	e s
-----------------	-----

Individual mounting	Series
sub-base	
Manifold mounting	1100
sub-base	55
	56
	57
	58
	59
	700
	900
	82
	6300
	6500
	6600
	2700
	1800
	ISO 1
	150 2
	ISO 3

© Contraction of the series 6500	R	e	Π	0	1	е	đ	į	ſ		V	đ		V	e	5
Function		Port size			Floш (Mi	IX]		In	lividual mou	Inting					Series	
4/2 - 4/3		3/8" -	• 1/2"	- 3/4"	5.1 C	,			sub-base							
 DPERATIONAL BENEFITS Balanced spool, immune pressure. Short stroke with high fla The piston (booster) provishifting forces. Powerful return thanks to mechanical and air sprir Bonded spool with minimin a glass-like finished bio Wiping effect eliminates Low leakage rate. 	ow. vides maxir o the combi ngs. num friction ore.	num Ination of								0 /10/ 0					110 55 56 57 58	0

HOW TO ORDER

HOW TO ORDER					
Port size	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	4/3 Pressure center
Valve	6512B-000-RA	6522B-000-RA	6532B-000-RA	6542B-000-RA	6552B-000-RA
less base					
Sub-base 3/8" NPTF	6512B-131-RA	6522B-141-RA	6532B-141-RA	6542B-141-RA	6552B-141-RA
Sub-base 1/2" NPTF	6512B-231-RA	6522B-241-RA	6532B-241-RA	6542B-241-RA	6552B-241-RA
Sub-base 3/4" NPTF	6512B-331-RA	6522B-341-RA	6532B-341-RA	6542B-341-RA	6552B-341-RA

OPTIONS

6512B-13<u>1</u>-RA

Dual pressure valves : replace by 4. (excluding 3/4" base)

6300

2700

1800

ISO 1

ISO 2

ISO 3





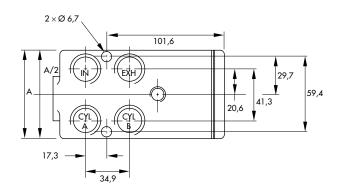
TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator and 3 positions : 25 to 150 PSI ≥ main valve pressure Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar)$:	3/8" : (4.5 C _v), 1/2" : (5.0 C _v), 3/4" : (5.1 C _v)

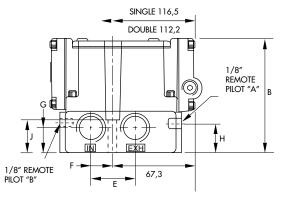
• Remote air operator : R-00008. • Seal between valve and base : 16246. • Mounting screw valve to base (x4) : 32201.

Options :

BSPP threads.

DIMENSIONS





3/8" & 1/2"	69.6	97.4	36.0	17.9	19.0	23.6	25.4
3/4″	94.5	109.3	40.1	19.2	20.8	35.9	36.6

© O Series 6500	R	e	Π	0	t	е	đ	į	ſ	V	đ]	V	е	5
Function		Port size)		Flow (M	ax]		Ma	anifold mounti	Nŷ				Series	
4/2 - 4/3		3/8"	- 1/2"	- 3/4"	5.1 C,	,			sub-base						
 OPERATIONAL BENEFITS 1. Balanced spool, immune pressure. 2. Short stroke with high flov 3. The piston (booster) provishifting forces. 4. Powerful return thanks to mechanical and air spring 5. Bonded spool with minimin a glass-like finished bo 6. Wiping effect eliminates at 7. Low leakage rate. 	w. des maxir the combi gs. um frictior re.	mum ination of												110 55 56 57 58	0

HOW TO ORDER

HOW TO ORDER					
Port size	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	4/3 Pressure center
Valve	6512B-000-RA	6522B-000-RA	6532B-000-RA	6542B-000-RA	6552B-000-RA
less base					
Sub-base 3/8" NPTF	6512B-431-RA	6522B-441-RA	6532B-441-RA	6542B-441-RA	6552B-441-RA
Sub-base 1/2" NPTF	6512B-531-RA	6522B-541-RA	6532B-541-RA	6542B-541-RA	6552B-541-RA
Sub-base 3/4" NPTF	6512B-631-RA	6522B-641-RA	6532B-641-RA	6542B-641-RA	6552B-641-RA

OPTIONS

6512B-43<u>1</u>-RA

For dual pressure valves, replace by 4.

Fastening kit : N-65002-01.

6300

6500 6600 2700

ISO 1

ISO 2

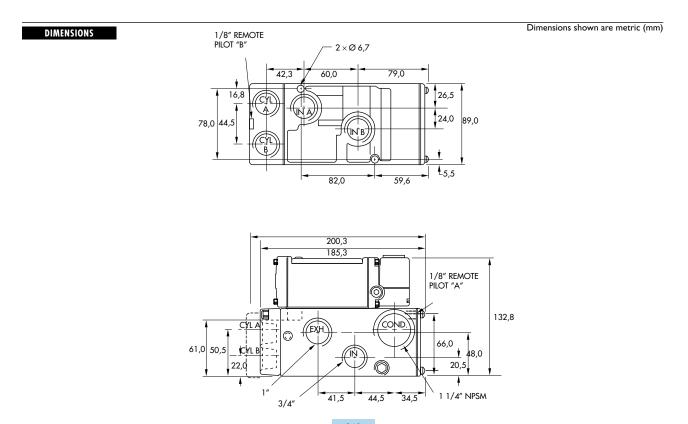
ISO 3





TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator and 3 positions : 25 to 150 PSI ≥ main valve pressure Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar)$:	

- Remote air operator : R-00008.
 Seal between valve and base : 16246.
 Mounting screw valve to base (x4) : 32201.
 Tie-rod (x2) : 19540.
- Options :
- BSPP threads.





R

6	Ш	0	t i	6	a	i –	ſ	V	đ	V	6	S

Individual mounting	Series
sub-base	
Manifold mounting	1100
sub-base	55
	56
	57
	58
	59
	700
	900
	82
	6300
	6500
	6600
	2700
	1800
	150 1
	150 2
	ISO 3

© Constant of the series 6600	R	e	Π	0	t	e	3	İ	ſ	V	đ]	V	e	S
Function		Port size	9		Flow (M	ax]		Inc	lividual mour	nting				Series	
4/2 - 4/3		3/4"	- 1"		9.6 0	v			sub-base						
 OPERATIONAL BENEFITS Balanced spool, immune pressure. Short stroke with high flo The piston (booster) prov shifting forces. Powerful return thanks to mechanical and air sprin Bonded spool with minim in a glass-like finished bo Wiping effect eliminates Low leakage rate. 	w. ides maxir the combi gs. um friction re.	mum ination of												110 55 56 57 58	0
HOW TO ORDER														59	

Port size	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	4/3 Pressure center
Valve	6612A-000-RA	6622A-000-RA	6632A-000-RA	6642A-000-RA	6652A-000-RA
less base					
Sub-base 3/4" NPTF	6612A-231-RA	6622A-241-RA	6632A-241-RA	6642A-241-RA	6652A-241-RA
Sub-base 1" NPTF	6612A-331-RA	6622A-341-RA	6632A-341-RA	6642A-341-RA	6652A-341-RA

OPTIONS

6612A-23<u>1</u>-RA

— Dual pressure valves : replace by 4.

6300

6500

6600

2700

1800

ISO 1

150 2

150 3





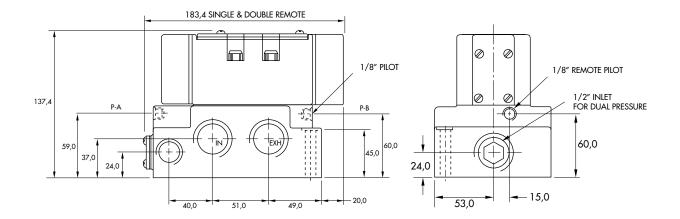
TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator and 3 positions : 25 to 150 PSI ≥ main valve pressure Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, ΔP=1bar) :	3/4" : (9.0 C _v), 1" : (9.6 C _v)

Options :

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

BSPP threads.

DIMENSIONS



© Series 6600	R e	m		e a	İ ſ	V	Đ		V	е	5
Function	Ports	ci70	Flow (Ma	พา	Manifold mounting					Series	
	10113	5120	יוון שטוז	IXJ						JEIICO	
4/2 - 4/3	3/4	- 1"	9.6 C _v	,	sub-base						
OPERATIONAL BENEFITS											
 Balanced spool, immune pressure. Short stroke with high flags. The piston (booster) pro 	ow.				Å					110	0
shifting forces.4. Powerful return thanks to mechanical and air spri	ings.					1	1	-1'		55	
 Bonded spool with mining in a glass-like finished b Wiping effect eliminates 	oore.	ng				10:	101	9		56 57	
7. Low leakage rate.	5					100	A				
Ū						°	0,			58	
HOW TO ORDER					6		0				
	4/2 Single opera	ator	4/2 Double operator	4/3 Closed center	4/3 Open center	•		/3 re cente	r	58 59	
HOW TO ORDER		B T			Open center	A	Pressui B A 	e cente	₽ ▲ 1)
HOW TO ORDER Port size Valve	Single oper	B I I I I I I I I I I I I I I I I I I I	Double operator			▲ ⊲–– ⊴₩	Pressui B A 	B B A E E E E E E E E E E E E E E E E E	▲ ⊴⊢ ⊴⊒ww•	59 700	
HOW TO ORDER Port size		3 B ⊴1 ₩ •EX -RA11	A A B B	Closed center B A B A D J J J A G IN VEXH	Open center	A11	Pressur B A 	e cente B A VexH VexH 0-PM-RA	▲ 11 111	59	
HOW TO ORDER Port size Valve less base Sub-base 3/4" NPTF Sub-base 1" NPTF	Single operation	3 B 31 31 31 31 32 32 32 32 32 32 32 32 32 32	Double operator A B B ID A	Closed center	Open center B A	A11	Pressur B A ME IN 6 6652A-00	e cente B ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	▲ ⊴ ⊴uwv .11	59 700	
HOW TO ORDER Port size Valve less base Sub-base 3/4" NPTF	Single operation 	3 B 31 31 31 31 32 32 32 32 32 32 32 32 32 32	A B B ID	Closed center B A B A 	Open center B A	A11	Pressui B A A A A A A A A A A A A A	e cente B ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	▲ ⊴ ⊴uwv .11	59 700 900 82)
HOW TO ORDER Port size Valve less base Sub-base 3/4" NPTF Sub-base 1" NPTF OPTIONS 6612A-XXX-PM-RA11 Fc	Single operations A 	-RA11 -RA11 -RA11 -	Double operator A B B C C C C C C C C C C C C C C C C C	Closed center B A B A 	Open center B A	A11	Pressui B A A A A A A A A A A A A A	e cente B ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	▲ ⊴ ⊴uwv .11	59 700 900)
HOW TO ORDER Port size Ualve less base Sub-base 3/4" NPTF Sub-base 1" NPTF OPTIONS 6612A-XXX-PM-RA11	Single operations A 	-RA11 -RA11 -RA11 -	Double operator A B B C C C C C C C C C C C C C C C C C	Closed center B A B A 	Open center B A	A11	Pressui B A A A A A A A A A A A A A	e cente B ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	▲ ⊴ ⊴uwv .11	59 700 900 82	0
HOW TO ORDER Port size Valve less base Sub-base 3/4" NPTF Sub-base 1" NPTF OPTIONS 6612A-XXX-PM-RA11 Fc	Single operations A 	-RA11 -RA11 -RA11 -	Double operator A B B C C C C C C C C C C C C C C C C C	Closed center B A B A 	Open center B A	A11	Pressui B A A A A A A A A A A A A A	e cente B ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	▲ ⊴ ⊴uwv .11	59 700 900 82 630	0
HOW TO ORDER Port size Valve less base Sub-base 3/4" NPTF Sub-base 1" NPTF OPTIONS 6612A-XXX-PM-RA11 Fc	Single operations A 	-RA11 -RA11 -RA11 -	Double operator A B B C C C C C C C C C C C C C C C C C	Closed center B A B A 	Open center B A	A11	Pressui B A A A A A A A A A A A A A	e cente B ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	▲ ⊴ ⊴uwv .11	59 700 900 82 630 650	

- ____
- 150 1
- 150 2
- **ISO 3**



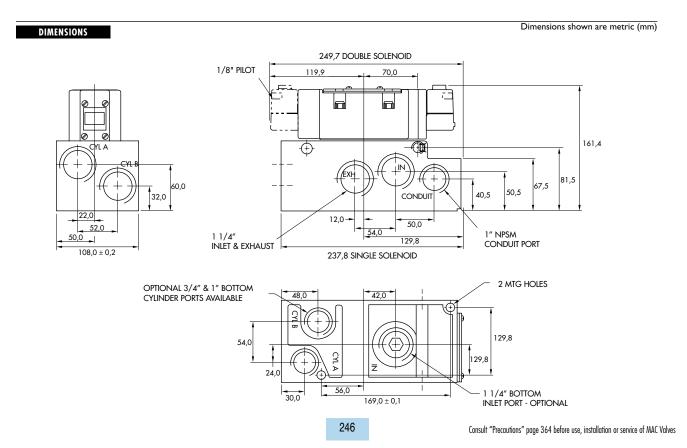


TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator and 3 positions : 25 to 150 PSI ≥ main valve pressure Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, ΔP=1bar) :	3/4" : (9.0 C _v), 1" : (9.6 C _v)

• Remote air operator : R-A3004. • Pressure seal between valve and base : 16436. • Mounting screw valve to base (x4) : 35416. • Tie-rod (x2) : 19789. • Remote air pilot : PME-RA11.

Options :

• BSPP threads.





R	e	Ш	0	ŀ	6	đ	i	ſ	V	đ	V	6	S
			Indi	vidual mo	unting							Series	
			SU	b-base							 		
												110	0

ISO 1

150 2

150 3

© Contraction of the series 2700	Rer	n o t	9 3	Î ſ V	a	V e s
Function	Port size		Floш (Max)	Individual mounting		Series
4/2 - 4/3	3/4" - 1"	- 1 1/4" - 1 1/2"	15.9 C _v	sub-base		
 OPERATIONAL BENEFITS Balanced spool, immune pressure. Short stroke with high flo The piston (booster) prov shifting forces. Powerful return thanks to mechanical and air sprin Bonded spool with minim in a glass-like finished bc Wiping effect eliminates Low leakage rate. 	w. ides maximum the combination of ngs. num friction, shifting ore.					1100 55 56 57
						58
HOW TO ORDER Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	58 59
Port size	Pilot air	4/2 Single operator A 	4/2 Double operator A B B D A BD A B B D A B B D A B B D A B B D A B B D A B B D A B B D A B B B D A B B B D A B B B B D A B B B B B D A B B B B B B B B B B B B B B B B B B			
Valve less base Sub-base 3/4" NPTF Sub-base 1 //4" NPTF Sub-base 1 1/4" NPTF Sub-base 1 1/2" NPTF	Pilot air Internal	Single operator	Double operator	Closed center	Open center	59
Port size Valve less base Sub-base 3/4" NPTF Sub-base 1 1/4" NPTF		Single operator A B B DE 2701G-1 2721G-1 2731G-1 2751G-1	Double operator	Closed center	Open center	59 700 900

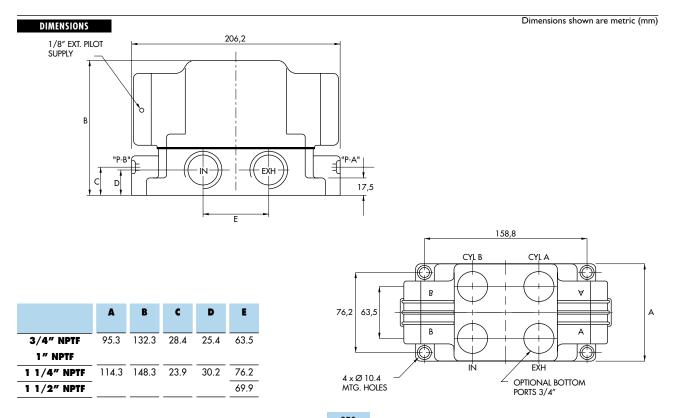




TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator and 3 positions : 25 to 150 PSI ≥ main valve pressure Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar)$:	3/4" : (11.5 C _v), 1" : (13.4 C _v), 1 1/4" : (15.4 C _v), 1 1/2" : (15.9 C _v)

Options :

- Remote air end plate : R-00016B. Pressure seal between valve and base : 16083. Mounting screw valve to base (x4) : 32214.
- BSPP threads.





R	e	Π	0	ľ	e	đ	i	ſ	V	3	V	e	S
			Inc	dividual I Inline	nounting							Series	
						 			 		 	110	0
												55	
												56	
												57	

ISO 1

ISO 2

ISO 3

© Contraction of the series 1800	R e m	n o te	e a	İſ	V a l	V C S
Function	Port size	Flow (Ma)	X]	Individual mounting		Series
5/2 - 5/3	1/4"	1.4 C _v		Inline		_
 OPERATIONAL BENEFITS 1. Balanced spool, immune pressure. 2. Short stroke with high flot 3. The piston (booster) prov shifting forces. 4. Powerful return thanks to mechanical and air sprir 5. Bonded spool with minin in a glass-like finished bo 6. Wiping effect eliminates 7. Low leakage rate. 	low. wides maximum o the combination of ings. mum friction, shifting sore. s sticking.					1100 55 56 57 58 59
Port size	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center	5/3 Pressure center	
		$ \begin{array}{c} A \\ \mathbb{D} \\ \hline \\ 5 \\ \hline \\ 5 \\ \hline \\ 5 \\ \hline \\ 5 \\ \hline \\ 5 \\ \hline \\ \\ 5 \\ \hline \\ \\ \\ \\$	B 23 A ⊡ 1 1 A ⊡ 1 1 A 4 \$ \$ \$ \$	$ \begin{array}{c} B \\D \\D \\ W \\ 4 \\ \psi \\ \psi \\ 5 \\ \psi \\ 5 \\ \end{array} $		700
1/4" NPTF	180001-112-0003	180003-112-0003	180304-512-0304	180304-612-0304	180304-812-0304	<u>4</u> 900
Air pilot port : 1/8" NPTF. Options : Side pilot port : r	replace code 0003 by 001(0 (2 positions valves only).				82
						6300
						6500
						6600
						2700
						1800
						ISO 1
						ISO 2
						150 3





TECHNICAL DATA			
Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Vacuum to 200 PSI		
Air signal pressure :	Single operator and 3 positions : 20 to 150 PSI	Double operator : 10 to 150 PSI	
Lubrication :	Not required, if used select a medium aniline point lubr	icant (between 180°F to 210°F)	
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to 50°C)		
Flow (at 6 bar, $\Delta P=1bar$) :	1/4" - 3/8" : (1.4 C _v)		

Spare parts :

• Remote air operator (2 positions) : 180003. • Remote air operator (3 positions) : 180304.

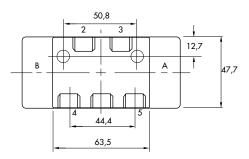
Options :

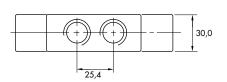
• BSPP threads. • 3/8" ports (ports 1, 2 &3 - MOD. 0358 required).

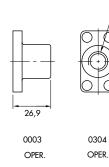
DIMENSIONS

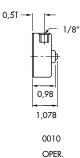
Dimensions shown are metric (mm)

1/8″











R	6	Π	0	ŀ	6	Б	į	ſ	V	9		V	6	S
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Individual mounting	Series
valve only	
Manifold mounting	1100
sub-base	55
	56
	57
	58
	59
	700
	900
	82
	6300
	6500
	6600
	2700
	1800
	ISO 1
	150 2
	ISO 3

Black	R e	Π	0	ľ	e	đ	į	ſ	V	đ		V	е	S
Series ISO 1	Port	size		Floш (Mi	ax]		Ini	dividual moun	ting & Manifo	ld mountii	19		Series	
5/2 - 5/3	1/4	- 3/8"		1.6 C			Ň	valve only						
Short stroke with high flow. The piston (booster) provides shifting forces. Powerful return thanks to the mechanical and air springs. Bonded spool with minimum in a glass-like finished bore. Wiping effect eliminates stic Low leakage rate.	combination friction, shifti							a a /2			ſ		55 56 57 58 59	
INGLE PRESSURE VALVE		5/2 e operator			/2 operator			5/3 d center 4 2 12 12 12	14	5/3 Open co			700)
Internal External		-A1C-B111 -A1C-B121		-	↓/] 5₩1¥3 IC-B221			 1C-B322	 	₽ <mark>,,,</mark> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			900	
UAL PRESSURE VALVES													82	
Air spring		5, Single c 14 12	$\begin{pmatrix} 2 \\ perator \\ 4 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 3 \\ 7 \\ 3 \\ 7 \\ 3 \\ 7 \\ 3 \\ 7 \\ 3 \\ 7 \\ 3 \\ 7 \\ 7$		Do 14 		2 perator 2 12 12 12 12			5/3 sure cen			630	0
Internal port 3		MV-A1	C-B131				1 °						650	0
Internal port 5 External		MV-A1 MV-A1			- <u> </u>	 NV-A1C			MV	 -A1C-B34	1		660	0
ote : ISO valves are delivered	l w/o base. S			de									270	
													180	0
													150	1
													ISO	2
													160	2

150 3

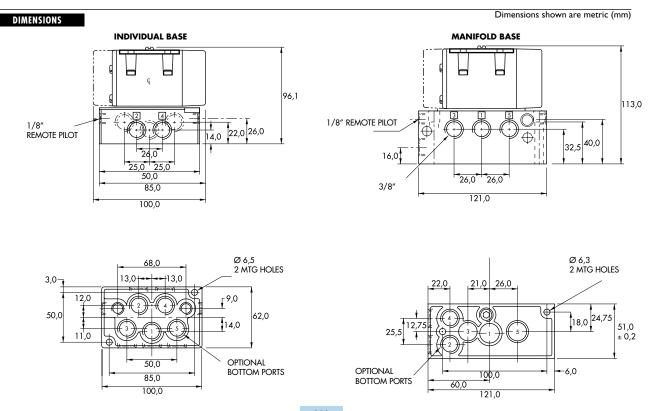




TECHNICAL DATA Fluid : Compressed air, vacuum, inert gases Pressure range : Vacuum to 150 PSI Air signal pressure : Single operator and 3 positions : 20 to 150 PSI \geq main valve pressure Double operator : 10 to 150 PSI Lubrication : Not required, if used select a medium aniline point lubricant (between 180°F to 210°F) Filtration : 40 µ Temperature range : 0°F to 120°F (-18°C to 50°C) Flow (at 6 bar, $\Delta P=1bar$) : 1/4" - 3/8" : (1.6 C_v)

Spare parts :

- Remote air operator 2 positions : R-A1010. Remote air operator 3 positions : R-A1005B.
- Pressure seal between valve and base : 16344. Mounting screw body to base (x4) : 35304.



Consult "Precautions" page 364 before use, installation or service of MAC Valves



R	6	Ш	0	ŀ	6	Б	i –	ſ	V	đ	V	6	S

Individual mounting	Series
valve only	
Manifold mounting	1100
sub-base	55
	56
	57
	58
	59
	700
	900
	82
	6300
	6500
	6600
	2700
	1800
	ISO 1
	ISO 2
	150 3

Series ISO 2	R e	Π	0	t	9	đ	į	ſ	V	3		V	е	S
unction	Port siz	Ze		Flow (Ma	ax]		Ind	dividual mounti	ing & Manifol	ld mountir	19		Series	
5/2 - 5/3	3/8"	" - 1/2"		3.0 C _v	,		v	valve only						
 pressure. Short stroke with high flow. The piston (booster) provide shifting forces. Powerful return thanks to the mechanical and air springs Bonded spool with minimun in a glass-like finished bore Wiping effect eliminates stic Low leakage rate. 	es maximum te combination of s. m friction, shifting e.										1		55 56 57 58 59	
INGLE PRESSURE VALVE	Ľ	5/2			5/2			i/3		5/3				
		operator			operator			d center	14 []		nter 12		700)
Internal		<u>5₩1₹3</u> 42B-B111		<u>دد تا</u> 5	5 \$\$ 1 \$ 3			<u>↓</u> ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓		5 † † † ; 	3		900)
External		A2B-B121		MV-A2	2B-B221		MV-A	2B-B322		MV-A2B-	B321			
UAL PRESSURE VALVES													82	
Air spring			5/2 operator		Dou	5/2 ble op			Pres	5/3 sure cent	Lau		Theor	
		·	<u>4 2</u> 12		14								630	0
					1D2_1	1_\ /	T 1			EAD 0.4				
Internal port 3		12 <u>_</u>	42B-B131		DΣ	5 001 	₽ 3						650	0
Internal port 5		MV-A MV-A	A2B-B131 A2B-B135		12 									
Internal port 5 External		A-VM MV-A MV-A MV-A	A2B-B135 A2B-B141		12 12 12 			 	MV		1		650 660	
Internal port 5 External	 d w/o base. See	A-VM MV-A MV-A MV-A	A2B-B135 A2B-B141	 le.	tb tb 			 	MV		1			0
Internal port 5 External	 d w/o base. See	A-VM MV-A MV-A MV-A	A2B-B135 A2B-B141	 Je.	t£						1		660 270	0
Internal port 5 External	 d w/o base. See	A-VM MV-A MV-A MV-A	A2B-B135 A2B-B141	 Je.	t£				MV-		1		660 270 180	
Internal port 5 External	 :d w/o base. See	A-VM MV-A MV-A MV-A	A2B-B135 A2B-B141	 Je.	t£				MV-		1		660 270	
Internal port 5		A-VM MV-A MV-A MV-A	A2B-B135 A2B-B141	 Je.	t£				MV		1		660 270 180)0)0)0 1

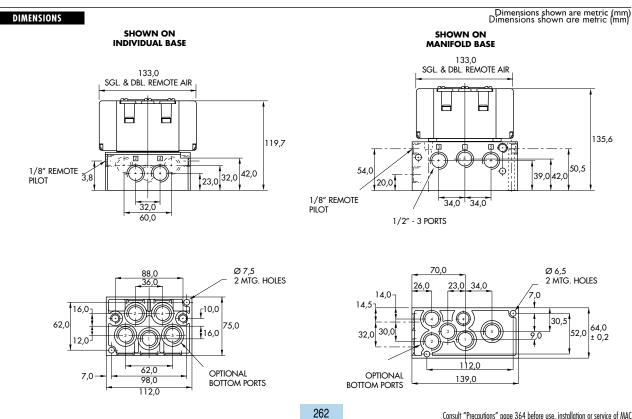




TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator and 3 positions : 25 to 150 PSI ≥ main valve pressure Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, ΔP=1bar) :	3/8" - 1/2" : (3.0 C _v)

Spare parts :

• Remote air operator : R-A3004. • Pressure seal between valve and base : 16351. • Mounting screw body to base (x4) : 35412.





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R	6	Π	0	ŀ	6	9	ĺ	ſ	V	g	V	6	S
			Ind	lividual m	ounting							Series	
			v	alve only									
												110)0
												55	
												56	
												57	
												58	
												59	
												700	
												900	
												82	
												630	0

6500

6600

2700

1800

ISO 1

ISO 2

ISO 3

Series ISO 3	R e m	0	ľ	е	a i	ſ	V	3		V	е	5
Function	Port size		Floш (Ма	נאנ		Individual moun	tinq				Series	
5/2 - 5/3	1/2" - 3/4		6.3 C _v			valve only						
 pressure. Short stroke with high flow. The piston (booster) provides r shifting forces. Powerful return thanks to the c mechanical and air springs. Bonded spool with minimum fr in a glass-like finished bore. Wiping effect eliminates stickin 7. Low leakage rate. 	ombination of iction, shifting							Î	T		55 56 57 58 59	
SINGLE PRESSURE VALVES Air spring	5/2			/2		5/3		5/3				
Internal External	Single operate 14 D D D 	12		operator 4 2 12 ↓ 1 ↓ 1 ↓ 1 ↓ 1 ↓ 1 ↓ 1 ↓ 1 ↓ 1	14 	4 2 30 5 12 30 30 30 V-A3B-B322	14 ~~~[Open ce 4 2 5 0 0 0 5 0 0 0 MV-A3B-			700 900	
· ·				_	5/2			5/3			82	
DUAL PRESSURE VALVES Air spring	¢ in	5/2	_	Davi			Dread					
	Sin 14 1∑	gle operato	9 F 12	Dou 14 12	5/2 ble operat	or 12 		sure cent	12 12 12 12 12		630	0
Air spring	14 [b] 	Je operato 4 2 5 500 1 5 5 500 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 				12	14				630 650	
	14 12 	Je operato		14 D	ble operat	12	14 ⊡	sure cent $\begin{pmatrix} 4 & 2 \\ \uparrow & \uparrow & \downarrow \\ T & \downarrow & \downarrow \\ 5^{\circ} & 7^{\circ} & 3 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 &$	12 ∰~~			0





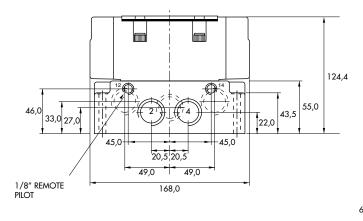
TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 150 PSI
Air signal pressure :	Single operator and 3 positions : 25 to 150 PSI ≥ main valve pressure Double operator : 10 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between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

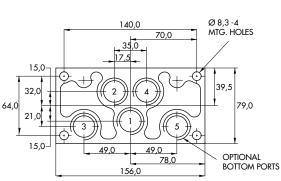
Spare parts :

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

DIMENSIONS

Dimensions shown are metric (mm)







Section 3 Mechanically and manually operated valves

Port size	Flow (Max)
1/8" - 1/4"	0.18 C _v
1/8" - 1/4"	0.14 C _v
1/4"	1.35 C _v
	1/8" - 1/4" 1/8" - 1/4"

Individual m	nounting Manifold	mounting	Series
Inline	sub-bas	e	
P. 273			1100
P. 279	P. 27		1800



Indiv	dividual mounting		
	Inline		
	Manifold m	punting	1100
	sub-base		1800

Series 1100	echanica	ılly and m	1 a N U	ally	operated	VƏİVes
Function	Port size	Flow (Max)		Individual m	ounting	Series
3/2 NO-NC, 2/2 NO-NC	1/8" - 1/4"	0.18 C _v		Inline		
OPERATIONAL BENEFITS Short stroke with high flow. Powerful return spring. HOW TO ORDER						1100 1800
Port size		Universal valve			NC only valve	
1/8" NPTF 1/4" NPTF		1111A- xxx 1113A- xxx			1161A- xxx 1163A- xxx	
MECHANICAL OPERATOR >		XXX				
						_
Code Description 011 Cam roller parallel O to ports 1 & 2	Code 023	Lever locking pull perpendicu to ports 1 & 2		031	Description Push button	
012 Cam roller perpendicula to ports 1 &2 013 Lever cam perpendicula	<u>گ</u> سر	Lever non-locking pull perper to ports 1 & 2 Lever locking push parallel	ıdicular	032 () 033	Push button (panel mounting) Push button with guard	
to ports 1 & 2		to ports 1 & 2		Œ	Tosh bolion will goard	
●14 Lever cam parallel ⊙ to ports 1 & 2	026 /~~_	Lever non-locking push paral to ports 1 & 2	el	036 (H	Palm button	
021 Lever locking push perp to ports 1 & 2	<u> </u>	Lever locking pull parallel to ports 1 & 2		037 (+	Palm button (panel mounting)	
•22 Lever non-locking push to ports 1 & 2	perpendicular 028	Lever non-locking pull paralle to ports 1 & 2 	<u>.</u>	038 (†	Palm button with guard	





TECHNICAL DATA

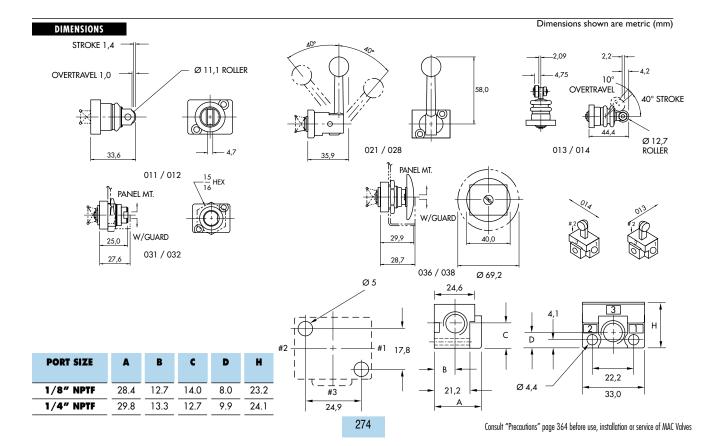
Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Vacuum to 150 PSI		
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)		
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to 50°C)		
Flow (at 6 bar, $\Delta P=1 bar)$:	1/8" - 1/4" : (0.18-C _v)		

Spare parts :

• Operator : 1100A-XXX (see codification).

Options :

• BSPP threads.



Series 1100	echani	cally and mi	anually opera	ted valves
Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC, 2/2 NO-NC	1/8"	0.14 C _v	sub-base	
OPERATIONAL BENEFITS 1. Short stroke with high flow. 2. Powerful return spring.			Ŷ	1100
HOW TO ORDER				1800
Port size		Universal valve	NC only valve	
Valve less base Sub-base 1/8" N		1130A- xxx 1132A- xxx	1170A-XXX 1172A-XXX	
MECHANICAL OPERATOR >				
Code Description		Code Desc	ription	
025 Lever locking push pa to ports 1 & 2 026 Lever non-locking pus		028_ Leve	button r non-locking pull paralle!	
• oports 1 & 2 • oports 1 & 2 • oports 1 & 2 • oports 1 & 2	allel		orts 1 & 2	
	42 500 4 01			

End plate kit (Port size 1/4" NPTF) : A2-5004-01.





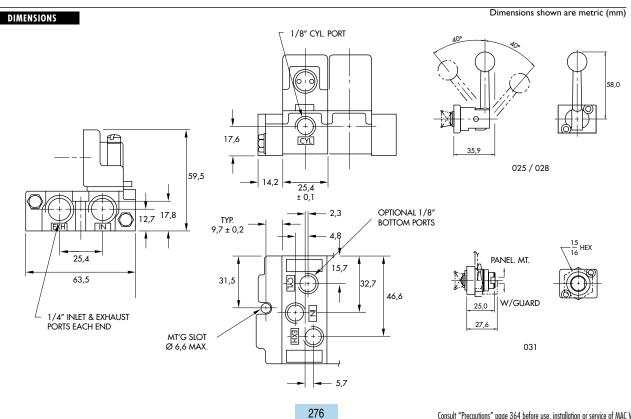
TECHNICAL DATA Fluid : Compressed air, vacuum, inert gases Pressure range : Vacuum to 150 PSI Lubrication : Not required, if used select a medium aniline point lubricant (between 180°F to 210°F) Filtration : 40 µ Temperature range : 0°F to 120°F (-18°C to 50°C) Flow (at 6 bar, $\Delta P=1bar$) : 1/8" : (0.14-C_v)

Spare parts :

• Operator : 1100A-XXX (see codification). • Function plate : A2-7009. • Pressure seal between bases : 16226. • Tie-rod (x2) : 19546.

Options :

• BSPP threads.



Consult "Precautions" page 364 before use, installation or service of MAC Valves



ndividual mounting		Series
Inline		
		1100

1800

H	nanically and mar	ıuallų operate	d valves
Series 1800 Function Port s	ize Flow (Max)	Individual mounting	Series
5/2 1/4			361163
 OPERATIONAL BENEFITS 1. Short stroke with high flow. 2. Powerful return force. 3. Bonded spool with minimum friction, shiftin in a glass-like finished bore. 4. Wiping effect eliminates sticking. 5. Long service life. 	g		1100
HOW TO ORDER Port size	Single operator	Double operator	
	A J B V T T V	A 3 2 B	
1/4" NPTF	180001-112- <i>XXXX</i>	18xxxx-112-xxxx	
MECHANICAL OPERATOR >	XXXX		
Code Description	Code Description	Code Description	
 O111 Cam roller parallel to ports 2 & 3 O112 Cam roller perpendicular 	0024 Lever non-locking pull perpendicular 2 to body 0025 Lever locking push parallel	0033 Push button with guard	
to ports 2 & 3	for body		
0013 Lever cam perpendicular to ports 2 & 3	0026 Lever non-locking push parallel 2 to body	0035 Push Pull (panel mounting)	
0014 Lever cam parallel to ports 2 & 3	0027 Lever locking pull parallel		
0021 Lever locking push perpendicular to body	to body	0037 Palm button (panel mounting)	
0022 Lever non-locking push perpendit	Œ.	0038 Palm button with guard	
0023 Lever locking pull perpendicular Lever locking pull perpendicular to body	0032 Push button (panel mounting)	0039 Push Pull palm button	
OPTIONS			
002X Replace 0 by operator with	2 for lever 279 boot (see photo)	Consult "Precautions" page 364 before use, installation or servi	ce of MAC Valves





TECHNICAL DATA

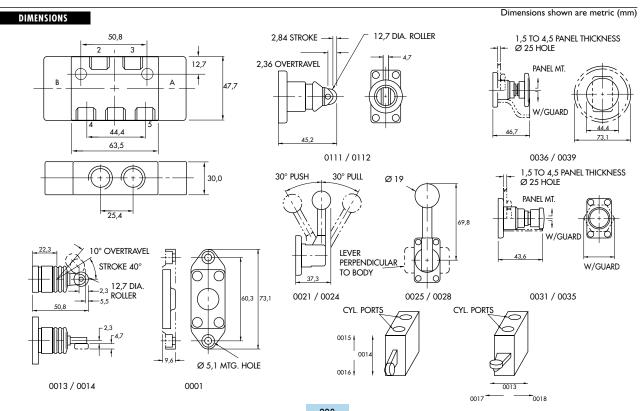
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 200 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, ΔP=1bar) :	1/4" : (1.4-C _v)

Spare parts :

• Operator : 18XXXX (see codification).

Options :

• BSPP threads. • 3/8" ports (ports 1,2 & 3 - MOD. 0358 required).



Consult "Precautions" page 364 before use, installation or service of MAC Valves



Section 4 Bases according to ISO 5599



		Series
ISO 2	ISO 3	
		ISO 1
P. 287		150 2
	P. 289	ISO 3
		P. 287



Series



HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports	Side & bottom ports	Bottom cylinder ports 2 and 4.	Bottom inlet port 1
1/4" NPTF	MB-A1C-221	MB-A1C-223	MB-A1C-222	MB-A1C-224
3/8″ NPTF	MB-A1C-231	MB-A1C-233	MB-A1C-232	MB-A1C-234

MANIFOLD BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom inlet port 1
1/4" NPTF	MM-A1C-221	MM-A1C-223	MM-A1C-222	MM-A1C-224
3/8" NPTF	MM-A1C-231	MM-A1C-233	MM-A1C-232	MM-A1C-234

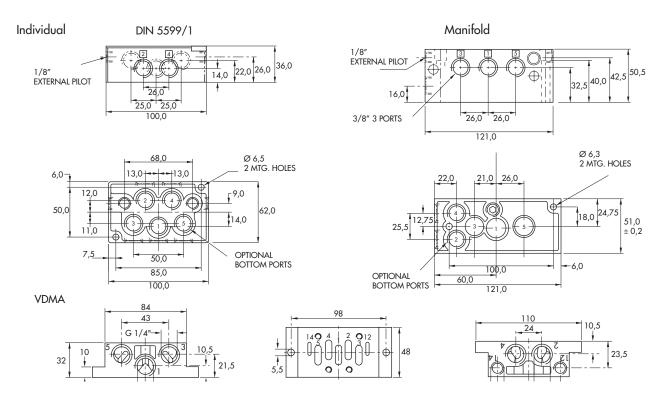
Manifold fastening kit : N-63002-01.





DIMENSIONS

Dimensions shown are metric (mm)





Series



ISO 1 ISO 2 ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports	Side & bottom ports	Bottom cylinder ports 2 and 4.	Bottom inlet port 1
3/8" NPTF	MB-A2B-221	MB-A2B-223	MB-A2B-222	MB-A2B-224
1/2" NPTF	MB-A2B-231	MB-A2B-233	MB-A2B-232	MB-A2B-234

MANIFOLD BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom inlet port 1
3/8″ NPTF	MM-A2B-221	MM-A2B-223	MM-A2B-222	MM-A2B-224
1/2" NPTF	MM-A2B-231	MM-A2B-233	MM-A2B-232	MM-A2B-234

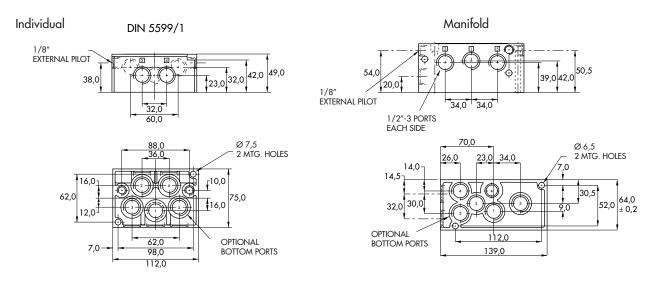
Manifold fastening kit : N-63002-01.





DIMENSIONS

Dimensions shown are metric (mm)





Series

ISO	1
150	2
ISO	3



HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports	Side & bottom ports	Bottom cylinder ports 2 and 4.	Bottom inlet port 1
1/2" NPTF	MB-A3B-221	MB-A3B-223	MB-A3B-222	MB-A3B-224
3/4" NPTF	MB-A3B-231	MB-A3B-233	MB-A3B-232	MB-A3B-234



DIMENSIONS



Dimensions shown are metric (mm)

Individual ISO DIN 5599/1 Ø 8,3 4 MTG. HOLES 140,0 70,0 35,0 17,5 15,0-Ó 39,5 32,0 2 Ô 64,0 79,0 55,0 21,0 46,0 43,5 33,0 27,0 5 3 22,0 Œ 15,0-49,0 49,0 45,0 45,0 OPTIONAL BOTTOM PORTS 78,0 20,5 20,5 156,0 1/8" EXTERNAL PILOT 49,0 49,0



Section 5 Interchangable sub-bases and manifolds



			Series
MAC 125	MAC 250	MAC 500	
P. 295			MAC 125
	P. 297		MAC 250
		P. 299	MAC 500



MAC 125 MAC 250 MAC 500

HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports
1/4" NPTF	MAC125A-B21A
3/8″ NPTF	MAC125A-B31A

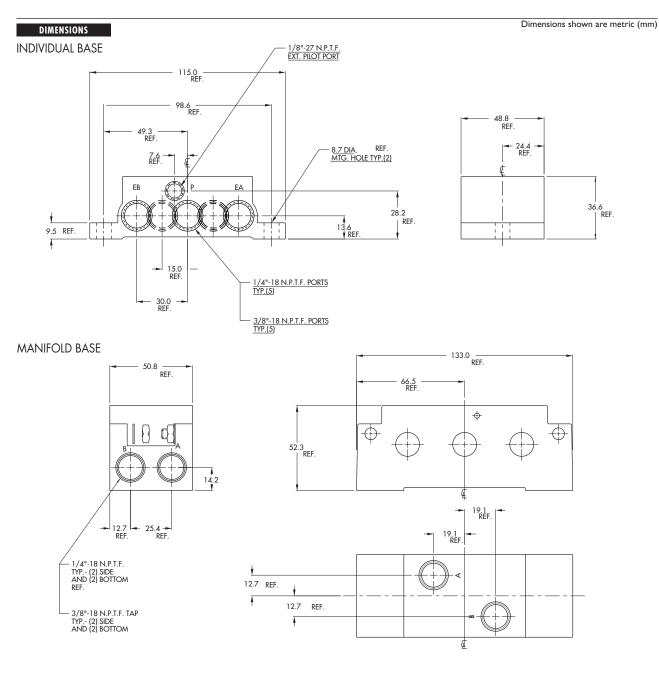
MANIFOLD BASE

Port size	Bottom cylinder ports	Side & bottom cylinder ports	
1/4" NPTF	MAC125A-M21B	MAC125A-M21C	
3/8" NPTF	MAC125A-M31B	MAC125A-M31C	

Manifold fastening kit : M-12001-01 (3/8" NPTF)







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HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports
1/2" NPTF	MAC250A-B21A
3/4" NPTF	MAC250A-B31A
1" NPTF	MAC250A-B41A

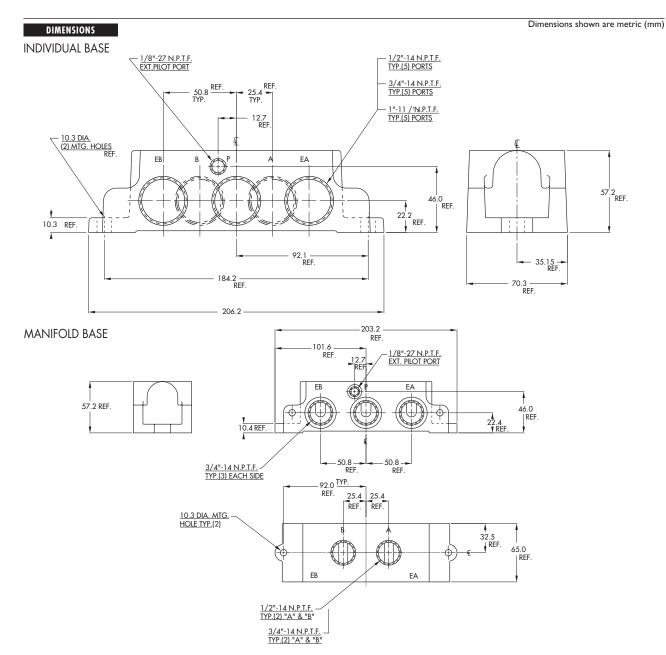
MANIFOLD BASE

Port size	Bottom cylinder ports	Side & bottom cylinder ports	
1/2″ NPTF	MAC250A-M21B	MAC250A-M21C	
3/4" NPTF	MAC250A-M31B	MAC250A-M31C	

Manifold fastening kit : M-25001-01 (only required for manifolds with side & bottom cylinder ports)









Series



MAC 125

MAC 250

MAC 500

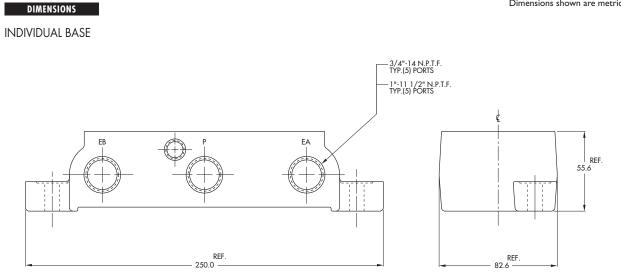
HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports		
3/4" NPTF	MAC500A-B21A		
1" NPTF	MAC500A-B31A		





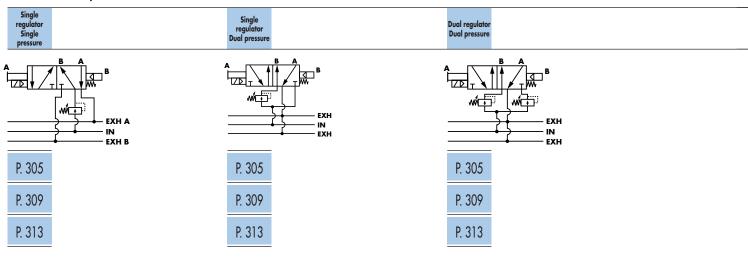




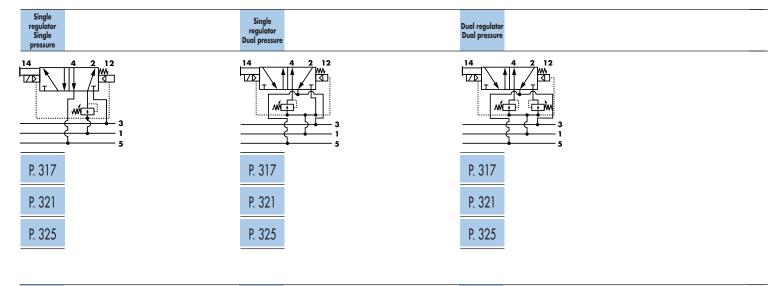
Section 6 Pressure regulators

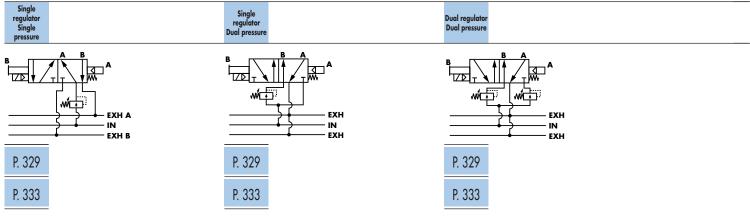


Manual adjust



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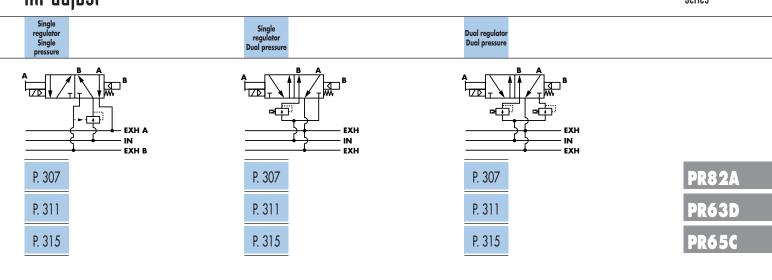


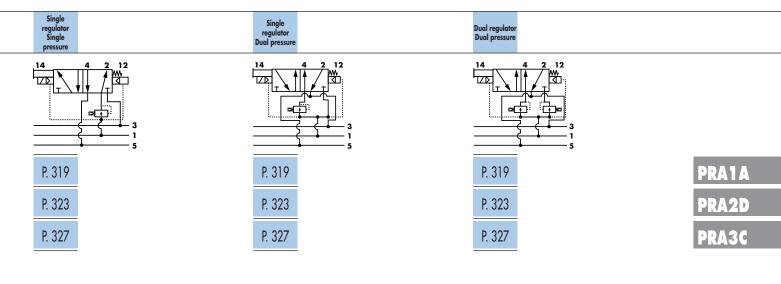
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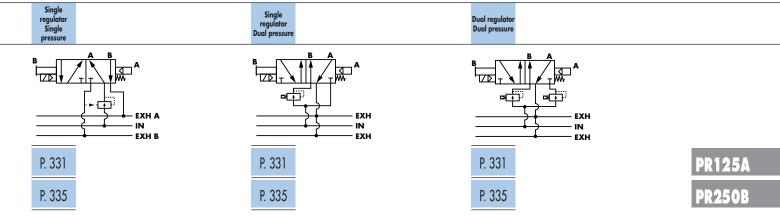
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Air adjust











PR63D

PR65C

PRA 1 A

PR125A

PR250B

Sandwich pressure regulator with manual adjust locking knob.

р

OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Dual pressure * Regulator A end Regulated pressure to port A	Dual pressure * Regulator B end Regulated pressure to port B	Dual pressure * Dual regulator Two regulated pressures to ports A and B
No gauge	PR82A-GADA	PR82A-GCDA	PR82A-GBDA	PR82A-GDDA
Gauge parallel to regulator	PR82A-GACA	PR82A-GCCA	PR82A-GBCA	PR82A-GDCA
Gauge perpendicular to regulator	PR82A-GABA	PR82A-GCBA	PR82A-GBBA	PR82A-GDBA

REGULATORS FOR "NON PLUG-IN" AND REMOTE AIR VALVES

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Dual pressure * Regulator A end Regulated pressure to port A	Dual pressure * Regulator B end Regulated pressure to port B	Dual pressure * Dual regulator Two regulated pressures to ports A and B	PRA2D PRA3C
No gauge	PR82A-HADA	PR82A-HCDA	PR82A-HBDA	PR82A-HDDA	
Gauge parallel to regulator	PR82A-HACA	PR82A-HCCA	PR82A-HBCA	PR82A-HDCA	
Gauge perpendicular to regulator	PR82A-HABA	PR82A-HCBA	PR82A-HBBA	PR82A-HDBA	

Note : regulating range for above models is 0-120 PSI. For other ranges see technical data page.

* To be used with dual pressure valves.

ADJUSTMENT OPTIONS

PR82A-xxxx

- Replace by A for "plug-in" with slotted stem adjustment.
- Replace by B for "non plug-in" with slotted stem adjustment.
- Replace by K for "plug-in" with locking slotted stem adjustment.
- Replace by L for "non plug-in" with locking slotted stem adjustment.

**SELECTOR OPTIONS selects pressure to inlet of adjacent valve.

PR82A-XXXX

- Replace by S for dual regulators.
- Replace by T for regulator on "B" end with by-pass on "A" end.

** This option must be used with a single pressure valve and selector manifold base.

305





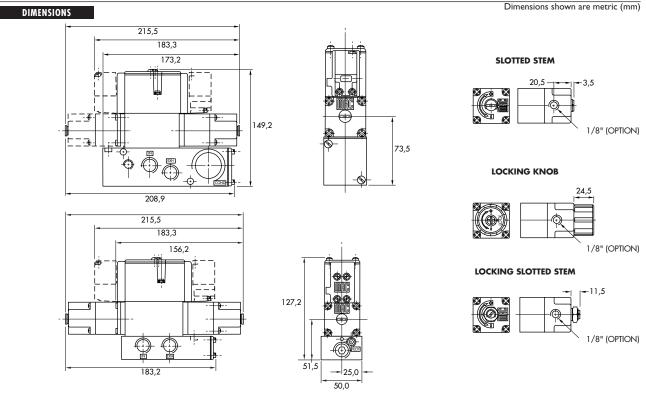
Fluid :	Compressed air, inert gases
Pressure range :	0 to 150 PSI
Regulating range :	0 to 120 PSI (other ranges see below)
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow :	(1.08 C _v)

Spare parts :

- Pressure regulator (less sandwich block) : PR82A-JOAA (KNOB), PR82A-COAA (SLOTTED STEM), PR82A-MOAA (LOCKING SLOTTED STEM).
- Fressure regulator (less sandwich block) : FR6ZAJ
 Gauges : N-82016-01 (0-120 PSI perpendicular)
 N-82016-02 (0-120 PSI parallel)
 N-82016-03 (0-80 PSI perpendicular)
 N-82016-05 (0-30 PSI parallel)
 N-82016-05 (0-30 PSI perpendicular)
 N-82016-06 (0-30 PSI parallel)

Regulating range options : PR82A-XXXA

- 0 to 80 PSI - 0 to 30 PSI - 0 to 120 PSI on "A" end - 0 to 120 PSI on "B" end - 0 to 80 PSI on "A" end - 0 to 120 PSI on "A" end - 0 to 120 PSI on "A" end - 0 to 120 PSI on "A" end - 0 to 30 PSI on "A" end - 0 to 30 PSI on "A" end - 0 to 30 PSI on "B" end - 0 to 30 PSI on "B" end - 0 to 80 PSI on "A" end Replace by B Replace by C Replace by D Replace by E Replace by F Replace by G Replace by H Replace by J



306



Pressure regula	1 0	ſS
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Sandwich pressure regulator with air pilot adjust.

OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators. 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Dual pressure * Regulator A end Regulated pressure to port A	Dual pressure * Regulator B end Regulated pressure to port B	Dual pressure * Dual regulator Two regulated pressures to ports A and B
No gauge	PR82A-DADA	PR82A-DCDA	PR82A-DBDA	PR82A-DDDA
Gauge parallel to regulator	PR82A-DACA	PR82A-DCCA	PR82A-DBCA	PR82A-DDCA
Gauge perpendicular to regulator	PR82A-DABA	PR82A-DCBA	PR82A-DBBA	PR82A-DDBA

REGULATORS FOR "NON PLUG-IN" AND REMOTE AIR VALVES

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Dual pressure * Regulator A end Regulated pressure to port A	Dual pressure * Regulator B end Regulated pressure to port B	Dual pressure * Dual regulator Two regulated pressures to ports A and B	PRA2D PRA3C
No gauge	PR82A-EADA	PR82A-ECDA	PR82A-EBDA	PR82A-EDDA	
Gauge parallel to regulator	PR82A-EACA	PR82A-ECCA	PR82A-EBCA	PR82A-EDCA	
Gauge perpendicular to regulator	PR82A-EABA	PR82A-ECBA	PR82A-EBBA	PR82A-EDBA	

* To be used with dual pressure valves.

PR125A

PRA 1 A

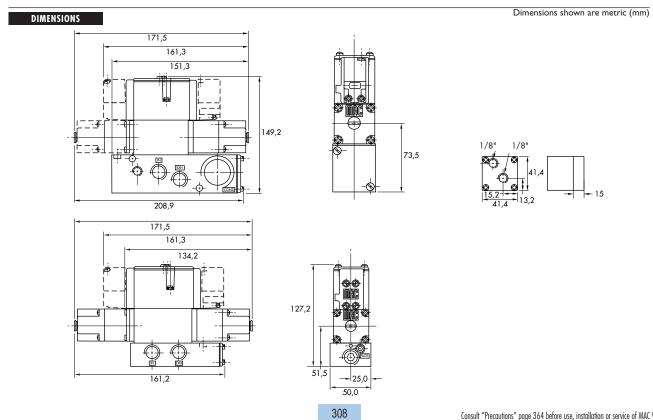




Fluid :	Compressed air, inert gases
Pressure range :	0 to 150 PSI
Regulating range :	0 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow :	(1.08 C _v)

Spare parts :

Pressure regulator (less sandwich block) : PR82A-FOAA.
 Gauges : N-82016-01 (0-120 PSI perpendicular)
 N-82016-02 (0-120 PSI parallel)





Ргеззиге гед	ulators
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PR82A

PR63D

PR65C

PRA 1 A

PRA2D

PRA3C

PR125A

PR250B

Sandwich pressure regulator with manual adjust knob.

OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

ator B end Dual regulator ted pressure Two regulated pressures port A to ports A and B
3D-23AA PR63D-25AA
3D-23BA PR63D-25DA
3D-23CA
3D-23FA PR63D-25HA
3D-23GA
5

Note : above models are coded for use with double solenoid plug-in valves.

REGULATORS FOR "NON PLUG-IN" AND REMOTE AIR VALVES

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure * Regulator A end Regulated pressure to port B	Dual pressure * Regulator B end Regulated pressure to port A	Dual pressure * Dual regulator Two regulated pressures to ports A and B
No gauge	PR63D-32AA	PR63D-31AA	PR63D-34AA	PR63D-33AA	PR63D-35AA
Glycerine filled gauge on regulator(s)	PR63D-32BA	PR63D-31BA	PR63D-34BA	PR63D-33BA	PR63D-35DA
Glycerine filled gauge opposite to regulator	PR63D-32CA	PR63D-31CA	PR63D-34CA	PR63D-33CA	
Non-filled gauge on regulator(s)	PR63D-32FA	PR63D-31FA	PR63D-34FA	PR63D-33FA	PR63D-35HA
Non-filled gauge opposite to regulator	PR63D-32GA	PR63D-31GA	PR63D-34GA	PR63D-33GA	

Note : regulating range for above models is 0-150 PSI. For other ranges see technical data page.

* To be used with dual pressure valves (manifolds only).

PLUG-IN OPTIONS

PR63D-xxxx

- Replace by 1 for single solenoid plug-in with knob adjustment.

ADJUSTMENT OPTIONS

PR63D-xxxx

309

Replace by A for slotted stem adjustment for single solenoid plug-in.
 Replace by B for slotted stem adjustment for double solenoid plug-in.

- Replace by C for slotted stem adjustment for non plug-in valves.
- Replace by E for slotted stem with locknut for single solenoid plug-in.

- Replace by F for slotted stem with locknut for double solenoid plug-in.

Replace by G for slotted stem with locknut for non plug-in valves.

Consult "Precautions" page 364 before use, installation or service of MAC Valves





FLuid : Compressed air, inert gases Pressure range : O to 150 PSI Regulating range : O to 150 PSI (other ranges see below) Lubrication : Not required, if used select a medium aniline point lubricant (between 180°F to 210°F) Filtration : 40 µ Temperature range : 0°F to 120°F (-18°C to 50°C) Flow : (2.4 C_v)

Spare parts :

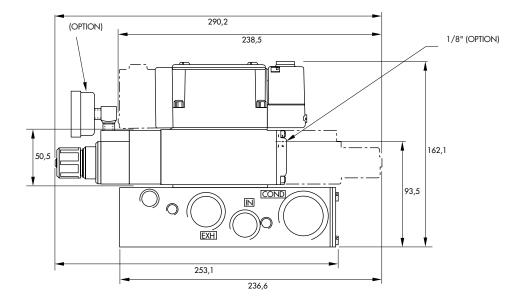
Pressure regulator (less sandwich block) : PR63D-41AA (KNOB), PR63D-D1AA (SLOTTED STEM), PR63D-H1AA (SLOTTED STEM WITH LOCKNUT).
 Gauges :

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

Regulating range options : PR63D-XXXA

Replace by B - 0 to 100 PSI
Replace by C - 0 to 45 PSI

DIMENSIONS





Pressure regulators

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.



PR82A PR63D PR65C

PRA 1 A

PRA2D

PRA3C

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure * Regulator A end Regulated pressure to port B	Dual pressure * Regulator B end Regulated pressure to port A	Dual pressure * Dual regulator Two regulated pressures to ports A and B
No gauge	PR63D-2BAA	PR63D-2AAA	PR63D-2DAA	PR63D-2CAA	PR63D-2EAA
Glycerine filled gauge on regulator(s)	PR63D-2BBA	PR63D-2ABA	PR63D-2DBA	PR63D-2CBA	PR63D-2EDA
Glycerine filled gauge opposite to regulator	PR63D-2BCA	PR63D-2ACA	PR63D-2DCA	PR63D-2CCA	
Non-filled gauge on regulator(s)	PR63D-2BFA	PR63D-2AFA	PR63D-2DFA	PR63D-2CFA	PR63D-2EHA
Non-filled gauge opposite to regulator	PR63D-2BGA	PR63D-2AGA	PR63D-2DGA	PR63D-2CGA	

Note : above models are coded for use with double solenoid plug-in valves.

REGULATORS FOR "NON PLUG-IN" AND REMOTE AIR VALVES

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure * Regulator A end Regulated pressure to port B	Dual pressure * Regulator B end Regulated pressure to port A	Dual pressure * Dual regulator Two regulated pressures to ports A and B
No gauge	PR63D-3BAA	PR63D-3AAA	PR63D-3DAA	PR63D-3CAA	PR63D-3EAA
Glycerine filled gauge on regulator(s)	PR63D-3BBA	PR63D-3ABA	PR63D-3DBA	PR63D-3CBA	PR63D-3EDA
Glycerine filled gauge opposite to regulator	PR63D-3BCA	PR63D-3ACA	PR63D-3DCA	PR63D-3CCA	
Non-filled gauge on regulator(s)	PR63D-3BFA	PR63D-3AFA	PR63D-3DFA	PR63D-3CFA	PR63D-3EHA
Non-filled gauge opposite to regulator	PR63D-3BGA	PR63D-3AGA	PR63D-3DGA	PR63D-3CGA	

* To be used with dual pressure valves (available only on manifolds).

PLUG-IN OPTIONS

PR63D-XXXX

- - Replace by 1 for single solenoid plug-in.

PR125A



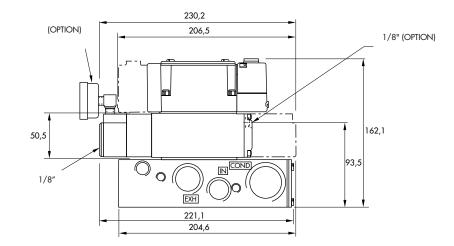


Fluid :	Compressed air, inert gases
Pressure range :	0 to 150 PSI
Regulating range :	0 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1 bar)$:	(2.4 C _v)

Spare parts :

- Pressure regulator (less sandwich block) : PR63D-4AAA.
 Gauges : Glycerine filled : N-62015-01
 Non filled : N-62016-01

DIMENSIONS





Sandwich pressure regulator with manual adjust knob.

OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure Regulator A end Regulated pressure to port B	Dual pressure Regulator B end Regulated pressure to port A	Dual pressure Dual regulator Two regulated pressures to ports A and B
No gauge	PR65C-22AA	PR65C-21AA	PR65C-24AA	PR65C-23AA	PR65C-25AA
Glycerine filled gauge on regulator(s)	PR65C-22BA	PR65C-21BA	PR65C-24BA	PR65C-23BA	PR65C-25DA
Glycerine filled gauge opposite to regulator	PR65C-22CA	PR65C-21CA	PR65C-24CA	PR65C-23CA	
Non-filled gauge on regulator(s)	PR65C-22FA	PR65C-21FA	PR65C-24FA	PR65C-23FA	PR65C-25HA
Non-filled gauge opposite to regulator	PR65C-22GA	PR65C-21GA	PR65C-24GA	PR65C-23GA	

Note : above models are coded for use with double solenoid plug-in valves.

REGULATORS FOR "NON PLUG-IN" AND REMOTE AIR VALVES

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure Regulator A end Regulated pressure to port B	Dual pressure Regulator B end Regulated pressure to port A	Dual pressure Dual regulator Two regulated pressures to ports A and B
No gauge	PR65C-32AA	PR65C-31AA	PR65C-34AA	PR65C-33AA	PR65C-35AA
Glycerine filled gauge on regulator(s)	PR65C-32BA	PR65C-31BA	PR65C-34BA	PR65C-33BA	PR65C-35DA
Glycerine filled gauge opposite to regulator	PR65C-32CA	PR65C-31CA	PR65C-34CA	PR65C-33CA	
Non-filled gauge on regulator(s)	PR65C-32FA	PR65C-31FA	PR65C-34FA	PR65C-33FA	PR65C-35HA
Non-filled gauge opposite to regulator	PR65C-32GA	PR65C-31GA	PR65C-34GA	PR65C-33GA	

Note : regulating range for above models is 0-150 PSI. For other ranges see technical data page.

- Replace by 1 for single solenoid plug-in with knob adjustment.

PLUG-IN OPTIONS

PR65C-XXXX

ADJUSTMENT OPTIONS

PR65C-xxxx

- Replace by A for slotted stem adjustment for single solenoid plug-in.

- Replace by B for slotted stem adjustment for double solenoid plug-in.
- Replace by C for slotted stem adjustment for non plug-in valves.
- Replace by E for slotted stem with locknut for single solenoid plug-in.

- Replace by F for slotted stem with locknut for double solenoid plug-in.

Replace by G for slotted stem with locknut for non plug-in valves.

Consult "Precautions" page 364 before use, installation or service of MAC Valves

313

PRA3C

PRA2D

PRA 1 A

PR125A





Fluid :	Compressed air, inert gases
Pressure range :	0 to 150 PSI
Regulating range :	0 to 150 PSI (other ranges see below)
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar$) :	(4.0 C _v)

Spare parts :

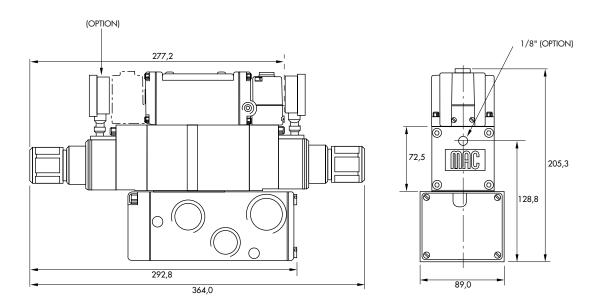
Pressure regulator (less sandwich block) : PR65C-41AA (KNOB), PR65C-D1AA (SLOTTED STEM), PR65C-H1AA (SLOTTED STEM WITH LOCKNUT).
 Gauges :

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

Regulating range options : PR65C-XXXA

Replace by B - 0 to 100 PSI
 Replace by C - 0 to 45 PSI

DIMENSIONS





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.



PR82A PR63D PR65C

PRA 1 A

PRA2D

PRA3C

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure Regulator A end Regulated pressure to port B	Dual pressure Regulator B end Regulated pressure to port A	Dual pressure Dual regulator Two regulated pressures to ports A and B
No gauge	PR65C-2BAA	PR65C-2AAA	PR65C-2DAA	PR65C-2CAA	PR65C-2EAA
Glycerine filled gauge on regulator(s)	PR65C-2BBA	PR65C-2ABA	PR65C-2DBA	PR65C-2CBA	PR65C-2EDA
Glycerine filled gauge opposite to regulator	PR65C-2BCA	PR65C-2ACA	PR65C-2DCA	PR65C-2CCA	
Non-filled gauge on regulator(s)	PR65C-2BFA	PR65C-2AFA	PR65C-2DFA	PR65C-2CFA	PR65C-2EHA
Non-filled gauge opposite to regulator	PR65C-2BGA	PR65C-2AGA	PR65C-2DGA	PR65C-2CGA	

Note : above models are coded for use with double solenoid plug-in valves.

REGULATORS FOR "NON PLUG-IN" AND REMOTE AIR VALVES

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure Regulator A end Regulated pressure to port B	Dual pressure Regulator B end Regulated pressure to port A	Dual pressure Dual regulator Two regulated pressures to ports A and B
No gauge	PR65C-3BAA	PR65C-3AAA	PR65C-3DAA	PR65C-3CAA	PR65C-3EAA
Glycerine filled gauge on regulator(s)	PR65C-3BBA	PR65C-3ABA	PR65C-3DBA	PR65C-3CBA	PR65C-3EDA
Glycerine filled gauge opposite to regulator	PR65C-3BCA	PR65C-3ACA	PR65C-3DCA	PR65C-3CCA	
Non-filled gauge on regulator(s)	PR65C-3BFA	PR65C-3AFA	PR65C-3DFA	PR65C-3CFA	PR65C-3EHA
Non-filled gauge opposite to regulator	PR65C-3BGA	PR65C-3AGA	PR65C-3DGA	PR65C-3CGA	

PLUG-IN OPTIONS

PR65C-xxxx

- - Replace by 1 for single solenoid plug-in.

PR125A





Fluid :	Compressed air, inert gases
Pressure range :	0 to 150 PSI
Regulating range :	0 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow (at 6 bar, $\Delta P=1bar)$:	(4.0 C _v)

Spare parts :

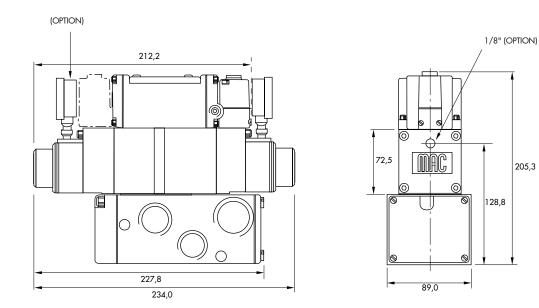
- Pressure regulator (less sandwich block) : PR65C-4AAA.
 Gauges :

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

DIMENSIONS

Dimensions shown are metric (mm)

205,3





PR82A

PR63D

PR65C

PRA1A

PRA2D

PRA₃C

Sandwich pressure regulator with manual adjust knob.

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OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

INTERNAL PILOT

Gauges	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 parallel to regulator(s)	PRA1A-GADA	PRA1A-GCDA	PRA1A-GBDA	PRA1A-GDDA	PRA1A-GEEA
Gauge perpendicular to regulator(s)	PRA1A-GABA	PRA1A-GCBA	PRA1A-GBBA	PRA1A-GDBA	PRA1A-GECA

EXTERNAL PILOT AND REMOTE AIR

Gauges	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 parallel to regulator(s)	PRA1A-HADA	PRA1A-HCDA	PRA1A-HBDA	PRA1A-HDDA	PRA1A-HEEA
Gauge perpendicular to regulator(s)	PRA1A-HABA	PRA1A-HCBA	PRA1A-HBBA	PRA1A-HDBA	PRA1A-HECA

* - To be used with dual pressure valves.

Valve code is : MV-A1C-AX5X-PM-XXYZZ (sgl. pressure ext. pilot)

Valve code is : MV-A1C-AX4X-PM-XXYZZ (dual pressure ext. pilot)

Note : regulating range for above models is 0-120 PSI. For other ranges see technical data page.

ADJUSTMENT OPTIONS

PRA1A-<u>xxxx</u>

- Replace by A for slotted stem adjustment (internal pilot)

- Replace by B for slotted stem adjustment (external/remote air)

- Replace by K for slotted stem with locknut (internal pilot)

- Replace by 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.

				1
- 14		-1	10	10
10			1	IP.





Fluid :	Compressed air, inert gases
Pressure range :	0 to 150 PSI
Regulating range :	0 to 120 PSI (other ranges see below)
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow :	(1.0 C _v)

Spare parts :

- Pressure regulator (less sandwich block) : PRA1A-JOAA (KNOB), PRA1A-COAA (SLOTTED STEM), PRA1A-MOAA (SLOTTED STEM WITH LOCKNUT).
 Gauges : N-82016-01 (0-120 PSI perpendicular)
- Pressure regulator (less sandwich block) : PKA IA-J0.
 Gauges : N-82016-01 (0-120 PSI perpendicular) N-82016-02 (0-120 PSI parallel) N-82016-03 (0-80 PSI perpendicular) N-82016-04 (0-80 PSI parallel) N-82016-05 (0-30 PSI perpendicular) N-82016-06 (0-30 PSI parallel)

Regulating range options : PRA1A-XXXA

 A
 Replace by B
 - 0 to 80 PSI

 Replace by C
 - 0 to 30 PSI on "14" end

 Replace by D
 - 0 to 120 PSI on "12" end

 Replace by E
 - 0 to 120 PSI on "14" end

 Replace by F
 - 0 to 120 PSI on "14" end

 Replace by F
 - 0 to 120 PSI on "14" end

 Replace by F
 - 0 to 120 PSI on "14" end

 Replace by F
 - 0 to 120 PSI on "14" end

 Replace by G
 - 0 to 120 PSI on "14" end

 Replace by H
 - 0 to 80 PSI on "14" end

 Replace by H
 - 0 to 80 PSI on "14" end

 Replace by J
 - 0 to 80 PSI on "12" end

 Replace by J
 - 0 to 80 PSI on "14" end

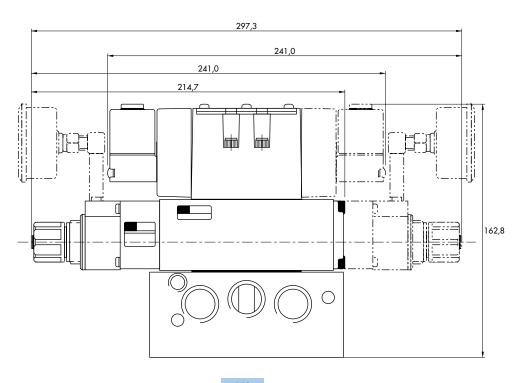
 Replace by J
 - 0 to 80 PSI on "12" end

 - 0 to 30 PSI on "12" end
 - 0 to 30 PSI on "12" end

 - 0 to 30 PSI on "12" end
 - 0 to 30 PSI on "12" end

 - 0 to 30 PSI on "12" end
 - 0 to 30 PSI on "12" end

DIMENSIONS





Sandwich pressure regulator with air pilot adjust.

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OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

INTERNAL PILOT

Gauges	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA1A-DAAA	PRA1A-DCAA	PRA1A-DBAA	PRA1A-DDAA	PRA1A-DEAA
Gauge parailei to regulator(s)	PRA1A-DADA	PRA1A-DCDA	PRA1A-DBDA	PRA1A-DDDA	PRA1A-DEEA
Gauge perpendicular to regulator(s)	PRA1A-DABA	PRA1A-DCBA	PRA1A-DBBA	PRA1A-DDBA	PRA1A-DECA

EXTERNAL PILOT AND REMOTE AIR

Gauges	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure Regulator 14 end Regulated pressure to port 4	Dual pressure Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA1A-EAAA	PRA1A-ECAA	PRA1A-EBAA	PRA1A-EDAA	PRA1A-EEAA
Gauge parallel to regulator(s)	PRA1A-EADA	PRA1A-ECDA	PRA1A-EBDA	PRA1A-EDDA	PRA1A-EEEA
Gauge perpendicular to regulator(s)	PRA1A-EABA	PRA1A-ECBA	PRA1A-EBBA	PRA1A-EDBA	PRA1A-EECA

* - To be used with dual pressure valves.

Valve code is : MV-A1C-AX5X-PM-XXYZZ (sgl. pressure ext. pilot)

Valve code is : MV-A1C-AX4X-PM-XXYZZ (dual pressure ext. 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 #35336.

PR125A

PRA1A

PRA2D

PRA3C



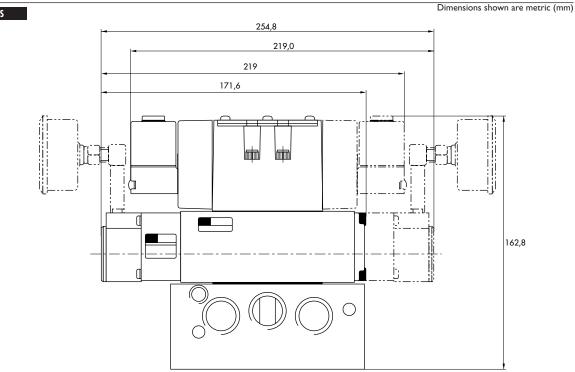


Fluid :	Compressed air, inert gases
Pressure range :	0 to 150 PSI
Regulating range :	0 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow :	(1.0 C _v)

Spare parts :

Pressure regulator (less sandwich block) : PRA1A-FOAA.
 Gauges : N-82016-01 (0-120 PSI perpendicular)
 N-82016-02 (0-120 PSI parallel)

DIMENSIONS





Sandwich pressure regulator with manual adjust knob.

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OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

INTERNAL PILOT

Gauges	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

Gauges	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA2D-2AAA	PRA2D-2EAA	PRA2D-2BAA	PRA2D-2FAA	PRA2D-2JAA
Non-filled gauge on regulator(s)	PRA2D-2ADA	PRA2D-2EDA	PRA2D-2BDA	PRA2D-2FDA	PRA2D-2JEA
Non-filled gauge opposite to regulator	PRA2D-2CDA	PRA2D-2GDA	PRA2D-2DDA	PRA2D-2HDA	
Glycerine filled gauge on regulator(s)	PRA2D-2ABA	PRA2D-2EBA	PRA2D-2BBA	PRA2D-2FBA	PRA2D-2JCA
Glycerine filled gauge opposite to regulator	PRA2D-2CBA	PRA2D-2GBA	PRA2D-2DBA	PRA2D-2HBA	

* - To be used with dual pressure valves.

Valve code is : MV-A2B-AX5X-PM-XXYZZ (sgl. pressure ext. pilot) Valve code is : MV-A2B-AX4X-PM-XXYZZ (dual pressure ext. pilot) Note : regulating range for above models is 0-150 PSI. For other ranges see technical data page.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block. Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #19177.

ADJUSTMENT OPTIONS

PRA2D-XXXX

- Replace by A for slotted stem adjustment (internal pilot)
 - Replace by B for slotted stem adjustment (external pilot)
 - Replace by D for slotted stem with locknut (internal pilot)

- Replace by E for slotted stem with locknut (external pilot)

PRA 1 A

PRA2D

PRA3C

PR125A





TECHNICAL DATA Fluid : Compressed air, inert gases Pressure range : 0 to 150 PSI 0 to 150 PSI (other ranges see below) Lubrication : Not required, if used select a medium aniline point lubricant (between 180°F to 210°F) Filtration : 40 µ Temperature range : 0°F to 120°F (-18°C to 50°C) Flow : [2.3 C_v)

Spare parts :

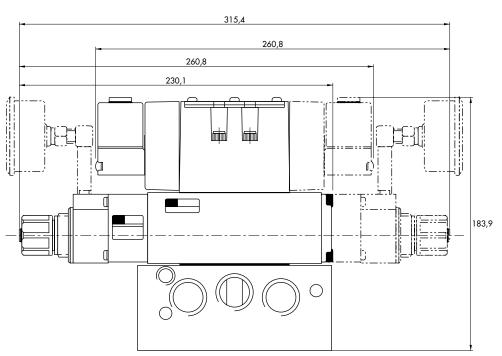
Pressure regulator (less sandwich block) : PRA2D-30AA (KNOB), PRA2D-C0AA (SLOTTED STEM), PRA2D-F0AA (SLOTTED STEM WITH LOCKNUT).
 Gauges :

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

Regulating range options : PRA2D-XXXA

Replace by B - 0 to 100 PSI
 Replace by C - 0 to 45 PSI

DIMENSIONS





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Sandwich pressure regulator with air pilot adjust.

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OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

INTERNAL PILOT

Gauges	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

Gauges	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA2D-5AAA	PRA2D-5EAA	PRA2D-5BAA	PRA2D-5FAA	PRA2D-5JAA
Non-filled gauge on regulator(s)	PRA2D-5ADA	PRA2D-5EDA	PRA2D-5BDA	PRA2D-5FDA	PRA2D-5JEA
Non-filled gauge opposite to regulator	PRA2D-5CDA	PRA2D-5GDA	PRA2D-5DDA	PRA2D-5HDA	
Glycerine filled gauge on regulator(s)	PRA2D-5ABA	PRA2D-5EBA	PRA2D-5BBA	PRA2D-5FBA	PRA2D-5JCA
Glycerine filled gauge opposite to regulator	PRA2D-5CBA	PRA2D-5GBA	PRA2D-5DBA	PRA2D-5HBA	

* - To be used with dual pressure valves.

Valve code is : MV-A2B-AX5X-PM-XXYZZ (sgl. pressure ext. pilot) Valve code is : MV-A2B-AX4X-PM-XXYZZ (dual pressure ext. 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. PRA 1 A

PRA2D

PRA₃C

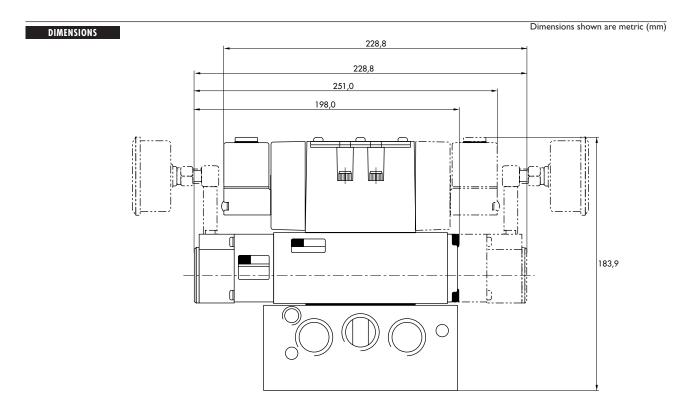




TECHNICAL DATA Fluid : Compressed air, inert gases Pressure range : 0 to 150 PSI Regulating range : 0 to 150 PSI Lubrication : Not required, if used select a medium aniline point lubricant (between 180°F to 210°F) 40 µ Filtration : 0°F to 120°F (-18°C to 50°C) Temperature range : Flow : (2.3 C_v)

Spare parts :

- Pressure regulator (less sandwich block) : PRA2D-60AA.
 Gauges : Glycerine filled : N-62015-01
 Non filled : N-62016-01





Sandwich pressure regulator with manual adjust knob.

OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

INTERNAL PILOT

Gauges	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

Gauges	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA3C-2AAA	PRA3C-2EAA	PRA3C-2BAA	PRA3C-2FAA	PRA3C-2JAA
Non-filled gauge on regulator(s)	PRA3C-2ADA	PRA3C-2EDA	PRA3C-2BDA	PRA3C-2FDA	PRA3C-2JEA
Non-filled gauge opposite to regulator	PRA3C-2CDA	PRA3C-2GDA	PRA3C-2DDA	PRA3C-2HDA	
Glycerine filled gauge on regulator(s)	PRA3C-2ABA	PRA3C-2EBA	PRA3C-2BBA	PRA3C-2FBA	PRA3C-2JCA
Glycerine filled gauge opposite to regulator	PRA3C-2CBA	PRA3C-2GBA	PRA3C-2DBA	PRA3C-2HBA	

* - To be used with dual pressure valves.

Valve code is : MV-A3B-AX5X-PM-XXYZZ (sgl. pressure ext. pilot) Valve code is : MV-A3B-AX4X-PM-XXYZZ (dual pressure ext. pilot) Note : regulating range for above models is 0-150 PSI. 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

- - Replace by A for slotted stem adjustment (internal pilot)

- Replace by B for slotted stem adjustment (external pilot)

- Replace by D for slotted stem with locknut (internal pilot)

- Replace by E for slotted stem with locknut (external pilot)

PR125A





Fluid :	Compressed air, inert gases				
Pressure range :	0 to 150 PSI				
Regulating range :	0 to 150 PSI (other ranges see below)				
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)				
Filtration :	40 µ				
Temperature range :	0°F to 120°F (-18°C to 50°C)				
Flow :	(5.4 C _v)				

Spare parts :

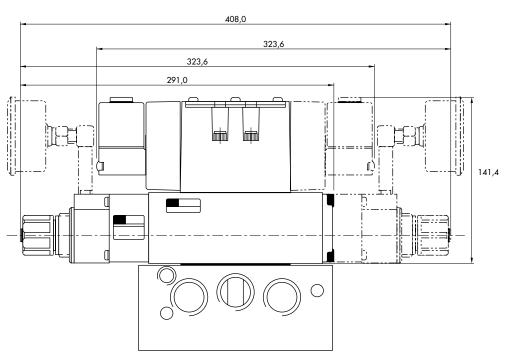
Pressure regulator (less sandwich block) : PRA3C-30AA (KNOB), PRA3C-C0AA (SLOTTED STEM), PRA3C-F0AA (SLOTTED STEM WITH LOCKNUT).
 Gauges :

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

Regulating pressure options :

PRA3C-XXXA	
Replace by B	- 0 to 100 PSI
Replace by C	- 0 to 45 PSI

DIMENSIONS





Sandwich pressure regulator with air pilot adjust.

OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

INTERNAL PILOT

Gauges	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

Gauges	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure * Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA3C-5AAA	PRA3C-5EAA	PRA3C-5BAA	PRA3C-5FAA	PRA3C-5JAA
Non-filled gauge on regulator(s)	PRA3C-5ADA	PRA3C-5EDA	PRA3C-5BDA	PRA3C-5FDA	PRA3C-5JEA
Non-filled gauge opposite to regulator	PRA3C-5CDA	PRA3C-5GDA	PRA3C-5DDA	PRA3C-5HDA	
Glycerine filled gauge on regulator(s)	PRA3C-5ABA	PRA3C-5EBA	PRA3C-5BBA	PRA3C-5FBA	PRA3C-5JCA
Glycerine filled gauge opposite to regulator	PRA3C-5CBA	PRA3C-5GBA	PRA3C-5DBA	PRA3C-5HBA	

* - To be used with dual pressure valves.

Valve code is : MV-A3B-AX5X-PM-XXYZZ (sgl. pressure ext. pilot) Valve code is : MV-A3B-AX4X-PM-XXYZZ (dual pressure ext. 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 #35418. PR125A

PRA 1 A

PRA2D

PRA3C



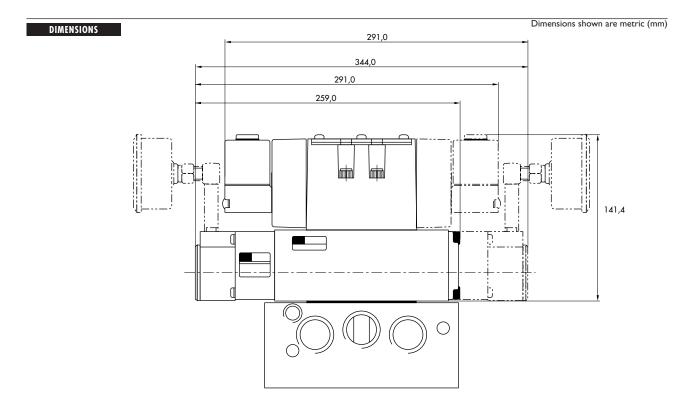


Fluid :	Compressed air, inert gases
Pressure range :	0 to 150 PSI
Regulating range :	0 to 150 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow :	(5.4 C _v)

Spare parts :

- Pressure regulator (less sandwich block) : PRA3C-60AA.
 Gauges :

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





Sandwich pressure regulator with manual adjust knob.

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OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

INTERNAL PILOT REGULATORS

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure * Regulator A end Regulated pressure to port A	Dual pressure * Regulator B end Regulated pressure to port B	Dual pressure Dual regulator Two regulated pressures to ports A and B
No gauge	PR125A-GCAA	PR125A-GAAA	PR125A-GDAA	PR125A-GBAA	PR125A-GEAA
Gauge parallel to regulator(s)	PR125A-GCDA	PR125A-GADA	PR125A-GDDA	PR125A-GBDA	PR125A-GEEA
Gauge perpendicular to regulator(s)	PR125A-GCBA	PR125A-GABA	PR125A-GDBA	PR125A-GBBA	PR125A-GECA

EXTERNAL PILOT REGULATORS

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure Regulator A end Regulated pressure to port A	Dual pressure Regulator B end Regulated pressure to port B	Dual pressure Dual regulator Two regulated pressures to ports A and B
No gauge	PR125A-HCAA	PR125A-HAAA	PR125A-HDAA	PR125A-HBAA	PR125A-HEAA
Gauge parallel o regulator(s)	PR125A-HCDA	PR125A-HADA	PR125A-HDDA	PR125A-HBDA	PR125A-HEEA
Gauge perpendicular to regulator(s)	PR125A-HCBA	PR125A-HABA	PR125A-HDBA	PR125A-HBBA	PR125A-HECA

* - To be used with dual pressure valves.

Valve code is : MAC125A-VXX4-PM-XXYZZ (valves must be external pilot models for either single or dual pressure valves)

Note : regulating range for above models is 0-120 PSI. For other ranges see technical data page. Photo shown with slotted stem.

ADJUSTMENT OPTIONS

PR125A-xxxx

- - Replace by A for internal pilot with slotted stem

- Replace by B for external pilot with slotted stem

- Replace by K for internal pilot with locking slotted stem
 Replace by L for external pilot with locking slotted stem

PRA 1 A

PRA2D





Fluid :	Compressed air, inert gases		
Pressure range :	0 to 150 PSI		
Regulating range :	0 to 120 PSI (other ranges see below)		
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)		
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to 50°C)		
Flow :	(1.8 C _v)		

Spare parts :

- Pressure regulator (less sandwich block) : PR125A-JOAA (KNOB), PR125A-COAA (SLOTTED STEM), PR125A-MOAA (LOCKING SLOTTED STEM).
 Gaures : N.82016-01 (0.120 PS) percendicular)
- Pressure regulator (less sandwich block) : PK12DAJ
 Gauges : N-82016-01 (0-120 PSI perpendicular) N-82016-02 (0-120 PSI perpendicular) N-82016-03 (0-80 PSI perpendicular) N-82016-05 (0-30 PSI perpendicular) N-82016-05 (0-30 PSI perpendicular) N-82016-06 (0-30 PSI parallel)

Regulating range options : PR125A-XXXA

 A
 Replace by B
 - 0 to 80 PSI

 Replace by C
 - 0 to 30 PSI

 Replace by D
 - 0 to 120 PSI on "A" end

 - 0 to 80 PSI on "B" end
 - 0 to 120 PSI on "A" end

 Replace by E
 - 0 to 120 PSI on "A" end

 - 0 to 120 PSI on "A" end
 - 0 to 120 PSI on "A" end

 Replace by F
 - 0 to 120 PSI on "A" end

 - 0 to 30 PSI on "A" end
 - 0 to 30 PSI on "A" end

 Replace by G
 - 0 to 30 PSI on "A" end

 - 0 to 30 PSI on "A" end
 - 0 to 30 PSI on "B" end

 - 0 to 30 PSI on "B" end
 - 0 to 30 PSI on "B" end

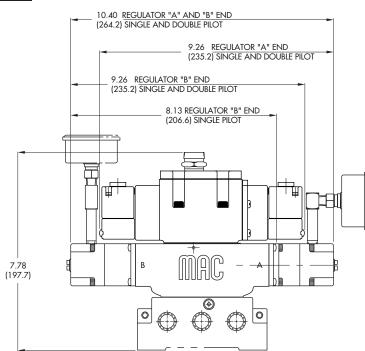
 - 0 to 30 PSI on "B" end
 - 0 to 30 PSI on "B" end

 - 0 to 30 PSI on "B" end
 - 0 to 30 PSI on "B" end

 - 0 to 30 PSI on "B" end
 - 0 to 30 PSI on "B" end

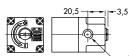
 - 0 to 30 PSI on "B" end
 - 0 to 30 PSI on "A" end

DIMENSIONS



SLOTTED STEM

Dimensions shown are metric (mm)



1/8" (OPTION)

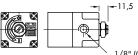
24,5

LOCKING KNOB



1/8" (OPTION)

LOCKING SLOTTED STEM



1/8" (OPTION)



ressure regulators	ressure regulato	ſ S
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Series

Sandwich pressure regulator with air pilot adjust.

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OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

INTERNAL PILOT REGULATORS

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure Regulator A end Regulated pressure to port A	Dual pressure * Regulator B end Regulated pressure to port B	Dual pressure * Dual regulator Two regulated pressures to ports A and B
No gauge	PR125A-DCAA	PR125A-DAAA	PR125A-DDAA	PR125A-DBAA	PR125A-DEAA
Gauge parallel to regulator(s)	PR125A-DCDA	PR125A-DADA	PR125A-DDDA	PR125A-DBDA	PR125A-DEEA
Gauge perpendicular to regulator(s)	PR125A-DCBA	PR125A-DABA	PR125A-DDBA	PR125A-DBBA	PR125A-DECA

EXTERNAL PILOT REGULATORS

EXTERNAL PILOT REGULATORS						PRA2D
Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure Regulator A end Regulated pressure to port A	Dual pressure * Regulator B end Regulated pressure to port B	Dual pressure * Dual regulator Two regulated pressures to ports A and B	PRA3C
No gauge	PR125A-ECAA	PR125A-EAAA	PR125A-EDAA	PR125A-EBAA	PR125A-EEAA	
Gauge parallel to regulator(s)	PR125A-ECDA	PR125A-EADA	PR125A-EDDA	PR125A-EBDA	PR125A-EEEA	
Gauge perpendicular to regulator(s)	PR125A-ECBA	PR125A-EABA	PR125A-EDBA	PR125A-EBBA	PR125A-EECA	

* - To be used with dual pressure valves.

Valve code is : MAC125A-VXX4-PM-XXYZZ (valves must be external pilot models for either single or dual pressure valves)

PR125A

PRA 1 A

PR250B





TECHNICAL DATA

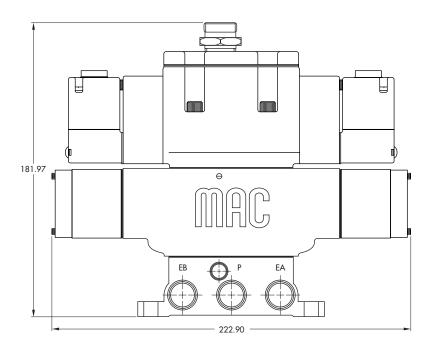
Fluid :	Compressed air, inert gases
Pressure range :	0 to 150 PSI
Regulating range :	0 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow :	(1.8 C _v)

Spare parts :

- Pressure regulator (less sandwich block) : PR125A-FOAA
 Gauges : N-82016-01 (0-120 PSI perpendicular) N-82016-02 (0-120 PSI parallel)

DIMENSIONS

Dimensions shown are metric (mm)





Series

Sandwich pressure regulator with manual adjust knob.

р

OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

INTERNAL PILOT REGULATORS

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure * Regulator A end Regulated pressure to port A	Dual pressure Regulator B end Regulated pressure to port B	Dual pressure * Dual regulator Regulated pressures to ports A and B
No gauge	PR250B-ACAA	PR250B-AAAA	PR250B-ADAA	PR250B-ABAA	PR250B-AEAA
Dry Gauge	PR250B-ACCA	PR250B-AACA	PR250B-ADCA	PR250B-ABCA	PR250B-AEEA
Glycerine Gauge	PR250B-ACBA	PR250B-AABA	PR250B-ADBA	PR250B-ABBA	PR250B-AEDA

EXTERNAL PILOT REGULATORS

EXTERNAL PILOT REGULA	EXTERNAL PILOT REGULATORS						
Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure Regulator A end Regulated pressure to port A	Dual pressure Regulator B end Regulated pressure to port B	Dual pressure * Dual regulator Regulated pressures to ports A and B	PRA3C	
No gauge	PR250B-BCAA	PR250B-BAAA	PR250B-BDAA	PR250B-BBAA	PR250B-BEAA		
Dry Gauge	PR250B-BCCA	PR250B-BACA	PR250B-BDCA	PR250B-BBCA	PR250B-BEEA		
Glycerine Gauge	PR250B-BCBA	PR250B-BABA	PR250B-BDBA	PR250B-BBBA	PR250B-BEDA		

* - To be used with dual pressure valves.

Valve code is : MAC250A-VXX4-PM-XXYZZ (valves must be external pilot models for either single or dual pressure valves)

Note : regulating pressure range for above models is 7-120 PSI. For other ranges see technical data page.





TECHNICAL DATA Fluid : Compressed air, inert gases Pressure range : 0 to 150 PSI 7 to 120 PSI (other ranges see below) Regulating range : Not required, if used select a medium aniline point lubricant (between 180°F to 210°F) Lubrication : Filtration : 40 µ Temperature range : 0°F to 120°F (-18°C to 50°C) Flow : (4.7 C_v)

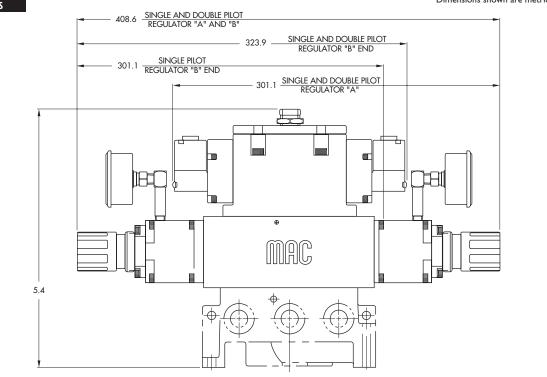
Spare parts :

• Pressure regulator (less sandwich block) : PR250B-COAA (KNOB) • Gauges : • N-82016-01 (perpendicular) • N-82016-02 (parallel)

- Replace by B - 7 to 60 PSI

Regulating range options : PR250B-XXXA

DIMENSIONS



Dimensions shown are metric (mm)



⁾ I E S S U I E I E	gulators
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Series

Sandwich pressure regulator with air pilot adjust.

Р

OPERATIONAL BENEFITS

- 1. Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

INTERNAL PILOT REGULATORS

Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure Regulator A end Regulated pressure to port A	Dual pressure Regulator B end Regulated pressure to port B	Dual pressure Dual regulator Regulated pressures to ports A and B
No gauge	PR250B-DCAA	PR250B-DAAA	PR250B-DDAA	PR250B-DBAA	PR250B-DEAA
Dry Gauge	PR250B-DCCA	PR250B-DACA	PR250B-DDCA	PR250B-DBCA	PR250B-DEEA
Glycerine Gauge	PR250B-DCBA	PR250B-DABA	PR250B-DDBA	PR250B-DBBA	PR250B-DEDA

EXTERNAL PILOT REGULATORS

EXTERNAL PILOT REGULATORS						
Gauges	Single pressure Regulator A end Same regulated pressure to ports A and B	Single pressure Regulator B end Same regulated pressure to ports A and B	Dual pressure Regulator A end Regulated pressure to port A	Dual pressure Regulator B end Regulated pressure to port B	Dual pressure Dual regulator Regulated pressures to ports A and B	PRA3C
No gauge	PR250B-ECAA	PR250B-EAAA	PR250B-EDAA	PR250B-EBAA	PR250B-EEAA	
Dry Gauge	PR250B-ECCA	PR250B-EACA	PR250B-EDCA	PR250B-EBCA	PR250B-EEEA	
Glycerine Gauge	PR250B-ECBA	PR250B-EABA	PR250B-EDBA	PR250B-EBBA	PR250B-EEDA	

* - To be used with dual pressure valves.

Valve code is : MAC250A-VXX4-PM-XXYZZ (valves must be external pilot models for both single or dual pressure valves)

PR125A

PR250B





TECHNICAL DATA

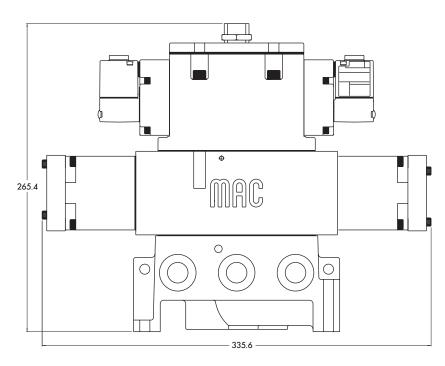
Fluid :	Compressed air, inert gases
Pressure range :	0 to 150 PSI
Regulating range :	7 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Flow :	(4.7 C _v)

Spare parts :

- Pressure regulator (less sandwich block) : PR250B-F0AA
 Gauges : N-82016-01 (0-120 PSI perpendicular) N-82016-02 (0-120 PSI parallel)

DIMENSIONS

Dimensions shown are metric (mm)





Section 7 Intrinsically Safe Valves

Bharman

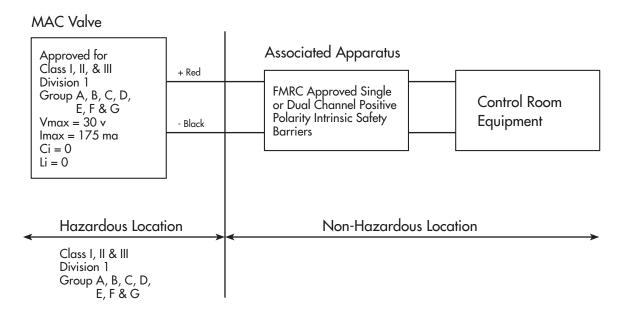
Specifications for Intrinsically Safe Valves	339
35 series	342
45 series	342
100 series	343
56 series	344
57 series	344
58 series	344
800 series	345
900 series	346
82 series	347
6300 series	348
6500 series	349
6600 series	350
ISO 1, 2 & 3	351
MAC 125 & MAC 250	352
*Dimensional information (35, 57, & 58 series)	353

*Dimensional information differs from "Standard Valve" dimensions.

Page

INTRINSICALLY SAFE CIRCUIT

In order to use an intrinsically safe valve in a hazardous location, the installation must be in accordance with the following installation diagram :



There are 3 basic parts to an intrinsically safe circuit :

1. FIELD DEVICE

This is defined as the device that will be used in the hazardous location. In this case, the field device will be the intrinsically safe valve.

2. ASSOCIATED APPARATUS

This will be an energy limiting device also known as a barrier.

3. FIELD WIRING

Wiring used to connect the two above devices.

When the MAC intrinsically safe valves were tested for approval, they were tested and approved for the following atmospheres.

Class I, II, III Division 1 Groups ; A, B, C, D, E, F, G

under the following parameters :

Vmax : 30 VDC Imax : 175 ma Ci : 0 Li : 0



What this means is that the intrinsically safe values were tested against each atmosphere with up to 30 VDC and 175 ma of current across the solenoid and found to still be safe. The other two parameters are values to indicate how much energy can be stored or created by the value :

- Ci : Internal capacitance of the solenoid. This indicates how much energy the solenoid is capable of storing.
- Li : Internal inductance of the solenoid. This indicates the solenoid's ability to create or increase energy beyond what is supplied.

When applying an intrinsically safe valve in a hazardous location, a proper barrier must first be selected. The barrier selection process must first take into account the parameters the valve was approved for and compared in the following way :

- Vmax must be greater than or equal to Voc of the barrier. Voc = Voltage open circuit or maximum allowed out of the barrier
- Imax must be greater than or equal to Isc of the barrier. Isc = Current short circuit or the maximum current allowed out of the barrier
- Ci plus field wiring must be less than Ca of the barrier. Ca = Allowed capacitance
- Li plus field wiring must be less than La of the barrier.
- La = Allowed inductance

When properly combined, the barrier will never allow more energy to the intrinsically safe valve than what it was tested and approved for.

The following page can be used as your guide to help ask the right questions when working with an intrinsically safe circuit. Also included is a partial list of intrinsically safe barriers that have been tested with the MAC intrinsically safe valves.



Approval : Factory Mutual Research 2X7A8.AX (3610)

Approved as intrinsically safe apparatus and associated apparatus for use in Class I, II, III - Division 1, Group : A, B, C, D, E, F & G.

Parameters : Vmax : 30 VDC

lmax : 175 ma Ci : 0 Li : 0 Operating voltage greater than 11.5 volts Coil resistance : Approximately 250 ohms Current draw : 50 ma Wattage : 0.6 watts

Circuit Check Lists :

- Is Vmax greater than or equal to Voc ?
- Is Imax greater than or equal to Isc ?
- Is Ci less than Ca ?
- Is Li less than La ?
- Is the barrier capable of handing 50 ma draw ?
- Is the internal resistance of the barrier 250 ohms or less ?

If all answers to the above questions are "yes" the barrier may be a good choice in combination with the MAC intrinsically safe valve.

To calculate voltage across the solenoid, plug values into the following equations :

ITOTAL = SUPPLY VOLTAGE Plug ITOTAL in below – I_{total} = = Plug ITOTAL in below 250 + BARRIER RESISTANCE

Voltage at Solenoid = $I_{TOTAL} \times 250$ ohms = ____

Manufacturer	Model #	Barrier Res.	Voltage w/o Light	Voltage w/Light	Groups	Туре
Turck	MK72-S01-EX		11.2 v	10.2 v*	A-G	T.I.B.
Crouse-Hinds	SB19140-M2410		13.2 v	12.6 v	C-G	Zener
IMO Industries (Gems Sensors)	114072	234 OHMS	12.0 v	11.4 v	C-G	Zener
Pepperl & Fuchs	KHZ-922/EX-1	270 OHMS	11.6 v	11.06 v	A-G	Zener
	KHZ-922/EX-2	270 OHMS	11.6 v	11.06 v	A-G	Zener
	KHZ-922/EX-3	270 OHMS	11.6 v	11.06 v	A-G	Zener
Stahl	9001/01-280-165-10		13.5 v	12.9 v	C-G	Zener
	9351/10-14-10	80 OHMS	13.7 v	13.4 v	A-G	T.I.B.
Ronan	X57-229P	200 OHMS	12.7 v	12.05 v	C-G	Zener
Measurement Technology	MTL728P+	250 OHMS	11.9 v	11.4 v	A-G	Zener
	MTL3022		15.0 v	14.5 v	C-G	T.I.B.

Above data is based on a 24 v DC supply voltage to the input of the barrier. A 12 v DC, 243 OHM, .6 watt intrinsically safe solenoid is used. The measurement with light is an LED with a current limiting resistor.

Groups indicate what atmosphere the barrier has been approved for. All MAC intrinsically safe valves have been approved for Class I, II and III, Division 1, Groups A, B, C, D, E, F and G indoor hazardous locations.

T.I.B. = Transformer Isolated Barrier

* = Not a recommended combination

)
Series 35-4	5

BODY SOLENOID HOW TO ORDER OPTIONS OPTIONS 35A - X X X - (DXXX - XXX) - FM **BODY TYPE** PORT SIZE VALVE FUNCTION/MANIFOLD TYPE Inline 0 Manifold Body Only 0 Manifold Body Only #10-32 UNF (Inline Only) Individual Inline 3 way N.C. Ónly (Ínline) B R Indiv. Inline w/2 Manifold Mount Ports D D M5 (Inline Only) Note : there is no manifold base for the 35 series. The manifold valve can only mount to a circuit bar, see note below Manifold Manifold Body (N.C. Only) E Manifold Body w/Gage Port G (N.C. Only) BODY SOLENOID OPTIONS OPTIONS 45A - X X X - (DXXX - XXX) - FM **BODY TYPE** PORT SIZE VALVE FUNCTION/MANIFOLD TYPE Inline 0 Manifold Body Only Inline 4 Port Body 1/8" NPT No Flow Controls Α Α 5 Port Body B В #10-32 UNF **Bases - Regulators** 4 Port Body "O" Ring Mount -All Bottom Ports D С 1/8" BSPPI 0 Valve Only - No Base D M5 (Metric) Individual Base Α 5 Port Body "O" Ring Mount -3 Bottom Ports Inlet and Cylinders E F #10-32 UNF Bottom Ports С Manifold Base Manifold w/Regulator w/Slotted Stem G M5 Bottom Ports E Н "O" Ring Mount Ports G Manifold w/Regulator w/Locking Slotted Stem 4 Port Body "O" Ring Mount-Bottom Cylinder 1/8" NPT Bottom Ports Manifold w/Regulator w/Locking Knob J J Ports Only К 1/8" BSPPL Bottom Ports **Base Mount** For Base Only - No Valve 0 Base Mount Body L Base Mount Body with Gage Port Μ **MANIFOLD MOUNT ACCESSORIES** M-45008-01 End Plate Kit Pressure Seal Between Manifold 16455 19753 Tie Rod N-45008 Isolator Kit - Inlet and Exhaust N-45009 Isolator Kit - Inlet only Isolator Kit - Exhaust only N-45010 N-45015 End Cover Plate - Plain End Cover Plate w/Flow Controls N-45016 N-45017 Flow Control Needle Assembly SOLENOID OPTIONS - X X X - FM VOLTAGE LEAD LENGTH **MANUAL OPERATOR** ELECTRICAL CONNECTION FR 12VDC (0.6 W) 18" Leads 0 Δ No operator BA Grommet 24" Leads 24VDC (0.6 W) Non-locking Recessed FS B CA Conduit 1/2" NPS† 1 С 36" Leads 2 Locking Recessed Metal Conduit 1/2" NPS† СМ D 48" Leads 3 Non-locking Extended CN Metal Conduit w/grd. 1/2" NPS† E 72" Leads 4 Locking Extended **External Plug-in**

*Use "J" for external plug-in connectors

342

6" Leads

NOTE : For valves mounted to a circuit bar reference MAC circuit bar Catalog for ordering info. For the 35 series circuit bar, use MOD FM01 after circuit bar part number.

J

TA Dual Tabs (.110) Plain
 TJ Dual Tabs (.110) Plain
 † Available on individual valves and circuit bars.

Mini Plug-in

FM JB

JM

KA

KJ

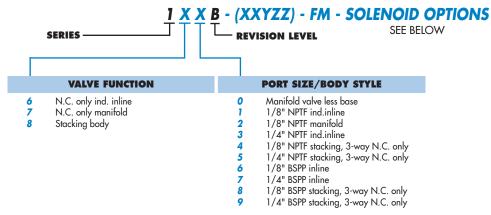
Plug-in (For ECD & ECE Bar)

Rectangular Plug-in† Rectangular Male only†

Mini Plug-in Male only



BODY OPTIONS



SOLENOID OPTIONS

	EXAMPLE :	XX 	Y ZZ - FM		
ХХ	DC VOLTAGE	Y	MANUAL OPERATOR	ZZ	ENCLOSURE
A5 A6	12 VDC (0.6 W) 24 VDC (0.6 W)	0 1 2 3 4	No operator Non-locking Recessed (std.) Locking Recessed Non-locking Extended Locking Extended	AA BA CA JB JM NA RA	JIC w/1/2" NPS Conduit Grommet Conduit 1/2" NPS Conduit 1/2" NPT (CSA threads) Rectangular Plug-in Rectangular Male only Conduit 1/2" NPS w/ground wire Conduit 3/8" NPS for Manifold models

(MA & MB common conduit covers require 1#M-01002-01 conduit end plate kit per stack)

MA

MB

100 SERIES-SUPPLEMENTAL TECHNICAL DATA

MOD. NO.	DESCRIPTION	MODEL AVAILABILITY
0004 0009	All bottom and side ports Bottom and side cylinder ports with side only inlet and exhaust ports	Manifold models only Manifold models only
0210	Additionnal bottom inlet	Manifold & stacking models
313P	For isolating the common inlet passage between manifold bases	Manifold models only
313E	For isolating the common exhaust passage between manifold bases	Manifold models only

TO ORDER Add the appropriate modification number from the table above after the valve number, **EXAMPLE :** 172B-A51BA-FM **MOD 0004**.

STACKING BODY ACCESSORIES : STACKING END PLATE KIT-

Com. Conduit 1" NPS (Manifold models)

Com. Conduit 1" NPS (Stacking models)

For each gang one kit is required.

TO ORDER- Specify number M-01001-01 (1/4" NPTF) or M-01001-01P (1/4" BSPP). INLET ISOLATOR PLATE N-01003 EXHAUST ISOLATOR PLATE N-01004

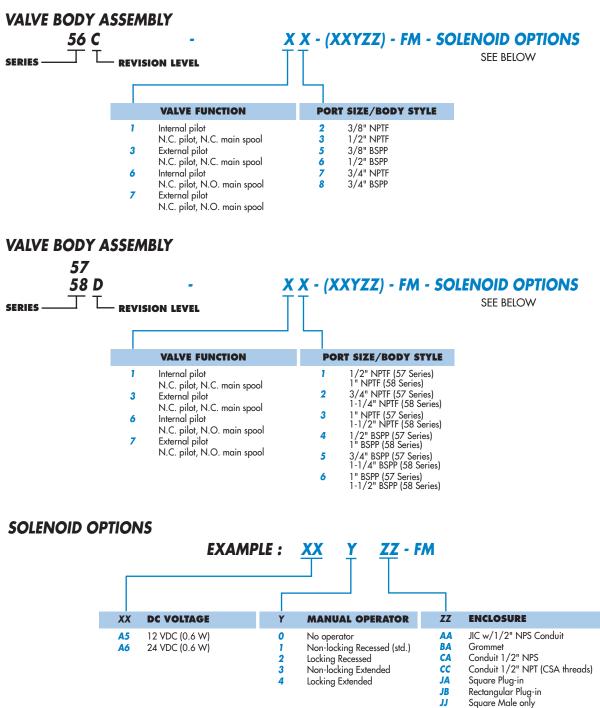
MANIFOLD ACCESSORIES : MANIFOLD END PLATE KIT-

For each gang one kit is required.

TO ORDER- Specify number A2-5004-01 (1/4" NPTF) or A2-5004-01P (1/4" BSPP).



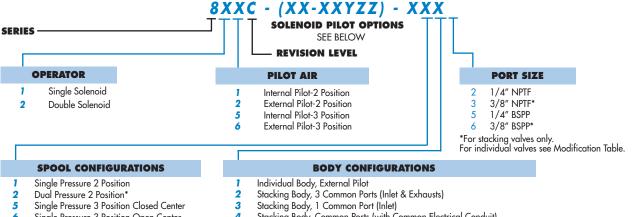
HOW TO ORDER



JM Rectangular Male only



BODY OPTIONS



- Dual Pressure 2 Position* 2
- Single Pressure 3 Position Closed Center 5
- 6 Single Pressure 3 Position Open Center 7
- Dual Pressure 3 Position Pressure Center 8
- Single Pressure 3 Position Pressure Center

*Not available on models with integral flow controls

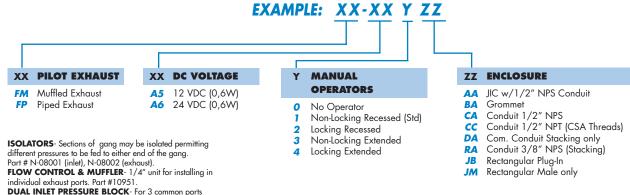
- 2
- 3 4 Stacking Body, Common Ports (with Common Electrical Conduit)
 - Individual Body, Internal Pilot

5

- Stacking Body, 3 Common Ports (with Common Electrical Conduit and Integral Exhaust Flow Controls) 6
- 9 Stacking Body, 3 Common Ports (with Integral Exhaust Flow Controls)

SOLENOID PILOT OPTIONS

or 1 common port stacking valves. Provides 2 additional inlet pressure ports to a stack. Part #M-08003. For Common Conduit Valves. Part #M-00014.



ACCESSORIES

MA			
INT. PILOT	EXT. PILOT		
PART NO.	PART NO.	MODELS USED WITH	
M-08001-01-01 M-08002-01-01 M-00005-01-01 M-00007-01-01	M-08001-02-01 M-08002-02-01 M-00005-02-01 M-00007-02-01	3 com. port or 1 com. port models, stacks Com. conduit models, stacks of 1 thru 16 3 com. port or 1 com. port models, stacks valves. Com. conduit models, stacks of 17 or mo	valves. s of 17 or more

*Add letter P at end of part number for BSPP threads; EXAMPLE: M-08001-01-01P

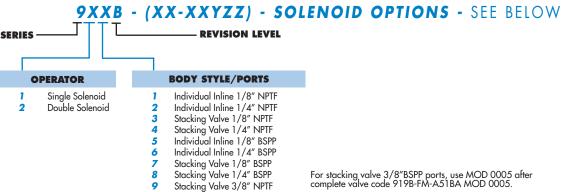
MODIFICATIONS

MOD. NO.	DESCRIPTION	MODEL AVAILABILITY
0358	3/8" Inlet & Cylinder Ports	Individual Valves

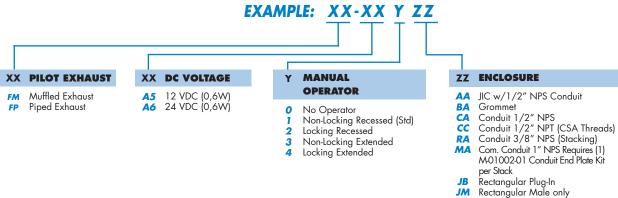




BODY OPTIONS



SOLENOID PILOT OPTIONS



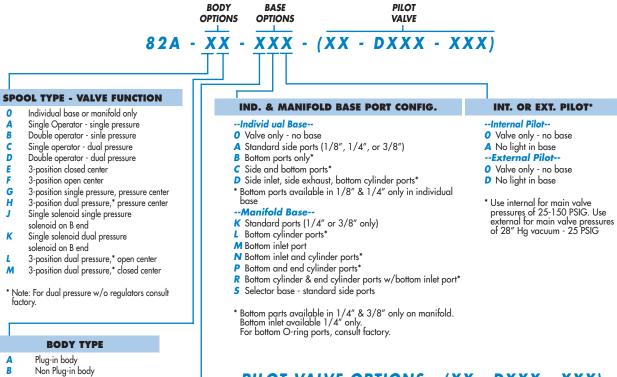
MODIFICATIONS

PART. NO.	DESCRIPTION
M-09001-01	Manifold End Plate Kit (3/8" NPTF)
M-09001-01P	Manifold End Plate Kit (3/8" BSPP)
N-09002	Isolator Plate Kit - Inlet & Exhaust
N-09003	Isolator Plate Kit - Exhaust only
N-09004A	Isolator Plate Kit - Inlet only

MANIFOLD ACCESSORIES:

MANIFOLD END PLATE KIT: For each stack one kit is required. **ISOLATORS:** Sections of a stack may be isolated permitting different pressures to be fed to either end of the stack. **TO ORDER:** Select the appropriate part number from the adjacent table.





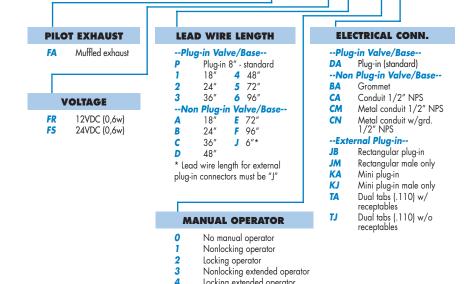
THREAD TYPE

PU	KI SIZE - IMKEA
0	Valve only - no base
Α	1/8" NPTF
В	1/4" NPTF
С	3/8" NPTF

D	1/8″	BSPPL	
_	- /		

1/4" BSPPL Ε 3/8" BSPPL

PILOT VALVE OPTIONS - (XX - DXXX - XXX)



- Locking extended operator

HOW TO ORDER 82 SERIES FLOW CONTROL MODULE*

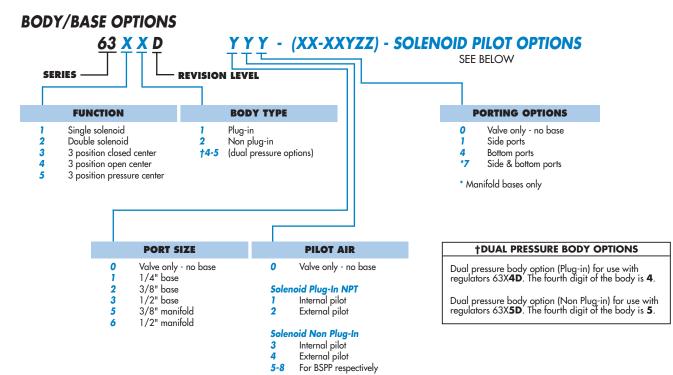
FC 82A-AA	Plug-in flow control assembly				
FC 82A-BA	Non plug-in flow control assembly				

NOTE: Reference regulator ordering section if a NOTE: Reference regulator ordering section in a sandwich regulator is required. NOTE: If a flow control assembly is used with the dual pressure regulator option, only the flow control on the "A" end is functional. (Controls both cylinder ports.)

*If flow control module is to be installed between valve and base or valve and manifold at the factory, add -9 after the flow control model number, i.e., FC82A-AA-9. The flow control model number should follow the valve model number on which it is to be installed.



HOW TO ORDER



PILOT VALVE OPTIONS

			XX	- XXYZZ	2		
ХХ	PILOT EXHAUST	ХХ	DC VOLTAGE	Y	MANUAL OPERATOR	ZZ	ELECTRICAL CONN.
FM FP	Muffled exhaust Piped exhaust	A5 A6	12 VDC (0.6 W) 24 VDC (0.6 W)	0 1 2 3 4	No operator Non-locking Recessed (std.) Locking Recessed Non-locking Extended Locking Extended	BA CA JB JM JA	Plug-in (standard) Plug-in Grommet Conduit 1/2" NPS Rectangular Plug-in Rectangular Male only Square Plug-in
MOD 021	CATIONS 0 Bottom inlet port in addition 0 42110 511 FM 45104 M		et port (manifolds only)			JJ	Square Male only

TO ORDER: 6311D-511-FM-A51DA MOD 0210

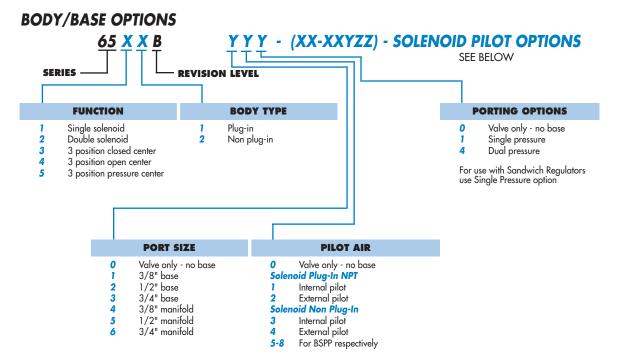
Manifold Accesories: Inlet Isolators #32839. Exhaust Isolator #28309.

NOTE: 1. The valve less base is always the same for internal or external pilot. These options are effected in the base or manifold.

2. When ordering an external pilot connection for manifold bases, a common external pilot is standard. One connection only is required for all the valves in the manifold whether single or double solenoid.



HOW TO ORDER



PILOT VALVE OPTIONS

	XX - XXYZZ								
				\					
XX	PILOT EXHAUST	XX	DC VOLTAGE	Ŷ	MANUAL OPERATOR	ZZ	ELECTRICAL CONN.		
FM FP	Muffled exhaust Piped exhaust	A5 A6	12 VDC (0.6 W) 24 VDC (0.6 W)	0 1 2 3 4	No operator Non-locking Recessed (std.) Locking Recessed Non-locking Extended Locking Extended	DA Non BA CA JB JM JA JJ	Plug-in (standard) Plug-in Grommet Conduit 1/2" NPS Rectangular Plug-in Rectangular Male only Square Plug-in Square Male only		

NOTE: 1. The valve less base is always the same for internal or external pilot. These options are effected in the base or manifold.

- 2. Bottom ports: Refer to modification table below.
- 3. Manifold Accessories: Inlet Isolator #28309. Exhaust Isolator #28310.

MODIFICATIONS

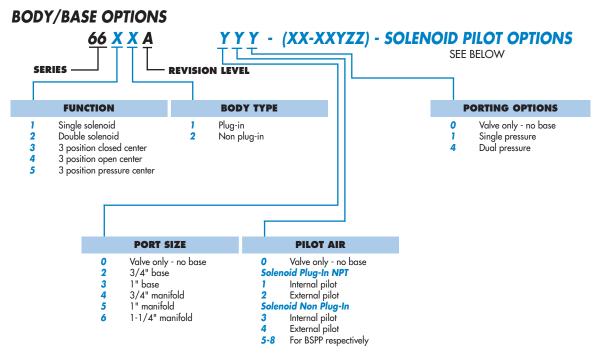
MOD. NO.	DESCRIPTION
0002 0004 0112	Bottom inlet, exhaust, & cylinder ports (no side ports) Full side porting and additional bottom inlet, exhausts, and cylinder ports Side inlet & exhaust with bottom cylinder ports (no end cylinder ports)
0210 0364	Porting as ordered in model number plus an additional bottom inlet Single Pressure - Side inlet & exhaust and additional bottom inlet with bottom cylinder ports (no end cylinder ports) Dual Pressure - Same as single pressure except with two bottom inlets

MODEL AVAILABILITY

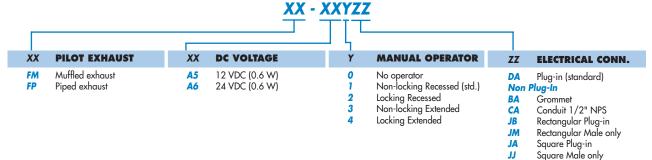
Available on individual base 3/8" & 1/2" only Available on individual base 3/8" only Available on all manifold models Available on all manifold models Available on all manifold models



HOW TO ORDER



PILOT VALVE OPTIONS



NOTE: 1. The valve less base is always the same for internal or external pilot. These options are effected in the base or manifold.

- 2. Bottom ports: Refer to modification table below.
- 3. When ordering an external pilot connection for manifold bases, a common external pilot port is standard. One connection only is required for all the valves in the manifold whether single or double solenoid.
- 4. Manifold Accessories: Inlet & Exhaust Isolator #28367.

MODIFICATIONS

MOD. NO.	DESCRIPTION	MODEL AVAILABILITY
0002 0004 0112 0210 0364	Bottom inlet, exhaust, & cylinder ports (no side ports) Full side porting and additional bottom inlet, exhausts, and cylinder ports Side inlet & exhaust with bottom cylinder ports (no end cylinder ports) 1-1/4" bottom inlet 1-1/4" bottom inlet & 3/4" or 1" bottom cyl.	Available on individual base 3/4" only Available on individual base 3/4" only 3/4" individual base & 3/4" & 1" manifold base Manifold base Manifold base

TO ORDER Add the appropriate modification number after the valve number, EXAMPLE : 6611A-211-FM451DA MOD 0002.



MV-A1C ISO 1MAC ISO valves are built to International Standards Organization (ISO) Std. 5599/1. They are available in 3 sizes;MV-A2B ISO 2ISO 1, 2 & 3. To select th ISO size required, insert the appropriate ISO number in the 5th position of the model code;EXAMPLE MV-A1C for ISO 1, MV-A2B for ISO 2, or MV-A3B for ISO 3.Bases and manifolds must be ordered separately from the table below.

HOW TO ORDER

SOLENOID PILOT OPERATED VALVES LESS BASE SINGLE PRESSURE VALVES

SGL. OPERATOR	DBL. OPERATOR	PILOT	DBL. OPER. 3-POS.	DBL. OPER. 3-POS.
AIR/SPRING RETURN	2-POSITION	SUPPLY	CLOSED CENTER	OPEN CENTER
MV-AXB-A111-FM-A51JA MV-AXB-A121-FM-A51JA MV-AXB-A151-FM-A51JA	MV-AXB-A211-FM-A51JA MV-AXB-A221-FM-A51JA MV-AXB-A251-FM-A51JA	Internal Pilot External Pilot External Pilot for use with Regulator	MV-AXB-A312-FM-A51JA MV-AXB-A322-FM-A51JA MV-AXB-A352-FM-A51JA	MV-AXB-A311-FM-A51JA MV-AXB-A321-FM-A51JA MV-AXB-A351-FM-A51JA

DUAL PRESSURE VALVES

SGL. OPERATOR	DBL. OPERATOR	PILOT	DBL. OPER. 3-POS.
AIR/SPRING RETURN	2-POSITION	SUPPLY	PRESSURE CENTER
MV-AXB-A131-FM-A51JA	MV-AXB-A231-FM-A51JA	Int. Pilot-From Port 3	MV-AXB-A331-FM-A51JA
MV-AXB-A135-FM-A51JA	MV-AXB-A232-FM-A51JA	Int. Pilot-From Port 5	MV-AXB-A332-FM-A51JA
MV-AXB-A141-FM-A51JA	MV-AXB-A241-FM-A51JA	External Pilot	MV-AXB-A341-FM-A51JA

SOLENOID PILOT VALVE OPTIONS

XX - XXYZZ XX PILOT EXHAUST XX DC VOLTAGE MANUAL OPERATOR ZZ EXTERNAL PLUG-IN ZZ ENCLOSURE Y JA Square without light (on solenoid) FM Muffled exhaust A5 12 VDC (0.6 W) 0 No operator AA JIC w/1/2" NPS Conduit A6 24 VDC (0.6 W) Non-locking Recessed (std.) FP Piped exhaust **BA** Grommet 1 Rectangular without light (on solenoid) CA Conduit 1/2" NPS Locking Recessed JB 2 CC Conduit 1/2" NPT (CSA Threads) 3 Non-locking Extended JE Square without light 4 Locking Extended (on body)

BASE TABLE

ISO TYPE	PORT SIZE	INDIVIDUA BSPP	L BASE NPTF	MANIFOLD BSPP	BASE NPTF
ISO 1	1/4"	MB-A1C-121	MB-A1C-221	MM-A1C-121	MM-A1C-221
	3/8"	MB-A1C-131	MB-A1C-231	MM-A1C-131	MM-A1C-231
ISO 2	3/8"	MB-A2B-121	MB-A2B-221	MM-A2B-121	MM-A2B-221
	1/2"	MB-A2B-131	MB-A2B-231	MM-A2B-131	MM-A2B-231
ISO 3	1/2"	MB-A3B-121	MB-A3B-221	MM-A3B-121	N/A
	3/4"	MB-A3B-131	MB-A3B-231	MM-A3B-131	N/A

For manifold bases a common external pilot port is available. One connection only is required for all valves in the manifold whether single or double solenoid. Bottom ports are also available; consult factory for ordering information for these options.

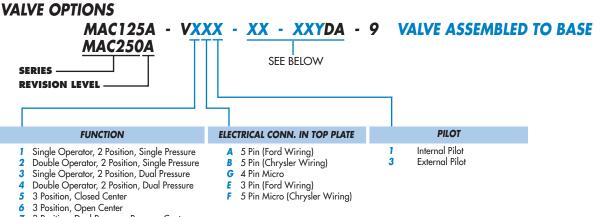
MANIFOLD FASTENING KIT - For each gang, one kit is required. To order specify par number N-63002-01.

Rectangular without light (on body)

JF

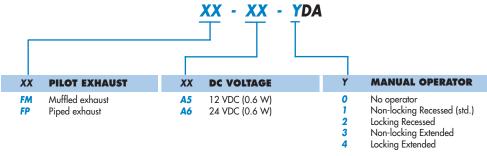


HOW TO ORDER



7 3 Position, Dual Pressure, Pressure Center

SOLENOID PILOT OPTIONS



ORDERING EXAMPLE: MAC125A-V1A1-FM-A51DA

BASE/MANIFOLD TABLE

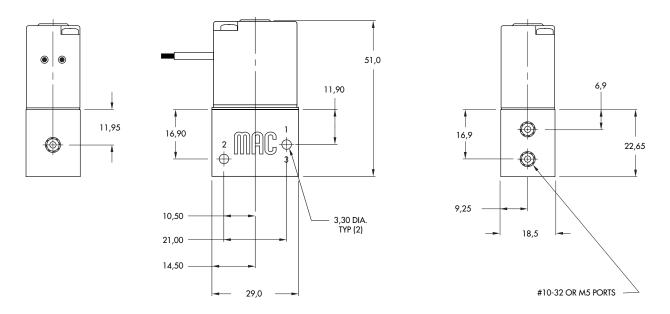
TYPE	PORT SIZE	INDIVIDUAL BASE	MANIFOLD BASE (btm. cyl. ports)	MANIFOLD BASE** (side & btm. cyl. ports)
MAC125	1/4"	MAC125A-B21A	MAC125A-M21B	MAC125A-M21C
	3/8"	MAC125A-B31A	MAC125A-M31B	MAC125A-M31C
MAC250	1/2"	MAC250A-B21A	MAC250A-M21B	MAC250A-M21C
	3/4"	MAC250A-B31A	MAC250A-M31B	MAC250A-M31C
	1"	MAC250A-B41A	N/A	N/A

Individual base available with side ports only. **Requires End Plate Kit M-12002-01 (125 Series), M-25002-01 (250 Series)

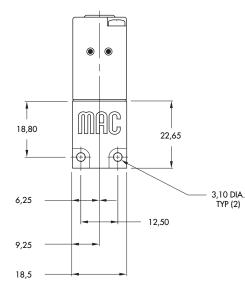
Bases & maifolds coded for internal pilot. For external pilot, last number of code is 2. ORDERING EXAMPLE: MAC125A-B22A.

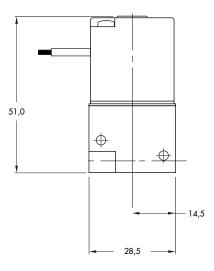


35 Series Inline



35 Series Manifold

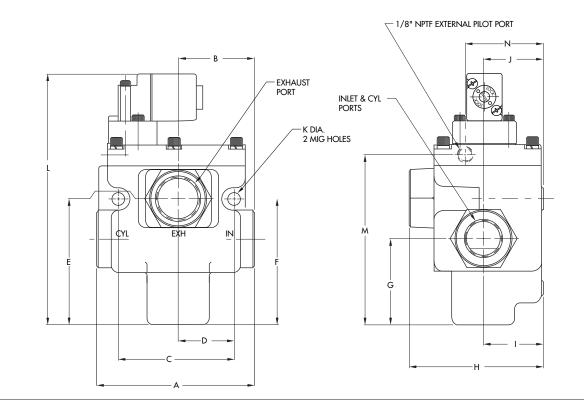






57 & 58 Intrinsically Safe

Dimensions shown are metric (mm)



DIMENSIC	ONS	A	В	C	D	E	F	G	н	I	J	K	L.	M	N
57	Inches	4.42	2.13	3.25	1.56	3.56	3.56	2.43	3.18	1.68	1.80	.34	7.04	4.78	2.19
Series	MM	112.3	54.1	82.6	39.7	90.4	90.4	61.7	96.8	42.7	45.7	8.6	78.9	121.5	55.7
58	Inches	5.66	2.77	4.66	2.27	4.5	4.91	3.31	4.57	1.88	2.00	.53	8.41	6.15	2.39
Series	MM	143.7	70.3	118.4	57.7	114.3	124.7	84.1	116.1	47.8	50.8	13.5	213.6	156.3	60.8



Section 8 Options



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Codification table for voltages / Manual operator / Electrical connection / Wire length

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OPTIONS AVAILABLE FOR	OPTIONS AVAILABLE FOR
valves type 100 Series	- valves type 200 Series
pilot valves "CNOMO"	
Pilot operated valves with pilots type 100 Series Series : 55 - 56 - 700 - 800 - 900 - 6300 - 6500 - 6600 - 1300 - ISO 1 - ISO 2 - ISO 3. - MAC 125 - MAC 250 - MAC 500	- pilot operated valves with pilots type 200 Series Series : 200 - 57 - 58 - 59.

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357



Used on valve series: 100, 55, 56, 700, 800, 900, 6300, 6500, 6600, 1300, MVA1C, MVA2B, MVA3B, MAC125, MAC250, MAC500.

Used on valve series: 200, 57, 58, 59.

	1. VOLTAGE (100 Serie type coil)		1. VOLTAGE (200 Serie type coil)
XX Y ZZ	VOLTAGE	- XX Y ZZ	VOLTAGE
11	120/60, 110/50	11	120/60, 110/50, 24 VDC (6 W)
12	240/60, 220/50	12	240/60, 220/50
13	100/60, 100/50	13	100/60, 100/50
15	200/60, 200 /50	14	200/60, 200/50
16	10/60	20	6/60
20	6/60	21	12/60
21	12/50, 12/60	22	24/60, 24/50
22	24/60, 24/50	23	32/60, 32/50
23	32/60, 32/50	24	48/60, 42/50
4	48/60, 42/50	25	240/50
6*	380/50, 440/50, 440/60, 480/60	26	480/60, 440/50
9	220/60	27	127/60
4	127/50, 120/50	28	415/50
5	48/50	29	220/60
6	16/60	30	380/50
1	24/50	31	550/60, 550/50
0	24 VDC (6 W)	32	120/60, 110/50
	24 VDC (4 W)	33	600/60
4	12 VDC (4 W)	34	127/50
	12 VDC (6 W)	35	48/50
7	12 VDC (2.5 W)	50	24 VDC (6 W)
)	24 VDC (2.5 W)	51	24 VDC (4.5 W)
, 0	12 VDC (8.5 W)	52	24 VDC (2.5 W)
1	24 VDC (8.5 W)	53	24 VDC (1.0 W)
4	6 VDC (6 W)	<u> </u>	12 VDC (6 W)
. 5	32 VDC (7 W)	<u> </u>	12 VDC (0 VV)
	48 VDC (5.8 W)	58	48 VDC (2.5 W)
	64 VDC (7.5 W)		
-	120 VDC (6.4 W)	<u> </u>	12 VDC (9.5 W) 24 VDC (8.5 W)
	, ,		
9* -	220 VDC (8.7 W), 250 VDC (11.2 W)	64	6 VDC (8.5 W)
; ;	90 VDC (8.8 W)	65	32 VDC (10 W)
j* •	100 VDC (6.9 W)	66	48 VDC (11.5 W)
*	125 VDC (10.9 W)	67	64 VDC (10.5 W)
7*	24 VDC (17.1 W)	68	120 VDC (12.3 W)
8* *	12 VDC (17.4 W)	69	250 VDC (9.2 W)
)*	36 VDC (18.8 W)		8 VDC (8.2 W)
)	28 VDC (8.2 W)	72	24 VDC (12 W)
1*	6 VDC (10.6 W)	73	198 VDC (10 W)
2	190 VDC (6.5 W)	74	72 VDC (11.3 W)
4	3 VDC (7 W)	75	90 VDC (11.3 W)
5	38 VDC (6.4 W)	76	100 VDC (9 W)
1	24 VDC (1 W)	77	220 VDC (10 W), 230 VDC (11.6 W
2	12 VDC (1 W)	78*	24 VDC (24 W)
3	9 VDC (1 W)	80	55 VDC (10.6 W)
. DD01 : Prot	ection diode (DC) - MAX. 8.5W	82	170 VDC (11.1 W)
	tection varistor (AC) - MAX. 8.5W	83	15 VDC (8.1 W)
tages are CLS	Fonly	84	125 VDC (10 W)
		86	36 VDC (11 W)
		93*	12 VDC (24 W)



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2. MANUAL OPERATOR (Common options for 100 & 200 Series type coils)

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- XX Y ZZ	MANUAL OPERATOR		
0	No operator	5*	No Operator with Light
1	Non-locking recessed	6*	Non-Locking Recessed with Light
2	Locking recessed	7*	Locking Recessed with Light
3	Non-locking extended	8*	Non-Locking Extended with Light
4	Locking extended	9*	Locking Extended with Light
		* Lights	used with "AA" electrical connection

3. ELECTRICAL CONNECTION (100 Serie type coil)

3/8" NPS conduit

* Not to be used with 100, 800 and 900 Series manifold mounting

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3. ELECTRICAL CONNECTION (200 Serie type coil)

XX Y Z	ZZ	ELECTRICAL CONNECTION	- XX Y	ZZ	ELECTRICAL CONNECTION
	AA	Wiring box with 1/2" NPS conduit		AA	Wiring box with 1/2" NPS conduit
I	BA	Flying leads		BA	Flying leads
(СА	1/2" NPS conduit		СА	1/2" NPS conduit
(СС	1/2" NPT conduit		СС	1/2" NPT conduit
I	FA	Military type 2 PIN		EA	Explosion proof (200 Series)
(GA	Military type 3 PIN		EA	Explosion proof (57, 58 & 59 Series)
I	HA	AA with ground wire		FA	Military type 2 PIN
	JA*	Square connector		GA	Military type 3 PIN
	JB	Rectangular connector		HA	AA with ground wire
	JC*	Square connector with light		JA*	Square connector
	JD	Rectangular connector with light		JC	Square connector with light
	JE	Square connector on top		JJ	Square connector, male only
		(ISO2, ISO3)		NA	CA with ground wire
	JF	Rectangular connector on top		NC	CC with ground wire
		(ISO1 , ISO2, ISO3)			
	JG	JE with light	-		
	JH	JF with light	-		
	JJ	Square connector, male only	-		
	ЈМ	Rectangular connector, male only	-		
	MA	Electrical common conduit	-		
		(100 Series-Manifold/900 Series)			
	МВ	Electrical common conduit	-		
		(100 Series-Stacking/700 Series)			
1	NA	CA with ground wire	-		
	NC	CC with ground wire	-		



4. COIL WIRE LENGTH (Common options for 100 & 200 Serie type coils)				
- XX Y ZZ (-VV)	WIRE LENGTH			
AA	18″			
AB	24"			
AD	36″			
AE	48″			
AF	72″			
AG	6"			
AR	12″			
AU	120″			
BA	60″			
BB	144"			
Series 6000 : wire length, from	n the base			
MOD L024	24"			
MOD L036	36″			
MOD L048	48″			
MOD 1060	60″			
MOD L072	72″			
MOD L120	120″			

4. COIL WIRE LENGTH (Common options for 100 & 200 Serie type coils)



Codification table for voltages / Wire length / Manual operators / Electrical connections

VALVE CODE >

$-D \frac{XX}{1} \frac{X}{2} - \frac{X}{3} \frac{XX}{4}$

OPTIONS AVAILABLE FOR

- Solenoid valves 35, 45 and 82 Series



	1. VOLTAGE
- D XX X - X XX	VOLTAGE
AA	120/60, 110/50
AB	240/60, 220/50
AC	24/60, 24/50
AD	24/60
AE	200/60
AF	240/50
AG	100/50, 100/60, 110/60
DA	24 VDC (5.4 W)
DB	12 VDC (5.4 W)
DC	12 VDC (7.5 W)
DD	24 VDC (7.3 W)
DE	12 VDC (12.7 W) - CLSFonly
DF	24 VDC (12.7 W) - CLSF only
DK	110 VDC (4.7 W)
DL	64 VDC (6 W)
DM	36 VDC (5.3 W)
DN	6 VDC (6 W)
DP	48 VDC (5.8 W)
DU	24 VDC (6 W)
EA	12 VDC (6 W)
FA	12 VDC (1.8 W)
FB	24 VDC (1.8 W)
FE	12 VDC (2.4 W)
FF	24 VDC (2.4 W)

2. WIRE LENGTH

- D XX X - X XX	WIRE LENGTH
Α	18″
В	24"
С	36″
D	48″
E	72"
F	96″
J	For external plug-in connector ("J", "K" & "T" type electrical connection)
Р	For plug-in valves (82 Series only)



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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	

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4. ELECTRICAL CONNECTION

- D XX X - X XX	ELECTRICAL CONNECTION
BA	Flying leads
ВК	BA with protection diode
BL	BA with protection varistor (M.O.V.)
** CA	1/2" NPS conduit
** CM	1/2" NPS metal conduit
** CN	1/2" NPS metal conduit w/ground
** JB	Rectangular connector
** JD	Rectangular connector with light
** JM	Rectangular connector, male only
КА	Square connector
КВ	Square connector with protection diode
КС	Square connector with protection varistor (M.O.V.)
KD	Square connector with light
KE	Square connector with light and protection diode
KF	Square connector with light and protection varistor (M.O.V.)
KG	Square connector with LED light & diode
КЈ	Square connector (male only)
КК	Square connector with protection diode (male only)
KL	Square connector with protection varistor (male only) (M.O.V.)
*** MA	Electrical common conduit
TA	Dual tabs
ТВ	TA with protection diode
TD	TA with light
TE	TA with light and protection diode
TJ	Dual tabs (male only)
ТК	TJ with protection diode
ТМ	TJ with light
TN	TJ with light and protection diode
DA*	Plug-in connector
DK*	DA with protection diode
DL*	DA with protection varistor (M.O.V.)
FM	Plug-in
FN	Plug-in with diode
FP	Plug-in with M.O.V.
* To be used with 82	Series only

** ***

To be used with 82 Series only Inline valves only for 35 & 45 series. No restrictions for 82 series. Stacking valves only for 35 & 45 series. Conduit end plate kit required, one per stack.

35 series : M-35002-01 45 series : M-45005-01



PRECAUTIONS AND WARNINGS CONCERNING THE APPLICATION, INSTALLATION AND SERVICE OF MAC VALVES AND OTHER MAC VALVES PRODUCTS

The warnings and precautions below are important to be read and understood before designing into a system any MAC Valves products, and before installing or servicing any MAC Valves product. Improper use, installation or servicing of any MAC Valves product in some systems could create a hazard to personnel or equipment. No distinction in importance should be made between the terms warnings and precautions.

WARNING :

Under no circumstances are MAC Valves products to be used in any application or in any manner where failure of the MAC Valves product to operate as intended could in any way jeopardize the safety of the operator or any other person or property.

- Do not operate outside of pressure range listed on a valve label or outside of the designated temperature range.
- Air supply must be clean and dry. Moisture or contamination can affect proper operation of the valve.
- Before attempting to repair, adjust or clean a MAC Valves product, consult catalog, parts & operation sheet, or factory for proper maintenance procedures, lubrication and cleaning agents. Never
- attempt to repair or perform other maintenance with air pressure to the valve. • If air line lubrication is used do not use any lubrication other than those recommended in the catalog, parts & operation sheet or by the factory.

APPLICATION PRECAUTIONS :

INDUSTRIAL USE ·

 MAC Valve products are intended for general use in industrial pneumatic and/or vacuum systems. They are general purpose industrial products with literally thousands of different applications in industrial systems. These products are not inherently dangerous, but they are only a component of an overall system. The system in which they are used must provide adequate safeguards to prevent injury or damage in the event failure occurs, whether it be failure of switches, regulators, cylinders, valves or any other component.

POWER PRESSES -

MAC Valve products are not designed nor intended to be used to operate and/or control the operation of clutch and/or brake systems on power presses. There are special products on the market for such use.

2-POSITION VALVES -

Some MAC valves are 2-position, 4-way valves. When air is supplied to the inlet port(s) of these valves, there will always be a flow path from the inlet to one of the outlets regardless of which of the two positions the valve is situated. Therefore, if pressurized air retained in the system would present a hazard in the application or servicing of the valve or system, a separate method in the system must be provided to remove the trapped air.

3- POSITION VALVES-

Some MAC valves are 3-position, 4-way valves. These valves are either double solenoid or double remote air operated.

If either of the two operators is in control, air supplied to the inlet port(s) will pass through the valve to one of the outlets as on 2-position, 4-way valves. However, if neither operator is in control, the valve moves to a center position. Listed below are the various center position functions :

A. CLOSED CENTER-

With this type valve, when in the center position all ports are blocked (inlets and exhausts) meaning the air at both outlet ports is trapped. If trapping the air in both outlet ports would present a hazard in the application or servicing, a separate method in the system must be provided to remove the trapped air or this type valve should not be used.

B. OPEN CENTER-

With this type valve, when in the center position, the inlet port(s) is blocked and the two outlet ports are open to the exhaust port(s) of the valve. If having no air in either outlet port would present a hazard in the application or servicing, this type valve should not be used.

C. PRESSURE CENTER-

With this type valve, when in the center position, the inlet port(s) is connected to both outlet ports of the valve. If having pressurized air to either or both outlet ports would present a hazard in the application or servicing of the valve or system, a separate method in the system must be provided to remove the retained air or this type valve should not be used.

OPERATING SPECIFICATIONS -

MAC Valves products are to be installed only on applications that meet all operating specifications described in the MAC catalog for the MAC Valves product.

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. If intentional or accidental operation of a valve by a manual operator could cause personal injury or property damage, a manual operator should not 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 any MAC Valves product without first turning off air (bleed system completely) and electricity to the machine.
- B. MAC Valves products 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.
- C. If air line lubrication is used do not use any lubrication other than those recommended in the catalog, parts & operation sheet or by the factory.

SERVICE PRECAUTIONS :

- A. Do not service or remove from service any MAC Valves product 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 products should only be serviced or removed from service by qualified, knowledgeable personnel who understand how the specific product is used and/or 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. Before attempting to repair, adjust or clean a MAC Valves product, consult catalog, parts & operation sheet, or factory for proper maintenance procedures, lubrication and cleaning agents. Never attempt to repair or perform other maintenance with air pressure to the valve.
- D. MAC Valves products are never to be stepped on while working on a machine. Damage to a MAC valve, or other product or lines to the product (either air or electrical lines) or accidental activation of a manual operator on the valve could result in personal injury or property damage.

LIMITATION OF GUARANTEE

This Guarantee is limited to the replacement or rebuilding of any valve or other product which should fail to operate properly. Valves or other products, 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 or other product 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.

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