1/4 & 3/8 NPT PORTED, MANUAL, MECHANICAL AND PILOT OPERATED AIR VALVES – "The Finest in Simplicity" 2, 3 and 4 Way - 2 Position – Operation to 150 psi Air

1/4 & 3/8 NPT

2.3 & 4 Wav

Suitable for Vacuum directional flow applications, but NOT for holding vacuum.

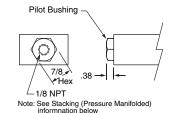
The short stroke of the lightweight Delrin® spool provides fast, posiitive, and reliable response.

Note 1: Specify Normally Open by substituting -30 for -3.



Brass bushing with 1/8 NPT port. Standard 3 Way spring return is normally closed. For normally open the actuators may be exchanged end for end or by specifying -30 for -3. Minimum pilot pressure:

Standard spring 50 psi Light spring (Option -L) . . . 40 psi Double pilot 20 psi



	3 Way	4 Way
Single Pilot - Spri	ng Return	•
1/4 NPT	14SP-3	14SP-4
1/4 Stacking	N/A	M14SP-4
3/8 NPT	34SP-3	34SP-4
Double Pilot		
1/4 NPT	14DP-3	14DP-4
1/4 Stacking	N/A	M14DP-4
3/8 NPT	34DP-3	34DP-4
Replacement spo	ol & seals	
	1400-903	1400-904

3 Way

4 Way

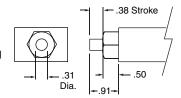
Rod Actuator



Stainless steel rod in brass bushing. Standard 3 Way spring return is normally closed. For normally open the actuators may be exchanged end for end or specify by substituting -30 for -3.

Force to actuate:

Standard spring 10.5 lb. Light spring (Option-L) 9.0 lb. Double rod 1.2 lb.

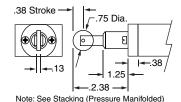


Note: See Stacking (Pressure Manifolded) informnation below

	J way	→ vvay
Single Rod - Sp	oring Return	•
1/4 NPT	14SR-3	14SR-4
1/4 Stacking	N/A	M14SR-4
3/8 NPT	34SR-3	34SR-4
Single Rod - Pi	lot Return	
1/4 NPT	14SRP-3	14SRP-4
1/4 Stacking	N/A	M14SRP-4
3/8 NPT	34SRP-3	34SRP-4
Double Rod		
1/4 NPT	14DR-3	14DR-4
1/4 Stacking	N/A	M14DR-4
3/8 NPT	34DR-3	34DR-4
Replacement s	pool & seals	
	1400-903	1400-904

Roller Cam

Case hardened steel roller and shaft in hard anodized aluminum housing. Standard 3 Way spring return is normally closed. For normally open specify by substituting -30 for -3. Force to actuate:



informnation below

	3 Way	4 Way
Single Cam - S	pring Return	
1/4 NPT	14CR-3	14CR-4
1/4 Stacking	N/A	M14CR-4
3/8 NPT	34CR-3	34CR-4
Single Cam - F	ilot Return	
1/4 NPT	14CRP-3	14CRP-4
1/4 Stacking	N/A	M14CRP-4
3/8 NPT	34CRP-3	34CRP-4
Replacement s	pool & seals fo	r above
•	1400-913	1400-914
Double cam		
1/4 NPT	14CCR-3	14CCR-4
1/4 Stacking	N/A	M14CCR-4
3/8 NPT	34CCR-3	34CCR-4
Replacement s	pool & seals	
•	1400-923	1400-924

Stacking - Pressure Manifold



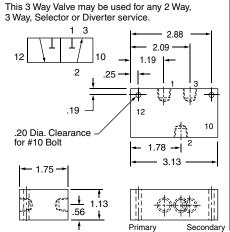
Selected models of the 14 Series 1/4" air valves can be stacked and pressure manifolded for space and money savings. The valve bodies are bolted together with 4 through tie bolts and the pressure is manifolded with O-Ring seals between the valves. Inlet pressure can be connected to either or both ends of the stack. Due to the fact that the pressure port, on all valve bodies, is tapped on both sides, the pressure manifold can be plugged at any point within the stack. This allows you to supply the stack with two different pressures, one from each end.

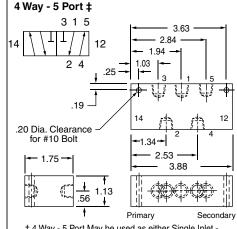
See Model Numbers in the Air-Pilot Rod Actuator, Roller Cam and Small Palm Button sections of Pgs 11.13 and 11.14 and Solenoid Valves on Pgs 11.19 and 11.20.

To Order: Specify the Quantity of each model desired, the Order in which they are to be assembled, and Brackets, if desired.

Spring Cap Dimensions STANDARD SPRING LIGHT SPRING OPTION -L 7/8 Hex

Valve Body Dimensions 2 Way / 3 Way 4 Way





‡ 4 Way - 5 Port May be used as either Single Inlet -Dual Exhaust or Dual Inlet Single Exhaust

Specifications subject to change without notice or incurring obligation

Aluminum bar body FEATURES

- Anodized black
- Honed & burnished bore
- Pressure balanced spool
- Delrin spool
- Buna-N seals
- Operation to 150 psi
- 4 Way 5 port may be used as either single inlet - dual exhaust or dual inlet - single exhaust.





- · Interchangeability of Parts
- Cv = 1.0 56.2 SCFM Free Flow to Atmosphere at 80 psi Supply
- Operating Temperature +32° to +180°F; Solenoid controlled models +150°F max. See pages 11.17, 11.19 & 11.21.

OPTIONS

- Light spring Specify Option -L
- Viton seals Specify Option -V
- Spools for bleeder pilot -Consult factory.

Note 1: Specify Normally Open by substituting -30 for -3.

OPERATING TEMPERATURE FOOTNOTE SEE PAGE 11.1

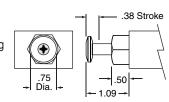
Small Palm Button



Un-anodized aluminum button with stainless steel rod in brass bushing. Standard 3 Way spring return is normally closed. For normally open the actuators may be exchanged end for end or specify by substituting -30 for -3.

Force to actuate:

Standard spring	.10.5	lb.
Light spring (Option -L)		
Double Button	1.2	lb.



	3 Way	4 Way
Single Button - Spri	ing Return	• •
1/4 NPT	14PS-3	14PS-4
1/4 Stacking	N/A	M14PS-4
3/8 NPT	34PS-3	34PS-4
Single Button - Pilo	t Return	
1/4 NPT	14PSP-3	14PSP-4
1/4 Stacking	N/A	M14PSP-4
3/8 NPT	34PSP-3	34PSP-4
Double Button		
1/4 NPT	14PPS-3	14PPS-4
1/4 Stacking	N/A	M14PPS-4
3/8 NPT	34PPS-3	34PPS-4
Replacement spool	& seals	
	1400-903	1400-904

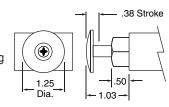
Large Palm Button



Red anodized aluminum button with stainless steel rod in brass bushing. Standard 3 Way spring return is normally closed. For normally open the actuators may be exchanged end for end or specify by substituting -30 for -3.

Force to actuate:

Standard spring10.5	lb
Light spring (Option -L) 9.0	lb
Double Button1.2	lb



	3 way	4 way
Single Button -	Spring Return	,
1/4 NPT	14PL-3	14PL-4
3/8 NPT	34PL-3	34PL-4
Single Button -	Pilot Return	
1/4 NPT	14PLP-3	14PLP-4
3/8 NPT	34PLP-3	34PLP-4
Double Button		
1/4 NPT	14PPL-3	14PPL-4
3/8 NPT	34PPL-3	34PPL-4
Replacement s	spool & seals	
	1400-903	1400-904

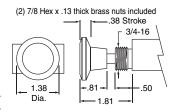
2 1//01/

Panel Mount Button



Phenolic button with plated steel rod in brass bushing: black button standard, red button Option -R. Standard 3 Way assemblies are normally closed with knob in the "out" position. For normally open specify by substituting -30 for -3. Force to actuate:

Standard spring	10.5	lb.
Light spring (Option -L)	9.0	lb.
Detented	3.0	lb.



	3 Way	4 Way
Spring Return		•
1/4 NPT	14PMS-3	14PMS-4
3/8 NPT	34PMS-3	34PMS-4
Pilot Return		
1/4 NPT	14PMP-3	14PMP-4
3/8 NPT	34PMP-3	34PMP-4
Replacement s	spool & seals for	r above
	1400-903	1400-904
Detented (Pus	h Pull)	
	14PMD-3	14PMD-4
3/8 NPT	34PMD-3	34PMD-4
Replacement s		
	1400-943†	1400-944†
† Includes fact	ory assembled:	spool attach-

Hand Lever



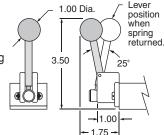
Hardened & plated steel shaft with unique connection to spool results in positive shifting. Standard 3 Way spring return is normally closed. For normally open specify by substituting -30 for -3.

Force to actuate:

Rod Actuator

Assembly

Standard spring . . . 10.0 lb. Light spring 6.0 lb. (Option -L) Detented 3.0 lb.



	3 Way	4 Way
Spring Return	•	•
1/4 NPT	14HLS-3	14HLS-4
3/8 NPT	34HLS-3	34HLS-4
Detented		
1/4 NPT	14HL-3	14HL-4
3/8 NPT	34HL-3	34HL-4

Replacement spool & seals 1400-934+

[MMMM]

† Includes factory assembled spool attachments

MOST THREADED-IN OPERATORS ARE INTERCHANGEABLE BETWEEN ENDS

Palm Button Assembly

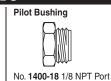
No. 1400-1 Large Button No. 1400-2 Small Button

No. 1400-3

Spring Housing Assembly

No. 1400-4 Light Spring only (for Option -L) No. 1400-5 Standard Spring only

No. 1400-46 Light Spring & Housing Assembly (for Option -L). No. 1400-56 Standard Spring & Housing Assembly



Panel Mount Button Assembly





For Detented (with Spool) 1400-7-3 (3 Way Normally Closed) 1400-7-30 (3 Way Normally Open)

Above NOT interchangeable End for End 1400-7-4 (4 Way)

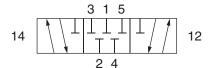
For Spring or Pilot Return (No Spool) 1400-8 (3 Way N.O. or N.C., and 4 Way) Fabco-Air has the expertise and willingness to design. modify and adapt these valves to your necessary and specific job requirements. Please advise us of your needs.

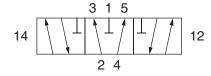
11.14

1/4 NPT & 3/8 NPT Ported, Manual & Pilot Operated, & Solenoid Controlled Air Valves

New 5 Ported, 3-Position 4-Way Operation

New Spools for 14 & 34 Series Air Valves





4-Way - 5 Ported - 3 Position - Type B "Blocked"

Center position - All ports blocked and isolated. Use on conventional block and hold circuits.

4-Way - 5 Ported - 3 Position - Type F "Float"

Center position - Inlet blocked and
Cylinders open to exhaust
Used to vent both ends of cylinder to allow
cylinder to float with a manual or machine movement. Flow controls or exhaust speed controls
should not be used.

1/4 NPT & 3/8 NPT Ported, Pilot Operated Air Valves

5 Ported, 3-Position 4-Way Operation



Model 14-DPF Shown

Features

- Aluminum bar body
- Anodized black
- · Honed and burnished bore
- · Delrin spool, pressure balanced
- Buna N seals
- May be used as either single inlet-dual exhaust or dual inlet-single exhaust
- Pre-lubed with Magnalube-G® Grease

Operating Range

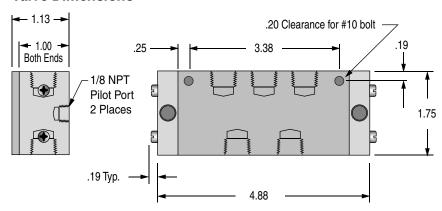
- Operating pressure.....0 to 150 psi
- Minimum pilot pressure50 psi
- Cv = 1.0 (56.2 SCFM free flow to atmosphere @ 80 psi supply)

Options

Viton Seals, Specify Option -V

	Model Number Guide: 3-Position, Pilot Operated				
	Spring Centered Spool Replacement				
Spool Type	1/4 NPT Ports 3/8 NPT Ports		Spool and Seals		
B Spool	14 DPB	34DPB	1400-904B		
F Spool	1400-904F				

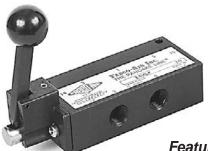
Valve Dimensions



11

1/4 NPT & 3/8 NPT Ported, Hand Lever Operated Air Valves

5 Ported, 3-Position 4-Way Operation



Model 14-HLF Shown

Features

Hardened and plated steel shaft with unique connections results in positive shifting

- Aluminum bar body
- Anodized black
- Honed and burnished bore
- Delrin spool, pressure balanced
- Buna N seals
- May be used as either single inlet-dual exhaust or dual inlet-single exhaust
- Pre-lubed with Magnalube–G® Grease

Operating Range

- Operating pressure...... 0 to 150 psi
- Cv = 1.0 (56.2 SCFM free flow to atmosphere @ 80 psi supply)
- Temperature+32° to 180°F

Standard catalog models are suitable for operation in intermittent low temperatures in a range of 0° to + 32 °F.

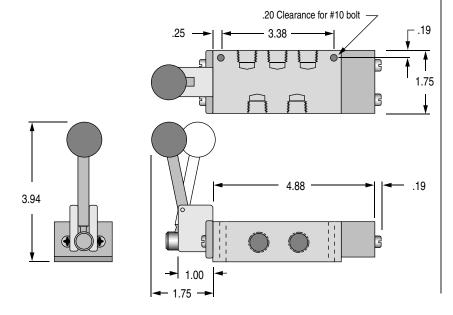
A custom aluminum spool may be substituted when long-term application temperatures are expected to be -40° to $+32^{\circ}$ F. These should be limited to manual actuation, not spring centered. Consider that actuation force may exceed catalog specs and that spring return models may not be reliable at these low temperatures. Please consult factory. For long-term, continuous operation in a range of $+150^{\circ}$ F to $+180^{\circ}$ F, the Viton seal option can provide the benefits of reliable leak-free operation and extended durability.

Options

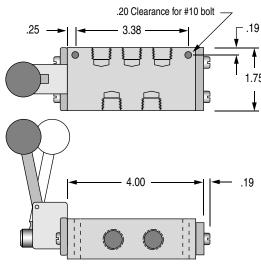
Viton Seals, Specify Option -V

	Model Number Guide: 3-Position, Hand Lever Operated					
	Spring Centered Spool Replacement Detented Spool					Replacement Spool & Seals
Spool Type	1/4 NPT Ports	3/8 NPT Ports	Spool & Seals	1/4 NPT Ports	3/8 NPT Ports	Spool & Seals
B Spool	14HLSB	34HLSB	1400-934SB	14HLB	34HLB	1400-934B
F Spool	14HLSF	34HLSF	1400-934SF	14HLF	34HLF	1400-934F

Dimensions – Spring Centered Spool



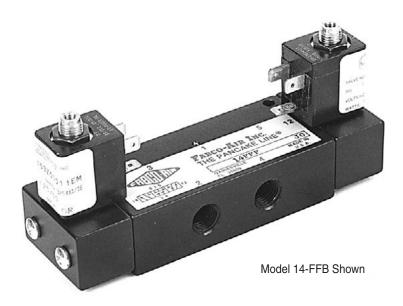
Dimensions - Detented Spool



11

1/4 NPT & 3/8 NPT Ported, 53 Style Solenoid Controlled, Pilot Operated Air Valves

5 Ported, 3-Position 4-Way Operation



Features

- · Aluminum bar body
- Anodized black
- · Honed and burnished bore
- Delrin spool
- Buna N seals
- Cv = 1.0 (56.2 SCFM free flow to atmosphere @ 80 psi supply)
- Operation to 150 psi
- Operating Temperature:

+32°F (0°C) to +104°F (40°C) ambient. +32°F (0°C) to +150°F (65°C) media.

- Pre-lubed with Magnalube-G® Grease
- Coils & Housing information see page 11.29.

Operating Range

Internal pilot supply - standard
Inlet......50 to 150 psi
External pilot supply Option -X

Inlet......0 to 150 psi Pilot Supply50 to 150 psi

Ordering

Choose valve model number from table below and add option suffixes as required and specify voltage/hertz.

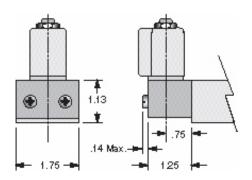
ш

	Model Number Guide: 4-Way, 3-Position, Spring Centered Double Solenoid Valves						
	Conduit Housing "C" Grommet Housing "G"		lousing "G"	Male Mini-Dll	Replacement		
Spool Type	1/4 NPT Ports	3/8 NPT Ports	1/4 NPT Ports	3/8 NPT Ports	1/4 NPT Ports	3/8 NPT Ports	Spool & Seals
B Spool	14-CCB	34-CCB	14-GGB	34-GGB	14-FFB	34-FFB	1400-904B
F Spool	14-CCF	34-CCF	14-GGF	34-GGF	14-FFF	34-FFF	1400-904F

1/4 & 3/8 NPT

4-Way, 3 Position

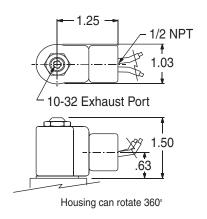
53 Style Solenoid Operators



Standard 53 Style Operator

The solenoid operator is a 3-way NC valve which, upon receiving an electrical signal, directs pressure to shift the main valve spool. As standard, the operator is internally supplied with air pressure from the main valve inlet.

Conduit Housing "C"



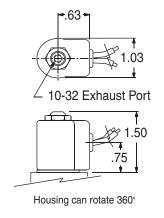
1/8 NPT 1.13 .14 Max.

53 Style Operator with External Pilot Option -X

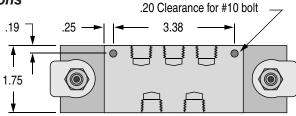
In the following listed applications, as well as many others, a proper air supply may not be available from the main valve inlet. For these applications, an external pilot supply port is available (Option -X). A proper air supply to this port then supplies the solenoid with air pressure for piloting the main valve spool.

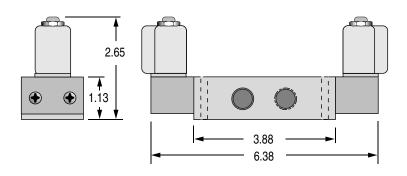
- Dual inlet, single exhaust
- Insufficient Pressure at main valve inlet
- Media at main valve inlet is other than air
- Extreme fast cycling

Grommet Housing "G"

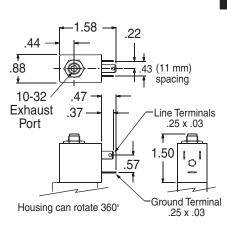


Valve Dimensions





Male Mini-DIN Housing "F"



1/4 & 3/8 NPT Ported 53 STYLE Solenoid Controlled, Pilot Operated Air Valves 2, 3 & 4 Way - 2 Position - Operation to 150 psi Air



Options

Manual override
Locking
Non-Locking
External pilot
Light springL
Viton seals for media compatibilityV
Explosion proof operatorsEP
See page 11.30
Dual Inlet - Single Exhaust 4 Way
See page 11.20, Note 1: Optional Flow Pat

Features

- Black anodized aluminum bar stock body Honed and burnished bore
- Lightweight Delrin® spool provides fast, positive, reliable response
- Buna N seals Operation to 150 psi
- Coils & housing information see page 11.29
- Cv = 1.0 56.2 SCFM free flow to atmosphere @ 80 psi
- Prelubed with Magnalube® -G grease
- Operating temperature:
 - +32°F (0°C) to +104°F (40°C) ambient.
 - +32°F (0°C) to +150°F (65°C) media.

Standard catalog models are suitable for operation in intermittent low temperatures in a range of 0° to + 32 °F.

A custom aluminum spool may be substituted when long-term application temperatures are expected to be 0° to +32°F. These should be limited to double solenoid actuation. Consider that actuation force may exceed catalog specs and that spring return models may not be reliable at these low temperatures. Please consult factory.

4 WAY 4 WAY

SINGLE SOLENOID

[‡]Plug 3-Way Valve for 2-Way Service.

4 WAY

3/8 NPT PORTS

‡2 / 3WAY

To Order Specify: Model Number from chart **Options**

Volts & Hertz (See page



Operating Range

, , ,
Internal Pilot Supply (Standard)
Standard Spring 50 to 150 psi
Light Spring, Option -L 40 to 150 psi
Pilot Return (0 psi Pilot) 30 to 150 psi
External Pilot Supply, Option -X
Inlet Pressure 0 to 150 psi
External Pilot Supply, Option -X
Standard Spring 50 to 150 psi
Light Spring, Option -L 40 to 150 psi

Pilot Return (0 psi Pilot) . . 30 to 150 psi

~~ 11 00\	-2/3WAI		7 WAI	7 11/1	-2/3WAI		7 11/1
ge 11.29)	Normally Closed	Normally Open		Stacking See pg 11.20	Normally Closed	Normally Open	
Conduit Housing	14CS-3	14CS-30	14CS-4	M14CS-4	34CS-3	34CS-30	34CS-4
Grommet Housing	14GS-3	14GS-30	14GS-4	M14GS-4	34GS-3	34GS-30	34GS-4
Male Mini-DIN Housing	14FS-3	14FS-30	14FS-4	M14FS-4	34FS-3	34FS-30	34FS-4
Replacement Spool & Seals	1400-913	1400-9130	1400-914	1400-904	1400-913	1400-9130	1400-914

SINGLE SOLENOID - PILOT RETURN MODELS

A pilot return can be substituted for the standard spring return. It may be used in two manners.

1/4 NPT PORTS

- 1. For a pulse signal, then pilot return.
- 2. As a constant, adjustable force, spring.

Supply pilot port with a constant regulated pressure. This will act as a very constant spring against the solenoid controlled pilot signal. The pilot return should be a minimum of 30 psi below the solenoid controlled pressure.

To Specify, Substitute **P** for **S** in the Model Number. (Ex: 14CP-3-120/60)

DOUBLE SOLENOID



Operating Range

Internal Pilot Supply (Standard) Inlet 30 to 150 psi External Pilot Supply, Option -X Inlet Pressure 0 to 150 psi Pilot Supply......30 to 150 psi

To Order Specify: Model Number from chart

Options

Volts & Hertz (See page 11.29)

[‡]Plug 3-Way Valve for 2-Way Service.

	1/4 NPT PORTS			3/8 NPT PORTS		
	[‡] 2 / 3 WAY	4 WAY	4 WAY Stacking See pg 11.20	[‡] 2 / 3 WAY	4 WAY	
Conduit Housing	14CC-3	14CC-4	M14CC-4	34CC-3	34CC-4	
Grommet Housing	14GG-3	14GG-4	M14GG-4	34GG-3	34GG-4	
Male Mini-DIN Housing	14FF-3	14FF-4	M14FF-4	34FF-3	34FF-4	
Replacement Spool & Seals	1400-923	1400-924	1400-904	1400-923	1400-924	

See Housing Details Page 11.29

14 Max

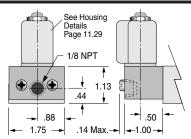
Directional Control Valves

Standard 53 STYLE Solenoid Operator

1.75

The solenoid operator is a 3-way NC valve which, upon receiving an electrical signal, directs a pilot pressure to shift the main valve spool. As standard, the operator is internally supplied with air pressure from the main valve inlet. Also see "External Pilot Supply" below.

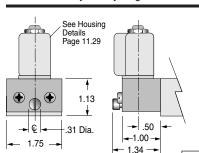
1.00



53 STYLE Solenoid Operator with External Pilot Supply Option -X

In the following listed applications, as well as many others, a proper air supply may not be available from the main valve inlet. For these applications, an external pilot supply port is available (Option -X). A proper air supply to this port then supplies the solenoid with air pressure for piloting the main valve spool.

- Dual Inlet Single Exhaust 4 Way.
- Insufficient pressure at main valve inlet.
- Media, at main valve inlet, other than air.
- · Extremely fast cycling.



Option **-X**is NOT combinable
with either Option **-MO1** or **-MO4**

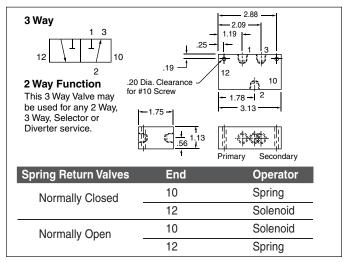
53 STYLE Solenoid Operator with Manual Override

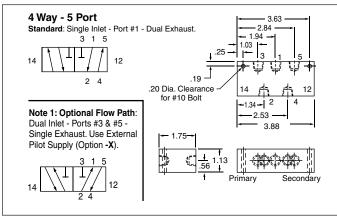
This manual override is a 3-way NC valve that when pushed, directs pilot pressure to shift the main spool. Pressure must be present at main valve inlet for this override to function.

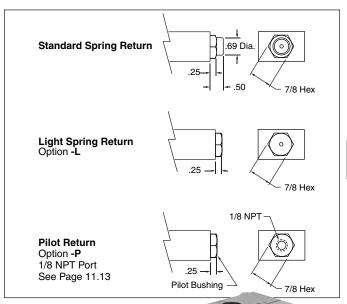
TYPE	SUFFIX
LOCKING	
Push to override;	-MO1
Turn to lock in;	
Turn back to release.	
NON-LOCKING	
Push to override.	-MO4

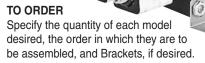
STACKING - PRESSURE MANIFOLDED

Versions of these 1400 Series 1/4 NPT solenoid valves with different adaptor blocks can be stacked and pressure manifolded for space and money savings. The valve bodies are bolted together with 4 through tie bolts and the pressure is manifolded with O-Ring seals between valves. Inlet pressure can be connected to either or both ends of the stack. Due to the fact that the pressure port, on all valve bodies, is tapped on both sides, the pressure manifold can be plugged at any point within the stack. This allows you to supply the stack with two different pressures, one from each end. Versions of the Air Pilot, Rod Actuator, Roller Cam and Small Palm Button valves may be mounted in the same stack along with these solenoid valves.







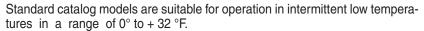


1/4 & 3/8 NPT Ported 58 STYLE Solenoid Controlled, Pilot Operated Air Valves 2, 3 & 4 Way - 2 Position



Features

- Black anodized aluminum bar stock body
- Honed and burnished bore
- Lightweight Delrin® spool provides fast, positive, reliable response
- Simplicity Reliability
- Corrosion resistant construction
- Buna N seals Operation to 150 psi
- Solenoid operator information see page 11.31
- Cv = 1.0
- 56.2 SCFM Free flow to atmosphere @ 80 psi
- Prelubed with Magnalube®-G grease
- Operating temperature:
 - +32°F (0°C) to +122°F (50°C) ambient.
 - +32°F (0°C) to +122°F (50°C) media.



A custom aluminum spool may be substituted when long-term application temperatures are expected to be 0° to $+32^{\circ}$ F. These should be limited to double solenoid actuation. Consider that actuation force may exceed catalog specs and that spring return models may not be reliable at these low temperatures. Please consult factory.

Options

External Pilot
†External Pilot and Viton SealsXV
Light Spring

[†] Viton Seals are available in the main valve only, for media compatibility, and therefore only in conjunction with External Pilot: +32°F (0°C) to +122°F (50°C).

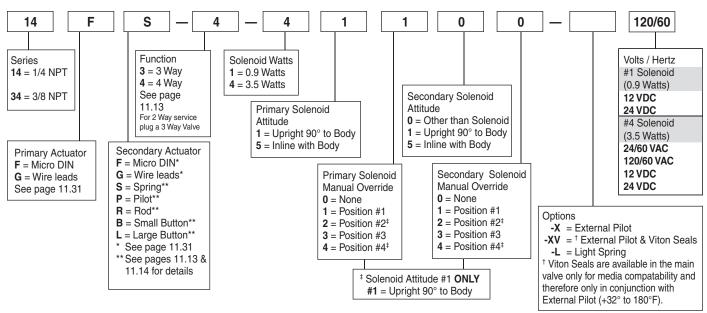
Operating Ranges, psi

	#1 Solenoid 0.9 Watts	#4 Solenoid 3.5 Watts
Internal pilot supply (standard) inlet pressure		
Non Spring Return	30 to 130	30 to 145
Spring Return	50 to 130	50 to 145
Light Spring Option -L	40 to 130	40 to 145
External pilot supply, Option -X inlet pressure .	0 to 150	0 to 150
External pilot supply, Option -X pilot supply		
Non Spring Return	30 to 130	30 to 145
Spring Return	50 to 130	50 to 145
Light Spring Option -L	40 to 130	40 to 145



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58 STYLE Solenoid Valve, Model Number Code



Example: 14FS-4-41100-120/60

1/4 NPT - Primary Actuator Solenoid with Micro DIN coil; Secondary Actuator, Spring Return - 4 Way Function 3.5 Watt Solenoid; Primary Solenoid Upright position with Manual Override in Position #1; Secondary Actuator is not a Solenoid: no Manual Override on Secondary Actuator - No Options - 120 Volt/60 Hertz.

