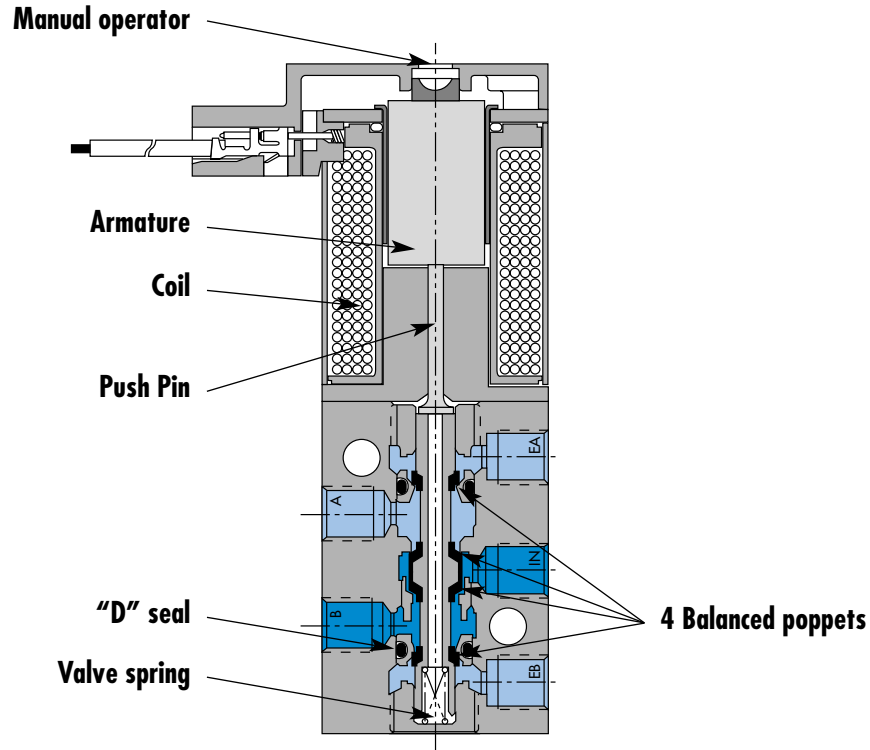


Circuit bar mounting

non plug-in cylinder ports in base	non plug-in cylinder ports in valve	plug-in	plug-in with F. C.	plug-in with Pr. Reg.	plug-in with Pr. Reg. and F. C.	add-on style plug-in	add-on style plug-in with F. C.
add-on style plug-in with Pr. Reg.	add-on style plug-in with Pr. Reg. and F. C.	plug-in add-a-unit stations	plug-in add-a-unit stations with F. C.	plug-in add-a-unit stations with Pr. Reg.	plug-in add-a-unit stations with F. C. and Pr. Reg.		



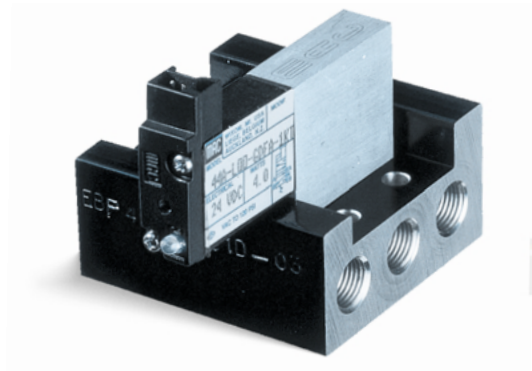
SERIES FEATURES

- High force MACSOLENOID®.
- 10mm direct operated.
- # 10-32 or M5 ports.
- Rated for lubricated or non-lubricated service.
- Cylinder ports in valve or in circuit bar.

Function	Port size	Flow [Max]	Circuit bar mounting
5/2, 3/2 NO-NC	M5 - #10-32	93 NL/min	non plug-in cylinder ports in base


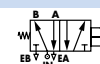
OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Valve	Valve for use with external flow controls
		
Valve less base	44B-100-G xxx-xxx	44B-M00-G xxx-xxx

SOLENOID OPERATOR >

G **XX X- X XX**

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	A 45 cm	1 Non-locking	BA Flying leads
DC 24VDC (1.8 W)	C 90 cm		BT Flying leads with light
DD 24VDC (2.5 W)			KA Mini connector
DF 24VDC (4.0 W)			KT Mini connector with light

HOW TO ORDER CIRCUIT BAR

Port size	Side cylinder ports	Bottom cylinder ports
M5	EBP44B-001D- xx	EBP44B-002D- xx
# 10-32	EBP44B-001B- xx	EBP44B-002B- xx

Number of stations (03=3 stations)

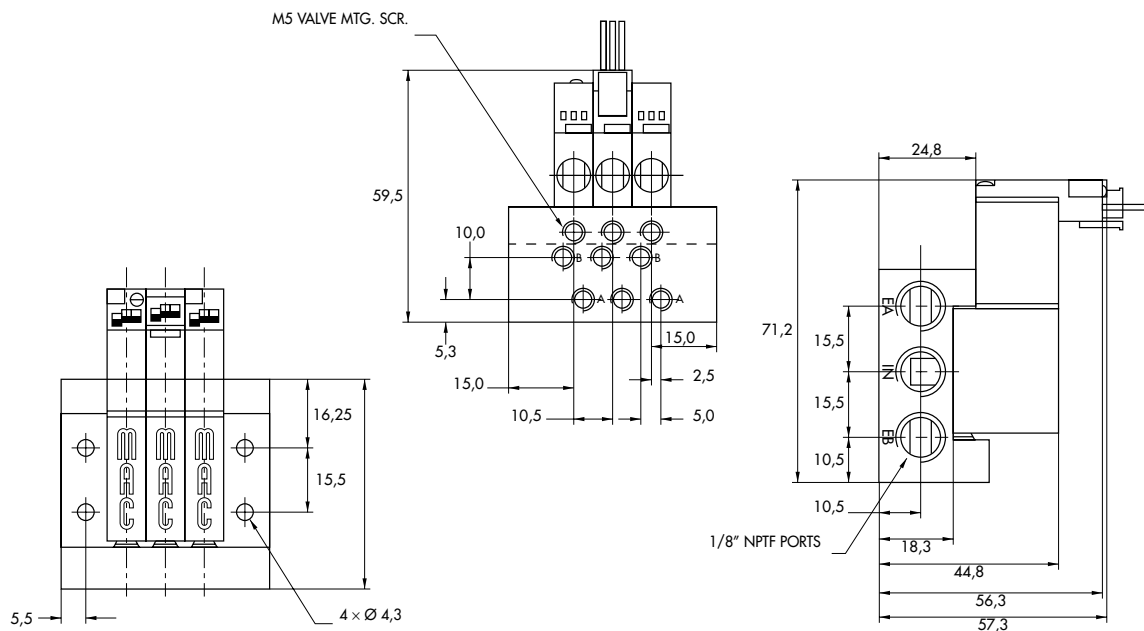
Note : clic for valves mounted on base at the factory (add - 9 to the model number).

**TECHNICAL
DATA**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 93 NL/min, 2.5 W : 77 NL/min, 1.8 W : 57 NL/min, 1.0 W : 48 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 3.4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Valve mounting kit : N-44001-03. • Blanking plate : M-44003.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult Factory.

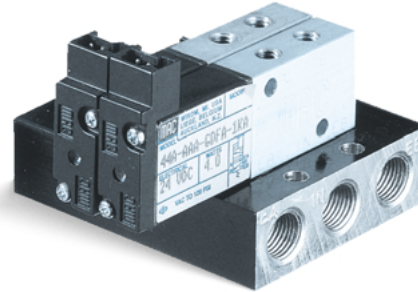
DIMENSIONS



Function	Port size (Inlet & Exhaust)	Flow (Max)	Circuit bar mounting
5/2, 3/2 NO-NC	M5 - 1/8" BSPP	93 NL/min	non plug-in cylinder ports in valve

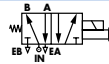

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Valve port size	Valve	Valve for use with external flow controls
		
M5	44B-ABA-Gxxx-xxx	44B-BBA-Gxxx-xxx
# 10-32	44B-AAA-Gxxx-xxx	44B-BAA-Gxxx-xxx

SOLENOID OPERATOR >

G **XX X- X XX***

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	A 45 cm	I Non-locking	BA Flying leads
DC 24VDC (1.8 W)	c 90 cm		BT Flying leads with light
DD 24VDC (2.5 W)			KA Mini connector
DF 24VDC (4.0 W)			KT Mini connector with light

HOW TO ORDER CIRCUIT BAR

Port size COMMON INLET & EXHAUST	
M5	EBM44A-001D-xx
1/8" BSPP	EBM44A-002C-xx

Number of stations (03=3 stations)

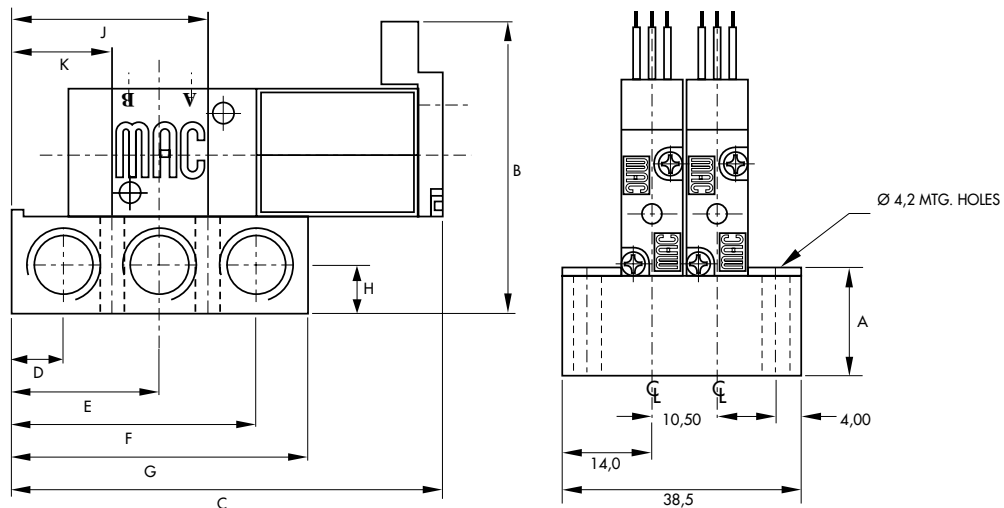
Note : clic for valves mounted on base at the factory (add - 9 to the model number).

**TECHNICAL
DATA**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 93 NL/min, 2.5 W : 77 NL/min, 1.8 W : 57 NL/min, 1.0 W : 48 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 3.5 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Valve mounting kit (M5) : M-44001-21. • Valve mounting kit (1/8") : M-44001-01. • Blanking plate : 30426-A.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult Factory.

DIMENSIONS

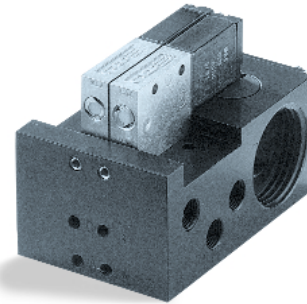


Port size	A	B	C	D	E	F	G	H	J	K
1/8"	16.0	47.5	69.2	8.5	24.0	39.5	48.0	8.0	31.85	16.15
M5	12.0	43.5	63.2	5.0	17.0	29.0	34.0	6.0	23.00	11.00

Function	Port size	Flow [Max]	Circuit bar mounting
5/2, 3/2 NO-NC	M5 - #10-32	90 NL/min	plug-in

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Single operator
Valve less base	 44B-LOO-GXXO-XXX

SOLENOID OPERATOR >

G **XX** O - **X** **XX** *

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	1 Non-locking	DJ Plug-in
DC 24VDC (1.8 W)		DT Plug-in with light
DD 24VDC (2.5 W)		DE Plug-in with suppression diode
DF 24VDC (4.0 W)		DV Plug-in with light and suppression diode

HOW TO ORDER CIRCUIT BAR

Port size	Side cylinder ports (10.5 mm)	Bottom cylinder ports (10.5 mm)
M5	ECD044B-001AD-AOXX	ECD044B-002AD-AOXX
# 10-32	ECD044B-001AB-AOXX	ECD044B-002AB-AOXX

Number of stations (03=3 stations)

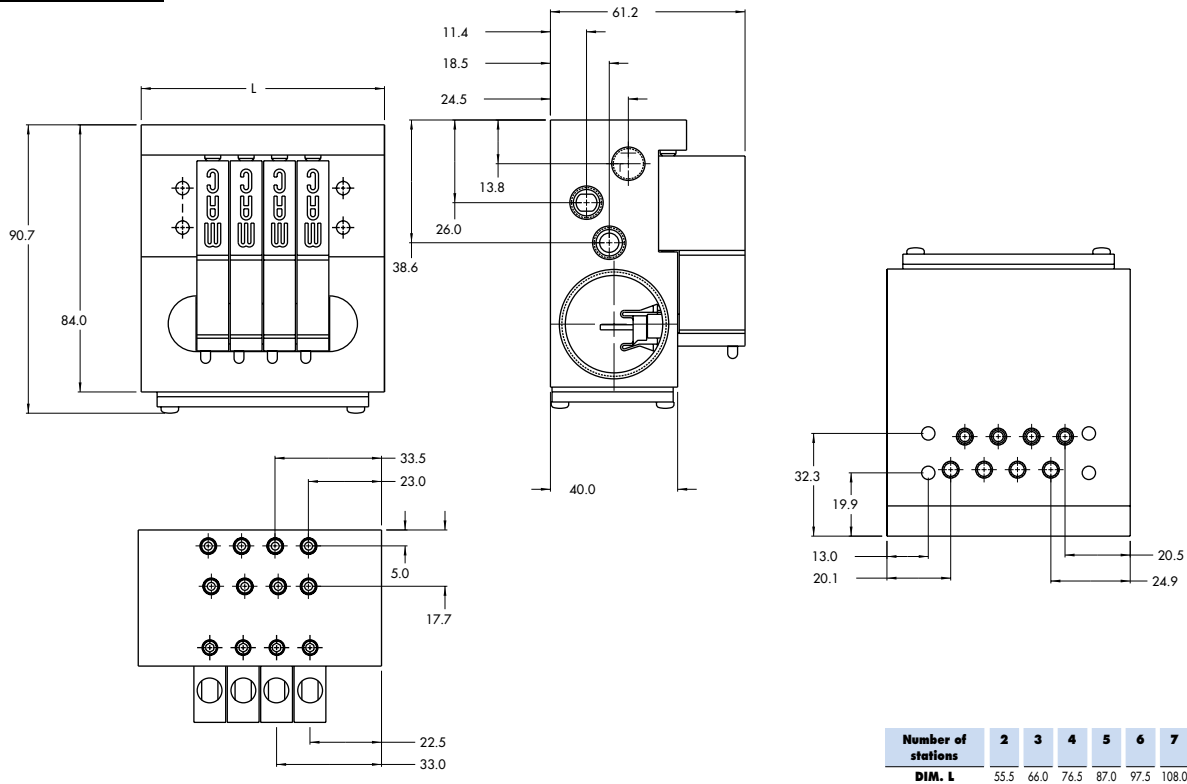
Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 clic for multi-pin connector option (9, 15 or 25).

**TECHNICAL
DATA**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 90 NL/min, 2.5 W : 80 NL/min, 1,8 W : 60 NL/min, 1.0 W : 50 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Valve mounting kit : N-44001-03. • Blanking plate : M-44003.
- Options : • Isolation of inlet and/or exhaust. • BSPP Threads.

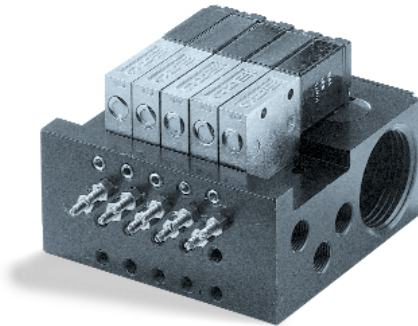
DIMENSIONS



Function	Port size	Flow [Max]	Circuit bar mounting
5/2, 3/2 NO-NC	M5 - #10-32	80 NL/min	plug-in with F. C.

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Single operator
Valve less base	 44B-MOO-GxxO-xxx

SOLENOID OPERATOR >

G **XX** O - **X** **XX** *

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	I Non-locking	DJ Plug-in
DC 24VDC (1.8 W)		DT Plug-in with light
DD 24VDC (2.5 W)		DE Plug-in with suppression diode
DF 24VDC (4.0 W)		DV Plug-in with light and suppression diode

HOW TO ORDER CIRCUIT BAR WITH FLOW CONTROLS

Port size	Side cylinder ports (10.5 mm)	Bottom cylinder ports (10.5 mm)
M5	ECD044B-005AD-AOxx	ECD044B-006AD-AOxx
# 10-32	ECD044B-005AB-AOxx	ECD044B-006AB-AOxx

Number of stations (03=3 stations)

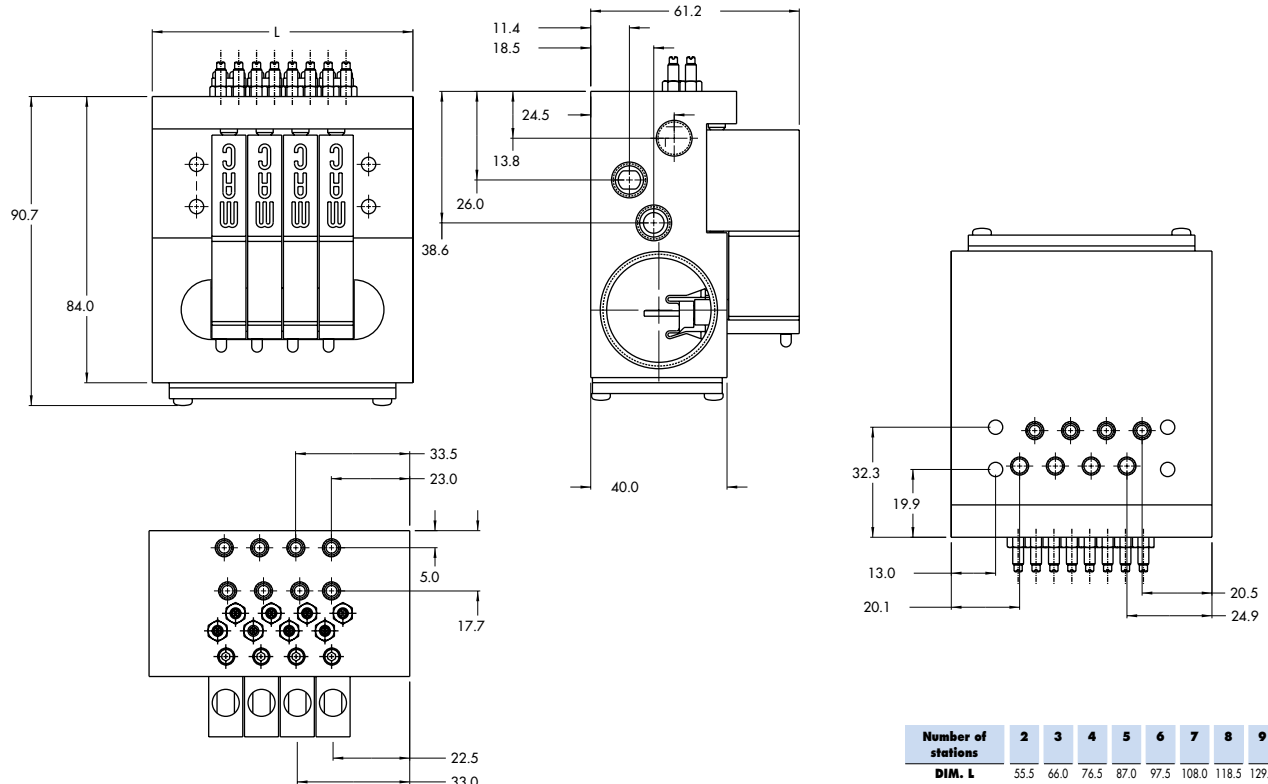
Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 clic for multi-pin connector option (9, 15 or 25).

**TECHNICAL
DATA**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 90 NL/min, 2.5 W : 80 NL/min, 1.8 W : 60 NL/min, 1.0 W : 50 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note :
 - Valve and coil are not interchangeable.
- Spare parts :
 - Valve mounting kit : N-44001-03. • Blanking plate : M-44003. • Flow control needle (x2): N-44002.
 - Base wire Plug-in protector : 24180.
- Options :
 - Isolation of inlet and/or exhaust. • BSPP Threads.

DIMENSIONS



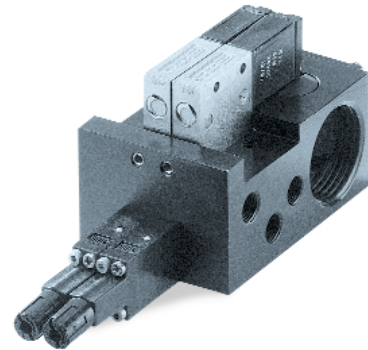
Number of stations	2	3	4	5	6	7	8	9	10
DIM. L	55.5	66.0	76.5	87.0	97.5	108.0	118.5	129.0	139.5

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

Function	Port size	Flow [Max]	Circuit bar mounting
5/2, 3/2 NO-NC	M5 - #10-32	80 NL/min	plug-in with Pr. Reg.


OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Single operator
Valve less base	 44B-LOO-GxxO-xxx

SOLENOID OPERATOR >

G **XX** O- **X** **XX***

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	I Non-locking	DJ Plug-in
DC 24VDC (1.8 W)		DT Plug-in with light
DD 24VDC (2.5 W)		DE Plug-in with suppression diode
DF 24VDC (4.0 W)		DV Plug-in with light and suppression diode

HOW TO ORDER CIRCUIT BAR FOR PRESSURE REGULATORS** (to be ordered separately)

Port size	Bottom cylinder ports (10,5 mm)
M5	ECD044B-004AD-A0-xx
# 10-32	ECD044B-004AB-A0-xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 clic for multi-pin connector option (9, 15 or 25).

** Pressure Regulators :

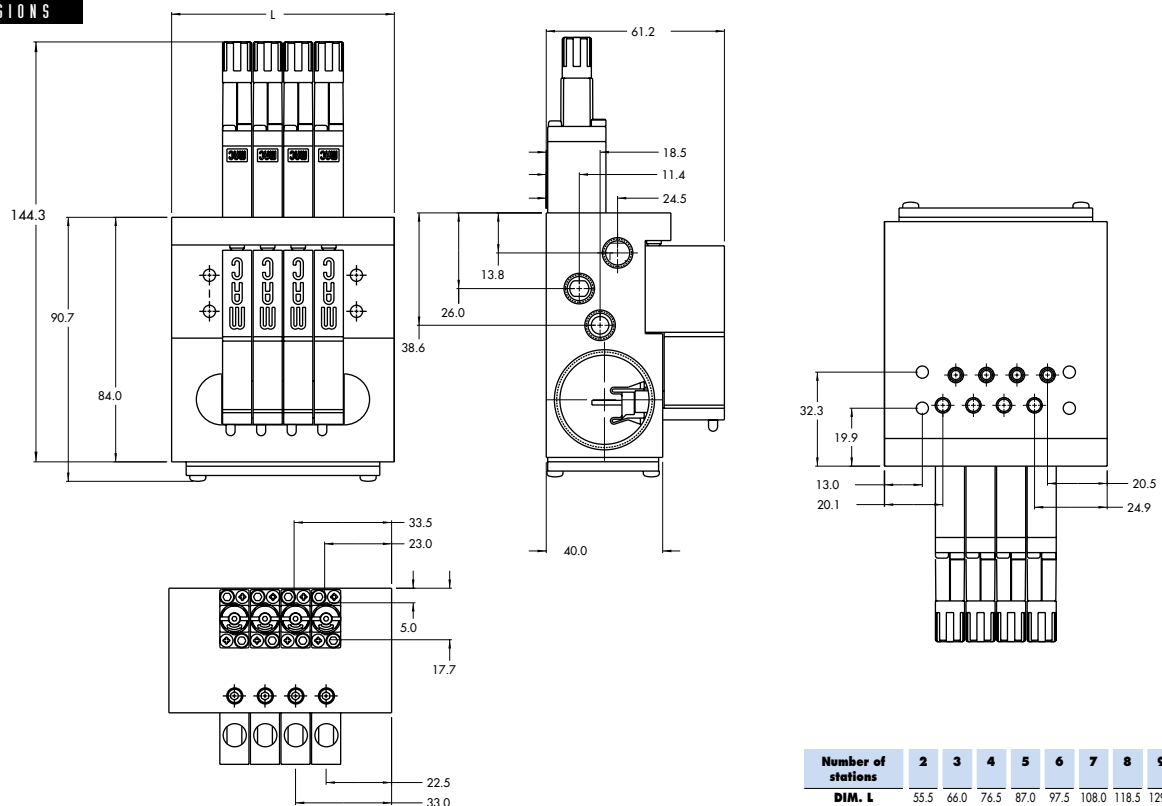
- Y=A (no gage port)
- Y=B (with gage port)
- X=A (0 to 6.7 BAR)
- X=B (0 to 4 BAR)
- X=C (0 to 2.7 BAR)
- X=D (0 to 1 BAR)

**TECHNICAL
DATA**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 90 NL/min, 2.5 W : 80 NL/min, 1,8 W : 60 NL/min, 1.0 W : 50 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note :
- Valve and coil are not interchangeable.
 - Pressure range regulators : (0-100 PSI).
- Spare parts :
- Valve mounting kit : N-44001-03. • Blanking plate : M-44003. • Blanking plate regulator: N-44003.
 - Base wire Plug-in protector : 24180.
- Options :
- Isolation of inlet and/or exhaust. • BSPP Threads.

DIMENSIONS

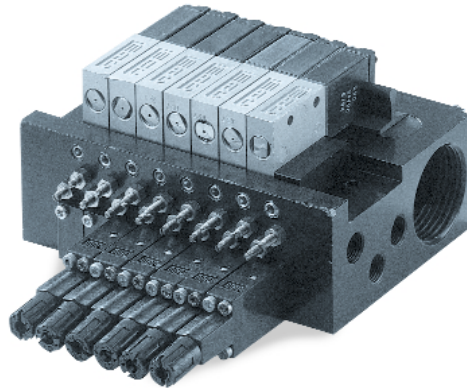


Consult "Precautions" before use, installation or service of MAC Valves.

Function	Port size	Flow [Max]	Circuit bar mounting
5/2, 3/2 NO-NC	M5 - #10-32	70 NL/min	plug-in with Pr. Reg. and F. C.

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Single operator
Valve less base	 44B-MOO-GxxO-xxx

SOLENOID OPERATOR >

G **XX** O- **X** **XX***

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	1 Non-locking	DJ Plug-in
DC 24VDC (1.8 W)		DT Plug-in with light
DD 24VDC (2.5 W)		DE Plug-in with suppression diode
DF 24VDC (4.0 W)		DV Plug-in with light and suppression diode

HOW TO ORDER CIRCUIT BAR WITH FLOW CONTROLS AND PRESSURE REGULATORS** (pressure regulators to be ordered separately)

Port size	Bottom cylinder ports (10,5 mm)
M5	ECD044B-007AD-A0-xx
# 10-32	ECD044B-007AB-A0-xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 clic for multi-pin connector option (9, 15 or 25).

** Pressure Regulators :

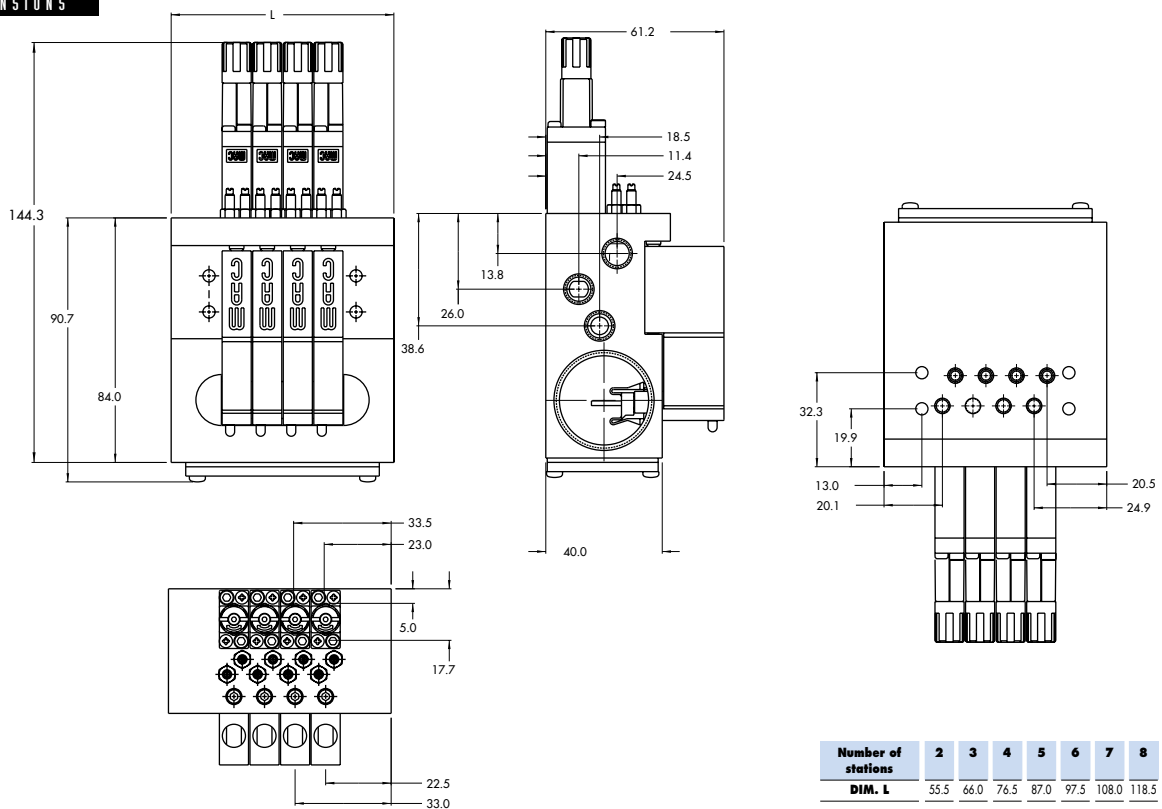
- Y=A (no gage port)
- Y=B (with gage port)
- X=A (0 to 6.7 BAR)
- X=B (0 to 4 BAR)
- X=C (0 to 2.7 BAR)
- X=D (0 to 1 BAR)

**TECHNICAL
DATA**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 70 NL/min, 2.5 W : 60 NL/min, 1,8 W : 60 NL/min, 1.0 W : 50 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note :
- Valve and coil are not interchangeable.
 - Pressure range regulators : (0-100 PSI).
- Spare parts :
- Valve mounting kit : N-44001-03. • Blanking plate : M-44003. • Blanking plate regulator: N-44003.
 - Base wire Plug-in protector : 24180.
- Options :
- Isolation of inlet and/or exhaust. • BSPP Threads.

DIMENSIONS

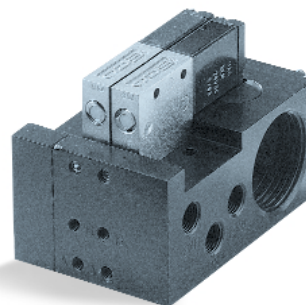


Consult "Precautions" before use, installation or service of MAC Valves.

Function	Port size	Flow [Max]	Circuit bar mounting
5/2, 3/2 NO-NC	M5 - #10-32	90 NL/min	add-on style plug-in

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Single operator
Valve less base	 44B-LOO-GxxO-xxx

SOLENOID OPERATOR >

G **XX** O- **X** **XX***

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	1 Non-locking	DJ Plug-in
DC 24VDC (1.8 W)		DT Plug-in with light
DD 24VDC (2.5 W)		DE Plug-in with suppression diode
DF 24VDC (4.0 W)		DV Plug-in with light and suppression diode

HOW TO ORDER CIRCUIT BAR

Port size	Side cylinder ports (10.5 mm)	Bottom cylinder ports (10.5 mm)
M5	ECD044B-001BD-AOxx	ECD044B-002BD-AOxx
# 10-32	ECD044B-001BB-AOxx	ECD044B-002BB-AOxx

Number of stations (03=3 stations)

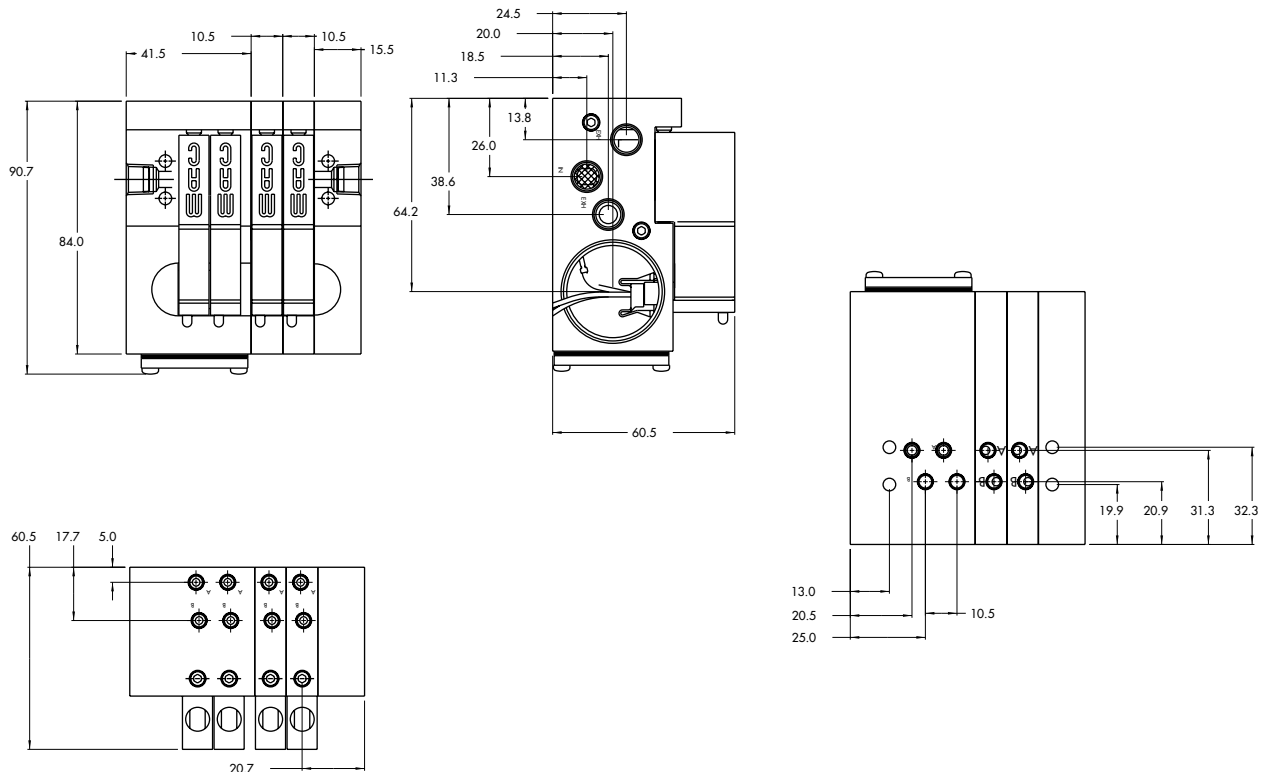
- Note :
- clic for valves mounted on base at the factory (add - 9 to the model number).
 - clic for multi-pin connector option (9, 15 or 25).
 - add-a-unit stations may be added to above bars.

**TECHNICAL
D A T A**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 90 NL/min, 2.5 W : 80 NL/min, 1,8 W : 60 NL/min, 1.0 W : 50 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note :
 - Valve and coil are not interchangeable.
- Spare parts :
 - Valve mounting kit : N-44001-03. • Blanking plate : M-44003.
- Options :
 - Isolation of inlet and/or exhaust. • BSPP Threads.

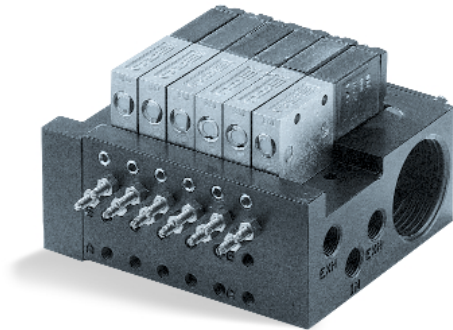
DIMENSIONS



Function	Port size	Flow [Max]	Circuit bar mounting
5/2, 3/2 NO-NC	M5 - #10-32	80 NL/min	add-on style plug-in with F. C.

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Single operator
Valve less base	 44B-MOO-GxxO-xxx

SOLENOID OPERATOR >

G **XX** O- X **XX** *

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	1 Non-locking	DJ Plug-in
DC 24VDC (1.8 W)		DT Plug-in with light
DD 24VDC (2.5 W)		DE Plug-in with suppression diode
DF 24VDC (4.0 W)		DV Plug-in with light and suppression diode

HOW TO ORDER CIRCUIT BAR WITH FLOW CONTROLS

Port size	Side cylinder ports (10.5 mm)	Bottom cylinder ports (10.5 mm)
M5	ECD044B-005BD-AOxx	ECD044B-006BD-AOxx
# 10-32	ECD044B-005BB-AOxx	ECD044B-006BB-AOxx

Number of stations (03=3 stations)

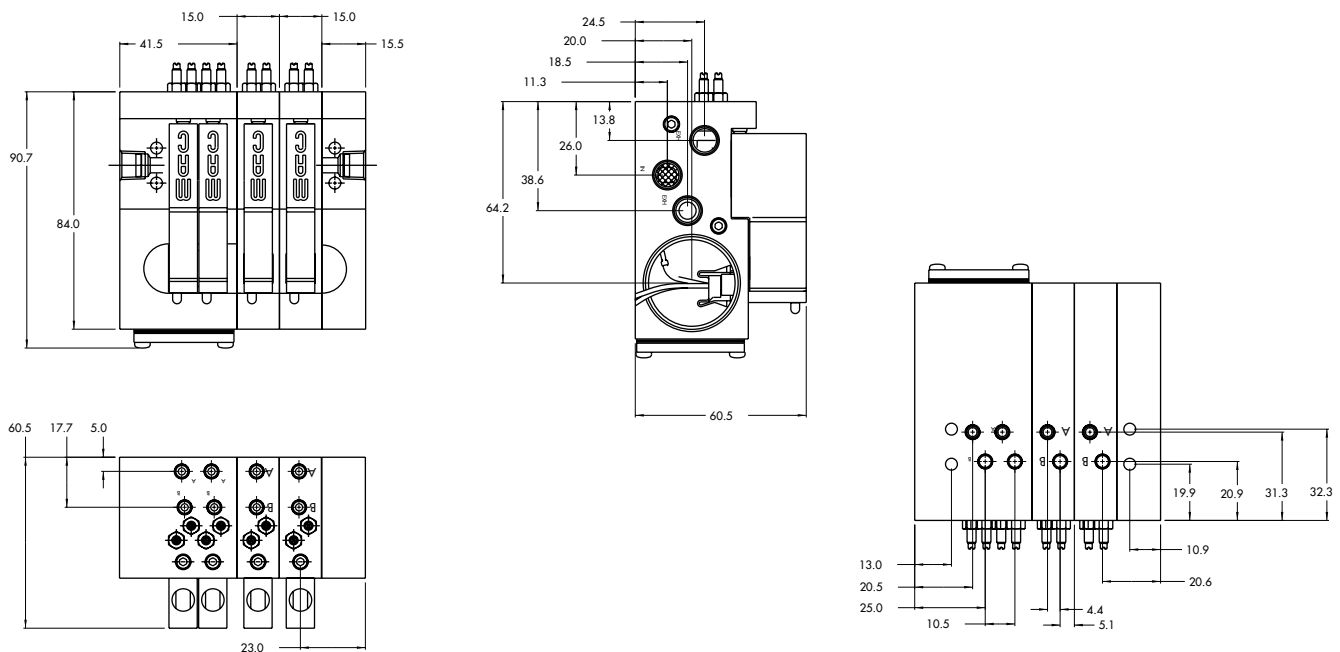
Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 clic for multi-pin connector option (9, 15 or 25).
 add-a-unit stations may be added to above bars.

**TECHNICAL
DATA**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 90 NL/min, 2.5 W : 80 NL/min, 1.8 W : 60 NL/min, 1.0 W : 50 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note :
 - Valve and coil are not interchangeable.
- Spare parts :
 - Valve mounting kit : N-44001-03. • Blanking plate : M-44003. • Flow control needle (x2): N-44002.
 - Base wire Plug-in protector : 24180.
- Options :
 - Isolation of inlet and/or exhaust. • BSPP Threads.

DIMENSIONS



Function	Port size	Flow [Max]	Circuit bar mounting
5/2, 3/2 NO-NC	M5 - #10-32	80 NL/min	add-on style plug-in with Pr. Reg.

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER



HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Single operator
Valve less base	 44B-LOO-GxxO-xxx

SOLENOID OPERATOR >

G **XX** O- **X** **XX***

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	1 Non-locking	DJ Plug-in
DC 24VDC (1.8 W)		DT Plug-in with light
DD 24VDC (2.5 W)		DE Plug-in with suppression diode
DF 24VDC (4.0 W)		DV Plug-in with light and suppression diode



HOW TO ORDER CIRCUIT BAR FOR PRESSURE REGULATORS** (to be ordered separately)

Port size	Bottom cylinder ports (10,5 mm)
M5	ECD044B-004BD-A0-xx
# 10-32	ECD044B-004BB-A0-xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 clic for multi-pin connector option (9, 15 or 25).
 add-a-unit stations may be added to above bars.

** Pressure Regulators :



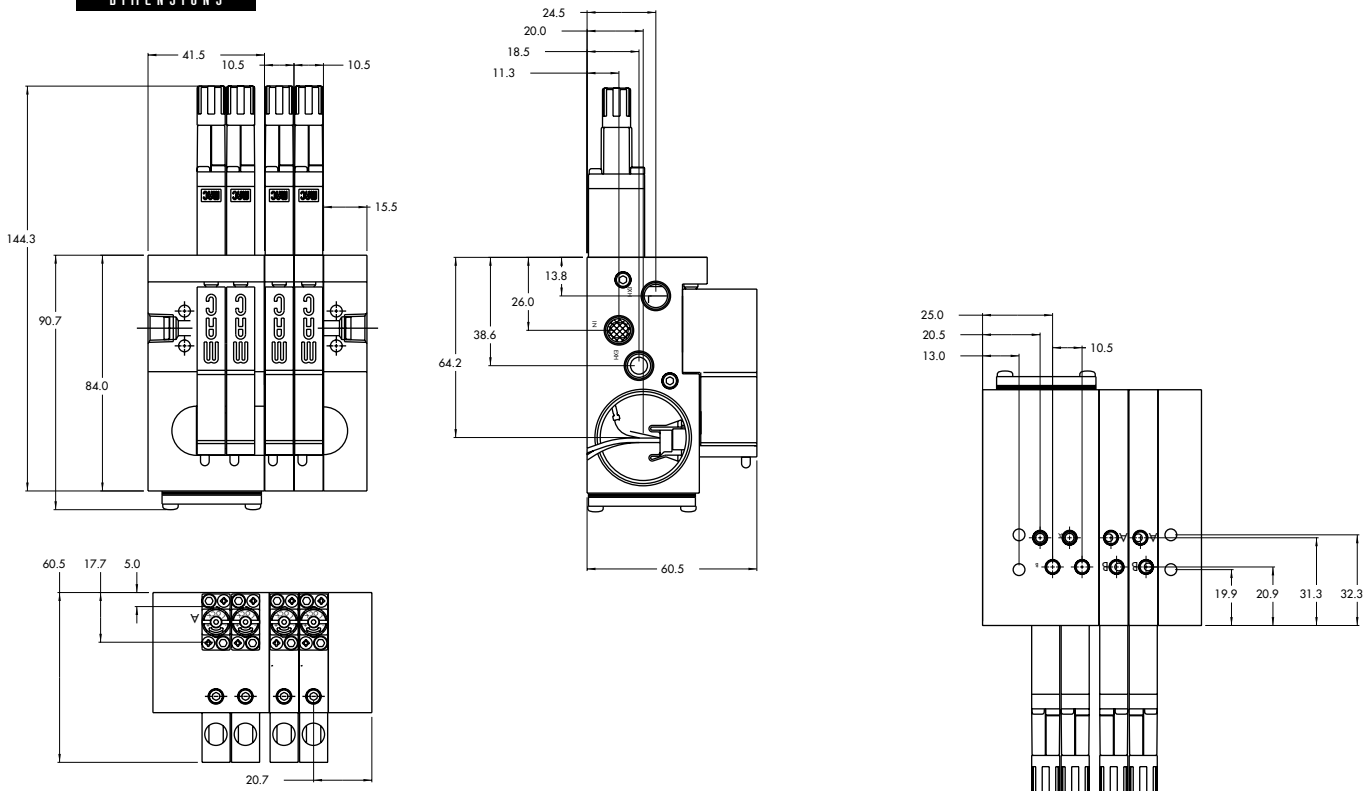
- Y=A (no gage port)
- Y=B (with gage port)
- X=A (0 to 6.7 BAR)
- X=B (0 to 4 BAR)
- X=C (0 to 2.7 BAR)
- X=D (0 to 1 BAR)

**TECHNICAL
DATA**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 90 NL/min, 2.5 W : 80 NL/min, 1.8 W : 60 NL/min, 1.0 W : 50 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note :
- Valve and coil are not interchangeable.
 - Pressure range regulators : (0-100 PSI).
- Spare parts :
- Valve mounting kit : N-44001-03. • Blanking plate : M-44003. • Blanking plate regulator: N-44003.
 - Base wire Plug-in protector : 24180.
- Options :
- Isolation of inlet and/or exhaust. • BSPP Threads.

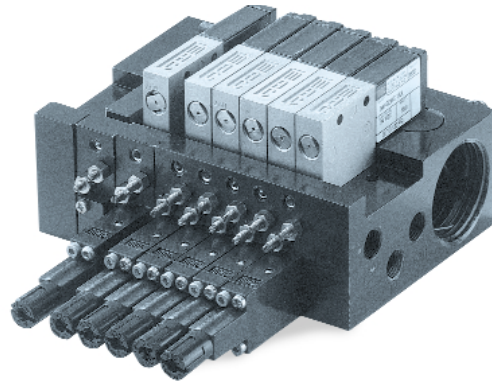
DIMENSIONS



Function	Port size	Flow [Max]	Circuit bar mounting
5/2, 3/2 NO-NC	M5 - #10-32	70 NL/min	add-on style plug-in with Pr. Reg. and F. C.

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Single operator
Valve less base	 44B-MOO-GxxO-xxx

SOLENOID OPERATOR >

G **XX** O- **X** **XX***

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	1 Non-locking	DJ Plug-in
DC 24VDC (1.8 W)		DT Plug-in with light
DD 24VDC (2.5 W)		DE Plug-in with suppression diode
DF 24VDC (4.0 W)		DV Plug-in with light and suppression diode

HOW TO ORDER CIRCUIT BAR WITH FLOW CONTROLS AND PRESSURE REGULATORS** (pressure regulators to be ordered separately)

Port size	Bottom cylinder ports (10,5 mm)
M5	ECD044B-007BD-A0-xx
# 10-32	ECD044B-007BB-A0-xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 clic for multi-pin connector option (9, 15 or 25).
 add-a-unit stations may be added to above bars.

** Pressure Regulators :

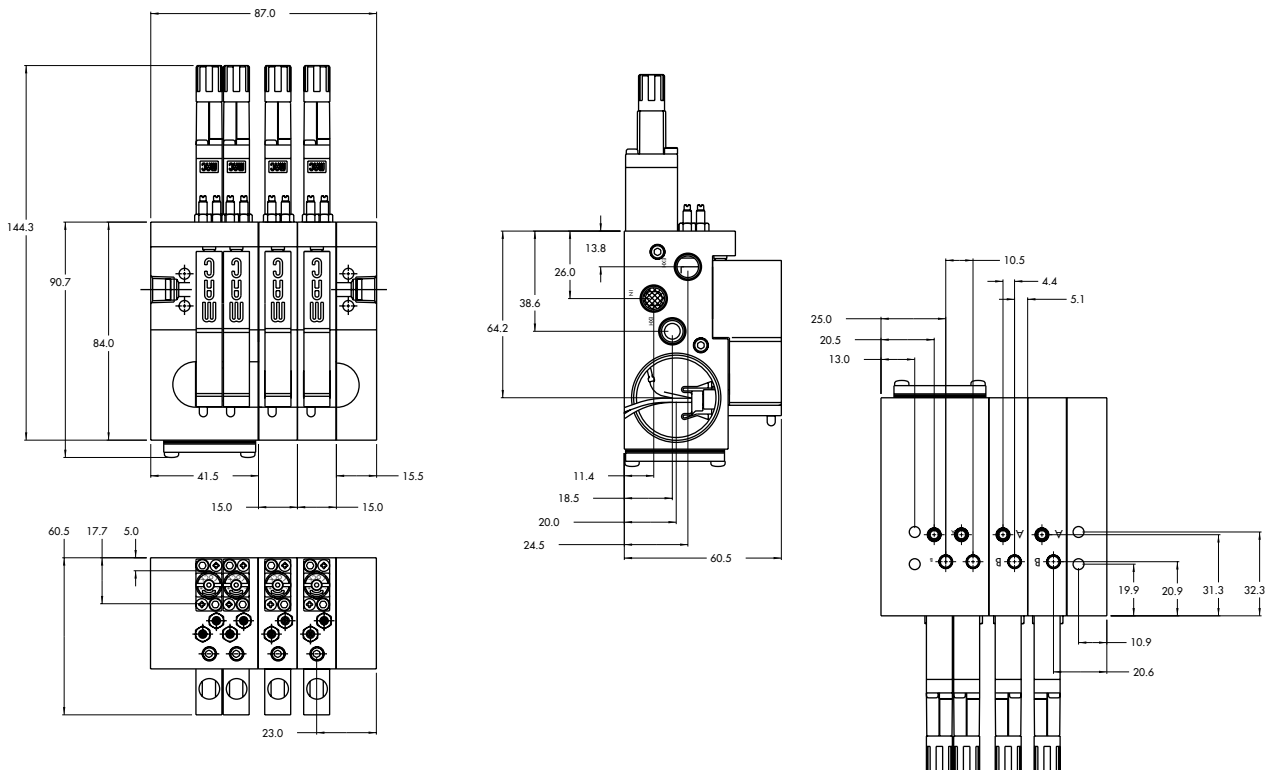
- Y=A (no gage port)
- Y=B (with gage port)
- X=A (0 to 6.7 BAR)
- X=B (0 to 4 BAR)
- X=C (0 to 2.7 BAR)
- X=D (0 to 1 BAR)

**TECHNICAL
DATA**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 70 NL/min, 2.5 W : 60 NL/min, 1,8 W : 60 NL/min, 1.0 W : 50 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note :
- Valve and coil are not interchangeable.
 - Pressure range regulators : (0-100 PSI).
- Spare parts :
- Valve mounting kit : N-44001-03. • Blanking plate : M-44003. • Blanking plate regulator: N-44003.
 - Base wire Plug-in protector : 24180.
- Options :
- Isolation of inlet and/or exhaust. • BSPP Threads.

DIMENSIONS





Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow [Max]	Circuit bar mounting
5/2	M5 - #10-32	90 NL/min	plug-in add-a-unit stations

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER



HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Single operator
Valve less base	 44B-LOO-GxxO-xxx

SOLENOID OPERATOR >

G **XX** O- **X** **XX**'

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	1 Non-locking	DJ Plug-in
DC 24VDC (1.8 W)		DT Plug-in with light
DD 24VDC (2.5 W)		DE Plug-in with suppression diode
DF 24VDC (4.0 W)		DV Plug-in with light and suppression diode



HOW TO ORDER CIRCUIT BAR

Port size	Side cylinder ports	Bottom cylinder ports
M5	ECD044B-001CD-AOxx	ECD044B-002CD-AOxx
# 10-32	ECD044B-001CB-AOxx	ECD044B-002CB-AOxx

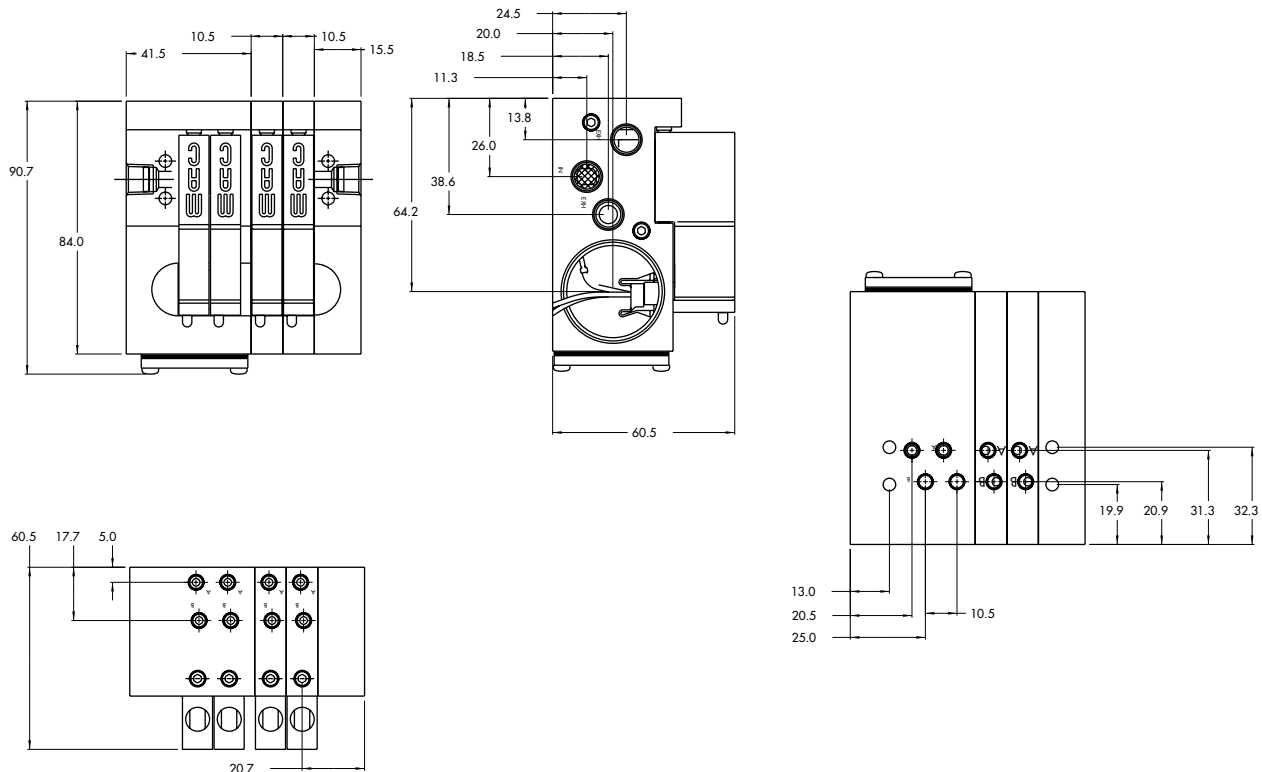
Number of stations (03=3 stations) - Maximum length is 4 stations
 Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 when add-a-unit stations are added to bars with a multi-pin connector,
 MOD. SD03 should be included with add-a-unit model number.

**TECHNICAL
DATA**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 90 NL/min, 2.5 W : 80 NL/min, 1.8 W : 60 NL/min, 1.0 W : 50 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Valve mounting kit : N-44001-03. • Blanking plate : M-44003.
- Options : • Isolation of inlet and/or exhaust. • BSPP Threads.

DIMENSIONS



Function	Port size	Flow [Max]	Circuit bar mounting
5/2	M5 - #10-32	80 NL/min	plug-in add-a-unit stations with F. C.

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER



HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Single operator
Valve less base	 44B-MOO-GXXO-XXX

SOLENOID OPERATOR >

G **XX** O- **X** **XX**'

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	1 Non-locking	DJ Plug-in
DC 24VDC (1.8 W)		DT Plug-in with light
DD 24VDC (2.5 W)		DE Plug-in with suppression diode
DF 24VDC (4.0 W)		DV Plug-in with light and suppression diode



HOW TO ORDER CIRCUIT BAR WITH FLOW CONTROLS

Port size	Side cylinder ports	Bottom cylinder ports
M5	ECD044B-005CD-AOXX	ECD044B-006CD-AOXX
# 10-32	ECD044B-005CB-AOXX	ECD044B-006CB-AOXX

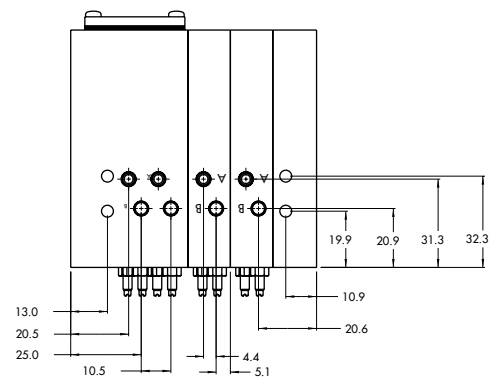
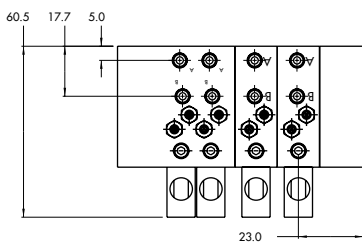
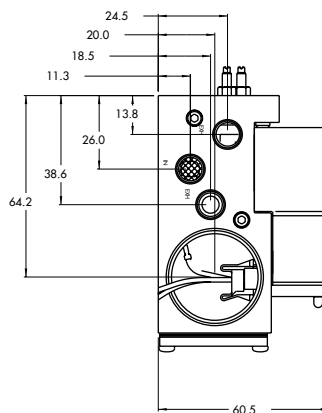
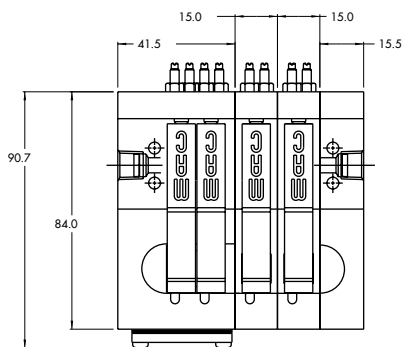
Number of stations (03=3 stations) - Maximum length is 4 stations
 Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 when add-a-unit stations are added to bars with a multi-pin connector,
 MOD. SD03 should be included with add-a-unit model number.

**TECHNICAL
DATA**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 90 NL/min, 2.5 W : 80 NL/min, 1.8 W : 60 NL/min, 1.0 W : 50 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note :
 - Valve and coil are not interchangeable.
- Spare parts :
 - Valve mounting kit : N-44001-03. • Blanking plate : M-44003. • Flow control needle (x2): N-44002.
 - Base wire Plug-in protector : 24180.
- Options :
 - Isolation of inlet and/or exhaust. • BSPP Threads.

DIMENSIONS



Function	Port size	Flow [Max]	Circuit bar mounting
5/2	M5 - #10-32	80 NL/min	plug-in add-a-unit stations with Pr. Reg.

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER



HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Single operator
Valve less base	 44B-LOO-GxxO-xxx

SOLENOID OPERATOR >

G **XX** O- **X** **XX**'

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	1 Non-locking	DJ Plug-in
DC 24VDC (1.8 W)		DT Plug-in with light
DD 24VDC (2.5 W)		DE Plug-in with suppression diode
DF 24VDC (4.0 W)		DV Plug-in with light and suppression diode



HOW TO ORDER CIRCUIT BAR FOR PRESSURE REGULATORS ** (to be ordered separately)

Port size	Bottom cylinder ports (10,5 mm)
M5	ECD044B-004CD-AOxx
# 10-32	ECD044B-004CB-AOxx

Number of stations (03=3 stations) - Maximum length is 4 stations
 Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 when add-a-unit stations are added to bars with a multi-pin connector,
 MOD. SD03 should be included with add-a-unit model number.

** Regulator ordered separately-see below :



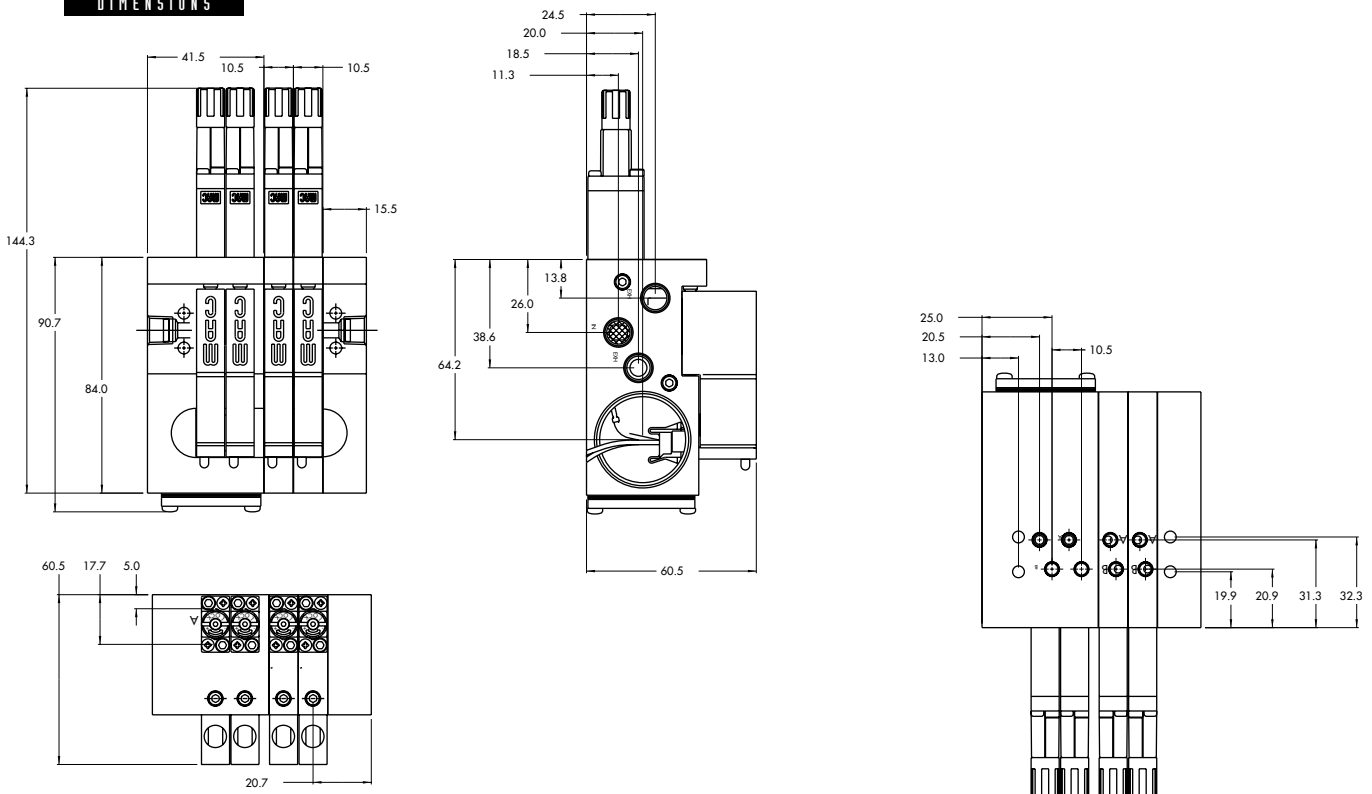
- Y=A (no gage port)
- Y=B (with gage port)
- X=A (0 to 6.7 BAR)
- X=B (0 to 4 BAR)
- X=C (0 to 2.7 BAR)
- X=D (0 to 1 BAR)

**TECHNICAL
D A T A**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 90 NL/min, 2.5 W : 80 NL/min, 1,8 W : 60 NL/min, 1.0 W : 50 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note :
- Valve and coil are not interchangeable.
 - Pressure range regulators : (0-100 PSI).
- Spare parts :
- Valve mounting kit : N-44001-03. • Blanking plate : M-44003. • Blanking plate regulator: N-44003.
 - Base wire Plug-in protector : 24180.
- Options :
- Isolation of inlet and/or exhaust. • BSPP Threads.

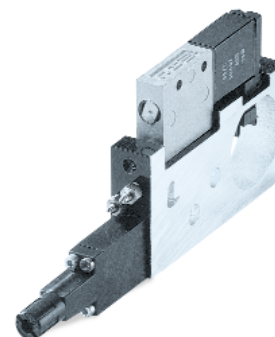
DIMENSIONS



Function	Port size	Flow [Max]	Circuit bar mounting
5/2	M5 - #10-32	70 NL/min	plug-in add-a-unit stations with F. C. and Pr. Reg.

OPERATIONAL BENEFITS

1. 10 mm valve, direct solenoid operated.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Flow is specifically adjusted on each valve.
7. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Single operator
Valve less base	 44B-MOO-GxxO-xxx

SOLENOID OPERATOR >

G **XX** O - **X** **XX** *

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (1.0 W)	1 Non-locking	DJ Plug-in
DC 24VDC (1.8 W)		DT Plug-in with light
DD 24VDC (2.5 W)		DE Plug-in with suppression diode
DF 24VDC (4.0 W)		DV Plug-in with light and suppression diode

HOW TO ORDER CIRCUIT BAR WITH FLOW CONTROLS AND PRESSURE REGULATORS ** (pressure regulators to be ordered separately)

Port size	Bottom cylinder ports (10,5 mm)
M5	ECD044B-007CD-AOxx
# 10-32	ECD044B-007CB-AOxx

Number of stations (03=3 stations) - Maximum length is 4 stations
 Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 when add-a-unit stations are added to bars with a multi-pin connector,
 MOD. SD03 should be included with add-a-unit model number.

** Regulator ordered separately-see below :

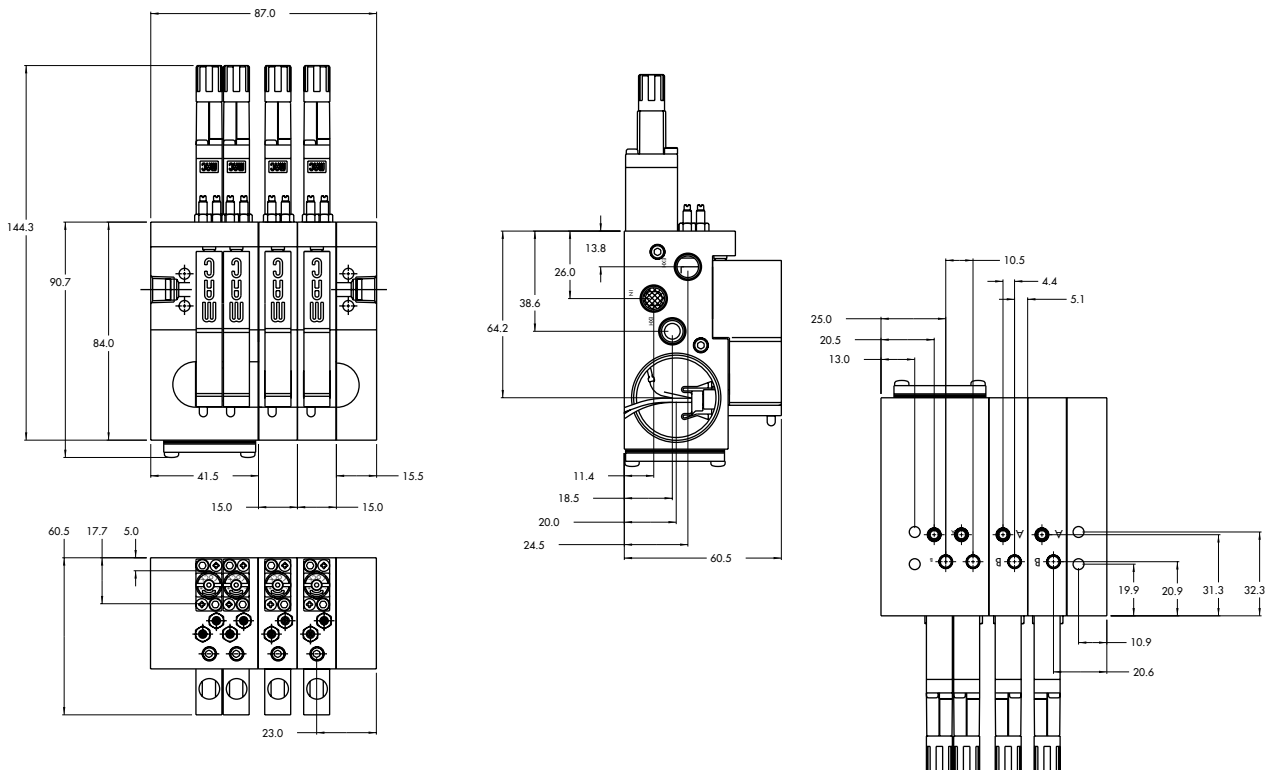
- Y=A (no gage port)
- Y=B (with gage port)
- X=A (0 to 6.7 BAR)
- X=B (0 to 4 BAR)
- X=C (0 to 2.7 BAR)
- X=D (0 to 1 BAR)

**TECHNICAL
DATA**

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 :	0°F to 120°F (-18°C to +50°C)
Orifice :	1.8 mm
Flow (at 6 bar, ΔP=1bar) :	4 W : 70 NL/min, 2.5 W : 60 NL/min, 1,8 W : 60 NL/min, 1.0 W : 50 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	4 W - 2.5 W - 1.8 W - 1.0 W
Response times :	Energize : 4 ms
(with 4 W coil)	De-energize : 1.5 ms

- Note :
- Valve and coil are not interchangeable.
 - Pressure range regulators : (0-100 PSI).
- Spare parts :
- Valve mounting kit : N-44001-03. • Blanking plate : M-44003. • Blanking plate regulator: N-44003.
 - Base wire Plug-in protector : 24180.
- Options :
- Isolation of inlet and/or exhaust. • BSPP Threads.

DIMENSIONS





Section 2 Options



0 p t i o n s

Codification table for voltages / Manual operator / Electrical connection

VALVE CODE ➤ **-GXX X - X XX**
1 2 3 4

OPTIONS AVAILABLE FOR

- solenoid valves 34 & 44 Series

1. VOLTAGE (type 34 Series)		1. VOLTAGE (type 44 Series)	
-G XX X - X XX	VOLTAGE	-G XX X - X XX	VOLTAGE
DC	24 VDC (1,8 W)	DA	24 VDC (1,0 W)
DD	24 VDC (2,5 W)	DC	24 VDC (1,8 W)
DE	24 VDC (3,0 W)	DD	24 VDC (2,5 W)
DF	24 VDC (4,0 W)	DF	24 VDC (4,0 W)
DJ	12 VDC (1,8 W)	DG	12 VDC (1,0 W)
DK	12 VDC (2,5 W)	DJ	12 VDC (1,8 W)
DM	12 VDC (3,0 W)	DK	12 VDC (2,5 W)
DN	12 VDC (4,0 W)	DN	12 VDC (4,0 W)

2. WIRE LENGTH (Common options for 34 & 44 Series)	
-G XX X - X XX	WIRE LENGTH
A	45 cm
B	60 cm
C	90 cm
D	120 cm
E	180 cm
F	240 cm
G	305 cm
H	366 cm

3. MANUAL OPERATOR (COMMON OPTIONS FOR 34 & 44 SERIES)

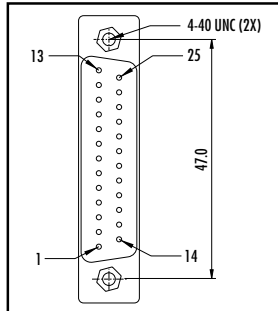
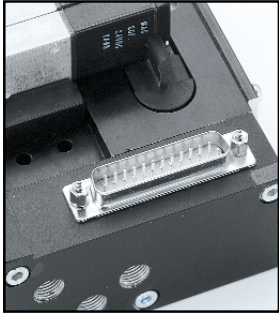
-G XX X - X XX	MANUAL OPERATOR
1	Non-locking recessed
3	Non-locking extended

4. ELECTRICAL CONNECTION (COMMON OPTIONS FOR 34 & 44 SERIES)

-G XX X - X XX	NO CONNECTOR
BA	Flying leads
BB	BA with ground wire
BC	BA with light
BD	BA with light and ground wire
BE	BA with suppression diode
BF	BA with suppression diode and ground wire
BG	BA with suppression diode and light
BH	BA with suppression diode, light and ground wire
BN	BA with suppression diode and blocking diode
BP	BA with suppression diode, blocking diode and ground wire
BR	BA with suppression diode, blocking diode and light
BS	BA with suppression diode, blocking diode, light and ground wire
BT	BA with light
BU	BA with light and ground wire
BV	BA with suppression diode and light
BW	BA with suppression diode, light and ground wire
BX	BA with suppression diode, blocking diode and light
BY	BA with suppression diode, blocking diode, light and ground wire

-G XX X - X XX	PLUG-IN CONNECTOR
KA	Mini connector with flying leads
KB	KA with ground wire
KE	KA with suppression diode
KF	KA with suppression diode and ground wire
KJ	Mini connector for KA option
KM	Mini connector for KB option
KN	KA with suppression diode and blocking diode
KP	KA with suppression diode, blocking diode and ground wire
KT	KA with light
KU	KA with light and ground wire
KV	KA with suppression diode and light
KW	KA with suppression diode, light and ground wire
KX	KA with suppression diode, blocking diode and light
KY	KA with suppression diode, blocking diode, light and ground wire

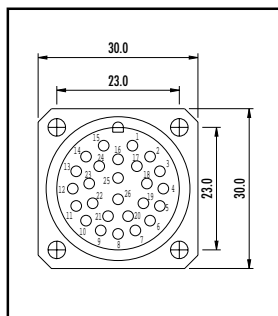
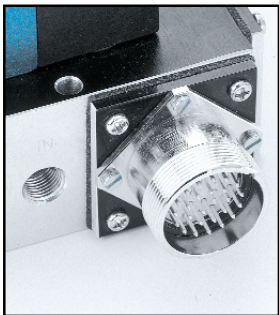
Connector SUB_D 25 (option ZZZY = SUBY ; Y = cable length)



TECHNICAL DATA

- Type «SUB_D»
- Number of contacts : 25
- Solder termination (Dia. 0.6 mm/0.14 mm²/26-22 AWG)
- Operating current 5 A/contact
- Rated voltage 125 V~
- Temp. range -40° to +125°C
- Insulation resistance $\geq 10^{10} \Omega$
- Protection class IP40 (DIN 40050)
- Number of solenoids : 20 max.
- Max. 24 V= / 5.4 W per solenoid
- 5 common wires
- Female plug supplied with circuit bar

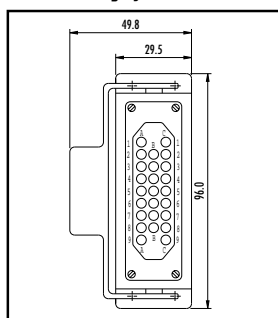
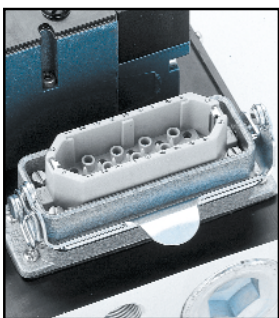
Connector RND (option ZZZY = RNDY ; Y = cable length)



TECHNICAL DATA

- Type «Round connector»
- Number of contacts : 26
- Solder termination (Dia. 1 mm/1 mm²/17 AWG)
- Operating current 7.5 A/contact
- Rated voltage 250 V~
- Insulation resistance $\geq 10^8 \Omega$
- Cable entry PG16
- Temp. range -40° to +125°C
- Protection class IP65 (DIN 40050)
- Number of solenoids : 24 max.
- 1 common and 1 ground
- All voltages
- Female plug supplied with circuit bar

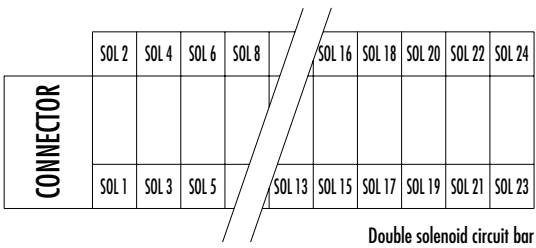
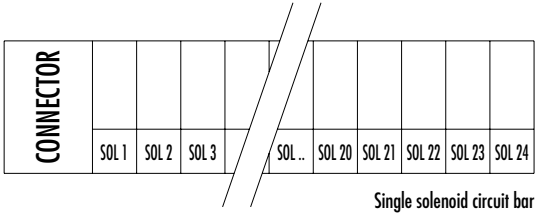
Connector HDT (option ZZZY = HDTY ; Y = cable length)



TECHNICAL DATA

- Type «Heavy duty»
- Number of contacts : 25
- Solder termination (Dia. 1.4 mm/0.75 mm²/18 AWG)
- Operating current 10 A/contact
- Rated voltage 250 V~
- Insulation resistance $\geq 10^{10} \Omega$
- Cable entry PG16
- Temp. range -40° to +125°C
- Protection class IP65 (DIN 40050)
- Number of solenoids : 24 max.
- 1 common and 1 ground
- All voltages
- Female plug supplied with circuit bar

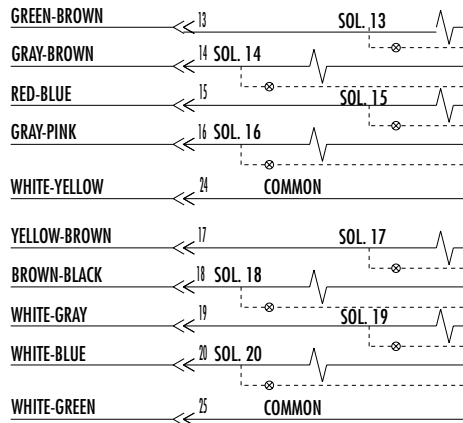
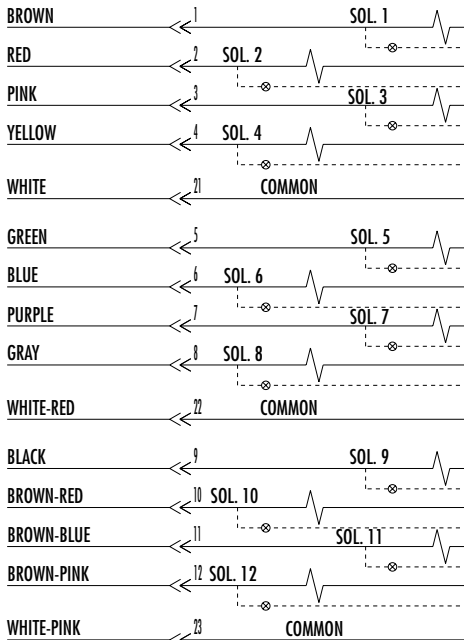
Connector termination details



Connector SUB_025 [option ZZZY = SUBY ; Y = cable length]

TECHNICAL DATA PREWIRED CABLE

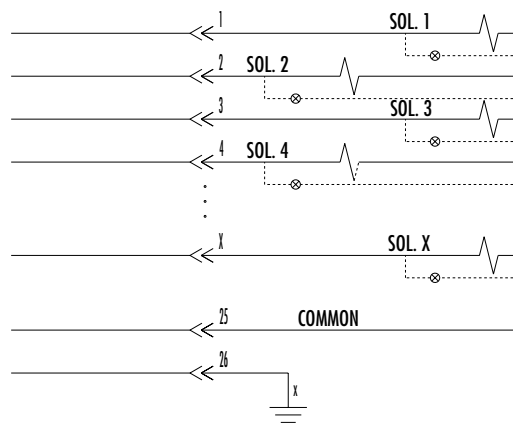
- Type : LIYY -0.14 mm²
- Dia. ca. 9.3 mm
- Insulation resistance : 20 MΩ for 1000 meter
- Temp. range -5° to +80°C
- Rated voltage : 250 V~
- PVC core insulation and sheath



Connector RND (option ZZZY = SNDY ; Y = cable length)

TECHNICAL DATA PREWIRED CABLE

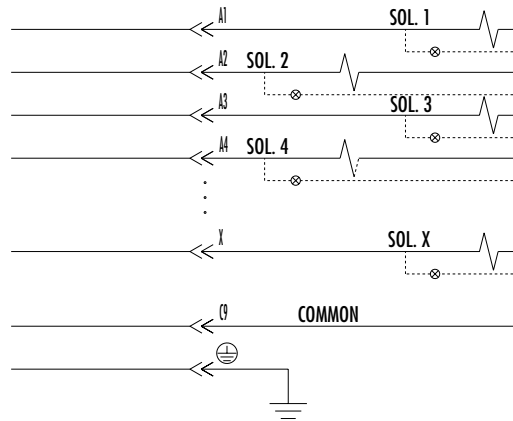
- Type : LIY(C)Y -0.50 mm²
- Dia. ca. 10.8 mm (12 core); 12.9 mm (18 core); 16.0 mm (32 core)
- Insulation resistance : 20 MΩ for 1000 meter
- Temp. range -5° to +80°C
- Rated voltage : 500 V~
- PVC core insulation and sheath
- Tinned copper wire braid



Connector HDT (option ZZZY = HDTY ; Y = cable length)

TECHNICAL DATA PREWIRED CABLE

- Type : LIY(C)Y -0.75 mm²
- Dia. ca. 12.0 mm (12 core); 13.5 mm (18 core); 18.0 mm (32 core)
- Insulation resistance : 20 MΩ for 1000 meter
- Temp. range -5° to +80°C
- Rated voltage : 500 V~
- PVC core insulation and sheath
- Tinned copper wire braid





PRECAUTIONS CONCERNING THE APPLICATION, INSTALLATION AND SERVICE OF MAC VALVES

The precautions below are important to be read and understood before designing into a system any MAC valve, and before installing or servicing any MAC valve. Improper use, installation or servicing of any MAC valve in some systems could create a hazard to personnel or equipment.

APPLICATION PRECAUTIONS :

INDUSTRIAL USE -

MAC valves are intended for use in industrial pneumatic and/or vacuum systems. They are not intended for consumer use or service. They are general purpose industrial valves with literally thousands of different applications in industrial systems. These products are not inherently dangerous, but they are only a component of an overall system. The system in which they are used must provide adequate safeguards to prevent injury or damage in the event failure occurs, whether it be failure of switches, regulators, cylinders, valves or any other component.

POWER PRESSES -

MAC valves are not designed nor intended to be used to operate and/or control the operation of clutch and/or brake systems on power presses. There are special products on the market for such use.

2-POSITION VALVES -

Some MAC valves are 2-position, 4-way valves. When air is supplied to the inlet port(s) of these valves, there will always be a flow path from the inlet to one of the outlets regardless of which of the two positions the valve is situated. Therefore, if pressurized air retained in the system would present a hazard in the application or servicing of the valve or system, a separate method in the system must be provided to remove the trapped air.

3- POSITION VALVES-

Some MAC valves are 3-position, 4-way valves. These valves are either double solenoid or double remote air operated.

If either of the two operators is in control, air supplied to the inlet port(s) will pass through the valve to one of the outlets as on 2-position, 4-way valves. However, if neither operator is in control, the valve moves to a center position. Listed below are the various center position functions :

A. CLOSED CENTER-

With this type valve, when in the center position all ports are blocked (inlets and exhausts) meaning the air at both outlet ports is trapped. If trapping the air in both outlet ports would present a hazard in the application or servicing, a separate method in the system must be provided to remove the trapped air or this type valve should not be used.

B. OPEN CENTER-

With this type valve, when in the center position, the inlet port(s) is blocked and the two outlet ports are open to the exhaust port(s) of the valve. If having no air in either outlet port would present a hazard in the application or servicing, this type valve should not be 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.

OPERATING SPECIFICATIONS -

MAC valves are to be installed only on applications that meet all operating specifications described in the MAC catalog for the valve.

MANUAL OPERATORS-

Most MAC valves can be ordered with manual operators. Manual operators when depressed, are designed to shift the valve to the same position as would the corresponding solenoid or remote air pilot operator if it were activated. Care must be taken to order a type, if any, that will be safe for the physical location of the manual operator in the system. Accidental activation of a manual operator could create a dangerous situation. If intentional or accidental operation of a valve by a manual operator could create a dangerous situation then the "no operator" option should be used.

REMOTE AIR OPERATED VALVES

Pilot valves supplying signal pressure to remote air operated valves should be 3-way valves with adequate supply and exhaust capacity to provide positive pressurizing and exhausting of the pilot supply line. Pilot lines should be open to exhaust when valves are deenergized.

INSTALLATION AND SERVICE PRECAUTIONS :

- A. Do not install or service MAC valves without first making sure both the air and electrical power to the machine are off and that all air has been completely bled from the system.
- B. MAC valves should only be installed and/or serviced 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 and graphic symbols. Do not install unless these symbols and the valve functions and operations are thoroughly understood.
- C. Before service, maintenance, repair or cleaning, consult local distributor or factory for Parts & Operation Sheet and information on proper cleaning and lubrication agents. Do not subject MAC valves' parts to any foreign substance including lubricants and cleaning agents not specifically recommended by MAC valves, Inc.
- D. MAC valves are never to be stepped on while working on a machine. Damage to the valve, or lines to the valve (either air or electrical lines) or accidental activating of a manual operator on the valve could result in a dangerous condition.

WARNING :

Under no circumstances are Mac valves to be used in any application where failure of the valve to operate as intended could jeopardize the safety of the operator or any other person.

- Do not operate outside of pressure range listed on valve label or outside of designated temperature range.
- Air supply must be clean. Contamination of valve can affect proper operation.
- Before attempting to repair, adjust or clean valve, 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 valve.
- If airline lubrication is used, consult catalog, parts & operation sheet, or factory for recommended lubricants.

LIMITATION OF GUARANTEE

This Guarantee is limited to the replacement or rebuilding of any valve which should fail to operate properly. Valves, under the MAC Guarantee, must be returned (with or without bases) transportation prepaid and received at our factory within the Guarantee period. They will be returned to the customer at the expense of MAC Valves, Inc., and will carry the same guarantee as provided under the Flat Rate Rebuild Program.

DISCLAIMER OF GUARANTEE

No claims for labor, material, time, damage, or transportation are allowable nor will any valve be replaced or rebuilt under this guarantee which has been damaged by the purchaser not in the normal course of its use and maintenance during the warranty period. The guarantee does not apply to loss or damage caused by fire, theft, riot, explosion, labor dispute, act of God, or other causes beyond the control of MAC Valves, Inc. MAC Valves, Inc. shall in no event be liable for remote, special or consequential damages under the MAC Guarantee, nor under any implied warranties, including the implied warranty of merchantability.

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