

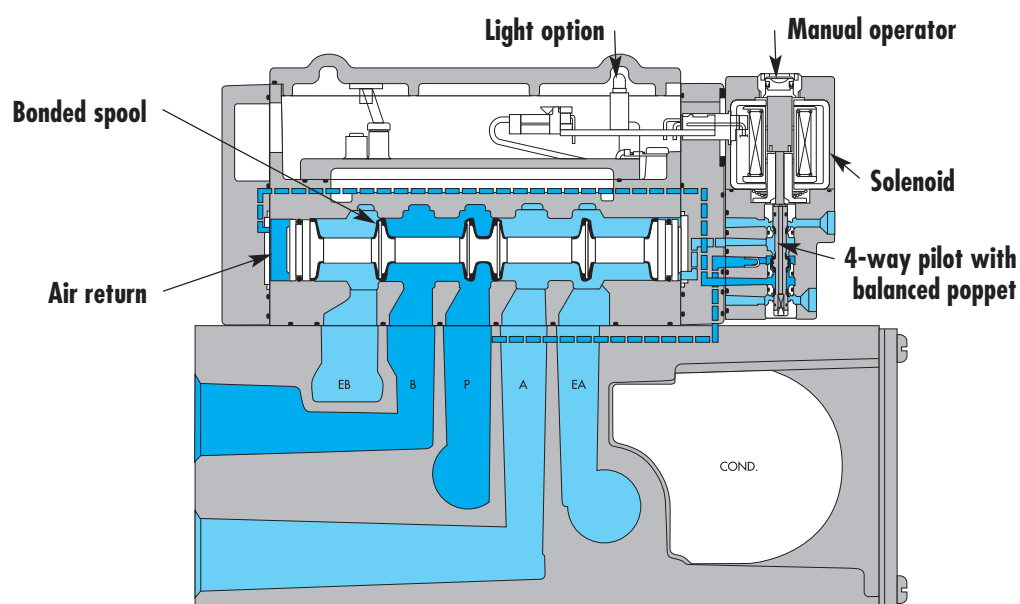
Direct solenoid and solenoid pilot operated valves

Individual mounting

Inline	Sub-base non "plug-in"	Sub-base "plug-in"
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Manifold mounting

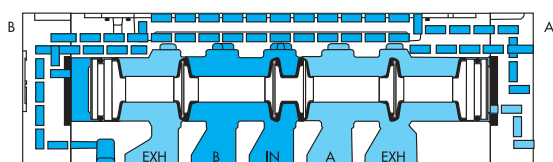
Manifold base non "plug-in"	Manifold base "plug-in"
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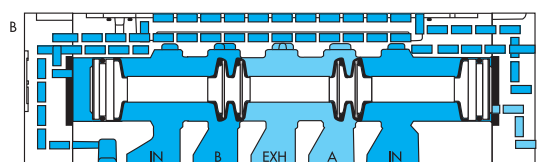
SERIES FEATURES

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

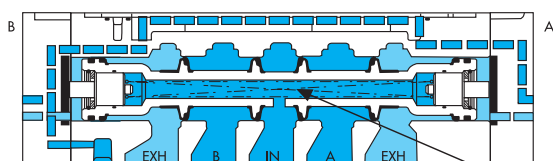
SPOOL CONFIGURATIONS



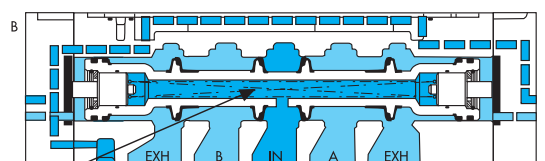
2 POSITION SINGLE PRESSURE
SHOWN WITH "B" OPERATOR ENERGIZED



2 POSITION DUAL PRESSURE
SHOWN WITH "B" OPERATOR ENERGIZED

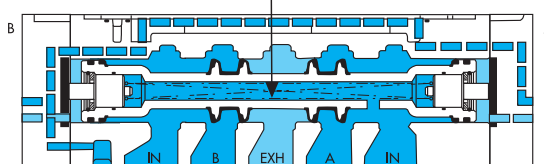


3 POSITION CLOSED CENTER



3 POSITION OPEN CENTER

SPRING CENTERING

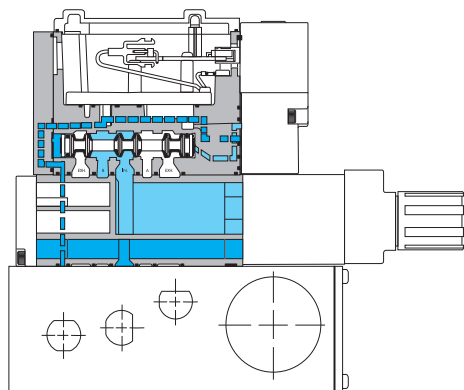


3 POSITION DUAL PRESSURE, PRESSURE CENTER

REGULATOR CONFIGURATIONS

SINGLE REGULATOR - SINGLE PRESSURE

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

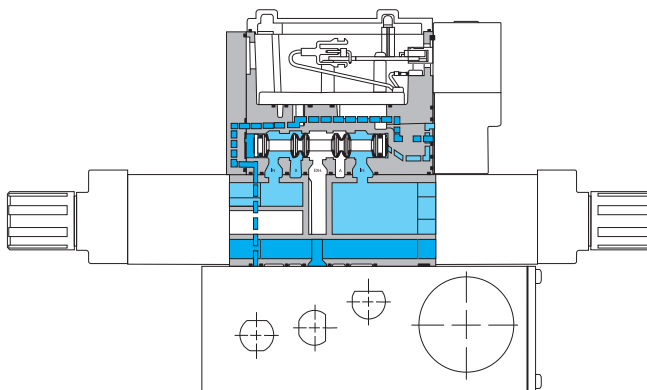


MANIFOLD WITH REGULATOR - SINGLE PRESSURE

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

DUAL REGULATOR - DUAL PRESSURE

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



MANIFOLD WITH REGULATOR - DUAL PRESSURE



Direct solenoid and solenoid pilot operated valves

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

OPERATIONAL BENEFITS

1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. Air only return. Optional memory spring is also available.
4. Optional low wattage DC solenoid down to 1 watt.
5. MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
					
G3/8"	Internal	93A-AJ0-E0J-DM-Dxxx-xxx	93A-BJ0-E0J-DM-Dxxx-xxx	93A-EJ0-E0J-DM-Dxxx-xxx	93A-FJ0-E0J-DM-Dxxx-xxx
G1/2"	Internal	93A-AJ0-F0J-DM-Dxxx-xxx	93A-BJ0-F0J-DM-Dxxx-xxx	93A-EJ0-F0J-DM-Dxxx-xxx	93A-FJ0-F0J-DM-Dxxx-xxx
G3/8"	External	93A-AJ0-E0K-DM-Dxxx-xxx	93A-BJ0-E0K-DM-Dxxx-xxx	93A-EJ0-E0K-DM-Dxxx-xxx	93A-FJ0-E0K-DM-Dxxx-xxx
G1/2"	External	93A-AJ0-F0K-DM-Dxxx-xxx	93A-BJ0-F0K-DM-Dxxx-xxx	93A-EJ0-F0K-DM-Dxxx-xxx	93A-FJ0-F0K-DM-Dxxx-xxx

DUAL PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure centre
				
G3/8"	Internal	93A-CJ0-E0J-DM-Dxxx-xxx	93A-DJ0-E0J-DM-Dxxx-xxx	93A-HJ0-E0J-DM-Dxxx-xxx
G1/2"	Internal	93A-CJ0-F0J-DM-Dxxx-xxx	93A-DJ0-F0J-DM-Dxxx-xxx	93A-HJ0-F0J-DM-Dxxx-xxx
G3/8"	External	93A-CJ0-E0K-DM-Dxxx-xxx	93A-DJ0-E0K-DM-Dxxx-xxx	93A-HJ0-E0K-DM-Dxxx-xxx
G1/2"	External	93A-CJ0-F0K-DM-Dxxx-xxx	93A-DJ0-F0K-DM-Dxxx-xxx	93A-HJ0-F0K-DM-Dxxx-xxx

SOLENOID OPERATOR ►

DM-D **xxx-xxx***

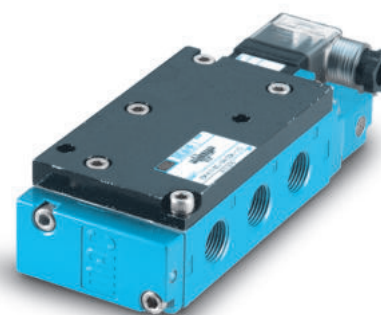
XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection
JA	110 V~/50Hz	A	45 cm (Flying leads)	1	Non-locking	KA	Square connector
JB	220 V~/50Hz	B	60 cm (Flying leads)	2	Locking	KD	Square connector with light
JC	24 V~/50Hz	J	Connector			JB	Rectangular connector
FB	24 V~/1,8W					JD	Rectangular connector with light
DA	24 V~/5,4W					BA	Flying leads
DF	24 V~/12,7W						

* Other options available, see page options.

OPTIONS

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

- J** Standard pilot exhaust
- K** Pilot exhaust to main exhaust (use DU pilot)





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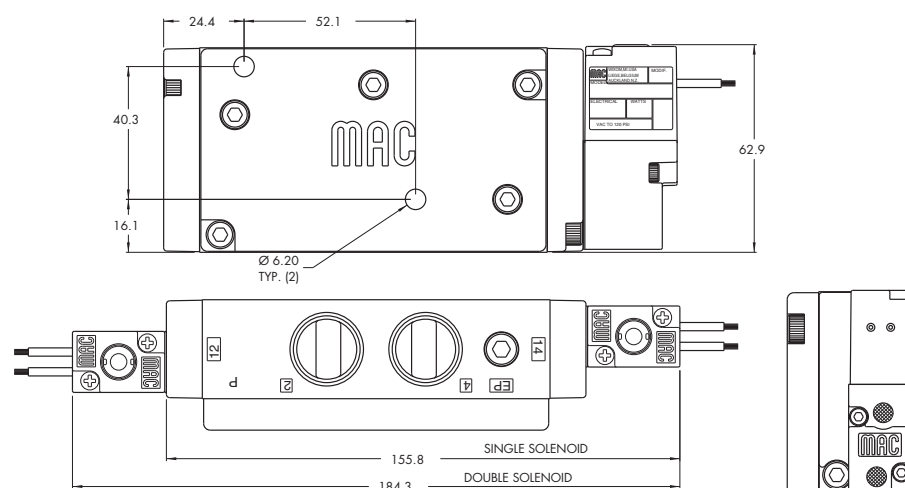
WARRANTY
18
MONTHS

TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	11,7 mm
Flow (at 6 bar, ΔP=1bar) :	3800 NI/min (Cv 3,8)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 1.8 to 12.7 W
Response times : (with 4 W coil)	Energize : 13 ms De-energize : 10 ms

Option : • NPTF thread

DIMENSIONS

Dimensions shown are metric (mm)





Direct solenoid and solenoid pilot operated valves

Function Port size Flow [Max] Individual mounting

5/2, 5/3 G1/4" - G3/8" - G1/2" 3400 NI/min

Subbase
non "plug-in"

OPERATIONAL BENEFITS

1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. Air only return. Optional memory spring is also available.
4. Optional low wattage DC solenoid down to 1 watt.
5. MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.

HOW TO ORDER

SINGLE PRESSURE MODELS (1/4" MODELS ARE BOTTOM PORTED)

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
Valve less base		93A-ABA-000-DM-Dxxx-xxx	93A-BBA-000-DM-Dxxx-xxx	93A-EBA-000-DM-Dxxx-xxx	93A-FBA-000-DM-Dxxx-xxx
G1/4"	Internal	93A-ABA-DBG-DM-Dxxx-xxx	93A-BBA-DBG-DM-Dxxx-xxx	93A-EBA-DBG-DM-Dxxx-xxx	93A-FBA-DBG-DM-Dxxx-xxx
G3/8"		93A-ABA-EAG-DM-Dxxx-xxx	93A-BBA-EAG-DM-Dxxx-xxx	93A-EBA-EAG-DM-Dxxx-xxx	93A-FBA-EAG-DM-Dxxx-xxx
G1/2"		93A-ABA-FAG-DM-Dxxx-xxx	93A-BBA-FAG-DM-Dxxx-xxx	93A-EBA-FAG-DM-Dxxx-xxx	93A-FBA-FAG-DM-Dxxx-xxx
G1/4"		93A-ABA-DBH-DM-Dxxx-xxx	93A-BBA-DBH-DM-Dxxx-xxx	93A-EBA-DBH-DM-Dxxx-xxx	93A-FBA-DBH-DM-Dxxx-xxx
G3/8"	External	93A-ABA-EAH-DM-Dxxx-xxx	93A-BBA-EAH-DM-Dxxx-xxx	93A-EBA-EAH-DM-Dxxx-xxx	93A-FBA-EAH-DM-Dxxx-xxx
G1/2"		93A-ABA-FAH-DM-Dxxx-xxx	93A-BBA-FAH-DM-Dxxx-xxx	93A-EBA-FAH-DM-Dxxx-xxx	93A-FBA-FAH-DM-Dxxx-xxx

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR, SEE „REGULATORS“ SECTION (1/4" MODELS ARE BOTTOM PORTED))

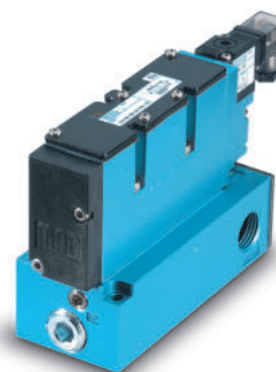
Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure centre
Valve less base		93A-CBA-000-DM-Dxxx-xxx	93A-DBA-000-DM-Dxxx-xxx	93A-HBA-000-DM-Dxxx-xxx
G1/4"	Internal	93A-CBA-DBG-DM-Dxxx-xxx	93A-DBA-DBG-DM-Dxxx-xxx	93A-HBA-DBG-DM-Dxxx-xxx
G3/8"		93A-CBA-EAG-DM-Dxxx-xxx	93A-DBA-EAG-DM-Dxxx-xxx	93A-HBA-EAG-DM-Dxxx-xxx
G1/2"		93A-CBA-FAG-DM-Dxxx-xxx	93A-DBA-FAG-DM-Dxxx-xxx	93A-HBA-FAG-DM-Dxxx-xxx
G1/4"		93A-CBA-DBH-DM-Dxxx-xxx	93A-DBA-DBH-DM-Dxxx-xxx	93A-HBA-DBH-DM-Dxxx-xxx
G3/8"	External	93A-CBA-EAH-DM-Dxxx-xxx	93A-DBA-EAH-DM-Dxxx-xxx	93A-HBA-EAH-DM-Dxxx-xxx
G1/2"		93A-CBA-FAH-DM-Dxxx-xxx	93A-DBA-FAH-DM-Dxxx-xxx	93A-HBA-FAH-DM-Dxxx-xxx

SOLENOID OPERATOR ►

DM-D **xxx-xxx***

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

* Other options available, see page options.





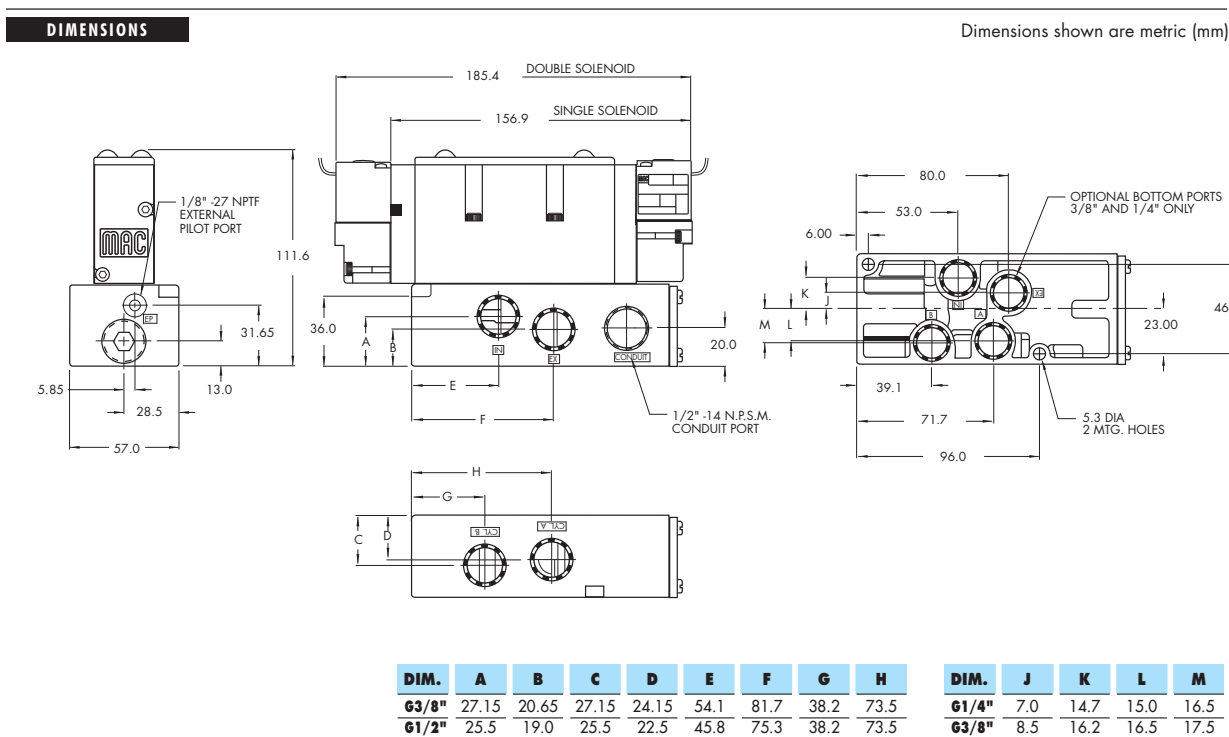
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WARRANTY
18
MONTHS

TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	11,7 mm
Flow (at 6 bar, ΔP=1bar) :	1/4", 3/8": 3000 NI/min (Cv3.0) – 1/2": 3400 NI/min (Cv 3,4)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 1 to 12.7 W
Response times : (with 4 W coil)	Energize : 13 ms De-energize : 10 ms

- Options :
- NPTF thread • Sandwich regulator (see ,regulators' section)
 - Sandwich flow controls FC93A-BA (screwdriver slot adjustment)
 FC93A-BB (locking knob adjustment)

- Spare parts :
- Pilot valve: DM-Dxxx-xxx • Valve to base pressure seal: 16622
 - Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249
 - Pilot valve mounting screws (x2): 35069





Direct solenoid and solenoid pilot operated valves

Function Port size Flow [Max] Individual mounting

5/2, 5/3 G1/4" - G3/8" - G1/2" 3400 NI/min

Subbase
"plug-in"

OPERATIONAL BENEFITS

1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. Air only return. Optional memory spring is also available.
4. Optional low wattage DC solenoid down to 1 watt.
5. MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.



HOW TO ORDER

SINGLE PRESSURE MODELS (1/4" MODELS ARE BOTTOM PORTED)

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
Valve less base		93A-AAA-000-DM-DxxP-xxx	93A-BAA-000-DM-DxxP-xxx	93A-EAA-000-DM-DxxP-xxx	93A-FAA-000-DM-DxxP-xxx
G1/4"	Internal	93A-AAA-DBA-DM-DxxP-xxx	93A-BAA-DBA-DM-DxxP-xxx	93A-EAA-DBA-DM-DxxP-xxx	93A-FAA-DBA-DM-DxxP-xxx
G3/8"		93A-AAA-EAA-DM-DxxP-xxx	93A-BAA-EAA-DM-DxxP-xxx	93A-EAA-EAA-DM-DxxP-xxx	93A-FAA-EAA-DM-DxxP-xxx
G1/2"		93A-AAA-FAA-DM-DxxP-xxx	93A-BAA-FAA-DM-DxxP-xxx	93A-EAA-FAA-DM-DxxP-xxx	93A-FAA-FAA-DM-DxxP-xxx
G1/4"		93A-AAA-DBD-DM-DxxP-xxx	93A-BAA-DBD-DM-DxxP-xxx	93A-EAA-DBD-DM-DxxP-xxx	93A-FAA-DBD-DM-DxxP-xxx
G3/8"	External	93A-AAA-EAD-DM-DxxP-xxx	93A-BAA-EAD-DM-DxxP-xxx	93A-EAA-EAD-DM-DxxP-xxx	93A-FAA-EAD-DM-DxxP-xxx
G1/2"		93A-AAA-FAD-DM-DxxP-xxx	93A-BAA-FAD-DM-DxxP-xxx	93A-EAA-FAD-DM-DxxP-xxx	93A-FAA-FAD-DM-DxxP-xxx

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure Centre
Valve less base		93A-CAA-000-DM-DxxP-xxx	93A-DAA-000-DM-DxxP-xxx	93A-HAA-000-DM-DxxP-xxx
G1/4"	Internal	93A-CAA-DBA-DM-DxxP-xxx	93A-DAA-DBA-DM-DxxP-xxx	93A-HAA-DBA-DM-DxxP-xxx
G3/8"		93A-CAA-EAA-DM-DxxP-xxx	93A-DAA-EAA-DM-DxxP-xxx	93A-HAA-EAA-DM-DxxP-xxx
G1/2"		93A-CAA-FAA-DM-DxxP-xxx	93A-DAA-FAA-DM-DxxP-xxx	93A-HAA-FAA-DM-DxxP-xxx
G1/4"		93A-CAA-DBD-DM-DxxP-xxx	93A-DAA-DBD-DM-DxxP-xxx	93A-HAA-DBD-DM-DxxP-xxx
G3/8"	External	93A-CAA-EAD-DM-DxxP-xxx	93A-DAA-EAD-DM-DxxP-xxx	93A-HAA-EAD-DM-DxxP-xxx
G1/2"		93A-CAA-FAD-DM-DxxP-xxx	93A-DAA-FAD-DM-DxxP-xxx	93A-HAA-FAD-DM-DxxP-xxx

SOLENOID OPERATOR >

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

Above models are shown without light.

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

* Other options available, see page options.
Note: Ground required for 30 Volts or higher.



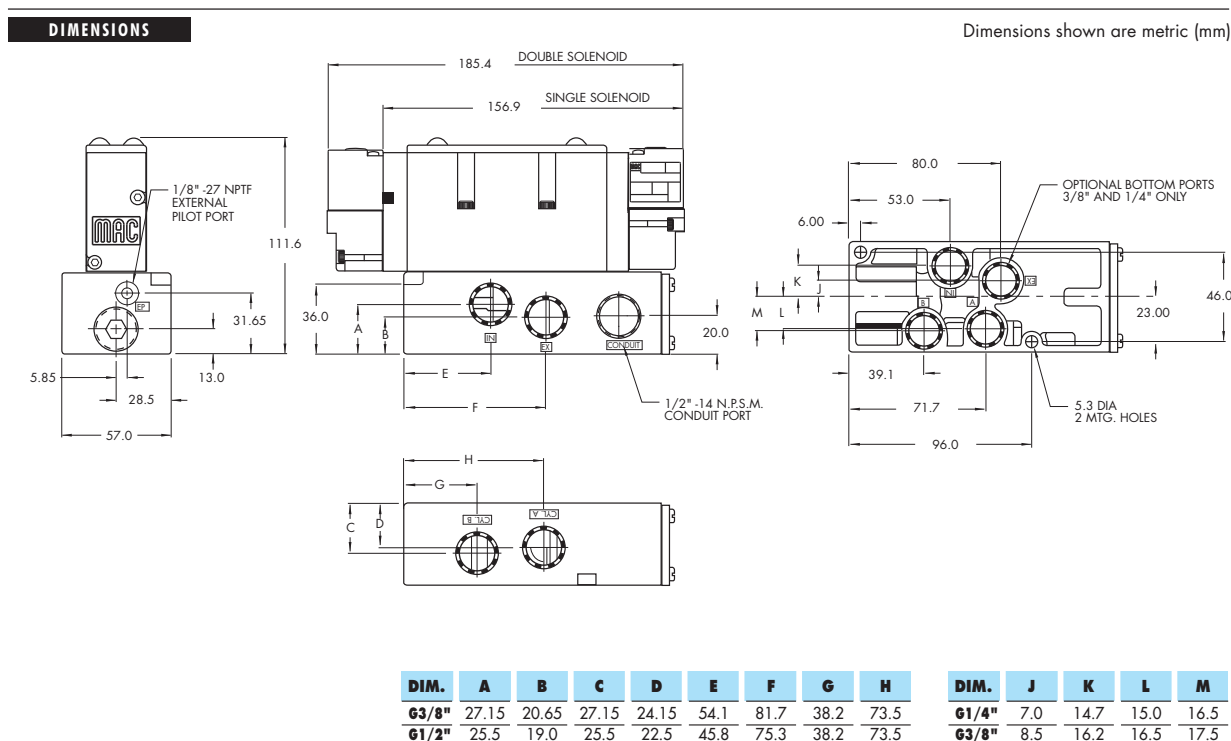
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WARRANTY
18
MONTHS

TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	11,7 mm
Flow (at 6 bar, ΔP=1bar) :	1/4", 3/8": 3000 NI/min (Cv3.0) – 1/2": 3400 NI/min (Cv 3,4)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 1 to 12.7 W
Response times : (with 4 W coil)	Energize : 13 ms De-energize : 10 ms

- Options :
- NPTF thread • Sandwich regulator (see ,regulators' section)
 - Sandwich flow controls FC93A-AA (screwdriver slot adjustment)
 FC93A-AB (locking knob adjustment)

- Spare parts :
- Pilot valve: DM-DxxP-xxx • Valve to base pressure seal: 16622
 - Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249
 - Pilot valve mounting screws (x2): 35069



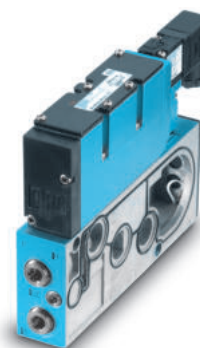


Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow [Max]	Manifold mounting
5/2, 5/3	G3/8" - G1/2"	3800 NI/min	Manifold base non "plug-in"

OPERATIONAL BENEFITS

1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. Air only return. Optional memory spring is also available.
4. Optional low wattage DC solenoid down to 1 watt.
5. MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.



HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
Valve less base		93A-ABA-000-DM-Dxxx-xxx	93A-BBA-000-DM-Dxxx-xxx	93A-EBA-000-DM-Dxxx-xxx	93A-FBA-000-DM-Dxxx-xxx
G3/8"	Internal	93A-ABA-EJG-DM-Dxxx-xxx	93A-BBA-EJG-DM-Dxxx-xxx	93A-EBA-EJG-DM-Dxxx-xxx	93A-FBA-EJG-DM-Dxxx-xxx
G1/2"		93A-ABA-FJG-DM-Dxxx-xxx	93A-BBA-FJG-DM-Dxxx-xxx	93A-EBA-FJG-DM-Dxxx-xxx	93A-FBA-FJG-DM-Dxxx-xxx
G3/8"	External	93A-ABA-EJH-DM-Dxxx-xxx	93A-BBA-EJH-DM-Dxxx-xxx	93A-EBA-EJH-DM-Dxxx-xxx	93A-FBA-EJH-DM-Dxxx-xxx
G1/2"		93A-ABA-FJH-DM-Dxxx-xxx	93A-BBA-FJH-DM-Dxxx-xxx	93A-EBA-FJH-DM-Dxxx-xxx	93A-FBA-FJH-DM-Dxxx-xxx

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR, SEE „REGULATORS“ SECTION)

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure centre
Valve less base		93A-CBA-000-DM-Dxxx-xxx	93A-DBA-000-DM-Dxxx-xxx	93A-HBA-000-DM-Dxxx-xxx
G3/8"	Internal	93A-CBA-EJG-DM-Dxxx-xxx	93A-DBA-EJG-DM-Dxxx-xxx	93A-HBA-EJG-DM-Dxxx-xxx
G1/2"		93A-CBA-FJG-DM-Dxxx-xxx	93A-DBA-FJG-DM-Dxxx-xxx	93A-HBA-FJG-DM-Dxxx-xxx
G3/8"	External	93A-CBA-EJH-DM-Dxxx-xxx	93A-DBA-EJH-DM-Dxxx-xxx	93A-HBA-EJH-DM-Dxxx-xxx
G1/2"		93A-CBA-FJH-DM-Dxxx-xxx	93A-DBA-FJH-DM-Dxxx-xxx	93A-HBA-FJH-DM-Dxxx-xxx

SOLENOID OPERATOR ➤

DM-D **xxx-xxx***

XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection
JA	110 V~/50Hz	A	45 cm (Flying leads)	1	Non-locking	BM	Flying leads
JB	220 V~/50Hz	B	60 cm (Flying leads)	2	Locking	BN	Flying leads with diode
JC	24 V~/50Hz	J	Connector			KA	Square connector
FB	24 V=/1,8W					KD	Square connector with light
DA	24 V=/5,4W						
DF	24 V=/12,7W						

* Other options available, see page options.
End plate kit required (1/2" ports): M-93001-01-01P internal pilot.
M-93001-02-01P external pilot.

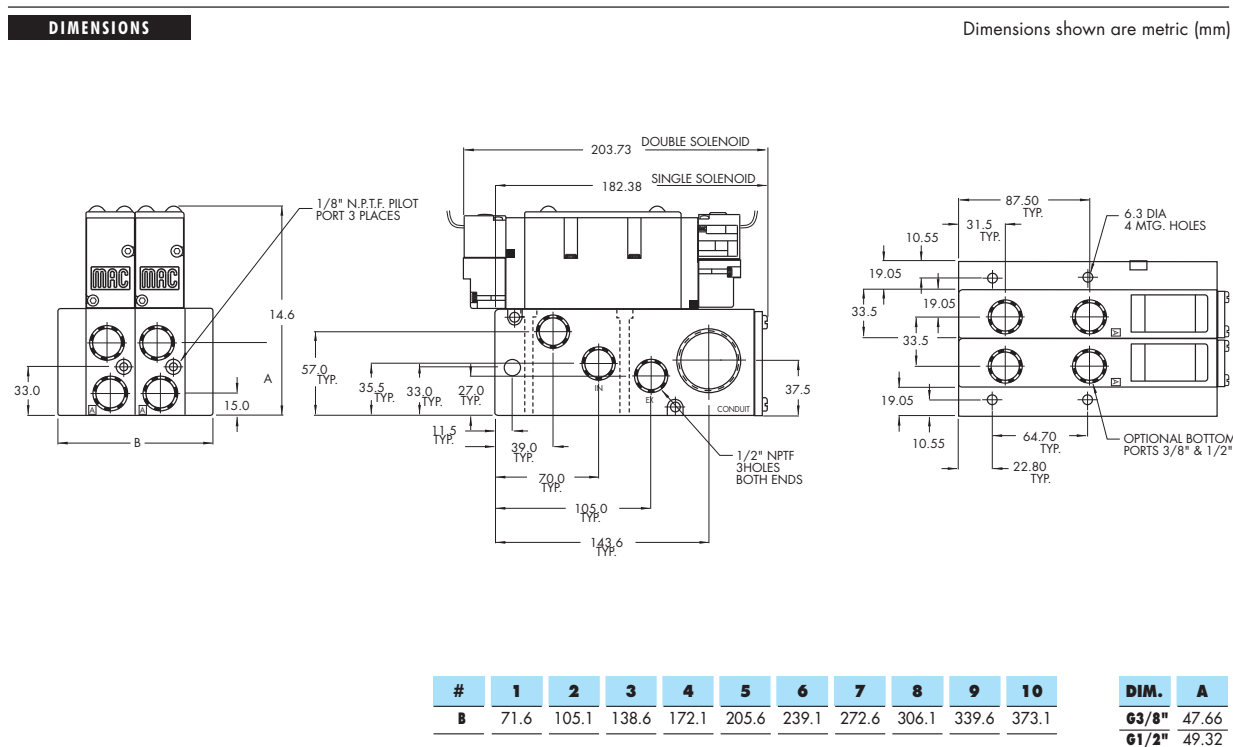


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WARRANTY
18
MONTHS

TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	11,7 mm
Flow (at 6 bar, ΔP=1bar) :	3/8": 3400 NI/min (Cv 3,4) – 1/2": 3800 NI/min (Cv 3.8)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 1 to 12.7 W
Response times : (with 4 W coil)	Energize : 13 ms De-energize : 10 ms

- Options :
- NPTF thread • Sandwich regulator (see ,regulators' section)
 - Sandwich flow controls FC93A-BA (screwdriver slot adjustment), FC93A-BB (locking knob adjustment)
- Spare parts :
- Pilot valve: DM-Dxxx-xxx • Valve to base pressure seal: 16622
 - Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249
 - Inlet/exh. Isolator disc: N-93008 • Valve blanking plate: M-93002



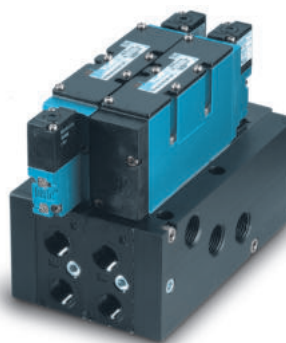


Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Manifold mounting
5/2, 5/3	G3/8" - G1/2"	3800 NI/min	Manifold base "plug-in"

OPERATIONAL BENEFITS

1. Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof solenoid operation.
2. Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
3. Air only return. Optional memory spring is also available.
4. Optional low wattage DC solenoid down to 1 watt.
5. MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.



HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
Valve less base		93A-AAA-000-DM-DxxP-xxx	93A-BAA-000-DM-DxxP-xxx	93A-EAA-000-DM-DxxP-xxx	93A-FAA-000-DM-DxxP-xxx
G3/8"	Internal	93A-AAA-EJA-DM-DxxP-xxx	93A-BAA-EJA-DM-DxxP-xxx	93A-EAA-EJA-DM-DxxP-xxx	93A-FAA-EJA-DM-DxxP-xxx
G1/2"		93A-AAA-FJA-DM-DxxP-xxx	93A-BAA-FJA-DM-DxxP-xxx	93A-EAA-FJA-DM-DxxP-xxx	93A-FAA-FJA-DM-DxxP-xxx
G3/8"	External	93A-AAA-EJD-DM-DxxP-xxx	93A-BAA-EJD-DM-DxxP-xxx	93A-EAA-EJD-DM-DxxP-xxx	93A-FAA-EJD-DM-DxxP-xxx
G1/2"		93A-AAA-FJD-DM-DxxP-xxx	93A-BAA-FJD-DM-DxxP-xxx	93A-EAA-FJD-DM-DxxP-xxx	93A-FAA-FJD-DM-DxxP-xxx

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR, SEE „REGULATORS“ SECTION)

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure Centre
Valve less base		93A-CAA-000-DM-DxxP-xxx	93A-DAA-000-DM-DxxP-xxx	93A-HAA-000-DM-DxxP-xxx
G3/8"	Internal	93A-CAA-EJA-DM-DxxP-xxx	93A-DAA-EJA-DM-DxxP-xxx	93A-HAA-EJA-DM-DxxP-xxx
G1/2"		93A-CAA-FJA-DM-DxxP-xxx	93A-DAA-FJA-DM-DxxP-xxx	93A-HAA-FJA-DM-DxxP-xxx
G3/8"	External	93A-CAA-EJD-DM-DxxP-xxx	93A-DAA-EJD-DM-DxxP-xxx	93A-HAA-EJD-DM-DxxP-xxx
G1/2"		93A-CAA-FJD-DM-DxxP-xxx	93A-DAA-FJD-DM-DxxP-xxx	93A-HAA-FJD-DM-DxxP-xxx

SOLENOID OPERATOR ➤

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

Above model numbers are shown with side ports without light.

XX	Voltage	X	Manual operator	XX	Electrical connection
JA	110 V~/50Hz (2,9W)	1	Non-locking	DM	Plug-in
JB	220 V~/50Hz (2,9W)	2	Locking	DN	Plug-in with diode
JC	24 V~/50Hz (3,7W)			DP	Plug-in with M.O.V.
FB	24 V~/1,8W			DG	Plug-in with ground
DA	24 V~/5,4W				
DF	24 V~/12,7W				

* Other options available, see page options.
End plate required (1/2" ports): M-93001-01-01P Internal pilot.
M-93001-02-01P External pilot.



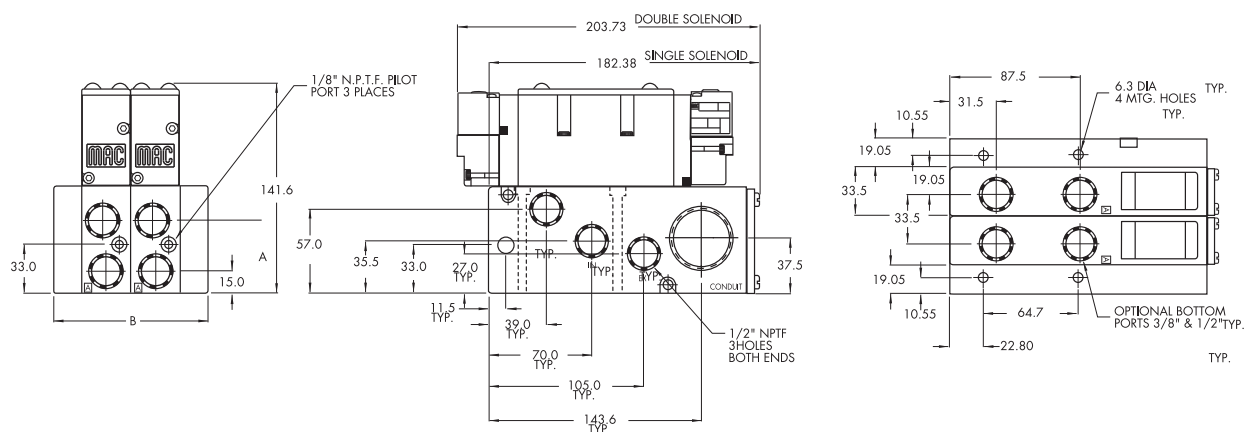
100%
OF
PRODUCTION
TESTED
100%

WARRANTY
18
MONTHS

TECHNICAL DATA	
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Orifice :	11,7 mm
Flow (at 6 bar, ΔP=1bar) :	3/8": 3400 NI/min (Cv 3,4) – 1/2": 3800 NI/min (Cv 3.8)
Coil :	Epoxy encapsulated – 100% ED
Voltage range :	-15% to +10% of nominal voltage
Protection :	IP65 (electrical connection)
Power :	~ Inrush 7,6 VA Holding: 4,8 VA = 1 to 12.7 W
Response times : (with 4 W coil)	Energize : 13 ms De-energize : 10 ms

- Options :
- NPTF thread • Sandwich regulator (see 'regulators' section)
 - Sandwich flow controls FC93A-AA (screwdriver slot adjustment), FC93A-AB (locking knob adjustment)
- Spare parts :
- Pilot valve: DM-DxxP-xxx • Valve to base pressure seal: 16622
 - Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249
 - Inlet/exh. Isolator disc: N-93008 • Valve blanking plate: M-93002

DIMENSIONS Dimensions shown are metric (mm)



#	1	2	3	4	5	6	7	8	9	10
B	71.6	105.1	138.6	172.1	205.6	239.1	272.6	306.1	339.6	373.1

DIM.	A
63/8"	47.66
61/2"	49.32



Direct solenoid and solenoid pilot operated valves

OPTIONS FOR NON PLUG-IN VALVES

Valve function

93A-**L**XX-XXX-XX-D**XXX**-XXX

- L** for single operator, single pressure with memory spring
- N** for single operator, dual pressure with memory spring
- R** for single operator universal spool (ext. pilot only)
- S** for double operator universal spool (ext. pilot only)

Pilot exhaust

93A-X**B**X-XXX-XX-D**XXX**-XXX

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

Port configuration :

Individual sub-base

93A-XXX-X**A**X-XX-D**XXX**-XXX

- A** side ports (3/8" & 1/2" only)
- B** bottom ports (1/4" & 3/8" only)
- C** side & bottom ports (1/4" & 3/8" only)
- D** side inlet & exhaust with bottom cylinder ports (1/4" & 3/8" only)

Manifold sub-base

93A-XXX-X**J**X-XX-D**XXX**-XXX

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

Pilot style :

93A-XXX-XXX-**DM**-D**XXX**-XXX

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

Base only :

93A-000-XXX (i.e. 93A-000-DBG) - Individual base

93A-000-XXX (i.e. 93A-000-EJG) - Manifold base

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



Direct solenoid and solenoid pilot operated valves

OPTIONS FOR PLUG-IN VALVES

Valve function

93A-**LXX**-XXX-XX-D**XX**P-**XXX**

- L** for single operator, single pressure with memory spring
- N** for single operator, dual pressure with memory spring
- R** for single operator universal spool (ext. pilot only)
- S** for double operator universal spool (ext. pilot only)

Pilot exhaust

93A-X**AX**-XXX-XX-D**XX**P-**XXX**

- A** standard pilot exhaust
- C** pilot exhaust to main valve exhaust*

Body electrical

92B-X**XA**-XXX-XX-D**XX**P-**XXX**

- A** no light
- B** light(s)

Port configuration :

Individual sub-base

93A-XXX-X**AX**-XX-D**XX**P-**XXX**

- A** side ports (3/8" & 1/2" only)
- B** bottom ports (1/4" & 3/8" only)
- C** side & bottom ports (1/4" & 3/8" only)
- D** side inlet & exhaust with bottom cylinder ports (1/4" & 3/8" only)

Manifold sub-base

93A-XXX-X**JX**-XX-D**XX**P-**XXX**

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

Base/manifold int./ext. pilot

93A-XXX-X**XA**-XX-D**XX**P-**XXX**

- A** internal pilot no light
- B** internal pilot single light
- C** internal pilot double light
- D** external pilot no light
- E** external pilot single light
- F** external pilot double light

Pilot style :

93A-XXX-XXX-**DM**-D**XX**P-**XXX**

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

Base only :

93A-000-XXX (i.e. 93A-000-DBA) - Individual base

(Note: bases are wired for double solenoid valves)

93A-000-XXX (i.e. 93A-000-DJA) - Manifold base

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



P r e s s u r e r e g u l a t o r s

Sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

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



HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR93A-DAAA	PR93A-DBAA	PR93A-DCAA	PR93A-DDAA	PR93A-DEAA
Gauge with face perpendicular to manual operator	PR93A-DABA	PR93A-DBBA	PR93A-DCBA	PR93A-DDBA	PR93A-DEBA
Gauge with face parallel to manual operator	PR93A-DACA	PR93A-DBCA	PR93A-DCCA	PR93A-DDCA	PR93A-DECA

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

REGULATORS FOR "NON PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR93A-EAAA	PR93A-EBAA	PR93A-ECAA	PR93A-EDAA	PR93A-EEAA
Gauge with face perpendicular to manual operator	PR93A-EABA	PR93A-EBBA	PR93A-ECBA	PR93A-EDBA	PR93A-EEBA
Gauge with face parallel to manual operator	PR93A-EACA	PR93A-EBCA	PR93A-ECCA	PR93A-EDCA	PR93A-EECA

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

* For use with dual pressure valves.

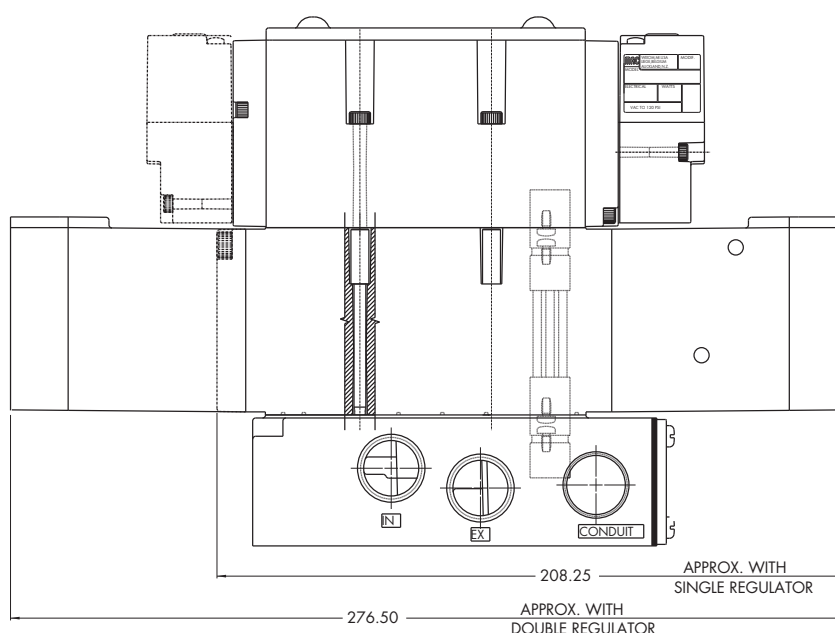


TECHNICAL DATA	
Fluid :	Compressed air, inert gases
Pressure range :	0 to 8 bar
Regulating range :	0 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Flow (at 6 bar, ΔP=1bar) :	2400 NI/min (Cv 2.4)

- Spare parts :
- Regulator end plate kit: R-93004 • Regulator by-pass end plate kit: R-93004-01
 - Gauge kit: N-92006-01 (0 to 10,7 bar)
 - Pressure regulator (less sandwich block): PR93A-F0AA

DIMENSIONS

Dimensions shown are metric (mm)





P r e s s u r e r e g u l a t o r s

Sandwich selector pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

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



HOW TO ORDER

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

Gauge	Select to A port Regulator A end By-pass plate B end	Select to B port Regulator B end By-pass plate A end	Select to A port Reg. both ends A end low press. B end high press.	Select to B port Reg. both ends A end high press. B end low press.
Gauge port only (plugged)	PR93A-GPAA	PR93A-GRAA	PR93A-GSAA	PR93A-GTAA
Gauge with face perpendicular to manual operator	PR93A-GPBA	PR93A-GRBA	PR93A-GSBA	PR93A-GTBA
Gauge with face parallel to manual operator	PR93A-GPCA	PR93A-GRCA	PR93A-GSCA	PR93A-GTCA

REGULATORS FOR "NON PLUG-IN" VALVES

Gauge	Select to A port Regulator A end By-pass plate B end	Select to B port Regulator B end By-pass plate A end	Select to A port Reg. both ends A end low press. B end high press.	Select to B port Reg. both ends A end high press. B end low press.
Gauge port only (plugged)	PR93A-HPAA	PR93A-HRAA	PR93A-HSAA	PR93A-HTAA
Gauge with face perpendicular to manual operator	PR93A-HPBA	PR93A-HRBA	PR93A-HSBA	PR93A-HTBA
Gauge with face parallel to manual operator	PR93A-HPCA	PR93A-HRCA	PR93A-HSCA	PR93A-HTCA

Notes: - Regulating range for above models is 0 to 8 bar. For other ranges, see technical data page
- Use single pressure valve for all above models.

OPTIONS

Regulator less sandwich block

PR93A-x0xx

- J Knob
- C Slotted stem
- M Slotted stem with locknut

Other adjustment

PR93A-xxxx

- A Slotted stem, plug-in
- B Slotted stem, non plug-in
- K Slotted stem w/ locknut, plug-in
- L Slotted stem w/ locknut, non plug-in

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



100%
OF
PRODUCTION
TESTED
100%

WARRANTY
18
MONTHS

TECHNICAL DATA	
Fluid :	Compressed air, inert gases
Pressure range :	0 to 8 bar
Regulating range :	0 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Flow (at 6 bar, ΔP=1bar):	2400 NI/min (Cv 2.4)

Spare parts :

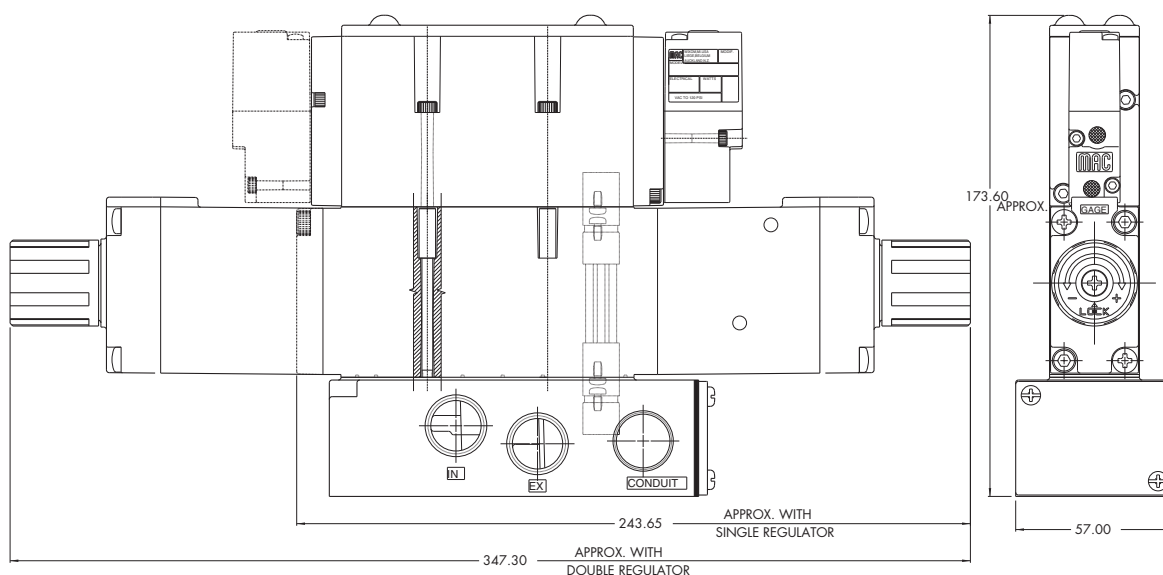
- R-93004 : end plate kit • R-93004-01 : by-pass end plate kit
- Gauge kit 0 – 10,7 bar: N-92006-01 • Gauge kit 0 – 6,7 bar: N-92006-02
- Gauge kit 0-4 bar: N-92006-03

Option:

- Pressure range: PR93A-xxxA (A 0 to 8 bar)
 - B 0 to 5,3 bar
 - C 0 to 2 bar
 - D 0 to 8 bar "A" end, 0 to 5,3 bar "B" end
 - E 0 to 8 bar "B" end, 0 to 5,3 bar "A" end
 - F 0 to 8 bar "A" end, 0 to 2 bar "B" end
 - G 0 to 8 bar "B" end, 0 to 2 bar "A" end
 - H 0 to 5,3 bar "A" end, 0 to 2 bar "B" end
 - J 0 to 5,3 bar "B" end, 0 to 2 bar "A" end

DIMENSIONS

Dimensions shown are metric (mm)



Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

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



HOW TO ORDER

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

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR93A-GAAA	PR93A-GBAA	PR93A-GCAA	PR93A-GDAA	PR93A-GEAA
Gauge with face perpendicular to manual operator	PR93A-GABA	PR93A-GBBA	PR93A-GCBA	PR93A-GDBA	PR93A-GEBA
Gauge with face parallel to manual operator	PR93A-GACA	PR93A-GBCA	PR93A-GCCA	PR93A-GDCA	PR93A-GECA

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

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

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR93A-HAAA	PR93A-HBAA	PR93A-HCAA	PR93A-HDAA	PR93A-HEAA
Gauge with face perpendicular to manual operator	PR93A-HABA	PR93A-HBBA	PR93A-HCBA	PR93A-HDBA	PR93A-HEBA
Gauge with face parallel to manual operator	PR93A-HACA	PR93A-HBCA	PR93A-HCCA	PR93A-HDCA	PR93A-HECA

* For use with dual pressure valves.

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

OPTIONS

Regulator less sandwich block

PR93A-x0xx

- J** Knob
- C** Slotted stem
- M** Slotted stem with locknut

Other adjustment

PR93A-xxxx

- A** Slotted stem, plug-in
- B** Slotted stem, non plug-in
- K** Slotted stem w/ locknut, plug-in
- L** Slotted stem w/ locknut, non plug-in

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



TECHNICAL DATA	
Fluid :	Compressed air, inert gases
Pressure range :	0 to 8 bar
Regulating range :	0 to 8 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	-18°C to +50°C
Flow (at 6 bar, ΔP=1bar):	2400 NI/min (Cv 2.4)

Spare parts :

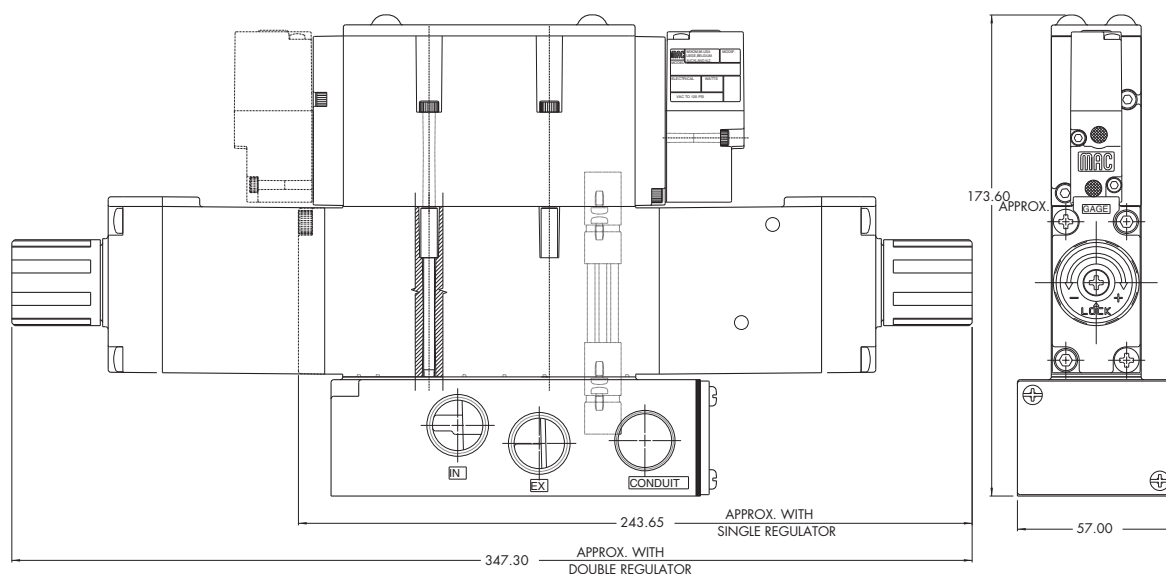
- R-93004 : end plate kit • R-93004-01 : by-pass end plate kit
- Gauge kit 0 – 10,7 bar: N-92006-01 • Gauge kit 0 – 6,7 bar: N-92006-02
- Gauge kit 0-4 bar: N-92006-03

Option:

- Pressure range: PR93A-xxxA (A 0 to 8 bar)
 - B 0 to 5,3 bar
 - C 0 to 2 bar
 - D 0 to 8 bar "A" end, 0 to 5,3 bar "B" end
 - E 0 to 8 bar "B" end, 0 to 5,3 bar "A" end
 - F 0 to 8 bar "A" end, 0 to 2 bar "B" end
 - G 0 to 8 bar "B" end, 0 to 2 bar "A" end
 - H 0 to 5,3 bar "A" end, 0 to 2 bar "B" end
 - J 0 to 5,3 bar "B" end, 0 to 2 bar "A" end

DIMENSIONS

Dimensions shown are metric (mm)





0 p t i o n s

Codification table for voltages / Manual operator / Electrical connection

VALVE CODE ► **-DM- D XX X-X XX**
1 2 3 4

1. VOLTAGE		4. ELECTRICAL CONNECTION	
D-XX X-X XX	VOLTAGE	D-XX X-X XX	ELECTRICAL CONNECTION
DA	24V=/5,4W	BA*	Flying leads
DB	12V=/5,4W	BK*	BA with protection diode
DC	12V=/7,5W	BL*	BA with protection varistor
DD	24V=/7,3W	BM**	Flying leads (solenoid plug-in)
DE	12V=/12,7W	BN**	BM with protection diode
DF	24V=/12,7W	BP**	BM with protection varistor
DK	110V=/4,7W	BG**	BM with ground
DJ	28V=/5,2W	BH**	BM with protection diode & ground
DL	64V=/6W	BJ**	BM with protection varistor & ground
DM	36V=/5,3W	CA*	1/2" NPS conduit with flying leads
DN	6V=/6W	CM*	1/2" NPS metal conduit with flying leads
DR	90V=/6,6W	CN*	1/2" NPS metal conduit with flying leads & ground
DS	110V=/7,3W	DG	Plug-in with ground
DT	75V=/5,6W	DH	Plug-in with diode & ground
DP	48V=/5,8W	DJ	Plug-in with M.O.V. & ground
FA	12V=/1,8W	DM	Plug-in
FB	24V=/1,8W	DN	Plug-in with diode
FE	12V=/2,4W	DP	Plug-in with M.O.V.
FF	24V=/2,4W	JB	Rectangular connector
JA	120V~/60Hz, 110V~/50Hz (2,9W)	JD	Rectangular connector with light
JB	240V~/60Hz, 220V~/50Hz (2,9W)	JM	Rectangular connector, male only
JC	24V~/60Hz, 24V~/50Hz (3,7W)	KA	Square connector
JD	100V~/60Hz, 100V~/50Hz, 110V~/60Hz (3,9W)	KB	Square connector with protection diode
JE	220V~/60Hz (3,4W)	KC	Square connector with protection varistor
JF	240V~/50Hz (2,8W)	KD	Square connector with light
JG	200V~/60Hz, 200V~/50Hz (3,9W)	KE	Square connector with light and protection diode
		KF	Square connector with light and protection varistor
		KG	Square connector with light & diode
		KJ	Square connector (male only)
		KK	Square connector with protection diode (male only)
		KL	Square connector with protection varistor (male only)
		TA	Dual tabs with receptacles
		TB	TA with protection diode
		TD	TA with light
		TE	TA with light and protection diode
		TJ	Dual tabs (male only)
		TK	TJ with protection diode
		TM	TJ with light
		TN	TJ with light and protection diode

2. WIRE LENGTH	
D-XX X-X XX	WIRE LENGTH
O	No wires
A	45 cm – 18"
B	60 cm – 24"
C	90 cm – 36"
D	120 cm – 48"
E	180 cm – 72"
F	240 cm – 96"

3. MANUAL OPERATOR	
D-XX X-X XX	MANUAL OPERATOR
0	No operator
1	Non-locking recessed
2	Locking recessed
3	Non-locking extended
4	Locking extended

* From Lead wire length options choose A through F
 ** From Lead wire length options choose O through F
 Note: When coil is above 30 volts, a ground wire is required. Applies to options with flying leads.