

Mini 1

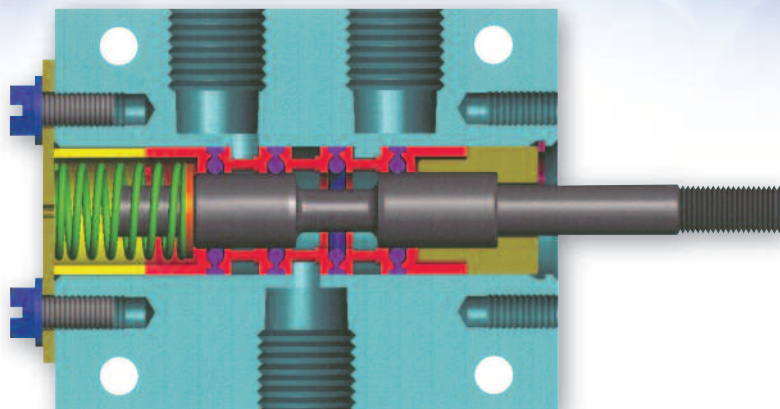
Compact – High Flow 3-Way and 4-Way
Pneumatic Directional Control Valves



FEATURES:

- 3-port or 5-port bodies
- Manual, Air Pilot, Solenoid or Mechanical Operators
- Two-position, Single or Dual Actuation

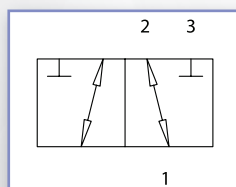
Mini 1 Valve Line



The Mini 1 valve line features a high flow, compact design. Although the bodies are only 1" thick and 2" wide, they produce a flow capacity of 1.0 Cv. Mini 1's feature fast response times due to a short spool travel of only 0.30". Our patented seal-spacer design yields optimum sealing with minimal squeeze which provides consistent, low friction shifting. The spool is made from durable, corrosion resistant 416 series stainless steel with a high precision finish for maximum seal life. The balanced spool design provides for true multipurpose capability, allowing the use of dual pressures, vacuum or other non-standard piping of the ports. Self-lubricating seals coated with Teflon® based grease allow operation in minimal or even non-lube service.

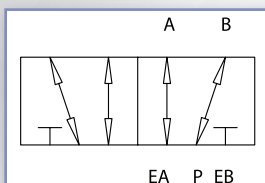
ANSI Symbols shown are for basic valve bodies without operators.

3-Way



For single operator spring returned valves, the spring will be on the right side of the diagram - supply to port 3 would yield a normally closed valve.

4-Way



For single operator spring returned valves, the spring will be on the right side of the diagram - with supply in "P", "B" is pressurized and "A" is exhausted.

Due to our balanced spool and true multipurpose capability, any port may be pressurized or plugged (see note in Solenoid Valve Specifications on page 20).

Teflon® is a registered trademark of the DuPont Corporation.

Mini 1 – Manually Operated



The manually operated models feature rugged actuators made from durable cast aluminum, some with plastic knobs or buttons.

Applications include:

- Actuation of small pneumatic devices, i.e. single or double acting cylinders, rotary actuators, slides, grippers, etc.
- Allows human interface to pneumatic control systems
- Pilot signals for other products, i.e. Lexair Poppet or TUBE-O-MATIC® valves
- Can be plumbed as pressure selector, diverter, used in vacuum applications, etc.

SPECIFICATIONS

Flow Capacity	1.0 Cv or 45 SCFM at 100 PSI inlet with a Δp of 20 PSI
Operating Pressure	Vacuum to 150 PSIG (higher pressures are possible—consult the factory)
Media	Air or other inert gases
Ports	1/4" NPT
Body	Anodized Aluminum
Spool	416 Stainless Steel
Seals	Self-lubricating Buna-N
Operating Temperature	-20°F to +160°F

Mini 1 – Manually Operated

Model Numbers – Spring Return or Dual Operators

Primary Actuator	**Secondary Actuator	Model Number	
		3 Way	4 Way
Palm Button	Spring	M3820601	M3840601
	No Spring	M3820602	M3840602
	Palm Button	M3820606	M3840606
	Threaded Extension	M3820604	M3840604
	Pilot*	M3821306	M3841306
Push/Pull Knob	Spring Return	M3820701	M3840701
	No Spring	M3820702	M3840702
	Push/Pull Knob	M3820707	M3840707
	Threaded Extension	M3820704	M3840704
Rotary Knob	No Spring	M3821516	M3841516
Finger Tip Lever	Spring	M3820801	M3840801
	Thermo Plastic Cap	M3820805	M3840805
	Pilot*	M3820813	M3840813
2 Position Lever	Spring	M3821801	M3841801
	No Spring	M3821802	M3841802
Foot Pedal	Spring	M3821201	M3841201
	Foot Pedal	M3821212	M3841212
	Pilot*	M3821213	M3841213
Locking Lever	Spring Return or Detented	M3820901	M3840901

*For maximum life, the pilot air should be restricted.

** All models without return springs must be mounted with the spool in the horizontal position.

Mini 1 – Manually Operated

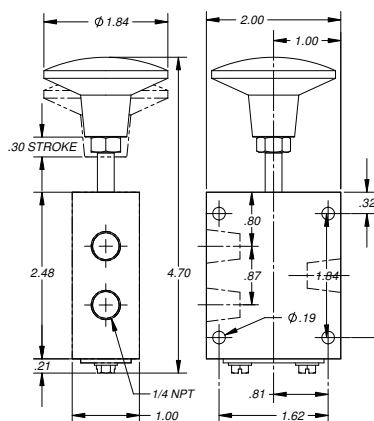
Model Numbers – Mechanically Detented Valves

Primary Actuator	Secondary Actuator	Model Number	
		3 Way	4 Way
Palm Button	None	M3820623	M3840623
	Palm Button	M382062306	M384062306
	Threaded Extension	M382062304	M384062304
Push/Pull Knob	None	M3820723	M3840723
	Push/Pull Knob	M382072307	M384072307
	Threaded Extension	M382072304	M384072304
Two Position Lever	None	M3821823	M3841823

Dimensional Drawings

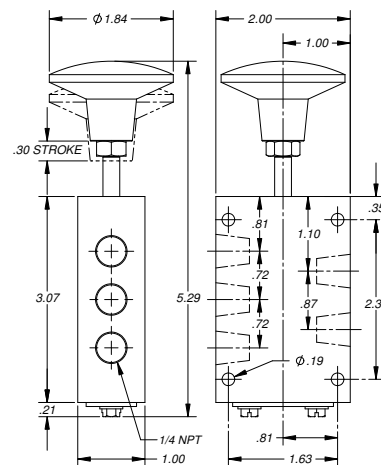
PALM BUTTON MODELS

These models can be panel mounted – see page 19 for mounting hole locations.



3-Way

M3820601 or M3820602



4-Way

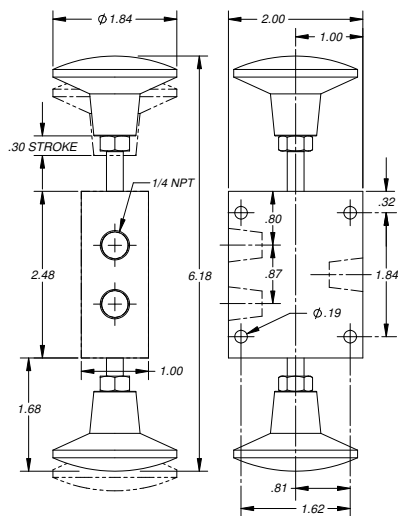
M3840601 or M3820602

Mini 1 – Manually Operated

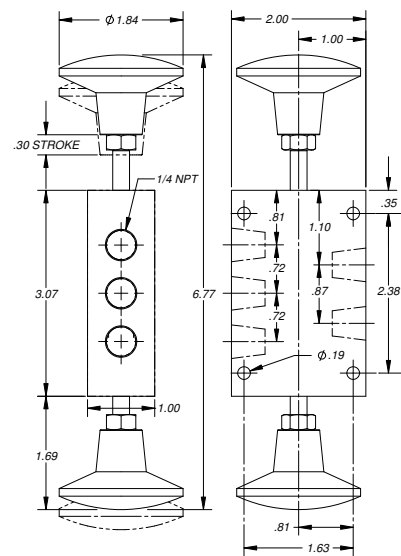
Dimensional Drawings

PALM BUTTON MODELS—CONTINUED

These models can be panel mounted – see page 19 for mounting hole locations.

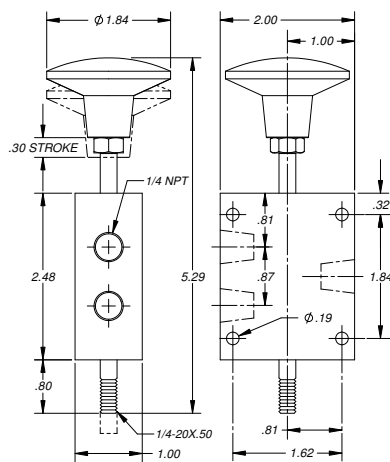


3-Way
M3820606

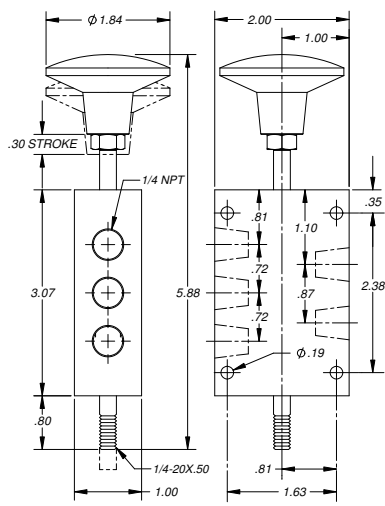


4-Way
M3840606

These models can be panel mounted – see page 19 for mounting hole locations.



3-Way
M3820604



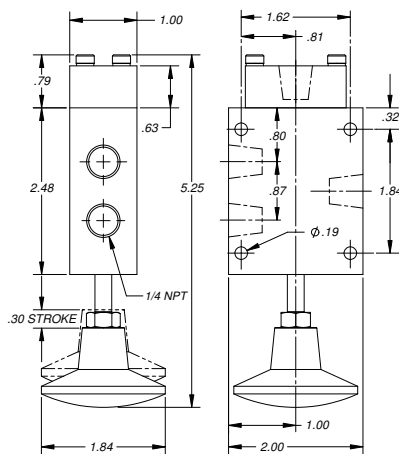
4-Way
M3840604

Mini 1 – Manually Operated

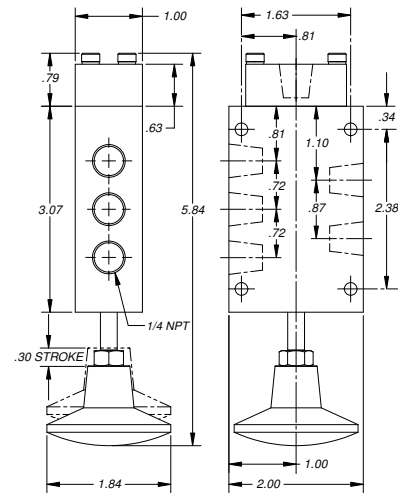
Dimensional Drawings

PALM BUTTON MODELS—CONTINUED

These models can be panel mounted – see page 19 for mounting hole locations.



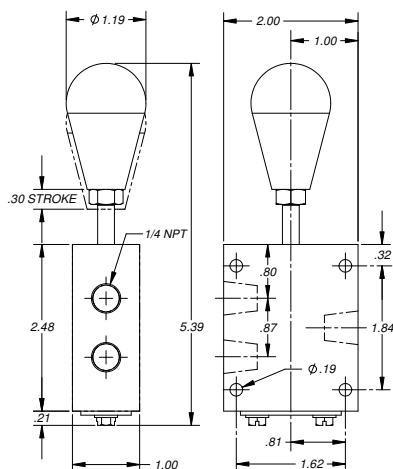
3-Way
M3821306



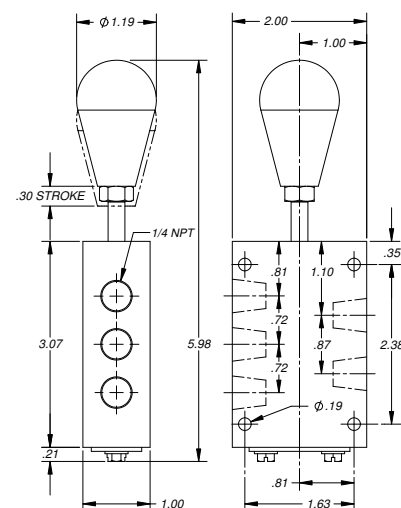
4-Way
M3841306

PUSH/PULL KNOB MODELS

These models can be panel mounted – see page 19 for mounting hole locations.



3-Way
M3820701 or M3820702



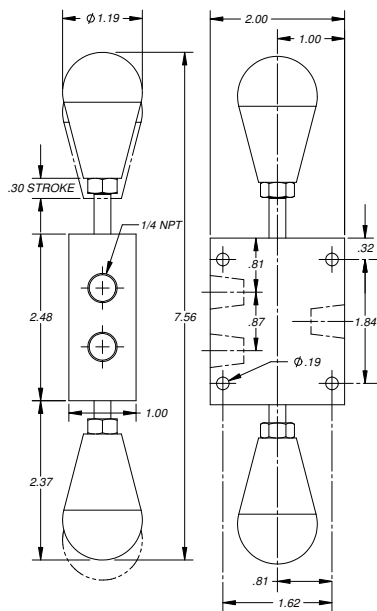
4-Way
M3840701 or M3840702

Mini 1 – Manually Operated

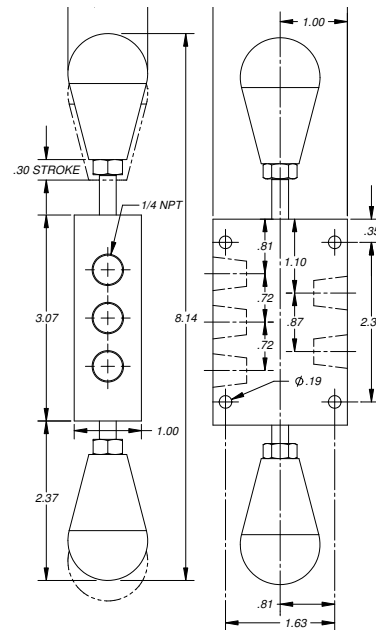
Dimensional Drawings

PUSH/PULL KNOB MODELS—CONTINUED

These models can be panel mounted – see page 19 for mounting hole locations.

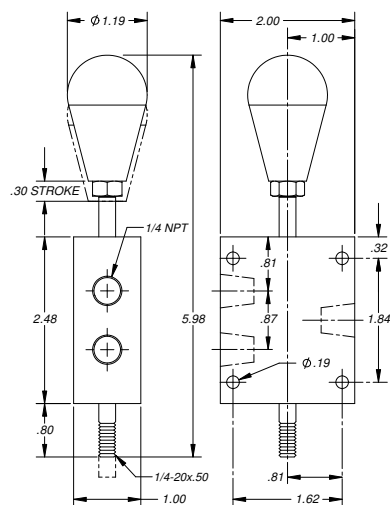


3-Way
M3820707

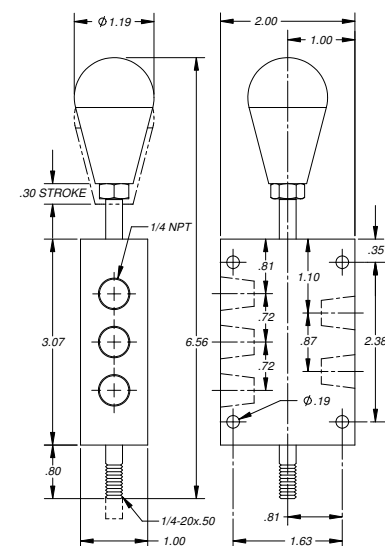


4-Way
M3840707

These models can be panel mounted – see page 19 for mounting hole locations.



3-Way
M3820704

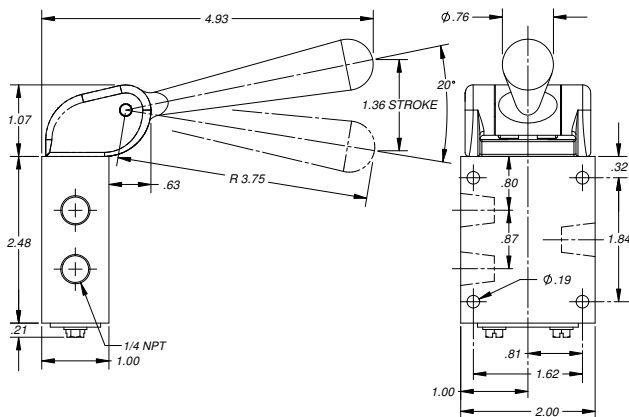


4-Way
M3840704

Mini 1 – Manually Operated

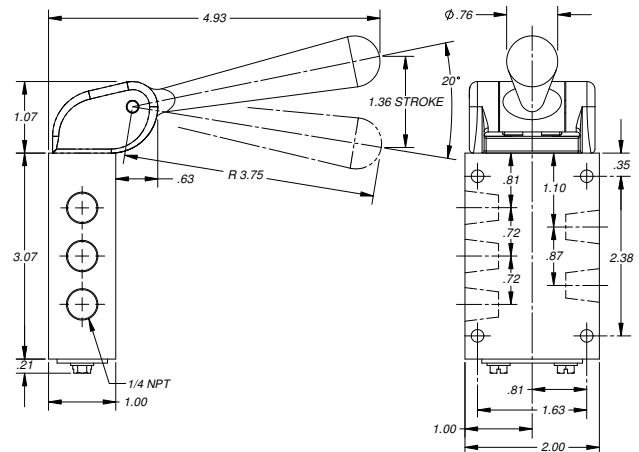
Dimensional Drawings

TWO POSITION LEVER MODELS



3-Way

M3821801 or M3821802

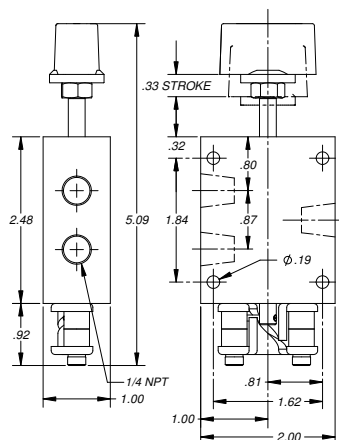


4-Way

M3841801 or M3841802

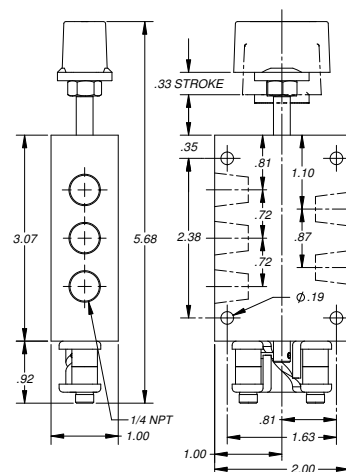
ROTARY KNOB MODELS

These models can be panel mounted – see page 19 for mounting hole locations.



3-Way

M3821516



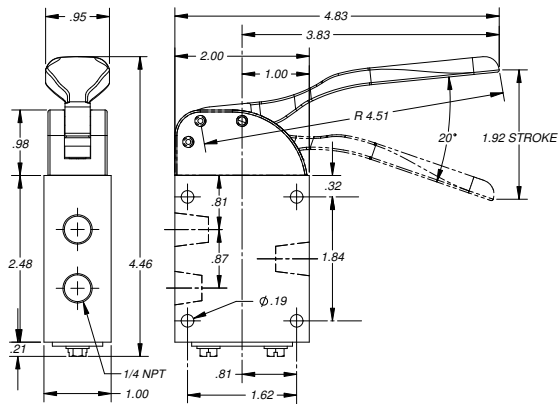
4-Way

M3841516

Mini 1 – Manually Operated

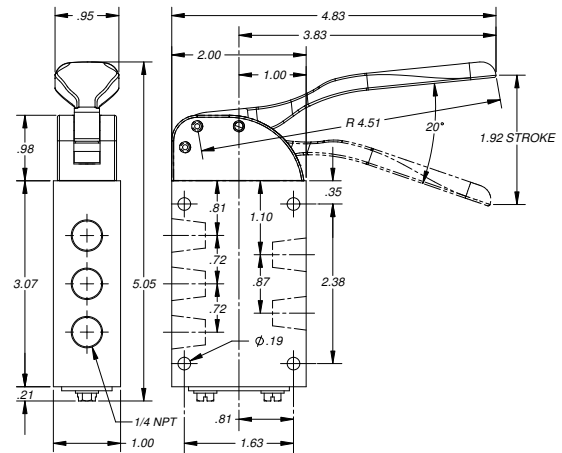
Dimensional Drawings

FINGER TIP LEVER MODELS



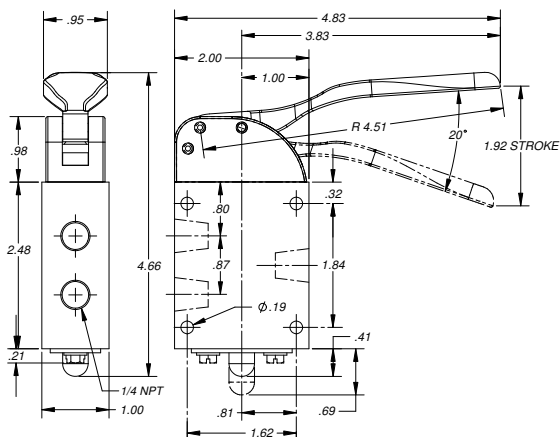
3-Way

M3820801



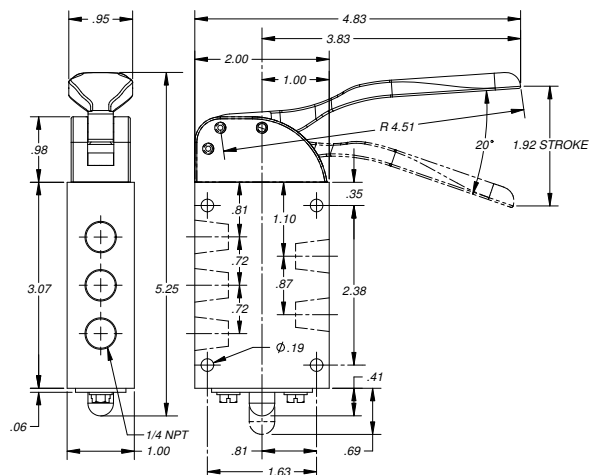
4-Way

M3840801



3-Way

M3820805



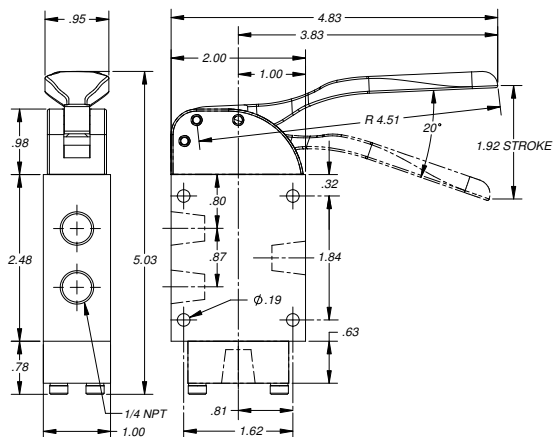
4-Way

M3840805

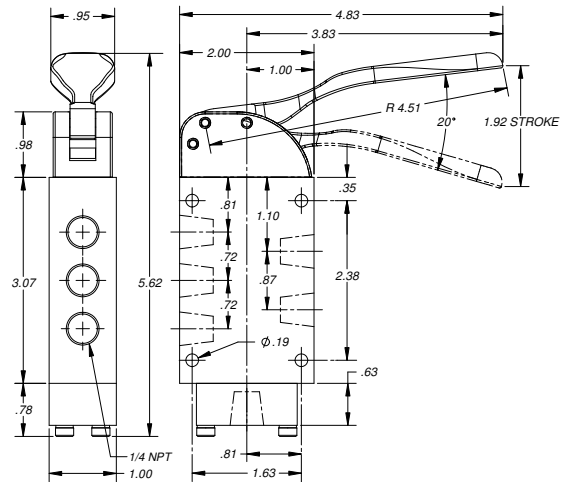
Mini 1 – Manually Operated

Dimensional Drawings

FINGER TIP LEVER MODELS – CONTINUED

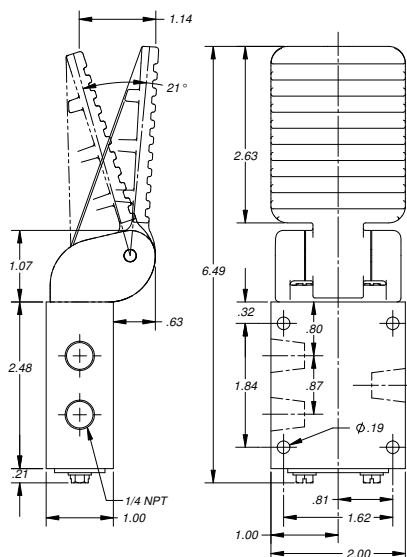


3-Way
M3820813

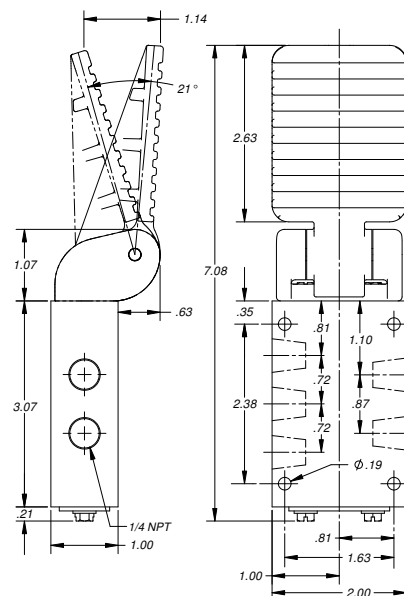


4-Way
M3840813

FOOT PEDAL MODELS



3-Way
M3821201

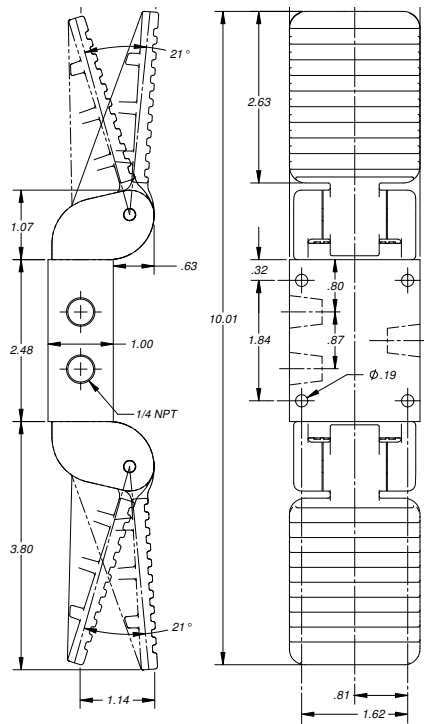


4-Way
M3841201

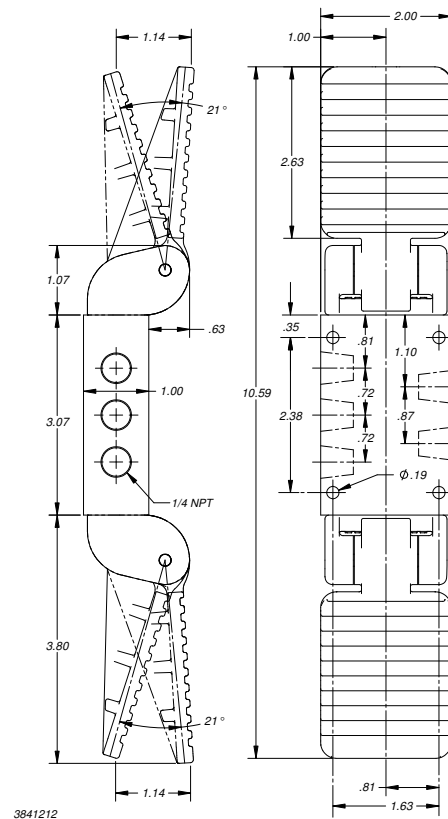
Mini 1 – Manually Operated

Dimensional Drawings

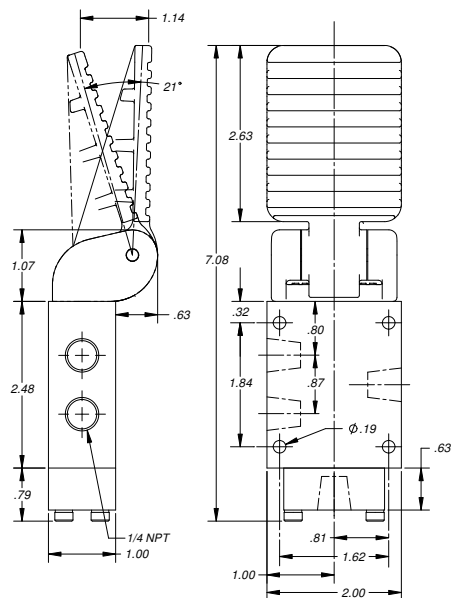
FOOT PEDAL MODELS – CONTINUED



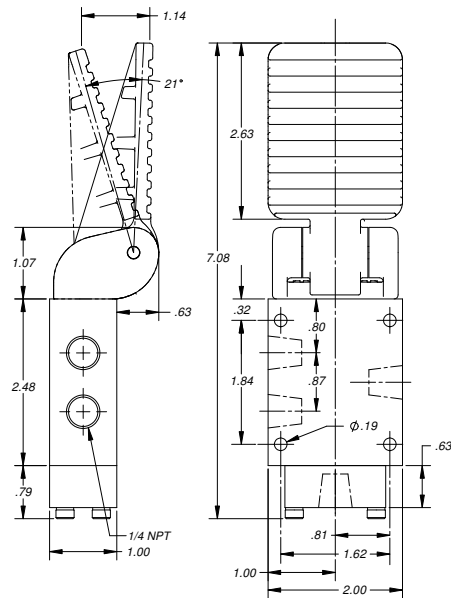
3-Way
M3821212



4-Way
M3841212



3-Way
M3821213

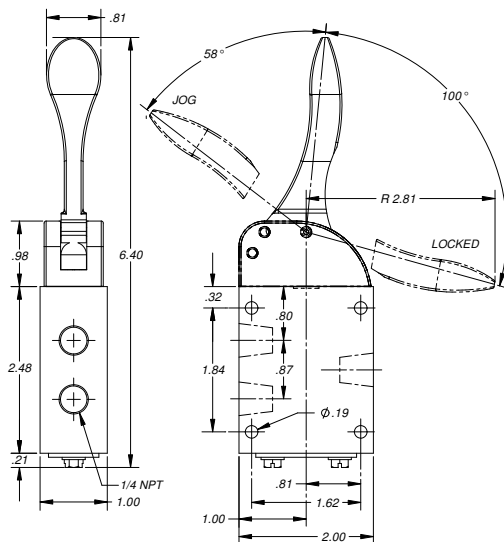


4-Way
M3821213

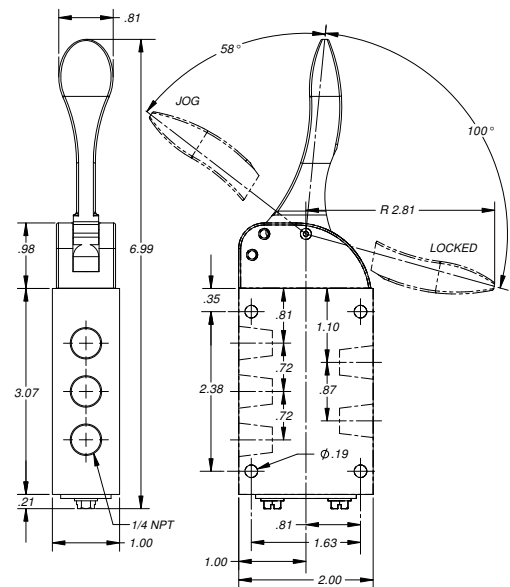
Mini 1 – Manually Operated

Dimensional Drawings

LOCKING LEVER MODELS



3-Way
M3820901



4-Way
M3840901

Our unique locking lever model allows two different valve functions (spring returned or detented) from the same unit by using three handle positions. In the released or “NORMAL” position (lever straight up), the valve spool is in the spring return condition. When the lever is pushed to the left, it is in the “JOG” position and is automatically returned by the spring to the “NORMAL” position when released. When the lever is pulled to the right and down, it will detent into the “LOCKED” position and remain there when released. This valve has many uses when both momentary and continuous operation of controlled equipment is desired.

Mini 1 – Mechanically Operated



The mechanically operated versions are equipped with durable cast aluminum lever arms and feature Delrin® rollers for long, quiet operation.

Applications include:

- Actuation of small pneumatic devices, i.e. single or double acting cylinders, rotary actuators, slides, grippers, etc.
- End of stroke/cycle sensing to reset circuit
- Useful in sequencing of pneumatically operated equipment requiring mechanical interface
- Pilot signals for other products, i.e. Lexair Poppet or TUBE-O-MATIC® valves
- Can be used as pressure selector, diverter, used in vacuum applications, etc.

SPECIFICATIONS

Flow Capacity	1.0 Cv or 45 SCFM at 100 PSI inlet with a Δp of 20 PSI
Operating Pressure	Vacuum to 150 PSIG (higher pressures are possible—consult the factory)
Media	Air or other inert gases
Ports	1/4" NPT
Body	Anodized Aluminum
Spool	416 Stainless Steel
Seals	Self-lubricating Buna-N
Operating Temperature	-20°F to +160°F

Delrin® is a registered trademark of the DuPont Corporation.

Mini 1 – Mechanically Operated

Model Numbers

Primary Actuator	**Secondary Actuator	Model Number	
		3 Way	4 Way
Plain Extension	Spring	M3820301	M3840301
	No Spring	M3820302	M3840302
Threaded Extension	Spring	M3820401	M3840401
	No Spring	M3820402	M3840402
Mechanically Detented Threaded Extension	None	M3820423	M3840423
Cam over Center	Spring	M3821001	M3841001
	Pilot*	M3821013	M3841013
Cam off Center	Spring	M3821101	M3841101
	Pilot*	M3821113	M3841113
One-way Cam	Spring	M3821401	M3841401
	Pilot*	M3821413	M3841413

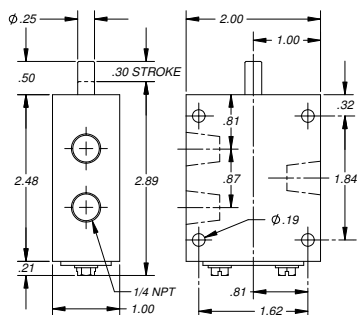
*For maximum life, the pilot air should be restricted.

**All models without return springs must be mounted with the spool in the horizontal position.

Dimensional Drawings

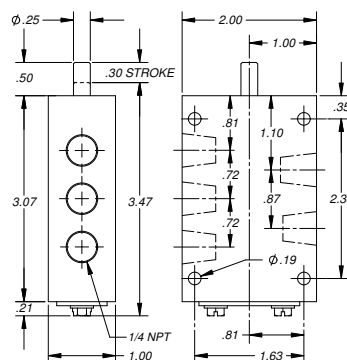
PLAIN EXTENSION MODELS

These models can be panel mounted – see page 19 for mounting hole locations.



3-Way

M3820301 or M3820302



4-Way

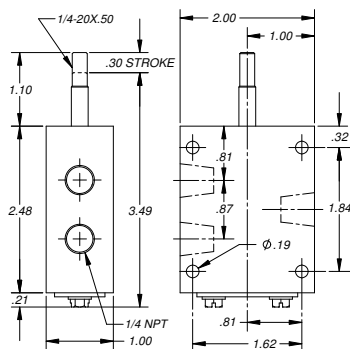
M3840301 or M 3840302

Mini 1 – Mechanically Operated

Dimensional Drawings

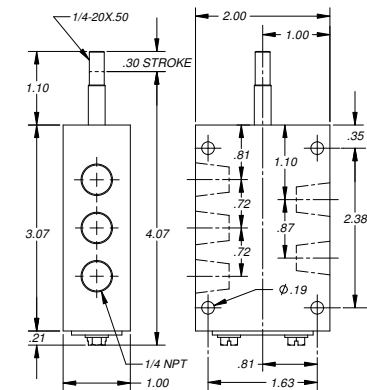
THREADED EXTENSION MODELS

These models can be panel mounted – see page 19 for mounting hole locations.



3-Way

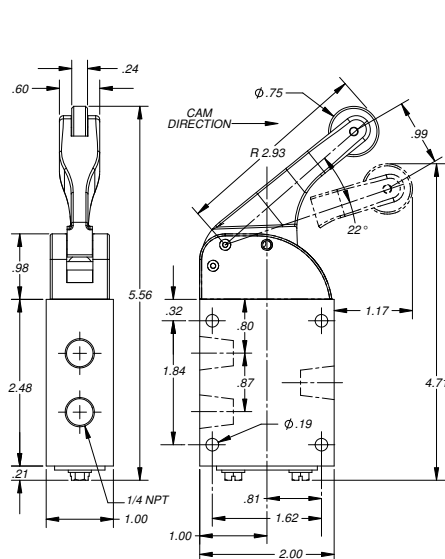
M3820401, M3820402 or M3820423



4-Way

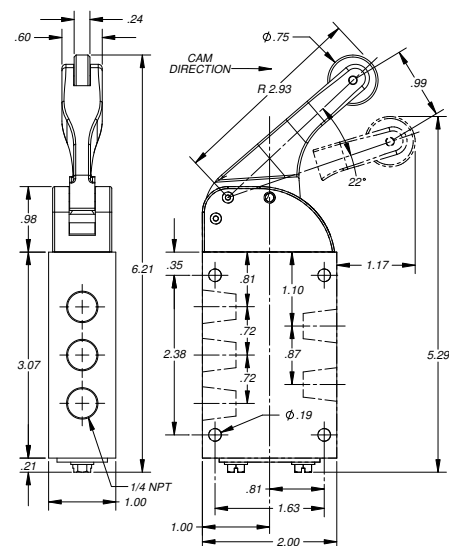
M3840401, M3840402 or M 3840423

CAM OVER CENTER MODELS



3-Way

M3821001



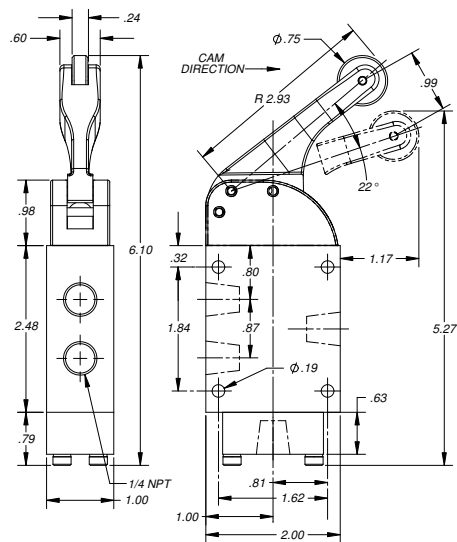
4-Way

M3841001

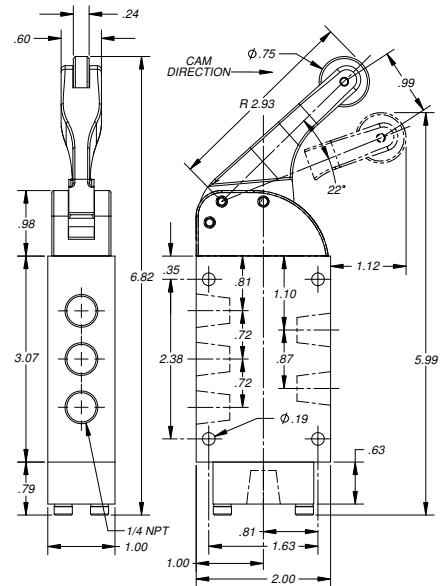
Mini 1 – Mechanically Operated

Dimensional Drawings

CAM OVER CENTER MODELS – CONTINUED

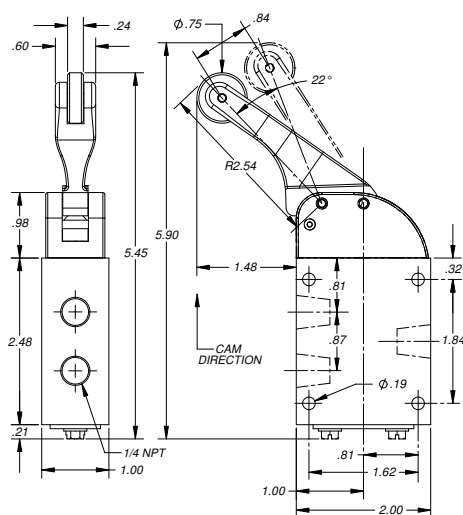


3-Way
M3821013

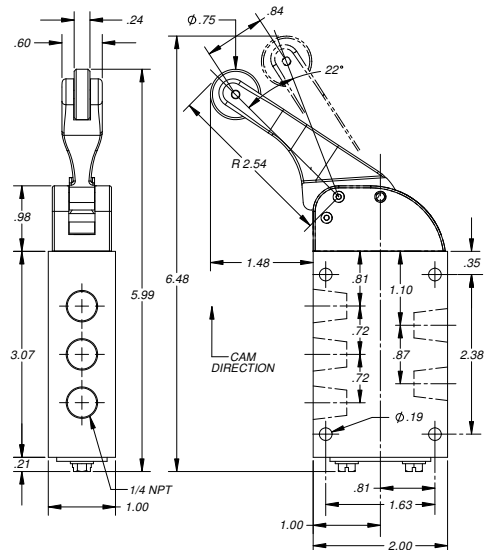


4-Way
M3841013

CAM OFF CENTER MODELS



3-Way
M3821101

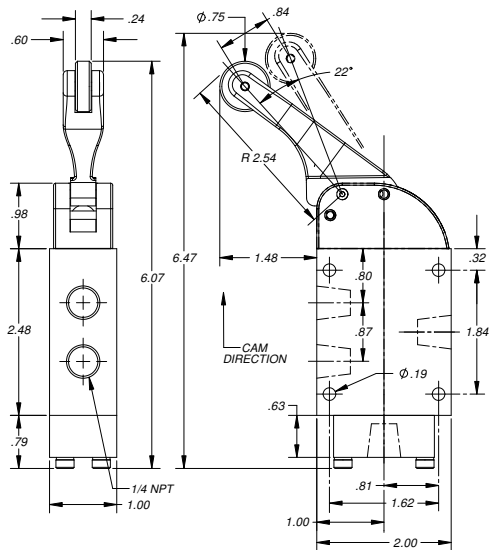


4-Way
M3841101

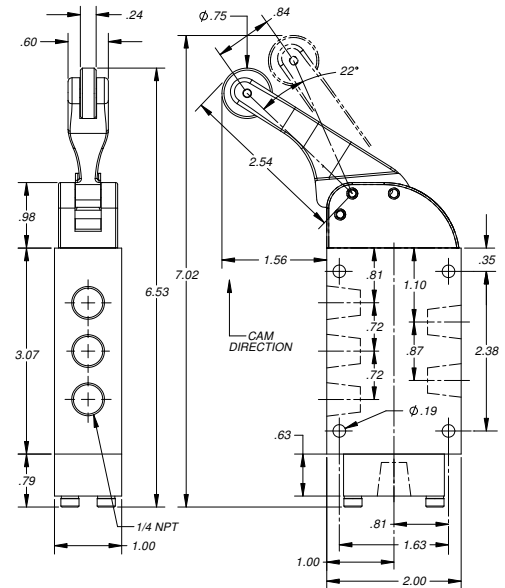
Mini 1 – Mechanically Operated

Dimensional Drawings

CAM OFF CENTER MODELS – CONTINUED

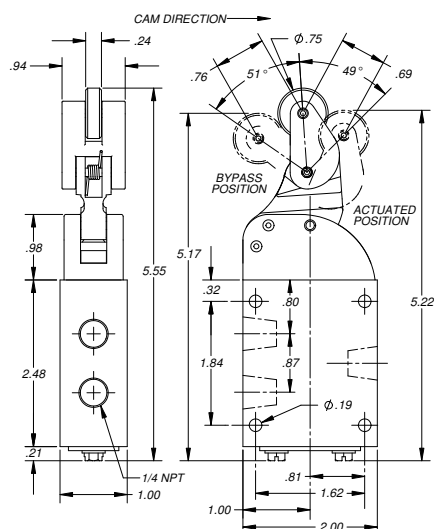


3-Way
M3821113

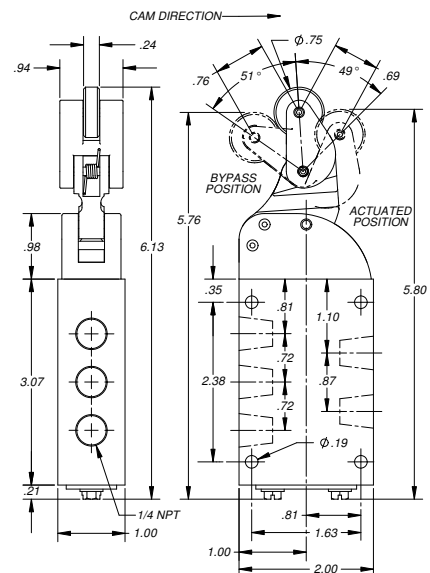


4-Way
M3841113

ONE WAY CAM MODELS



3-Way
M3821401

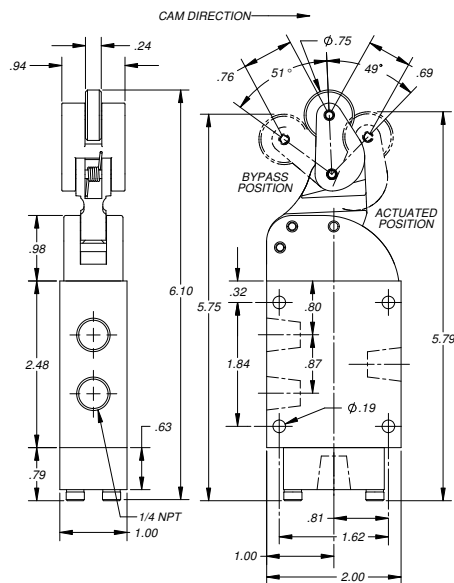


4-Way
M3841401

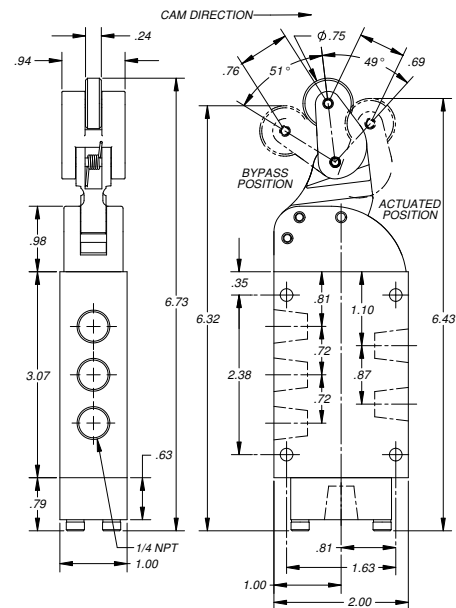
Mini 1 – Mechanically Operated

Dimensional Drawings

ONE WAY CAM MODELS – CONTINUED

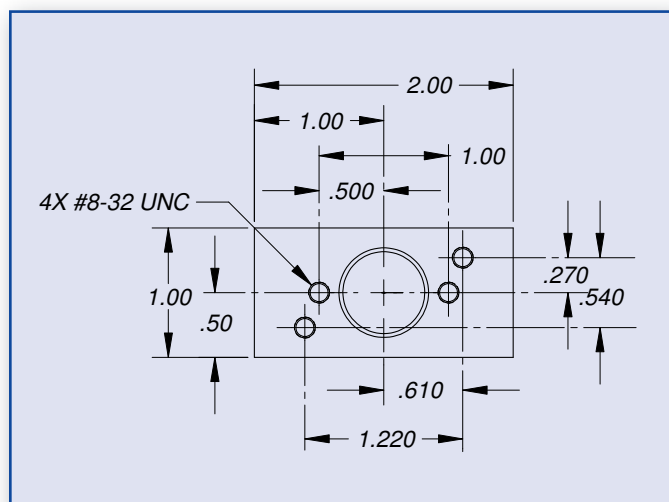


3-Way
M3821413



4-Way
M3841413

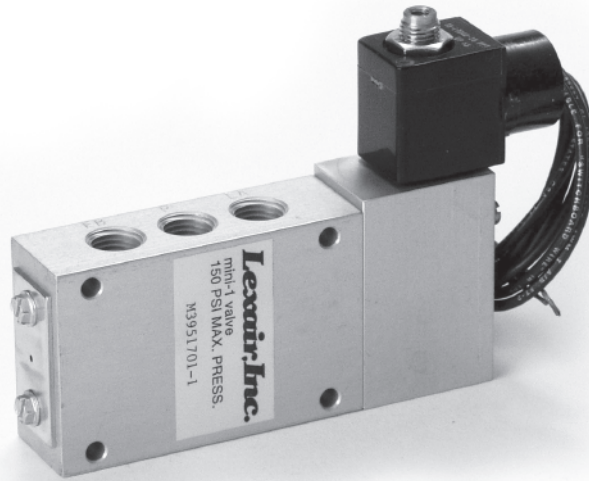
Panel Mounted Models Valve End Dimensions



View of valve end where primary operator is mounted.

The holes furthest from the center of the valve are typically used for mounting. However, either set of holes can be used.

Mini 1 – Solenoid Operated



Solenoid operators are available in single or double configuration with a wide range of AC and DC voltages, including explosion-proof versions. Mini 1's feature low (7 watts nominal) current draw and a choice of 1/2" conduit or DIN style connections.

Applications include:

- Electrically controlled actuation of small pneumatic devices, i.e. single and double acting cylinders, rotary actuators, slides, grippers, etc.
- Optional explosion-proof solenoid safely allows operation in hazardous locations
- Any pneumatic circuit where electrical control of valves is needed

VALVE SPECIFICATIONS

Flow Capacity	1.0 Cv or 45 SCFM at 100 PSI inlet with a Δp of 20 PSI
Pilot Pressure	35 to 150 PSI
Maximum Operating Pressure	Vacuum to 150 PSI <i>(Inlet pressures below 35 PSI or multipurpose plumbing requires external pilot option - consult factory)</i>
Temperature Range	0°F to 104°F
Media	Air or other inert gases
Ports	1/4" NPT
Body	Anodized Aluminum
Spool	416 Stainless Steel
Seals	Self-lubricating Buna-N

Mini 1 – Solenoid Operated

SOLENOID OPERATOR SPECIFICATIONS

- Continuous duty coils
- Standard molded coil construction
- 1/2" conduit or DIN connector (DIN connector(s) supplied with valve)
- Current draw is 7 watts nominal AC or DC
- Manual override standard

EXPLOSION-PROOF SOLENOID OPERATOR SPECIFICATIONS

- Continuous duty coils
- Temperature Range: 0°F to +104°F Valve Ambient Range
T3C (160°C) Temperature Classification per NEC 500
- 1/2" conduit housing
- Power is 7 watts nominal AC or DC
- Manual override standard
- U. L. Listed/CSA Certifications: Class 1: Division 1, Groups C and D
Class 2: Division 1, Groups E, F and G
Class 2: Division 2, Groups A, B, C, D, E, F and G

Model Numbers

Function	*Operator	Model	Model Number
4 Way	Single Solenoid Spring Return	Conduit DIN	M3951701-X M3952201-X
4 Way	*Double Solenoid	Conduit DIN	M3951717-X M3952222-X

*Double solenoid operated model must be mounted with the spool in the horizontal position.

HOW TO ORDER: (see top of page 22 for solenoid voltage selector)

Standard Models

- Add voltage -X to Model Number. (Ex: M3951701-1 would be a single solenoid, conduit connection with 120V/60Hz coil)

Explosion-Proof Models

- Add voltage -X and -E to Model Number. (Ex: M3951701-1-E would be a single solenoid, conduit connection with 120V/60Hz explosion-proof operator)

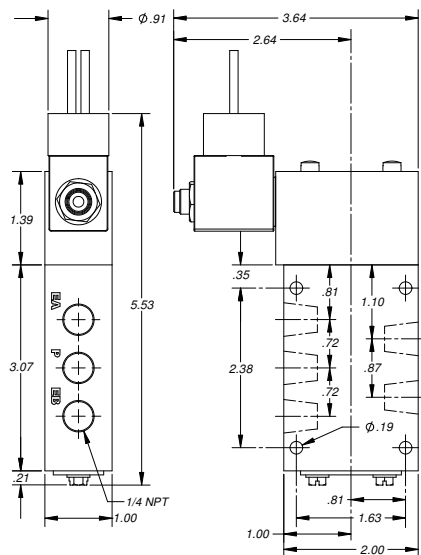
Mini 1 – Solenoid Operated

SOLENOID VOLTAGE SELECTOR

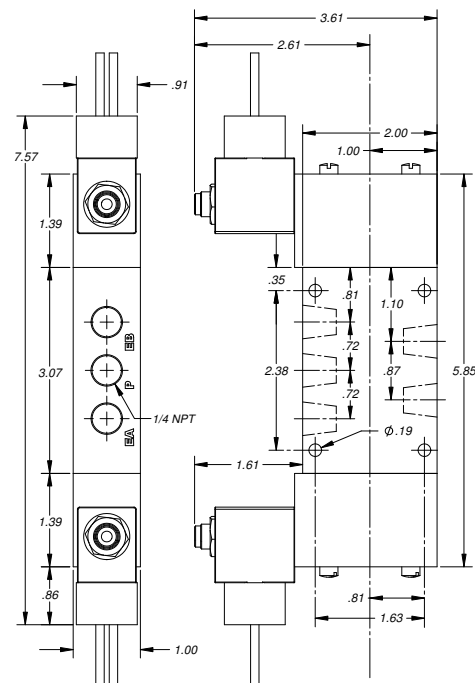
-X	Voltage
-1	120V/60Hz AC (conduit, DIN or explosion-proof)
-2	240V/60Hz AC (conduit, DIN or explosion-proof)
-3	480V/60Hz AC (explosion-proof only)
-4	6V DC (explosion-proof only)
-5	12V DC (conduit, DIN or explosion-proof)
-6	24V DC (conduit, DIN or explosion-proof)
-7	24V/60Hz AC (conduit, DIN or explosion-proof)

Dimensional Drawings

1/2" CONDUIT MODELS



Single Solenoid
M3951701-X



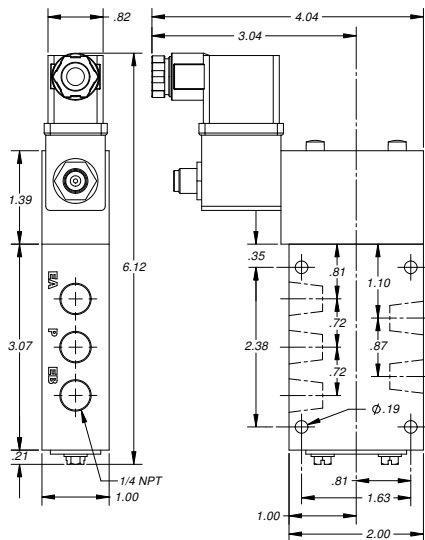
Double Solenoid

Mini 1 – Solenoid Operated

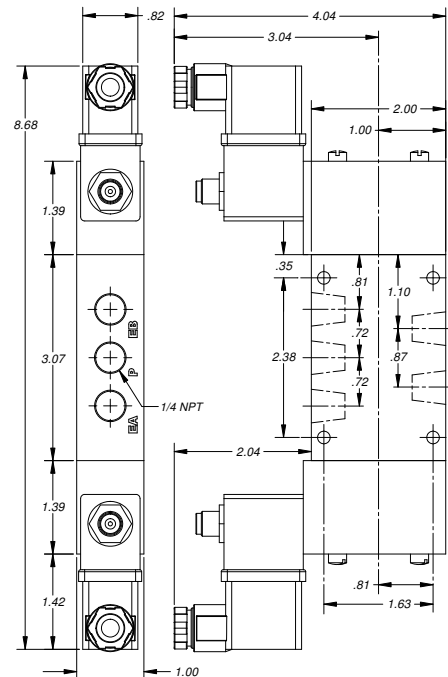
Dimensional Drawings – Continued

DIN CONNECTOR MODELS

DIN connector(s) are supplied with both of these models.

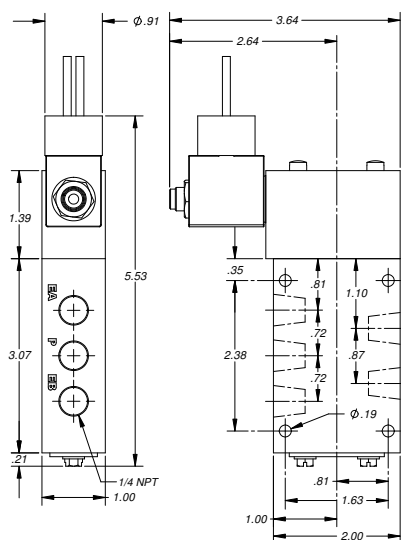


Single Solenoid
M3952201-X

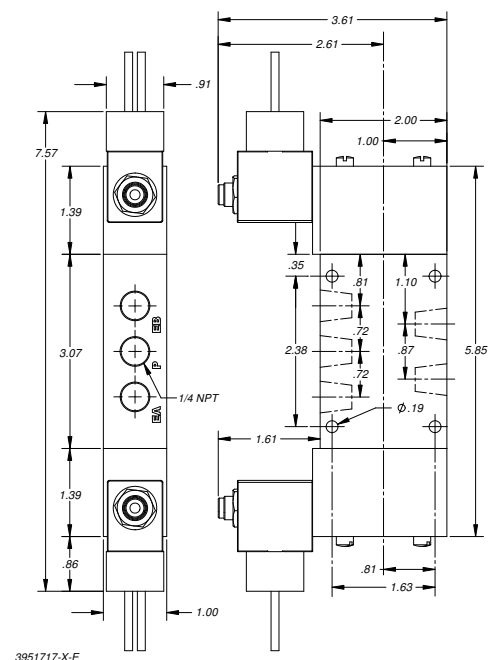


Double Solenoid
M3952222-X

EXPLOSION PROOF MODELS



Single Solenoid
M3951701-X-E



Double Solenoid
M3951717-X-E

Mini 1 – Pilot Operated



Single and double air piloted versions are available. Both feature our patented seal-spacer construction and 416 stainless steel spool which helps yield long service life.

Applications include:

- Actuation of small pneumatic devices, i.e. single or double acting cylinders, rotary actuators, slides, grippers, etc.
- Can be plumbed as pressure selector, diverter, used in vacuum applications, etc.
- Can be safely operated in hazardous locations

SPECIFICATIONS

Flow Capacity	1.0 Cv or 45 SCFM at 100 PSI inlet with a Δp of 20 PSI
Pilot Pressure	35 to 150 PSI
Operating Pressure	Vacuum to 150 PSI (higher pressures are possible—consult the factory)
Media	Air or other inert gases
Ports	1/4" NPT
Body	Anodized Aluminum
Spool	416 Stainless Steel
Seals	Self-lubricating Buna-N
Operating Temperature	-20°F to +160°F

Mini 1 – Pilot Operated

Model Numbers

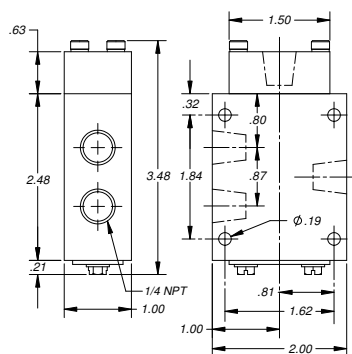
Function	**Operator	Model Number	
3 Way	Single Pilot* Spring Return	M3821301	
3 Way	Double Pilot*	M3821313	
4 Way	Single Pilot* Spring Return	M3841301	
4 Way	Double Pilot*	M3841313	

*For maximum life, the pilot air should be restricted.

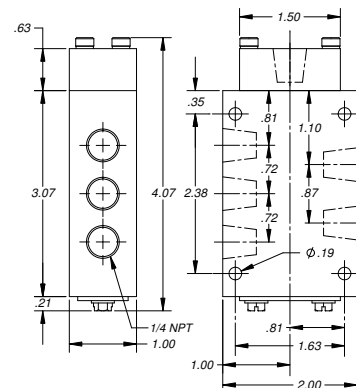
**Double pilot operated valves must be mounted with the spool in the horizontal position.

Dimensional Drawings

SINGLE PILOT MODELS



3-Way
M3821301

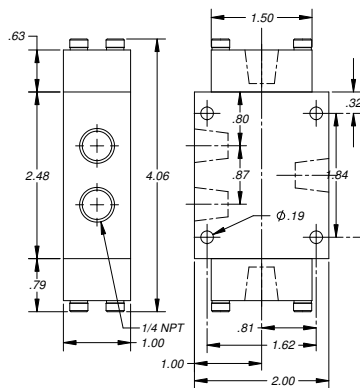


4-Way
M3841301

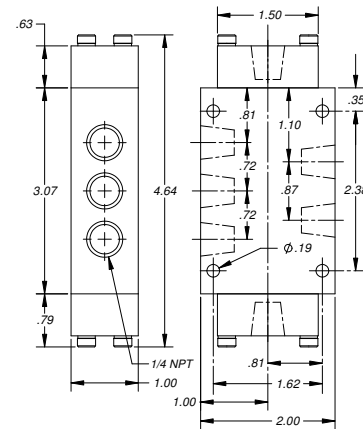
Mini 1 – Pilot Operated

Dimensional Drawings

DOUBLE PILOT MODELS



3-Way
M3821313



4-Way
M3841313

Repair Part Information

REPAIR KITS

MODEL NO	DESCRIPTION
11-0394	◆ MANUAL & MECHANICAL
11-0380	◆ SINGLE SOLENOID & PILOT
11-0425	◆ DOUBLE SOLENOID & PILOT

◆ Can be used for 3-way or 4-way valves

CONDUIT TYPE REPLACEMENT SOLENOIDS AND COILS

VOLTAGE	SOLENOID PART NO	COIL PART NO
120V/60HZ	03-3903	03-3918
240V/60HZ	03-3905	03-3920
12V/DC	03-3901	03-3916
24V/DC	03-3902	03-3917
24V/60HZ	03-3904	03-3919

EXPLOSION PROOF REPLACEMENT SOLENOIDS AND COILS

VOLTAGE	SOLENOID PART NO	COIL PART NO
120V/60HZ	03-3953	03-3973
240V/60HZ	03-3954	03-3974
12V/DC	03-3951	03-3971
24V/DC	03-3952	03-3972
24V/60HZ	03-3956	03-3971

DIN TYPE REPLACEMENT SOLENOIDS AND COILS

VOLTAGE	SOLENOID PART NO	COIL PART NO
120V/60HZ	03-3933	03-3943
12V/DC	03-3931	03-3941
24V/DC	03-3932	03-3942
24V/60HZ	03-3934	03-3944

NOTE:

Please consult the factory if you have questions regarding discontinued manifold or subplate mounted versions of any model.

Lexair® Valves for Every Application

Four different lines—each the best of its kind.
It could be the smartest valve decision you have ever made.

TUBE-O-MATIC® Series: This line features 2-Way operation in a unique pinch valve design that was developed for long service life while being used in abrasive/aggressive media applications. Direct air pilot or solenoid pilot versions are available. Port sizes range from 1/4" – 2-1/2" NPT with working pressures to 150 PSI. Sleeve material options allow a wide range of media and temperatures to be used.

Hi-Cyclic® Series: Features a complete line of 2, 3 and 4-way valves for pneumatic or hydraulic service. A wide range of manual, mechanical, pilot (air or oil) and solenoid operators are available. Multiple spool configurations cover any application need. Working pressures to 250 PSI (pneumatic) or 3000 PSI (hydraulic) are standard. Port sizes range from 1/8" – 1/2" NPT with 7/16-20 and 9/16-18 SAE available as well. Our Magna-Cycle® models feature built-in, adjustable control functions available in three different models depending upon your application requirements.

Mini 1 Series: These 1/4" NPT pneumatic valves boast a Cv capacity of 1.0 to pack a lot of punch in a small package (basic envelope is 1 inch thick and 2 inches wide). The lineup includes manual, mechanical, solenoid and air pilot versions. Most models are offered in either a three port 3-Way or five port 4-Way version. Working pressures are from vacuum through 150 PSI and the balanced spool design assures that this series can be used as a selector, diverter, in dual pressure service as well as in many other non-standard plumbing applications.

Lexair 2 and 3-Way Poppet valves provide high flow, positive shut-off operation for a variety of industrial and process control needs. Constructed of non-corrosive materials, they can be used with a wide range of liquids and gases or vacuum where quick-acting control is required. Working pressures to 500 PSI are standard, higher pressures are available upon request. Available operators include, direct pilot, solenoid pilot (with integrated DIN style operators), direct solenoid and mechanical cam operation. Port sizes range from 1/4" – 2" NPT and the 2-Way series features both normally closed and normally open models. Many choices of seal materials are available providing for a wide range of media and temperatures to be used. High ratio pilots are available as standard catalog items for use in high media pressure/low pilot pressure applications. This catalog also includes: Our bubble-tight, poppet style Check Valves in 1/2" - 2" NPT port sizes with features that are the same as our 2 and 3-Way Poppet Valve line. Our Shuttle Valve lineup featuring port sizes from 1/4" - 1-1/2" NPT and working pressures to 250 PSI for use with gases or liquids. Our Multifunction Solenoid Valves for use with gases or liquids up to 150 PSI. These solenoid valves can be used in stand-alone applications and also work great as operators for our other valve lines.



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FLUID POWER
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Catalog LX-530
Supersedes LX-500 & LX-525
Revised 12/07