

Direct solenoid and solenoid pilot operated valves

Individual mounting

inline

Series

Manifold mounting

stacking

35

100

200

55

56

57

58

59

45

700

900

82

6300

6500

6600

1300

800

ISO 1

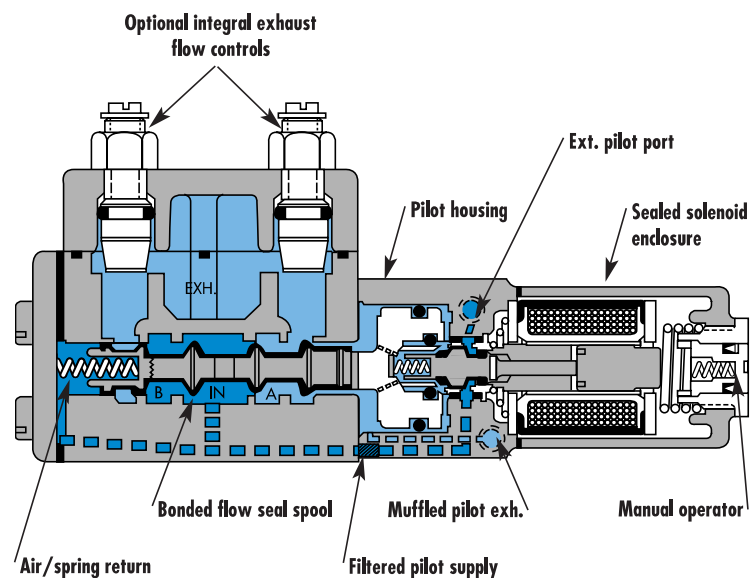
ISO 2

ISO 3

MAC 125A

MAC 250A

MAC 500A



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.



VALVE CONFIGURATIONS AVAILABLE

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

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

SERIES FEATURES-REMOTE AIR PILOT OPERATED VALVES

The remote air versions feature:

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

SERIES FEATURES-REMOTE AIR PILOT, PILOT OPERATED VALVES

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

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

SPECIAL APPLICATIONS:

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

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



Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Individual mounting	Series
4/2	1/8" - 1/4"	0.7 C _v	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 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.



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ISO 1

ISO 2

ISO 3

MAC 125A

MAC 250A

MAC 500A

HOW TO ORDER

Port size	Pilot air	Single operator	Double operator
1/8" NPTF	Internal	711C-11-PI- XXYZZ	721C-11-PI- XXYZZ
1/4" NPTF	Internal	711C-12-PI- XXYZZ	721C-12-PI- XXYZZ
1/8" NPTF	External	711C-11-PE- XXYZZ	721C-11-PE- XXYZZ
1/4" NPTF	External	711C-12-PE- XXYZZ	721C-12-PE- XXYZZ

HOW TO ORDER VALVE WITH FLOW CONTROLS

Port size	Pilot air	Single operator	Double operator
1/8" NPTF	Internal	712C-11-PI- XXYZZ	722C-11-PI- XXYZZ
1/4" NPTF	Internal	712C-12-PI- XXYZZ	722C-12-PI- XXYZZ
1/8" NPTF	External	712C-11-PE- XXYZZ	722C-11-PE- XXYZZ
1/4" NPTF	External	712C-12-PE- XXYZZ	722C-12-PE- XXYZZ

SOLENOID OPERATOR ►

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

* Other options available, see page 349.

OPTIONS

7XXC-XX-PX-**XXYZZ**

- For bottom ports (1/8" only) replace by 2.

TECHNICAL DATA

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

Spare parts :

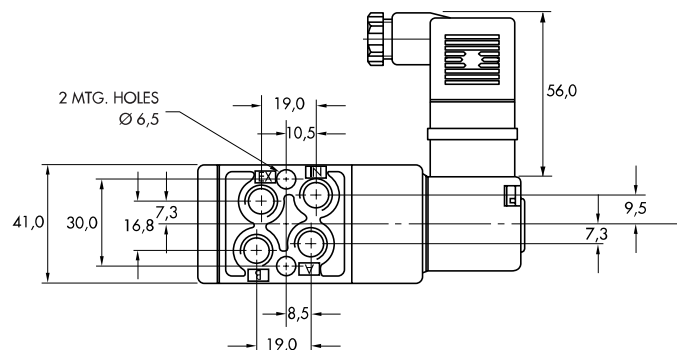
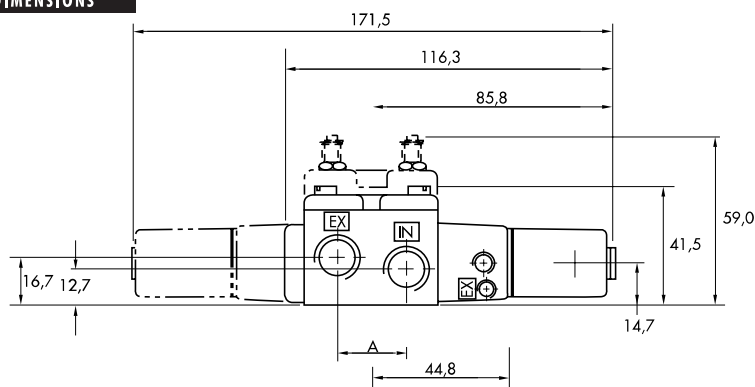
- Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
- Pilot valve : PID-XXYZZ, including mounting screws 35214 and seal 16363.
- Valve cover plate with integral flow controls : N-07002.

Options :

- BSPP threads.

DIMENSIONS

Dimensions shown are metric (mm)



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



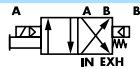
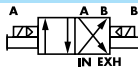
Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	1/8" - 1/4"	0.8 C _v	stacking	

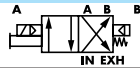
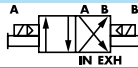
OPERATIONAL BENEFITS

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

HOW TO ORDER

Port size	Pilot air	Single operator	Double operator
			
1/8" NPTF	Internal	713C-11-PI- XXYZZ	723C-11-PI- XXYZZ
1/4" NPTF		713C-12-PI- XXYZZ	723C-12-PI- XXYZZ

HOW TO ORDER VALVE WITH FLOW CONTROLS

Port size	Pilot air	Single operator	Double operator
			
1/8" NPTF	Internal	714C-11-PI- XXYZZ	724C-11-PI- XXYZZ
1/4" NPTF		714C-12-PI- XXYZZ	724C-12-PI- XXYZZ

SOLENOID OPERATOR ►

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

* Other options available, see page 349.

End plate kit required (Port size 1/4") : M-07001-01-01 (internal pilot).
M-07001-02-01 (external pilot).



35

100

200

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57

58

59

45

700

900

82

6300

6500

6600

1300

800

ISO 1

ISO 2

ISO 3

MAC 125A

MAC 250A

MAC 500A

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Internal pilot : single operator : 20 to 150 PSI double operator : 10 to 150 PSI External pilot : vacuum to 150 PSI		
Pilot pressure :	Single operator : 20 to 150 PSI Double operator : 10 to 150 PSI		
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F to 210°F)		
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to 50°C)		
Flow (at 6 bar, ΔP=1bar) :	1/8" : (0.7 C _v), 1/4" : (0.8 C _v)		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	Consult factory		
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA = 1 to 17.1 W		
Response times :	24 VDC (8.5 W)	Energize : 6.4 ms	De-energize : 8.5 ms
	120/60	Energize : 4-10 ms	De-energize : 7-13 ms

Spare parts :

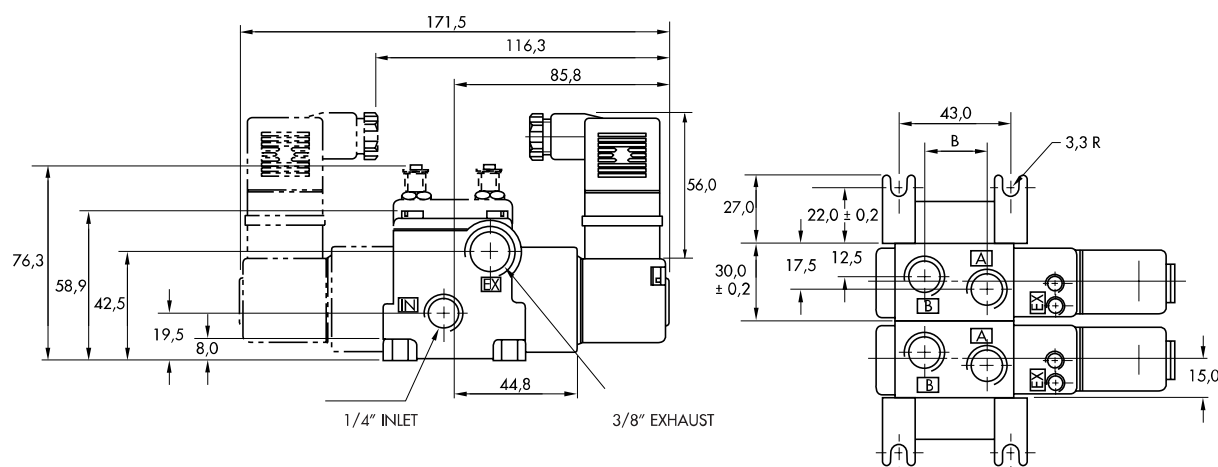
- Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.
- Pilot valve : PID-XXYZZ, including mounting screws 35214 and seal 16363.
- Valve cover plate with integral flow controls : N-07004. • Inlet & exhaust isolator : N-07005. • Inlet isolator : N-07006.
- Exhaust isolator : N-07007.

Options :

- BSPP threads.

DIMENSIONS

Dimensions shown are metric (mm)



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

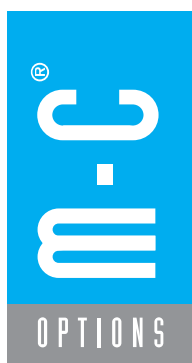


0 p t i 0 n s

Codification table for voltages / Manual operator / Electrical connection / Wire length

VALVE CODE ➤ -XX Y ZZ (-VV)
1 2 3 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. - MAC 125 - MAC 250 - MAC 500	- pilot operated valves with pilots type 200 Series Series : 200 - 57 - 58 - 59.
- Pilot operated valves with pilots "CNOMO" Series : ISO1 - ISO2 - ISO3	



Used on valve series: 100, 55, 56, 700, 800, 900, 6300, 6500, 6600, 1300, MVA1C, MVA2B, MVA3B, MAC125, MAC250, MAC500.

Used on valve series: 200, 57, 58, 59.

1. VOLTAGE (100 Serie type coil)				
- XX	Y	ZZ	VOLTAGE	
11			120/60, 110/50	
12			240/60, 220/50	
13			100/60, 100/50	
15			200/60, 200 /50	
16			10/60	
20			6/60	
21			12/50, 12/60	
22			24/60, 24/50	
23			32/60, 32/50	
24			48/60, 42/50	
26*			380/50, 440/50, 440/60, 480/60	
29			220/60	
34			127/50, 120/50	
35			48/50	
36			16/60	
B1			24/50	
50			24 VDC (6 W)	
51			24 VDC (4 W)	
54			12 VDC (4 W)	
55			12 VDC (6 W)	
57			12 VDC (2.5 W)	
59			24 VDC (2.5 W)	
60			12 VDC (8.5 W)	
61			24 VDC (8.5 W)	
64			6 VDC (6 W)	
65			32 VDC (7 W)	
66			48 VDC (5.8 W)	
67			64 VDC (7.5 W)	
68			120 VDC (6.4 W)	
69*			220 VDC (8.7 W), 250 VDC (11.2 W)	
75			90 VDC (8.8 W)	
76*			100 VDC (6.9 W)	
84*			125 VDC (10.9 W)	
87*			24 VDC (17.1 W)	
88*			12 VDC (17.4 W)	
89*			36 VDC (18.8 W)	
90			28 VDC (8.2 W)	
91*			6 VDC (10.6 W)	
92			190 VDC (6.5 W)	
94			3 VDC (7 W)	
95			38 VDC (6.4 W)	
A1			24 VDC (1 W)	
A2			12 VDC (1 W)	
A3			9 VDC (1 W)	

MOD. DD01 : Protection diode (DC) - MAX. 8.5W

MOD. MOV1 : Protection varistor (AC) - MAX. 8.5W

* Voltages are CLSF only

1. VOLTAGE (200 Serie type coil)				
- XX	Y	ZZ	VOLTAGE	
11			120/60, 110/50, 24 VDC (6 W)	
12			240/60, 220/50	
13			100/60, 100/50	
14			200/60, 200/50	
20			6/60	
21			12/60	
22			24/60, 24/50	
23			32/60, 32/50	
24			48/60, 42/50	
25			240/50	
26			480/60, 440/50	
27			127/60	
28			415/50	
29			220/60	
30			380/50	
31			550/60, 550/50	
32			120/60, 110/50	
33			600/60	
34			127/50	
35			48/50	
50			24 VDC (6 W)	
51			24 VDC (4.5 W)	
52			24 VDC (2.5 W)	
53			24 VDC (1.0 W)	
55			12 VDC (6 W)	
57			12 VDC (2.5 W)	
58			48 VDC (2.5 W)	
60			12 VDC (9.5 W)	
61			24 VDC (8.5 W)	
64			6 VDC (8.5 W)	
65			32 VDC (10 W)	
66			48 VDC (11.5 W)	
67			64 VDC (10.5 W)	
68			120 VDC (12.3 W)	
69			250 VDC (9.2 W)	
71			8 VDC (8.2 W)	
72			24 VDC (12 W)	
73			198 VDC (10 W)	
74			72 VDC (11.3 W)	
75			90 VDC (11.3 W)	
76			100 VDC (9 W)	
77			220 VDC (10 W), 230 VDC (11.6 W)	
78*			24 VDC (24 W)	
80			55 VDC (10.6 W)	
82			170 VDC (11.1 W)	
83			15 VDC (8.1 W)	
84			125 VDC (10 W)	
86			36 VDC (11 W)	
93*			12 VDC (24 W)	

2. MANUAL OPERATOR (Common options for 100 & 200 Series type coils)

- XX Y ZZ	MANUAL OPERATOR		
0	No operator	5*	No Operator with Light
1	Non-locking recessed	6*	Non-Locking Recessed with Light
2	Locking recessed	7*	Locking Recessed with Light
3	Non-locking extended	8*	Non-Locking Extended with Light
4	Locking extended	9*	Locking Extended with Light

* Lights used with "AA" electrical connection

3. ELECTRICAL CONNECTION (100 Serie type coil)

- XX Y ZZ	ELECTRICAL CONNECTION
AA	Wiring box with 1/2" NPS conduit
BA	Flying leads
CA	1/2" NPS conduit
CC	1/2" NPT conduit
FA	Military type 2 PIN
GA	Military type 3 PIN
HA	AA with ground wire
JA*	Square connector
JB	Rectangular connector
JC*	Square connector with light
JD	Rectangular connector with light
JE	Square connector on top (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 (100 Series-Manifold/900 Series)
MB	Electrical common conduit (100 Series-Stacking/700 Series)
NA	CA with ground wire
NC	CC with ground wire
RA	3/8" NPS conduit

* Not to be used with 100, 800 and 900 Series manifold mounting

3. ELECTRICAL CONNECTION (200 Serie type coil)

- XX Y ZZ	ELECTRICAL CONNECTION
AA	Wiring box with 1/2" NPS conduit
BA	Flying leads
CA	1/2" NPS conduit
CC	1/2" NPT conduit
EA	Explosion proof (200 Series)
EA	Explosion proof (57, 58 & 59 Series)
FA	Military type 2 PIN
GA	Military type 3 PIN
HA	AA with ground wire
JA*	Square connector
JC	Square connector with light
JJ	Square connector, male only
NA	CA with ground wire
NC	CC with ground wire



4. COIL WIRE LENGTH (Common options for 100 & 200 Serie type coils)

- XX Y ZZ (-VV)	WIRE LENGTH
AA	18"
AB	24"
AD	36"
AE	48"
AF	72"
AG	6"
AR	12"
AU	120"
BA	60"
BB	144"
Series 6000 : wire length, from the base	
MOD L024	24"
MOD L036	36"
MOD L048	48"
MOD L060	60"
MOD L072	72"
MOD L120	120"