



			Page
Introducti	0 П		3
Section	1	Direct solenoid and solenoid pilot operated valve	S 9
Section	5	Remote air valves	165
Section	3	Mechanically and manually operated valves	251
Section	4	Bases according to ISO 5599	265
Section	5	Pressure regulators	275
Section	6	Options	303



Welcome to your brand new MAC VALVES catalogue.

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







Pneumatic functions

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

- Direct solenoid valves 3 ways : universal The following functions are available
 - 3 ways NC
 - 3 ways NO
 - 2 ways NC
 - 2 ways NO
 - Selector
 - Divertor
- Pilot operated valves 3 ways : The following functions are available
 - 3 ways NC
 - 3 ways NO
 - 2 ways NC
 - 2 ways NO
 - Selector : the highest pressure is connected to the IN port; the lowest pressure is connected to the EXH port. (Use external pilot when the highest pressure is less than 2 bar)
 - Divertor (consult factory)

• Direct solenoid valves 4 ways :

The following functions are available

- 4 ways
- 3 ways NC
- 3 ways NO
- 2 ways NC
- 2 ways NO
- Divertor
- Pilot operated valves 4 & 5 ways : The following functions are available

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

EVERY VALVE FULLY TESTED PRIOR TO SHIPMENT



MAC DESIGN FEATURES

SPOOLS/BODIES

MAC flow seals are bonded to an aluminium 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 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 aluminium 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.

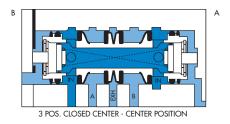


PILOT SYSTEM

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

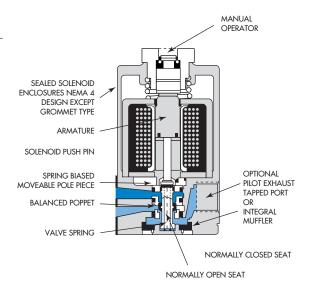
MAC 3-position solenoid and remote air pilot valves are centered by a patented spring centering device or patented combination spring and pressure assisted spool design which reduces side load potential and resultant wear, and assures fast, positive return of the main spool when the pilots are de-energized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



SOLENOID PILOT VALVES

Most MAC valves in this catalogue 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.).





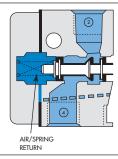
MAC DESIGN FEATURES

VIRTUALLY-BURN-OUT PROOF MACSOLENOID

The patented spring biased floating pole piece MACSOLENOID used on all 3-ways and 4-ways in this catalogue 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 armav 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 catalogue 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 electrical 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*.





Function	Port size	Flow (Max) Individual mounting						
			inline	sub-base non "plug-in"	sub-base "plug-in"	valve only		
3/2 - 2/2	G1/8"	170	P. 15					
3/2 - 2/2	M5 - G1/8"	160						
3/2 - 2/2	M5 - G1/8"	100						
3/2 - 2/2	G1/8" - G1/4"	180	P. 25					
3/2 - 2/2	G1/8"	140						
3/2 - 2/2	G1/8" - G1/4"	500	P. 33					
3/2 - 2/2	G1/4"	400						
3/2 - 2/2	G1/4" - G3/8"	2200	P. 43					
3/2 - 2/2	G3/8" - G1/2" - G3/4"	5700	P. 47					
3/2 - 2/2	G1/2" - G3/4" - G1"	17400	P. 51					
3/2 - 2/2	G1" - G1 1/4" - G1 1/2"	26000	P. 55					
3/2 - 2/2	G2" - G2 1/2"	60000	P. 59					
4/2	M5 - G1/8"	150	P. 63					
4/2	M5 - G1/8"	130		P. 65				
4/2	M5 - G1/8"	200						
4/2	M5 - G1/8"	110						
4/2	G1/8" - G1/4"	700	P. 85					
4/2	G1/8" - G1/4"	800						
4/2	G1/8" - G1/4"	1200	P. 91					
4/2	G1/8" - G1/4" - G3/8"	1400						
4/2	G1/8" - G1/4" - G3/8"	1350		P. 97	P. 99			
4/2 - 4/3	G1/4" - G3/8"	1350						
4/2 - 4/3	G1/4" - G3/8" - G1/2"	3000		P. 107	P. 109			
4/2 - 4/3	G3/8" - G1/2"	3000						
4/2 - 4/3	G3/8" - G1/2" - G3/4"	5100		P. 117	P. 119			
4/2 - 4/3	G3/4" - G1"	9600		P. 127	P. 129			
4/2 - 4/3	G3/4" - G1" - G1 1/4"	9600						
4/2 - 4/3	G3/4" - G1" - G1 1/4" - G1 1/2"	15900			P. 137			
4/2 - 4/3	G1/4"	1400	P. 141					
5/2 - 5/3	G1/4" - G3/8"	1400						
5/2 - 5/3	G1/4" - G3/8"	1600				P. 155		
5/2 - 5/3	G3/8" - G1/2"	3000				P. 159		
5/2 - 5/3	G1/2" - G3/4"	6300	<u> </u>			P. 163		

Manifold m	nounting													Series
stacking	sub-base non "plug-in"	sub-base with pressure regulators	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 controls	sub-base "plug-in" with regulator and flow controls	stacking body with 1 common port (inlet)	stacking body with 3 common ports (inlet & exhausts)	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	
														35
P. 17														
2.07	P. 19	P. 21					- ———							
P. 27	D 20													100
	P. 29 P. 35													200
	1.33	P. 37-39												200
														55
														56
										-				57
														58
														59
														45
		·												
P. 67	D./O	D 71	D 72	D 7F	D 77	D 70	D O I							
	P. 69	P.71	P. 73	P. 75	P. 77	P. 79	P. 81							700
P. 87								-						700
1.07														900
P. 93		·												
							-							82
	P. 101			P. 103										
		. ———						-		-				630
	P. 111			P. 113										
	P. 121			P. 123										650
	P. 131			P. 133										660
	F. 131	l		F. 133										130
		· ——						P. 143						800
								1.113	P. 145	P. 147	P. 149	P. 151		
		. ———											P. 155	ISO
													P. 159	ISO
							-						P. 163	ISO

Individual mounting Series inline 35 Manifold mounting sub-base with 100 200 55 56 **57** 58 59 Manual operator 45 Armature Epoxy encapsulated solenoid Push pin 700 Spring biased moveable pole piece **Bonded balanced poppet** 900 Spring return 82 6300 6500 **SERIES FEATURES** 6600 • Patented MACSOLENOID for fastest possible response times. • Bonded balanced poppet for high flow, precise repeatability, and consistent operation. 1300 • Balanced poppet permits versatility in function — may be used as 3-way or 2-way normally open or normally closed and may be used for vacuum, divertor, or selector applications. 800 • Extremely high cycle rate capability. • Use on lube or non-lube service. **ISO** 1 • Manual overrides as standard. **ISO 2** • Various solenoid enclosures and plug-in connectors. **ISO 3** • Optional surge suppression (M.O.V. or Diode) available. • Low wattage DC solenoids — down to 1.8 watts.

ullet Pattended MACSOLENOID $\,-\,$ virtually burn-out proof on AC service.







VALVE CONFIGURATIONS AVAILABLE:

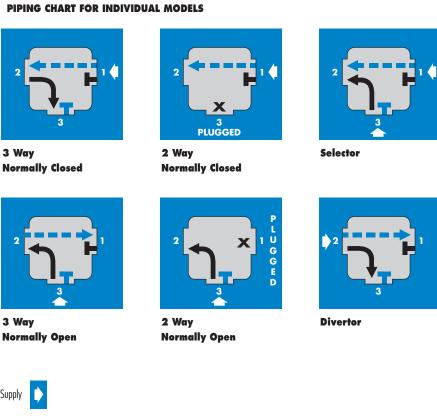
The 35 Series is a miniature 3 way or 2 way valve.

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

Operator De-Energized

Operator Energized

- 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.





Direct solenoid and solenoid pilot operated valves

Function		Port size		Flou	u (Max)	Individual m	nounting		Series
3/2 NO-	-NC, 2/2 NO-NC	G1/8"		17	0 NI/min	inline			
1. Balance pressur 2. Short s	ed poppet, immune to vare. troke with high flow. tented solenoid develops						4	A	35
forces. 4. Powerf 5. Manua	ul return spring. Il operator standard on a ut proof solenoid on AC s	ll valves.							100
O. Bull-oc	or proof solehold on AC s	service.							200
						ŧ			55
HOW	TO ORDER					-			56 57
	Port size		Unive	sal valve	1		NC	only valve	58 59
				2 T T W				, w	
	G1/8"		35A-AC	A-D <i>xxx-xx</i>	x		35A-A	ACB-Dxxx-xxx	45
SOLENC	OID OPERATOR >		D <u>xx</u>	X-X	XX *				
				Щ					700
XX AB	Voltage 220V~/50Hz	X A	Wire length 45 cm (Flying leads)	X 1	Manual ope	erator	XX KA	Electrical connection Square connector	700
AA AC FB DA	110V~/50Hz 24V~/50Hz 24V=/1,8W 24V=/5,4W		Connector	2	Locking		JB JD BA	Square connector with light Rectangular connector Rectangular connector with light Flying leads	900
DF	24V=/12,7W options available, see p	page 309.						.,,g.10000	82
									6300
									6500
									6600
									1300
									800
									ISO 1 ISO 2 ISO 3







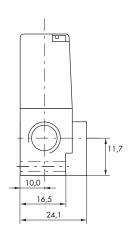
Fluid:	Compressed air, vacuum, inert gases						
Pressure range :	Vacuum to 8 bar						
Lubrication:	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)						
Filtration:	40 μ						
Temperature range :	-18°C to 50°C (0°F to 120°F)						
Flow (at 6 bar, $\Delta P=1bar$):	1.8 W : 80 NI/min, 5.4 W : 150 NI/min						
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 V=/5.4 W Energize : 6 ms De-energize : 2 ms						
	50 Hz/6 W Energize : 3-8 ms De-energize : 2-7 ms						

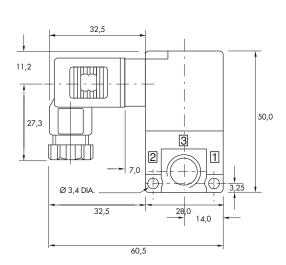
• Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013. • Seal (between solenoid and valve body) : 16402. Spare parts:

Options : • NPTF threads. • High flow up to 250 NI/min, according to wattage and high flow mod.

DIMENSIONS

Dimensions shown are metric (mm)







Function	Port size		Flow (Max)	Manifold mounting	Series
3/2 NO-NC, 2/2 NO-NC	M5, G1/8"		160 NI/min	stacking	
OPERATIONAL BENEFITS					
Balanced poppet, immune pressure. Short stroke with high flow	<i>I</i> .			9 6	35
 The patented solenoid dev forces. Powerful return spring. Manual operator standard 					100
5. Burn-out proof solenoid on	AC service.				200
					55
				The same of the sa	56
HOW TO ORDER					57
Port si	ize	NC or	nly valve	NO only valve	58
			CYL	CYL	59
			/ _T w	<u></u>	
G1/8	3#	35A-SC	IN EXH C-D <i>XXX-XXX</i>	35A-SCD-DXXX-XXX	45
M5		35A-SD	C-D <i>xxx-xxx</i>	35A-SDD-Dxxx-xxx	43
SOLENOID OPERATOR	>	D <u>xx</u>	X-XXX*		
_					700
XX Voltage AB 220V~/50Hz		Wire length 45 cm (Flying leads)	X Manual o Non-locking	perator XX Electrical KA Square conr	connection
AA 110V~/50Hz AC 24V~/50Hz		Connector	2 Locking	KD Square conr	ector with light
FB 24V=/1,8W				BA Flying leads	
DA 24V=/5,4W DF 24V=/12,7W					82
* Other options available,	see page 309.				6300
End plate kit required (Port si Note : upon request, manifol					6500
OPTIONS					
35A-TXX-Dxxx-xxx					6600
- Bottom Ir	nlet				1300
					800
					ISO 1 ISO 2 ISO 3







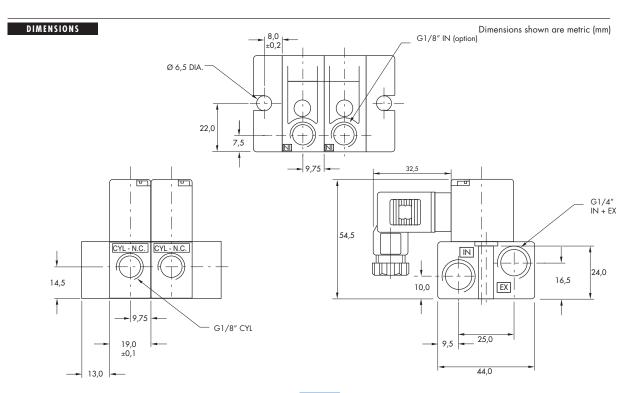
Fluid: Compressed air, vacuum, inert gases Vacuum to 8 bar Pressure range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): 1.8~W:120~Nl/min, 5.4~to12.7~W:160~Nl/minCoil: 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 V=/5.4 W Energize: 6 ms De-energize: 2 ms 50 Hz/6 W Energize: 3-8 ms De-energize: 2-7 ms

 $\text{Spare parts}: \qquad \qquad \bullet \text{ Solenoid operator (power} \geq 5.4 \text{ W)}: \text{DXXX-XXX, including mounting screws } 35013.$

• 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 : • NPTF threads. • High flow up to 250 NI/min, according to wattage and high flow mod.





Function	Port size		Floш	(Max)	Manifold mounting		Series
3/2 NO-NC, 2/2 NO-NC	M5, G1/8"		100	NI/min	sub-base non "plug-in"		
PERATIONAL BENEFITS Balanced poppet, immune to vopressure.	ariations of				255	Q a	35
Short stroke with high flow. The patented solenoid develops forces. Powerful return spring. Manual operator standard on a							100
Burn-out proof solenoid on AC					9		200
							55
HOW TO ORDER						1	56 57
IDE CYLINDER PORTS							58
Port size			rm. closed nifold base			Norm. open Aanifold base	59
			CYL T T W		ا	CYL T T W	
Valve less base (universa	al)	35A-	IN EXH BOO-DXXX-XXX		35	A-B00-Dxxx-xxx	45
M5 base			BDE-D <i>xxx-xxx</i>			A-BDF-D xxx-xxx	
G1/8" base OTTOM CYLINDER PORTS		<u>35A-</u>	BCE-D <i>xxx-xxx</i>		35	5A-BCF-D <i>xxx-xxx</i>	700
Port size			rm. closed nifold base			Norm. open Aanifold base	900
			CYL			CYL	900
	8 4		IN EXH			IN EXH	82
Valve less base (universe M5 base	al)		BOO-D <i>xxx-xxx</i> BJE-D <i>xxx-xxx</i>			5A-BJF-D xxx-xxx	
G1/8" base		_	BHE-Dxxx-xxx			5A-BHF-D xxx-xxx	6300
OLENOID OPERATOR >		D <u>x</u>	<u>x x- x</u> 2	KX *			6500
XX Voltage	Х	Wire length	Х	Manual op	erator X	X Electrical conn	ection 6600
AB 220V~/50Hz AA 110V~/50Hz	A	45 cm (Flying leads) Connector		Non-locking Locking		Square connector Square connector w	vith light 1300
AC 24V~/50Hz FB 24V=/1,8W DA 24V=/5,4W				J		A Flying leads	800
DF 24V=/12,7W							160 1
Other options available, see	page 309.						ISO 1
nd plate kit required (Port size : ote : upon request, manifolds ar							ISO 2 ISO 3
OPTIONS		•					
35A-EXX-Dxxx-xxx	354	4-FXX-Dxxx-xxx		35A-QXX			
- N.C. only va	lve	- universal w/	gage port		- no valve body (base only)	







Fluid:	Compressed air, vacuu	um, inert gases						
Pressure range :	Vacuum to 8 bar							
Lubrication :	Not required, if used	select a medium aniline	point lubricant (between 80°C and 100°C)					
Filtration:	40 µ							
Temperature range :	-18°C to 50°C (0°F to	120°F)						
Flow (at 6 bar, $\Delta P=1$ bar):	1.8 W : 90 NI/min, 5	1.8 W : 90 NI/min, 5.4 to 12.7 W : 100 NI/min						
Coil:	General purpose class A, continuous duty, encapsulated							
Voltage range :	-15% to +10% of nom	-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 V=/5.4 W	Energize : 6 ms	De-energize: 2 ms					
	50 Hz/6 W	Energize : 3-8 ms	De-energize : 2-7 ms					

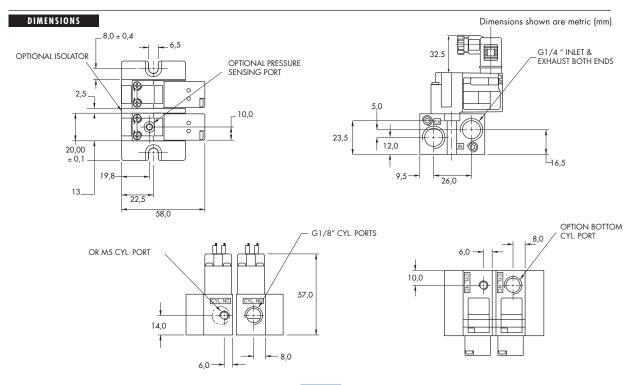
Spare parts : • Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.

• 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-35008.

• Inlet & Exhaust isolator : N-35006.

Options: • NPTF threads. • High flow up to 180 NI/min, according to wattage and high flow mod.





ınction	Port size		Flow (Max)	Manifold m	ounting	Series
/2 NO-NC, 2/2 NO-NC	M5, G1/8	п	100 NI/r	sub-base with pressure regulators		
PERATIONAL BENEFITS						
Balanced poppet, immune to pressure. Short stroke with high flow. The patented solenoid develop						35
forces. Powerful return spring. Manual operator standard on	all valves.				5	100
. Burn-out proof solenoid on AC	Service.					200
				- 4		55
				9	6	56
HOW TO ORDER						57
IDE CYLINDER PORTS						58
Port size			m. closed ifold base		Norm. open Manifold base	59
			/ _T W		LZ J / W	
Valve less base (universal)		35A-B	OO-Dxxx-xxx		35A-B00-D xxx-xxx	45
M5 base	•		BDJ-D xxx-xxx		35A-BDK-D xxx-xxx	
G1/8" base		35A-B	SCJ-D xxx-xxx		35A-BCK-D <i>xxx-xxx</i>	
OTTOM CYLINDER PORTS	S					700
Port size			m. closed ifold base		Norm. open Manifold base	900
			CYL M		CYL T T	
Valve less base (univers	sal)	35A-B	00-Dxxx-xxx		35A-B00-D xxx-xxx	82
M5 base			BJJ-D xxx-xxx		35A-BJK-D xxx-xxx	
G1/8" base		35A-B	SHJ-D xxx-xxx		35A-BHK-D xxx-xxx	6300
OLENOID OPERATOR >		D <u>X</u>	<u>x x- x xx</u> *			6500
			_ _			6600
XX Voltage	Х	Wire length		inual operator	XX Electrical co	nnection
AB 220V~/50Hz AA 110V~/50Hz	A	45 cm (Flying leads) Connector		n-locking king	KA Square connected KD Square connected	
AC 24V~/50Hz FB 24V=/1,8W DA 24V=/5,4W					BA Flying leads	800
DF 24V=/12,7W						ISO 1
Other options available, see	page 309.					150 1
nd plate kit required (Port size : lote : upon request, manifolds o						ISO 3
OPTIONS						







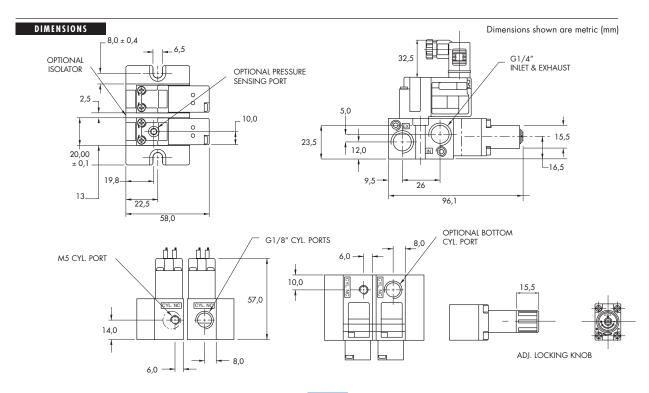
Fluid:	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 8 bar				
Lubrication:	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)				
Filtration:	40 µ				
Temperature range :	-18°C to 50°C (0°F to 120°F)				
Flow (at 6 bar, $\Delta P=1$ bar):	1.8 W : 90 Nl/min, 5.4 to 12.7 W : 100 Nl/min				
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 V=/5.4 W Energize : 6 ms De-energize : 2 ms				
	50 Hz/6 W Energize : 3-8 ms De-energize : 2-7 ms				

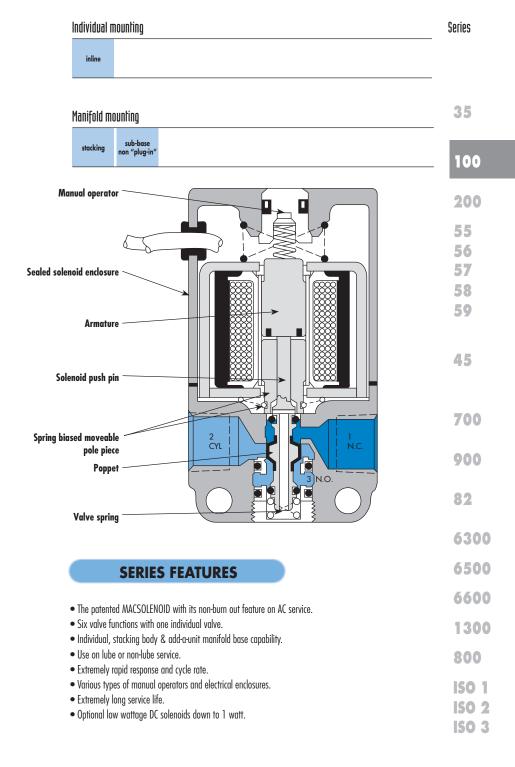
 \bullet Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013. Spare parts:

• 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. • Pressure regulator: 35A-00M (ADJ, KNOB) - 35A-00L (SLOTTED STEM).

Options: • NPTF threads. • High flow up to 180 NI/min, 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

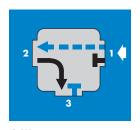
The interchangeable function plate between the valve bodies and base permits selection for 2- or 3-way, Normally Closed or Normally Open operation. On 3-way applications, one

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.

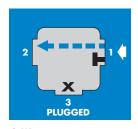
N.C. ONLY MODELS

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.

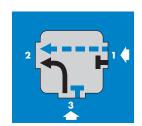
PIPING CHART FOR INDIVIDUAL MODELS



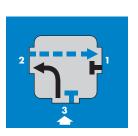
3 Way Normally Closed



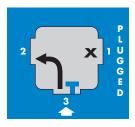
2 Way Normally Closed



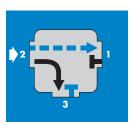
Selector



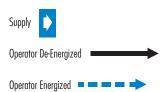
3 Way Normally Open



2 Way Normally Open



Divertor





Function	Port size	Flow (Max)	Individual moun	ıting	Series
3/2 NO-NC, 2/2 NO-NC	G1/8" - G1/4	180 NI/min	inline		
OPERATIONAL BENEFITS					
Balanced poppet, immune to very pressure. Short stroke with high flow. The patented solenoid develop:					35
forces. 4. Powerful return spring. 5. Manual operator standard on a	all valves.		4		100
6. Burn-out proof solenoid on AC	service.		8		200
					55
					56
HOW TO ORDER					57
Port size		Universal valve		NC only valve	58 59
		2 / 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Z w	37
G1/8"		116B- xxyzz		166B- XXYZZ	45
G1/4"		117B- xxyzz		167B- xxyzz	_
SOLENOID OPERATOR >		<u>XX Y ZZ</u> *			
					700
XX Voltage		Y Manual operator		ctrical connection	
11 110V~/50Hz 12 220V~/50Hz		1 Non-locking 2 Locking	JB Recto	angular connector angular connector with light	900
22 24V~/50Hz 59 24V=/2,5W				are connector are connector with light	
87 24V=/17,1W				ng leads (45 cm)	82
61 24V=/8,5W	205				-
* Other options available, see Notes:	page 305.				6300
CHANGING FROM NORMALLY Individual inline valves can be cl	hanged from normally	LLY OPEN closed to normally open by connecting the in	let to port 3 instead o	of port 1.	6500
NORMALLY CLOSED ONLY MO A single purpose Normally Close	ed only model is availe	ible for those applications where a greater to desired. Model numbers are indicated above	lerance for heavy cor	ncentrations of water,	6600
compressor products and other c	in the comaninations is	desired. Model Hollibers dre Indicaled above			1300
					800
					ISO 1
					ISO 2
					ISO 3







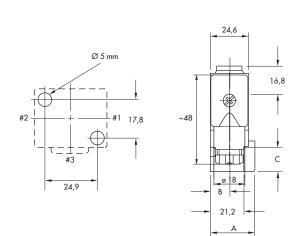
Fluid: Compressed air, vacuum, inert gases Vacuum to 10 bar Pressure range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ -18°C to 60°C (0°F to 140°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): 180 NI/min Coil: General purpose class A, continuous duty, encapsulated Voltage range: -15% to +10% of nominal voltage Protection: Consult factory ~ Inrush : 14.8 VA Holding: 10.9 VA Power: = 1 to 17 W24 V=/8.5 W Response times: Energize: 7 ms De-energize: 2 ms 50 Hz/6 W Energize : 3-8 ms De-energize : 2-7 ms

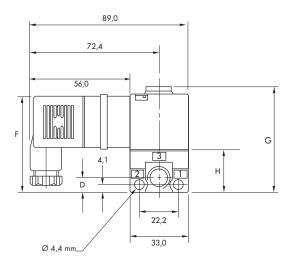
Spare parts : • Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 32184 and seal 16234.

Options : • NPTF threads.

DIMENSIONS

Dimensions shown are metric (mm)





PORT SIZE	A	В	C	D	E	F	G	Н
G1/8"	28.4	12.7	14.0	8.0	40.1	64.9	60.1	23.2
G1/4"	29.8	13.3	12.7	9.9	40.9	65.8	60.9	24.1



Function	Port size	Flow (Max)	Manifold mou	unting	Series
3/2 NO-NC, 2/2 NO-NC	G1/8" - G1/4"	180 NI/min	stacking		

OPERATIONAL BENEFITS

- 1. Balanced poppet, immune to variations of pressure.
- 2. Short stroke with high flow.
- 3. The patented solenoid develops high shifting forces.

Port size

G1/8"

G1/4"

4. Powerful return spring.

HOW TO ORDER

SOLENOID OPERATOR ➤

- 5. Manual operator standard on all valves.
- 6. Burn-out proof solenoid on AC service.



NC only valve

188B-**xxyzz**

189B-**xxyzz**

35

100

200

55 56

57

58 59

45

187B-xxyzz XX Y ZZ *

Universal valve

186B-**XXYZZ**

XX	Voltage	Y	Manual operator	ZZ	Electrical connection
11	110V~/50Hz	1	Non-locking	JB	Rectangular connector
12	220V~/50Hz	2	Locking	JD	Rectangular connector with light
22	24V~/50Hz			BA	Flying leads (45 cm)
59	24V=/2,5W				
87	24V=/17.1W				

^{*} Other options available, see page 305.

24V=/8,5W

End plate kit required (Port size G1/4"): M-01001-01P

Notes:

CHANGING FROM NORMALLY CLOSED TO NORMALLY OPEN

In the case of stacking valves a reversible plate, complete with indicator, is placed between each valve body assembly. This determines whether the valve is N.C. or N.O.

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.

900

700

82

6300

6500

6600

1300

800

ISO 1 ISO 2

ISO 3







Fluid:	Compressed air, vacuum, inert gases				
Pressure range:	Vacuum to 10 bar				
Lubrication:	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)				
Filtration:	40 μ				
Temperature range :	-18°C to 60°C (0°F to 140°F)				
Flow (at 6 bar, $\Delta P=1$ bar):	180 NI/min				
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				
	DC: 1 to 17.1 W				
Response times :	24 V=/8.5 W Energize : 7 ms De-energize : 2 ms				
	50 Hz/6 W Energize : 3-8 ms De-energize : 2-7 ms				

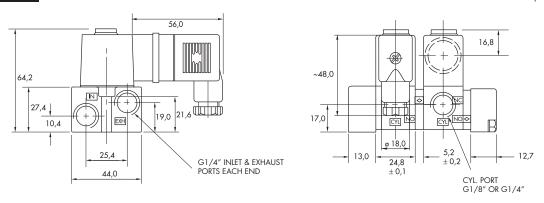
Spare parts:

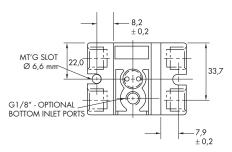
• Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
• Function plate : N-01002. • Tie-rod (x2) : 19674. • Inlet isolator plate : N01003. • Exhaust isolator plate : N01004.

Options : • NPTF threads. • Bottom inlet (Mod. 0210).

DIMENSIONS

Dimensions shown are metric (mm)







Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC, 2/2 NO-NC	G1/8"	140 NI/min	sub-base non "plug-in"	
Balanced poppet, immune to pressure. Short stroke with high flow.				35
3. The patented solenoid develop forces.4. Powerful return spring.5. Manual operator standard on	all valves.			100
6. Burn-out proof solenoid on AC	C service.			200
				55 56
HOW TO ORDER Port size		Universal valve	NC only valve	57 58 59
				37
Valve less base G1/8" base		130B- xxyzz 136B- xxyzz	170B- xxyzz	45
SOLENOID OPERATOR >		<u>XX Y ZZ</u> *		700
XX Voltage		Y Manual operator	ZZ Electrical connection	
11 110V~/50Hz 12 220V~/50Hz 22 24V~/50Hz 59 24V=/2,5W		1 Non-locking 2 Locking	JB Rectangular connector JD Rectangular connector with li BA Flying leads (45 cm)	ght 900
87 24V=/17,1W 61 24V=/8,5W				82
* Other options available, see End plate kit required (Port size		11P		6300
	·			6500
OPTIONS 12XB-XXYZZ				6600
2-way N.C.				1300
14XB- xxyzz 2-way N.O.				
102				800
(Base only) Notes: CHANGING FROM NORMALL	.Y CLOSED TO NORMA	ILLY OPEN		ISO 1 ISO 2

NORMALLY CLOSED ONLY MODELS

the valve.

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.

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

ISO 3







Fluid: Compressed air, vacuum, inert gases Vacuum to 10 bar Pressure range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 μ -18°C to 60°C (0°F to 140°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): 140 NI/min Coil: General purpose class A, continuous duty, encapsulated -15% to +10% of nominal voltage Voltage range: Protection: Consult factory Power: ~ Inrush : 14.8 VA Holding: 10.9 VA = 1 to 17 WResponse times: 24 V=/8.5 W Energize: 7 ms De-energize: 2 ms 50 Hz/6 W Energize: 3-8 ms De-energize : 2-7 ms

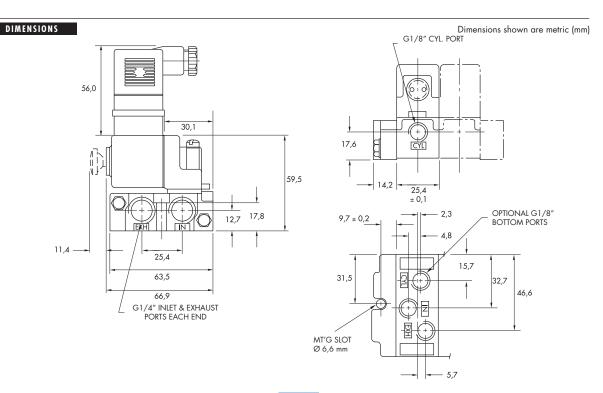
Spare parts: • Solenoid operator (power ≥ 4 W): D1-XXAA, cover mounting screws 32184 and seal 16234.

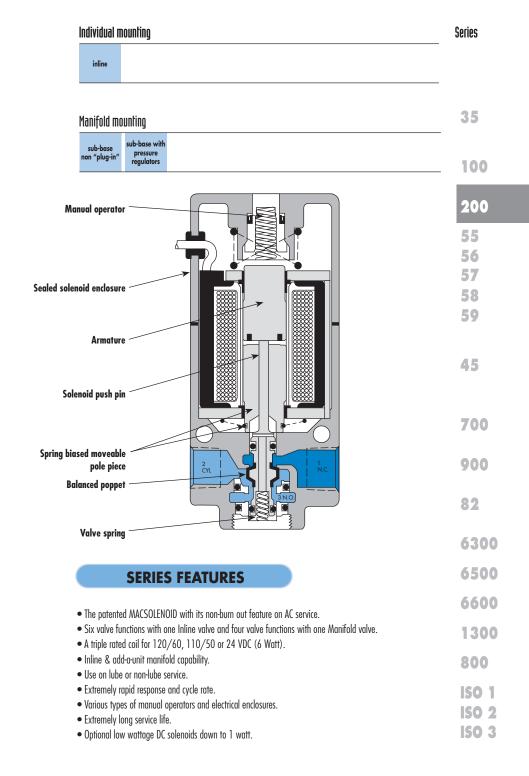
• Function plate: A2-7009. • Seal between manifold bases: 16226. • Tie-rod (x2): 19546.

Options : • NPTF 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. 130B-111BA Mod. 0210)











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

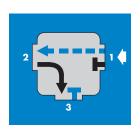
3-ways and 2-ways. Changes within a stack from one function to another can be made without disturbing the plumbing.

SPECIAL APPLICATIONS:

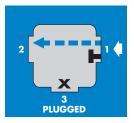
N.C. ONLY MODELS

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.

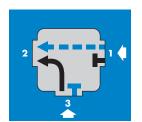
PIPING CHART FOR INDIVIDUAL MODELS



3 Way Normally Closed



2 Way Normally Closed



Selector



3 Way Normally Open



2 Way Normally Open



Divertor





Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-NC	G1/8" - G1/4"	500 NI/min	inline	
1. Balanced poppet, immune to v pressure. 2. Short stroke with high flow. 3. The patented solenoid develop				35
forces. 4. Powerful return spring. 5. Manual operator standard on				100
Burn-out proof solenoid on AC				200
HOW TO ORDER				55 56 57
Port size		Universal valve	NC only ve	silve 58
		Z w		59]w
G1/8" G1/4"		224B-xxyzz Mod 005 225B-xxyzz Mod 005	274B-xxyzz Mi 275B-xxyzz Mi	
SOLENOID OPERATOR ➤		<u>XX Y ZZ</u> *		700
XX Voltage 11 110V~/50Hz	Y	Manual operator Non-locking	ZZ Electrical conn JA Square connector	ection
12 220V~/50Hz 22 24V~/50Hz 52 24V=/2,5W	2		JC Square connector w BA Flying leads (45 cm)	
78 24V=/24W 61 24V=/8,5W				82
* Other options available, see Notes:	page 305.			6300
CHANGING FROM NORMALLY Individual inline valves can be c NORMALLY CLOSED ONLY MC	changed from normally clos	OPEN ed to normally open by connecting the in	let to port 3 instead of port 1.	6500
A single purpose Normally Clos	ed only model is available	for those applications where a greater to ired. Model numbers are indicated above	lerance for heavy concentrations o	f water, 6600
				1300
				800
				ISO 1 ISO 2

ISO 3







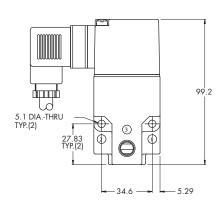
Fluid :	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 10 bar				
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)				
Filtration:	40 μ				
Temperature range :	-18°C to 60°C (0°F to 140°F)				
Flow (at 6 bar, $\Delta P=1$ bar):	500 NI/min				
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 V=/8.5 W Energize : 15 ms De-energize : 5 ms				
	50 Hz/6 W Energize : 3-8 ms De-energize : 3-13 ms				

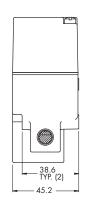
Spare parts : • Solenoid operator (power \geq 6 W) : D4-XXAAB, cover mounting screws 32222 and seal B5-6001.

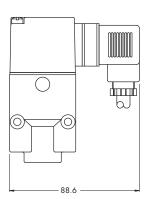
Options : • NPTF threads.

DIMENSIONS

Dimensions shown are metric (mm)









Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC, 2/2 NO-NC	G1/8" - G1/4"	500 NI/n	sub-base non "plug-in"	
OPERATIONAL BENEFITS				
Balanced poppet, immune to vopressure. Short stroke with high flow. The patented solenoid develops				35
forces. 4. Powerful return spring. 5. Manual operator standard on c	ıll valves.			100
6. Burn-out proof solenoid on AC				200
				55 56
HOW TO ORDER			a	57
Port size		Universal valve	NC only valve	58 59
		CYL	CYL IN EXH	37
Valve less base		250B- XXYZZ	280B- xxyzz	45
G1/8" base G1/4" base		256B- XXYZZ Mod 005 257B- XXYZZ Mod 005	286B-xxyzz Mod 00 287B-xxyzz Mod 00	05
·			ZOT B-RATEZ TYTOU OU	<u> </u>
SOLENOID OPERATOR ➤		<u>XX Y ZZ</u> *		700
XX Voltage	Y		ZZ Electrical connection	900
11 110V~/50Hz 12 220V~/50Hz		· ten re-	JC Square connector with light JA Square connector	
22 24V~/50Hz		Locking	BA Flying leads (45 cm)	
52 24V=/2,5W 78 24V=/24W				82
61 24V=/8,5W				
* Other options available, see p	page 305.			6300
End plate kit required (Port size :	G1/4"): A2-5003-01P.			6500
26XB-xxyzz Mod 005	206 Moo	005 207	7 Mod 005	6600
- universal 2-way	у (В	ase only - G1/8")	(Base only - G1/4")	1300
				800
CHANGING FROM NORMALLY For manifold base mounted valve			plates are available; a reversible plate for 3 Way	ISO 1
valves (N.C. & N.O.), one plate	for 2 Way N.C. and one		s, determined by the valve model number, are	ISO 2
supplied automatically with the v				ISO 3
NORMALLY CLOSED ONLY MOI		for those applications where = ====	ater tolerance for heavy concentrations of water,	130 0
compressor products and other a		appca.ions whole a giet	or water,	







Fluid:	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 10 bar	, g			
Lubrication :	Not required, if used	select a medium aniline	point lubricant (between 80°C and 100°C)		
Filtration:	40 µ		· · · · · · · · · · · · · · · · · · ·		
Temperature range :	-18°C to 60°C (0°F	o 140°F)			
Flow (at 6 bar, $\Delta P=1$ bar):	500 NI/min	500 NI/min			
Coil:	General purpose cla	General purpose class A, continuous duty, encapsulated			
Voltage range:	-15% to +10% of no	-15% to +10% of nominal voltage			
Protection :	Consult factory				
Power:	~ Inrush : 33 VA	Holding: 19.7 VA			
	= 1 to 24 W				
Response times:	24 V=/8.5 W	Energize : 15 ms	De-energize : 5 ms		
	50 Hz/6 W	Energize : 3-8 ms	De-energize: 3-13 ms		

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

• Function plate: A2-7005. • Seal between bases: B5-5010. • Tie-rod (x2): B4-9004.

Options : • NPTF 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. 257B-111BA Mod. 0210)

DIMENSIONS Dimensions shown are metric (mm) G1/8" OR G1/4" CYL PORT 42,0 75,7 14,5 19,2 45,9 20.1 18,0 35,1 OPTIONAL G1/8" OR G1/4" BOTTOM PORTS 20,1 75,8 35.6 102,1 52,1 G1/4" INLET & EXH. PORTS EACH END MT'G SLOT 8,1 DIA. MAX.



Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC, 2/2 NO-NO	G1/4"	400 NI/min	sub-base with pressure regulators	
OPERATIONAL BENEFITS				
Balanced poppet, immun pressure. Short stroke with high flo				35

- 3. The patented solenoid develops high shifting
- 4. Powerful return spring.

HOW TO ORDER

SOLENOID OPERATOR ➤

- 5. Manual operator standard on all valves.
- 6. Burn-out proof solenoid on AC service.
- 7. Individual pressure control to each cylinder

Port size

Valve less base

G1/4" base



100

200

55 56

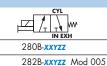
57

58 59

45

700

900



NC only valve



252B-**XXYZZ** Mod 005

250B-xxyzz

Universal valve

XX	Voltage	Y	Manual operator	ZZ	Electrical connection
11	110V~/50Hz	1	Non-locking	JA	Square connector
12	220V~/50Hz	2	Locking	JC	Square connector with light
22	24V~/50Hz			BA	Flying leads (45 cm)
52	24V=/2,5W				
<i>78</i>	24V=/24W				
61	24V=/8.5W				

^{*} Other options available, see page 305.

Manifold fastening kit required: N-02003

MODEL 252B-

3-Way N.C. or N.O.

2-Way N.C. or N.O.

282B-

3-Way N.C. only

INDIVIDUAL PRESSURE CONTROL TO EACH CYLINDER PORT

In this version the common inlet pressure supplies each individual valve in the stack. This common pressure passes through a relieving type regulator mounted on the same base as the valve and is supplied through the function plate to the Normally Closed or Normally Open poppet position. Through use of the appropriate function plate on the 200 Series basic valve, the operation can be Normally Closed Or Normally Open, 3-way or 2-way except for 282B models which are Normally Closed only. The exhaust ("out") port is common. Operation of the valves then opens or closes the cylinder port (See schematic diagram next page).

82

6300

6500

6600

1300

800

ISO 1 **ISO 2**

ISO 3







Fluid:	Compressed air, vacuum, inert gases					
Pressure range :	Vacuum to 10 bar					
Lubrication:	Not required, if used	select a medium aniline	point lubricant (between 80°C and 100°C)			
Filtration:	40 µ					
Temperature range :	-18°C to 60°C (0°F to	o 140°F)				
Flow (at 6 bar, $\Delta P=1$ bar):	400 NI/min	400 NI/min				
Coil:	General purpose clas	General purpose class A, continuous duty, encapsulated				
Voltage range:	-15% to +10% of nor	-15% to +10% of nominal voltage				
Protection:	Consult factory					
Power:	~ Inrush : 33 VA	Holding: 19.7 VA				
	= 1 to 24 W					
Response times:	24 V=/8.5 W	Energize : 15 ms	De-energize : 5 ms			
	50 Hz/6 W	Energize : 3-8 ms	De-energize : 3-13 ms			

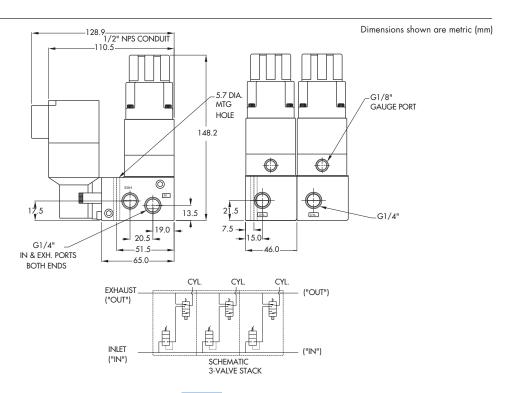
Spare parts : • Solenoid operator (power ≥ 6 W) : D4-XXAAB, cover mounting screws 32222 and seal B5-6001.

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

Options : • NPTF threads. • Isolation of inlet and/or exhaust.

• Mod. PR80 (0-5,3 bar pressure range), Mod PR30 (0-2 bar pressure range)

DIMENSIONS





Function	Port size		Flow (Max)	Manifold mounting		Series
3/2 NO-NC, 2/2 NO-NC	G1/4"		400 NI/min	sub-base with pressure regulators		
OPERATIONAL BENEFITS						
Balanced poppet, immune to variety pressure. Short stroke with high flow. The patented solenoid develop						35
forces. 4. Powerful return spring. 5. Manual operator standard on						100
6. Burn-out proof solenoid on AC7. Selected pressure control to a	service.			0		200
				0 -	200	55
HOW TO ORDER					.0	56 57
HOW TO ORDIN	Port size			NC only valve		58
				CYL		59
				IN EXH		
	Valve			251B- XXYZZ Mod 005		45
SOLENOID OPERATOR >		<u> </u>	Y <u>ZZ</u> *			
XX Voltage		Y Manual ope		ZZ Electrical	connection	700
11 110V~/50Hz		1 Non-locking	FIGIO	JA Square conne		200
12 220V~/50Hz 22 24V~/50Hz		2 Locking		JC Square conne BA Flying leads (ector with light 45 cm)	900
52 24V=/2,5W 78 24V=/24W		- -				200
61 24V=/8,5W * Other options available, see	nage 305	-				82
·	. •					
Manifold fastening kit required						6300
MODEL 251B-	This	CTED PRESSURE CONTROL version permits the alternate	selection of any of the			6500
3-Way Normally Closed		•		, ,	pressure port passes through utlet Port). Pressure supplied	//00
		common inlet port is reguld d in the stack the Normally				6600
	valve	is open to the common outl	et. If two valves are en	ergized at the same time the		1300
	open	to exhaust from the common natic diagram next page).				800
						ISO 1
						ISO 2

ISO 3







Fluid:	Compressed air, vac	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 10 bar					
Lubrication :	Not required, if used	select a medium aniline	point lubricant (between 80°C and 100°C)			
Filtration:	40 µ					
Temperature range :	-18°C to 60°C (0°F t	o 140°F)				
Flow (at 6 bar, $\Delta P=1$ bar):	400 NI/min	400 NI/min				
Coil:	General purpose cla	General purpose class A, continuous duty, encapsulated				
Voltage range :	-15% to +10% of no	-15% to +10% of nominal voltage				
Protection :	Consult factory					
Power:	~ Inrush : 33 VA	Holding: 19.7 VA				
	= 1 to 24 W					
Response times:	24 V=/8.5 W	Energize : 15 ms	De-energize : 5 ms			
	50 Hz/6 W	Energize : 3-8 ms	De-energize : 3-13 ms			

Spare parts: • Solenoid operator (power ≥ 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 : • NPTF threads. • Isolation of inlet and/or exhaust.

• Mod. PR80 (0-5,3 bar pressure range), Mod PR30 (0-2 bar pressure range)

DIMENSIONS

Dimensions shown are metric (mm) 28.9 1/2" NPS CONDUIT —110.5 5.7 DIA G1/8" GAUGE PORT MTG HOLE 148.2 0 \bigcirc 0 \ominus Θ 13.5 20.5 G1/4" IN & EXH. PORTS BOTH ENDS -46.0 -51.5 EXHAUST OR N.O. OPTIONAL COMMON OUTLET ("OUT") PRESSURE ("OUT") COMMON SUPPLY ("IN") SCHEMATIC 3-VALVE STACK ("IN")

Individual mounting Series

35

6500

6600

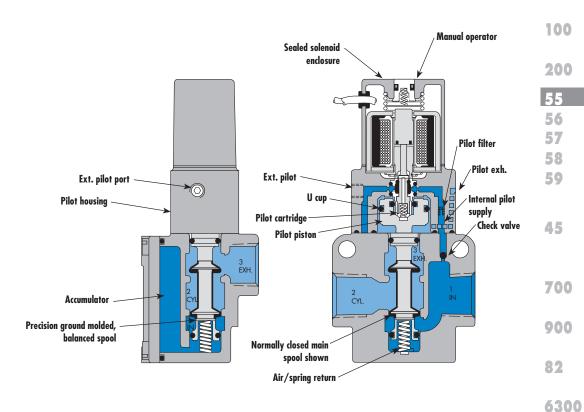
1300

800

ISO 1

ISO 2

ISO 3



SERIES FEATURES

- The patented MACSOLENOID with its non-burn out feature on AC service.
- Balanced spool unaffected by back pressure in the exhaust or by inlet restrictions. May be plugged for 2-way operation.
- A large checked accumulator which supplies the pilot and air/spring return for consistent shifting.
- Use on lube or non-lube service.
- Extremely rapid response and cycle rate.
- Various types of manual operators and solenoid enclosures.
- Optional low wattage DC solenoids down to 1 watt.







VALVE CONFIGURATIONS AVAILABLE

- 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 2 bar main valve pressures on solenoid or 1,7 bar 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 2 to 10 bar, 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 2 to 10 bar 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 2 bar on solenoid pilot or 1,7 bar 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 55 Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-NC	G1/4" - G3/8"	2200 NI/min	inline	001100
OPERATIONAL BENEFITS				
Balanced spool, immune to va pressure. Short stroke with high flow. The piston (booster) provides a	8. Pilot valve with be short and consiste	ninates sticking. planced poppet, high flow, ent response times.		35
shifting forces. 4. Checked accumulator guarant pilot pressure.				100
Powerful return force thanks to combination of mechanical a Bonded spool with minimum frame.	nd air springs.			200
in a glass-like finished bore.				55

HOW TO ORDER

Port size	Pilot air	NC valve	NO valve	
		CYL IN EXH	LZZE T T M	
G1/4"	Internal	55B-13-PI- XXYZZ	55B-23-PI- xxyzz	
G3/8"		55B-14-PI- XXYZZ	55B-24-PI- XXYZZ	
G1/4"	External	55B-13-PE- xxyzz	55B-23-PE- XXYZZ	
G3/8"		55B-14-PE- xxyzz	55B-24-PE-xxyzz	

XX	Voltage	Y	Manual operator	ZZ	Electrical connection
11	110V~/50Hz	1	Non-locking	JB	Rectangular connector
12	220V~/50Hz	2	Locking	JD	Rectangular connector with light
22	24V~/50Hz			JA	Square connector
59	24V=/2,5W			JC	Square connector with light
87	24V=/17,1W			BA	Flying leads (45 cm)

<u>XX</u> Y <u>ZZ</u>*

61 24V=/8,5W

SOLENOID OPERATOR ➤

ISO 1 **ISO 2 ISO 3**

56

57 58 59

45

700

900

82

6300

6500

6600

1300

800

^{*} Other options available, see page 305. Note: Exhaust port is G3/8"







Fluid :	Compressed air, vacu	um, inert gases				
Pressure range :	Internal pilot : 2 to 10	Internal pilot : 2 to 10 bar				
	External pilot : vacuur	n to 10 bar				
Pilot pressure :	2 to 10 bar					
Lubrication:	Not required, if used	select a medium aniline	point lubricant (between 80°C and 100°C)			
Filtration:	40 µ					
Temperature range :	-18°C to 50°C (0°F to	120°F)				
Flow (at 6 bar, ΔP=1bar):	Norm. Closed :G1/4" : 1400 NI/min, G3/8" : 1600 NI/min, Norm. Open : G1/4" : 1800 NI/min, G3/8" : 2200 NI/min					
Coil:	General purpose class	s A, continuous duty, enc	apsulated			
Voltage range :	-15% to +10% of nom	ninal voltage				
Protection:	Consult factory					
Power:	~ Inrush : 14.8 VA	Holding: 10.9 VA				
	= 1 to 17 W					
Response times :	24 V=/8.5 W	Energize : 9 ms	De-energize : 4.8 ms			
	50 Hz/6 W	Energize : 5-11 ms	De-energize: 5-11 ms			

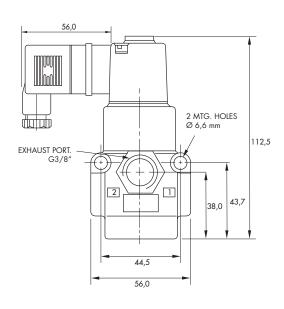
Spare parts :

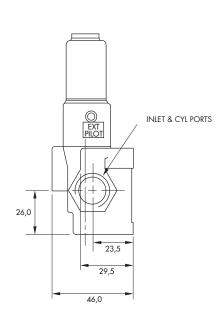
Solenoid operator (power ≥ 4 W): D1-XXAA, cover mounting screws 35206 and seal 16234.
 Pilot valve: PID-XXYZZ, including mounting screws 35214 and seal 16363. • Check valve: 70061.

• NPTF threads. Options :

DIMENSIONS

Dimensions shown are metric (mm)





Series 56

Individual mounting Series

35

100

200

55

57

58

59

45

700

900

82

6300

6500

6600

1300

800

ISO 1

ISO 2

ISO 3

Pilot valve **Function plate** Check valve Ext. pilot port From accumulator Pilot exhaust or remote air pilot port One piece body Precision ground molded, balanced Air/spring return spool To accumulator Internal pilot supply

SERIES FEATURES

- The patented MACSOLENOID with its non-burn out feature on AC service.
- Seven valve functions in one valve.
- Balanced spool unaffected by back pressure in the exhaust or by inlet restrictions.
 May be plugged for 2-way operation.
- A large checked accumulator which supplies the pilot and air/spring return for consistent shifting.
- Use on lube or non-lube service.
- Various types of manual operators and solenoid enclosures.
- Optional low wattage DC solenoids down to 1 watt.







VALVE CONFIGURATIONS AVAILABLE

- 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 1.7 bar 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 1.7-10 bar. 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 1.7 bar. 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 1.7 bar 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.



Function	Port size		Floш (Max)	Individual mo	unting	Series
3/2 NO-NC, 2/2 NO-NC	G3/8" - G1/2	" - G3/4"	5700 NI/min	inline		
OPERATIONAL BENEFITS						
Balanced spool, immune to var pressure. Short stroke with high flow. Large spool area provides max	8. 1	Wiping effect eliminates s Pilot valve with balanced Short and consistent respo	poppet, high flow,			35
forces. 4. Checked accumulator guarante pilot pressure.	es maximum					100
Powerful return force thanks to combination of mechanical and Bonded spool with minimum frie	d air springs.					200
in a glass-like finished bore.						55
HOW TO ORDER						57
Port size Pilot	air NC	only valve		NO only	valve	58
		ot - NC spool	NO pilot - NC sp		NC pilot - NO spool	59
		CYL IN EXH	CYL TD T T IN EXH		CYL T W	_
G3/8"		C-15- xxyzz	56C-25- XXYZZ		56C-65- XXYZZ	45
G1/2" Inter		C-16- XXYZZ	56C-26- XXYZZ		56C-66- XXYZZ	_
G3/4" G3/8"		C-18- xxyzz C-35- xxyzz	56C-28- XXYZZ 56C-45- XXYZZ		56C-68- xxyzz 56C-75- xxyzz	_
G1/2" Exter		C-36- XXYZZ	56C-46- XXYZZ		56C-76- XXYZZ	
G3/4"		C-38-xxyzz	56C-48- XXYZZ		56C-78- xxyzz	700
SOLENOID OPERATOR ➤		XX	Y <u>ZZ</u> *			900
XX Voltage		Y Manual ope	erator		ectrical connection	82
11 110V~/50Hz 12 220V~/50Hz		Non-locking Locking			ectangular connector ectangular connector with light	_
22 24V~/50Hz 59 24V=/2,5W				JA Sc	uare connector	- 6300
87 24V=/17,1W				BA FI	ving leads (45 cm)	_
61 24V=/8,5W						6500
* Other options available, see p Note : Exhaust port is G3/4"	page 305.					6600
						1300
						800
						ISO 1 ISO 2 ISO 3







Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot: 1.7 to 10 bar External pilot: vacuum to 10 bar Pilot pressure: 1.7 to 10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P=1$ bar): Norm. Closed: G3/8": 4400 NI/min, G1/2": 5000 NI/min, G3/4": 5400 NI/min, Norm. Open: G3/8": 4600 NI/min, G1/2": 5100 Nl/min, G3/4": 5700 Nl/min 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 W Response times: 24 V=/8.5 W Energize: 11 ms De-energize: 10,8ms 50 Hz/6 W Energize: 7-12 ms De-energize: 9-14 ms

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

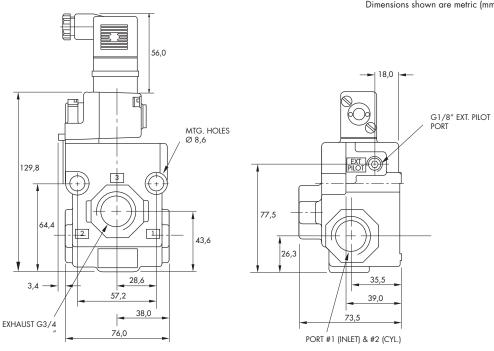
• Pilot valve: 130B-XXYZZ, including function plate A2-7009. • Pilot mounting screws kit: N-56002.

• Check valve : 70063.

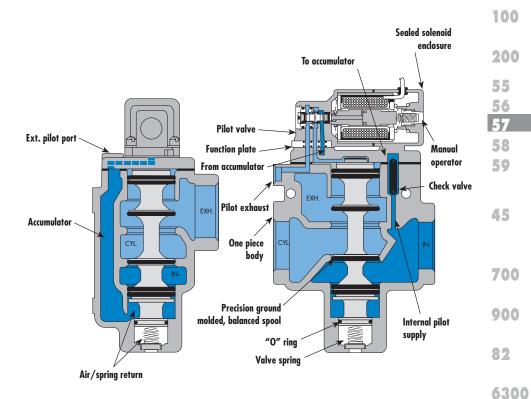
Options: • NPTF threads.

DIMENSIONS

Dimensions shown are metric (mm)



Individual mounting Series



SERIES FEATURES

- The patented MACSOLENOID with its non-burn out feature on AC service.
- Seven valve functions in one valve.
- Balanced spool unaffected by back pressure in the exhaust.
- A large checked accumulator which supplies the pilot and air/spring return for consistent shifting.
- A triple rated coil for 120/60, 110/50 or 24 VDC (6 Watt).
- Use on lube or non-lube service.
- Various types of manual operators and solenoid enclosures.
- Optional low wattage DC coils down to 1 watt.

ISO 3

6500

6600

1300

800

ISO 1

ISO 2

35







VALVE CONFIGURATIONS AVAILABLE

- 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 niir)
- Internal pilot or External pilot for vacuum to 1.7 bar 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:

- 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 1.7-10 bar. 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 1.7 bar. 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 1.7 bar 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.



Function	Port :	size	Flow (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-N	C G1/	2" - G3/4" - G1"	17400 NI/min	inline	
OPERATIONAL BENEFITS					
Balanced spool, immune pressure. Short stroke with high flo Large spool area provide	w.	 Pilot valve with balanced short and consistent resp 	poppet, high flow,		35
forces. 4. Checked accumulator gupilot pressure.	arantees maxim	-			100
5. Powerful return force that combination of mechanic6. Bonded spool with minin	ical and air spri			- 70	200
in a glass-like finished bo		9		17	55
					56
HOW TO ORDER					57
Port size	Pilot air	NC only valve		NO only valve	58
		NC pilot - NC spool	NO pilot - NC sp	oool NC pilot - NO spool	59
		CYL IN EXH	IN EXH	CYL TO THE SEXT	
G1/2"	_	57D-14- xxyzz	57D-24- xxyzz		45
G3/4"	Internal	57D-15- xxyzz	57D-25- XXYZZ		
G1"		57D-16- xxyzz 57D-34- xxyzz	57D-26- xxyzz 57D-44- xxyzz		
G3/4"	External —	57D-35-xxyzz	57D-45- XXYZZ		
G1"		57D-36- xxyzz	57D-46- XXYZZ		 700
SOLENOID OPERATOR	₹ >	<u> </u>	Y <u>ZZ</u> *		900
XX Voltage		Y Manual op	erator	ZZ Electrical connection	82
11 110V~/50Hz 12 220V~/50Hz		0 No operator Non-locking		JA Square connector JC Square connector with light	
22 24V~/50Hz 52 24V=/2,5W		2 Locking		BA Flying leads (45 cm)	6300
78 24V=/24W					7.000
61 24V=/8,5W					6500
* Other options available Note : Exhaust port is G1'		5.			6600
					1300
					800
					ISO 1 ISO 2 ISO 3







Fluid :

Compressed air, vacuum, inert gases

Pressure range:

Internal pilot : 1.7 to 10 bar External pilot : vacuum to 10 bar

Pilot pressure:

1.7 to 10 bar (Not to exceed main valve pressure by more than 3.3 bar)

Lubrication:

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

Filtration:

40 μ

Temperature range :

-18°C to 50°C (0°F to 120°F)

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

 $Norm. \ Closed: G1/2'': 9000 \ NI/min, \ G3/4'': 12700 \ NI/min, \ G1'': 15900 \ NI/min, \ Norm. \ Open: G1/2'': 10000 \ NI/min, \ O$

G3/4": 13700 Nl/min, G1": 17400 Nl/min

Coil : Voltage range :

General purpose class A, continuous duty, encapsulated

Protection:

-15% to +10% of nominal voltage

Power:

Consult factory

~ Inrush : 33 VA

Holding: 19.7 VA

Response times :

= 1 to 24 W

50 Hz/6 W

24 V=/8.5 W

Energize: 23 ms De-energize: 13ms

Energize: 9-16 ms De-energize: 11-22 ms

Spare parts :

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

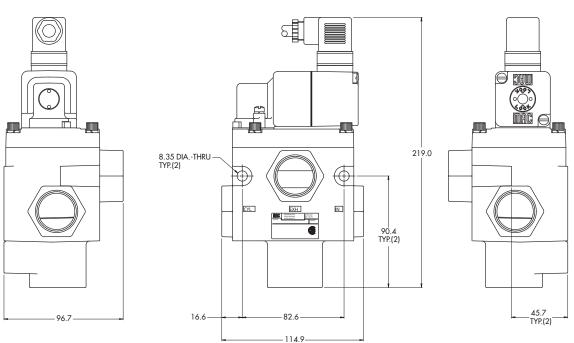
 $\bullet \ Pilot \ valve: 250 B-XXYZZ, \ including \ mounting \ screws \ 32203 \ and \ function \ plate \ A2-7005. \ \bullet \ Check \ valve: 70019.$

Options:

NPTF threads.

DIMENSIONS

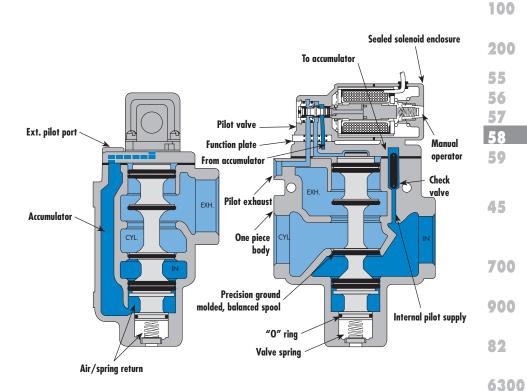
Dimensions shown are metric (mm)



Series 58

Direct solenoid and solenoid pilot operated valves

Individual mounting Series



SERIES FEATURES

- The patented MACSOLENOID with its non-burn out feature on AC service.
- Seven valve functions in one valve.
- Balanced spool unaffected by back pressure in the exhaust.
- A large checked accumulator which supplies the pilot and air/spring return for consistent shifting.
- A triple rated coil for 120/60, 110/50 or 24 VDC (6 Watt).
- Use on lube or non-lube service.
- Various types of manual operators and solenoid enclosures.
- Optional low wattage DC coils down to 1 watt.

ISO 3

6500

6600

1300

800

ISO 1

ISO 2

35







VALVE CONFIGURATIONS AVAILABLE

- 3-Way Normally Open or Normally Closed (solenoid or remote air).
- 2-Way (by plugging Exhaust port), Normally Open & Normally Closed (solenoid or remote niir)
- Internal pilot or External pilot for vacuum to 1.7 bar 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 1.7-10 bar. 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 1.7 bar. 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 1.7 bar 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.



Function		size	Floш (Max)	Individual mounting	Series	
		- G1 1/4" - G1 1/2"	26000 NI/min	inline		
OPERATIONAL BENEFITS	I					
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.		Pilot valve with balanced short and consistent response.	poppet, high flow,	1	35	
		-			100	
Powerful return force combination of mech Bonded spool with m	nanical and air spri			7 de 1/	200	
in a glass-like finished		iiig			55	
					56	
HOW TO ORDER					57	
Port size Pilot air		NC only valve		NO only valve		
		NC pilot - NC spool	NO pilot - NC s		spool 59	
		CYL III III III III III III III III III I	CYL IN EXI		TW EXH	
G1"		58D-14- xxyzz	58D-24- xxyz	58D-64- xx	YZZ 45	
G1 1/4"	Internal	58D-15- xxyzz	58D-25- XXYZ		YZZ	
G1 1/2" G1"		58D-16- xxyzz 58D-34- xxyzz	58D-26- xxyz			
G1 1/4"	External	58D-35- xxyzz	58D-45- xxyz			
G1 1/2"		58D-36- xxyzz	58D-46- xxyzz 58D-76- xx		YZZ	
OLENOID OPERAT	TOR ➤	XX	Y <u>ZZ</u> *		900	
XX Voltage		Y Manual ope		ZZ Electrical connectio	n 82	
11 110V~/50H		0 No operator		JA Square connector	02	
12 220V~/50H 22 24V~/50Hz		1 Non-locking 2 Locking		Square connector with light BA Flying leads (45 cm)	6300	
52 24V=/2,5W 78 24V=/24W					0300	
61 24V=/8,5W	1				6500	
Other options availa		5.			6600	
ote : Exhaust port is (JI 1/2"				6600	
					1300	
					800	
					ISO 1 ISO 2	

ISO 3







Fluid:	Compressed air, vacuui	m, inert gases					
Pressure range:	Internal pilot: 1.7 to 10 bar						
	External pilot : vacuum	to 10 bar					
Pilot pressure:	1.7 to 10 bar (Not to e	xceed main valve pressu	ure by more than 3.3 bar)				
Lubrication :	Not required, if used s	elect a medium aniline p	point lubricant (between 80°C and 100°C)				
Filtration:	40 µ						
Temperature range :	-18°C to 50°C (0°F to 1	120°F)					
Flow (at 6 bar, $\Delta P=1$ bar):	Norm. Closed : G1" :	18700 NI/min, G1 1/4	" : 23000 NI/min, G1 1/2" : 24900 NI/min, Norm. Open : G1" : 20800 NI/min,				
	G1 1/4" : 23800 NI/i	min, G1 1/2" : 26000	NI/min				
Coil:	General purpose class	A, continuous duty, enco	psulated				
Voltage range:	-15% to +10% of nomin	nal voltage					
Protection:	Consult factory						
Power:	~ Inrush : 33 VA	Holding: 19.7 VA					
	= 1 to 24 W						
Response times:	24 V=/8.5 W	Energize : 25 ms	De-energize: 18ms				
	50 Hz/6 W	Energize: 10-17 ms	De-energize: 17-22 ms				

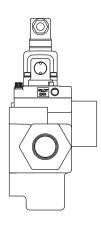
Spare parts:

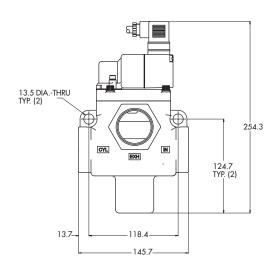
Solenoid operator (power ≥ 6 W): D4-XXAAB, cover mounting screws 32222 and seal B5-6001.
 Pilot valve: 250B-XXYZZ, including mounting screws 32203 and function plate A2-7005.
 Check valve: 70019.

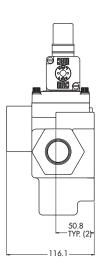
• NPTF threads. Options :

DIMENSIONS

Dimensions shown are metric (mm)







Individual mounting Series

35

6500

6600

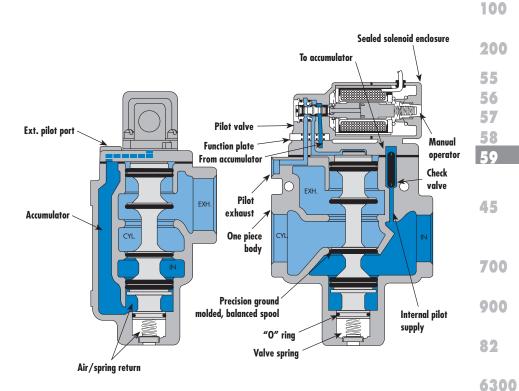
1300

800

ISO 1

ISO 2

ISO 3



SERIES FEATURES

- The patented MACSOLENOID with its non-burn out feature on AC service.
- Seven valve functions in one valve.
- Balanced spool unaffected by back pressure in the exhaust.
- A large checked accumulator which supplies the pilot and air/spring return for consistent shifting.
- A triple rated coil for 120/60, 110/50 or 24 VDC (6 Watt).
- Use on lube or non-lube service.
- Various types of manual operators and solenoid enclosures.
- Optional low wattage DC coils down to 1 watt.







VALVE CONFIGURATIONS AVAILABLE

- 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 1.7 bar 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 1.7-10 bar. 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 1.7 bar. 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
 1.7 bar 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.



unction	on Port size		Flow (Max)	Individual mounting	Series
3/2 NO-NC, 2/2 NO-N	IC G2'	" - G2 1/2"	60000 NI/min	inline	
OPERATIONAL BENEFITS					
Balanced spool, immune pressure. Short stroke with high flat. Large spool area provid.	ow.	8. Pilot valve with short and cons	eliminates sticking. I balanced poppet, high flow, istent response times.		35
forces. Checked accumulator grilot pressure.	uarantees maxin	-			100
 Powerful return force the combination of mechan Bonded spool with mining 	ical and air spri				200
in a glass-like finished b	ore.	9			55
					56
HOW TO ORDER					57
Port size	Pilot air		y valve - NC spool	NO only valve NO pilot - NC spool	58 59
		<u> </u>	CYL T A	CYL T T	37
G2"		59B-1	IN EXH 5-XXYZZ	59B-25 -xxyzz	45
G2 1/2"		59B-1	5-xxyzz	59B-26- xxyzz	49
G2"	External		5-xxyzz	59B-45- xxyzz	
G2 1/2"		59B-3	5-xxyzz	59B-46- xxyzz	
OLENOID OPERATO	R ➤		<u>XX Y ZZ</u> *		700
					900
XX Voltage			inual operator	ZZ Electrical connection	1
11 110V~/50Hz 12 220V~/50Hz			operator n-locking	JA Square connector Square connector with light	
22 24V~/50Hz 52 24V=/2,5W		2 Loc	king	BA Flying leads (45 cm)	82
78 24V=/24W					
61 24V=/8,5W					6300
Other options available ote: Exhaust port is G2		5.			6500
					6600
					1300
					800
					ISO 1
					ISO 2
					150 3
					150 3





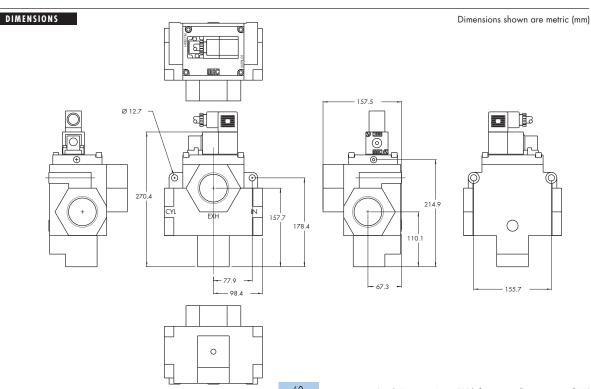


Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot: 1.7 to 10 bar External pilot: vacuum to 10 bar Pilot pressure: 1.7 to 10 bar (Not to exceed main valve pressure by more than 3.3 bar) Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G2": 55000 NI/min, G2 1/2": 60000 NI/min Coil: 1General purpose class A, continuous duty, encapsulated -15% to +10% of nominal voltage Voltage range: Protection: Consult factory ~ Inrush : 33 VA Holding: 19.7 VA Power: = 1 to 24 W Response times: 24 V=/8.5 W Energize: 38 ms De-energize: 25ms 50 Hz/6 W Energize: 35-45 ms De-energize : 25-34 ms

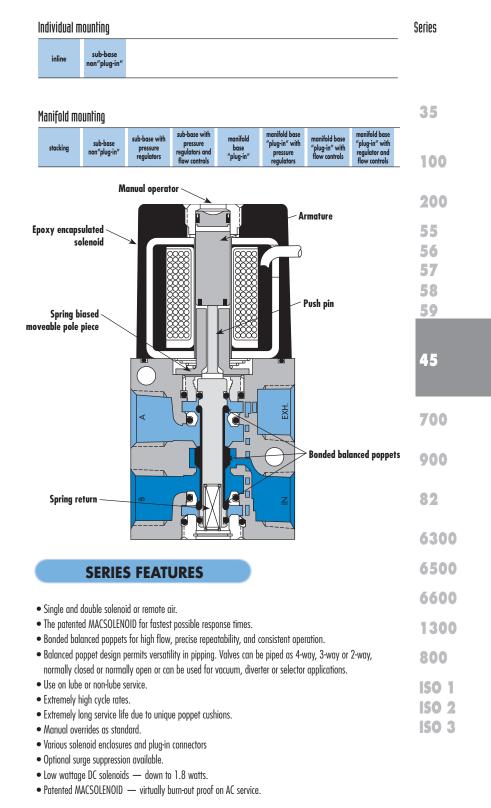
Spare parts : • Solenoid operator (power \geq 6 W) : D4-XXAAB, cover mounting screws 32222 and seal B5-6001.

• Pilot valve: 250B-XXYZZ, including mounting screws 32203 and function plate A2-7005. • Check valve: 70019.

Options : • NPTF threads.











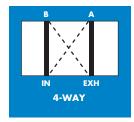


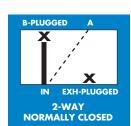
VALVE CONFIGURATIONS AVAILABLE

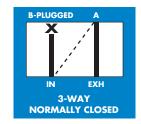
- 2-position single and double solenoid or remote air.
- Single pressure (4 or 5 ports)
- Individual, stacking and manifold base mounted models.
- Integral individual exhaust flow controls with common exhaust port.
- Integral regulators and flow controls on manifolds.

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.



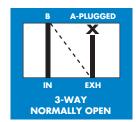


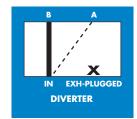


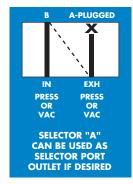




Operator Energized ---









Direct solenoid and solenoid pilot operated valves

Function	Port size		Flow (Max)	Individual mounting		Series	
4/2	M5 - G1/8)II	150 NI/min	inline			
OPERATIONAL BENEF	ITS						
pressure. 2. Short stroke with h	immune to variations of nigh flow.					35	
forces. 4. Powerful return spi	ring. standard on all valves.				-	100	
o. Burn-oui prooi sole	enota on AC service.				103	200	
				(O)		55	
						56	
HOW TO ORDER				-		57	
	Port size	Single (pperator		operator wattage 5.4W)	58 59	
		Z	A B B B		A B B		
	G1/8"		45A-AC1-D xxx-xxx		I-Dxxx-xxx	45	
	M5		45A-AD1-Dxxx-xxx		I-Dxxx-xxx	45	
WITH INTEGRATE	ED FLOW CONTROLS						
	Port size	Single (perator		operator wattage 5.4W)	700	
			A B B B	Z X	A B B B CH V OIN	900	
	G1/8"	_	-Dxxx-xxx		2-D xxx-xxx	200	
	M5	45A-AD2	45A-AD2-D xxx-xxx		45A-GD2-Dxxx-xxx		
SOLENOID OPER	RATOR >	D xx	X- <u>X</u> XX *			82	
		-	ŗ Ţ ̄			6300	
XX Voltage	e X	Wire length	X Manual op	erator XX	Electrical connection	6500	
AB 220V~/5 AA 110V~/5	50HZ A 50HZ J	45 cm (Flying leads) Connector	1 Non-locking 2 Locking		Square connector Square connector with light	6500	
AC 24V~/50 FB 24V=/1,8	DHZ 8W	Connector	Locking	JB	Rectangular connector Rectangular connector with light	6600	
DA 24V=/5,4 DF 24V=/12				BA	Flying leads	1300	
* Other options av	ailable, see page 309.					800	
BOTTOM PORT OPTIO	ONS (O'RING MOUNT)						
45A-XXX-D xxx -	-ххх					ISO 1	
	igl. oper All ports					ISO 2	
—— H-D	gl. oper "A" & "B" ports Dbl. oper All ports bl. oper "A" & "B" ports					ISO 3	







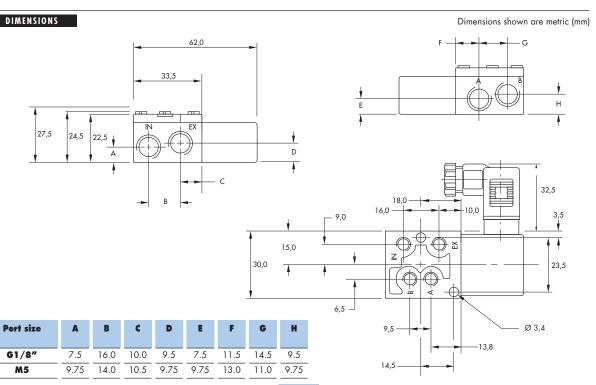
Fluid: Compressed air, vacuum, inert gases Vacuum to 8 bar Pressure range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: 1.8 W : 100 NI/min, 5.4 W : 150 NI/min Flow (at 6 bar, $\Delta P = 1 bar$): 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 24 V=/5.4 W Response times: Energize: 6 ms De-energize: 2 ms 50 Hz/6 W Energize : 3-8 ms De-energize : 2-7 ms

Spare parts : • 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.

Options:

• NPTF threads. • High flow up to 230 NI/min, according to wattage and high flow Mod. • NAMUR interface - 45A-FA1DXXX-XXX and required NAMUR adapter kit: N-45028-03 (for 3-way operation) - N-45028-04 (for 4-way operation).





Function	Port size		Floш (Max)	Individual mounting	Series
4/2	M5 - G1/8	п	130 NI/min	sub-base non"plug-in"	
OPERATIONAL BENEFITS					
Balanced poppet, imr pressure. Short stroke with high The patented solenoic	flow.				35
forces. 4. Powerful return spring 5. Manual operator stan 6. Burn-out proof solenoi	j. dard on all valves.			3	100
5. 20 00. p. 00. 00.0				0	200
					55
				5	56
HOW TO ORDER					57
Po	rt size	Single	operator	Double operator	
			АВ	(Minimum DC wattage	5,4W) 59
		Î <u></u>	KH V OIN	EXHV	_
Valve less base				45A-N00-D xxx-xxx	45
G1/8" base		45A-LCA-D xxx-xxx		45A-NCA-Dxxx-xxx	45
M5 base		45A-LDA-Dxxx-xxx		45A-NDA-D xxx-xxx	<u> </u>
WITH INTEGRATED	FLOW CONTROLS				700
Ро	rt size	Single operator		Double operator (Minimum DC wattage	
		E	KH V OIN	A B B B EXH V OIN	900
Valve less base			-D xxx-xxx	45A-N00-D xxx-xxx	
G1/8" base		45A-LCB-Dxxx-xxx 45A-LDB-Dxxx-xxx		45A-NCB-Dxxx-xxx	<u> </u>
M5 base		45A-LDB	-DXXX-XXX	45A-NDB-D xxx-xxx	
SOLENOID OPERAT	OR ➤	D <u>xx</u>	X- <u>X</u> XX *		6300
			J "		6500
XX Voltage AB 220V~/50Hz	X Z A	Wire length 45 cm (Flying leads)	X Manual a Non-locking	perator XX Electrical KA Square cont	connection 6600
AA 110V~/50HZ AC 24V~/50HZ FB 24V=/1,8W	<u> </u>	Connector	2 Locking	KD Square contained BA Flying leads	nector with light
DA 24V=/5,4W DF 24V=/12,7V	V				800
* Other options availa	ıble, see page 309.				ISO 1
OPTIONS					ISO 2
45A-LCA-D xxx-xxx	C				
T	ute "K" for G1/8" botto	om cylinder ports			150 3





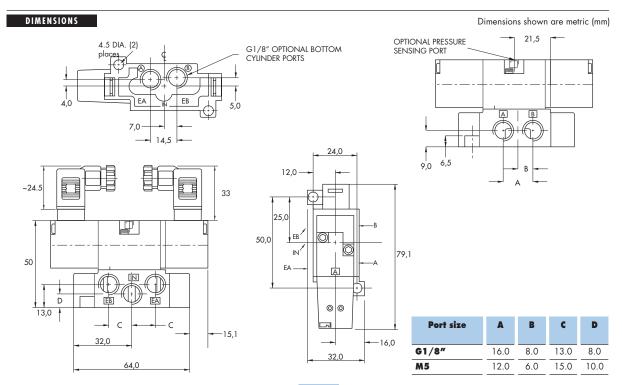


Fluid :	Compressed air, vacu	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 8 bar	, 0				
Lubrication :	Not required, if used	select a medium aniline	point lubricant (between 80°C and 100°C)			
Filtration:	40 µ	40 µ				
Temperature range :	-18°C to 50°C (0°F to	-18°C to 50°C (0°F to 120°F)				
Flow (at 6 bar, $\Delta P=1$ bar):	1.8 W : 110 NI/min,	1.8 W : 110 NI/min, 5.4 W : 130 NI/min				
Coil:	General purpose class A, continuous duty, encapsulated					
Voltage range :	-15% to +10% of nom	-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 V=/5.4 W	Energize : 6 ms	De-energize : 2 ms			
	50 Hz/6 W Energize : 3-8 ms De-energize : 2-7 ms					

Spare parts : • 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. • Flow control: N-45018.

Options: • NPTF threads. • High flow up to 200 NI/min, according to wattage and high flow mod.





Function	Port size		Flow (Max)	Manifold mounting	Series
4/2	M5 - G1,	'8 "	200 NI/min	stacking	
pressure. 2. Short stroke with hi	immune to variations of igh flow. oid develops high shifting ing.				35
6. Burn-out proof soler	noid on AC service.				200 55 56 57
1	Port size	Single	operator	Double operator (Minimum DC wattage	
G1/8"		45A-SC1-Dxxx-xxx 45A-SD1-Dxxx-xxx		45A-TD1-DXXX-XXX	45
WITH INTEGRATE	D FLOW CONTROLS				
	Port size	Single	operator	Double operator	700
	G1/8"		A B B WW WW O IN C-DXXX-XXX	45A-TC2-DXXX-XXX	900
	M5		P-Dxxx-xxx	45A-TD2-Dxxx-xx	82
SOLENOID OPERA			X- X XX *	VV Plating	6300
AB 220V~/50 AA 110V~/50	OHZ A	Wire length 45 cm (Flying leads) Connector	X Manual c 1 Non-locking 2 Locking	KA Square cor	6500
AC 24V~/50H FB 24V=/1,8	HZ	Connector	Locking	BA Flying lead	
DA 24V=/5,4 DF 24V=/12,	7W				1300
	ailable, see page 309.				800
End plate kit required	d (Port size G1/4") : M-45	001-01P.			ISO 1 ISO 2

ISO 3







Fluid:	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 8 bar				
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)				
Filtration:	40 µ				
Temperature range :	-18°C to 50°C (0°F to 120°F)				
Flow (at 6 bar, $\Delta P=1$ bar):	1.8 W : 140 NI/min, 5.4 W : 200 NI/min				
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 V=/5.4 W Energize : 6 ms De-energize : 2 ms				
	50 Hz/6 W Energize : 3-8 ms De-energize : 2-7 ms				

Spare parts : • 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.

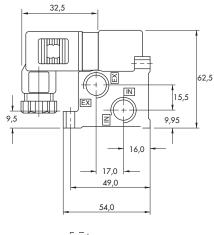
• Valve cover plate with flow controls : N-45004.

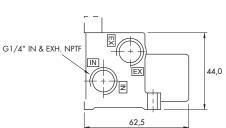
• Inlet & exhaust isolator : N-45005. Inlet isolator : N-45006. Exhaust isolator : N-45007

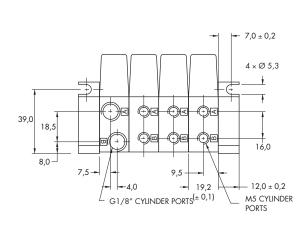
Options: • NPTF threads. • High flow up to 300 NI/min, according to wattage and high flow mod.

DIMENSIONS

Dimensions shown are metric (mm)









Function	Port size		Flow (Max)	Manifold mounting	Series
4/2	M5 - G1/	′8 <i>″</i>	110 NI/min	sub-base non"plug-in"	
OPERATIONAL BENEFIT	rs				
pressure. 2. Short stroke with high	mmune to variations of gh flow. oid develops high shifting			•	35
forces. 4. Powerful return spri 5. Manual operator sta	ng. andard on all valves.				100
6. Burn-out proof soler	note on AC service.				200
				0.0	55
				56	
HOW TO ORDER					57
	Port size	Single	e operator	Double	operator 58
					wattage 5.4W)
		A C	EXH V OIN	A EX	A B B CHÝ ÔIN
Valve less base	•	45A-L00-D <i>xxx-xxx</i>			D-Dxxx-xxx 45
M5 base		45A-LCC-Dxxx-xxx 45A-LDC-Dxxx-xxx			C-Dxxx-xxx C-Dxxx-xxx
		45A-LL	C-DXXX-XXX		
	D FLOW CONTROLS	a			700
'	Port size	Single operator			operator wattage 5.4W)
			A B B B	Â	A B B B 900
Valve less base	•	45A-L00-Dxxx-xxx			D-Dxxx-xxx
G1/8" base		45A-LCD-D xxx-xxx		_	D-Dxxx-xxx 82
M5 base		45A-LC	D-D xxx-xxx	45A-NDE	D-Dxxx-xxx
SOLENOID OPERA	ATOR ➤	D <u>x</u>	X X- X XX *		6300
			J		6500
XX Voltage AB 220V~/50		Wire length 45 cm (Flying leads)	X Manual a Non-locking	•	Electrical connection Square connector
AA 110V~/50 AC 24V~/50H	DHZ J	Connector	2 Locking	KD	Square connector with light Flying leads 1300
DA 24V=/1,8V DA 24V=/5,4V DF 24V=/12,7	W				800
* Other options ava	ilable, see page 309.				
•	l (Port size G1/4") : M-450	008 01 P			ISO 1
Liia piale kii required	i (ron size G1/4): M-430	JUO-U F			ISO 2
					ISO 3







Fluid:	Compressed air, vacu	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 8 bar					
Lubrication :	Not required, if used	select a medium aniline	point lubricant (between 80°C and 100°C)			
Filtration:	40 µ					
Temperature range :	-18°C to 50°C (0°F to	-18°C to 50°C (0°F to 120°F)				
Flow (at 6 bar, $\Delta P=1$ bar):	1.8 W : 90 NI/min, 5	1.8 W : 90 NI/min, 5.4 W : 110 NI/min				
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 V=/5.4 W	Energize : 6 ms	De-energize : 2 ms			
	50 Hz/6 W	Energize : 3-8 ms	De-energize : 2-7 ms			

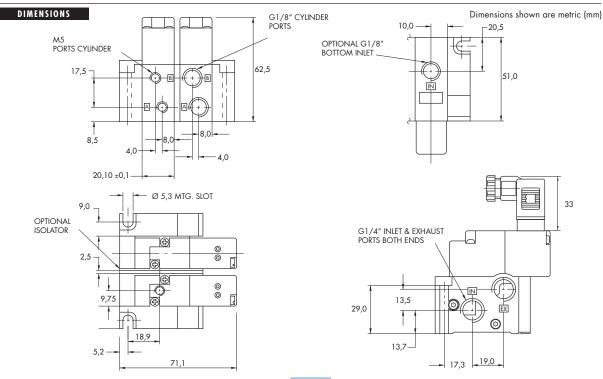
Spare parts : • Solenoid operator (power $\geq 5.4~W$) : DXXX-XXX, including mounting screws 35013.

• 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: • NPTF threads. • High flow up to 180 NI/min, according to wattage and high flow Mod. • Bottom inlet: specify Mod. 0210.





Function	Port	size		Flou	ı (Max)	Manifold mounting	ng		Series
4/2	M5	- G1/8"		110 NI/min					
OPERATIONAL B	ENEFITS								
pressure. 2. Short stroke v	opet, immune to variations with high flow. solenoid develops high sh					ſ			35
forces. 4. Powerful returns 5. Manual opera	rn spring. ator standard on all valves	-				į	0		100
6. Burn-out prod	f solenoid on AC service.					4		00	200
							Ż		55
						0		-	56
HOW TO OF				_					5 7 58
	Port size		Sing	Single operator				e operator C wattage 5,4W)	59
			<u>A</u>	A B W			<u>^</u>		
Valve less	base		EXH ♥ ◆IN 45A-L00-D <i>xxx-xxx</i>		45A-N00-D xxx-xxx		45		
G1/8" bo	ıse			45A-LCJ-D xxx-xxx		45A-NCJ-D xxx-xxx		75	
M5 base			45A-	LDJ-D xxx-xxx			45A-11	DJ-Dxxx-xxx	
SOLENOID C	PERATOR ➤		D <u>X</u>	X X - X X	XX *				700
				-					
	tage		Wire length	Х	Manual op	erator	XX	Electrical connection	900
AA 110	V~/50HZ V~/50HZ		45 cm (Flying leads) Connector	1 2	Non-locking Locking		KA KD	Square connector with light	
AC 24V FB 24V	~/50HZ =/1,8W						BA	Flying leads	82
	=/5,4W =/12,7W								
	s available, see page 30	9.							6300
	quired (Port size G1/4") auge port) : Single opera								6500
	Double oper								6600
REGULATOR O 45A-XXJ-D		Adj. knol	o)						1300
	Replace with "E" for	slotted st	em						800
	– Replace with "G" fo	r locking :	slotted stem						
									ISO 1
									ISO 2
									ISO 3







Fluid: Compressed air, vacuum, inert gases Pressure range: Vacuum to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 μ Temperature range: -18°C to 50°C (0°F to 120°F) Flow (at 6 bar, ΔP=1bar): 1.8 W : 90 Nl/min, 5.4 W : 110 Nl/min 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 V=/5.4 W Energize: 6 ms De-energize: 2 ms 50 Hz/6 W Energize: 3-8 ms De-energize: 2-7 ms

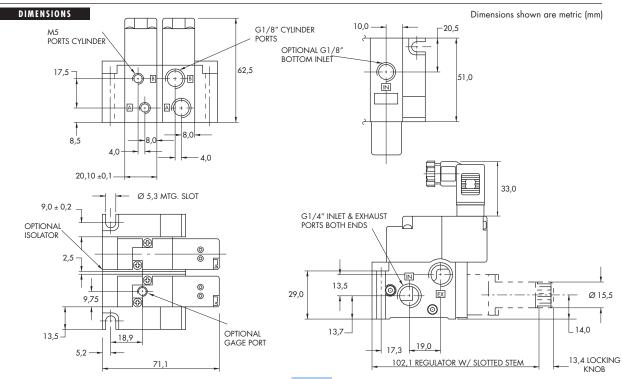
 $\text{Spare parts}: \qquad \qquad \bullet \text{ Solenoid operator (power} \geq 5.4 \text{ W)}: \text{DXXX-XXX, including mounting screws } 35013.$

• 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 : • NPTF threads. • High flow up to 180 NI/min, according to wattage and high flow mod. • Bottom inlet : specify Mod. 0210.





Function	P	ort size		Floi	μ (Max)	Manifold mounting)		Series
4/2		M5 - G1/8	II .	11	O NI/min	sub-base with pressure regulators and flow controls			
OPERATIO	DNAL BENEFITS								
pressur 2. Short s	ed poppet, immune to variationere. troke with high flow. tented solenoid develops high						T	6	35
forces. 4. Powerf 5. Manua	ul return spring. Il operator standard on all val	ves.				9			100
6. Burn-oi	ut proof solenoid on AC servic	ee.						00	200
							Z	27	55
						S.A.	9	40	56
HOW	TO ORDER								57
	Port size		Sinal	e operato	1	D	oubl	e operator	58
								C wattage 5,4W)	59
			Å .	EXH V SIN		<u>,</u>		A B B B EXTENSION	
	e less base			00-D xxx-xx				00-D <i>xxx-xxx</i>	45
	8" base			CK-Dxxx-xx				CK-Dxxx-xxx	
	base		45A-LL	K-D <i>xxx-xx</i>	(43	DA-INI	OK-Dxxx-xxx	
SOLEN	OID OPERATOR ➤		D <u>xx</u>	X-X	XX *				700
XX	Voltage	X	Wire length	X	Manual op		KX	Electrical connection	900
AB AA	220V~/50HZ 110V~/50HZ	A 	45 cm (Flying leads) Connector		Non-locking Locking		KA KD	Square connector Square connectorwith light	
AC FB	24V~/50HZ 24V=/1,8W	-			-		BA	Flying leads	82
DA	24V=/5,4W	-							
* Other	24V=/12,7W options available, see page	309.							6300
End plate Options (kit required (Port size G1/4 with gauge port) : Single ope	") : M-4500 erator : repla	8-01P. ace L by M						6500
PEGIII		perator : rep	lace N by P.						6600
F.C.	ATOR AND OPTIONS								1300
45A	— Replace with "F" f	or slotted s							800
	— Replace with "H"	for locking	slotted stem and F.C.						ISO 1 ISO 2 ISO 3







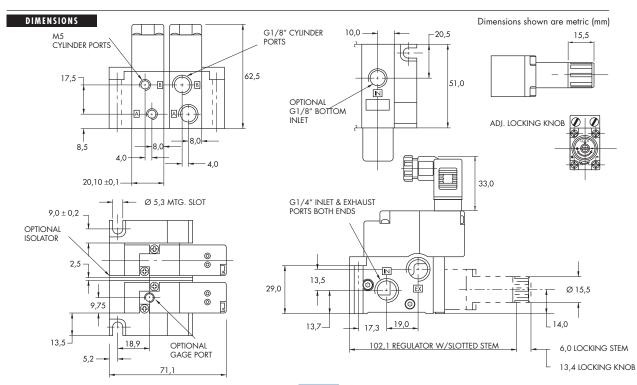
Fluid:	Compressed air, vacu	Compressed air, vacuum, inert gases				
Pressure range :	Vacuum to 8 bar					
Lubrication :	Not required, if used	select a medium aniline	point lubricant (between 80°C and 100°C)			
Filtration:	40 µ					
Temperature range :	-18°C to 50°C (0°F to	120°F)				
Flow (at 6 bar, $\Delta P=1$ bar):	1.8 W : 90 NI/min, 5.4 W : 110 NI/min					
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 V=/5.4 W	Energize : 6 ms	De-energize : 2 ms			
	50 Hz/6 W	Energize : 3-8 ms	De-energize : 2-7 ms			

Spare parts : • 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: • NPTF threads. • High flow up to 180 NI/min, according to wattage and high flow Mod. • Bottom inlet: specify Mod. 0210.





Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	M5 - G1/8"	110 NI/min	Manifold base plug-in	
pressure. 2. Short stroke w 3. The patented storces. 4. Powerful return 5. Manual opera	opet, immune to variations of with high flow. solenoid develops high shifting			35 100 200 55 56
HOW TO OR	DER Port size	Single operator	Double operator	57 58 59
Valve less G1/8" M5	base	45A-LOO-OO-DXXJ-XXX 45A-LSB-AC-DXXJ-XXX 45A-LSB-AC-DXXJ-XXX	45A-NSB-BL-DxxJ-xxx 45A-NSB-BL-DxxJ-xxx	45
Note: Double op	erator valves are only available with b	oottom cylinder ports. D XX J-X XX*		700
AA 110\	tage V-/50Hz	X Manual operator O No operator	XX Electrical connection FM Plug-in	900
DA 24V : FA 12V : FB 24V :	V~/50Hz =/5.4W =/1.8W =/1.8W =/2.4W	1 Non-locking 2 Locking	FN Plug-in with diode FP Plug-in with M.O.V.	6300
FF 24V	=/2.4W available, see page 361.			6500 6600
OPTIONS 45A- L SB-A Q				1300
	C Side cylinder ports - Sing L Bottom cylinder ports - S O Base only - no valve L Single solenoid - Base m M Single solenoid - Base m	Single or double operator ount body		800 ISO 1 ISO 2
	N Double solenoid – Base i			ISO 3

Example: base only: 45A-0SB-AC (1/8" BSP wired for single operator) End plate kit required : M-45028-01P





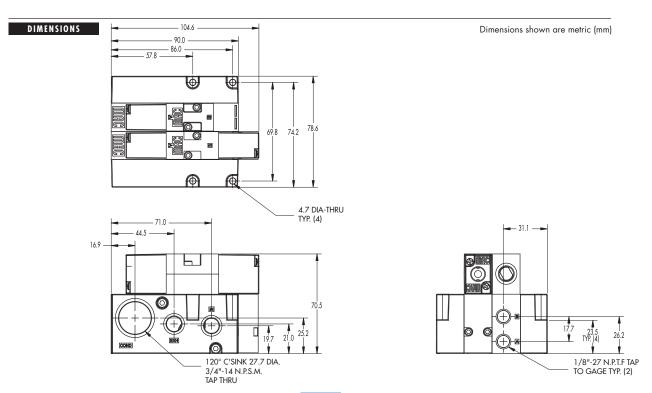


Fluid: Compressed air, vacuum, inert gases Vacuum to 8 bar Pressure range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ -18°C to 50°C Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): 1.8 W: 90 Nl/min, 5.4 W: 110 Nl/min Coil: General purpose class A, continuous duty, encapsulated -15% to +10% of nominal voltage Voltage range: 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 : • NPTF threads





Function	Port size	Flow (Max)	Manifold	-	Series
4/2	M5 - G1/8"	110 NI/m	Manifold bas plug-in with pressure regulators	1	
OPERATIONAL BENEFIT	rs				
Short stroke with high and the patented solend 4. Powerful return spring the solend solend the solend solend the solend term of the solend te	oid develops high shifting forces. ng.				35
Manual operator sta Burn-out proof solen					100
				200	200
					55
			0		56
HOW TO ORDER			_		57
	Port size		Single	e operator	58 59
			<u>^</u>	A B B WW	
Valve less base	•)-00-D xxJ-xxx	45
M5				B-AJ-DxxJ-xxx E-AJ-DxxJ-xxx	_
Note : Bottom cylinder	r ports only with the regulator option. ATOR >	D <u>xx</u> J- x <u>xx</u> .			700 900
VV V-II			VV	Plantation and an artist	
XX Voltage 110V~/50		Manual operator No operator	XX FM	Electrical connection Plug-in	82
AB 220V~/50 DA 24V =/5.4	OHz 1	Non-locking Locking	FN FP	Plug-in with diode Plug-in with M.O.V.	
FA 12V =/1.8°	W	LOCKING		Tidg III WIIII W.C. V.	6300
FB 24V =/1.8° FE 12V =/2.4°	W				0000
* Other options avail					6500
OPTIONS					6600
45A- L SB-A J -Dxx	d-xxx				1300
ΙL.					800
	G Regulator with locking slotted ste	m			ISO 1
	O Base only – no valve				ISO 2
	L Single solenoid - Base mount boom Single solenoid - Base mount boom Mount Single sol				ISO 2
	Example: base only with regulator: 45A-0 End plate kit required : M-45028-01P	SB-AJ			







: DC

DIMENSIONS

Fluid: Compressed air, vacuum, inert gases Vacuum to 8 bar Pressure range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ -18°C to 50°C Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): 1.8 W: (90 Nl/min), 5.4 W: (110 Nl/min) Coil: General purpose class A, continuous duty, encapsulated -15% to +10% of nominal voltage Voltage range: Protection: Consult factory Power: 120 VAC ~ Inrush : 10.9 VA Holding: 7.7 VA

Spare parts : • Inlet isolator : 28477 • Exhaust isolator : 28476

= 1.8 to 12.7 W

• Tie rod (x2): 79244 • Seal between bases: 16762 • Seal between valve & base: 16453

Options : • NPTF threads

4.7 DIA-THRU TYP. (4) 16.9 70.5

120° C'SINK 27.7 DIA. 3/4"-14 N.P.S.M. TAP THRU



Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	M5 - G1/8"	110 NI/min	Manifold base plug-in with flow controls	
OPERATIONAL BENEFIT	-			
2. Short stroke with hig3. The patented soleno4. Powerful return sprir	id develops high shifting forces. ng.		0 0	35
5. Manual operator sta6. Burn-out proof solen	indard on all valves. oid on AC service.		Pills.	100
			0	200
			0	55
HOW TO ORDER	1			56 57
	Port size		Single operator	58 59
				39
Valve less base			exh	45
G1/8"			45A-LSB-AD-DxxJ-xxx	
SOLENOID OPERA	T∩R ► Γ) <u>XX</u> J-X <u>XX</u> *		700
OCIETACID OF ERO		T T		900
XX Voltage	X Mar	ual operator	XX Electrical connecti	on
AA 110V~/50H	Hz O No op	perator	FM Plug-in	82
AB 220V~/50H DA 24V =/5.4V	V 2 Lockir	ocking ng	FN Plug-in with diode FP Plug-in with M.O.V.	
FA 12V =/1.8V FB 24V =/1.8V				6300
FF 12V =/2.4V FF 24V =/2.4V	V			6500
* Other options availa	able, see page 361.			
OPTIONS	1			6600
45A- <u>L</u> SB-A <u>D</u> -Dxx	J-xxx			1300
r	Side cylinder ports with flow controls Bottom cylinder ports with flow controls			800
				ISO 1
و ــــــــــــــــــــــــــــــــــــ				ISO 2
L	 Single solenoid - Base mount body Single solenoid - Base mount body with 	gage port		ISO 3
	,			
	xample: Base only with flow controls: 45A-OSB-A nd plate kit required : M-45028-01P	U		







Temperature range:

Protection:

Fluid: Compressed air, vacuum, inert gases Vacuum to 8 bar Pressure range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

-18°C to 50°C Flow (at 6 bar, $\Delta P = 1 bar$): 1.8 W: (90 Nl/min), 5.4 W: (110 Nl/min)

Coil: General purpose class A, continuous duty, encapsulated

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

Consult factory Power: 120 VAC ~ Inrush : 10.9 VA Holding: 7.7 VA

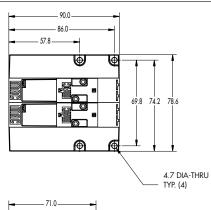
: DC = 1.8 to 12.7 W

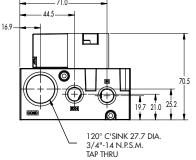
Spare parts : • Inlet isolator : 28477 • Exhaust isolator : 28476

• Tie rod (x2): 79244 • Seal between bases: 16762 • Seal between valve & base: 16453

• NPTF threads Options :

DIMENSIONS





1/8"-27 N.P.T.F TAP TO GAGE TYP. (2)



Function	Port size		Flow (Max)	Manifold m	ounting	Series
4/2	M5 - G1/8"		110 NI/min	Manifold base plug-in with regulator & flow controls	i.	
2. Short stroke with hig	mmune to variations of pressure. 3h flow. 3rd develops high shifting forces.					35
5. Manual operator sto 6. Burn-out proof solen	andard on all valves.					100
					300	200
HOW TO ORDER	_					55 56
HOW TO ORDER	Port size			Single	operator	57 58 59
Valve less base G1/8" M5	:			45A-LSB-	A B B B B B B B B B B B B B B B B B B B	45
						700
SOLENOID OPERA	ATOR ➤	D <u>xx</u> J-x	<u> </u>			900
XX Voltage AA 110V~/50 AB 220V~/50 DA 24V =/5.4V	Hz 0 Hz 1 W 2	Manual operation No operator Non-locking	tor	XX FM FN FP	Electrical connection Plug-in Plug-in with diode Plug-in with M.O.V.	82
FB 24V =/1.8V FE 12V =/2.4V	W W					6300
* Other options availa						6500
	ports only with the regulator & flow of	ontrols option.				6600
45A- L SB-A K -Dxx	U-xxx					1300
	 Regulator with locking slotted 	stem & flow controls				800
(M Single solenoid - Base mount	body body with gage port				ISO 1 ISO 2 ISO 3
	example: Base only with regulator and End plate kit required : M-45028-01P	flow controls: 45A-OSB-A	AK			







Fluid: Compressed air, vacuum, inert gases Vacuum to 8 bar Pressure range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ -18°C to 50°C Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): 1.8 W: (90 Nl/min), 5.4 W: (110 Nl/min) Coil: General purpose class A, continuous duty, encapsulated -15% to +10% of nominal voltage Voltage range: Protection: Consult factory Power: 120 VAC ~ Inrush : 10.9 VA Holding: 7.7 VA : DC = 1.8 to 12.7 W

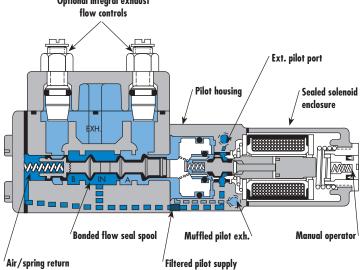
Spare parts : • Inlet isolator : 28477 • Exhaust isolator : 28476

• Tie rod (x2): 79244 • Seal between bases: 16762 • Seal between valve & base: 16453

Options : • NPTF threads

Dimensions shown are metric (mm) 4.7 DIA-THRU TYP. (4) 120° C'SINIX 27.7 DIA. 3/4*-14 N.P.S.M. TAP THRU

Individual mounting Manifold mounting 35 stacking Optional integral exhaust flow controls 56 57



SERIES FEATURES

- The patented MACSOLENOID with its non-burn out feature on AC service.
- Air/spring return for consistent shifting on single solenoid internal pilot valves.
- Use on lube or non-lube service.
- Optional integral adjustable exhaust flow controls with a single common exhaust port.
- Optional low wattage DC solenoids down to 1 watt.
- Various types of manual operators and solenoid enclosures.

ISO 1

58

59

45

700

900

82

6300

6500

6600

1300

800







VALVE CONFIGURATIONS AVAILABLE

The 700 Series is a compact 4-way valve with a flow of up to 800 NI/min. 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 1.3 bar 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 1.3 bar 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 1.3-10 bar, 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 1.3 bar on single operator or 0.7bar on double operator models.
 Single operators require MOD 158-heavy duty spring. Pipe using either an M5x0.8 or a
 M5 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.



ction	Port size	Flow (Max)	Individual mounting	Series
1	G1/8" - G1/4"	700 NI/min	inline	
RATIONAL BENEFITS				
alanced spool, immune to hort stroke with high flow. he piston (booster) provide orces.	·			35
owerful return force thanks echanical and air springs. onded spool with minimur ass-like finished bore.				100
iping effect eliminates stic lot valve with balanced po	oppet, high flow, short			200
nd consistent response time ong service life.	es.			55
ing service ine.			18/18 18	56
OW TO ORDER			(9)	57
Port size	Pilot air	Single oper	ator Double ope	erator 58
				59
		A B B	B A A A IZE IN IN	B B d d /
G1/8"	Internal	711C-13-PI- x 2		45
G1/4"		711C-14-PI-x		XXYZZ
G1/8"	External	711C-13-PE-X		
G1/4"		711C-14-PE- x	XYZZ 721C-14-PE	
	WITH FLOW CONTROLS			700
Port size	Pilot air	Single oper	ator Double ope	erator 900
		A B IN EX	B A A	<u>B</u> B d d d d d d d d d d d d d d d d d d
G1/8"	Internal	712C-13-PI- x)	YZZ 722C-13-PI-	XXYZZ 82
G1/4"		712C-14-PI- x 2		
G1/8"	External	712C-13-PE-X		
G1/4"		712C-14-PE- x	722C-14-PE	
enoid operator >	-	<u>XX</u> Y <u>ZZ</u> *		6500
				6600
VX Voltage		Manual operator	ZZ Electrical connection	1300
11 110V~/50Hz 12 220V~/50Hz		Non-locking Locking	JB Rectangular connector JD Rectangular connector with	
22 24V~/50Hz 59 24V=/2,5W 87 24V=/17,1W			JA Square connector JC Square connector with ligh BA Flying leads (45 cm)	800
61 24V=/8,5W				ISO 1
ther options available, s	ee page 305.			ISO 2
OPTIONS				ISO 3
OFFICIONS				130 3

- For bottom ports (G1/8" only) replace by 2.







Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot : single operator : 1.3 to 10 bar double operator: 0.7 to 10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator: 1.3 to 10 bar Double operator : 0.7 to 10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G1/8": 600 NI/min, G1/4": 700 NI/min Coil: General purpose class A, continuous duty, encapsulated -15% to +10% of nominal voltage Voltage range: Protection: Consult factory Power: ~ Inrush : 14.8 VA Holding: 10.9 VA = 1 to 17.1 W Response times: 24 V=/8.5 W Energize: 6.4 ms De-energize: 8.5ms

De-energize: 7-13 ms

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

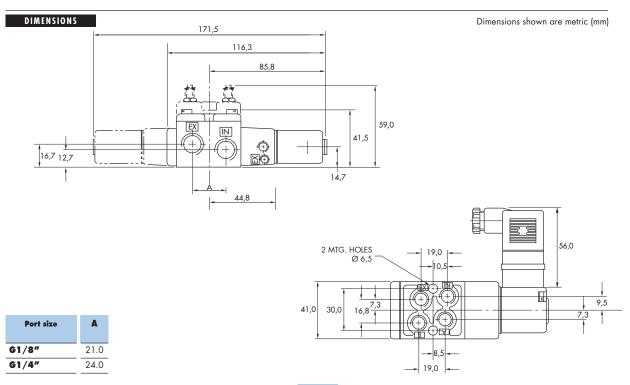
Energize: 4-10 ms

• Pilot valve: PID-XXYZZ, including mounting screws 35214 and seal 16363.

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

Options : • NPTF threads.

50Hz/6 W





Function	Port size		Flow (Max) Manifol	d mounting	Series
4/2	G1/8"	- G1/4"	800 NI/min stackii	ng	
OPERATIONAL BENEFITS					
Balanced spool, immune Short stroke with high fla The piston (booster) provious forces.	ow.				35
 Powerful return force the mechanical and air sprii Bonded spool with mini glass-like finished bore. 	ngs.				100
 Wiping effect eliminates Pilot valve with balance 	d poppet, high flow,	short	•	0	200
and consistent response 3. Long service life.	times.		1		55
O .			No.	0 00	56
HOW TO ORDER				1	57
Port size		Pilot air	Single operator	Double operator	58
			-		59
			A B B IN EXH	A A B B IN EXH	3 2
G1/8"		Internal	713C-13-PI- xxyzz	723C-13-PI- xxyzz	45
G1/4"			713C-14-PI- XXYZZ	723C-14-PI- XXYZZ	_
HOW TO ORDER VAL	VE WITH FLOW	CONTROLS			
Port size		Pilot air	Single operator	Double operator	700
			A B B B	A B B	900
G1/8"		Internal	714C-13-PI- XXYZZ	724C-13-PI- XXYZZ	_ 700
G1/4"		-	714C-14-PI- xxyzz	724C-14-PI- XXYZZ	_
SOLENOID OPERATO	R ≻	<u>XX</u> 1	<u>ZZ</u> *		82
					6300
XX Voltage		Y Manual oper	rator ZZ	Electrical connection	7.000
11 110V~/50Hz 12 220V~/50Hz		1 Non-locking 2 Locking	JB ID	Rectangular connector	6500
22 24V~/50Hz		2 Locking	JD JA	Rectangular connector with light Square connector	6600
59 24V=/2,5W 87 24V=/17,1W			JC BA	Square connector with light Flying leads (45 cm)	
61 24V=/8,5W				y.iig loods (40 oiil)	1300
Other options available and plate kit required (Por		17001-01-01P (internal pilot).			800
,		77001-02-01P (external pilot).			ISO 1
					ISO 2
					ISO 3
					130 3







Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot : single operator : 1.3 to 10 bar double operator: 0.7 to 10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator: 1.3 to 10 bar Double operator : 0.7 to 10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G1/8": 700 NI/min, G1/4": 800 NI/min Coil: General purpose class A, continuous duty, encapsulated -15% to +10% of nominal voltage Voltage range: Protection: Consult factory Power: ~ Inrush : 14.8 VA Holding: 10.9 VA = 1 to 17.1 W Response times: 24 V=/8.5 W Energize: 6.4 ms De-energize: 8.5 ms 50Hz/6 W Energize: 4-10 ms De-energize: 7-13 ms

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

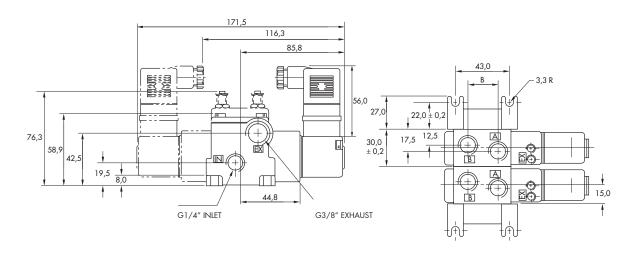
• Pilot valve : PID-XXYZZ, including mounting screws 35214 and seal 16363.

• Valve cover plate with integral flow controls : N-07004. • Inlet & exhaust isolator : N-07005. • Inlet isolator : N-07006.

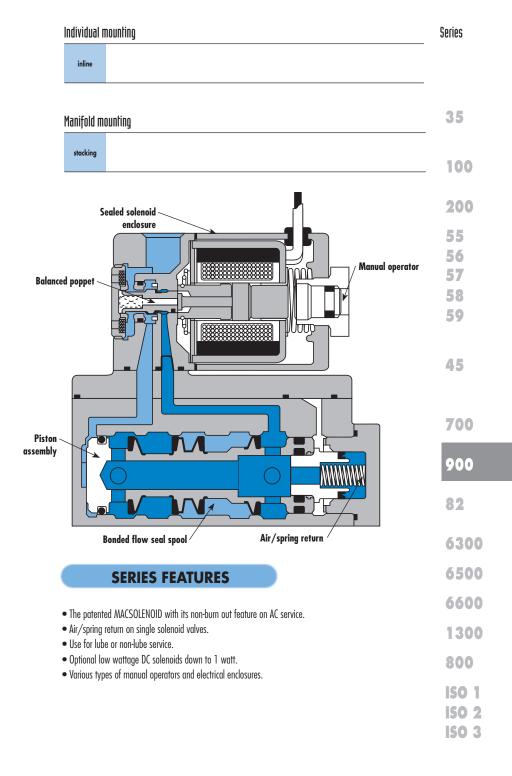
• Exhaust isolator : N-07007.

Options : • NPTF threads.

DIMENSIONS



Port size	В
G1/8"	21.0
G1/4"	24.0









VALVE CONFIGURATIONS AVAILABLE

The 900 Series is a small Inline 4-way valve with a flow of up to 1400 NI/min. 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 0158 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 1.7 bar on singles or 0.7 bar on doubles.



Function	Port size		Flow (Max)	Individua	l mounting	Series
4/2	G1/8" - G1/	4"	1200 NI/min	inline		
 Short stroke with I Large spool area 	mmune to variations of pressure.					35
mechanical and a	th minimum friction, shifting in a					100
6. Wiping effect elin						200
and consistent res						55
8. Long service life. HOW TO ORDER	R					56 57
	Port size	Si	ingle operator		Double operator	58
			AAB_B		- A A B B	59
			IN EX		IN EX	
	G1/8"	(915B-PM- XXYZZ		925B-PM-XXYZZ	45
	G1/4"	(916B-PM- xxyzz		926B-PM- xxyzz	
SOLENOID OPER	RATOR ➤		XX Y ZZ *			700
XX Voltag		Y Manu	al operator	ZZ	Electrical connection	700
11 110V~/5		1 Non-loc		JB	Rectangular connector	000
12 220V~/5 22 24V~/50		2 Locking		JD JA	Rectangular connector with light Square connector	900
59 24V=/2,	5W			JC	Square connector with light	
87 24V=/17 61 24V=/8,	7,1W .5W			BA	Flying leads (45 cm)	82
	vailable, see page 305.					
						6300
						6500
						6600
						1300
						800
						ISO 1 ISO 2 ISO 3





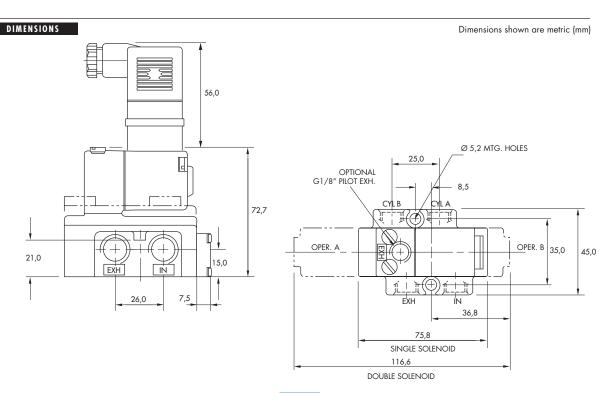


Fluid: Compressed air, vacuum, inert gases Single operator: 1.7 to 10 bar Double operator : 0.7 to 10 bar Pressure range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G1/8": 800 NI/min, G1/4": 1200 NI/min Coil: General purpose class A, continuous duty, encapsulated -15% to +10% of nominal voltage Voltage range: Protection: Consult factory ~ Inrush : 14.8 VA Power: Holding: 10.9 VA = 1 to 17.1 W 24 V=/8.5 W Response times: Energize: 8 ms De-energize: 10 ms 50Hz/6 W 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 16337. • Mounting screw pilot to main valve: 35219.

Options : • NPTF threads.





Function	Port size		Floш (Max)	Manifold mounting	Series
4/2	G1/8" - G1/	/4" - G3/8"	1400 NI/min	stacking	
 Short stroke with hi Large spool area p 	mune to variations of pressure.				35
mechanical and air 5. Bonded spool with	minimum friction, shifting in a				100
glass-like finished b 6. Wiping effect elimi 7. Pilot valve with bala					200
and consistent resp 8. Long service life.					55 56
HOW TO ORDER					57
1	Port size	Single	operator		58
		A LIZE	A B B B IN EX		59
	G1/8"		M-xxyzz	_	45
	G1/4" G3/8"		M-XXYZZ	_	
	G3/6 **		M-xxyzz Mod 005	_	
SOLENOID OPERA	ATOR ➤	<u> </u>	Υ <u>ΖΖ</u>* Τ		700
XX Voltage		Y Manual o		ZZ Electrical connecti	
11 110V~/50		1 Non-locking	peruior	JB Rectangular connector	900
12 220V~/50	Hz	2 Locking		JD Rectangular connector wi	th light
22 24V~/50H 59 24V=/2,5				BA Flying leads (45 cm)	82
87 24V=/17,	1W				02
61 24V=/8,5	W				
* Other options ava	ilable, see page 305.				6300
End plate kit required	(Port size : G3/8") : M-0900	1-01P.			6500
					6600
					1300
					800
					ISO 1 ISO 2 ISO 3







Fluid:	Compressed air, vacuum, inert gases					
Pressure range :	Single operator : 1.7 to 10 bar Double operator : 0.7 to 10 bar					
Lubrication:	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)					
Filtration:	40 μ					
Temperature range :	-18°C to 50°C (0°F to 120°F)					
Flow (at 6 bar, $\Delta P=1$ bar):	G1/8" : 1200 NI/min, G1/4" : 1400 NI/min, G3/8" : 1400 NI/min					
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 V=/8.5 W Energize : 8 ms De-energize : 10 ms					
	50Hz/6 W 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.

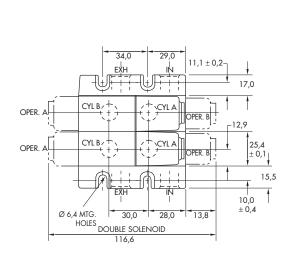
• Pilot valve: PME-XXYZZ, including seal 16367. • Mounting screw pilot to main valve: 35208.

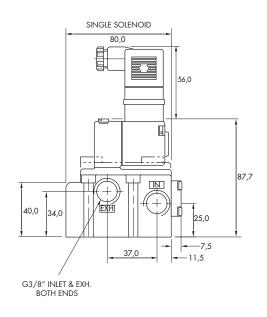
• Pressure seal between valves: 16358. • Tie-rod (x2): 19615. • Inlet & exhaust isolator: N-09002. • Inlet isolator: N-09004.A.

• Exhaust isolator : N-09003.

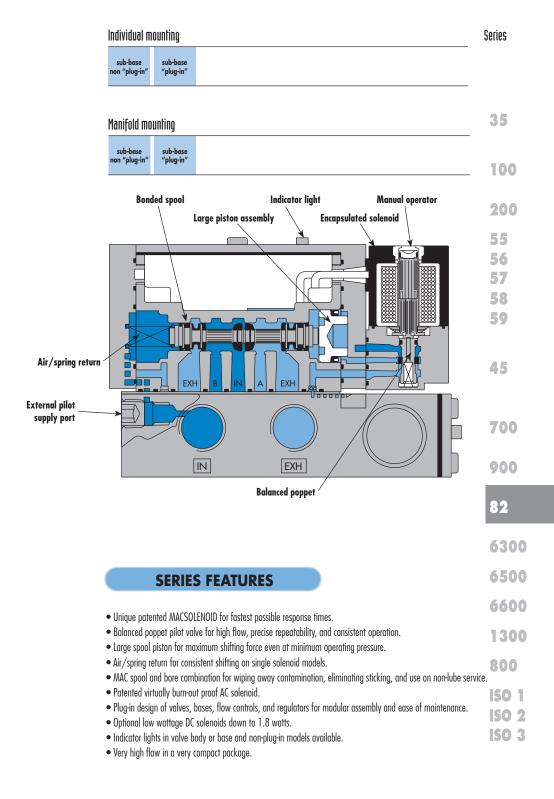
Options : • NPTF threads.

DIMENSIONS







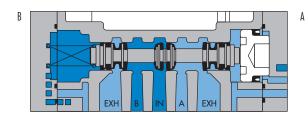




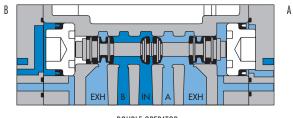




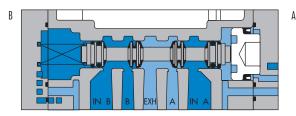
SPOOL CONFIGURATIONS



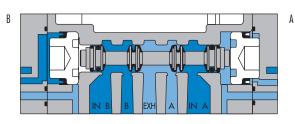
SINGLE OPERATOR SINGLE INLET - DUAL EXHAUST SHOWN WITH "B" OPERATOR ENERGIZED



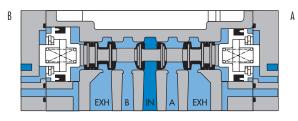
DOUBLE OPERATOR SINGLE INLET - DUAL EXHAUST SHOWN WITH "B" OPERATOR ENERGIZED



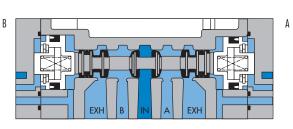
SINGLE OPERATOR DUAL INLET - SINGLE EXHAUST SHOWN WITH "B" OPERATOR ENERGIZED



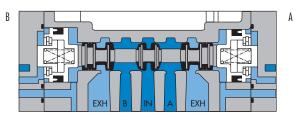
DOUBLE OPERATOR
DUAL INLET - SINGLE EXHAUST
SHOWN WITH "B" OPERATOR ENERGIZED



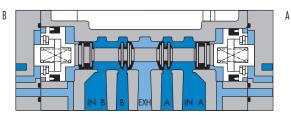
3 POSITION CLOSED CENTER



3 POSITION OPEN CENTER



3 POSITION SINGLE PRESSURE PRESSURE CENTER



3 POSITION DUAL PRESSURE PRESSURE CENTER



Function	Port size	Flow (Max)	Individual mounting	Series
4/2 - 4/3	G1/8" - G1/4" - G3/8"	1350 NI/min	sub-base non "plug-in"	

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of pressure.
- 2. Short stroke with high flow.
- 3. The piston (booster) provides maximum shifting
- 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.



35

100

200

55 56

57

58 59

45

700

900

82

6300

6500

6600

1300

800

ISO 1

ISO 2

ISO 3

OF

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
		A B B B IN EXH	A B B GT	B A B A GIW 1 1 1 A GIW 1 1 1 A GIW 1 1 1 A GIW	B A B A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A B A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A B A A A B	B A B A GIW
Valve less	base	82A-AB-000-TM-D xxx-xxx	82A-BB-000-TM-D xxx-xxx	82A-EB-000-TM-D xxx-xxx	82A-FB-000-TM-D xxx-xxx	82A-GB-000-TM-D xxx-xxx
sub-base	Internal	82A-AB-DAA-TM-D xxx-xxx	82A-BB-DAA-TM-D xxx-xxx	82A-EB-DAA-TM-D xxx-xxx	82A-FB-DAA-TM-D xxx-xxx	82A-GB-DAA-TM-D xxx-xxx
G1/8"	External	82A-AB-DAD-TM-D xxx-xxx	82A-BB-DAD-TM-Dxxx-xxx	82A-EB-DAD-TM-Dxxx-xxx	82A-FB-DAD-TM-Dxxx-xxx	82A-GB-DAD-TM-D xxx-xxx
sub-base	Internal	82A-AB-EAA-TM-D xxx-xxx	82A-BB-EAA-TM-Dxxx-xxx	82A-EB-EAA-TM-D xxx-xxx	82A-FB-EAA-TM-D xxx-xxx	82A-GB-EAA-TM-Dxxx-xxx
G1/4"	External	82A-AB-EAD-TM-Dxxx-xxx	82A-BB-EAD-TM-Dxxx-xxx	82A-EB-EAD-TM-Dxxx-xxx	82A-FB-EAD-TM-Dxxx-xxx	82A-GB-EAD-TM-Dxxx-xxx
sub-base	Internal	82A-AB-FAA-TM-D xxx-xxx	82A-BB-FAA-TM-D xxx-xxx	82A-EB-FAA-TM-D xxx-xxx	82A-FB-FAA-TM-D xxx-xxx	82A-GB-FAA-TM-D xxx-xxx
G3/8"	External	82A-AB-FAD-TM-Dxxx-xxx	82A-BB-FAD-TM-Dxxx-xxx	82A-EB-FAD-TM-Dxxx-xxx	82A-FB-FAD-TM-Dxxx-xxx	82A-GB-FAD-TM-Dxxx-xxx

SOLENOID OPERATOR ➤

XX	Voltage	X	Wire length	X	(Manual operator	XX	Electrical connection
AB	220V~/50Hz	Α	45 cm (Flying leads)	1	1	Non-locking	KA	Square connector
AA	110V~/50Hz	J	Connector	2	2	Locking	KD	Square connector with light
AC	24V~/50Hz						JB	Rectangular connector
FB	24V=/1,8W						JD	Rectangular connector with light
DA	24V=/5,4W						BA	Flying leads
DF	24V=/12,7W						NI I	

Other options available, see page 309.

Note: KD connector shown in photo.

OPTIONS

82A-<u>A</u>B-000-TM-D**xxx-xxx**

- For dual pressure valves, replace A by C, B by D, E by M, F by L, G by H. (Requires sandwich regulator, see pressure regulator section.)

82A-A<u>B</u>-000-<u>TM</u>-D*xxx-xxx*

- TP (Piped pilot exhaust)

- For pilot exhaust out main exhaust, replace B by E. Also, TM pilot body is replaced by TU pilot body.

- Main exhaust cannot be restricted. Available only on single pressure valves.

- Replace A by B for bottom ports (G1/8" or G1/4" only) Replace A by C for side and bottom ports (G1/8" or G1/4" only)







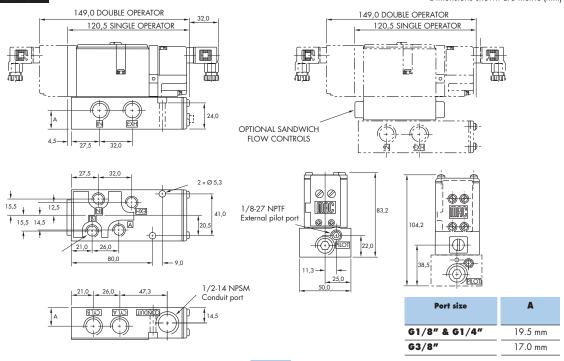
Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot: single operator and 3 positions: 1.7-10 bar double operator: 0.7-10 bar External pilot: vacuum to 10 bar Pilot pressure : Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): $G1/8":900\ Nl/min,\ G1/4":1300\ Nl/min,\ G3/8":1350\ Nl/min$ Coil: Epoxy encapsulated - class A wires - Continuous duty. -15% to +10% of nominal voltage Voltage range: Consult factory Protection: Power: ~ Inrush: 10.9 VA Holding: 7.7 VA = 1.8 to 12.7 W24 V=/5.4 W Energize: 9 ms Response times: De-energize: 6 ms 50Hz/6 W Energize: 5-12 ms De-energize :6-13 ms

Spare parts :

- Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.
- 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 pilot to main valve: 33023.
 Pressure seal between val.
 Mounting screw valve to base (x2): 35211.

Options : • NPTF threads. • Flow controls (Part N°. FC82A-BA).

DIMENSIONS





Function		Port size		Flow (Max)	Individual mounting	Series	;
4/2 - 4/3		G1/8" - G1/4"	- G3/8"	1350 NI/min	sub-base "plug-in"		
OPERATIONAL BENEF	ITS						
2. Short stroke with h 3. The piston (booste	nigh flow.	variations of pressure. s maximum shifting				35)
mechanical and a . Bonded spool wit	ir springs. th minimum	to the combination of				10	0
	ninates sticl Ilanced po	ppet, high flow, short				20	0
and consistent res . Long service life.	ponse time	PS.				55	5
. Long service inc.						56	j
HOW TO ORDER	R					57	7
Port size	Pilot air	4/2	4/2	4/3	4/3	4/3 58	3
		Single operator	Double operator	Closed center	Open center	Pressure center 59)
		IN EXH	A B B B IN EXH	B A B A B A GM	B A B A GIW	B A B A B A B A B A B A B A B A B A B A	
Valve less be		82A-AA-000-TM-DxxP-xDA	82A-BA-000-TM-D xx P- x DA	82A-EA-000-TM-DxxP-xDA	82A-FA-000-TM-D xx P- x DA	82A-GA-000-TM-DxxP-xDA	5
sub-base G1/8"	Internal	82A-AA-DAA-TM-DxxP-xDA	82A-BA-DAA-TM-DXXP-XDA	82A-EA-DAA-TM-DXXP-XDA	82A-FA-DAA-TM-DxxP-xDA	82A-GA-DAA-TM-DxxP-xDA	
sub-base	External Internal	82A-AA-DAD-TM-DxxP-xDA 82A-AA-EAA-TM-DxxP-xDA	82A-BA-DAD-TM-DxxP-xDA 82A-BA-EAA-TM-DxxP-xDA	82A-EA-DAD-TM-DxxP-xDA 82A-EA-EAA-TM-DxxP-xDA	82A-FA-DAD-TM-D <i>xx</i> P- <i>x</i> DA 82A-FA-EAA-TM-D <i>xx</i> P- <i>x</i> DA	82A-GA-DAD-TM-DxxP-xDA 82A-GA-EAA-TM-DxxP-xDA	
_	External	82A-AA-EAD-TM-DxxP-xDA	82A-BA-EAD-TM-DxxP-xDA	82A-EA-EAD-TM-DxxP-xDA	82A-FA-EAD-TMDxxP-xDA	004 C4 F4D T44 D + 004	
sub-base	Internal	82A-AA-FAA-TM-DxxP-xDA	82A-BA-FAA-TM-DxxP-xDA	82A-EA-FAA-TM-DxxP-xDA	82A-FA-FAA-TM-DxxP-xDA	82A-GA-FAA-TM-DXXP-XDA 82A-GA-FAA-TM-DXXP-XDA	0
_	External	82A-AA-FAD-TM-D xx P- x DA	82A-BA-FAD-TM-D xx P- x DA	82A-EA-FAD-TM-D xx P- x DA	82A-FA-FAD-TM-D xx P- x DA	82A-GA-FAD-TM-D xx P- x DA	
OLENOID OPER	RATOR >		D <u>XX</u> P-	X DA*		90	0
				ካ		82	
XX Voltag	е			X Manual ope	rator		
AB 220V~/5				1 Non-locking 2 Locking		63	300
AA 110V~/5 AC 24V~/50				2 Locking			
FB 24V=/1, DA 24V=/5,						65	500
DF 24V=/12							
Other options av	ailable, se	ee page 309.					000
OPTIONS						13	300
2A-AA-000-TM-D xx P-,	light in k	body replace A by C.	raplace A by D. For li	ight raplace A by E		80	0
Use sinç - For - For	e TU pilot gle pressi piped pi dual pre	naust out main exhaust t body for pilot exhaust ure valve only. TU repl ilot exhaust replace TM essure valves, replace A undwich regulator - see	t to main exhaust, mai aces TM. 1 by TP. 1 by C, B by D, E by <i>I</i>	n exhaust cannot be ro M, F by L, G by H.	estricted (NO flow cont	trols) available with ISC	0 2
82A-AA-EAA-TM-DxxP- Rep - Rep	olace A b	by B for bottom ports (C by C for side and botto	G1/8" or G1/4" only m ports (G1/8" or G) 1/4″ only)			







Fluid: Compressed air, vacuum, inert gases double operator : 0.7-10 bar Pressure range: Internal pilot: single operator and 3 positions: 1.7-10 bar External pilot: vacuum to 10 bar Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Pilot pressure: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G1/8":900 NI/min, G1/4":1300 NI/min, G3/8":1350 NI/minCoil: Epoxy encapsulated - class A wires - Continuous duty. -15% to +10% of nominal voltage Voltage range: Consult factory Protection: ~ Inrush : 10.9 VA Holding: 7.7 VA Power: = 1.8 to 12.7 WResponse times: 24 V=/5.4 W Energize: 9 ms De-energize : 6 ms 50Hz/6 W Energize: 5-12 ms De-energize :6-13 ms

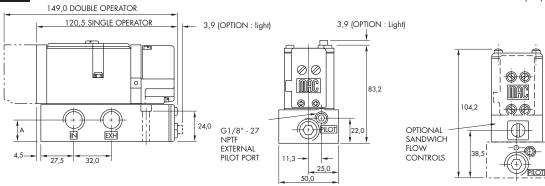
Spare parts : • Solenoid operator (power ≥ 5.4 W) : DXXP-XDA, including mounting screws 35013. • Seal between solenoid and pilot body : 16402.

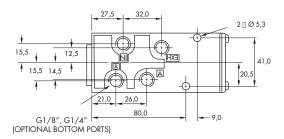
• Pilot valve: TM-DXXP-XDA, including seal 16447. • Mounting screw pilot to main valve: 35023. • Pressure seal between valve and base: 16446.

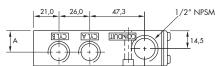
• Mounting screw valve to base (x2) : 35211.

Options : • NPTF threads. • Flow controls (Part N° . FC82A-AA) • Lights in base.

DIMENSIONS







Port size	A
G1/8" - G1/4"	19.5
G3/8"	17.0



ıction		Port size		Flow (Max)	Manifold mounting		Series
2 - 4/3		G1/4" - G3/8"		1350 NI/min	sub-base non "plug-in"		
ERATIONAL BE	NEFITS						
Short stroke wi	ith high flow.	variations of pressure.					35
mechanical an	d air springs. with minimum	to the combination of a friction, shifting in a					100
Wiping effect Pilot valve with	eliminates stic n balanced po	ppet, high flow, short				500.	200
and consistent ong service li	response time fe.	S.)	55
							56
HOW TO OR	DER						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
		A B B B IN EXH	A B B B IN EXH	B A B A A A A A A A A A A A A A A A A A	BWD A B GW	WD A B GM	37
Valve les	s base	82A-AB-000-TM-D xxx-xxx	82A-BB-000-TM-D xxx-xxx	82A-EB-000-TM-D <i>xxx-xxx</i>	82A-FB-000-TM-Dxxx-xxx	82A-GB-000-TM-Dxxx-xxx	45
sub-base	Internal	82A-AB-EKA-TM-D xxx-xxx	82A-BB-EKA-TM-D xxx-xxx	82A-EB-EKA-TM-D xxx-xxx	82A-FB-EKA-TM-D xxx-xxx	82A-GB-EKA-TM-D xxx-xxx	73
G1/4" sub-base	External Internal	82A-AB-EKD-TM-D xxx-xxx 82A-AB-FKA-TM-D xxx-xxx	82A-BB-EKD-TM-D xxx-xxx 82A-BB-FKA-TM-D xxx-xxx	82A-EB-EKD-TM-Dxxx-xxx 82A-EB-FKA-TM-Dxxx-xxx	82A-FB-EKD-TM-Dxxx-xxx 82A-FB-FKA-TM-Dxxx-xxx	82A-GB-FKA-TM-Dxxx-xxx	
G3/8"	External	82A-AB-FKD-TM-Dxxx-xxx	82A-BB-FKD-TM-Dxxx-xxx	82A-EB-FKD-TM-Dxxx-xxx	82A-FB-FKD-TM-Dxxx-xxx	82A-GB-FKD-TM-Dxxx-xxx	700
	PERATOR >		D XX X	- X XX *	rator XX E	lectrical connection	900
AB 220V	/~/50Hz	A 45 c	m (Flying leads)	1 Non-locking	KA S	quare connector	82
AC 24V~ FB 24V=	/~/50Hz -/50Hz -/1,8W	J Conr	ector	2 Locking	JB R JD R	quare connectorwith light ectangular connector ectangular connector with light	6300
	:/5,4W :/12,7W				BA F	lying leads	0300
Other options	available, se	ee page 309.			Note : KD co	onnector shown in photo.	6500
OPTIONS							6600
	For pilot exh	naust out main exhaust			ced by TU pilot body.	Main exhaust cannot	1300
-	For piped p	(No flow controls) availed exhaust replace TA	N by TP.	,			800
		essure valves, replace n ndwich regulator - see					ISO 1
82A-XX-EKA-TM-Dxxx-xxx						ISO 2	
	Replace K b Replace K b	y L for bottom cyl. por y M for bottom inlet p y N for bottom inlet a y P for bottom and en	ort nd cyl. ports d cyl. ports				ISO 3







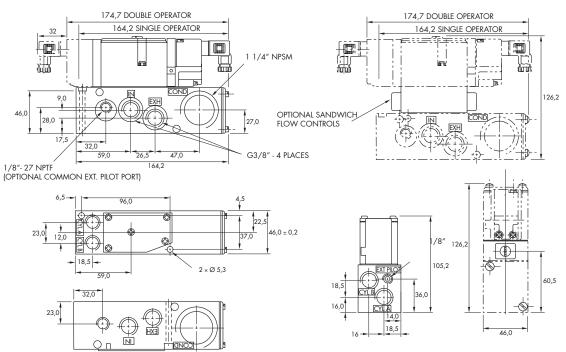
Fluid: Compressed air, vacuum, inert gases double operator : 0.7-10 bar Pressure range: Internal pilot: single operator and 3 positions: 1.7-10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P=1$ bar): G1/4": 1300 NI/min, G3/8": 1350 NI/min Coil: Epoxy encapsulated - class A wires - Continuous duty. -15% to +10% of nominal voltage Voltage range: Protection: Consult factory ~ Inrush : 10.9 VA Holding: 7.7 VA Power: = 1.8 to 12.7 WResponse times: 24 V=/5.4 W Energize: 9 ms De-energize : 6 ms 50Hz/6 W Energize: 5-12 ms De-energize :6-13 ms

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

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.
Tierod (x2): 19731.
Fastening kit: N-82005-01.

Options : • NPTF threads. • Flow controls (Part N° . FC82A-BA).

DIMENSIONS





Function		Port size		Flow (Max)	Manifold mounting		Series
4/2 - 4/3		G1/4" - G3/8"		1350 NI/min	sub-base "plug-in"		
2. Short stroke w	ol, immune to vith high flow.	variations of pressure. s maximum shifting					35
4. Powerful returnmechanical ar5. Bonded spoo	nd air springs. I with minimun	to the combination of n friction, shifting in a					100
glass-like finish 6. Wiping effect 7 Pilot valve with	eliminates stic	king. oppet, high flow, short				00	200
	t response time				30		55
							56
HOW TO OR							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
		A B B B IN EXH	A B B B IN EXH	B A B A B A A B A A A B A A A B A A A B A A A B A A A B A A A B A	B A B A B A A B A A A B A A A A A A A A	B A B A GW	37
Valve les	s base	82A-AA-000-TM-D xx P- x DA	82A-BA-000-TM-D xx P- x DA	82A-EA-000-TM-D xx P- x DA	82A-FA-000-TM-D xx P- x DA	82A-GA-000-TM-D xx P- x DA	45
sub-base	Internal	82A-AA-EKA-TM-DxxP-xDA	82A-BA-EKA-TM-DxxP-xDA	82A-EA-EKA-TM-DxxP-xDA	82A-FA-EKA-TM-DxxP-xDA	82A-GA-EKA-TM-DxxP-xDA	70
G1/4"	External Internal	82A-AA-EKD-TM-D xx P- x DA 82A-AA-FKA-TM-D xx P- x DA	82A-BA-EKD-TM-DxxP-xDA 82A-BA-FKA-TM-DxxP-xDA	82A-EA-EEKD-TM-D xx P- x DA 82A-EA-FKA-TM-D xx P- x DA	82A-FA-EKD-TM-DxxP-xDA 82A-FA-FKA-TM-DxxP-xDA	82A-GA-EKD-TM-D xx P- x DA 82A-GA-FKA-TM-D xx P- x DA	
G3/8"	External	82A-AA-FKD-TM-D xx P- x DA	82A-BA-FKD-TM-D xx P- x DA	82A-EA-FKD-TM-D xx P- x DA	82A-FA-FKD-TM-D xx P- x DA	82A-GA-FKD-TM-D xx P- x DA	700
SOLENOID O	PERATOR >		D XX P-	X DA*			900
	tage			X Manual ope	rator		82
AA 110\	/~/50Hz /~/50Hz			1 Non-locking 2 Locking			04
FB 24V=	~/50Hz =/1,8W						6300
	=/5,4W =/12,7W						0300
* Other option	s available, se	ee page 309.					6500
OPTIONS	S						6600
82A- <u>AA</u> -000-TM-D		body replace A by C.					1300
	For pilot ex	haust out main exhaust tody for pilot exhaus			estricted (No flow cont	rols) available with	800
		sure valve only. TU repl silot exhaust replace TA					100 1
	For dual pre	essure valves, replace	A by C, B by D, E by I				ISO 1
004 VV FV 4 T4 10		andwich regulator - see	pressure regulator se	ction)			150 2
82A-XX-EKA-TM-D		by L for bottom cyl. por	·ts				150 3
	Replace K k Replace K k Replace K k	by M for bottom inlet p by N for bottom inlet a by P for bottom and en by R for bottom and en	ort nd cyl. ports d cyl. ports d cyl. ports w/bottom	inlet			
	Replace K k	by S for selector base v	with side ports	00			







Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot: single operator and 3 positions: 1.7-10 bar double operator: 0.7-10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G1/4": 1300 NI/min, G3/8": 1350 NI/min Coil: Epoxy encapsulated - class A wires - Continuous duty. -15% to +10% of nominal voltage Voltage range: Consult factory Protection: Power: ~ Inrush: 10.9 VA Holding: 7.7 VA = 1.8 to 12.7 WResponse times: 24 V=/5.4 W Energize: 9 ms De-energize : 6 ms 50Hz/6 W Energize: 5-12 ms De-energize :6-13 ms

Spare parts : • 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.

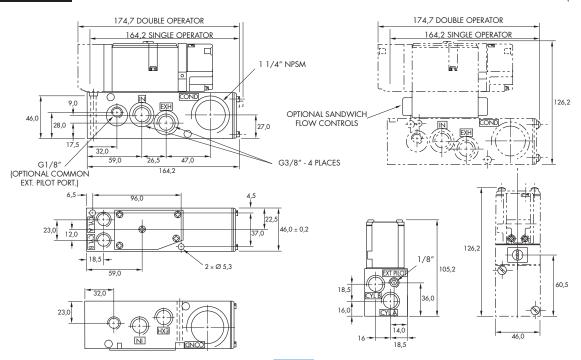
• Mounting screw pilot to main valve : 35023. • Pressure seal between valve and base : 16446.

• Mounting screw valve to base (x2): 35211. • Tie-rod (x2): 19731. • Fastening kit: N-82005-01.

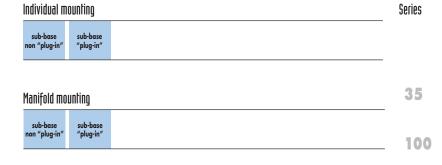
 ${\sf Options}:$

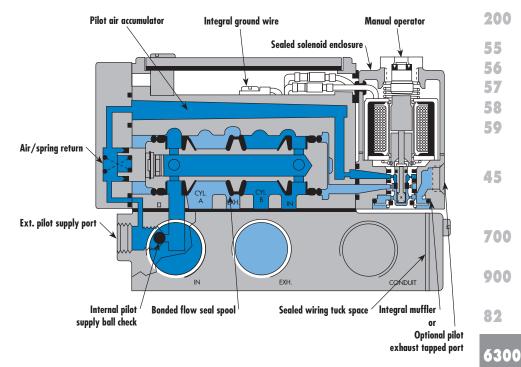
 \bullet NPTF threads. \bullet Flow controls (Part N°. FC82A-AA) \bullet Lights in base.

DIMENSIONS



Series 6300





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 the valve portion is the same.
- Non-lubricated or lubricated service.
- Optional low wattrage 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.

ISO 2 ISO 3

6500

6600

1300

800

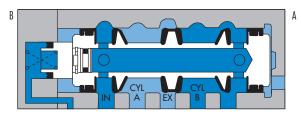
ISO 1



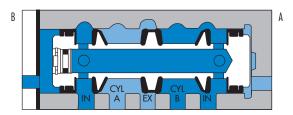




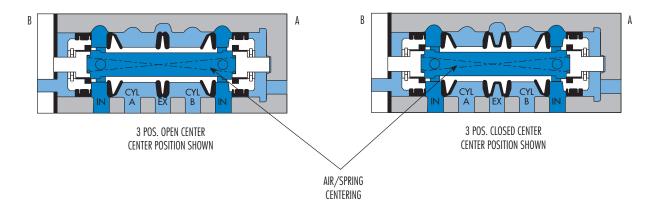
SPOOL CONFIGURATIONS



2 POS. SINGLE OPERATOR SPRING RETURN B ACTUATED SHOWN



2 POS. DOUBLE OPERATOR B ACTUATED SHOWN



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 1.7 bar 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 1.3 to 10 bar, regardless of main valve pressure.



Function	Port size	Flow (Max)	Individual mounting	Series
4/2 - 4/3	G1/4" - G3/8" - G1/2"	3000 NI/min	sub-base non "plug-in"	

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of
- 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.

56 57

55

58

59

700

900

100

200

35

45

82

6300

6500 6600

1300

800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center
		A A B B IN EXH	A A B B IN EXH	B A B A B A A B A A A A A A A A A A A A	B A B A S A A A A A A A A A A A A A A A
Valve less l	ase	6312D-000-PM- xxyzz	6322D-000-PM- xxyzz	6332D-000-PM- XXYZZ	6342D-000-PM- XXYZZ
sub-base	Internal	6312D-171-PM- XXYZZ	6322D-171-PM- XXYZZ	6332D-171-PM- XXYZZ	6342D-171-PM- XXYZZ
G1/4"	External	6312D-181-PM- xxyzz	6322D-181-PM- XXYZZ	6332D-181-PM- XXYZZ	6342D-181-PM- XXYZZ
sub-base	Internal	6312D-271-PM- xxyzz	6322D-271-PM- XXYZZ	6332D-271-PM- XXYZZ	6342D-271-PM- XXYZZ
G3/8"	External	6312D-281-PM- xxyzz	6322D-281-PM- xxyzz	6332D-281-PM- XXYZZ	6342D-281-PM- XXYZZ
sub-base	Internal	6312D-371-PM- xxyzz	6322D-371-PM- xxyzz	6332D-371-PM- XXYZZ	6342D-371-PM- XXYZZ
G1/2"	External	6312D-381-PM- xxyzz	6322D-381-PM- xxyzz	6332D-381-PM- XXYZZ	6342D-381-PM- XXYZZ

Note: Above codes shown are for side ports.

SOLENOID OPERATOR ➤

ХХ	Voltage	Y	Manual operator	ZZ	Electrical connection
11	110V~/50Hz	1	Non-locking	JB	Rectangular connector
12	220V~/50Hz	2	Locking	JD	Rectangular connector with light
22	24V~/50Hz			JA	Square connector
59	24V=/2,5W			JC	Square connectorwith light
87	24V=/17,1W			BA	Flying leads (45 cm)
61	24V=/8,5W			Note : Ph	noto shown with JC connector.

<u>XX</u> Y <u>ZZ</u>*

* Other options available, see page 305.

OPTIONS

6312D-XXX-PM-xxyzz

- - For piped pilot exhaust replace M by P.

- For bottom cylinder ports (excluding G1/2"), replace by 4.

- For dual pressure valves (see page 293 for use with sandwich regulators), replace by 5.

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-171.







Fluid: Compressed air, vacuum, inert gases double operator : 0.7-10 bar Pressure range: Internal pilot : single operator and 3 positions : 1.7-10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator and 3 positions : 1.7-10 bar Double operator : 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): $G1/4": 2000 \ NI/min, \ G3/8": 2600 \ NI/min, \ G1/2": 3000 \ NI/min$ Coil: Epoxy encapsulated - class A wires - Continuous duty. -15% to +10% of nominal voltage Voltage range: Protection: Consult factory ~ Inrush : 14.8 VA Holding: 10.9 VA Power: = 1 to 17.1 W Response times: 24 V=/8.5 W Energize: 10 ms De-energize: 11 ms 50Hz/6 W Energize: 4-13 ms De-energize: 10-17 ms

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

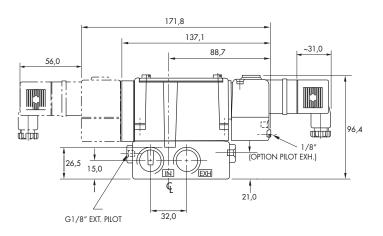
• Pilot valve: PME-XXYZZ, including seal 16337. • Pressure seal between valve and base: 16298.

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

Options : • NPTF threads.

DIMENSIONS

Dimensions shown are metric (mm)





Function	Port size	Flow (Max)	Individual mounting	Series
4/2 - 4/3	G1/4" - G3/8" - G1/2"	3000 NI/min	sub-base "plug-in"	
OPERATIONAL BENEFITS				
Balanced spool, immu pressure.	ne to variations of			35
2. Short stroke with high 3. High shifting forces.	flow.		0	

- 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.



100

200

55

56

57 58 59

45

700

900

82

6300

6500

6600

1300

800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center
		A A B B IN EXH	A A B B B IN EXH	B A B A B A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A A B A	B A B SIM SIM SIM SIM SIM EXH
Valve less k	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-151-PM- XXY DA	6321D-151-PM- XXY DA	6331D-151-PM- XXY DA	6341D-151-PM- XXY DA
G1/4"	External	6311D-161-PM- XXY DA	6321D-161-PM- XXY DA	6331D-161-PM- XXY DA	6341D-161-PM- XXY DA
sub-base	Internal	6311D-251-PM- XXY DA	6321D-251-PM- XXY DA	6331D-251-PM- XXY DA	6341D-251-PM- XXY DA
G3/8"	External	6311D-261-PM- XXY DA	6321D-261-PM- XXY DA	6331D-261-PM- XXY DA	6341D-261-PM- XXY DA
sub-base	Internal	6311D-351-PM- XXY DA	6321D-351-PM- xxy DA	6331D-351-PM- xxy DA	6341D-351-PM- xxy DA
G1/2"	External	6311D-361-PM- XXY DA	6321D-361-PM- XXY DA	6331D-361-PM- XXY DA	6341D-361-PM- XXY DA

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

SOLE	ENOID OPERATOR ➤	<u>XX</u> Y DA *

XX	Voltage	Y	Manual operator
11	110V~/50Hz	1	Non-locking
12	220V~/50Hz	2	Locking
22	24V~/50Hz		
59	24V=/2,5W		
87	24V=/17,1W		
61	24V=/8,5W		
59	24V=/2,5W 24V=/17,1W		

^{*} Other options available, see page 305.

OPTIONS

6311D-XXX-PM-xxyDA

- - For piped pilot exhaust replace M by P.
- For bottom ports (excluding G1/2"), replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light).
- - For side ports with lights on base, replace by 2 (sgl. light), by 3 (dbl. light).
- 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.

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-151.







Fluid: Compressed air, vacuum, inert gases double operator : 0.7-10 bar Internal pilot: single operator and 3 positions: 1.7-10 bar Pressure range: External pilot: vacuum to 10 bar Pilot pressure: Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G1/4": 2000 NI/min, G3/8": 2600 NI/min, G1/2": 3000 NI/minCoil: Epoxy encapsulated - class A wires - Continuous duty. -15% to +10% of nominal voltage Voltage range: Protection: Consult factory Power: ~ Inrush : 14.8 VA Holding: 10.9 VA = 1 to 17.1 W Response times: 24 V=/8.5 W Energize: 10 ms De-energize: 11 ms 50Hz/6 W Energize: 4-13 ms De-energize: 10-17 ms

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

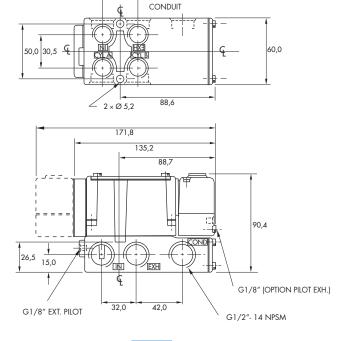
• Pilot valve: PME-XXYDA-BE, including seal 16337. • Pressure seal between valve and base: 16298.

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

Options : • NPTF threads.

DIMENSIONS

Dimensions shown are metric (mm)





nction		Port size		Flow (Max)	Manifold mounting		Series
/2 - 4/3		G3/8" - G1/2"		3000 NI/min	sub-base non "plug-in"		
PERATIONAL BEN	NEFITS						
Balanced spool pressure. Short stroke wit High shifting fo	h high flow. rces.						35
Checked accumpilot pressure. Powerful return	force thanks t	o the					100
in a glass-İike fi	with minimum nished bore.	friction, shifting				0.00	200
Wiping effect e Pilot valve with					0	3	55
short and consi							56
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
		A A B B B IN EXH	IN EXH	B A B QWM	IN EXH	M B A B A B A A A A A A A A A A A A A A	
Valve less b		6312D-000-PM- xxyzz	6322D-000-PM- XXYZZ	6332D-000-PM- XXYZZ	6342D-000-PM- XXYZ		45
sub-base G3/8"	Internal	6312D-571-PM- XXYZZ	6322D-571-PM- XXYZZ	6332D-571-PM- XXYZZ	6342D-571-PM- XXYZ		
sub-base	External Internal	6312D-581-PM- xxyzz	6322D-581-PM- XXYZZ	6332D-581-PM- xxyzz	- 6342D-581-PM-xxyz 6342D-671-PM-xxyz		
G1/2"	External	6312D-681-PM- xxyzz	6322D-681-PM- XXYZZ	6332D-681-PM- XXYZZ	6342D-681-PM- XXYZ		T 00
							700
ote : Above cod	ies snown are	e for side cylinder ports.					
OLENOID OF	PERATOR >		<u> </u>	<u>ZZ</u> *			900
XX Volte	age		Y Manual oper	ator	ZZ Electrica	l connection	82
	~/50Hz		1 Non-locking		JB Rectangular		
12 220V- 22 24V-/	~/50Hz /50Hz		2 Locking		JD Rectangular JA Square con	connector with light	6300
59 24V=/	/2,5W				JC Square con	nector with light	
	/17,1W /8,5W				BA Flying leads Note: Photo shown w		6500
Other options	available see	e page 305			INOTE : Photo snown w	ith JC connector.	7.7.0.0
	a.anabio, 360	- 7-9					6600
OPTIONS							1300
6312D-XXX-P	M-XXYZZ						
6312D-XXX-P	- For p	iped pilot exhaust rep ottom cylinder ports, i					800

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-671.
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.

- 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-571-PM-111JA MOD 0210

ISO 1

ISO 2

ISO 3







Fluid: Compressed air, vacuum, inert gases double operator : 0.7-10 bar Pressure range: Internal pilot: single operator and 3 positions: 1.7-10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G3/8": 2600 NI/min, G1/2": 3000 NI/minEpoxy encapsulated - class A wires - Continuous duty. Coil: -15% to +10% of nominal voltage Voltage range: Protection: Consult factory ~ Inrush : 14.8 VA Holding: 10.9 VA Power: = 1 to 17.1 W Response times: 24 V=/8.5 W Energize: 10 ms De-energize: 11 ms 50Hz/6 W Energize: 4-13 ms De-energize: 10-17 ms

Spare parts : • Solenoid operator (power $\geq 4 \text{ W}$) : D1-XXAA, cover mounting screws 35206 and seal 16234.

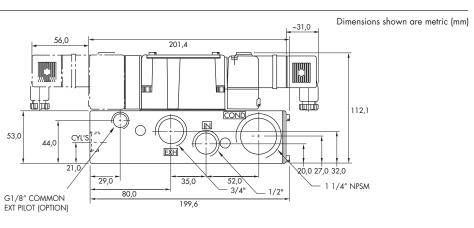
• Pilot valve: PME-XXYZZ, including seal 16337. • Pressure seal between valve and base: 16396.

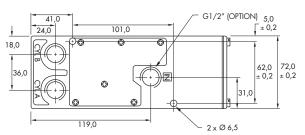
• Mounting screw valve to base (x4): 35303. • Tie-rod (x2): 19624. • Fastening kit: N-63002-01

• Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014.

Options : • NPTF threads.

DIMENSIONS







unction		Port size		Flow (Max)	Manifold mounting		Series
/2 - 4/3	- 4/3 G3/8" - G1/2"		3000 NI/min	sub-base "plug-in"			
PERATIONAL BE	NEFITS						
Balanced spoo pressure. Short stroke wi High shifting fo	th high flow.	variations of			C B		35
Checked accur pilot pressure. Powerful return	mulator guarar ı force thanks t						100
Bonded spool in a glass-like f	with minimum finished bore.	and air springs. friction, shifting				000	200
Wiping effect		king. opet, high flow,			6		55
short and cons							56
HOW TO ORI	DER				100		57
Port size	Pilot air	4/2	4/2	4/3	4/3	4/3	58
POTT SIZE	FIIOT GIF	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center	4/3 Pressure center	59
		A B B B IN EXH	A B B B IN EXH	B A B A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A B A A B A B A A B A B A A B A	B A B A B A B A A B A B A A B A B A A B A	B A B A A A B A A A B A A B A A A B A A B A A B A A B A A B A A B A A B A A B A A A B A A	39
Valve less l	ase	6311D-000-PM- xxy DA	6321D-000-PM- xxy DA	6331D-000-PM- xxy DA	6341D-000-PM- xxy DA	6351D-000-PM- XXY DA	45
sub-base	Internal	6311D-551-PM- xxy DA	6321D-551-PM- xxy DA	6331D-551-PM- xxy DA	6341D-551-PM- xxy DA	6351D-551-PM- XXY DA	73
G3/8"	External	6311D-561-PM- xxy DA	6321D-561-PM- xxy DA	6331D-561-PM- XXY DA	6341D-561-PM- xxy DA	6351D-561-PM- XXY DA	
sub-base G1/2"	Internal External	6311D-651-PM- XXY DA 6311D-661-PM- XXY DA	6321D-651-PM- XXY DA 6321D-661-PM- XXY DA	6331D-651-PM- XXY DA 6331D-661-PM- XXY DA	6341D-651-PM-XXYDA 6341D-661-PM-XXYDA	6351D-651-PM-XXYDA 6351D-661-PM-XXYDA	
te : Above co		e for side cylinder ports w	vithout lights.	'DA *			700 900
722, 1015 01			_	-			
XX Volt	age			Y Manual ope	rator		82
	~/50Hz			1 Non-locking 2 Locking			
22 24V~	~/50Hz /50Hz			2 Locking			6300
	/17,1W /2,5W						
	/8,5W						6500
Other options		e page 305.					6600
6311D-XXX-P							1300
	For b	piped pilot exhaust rep pottom cylinder ports, i ide cylinder ports with	eplace by 4 (no light)), by 5 (sgl. light), by a	6 (dbl. light).		800
	For b	oottom and side cylind ights on valve body, re	er ports, replace by 7 eplace by 3.	(no light), by 8 (sgl. l	ight), by 9 (dbl. light).		ISO 1 ISO 2
	- For d	lual pressure valves w	ith lights on valve bod	ly (see page 293 for u	use with sandwich regu	lators), replace by 6.	130 2

- **MODIFICATIONS MOD 0210** Bottom inlet port in addition to side inlet port **TO ORDER** : 6311D-551-PM-111DA **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-551.
 - 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.

ISO 3







Fluid:	Compressed air, vacuum, inert gases						
Pressure range:	Internal pilot : single operator and 3 positions : 1.7-10 bar double operator : 0.7-10 bar						
	External pilot : vacuum to 10 bar						
Pilot pressure:	Single operator and 3 positions : 1.7-10 bar Double operator : 0.7-10 bar						
Lubrication:	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)						
Filtration:	40 µ						
Temperature range :	-18°C to 50°C (0°F to 120°F)						
Flow (at 6 bar, $\Delta P=1bar$):	G3/8" : 2600 NI/min, G1/2" : 3000 NI/min						
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 V=/8.5 W Energize : 10 ms De-energize : 11 ms						
	50Hz/6 W Energize : 4-13 ms De-energize : 10-17 ms						

ullet Solenoid operator (power ≥ 4 W) : D1-XXBE, cover mounting screws 35206 and seal 16234. Spare parts:

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

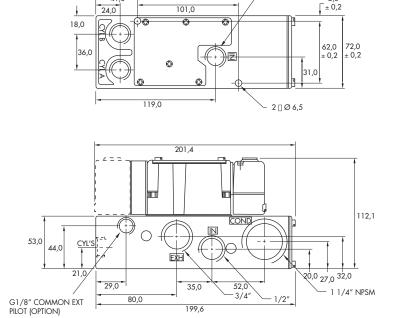
• Inlet isolator : 32839. • Exhaust isolator : 28309. • Blank station cover plate : M-63014.

• NPTF threads. Options :

DIMENSIONS

Dimensions shown are metric (mm)

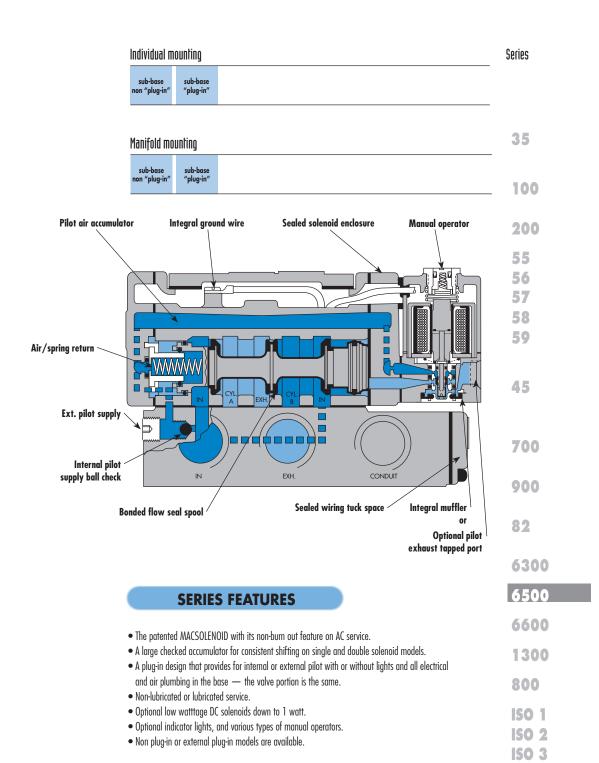
· G1/2" (OPTION) 5,0



199,6

Series 6500

Direct solenoid and solenoid pilot operated valves

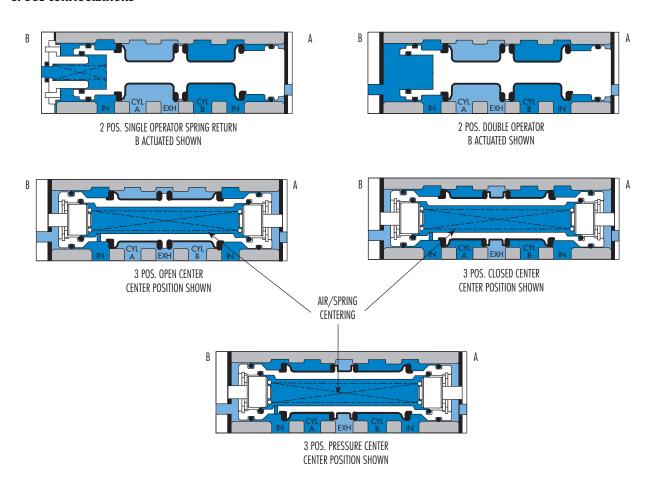








SPOOL CONFIGURATIONS



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 1.7 bar 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 1.3 to 10 bar, regardless of main valve pressure.

ALL MODELS AVAILABLE WITH SANDWICH TYPE REGULATORS



Function	Port size	Floш (Max)	Individual mounting	Series
4/2 - 4/3	G3/8" - G1/2" - G3/4"	5100 NI/min	sub-base non "plug-in"	

- 1. Balanced spool, immune to variations of
- 3. High shifting forces.
- 4. Checked accumulator guarantees maximum
- 5. Powerful return force thanks to the combination of mechanical and air springs.
- 7. Wiping effect eliminates sticking.
- 8. Pilot valve with balanced poppet, high flow, short and consistent response times.

200 55

100

35

56 **57**

58 59

45

700

900

82

6300

6500

6600 1300

800

ISO 1

ISO 2 ISO 3

OPERATIONAL BENEFITS

- 2. Short stroke with high flow.

- pilot pressure.
- 6. Bonded spool with minimum friction, shifting
- in a glass-like finished bore.

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
		A B B B IN EXH	A B B B IN EXH	B A B A A B A A A B A A A A B A A A A A	B A B A GIM	B A B A GIW
Valve less k	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-171-PM- XXYZZ	6522B-171-PM- xxyzz	6532B-171-PM- XXYZZ	6542B-171-PM- XXYZZ	6552B-171-PM- XXYZZ
G3/8"	External	6512B-181-PM- XXYZZ	6522B-181-PM- XXYZZ	6532B-181-PM- XXYZZ	6542B-181-PM- XXYZZ	6552B-181-PM- XXYZZ
sub-base	Internal	6512B-271-PM- XXYZZ	6522B-271-PM- xxyzz	6532B-271-PM- XXYZZ	6542B-271-PM- XXYZZ	6552B-271-PM- XXYZZ
G1/2"	External	6512B-281-PM- XXYZZ	6522B-281-PM- xxyzz	6532B-281-PM- XXYZZ	6542B-281-PM- XXYZZ	6552B-281-PM- XXYZZ
sub-base	Internal	6512B-371-PM- XXYZZ	6522B-371-PM- xxyzz	6532B-371-PM- XXYZZ	6542B-371-PM- XXYZZ	6552B-371-PM- XXYZZ
G3/4"	External	6512B-381-PM- XXYZZ	6522B-381-PM- XXYZZ	6532B-381-PM- XXYZZ	6542B-381-PM- XXYZZ	6552B-381-PM- XXYZZ

Note: Above codes shown are for side ports.

SOLENOID OPERATOR ➤

XX	Voltage	Y	Manual operator	ZZ	Electrical connection
11	110V~/50Hz	1	Non-locking	JB	Rectangular connector
12	220V~/50Hz	2	Locking	JD	Rectangular connector with light
22	24V~/50Hz			JA	Square connector
59	24V=/2,5W			JC	Square connector with light
87	24V=/17,1W			BA	Flying leads (45 cm)
61	24V=/8,5W			Note : Ph	oto shown with JC connector.

Other options available, see page 305.

OPTIONS

6512B-XXX-PM-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 G3/8" & G1/2" only					
0004	Full side porting and additional bottom inlet, exh. & cyl. ports	Available on individual base G3/8" only					

effected in the base. Bottom ports : Refer to modification table.
 To order bases without the valve, choose the base from the above table, then add 6500B as a prefix. Example 6500B-171.

Note: 1. The valve less base is always the same for internal or external pilot. These options are







Fluid:

Compressed air, vacuum, inert gases

Pressure range:

Internal pilot: single operator and 3 positions: 1.7-10 bar double operator: 0.7-10 bar

External pilot: vacuum to 10 bar

Pilot pressure:

Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar

Lubrication:

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

Filtration:

40 μ

Temperature range:

-18°C to 50°C (0°F to 120°F)

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

G3/8":4500 NI/min, G1/2":5000 NI/min, G3/4":5100 NI/min

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:

Spare parts:

24 V=/8.5 W Energize: 12 ms De-energize: 12 ms

50Hz/6 W Energize: 9-14 ms

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

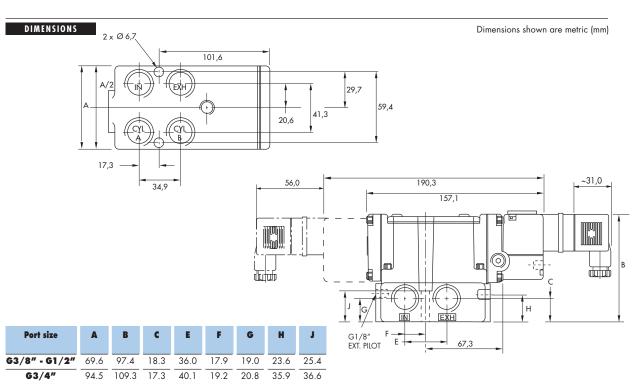
• Pilot valve: PME-XXYZZ, including seal 16337. • Pressure seal between valve and base: 16246.

De-energize: 11-18 ms

• Mounting screw valve to base (x4): 32201.

Options:

• NPTF threads.





Function	Port size	Flow (Max)	Individual mounting	Series
4/2 - 4/3	G3/8" - G1/2" - G3/4"	5100 NI/min	sub-base "plug-in"	

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of
- 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.
- 8. Pilot valve with balanced poppet, high flow, short and consistent response times.



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57

58 59

700

900

82

6300

ISO 3

45

6500

6600 1300

800

ISO 1

ISO 2

internal or external pilot. These options are effected in the base. 2. Bottom ports: Refer to modification table.

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

3. To order bases without the valve, choose the base from the above table, then add 6500B as a prefix. Example 6500B-151.

7. Wiping effect eliminates sticking.

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
		A B B B IN EXH	A B B B IN EXH	B A B A B A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A B A A B A A B A A B A A B A A B A A B A A B A B A A B A B A A B A	B A B A GIM	B A B A GIW
Valve less l	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-151-PM- xxy DA	6521B-151-PM- XXY DA	6531B-151-PM- XXY DA	6541B-151-PM- XXY DA	6551B-151-PM- XXY DA
G3/8"	External	6511B-161-PM- xxy DA	6521B-161-PM- XXY DA	6531B-161-PM- XXY DA	6541B-161-PM- XXY DA	6551B-161-PM- XXY DA
sub-base	Internal	6511B-251-PM- XXY DA	6521B-251-PM- XXY DA	6531B-251-PM- XXY DA	6541B-251-PM- XXY DA	6551B-251-PM- XXY DA
G1/2"	External	6511B-261-PM- XXY DA	6521B-261-PM- XXY DA	6531B-261-PM- XXY DA	6541B-261-PM- XXY DA	6551B-261-PM- XXY DA
sub-base	Internal	6511B-351-PM- XXY DA	6521B-351-PM- XXY DA	6531B-351-PM- XXY DA	6541B-351-PM- XXY DA	6551B-351-PM- XXY DA
G3/4"	External	6511B-361-PM-xxyDA	6521B-361-PM- xxy DA	6531B-361-PM- XXY DA	6541B-361-PM-xxyDA	6551B-361-PM-xxyDA

XX Y DA

Manual operator

Non-locking

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

SOLENOID OPERATOR ➤

XX	Voltage	
11	110V~/50Hz	
12	220V~/50Hz	Т
22	24V~/50Hz	
59	24V=/2,5W	
<i>87</i>	24V=/17,1W	
61	24V=/8,5W	

Other options available, see page 305.

OPTIONS

6511B-XXX-PM-**xxy**DA

- 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 base, replace by 2 (sgl. light), by 3 (dbl. light).
- For lights on valve body, replace by 3.

	MODIFICATIONS	
MOD. N°	DESCRIPTION	MODEL AVAILABILITY
0002	Bottom inlet, exh. & cyl. ports (no side ports)	Available on individual base G3/8" & G1/2" only
0004	Full side porting and additional bottom inlet, exh. & cyl. ports	Available on individual base G3/8" only







Pilot pressure:

Fluid: Compressed air, vacuum, inert gases Pressure range:

Internal pilot: single operator and 3 positions: 1.7-10 bar double operator: 0.7-10 bar

External pilot: vacuum to 10 bar

Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar

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

Filtration: 40 μ

-18°C to 50°C (0°F to 120°F)

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

Temperature range:

Response times:

G3/8":4500 NI/min, G1/2":5000 NI/min, G3/4":5100 NI/min

Coil: Epoxy encapsulated - class A wires - Continuous duty

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

Protection: Consult factory

Power: ~ Inrush : 14.8 VA Holding: 10.9 VA

= 1 to 17.1 W

24 V=/8.5 W Energize: 12 ms De-energize: 12 ms 50Hz/6 W Energize: 9-14 ms De-energize: 11-18 ms

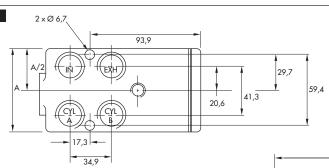
• Solenoid operator (power ≥ 4 W) : D1-XXBE, cover mounting screws 35206 and seal 16234. Spare parts:

• Pilot valve: PME-XXYDA-BE, including seal 16337. • Pressure seal between valve and base: 16246.

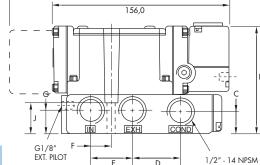
• Mounting screw valve to base (x4): 32201.

• NPTF threads. Options:

DIMENSIONS



Dimensions shown are metric (mm)



190,3

Port size	A	В	C	D	E	F	G	Н	J
G3/8" - G1/2"	69.6	97.4	18.3	40.6	36.0	17.9	19.0	23.6	25.4
G3/4"	94.5	109.3	17.3	46.7	40.1	19.2	20.8	35.9	36.6



Function	Port size	Flow (Max)	Manifold mounting	Series
4/2 - 4/3	G3/8" - G1/2" - G3/4"	5100 NI/min	sub-base non "plug-in"	

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of
- 2. Short stroke with high flow.
- 3. High shifting forces.
- 4. Checked accumulator guarantees maximum pilot pressure.
- 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.

35

100

000

200

55 56

57 58

50 59

45

700

900

82

6300

6500

6600

1300

800 ISO 1

ISO 2

ISO 3

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
		A B B B IN EXH	A B B B IN EXH	B A B A B A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A B A A B A B A A B	B A B A GM TO TO THE TOTAL	B A B A B A B A B A A B A B A A B
Valve less l	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-471-PM- XXYZZ	6522B-471-PM- XXYZZ	6532B-471-PM- XXYZZ	6542B-471-PM- XXYZZ	6552B-471-PM- xxyzz
G3/8"	External	6512B-481-PM- XXYZZ	6522B-481-PM- XXYZZ	6532B-481-PM- XXYZZ	6542B-481-PM- XXYZZ	6552B-481-PM- XXYZZ
sub-base	Internal	6512B-571-PM- XXYZZ	6522B-571-PM- xxyzz	6532B-571-PM- XXYZZ	6542B-571-PM- XXYZZ	6552B-571-PM- XXYZZ
G1/2"	External	6512B-581-PM- XXYZZ	6522B-581-PM- XXYZZ	6532B-581-PM- XXYZZ	6542B-581-PM- XXYZZ	6552B-581-PM- XXYZZ
sub-base	Internal	6512B-671-PM- XXYZZ	6522B-671-PM- XXYZZ	6532B-671-PM- XXYZZ	6542B-671-PM- XXYZZ	6552B-671-PM- XXYZZ
G3/4"	External	6512B-681-PM- XXYZZ	6522B-681-PM- xxyzz	6532B-681-PM- XXYZZ	6542B-681-PM- XXYZZ	6552B-681-PM- xxyzz

Note: Above codes shown are for side cylinder ports.

SOLENOID OPERATOR ➤

XX	Voltage	Y	Manual operator	ZZ	Electrical connection
11	110V~/50Hz	1	Non-locking	JB	Rectangular connector
12	220V~/50Hz	2	Locking	JD	Rectangular connector with light
22	24V~/50Hz			JA	Square connector
59	24V=/2,5W			JC	Square connectorwith light
87	24V=/17,1W			BA	Flying leads (45 cm)
61	24V=/8,5W			Note : Ph	noto shown with JC connector.

* Other options available, see page 305.

OPTIONS

6512B-XXX-PM-**XXYZZ**

- For piped pilot exhaust replace M by P.

- - For dual pressure valve, replace by 4.

	MODIFICATIONS	
MOD. N°	DESCRIPTION	MODEL AVAILABILITY
0112	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

- Note: 1. The valve less base is always the same for internal or external pilot. These options are effected in the manifold.
 - Bottom ports: Refer to modification table.
 To order manifolds without the valve, choose the manifold from the above table, then add 6500B as a prefix. Example 6500B-471.







Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot: single operator and 3 positions: 1.7-10 bar double operator : 0.7-10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G3/8":4500 NI/min, G1/2":5000 NI/min, G3/4":5100 NI/minCoil: Epoxy encapsulated - class A wires - Continuous duty -15% to +10% of nominal voltage Voltage range: Protection: Consult factory ~ Inrush : 14.8 VA Holding: 10.9 VA Power: = 1 to 17.1 W Response times: 24 V=/8.5 W Energize: 12 ms De-energize: 12 ms 50Hz/6 W Energize: 9-14 ms De-energize: 11-18 ms

Spare parts :

- ullet 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: 16246.
- Mounting screw valve to base (x4): 32201. Tie-rod (x2): 19540. Fastening kit: N-65002-01

2 × Ø 6.7

79.0

26,5

24,0

89,0

• Inlet isolator : 28309. • Exhaust isolator : 28310. • Blank station cover plate : N-65009.

60,0

G1/8" EXT. PILOT

16,8

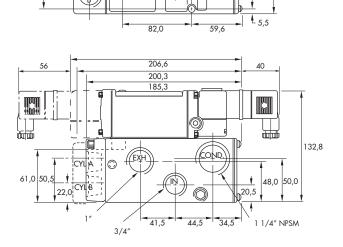
78,0 44,5

42,3

Options : • NPTF threads.

DIMENSIONS

Dimensions shown are metric (mm)





Function	Port size	Flow (Max)	Manifold mounting	Series
4/2 - 4/3	G3/8" - G1/2" - G3/4"	5100 NI/min	sub-base "plug-in"	

4/3 Closed center

6531B-000-PM-XXYDA

6531B-451-PM-XXYDA

6531B-461-PM-xxyDA

6531B-551-PM-**XXY**DA

6531B-561-PM-xxyDA

6531B-651-PM-**XXY**DA

6531B-661-PM-**XXY**DA

Manual operator

Non-locking

OPERATIONAL BENEFITS

- Balanced spool, immune to variations of pressure
- 2. Short stroke with high flow.
- 3. High shifting forces.
- 4. Checked accumulator guarantees maximum pilot pressure.
- 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.

HOW TO ORDER

Valve less base

Port size

sub-base

G3/8"

sub-base

G1/2"

sub-base

G3/4"

8. Pilot valve with balanced poppet, high flow, short and consistent response times.

Internal

External

Internal

External

Internal

External

4/3

Pressure center

6551B-000-PM-XXYDA

6551B-451-PM-xxyDA

6551B-461-PM-**XXY**DA

6551B-551-PM-**XXY**DA

6551B-561-PM-xxyDA

6551B-651-PM-**XXY**DA

6551B-661-PM-**XXY**DA

4/3

Open center

6541B-000-PM-xxyDA

6541B-451-PM-xxyDA

6541B-461-PM-**XXY**DA

6541B-551-PM-**XXY**DA

6541B-561-PM-xxyDA

6541B-651-PM-**XXY**DA

6541B-661-PM-**XXY**DA

35

100

200

55

56 57

58

59

45

700

900

00

82

6300

6500

6600

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

SOLENOID OPERATOR ➤

X	X	Voltage	Y
1	1	110V~/50Hz	1
1	2	220V~/50Hz	2
2	2	24V~/50Hz	
5	9	24V=/2,5W	
8	7	24V=/17,1W	
6	1	24V=/8,5W	

4/2

Single operator

6511B-000-PM-**XXY**DA

6511B-451-PM-XXYDA

6511B-461-PM-XXYDA

6511B-551-PM-**XXY**DA

6511B-561-PM-xxyDA

6511B-651-PM-**XXY**DA

6511B-661-PM-**XXY**DA

4/2

Double operator

6521B-000-PM-XXYDA

6521B-451-PM-**XXY**DA

6521B-461-PM-XXYDA

6521B-551-PM-**XXY**DA

6521B-561-PM-xxyDA

6521B-651-PM-**XXY**DA

6521B-661-PM-**XXY**DA

XX Y DA

OPTIONS

6511B-XXX-PM-**xxy**DA

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).
 For lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light).
- MODIFICATIONS

 MOD. N°

 DESCRIPTION

 MODEL AVAILABILITY

 0112

 Side inlet & exhaust with bottom cyl. ports (No end cyl. ports)

 Porting as ordered in model number plus an additional bottom inlet with bottom cyl. ports (No end cyl. ports)

 Available on all manifold models

 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
- Note: 1. The valve less base is always the same for internal or external pilot. These options are effected in the manifold.
 - Bottom ports : Refer to modification table.
 To order manifolds without the valve, choose
 - To order manifolds without the valve, choose the manifold from the above table, then add 6500B as a prefix. Example 6500B-451.

1300	
800	
ISO 1	

ISO 2 ISO 3

^{*} Other options available, see page 305.







Fluid:	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot : single operator and 3 positions : 1.7-10 bar double operator : 0.7-10 bar
	External pilot : vacuum to 10 bar
Pilot pressure:	Single operator and 3 positions : 1.7-10 bar Double operator : 0.7-10 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)
Filtration:	40 μ
Temperature range :	-18°C to 50°C (0°F to 120°F)
Flow (at 6 bar, $\Delta P=1$ bar):	G3/8" : 4500 NI/min, G1/2" : 5000 NI/min, G3/4" : 5100 NI/min
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 V=/8.5 W Energize : 12 ms De-energize : 12 ms
	50Hz/6 W Energize : 9-14 ms De-energize : 11-18 ms

Spare parts:

G1/8" EXT. PILOT

16,8

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: 16246.
Mounting screw valve to base (x4): 32201.
Tie-rod (x2): 19540.
Fastening kit: N-65002-01

2 × Ø 6,7

79,0

26,5

24,0 89,0

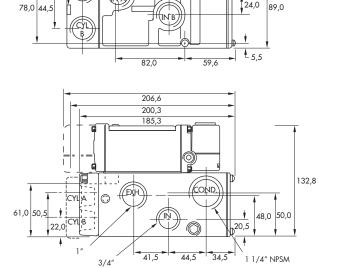
• Inlet isolator : 28309. • Exhaust isolator : 28310. • Blank station cover plate : N-65009.

60,0

• NPTF threads. Options :

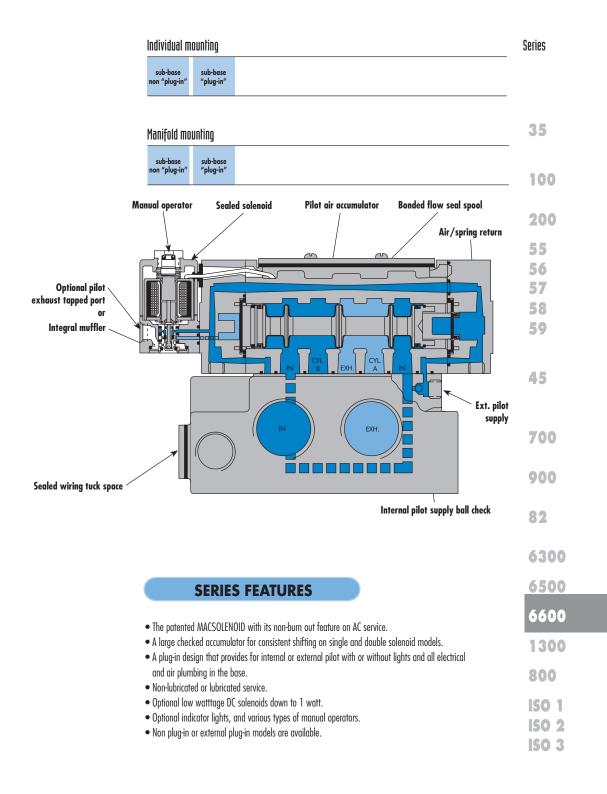
DIMENSIONS

Dimensions shown are metric (mm)



Series 6600

Direct solenoid and solenoid pilot operated valves

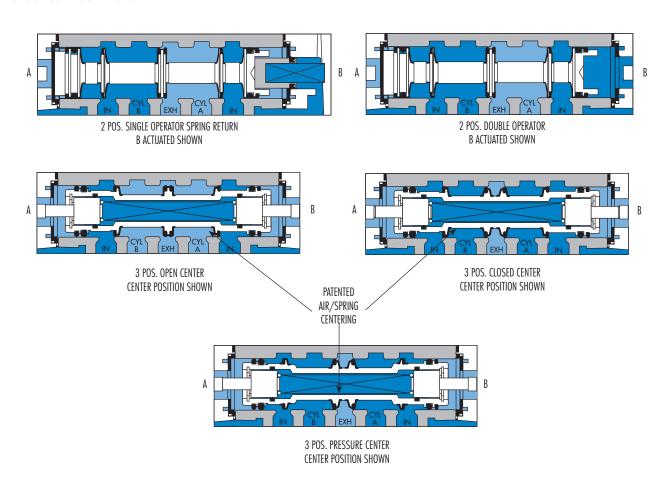








SPOOL CONFIGURATIONS



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 1.7 bar main valve pressures, external pilot.
- 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 1.3 to 10 bar, regardless of main valve pressure.



Function	Port size	Flow (Max)	Individual mounting	Series
4/2 - 4/3	G3/4" - G1"	9600 NI/min	sub-base non "plug-in"	

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of
- 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.

HOW TO ORDER

Valve less base

Port size

sub-base

G3/4"

sub-base

G1"

8. Pilot valve with balanced poppet, high flow, short and consistent response times.

4/3

Open center

6642A-000-PM-XXYZZ

6642A-271-PM-**xxyzz**

6642A-281-PM-**XXYZZ**

6642A-371-PM-**XXYZZ**

6642A-381-PM-xxyzz

4/3

Pressure center

6652A-000-PM-XXYZZ

6652A-271-PM-**XXYZZ**

6652A-281-PM-**XXYZZ**

6652A-371-PM-**XXYZZ**

6652A-381-PM-**XXYZZ**

58 59

35

100

200

55

56

57

45

700

900

82

6300

6500

6600

1300

800

Note: Above codes shown are for side ports.

Internal

External

Internal

External

SOLENOID OPERATOR ➤

XX	Voltage
11	110V~/50Hz
12	220V~/50Hz
22	24V~/50Hz
59	24V=/2,5W
87	24V=/17,1W
61	24V=/8,5W

*	Other	options	available,	see	page	305.
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4/2

Double operator

6622A-000-PM-XXYZZ

6622A-271-PM-XXYZZ

6622A-281-PM-**XXYZZ**

6622A-371-PM-XXYZZ

6622A-381-PM-XXYZZ

•	Manual operator	ZZ	Electrical connection
1	Non-locking	JB	Rectangular connector
2	Locking	JD	Rectangular connector with light
		JA	Square connector
		JC	Square connectorwith light
		BA	Flying leads (45 cm)

Note: Photo shown with JC connector.

Closed center

6632A-000-PM-XXYZZ

6632A-271-PM-**xxyzz**

6632A-281-PM-**XXYZZ**

6632A-371-PM-**XXYZZ**

6632A-381-PM-XXYZZ

OPTIONS

6612A-XXX-PM-XXYZZ

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

4/2

Single operator

6612A-000-PM-XXYZZ

6612A-271-PM-**XXYZZ**

6612A-281-PM-XXYZZ

6612A-371-PM-XXYZZ

6612A-381-PM-XXYZZ

	MODIFICATIONS						
MOD. N°	DESCRIPTION	MODEL AVAILABILITY					
0002	Bottom inlet, exh. & cyl ports (side ports plugged)	G3/4" individual base					
0004	Full side porting and additional. Bottom inlet, exh. & cyl ports	G3/4" individual base					
0112	Side inlet & exhaust with bottom cyl. ports (side cyl.ports plugged)	G3/4" individual base					

TO ORDER - Add the appropriate modification number after the valve number;

EXAMPLE: 6612A-271-PM-111JA MOD 0002

Note: 1	1.	The valve less base is always the same for
		internal or external pilot. These options are
		affected in the base

4. 2 position and 3 position valve bodies are not interchangeable.

ISO 1 Bottom ports : Refer to modification table.
 To order bases without the valve, choose the **ISO 2** base from the above table, then add 6600A as **ISO** 3 a prefix. Example 6600A-271.







Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot: single operator and 3 positions: 1.7-10 bar double operator : 0.7-10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G3/4": 9000 Nl/min, G1": 9600 Nl/min Coil: Epoxy encapsulated - class A wires - Continuous duty -15% to +10% of nominal voltage Voltage range: Protection: Consult factory Power: ~ Inrush : 14.8 VA Holding: 10.9 VA = 1 to 17.1 W Response times: 24 V=/8.5 W Energize: 18 ms De-energize: 20 ms 50Hz/6 W Energize: 15-25 ms De-energize: 19-28 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: 16436.

• Mounting screw valve to base (x4): 35416.

Options : • NPTF threads.

DIMENSIONS Dimensions shown are metric (mm) DBL 239,8 SGL 203,9 G1/8" EXTERNAL PILOT G1/8" EXTERNAL PILOT G1/2" INLET FOR DUAL 137,4 P-B PRESSURE 쉾 60,0 60,0 45,0 1/2" NPSM - 15,0 53,0 CONDUIT 51,0 49,0 Ø 10,32 2 MTG HOLES 5,0 -24,0 53,0 28,0 106,0 28,0 43,0 22,0 G3/4" OPTIONAL G1/8" OPTIONAL BOTTOM PORTS BOTTOM EXTERNAL PILOT



Function	Port size	Floш (Max)	Individual mounting	Series
4/2 - 4/3	G3/4" - G1"	9600 NI/min	sub-base "plug-in"	

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of
- 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.



35

100

200

55 56

57

58

59

45

700

Manual operator Non-locking Locking

900

82

6300

6500 6600

1300

800

ISO 1

ISO 2 ISO 3

 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-251.

Note : 1. The valve less base is always the same for internal or external pilot. These options are

effected in the base.

4. 2 position and 3 position valve bodies are not interchangeable.

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
		A B B B IN O VEXH	A B B B S IN O VEXH	B A B A A B A A A A A A A A A A A A A A	B A B A A B A A A A B A A A A B A A A A	B A B A A A A A A A A A A A A A A A A A
Valve less b	ase	6611A-000-PM- xxy DA	6621A-000-PM- xxy DA	6631A-000-PM- XXY DA	6641 A-000-PM- xxy DA	6651A-000-PM- xxy DA
sub-base	Internal	6611A-251-PM- xxy DA	6621A-251-PM- xxy DA	6631A-251-PM- XXY DA	6641 A-251-PM- XXY DA	6651A-251-PM- xxy DA
G3/4"	External	6611A-261-PM- xxy DA	6621A-261-PM- xxy DA	6631A-261-PM- XXY DA	6641 A-261-PM- XXY DA	6651A-261-PM- xxy DA
sub-base	Internal	6611A-351-PM- xxy DA	6621A-351-PM- xxy DA	6631A-351-PM- XXY DA	6641 A-351-PM- XXY DA	6651A-351-PM- xxy DA
G1"	External	6611A-361-PM- xxy DA	6621A-361-PM- xxy DA	6631A-361-PM- XXY DA	6641 A-361-PM- XXY DA	6651A-361-PM- xxy DA

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

SOLENOID OPERATOR ➤

XX	Voltage	
11	110V~/50Hz	
12	220V~/50Hz	
22	24V~/50Hz	
59	24V=/2,5W	
87	24V=/17,1W	
61	24V=/8,5W	

Other options available, see page 305.

OPTIONS

6611A-XXX-PM-xxyDA

- - For piped pilot exhaust replace M by P.

- For lights on base, replace by 4 (no light), by 5 (sgl. light), by 6 (dbl. light).

- - For lights on valve body, replace by 3.

	MODIFICATIONS						
MOD. N°	DESCRIPTION	MODEL AVAILABILITY					
0002	Bottom inlet, exh. & cyl ports (side ports plugged)	G3/4" individual base					
0004	Full side porting and additional bottom inlet, exh. & cyl ports	G3/4" individual base					
0112	Side inlet & exhaust with bottom cyl. ports (side cyl.ports plugged)	G3/4" individual base					

TO ORDER - Add the appropriate modification number after the valve number;

EXAMPLE: 6611A-251-PM-111DA MOD 0002







Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot: single operator and 3 positions: 1.7-10 bar double operator : 0.7-10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G3/4": 9000 Nl/min, G1": 9600 Nl/min Coil: Epoxy encapsulated - class A wires - Continuous duty -15% to +10% of nominal voltage Voltage range: Protection: Consult factory Power: ~ Inrush : 14.8 VA Holding: 10.9 VA = 1 to 17.1 W Response times: 24 V=/8.5 W Energize: 18 ms De-energize: 20 ms 50Hz/6 W Energize: 15-25 ms De-energize: 19-28 ms

Spare parts : • 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: 16436.

• Mounting screw valve to base (x4): 35416.

Options : • NPTF threads.

DIMENSIONS Dimensions shown are metric (mm) 239,8 G1/8" EXTERNAL PILOT 203,9 0 G1/8" EXTERNAL PILOT G1/2" INLET FOR DUAL PRESSURE 137,4 P-B 솅 60,0 60,0 1/2" NPSM - 15,0 -20,0 40,0 51.0 49,0 Ø 10,32 2 MTG HOLES 5,0 → 24,0 53,0 28,0 106,0 28,0 43,0 22.0 G3/4" OPTIONAL G1/8" OPTIONAL BOTTOM EXTERNAL PILOT BOTTOM PORTS 20.0 51,0 110.0



Function	Port size	Flow (Max)	Manifold mounting	Series
4/2 - 4/3	G3/4" - G1" - G1 1/4"	9600 NI/min	sub-base non "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.
- 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.

35

100

200

55

56 57

58

59

45

700

900

82

6300

6500

6600 1300

800

ISO 1

ISO 2 ISO 3

all the valves in the manifold whether single or double solenoid. 5. 2 position and 3 position valve bodies are not interchangeable.

 When ordering an external pilot connection for manifold bases, a common external pilot port is standard. One connection only is required for

Note: 1. The valve less base is always the same for internal or external pilot. These options are effected in the manifold.

Bottom ports : Refer to modification table.
 To order manifolds without the valve, choose the manifold from the above table, then add 6600A

as a prefix. Example 6600A-471.

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
		A B B B WWW WWW VEXH	A A B B B IN O VEXH	B A B A B A A A A A A A A A A A A A A A	B A B A A B A A A A A A A A A A A A A A	B A B A D A D A D A D A D A D A D A D A
Valve less l	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-471-PM- XXYZZ	6622A-471-PM- xxyzz	6632A-471-PM- XXYZZ	6642A-471-PM- XXYZZ	6652A-471-PM- XXYZZ
G3/4"	External	6612A-481-PM- XXYZZ	6622A-481-PM- xxyzz	6632A-481-PM- XXYZZ	6642A-481-PM- XXYZZ	6652A-481-PM- XXYZZ
sub-base	Internal	6612A-571-PM- XXYZZ	6622A-571-PM- xxyzz	6632A-571-PM- XXYZZ	6642A-571-PM- XXYZZ	6652A-571-PM- XXYZZ
G1"	External	6612A-581-PM- XXYZZ	6622A-581-PM- xxyzz	6632A-581-PM- XXYZZ	6642A-581-PM- XXYZZ	6652A-581-PM- XXYZZ
sub-base	Internal	6612A-671-PM- XXYZZ	6622A-671-PM- xxyzz	6632A-671-PM- XXYZZ	6642A-671-PM- XXYZZ	6652A-671-PM- XXYZZ
G1 1/4"	External	6612A-681-PM- XXYZZ	6622A-681-PM- XXYZZ	6632A-681-PM- XXYZZ	6642A-681-PM- XXYZZ	6652A-681-PM- XXYZZ

Note: Above codes shown are for side ports.

SOLENOID OPERATOR >

XX	Voltage	Y	Manual operator	ZZ	Electrical connection
11	110V~/50Hz	1	Non-locking	JB	Rectangular connector
12	220V~/50Hz	2	Locking	JD	Rectangular connector with light
22	24V~/50Hz			JA	Square connector
59	24V=/2,5W			JC	Square connectorwith light
87	24V=/17,1W			BA	Flying leads (45 cm)
61	24V=/8,5W			Nloto · Dh	note shown with IC connector

* Other options available, see page 305.

OPTIONS

6612A-XXX-PM-**xxy**DA

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

	MODIFICATIONS						
MOD. N°	DESCRIPTION	MODEL AVAILABILITY					
0210	G1 1/4" Bottom inlet	Manifold base					
0364	G1 1/4" Bottom inlet, G3/4" or G1" Bottom cyl.	Manifold base					
0112	Side inlet & exhaust with bottom cyl. ports	G1" Manifold base					

TO ORDER - Add the appropriate modification number after the valve number;

EXAMPLE: 6612A-471-PM-111JA **MOD 0364**









Fluid:	Compressed air, vacuum, inert gases					
Pressure range :	Internal pilot : single operator and 3 positions : 1.7-10 bar double operator : 0.7-10 bar					
	External pilot : vacuum to 10 bar					
Pilot pressure :	Single operator and 3 positions : 1.7-10 bar Double operator : 0.7-10 bar					
Lubrication:	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)					
Filtration:	40 μ					
Temperature range :	-18°C to 50°C (0°F to 120°F)					
Flow (at 6 bar, $\Delta P=1bar$):	G3/4" : 9000 NI/min, G1" : 9600 NI/min, G1 1/4" : 9600 NI/min					
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 V=/8.5 W Energize : 18 ms De-energize : 20 ms					
	50Hz/6 W Energize: 15-25 ms De-energize: 19-28 ms					

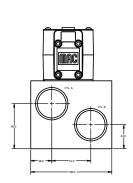
Spare parts :

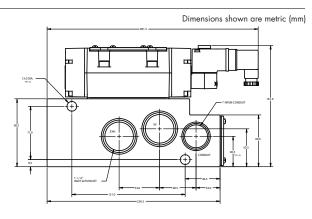
- Solenoid operator (power ≥ 4 W): D1-XXAA, cover mounting screws 35206 and seal 16234.
 Pilot valve: PME-XXYZZ, including seal 16337. Pressure seal between valve and base: 16436.
 Mounting screw valve to base (x4): 35416. Tie-rod (x2): 19789. Fastening kit: N-66002-01.
- Inlet & exhaust isolator : 28367.

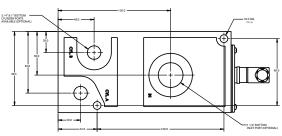
Options :

• NPTF threads.

DIMENSIONS







132

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Consult "Precautions" page 312 before use, installation or service of MAC Valves.





(



Function	Port size	Flow (Max)	Manifold mounting	Series
4/2 - 4/3	G3/4" - G1" - G1 1/4"	9600 NI/min	sub-base "plug-in"	

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of
- 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.



55 56

35

100

200

57

45

700

900

58 59

6300

6500

6600

1300

800

ISO 1

ISO 2

ISO 3

82

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
		A B B B IN O VEXH	A B B B IN O VEXH	B B B S S S S S S S S S S S S S S S S S	B A B A G A G A G A G A G A G A G A G A	B A B A B A A A A A A A A A A A A A A A
Valve less k	ase	6611A-000-PM- xxy DA	6621A-000-PM- xxy DA	6631A-000-PM- xxy DA	6641 A-000-PM- xxy DA	6651A-000-PM- xxy DA
sub-base	Internal	6611A-451-PM- xxy DA	6621A-451-PM- xxy DA	6631A-451-PM- XXY DA	6641 A-451-PM- XXY DA	6651A-451-PM- XXY DA
G3/4"	External	6611A-461-PM- xxy DA	6621A-461-PM- xxy DA	6631A-461-PM- XXY DA	6641 A-461-PM- XXY DA	6651A-461-PM- xxy DA
sub-base	Internal	6611A-551-PM- xxy DA	6621A-551-PM- XXY DA	6631A-551-PM- XXY DA	6641 A-551-PM- XXY DA	6651A-551-PM- xxy DA
G1"	External	6611A-561-PM- xxy DA	6621A-561-PM- XXY DA	6631A-561-PM- XXY DA	6641 A-561-PM- XXY DA	6651A-561-PM- xxy DA
sub-base	Internal	6611A-651-PM- xxy DA	6621A-651-PM- XXY DA	6631A-651-PM- XXY DA	6641 A-651-PM- XXY DA	6651A-651-PM- XXY DA
G1 1/4"	External	6611A-661-PM- xxy DA	6621A-661-PM- XXY DA	6631A-661-PM- XXY DA	6641 A-661-PM- XXY DA	6651A-661-PM- XXY DA

XX Y DA *

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

		 ·	
XX	Voltage	Y	Manual operator
11	110V~/50Hz	1	Non-locking
12	220V~/50Hz	2	Locking
22	24V~/50Hz		-
59	24V=/2,5W		
<i>87</i>	24V=/17,1W		
61	24V=/8,5W		

Other options available, see page 305.

OPTIONS

6611A-XXX-PM-**XXY**DA

SOLENOID OPERATOR ➤

- For piped pilot exhaust replace M by P.

- For c
- For I - For lights on valve body, replace by 3.

MODIFICATIONS DESCRIPTION MODEL AVAILABILITY Manifold base G1 1/4" Bottom inlet

MOD. N° 0210 0364 G1 1/4" Bottom inlet, G3/4" or G1" Bottom cyl. Manifold base 0112 Side inlet & exhaust with bottom cyl. ports G1" Manifold base (side cyl.ports plugged)

TO ORDER - Add the appropriate modification number after the valve number;

EXAMPLE: 6611A-451-PM-111DA MOD 0364

dual pressure valve replace by 4 (no light), by 5 (sgl. light), by 6	(dbl. light).
lights on manifold, replace by 2 (sgl. light), by 3 (dbl. light).	

- Note: 1. The valve less base is always the same for internal 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-451.
 - 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 interchanaeable.

133









Fluid:	Compressed air, vacuum, inert gases				
Pressure range :	Internal pilot : single operator and 3 positions : 1.7-10 bar double operator : 0.7-10 bar External pilot : vacuum to 10 bar				
Pilot pressure :	Single operator and 3 positions : 1.7-10 bar Double operator : 0.7-10 bar				
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)				
Filtration:	40 μ				
Temperature range :	-18°C to 50°C (0°F to 120°F)				
Flow (at 6 bar, $\Delta P=1bar$):	G3/4" : 9000 NI/min, G1" : 9600 NI/min, G1 1/4" : 9600 NI/min				
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 V=/8.5 W Energize : 18 ms De-energize : 20 ms				
	50Hz/6 W Energize: 15-25 ms De-energize: 19-28 ms				

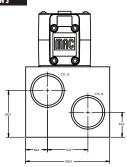
Spare parts :

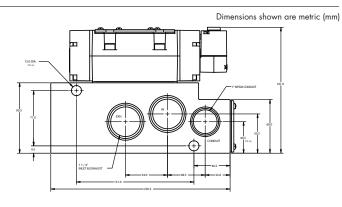
- Inlet & exhaust isolator : 28367.

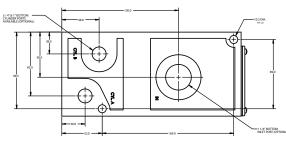
Options :

• NPTF threads.

DIMENSIONS







134

Consult "Precautions" page 312 before use, installation or service of MAC Valves.



Individual mounting

sub-base
"plug-in"

Series

100

200

55

45

700

900

82

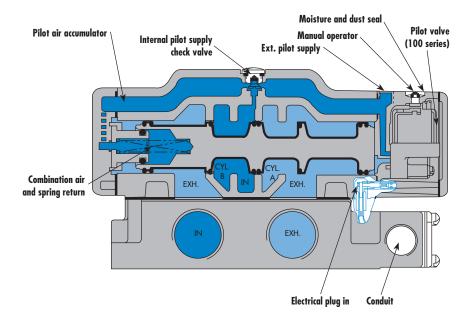
6300

6500

6600

1300

35



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 in the base.
- Non-lubricated or lubricated service.
- Optional indicator lights, and various types of manual operators.

800 ISO 1 ISO 2

ISO 3







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 G1/8" 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

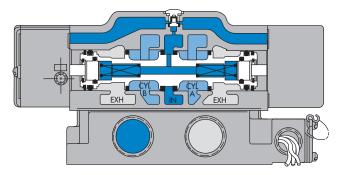
Single solenoid pilot or single air pilot operated models contain a combination spring and air assisted differential return. Supplied from the accumulator it balances the shifting forces for consistent operation and positive spool return.

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



Function	Port size	Floш (Max)	Individual mounting	Series
4/2 - 4/3	G3/4" - G1" - G1 1/4" - G1 1/2"	15900 NI/min	sub-base "plug-in"	
OPERATIONAL BENEFITS				

- 1. Balanced spool, immune to variations of
- 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.

HOW TO ORDER

Port size

Valve less base

Sub base G3/4"

Sub base G1"

Sub base G1 1/4"

Sub base G1 1/2"

SOLENOID OPERATOR ➤

8. Pilot valve with balanced poppet, high flow, short and consistent response times.

4/2

Single operator

1301G-xxyD-xx

1321G-**xxy**D-**xx**

1331G-**xxy**D-**xx**

1351G-**xxy**D-**xx**

1361G-**xxy**D-**xx**

4/3

Open center

1308G-xxyD-xx

1328G-**xxy**D-**xx**

1338G-**xxy**D-**xx**

1358G-**xxy**D-**xx**

1368G-**xxy**D-**xx**

4/3

Closed center

1307G-**xxy**D-**xx**

1327G-**xxy**D-**xx**

1337G-**xxy**D-**xx**

1357G-**xxy**D-**xx**

1367G-xxyD-xx

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100

200

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57

58

59

45

700

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XX	Y	Г
$\Delta\Delta$	•	_

				'			
XX	Voltage	Y	Manual operator	X	Pilot air	X	Indicator light
11	110V~/50Hz	1	Non-locking	3	Internal	5	With light in base
12	220V~/50Hz	2	Locking	4	External		
22	24V~/50Hz						

4/2

Double operator

1303G-**xxy**D-**xx**

1323G-**xxy**D-**xx**

1333G-**xxy**D-**xx**

1353G-**xxy**D-**xx**

1363G-**xxy**D-**xx**

24V=/17,1W 24V=/2,5W

Other options available, see page 305.

Bases	
10952-0005P	G3/4" BASE ASS'Y - SGL. (BSPP)
10952-0006P	G3/4" BASE ASS'Y - DBL. (BSPP)
10952-XX05P	G3/4" BASE ASS'Y - SGL W/LIGHT (BSPP)
10952-XX06P	G3/4" BASE ASS'Y - DBL W/LIGHT (BSPP)
10953-0005P	G1" BASE ASS'Y - SGL. (BSPP)
10953-0006P	G1" BASE ASS'Y - DBL. (BSPP)
10953-XX05P	G1" BASE ASS'Y - SGL W/LIGHT (BSPP)
10953-XX06P	G1" BASE ASS'Y - DBL W/LIGHT (BSPP)
10954-0005P	G1 1/4" BASE ASS'Y - SGL. (BSPP)
10954-0006P	G1 1/4" BASE ASS'Y - DBL. (BSPP)
10954-XX05P	G1 1/4" BASE ASS'Y - SGL W/LIGHT (BSPP)
10954-XX06P	G1 1/4" BASE ASS'Y - DBL W/LIGHT (BSPP)
10955-0005P	G1 1/2" BASE ASS'Y - SGL. (BSPP)
10955-0006P	G1 1/2" BASE ASS'Y - DBL. (BSPP)
10955-XX05P	G1 1/2" BASE ASS'Y - SGL W/LIGHT (BSPP)
10955-XX06P	G1 1/2" BASE ASS'Y - DBL W/LIGHT (BSPP)

Light options					
XX =	11 - 110V-120V				
	12 - 220V-240V				
	61 - 24V-28V				

BOTTOM PORTS available only on G3/4" valves For bottom ports only specify MOD 0002 For side and bottom ports specify MOD 0004 **EXAMPLE**: 1321G-111D-1 MOD 0002

82

6300

6500

6600

1300

800

ISO 1

ISO 2 ISO 3







Fluid: Compressed air, vacuum, inert gases double operator : 0.7-10 bar Pressure range: Internal pilot: single operator and 3 positions: 1.7-10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G3/4": 11500 NI/min, G1": 13700 NI/min, G1 1/4": 15400 NI/min, G1 1/2": 15900 NI/min Coil: Epoxy encapsulated - class A wires - Continuous duty -15% to +10% of nominal voltage Voltage range: Consult factory Protection: Power: ~ Inrush : 14.8 VA Holding: 10.9 VA = 1 to 17.1 W Response times: 24 V=/8.5 W Energize: 20 ms De-energize: 28 ms Energize: 17-23 ms 50Hz/6 W De-energize : 29-35 ms

Spare parts : • Solenoid operator (power ≥ 4 W) : D1-XXBD. • Pressure seal between valve and base : 16083.

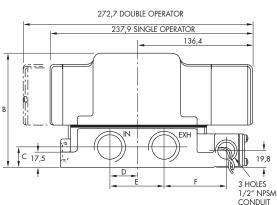
• Pilot valve: 150B-XXBD, including mounting screws 32180 and adaptor plate N-03001.

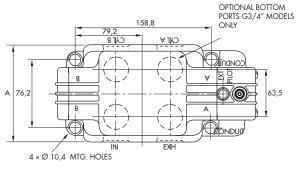
• Mounting screw valve to base (x4): 32396.

Options : • NPTF threads. • Lights in base.

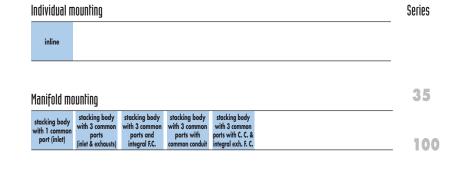
DIMENSIONS

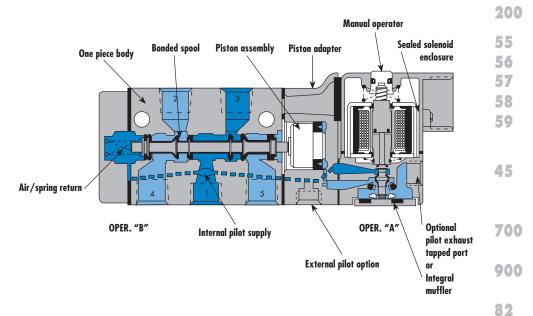
Dimensions shown are metric (mm)





Port size	A	В	C	D	E	F
G3/4", G1"	111.3	132.4	23.8	31.7	63.5	71.4
G1 1/4"	114.3	148.3	30.2	38.1	76.2	65.0
G1 1/2"				35.0	69.9	68.0





SERIES FEATURES

- The patented MACSOLENOID with its non-burn out feature on AC service.
- Air/spring return on single solenoid valves.
- Use for lube or non-lube service.
- Optional common conduit stacking valve with integral wiring space and indicator lights
- Optional integral individual exhaust flow controls.
- Optional low wattage DC solenoids down to 1 watt.
- Various types of manual operators and solenoid enclosures.

ISO 1 ISO 2 ISO 3

6300

6500

6600

1300

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 1.3 bar on single solenoid or 0.7 bar on double solenoid valves in 2-position models, or less than 1.3 bar on 3-position double solenoid models. Also an External Pilot is required when main valve pressure is in excess of 10 bar.

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 Stackina).

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

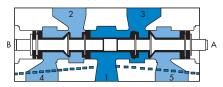
For dual pressure, single exhaust type valves, vacuum should be connected to port #1 (Inlet) and ports #4 & #5 (Exhausts) to atmosphere.

SELECTOR APPLICATIONS:

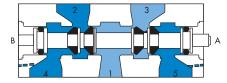
Use an External Pilot model as described above, if both pressures are below the minimum pilot pressure; otherwise use an Internal Pilot model. In either case, use a single pressure model and connect the higher pressure to port #1 (Inlet) and the lower pressure to port #4 (Exhaust) if using cylinder port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

SPOOL CONFIGURATIONS

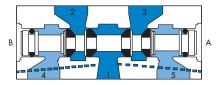
2-POSITION SGL. PRESSURE (SPOOL #12184)
B ACTUATED SHOWN



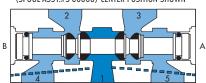
2-POSITION DUAL PRESSURE (SPOOL ASSY.#10266) B ACTUATED SHOWN



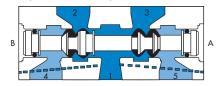
3-POSITION SGL. PRESS. CLOSED CENTER (SPOOL ASSY. #S-00004) CENTER POSITION SHOWN



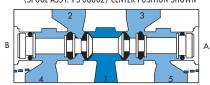
3-POSITION SGL. PRESS. OPEN CENTER (SPOOL ASSY.#S-00003) CENTER POSITION SHOWN



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





Function		Port size		Flow (Max)	Individual mounting	Series	
5/2 - 5/3		G1/4"		1400 NI/min	inline		
OPERATIONAL BE	NEFITS						
2. Short stroke wi	ith high flow.	ariations of pressure.				35	
Powerful return mechanical an Bonded spool	nd air springs. I with minimum	o the combination of friction, shifting in a			0.7	100	D
glass-like finish Wiping effect of Pilot valve with	eliminates stick	ing. opet, high flow, short				200	D
and consistent . Long service lil		5.				55	
59 551 1166 111					3/2	56	
HOW TO OR	DER					57	
Port size	Pilot air	5/2	5/2	5/3	5/3	5/3	
		Single operator	Double operator	Closed center	Open center	Pressure center 59	
		5 0 0 0 0					
G1/4"	Internal	811C-PM- xxyzz -155	821C-PM- XXYZZ -155	825C-PM- XXYZZ- 555	825C-PM- xxyzz -655	825C-PM- XXYZZ -855	
	External	812C-PM- XXYZZ -115	822C-PM- XXYZZ -115	826C-PM- XXYZZ -515	826C-PM- xxyzz -615	5 826C-PM- xxyzz -815	
OLENOID OI	PERATOR ➤		<u> </u>	ZZ *			
						700	D
XX Volt	lage		Y Manual opera	ator	ZZ Electrical	connection	
11 110V	/~/50Hz /~/50Hz		Non-locking Locking		JB Rectangular of		D
22 24V~	/50Hz		2 Locking		JA Square conne	ector	
87 24V=	:/2,5W :/17,1W				JC Square conne BA Flying leads (ector with light (45 cm) 82	
	=/8,5W						
Other options		e page 305. 3 - G3/8" inlet and cylin	day waste automote waste (21/4"		630	00
MODIFICATION	NS - N° 1080	• NAMUR interface.				7.5	
Add mod. N° after valve part n° EXAMPLE : 811C-PM-111CA-155 Mod. 0358.							00
OPTIONS						660	00
811C-PM-111CA-155						10	0.0
						130	70
825C-PM-111CA	T	3 position dual pressu	re pressure center : r	enlace by 7		800	D
		o position addi pressu	re, pressure cemer : r	epiace by /.		ISO	1
						ISO	
						130	4

ISO 3





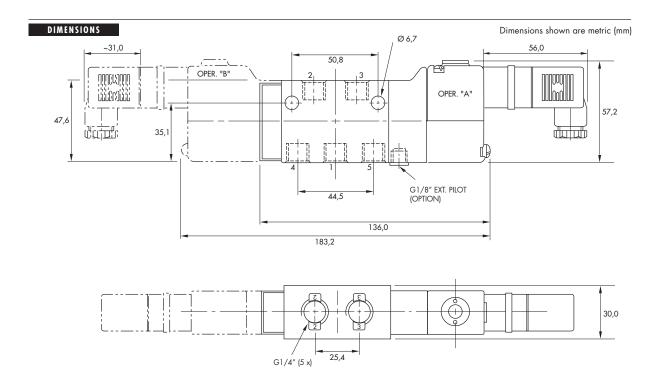


Fluid: Compressed air, vacuum, inert gases Internal pilot: single operator and 3 positions: 1.3-10 bar Pressure range: double operator : 0.7-10 bar External pilot: vacuum to 13.3 bar Pilot pressure: Single operator and 3 positions : 1.3-10 bar Double operator : 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: G1/4": 1400 NI/min Flow (at 6 bar, $\Delta P = 1 bar$): 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 V=/8.5 W Energize: 8 ms De-energize: 10 ms 50Hz/6 W Energize : 5-11 ms De-energize : 9-16 ms

Spare parts : • 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 : • NPTF threads. • NAMUR interface. • Flow control/muffler (G1/4") : 10951





Function	Port size		Floш (Max)	Manifold mounting	!	Series	
5/2 - 5/3	G1/4"		1400 NI/min	stacking body with 1 common port (inlet)			
PERATIONAL BENEFITS							
?. Short stroke with high	ne to variations of pressure. flow. rovides maximum shifting				90	35	
. Powerful return force t mechanical and air sp . Bonded spool with mi	inimum friction, shifting in a					100	
glass-like finished bore Wiping effect eliminat Pilot valve with balance	e. es sticking. eed poppet, high flow, short			9 3	000	200	
and consistent respons Long service life.	se times.					55	
. Long service me.						56	
HOW TO ORDER						57	
Port size	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center	5/3 Pressure center	58	
	A 3 2 B	A 3 2 B	B 2 3 A A	B 2 3 W A	B 2 3 A A	59	
G1/4"	811C-PM- xxyzz -135	821C-PM- xxyzz -135	825C-PM- XXYZZ- 535	825C-PM- XXYZZ -635	825C-PM- XXYZZ -835	45	
XX Voltage 11 110V~/50Hz		Y Manual ope 1 Non-locking	Y ZZ *	ZZ Electrical co		700	
12 220V~/50Hz 22 24V~/50Hz 59 24V=/2,5W 87 24V=/17,1W		2 Locking		JD Rectangular com BA Flying leads (45)	nector with light	900	
61 24V=/8,5W Other options availal	ble, see page 305.					82	
	MANIFOLI	END PLATE KITS (BSPI	D1*			7000	
INT. PILOT - PART			MODELS USED WIT	ГН		6300	
M-08001-01-01I	P M-08001-02	-01P 3 com. port	3 com. port or 1 com. port models, stacks of 1 thru 16 valves			6500	
M-00005-01-011	P M-00005-02	-01P 3 com. port c	or 1 com. port models, stacks	of 17 or more valves			
	d of part N°. for NPTF threads	; EXAMPLE : M-08001-0	01-01			6600	
Note: (1) end plate kit required per stack.						1300	
0PTIONS 811C-PM-111BA-135							
- For 2 position dual pressure : replace by 2.							
825C-PM-111BA-835						ISO 1	
	For 3 position dual pres	sure, pressure center :	replace by 7.				
						ISO 3	







Fluid:	Compressed air, vacuum, inert gases
Pressure range:	Internal pilot : single operator and 3 positions : 1.3-10 bar double operator : 0.7-10 bar
	External pilot : vacuum to 13.3 bar
Pilot pressure :	Single operator and 3 positions : 1.3-10 bar Double operator : 0.7-10 bar
Lubrication:	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)
Filtration:	40 µ
Temperature range :	-18°C to 50°C (0°F to 120°F)
Flow (at 6 bar, $\Delta P=1$ bar):	G1/4" : 1400 NI/min
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 V=/8.5 W Energize : 8 ms De-energize : 10 ms
	50Hz/6 W Energize : 5-11 ms De-energize : 9-16 ms

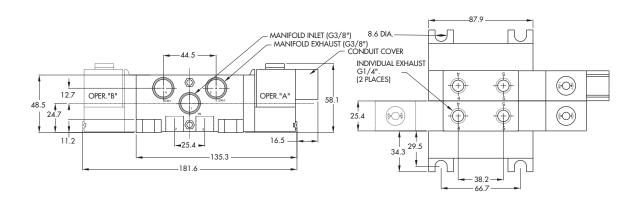
Spare parts : • Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.

• Pilot valve: PME-XXYZZ, including seal 16337. • Mounting screw kit for pilot: N-08003.

• Inlet isolator : N-08001 • Exhaust isolator (x2) : N-08002

Options : • NPTF threads. • Dual inlet block: M-08003 • Flow control/muffler (G1/4") : 10951

DIMENSIONS





ıction	Port size		Flow (Max)	Manifold mounting	Ser	ies
2 - 5/3	G1/4" - G3/8"		1400 NI/min	stacking body with 3 common ports (inlet & exhausts)		
ERATIONAL BENEFITS						
Balanced spool, immune Short stroke with high flo The piston (booster) provi forces.					3	5
nechanical and air sprin	nks to the combination of gs. num friction, shifting in a			Ø		00
Wiping effect eliminates Pilot valve with balanced	poppet, high flow, short			0	200	200
and consistent response t Long service life.	times.				70 A	5
Long service me.				0		6
HOW TO ORDER					5	7
Port size	5/2	5/2	5/3	5/3		8
1 011 3120	Single operator	Double operator	Closed center	Open center		9
	A 3 2 B 3 4 4 5 V 4 4	A 3 2 B 3 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	B 2 3 A A A A A A A A A A A A A A A A A A	B 2 3 W A 371 415	B W 37 A 37 A 415	<i>,</i> 2
G1/4"	811C-PM- xxyzz -125	821C-PM- xxyzz -125	825C-PM- xxyzz -525	825C-PM- xxyzz -625	825C-PM- xxyzz -825	5
G3/8"	811C-PM- xxyzz -126	821C-PM- XXYZZ -126	825C-PM- xxyzz -526	825C-PM- XXYZZ -626	825C-PM- xxyzz -826	
DLENOID OPERATOR	₹ >	<u> </u>	ZZ *		-	700
XX Voltage		Y Manual opera	itor	ZZ Electrical co		
11 110V~/50Hz		1 Non-locking		JB Rectangular conr	nactor	
12 220V~/50Hz 22 24V~/50Hz		2 Locking		JD Rectangular conr BA Flying leads (45		000
59 24V=/2,5W				Trying ledds (45)	<u>Citij</u>	
87 24V=/17,1W 61 24V=/8,5W					8	2
Other options available	. soo nago 305					
Official dydridble					6	300
INT. PILOT - PART N		END PLATE KITS (BSPP) RT N°.	MODELS USED WIT	н		E00
M-08001-01-01P	M-08001-02-0		1 com. port models, stacks		Q	500
M-00005-01-01P	M-00005-02-0	1P 3 com. port or	1 com. port models, stacks	of 17 or more valves	6	600
Remove letter P at end o	f part N°. for NPTF threads; I	EXAMPLE : M-08001-01	-01			
ote : (1) end plate kit req	juired per stack.				_1	300
OPTIONS 811C-PM-111RA-125					8	300
T	For 2 position dual pressu	ura : rankaca hy 2			1	SO 1
	i oi z position audi pressu	ire . replace by z.				50 2
825C-PM-111RA-825	For 3 position dual pressu				=-	50 3





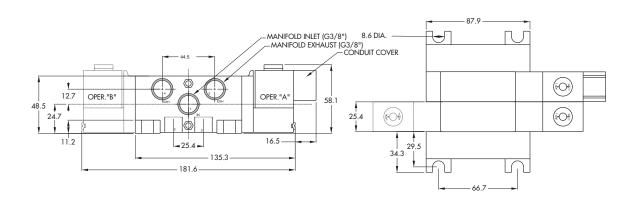


Fluid:	Compressed air, vacuum, inert gases
Pressure range:	Internal pilot : single operator and 3 positions : 1.3-10 bar double operator : 0.7-10 bar
	External pilot : vacuum to 13.3 bar
Pilot pressure :	Single operator and 3 positions : 1.3-10 bar Double operator : 0.7-10 bar
Lubrication:	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)
Filtration:	40 μ
Temperature range :	-18°C to 50°C (0°F to 120°F)
Flow (at 6 bar, $\Delta P=1bar$):	G1/4" : 1400 NI/min, G3/8" : 1400 NI/min
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 V=/8.5 W Energize : 8 ms De-energize : 10 ms
	50Hz/6 W 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.
• Inlet isolator : N-08001 • Exhaust isolator (x2) : N-08002. Spare parts :

• NPTF threads. • Dual inlet block: M-08003. Options :

DIMENSIONS





nction	Port size		Floш (Max)	Manifold mounting		Series
2 - 5/3	G1/4" - G3/8"		1400 NI/min	stacking body with 3 common ports and integral F.C.		
ERATIONAL BENEFITS						
Balanced spool, immune to v	ariations of pressure.					35
Short stroke with high flow. The piston (booster) provides	maximum shifting					
forces. Powerful return force thanks t	to the combination of			0.0		
mechanical and air springs.	o lile combination of					100
Bonded spool with minimum glass-like finished bore.	friction, shifting in a					
Wiping effect eliminates stick					100	200
Pilot valve with balanced pop and consistent response time:			G F		10 10	
Long service life.	•		21		3	55
			-			56
HOW TO ORDER						57
Port size	5/2	5/2	5/3	5/3	5/3	58
	Single operator	Double operator A 3 2 B	Closed center	Open center	Pressure center	59
G1/4"	811C-PM- XXYZZ -195	321C-PM- xxyzz -195	825C-PM- XXYZZ -595	825C-PM- XXYZZ -695	825C-PM- XXYZZ -895	45
G3/8"	811C-PM- xxyzz -196	321C-PM- xxyzz -196	825C-PM- xxyzz -596	825C-PM- XXYZZ -696	825C-PM- xxyzz -896	43
OLENOID OPERATOR >		XX Y	77*			
OLLINOID OF ENATOR >			<u> </u>			
						700
XX Voltage 11 110V~/50Hz	Y 1	Manual opera	itor	JB Rectangular conr		
12 220V~/50Hz	2	Locking		JD Rectangular conr	ector with light	900
22 24V~/50Hz 59 24V=/2,5W				BA Flying leads (45	cm)	
87 24V=/17,1W 61 24V=/8,5W						82
, ,	205					
Other options available, se	e page 305.					6300
	MANIFOLD END	PLATE KITS (BSPP)				
INT. PILOT - PART N°.	EXT. PILOT - PART N		MODELS USED WIT			6500
M-08001-01-01P M-00005-01-01P	M-08001-02-01P M-00005-02-01P	<u> </u>	1 com. port models, stacks			6600
				of 17 of filore valves		0000
Remove letter P at end of pa ote: (1) end plate kit require	irt N°. for NPTF threads; EXA	MPLE : M-08001-01	-01			1300
	a per sidek.					
OPTIONS						800
811C-PM-111RA- <u>1</u> 95						ISO 1
- For	2 position dual pressure	: replace by 2.				
825C-PM-111RA-895						ISO 2

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







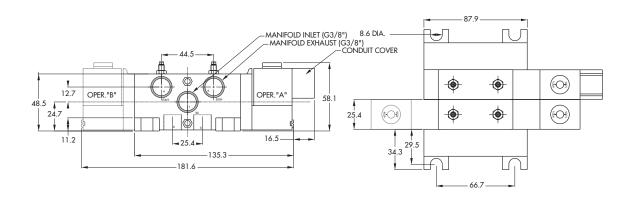
Fluid:	Compressed air, vacuum, inert gases
Pressure range:	Internal pilot : single operator and 3 positions : 1.3-10 bar double operator : 0.7-10 bar
	External pilot : vacuum to 13.3 bar
Pilot pressure :	Single operator and 3 positions : 1.3-10 bar Double operator : 0.7-10 bar
Lubrication:	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)
Filtration:	40 µ
Temperature range :	-18°C to 50°C (0°F to 120°F)
Flow (at 6 bar, $\Delta P = 1 bar$):	G1/4" : 1400 NI/min, G3/8" : 1400 NI/min
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 V=/8.5 W Energize : 8 ms De-energize : 10 ms
	50Hz/6 W Energize : 5-11 ms De-energize : 9-16 ms

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

Pilot valve: PME-XXYZZ, including seal 16337. • Mounting screw kit for pilot: N-08003.
Inlet isolator: N-08001 • Exhaust isolator (x2): N-08002.

• NPTF threads. • Dual inlet block: M-08003. Options :

DIMENSIONS





	Port size		Flow (Max)	Manifold mounting	Sei	ries
2 - 5/3	G1/4" - G3/8"		1400 NI/min	stacking body with 3 common ports with common conduit		
RATIONAL BENEFITS						
Balanced spool, immune t					3	35
Short stroke with high flow The piston (booster) provid				100		
orces. Powerful return force than	ks to the combination of					
nechanical and air spring	ıs.					100
Bonded spool with minim glass-like finished bore.	. •					
Viping effect eliminates s ilot valve with balanced	ticking. poppet, high flow, short				000	200
and consistent response ti						55
ong service life.				000	1	56
HOW TO ORDER				•		57
Port size	5/2	5/2	5/3	5/3	5/3	58
1 011 5120	Single operator	Double operator	Closed center	Open center		59
	A 3 2 B	A 3 2 B 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	B 2 3 A A A A A A A A A A A A A A A A A A	B 2 3 W A	B 2 3 A 3 A 3 A 3 A 3 A 3 A 3 A 3 A 3 A 3	
G1/4"	811C-PM- xxyzz -145	821C-PM- XXYZZ -145	825C-PM- XXYZZ -545	825C-PM- XXYZZ -645	00.50 014	15
G3/8"	811C-PM-xxyzz-146	821C-PM- XXYZZ -146	825C-PM- xxyzz -546	825C-PM- xxyzz -646	825C-PM- XXYZZ -846	19
DLENOID OPERATOR	>	<u>XX</u> Y	ZZ *			
ilenoid operator	>	<u>XX</u> Y	ZZZ *			700
XX Voltage	>	Y Manual opera		ZZ Electrical co	nnection	700
XX Voltage 11 110V~/50Hz	>	Y Manual opera		ZZ Electrical co DA Common conduit	nnection	700
XX Voltage 11 110V~/50Hz 12 220V~/50Hz 22 24V~/50Hz	>	Y Manual opera			nnection	
XX Voltage 11 110V~/50Hz 12 220V~/50Hz	>	Y Manual opera			nnection	900
XX Voltage 11 110V~/50Hz 12 220V~/50Hz 22 24V~/50Hz 59 24V=/2,5W	>	Y Manual opera			nnection	
XX Voltage 11 110V~/50Hz 12 220V~/50Hz 22 24V~/50Hz 59 24V=/2,5W 87 24V=/17,1W		Y Manual opera			nnection	32
XX Voltage 11 110V-/50Hz 12 220V-/50Hz 22 24V-/50Hz 59 24V=/2,5W 87 24V=/17,1W 61 24V=/8,5W	see page 305.	Y Manual opera			nnection	900
XX Voltage 11 110V-/50Hz 12 220V-/50Hz 22 24V-/50Hz 59 24V=/2,5W 87 24V=/17,1W 61 24V=/8,5W	see page 305.	Y Manual opera 1 Non-locking 2 Locking		DA Common conduit	nnection	32
XX Voltage 11 110V-/50Hz 12 220V-/50Hz 22 24V-/50Hz 59 24V=/2,5W 87 24V=/17,1W 61 24V=/8,5W Other options available,	see page 305.	Y Manual opera 1 Non-locking 2 Locking	ator	DA Common conduit	nnection	32 5300 5500
XX Voltage 11 110V-/50Hz 12 220V-/50Hz 22 24V-/50Hz 59 24V=/2,5W 87 24V=/17,1W 61 24V=/8,5W Other options available,	see page 305. MO DESCRIPTION	Y Manual opera 1 Non-locking 2 Locking DIFICATIONS	ator	DA Common conduit	nnection	900 32 5300
XX Voltage 11 110V-/50Hz 12 220V-/50Hz 22 24V-/50Hz 59 24V=/2,5W 87 24V=/17,1W 61 24V=/8,5W Other options available,	see page 305. MG DESCRIPTION Indicator light 24 V	Y Manual opera 1 Non-locking 2 Locking DIFICATIONS	ator MODEL AVAIL	DA Common conduit	nnection	32 5300 5500
XX Voltage 11 110V~/50Hz 12 220V~/50Hz 22 24V~/50Hz 59 24V=/2,5W 87 24V=/17,1W 61 24V=/8,5W Other options available, MOD. N° 0387 0295	see page 305. MO DESCRIPTION Indicator light 24 V Indicator light 120 V/	Y Manual opera 1 Non-locking 2 Locking DIFICATIONS DOC 60/50 60/50	MODEL AVAIL Single & double	DA Common conduit ABILITY solenoid	nnection	32 5300 5500
XX Voltage 11 110V~/50Hz 12 220V~/50Hz 22 24V~/50Hz 59 24V=/2,5W 87 24V=/17,1W 61 24V=/8,5W Other options available, MOD. N° 0387 0295	see page 305. MC DESCRIPTION Indicator light 24 V Indicator light 240 V/ opriate modification number	Y Manual opera 1 Non-locking 2 Locking DIFICATIONS DOC 60/50 60/50	MODEL AVAIL Single & double	DA Common conduit ABILITY solenoid	nnection	32 5300 5500 5600
XX Voltage 11 110V~/50Hz 12 220V~/50Hz 22 24V~/50Hz 59 24V=/2,5W 87 24V=/17,1W 61 24V=/8,5W Other options available, MOD. N° 0387 0295	see page 305. MO DESCRIPTION Indicator light 24 V/ Indicator light 240 V/ opriate modification number MANIFOLD I	Y Manual opera 1 Non-locking 2 Locking DIFICATIONS ODC 60/50 60/50 after the valve number; I	MODEL AVAIL Single & double	ABILITY solenoid 11DA-145 MOD 0295	nnection	32 5300 5500
XX Voltage 11 110V-/50Hz 12 220V-/50Hz 22 24V-/50Hz 59 24V=/2,5W 87 24V=/17,1W 61 24V=/8,5W Other options available, MOD. N° 0387 0295 0296 ORDER - Add the appr	see page 305. MO DESCRIPTION Indicator light 24 V/ Indicator light 240 V/ opriate modification number MANIFOLD I	Y Manual opera 1 Non-locking 2 Locking DIFICATIONS DOC 60/50 60/50 after the valve number; I No.	MODEL AVAIL Single & double EXAMPLE : 811C-PM-1	ABILITY solenoid 11DA-145 MOD 0295	nnection	32 5300 5500 5600

OPTIONS

Note: (1) end plate kit required per stack.

811C-PM-111DA-<u>1</u>45

- For 2 position dual pressure : replace by 2.

* Remove letter ${f P}$ at end of part $N^\circ.$ for NPTF threads; **EXAMPLE** : M-08002-01-01

825C-PM-111DA-<u>8</u>45

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







Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot: single operator and 3 positions: 1.3-10 bar double operator : 0.7-10 bar External pilot: vacuum to 13.3 bar Pilot pressure: Single operator and 3 positions : 1.3-10 bar Double operator : 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G1/4": 1400 NI/min, G3/8": 1400 NI/min Coil: General purpose - class A wires - Continuous duty - Encapsulated -15% to +10% of nominal voltage Voltage range: Consult factory Protection: Power: ~ Inrush : 14.8 VA Holding: 10.9 VA = 1 to 17.1 W Response times: 24 V=/8.5 W Energize: 8 ms De-energize: 10 ms Energize : 5-11 ms 50Hz/6 W De-energize: 9-16 ms

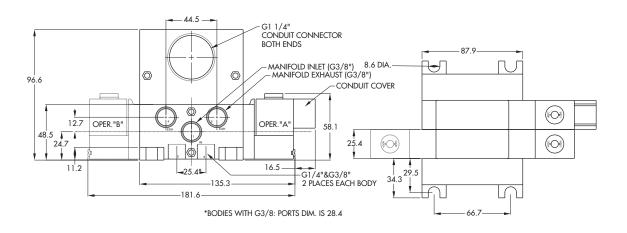
Spare parts : • Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.

• Pilot valve: PME-XXYZZ, including seal 16337. • Mounting screw kit for pilot: N-08003.

• Inlet isolator : N-08001 • Exhaust isolator (x2) : N-08002.

Options : • NPTF threads. • Dual inlet block: M-00014.

DIMENSIONS





nction	Port size		Flow (Max)	Manifold mounting		Series
2 - 5/3	G1/4" - G3/8"		1400 NI/min	stacking body with 3 common ports with C. C. & integral exh. F. C.		
ERATIONAL BENEFITS						
Balanced spool, immune						35
Short stroke with high flow The piston (booster) provi- forces. Powerful return force than mechanical and air spring	des maximum shifting			4		100
Bonded spool with mining glass-like finished bore. Wiping effect eliminates s Pilot valve with balanced	num friction, shifting in a sticking.				000	200
and consistent response ti Long service life.					00 6	55
Long service life.				36		56
HOW TO ORDER				20		57
Port size	5/2	5/2	5/3	5/3	5/3	58
1 011 3120	Single operator	Double operator	Closed center	Open center	Pressure center	59
	A 3 2 B S S S S S S S S S S S S S S S S S S	A 3 2 B 5 \$\frac{3}{5}\frac{1}{9}\frac{1}{3}\frac{1}{4}\frac{1}{3}	B 2 3 A A A A A A A A A A A A A A A A A A	B 2 3 W A 3 7 Y 3	B 2 3 W A 4 1 5	97
G1/4"	811C-PM- xxyzz -165	821C-PM- xxyzz -165	825C-PM- XXYZZ -565	825C-PM- xxyzz -665	825C-PM- xxyzz -865	45
G3/8"	811C-PM- XXYZZ -166	821C-PM- XXYZZ -166	825C-PM- XXYZZ -566	825C-PM- XXYZZ -666	825C-PM- XXYZZ -866	70
DLENOID OPERATOR	>	<u> </u>	ZZ *			
		<u> </u>				700
XX Voltage		Y Manual oper	ator	ZZ Electrical co		
11 110V~/50Hz 12 220V~/50Hz		Non-locking Locking		DA Common conduit	<u> </u>	900
22 24V~/50Hz						
59 24V=/2,5W 87 24V=/17,1W						
61 24V=/8,5W						82
Oth	205					
Other options available,	, see page 300.					6300
		DIFICATIONS				
MOD. N°	DESCRIPTION		MODEL AVAIL	ABILITY		6500
0387	Indicator light 24 VD		Single & double	solenoid		4400
0295	Indicator light 240 V/60		9.2 2. 2.2000			6600
	ropriate modification number o		FXAMPIF · 811C_PM 1	11DA-165 MOD 0295		1300
- Add the appr	•	•		110A-100 MOD 0293		
INT. PILOT - PART N°		ID PLATE KITS (BSPP)	MODELS USED WIT	'H		800
M-08002-01-01P	M-08002-02-01F		anduit models, stacks of 1			100.5
M-00007-01-01P	M-00007-02-01F		nduit models, stacks of 17			ISO 1
						ISO 2
Remove letter P at end of	f part N°. for NPTF threads; EX	CAMPLE : M-08002-0	1-01			ISO 3

OPTIONS

811CPM-111DA-165 - For 2 position dual pressure : replace by 2.

Note: (1) end plate kit required per stack.

825C-PM-111DA-<u>8</u>65

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







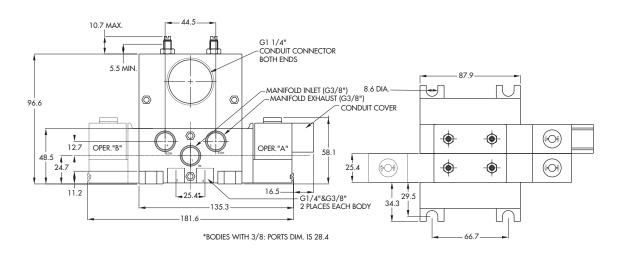
Fluid:	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot : single operator and 3 positions : 1.3-10 bar double operator : 0.7-10 bar
	External pilot : vacuum to 13.3 bar
Pilot pressure:	Single operator and 3 positions : 1.3-10 bar Double operator : 0.7-10 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)
Filtration:	40 μ
Temperature range :	-18°C to 50°C (0°F to 120°F)
Flow (at 6 bar, $\Delta P = 1 bar$):	G1/4" : 1400 NI/min, G3/8" : 1400 NI/min
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 V=/8.5 W Energize: 8 ms De-energize: 10 ms
	50Hz/6 W Energize : 5-11 ms De-energize : 9-16 ms

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

Pilot valve: PME-XXYZZ, including seal 16337. • Mounting screw kit for pilot: N-08003.
Inlet isolator: N-08001 • Exhaust isolator (x2): N-08002.

• NPTF threads. • Dual inlet block: M-00014. Options :

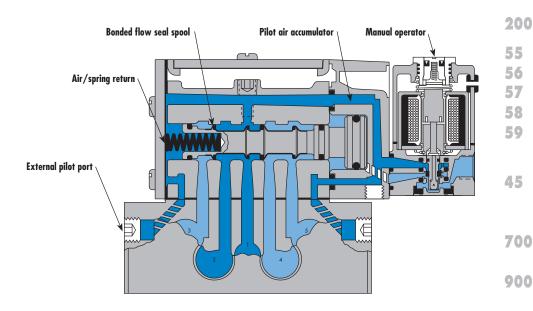
DIMENSIONS



Series ISO

Direct solenoid and solenoid pilot operated valves





SERIES FEATURES

- Fastest available response time with patented MACSOLENOID.
- \bullet 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.
- Large spool piston for high shifting force even at minimum operating pressure
- Air/spring return for consistent shifting on single solenoid models.
- Patented virtually burn-out proof AC solenoid.
- Optional low wattage DC solenoids down to 1.0 watt.
- Various manual operators & electrical connectors are available.
- Muffled or threaded pilot exhaust ports.
- Internal of external pilot models available.

82

6300

6500

6600

1300

800

ISO 1

ISO 2







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 gir)
- 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



unction	Port size		Flow (Max)	Individual mounl	ing & Manifold Mounting	Series
5/2 - 5/3	G1/4" - G3/8"		1600 NI/min	valve only		
PERATIONAL BENEFITS						
. Balanced spool, immune to vo . Short stroke with high flow. . The piston (booster) provides a forces.						35
Powerful return force thanks to mechanical and air springs. Bonded spool with minimum						100
glass-like finished bore. Wiping effect eliminates sticki Pilot valve with balanced pop	pet, high flow, short			• •		200
and consistent response times. Long service life.						55
. Long sorvice me.				6 6		56
HOW TO ORDER				0.1		57
INGLE PRESSURE VALVES						58
Pilot air	5/2 Single operator			5/3 Closed center	5/3	59
	14 4 2 12	Double of	2 12	14 4 2 12	Open center	
	5∜ 0 ₹3	5∜	⁶ ♥3	54043	5 \$ \$ \$ \$ \$ \$	45
Internal	MV-A1C-A111-PM-xxyzz	MV-A1C-A21		IV-A1C-A312-PM- XXYZZ		_
External	MV-A1C-A121-PM-XXYZZ	MV-A1C-A22	I-PM-XXYZZ M	IV-A1C-A322-PM- XXYZZ	MV-A1C-A321-PM-xxyzz	_
UAL PRESSURE VALVES						700
Pilot air	5/2		5/2		5/3	700
	Single oper	rator	Double of	perator	Pressure center	
		<u>k</u>	, <u>'</u> ze\ <u>\ </u>			900
	50 70	3 -	50	√ 63 1	50 703	_
Internal port 3	MV-A1C-A131-P		MV-A1C-A231		MV-A1C-A331-PM-xxyzz	- 82
Internal port 5	MV-A1C-A135-P	M-xxyzz	MV-A1C-A232	2-PM- xxyzz	MV-A1C-A332-PM-xxyzz	_
External	MV-A1C-A141-P	M- xxyzz	MV-A1C-A241	-PM- xxyzz	MV-A1C-A341-PM- XXYZZ	_
OLENOID OPERATOR >		YY V	Y ZZ *			6300
OLLINOID OFERAIOR >		^	<u>-</u>			
						6500
XX Voltage	Y	Manual oper	rator	ZZ Elec	trical connection	7.7.0.0
11 110V~/50Hz	1	Non-locking			ngular connector	6600
12 220V~/50Hz	2	Locking		JD Recta	ngular connector with light	
22 24V~/50Hz					e connector	1300
59 24V=/2,5W				Squar	e connector with light	_
87 24V=/17 1W				B∆ Elvino	lleads (4.5 cm)	
87 24V=/17,1W 61 24V=/8,5W					leads (45 cm)	800

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

Note: ISO valves are delivered w/o base. See page 261 for base

- For CNOMO pilot, consult factory.

OPTIONS

MV-A1C-A111-PM-xxyzz

ISO 2



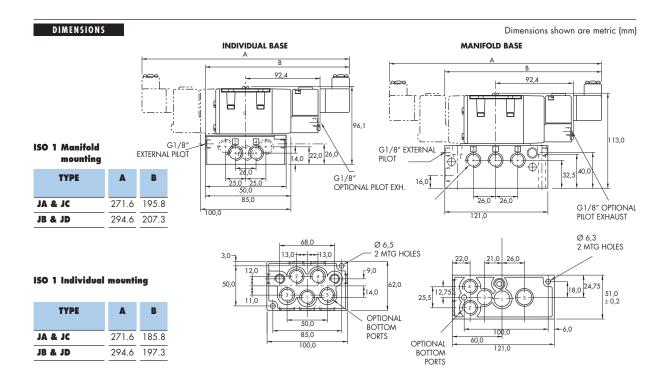




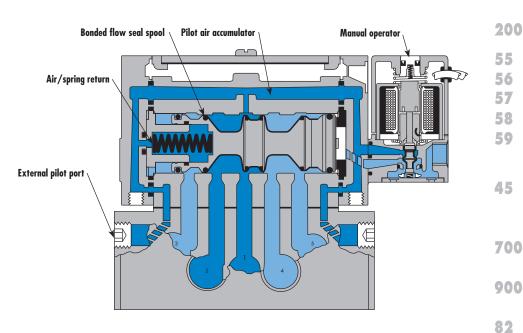
Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot: single operator and 3 positions: 1.7-10 bar double operator : 0.7-10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G1/4": 1600 NI/min, G3/8": 1600 NI/min Coil: Epoxy encapsulated - class A wires - Continuous duty -15% to +10% of nominal voltage Voltage range: Consult factory Protection: Power: ~ Inrush : 14.8 VA Holding: 10.9 VA = 1 to 17.1 W Response times: 24 V=/8.5 W Energize: 10 ms De-energize: 11 ms 50Hz/6 W Energize: 7-13 ms De-energize: 10-17 ms

Spare parts:

- \bullet 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: 16344.
- Mounting screw valve to base (x4): 35304.







SERIES FEATURES

- Fastest available response time with patented MACSOLENOID.
- 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.
- Large spool piston for high shifting force even at minimum operating pressure
- Air/spring return for consistent shifting on single solenoid models.
- Patented virtually burn-out proof AC solenoid.
- Optional low wattage DC solenoids down to 1.0 watt.
- Various manual operators & electrical connectors are available.
- Muffled or threaded pilot exhaust ports.
- Internal of external pilot models available.

6300

6500

6600

1300

800

ISO 1

ISO 2







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



unction	Port size	Flow (Max)		Individual n	Individual mounting & Manifold Mounting	
5/2 - 5/3	G3/8" - G1/2"		3000 NI,	/min valve only		
PERATIONAL BENEFITS						
. Balanced spool, immune to . Short stroke with high flow . The piston (booster) provide forces.	<i>.</i>					35
Powerful return force thank mechanical and air spring Bonded spool with minimum	S.			A		100
glass-like finished bore. Wiping effect eliminates st Pilot valve with balanced p	icking. poppet, high flow, short					200
and consistent response tir				mon		55
Long service life.				-		56
HOW TO ORDER					NJ	57
NGLE PRESSURE VALV	/EC					58
			10	- 1-	= /-	
Pilot air	5/2 Single operator		/2 operator	5/3 Closed center	5/3 Open center	59
	14 4 2 12 12 12 12 12 12 12 13 13 13 13 13 13 13 13 13 13 13 13 13	14	4 2 12 1 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	14 4 2 WE T T T T T T T T T T T T T T T T T T T		45
Internal	MV-A2B-A111-PM-xxyzz		1 1-PM- xxyzz	MV-A2B-A312-PM- x	MV-A2B-A311-PM-xxyzz	_
External	MV-A2B-A121-PM-xxyzz	MV-A2B-A22	21-PM- xxyzz	MV-A2B-A322-PM- x	MV-A2B-A321-PM-XXYZZ	-
JAL PRESSURE VALVES	ò					700
Pilot air	5/2			5/2	5/3	700
	Single ope	2_ 12	Doub	ble operator 4 2 12	Pressure center	
		/ a			50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	900
Internal port 3	MV-A2B-A131-I		MV-A2B	3-A231-PM-XXYZZ	MV-A2B-A331-PM- XXYZZ	- - 82
Internal port 5	MV-A2B-A135-I	PM- xxyzz		3-A232-PM- xxyzz	MV-A2B-A332-PM- xxyzz	02
External	MV-A2B-A141-	PM- xxyzz	MV-A2B	3-A241-PM- xxyzz	MV-A2B-A341-PM- XXYZZ	_
OLENOID OPERATOR	>	<u> </u>	Y <u>ZZ</u> *			6300
			T ——			6500
		Manual ope	erator	ZZ	Electrical connection	
XX Voltage	Y					6600
XX Voltage 11 110V~/50Hz	1	Non-locking			Rectangular connector	_
11 110V~/50Hz 12 220V~/50Hz	1 2	-		JD	Rectangular connector with light	_
11 110V~/50Hz 12 220V~/50Hz 22 24V~/50Hz 59 24V=/2,5W	1	Non-locking		JD JA JC	Rectangular connector with light Square connector Square connector with light	1300
11 110V~/50Hz 12 220V~/50Hz 22 24V~/50Hz 59 24V=/2,5W 87 24V=/17,1W	1	Non-locking		JD JA JC BA	Rectangular connector with light Square connector Square connector with light Flying leads (45 cm)	1300
11 110V~/50Hz 12 220V~/50Hz 22 24V~/50Hz 59 24V=/2,5W 87 24V=/17,1W 61 24V=/8,5W	1 2	Non-locking		JD JA JC BA	Rectangular connector with light Square connector Square connector with light	1300
11 110V~/50Hz 12 220V~/50Hz 22 24V~/50Hz 59 24V=/2,5W 87 24V=/17,1W 61 24V=/8,5W Other options available,	1 2	Non-locking Locking		JD JA JC BA	Rectangular connector with light Square connector Square connector with light Flying leads (45 cm)	1300
11 110V~/50Hz 12 220V~/50Hz 22 24V~/50Hz 59 24V=/2,5W 87 24V=/17,1W 61 24V=/8,5W Other options available,	see page 305.	Non-locking Locking		JD JA JC BA	Rectangular connector with light Square connector Square connector with light Flying leads (45 cm)	1300

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

- For CNOMO pilot, consult factory.







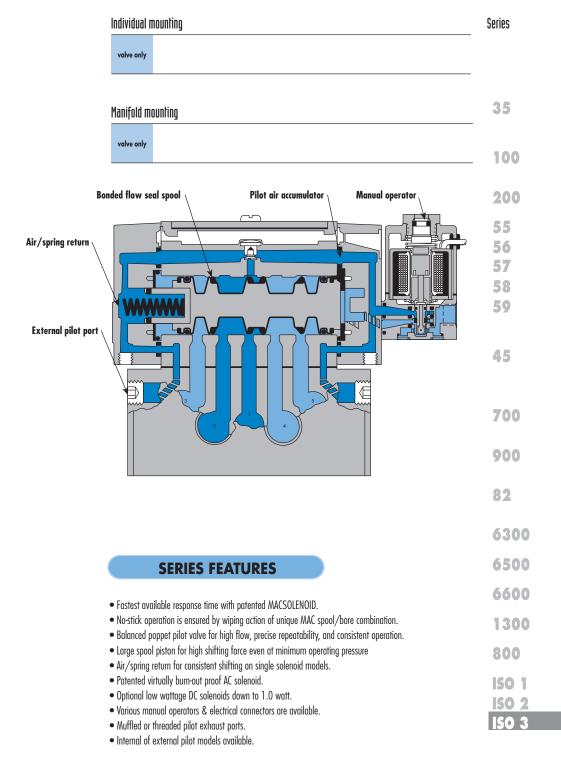
Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot: single operator and 3 positions: 1.7-10 bar double operator: 0.7-10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G3/8": 3000 NI/min, G1/2": 3000 NI/min) Coil: Epoxy encapsulated - class A wires - Continuous duty Voltage range: -15% to +10% of nominal voltage Consult factory Protection: Power: ~ Inrush : 14.8 VA Holding: 10.9 VA = 1 to 17.1 W 24 V=/8.5 W Energize: 10 ms De-energize: 15 ms Response times: 50Hz/6 W Energize: 6-15 ms De-energize: 10-17 ms

Spare parts:

- \bullet 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: 16351.
- Mounting screw valve to base (x4): 35412.

DIMENSIONS Dimensions shown are metric (mm) MANIFOLD BASE INDIVIDUAL BASE 102,4 102,4 135,6 147,7 119,7 131,5 G1/8" ISO 2 Manifold mounting EXTERNAL PILOT **TYPE** G1/8" EXTERNAL PILOT 34,0 34,0 G1/8" OPTIONAL PILOT G1/8" OPTIONAL PILOT EXHAUST **EXHAUST** G1/2" - 3 PORTS EACH JA & JC 291.6 214.8 JB & JD 314.6 226.3 6,5 DIA. 2 MTG. HOLES 70,0 7,5 DIA. THRU 2 MTG. HOLES 23,0 34,0 14,0-**√**10,0 52,0 64,0 ± 0,2 ISO 2 Individual mounting OPTIONAL OPTIONAL **TYPE** BOTTOM PORTS BOTTOM PORTS JA & JC 212.3 291.6 314.6 JB & JD 223.8











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 gir)
- Individual base.
- Internal pilot or external pilot (including a common external pilot or manifold models).
- Side porting and bottom porting options.

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

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



unction	Port size		Flow (Max) lı		ndividual mountin	G Manifold Mounting	Series
5/2 - 5/3	G1/2" - G3/4"		6300 NI/	min'	valve only		
DPERATIONAL BENEFITS Balanced spool, immune Short stroke with high flo The piston (booster) prov	ow.						35
forces. I. Powerful return force that mechanical and air sprir I. Bonded spool with minit	ngs.						100
glass-like finished bore. . Wiping effect eliminates . Pilot valve with balanced	d poppet, high flow, short						200
and consistent response B. Long service life.	times.				Tien I		55
Q							56
HOW TO ORDER					13		57
SINGLE PRESSURE VAL	LVES						58
Pilot air	5/2 Single operator	5/2 Double o		Clos	5/3 ed center	5/3 Open center	59
	14 4 2 12 14 7 12 12 5 00 1 0 3	14	12 12 14 17 17 17 17	14 	4 2 12 12 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	14 4 2 12 175 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	45
Internal	MV-A3B-A111-PM-xxyzz	MV-A3B-A211		MV-A3B-	A312-PM- XXYZZ	MV-A3B-A311-PM-xxyzz	- 73
External	MV-A3B-A121-PM- xxyzz	MV-A3B-A221	I-PM- XXYZZ	MV-A3B-	A322-PM- XXYZZ	MV-A3B-A321-PM-xxyzz	_
UAL PRESSURE VALVE	ES						T 00
Pilot air	5/2			5/2		5/3	700
	Single op	erator 2 12	Doub	le operato:		Pressure center	
		7 3 71 8 3		5 V1 3	1		900
Internal port 3	MV-A3B-A131		MV-A3B-A231-PM- XXYZZ			MV-A3B-A331-PM- xxyzz	- 82
Internal port 5				V-A3B-A232-PM- xxyzz MV-A3B-A332-PM- xxyzz			_
External	MV-A3B-A141	-PM-XXYZZ	MV-A3B-	-A241-PM- xx	<u>YZZ </u>	MV-A3B-A341-PM-XXYZZ	
OLENOID OPERATOR	R ➤	<u>XX</u> 1	Y <u>ZZ</u> * -				6300
							6500
XX Voltage	Υ	Manual ope	rator			cal connection	6600
11 110V~/50Hz 12 220V~/50Hz		Non-locking Locking				ular connector ular connector with light	_
22 24V~/50Hz 59 24V=/2,5W					JA Square	connector	1300
87 24V=/17,1W				_		ads (45 cm)	_
61 24V=/8,5W					lote : Photo show	with JC connector.	800
Other options available Note : ISO valves are deli	e, see page 305. vered w/o base. See page 265 f	or base code.					ISO 1
OPTIONS							ISO 2
OLLIONS							ISO 3

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

- For CNOMO pilot, consult factory.







Fluid: Compressed air, vacuum, inert gases Pressure range: Internal pilot: single operator and 3 positions: 1.7-10 bar double operator : 0.7-10 bar External pilot: vacuum to 10 bar Pilot pressure: Single operator and 3 positions: 1.7-10 bar Double operator: 0.7-10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: 40 μ -18°C to 50°C (0°F to 120°F) Temperature range: Flow (at 6 bar, $\Delta P = 1 bar$): G1/2": 6300 NI/min, G3/4": 6300 NI/min Coil: Epoxy encapsulated - class A wires - Continuous duty -15% to +10% of nominal voltage Voltage range: Protection: Consult factory ~ Inrush : 14.8 VA Holding: 10.9 VA Power: = 1 to 17.1 W Response times: 24 V=/8.5 W Energize: 18 ms De-energize: 20 ms 50Hz/6 W Energize: 15-25 ms De-energize: 19-28 ms

Spare parts:

- ullet 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. Check valve : 70002 (+M-00011).

DIMENSIONS Dimensions shown are metric (mm) В 119,9 136,2 124,4 43,5 33,0 27,0 22,0 45,0 20,5 20,5 G1/8" EXTERNAL 49,0 49,0 140,0 Ø 8,3 MTG. HOLES 168,0 70,0 ISO 3 Individual mounting 15,0-TYPE 79,0 JA & JC 326.6 247.3 JB & JD 349.6 258.8 15,0 49,0 OPTIONAL BOTTOM PORTS 78,0 156,0



Section 2 Remote air valves





Function	Port size	Flow (Max) NL/min
3/2 - 2/2	G1/8" - G1/4"	180
3/2 - 2/2	G1/8"	180
3/2 - 2/2	G1/4" - G3/8"	2500
3/2 - 2/2	G3/8" - G1/2" - G3/4"	6200
3/2 - 2/2	G1/2" - G3/4" - G1"	17400
3/2 - 2/2	G1" - G1 1/4" - G1 1/2"	33500
3/2 - 2/2	G2" - G2 1/2"	65000
4/2	G1/8" - G1/4"	700
4/2	G1/8" - G1/4"	800
4/2	G1/8" - G1/4"	1400
4/2 - 4/3	G1/8" - G1/4" - G3/8"	1350
4/2 - 4/3	G1/4" - G3/8"	1350
4/2 - 4/3	G1/4" - G3/8" - G1/2"	3000
4/2 - 4/3	G3/8" - G1/2" - G3/4"	5100
4/2 - 4/3	G3/4" - G1"	9600
4/2 - 4/3	G3/4" - G1" - G1 1/4" - G1 1/2"	15900
5/2 - 5/3	G1/4"	1400
5/2 - 5/3	G1/4" - G3/8"	1600
5/2 - 5/3	G3/8" - G1/2"	3000
5/2 - 5/3	G1/2" - G3/4"	6300

Indi	ividual mo	ounting		Manifold mo	unting		Series
	Inline	sub-base	valve only	stacking	sub-base	valve only	
P.	. 171						
_					P. 173		1100
P.	. 177						55
P.	. 181						56
P.	. 185						57
P.	. 189						58
P.	. 193						59
P.	. 197						700
_				P. 199			700
P.	203			P. 205			900
		P. 209					82
_					P. 211		02
_		P. 215			P. 217		6300
_		P. 221			P. 223		6500
_		P. 227			P. 229		6600
_		P. 233					2700
P.	237						1800
_			P. 241			P. 241	ISO 1
_			P. 245			P. 245	ISO 2
_			P. 249				ISO 3



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



R e mote air valve S

Individual mounting Function Port size Flow (Max) Series 3/2 NO-NC, 2/2 NO-NC G1/8" - G1/4" 180 NI/min Inline

OPERATIONAL BENEFITS

- 1. Balanced poppet, immune to variations of
- Short stroke with high flow.
 Powerful return spring.
 Maximum shifting forces.



1100

55

56

57

58

59

700

900

82

6300

6500

6600

2700

1800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

Port size	Universal valve	NC only valve
	\(\frac{1}{1\sqrt{1}\sqrt{3}} \rightarrow \)	\(\frac{2}{1\) \frac{2}{1\) \dots \dot
G1/8"	1116A-114	1166A-114
G1/4"	1117A-114	1167A-114

Air pilot port : G1/8".







Fluid:

Compressed air, vacuum, inert gases

Pressure range:

Vacuum to 10 bar

Air signal pressure:

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

Lubrication: Filtration:

1.3 bar

Temperature range :

-18°C to 60°C (0°F to 140°F)

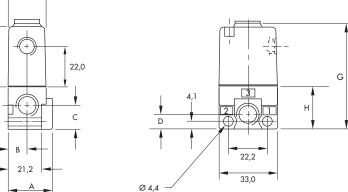
Flow (at 6 bar, $\Delta P=1bar$):

180 NI/min

• NPTF threads. Options :

DIMENSIONS

33,8 22,0 Dimensions shown are metric (mm)



Port size	A	В	C	D	G	Н
G1/8"	28.4	12.7	14.0	8.0	60.1	23.2
G1/4"	29.8	13.3	12.7	9.9	60.9	24.1

Ø 5 mm

24,9

#1 17,8



R emote air valve S

Function	Port size	Flow (Max)	Manifold mounting		Series
3/2 NO-NC, 2/2 NO-NC	G1/8"	180 NI/min	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.



1100

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HOW TO ORDER

Port size	Universal valve	NC only valve	
	CYL M INÓ VEXH	CYL INO VEXH	70
Valve less base	1130A-114	1170A-114	
Sub-base G1/8"	1136A-114	1176A-114	9

Air pilot port : G1/8".

End plate kit (G1/4" ports): A2-5004-01P.

OPTIONS

11X6A-111

- Replace by 2 for 2-way normally closed.- Replace by 4 for 2-way normally open.

82

6300

6500

6600

2700

1800

ISO 1

ISO 2







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure: 1.3 bar

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

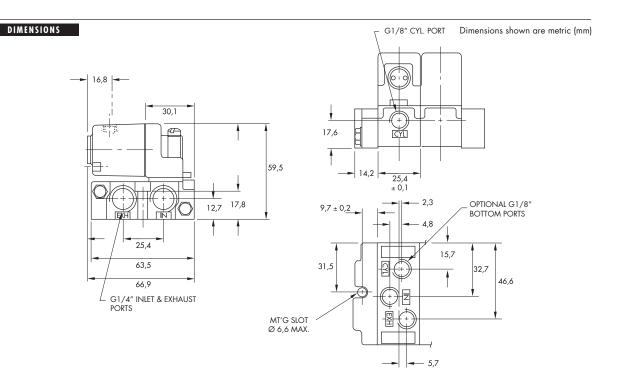
Filtration: 40 µ

Temperature range: -18°C to 60°C (0°F to 140°F)

Flow (at 6 bar, $\Delta P=1bar$): G1/8": 180 NI/min

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

Options: • NPTF threads.



Individual n	nounting	Series
Inline		

ISO 1

ISO 2



R 6 Ш 0 9 a i r V a V 6 S

Function	Port size	Floш (Max)	Individual m	nounting	Series
3/2 NO-NC, 2/2 NO-NC	G1/4" - G3/8"	2500 NI/min	Inline		

OPERATIONAL BENEFITS

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



1100

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700

900

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6300

6500

6600

2700

1800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

Port size	Air spring	NC valve	NO valve
		D CYL	DTIM
G1/4"	Internal	55B-13-RA	55B-23-RA
G3/8"		55B-14-RA	55B-24-RA
G1/4"	External	55B-13-RE	55B-23-RE
G3/8"		55B-14-RE	55B-24-RE

Air pilot port : G1/8".

Note: Designation "RE" required on remote air pilot models with main valve pressures of vacuum to 1.7 bar. "RE" provides an external pilot port and should have a pressure range of 1.7 to 6.7 bar. Since the external pilot supplies the air spring, it must not exceed the remote air pilot signal pressure.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure: 1.7 to 10 bar ≥ main valve pressure

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

Filtration: 40 µ

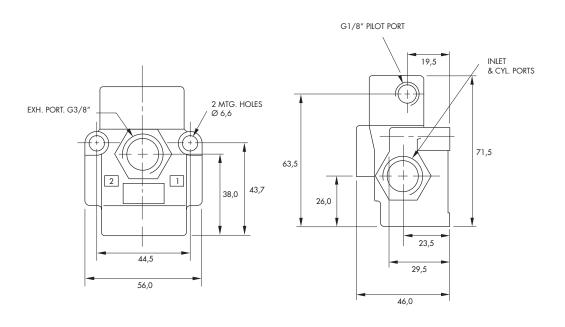
Temperature range: -18°C to 50°C (0°F to 120°F)

Flow (at 6 bar, ΔP=1bar) : G1/4" : 2500 NI/min, G3/8" : 2500 NI/min

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

Options : • NPTF threads.

DIMENSIONS





Remote air valves

Individual mounting Series

ISO 1

ISO 2



R 6 Ш 0 t e a i r v a l v 6 S

Function	Port size	Flow (Max)	Individual m	nounting	Series
3/2 NO-NC, 2/2 NO-NC	G3/8" - G1/2" - G3/4"	6200 NI/min	Inline		

OPERATIONAL BENEFITS

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



1100

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57 58

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6300

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2700

1800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

Port size	Air spring	NC valve	NO valve	
		E T G	CYL 	7
G3/8"		56C-55-RA	56C-85-RA	-
G1/2"	Internal	56C-56-RA	56C-86-RA	- 9
G3/4"		56C-58-RA	56C-88-RA	_
G3/8"		56C-55-RE	56C-85-RE	_
G1/2"	External	56C-56-RE	56C-86-RE	- (
G3/4"		56C-58-RE	56C-88-RE	_

Air pilot port : G1/8".

Note: Designation "RE" required on remote air pilot models with main valve pressures of vacuum to 1.7bar. "RE" provides an external pilot port and should have a pressure range of 1.7 to 6.7 bar. Since the external pilot supplies the air spring, it must not exceed the remote air pilot signal pressure.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure : 1.7 to 10 bar \geq main valve pressure

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

Filtration: 40 µ

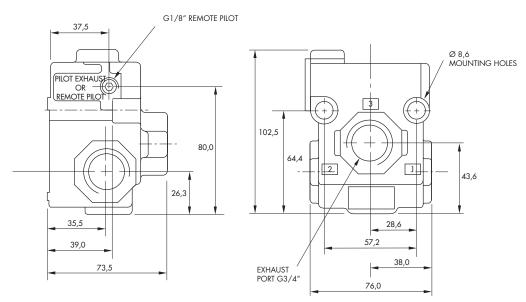
Temperature range: -18°C to 50°C (0°F to 120°F)

Flow (at 6 bar, ΔP=1bar): G3/8": 6000 NI/min, G1/2": 6100 NI/min, G3/4": 6200 NI/min

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

Options: • NPTF threads.

DIMENSIONS





Remote air valves



Remote air valves

Function	Port size	Floш (Max)	Individual m	nounting	Series
3/2 NO-NC, 2/2 NO-NC	G1/2" - G3/4" - G1"	17400 NI/min	Inline		

OPERATIONAL BENEFITS

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



1100

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58

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700

900

82

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6300

6500

6600

2700

1800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

Port size	Air spring	NC valve	NO valve
		E T T T	DTTMW
G1/2"		57D-54-RA	57D-84-RA
G3/4"	Internal	57D-55-RA	57D-85-RA
G1"		57D-56-RA	57D-86-RA
G1/2"		57D-54-RE	57D-84-RE
G3/4"	External	57D-55-RE	57D-85-RE
G1"		57D-56-RE	57D-86-RE

Air pilot port : G1/8".

Note: Designation "RE" required on remote air pilot models with main valve pressures of vacuum to 1.7 bar. "RE" provides an external pilot port and should have a pressure range of 1.7-5 bar. Since the external pilot supplies the air spring, it must not exceed the remote air pilot signal pressure.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure: $1.7 \text{ to } 10 \text{ bar } \ge \text{ main valve pressure}$

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

Filtration: 40

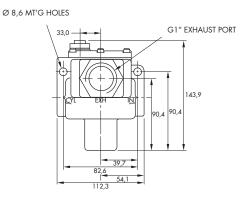
Temperature range: -18°C to 50°C (0°F to 120°F)

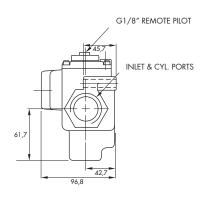
Flow (at 6 bar, ΔP=1bar): G1/2": 11000 NI/min, G3/4": 15300 NI/min, G1": 17400 NI/min

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

Options : • NPTF threads.

DIMENSIONS







Remote air valves

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



R 6 Ш 0 t e a i r V a V 6 S

Function	Port size	Flow (Max)	Individual m	nounting	Series
3/2 NO-NC, 2/2 NO-NC	G1" - G1 1/4" - G1 1/2"	33500 NI/min	Inline		

OPERATIONAL BENEFITS

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



1100

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56

57

59

700

900

82

6300

6500

6600

2700

1800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

G1" 58D-54-RA G1 1/4" Internal 58D-55-RA G1 1/2" 58D-56-RA G1" 58D-54-RE		
G1" 58D-54-RA G1 1/4" Internal 58D-55-RA G1 1/2" 58D-56-RA	DTTWW	
G1 1/2" 58D-56-RA	58D-84-RA	
·	58D-85-RA	
G1" 58D-54-RE	58D-86-RA	
	58D-84-RE	
G1 1/4" External 58D-55-RE	58D-85-RE	
G1 1/2" 58D-56-RE	58D-86-RE	

Air pilot port : G1/8".

Note: Designation "RE" required on remote air pilot models with main valve pressures of vacuum to 1.7bar. "RE" provides an external pilot port and should have a pressure range of 1.7-5 bar. Since the external pilot supplies the air spring, it must not exceed the remote air pilot signal pressure.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure: 1.7 to 10 bar ≥ main valve pressure

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

Filtration: 40 µ

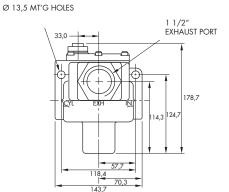
Temperature range: -18°C to 50°C (0°F to 120°F)

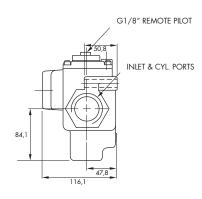
Flow (at 6 bar, ΔP=1bar): G1": 31200 NI/min, G1 1/4": 32500 NI/min, G1 1/2": 33500 NI/min

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

Options: • NPTF threads.

DIMENSIONS







R mote air valve S

Inline



R 6 Ш 0 t e a į ſ V a V 6 S

Function	Port size	Flow (Max)	Individual m	nounting	Series
3/2 NO-NC, 2/2 NO-NC	G2" - G2 1/2"	65000 NI/min	Inline		

OPERATIONAL BENEFITS

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



1100

55

56

57

58 59

700

900

82

6300

6500

6600

2700

1800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

Port size	Air spring	NC valve
		ID TING VEX
G2"	Internal	59B-55-RA
G2 1/2"	-	59B-56-RA
G2"	External	59B-55-RE
G2 1/2"	-	59B-56-RE

Air pilot port : G1/8".

Note: Designation "RE" required on remote air pilot models with main valve pressures of vacuum to 1.7bar. "RE" provides an external pilot port and should have a pressure range of 1.7-5 bar. Since the external pilot supplies the air spring, it must not exceed the remote air pilot signal pressure.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure: $1.7 \text{ to } 10 \text{ bar } \geq \text{ main valve pressure}$

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

Filtration:

Temperature range: -18°C to 50°C (0°F to 120°F)

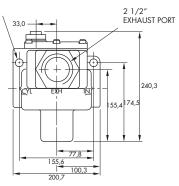
Flow (at 6 bar, ΔP=1bar): G2": 60000 NI/min, G2 1/2": 65000 NI/min

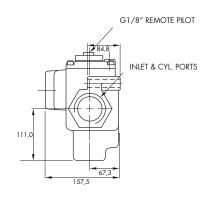
Spare parts : • Remote air pilot block : R-59003. • Check valve : 70019.

Options: • NPTF threads.

DIMENSIONS







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



R 6 mote air valv 6 S

Function	Port size	Flow (Max)	Individual m	nounting	Series
4/2	G1/8" - G1/4"	700 NI/min	Inline		

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of
- Short stroke with high flow.
 The piston (booster) provides maximum shifting forces.
- 4. Powerful return thanks to the combination of mechanical and air springs.

 5. Bonded spool with minimum friction, shifting
- in a glass-like finished bore.
- 6. Wiping effect eliminates sticking.
- 7. Low leakage rate.



HOW TO ORDER

Port size	Single operator	Double operator
	A B B B	A B B A B A B A B A B A B A B A B A B A
G1/8"	711C-13-RA	721C-13-RA
G1/4"	711C-14-RA	721C-14-RA

HOW TO ORDER VALVE WITH FLOW CONTROLS

Port size	Single operator	Double operator
	A B S S S S S S S S S S S S S S S S S S	A B B GIN VEX
G1/8"	712C-13-RA	722C-13-RA
G1/4"	712C-14-RA	722C-14-RA

Air pilot port : G1/8".

900

700

82

6300

6500

6600

2700

1800

ISO 1

ISO 2







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure : Single operator : 1.3 to 10 bar ≥ main valve pressure

Double operator : 0.7 to 10 bar

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

Filtration: 40μ

-18°C to 50°C (0°F to 120°F)

Flow (at 6 bar, ΔP=1bar):

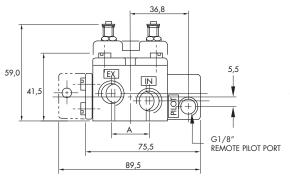
Temperature range:

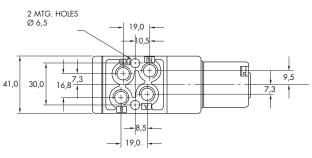
G1/8": 600 NI/min, G1/4": 700 NI/min

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

Options : • NPTF threads.

DIMENSIONS





PORT SIZE	A
G1/8"	21.0
G1/4"	24.0



R 6 m o te air valv 6 S

Function	Port size	Floш (Max)	Manifold mo	ounting	Series
4/2	G1/8" - G1/4"	800 NI/min	stacking		

OPERATIONAL BENEFITS

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



HOW TO ORDER

Port size	Single operator	Double operator
	A B B B C C C C C C C C C C C C C C C C	$ \begin{array}{c c} A & B & B \\D & & & & \\ \hline $
G1/8"	713C-13-RA	723C-13-RA
G1/4"	713C-14-RA	723C-14-RA

HOW TO ORDER VALVE WITH FLOW CONTROLS

Port size	Single operator	Double operator
	A B B G	A B B B G G G G G G G G G G G G G G G G
G1/8"	714C-13-RA	724C-13-RA
G1/4"	714C-14-RA	724C-14-RA

End plate kit (Port size G1/4"): M-07001-01-01P, internal pilot. M-07001-02-01P, external pilot.

Air pilot port : G1/8".

6600

6300

6500

700

900

82

2700 1800

ISO 1

ISO 2







 Fluid:
 Compressed air, vacuum, inert gases

 Pressure range:
 Vacuum to 10 bar

 Air signal pressure:
 Single operator: 1.3 to 10 bar ≥ main valve pressure

 Double operator: 0.7 to 10 bar

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

 Filtration:
 40 μ

 Temperature range:
 -18°C to 50°C (0°F to 120°F)

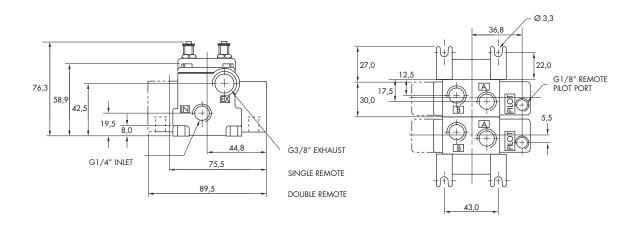
 Flow (at 6 bar, ΔP=1bar):
 G1/8": 700 NI/min, G1/4": 800 NI/min

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 : • NPTF threads.

DIMENSIONS



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



R mote air valv 6 6 S

Function	Port size	Flow (Max)	Individual m	nounting	Series
4/2	G1/8" - G1/4"	1400 NI/min	Inline		

OPERATIONAL BENEFITS

- Balanced spool, immune to variations of pressure.
 Short stroke with high flow.
- 3. The piston (booster) provides maximum shifting forces.
- 4. Powerful return thanks to the combination of
- mechanical and air springs.

 5. Bonded spool with minimum friction, shifting in a glass-like finished bore.

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



1100

55

56

57

58

700

59

900

82

6300

6500

6600

2700

1800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

Port size	Single operator	Double operator	
	A B B G GIN VEX	A B B D D D D D D D D D D D D D D D D D	7
G1/8"	915B-RA	925B-RA	
G1/4"	916B-RA	926B-RA	9

Air pilot port : G1/8".







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure : Single operator : 1.7 to 10 bar ≥ main valve pressure

Double operator : 0.7 to 10 bar

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

Filtration: 40 µ

Temperature range: -18°C to 50°C (0°F to 120°F)

Flow (at 6 bar, $\Delta P=1bar$): G1/8": 800 NI/min, G1/4": 1200 NI/min

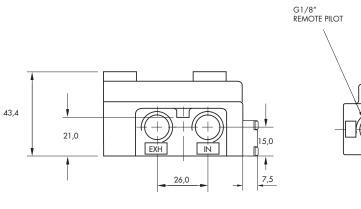
Spare parts : • Remote air operator (single operator) : R-09002-01P. • Remote air operator (double operator) : R-09002-02P.

Options: • NPTF threads.

DIMENSIONS

Dimensions shown are metric (mm)

7,5



EXH



R mote air valv 6 6 S

Function	Port size	Flow (Max)	Manifold mounting		Series
4/2	G1/8" - G1/4"	1400 NI/min	stacking		

OPERATIONAL BENEFITS

- Balanced spool, immune to variations of pressure.
 Short stroke with high flow.
- 3. The piston (booster) provides maximum shifting forces.
- 4. Powerful return thanks to the combination of
- mechanical and air springs.

 5. Bonded spool with minimum friction, shifting in a glass-like finished bore.

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



1100

55

56

57

58

59

700

900

82

6300

6500

6600

2700

1800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

Port size	Single operator
	A B B C C C C C C C C C C C C C C C C C
G1/8"	917B-RA
G1/4"	918B-RA

Air pilot port : G1/8".

Manifold fastening kit (G3/8") : M-09001-01P.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure: Single operator : 1.7 to 10 bar \ge main valve pressure

Double operator : 0.7 to 10 bar

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

Filtration: 40 µ

Temperature range: -18°C to 50°C (0°F to 120°F)

Flow (at 6 bar, $\Delta P=1bar$): G1/8": 800 NI/min, G1/4": 1200 NI/min

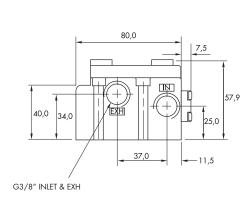
Spare parts: • Remote air operator (single operator): R-09002-01P. • Remote air operator (double operator): R-09002-02P.

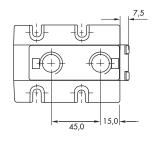
• Pressure seal between valves: 16358. • Tie-rod (x2): 19615.

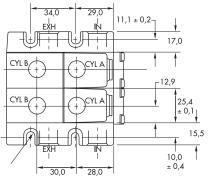
Options : • NPTF threads.

DIMENSIONS

Dimensions shown are metric (mm)







Ø 6,4 MTG. SLOT

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



R m o t e 6 a i r v a l v 6 S

Function	Port size	Floш (Max)	Individual mounting		Series
4/2 - 4/3	G1/8" - G1/4" - G3/8"	1350 NI/min	sub-base		

OPERATIONAL BENEFITS

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



1100

55

56

57 58

59

700

900

82

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	4/3 Pressure center
	A B B B	A B B COLOR OF THE SECOND	B A B A B A B A A B A B A A B A B A A B A B A A B A B A A B A B A A B A B A A B A B A A B A B A A B A A B A B A A B A B A A B A B A A B A B A A B A B A B A A B A B A A B A	B A B A A A B A A A B A	B A B A A A A A A A A A A A A A A A A A
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 G1/8"	82A-AB-DAA-RA	82A-BB-DAD-RA	82A-EB-DAD-RA	82A-FB-DAD-RA	82A-GB-DAD-RA
Sub-base G1/4"	82A-AB-EAA-RA	82A-BB-EAD-RA	82A-EB-EAD-RA	82A-FB-EAD-RA	82A-GB-EAD-RA
Sub-base G3/8"	82A-AB-FAA-RA	82A-BB-FAD-RA	82A-EB-FAD-RA	82A-FB-FAD-RA	82A-GB-FAD-RA

OPTIONS

82A-<u>A</u>B-000-RA

– - For dual pressure valves, replace A by C, B by D, E by M, F by L, G by H.







Fluid: Comp

 ${\sf Compressed\ air,\ vacuum,\ inert\ gases}$

Pressure range:

Air signal pressure:

Vacuum to 10 bar

Single operator an

Single operator and 3 positions : 1.7 to 10 bar ≥ main valve pressure Double operator : 0.7 to 10 bar

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

Filtration: 40

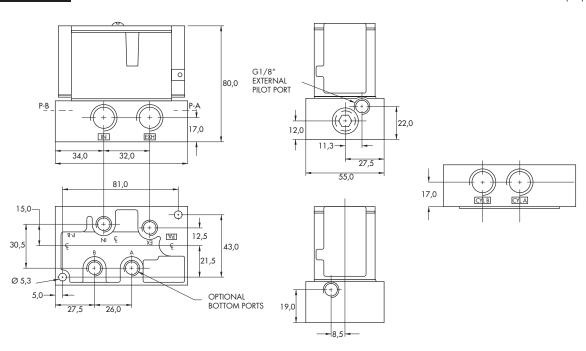
Temperature range : -18°C to 50°C (0°F to 120°F)

Flow (at 6 bar, ΔP=1bar): G1/8": 900 NI/min, G1/4": 1300 NI/min, G3/8": 1350 NI/min

Spare parts: • Remote air adapter assy.: R-82003.

Options: • NPTF threads.

DIMENSIONS





R 9 m o te a i r v a l v 6 S

Function	Port size	Flow (Max)	Manifold m	nounting	Series
4/2 - 4/3	G1/4" - G3/8"	1350 NI/min	sub-base		

OPERATIONAL BENEFITS

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



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1100

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700

900

82

6300

6500

6600

2700

1800

ISO 1

ISO 2

ISO 3

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
		A B B B OIN VEX	A B B B OIN VEX	B A B A A A B A A A B A A A B A B A A B A B A A B A B A B A A B A	B A B A A A B A A A B A A A B A A A	B A B A A A A A A A A A A A A A A A A A
Valve	Internal	82A-AB-000-TM-RA14	82A-BB-000-TM-RA14	82A-EB-000-TM-RA14	82A-FB-000-TM-RA14	82A-GB-000-TM-RA14
less base	only					
Sub-base	Internal	82A-AB-EKA-TM-RA14	82A-BB-EKA-TM-RA14	82A-EB-EKA-TM-RA14	82A-FB-EKA-TM-RA14	82A-GB-EKA-TM-RA14
G1/4"	External	82A-AB-EKD-TM-RA14	82A-BB-EKD-TM-RA14	82A-EB-EKD-TM-RA14	82A-FB-EKD-TM-RA14	82A-GB-EKD-TM-RA14
Sub-base	Internal	82A-AB-FKA-TM-RA14	82A-BB-FKA-TM-RA14	82A-EB-FKA-TM-RA14	82A-FB-FKA-TM-RA14	82A-GB-FKA-TM-RA14
G3/8"	External	82A-AB-FKD-TM-RA14	82A-BBFKD-TM-RA14	82A-EB-FKD-TM-RA14	82A-FB-FKD-TM-RA14	82A-GB-FKD-TM-RA14

OPTIONS

82A-<u>A</u>B-000-TM-RA14

– - For dual pressure valves, replace A by C, B by D, E by M, F by L, G by H.

Manifold fastening kit: N-82005-01P.







Fluid:

Compressed air, vacuum, inert gases

Pressure range:

Vacuum to 10 bar

Air signal pressure:

Single operator and 3 positions : 1.7 to 10 bar \geq main valve pressure Double operator: 0.7 to 10 bar

Lubrication:

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

Filtration:

Temperature range:

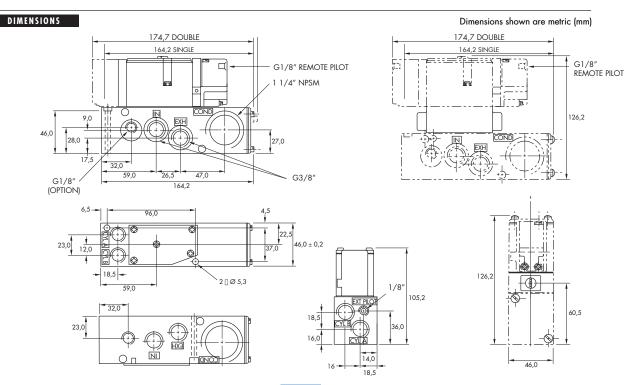
-18°C to 50°C (0°F to 120°F)

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

G1/4": 1300 NI/min, G3/8": 1350 NI/min

Spare parts : • Remote air operated pilot : TM-RA14.

• NPTF threads. Options:





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



R m o t e 6 a i r v a l v 6 S

Function	Port size	Floш (Max)	Individual m	nounting	Series
4/2 - 4/3	G1/4" - G3/8" - G1/2"	3000 NI/min	sub-base		

OPERATIONAL BENEFITS

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



HOW TO ORDER

Port size	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center
	A B B C C C C C C C C C C C C C C C C C	A B B B OIN VEX	B A B A D A B D	B A B A A B A A A A A A A A A A A A A A
/alve less base	6312D-000-RA	6322D-000-RA	6332D-000-RA	6342D-000-RA
Sub-base G1/4"	6312D-171-RA	6322D-181-RA	6332D-181-RA	6342D-181-RA
Sub-base G3/8"	6312D-271-RA	6322D-281-RA	6332D-281-RA	6342D-281-RA
Sub-base G1/2"	6312D-371-RA	6322D-381-RA	6332D-381-RA	6342D-381-RA

OPTIONS

6312D-17<u>1</u>-RA

- - For bottom ports (excluding G1/2"), replace by 4.

ISO 3

1100

55

56

57

58







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure: Single operator and 3 positions: 1.7 to 10 bar Double operator: 0.7 to 10 bar

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

Filtration:

Temperature range: -18°C to 50°C (0°F to 120°F)

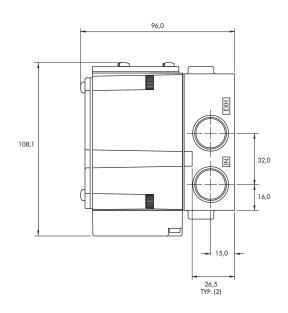
Flow (at 6 bar, ΔP=1bar): G1/4": 2000 NI/min, G3/8": 2600 NI/min, G1/2": 3000 NI/min

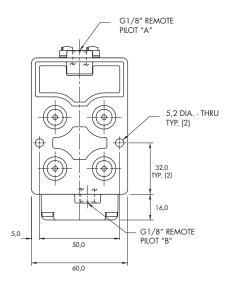
Spare parts: • Remote air operator (A side): R-63004A. • Remote air operator (B side): R-63005A.

• Seal between valve and base : 16298. • Mounting screw valve to base (x4) : 35303.

Options : • NPTF threads.

DIMENSIONS







R mote air valv 6 6 S

Function	Port size	Floш (Max)	Manifold mo	ounting	Series
4/2 - 4/3	G1/4" - G3/8" - G1/2"	3000 NI/min	sub-base		

4/2

6322D-000-RA

6322D-481-RA

6322D-581-RA

6322D-681-RA

OPERATIONAL BENEFITS

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

HOW TO ORDER

Port size



4/3

Closed center

6332D-000-RA

6332D-481-RA

6332D-581-RA

6332D-681-RA

4/3

6342D-000-RA

6342D-481-RA

6342D-581-RA

6342D-681-RA

55 56

1100

57

58

59

700

900

82

OPTIONS

Valve less base

Sub-base G1/4"

Sub-base G3/8"

Sub-base G1/2"

6312D-471-RA

- - For bottom cylinder ports, replace by 4.

4/2

Single operator

6312D-000-RA

6312D-471-RA

6312D-571-RA

6312D-671-RA

Fastening kit: N-63002-01P

ISO 3

ISO 2







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure : Single operator and 3 positions : 1.7 to 10 bar ≥ main valve pressure Double operator : 0.7 to 10 bar

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

Filtration: 40 µ

Temperature range: -18°C to 50°C (0°F to 120°F)

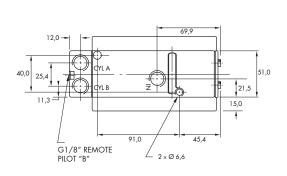
Flow (at 6 bar, ΔP=1bar): G1/4": 2000 NI/min, G3/8": 2600 NI/min, G1/2": 3000 NI/min

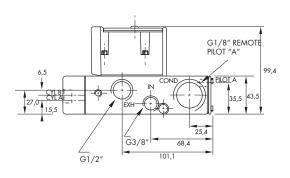
Spare parts : • Remote air operator (A side) : R-63004A. • Remote air operator (B side) : R-63005A. • Seal between valve and base : 16298.

• Mounting screw valve to base (x4): 35303. • Tie-rod (x2): 19624.

Options : • NPTF threads.

DIMENSIONS





ividual mounting	Series
ub-base	
nifold mounting	1100
ub-base	55
	56
	57
	58
	59
	700
	900
	82
	6300
	6500
	6600
	2700
	1800
	ISO 1
	ISO 2
	ISO 3



R 6 m o t e a i r v a l v 6 S

Function	Port size	Floш (Max)	Individual m	nounting	Series
4/2 - 4/3	G3/8" - G1/2" - G3/4"	5100 NI/min	sub-base		

OPERATIONAL BENEFITS

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



1100

55

56

57

58

59

700

900

82

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	4/3 Pressure center
	A B B B OIN VEX	A B B B OIN VEX	B A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A B A A A B A A B A A A B A A B A A A B A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A A B A A A B A A A B A A B A A A A B A A A A B A A A A B A A A A B A A A A B A A A A B A A A A B A A A A B A A A A B A A A B A A A B A A A B A A A B A A B A A A B A A A B A A A A B A A A A B A A A A A B A A A A A A A B A A A A A A A A A A B A	B A B A A A B A A A B A A B A A A B A A B A A B A A B A A B A A B A A B A A B A A A B A A A B A A B A A B A A B A A A B A A B A A A B A A A B A A A B	B A B A A A A A A A A A A A A A A A A A
Valve	6512B-000-RA	6522B-000-RA	6532B-000-RA	6542B-000-RA	6552B-000-RA
less base					
Sub-base G3/8"	6512B-171-RA	6522B-181-RA	6532B-181-RA	6542B-181-RA	6552B-181-RA
Sub-base G1/2"	6512B-271-RA	6522B-281-RA	6532B-281-RA	6542B-281-RA	6552B-281-RA
Sub-base G3/4"	6512B-371-RA	6522B-381-RA	6532B-381-RA	6542B-381-RA	6552B-381-RA

OPTIONS

6512B-17<u>1</u>-RA

Dual pressure valves: replace by 4. (excluding G3/4" base)







Fluid:

Compressed air, vacuum, inert gases

Pressure range:

Vacuum to 10 bar

Air signal pressure:

Single operator and 3 positions : 1.7 to 10 bar \geq main valve pressure Double operator: 0.7 to 10 bar

Lubrication:

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

Filtration:

Temperature range:

-18°C to 50°C (0°F to 120°F)

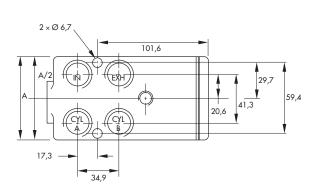
Flow (at 6 bar, $\Delta P=1bar$):

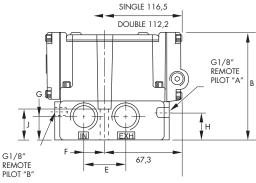
G3/8" : 4500 NI/min, G1/2" : 5000 NI/min, G3/4" : 5100 NI/min

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

Options : • NPTF threads.

DIMENSIONS





PORT SIZE	A	В	E	F	G	Н	J
G3/8" & G1/2"	69.6	97.4	36.0	17.9	19.0	23.6	25.4
G3/4"	94.5	109.3	40.1	19.2	20.8	35.9	36.6



R 9 m ote air v a l v 6 S

Function	Port size	Floш (Max)	Manifold mo	ounting	Series
4/2 - 4/3	G3/8" - G1/2" - G3/4"	5100 NI/min	sub-base		

OPERATIONAL BENEFITS

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



1100

55

56

57

58

59

700

900

82

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	4/3 Pressure center
	A B B B OIN VEX	A B B B OIN VEX	B A B A A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A A B A A B A A A B A A B A A A B A A A B A A A B A A A B A A A B A A A A B A A A A B A A A A B A A A A A B A A A A A B A A A A B A A A A A A B A A A A A A B A A A A A A B A A A A A A B A A A B A A A A A A B A A A A A B A A A A A B A A A A B A A A A B A A A A A B A	B A B A A A B A A A B A A B A A A B A A B A A B A A B A A B A A B A A B A A B A A A B A A A B A	B A B A A A A A A A A A A A A A A A A A
Valve	6512B-000-RA	6522B-000-RA	6532B-000-RA	6542B-000-RA	6552B-000-RA
less base					
Sub-base G3/8"	6512B-471-RA	6522B-481-RA	6532B-481-RA	6542B-481-RA	6552B-481-RA
Sub-base G1/2"	6512B-571-RA	6522B-581-RA	6532B-581-RA	6542B-581-RA	6552B-581-RA
Sub-base G3/4"	6512B-671-RA	6522B-681-RA	6532B-681-RA	6542B-681-RA	6552B-681-RA

OPTIONS

6512B-47<u>1</u>-RA

- For dual pressure valves, replace by 4.

Fastening kit: N-65002-01P.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure : Single operator and 3 positions : 1.7 to 10 bar ≥ main valve pressure Double operator : 0.7 to 10 bar

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

Filtration:

Temperature range: -18°C to 50°C (0°F to 120°F)

Flow (at 6 bar, ΔP=1bar): G3/8": 4500 NI/min, G1/2": 5000 NI/min, G3/4": 5100 NI/min

Spare parts : • Remote air operator : R-00008. • Seal between valve and base : 16246.

• Mounting screw valve to base (x4) : 32201. • Tie-rod (x2) : 19540.

Options : • NPTF threads.

DIMENSIONS

G1/8" REMOTE PILOT "B"

2 × Ø 6,7

42,3

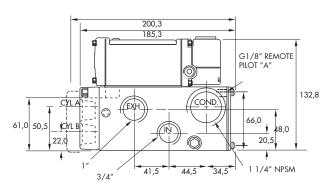
60,0

79,0

26,5

82,0

59,6





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



R m o t e 6 air valv 6 S

Function	Port size	Flow (Max)	Individual m	nounting	Series
4/2 - 4/3	G3/4" - G1"	9600 NI/min	sub-base		

OPERATIONAL BENEFITS

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



57

55

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1100

58 59

700

900

82

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	4/3 Pressure center
	A B B B J J J J J J J J J J J J J J J J	A B B C C C C C C C C C C C C C C C C C	B A B A	B A B A A A A B A A A B A A A B A A A A	B A B A A A A A A A A A A A A A A A A A
Valve	6612A-000-RA	6622A-000-RA	6632A-000-RA	6642A-000-RA	6652A-000-RA
less base					
Sub-base G3/4"	6612A-271-RA	6622A-281-RA	6632A-281-RA	6642A-281-RA	6652A-281-RA
Sub-base G1"	6612A-371-RA	6622A-381-RA	6632A-381-RA	6642A-381-RA	6652A-381-RA

OPTIONS

6612A-27<u>1</u>-RA

Dual pressure valves : replace by 4.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure : Single operator and 3 positions : 1.7 to 10 bar ≥ main valve pressure Double operator : 0.7 to 10 bar

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

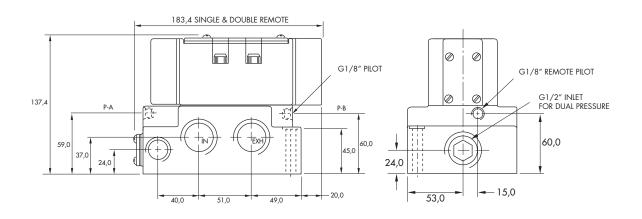
Filtration:

Temperature range: -18°C to 50°C (0°F to 120°F)
Flow (at 6 bar, ΔP=1bar): G3/4": 9000 NI/min, G1": 9600 NI/min

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

Options : • NPTF threads.

DIMENSIONS





R 9 m o te a i r v a l v 6 S

Function	Port size	Floш (Max)	Manifold mounting	Series
4/2 - 4/3	G3/4" - G1"	9600 NI/min	sub-base	

OPERATIONAL BENEFITS

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



1100

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59

700

900

82

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	4/3 Pressure center
	A B B B	A B B A B A B A B A B A B A B A B A B A	B A B A A A A A A A A A A A A A A A A A	B A B A A A B A A A B A B A A B A B A A B A B A B A A B A	B A B A A A A A A A A A A A A A A A A A
Valve	6612A-000-PM-MO114	6622A-000-PM-MO114	6632A-000-PM-MO114	6642A-000-PM-MO114	6652A-000-PM-MO114
less base					
Sub-base G3/4"	6612A-471-PM-MO114	6622A-481-PM-MO114	6632A-481-PM-MO114	6642A-481-PM-MO114	6652A-481-PM-MO114
Sub-base G1"	6612A-571-PM-MO114	6622A-581-PM-MO114	6632A-581-PM-MO114	6642A-581-PM-MO114	6652A-581-PM-MO114

OPTIONS

6612A-XXX<u>-P</u>M-MO114

- For dual pressure valves, replace by 4.

Fastening kit: N-66002-01P.







Fluid :

Compressed air, vacuum, inert gases

Pressure range:

Vacuum to 10 bar

Air signal pressure:

Single operator and 3 positions : 1.7 to 10 bar ≥ main valve pressure Double operator : 0.7 to 10 bar

Lubrication:

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

Filtration:

40 ...

Temperature range:

-18°C to 50°C (0°F to 120°F)

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

G3/4" : 9000 NI/min, G1" : 9600 NI/min

Spare parts :

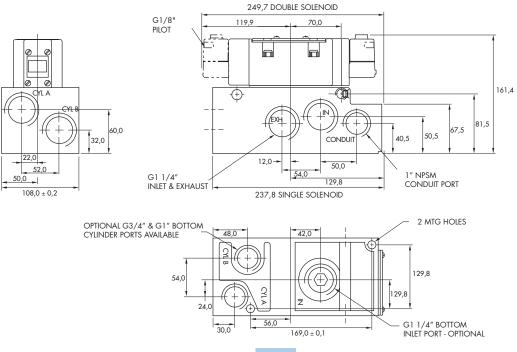
• Remote air operator : R-A3004. • Pressure seal between valve and base : 16436. • Mounting screw valve to base (x4) : 35416.

• Tie-rod (x2): 19789. • Remote air pilot: PME-MO114.

Options :

NPTF threads.

DIMENSIONS





Remote air valves

ISO 2

ISO 3



R mote air valv 6 6 S

Function	Port size	Flow (Max)	Individual mounting	Series
4/2 - 4/3	G3/4" - G1" - G1 1/4" - G1 1/2"	15900 NI/min	sub-base	

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of pressure.
- Short stroke with high flow.
 The piston (booster) provides maximum shifting forces.
- 4. Powerful return thanks to the combination of mechanical and air springs.

 5. Bonded spool with minimum friction, shifting
- in a glass-like finished bore.
- 6. Wiping effect eliminates sticking.
- 7. Low leakage rate.



1100

55

56

57

58

59

2700

1800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

Port size	Pilot air	4/2 Single operator	4/2 Double operator	4/3 Closed center	4/3 Open center
		A B B B OIN VEX	A B B B III VEX	B A B A A A B A A B A A A B A A B A A A B A A B A A A B A A A B A A B A A A B A A A B A A A B A A A B A A A A B A A A B A A A B A A B A A A A B A A A A B A A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A B A A A B A A A B A A A B A A A B A A A A B A A A A B A A A A A B A A A A A B A A A B A A A A A A A A A A B A	B A B A A B A A A B A A A B A A A B A A B A A B A A B A A B A A B A A A B A A A B A A A B A A B A A B A A B A A A B A A B A A B A A A B A A A B A A A B A A A B A A A B A A A A B A A A A B A A A A B A A A A B A A A A B A A A A B A A A A A B A A A A A B A A A A A B A A A A A B A
Valve					
less base		2701G-3	-	-	-
Sub-base G3/4"		2721G-3	-	-	-
Sub-base G1"	Internal	2731G-3	-	-	-
Sub-base G1 1/4"		2751G-3	-	-	-
Sub-base G1 1/2"		2761G-3	-	-	-
Valve					
less base		2701G-4	2703G-4	2707G-4	2708G-4
Sub-base G3/4"		2721G-4	2723G-4	2727G-4	2728G-4
Sub-base G1"	External	2731G-4	2733G-4	2737G-4	2738G-4
Sub-base G1 1/4"		2751G-4	2753G-4	2757G-4	2758G-4
Sub-base G1 1/2"		2761G-4	2763G-4	2767G-4	2768G-4

Note: Double operators are external pilot only Single operators are either internal or external pilot.







Fluid:

Compressed air, vacuum, inert gases

Pressure range:

Vacuum to 10 bar

Air signal pressure:

Single operator and 3 positions : 1.7 to 10 bar ≥ main valve pressure Double operator : 0.7 to 10 bar

Lubrication:

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

Filtration:

Temperature range:

-18°C to 50°C (0°F to 120°F)

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

G3/4": 11500 NI/min, G1": 13400 NI/min, G1 1/4": 15400 NI/min, G1 1/2": 15900 NI/min

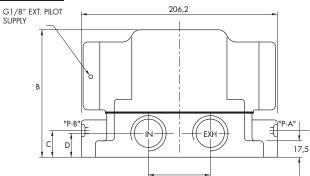
Spare parts :

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

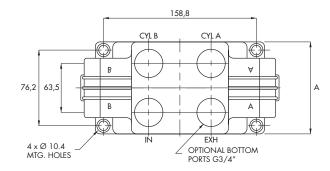
Options:

• NPTF threads.





PORT SIZE	A	В	C	D	E
G3/4"	95.3	132.3	28.4	25.4	63.5
G1"					
G1 1/4"	114.3	148.3	23.9	30.2	76.2
G1 1/2"					69.9





Remote air valves

Individual mounting Series

Inline

1100

ISO 1

ISO 2

ISO 3



R 6 m o t e a į į v a l v 6 S

Function	Port size	Floш (Max)	Individual n	nounting	Series
5/2 - 5/3	G1/4"	1400 NI/min	Inline		

OPERATIONAL BENEFITS

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



1100

55

56

57

58

59

700

900

82

6300

6500

6600

2700

1800

ISO 1

ISO 2

ISO 3

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
	A 3 2 B 5 0 0 4	A 3 2 B	B 2 3 A A	B 2 3 A	B 2 3 A A A A A A A A A A A A A A A A A A
G1/4"	180001-115-0003	180003-115-0003	180304-515-0304	180304-615-0304	180304-815-0304

Air pilot port : G1/8".

Options: Side pilot port: replace code 0003 by 0010 (2 positions valves only).







Fluid:

Compressed air, vacuum, inert gases

Vacuum to 13.3 bar

Air signal pressure:

Lubrication:

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

Filtration:

Temperature range:

Flow (at 6 bar, AP=1bar):

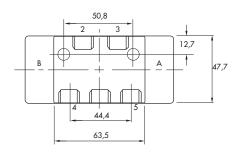
G1/4" - G3/8": 1400 NI/min

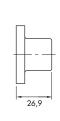
Spare parts : • Remote air operator (2 positions) : 180003. • Remote air operator (3 positions) : 180304.

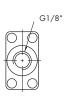
Options: • NPTF threads. • G3/8" ports (ports 1, 2 &3 - MOD. 0358 required).

DIMENSIONS

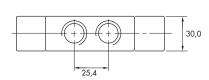
Dimensions shown are metric (mm)

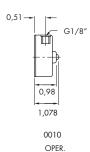






0003 OPER. 0304 OPER.







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

ISO 3



6 m o te a i r v a l v 6 S

Function	Port size	Floш (Max)	Individual r	nounting & Manifold mounting	Series
5/2 - 5/3	G1/4" - G3/8"	1600 NI/min	valve only		

OPERATIONAL BENEFITS

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



1100

55

56

57

58

59

700

900

82

6300

6500

6600

2700

1800

ISO 2

ISO 3

HOW TO ORDER

SINGLE PRESSURE VALVES

Air spring	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center
	14 4 2 12 	14 4 2 12 	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	14 4 2 12 D
Internal	MV-A1C-B111			
External	MV-A1C-B121	MV-A1C-B221	MV-A1C-B322	MV-A1C-B321

DUAL PRESSURE VALVES

Air spring	5/2 Single operator	5/2 Double operator	5/3 Pressure center
	14 	$ \begin{array}{c c} 14 & 2 & 12 \\ \cdot \boxed{0} & \downarrow $	14 4 2 12
Internal port 3	MV-A1C-B131		
Internal port 5	MV-A1C-B135		
External	MV-A1C-B141	MV-A1C-B241	MV-A1C-B341

Note: ISO valves are delivered w/o base. See page 261 for base code







Fluid: Compressed air, vacuum, inert gases

Vacuum to 10 bar Pressure range:

Single operator and 3 positions : 1.3 to 10 bar ≥ main valve pressure Air signal pressure: Double operator : 0.7 to 10 bar

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

Filtration:

-18°C to 50°C (0°F to 120°F) Temperature range:

Flow (at 6 bar, $\Delta P=1$ bar): G1/4" - G3/8" : 1600 NI/min

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.

DIMENSIONS Dimensions shown are metric (mm) INDIVIDUAL BASE MANIFOLD BASE 96,1 113,0 G1/8" REMOTE PILOT — 14,0 22,0 26,0 G1/8" ~ REMOTE PILOT 32,5 40,0 16,0 26,0 26,0 3/8" 85,0 121,0 100,0 Ø 6,5 2 MTG HOLES Ø 6,3 2 MTG HOLES 13,0 | -- | -- | 13,0 3,0 22,0 21,0 26,0 **√**9,0 50,0 62,0 18,0 24,75

12.7

60,0

121,0

OPTIONAL BOTTOM PORTS

14,0

85,0

100,0

OPTIONAL

BOTTOM PORTS

--6,0



lividual mounting	Series
lve only	
ifold mounting	1100
b-base	55
	56
	57
	58
	59
	700
	900
	82
	6300
	6500
	6600
	2700
	1800
	ISO 1
	ISO 2

ISO 3



6 mote air valv 6 S

Function	Port size	Floш (Max)	Individual r	nounting & Manifold mounting	Series
5/2 - 5/3	G3/8" - G1/2"	3000 NI/min	valve only		

OPERATIONAL BENEFITS

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



1100

55

56

57

58

59

700

900

82

6300

6500

6600

2700

1800

ISO 1

ISO 2

ISO 3

HOW TO ORDER

SINGLE PRESSURE VALVES

Air spring	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center
	14 4 2 12 	14 4 2 12 	14 4 2 12 	14 4 2 12
Internal	MV-A2B-B111			
External	MV-A2B-B121	MV-A2B-B221	MV-A2B-B322	MV-A2B-B321

DUAL PRESSURE VALVES

Air spring	5/2 Single operator	5/2 Double operator	5/3 Pressure center
	14 	14 	14 4 2 12
Internal port 3	MV-A2B-B131		
Internal port 5	MV-A2B-B135		
External	MV-A2B-B141	MV-A2B-B241	MV-A2B-B341

Note: ISO valves are delivered w/o base. See page 263 for base code.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 10 bar

Air signal pressure : Single operator and 3 positions : 1.7 to 10 bar ≥ main valve pressure Double operator : 0.7 to 10 bar

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

Filtration: 40 µ

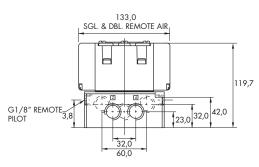
Temperature range : -18°C to 50°C (0°F to 120°F)

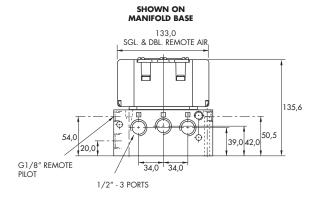
Flow (at 6 bar, ΔP=1bar): G3/8" - G1/2": 3000 NI/min

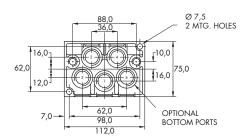
Spare parts: • Remote air operator: R-A3004. • Pressure seal between valve and base: 16351. • Mounting screw body to base (x4): 35412.

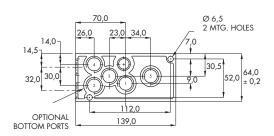
DIMENSIONS















Individual mounting	Series Series	
valve only		
	1100	

ISO 1

ISO 2

ISO 3



6 m o t e air valv 6 S

Function	Port size	Floш (Max)	Individual m	nounting	Series
5/2 - 5/3	G1/2" - G3/4"	6300 NI/min	valve only		

OPERATIONAL BENEFITS

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



1100

55

56

57

58

59

700

900

82

6300

6500

HOW TO ORDER

SINGLE PRESSURE VALVES

Air spring	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center
	14 4 2 12 	14 4 2 12 D T J J J	14 4 2 12 	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
Internal	MV-A3B-B111			
External	MV-A3B-B121	MV-A3B-B221	MV-A3B-B322	MV-A3B-B321

DUAL PRESSURE VALVES

Air spring	5/2 Single operator	5/2 Double operator	5/3 Pressure center
	14 4 2 12 	14 	14 4 2 12
Internal port 3	MV-A3B-B131		
Internal port 5	MV-A3B-B135		_
External	MV-A3B-B141	MV-A3B-B241	MV-A3B-B341

Note: ISO valves are delivered w/o base. See page 265 for base code.







 Fluid:
 Compressed air, vacuum, inert gases

 Pressure range:
 Vacuum to 10 bar

 Air signal pressure:
 Single operator and 3 positions: 1.7 to 10 bar ≥ main valve pressure
 Double operator: 0.7 to 10 bar

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

 Filtration:
 40 μ

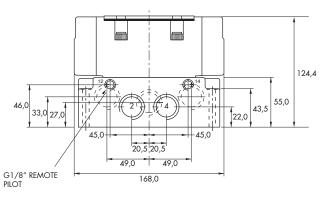
 Temperature range:
 -18°C to 50°C (0°F to 120°F)

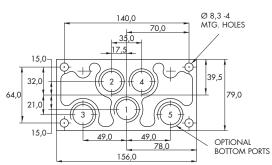
 Flow (at 6 bar, ΔP=1bar):
 G1/2" - G3/4": 6300 NI/min

Spare parts :

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

DIMENSIONS







Section 3 Mechanically and manually operated valves





Port size	Flow (Max) NI/min
G1/8" - G1/4"	180
G1/8" - G1/4"	140
G1/4"	1350
	G1/8" - G1/4" G1/8" - G1/4"

Individual I	mounting	Manifold mo	ounting	Series
Inline		sub-base		
P. 257				
		P. 259		1100
P. 263				1800



Mechanically and manually operated valves

Individual mounting		Series
Inline		
Manifold mounting		1100
sub-base		1800



Function	Port size	Flow (Max)	Individual mounting		Series
3/2 NO-NC, 2/2 NO-NC	G1/8" - G1/4"	180 NI/min	Inline		

OPERATIONAL BENEFITS

- Short stroke with high flow.
 Powerful return spring.



1100

1800

HOW TO ORDER

	Port size		Universal valve		NC only valve
		7 T W			T T W
	G1/8"		1116A- xxx		1166A- xxx
	G1/4"		1117A- xxx		1167A- xxx
MECHAN	ICAL OPERATOR >		XXX		
Code	Description	Code	Description	Code	Description
011	Cam roller parallel to ports 1 & 2	023	Lever locking pull perpendicular to ports 1 & 2	031	Push button
012	Cam roller perpendicular to ports 1 &2	024	Lever non-locking pull perpendicular to ports 1 & 2	032	Push button (panel mounting)
013	Lever cam perpendicular to ports 1 & 2	025	Lever locking push parallel to ports 1 & 2	033	Push button with guard
014	Lever cam parallel to ports 1 & 2	026	Lever non-locking push parallel to ports 1 & 2	036	Palm button
021	Lever locking push perpendicular to ports 1 & 2	027	Lever locking pull parallel to ports 1 & 2	037	Palm button (panel mounting)
022 / /	Lever non-locking push perpendicular to ports 1 & 2	028	Lever non-locking pull parallel to ports 1 & 2	038	Palm button with guard







Fluid :

Compressed air, vacuum, inert gases

Pressure range:

Vacuum to 10 bar

Lubrication:

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

Filtration:

40 μ

Temperature range :

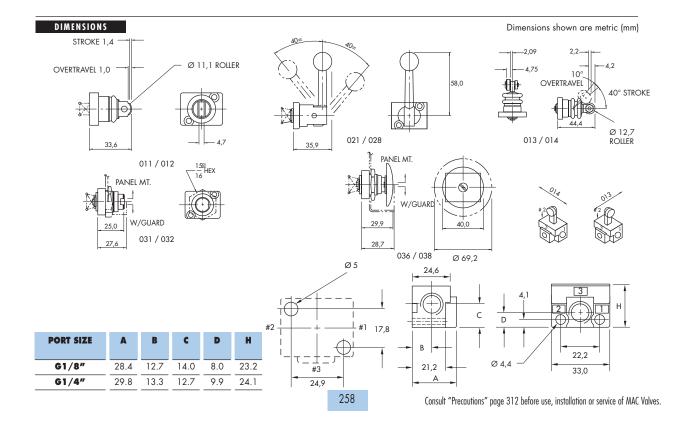
-18°C to 50°C (0°F to 120°F)

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

G1/8" - G1/4" : 180 NI/min

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

Options : • NPTF threads.



Function	Port size	Floш (Max)	Manifold mounting		Series
3/2 NO-NC, 2/2 NO-NC	G1/8"	140 NI/min	sub-base		

OPERATIONAL BENEFITS

- Short stroke with high flow.
 Powerful return spring.

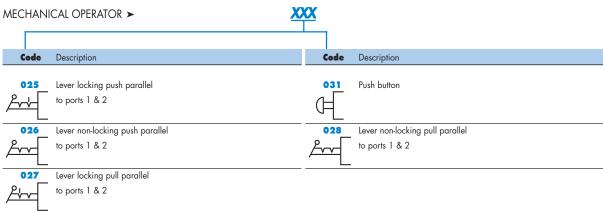


1100

1800

HOW TO ORDER

Port size	Universal valve	NC only valve
	CYL T T W IN 0 VEKH	CYL T T T W T T T W
Valve less base	1130A- xxx	1170A- xxx
Sub-base G1/8"	1136A- xxx	1176A- xxx
MECHANICAL OPERATOR	VVV	



End plate kit (Port size G1/4") : A2-5004-01P.







Fluid :

Compressed air, vacuum, inert gases

Pressure range:

Vacuum to 10 bar

Lubrication:

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

Filtration:

40 μ

Temperature range:

-18°C to 50°C (0°F to 120°F)

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

G1/8": 140 NI/min

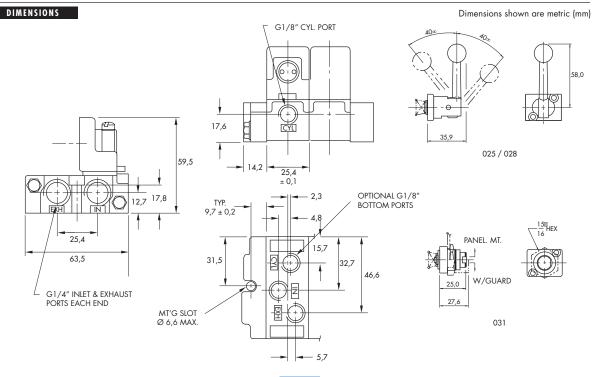
Spare parts :

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

• Tie-rod (x2): 19546.

Options :

• NPTF threads.





Mechanically and manually operated valves

Individual ı	nounting	Series
Inline		

1100

1800



Function	Port size	Floш (Max)	Individual n	nounting	Series
5/2	G1/4"	1400 NI/min	Inline		

OPERATIONAL BENEFITS

- Short stroke with high flow.
 Powerful return force.
 Bonded spool with minimum friction, shifting in a glass-like finished bore.

 4. Wiping effect eliminates sticking.

 5. Long service life.



1100

1800

HOW TO ORDER

Port size		Single operator			Double operator	
			A 3 2 W B W 5 0 0 V 4		A 3 2 B	
	G1/4"		180001-115- xxxx		18 xxxx -115- xxxx	
MECHANI	CAL OPERATOR ➤		XXXX			
Code	Description	Code	Description	Code	Description	
0111	Cam roller parallel to ports 2 & 3	0024	Lever non-locking pull perpendicular to body	0033	Push button with guard	
0112	Cam roller perpendicular to ports 2 & 3	0025	Lever locking push parallel to body	0034	Push Pull	
0013	Lever cam perpendicular	0026	Lever non-locking push parallel	0035	Push Pull	
œ[to ports 2 & 3	<u></u>	to body	(FX)	(panel mounting)	
0014	Lever cam parallel	0027	Lever locking pull parallel	0036	Palm button	
œ[to ports 2 & 3	٢٠٠٢	to body	Œ		
0021	Lever locking push perpendicular	0028	Lever non-locking pull parallel	0037	Palm button	
<u></u>	to body	<u></u>	to body	Œ	(panel mounting)	
0022	Lever non-locking push perpendicular to body	0031	Push button	0038	Palm button with guard	
0023	Lever locking pull perpendicular to body	0032	Push button (panel mounting)	0039	Push Pull palm button	

OPTIONS

Replace 0 by 2 for lever operator with boot (see photo)







Fluid :

Compressed air, vacuum, inert gases

Pressure range:

Vacuum to 13.3 bar

Lubrication:

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

Filtration:

۸0 II

Temperature range :

-18°C to 50°C (0°F to 120°F)

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

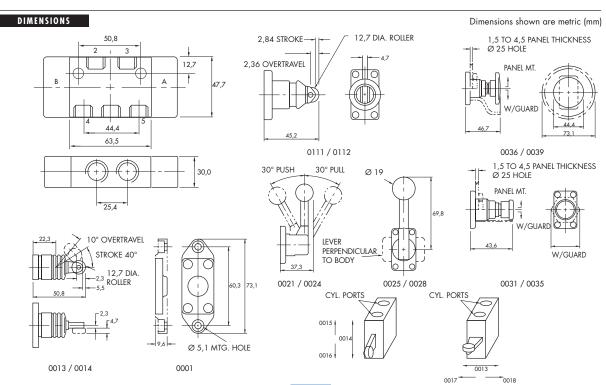
G1/4": 1400 NI/min

Spare parts :

• Operator : 18XXXX (see codification).

Options:

• NPTF threads. • G3/8" ports (ports 1,2 & 3 - MOD. 0358 required).





Section 4 Bases according to ISO 5599



Series			
	ISO 3	ISO 2	ISO 1
ISO 1			P. 269
ISO 2		P. 271	
ISO 3	P. 273		



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
G1/4"	MB-A1C-121	MB-A1C-123	MB-A1C-122	MB-A1C-124
G3/8"	MB-A1C-131	MB-A1C-133	MB-A1C-132	MB-A1C-134

INDIVIDUAL BASE ACCORDING TO VDMA 24345

Port size	Side ports	Bottom ports
G1/4"	HB-A1A-A	HB-A1A-B

MANIFOLD BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom inlet port 1
G1/4"	MM-A1C-121	MM-A1C-123	MM-A1C-122	MM-A1C-124
G3/8"	MM-A1C-131	MM-A1C-133	MM-A1C-132	MM-A1C-134

Manifold fastening kit: N-63002-01.

MANIFOLD BASE ACCORDING TO VDMA 24345

Port size	Bottom cylinder ports 2 and 4
G1/4"	HM-A1A-C

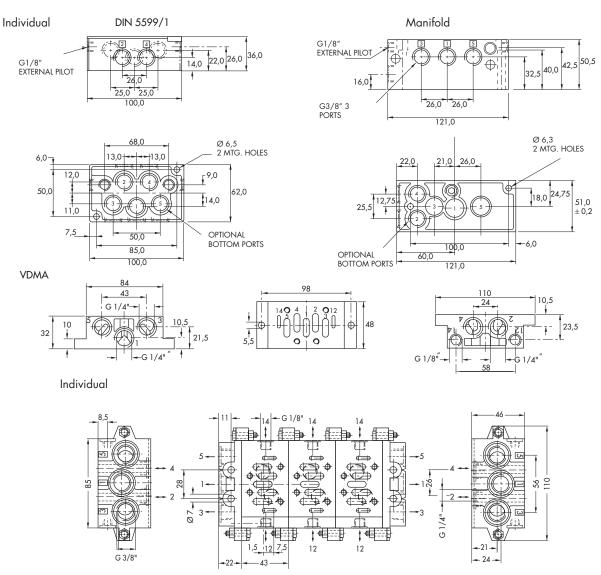
End plate kit: HM-A1A-D.







DIMENSIONS Dimensions shown are metric (mm)



Manifold





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
G3/8"	MB-A2B-121	MB-A2B-123	MB-A2B-122	MB-A2B-124
G1/2"	MB-A2B-131	MB-A2B-133	MB-A2B-132	MB-A2B-134

INDIVIDUAL BASE ACCORDING TO VDMA 24345

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

MANIFOLD BASE

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

Manifold fastening kit : N-63002-01.

MANIFOLD BASE ACCORDING TO VDMA 24345

Port size	Bottom cylinder ports 2 and 4
G3/8"	HM-A2B-C

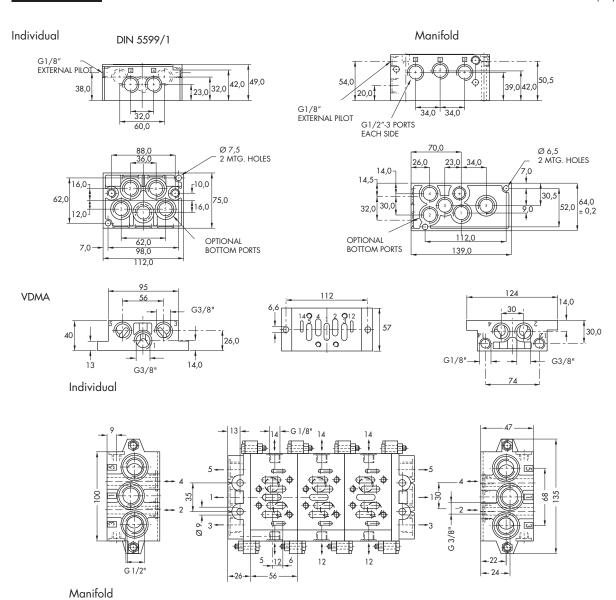
End plate kit: HM-A2B-D.







DIMENSIONS Dimensions shown are metric (mm)





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
G1/2"	MB-A3B-121	MB-A3B-123	MB-A3B-122	MB-A3B-124
G3/4"	MB-A3B-131	MB-A3B-133	MB-A3B-132	MB-A3B-134

INDIVIDUAL BASE ACCORDING TO VDMA 24345

Port size	Side ports	Bottom ports
G1/2"	HB-A3B-A	НВ-АЗВ-В

MANIFOLD BASE ACCORDING TO VDMA 24345

Port size	Bottom cylinder ports 2 and 4
G1/2"	HM-A3B-C

End plate kit: HM-A3B-D.





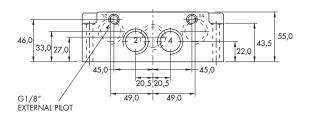


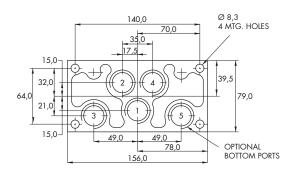
DIMENSIONS

Dimensions shown are metric (mm)

Individual

ISO DIN 5599/1





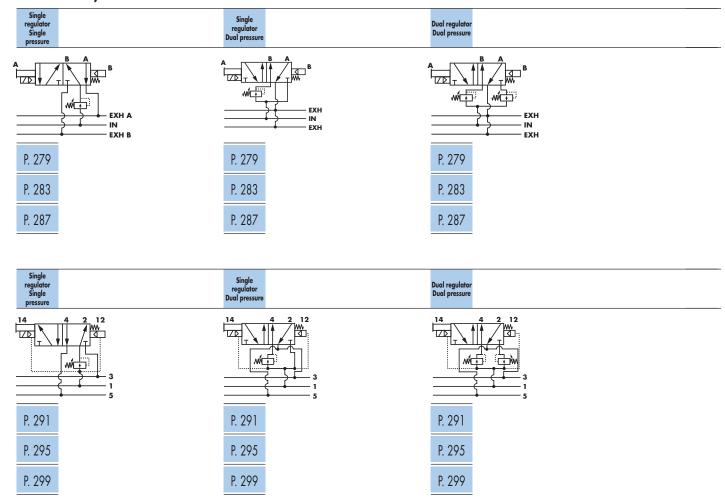


Section 5 Pressure regulators



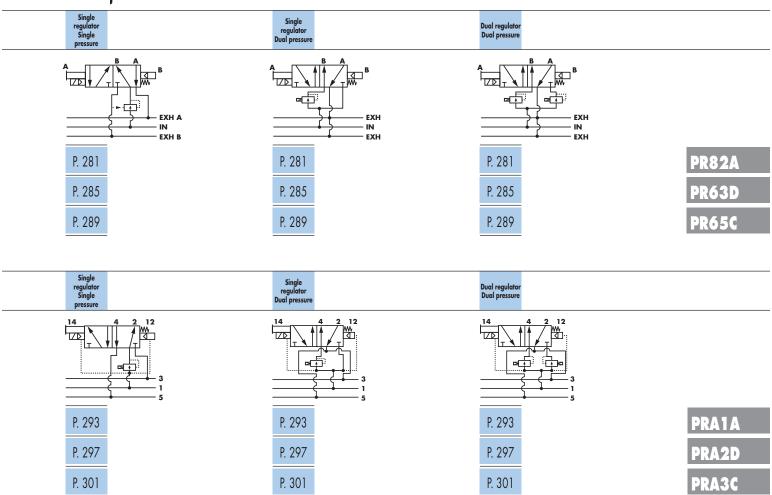
Р г е ѕ ѕ и г е

Manual adjust



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Air adjust Series



Sandwich pressure regulator with manual adjust locking knob.

OPERATIONAL BENEFITS

- 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

PRA1A

PRA₂D

PRA3C

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
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

279

Note: regulating range for above models is 0-8 bar. 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.

 $[\]ensuremath{^{\star\star}}$ This option must be used with a single pressure valve and selector manifold base







Fluid: Pressure range:

Compressed air, inert gases

0 to 10 bar

Regulating range:

0 to 8 bar (other ranges see below)

Lubrication:

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

Filtration:

Temperature range: Flow:

-18°C to 50°C (0°F to 120°F)

1080 NI/min

Spare parts :

• Pressure regulator (less sandwich block): PR82A-JOAA (KNOB), PR82A-COAA (SLOTTED STEM), PR82A-MOAA (LOCKING SLOTTED STEM).

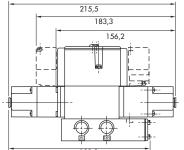
Pressure regulator (less sanawicii unoch, 1 nouch)
 Gauges: N-82016-01 (0-8 bar perpendicular) N-82016-02 (0-8 bar parallel) N-82016-03 (0-5.3 bar perpendicular) N-82016-04 (0-5.3 bar perpendicular) N-82016-05 (0-2 bar perpendicular) N-82016-06 (0-2 bar parallel)

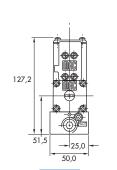
Regulating range options : PR82A-XXXA

- 0 to 5.3 bar - 0 to 2 bar - 0 to 8 bar on "A" end - 0 to 5.3 bar on "B" end - 0 to 5.3 bar on "A" end - 0 to 5.3 bar on "A" end - 0 to 2 bar on "B" end - 0 to 2 bar on "B" end - 0 to 2 bar on "A" end - 0 to 5.3 bar on "A" end - 0 to 5.3 bar on "A" end - 0 to 5.3 bar on "B" 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

DIMENSIONS

215,5 183.3 173.2 149,2 208,9

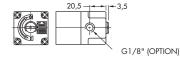




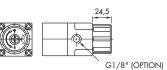
73,5

Dimensions shown are metric (mm)

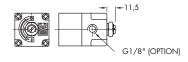
SLOTTED STEM



LOCKING KNOB



LOCKING SLOTTED STEM





Sandwich pressure regulator with air pilot adjust.

OPERATIONAL BENEFITS

- 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

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
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.

PRA1A PRA₂D PRA3C







Fluid: Pressure range: Compressed air, inert gases 0 to 10 bar

Regulating range:

0 to 8 bar

Lubrication:

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

Filtration:

Temperature range:

-18°C to 50°C (0°F to 120°F)

Flow:

1080 NI/min

171,5 161,3 151,3

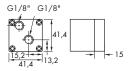
Spare parts :

Pressure regulator (less sandwich block) : PR82A-F0AA.
 Gauges : N-82016-01 (0-8 bar perpendicular)
 N-82016-02 (0-8 bar parallel)

DIMENSIONS

149,2 208,9 171,5 161,3 134,2 127,2 161,2

Dimensions shown are metric (mm)



50,0

73,5

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Series

Sandwich pressure regulator with manual adjust knob.

OPERATIONAL BENEFITS

- 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

PRA1A

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-22AA	PR63D-21AA	PR63D-24AA	PR63D-23AA	PR63D-25AA
Glycerine filled gauge on regulator(s)	PR63D-22BA	PR63D-21BA	PR63D-24BA	PR63D-23BA	PR63D-25DA
Glycerine filled gauge opposite to regulator	PR63D-22CA	PR63D-21CA	PR63D-24CA	PR63D-23CA	
Non-filled gauge on regulator(s)	PR63D-22FA	PR63D-21FA	PR63D-24FA	PR63D-23FA	PR63D-25HA
Non-filled gauge opposite to regulator	PR63D-22GA	PR63D-21GA	PR63D-24GA	PR63D-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	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 0-10 bar. 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

- 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.







Fluid: Compressed air, inert gases

Pressure range: 0 to 10 bar Regulating range: 0 to 10 bar (other ranges see below)

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

Filtration: -18°C to 50°C (0°F to 120°F) Temperature range:

Flow: 2400 NI/min

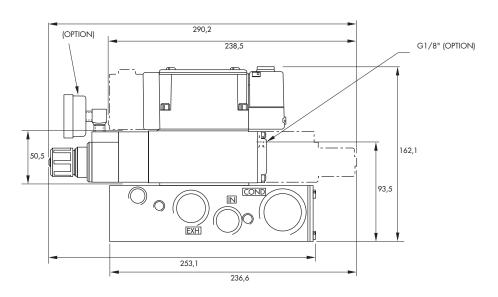
 Pressure regulator (less sandwich block): PR63D-41AA (KNOB), PR63D-D1AA (SLOTTED STEM), PR63D-H1AA (SLOTTED STEM WITH LOCKNUT).
 Gauges: • Glycerine filled: N-62015-01
 Non filled: N-62016-01 Spare parts :

Regulating range options : PR63D-XXXA

Replace by B - 0 to 6.7 bar Replace by C - 0 to 3 bar

DIMENSIONS

Dimensions shown are metric (mm)





Sandwich pressure regulator with air pilot adjust.

OPERATIONAL BENEFITS

- 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

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	_

PRA1A PRA2D

PRA3C

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	_

 $[\]mbox{\tt\tiny{\$}}$ To be used with dual pressure valves (available only on manifolds).

PLUG-IN OPTIONS

PR63D-xxxx

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







Fluid: Compressed air, inert gases

0 to 10 bar Pressure range:

0 to 10 bar Regulating range:

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

Filtration:

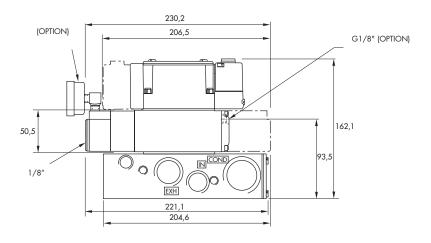
-18°C to 50°C (0°F to 120°F) Temperature range:

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

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

DIMENSIONS

Dimensions shown are metric (mm)





Sandwich pressure regulator with manual adjust knob.

OPERATIONAL BENEFITS

- 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

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 c	oded for use with double so	lenoid plug-in valves.			

PRA₂D

PRA3C

PRA1A

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 0-10 bar. For other ranges see technical data page.

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.

PLUG-IN OPTIONS

PR65C-xxxx

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







Fluid: Compressed air, inert gases

0 to 10 bar

Pressure range: Regulating range:

0 to 10 bar (other ranges see below)

Lubrication:

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

Filtration:

Temperature range:

-18°C to 50°C (0°F to 120°F)

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

4000 NI/min

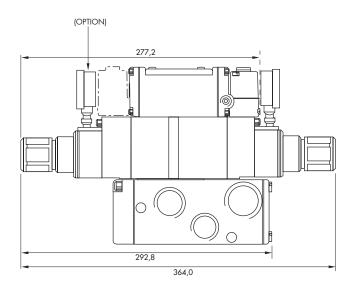
Spare parts:

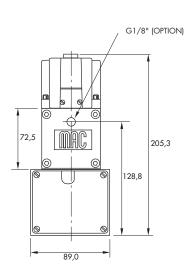
Pressure regulator (less sandwich block): PR65C-41AA (KNOB), PR65C-D1AA (SLOTTED STEM), PR65C-H1AA (SLOTTED STEM WITH LOCKNUT).
 Gauges: Glycerine filled: N-62015-01
 Non filled: N-62016-01

Regulating range options : PR65C-XXXA

Replace by B Replace by C - 0 to 6.7 bar - 0 to 3 bar

DIMENSIONS







Series

Sandwich pressure regulator with air pilot adjust.

OPERATIONAL BENEFITS

- 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

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	_

PRA1A PRA₂D PRA3C

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.







Fluid:

Compressed air, inert gases

Pressure range:

0 to 10 bar 0 to 10 bar

Regulating range:

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

Lubrication:

Filtration:

Temperature range:

-18°C to 50°C (0°F to 120°F)

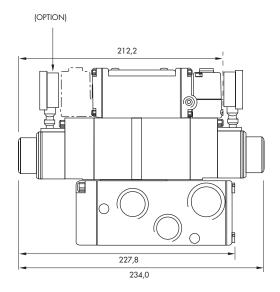
Flow (at 6 bar, $\Delta P=1bar$):

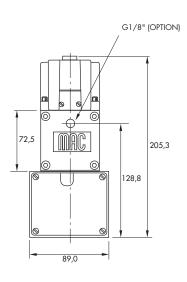
4000 NI/min

Spare parts:

- Pressure regulator (less sandwich block): PR65C-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.



PR82A PR63D PR65C

PRA2D

PRA3C

HOW TO ORDER

INTERNAL PILOT

THE CONTROL OF THE CO							
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	PRA 1 A-HEEA
Gauge perpendicular to regulator(s)	PRA1A-HABA	PRA1A-HCBA	PRA 1 A-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 0-8 bar. For other ranges see technical data page.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block

Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #35336.

ADJUSTMENT OPTIONS

PRA1A-xxxx

- - 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)







 Fluid:
 Compressed air, inert gases

 Pressure range:
 0 to 10 bar

 Regulating range:
 0 to 8 bar (other ranges see below)

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

 Filtration:
 40 μ

 Temperature range:
 -18°C to 50°C (0°F to 120°F)

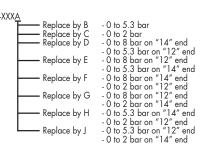
 Flow:
 1000 NI/min

Spare parts:

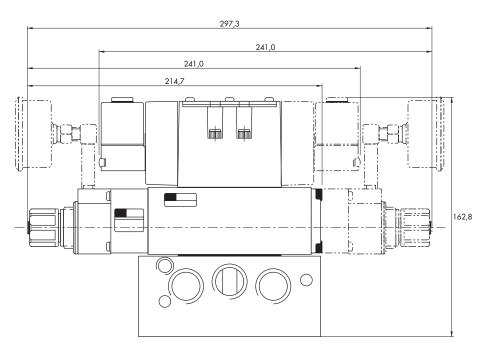
• Pressure regulator (less sandwich block): PRA1A-JOAA (KNOB), PRA1A-COAA (SLOTTED STEM), PRA1A-MOAA (SLOTTED STEM WITH LOCKNUT).

• Gauges : N-82016-01 (0-8 bar perpendicular)
N-82016-02 (0-8 bar parallel)
N-82016-03 (0-5.3 bar perpendicular)
N-82016-04 (0-5.3 bar perpendicular)
N-82016-05 (0-2 bar perpendicular)
N-82016-06 (0-2 bar perpendicular)

Regulating range options : PRA1A-XXXA



DIMENSIONS



Sandwich pressure regulator with air pilot adjust.

OPERATIONAL BENEFITS

- 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

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 parallel 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	PRA 1 A-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.

PRA₂D PRA3C





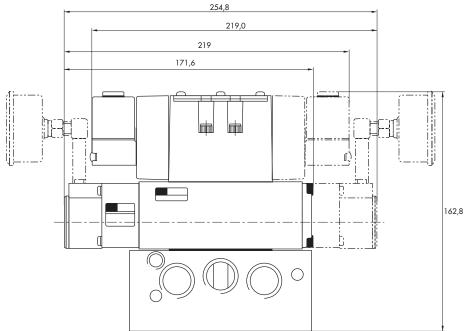


Fluid: Compressed air, inert gases 0 to 10 bar Pressure range: Regulating range: 0 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: -18°C to 50°C (0°F to 120°F) Temperature range: Flow: 1000 NI/min

Spare parts :

Pressure regulator (less sandwich block) : PRA1A-F0AA.
 Gauges : N-82016-01 (0-8 bar perpendicular) N-82016-02 (0-8 bar parallel)

DIMENSIONS



Sandwich pressure regulator with manual adjust knob.

OPERATIONAL BENEFITS

- 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

PRA1A

PRA2D

PRA3C

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 0-10 bar.

For other ranges see technical data page.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator

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)







Fluid: Compressed air, inert gases Pressure range: 0 to 10 bar Regulating range: 0 to 10 bar (other ranges see below) Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)

Filtration:

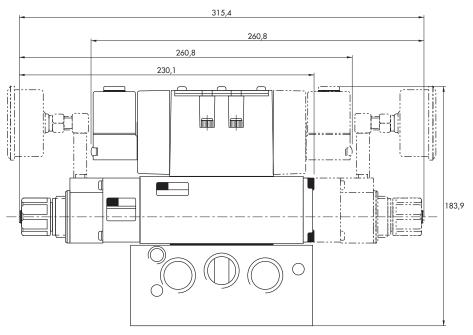
-18°C to 50°C (0°F to 120°F) Temperature range: 2300 NI/min Flow:

 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 Spare parts :

Regulating range options : PRA2D-XXXA

Replace by B - 0 to 6.7 bar Replace by C - 0 to 3 bar

DIMENSIONS



Series

Sandwich pressure regulator with air pilot adjust.

OPERATIONAL BENEFITS

- 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

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.

PRA1A

PRA2D

PRA3C







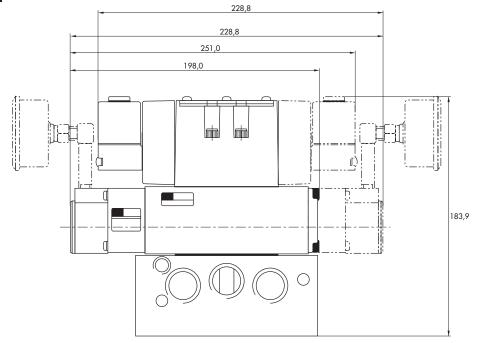
Flow:

Fluid: Compressed air, inert gases 0 to 10 bar Pressure range: 0 to 10 bar Regulating range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: -18°C to 50°C (0°F to 120°F) Temperature range:

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

2300 NI/min

DIMENSIONS



Sandwich pressure regulator with manual adjust knob.

OPERATIONAL BENEFITS

- 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

PRA1A

PRA2D

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 0-10 bar. For other ranges see technical data page.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator

block.

Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #35418.

ADJUSTMENT OPTIONS

PRA3C-xxxx

- 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)







Fluid: Pressure range:

0 to 10 bar

Regulating range:

0 to 10 bar (other ranges see below)

Lubrication:

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

Filtration:

Temperature range:

-18°C to 50°C (0°F to 120°F)

Compressed air, inert gases

Flow:

5400 NI/min

Spare parts :

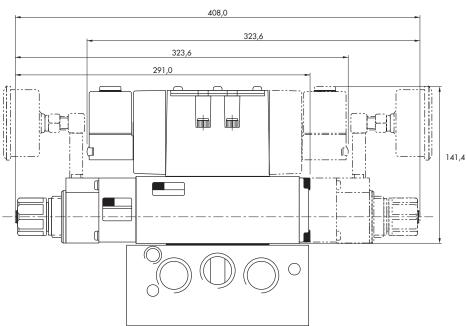
Pressure regulator (less sandwich block): PRA3C-30AA (KNOB), PRA3C-C0AA (SLOTTED STEM), PRA3C-F0AA (SLOTTED STEM WITH LOCKNUT).
 Gauges: Glycerine filled: N-62015-01
 Non filled: N-62016-01

Regulating pressure options :

PRA3C-XXXA

Replace by B Replace by C - 0 to 6.7 bar - 0 to 3 bar

DIMENSIONS





Series

Sandwich pressure regulator with air pilot adjust.

OPERATIONAL BENEFITS

- 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

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	_
opposite to regulator					

* - 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. PRA1A PRA₂D



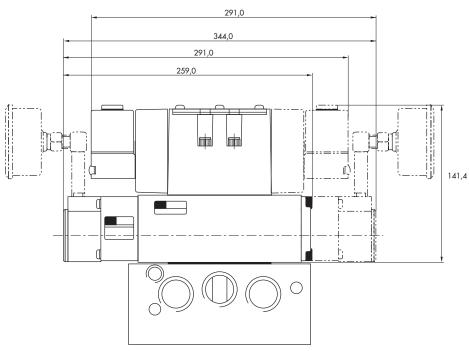




Fluid: Compressed air, inert gases 0 to 10 bar Pressure range: 0 to 10 bar Regulating range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: -18°C to 50°C (0°F to 120°F) Temperature range: Flow: 5400 NI/min

Spare parts:

DIMENSIONS





Section 6 Options



Codification table for voltages / Manual operator / Electrical connection / Wire length

VALVE CODE > $-\frac{XX}{1} \frac{Y}{2} \frac{ZZ}{3} \frac{(-VV)}{4}$

OPTIONS AVAILABLE FOR	OPTIONS AVAILABLE FOR
- valves type 100 Series - pilot valves "CNOMO"	- valves type 200 Series
- Pilot operated valves with pilots type 100 Series Series : 55 - 56 - 700 - 800 - 900 - 6300 - 6500 - 6600 - 1300 - ISO 1 - ISO 2 - ISO 3.	- pilot operated valves with pilots type 200 Series Series: 200 - 57 - 58 - 59.
- Pilot operated valves with pilots "CNOMO" Series : ISO1 - ISO2 - ISO3	



0

	1. VOLTAGE (type 100 Series)		1. VOLTAGE (type 200 Series)
XX Y ZZ	VOLTAGE	- XX Y ZZ	VOLTAGE
11	120 V~/60 Hz - 110 V~/50 Hz	11	120 V~/60 Hz - 110 V~/50 Hz - 24 V=/6 W
12	240 V~/60 Hz - 220 V~/50 Hz	12	240 V~/60 Hz - 220 V~/50 Hz
13	100 V~/60 Hz - 100 V~/50 Hz	13	100 V~/60 Hz - 100 V~/50 Hz
15	200 V~/60 Hz - 200 V~/50 Hz	14	200 V~/60 Hz - 200 V~/50 Hz
16	10 V~/60 Hz	20	6 V~/60 Hz
20	6 V~/60 Hz	21	12 V~/60 Hz
21	12 V~/50 Hz - 12 V~/60 Hz	22	24 V~/60 Hz - 24 V~/50 Hz
22	24 V~/60 Hz - 24 V~/50 Hz	23	32 V~/60 Hz - 32 V~/50 Hz
23	32 V~/60 Hz - 32 V~/50 Hz	24	48 V~/60 Hz - 42 V~/50 Hz
24	48 V~/60 Hz - 42 V~/50 Hz	25	240 V~/50 Hz
26	380 V~/50 Hz, 440 V~/50 Hz -440 V~/60 Hz,	26	480 V~/60 Hz - 440 V~/50 Hz
	480 V~/60 Hz-CLSF	27	127 V~/60 Hz
29	220 V~/60 Hz	28	415 V~/50 Hz
34	127 V~/50 Hz - 120 V~/50 Hz	29	220 V~/60 Hz
35	48 V~/50 Hz	30	380 V~/50 Hz
36	16 V~/60 Hz	31	550 V~/60 Hz - 550 V~/50 Hz
B1	24 V~/50 Hz	32	120 V~/60 Hz - 110 V~/50 Hz
50	24 V=/6 W	33	600 V~/60 Hz
51	24 V=/4 W	34	127 V~/50 Hz
54	12 V=/4 W	35	48 V~/50 Hz
<u>55</u>	12 V=/6 W	50	24 V=/6 W
<u>57</u>	12 V=/2,5 W	51	24 V=/4,5 W
59	24 V=/2,5 W	52	24 V=/2,5 W
60	12 V=/8,5 W	53	24 V=/1 W
61	24 V=/8,5 W	55	12 V=/6 W
64	6 V=/6 W	57	12 V=/2,5 W
65	32 V=/7 W	58	48 V=/2,5 W
66	48 V=/5,8 W	60	12 V=/9,5 W
67	64 V=/7,5 W	61	24 V=/8,5 W
68	120 V=/6,4 W	64	6 V=/8,5 W
69	220 V=/8,7 W - 250 V=/11,2 W CLSF	65	32 V=/10 W
75	90 V=/8,8 W CLSF	66	48 V=/11,5 W
76	100 V=/6,9 W CLSF	67	64 V=/10,5 W
84	125 V=/10,9 W CLSF	68	120 V=/12,3 W
<u>87</u>	24 V=/17,1 W CLSF	69	250 V=/9,2 W
88	12 V=/17,4 W CLSF	71	8 V=/8,2 W
89	36 V=/18,8 W CLSF	72	24 V=/12 W
90	28 V=/8,2 W	73	198 V=/10 W
91	6 V=/10,6 W CLSF	74	72 V=/11,3 W
92	190 V=/6,5 W	75	90 V=/11,3 W
94	3 V=/7 W	76	100 V=/9 W
95	38 V=/6,4 W	77	220 V=/10 W - 230 V=/1,6 W
A1	24 V=/1 W	78	24 V=/24 W CLSF
A2	12 V=/1 W	80	55 V=/10,6 W CLSF
A3	9 V=/1 W	82	170 V=/11,1 W
	tection diode (DC) - Max. 8,5 W	83	15 V=/8,1 W
	otection varistor (AC) - Max. 8,5 W	84	125 V=/10 W
	and the second s	86	36 V=/11 W
		93	12 V=/24 W CLSF

	2. MANUAL OPERATOR (Common options for 100 & 200 Series)
- XX Y ZZ	MANUAL OPERATOR
0	No operator
1	Non-locking recessed
2	Locking recessed
3	Non-locking extended
4	Locking extended

	3. ELEC	CTRICAL CONNECTION (type 100 Series)		3. EI	ECTRICAL CONNECTION (type 200
XX Y	ZZ	ELECTRICAL CONNECTION	- XX Y	ZZ	ELECTRICAL CONNECTION
	AA	Wiring box with 1/2" NPS conduit		AA	Wiring box with 1/2" NPS conduit
	BA	Flying leads		BA	Flying leads
	CA	1/2" NPS conduit		CA	1/2" NPS conduit
	СС	1/2" NPS conduit		СС	1/2" NPS conduit
	FA	Military type 2 PIN		FA	Military type 2 PIN
	GA	Military type 3 PIN		GA	Military type 3 PIN
	HA	AA with ground wire		HA	AA with ground wire
	JA*	Square connector		JA*	Square connector
	JB	Rectangular connector		JC	Square connector with light
	JC*	Square connector with light		JJ	Square connector, male only
	JD	Rectangular connector with light		NA	CA with ground wire
	JE	Square connector on top		NC	CC with ground wire
		(ISO2, ISO3)			
	JF	Rectangular connector on top			
		(ISO1, ISO2, ISO3)			
	JG	JE with light			
	JH	JF with light			
	JJ	Square connector, male only			
	JM	Rectangular connector, male only			
	MA	Electrical common conduit			
	МВ	Electrical common conduit			
	NA	CA with ground wire			
	NC	CC with ground wire			
	RA	3/8" NPS conduit			



	4. WIRE LENGTH (Common options for 100 & 200 Series)
- XX Y ZZ (-VV)	WIRE LENGTH
AA	45 cm - 18"
AB	60 cm - 24"
AD	90 cm - 36"
AE	120 cm - 48"
AF	180 cm - 72"
AG	15 cm - 6"
AR	30 cm - 12"
AU	305 cm - 120"
BA	152 cm - 60"
ВВ	366 cm - 144"
Series 6000 : wire length, del	ivered with the base
MOD L024	60 cm - 24"
MOD L036	91 cm - 36"
MOD L048	122 cm - 48"
MOD L060	152 cm - 60"
MOD L072	180 cm - 72"
MOD L120	305 cm - 120"



O ptions

Codification table for voltages / Wire length / Manual operators / Electrical connections

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

OPTIONS AVAILABLE FOR

- Solenoid valves 35, 45 and 82 Series



		1. VOLTAGE
- D XX	X - X XX	VOLTAGE
AA		120 V~/60 Hz - 110 V/50 Hz
AB		240 V~/60 Hz - 220 V/50 Hz
AC		24 V~/60 Hz - 24 V/50 Hz
AD		24 V~/60 Hz
AE		200 V~/60 Hz
AF		240 V~/50 Hz
AG		240 V~/50 Hz
DA		24 V=/5,4 W
DB		12 V=/5,4 W
DC		12 V=/7,5 W
DD		24 V=/7,3 W
DE		12 V=/12,7 W CLSF only
DF		24 V=/12,7 W CLSF only
DK		110 V=/4,7 W
DL		64 V=/6 W
DM		36 V=/5,3 W
DN		6 V=/6 W
DP		48 V=/5,8 W
DU		24 V=/6 W
EA		12 V=/6 W
FA		12 V=/1,8 W
FB		24 V=/1,8 W
FE		12 V=/2,4 W
FF		24 V=/2,4 W

	2. WIRE LENGTH
- D XX X - X XX	WIRE LENGTH
Α	45 cm - 18"
В	60 cm - 24"
С	90 cm - 36"
D	120 cm - 48"
E	180 cm - 72"
F	240 cm - 96"
J	For external plug-in connector ("J", "K" & "T" type electrical connection)
P	For plug-in valves (82 Series only)



3

4

Non-locking extended

Locking extended

- D XX X - X XX	MANUAL OPERATOR
0	No operator
1	Non-locking recessed
2	Locking recessed

3. MANUAL OPERATOR

4. ELECTRICAL CONNECTION

- D XX X - X XX **ELECTRICAL CONNECTION** Flying leads BK 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 KA Square connector KB Square connector with protection diode KC 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 KJ Square connector (male only) KK Square connector with protection diode (male only) KL Square connector with protection varistor (male only) (M.O.V.) TA Dual tabs TB TA with protection diode TD TA with light TA with light and protection diode TE TJ Dual tabs (male only) TK TJ with protection diode TM TJ with light TN TJ with light and protection diode

DA*

DK*

DL*

FM

FN

Plug-in

Plug-in connector

Plug-in with diode

Plug-in with M.O.V.

DA with protection diode

DA with protection varistor (M.O.V.)

FP

To be used with 82 Series only Inline valves only for 35 & 45 series. No restrictions for 82 series.

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 products 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 Valves 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 Valves 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

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 MAC Valves product without first turning off air (bleed system completely) and electricity to the machine.
- B. MAC Valves product 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 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 valves, 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.





MAC Valves Product Warranty Information

MAC VALVES Warranty, Warranty Limitations

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. For this reason, MAC Valves is able to provide the Buyer a limited warranty.

WARRANTY.

MAC Valves, Inc. hereby warrants to Buyer that, for a period of 18 months from the original date of shipment of each valve from our factory ("Warranty Period"), such valve will be free from significant defects in material and workmanship and will conform to all specifications agreed to by MAC Valves, Inc.. In addition, MAC Valves, Inc. warrants that the electrical coils on such valves will be free from significant defects in material and workmanship for their normal useful life. EXCEPT FOR THESE LIMITED WARRANTIES, MAC VALVES, INC. EXPRESSLY DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES OF ANY KIND (WHETHER EXPRESS, IMPLIED OR ARISING BY OPERATION OF LAW) WITH RESPECT TO THE VALVES, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR REPRESENTATIONS AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER MATTER. THIS SECTION SURVIVES THE EXPIRATION, TERMINATION OR CANCELLATION OF ANY AGREEMENTS BETWEEN THE PARTIES RELATING TO THE PURCHASE OF THE VALVES.

WARRANTY LIMITATIONS:

This Warranty does not apply where the valves have been (i) subjected to abuse, misuse, damage, neglect, negligence, accident, improper testing, improper installation, improper storage, improper handling, abnormal physical stress, abnormal environmental condition, or use contrary to any instructions issued by MAC Valves, Inc.; (ii) modified, reconstructed, repaired, or altered by persons other than MAC Valves, Inc. or its authorized representative; or (iii) used with any third-party product, hardware, software or other product that has not been previously approved in writing by MAC Valves, Inc. Additionally, this Warranty does not cover claims for labor, material, time or transportation, and 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.

EXCLUSIVE REMEDY:

The Buyer's sole remedy under this Warranty is limited to the replacement or rebuilding of any valve which does not conform to the warranties provided herein or, in MAC Valves, Inc.'s sole discretion, refund of the purchase price for the non-conforming valve. Buyer's remedy is conditioned on Buyer's compliance with its obligations under this Warranty. Valves that Buyer believes do not conform to this Warranty must be returned (with or without bases) transportation prepaid and received at our factory within the Warranty Period. If MAC Valves, Inc. determines that the valve is non-conforming and is otherwise covered by this Warranty, the rebuilt or replaced valve will be returned to the customer at the expense of MAC Valves, Inc. MAC VALVES, INC. WILL NOT BE RESPONSIBLE FOR ANY INCIDENTAL, SPECIAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION DIRECT AND INDIRECT LOST PROFITS, REGARDLESS OF WHETHER THOSE DAMAGES WERE FORESEEABLE.



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