

LARGE 3-WAY

All MAC large solenoid 3 way valves are solenoid pilot operated. The pilot of these valves is a balanced poppet, the main valve a balanced spool. Additionally, the pilot for the 52 series is a 4 way pilot design that maximises the shifting forces in both directions.

The valves can be divided into two groups: 52, 55, 56 series, & 57, 58 & 59 series.

Patents and Patents Pending

LARGE 3-WAY SOLENOID

52, 55 and 56 SERIES (Cv 1.1 to 6.2)

These valves can be supplied with remote air, remote air pilot, or mechanical operators. The electrical options and enclosures for the 52 series are the same as the 35 and 45 series. The solenoids, electrical options and enclosures for the 55 and 56 series are identical to the 100 series. The solenoids, electrical options and enclosures for the 55 and 56 series are identical to the 100 series.



52 SERIES

The 52 Series pilot is identical to the 400 Series pilot.



55 SERIES

The 55 Series pilot is identical to the 700 Series pilot.



56 SERIES

The 56 Series pilot is identical to the 100 Series manifold base mounted valve.

57, 58 and 59 SERIES (Cv 9.0 to 65.0)

The same pilot operates all 3 series and is identical to the 200 series manifold base mounted valve less the base.

The solenoids, electrical options and enclosures are identical to the 200 series. These valves can also be supplied with a remote air pilot block.



57 SERIES



58 SERIES



59 SERIES

INTERNAL/EXTERNAL PILOT

Internal pilot is used for main valve pressure of 20 to 120 PSI for the 52 series, 25 to 150 PSI for the 56, 57, 58, & 59 series and 30 to 150 PSI for the 55 series. External pilot is used when pressures are lower than the above, or when valves are used in vacuum applications.

CHANGING FROM INTERNAL TO EXTERNAL PILOT

52 SERIES: Cannot be field converted. Different bodies are required for internal pilot & external pilot.

55 SERIES: Rotate pilot adaptor 180 degrees and connect external pilot line to designated #10-32 or M5 connection provided.

The internal pilot passages are blocked from the pilot adaptor.

56, 57, 58, & 59 SERIES: Remove plug from external pilot connection. Remove check valve. Insert pipe plug in, internal pilot supply orifice. 1/8" tapped orifice is provided as standard on all valves except 56 series (1/16"). Connect external pilot to designated 1/4" external supply port (1/8" in case of the 56 & 59 series).

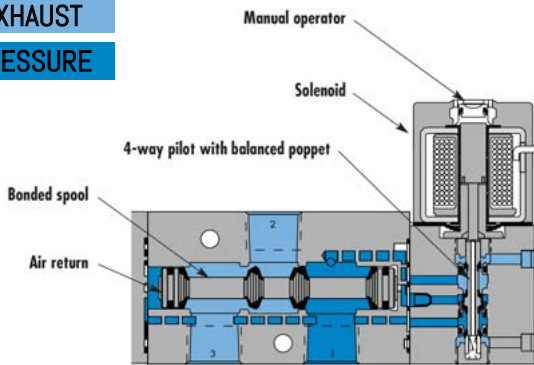
VACUUM APPLICATIONS

Use external pilot and connect vacuum source to exhaust port. Inlet may be left open to atmosphere or connected to pressure to provide a selector application (vacuum/pressure).

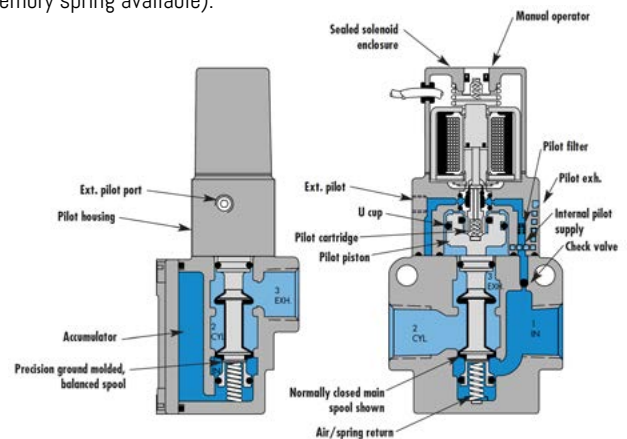
OPERATIONAL BENEFITS

- Unique patented MACSOLENOID for fastest possible response times with its non-burnout feature on AC service.
- Balanced poppet pilot of valve for high flow, precise repeatability and constant operation.
- Balanced spool main valve unaffected by back pressure in the exhaust or by inlet restriction. May be plugged for 2 way operation.
- Large spool or piston for maximum shifting forces even at minimum operating pressure.
- One piece bonded seal spool for extended life and ease of maintenance.
- MAC spool and bore combination for wiping away contamination, eliminating sticking and for use on lubricated or non-lubricated service.
- Air/spring return for reliable constant shifting.
- A large checked accumulator which supplies the pilot and air/spring return for reliable, constant shifting even in the event of inlet pressure fluctuations.
- Seven valve functions in one valve.
- A triple rated coil for 120/60, 110/50 & 24VDC 6 watt (57, 58 & 59 series).
- Non-locking manual operators standard on all solenoid valves; other types of manual operators available.
- NEMA 4 solenoid enclosures except for grommet type. Other types of electrical enclosures, including external plug-in connectors can also be supplied.
- Optional low wattage DC solenoids down to 1watt. (52 series is 1.8w)
- Optional solenoid pilot valves for hazardous locations designed to meet UL & CSA standards for division 1, class I, Groups B, C, D and Class II, Groups E, F and G. (NEMA equivalent for Class 1 is NEMA 7; Class II is NEMA 9) (57, 58 & 59 series)
- Internal or external pilot available in all series.
- Optional surge suppression available.
- Indicator lights available on certain types of electrical enclosures.
- Filter for internal pilot.
- Air only return. 4 way pilot design to maximise shifting forces in both directions (memory spring available).

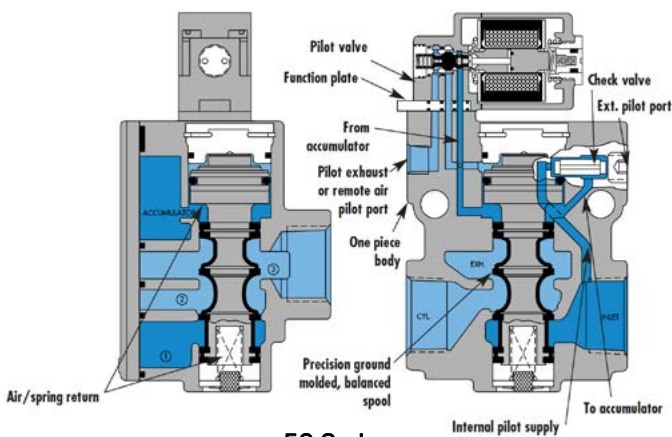
**EXHAUST
PRESSURE**



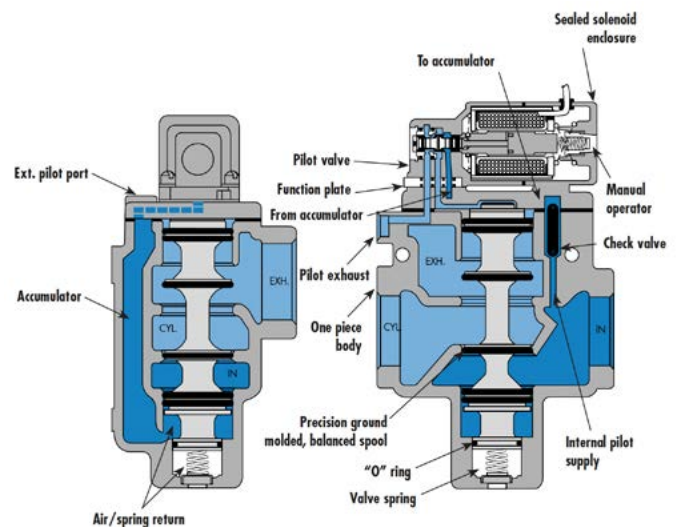
52 Series



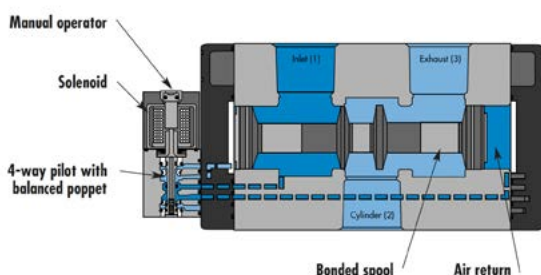
55 Series (N.C. Spool Shown)



56 Series



57/58/59 Series (N.C. Spool Shown)



67 Series

The MAC 52 series is a 3-way balanced spool valve pilot operated by a small direct operated 4-way solenoid valve - a one-off in air valve manufacturing. The 4-way pilot results in a low minimum operating pressure - no pistons - and minimal resistance to shifting. The balanced design in the pilot means shifting forces are consistently high and response times are repeatable regardless of inlet pressure fluctuations. For more information please ask our team at Mac Valves Pacific.

Stock Part Number: 52A-14-D0A-DM-DDBJ-1JD

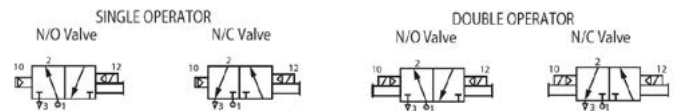
Function	Port size	Flow (Max)	Pressure Range	Individual Mounting
3/2 & 2/2 NO-NC	1/8" - 1/4"	1.5 Cv	Int. 20 to 120PSI, Vac 120 Ext. Pilot 120PSI	Inline

OPERATIONAL BENEFITS

- The 4-way pilot develops maximum shifting force both ways.
- Memory spring available.
- Balanced spool, immune to variations of pressure, also provides high flow.
- Short stroke with high flow.
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
- Pilot with balanced poppet, high flow, short and consistent response times.
- Wiping effect eliminates sticking.
- Long service life.



52 SERIES



52 SERIES

52A - $\begin{matrix} X & X & X & X & X & X \\ \hline 1 & 2 & 3 & 4 & 5 & 6 \end{matrix}$ - $\begin{matrix} D & XX & X & X \\ \hline 7 & 8 & 9 & 10 \end{matrix}$

1 - Spool Type - Valve Function

- 1 Single operator, N.C. main
- 2 Double operator, N.C. main
- 3 Single operator, N.O. main
- 4 Double operator, N.O. main

2 - Body Type

- 1 Inline 3-port
- 3 Manifold Body
- 4 Inline 3-port with memory spring
- 6 Manifold body with memory spring

3 - Port Size And Thread Type

- C 1/8" BSPPL
- D 1/4" BSPPL

4 - Body Configurations

- 0 Inline

5 - Internal/External Pilot

- A Internal pilot
- B External pilot

6 - Pilot Body

- DM Muffled Exhaust DP Piped Exhaust

52 SERIES - DM PILOT OPTIONS

DM - $\begin{matrix} D & XX & X & X \\ \hline 7 & 8 & 9 & 10 \end{matrix}$

7 - Voltage

JA 120/60, 110/50	JC 24/60, 24/50
JF 240/50	DA 24 VDC (54W)
DB 12 VDC (54W)	DE 12 VDC (12.7W) (MOD CLSF ONLY)
FA 12 VDC (1.8W)	DF 24 VDC (12.7W) (MOD CLSF ONLY)
FF 24 VDC (2.4W)	JF 240/50 (2.8w)

*Further Options Available

8 - Lead Wire Length

- A 18" Coil Leads J External Plug-In Connector
- * Longer leads available on request

9 - Manual Operator

- 0 No operator
- 1 Non-locking manual operator
- 2 Locking manual operator
- 3 Non-locking extended operator
- 4 Locking extended operator

10 - Electrical Connector

BA Grommet	JB Rectangular plug-in
JD Rectangular plug-in with light	JM Rectangular male only
JA Square Plug-In	JC Square Pug-In with light
JJ Square Male Only	KA Mini plug-in
KB Mini plug-in with diode	KC Mini plug-in w/M.O.V.
KD Mini plug-in with light	KE Mini plug-in w/light & diode
KF Mini plug-in w/light & M.O.V.	KJ Mini plug-in male
KG Mini plug-in w/LED light & diode	KL Mini plug-in male w/M.O.V.
KK Mini plug-in male only w/diode	

Complete Pilot Valve

DMB-DXXX-XXX-1 Pilot Valve (4-Way)

52 SERIES REMOTE AIR

52A - $\begin{matrix} \text{X} & \text{X} & \text{X} & \text{X} & \text{X} & \text{RA} \\ \text{T} & \text{T} & \text{T} & \text{T} & \text{T} & \text{T} \\ 1 & 2 & 3 & 4 & 5 & 6 \end{matrix}$

1 - Spool Type

- 1 Single Operator Normally Closed
- 2 Double Operator Normally Closed
- 3 Single Operator Normally Open
- 4 Double Operator Normally Open

2 - Body Type

- 1 Inline 3-port
- 3 Manifold Body
- 4 Inline 3-port with memory spring
- 6 Manifold body with memory spring

3 - Port Size And Thread Type

- C 1/8" BSPPL
- D 1/4" BSPPL

4 - Configuration

- 0 Inline or Manifold Body

5 - Pilot Port

- J Pilot Port Size M5 (Metric)

6 - Style

- RA Remote Air

*Note: For Single RA Operator Valves, Use MOD 1493

52 SERIES CIRCUIT BAR (CBM)

CBM052A - $\begin{matrix} \text{XX} & \text{X} & \text{X} & \text{X} & \text{X} & \text{XX} & 9 \\ \text{T} & \text{T} & \text{T} & \text{T} & \text{T} & \text{T} & \text{T} \\ 1 & 2 & 3 & 4 & 5 & & \end{matrix}$ Valves and cover plates assembled to bar

1 - Spacing

- 00 19.5mm Spacing
- 01* 21mm Spacing

2 - Configuration

- A Inline Body
- B Inline Body with Flow Control

3 - Style

- A Standard Bar
- B Add-On Version (Includes End Plate)
- E* Add-On Base

4 - Port Size & Thread Type

- B 3/8" BSPPL
- C 3/8" BSPTR

5 - Stations

- Number of Stations (02, 03, 04, etc.)

Accessories

- M-52001-01P Right Hand End Plate Kit

*NOTE: "E" Option is considered a Middle Station

52 SERIES CIRCUIT BAR (CBP)

CBP052A - $\begin{matrix} \text{XX} & \text{X} & \text{X} & \text{X} & \text{X} & \text{XX} & 9 \\ \text{T} & \text{T} & \text{T} & \text{T} & \text{T} & \text{T} & \text{T} \\ 1 & 2 & 3 & 4 & 5 & & \end{matrix}$ Valves and cover plates assembled to bar

1 - Spacing

- 00 19.5mm Spacing
- 01* 21mm Spacing

2 - Configuration

- A Side Port
- B Bottom Port
- C Side Port with Flow Control

3 - Style

- A Standard Bar
- B Add-On Version (Includes End Plate)
- E* Add-On Base

4 - Port Size & Thread Type

- B 1/8" BSPPL
- E 1/4" BSPPL

5 - Stations

- Number of Stations (02, 03, 04, etc.)

Accessories

- M-52001-01P Right Hand End Plate Kit
- M-52003 Blank Station Kit for Manifold Body

*NOTE: "E" Option is considered a Middle Station

SMALL
3-WAY

LARGE
3-WAY

SMALL
4-WAY

LARGE
4-WAY

ISO
VALVES

PPC
VALVES

PULSE
VALVES

BULLET
VALVES

The MAC 53 series is a 3-way balanced spool valve piloted by a small direct operated 4-way solenoid pilot. The 4-way pilot means a low minimum operating pressure - no pistons or return springs - results in minimal resistance to shifting. The balanced design in the pilot means shifting forces are consistently high and response times are repeatable regardless of inlet pressure fluctuations. For more information please ask our team at Mac Valves Pacific.

Stock Part Number: 53A-1AD-DM-DDAJ-1JD

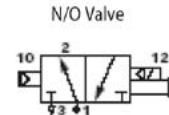
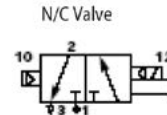
Function	Port size	Flow (Max)	Pressure Range	Individual Mounting
3/2 NO-NC	1/4" - 3/8"	2.0 Cv	Int. 20-120PSI (Mem. spring op.: 35-120 PSI) Ext. pilot: Vac to 120PSI	Inline



53 SERIES

OPERATIONAL BENEFITS

- The 4-way pilot develops maximum shifting force both ways.
- Memory spring available.
- Balanced spool, immune to variations of pressure, also provides high flow.
- Short stroke with high flow.
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
- Pilot with balanced poppet, high flow, short and consistent response times.
- Wiping effect eliminates sticking
- Long service life.



53 SERIES VALVE & BODY OPTIONS

53A - X X X - XX - D XX X - X XX
 1 2 3 4 G 5 6 7 8

1 - Spool Type

- 0 Base Only
- 1 Single Operator Normally Closed
- 2 Single Operator Normally Open
- 5 Single Operator Normally Closed with Memory Spring
- 6 Single Operator Normally Open with Memory Spring

2 - Internal/External Pilot

Base Only Valve Only / Valve & Base

- A Internal Pilot
- B External Pilot from "10" End
- C External Pilot from "12" End

3 - Port Size And Thread Type

- Ext. Pilot/Int. Pilot
- 0 Valve Only
 - C 1/4" BSPPL
 - D 3/8" BSPPL

4 - Pilot Body

- DM Muffled Pilot Exhaust
- GM Muffled Pilot Exhaust

53 SERIES - DM SOLENOID PILOT OPTIONS

D XX X - X XX
 5 6 7 8

5 - Voltage

- | | |
|-------------------|-----------------------------------|
| JA 120/60, 110/50 | JC 24/60, 24/50 |
| JF 240/50 | DA 24 VDC (54W) |
| DB 12 VDC (54W) | DE 12 VDC (12.7W) (MOD CLSF ONLY) |
| FA 12 VDC (1.8W) | DF 24 VDC (12.7W) (MOD CLSF ONLY) |
| FF 24 VDC (24W) | JF 240/50 (2.8w) |

*Further Options Available

6 - Lead Wire Length

- A 18" Coil leads
- J External plug-in lead

*Longer leads available on request

7 - Manual Operator

- | | |
|-----------------------------|-------------------------------|
| 0 No operator | 1 Non-locking manual operator |
| 2 Locking manual operator | 3 Non-locking ext. operator |
| 4 Locking extended operator | |

8 - Electrical Connector

- | | |
|-------------------------------------|---------------------------------|
| BA Grommet | JB Rectangular plug-in |
| JD Rectangular plug-in with light | JM Rectangular male only |
| JA Square Plug-In | JC Square Pug-In with light |
| JJ Square Male Only | KA Mini plug-in |
| KB Mini plug-in with diode | KC Mini plug-in w/M.O.V. |
| KD Mini plug-in with light | KE Mini plug-in w/light & diode |
| KF Mini plug-in w/light & M.O.V. | KJ Mini plug-in male |
| KG Mini plug-in w/LED light & diode | KL Mini plug-in male w/M.O.V. |
| KK Mini plug-in male only w/diode | |

*Further Options Available

Complete Pilot Valve

- DMB-DXXX-XXX-1 Pilot Valve

53 SERIES - SINGLE REMOTE AIR

53A - $\begin{matrix} X & X & X \\ \downarrow & \downarrow & \downarrow \\ 1 & 2 & 3 \end{matrix}$ - $\begin{matrix} DM \\ \downarrow \\ 4 \end{matrix}$ - $\begin{matrix} RA1 \\ \downarrow \\ 5 \end{matrix}$ $\begin{matrix} X \\ \downarrow \\ 6 \end{matrix}$

1 - Spool Type

- 0 Base Only
- 1 Single Operator Normally Closed
- 2 Single Operator Normally Open
- 5 Single Operator Normally Closed with Memory Spring
- 6 Single Operator Normally Open with Memory Spring

2 - Internal/External Pilot

- A Internal Pilot
- B External Pilot from "10" End
- C External Pilot from "12" End

3 - Cylinder Port Size And Thread Type

- 0 Valve Only
- C 1/4" BSPPL
- D 3/8" BSPPL

4 - Pilot Body

- DM Muffled Exhaust

5 - Remote Pilot Operator

- RA1 Pilot Operator

6 - Pilot Port Size and Thread Type

- 4 1/8" BSPPL

53 SERIES - DOUBLE REMOTE AIR

53A - $\begin{matrix} X & X & X \\ \downarrow & \downarrow & \downarrow \\ 1 & 2 & 3 \end{matrix}$ - RA

1 - Spool Type

- 0 Base Only
- 3 Double Operator Normally Closed
- 4 Double Operator Normally Open

2 - External Pilot

- D Remote Air

3 - Cylinder Port Size And Thread Type

- 0 Valve Only
- C 1/4" BSPPL
- D 3/8" BSPPL

Note: For Single Operator Valves, Use MOD 1493

53 SERIES - CIRCUIT BAR (EBM)

EBM053A - $\begin{matrix} XX & X & X & X \\ \downarrow & \downarrow & \downarrow & \downarrow \\ 1 & 2 & 3 & 4 \end{matrix}$ - $\begin{matrix} XX \\ \downarrow \\ 5 \end{matrix}$ - 9

1 - Spacing

- 00 254mm Spacing

2 - Configuration

- A Side Port
- B Bottom Port

3 - Style

- A Standard Bar Internal Pilot
- B Standard Bar External Pilot

4 - Port Size & Thread Type

- D 1/4" BSPPL
- E 3/8" BSPPL

5 - Stations

- Number of Stations (02, 03, 04, etc.)

Plate Kit

- M-52001-01P Right Hand End
- M-52003 Blank Station Kit for Manifold Body

*NOTE: "E" Option is considered a Middle Station



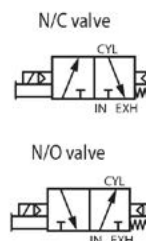
The MAC 55 series is a 3-way balanced spool valve piloted by a small direct operated balanced poppet valve. This is an extremely versatile valve: **1:** It can be converted for use in vacuum. **2:** It can be changed from an internal pilot to external by simply rotating the adapter between the pilot and main valve bodies. **3:** It can also be converted to a remote air operated valve by removing the solenoid pilot assembly - just to name a few. For more information regarding certifications (such as UL, CSA, RoHS and CE) please ask our team at Mac Valves Pacific.

Stock Part Number: 55B-14-PI-501JD

Function	Port size	Flow (Max)	Pressure Range	Individual Mounting
3/2 & 2/2 N/O-N/C	1/4"-3/8"	2.2 Cv	Ext. Vac. to 150PSI Int. 30 to 150PSI	Inline

OPERATIONAL BENEFITS

- Balanced spool, immune to variations of pressure.
- Short stroke with high flow.
- The piston (booster) provides maximum shifting forces.
- Checked accumulator guarantees maximum pilot pressure.
- Powerful return force thanks to the combination of mechanical and air springs.
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
- Wiping effect eliminates sticking.
- Pilot valve with balanced poppet, high flow, short and consistent response times.



55 SERIES

55 SERIES

55B - X X - XX - XX X XX
 T T T T T T
 1 2 3 4 5 6

1 - Valve Function

- Normally Closed
- Normally Open

2 - Port Size

- 1/4" BSPP
- 3/8" BSPP

3 - Port Size

- PI Internal Pilot
- PE External Pilot

4 - Voltage

- AC Voltage
- 120/60, 110/50
 - 24/50-60
 - 240/50
- DC Voltage
- 24VDC (6W)
 - 12VDC (6W)
 - 24VDC (2.5W)
 - 12VDC (8.5)
 - 24VDC (8.5)

*Further Options Available

5 - Manual Operator Indicator Lights

- No Operator
- Non-Locking Recessed (Std.)
- Locking Recessed
- Non-Locking Extended
- Locking Extended

6 - Enclosure

- BA Grommet
- CA Conduit 1/2" NPS
- JA Square - No Light
- JB Rectangle - No Light
- JC Square w/Light
- JD Rectangle w/Light

* - Lights are available for 120/60, 110/50 or 24VDC with JIC enclosure only (AA).

Modifications

- Diverter models
- MOD 0575 Diverter Internal pilot
 - MOD 0575 Diverter External pilot
 - MOD 0158 Heavy Duty Spring

Remote Air Pilot Operated Models

- Normally closed
- 55B-13-RA 1/4"
 - 55B-14-RA 3/8"
- Normally open
- 55B-23-RA 1/4"
 - 55B-24-RA 1/4"



The MAC 56 series is a 3-way balanced spool valve piloted by our 100 series.

This is an extremely versatile valve: **1:** It can be converted for use in vacuum. **2:** It can be changed from a normally closed function to a normally open function by simply rotating a function plate between the pilot and main valve bodies. **3:** It can also be converted to a remote air operated valve by removing the solenoid pilot assembly - just to name a few. For more information regarding certifications (such as UL, CSA, RoHS and CE) please ask our team at Mac Valves Pacific.

Stock Part Number: 56C-16-392JD

Function	Port size	Flow (Max)	Pressure Range	Individual Mounting
3/2 & 2/2 N/O-N/C	3/8"-1/2"-3/4"	5.7 Cv	Ext. Vac. to 150PSI Int. 25 to 150PSI	Inline

OPERATIONAL BENEFITS

- Balanced spool, immune to variations of pressure.
- Short stroke with high flow.
- Large spool area provides maximum shifting forces.
- Checked accumulator guarantees maximum pilot pressure.
- Powerful return force thanks to the combination of mechanical and air springs.
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
- Wiping effect eliminates sticking.
- Pilot valve with balanced poppet, high flow, short and consistent response times.

N/C pilot - NC spool



N/O pilot - N/C spool



56 SERIES

56 SERIES

56 C - $\begin{matrix} X & X & - & XX & X & XX \\ T & T & & T & T & T \\ 1 & 2 & & 3 & 4 & 5 \end{matrix}$

1 - Valve Function

- 1 Internal Pilot, N.C. Pilot, N.C. Main Spool
- 2 Internal Pilot, N.O. Pilot, N.C. Main Spool
- 3 External Pilot, N.C. Pilot, N.C. Main Spool
- 4 External Pilot, N.O. Pilot, N.C. Main Spool
- 5 Remote Air Pilot Operated, N.C. Main Spool
- 6 Internal Pilot, N.C. Pilot, N.O. Main Spool
- 7 External Pilot, N.C. Pilot, N.O. Main Spool
- 8 Remote Air Pilot, N.O. Main Spool

2 - Port Size

- | | |
|-------------|-------------|
| 5 3/8" BSPP | 6 1/2" BSPP |
| 8 3/4" BSPP | |

3 - Voltage

AC Voltage	DC Voltage
11 120/60, 110/50	50 24VDC (6W)
12 240/60, 220/50	55 12VDC (6W)
22 24/50-60	59 24VDC (2.5W)
39 240/50	60 12VDC (8.5)
*Further Options Available	61 24VDC (8.5)

4 - Manual Indicator Lights

- | | |
|--------------------|-------------------------------|
| 0 No Operator | 1 Non-Locking Recessed (Std.) |
| 2 Locking Recessed | 3 Non-Locking Extended |
| 4 Locking Extended | |

5 - Enclosure

- | | |
|----------------------|-------------------------|
| BA Grommet | CA Conduit 1/2" NPS |
| JA Square - No Light | JB Rectangle - No Light |
| JC Square w/Light | JD Rectangle w/Light |

*Lights are available for 120/60, 110/50 or 240/60, 220/50 or 24VDC with JIC enclosure only (AA).

56 SERIES - Remote Air Pilot Operated Models

56 C - $\begin{matrix} X & X & - & RA \\ T & T & & \\ 1 & 2 & & \end{matrix}$

1 - Function

- 5 Normally Closed
- 8 Normally Open

2 - Port Size

- 5 3/8" BSPP
- 6 1/2" BSPP
- 8 3/4" BSPP

Accessories

- | | |
|---------|-------------------------------|
| R-59003 | Remote Air Pilot Block |
| M-00012 | Explosion Proof Adapter Plate |

Pilot Valve

- 130B - XX X XX

Modifications

- | | |
|----------|-------------------|
| MOD 0158 | Heavy Duty Spring |
|----------|-------------------|

For "External Pilot", substitute "RA" for "RE" in part number

The MAC 57 series is a 3-way balanced spool valve piloted by our 200 series (which means this large 3-way valve can also be ordered with the 200 series hazardous location version as a pilot - giving it the same standard). This is an extremely versatile valve: **1:** It can be converted for use in vacuum. **2:** It can be changed from a normally closed function to a normally open function by simply rotating a function plate between the pilot and main valve bodies. **3:** It can also be converted to a remote air operated valve by removing the solenoid pilot assembly - just to name a few. For more information regarding certifications (such as UL, CSA, RoHS and CE) please ask our team at Mac Valves Pacific.

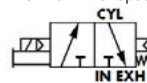
Stock Part Number: 57D-16-252JC

Function	Port size	Flow (Max)	Pressure Range	Individual Mounting
3/2 & 2/2 NO-NC	1/2"-3/4"-1"	174 Cv	Ext. Vac. to 150PSI Int. 25 to 150PSI	Inline

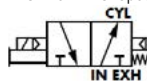
OPERATIONAL BENEFITS

- Balanced spool, immune to variations of pressure.
- Short stroke with high flow.
- Large spool area provides maximum shifting forces.
- Checked accumulator guarantees maximum pilot pressure.
- Powerful return force thanks to the combination of mechanical and air springs.
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
- Wiping effect eliminates sticking.
- Pilot valve with balanced poppet, high flow, short and consistent response times.

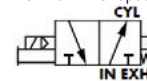
N.C.Pilot - N.C. Spool



N.O.Pilot - N.C. Spool



N.C.Pilot - N.O. Spool



57 SERIES

57 SERIES

57 D - $\begin{matrix} X & X & - & XX & X & XX \\ T & T & & T & T & T \\ 1 & 2 & & 3 & 4 & 5 \end{matrix}$

1 - Valve Function

- 1 Internal Pilot, N.C. Pilot, N.C. Main Spool
- 2 Internal Pilot, N.O. Pilot, N.C. Main Spool
- 3 External Pilot, N.C. Pilot, N.C. Main Spool
- 4 External Pilot, N.O. Pilot, N.C. Main Spool
- 5 Remote Air Pilot Operated, N.C. Main Spool
- 6 Internal Pilot, N.C. Pilot, N.O. Main Spool
- 7 External Pilot, N.C. Pilot, N.O. Main Spool
- 8 Remote Air Pilot, N.O. Main Spool

2 - Port Size

- 4 1/2" BSPP
- 5 3/4" BSPP
- 6 1" BSPP

3 - Voltage

AC Voltage	DC Voltage
11 120/60, 110/50	50 24VDC (6W)
22 24/50-60	55 12VDC (6W)
25 240/50	60 12VDC (8.5)
	61 24VDC (8.5)

4 - Manual Operator Indicator Lights

- | | |
|--------------------|-------------------------------|
| 0 No Operator | 1 Non-Locking Recessed (Std.) |
| 2 Locking Recessed | 3 Non-Locking Extended |
| 4 Locking Extended | |

5 - Enclosure

- | | |
|--------------------------|-----------------------------------|
| BA Grommet | CC Conduit 1/2" NPT |
| EA Hazardous Location** | BA Grommet |
| CA Conduit 1/2" NPS | CC Conduit 1/2" NPT (CSA Threads) |
| JA Square Din - No Light | JC Square Din with Light |
| JJ No Plug | |

** - Hazardous Location enclosure supplied with no operator only ("0").
DC not available below 6 watts.

57 SERIES - Remote Air Pilot Operated Models

57 D - $\begin{matrix} X & X & - & RA \\ T & T & & \\ 1 & 2 & & \end{matrix}$

1 - Function

- 5 Normally Closed
- 8 Normally Open

2 - Port Size

- 4 1/2" BSPP
- 5 3/4" BSPP
- 6 1" BSPP

For "External Pilot", substitute "RA" for "RE" in part number

Accessories

- | | |
|---------|------------------------|
| R-59003 | Remote Air Pilot Block |
|---------|------------------------|

Pilot Valve

- | | |
|----------------|-----------------------|
| 250B - XX X XX | (200 Series) Standard |
| 130B - XX X XX | (100 Series) Optional |

58 SERIES

The MAC 58 series is a 3-way balanced spool valve piloted by our 200 series (which means this large 3-way valve can also be ordered with the 200 series hazardous location version as a pilot - giving it the same standard). This is an extremely versatile valve:

1: It can be converted for use in vacuum. **2:** It can be changed from a normally closed function to a normally open function by simply rotating a function plate between the pilot and main valve bodies. **3:** It can also be converted to a remote air operated valve by removing the solenoid pilot assembly - just to name a few. For more information regarding certifications (such as UL, CSA, RoHS and CE) please ask our team at Mac Valves Pacific.

Stock Part Number: 58D-16-501JC

Function	Port size	Flow (Max)	Pressure Range	Individual Mounting
3/2 & 2/2 NO-NC	1"-1 1/4"-1 1/2"	26.0 Cv	Ext. Vac. to 150PSI Int. 25 to 150PSI	Inline

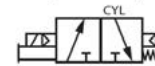


58 SERIES

OPERATIONAL BENEFITS

- Balanced spool, immune to variations of pressure.
- Short stroke with high flow.
- Large spool area provides maximum high flow.
- Checked accumulator provides pilot & spring with consistent air.
- Powerful return force thanks to the combination of mechanical and air springs.
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
- Wiping effect eliminates sticking.
- Pilot valve with balanced poppet, high flow, short and consistent response times.

N/C pilot - NC spool



N/O pilot - N/C spool



58 SERIES

58 D - X X - XX X XX
 1 2 3 4 5

1 - Valve Function

- Internal Pilot, N.C. Pilot, N.C. Main Spool
- Internal Pilot, N.O. Pilot, N.C. Main Spool
- External Pilot, N.C. Pilot, N.C. Main Spool
- External Pilot, N.O. Pilot, N.C. Main Spool
- Remote Air Pilot Operated, N.C. Main Spool
- Internal Pilot, N.C. Pilot, N.O. Main Spool
- External Pilot, N.C. Pilot, N.O. Main Spool
- Remote Air Pilot, N.O. Main Spool

2 - Port Size

- | | |
|---------------|---------------|
| 4 1" BSPP | 5 1 1/4" BSPP |
| 6 1 1/2" BSPP | |

3 - Voltage

AC Voltage	DC Voltage
11 120/60, 110/50	50 24VDC (6W)
22 24/50-60	55 12VDC (6W)
25 240/50	60 12VDC (8.5)
*Further Options Available	61 24VDC (8.5)

4 - Manual Indicator Lights

- | | |
|--------------------|-------------------------------|
| 0 No Operator | 1 Non-Locking Recessed (Std.) |
| 2 Locking Recessed | 3 Non-Locking Extended |
| 4 Locking Extended | |

5 - Enclosure

- | | |
|--------------------------|-------------------------|
| BA Grommet | CA Conduit 1/2" NPS |
| CC Conduit 1/2" NPT | EA Hazardous Location** |
| JA Square Din - No Light | JC Din with Light |

** - Hazardous Location enclosure supplied with no operator only ("0").
DC not available below 6 watts.

58 SERIES - Remote Air Pilot Operated Models

58 D - X X - RA
 1 2

1 - Function

- Normally Closed
- Normally Open

2 - Port Size

- 1" BSPP
- 1 1/4" BSPP
- 1 1/2" BSPP

For "External Pilot", substitute "RA" for "RE" in part number

Accessories

- | | |
|---------|-------------------------------|
| R-59003 | Remote Air Pilot Block |
| M-00012 | Explosion Proof Adapter Plate |

Pilot Valve

- 250B - XX X XX

Modifications

- | | |
|------|------------------------------|
| 0309 | 58C Spool Position Indicator |
| 0523 | Contaminated Atmosphere |
| 0575 | 58C Diverter |
| 0158 | Heavy Duty Spring |

The MAC 59 series is a 3-way balanced spool valve piloted by our 200 series (which means this large 3-way valve can also be ordered with the 200 series hazardous location version as a pilot - giving it the same standard). This is an extremely versatile valve: **1:** It can be converted for use in vacuum. **2:** It can be changed from a normally closed function to a normally open function by simply rotating a function plate between the pilot and main valve bodies. **3:** It can also be converted to a remote air operated valve by removing the solenoid pilot assembly - just to name a few. For more information regarding certifications (such as UL, CSA, RoHS and CE) please ask our team at Mac Valves Pacific.

Stock Part Number: 59B-16-112JC

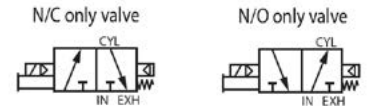
Function	Port size	Flow (Max)	Pressure Range	Individual Mounting
3/2 & 2/2 NO-NC	2"-2 1/2"	60.0 Cv	Ext. Vac. to 150PSI Int. 25 to 150PSI	Inline



59 SERIES

OPERATIONAL BENEFITS

- Balanced spool, immune to variations of pressure.
- Short stroke with high flow.
- Large spool area provides maximum shifting forces.
- Checked accumulator guarantees maximum pilot pressure.
- Powerful return force thanks to the combination of mechanical and air springs.
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
- Wiping effect eliminates sticking.
- Pilot valve with balanced poppet, high flow, short and consistent response times.



59 SERIES

59B - X X - XX X XX
 1 2 3 4 5

1 - Valve Function

- 1 Internal Pilot, N.C. Pilot, N.C. Main Spool
- 2 Internal Pilot, N.O. Pilot, N.C. Main Spool
- 3 External Pilot, N.C. Pilot, N.C. Main Spool
- 4 External Pilot, N.O. Pilot, N.C. Main Spool
- 5 Remote Air Pilot Operated, N.C. Main Spool
- 6 Internal Pilot, N.C. Pilot, N.O. Main Spool
- 7 External Pilot, N.C. Pilot, N.O. Main Spool
- 8 Remote Air Pilot, N.O. Main Spool

2 - Port Size

- 5 2" BSPP
- 6 2 1/2" BSPP

3 - Voltage

AC Voltage	DC Voltage
11 110/50	50 24VDC (6W)
22 24/50-60	55 12VDC (6W)
25 240/50	60 12VDC (8.5)
*Further Options Available	61 24VDC (8.5)

4 - Manual Operator Indicator Lights

- 0 No Operator
- 1 Non-Locking Recessed (Std.)
- 2 Locking Recessed
- 3 Non-Locking Extended
- 4 Locking Extended

5 - Enclosure

AA JIC w/1/2" NPS Conduit	BA Grommet
CC Conduit 1/2" NPT	EA Hazardous Location**
JA Square Din - No Light	JC Square Din with Light

* - Lights are available for 120/60, 110/50 or 240/60, 220/50 or 24VDC with JIC enclosure only (AA).

** - Hazardous Location enclosure supplied with no operator only ("0"). DC not available below 6 watts.

59 SERIES - Remote Air Pilot Operated Models

59D - X X - RA
 1 2

1 - Function

- 5 Normally Closed

2 - Port Size

- 4 1" BSPP
- 5 1 1/4" BSPP
- 6 1 1/2" BSPP

For "External Pilot", substitute "RA" for "RE" in part number

Accessories

R-59003	Remote Air Pilot Block
M-00012	Explosion Proof Adapter Plate

Pilot Valve

250B - XX X XX

Modifications

0523	Contaminated Atmosphere
0575	58C Diverter
0158	Heavy Duty Spring

67 SERIES

The MAC 67 series is a 3-way balanced spool valve piloted by a small direct operated 4-way solenoid pilot - a one-off in air valve manufacturing. The 4-way pilot means a low minimum operating pressure - no pistons or springs - and minimal resistance to shifting. The balanced design in the pilot means shifting forces are consistently high and response times are repeatable regardless of inlet pressure fluctuations. For more information please ask our team at Mac Valves Pacific.

Stock Part Number: 67A-A1-DAA-DM-DDAJ-1JD

Function	Port size	Flow (Max)	Pressure Range	Individual Mounting
3/2 & 2/2 NO-NC	3/4 - 1"	20.0 Cv	Ext. Vac. to 150PSI Int. 20 to 150PSI	Inline

OPERATIONAL BENEFITS

- The 4-way pilot develops maximum shifting force both ways.
- Memory spring available.
- Balanced spool, immune to variations of pressure, also provides high flow.
- Short stroke with high flow.
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
- Pilot with balanced poppet, high flow, short and consistent response times.
- Wiping effect eliminates sticking.



67 SERIES

67A - X X - X X X - XX - D XX X - X XX
1 2 3 4 5 6 7 8 9 10

1 - Spool Type

- A Single Operator - Normally Closed
- B Double Operator - Normally Closed
- C Single Operator - Normally Open
- D Double Operator - Normally Open
- G Single Operator - Universal Spool
- H Double Operator Universal Spool

2 - Spool Return

- 1 Standard Return
- 2 Standard Return w/ Memory Spring
- 3 Single Remote Air (w/ air spring return)
- 4 Double Remote Air

3 - Port Size & Thread Type

- C 3/4" BSPPL
- D 1" BSPPL
- G O-Ring Mount - Bottom Port

4 - Pilot Exhaust / Remote Air

- A Standard Pilot Exhaust
- R Remote Air

5 - Internal / External Pilot

- A Internal Pilot
- B External Pilot

67 SERIES - PILOT VALVE OPTIONS (If RA or RE - 7, 8, 9, & 10 don't apply)

XX - D XX X - X XX
6 7 8 9 10

6 - Pilot Style / Remote Air

- DM Pilot Valve w/muffled exhaust
- RA Remote Air
- RE Remote External

7 - Voltage

- JA 120/60, 110/50
- JF 240/50
- DB 12 VDC (54W)
- DF 24 VDC (12.7W)(CLSF)
- FF 24 VDC (24W)
- JC 24/60, 24/50
- DA 24 VDC (54W)
- DE 12 VDC (12.7W)(CLSF)
- FE 12 VDC (24W)

8 - Lead Wire Length

- 0 No Wires - Plug Option
- A 18" Coil Leads

9 - Manual Operator

- 0 No Operator
- 1 Non-Locking Manual Operator
- 2 Locking Manual Operator
- 3 Non-Locking Extended Manual Operator
- 4 Locking Extended Manual Operator

10 - Electrical Connector

- BA Grommet
- JB Rectangular Plug - No Light
- JD Rectangular Plug - w/Light

Solenoid and Cover Assembly

DXXX - XXX1

Complete Pilot Valve

DMB-DXXX-XXX1

Note: Low Wattage Available As Complete Valves Only

The MAC 68 series is a 3-way balanced spool valve piloted by a small direct operated 4-way solenoid pilot - a one-off in air valve manufacturing. The 4-way pilot means a low minimum operating pressure - no pistons or springs - and minimal resistance to shifting. The balanced design in the pilot means shifting forces are consistently high and response times are repeatable regardless of inlet pressure fluctuations. For more information regarding certifications (such as UL, CSA, RoHS and CE) please ask our team at Mac Valves Pacific.

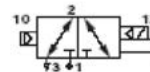
Stock Part Number: 68A-A1-EAA-JDAA-1BA

Function	Port size	Flow (Max)	Pressure Range	Individual Mounting
3/2 & 2/2 NO-NC	1"-1 1/4"-1 1/2"	31.0 Cv	Ext. Vac. to 150PSI Int. 20 to 150PSI	Inline

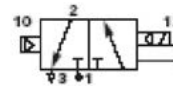
OPERATIONAL BENEFITS

- The 4-way pilot develops maximum shifting forces both ways.
- Balanced spool, immune to variations of pressure, highflow.
- Bonded spool with minimum friction, shifting in a glass like finished bore.
- Pilot with balanced poppet, high flow, and short response times.

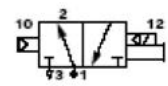
Single Operator Universal Valve



Single Operator N/C Valve



Single Operator N/O Valve



68 SERIES

68A - X X - X X X - J XX X - X XX (-G)
 1 2 3 4 5 6 7 8 9 10 11

1 - Spool Type

- A Single Operator - N/C C Single Operator - N/O
- G Single Operator - Universal Spool

2 - Spool Return

- 1 Standard Return

3 - Port Size & Thread Type

- D 1" BSPP E 1 1/4" BSPP
- F 1 1/2" BSPPL M O-Ring Mount - Bottom Port

4 - Pilot Exhaust

- A Standard Pilot Exhaust
- B Pilot Exhaust Out Main Exhaust

5 - Internal / External Pilot

- A Internal Pilot
- B External Pilot

68 SERIES - SOLENOID OPTIONS

J XX X - X XX (-G)
 6 7 8 9 10 11 - When ground is required

6 - Operator

- J Solenoid

7 - Voltage

- AA 240/50 AC 24 VAC (54W)
- DA 24 VDC (54W) DB 12 VDC (54W)
- DE 24 VDC (1.8W) DF 12 VDC (1.8W)

*Requires Electrical Cover w/ Rectifier

8 - Lead Wire Length

- 0 No Lead Wires A 18" Leads

9 - Manual Operator

- 0 No Operator 1 Non-Locking Recessed
- 2 Locking Recessed 3 Non-Locking Extended
- 4 Locking Extended

10 - Electrical Cover Connection

- BA Flying Leads JB Rectangular Connect (No Light)
- JD Rectangular Connector (w/ Light)
- KD DIN Plug (w/ Light) KA Mini DIN Plug - (No Light)

Pilot Valve (For Standard Pilot Exhaust)

- 46A-111-JXXX-XXX(G)

68 SERIES - (REMOTE AIR)

68A - X X - X X X - XX
 1 2 3 4 5 6 - When ground is required

1 - Spool Type

- A Single Operator - N/C B Double Operator - N/C
- C Single Operator - N/O D Double Operator - N/O

2 - Spool Return

- 3 Sgl. Remote Air (w/ Air Spring Return)
- 4 Dbl. Remote Air

3 - Port Size & Thread Type

- D 1" BSPP E 1 1/4" BSPP
- F 1 1/2" BSPP M O-Ring Mount - Bottom Port

4 - Configuration

- R Remote Air

5 - Internal / External Pilot

- A Internal Pilot B External Air Spring or Double Remote Air

6 - Internal / External Air Spring

- RA Single Remote Air w/Internal Air Spring Return or Double Remote Air
- RE Single Remote Air w/External Air Spring Return

The MAC 69 series is a 3-way balanced spool valve piloted by a small direct operated 4-way solenoid pilot - a one-off in air valve manufacturing. The 4-way pilot means a low minimum operating pressure - no pistons or springs - and minimal resistance to shifting. The balanced design in the pilot means shifting forces are constantly high and response times are repeatable regardless of inlet pressure fluctuations. For more information regarding certifications (such as UL, CSA, RoHS and CE) please ask our team at Mac Valves Pacific.

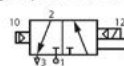
Stock Part Number: 69A-A1A-EAB-JDA0-2JD

Function	Port size	Flow (Max)	Pressure Range	Individual Mounting
3/2 & 2/2 NO-NC	1 1/2"-2"-2 1/2"	60.0 Cv	Ext. Vac. to 120PSI Int. 20 to 120PSI	Inline

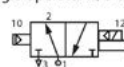
OPERATIONAL BENEFITS

- The 4-way pilot develops maximum shifting force both ways.
- Balanced spool, immune to variations of pressure, also provides high flow.
- Short stroke with high flow.
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
- Pilot with balanced poppet, high flow, short and consistent response times.
- Wiping effect eliminates sticking and contamination.

Single Operator N/C Valve



Single Operator N/O Valve



69 SERIES

69 SERIES

69A - $\overset{\text{X}}{\underset{\text{T}}{1}} \overset{\text{X}}{\underset{\text{T}}{2}} \overset{\text{X}}{\underset{\text{T}}{3}} \overset{\text{X}}{\underset{\text{T}}{4}} \overset{\text{X}}{\underset{\text{T}}{5}} \overset{\text{X}}{\underset{\text{T}}{6}} \overset{\text{J}}{\underset{\text{T}}{7}} \overset{\text{XX}}{\underset{\text{T}}{8}} \overset{\text{X}}{\underset{\text{T}}{9}} \overset{\text{X}}{\underset{\text{T}}{10}} \overset{\text{XX}}{\underset{\text{T}}{11}} (-\text{G})$

1 - Spool Type

- A Single Operator - Normally Closed
- C Single Operator - Normally Open

2 - Spool Return

- 1 Standard Return

3 - Port Size & Thread Type

- D 1 1/2" BSPPL E 2" BSPPL
- F 2 1/2" BSPPL M O-Ring Mount

4 - Pilot Exhaust / Remote Air

- A Standard Pilot Exhaust
- B Pilot Exhaust Out Main Exhaust

5 - Internal / External Pilot

- A Internal Pilot
- B External Pilot

69 SERIES - SOLENOID OPTIONS

$\overset{\text{J}}{\underset{\text{T}}{6}} \overset{\text{XX}}{\underset{\text{T}}{7}} \overset{\text{X}}{\underset{\text{T}}{8}} \overset{\text{X}}{\underset{\text{T}}{9}} \overset{\text{XX}}{\underset{\text{T}}{10}} \overset{\text{X}}{\underset{\text{T}}{11}} (-\text{G})$

6 - Operator

- J Solenoid

7 - Voltage

- AA 240/50
- AC 24 VAC (54W) (Req: Electrical Cover w/ Rectifier)
- DA 24 VDC (54W) DB 12 VDC (54W)
- DC 24 VDC (24W) DD 12 VDC (24W)
- DE 24 VDC (1.8W) DF 12 VDC (1.8W)

8 - Lead Wire Length

- 0 No Leads Wires A 18" Leads

9 - Manual Operator

- 0 No Operator 1 Non-Locking Recessed
- 2 Locking Recessed 3 Non-Locking Extended
- 4 Locking Extended

10 - Electrical Cover Connection

- BA Flying Leads
- JB Rectangular Connector - No Light
- JD Rectangular Connector w/ Light
- KD Mini Plug-In w/ Light

11 - Ground

- G Ground Pin/Wire

Pilot Valve

- 46A-111-JXXX-XXX(G)

69 SERIES - (REMOTE AIR)

69A - $\begin{matrix} X & X & - & X & X & X & - & XX \\ \hline 1 & 2 & 3 & 4 & 5 & 6 \end{matrix}$

1 - Spool Type

- A Single Operator - Normally Closed
- B Double Operator - Normally Closed
- C Single Operator - Normally Open
- D Double Operator - Normally Open

2 - Spool Return

- 3 Single Remote Air (w/ Air Spring Return)
- 4 Double Remote Air

3 - Port Size & Thread Type

- F 2 1/2" BSPPL
- M O-Ring Mount - Bottom Mount

4 - Configuration

- R Remote Air

5 - Internal / External Pilot

- A Internal Pilot
- B External Air Spring or Double Remote Air

6 - Internal / External Air Spring

- RA Single Remote Air w/Internal Air Spring Return or Dble. Remote Air
- RE Single Remote Air w/External Air Spring Return



SMALL
3-WAY



LARGE
3-WAY



SMALL
4-WAY



LARGE
4-WAY



ISO
VALVES



PPC
VALVES



PULSE
VALVES



BULLET
VALVES