

Handhabungstechnik  
Motore & Getriebe  
Pneumatik  
Hydraulik  
Systemlösungen

**as-tec**  
Mechatronik GmbH

## Produktkatalog

### **MAC 4/2 Wegeventile** **Serie 45 - M5 1/8"**



# Über Uns

Die Firma **as-tec Mechatronik GmbH** ist ein herstellerunabhängiger Lieferant von Systemlösungen und Komponenten für pneumatische, hydraulische und elektrische Antriebs- und Steuerungstechnik.

Wir bieten unseren Kunden für ihre Projekte im Maschinen- und Anlagenbau, beziehungsweise für die Instandhaltung ihrer Fertigungseinrichtungen die am besten geeigneten Produkte aus unserem herstellerübergreifenden Produktportfolio.

In unserer Werkstätte produzieren wir kundenspezifische Lösungen wie zum Beispiel Ventileinheiten, Schaltschränke und Sonderzylinder. Weiters halten wir sowohl Standardkomponenten als auch speziell für Kunden bevorratete Produkte auf Lager.



## Individual mounting

Series

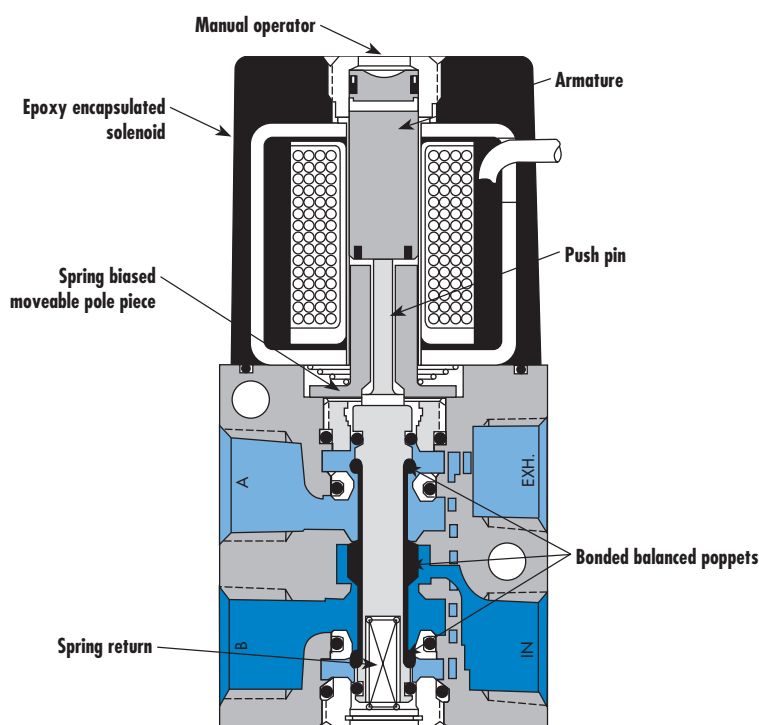
inline	sub-base non "plug-in"
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## Manifold mounting

35

stacking	sub-base non "plug-in"	sub-base with pressure regulators	sub-base with pressure regulators and flow controls	manifold base "plug-in"	manifold base "plug-in" with pressure regulators	manifold base "plug-in" with flow controls	manifold base "plug-in" with regulator and flow controls
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100



200

55

56

57

58

59

45

700

900

82

6300

## SERIES FEATURES

- Single and double solenoid or remote air.
- The patented MACSOLENOID for fastest possible response times.
- Bonded balanced poppets for high flow, precise repeatability, and consistent operation.
- Balanced poppet design permits versatility in piping. Valves can be piped as 4-way, 3-way or 2-way, normally closed or normally open or can be used for vacuum, diverter or selector applications.
- Use on lube or non-lube service.
- Extremely high cycle rates.
- Extremely long service life due to unique poppet cushions.
- Manual overrides as standard.
- Various solenoid enclosures and plug-in connectors
- Optional surge suppression available.
- Low wattage DC solenoids — down to 1.8 watts.
- Patented MACSOLENOID — virtually burn-out proof on AC service.

6500

6600

1300

800

ISO 1

ISO 2

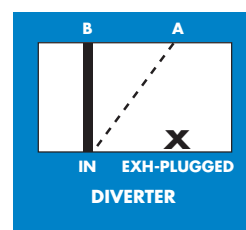
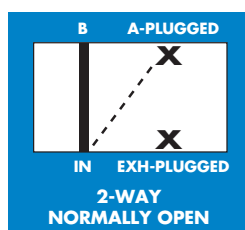
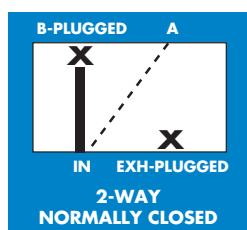
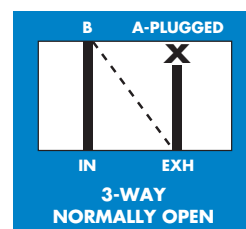
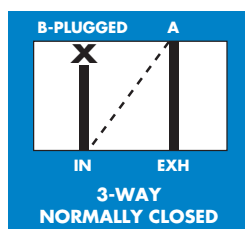
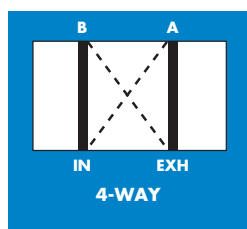
ISO 3

#### VALVE CONFIGURATIONS AVAILABLE

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

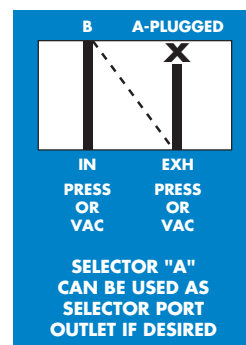
#### SPECIAL APPLICATIONS :

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



Operator De-Energized —————

Operator Energized - - - - -



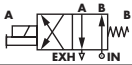

Function	Port size	Flow [Max]	Individual mounting	Series
<b>4/2</b>	<b>M5 - G1/8"</b>	<b>150 NI/min</b>	inline	

## OPERATIONAL BENEFITS

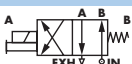

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.



## HOW TO ORDER

Port size	Single operator	Double operator (Minimum DC wattage 5.4W)
		
<b>G1/8"</b>	45A-AC1-Dxxx-xxx	45A-GC1-Dxxx-xxx
<b>M5</b>	45A-AD1-Dxxx-xxx	45A-GD1-Dxxx-xxx

## WITH INTEGRATED FLOW CONTROLS

Port size	Single operator	Double operator (Minimum DC wattage 5.4W)
		
<b>G1/8"</b>	45A-AC2-Dxxx-xxx	45A-GC2-Dxxx-xxx
<b>M5</b>	45A-AD2-Dxxx-xxx	45A-GD2-Dxxx-xxx

## SOLENOID OPERATOR ➤

D **XX X- X XX** \*

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

\* Other options available, see page 309.

## BOTTOM PORT OPTIONS (O'RING MOUNT)

45A-XXX-D xxx-xxx

- D-Sgl. oper. - All ports
- F-Sgl. oper. - "A" & "B" ports
- H-Dbl. oper. - All ports
- J-Dbl. oper. - "A" & "B" ports

# 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 :	-18°C to 50°C (0°F to 120°F)		
Flow (at 6 bar, ΔP=1bar) :	1.8 W : 100 NI/min, 5.4 W : 150 NI/min		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	Consult factory		
Power :	~ Inrush : 10.9 VA      Holding : 7.7 VA = 1.8 to 12.7 W		
Response times :	24 V=5.4 W	Energize : 6 ms	De-energize : 2 ms
	50 Hz/6 W	Energize : 3-8 ms	De-energize : 2-7 ms

Spare parts :

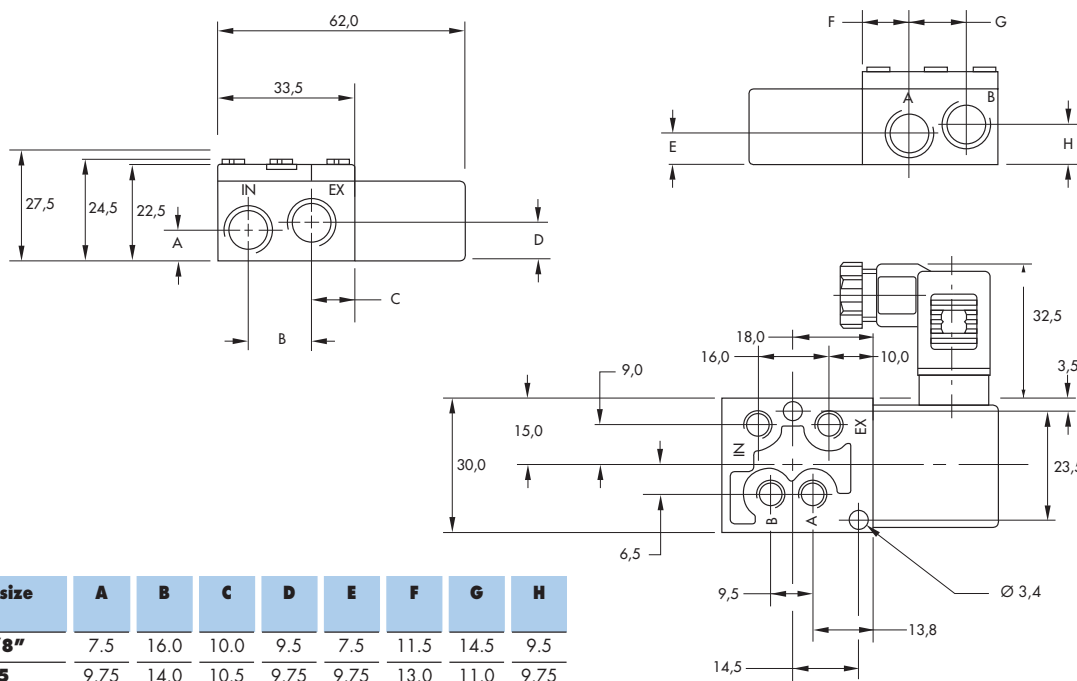
- Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.
- Seal (between solenoid and valve body) : 16402. • Valve cover plate with flow controls : N-45002.

Options :

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

# DIMENSIONS

Dimensions shown are metric (mm)



Port size	A	B	C	D	E	F	G	H
<b>G1/8"</b>	7.5	16.0	10.0	9.5	7.5	11.5	14.5	9.5
<b>M5</b>	9.75	14.0	10.5	9.75	9.75	13.0	11.0	9.75

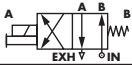

Function	Port size	Flow (Max)	Individual mounting	Series
4/2	M5 - G1/8"	130 NI/min	sub-base non "plug-in"	

## OPERATIONAL BENEFITS

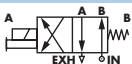

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.



## HOW TO ORDER

Port size	Single operator	Double operator (Minimum DC wattage 5,4W)
		
Valve less base	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
G1/8" base	45A-LCA-Dxxx-xxx	45A-NCA-Dxxx-xxx
M5 base	45A-LDA-Dxxx-xxx	45A-NDA-Dxxx-xxx

## WITH INTEGRATED FLOW CONTROLS

Port size	Single operator	Double operator (Minimum DC wattage 5,4W)
		
Valve less base	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
G1/8" base	45A-LCB-Dxxx-xxx	45A-NCB-Dxxx-xxx
M5 base	45A-LDB-Dxxx-xxx	45A-NDB-Dxxx-xxx

## SOLENOID OPERATOR >

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

\* Other options available, see page 309.

## OPTIONS

45A-LCA-D xxx-xxx

Substitute "K" for G1/8" bottom cylinder ports

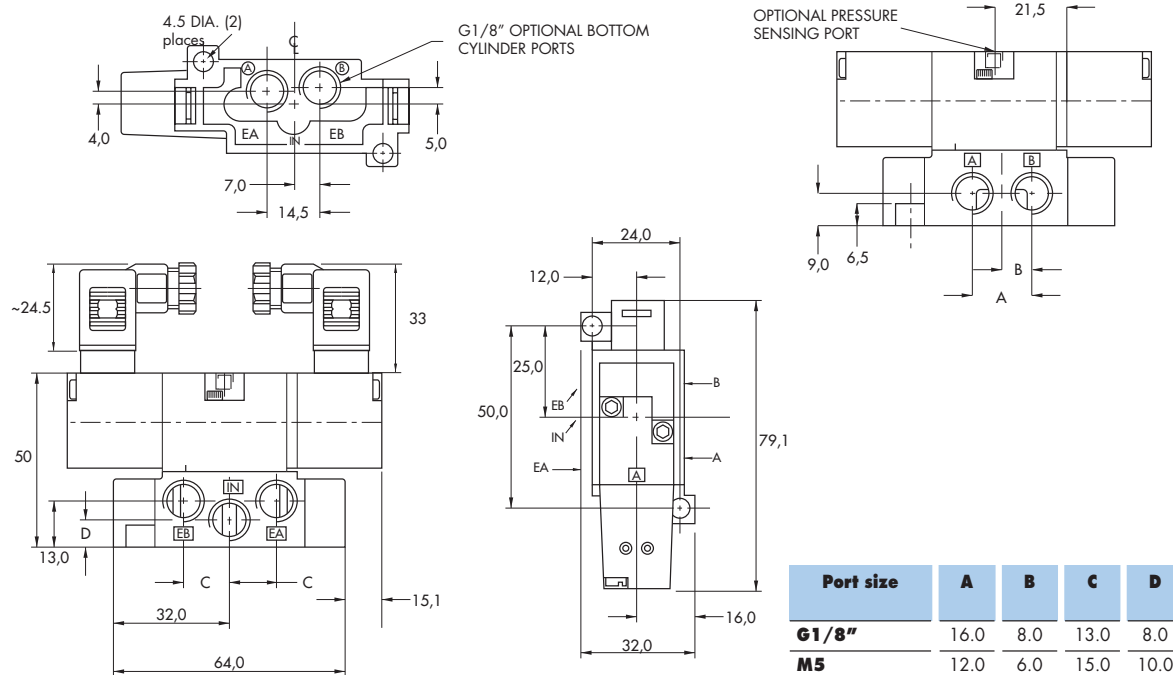
# TECHNICAL DATA

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 :	-18°C to 50°C (0°F to 120°F)		
Flow (at 6 bar, ΔP=1bar) :	1.8 W : 110 NI/min, 5.4 W : 130 NI/min		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	Consult factory		
Power :	~ Inrush : 10.9 VA      Holding : 7.7 VA = 1.8 to 12.7 W		
Response times :	24 V=5.4 W	Energize : 6 ms	De-energize : 2 ms
	50 Hz/6 W	Energize : 3-8 ms	De-energize : 2-7 ms

- Spare parts :
- Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.
  - Seal (between solenoid and valve body) : 16402. • Seal between base and valve : 16453. • Flow control : N-45018.
- Options :
- NPTF threads. • High flow up to 200 NI/min, according to wattage and high flow mod.

# DIMENSIONS

Dimensions shown are metric (mm)

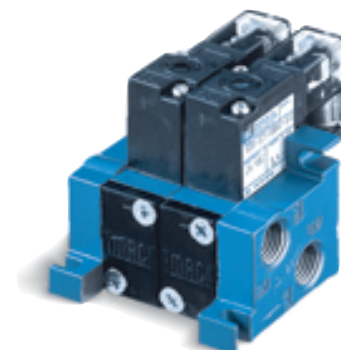




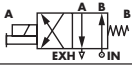
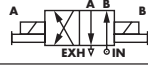
Function	Port size	Flow [Max]	Manifold mounting	Series
4/2	M5 - G1/8"	200 NI/min	stacking	

## OPERATIONAL BENEFITS

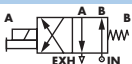

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.



## HOW TO ORDER

Port size	Single operator	Double operator (Minimum DC wattage 5,4W)
		
G1/8"	45A-SC1-Dxxx-xxx	45A-TC1-Dxxx-xxx
M5	45A-SD1-Dxxx-xxx	45A-TD1-Dxxx-xxx

## WITH INTEGRATED FLOW CONTROLS

Port size	Single operator	Double operator
		
G1/8"	45A-SC2-Dxxx-xxx	45A-TC2-Dxxx-xxx
M5	45A-SD2-Dxxx-xxx	45A-TD2-Dxxx-xxx

## SOLENOID OPERATOR >

D **XX X- X XX** \*

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

\* Other options available, see page 309.

End plate kit required (Port size G1/4") : M-45001-01P.

# 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 :	-18°C to 50°C (0°F to 120°F)		
Flow (at 6 bar, ΔP=1bar) :	1.8 W : 140 NI/min, 5.4 W : 200 NI/min		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	Consult factory		
Power :	~ Inrush : 10.9 VA      Holding : 7.7 VA = 1.8 to 12.7 W		
Response times :	24 V=5.4 W	Energize : 6 ms	De-energize : 2 ms
	50 Hz/6 W	Energize : 3-8 ms	De-energize : 2-7 ms

## Spare parts :

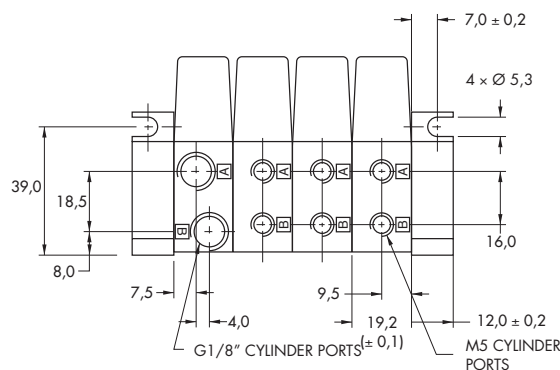
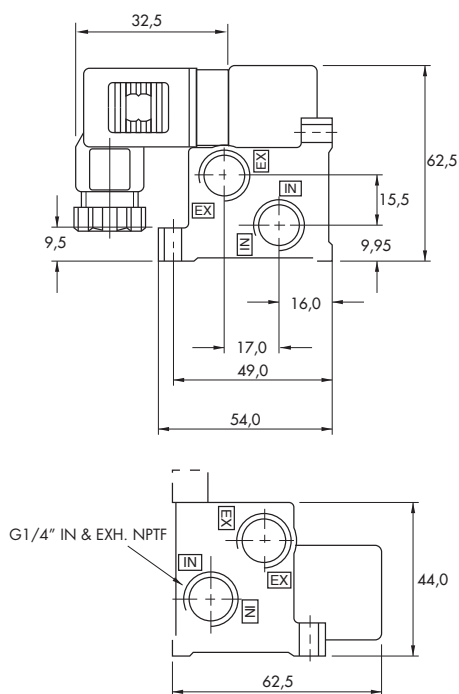
- Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.
- Seal (between solenoid and valve body) : 16402. • Seal between valves : 16422. • Tie-rod (x2) : 19813.
- Valve cover plate with flow controls : N-45004.
- Inlet & exhaust isolator : N-45005. Inlet isolator : N-45006. Exhaust isolator : N-45007

## Options :

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

# DIMENSIONS

Dimensions shown are metric (mm)



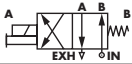

Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	M5 - G1/8"	110 NI/min	sub-base non "plug-in"	

## OPERATIONAL BENEFITS

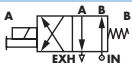

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.



## HOW TO ORDER

Port size	Single operator	Double operator (Minimum DC wattage 5.4W)
		
Valve less base	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
G1/8" base	45A-LCC-Dxxx-xxx	45A-NCC-Dxxx-xxx
M5 base	45A-LDC-Dxxx-xxx	45A-NDC-Dxxx-xxx

## WITH INTEGRATED FLOW CONTROLS

Port size	Single operator	Double operator (Minimum DC wattage 5.4W)
		
Valve less base	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
G1/8" base	45A-LCD-Dxxx-xxx	45A-NCD-Dxxx-xxx
M5 base	45A-LDD-Dxxx-xxx	45A-NDD-Dxxx-xxx

## SOLENOID OPERATOR ►

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

\* Other options available, see page 309.

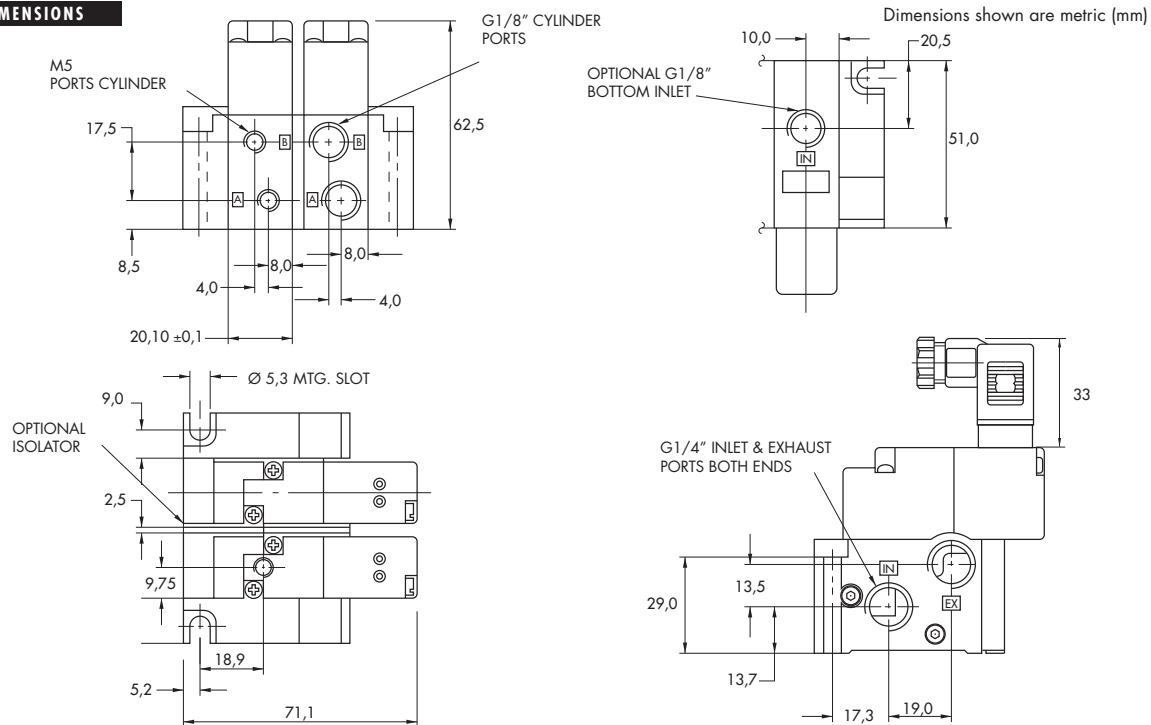
End plate kit required (Port size G1/4") : M-45008-01P

# 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 :	-18°C to 50°C (0°F to 120°F)		
Flow (at 6 bar, ΔP=1bar) :	1.8 W : 90 NI/min, 5.4 W : 110 NI/min		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	Consult factory		
Power :	~ Inrush : 10.9 VA    Holding : 7.7 VA = 1.8 to 12.7 W		
Response times :	24 V=5.4 W	Energize : 6 ms	De-energize : 2 ms
	50 Hz/6 W	Energize : 3-8 ms	De-energize : 2-7 ms

- Spare parts :
- Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.
  - Seal (between solenoid and valve body) : 16402. • Seal between base and valve : 16453. • Seal between bases : 16455.
  - Tie-rod (x2) : 19753. • Side cover plate with flow controls : N-45016.
  - Inlet & exhaust isolator : N-45008. • Inlet isolator : N-45009. • Exhaust isolator : N-45010.
- Options :
- NPTF threads. • High flow up to 180 NI/min, according to wattage and high flow Mod. • Bottom inlet : specify Mod. 0210.

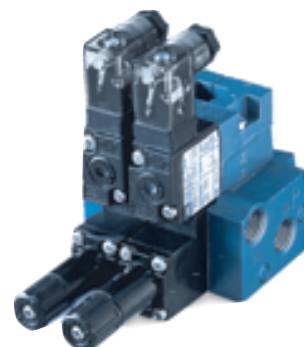
# DIMENSIONS



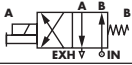

Function	Port size	Flow [Max]	Manifold mounting	Series
4/2	M5 - G1/8"	110 NI/min	sub-base with pressure regulators	

## OPERATIONAL BENEFITS

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



## HOW TO ORDER

Port size	Single operator	Double operator (Minimum DC wattage 5,4W)
		
Valve less base	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
G1/8" base	45A-LCJ-Dxxx-xxx	45A-NCJ-Dxxx-xxx
M5 base	45A-LDJ-Dxxx-xxx	45A-NDJ-Dxxx-xxx

## SOLENOID OPERATOR >

D **XX X- X XX** \*

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

\* Other options available, see page 309.

End plate kit required (Port size G1/4") : M-45008-01P.

Options (with gauge port) : Single operator : replace L by M.  
Double operator : replace N by P.

## REGULATOR OPTIONS

45A-XXJ-D xxx-xxx ("J" is for Adj. knob)

— Replace with "E" for slotted stem

— Replace with "G" for locking slotted stem

# 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 :	-18°C to 50°C (0°F to 120°F)		
Flow (at 6 bar, ΔP=1bar) :	1.8 W : 90 NI/min, 5.4 W : 110 NI/min		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	Consult factory		
Power :	~ Inrush : 10.9 VA      Holding : 7.7 VA = 1.8 to 12.7 W		
Response times :	24 V=5.4 W	Energize : 6 ms	De-energize : 2 ms
	50 Hz/6 W	Energize : 3-8 ms	De-energize : 2-7 ms

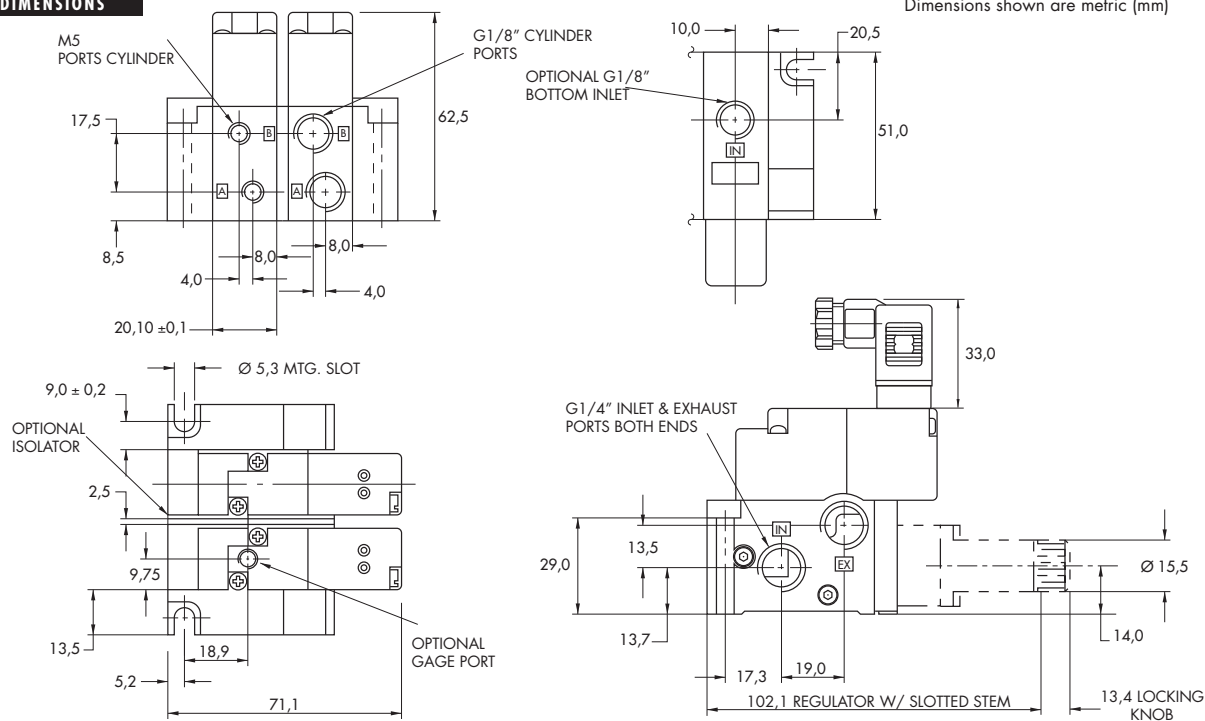
## Spare parts :

- Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.
- Seal (between solenoid and valve body) : 16402. • Seal between base and valve : 16453. • Seal between bases : 16455.
- Tie-rod (x2) : 19753. • Pressure regulator : 45A-00R (Adj. Knob), 45A-00L (Slotted Stem), 45A-00M (Locking Slotted Stem).
- Inlet & exhaust isolator : N-45008. • Inlet isolator : N-45009. • Exhaust isolator : N-45010.

## Options :

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

# DIMENSIONS



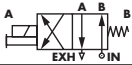

Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	M5 - G1/8"	110 NI/min	sub-base with pressure regulators and flow controls	

## OPERATIONAL BENEFITS

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



## HOW TO ORDER

Port size	Single operator	Double operator (Minimum DC wattage 5,4W)
		
Valve less base	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
G1/8" base	45A-LCK-Dxxx-xxx	45A-NCK-Dxxx-xxx
M5 base	45A-LDK-Dxxx-xxx	45A-NDK-Dxxx-xxx

## SOLENOID OPERATOR >

D **XX X- X XX\***

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

\* Other options available, see page 309.

End plate kit required (Port size G1/4") : M-45008-01P.

Options (with gauge port) : Single operator : replace L by M  
Double operator : replace N by P.

## REGULATOR AND F.C. OPTIONS

45A-XXK-D xxx-xxx ("K" option is for Adj. knob and F.C.)

— Replace with "F" for slotted stem and F.C.

— Replace with "H" for locking slotted stem and F.C.

# 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 :	-18°C to 50°C (0°F to 120°F)		
Flow (at 6 bar, ΔP=1bar) :	1.8 W : 90 NI/min, 5.4 W : 110 NI/min		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	Consult factory		
Power :	~ Inrush : 10.9 VA      Holding : 7.7 VA = 1.8 to 12.7 W		
Response times :	24 V=5.4 W	Energize : 6 ms	De-energize : 2 ms
	50 Hz/6 W	Energize : 3-8 ms	De-energize : 2-7 ms

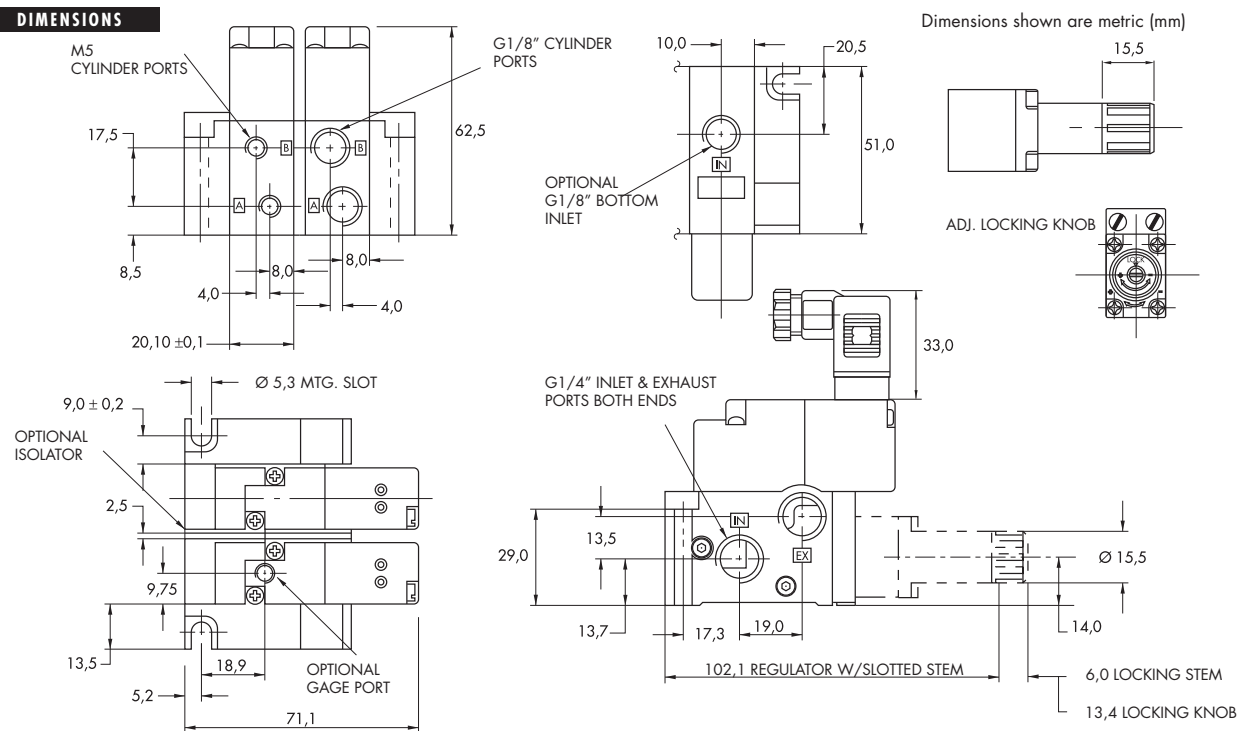
## Spare parts :

- Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.
- Seal (between solenoid and valve body) : 16402. • Seal between base and valve : 16453. • Seal between bases : 16455.
- Tie-rod (x2) : 19753. • Pressure regulator with flow controls : 45A-00N (Slotted Stem), 45A-00P (Locking Slotted Stem), 45A-00S(Adj. Knob). • Inlet & exhaust isolator : N-45008. • Inlet isolator : N-45009. • Exhaust isolator : N-45010.

## Options :

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

# DIMENSIONS





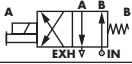

Function	Port size	Flow [Max]	Manifold mounting	Series
<b>4/2</b>	<b>M5 - G1/8"</b>	<b>110 NI/min</b>	Manifold base plug-in	

## OPERATIONAL BENEFITS

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



## HOW TO ORDER

Port size	Single operator	Double operator
		
<b>Valve less base</b>	45A-L00-00-Dxxj-xxx	45A-N00-00-Dxxj-xxx
<b>G1/8"</b>	45A-LSB-AC-Dxxj-xxx	45A-NSB-BL-Dxxj-xxx
<b>M5</b>	45A-LSE-AC-Dxxj-xxx	45A-NSE-BL-Dxxj-xxx

Note: Double operator valves are only available with bottom cylinder ports.

## SOLENOID OPERATOR ►

D **XX** J-X **XX**\*

XX Voltage	X Manual operator	XX Electrical connection
<b>AA</b> 110V~/50Hz	<b>0</b> No operator	<b>FM</b> Plug-in
<b>AB</b> 220V~/50Hz	<b>1</b> Non-locking	<b>FN</b> Plug-in with diode
<b>DA</b> 24V=/5.4W	<b>2</b> Locking	<b>FP</b> Plug-in with M.O.V.
<b>FA</b> 12V=/1.8W		
<b>FB</b> 24V=/1.8W		
<b>FE</b> 12V=/2.4W		
<b>FF</b> 24V=/2.4W		

\* Other options available, see page 361.

## OPTIONS

45A-LSB-A C-Dxxj-xxx

- C** Side cylinder ports - Single operator only
- L** Bottom cylinder ports - Single or double operator
- O** Base only - no valve
- L** Single solenoid - Base mount body
- M** Single solenoid - Base mount body with gage port
- N** Double solenoid - Base mount body
- P** Double solenoid - Base mount body with gage port

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

# 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 :	-18°C to 50°C
Flow (at 6 bar, ΔP=1bar) :	1.8 W : 90 NI/min, 5.4 W : 110 NI/min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power : 120 VAC : DC	~ Inrush : 10.9 VA      Holding : 7.7 VA = 1.8 to 12.7 W

Spare parts :

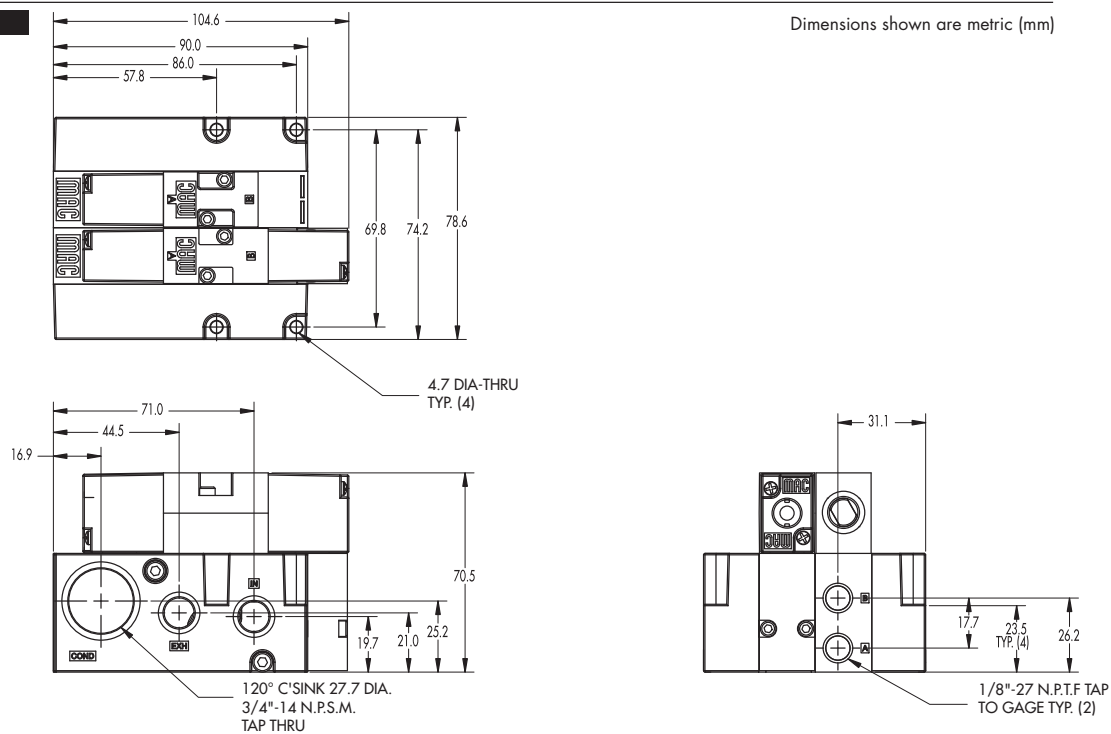
- Inlet isolator : 28477 • Exhaust isolator : 28476
- Tie rod (x2): 79244 • Seal between bases: 16762 • Seal between valve & base: 16453

Options :

- NPTF threads

# DIMENSIONS

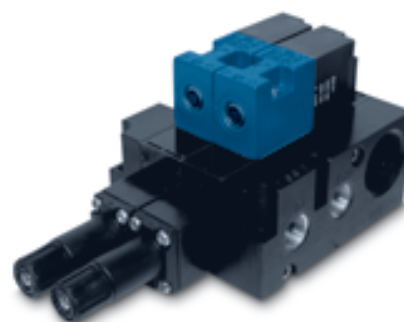
Dimensions shown are metric (mm)



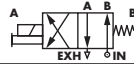
Function	Port size	Flow (Max)	Manifold mounting	Series
<b>4/2</b>	<b>M5 - G1/8"</b>	<b>110 NI/min</b>	Manifold base plug-in with pressure regulators	

## OPERATIONAL BENEFITS

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



## HOW TO ORDER

Port size	Single operator
	
<b>Valve less base</b>	45A-L00-00-DxxJ-xxx
<b>G1/8"</b>	45A-LSB-AJ-DxxJ-xxx
<b>M5</b>	45A-LSE-AJ-DxxJ-xxx

Note : Bottom cylinder ports only with the regulator option.

## SOLENOID OPERATOR ►

D **XX** J-X **XX**\*

XX Voltage	X Manual operator	XX Electrical connection
<b>AA</b> 110V~/50Hz	<b>0</b> No operator	<b>FM</b> Plug-in
<b>AB</b> 220V~/50Hz	<b>1</b> Non-locking	<b>FN</b> Plug-in with diode
<b>DA</b> 24V =/5.4W	<b>2</b> Locking	<b>FP</b> Plug-in with M.O.V.
<b>FA</b> 12V =/1.8W		
<b>FB</b> 24V =/1.8W		
<b>FE</b> 12V =/2.4W		
<b>FF</b> 24V =/2.4W		

\* Other options available, see page 361.

## OPTIONS

45A- L SB-A J -DxxJ-xxx

- J** Regulator with adjusting knob
- E** Regulator with slotted stem
- G** Regulator with locking slotted stem
- 0** Base only – no valve
- L** Single solenoid - Base mount body
- M** Single solenoid - Base mount body with gage port

Example: base only with regulator: 45A-0SB-AJ  
End plate kit required : M-45028-01P

# 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 :	-18°C to 50°C
Flow (at 6 bar, ΔP=1bar) :	1.8 W : (90 Nl/min), 5.4 W : (110 Nl/min)
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power : 120 VAC : DC	~ Inrush : 10.9 VA      Holding : 7.7 VA = 1.8 to 12.7 W

Spare parts :

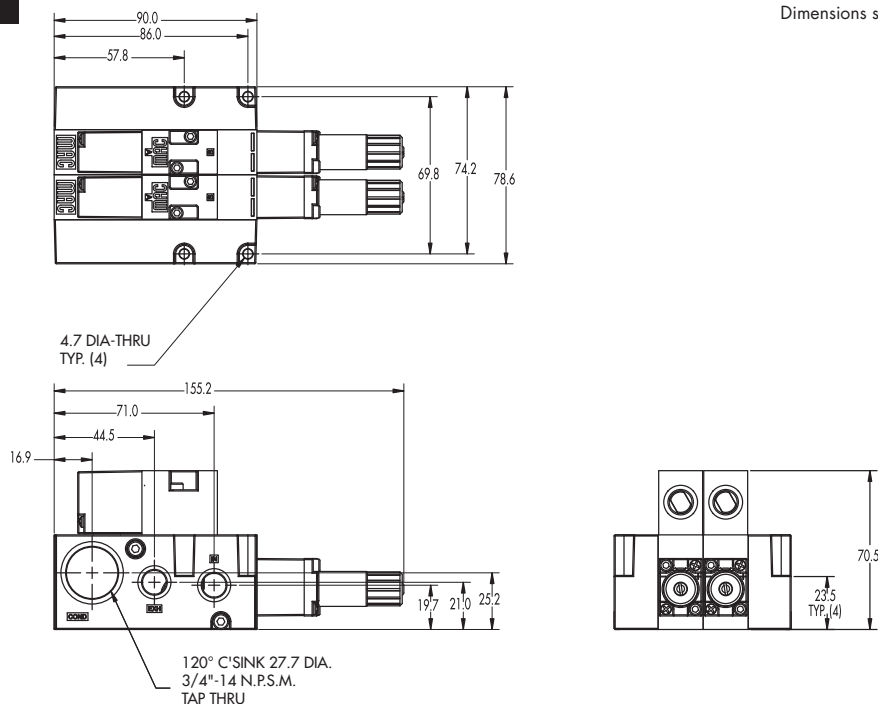
- Inlet isolator : 28477 • Exhaust isolator : 28476
- Tie rod (x2): 79244 • Seal between bases: 16762 • Seal between valve & base: 16453

Options :

- NPTF threads

# DIMENSIONS

Dimensions shown are metric (mm)



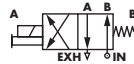
Function	Port size	Flow (Max)	Manifold mounting	Series
<b>4/2</b>	<b>M5 - G1/8"</b>	<b>110 NI/min</b>	Manifold base plug-in with flow controls	

## OPERATIONAL BENEFITS

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



## HOW TO ORDER

Port size	Single operator
	
<b>Valve less base</b>	45A-L00-00-DxxJ-xxx
<b>G1/8"</b>	45A-LSB-AD-DxxJ-xxx
<b>M5</b>	45A-LSE-AD-DxxJ-xxx

## SOLENOID OPERATOR ►

D **XX** J-X **XX**\*

XX Voltage	X Manual operator	XX Electrical connection
<b>AA</b> 110V~/50Hz	<b>0</b> No operator	<b>FM</b> Plug-in
<b>AB</b> 220V~/50Hz	<b>1</b> Non-locking	<b>FN</b> Plug-in with diode
<b>DA</b> 24V =/5.4W	<b>2</b> Locking	<b>FP</b> Plug-in with M.O.V.
<b>FA</b> 12V =/1.8W		
<b>FB</b> 24V =/1.8W		
<b>FE</b> 12V =/2.4W		
<b>FF</b> 24V =/2.4W		

\* Other options available, see page 361.

## OPTIONS

45A-LSB-A D-DxxJ-xxx

- D** Side cylinder ports with flow controls
- M** Bottom cylinder ports with flow controls
- 0** Base only – no valve
- L** Single solenoid - Base mount body
- M** Single solenoid - Base mount body with gage port

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

# 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 :	-18°C to 50°C
Flow (at 6 bar, ΔP=1bar) :	1.8 W : (90 NI/min), 5.4 W : (110 NI/min)
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power : 120 VAC : DC	~ Inrush : 10.9 VA      Holding : 7.7 VA = 1.8 to 12.7 W

Spare parts :

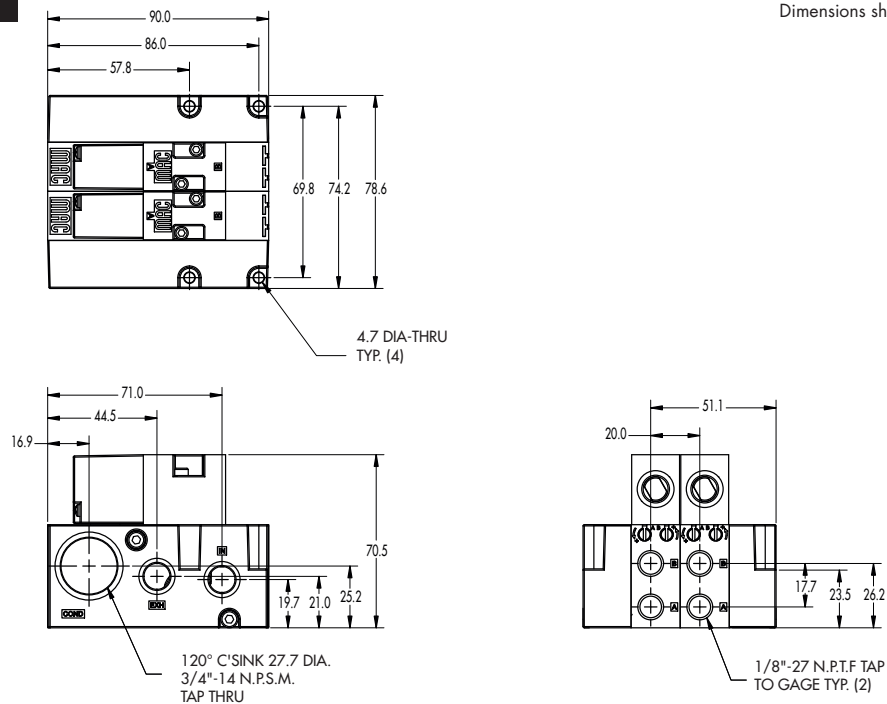
- Inlet isolator : 28477 • Exhaust isolator : 28476
- Tie rod (x2): 79244 • Seal between bases: 16762 • Seal between valve & base: 16453

Options :

- NPTF threads

# DIMENSIONS

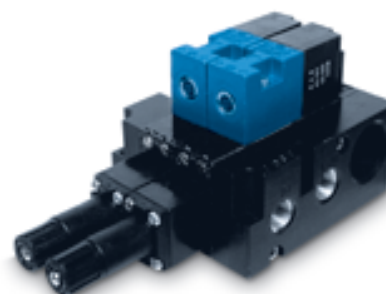
Dimensions shown are metric (mm)



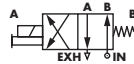
Function	Port size	Flow (Max)	Manifold mounting	Series
<b>4/2</b>	<b>M5 - G1/8"</b>	<b>110 NI/min</b>	Manifold base plug-in with regulator & flow controls	

## OPERATIONAL BENEFITS

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



## HOW TO ORDER

Port size	Single operator
	
<b>Valve less base</b>	45A-L00-00-DxxJ-xxx
<b>G1/8"</b>	45A-LSB-AK-DxxJ-xxx
<b>M5</b>	45A-LSE-AK-DxxJ-xxx

## SOLENOID OPERATOR ►

D **XX** J-**X** **XX**\*

XX Voltage	X Manual operator	XX Electrical connection
<b>AA</b> 110V~/50Hz	<b>0</b> No operator	<b>FM</b> Plug-in
<b>AB</b> 220V~/50Hz	<b>1</b> Non-locking	<b>FN</b> Plug-in with diode
<b>DA</b> 24V =/5.4W	<b>2</b> Locking	<b>FP</b> Plug-in with M.O.V.
<b>FA</b> 12V =/1.8W		
<b>FB</b> 24V =/1.8W		
<b>FE</b> 12V =/2.4W		
<b>FF</b> 24V =/2.4W		

\* Other options available, see page 361.

Note : Bottom cylinder ports only with the regulator & flow controls option.

## OPTIONS

45A- L SB-A K -DxxJ-xxx

- F** Regulator with slotted stem & flow controls
- H** Regulator with locking slotted stem & flow controls
- K** Regulator with adjusting knob & flow controls
- O** Base only – no valve
- L** Single solenoid - Base mount body
- M** Single solenoid - Base mount body with gage port

Example: Base only with regulator and flow controls: 45A-0SB-AK  
End plate kit required : M-45028-01P

# 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 :	-18°C to 50°C
Flow (at 6 bar, ΔP=1bar) :	1.8 W : (90 Nl/min), 5.4 W : (110 Nl/min)
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Protection :	Consult factory
Power : 120 VAC : DC	~ Inrush : 10.9 VA      Holding : 7.7 VA = 1.8 to 12.7 W

Spare parts :

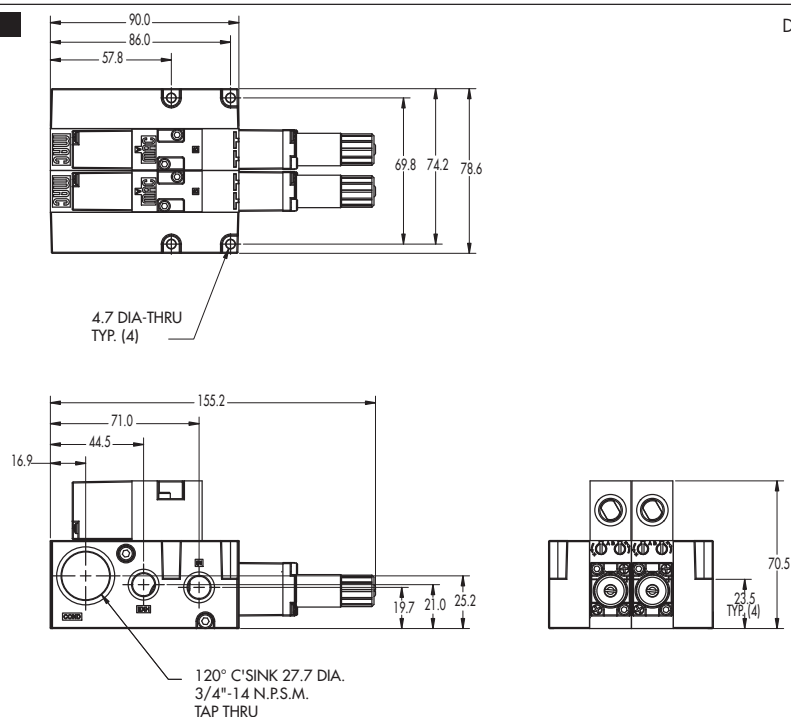
- Inlet isolator : 28477 • Exhaust isolator : 28476
- Tie rod (x2): 79244 • Seal between bases: 16762 • Seal between valve & base: 16453

Options :

- NPTF threads

# DIMENSIONS

Dimensions shown are metric (mm)





Function	Port size	Flow [Max]	Individual mounting	Series
<b>4/2</b>	<b>#10-32 - 1/8"</b>	<b>0.15 C<sub>v</sub></b>	inline	

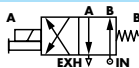
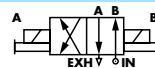
## OPERATIONAL BENEFITS

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



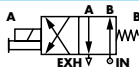

35  
100  
200  
55  
56  
57  
58  
59

## HOW TO ORDER

Port size	Single operator	Double operator (Minimum DC wattage 5.4W)
		
<b>1/8" NPTF</b>	45A-AA1-Dxxx-xxx	45A-GA1-Dxxx-xxx
<b># 10-32 UNF</b>	45A-AB1-Dxxx-xxx	45A-GB1-Dxxx-xxx

45

## WITH INTEGRATED FLOW CONTROLS

Port size	Single operator	Double operator (Minimum DC wattage 5.4W)
		
<b>1/8" NPTF</b>	45A-AA2-Dxxx-xxx	45A-GA2-Dxxx-xxx
<b># 10-32 UNF</b>	45A-AB2-Dxxx-xxx	45A-GB2-Dxxx-xxx

700  
900  
82

## SOLENOID OPERATOR ►

D **XX X- X XX\***

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
<b>AA</b> 120/60, 110/50	<b>A</b> 18" (Flying leads)	<b>1</b> Non-locking	<b>KA</b> Square connector
<b>AB</b> 240/60, 220/50	<b>J</b> Connector	<b>2</b> Locking	<b>KD</b> Square connector with light
<b>AC</b> 24/60, 24/50			<b>JB</b> Rectangular connector
<b>FB</b> 24 VDC (1.8 W)			<b>JD</b> Rectangular connector with light
<b>DA</b> 24 VDC (5.4 W)			<b>BA</b> Flying leads
<b>DF</b> 24 VDC (12.7 W)			

\* Other options available, see page 353.

## BOTTOM PORT OPTIONS (O'RING MOUNT)

45A-XXX-D xxx-xxx

- D-Sgl. oper. - All ports
- F-Sgl. oper. - "A" & "B" ports
- H-Dbl. oper. - All ports
- J-Dbl. oper. - "A" & "B" ports

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

## Spare parts :

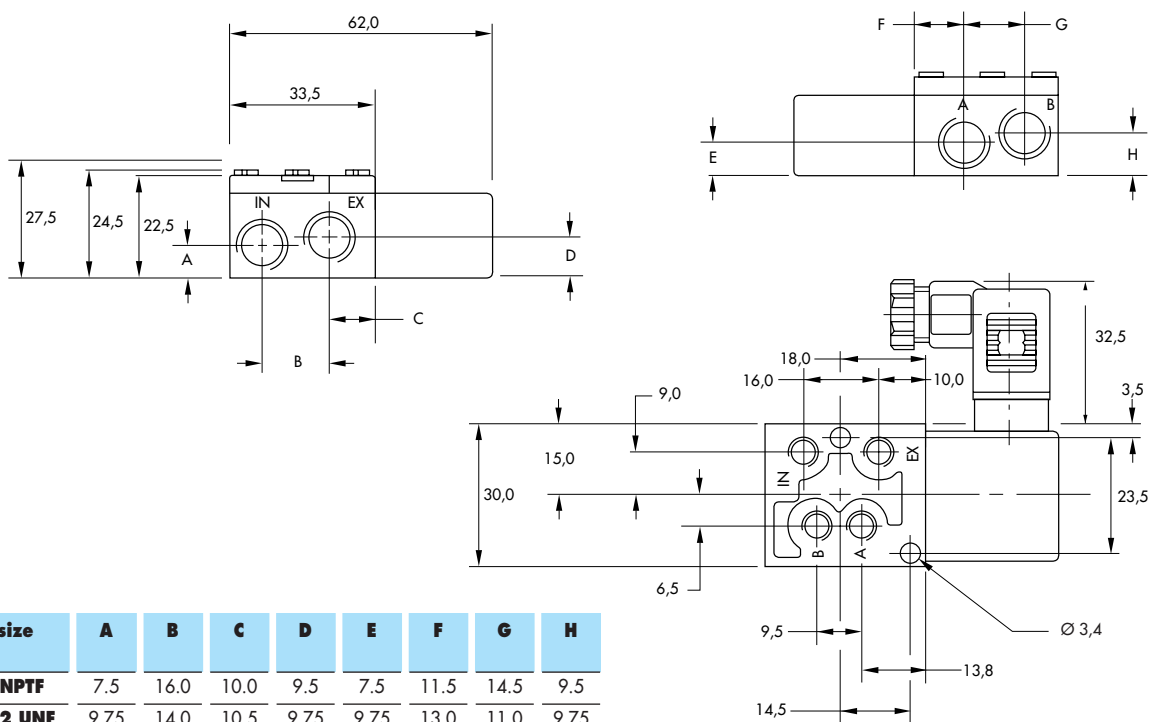
- Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.
- Seal (between solenoid and valve body) : 16402. • Valve cover plate with flow controls : N-45002.

## Options :

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

# DIMENSIONS

Dimensions shown are metric (mm)



Port size	A	B	C	D	E	F	G	H
<b>1/8" NPTF</b>	7.5	16.0	10.0	9.5	7.5	11.5	14.5	9.5
<b># 10-32 UNF</b>	9.75	14.0	10.5	9.75	9.75	13.0	11.0	9.75

Function	Port size	Flow [Max]	Individual mounting	Series
<b>4/2</b>	<b>#10-32 - 1/8"</b>	<b>0.13 C<sub>v</sub></b>	sub-base non "plug-in"	

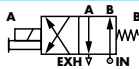
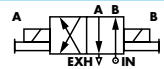
## OPERATIONAL BENEFITS

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



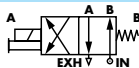
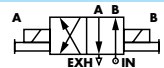
35  
100  
200  
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57  
58  
59

## HOW TO ORDER

Port size	Single operator	Double operator (Minimum DC wattage 5,4W)
		
<b>Valve less base</b>	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
<b>1/8" NPTF base</b>	45A-LAA-Dxxx-xxx	45A-NAA-Dxxx-xxx
<b>#10-32 UNF base</b>	45A-LBA-Dxxx-xxx	45A-NBA-Dxxx-xxx

45

## WITH INTEGRATED FLOW CONTROLS

Port size	Single operator	Double operator (Minimum DC wattage 5,4W)
		
<b>Valve less base</b>	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
<b>1/8" NPTF base</b>	45A-LAB-Dxxx-xxx	45A-NAB-Dxxx-xxx
<b>#10-32 UNF base</b>	45A-LBB-Dxxx-xxx	45A-NBB-Dxxx-xxx

700  
900  
82

## SOLENOID OPERATOR >

D **XX X- X XX\***

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
<b>AA</b> 120/60, 110/50	<b>A</b> 18" (Flying leads)	<b>1</b> Non-locking	<b>KA</b> Square connector
<b>AB</b> 240/60, 220/50	<b>J</b> Connector	<b>2</b> Locking	<b>KD</b> Square connector with light
<b>AC</b> 24/60, 24/50			<b>BA</b> Flying leads
<b>FB</b> 24 VDC (1.8 W)			
<b>DA</b> 24 VDC (5.4 W)			
<b>DF</b> 24 VDC (12.7 W)			

\* Other options available, see page 353.

## OPTIONS

45A-LAA-D xxx-xxx

Substitute "J" for 1/8" bottom cylinder ports

6300  
6500  
6600  
1300  
800  
ISO 1  
ISO 2  
ISO 3  
MAC 125A  
MAC 250A  
MAC 500A

# TECHNICAL DATA

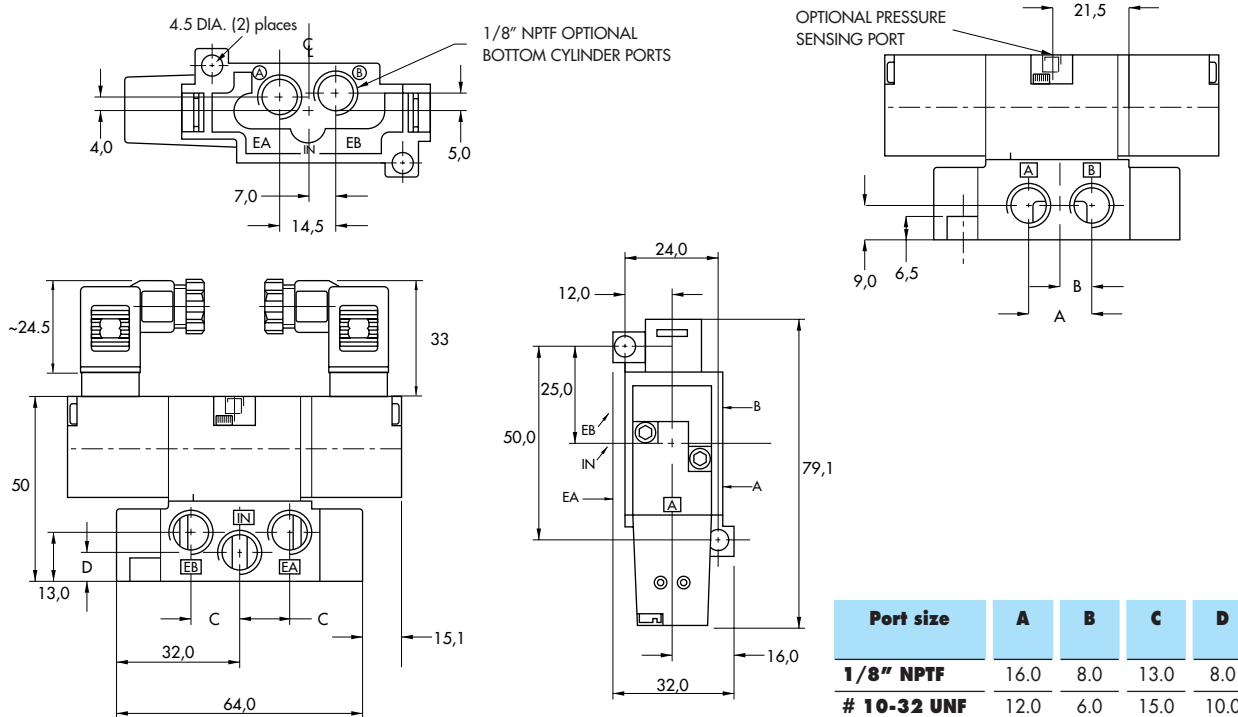
Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Vacuum to 120 PSI		
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to 50°C)		
Flow (at 6 bar, ΔP=1bar) :	1.8 W : (0.11 C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

Spare parts :      • Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.  
                              • Seal (between solenoid and valve body) : 16402. • Seal between base and valve : 16453. • Flow control : N-45018.

Options :      • BSPP threads. • High flow up to 0.20 C<sub>v</sub>, according to wattage and high flow mod.

# DIMENSIONS

Dimensions shown are metric (mm)



Function	Port size	Flow [Max]	Manifold mounting	Series
4/2	# 10-32 - 1/8"	0.20 C <sub>v</sub>	stacking	

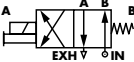
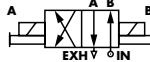
## OPERATIONAL BENEFITS

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



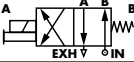
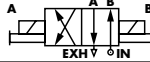
35  
100  
200  
55  
56  
57  
58  
59

## HOW TO ORDER

Port size	Single operator	Double operator (Minimum DC wattage 5,4W)
		
1/8" NPTF	45A-SA1-Dxxx-xxx	45A-TA1-Dxxx-xxx
# 10-32 UNF	45A-SB1-Dxxx-xxx	45A-TB1-Dxxx-xxx

45

## WITH INTEGRATED FLOW CONTROLS

Port size	Single operator	Double operator
		
1/8" NPTF	45A-SA2-Dxxx-xxx	45A-TA2-Dxxx-xxx
# 10-32 UNF	45A-SB2-Dxxx-xxx	45A-TB2-Dxxx-xxx

700  
900  
82

## SOLENOID OPERATOR >

D **XX X- X XX\***

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
AA 120/60, 110/50	A 18" (Flying leads)	1 Non-locking	KA Square connector
AB 240/60, 220/50	J Connector	2 Locking	KD Square connector with light
AC 24/60, 24/50			BA Flying leads
FB 24 VDC (1.8 W)			
DA 24 VDC (5.4 W)			
DF 24 VDC (12.7 W)			

\* Other options available, see page 353.

End plate kit required (Port size 1/4" NPTF) : M-45001-01.

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 :	Vacuum to 120 PSI		
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to 50°C)		
Flow (at 6 bar, ΔP=1bar) :	1.8 W : (0.14 C <sub>v</sub> ), 5.4 W : (0.2 C <sub>v</sub> )		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	Consult factory		
Power :	~ Inrush : 10.9 VA      Holding : 7.7 VA = 1.8 to 12.7 W		
Response times :	24 VDC (5.4 W)	Energize : 6 ms	De-energize : 2 ms
	120/60	Energize : 3-8 ms	De-energize : 2-7 ms

## Spare parts :

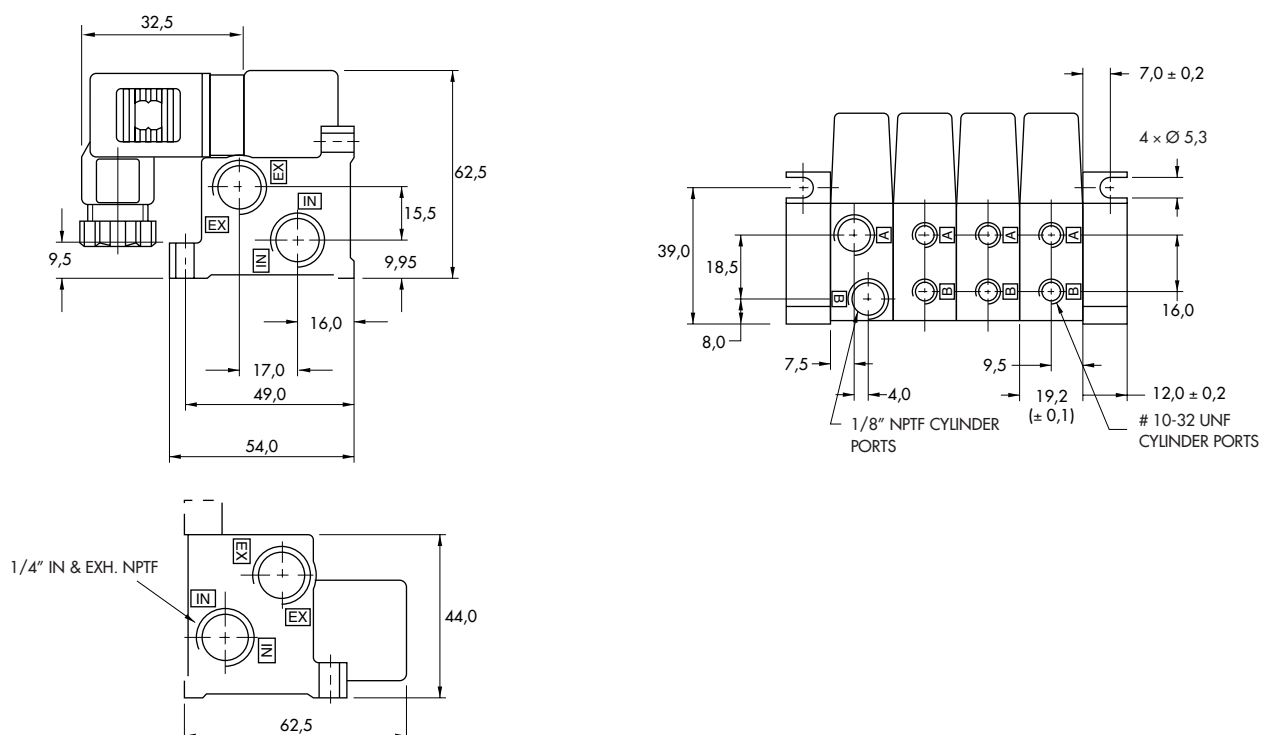
- Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.
- Seal (between solenoid and valve body) : 16402. • Seal between valves : 16422. • Tie-rod (x2) : 19813.
- Valve cover plate with flow controls : N-45004.
- Inlet & exhaust isolator : N-45005. Inlet isolator : N-45006. Exhaust isolator : N-45007

## Options :

- BSPP threads. • High flow up to 0.3 C<sub>v</sub>, according to wattage and high flow mod.

# DIMENSIONS

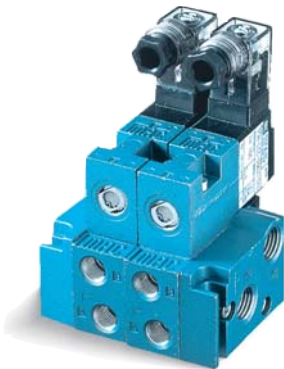
Dimensions shown are metric (mm)



Function	Port size	Flow [Max]	Manifold mounting	Series
4/2	# 10-32 - 1/8"	0.11 C <sub>v</sub>	sub-base non "plug-in"	

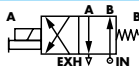

## OPERATIONAL BENEFITS

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



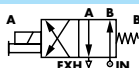

35  
100  
200  
55  
56  
57  
58  
59

## HOW TO ORDER

Port size	Single operator	Double operator (Minimum DC wattage 5.4W)
		
Valve less base	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
1/8" NPTF base	45A-LAC-Dxxx-xxx	45A-NAC-Dxxx-xxx
# 10-32 UNF base	45A-LBC-Dxxx-xxx	45A-NBC-Dxxx-xxx

45

## WITH INTEGRATED FLOW CONTROLS

Port size	Single operator	Double operator (Minimum DC wattage 5.4W)
		
Valve less base	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
1/8" NPTF base	45A-LAD-Dxxx-xxx	45A-NAD-Dxxx-xxx
# 10-32 UNF base	45A-LBD-Dxxx-xxx	45A-NBD-Dxxx-xxx

700  
900  
82

## SOLENOID OPERATOR ►

D **XX X- X XX**\*

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
AA 120/60, 110/50	A 18" (Flying leads)	1 Non-locking	KA Square connector
AB 240/60, 220/50	J Connector	2 Locking	KD Square connector with light
AC 24/60, 24/50			BA Flying leads
FB 24 VDC (1.8 W)			
DA 24 VDC (5.4 W)			
DF 24 VDC (12.7 W)			

\* Other options available, see page 353.

End plate kit required (Port size 1/4" NPTF) : M-45008-01

6300  
6500  
6600  
1300  
800  
ISO 1  
ISO 2  
ISO 3  
MAC 125A  
MAC 250A  
MAC 500A

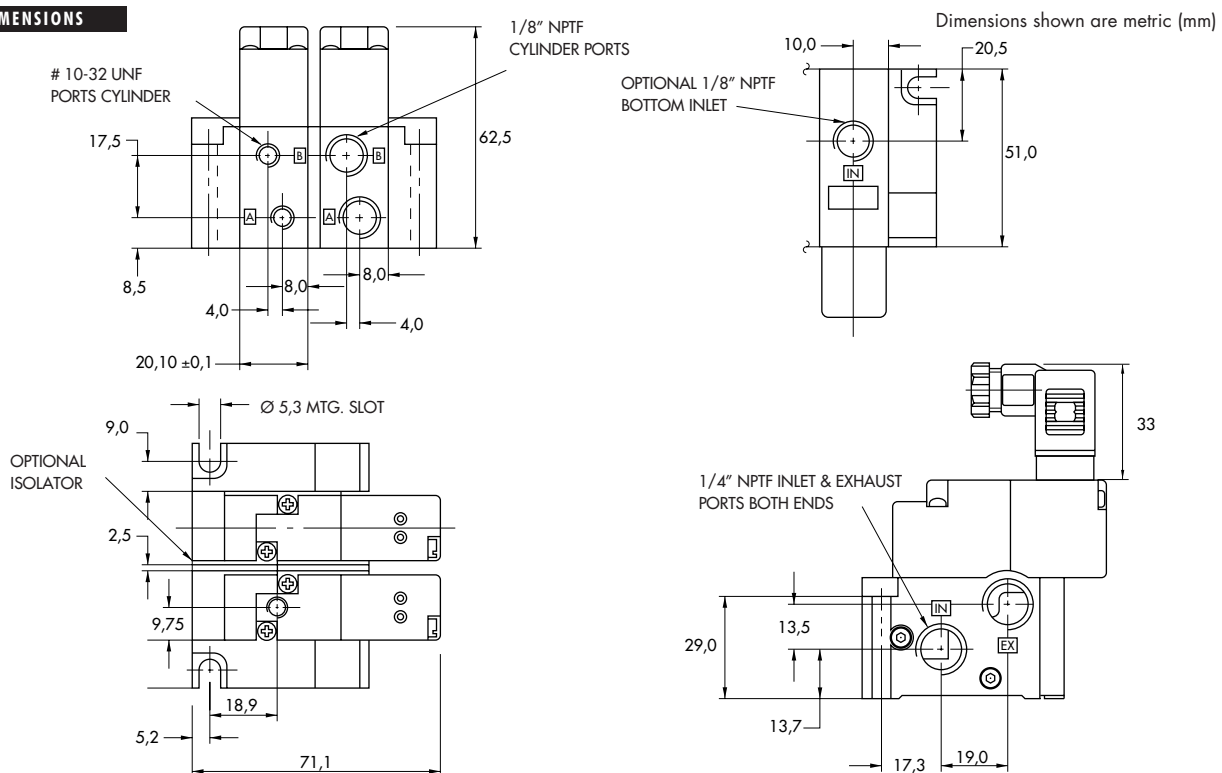
#### TECHNICAL DATA

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

Spare parts : • Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.  
• Seal (between solenoid and valve body) : 16402. • Seal between base and valve : 16453. • Seal between bases : 16455.  
• Tie-rod (x2) : 19753. • Side cover plate with flow controls : N-45016.  
• Inlet & exhaust isolator : N-45008. • Inlet isolator : N-45009. • Exhaust isolator : N-45010.

Options : • BSPP threads. • High flow up to 0.18 C<sub>v</sub>, according to wattage and high flow Mod. • Bottom inlet : specify Mod. 0210.

#### DIMENSIONS

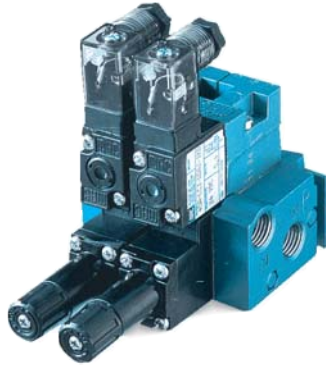




Function	Port size	Flow [Max]	Manifold mounting	Series
<b>4/2</b>	<b># 10-32 - 1/8"</b>	<b>0.11 C<sub>v</sub></b>	sub-base with pressure regulators	

### OPERATIONAL BENEFITS

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



35  
100  
200  
55  
56  
57  
58  
59

### HOW TO ORDER

Port size	Single operator	Double operator (Minimum DC wattage 5,4W)
<b>Valve less base</b>	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
<b>1/8" NPTF base</b>	45A-LAJ-Dxxx-xxx	45A-NAJ-Dxxx-xxx
<b># 10-32 UNF base</b>	45A-LBJ-Dxxx-xxx	45A-NBJ-Dxxx-xxx

45

### SOLENOID OPERATOR ➤

D **XX X- X XX\***

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
AA 120/60, 110/50	A 18" (Flying leads)	1 Non-locking	KA Square connector
AB 240/60, 220/50	J Connector	2 Locking	KD Square connector with light
AC 24/60, 24/50			BA Flying leads
FB 24 VDC (1.8 W)			
DA 24 VDC (5.4 W)			
DF 24 VDC (12.7 W)			

700  
900  
82

\* Other options available, see page 353.

End plate kit required (Port size 1/4" NPTF) : M-45008-01.  
Options (with gauge port) : Single operator : replace L by M.  
Double operator : replace N by P.

### REGULATOR OPTIONS

45A-XXJ-D xxx-xxx	("J" is for Adj. knob)
—	Replace with "E" for slotted stem
—	Replace with "G" for locking slotted stem

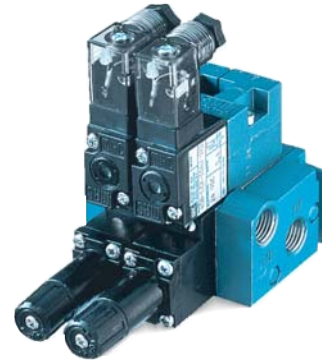
6300  
6500  
6600  
1300  
800  
ISO 1  
ISO 2  
ISO 3  
MAC 125A  
MAC 250A  
MAC 500A



Function	Port size	Flow [Max]	Manifold mounting	Series
<b>4/2</b>	<b># 10-32 - 1/8"</b>	<b>0.11 C<sub>v</sub></b>	sub-base with pressure regulators and flow controls	

## OPERATIONAL BENEFITS

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



35  
100  
200  
55  
56  
57  
58  
59

## HOW TO ORDER

Port size	Single operator	Double operator (Minimum DC wattage 5,4W)
<b>Valve less base</b>	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
<b>1/8" NPTF base</b>	45A-LAK-Dxxx-xxx	45A-NAK-Dxxx-xxx
<b># 10-32 UNF base</b>	45A-LBK-Dxxx-xxx	45A-NBK-Dxxx-xxx

45

## SOLENOID OPERATOR ►

D **XX X- X XX\***

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
AA 120/60, 110/50	A 18" (Flying leads)	1 Non-locking	KA Square connector
AB 240/60, 220/50	J Connector	2 Locking	KD Square connector with light
AC 24/60, 24/50			BA Flying leads
FB 24 VDC (1.8 W)			
DA 24 VDC (5.4 W)			
DF 24 VDC (12.7 W)			

700  
900  
82

\* Other options available, see page 353.

End plate kit required (Port size 1/4" NPTF) : M-45008-01.  
Options (with gauge port) : Single operator : replace L by M  
Double operator : replace N by P.

## REGULATOR AND F.C. OPTIONS

45A-XXK-D xxx-xxx ("K" option is for Adj. knob and F.C.)  
— Replace with "F" for slotted stem and F.C.  
— Replace with "H" for locking slotted stem and F.C.

6300  
6500  
6600  
1300  
800  
ISO 1  
ISO 2  
ISO 3  
MAC 125A  
MAC 250A  
MAC 500A

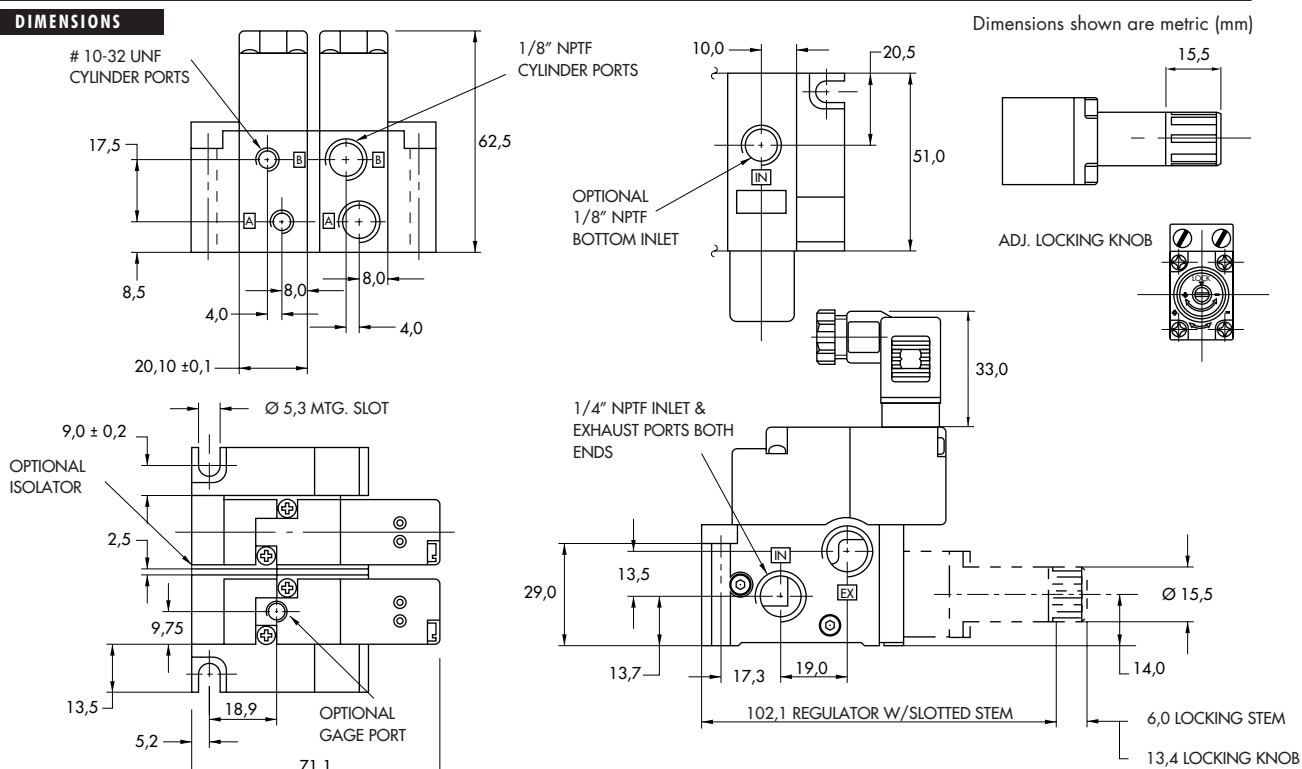
# TECHNICAL DATA

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

Spare parts : • Solenoid operator (power ≥ 5.4 W) : DXXX-XXX, including mounting screws 35013.  
• Seal (between solenoid and valve body) : 16402. • Seal between base and valve : 16453. • Seal between bases : 16455.  
• Tie-rod (x2) : 19753. • Pressure regulator with flow controls : 45A-00N (Slotted Stem), 45A-00P (Locking Slotted Stem), 45A-00S(Adj. Knob). • Inlet & exhaust isolator : N-45008. • Inlet isolator : N-45009. • Exhaust isolator : N-45010.

Options : • BSPP threads. • High flow up to 0.18 C<sub>v</sub>, according to wattage and high flow Mod. • Bottom inlet : specify Mod. 0210.

## DIMENSIONS



HOW TO ORDER

35A - **X X X** - (DXXX - XXX) - FM

BODY TYPE	PORT SIZE	SOLENOID OPTIONS	VALVE FUNCTION/MANIFOLD TYPE
<b>Inline</b> <b>A</b> Individual Inline <b>D</b> Indiv. Inline w/2 Manifold Mount Ports <b>Manifold</b> <b>E</b> Manifold Body (N.C. Only) <b>G</b> Manifold Body w/Gage Port (N.C. Only)	<b>O</b> Manifold Body Only <b>B</b> #10-32 UNF (Inline Only) <b>D</b> M5 (Inline Only)	<b>O</b> Manifold Body Only <b>B</b> 3 way N.C. Only (Inline)	Note : there is no manifold base for the 35 series. The manifold valve can only mount to a circuit bar, see note below

45A - **X X X** - (DXXX - XXX) - FM

BODY TYPE	PORT SIZE	SOLENOID OPTIONS	VALVE FUNCTION/MANIFOLD TYPE
<b>Inline</b> <b>A</b> 4 Port Body <b>B</b> 5 Port Body <b>D</b> 4 Port Body "O" Ring Mount -All Bottom Ports <b>E</b> 5 Port Body "O" Ring Mount -3 Bottom Ports Inlet and Cylinders <b>F</b> 4 Port Body "O" Ring Mount-Bottom Cylinder Ports Only <b>Base Mount</b> <b>O</b> For Base Only - No Valve <b>L</b> Base Mount Body <b>M</b> Base Mount Body with Gage Port	<b>O</b> Manifold Body Only <b>A</b> 1/8" NPT <b>B</b> #10-32 UNF <b>C</b> 1/8" BSPPL <b>D</b> M5 (Metric) <b>F</b> #10-32 UNF Bottom Ports <b>G</b> M5 Bottom Ports <b>H</b> "O" Ring Mount Ports <b>J</b> 1/8" NPT Bottom Ports <b>K</b> 1/8" BSPPL Bottom Ports	<b>Inline</b> <b>1</b> No Flow Controls <b>Bases - Regulators</b> <b>O</b> Valve Only - No Base <b>A</b> Individual Base <b>C</b> Manifold Base <b>E</b> Manifold w/Regulator w/Slotted Stem <b>G</b> Manifold w/Regulator w/Locking Slotted Stem <b>J</b> Manifold w/Regulator w/Locking Knob	

MANIFOLD MOUNT ACCESSORIES

<b>M-45008-01</b>	End Plate Kit
<b>16455</b>	Pressure Seal Between Manifold
<b>19753</b>	Tie Rod
<b>N-45008</b>	Isolator Kit - Inlet and Exhaust
<b>N-45009</b>	Isolator Kit - Inlet only
<b>N-45010</b>	Isolator Kit - Exhaust only
<b>N-45015</b>	End Cover Plate - Plain
<b>N-45016</b>	End Cover Plate w/Flow Controls
<b>N-45017</b>	Flow Control Needle Assembly

D - **X X X** - **X X X** - FM

VOLTAGE	LEAD LENGTH	MANUAL OPERATOR	ELECTRICAL CONNECTION
<b>FR</b> 12VDC (0.6 W) <b>FS</b> 24VDC (0.6 W)	<b>A</b> 18" Leads <b>B</b> 24" Leads <b>C</b> 36" Leads <b>D</b> 48" Leads <b>E</b> 72" Leads <b>J*</b> 6" Leads	<b>0</b> No operator <b>1</b> Non-locking Recessed <b>2</b> Locking Recessed <b>3</b> Non-locking Extended <b>4</b> Locking Extended	<b>BA</b> Grommet <b>CA</b> Conduit 1/2" NPS† <b>CM</b> Metal Conduit 1/2" NPS† <b>CN</b> Metal Conduit w/grd. 1/2" NPS† <b>External Plug-in</b> <b>FM</b> Plug-in (For ECD & ECE Bar) <b>JB</b> Rectangular Plug-in† <b>JM</b> Rectangular Male only† <b>KA</b> Mini Plug-in <b>KJ</b> Mini Plug-in Male only <b>TA</b> Dual Tabs (.110) Plain <b>TJ</b> Dual Tabs (.110) Plain

\*Use "J" for external plug-in connectors

NOTE : For valves mounted to a circuit bar reference MAC circuit bar Catalog for ordering info.  
For the 35 series circuit bar, use MOD FM01 after circuit bar part number.

† Available on individual valves and circuit bars.



0 p t i 0 n s

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**Codification table for voltages / Wire length / Manual operators / Electrical connections**

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VALVE CODE ➤

**-DXX X - X XX**  
**1 2 3 4**

**OPTIONS AVAILABLE FOR**

- Solenoid valves 35, 45 and 82 Series

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## 1. VOLTAGE

### - D XX X - X XX VOLTAGE

<b>AA</b>	120/60, 110/50
<b>AB</b>	240/60, 220/50
<b>AC</b>	24/60, 24/50
<b>AD</b>	24/60
<b>AE</b>	200/60
<b>AF</b>	240/50
<b>AG</b>	100/50, 100/60, 110/60
<b>DA</b>	24 VDC (5.4 W)
<b>DB</b>	12 VDC (5.4 W)
<b>DC</b>	12 VDC (7.5 W)
<b>DD</b>	24 VDC (7.3 W)
<b>DE</b>	12 VDC (12.7 W) - CLSFonly
<b>DF</b>	24 VDC (12.7 W) - CLSF only
<b>DK</b>	110 VDC (4.7 W)
<b>DL</b>	64 VDC (6 W)
<b>DM</b>	36 VDC (5.3 W)
<b>DN</b>	6 VDC (6 W)
<b>DP</b>	48 VDC (5.8 W)
<b>DU</b>	24 VDC (6 W)
<b>EA</b>	12 VDC (6 W)
<b>FA</b>	12 VDC (1.8 W)
<b>FB</b>	24 VDC (1.8 W)
<b>FE</b>	12 VDC (2.4 W)
<b>FF</b>	24 VDC (2.4 W)

## 2. WIRE LENGTH

### - D XX X - X XX WIRE LENGTH

<b>A</b>	18"
<b>B</b>	24"
<b>C</b>	36"
<b>D</b>	48"
<b>E</b>	72"
<b>F</b>	96"
<b>J</b>	For external plug-in connector ("J", "K" & "T" type electrical connection)
<b>P</b>	For plug-in valves (82 Series only)

### 3. MANUAL OPERATOR

#### - D XX X - X XX MANUAL OPERATOR

<b>0</b>	No operator
<b>1</b>	Non-locking recessed
<b>2</b>	Locking recessed
<b>3</b>	Non-locking extended
<b>4</b>	Locking extended

### 4. ELECTRICAL CONNECTION

#### - D XX X - X XX ELECTRICAL CONNECTION

<b>BA</b>	Flying leads
<b>BK</b>	BA with protection diode
<b>BL</b>	BA with protection varistor (M.O.V.)
<b>** CA</b>	1/2" NPS conduit
<b>** CM</b>	1/2" NPS metal conduit
<b>** CN</b>	1/2" NPS metal conduit w/ground
<b>JB</b>	Rectangular connector
<b>JD</b>	Rectangular connector with light
<b>JM</b>	Rectangular connector, male only
<b>KA</b>	Square connector
<b>KB</b>	Square connector with protection diode
<b>KC</b>	Square connector with protection varistor (M.O.V.)
<b>KD</b>	Square connector with light
<b>KE</b>	Square connector with light and protection diode
<b>KF</b>	Square connector with light and protection varistor (M.O.V.)
<b>KG</b>	Square connector with LED light & diode
<b>KJ</b>	Square connector (male only)
<b>KK</b>	Square connector with protection diode (male only)
<b>KL</b>	Square connector with protection varistor (male only) (M.O.V.)
<b>*** MA</b>	Electrical common conduit
<b>TA</b>	Dual tabs
<b>TB</b>	TA with protection diode
<b>TD</b>	TA with light
<b>TE</b>	TA with light and protection diode
<b>TJ</b>	Dual tabs (male only)
<b>TK</b>	TJ with protection diode
<b>TM</b>	TJ with light
<b>TN</b>	TJ with light and protection diode
<b>DA*</b>	Plug-in connector
<b>DK*</b>	DA with protection diode
<b>DL*</b>	DA with protection varistor (M.O.V.)

\* To be used with 82 Series only

\*\* Inline valves only for 35 & 45 series. No restrictions for 82 series.

\*\*\* Stacking valves only for 35 & 45 series. Conduit end plate kit required, one per stack.

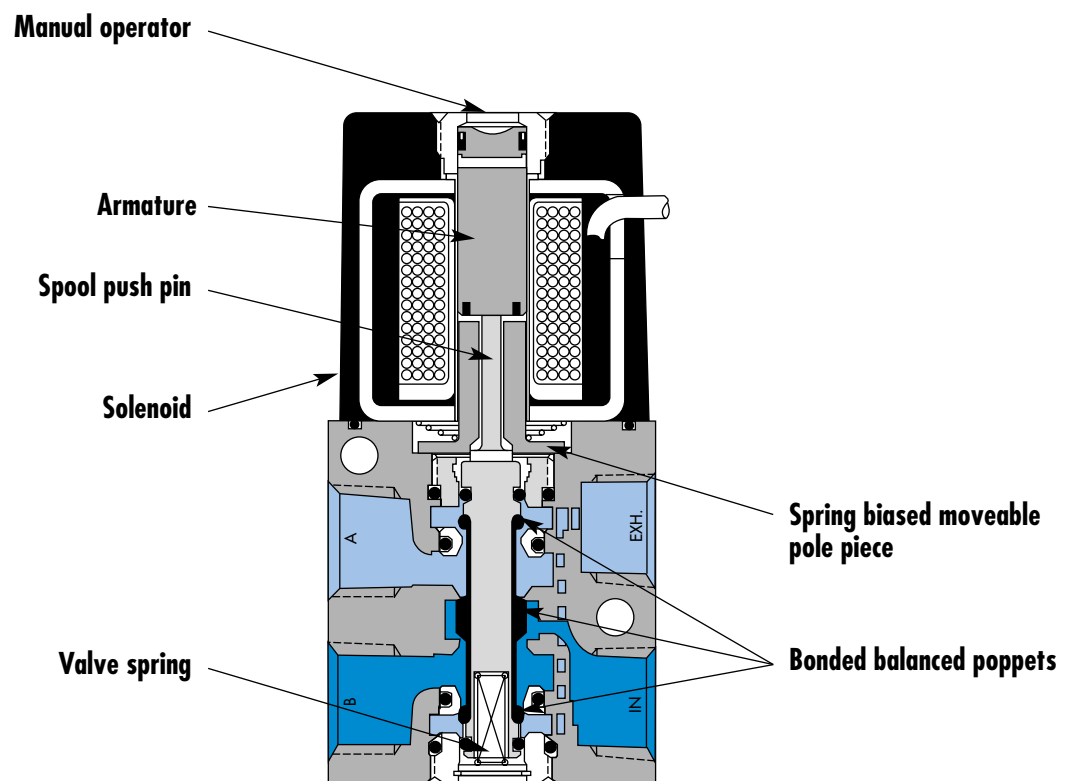
35 series : M-35002-01

45 series : M-45005-01



### Circuit bar mounting

non plug-in with or without F. C.	non plug-in with Pr. Reg.	non plug-in with Pr. Reg. and F. C.	plug-in	plug-in with side Pr. Reg.	plug-in with sandwich Pr. Reg.	plug-in with F. C.	plug-in with Pr. Reg. and F. C.
plug-in with integral terminal strip	plug-in with integral terminal strip and side Pr. Reg.	plug-in with integral terminal strip and sandwich Pr. Reg.	plug-in with integral terminal strip with F. C.	plug-in with integral terminal strip with Pr. Reg. and F. C.			



### SERIES FEATURES

- Patented MACSOLENOID<sup>®</sup> for fastest possible response times.
- Extremely high cycle rate capability.
- Rated for lubricated or non-lubricated service.
- Various solenoid enclosures and plug-in connectors.
- Low wattage DC solenoids - down to 1.8 watts.

Function	Port size	Flow [Max]	Circuit bar mounting
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	non plug-in with or without F. C.

## OPERATIONAL BENEFITS

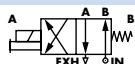
1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.

Reset

## HOW TO ORDER

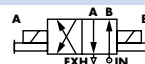
HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

### Single operator

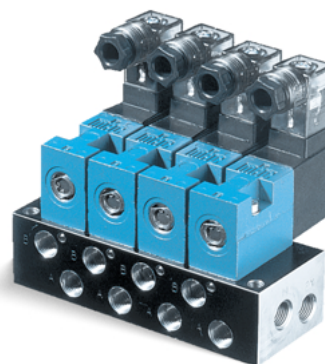


45A-L00-Dxxx-xxx

### Double operator (Minimum DC wattage 5,4W)



45A-N00-Dxxx-xxx



SOLENOID OPERATOR ➤

D **XX X- X XX\***

XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection
AA	120/60, 110/50	A	18" (Flying leads)	1	Non-locking Recessed	KA	Square connector
AB	240/60, 220/50	J	Connector	2	Locking Recessed	KD	Square connector with light
AC	24/60, 24/50					BA	Flying leads
FB	24VDC (1.8 W)						
DA	24VDC (5.4 W)						
DF	24VDC (12.7 W)						

HOW TO ORDER CIRCUIT BAR\*\* (WITHOUT FLOW CONTROLS)

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
<b>1/8" NPTF</b>	21	EBM45A-001A-xx	EBM45A-002A-xx
<b># 10-32 UNF</b>	21	EBM45A-001B-xx	EBM45A-002B-xx

HOW TO ORDER CIRCUIT BAR\*\* (WITH FLOW CONTROLS)

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
<b>1/8" NPTF</b>	26	EBM45A-015A-xx	EBM45A-016A-xx
<b># 10-32 UNF</b>	26	EBM45A-015B-xx	EBM45A-016B-xx
<b>1/8" NPTF</b>	40	EBM45A-025A-xx	EBM45A-026A-xx
<b># 10-32 UNF</b>	40	EBM45A-025B-xx	EBM45A-026B-xx

Number of stations (03=3 stations)

\*\* Other options available Consult factory.

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

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

**TECHNICAL  
DATA**

<b>Fluid :</b>	Compressed air, vacuum, inert gases		
<b>Pressure range :</b>	Vacuum to 120 PSI		
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
<b>Filtration :</b>	40 µ		
<b>Temperature range :</b>	0°F to 120°F (-18°C to 50°C)		
<b>Orifice :</b>	2 mm		
<b>Flow (at 6 bar, ΔP=1bar) :</b>	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>		
<b>Coil :</b>	General purpose class A, continuous duty, encapsulated		
<b>Voltage range :</b>	-15% to +10% of nominal voltage		
<b>Protection :</b>	Nema 4		
<b>Power :</b>	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)    Holding : 7.7 VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W		
<b>Response times :</b>	24 VDC (5.4W)	Energize : 6 ms	De-energize : 2 ms
	120 VAC	Energize : 3-8 ms	De-energize : 2-7 ms

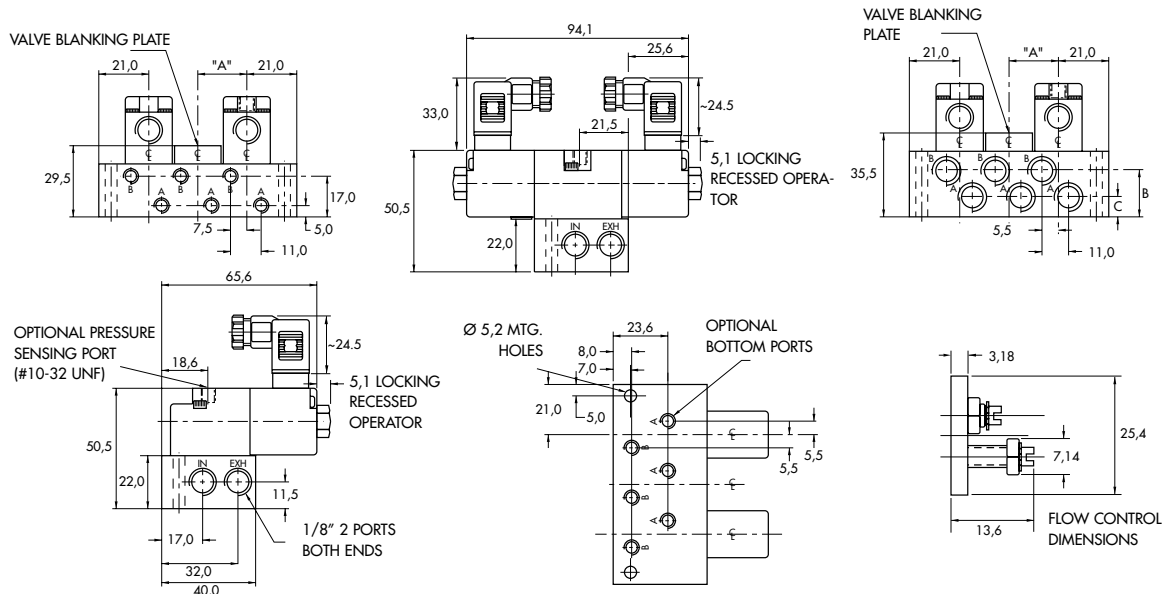
Spare parts :

- Solenoid operator (power ≥ 5.4 W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

Options :

- BSPP threads. • High flow up to 0.14 C<sub>v</sub>, according to wattage. • Isolation of inlet and/or exhaust.

**DIMENSIONS**



SPACING SIZE	A	PORT SIZE	B	C
STANDARD	21.0	1/8"	20.0	8.0
PER JB	26.0	M5	22.0	6.0
GAGES	40.0			

Function	Port size	Flow [Max]	Circuit bar mounting
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	non plug-in with Pr. Reg.

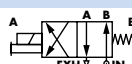

## OPERATIONAL BENEFITS

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

Reset

## HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

	Single operator	Double operator (Minimum DC wattage 5,4W)
		
<b>Valve w/o gage port</b>	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
<b>Valve w/ gage port</b>	45A-M00-Dxxx-xxx	45A-P00-Dxxx-xxx

SOLENOID OPERATOR ➤

D **XX X- X XX**\*

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
<b>AA</b> 120/60, 110/50	<b>A</b> 18" (Flying leads)	<b>1</b> Non-locking Recessed	<b>KA</b> Square connector
<b>AB</b> 240/60, 220/50	<b>J</b> Connector	<b>2</b> Locking Recessed	<b>KD</b> Square connector with light
<b>AC</b> 24/60, 24/50			<b>BA</b> Flying leads
<b>FB</b> 24VDC (1.8 W)			
<b>DA</b> 24VDC (5.4 W)			
<b>DF</b> 24VDC (12.7 W)			

HOW TO ORDER CIRCUIT BAR WITH PRESSURE REGULATORS (ORDER REGULATORS SEPARATELY) \*\*

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
<b>1/8" NPTF</b>	21 (w/o gage)	EBM45A-003A-xx	EBM45A-004A-xx
<b># 10-32 UNF</b>	21 (w/o gage)	EBM45A-003B-xx	EBM45A-004B-xx
<b>1/8" NPTF</b>	40 (w/ gage)	EBM45A-023A-xx	EBM45A-024A-xx
<b># 10-32 UNF</b>	40 (w/ gage)	EBM45A-023B-xx	EBM45A-024B-xx

Number of stations (03=3 stations)

\*\* Other options available Consult factory.

Note : clic for valves and regulators mounted to circuit bar at the factory (add - 9 to the model number).  
gage not supplied w/circuit bar.

Pressure regulators :

35A-00M (Adjusting knob)

35A-00L (Slotted stem)

35A-00U (Locking stem)

### TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Vacuum to 120 PSI		
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to 50°C)		
Orifice :	2 mm		
Flow (at 6 bar, ΔP=1bar) :	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	Nema 4		
Power :	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)      Holding : 7.7 VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W		
Response times :	24 VDC (5.4W)	Energize : 6 ms	De-energize : 2 ms
	120 VAC	Energize : 3-8 ms	De-energize : 2-7 ms

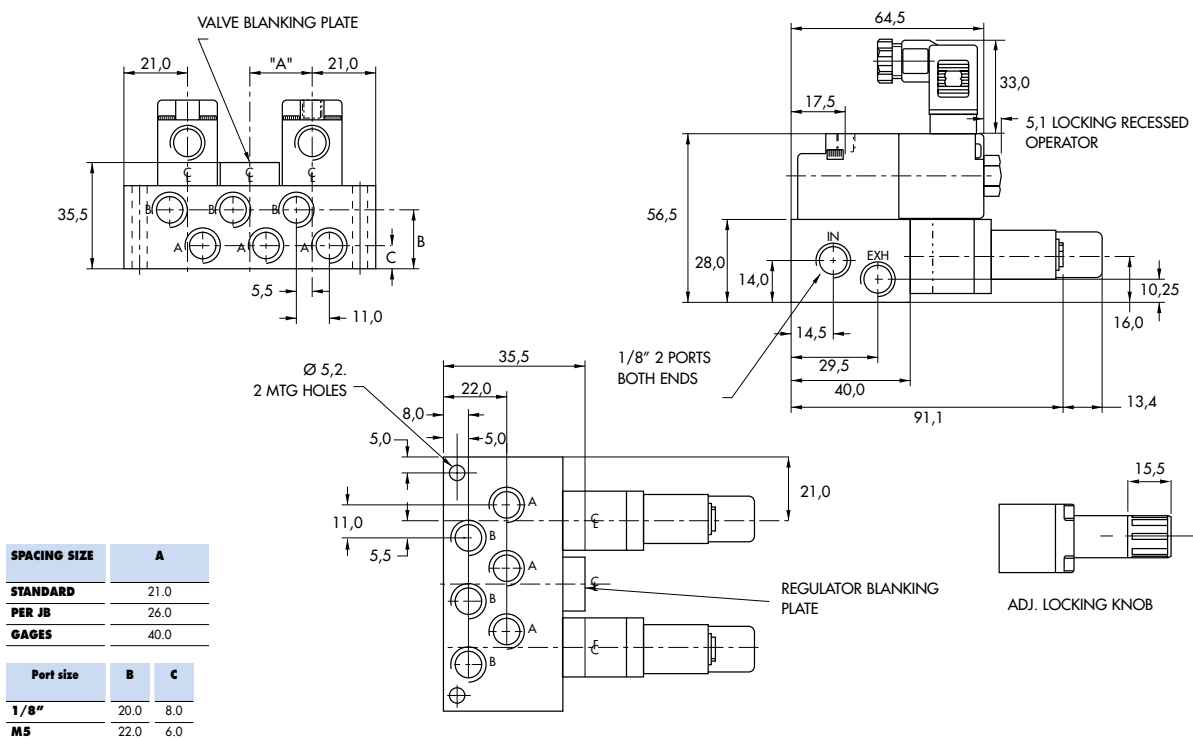
#### Spare parts :

- Solenoid operator (power ≥ 5.4 W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

#### Options :

- BSPP threads. • High flow up to 0.14 C<sub>v</sub>, according to wattage. • Isolation of inlet and/or exhaust.

### DIMENSIONS



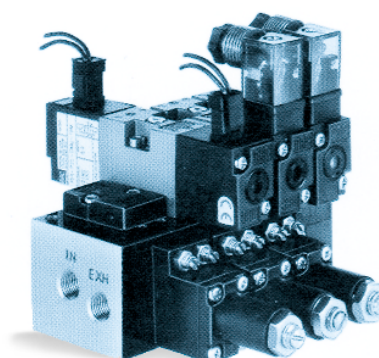
Function	Port size	Flow [Max]	Circuit bar mounting
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	non plug-in with Pr. Reg. and F. C.

## OPERATIONAL BENEFITS

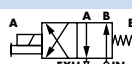

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.

Reset

## HOW TO ORDER



## HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

	Single operator	Double operator (Minimum DC wattage 5,4W)
		
<b>Valve w/o gage port</b>	45A-L00-Dxxx-xxx	45A-N00-Dxxx-xxx
<b>Valve w/ gage port</b>	45A-M00-Dxxx-xxx	45A-P00-Dxxx-xxx

## SOLENOID OPERATOR >

D **XX X- X XX**\*

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
AA 120/60, 110/50	A 18" (Flying leads)	1 Non-locking Recessed	KA Square connector
AB 240/60, 220/50	J Connector	2 Locking Recessed	KD Square connector with light
AC 24/60, 24/50			BA Flying leads
FB 24VDC (1.8 W)			
DA 24VDC (5.4 W)			
DF 24VDC (12.7 W)			

## HOW TO ORDER CIRCUIT BAR WITH PRESSURE REGULATORS AND FLOW CONTROLS (ORDER REGULATOR AND FLOW CONTROL SEPARATELY) \*\*

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
<b>1/8" NPTF</b>	21 (w/o gage)	EBM45A-007A-xx	EBM45A-008A-xx
<b># 10-32 UNF</b>	21 (w/o gage)	EBM45A-007B-xx	EBM45A-008B-xx
<b>1/8" NPTF</b>	40 (w/ gage)	EBM45A-027A-xx	EBM45A-028A-xx
<b># 10-32 UNF</b>	40 (w/ gage)	EBM45A-027B-xx	EBM45A-028B-xx

Number of stations (03=3 stations)

\*\* Other options available Consult factory.

Note : clic for valves, regulators and flow controls mounted to circuit bar at the factory (add - 9 to the model number).  
gage not supplied w/circuit bar

Pressure regulators and flow controls:

- 45A-001 (Slotted stem)
- 45A-002 (Adjusting knob)
- 45A-003 (Locking stem)

**TECHNICAL  
DATA**

<b>Fluid :</b>	Compressed air, vacuum, inert gases		
<b>Pressure range :</b>	Vacuum to 120 PSI		
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
<b>Filtration :</b>	40 µ		
<b>Temperature range :</b>	0°F to 120°F (-18°C to 50°C)		
<b>Orifice :</b>	2 mm		
<b>Flow (at 6 bar, ΔP=1bar) :</b>	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>		
<b>Coil :</b>	General purpose class A, continuous duty, encapsulated		
<b>Voltage range :</b>	-15% to +10% of nominal voltage		
<b>Protection :</b>	Nema 4		
<b>Power :</b>	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)    Holding : 7.7 VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W		
<b>Response times :</b>	24 VDC (5.4W)	Energize : 6 ms	De-energize : 2 ms
	120 VAC	Energize : 3-8 ms	De-energize : 2-7 ms

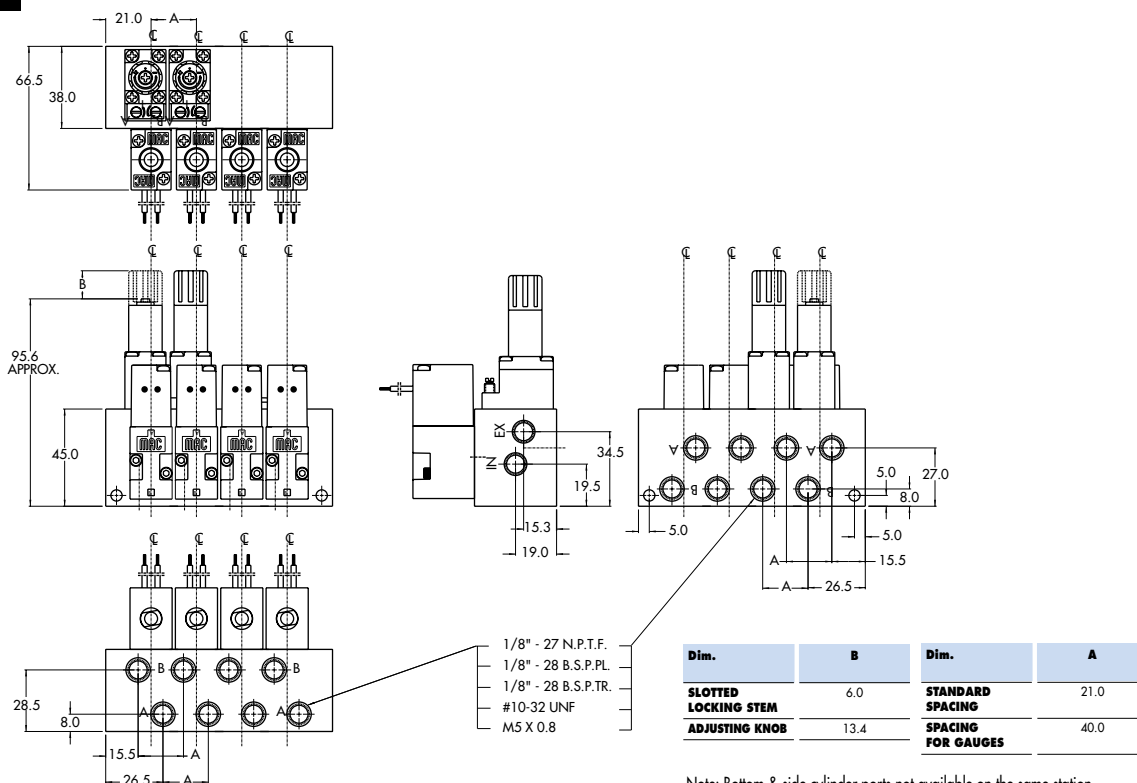
**Spare parts :**

- Solenoid operator (power ≥ 5.4 W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

**Options :**

- BSPP threads. • High flow up to 0.14C<sub>v</sub>, according to wattage. • Isolation of inlet and/or exhaust.

**DIMENSIONS**



Note: Bottom & side cylinder ports not available on the same station

Function	Port size	Flow [Max]	Circuit bar mounting
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	plug-in

## OPERATIONAL BENEFITS

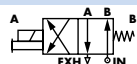
1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.

Reset

## HOW TO ORDER

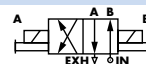
HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING "PLUG-IN"

### Single operator



45A-L00-DxxJ-xFM

### Double operator (Minimum DC wattage 5,4W)



45A-N00-DxxJ-xFM

SOLENOID OPERATOR ➤

D **xx** J- **x** FM

<b>xx</b> Voltage	<b>x</b> Manual operator
<b>AA</b> 120/60, 110/50	<b>1</b> Non-locking Recessed
<b>AB</b> 240/60, 220/50	<b>2</b> Locking Recessed
<b>AC</b> 24/60, 24/50	
<b>FB</b> 24VDC (1.8 W)	
<b>DA</b> 24VDC (5.4 W)	
<b>DF</b> 24VDC (12.7 W)	

HOW TO ORDER "PLUG-IN" CIRCUIT BAR\*\*

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
<b>1/8" NPTF</b>	21	ECD45A-001A-A0-xx	ECD45A-002A-A0-xx
<b># 10-32 UNF</b>	21	ECD45A-001B-A0-xx	ECD45A-002B-A0-xx
<b>1/8" NPTF</b>	30	ECD45A-031A-C0-xx	ECD45A-032A-C0-xx
<b># 10-32 UNF</b>	30	ECD45A-031B-C0-xx	ECD45A-032B-C0-xx

Number of stations (03=3 stations)

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

\*\* A0 = without light  
AA = with light (120V)  
AB = with light (240V)  
AD = with light (24V)  
C0 = terminal strip  
CA = terminal w/light (120V)  
CB = terminal w/light (240V)  
CD = terminal w/light (24V)

## OPTIONS

ECD45A-002A-A0-xx

- clic for double operator valve (replace by 8) (Bottom cylinder ports).



### TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Vacuum to 120 PSI		
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to 50°C)		
Orifice :	2 mm		
Flow (at 6 bar, $\Delta P=1\text{bar}$ ) :	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	Nema 4		
Power :	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)      Holding : 7.7 VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W		
Response times :	24 VDC (5.4W)	Energize : 6 ms	De-energize : 2 ms
	120 VAC	Energize : 3-8 ms	De-energize : 2-7 ms

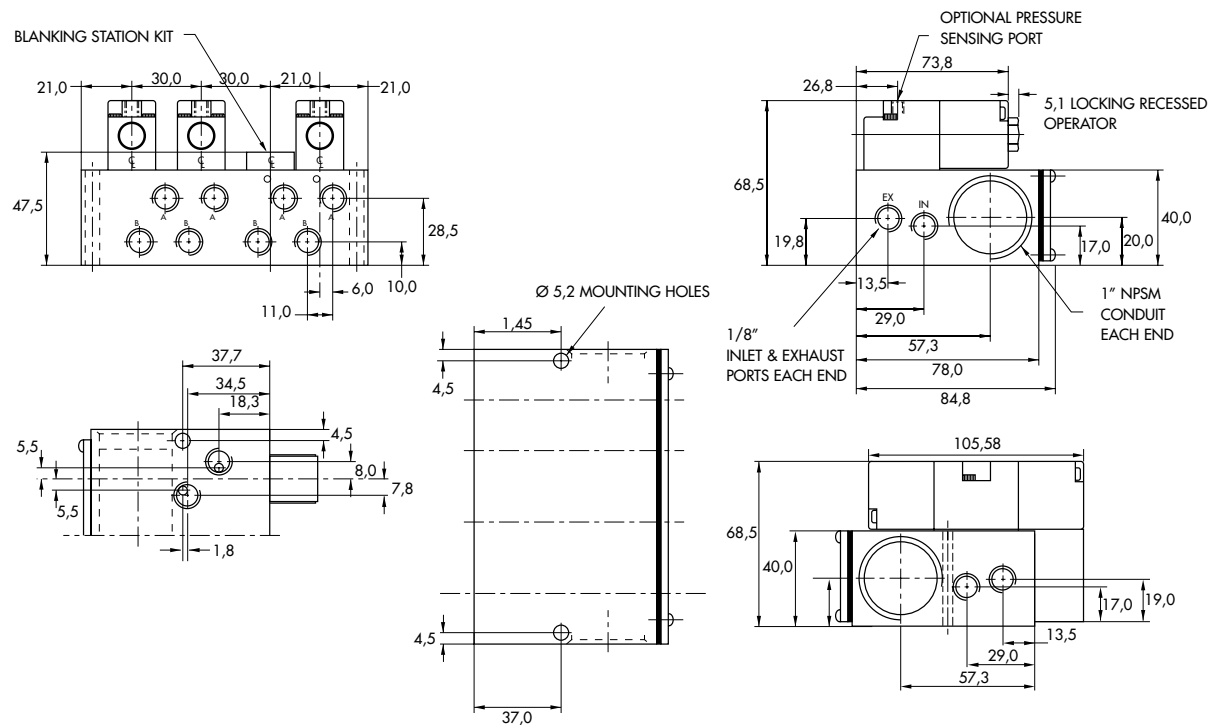
#### Spare parts :

- Solenoid operator (power  $\geq 5.4$  W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

#### Options :

- BSPP threads. • High flow up to 0.14C<sub>v</sub>, according to wattage. • Isolation of inlet and/or exhaust.

### DIMENSIONS



Function	Port size	Flow [Max]	Circuit bar mounting
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	plug-in with side Pr. Reg.

## OPERATIONAL BENEFITS

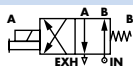
1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.

Reset

## HOW TO ORDER

HOW TO ORDER VALVE FOR "PLUG-IN" CIRCUIT BAR

### Single operator

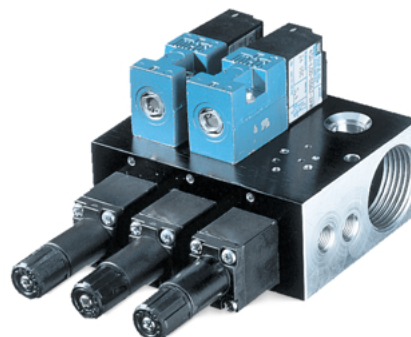


45A-L00-DxxJ-xFM

45A-M00-DxxJ-xFM

Valve w/o gage port

Valve w/ gage port



SOLENOID OPERATOR ➤

D **xx** J- **x** FM\*

### xx Voltage

<b>AA</b>	120/60, 110/50
<b>AB</b>	240/60, 220/50
<b>AC</b>	24/60, 24/50
<b>FB</b>	24VDC (1.8 W)
<b>DA</b>	24VDC (5.4 W)
<b>DF</b>	24VDC (12.7 W)

### x Manual operator

<b>1</b>	Non-locking Recessed
<b>2</b>	Locking Recessed

HOW TO ORDER CIRCUIT BAR WITH PRESSURE REGULATORS (TO BE ORDERED SEPARATELY) \*\*

Port size	Spacing mm	Bottom cylinder ports
<b>1/8" NPTF</b>	21	ECD45A-004A-A0-xx
<b># 10-32 UNF</b>	21	ECD45A-004B-A0-xx
<b>1/8" NPTF</b>	30	ECD45A-034A-C0-xx
<b># 10-32 UNF</b>	30	ECD45A-034B-C0-xx
<b>1/8" NPTF</b>	40	ECD45A-024A-A0-xx
<b># 10-32 UNF</b>	40	ECD45A-024B-A0-xx

Number of stations (03=3 stations)

Note : clic for valves and regulators mounted to circuit bar at the factory (add - 9 to the model number).  
for multi-pin connector (9, 15 or 25).  
minimum spacing for terminal strips is 30 mm.  
use 40 mm spacing for gages.

\*\* Pressure Regulators :

35A-00M (Adjusting knob)  
35A-00L (Slotted stem)  
35A-00U (Locking stem)

\*\* A0 = without light

AA = with light (120V)  
AB = with light (240V)  
AD = with light (24V)  
C0 = terminal strip  
CA = terminal w/light (120V)  
CB = terminal w/light (240V)  
CD = terminal w/light (24V)

### TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Vacuum to 120 PSI		
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to 50°C)		
Orifice :	2 mm		
Flow (at 6 bar, ΔP=1bar) :	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	Nema 4		
Power :	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)      Holding : 7.7 VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W		
Response times :	24 VDC (5.4W)	Energize : 6 ms	De-energize : 2 ms
	120 VAC	Energize : 3-8 ms	De-energize : 2-7 ms

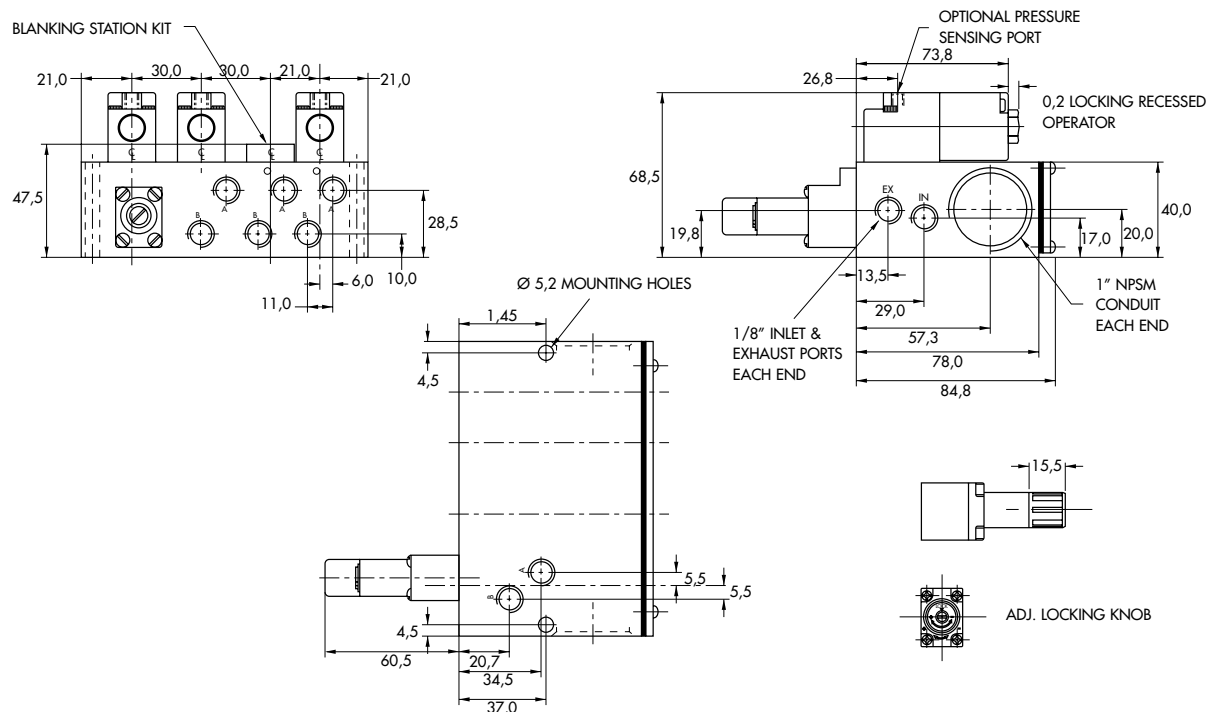
#### Spare parts :

- Solenoid operator (power ≥ 5.4 W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

#### Options :

- BSPP threads. • High flow up to 0.14 C<sub>v</sub>, according to wattage. • Isolation of inlet and/or exhaust.

### DIMENSIONS



Function	Port size	Flow [Max]	Circuit bar mounting
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	plug-in with sandwich Pr. Reg.

## OPERATIONAL BENEFITS

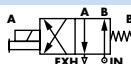
1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.

Reset

## HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING "PLUG-IN"

### Single operator

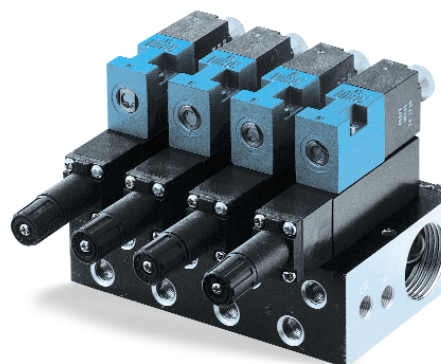


45A-L00-DxxJ-xFM

45A-M00-DxxJ-xFM

Valve w/o gage port

Valve w/ gage port



SOLENOID OPERATOR ➤

D **xx** J- **x** FM\*

xx	Voltage
AA	120/60, 110/50
AB	240/60, 220/50
AC	24/60, 24/50
FB	24VDC (1.8 W)
DA	24VDC (5.4 W)
DF	24VDC (12.7 W)

x	Manual operator
1	Non-locking Recessed
2	Locking Recessed

HOW TO ORDER "PLUG-IN" CIRCUIT BAR WITH SANDWICH PRESSURE REGULATORS (TO BE ORDERED SEPARATELY) \*\*

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
<b>1/8" NPTF</b>	21	ECD45A-001A-A0-xx	ECD45A-002A-A0-xx
<b># 10-32 UNF</b>	21	ECD45A-001B-A0-xx	ECD45A-002B-A0-xx
<b>1/8" NPTF</b>	30	ECD45A-031A-C0-xx	ECD45A-032A-C0-xx
<b># 10-32 UNF</b>	30	ECD45A-031B-C0-xx	ECD45A-032B-C0-xx
<b>1/8" NPTF</b>	40	ECD45A-021A-A0-xx	ECD45A-022A-A0-xx
<b># 10-32 UNF</b>	40	ECD45A-021B-A0-xx	ECD45A-022B-A0-xx

Number of stations (03=3 stations)

Note : clic for valves and regulators mounted to circuit bar at the factory, add - 9 to the model number.  
for multi-pin connector (9, 15 or 25).  
minimum spacing for terminal strips is 30 mm.  
use 40 mm spacing for gages.

\*\* Pressure Regulators :

PR45A-AA0A (Adjusting knob)  
PR45A-AB0A (Slotted stem)  
PR45A-AC0A (Locking stem)

\*\* A0 = without light

AA = with light (120V)  
AB = with light (240V)  
AD = with light (24V)  
C0 = terminal strip  
CA = terminal w/light (120V)  
CB = terminal w/light (240V)  
CD = terminal w/light (24V)

## TECHNICAL DATA

<b>Fluid :</b>	Compressed air, vacuum, inert gases		
<b>Pressure range :</b>	Vacuum to 120 PSI		
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
<b>Filtration :</b>	40 µ		
<b>Temperature range :</b>	0°F to 120°F (-18°C to 50°C)		
<b>Orifice :</b>	2 mm		
<b>Flow (at 6 bar, ΔP=1bar) :</b>	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>		
<b>Coil :</b>	General purpose class A, continuous duty, encapsulated		
<b>Voltage range :</b>	-15% to +10% of nominal voltage		
<b>Protection :</b>	Nema 4		
<b>Power :</b>	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)      Holding : 7.7 VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W		
<b>Response times :</b>	24 VDC (5.4W)	Energize : 6 ms	De-energize : 2 ms
	120 VAC	Energize : 3-8 ms	De-energize : 2-7 ms

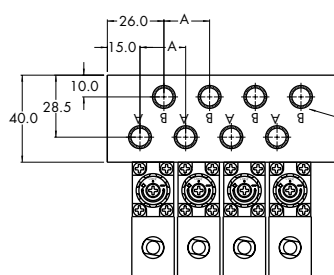
### Spare parts :

- Solenoid operator (power ≥ 5.4 W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

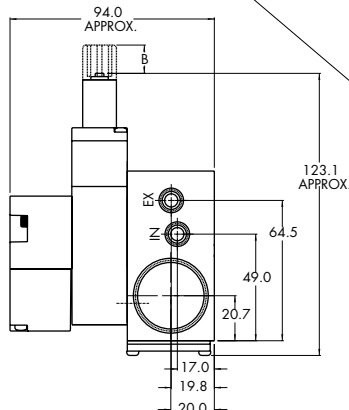
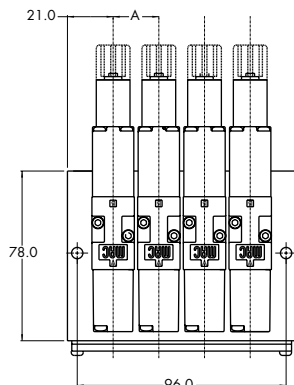
### Options :

- BSPP threads. • High flow up to 0.14C<sub>v</sub>, according to wattage. • Isolation of inlet and/or exhaust.

## DIMENSIONS

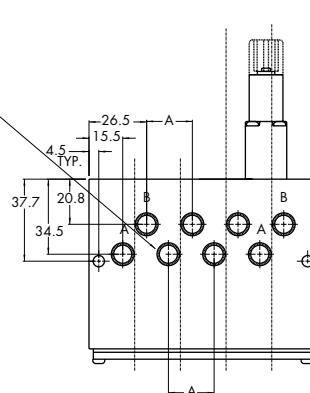


1/8" - 27 N.P.T.F.  
1/8" - 28 B.S.P.PL.  
1/8" - 28 B.S.P.TR.  
#10-32  
M5 0.8



Dim.	A	Dim.	B
<b>STANDARD SPACING</b>	21.0	<b>SLOTTED LOCKING STEM</b>	6.0
<b>OPTIONAL SPACING</b>	30.0	<b>ADJUSTING KNOB</b>	13.4
<b>SPACING FOR GAUGES</b>	40.0		

Note: Bottom & side cylinder ports not available on the same station



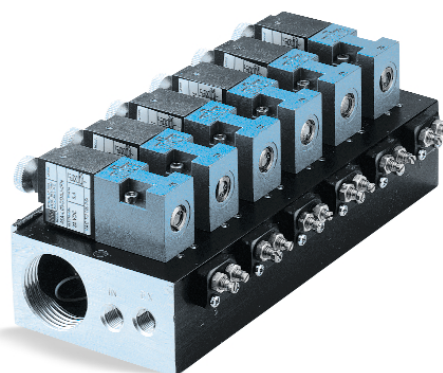
Function	Port size	Flow [Max]	Circuit bar mounting
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	plug-in with F. C.

## OPERATIONAL BENEFITS

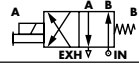
1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.

Reset

## HOW TO ORDER



HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING "PLUG-IN"

Port size (see base)	Single operator
Valve less base	 45A-L00-DxxJ-xFM

SOLENOID OPERATOR ➤

D **xx** J- **x** FM\*

<b>xx</b> Voltage	<b>x</b> Manual operator
<b>AA</b> 120/60, 110/50	<b>1</b> Non-locking Recessed
<b>AB</b> 240/60, 220/50	<b>2</b> Locking Recessed
<b>AC</b> 24/60, 24/50	
<b>FB</b> 24VDC (1.8 W)	
<b>DA</b> 24VDC (5.4 W)	
<b>DF</b> 24VDC (12.7 W)	

HOW TO ORDER "PLUG-IN" CIRCUIT BAR WITH FLOW CONTROLS \*\*

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
<b>1/8" NPTF</b>	21	-----	ECD45A-006A-A0-xx
<b># 10-32 UNF</b>	21	-----	ECD45A-006B-A0-xx
<b>1/8" NPTF</b>	30	ECD45A-035A-A0-xx	-----
<b># 10-32 UNF</b>	30	ECD45A-035B-A0-xx	-----

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).  
for multi-pin connector (9, 15 or 25).  
minimum spacing for terminal strips is 30 mm.

\*\* A0 = without light  
AA = with light (120V)  
AB = with light (240V)  
AD = with light (24V)  
C0 = terminal strip  
CA = terminal w/light (120V)  
CB = terminal w/light (240V)  
CD = terminal w/light (24V)

TECHNICAL  
DATA

<b>Fluid :</b>	Compressed air, vacuum, inert gases		
<b>Pressure range :</b>	Vacuum to 120 PSI		
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
<b>Filtration :</b>	40 µ		
<b>Temperature range :</b>	0°F to 120°F (-18°C to 50°C)		
<b>Orifice :</b>	2 mm		
<b>Flow (at 6 bar, ΔP=1bar) :</b>	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>		
<b>Coil :</b>	General purpose class A, continuous duty, encapsulated		
<b>Voltage range :</b>	-15% to +10% of nominal voltage		
<b>Protection :</b>	Nema 4		
<b>Power :</b>	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)      Holding : 7.7VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W		
<b>Response times :</b>	24 VDC (5.4W)	Energize : 6 ms	De-energize : 2 ms
	120 VAC	Energize : 3-8 ms	De-energize : 2-7 ms

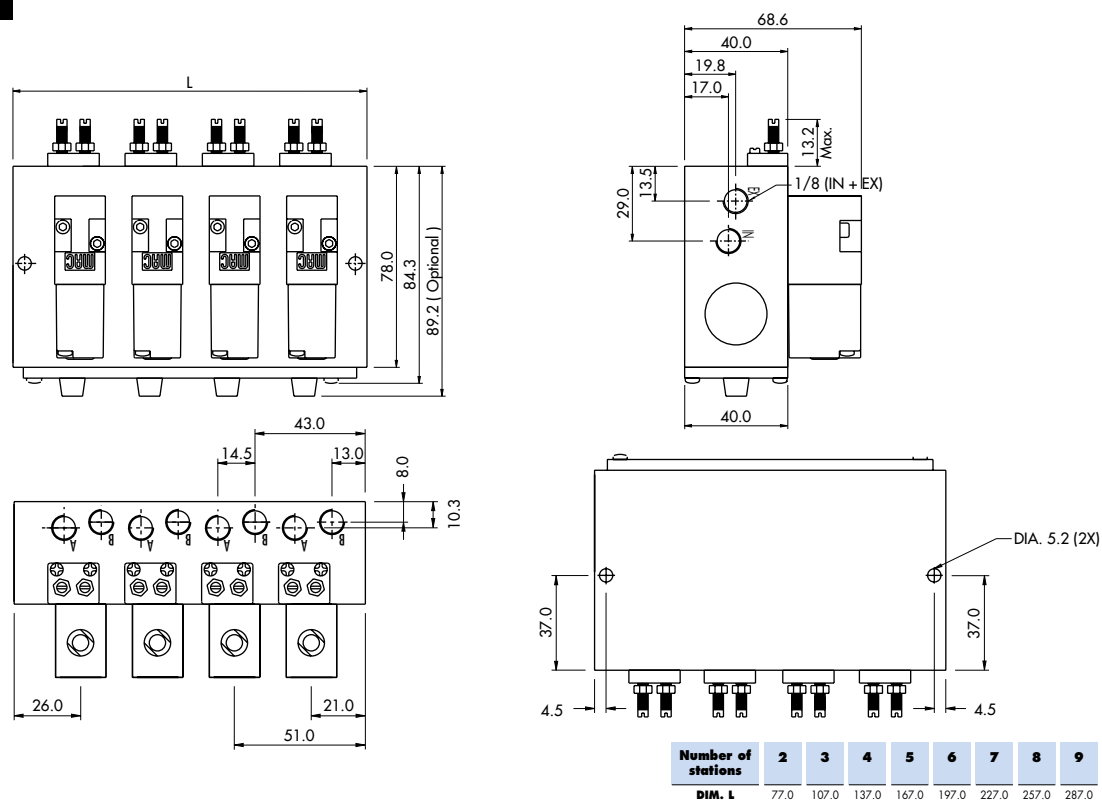
Spare parts :

- Solenoid operator (power  $\geq 5.4$  W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

Options :

- BSPP threads.
- High flow up to  $0.14C_v$ , according to wattage.
- Isolation of inlet and/or exhaust.

## DIMENSIONS



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

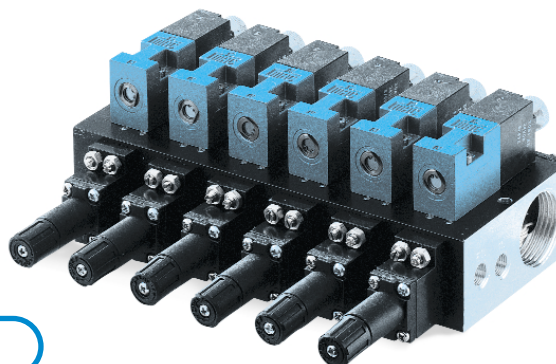
Function	Port size	Flow [Max]	Circuit bar mounting
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	plug-in with Pr. Reg. and F. C.

## OPERATIONAL BENEFITS

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

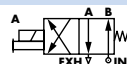
Reset

## HOW TO ORDER



HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING "PLUG-IN"

Port size (see base)	Single operator
Valve less base (w/o gage port)	45A-L00-DxxJ-xFM
Valve less base (w/ gage port)	45A-M00-DxxJ-xFM



SOLENOID OPERATOR ➤

D **xx** J- **x** FM\*

<b>xx</b> Voltage	<b>x</b> Manual operator
<b>AA</b> 120/60, 110/50	<b>1</b> Non-locking Recessed
<b>AB</b> 240/60, 220/50	<b>2</b> Locking Recessed
<b>AC</b> 24/60, 24/50	
<b>FB</b> 24VDC (1.8 W)	
<b>DA</b> 24VDC (5.4 W)	
<b>DF</b> 24VDC (12.7 W)	

HOW TO ORDER "PLUG-IN" CIRCUIT BAR WITH REGULATORS AND FLOW CONTROLS (TO BE ORDERED SEPARATELY) \*\*

Port size	Spacing mm	Bottom cylinder ports
<b>1/8" NPTF</b>	21	ECD45A-007A-A0-xx
<b># 10-32 UNF</b>	21	ECD45A-007B-A0-xx
<b>1/8" NPTF</b>	30	ECD45A-037A-C0-xx
<b># 10-32 UNF</b>	30	ECD45A-037B-C0-xx

Number of stations (03=3 stations)

Note : clic for valves and regulators mounted to circuit bar at the factory  
(add - 9 to the model number).  
for multi-pin connector (9, 15 or 25).  
minimum spacing for terminal strips is 30 mm.

Pressure regulators and flow controls:

- 45A-001 (Slotted stem)
- 45A-002 (Adjusting knob)
- 45A-003 (Locking stem)

- \*\* A0 = without light
- AA = with light (120V)
- AB = with light (240V)
- AD = with light (24V)

- \*\* C0 = terminal strip
- CA = terminal w/light (120V)
- CB = terminal w/light (240V)
- CD = terminal w/light (24V)



**TECHNICAL  
DATA**

<b>Fluid :</b>	Compressed air, vacuum, inert gases		
<b>Pressure range :</b>	Vacuum to 120 PSI		
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
<b>Filtration :</b>	40 µ		
<b>Temperature range :</b>	0°F to 120°F (-18°C to 50°C)		
<b>Orifice :</b>	2 mm		
<b>Flow (at 6 bar, ΔP=1bar) :</b>	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>		
<b>Coil :</b>	General purpose class A, continuous duty, encapsulated		
<b>Voltage range :</b>	-15% to +10% of nominal voltage		
<b>Protection :</b>	Nema 4		
<b>Power :</b>	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)      Holding : 7.7 VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W		
<b>Response times :</b>	24 VDC (5.4W)	Energize : 6 ms	De-energize : 2 ms
	120 VAC	Energize : 3-8 ms	De-energize : 2-7 ms

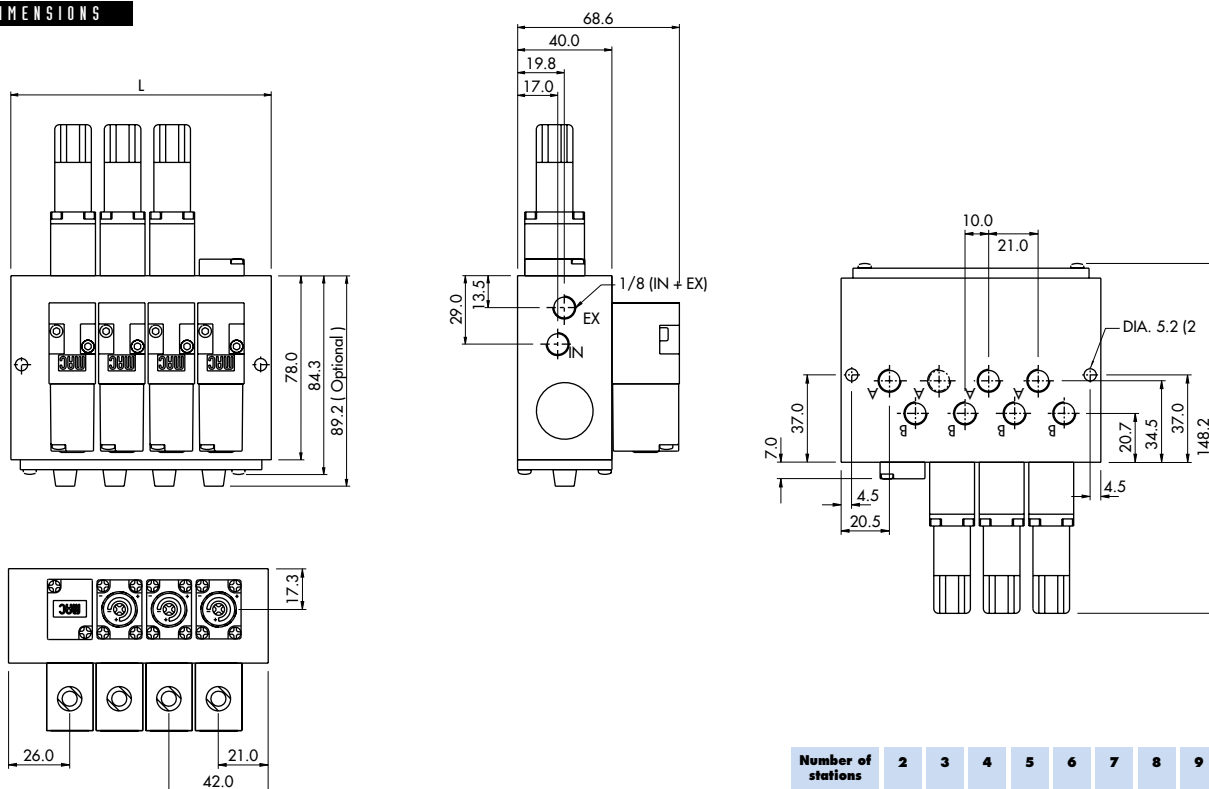
Spare parts :

- Solenoid operator (power ≥ 5.4 W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

Options :

- BSPP threads. • High flow up to 0.14C<sub>v</sub>, according to wattage. • Isolation of inlet and/or exhaust.

**DIMENSIONS**



Function	Port size	Flow [Max]	Circuit bar mounting	S
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	plug-in with integral terminal strip	

## OPERATIONAL BENEFITS

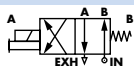
1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.

Reset

## HOW TO ORDER

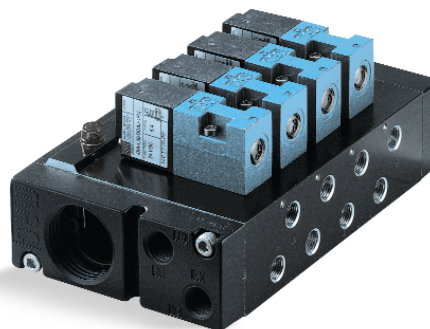
HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING "PLUG-IN"

### Single operator



45A-L00-DxxJ-xFM

Valve less base



SOLENOID OPERATOR ➤

D **xx** J- **x** FM

<b>xx</b> Voltage	<b>x</b> Manual operator
<b>AA</b> 120/60, 110/50	<b>1</b> Non-locking Recessed
<b>AB</b> 240/60, 220/50	<b>2</b> Locking Recessed
<b>AC</b> 24/60, 24/50	
<b>FB</b> 24VDC (1.8 W)	
<b>DA</b> 24VDC (5.4 W)	
<b>DF</b> 24VDC (12.7 W)	

HOW TO ORDER "PLUG-IN" CIRCUIT BAR\*\*

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
<b>1/8" NPTF</b>	26	ECE45A-011A-C0-xx	ECE45A-012A-C0-xx
<b># 10-32 UNF</b>	26	ECE45A-011B-C0-xx	ECE45A-012B-C0-xx

Number of stations (03=3 stations)

End plate kit required : M-45017

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

\*\* C0 = terminal strip

CA = terminal strip w/light (120V)

CB = terminal strip w/light (240V)

CD = terminal strip w/light (24V)

## TECHNICAL DATA

<b>Fluid :</b>	Compressed air, vacuum, inert gases
<b>Pressure range :</b>	Vacuum to 120 PSI
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
<b>Filtration :</b>	40 µ
<b>Temperature range :</b>	0°F to 120°F (-18°C to 50°C)
<b>Orifice :</b>	2 mm
<b>Flow (at 6 bar, ΔP=1bar) :</b>	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>
<b>Coil :</b>	General purpose class A, continuous duty, encapsulated
<b>Voltage range :</b>	-15% to +10% of nominal voltage
<b>Protection :</b>	Nema 4
<b>Power :</b>	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)      Holding : 7.7 VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W
<b>Response times :</b>	24 VDC (5.4W)      Energize : 6 ms      De-energize : 2 ms 120 VAC      Energize : 3-8 ms      De-energize : 2-7 ms

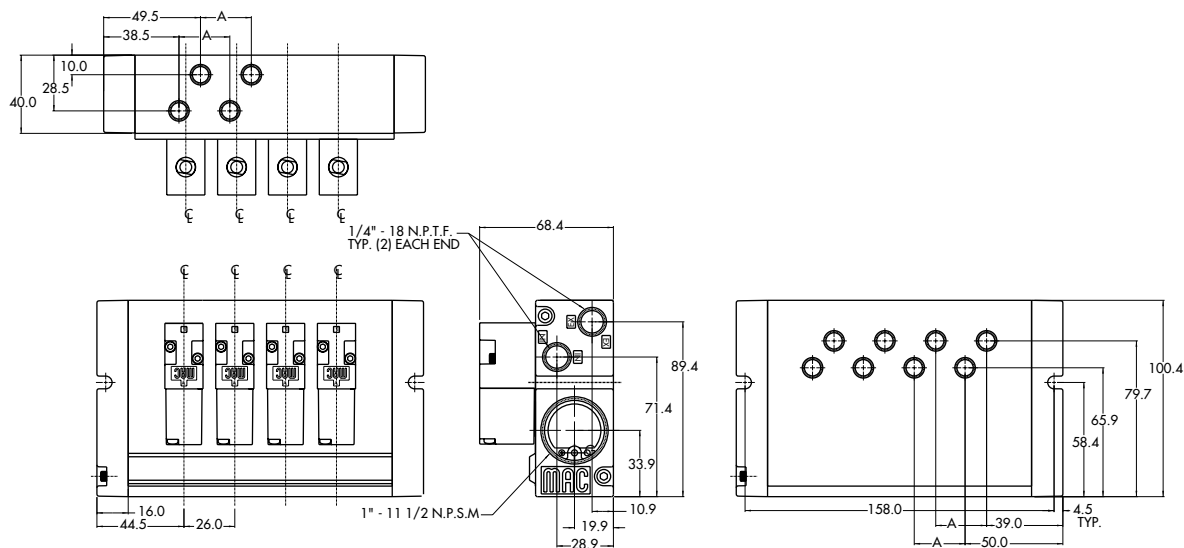
### Spare parts :

- Solenoid operator (power ≥ 5.4 W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

### Options :

- BSPP threads. • High flow up to 0.14C<sub>v</sub>, according to wattage. • Isolation of inlet and/or exhaust.

## DIMENSIONS



Note: Bottom & side cylinder ports not available on the same station

Function	Port size	Flow [Max]	Circuit bar mounting
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	plug-in with integral terminal strip and side Pr. Reg.

## OPERATIONAL BENEFITS

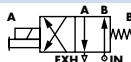
1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.

Reset

## HOW TO ORDER

HOW TO ORDER VALVE FOR "PLUG-IN" CIRCUIT BAR

### Single operator

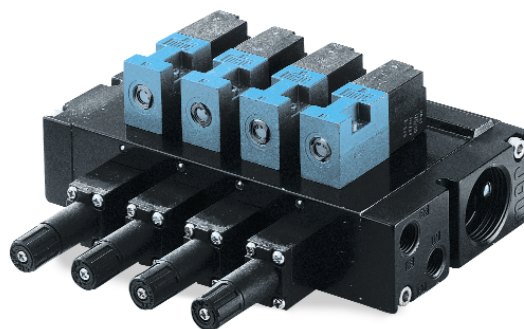


45A-L00-DxxJ-xFM

45A-M00-DxxJ-xFM

Valve less base w/o gage port

Valve less base w/ gage port



SOLENOID OPERATOR ➤

D **xx** J- **x** FM

<b>xx</b>	<b>Voltage</b>
<b>AA</b>	120/60, 110/50
<b>AB</b>	240/60, 220/50
<b>AC</b>	24/60, 24/50
<b>FB</b>	24VDC (1.8 W)
<b>DA</b>	24VDC (5.4 W)
<b>DF</b>	24VDC (12.7 W)

<b>x</b>	<b>Manual operator</b>
<b>1</b>	Non-locking Recessed
<b>2</b>	Locking Recessed

HOW TO ORDER CIRCUIT BAR WITH PRESSURE REGULATORS (TO BE ORDERED SEPARATELY) \*\*

Port size	Spacing mm	Bottom cylinder ports
<b>1/8" NPTF</b>	26	ECE45A-014A-C0-xx
<b># 10-32 UNF</b>	26	ECE45A-014B-C0-xx
<b>1/8" NPTF</b>	40	ECE45A-024A-C0-xx
<b># 10-32 UNF</b>	40	ECE45A-024B-C0-xx

Number of stations (03=3 stations)

End plate kit required : M-45017

Note : clic for valves and regulators mounted to circuit bar at the factory (add - 9 to the model number).  
Use 40 mm spacing for valves w/ gage port.

\*\* Pressure Regulators :

35A-00M (Adjusting knob)

35A-00L (Slotted stem)

35A-00U (Locking stem)

\*\* C0 = terminal strip

CA = terminal strip w/light (120V)

CB = terminal strip w/light (240V)

CD = terminal strip w/light (24V)

**TECHNICAL  
DATA**

<b>Fluid :</b>	Compressed air, vacuum, inert gases
<b>Pressure range :</b>	Vacuum to 120 PSI
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
<b>Filtration :</b>	40 µ
<b>Temperature range :</b>	0°F to 120°F (-18°C to 50°C)
<b>Orifice :</b>	2 mm
<b>Flow (at 6 bar, ΔP=1bar) :</b>	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>
<b>Coil :</b>	General purpose class A, continuous duty, encapsulated
<b>Voltage range :</b>	-15% to +10% of nominal voltage
<b>Protection :</b>	Nema 4
<b>Power :</b>	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)      Holding : 7.7 VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W
<b>Response times :</b>	24 VDC (5.4W)      Energize : 6 ms      De-energize : 2 ms 120 VAC      Energize : 3-8 ms      De-energize : 2-7 ms

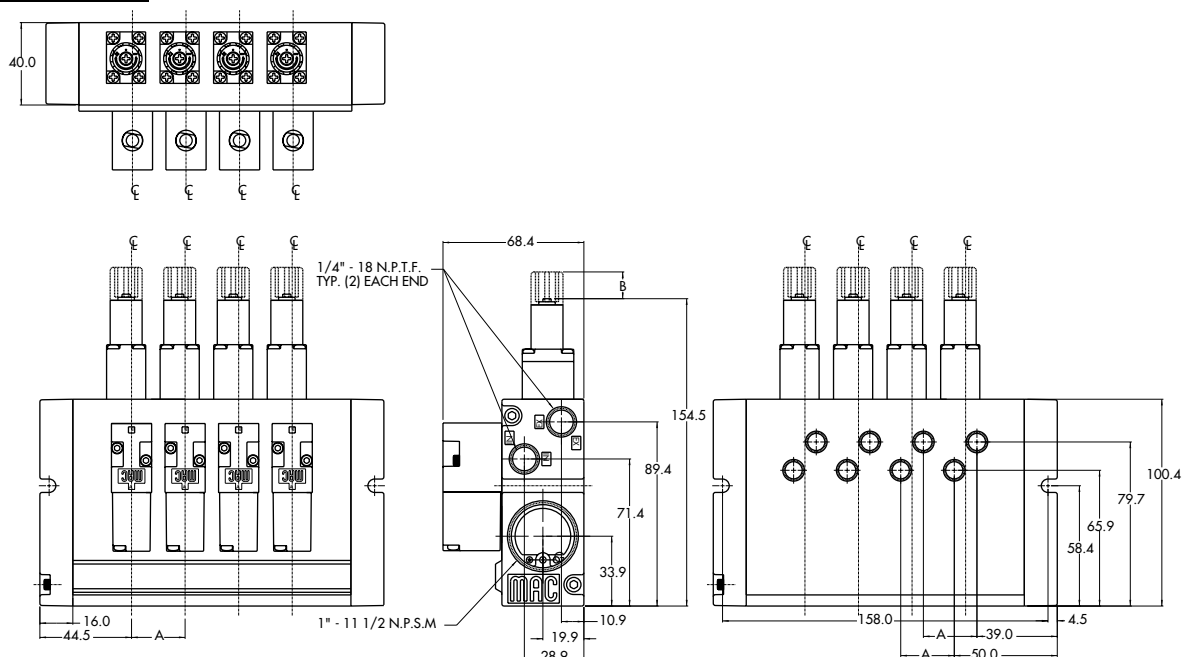
Spare parts :

- Solenoid operator (power ≥ 5.4 W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

Options :

- BSPP threads. • High flow up to 0.14C<sub>v</sub>, according to wattage. • Isolation of inlet and/or exhaust.

**DIMENSIONS**



Dim.	B	Dim.	A
<b>SLOTTED LOCKING STEM</b>	6.0	<b>STANDARD SPACING</b>	26.0
<b>ADJUSTING KNOB</b>	13.4	<b>SPACING FOR GAUGES</b>	40.0

Function	Port size	Flow [Max]	Circuit bar mounting
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	plug-in with integral terminal strip and sandwich Pr. Reg.

## OPERATIONAL BENEFITS

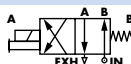
1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.

Reset

## HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING "PLUG-IN"

### Single operator

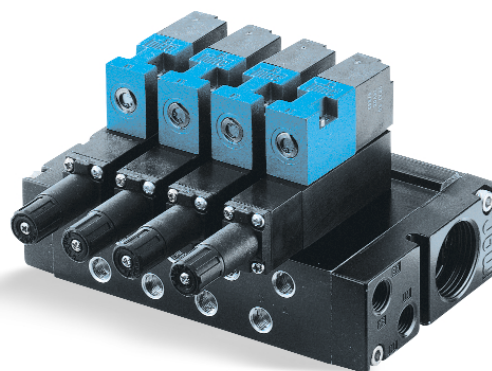


45A-L00-DxxJ-xFM

45A-M00-DxxJ-xFM

Valve w/o gage port

Valve w/ gage port



SOLENOID OPERATOR ➤

D **xx** J- **x** FM

<b>xx</b>	<b>Voltage</b>
<b>AA</b>	120/60, 110/50
<b>AB</b>	240/60, 220/50
<b>AC</b>	24/60, 24/50
<b>FB</b>	24VDC (1.8 W)
<b>DA</b>	24VDC (5.4 W)
<b>DF</b>	24VDC (12.7 W)

<b>x</b>	<b>Manual operator</b>
<b>1</b>	Non-locking Recessed
<b>2</b>	Locking Recessed

HOW TO ORDER "PLUG-IN" CIRCUIT BAR WITH SANDWICH REGULATORS (TO BE ORDERED SEPARATELY) \*\*

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
<b>1/8" NPTF</b>	26	ECE45A-011A-C0-xx	ECE45A-012A-C0-xx
<b># 10-32 UNF</b>	26	ECE45A-011B-C0-xx	ECE45A-012B-C0-xx
<b>1/8" NPTF</b>	40	ECE45A-021A-C0-xx	ECE45A-022A-C0-xx
<b># 10-32 UNF</b>	40	ECE45A-021B-C0-xx	ECE45A-022B-C0-xx

Number of stations (03=3 stations)

End plate kit required : M-45017

Note : clic for valves and regulators mounted to circuit bar at the factory (add - 9 to the model number).  
Use 40 mm spacing for valves w/ gage port.

\*\* Pressure Regulators :

PR45A-AA0A (Adjusting knob)

PR45A-AB0A (Slotted stem)

PR45A-AC0A (Locking stem)

\*\* C0 = terminal strip

CA = terminal strip w/light (120V)

CB = terminal strip w/light (240V)

CD = terminal strip w/light (24V)

**TECHNICAL  
DATA**

<b>Fluid :</b>	Compressed air, vacuum, inert gases
<b>Pressure range :</b>	Vacuum to 120 PSI
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
<b>Filtration :</b>	40 µ
<b>Temperature range :</b>	0°F to 120°F (-18°C to 50°C)
<b>Orifice :</b>	2 mm
<b>Flow (at 6 bar, ΔP=1bar) :</b>	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>
<b>Coil :</b>	General purpose class A, continuous duty, encapsulated
<b>Voltage range :</b>	-15% to +10% of nominal voltage
<b>Protection :</b>	Nema 4
<b>Power :</b>	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)      Holding : 7.7 VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W
<b>Response times :</b>	24 VDC (5.4W)      Energize : 6 ms      De-energize : 2 ms 120 VAC      Energize : 3-8 ms      De-energize : 2-7 ms

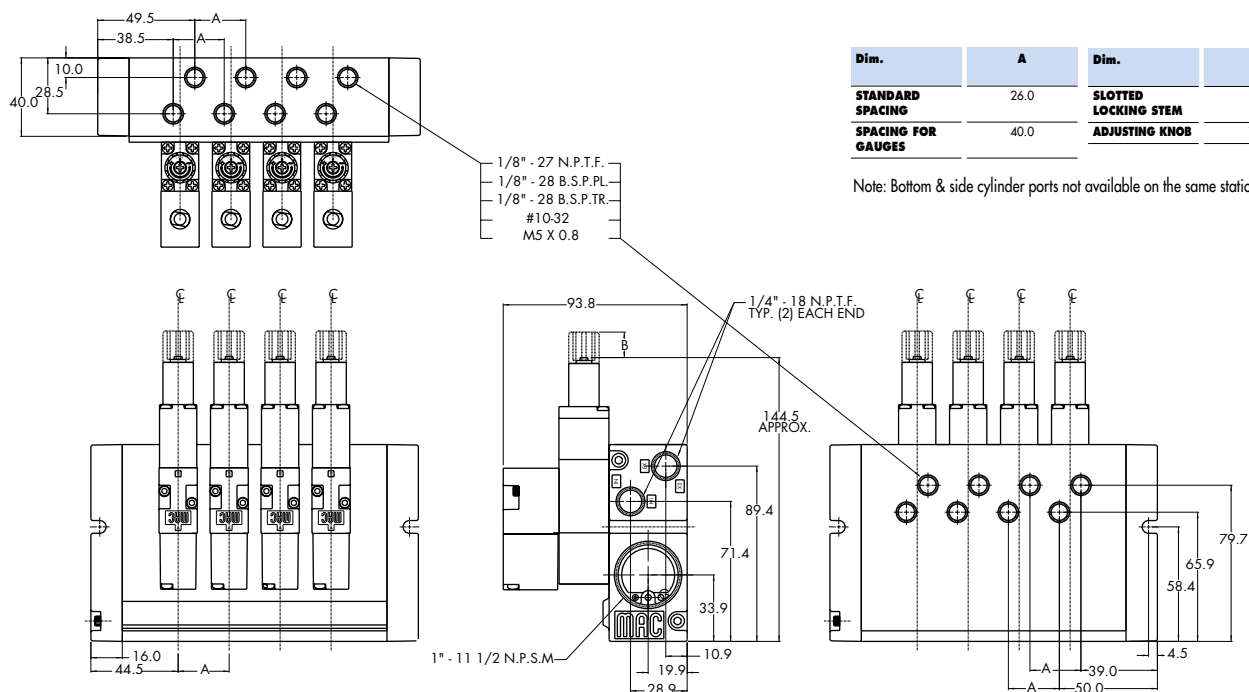
Spare parts :

- Solenoid operator (power ≥ 5.4 W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

Options :

- BSPP threads. • High flow up to 0.14C<sub>v</sub>, according to wattage. • Isolation of inlet and/or exhaust.

**DIMENSIONS**



Function	Port size	Flow [Max]	Circuit bar mounting
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	plug-in with integral terminal strip with F. C.

## OPERATIONAL BENEFITS

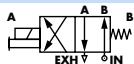
1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.

Reset

## HOW TO ORDER

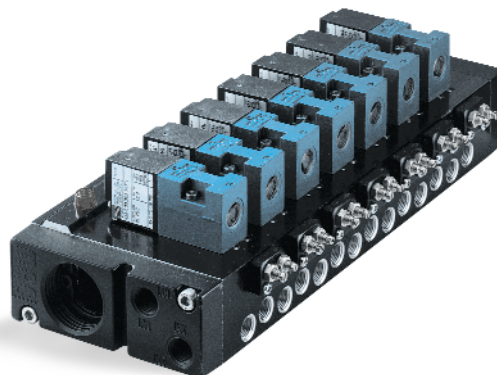
HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING "PLUG-IN"

### Single operator



45A-L00-DxxJ-xFM

Valve less base



SOLENOID OPERATOR ➤

D **xx** J- **x** FM

<b>xx</b>	<b>Voltage</b>
<b>AA</b>	120/60, 110/50
<b>AB</b>	240/60, 220/50
<b>AC</b>	24/60, 24/50
<b>FB</b>	24VDC (1.8 W)
<b>DA</b>	24VDC (5.4 W)
<b>DF</b>	24VDC (12.7 W)

<b>x</b>	<b>Manual operator</b>
<b>1</b>	Non-locking Recessed
<b>2</b>	Locking Recessed

HOW TO ORDER "PLUG-IN" CIRCUIT BAR WITH FLOW CONTROLS \*\*

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
<b>1/8" NPTF</b>	26	-----	ECE45A-016A-C0-xx
<b># 10-32 UNF</b>	26	-----	ECE45A-016B-C0-xx
<b>1/8" NPTF</b>	30	ECE45A-035A-C0-xx	-----
<b># 10-32 UNF</b>	30	ECE45A-035B-C0-xx	-----

Number of stations (03=3 stations)

End plate kit required : M-45017

Note : clic for valves and regulators mounted to circuit bar at the factory (add - 9 to the model number).

\*\* CO = terminal strip

CA = terminal strip w/light (120V)

CB = terminal strip w/light (240V)

CD = terminal strip w/light (24V)



**TECHNICAL  
DATA**

<b>Fluid :</b>	Compressed air, vacuum, inert gases
<b>Pressure range :</b>	Vacuum to 120 PSI
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
<b>Filtration :</b>	40 µ
<b>Temperature range :</b>	0°F to 120°F (-18°C to 50°C)
<b>Orifice :</b>	2 mm
<b>Flow (at 6 bar, ΔP=1bar) :</b>	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>
<b>Coil :</b>	General purpose class A, continuous duty, encapsulated
<b>Voltage range :</b>	-15% to +10% of nominal voltage
<b>Protection :</b>	Nema 4
<b>Power :</b>	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)      Holding : 7.7 VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W
<b>Response times :</b>	24 VDC (5.4W)      Energize : 6 ms      De-energize : 2 ms 120 VAC      Energize : 3-8 ms      De-energize : 2-7 ms

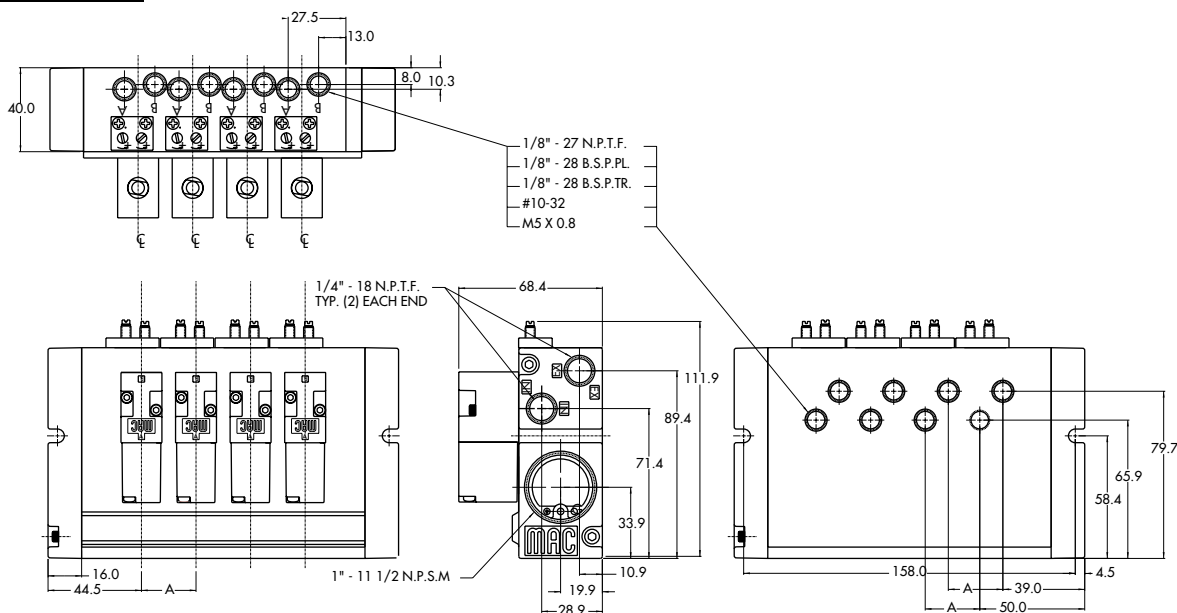
Spare parts :

- Solenoid operator (power ≥ 5.4 W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

Options :

- BSPP threads. • High flow up to 0.14C<sub>v</sub>, according to wattage. • Isolation of inlet and/or exhaust.

**DIMENSIONS**



Dim.	A
<b>STANDARD SPACING</b>	26.0
<b>OPTIONAL SPACING</b>	30.0

Note: Bottom & side cylinder ports not available on the same station

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

Function	Port size	Flow [Max]	Circuit bar mounting
<b>4/2</b>	<b>1/8" NPTF - #10-32 UNF</b>	<b>0.10C<sub>v</sub></b>	plug-in with integral terminal strip with Pr. Reg. and F. C.

## OPERATIONAL BENEFITS

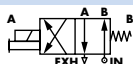
1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.

Reset

## HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING "PLUG-IN"

### Single operator

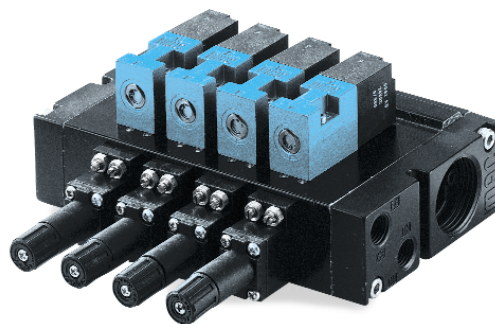


45A-L00-DxxJ-xFM

45A-M00-DxxJ-xFM

Valve less base

Valve less base w/ gage port



SOLENOID OPERATOR ➤

D **xx** J- **x** FM

<b>xx</b>	<b>Voltage</b>
<b>AA</b>	120/60, 110/50
<b>AB</b>	240/60, 220/50
<b>AC</b>	24/60, 24/50
<b>FB</b>	24VDC (1.8 W)
<b>DA</b>	24VDC (5.4 W)
<b>DF</b>	24VDC (12.7 W)

<b>x</b>	<b>Manual operator</b>
<b>1</b>	Non-locking Recessed
<b>2</b>	Locking Recessed

HOW TO ORDER "PLUG-IN" CIRCUIT BAR WITH PRESSURE AND FLOW CONTROLS (TO BE ORDERED SEPARATELY) \*\*

Port size	Spacing mm	Bottom cylinder ports
<b>1/8" NPTF</b>	26	ECE45A-017A-C0-xx
<b># 10-32 UNF</b>	26	ECE45A-017B-C0-xx
<b>1/8" NPTF</b>	40	ECE45A-027A-C0-xx
<b># 10-32 UNF</b>	40	ECE45A-027B-C0-xx

Number of stations (03=3 stations)

End plate kit required : M-45017

Note : clic for valves and regulators mounted to circuit bar at the factory (add - 9 to the model number).  
Use 40 mm spacing for valves w/ gage port.

\*\* Pressure Regulators :

- 45A-001 (Slotted stem)
- 45A-002 (Adjusting knob)
- 45A-003 (Locking stem)

\*\* C0 = terminal strip

- CA = terminal strip w/light (120V)
- CB = terminal strip w/light (240V)
- CD = terminal strip w/light (24V)

TECHNICAL  
DATA

<b>Fluid :</b>	Compressed air, vacuum, inert gases		
<b>Pressure range :</b>	Vacuum to 120 PSI		
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
<b>Filtration :</b>	40 µ		
<b>Temperature range :</b>	0°F to 120°F (-18°C to 50°C)		
<b>Orifice :</b>	2 mm		
<b>Flow (at 6 bar, ΔP=1bar) :</b>	1.8 W : 0.08 C <sub>v</sub> , 5.4 W : 0.1 C <sub>v</sub>		
<b>Coil :</b>	General purpose class A, continuous duty, encapsulated		
<b>Voltage range :</b>	-15% to +10% of nominal voltage		
<b>Protection :</b>	Nema 4		
<b>Power :</b>	120 VAC/60 = Inrush : 10.9 VA (0.09 AMPS)      Holding : 7.7VA (0.06 AMPS) DC VOLTS = 1.8 W to 12.7 W		
<b>Response times :</b>	24 VDC (5.4W)	Energize : 6 ms	De-energize : 2 ms
	120 VAC	Energize : 3-8 ms	De-energize : 2-7 ms

Spare parts :

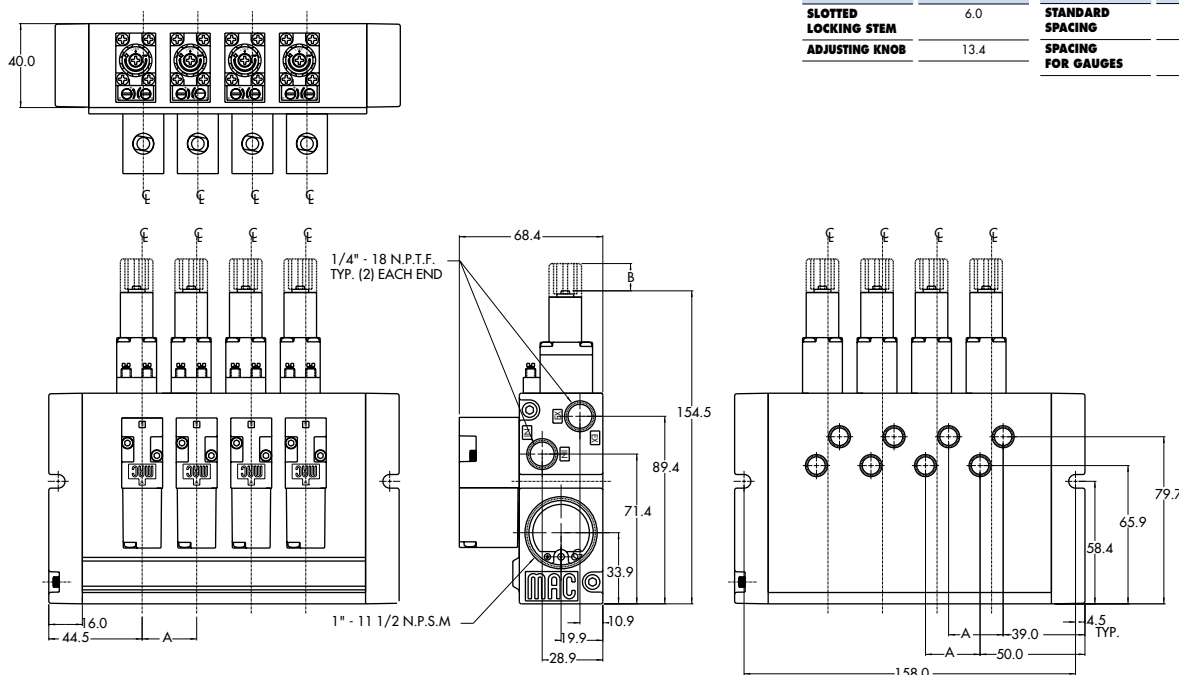
- Solenoid operator (power  $\geq 5.4$  W) : DXXJ-XFM, including mounting screws 35013.
- Seal between solenoid and valve body : 16402. • Seal between base and valve : 16453.
- Valve mounting screw (x2) : 35020. • Blanking plate valve : M-45010. • Blanking plate regulator : M-35005.

Options :

- BSPP threads.
- High flow up to  $0.14C_v$ , according to wattage.
- Isolation of inlet and/or exhaust.

## DIMENSIONS

Dim.	B	Dim.	A
<b>SLOTTED LOCKING STEM</b>	6.0	<b>STANDARD SPACING</b>	26.0
<b>ADJUSTING KNOB</b>	13.4	<b>SPACING FOR GAUGES</b>	40.0



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



## Section 2

## Options



0 p t i o n s

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**Codification table for voltages / Wire length / Manual operators / Electrical connections**

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VALVE CODE ➤

**-D XX X - X XX**  
**1 2 3 4**

**OPTIONS AVAILABLE FOR**

- Solenoid valves 35 & 45 Series

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## 1. VOLTAGE

- D XX	X - X XX	VOLTAGE
AD		24/60
AE		200/60
AF		240/50
AG		100/50, 100/60, 110/60
DB		12 VDC (5.4 W)
DC		12 VDC (7.5 W)
DD		24 VDC (7.3 W)
DE		12 VDC (12.7 W) CLSF
DK		110 VDC (5.8 W)
DL		64 VDC (6.0 W)
DM		36 VDC (5.8 W)
DN		6 VDC (6.0 W)
DP		48 VDC (5.8 W)
DU		24 VDC (6.0 W)
EA		12 VDC (6.0 W)
FA		12 VDC (1.8 W)
FE		12 VDC (2.4 W)
FF		24 VDC (2.4 W)

## 2. WIRE LENGTH

- D XX	X - X XX	WIRE LENGTH
B		24"
C		36"
D		48"
E		72"
F		96"

### 3. MANUAL OPERATOR

#### - D XX X - X XX MANUAL OPERATOR

<b>0</b>	No operator
<b>1</b>	Non-locking recessed
<b>2</b>	Locking recessed
<b>3</b>	Non-locking extended
<b>4</b>	Locking extended

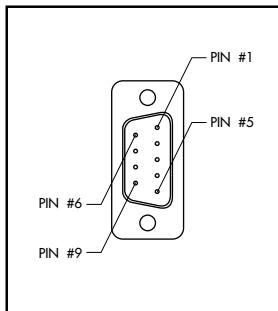
### 4. ELECTRICAL CONNECTION

#### - D XX X - X XX ELECTRICAL CONNECTION

<b>BA</b>	Flying leads
<b>BK</b>	BA with protection diode
<b>BL</b>	BA with protection varistor
<b>CA</b>	1/2" NPS conduit
<b>*FN</b>	Plug-in with diode
<b>*FP</b>	Plug-in with M.O.V.
<b>JB</b>	Rectangular connector
<b>JD</b>	Rectangular connector with light
<b>JM</b>	Rectangular connector, male only
<b>KA</b>	Square connector
<b>KB</b>	Square connector with protection diode
<b>KC</b>	Square connector with protection varistor
<b>KD</b>	Square connector with light
<b>KE</b>	Square connector with light and protection diode
<b>KF</b>	Square connector with light and protection varistor
<b>KJ</b>	Square connector (male only)
<b>KK</b>	Square connector with protection diode (male only)
<b>KL</b>	Square connector with protection varistor (male only)
<b>TA</b>	Dual tabs
<b>TB</b>	TA with protection diode
<b>TD</b>	TA with light
<b>TE</b>	TA with light and protection diode
<b>TJ</b>	Dual tabs (male only)
<b>TK</b>	TJ with protection diode
<b>TM</b>	TJ with light
<b>TN</b>	TJ with light and protection diode

\* For use with the ECD and ECE style circuit bars.

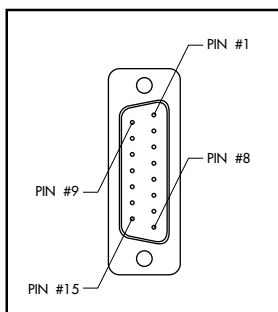
### MOD. S009



#### TECHNICAL DATA

- Type «SUB\_D»
- Number of contacts : 9
- Solder termination (Dia. 0.6 mm/0.14 mm<sup>2</sup>/26-22 AWG)
- Operating current 5 A/contact
- Rated voltage 125 V~
- Temp. range -40° to +125°C
- Insulation resistance  $\geq 5.0^9 \Omega$
- Protection class IP40 (DIN 40050)
- Number of solenoids : 7 max.
- Max. 24 V=/5.4 W per solenoid
- 2 common wires

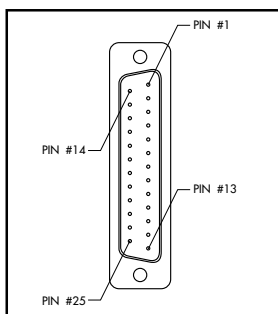
### MOD. S015



#### TECHNICAL DATA

- Type «SUB\_D»
- Number of contacts : 15
- Solder termination (Dia. 0.6 mm/0.14 mm<sup>2</sup>/26-22 AWG)
- Operating current 5 A/contact
- Rated voltage 125 V~
- Temp. range -40° to +125°C
- Insulation resistance  $\geq 5.0^9 \Omega$
- Protection class IP40 (DIN 40050)
- Number of solenoids : 12 max.
- Max. 24 V=/5.4 W per solenoid
- 3 common wires

### MOD. S025



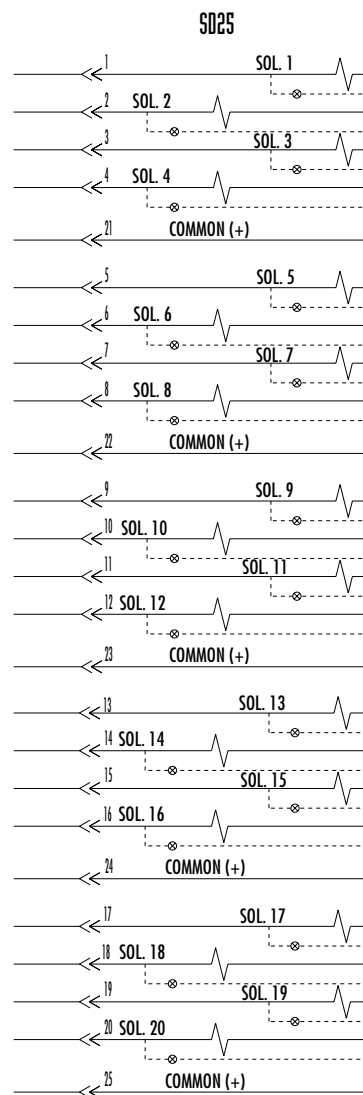
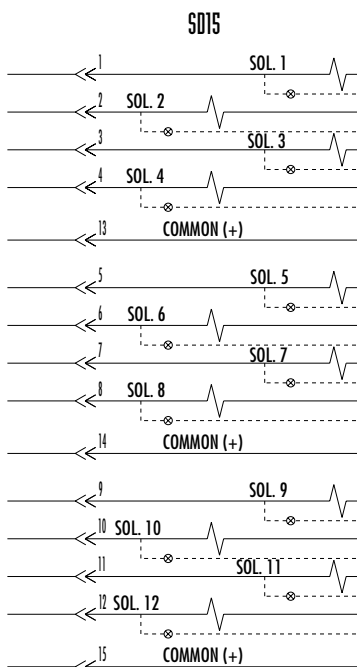
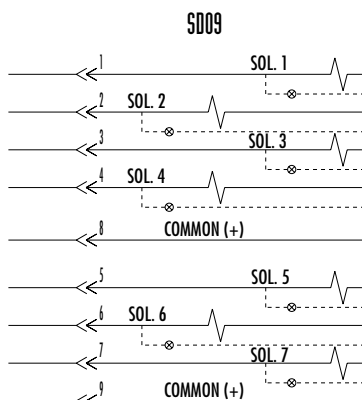
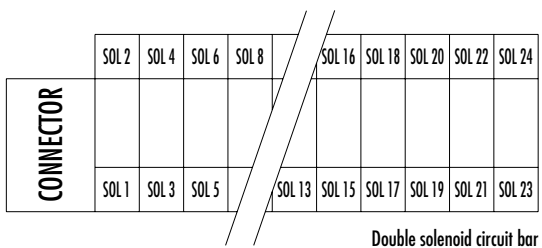
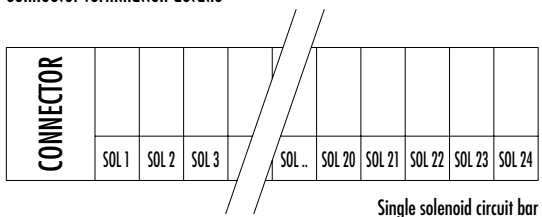
#### TECHNICAL DATA

- Type «SUB\_D»
- Number of contacts : 25
- Solder termination (Dia. 0.6 mm/0.14 mm<sup>2</sup>/26-22 AWG)
- Operating current 5 A/contact
- Rated voltage 125 V~
- Temp. range -40° to +125°C
- Insulation resistance  $\geq 5.0^9 \Omega$
- Protection class IP40 (DIN 40050)
- Number of solenoids : 20 max.
- Max. 24 V=/5.4 W per solenoid
- 5 common wires

Note : Use desired MOD. number after circuit bar part number



# Connector termination details





## 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.

HOW TO ORDER

35A - **X X X** - (DXXX - XXX) - FM

BODY TYPE	PORT SIZE	SOLENOID OPTIONS	VALVE FUNCTION/MANIFOLD TYPE
<b>Inline</b> <b>A</b> Individual Inline <b>D</b> Indiv. Inline w/2 Manifold Mount Ports <b>Manifold</b> <b>E</b> Manifold Body (N.C. Only) <b>G</b> Manifold Body w/Gage Port (N.C. Only)	<b>O</b> Manifold Body Only <b>B</b> #10-32 UNF (Inline Only) <b>D</b> M5 (Inline Only)	<b>O</b> Manifold Body Only <b>B</b> 3 way N.C. Only (Inline)	Note : there is no manifold base for the 35 series. The manifold valve can only mount to a circuit bar, see note below

45A - **X X X** - (DXXX - XXX) - FM

BODY TYPE	PORT SIZE	SOLENOID OPTIONS	VALVE FUNCTION/MANIFOLD TYPE
<b>Inline</b> <b>A</b> 4 Port Body <b>B</b> 5 Port Body <b>D</b> 4 Port Body "O" Ring Mount -All Bottom Ports <b>E</b> 5 Port Body "O" Ring Mount -3 Bottom Ports Inlet and Cylinders <b>F</b> 4 Port Body "O" Ring Mount-Bottom Cylinder Ports Only <b>Base Mount</b> <b>O</b> For Base Only - No Valve <b>L</b> Base Mount Body <b>M</b> Base Mount Body with Gage Port	<b>O</b> Manifold Body Only <b>A</b> 1/8" NPT <b>B</b> #10-32 UNF <b>C</b> 1/8" BSPPL <b>D</b> M5 (Metric) <b>F</b> #10-32 UNF Bottom Ports <b>G</b> M5 Bottom Ports <b>H</b> "O" Ring Mount Ports <b>J</b> 1/8" NPT Bottom Ports <b>K</b> 1/8" BSPPL Bottom Ports	<b>Inline</b> <b>1</b> No Flow Controls <b>Bases - Regulators</b> <b>O</b> Valve Only - No Base <b>A</b> Individual Base <b>C</b> Manifold Base <b>E</b> Manifold w/Regulator w/Slotted Stem <b>G</b> Manifold w/Regulator w/Locking Slotted Stem <b>J</b> Manifold w/Regulator w/Locking Knob	

MANIFOLD MOUNT ACCESSORIES

<b>M-45008-01</b>	End Plate Kit
<b>16455</b>	Pressure Seal Between Manifold
<b>19753</b>	Tie Rod
<b>N-45008</b>	Isolator Kit - Inlet and Exhaust
<b>N-45009</b>	Isolator Kit - Inlet only
<b>N-45010</b>	Isolator Kit - Exhaust only
<b>N-45015</b>	End Cover Plate - Plain
<b>N-45016</b>	End Cover Plate w/Flow Controls
<b>N-45017</b>	Flow Control Needle Assembly

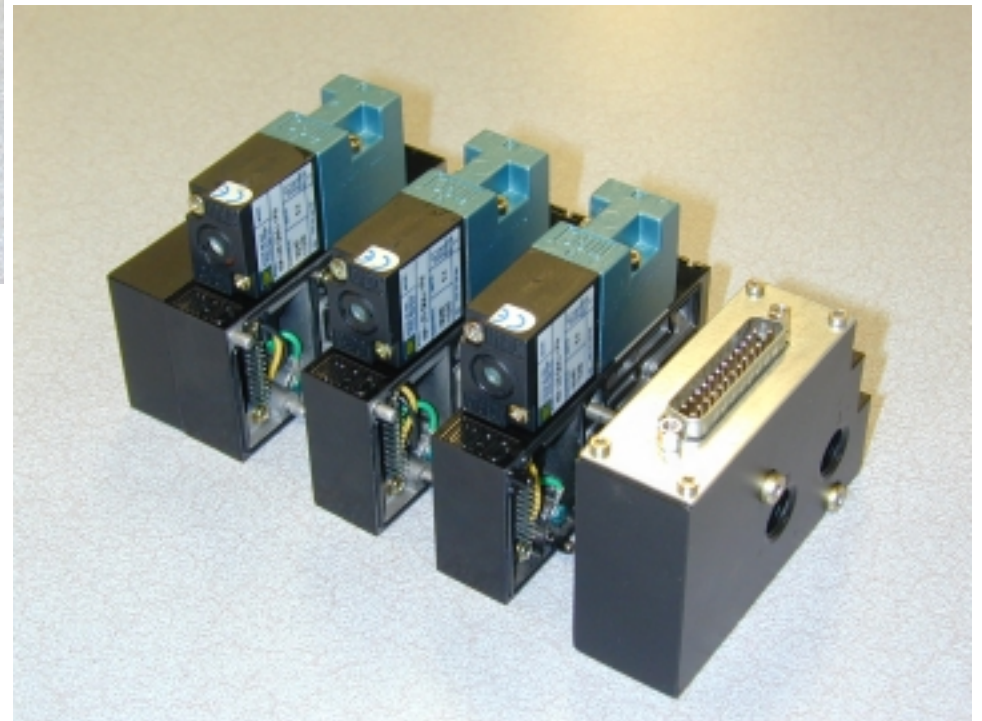
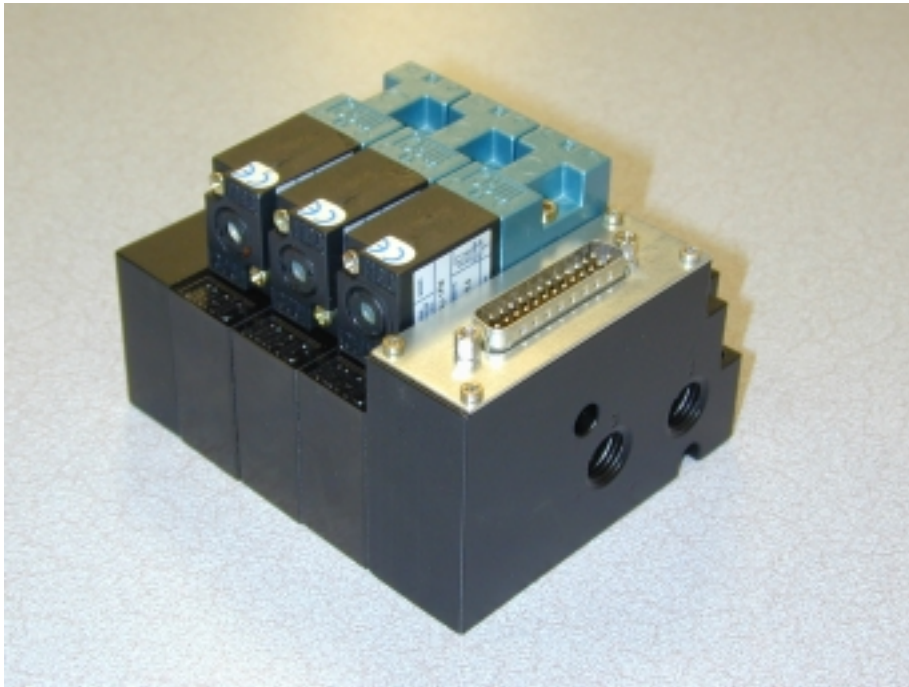
D - **X X X** - **X X X** - FM

VOLTAGE	LEAD LENGTH	SOLENOID OPTIONS	MANUAL OPERATOR	ELECTRICAL CONNECTION
<b>FR</b> 12VDC (0.6 W) <b>FS</b> 24VDC (0.6 W)	<b>A</b> 18" Leads <b>B</b> 24" Leads <b>C</b> 36" Leads <b>D</b> 48" Leads <b>E</b> 72" Leads <b>J*</b> 6" Leads	<b>O</b> No operator <b>1</b> Non-locking Recessed <b>2</b> Locking Recessed <b>3</b> Non-locking Extended <b>4</b> Locking Extended	<b>BA</b> Grommet <b>CA</b> Conduit 1/2" NPS† <b>CM</b> Metal Conduit 1/2" NPS† <b>CN</b> Metal Conduit w/grd. 1/2" NPS† <b>External Plug-in</b> <b>FM</b> Plug-in (For ECD & ECE Bar) <b>JB</b> Rectangular Plug-in† <b>JM</b> Rectangular Male only† <b>KA</b> Mini Plug-in <b>KJ</b> Mini Plug-in Male only <b>TA</b> Dual Tabs (.110) Plain <b>TJ</b> Dual Tabs (.110) Plain	† Available on individual valves and circuit bars.

\*Use "J" for external plug-in connectors

NOTE : For valves mounted to a circuit bar reference MAC circuit bar Catalog for ordering info.  
For the 35 series circuit bar, use MOD FM01 after circuit bar part number.

# 45 Series MAConnect™



# Specifications

## 45 Series Valve

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**Fluids:**

Compressed Air or Inert Gases

**Lubrication:**

Not required. If used, select a medium aniline point lubricant (between 180°F and 210°F)

**Safe Operating Temperature Range:**

0°F to 120°F (-18°C to 50° C)

**Pressure Range:**

Vacuum to 120 PSI

**Electrical:**

DC 12/24 Volt 1.8w to 5.4w

AC 24, 120, 220, 240VAC

Maximum Coil Amperage - 250mA

Maximum Voltage - 240VAC

Dielectric Strength in Excess of 2000 Volts.

Recommended Mating Sub-D Cable Specifications

3 Amp Current Rating per Conductor

300 Volt RMS, 105°C Insulation

### Amp CPC Connector Specifications

Receptacle: (Mounted in MACConnect™ adapter block)

- Series 1 Amp CPC Connector
- Shell size 23
- 24 Male pins (1.57mm diameter)
- Five key configuration

Recommended Plug:

- Amp part number 206837-1
- 5 key configuration
- Recommended receptacle contacts are size 16 type III+ (Accepts pin dia. 1.57mm)

Additional information can be obtained from Amp Catalog 82021

# Specifications

## SM32 Manifold

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### Outputs:

Number: 16 Channels / Solenoids on manifold

Voltage Current: 24 VDC at .225 per channel (6.0 Watts max.)

### Inputs:

Number: 4

Type: 24 VDC NPN or PNP Logic

### Protocols:

DeviceNet

Allen Bradley Remote I/O\*

Profibus

Interbus-S

AS-I

### Current Consumption:

Outputs - 4 A Max.

Electronics and Inputs - 75mA

### Voltage Ranges:

Operating with single supply: 24VDC

Operating separate supply for valves : 24VDC

### Safe Operating Temperature Range:

0-50° C (32-120°F)

10-90% RH (Non-condensing)

### Enclosure:

Designed to meet NEMA 4 and IP65

\* This product incorporates technology which is licensed by Allen-Bradley Company, Inc. Allen-Bradley has not technically approved, nor does it warrant or support this product. All warranty and support for this product and its application is provided solely by MAC Valves, Inc.

# Specifications

## SM16 Manifold

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**Outputs:**

Number: 16 Channels / Solenoids on manifold  
Voltage Current: 24 VDC at .225 per channel (5.4 Watts max.)

**Inputs:** Not available at this time

**Protocols:**

DeviceNet

**Current Consumption:**

Outputs - 4 A Max.  
Electronics - 200mA

**Voltage Ranges:**

Operating with single supply: 24VDC  
Operating separate supply for valves : 24VDC

**Operating Temperature:**

0-50° C (32-120°F)  
10-90% RH (Non-condensing)

**Operating Atmosphere:**

No corrosive gases

**Enclosure:**

Designed to meet NEMA 4

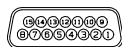
**Impact Resistance:**

10G



PIN #	SOLENOID #
1	1
2	2
✓	✓
20	20
21	+ COMMON
22	+ COMMON
23	+ COMMON
24	+ COMMON
25	+ COMMON

25 PIN SUB-D



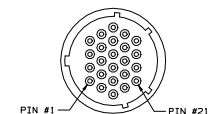
PIN #	SOLENOID #
1	1
2	2
✓	✓
13	13
14	+ COMMON
15	+ COMMON

15 PIN SUB-D



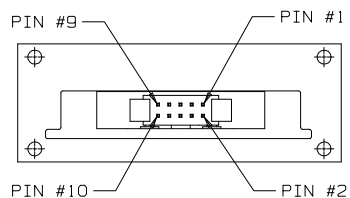
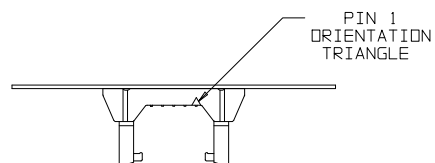
PIN #	SOLENOID #
1	1
2	2
✓	✓
8	8
9	+ COMMON

9 PIN SUB-D



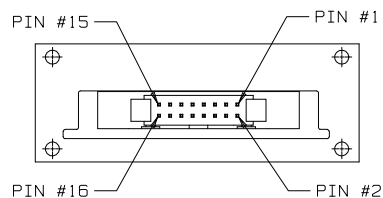
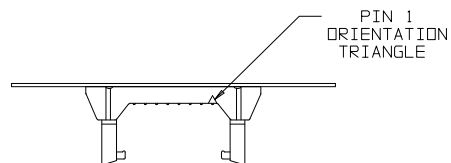
PIN #	SOLENOID #
1	1
2	2
✓	✓
20	20
21	+ COMMON
22	+ COMMON
23	+ COMMON
24	+ COMMON

24 PIN AMP CPC



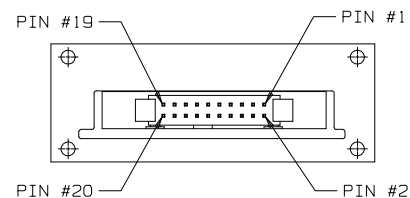
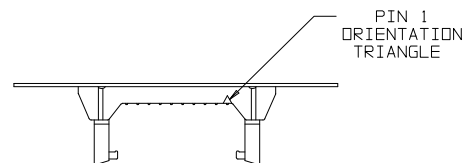
PIN #	SOLENOID #
1	1
2	2
✓	✓
8	8
9	+ COMMON
10	+ COMMON

10 PIN



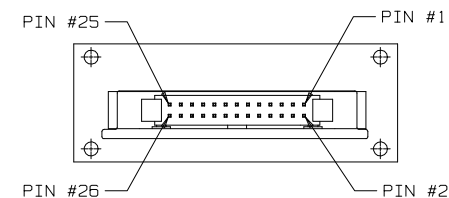
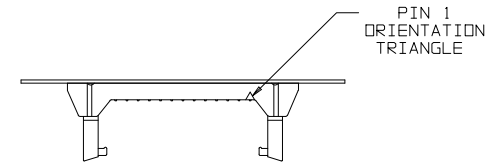
PIN #	SOLENOID #
1	1
2	2
✓	✓
12	12
13	+ COMMON
14	+ COMMON
15	+ COMMON
16	+ COMMON

16 PIN



PIN #	SOLENOID #
1	1
2	2
✓	✓
16	16
17	+ COMMON
18	+ COMMON
19	+ COMMON
20	+ COMMON

20 PIN

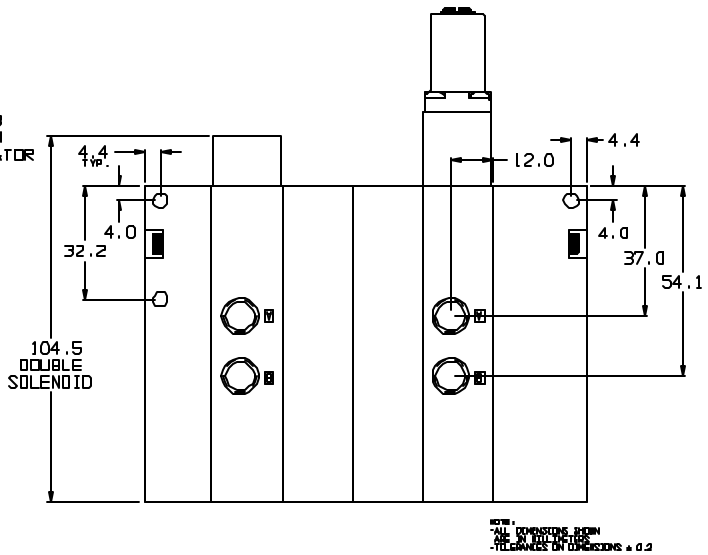
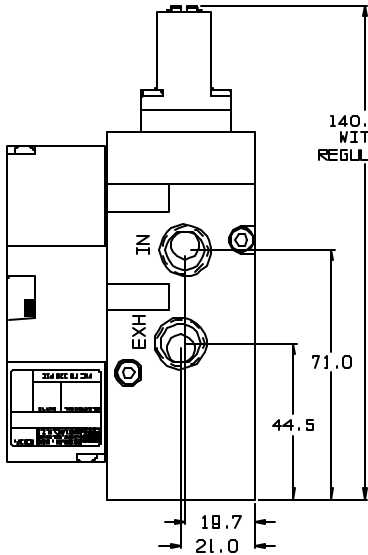
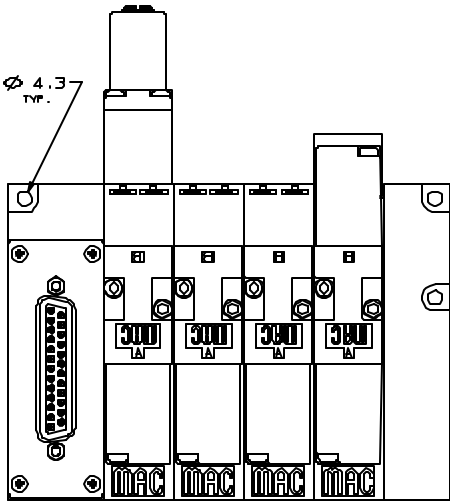
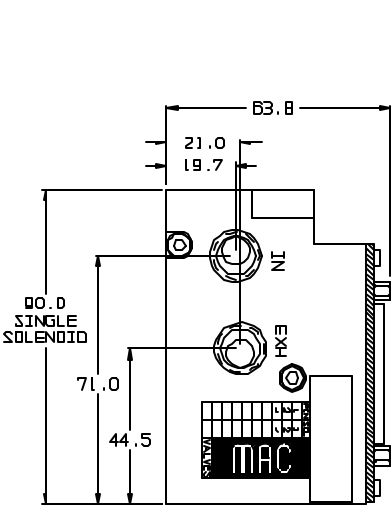
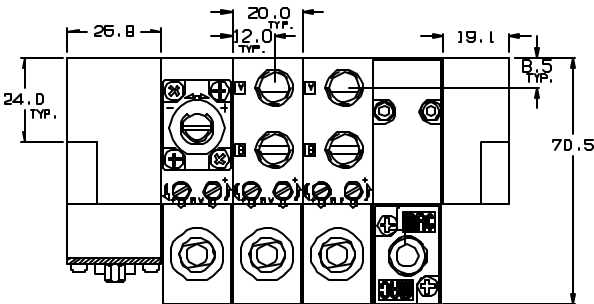


PIN #	SOLENOID #
1	1
2	2
✓	✓
20	20
21	+ COMMON
22	+ COMMON
23	+ COMMON
24	+ COMMON
25	+ COMMON
26	+ COMMON

26 PIN

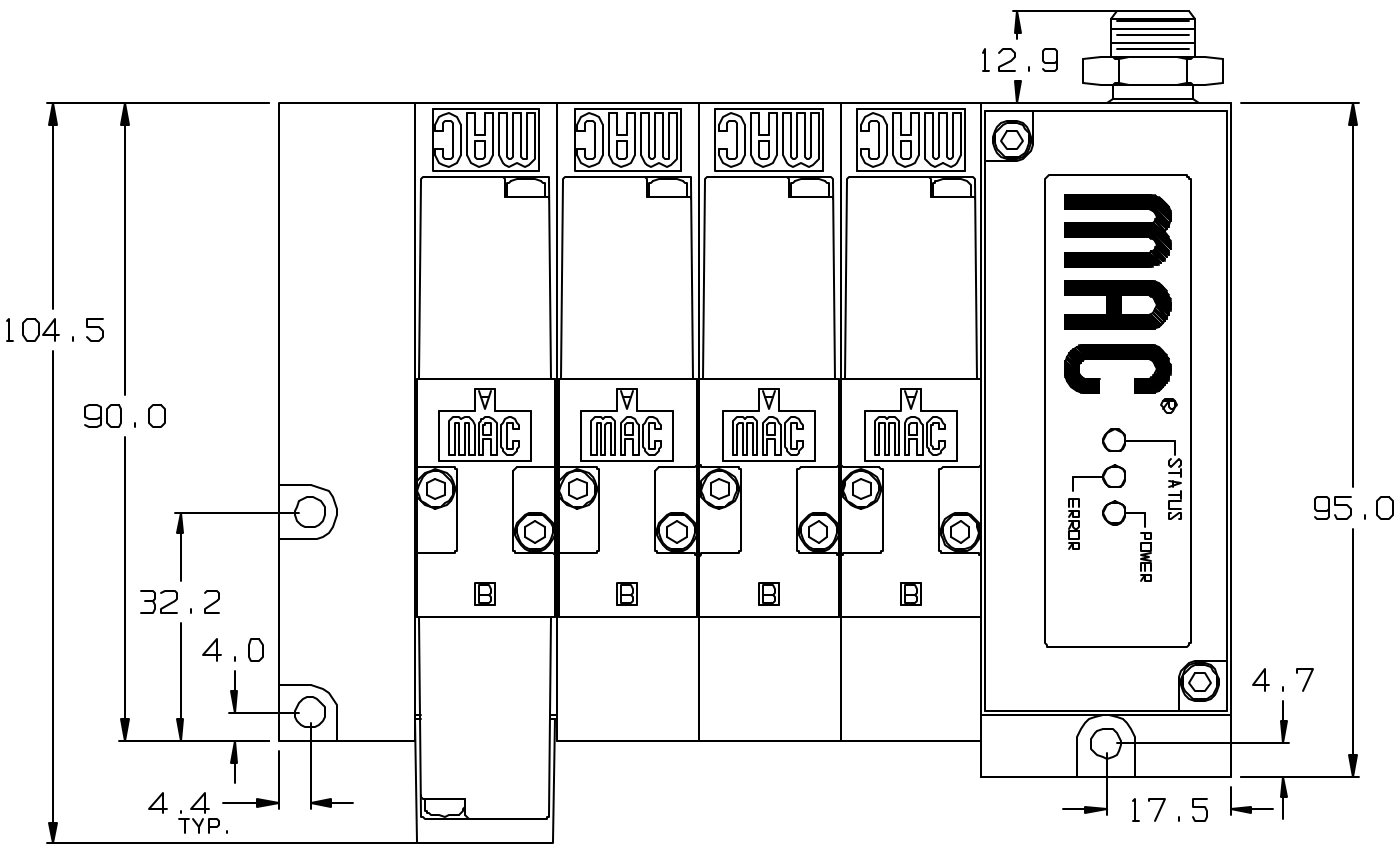


## WITH SUB-D, REGULATOR AND FLOW CONTROLS

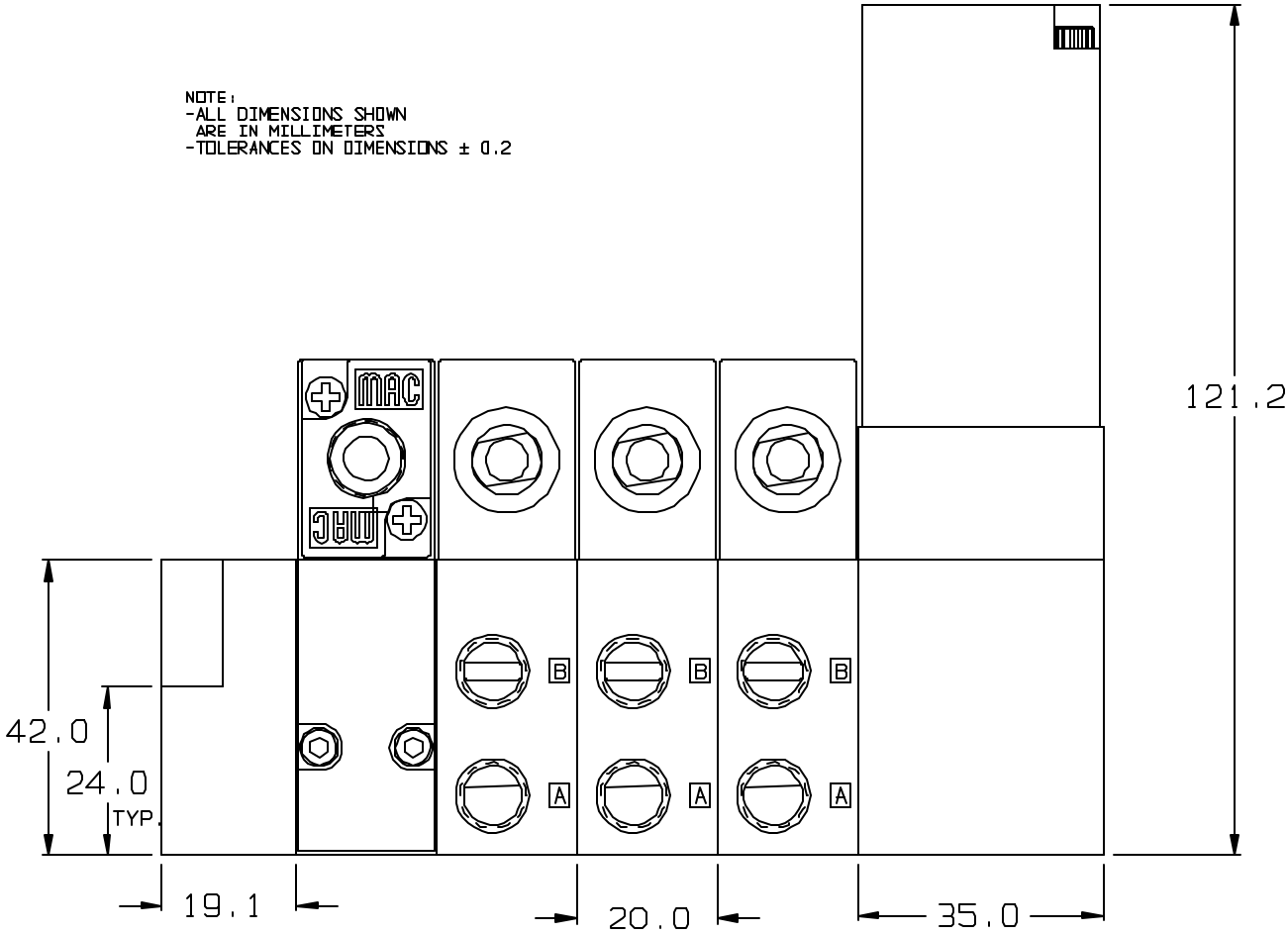


NOTE:  
-ALL DIMENSIONS SHOWN  
ARE IN MILLIMETERS  
-TOLERANCES ON DIMENSIONS  $\pm 0.2$

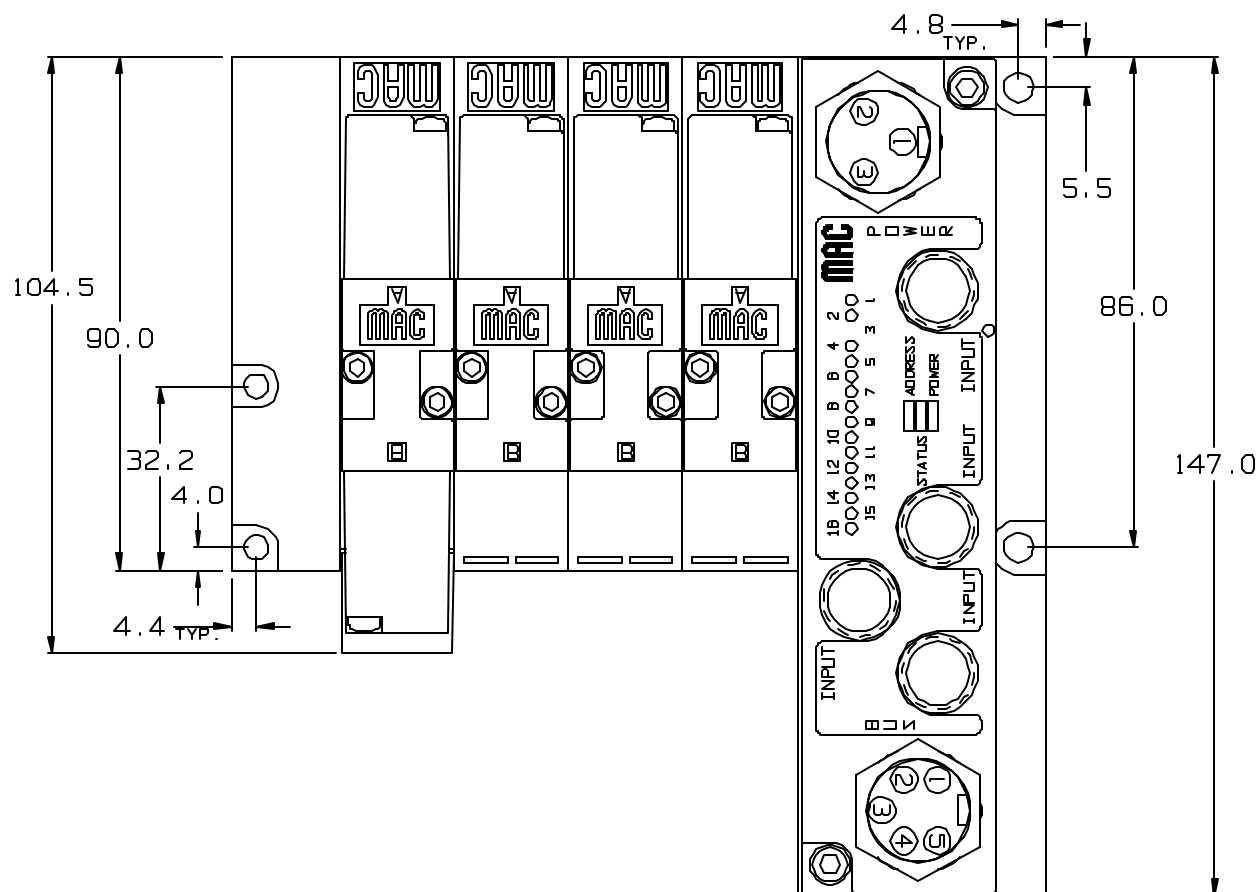
# 45 SERIES MACONNECT WITH SM16



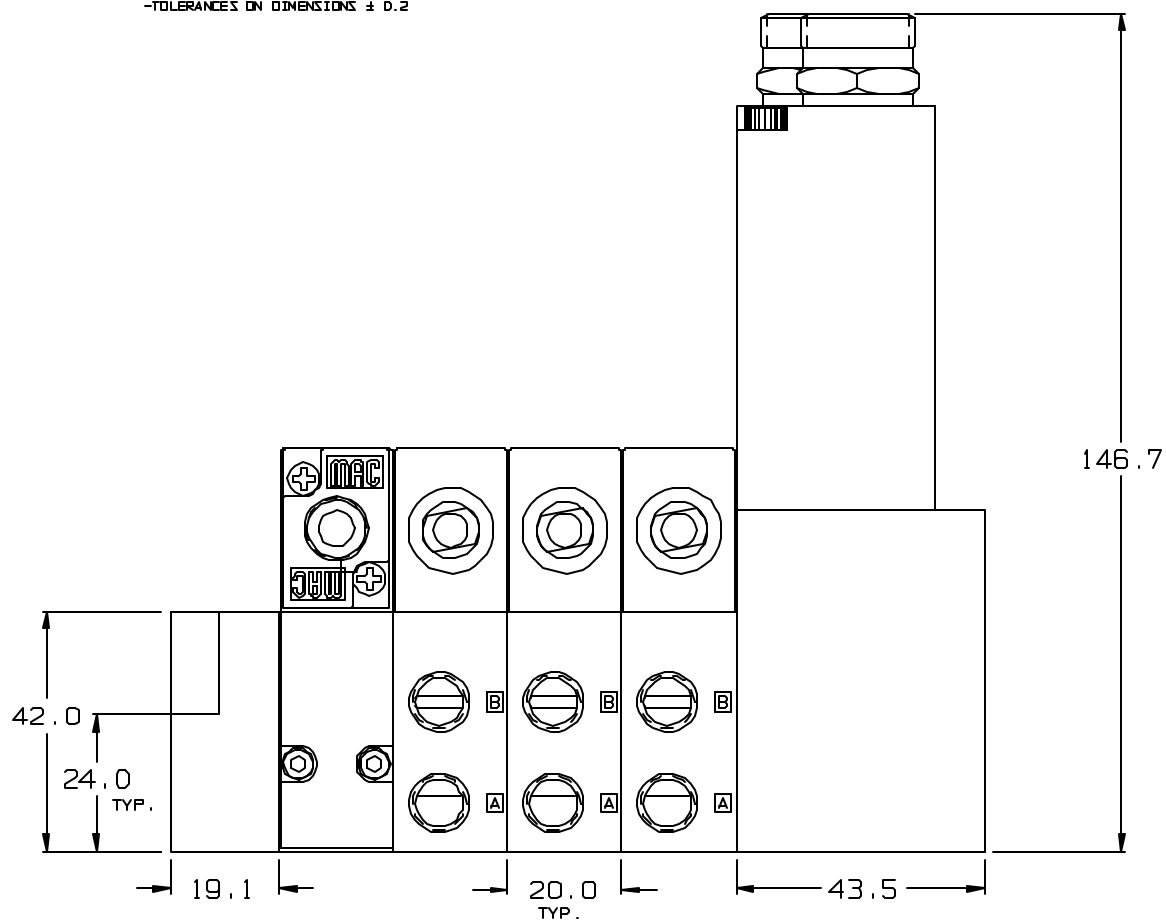
NOTE:  
-ALL DIMENSIONS SHOWN  
ARE IN MILLIMETERS  
-TOLERANCES ON DIMENSIONS  $\pm 0.2$



# 45 SERIES MACONNECT WITH SM32



NOTE:  
 -ALL DIMENSIONS SHOWN  
 ARE IN MILLIMETERS  
 -TOLERANCES ON DIMENSIONS  $\pm 0.2$



# REMOTE AIR PILOT, PILOT OPERATED OPTIONS

A 100 type remote air pilot, pilot operator (shown on the right) is available on all valves using the 100 Series solenoid (All series in this catalog except 200, 57, 58, 59, or 1300). Any 100 Series solenoid can be replaced with this air pilot operator. When utilizing this operator the air pilot signal can be a minimum of 20 psig regardless of main valve pressures. The air pilot signal pressure shifts only the pilot valve poppet while internal (main valve) or external pilot pressure shifts the main valve spool. A manual operator and pilot spool position indicator is standard.

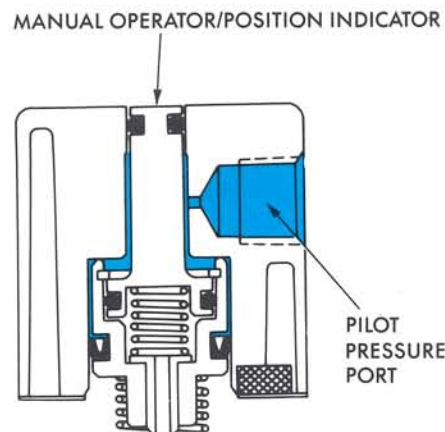
**TO ORDER:** Substitute the voltage, manual operator and enclosure options given in the catalog under each series with RA1X, X equaling the desired pilot port thread options shown on the right examples, 55B-12-PI-RA11, 56C-12-RA11, 711C-11-PI-RA11, 811C-PM-RA11-52, 911B-PM-RA11.

On 6000Series (6200-6300-6500) for both

single and double operated models use the Remote Air Pilot Model numbers given in the catalog and add 1X (X equaling desired port thread) after the RA e.g. 6212C-131-PM-RA11, 6312D-131-PM-RA11 or 6512B-131-PM-RA11. To order a solenoid operated valve with air pilot return, use the standard double solenoid valve model numbers and add MOD 410A to replace the "A" solenoid with the remote air pilot, pilot operator or MOD 410B to replace the "B" solenoid.

PILOT PORT OPTIONS	
1	1/8" NPTF
* 2	#10-32 UNF
* 3	M5 x 0.8
4	1/8" BSPP
5	1/8" BSPT

\* Not available for the  
35, 45 & 82 Series



A similar remote air pilot is available for the 35, 45 & 82 Series. Use same code for pilot port options.

**Examples:** 35A-AAA-RA11  
45A-AA1-RA11  
82A-AB-BAA-TM-RA11

## PARTIAL LIST OF MODIFICATIONS

# T4

MAC Valves is committed to designing and producing valves to our customers' specifications wherever practical and possible. Below is an abbreviated list of some of the more common modifications in general use. There are currently over 1,000 MOD numbers issued; if you do not find what you require in the list below, please consult the factory.

- DD01** - Replace standard coil with a coil containing a spike suppressing diode. For D.C. voltages only (polarity sensitive).
- MOV1** - Replace standard coil with a coil containing a spike suppressing M.O.V. For both AC & DC voltages (not polarity sensitive).
- DRA1** - Assemble single solenoid valves with a base or manifold wired to accommodate a double solenoid valve.
- CLSF** - Replace standard coil with a Class F rated coil.
- Lxxx** - Assemble valve or base assembly with special length lead wire (xxx = lead length in inches).
- T65C** - For ambient temperatures up to 150° F (65° C). Includes CLSF coil.
- TSA1** - Provide a terminal strip mounted on junction box cover plate.
- TSA2** - As TSA1 but with the base leads prewired to terminal strip.
- 0158** - Replace standard spring with heavy duty spring.
- 0233** - Assemble valve with solenoid operator on B end of valve instead of A end.
- 300B** - Install Brad Harrison 3 pin connector.
- 0300** - Install Brad Harrison 5 pin connector.
- 0389** - Rotate solenoid cover or mechanical operator 180 degrees from standard position.
- 408B** - Install filter screen in port 3 instead of port 1. (35, 100 or 200 series)
- 416Y** - DIN connectors prewired with 6 feet of SJO-3 yellow cord.
- 0446** - Replace standard spools and seals with viton spools and seals.
- 471L** - Coil wires to be 22 AWG.
- 0532** - Valves supplied with solenoid cover(s) and corrosion resistant parts for wash down applications.
- 0575** - Modify 55, 58 and 59 series for diverter application.
- 0650** - Grease all valve parts with FDA approved grease.
- 736A** - 100 series modified for higher flow, high speed 2 Way applications.
- 0819** - Extended meter in/out flow controls (45 series).
- 0850** - Lubricate valve with Dow Corning no.4 grease.

# Notizen

**as-tec Mechatronik GmbH**

A-4840 Vöcklabruck  
Linzer Straße 59

t: +43 7672 33033 0  
m: [office@as-tec.at](mailto:office@as-tec.at)  
w<sup>3</sup>: [www.as-tec.at](http://www.as-tec.at)