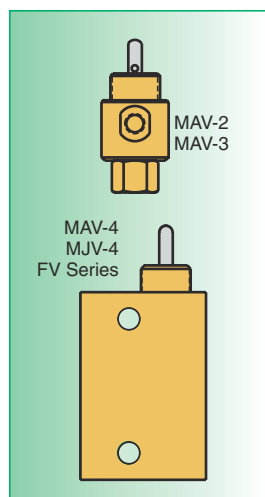




VALVE ACTUATORS

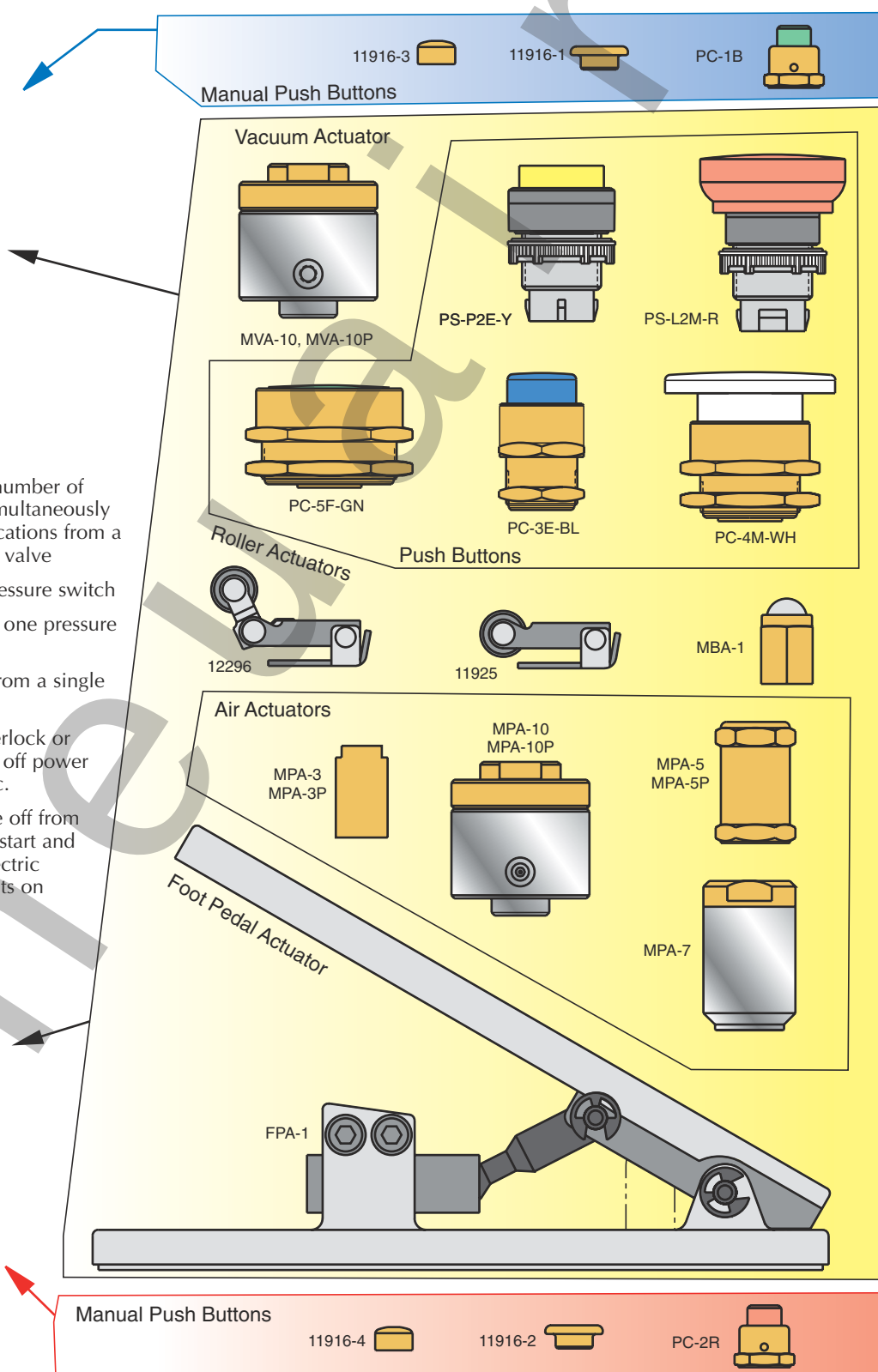
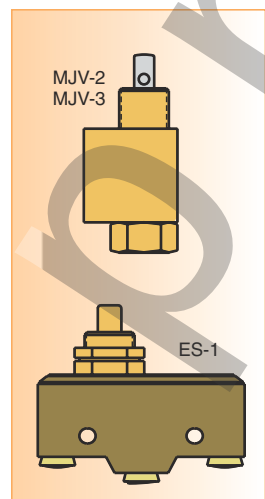
The following valve actuators are compatible with all Clippard MAV, MAVO, MJV, MJVO, ES-1, & FV series valves.

One of the most versatile items in the Clippard line. Permits wide circuit flexibility and allows many control functions to be accomplished pneumatically with less cost, hazards and complexity. Threads onto the tops of our Miniature 2-way, 3-way, and 4-way valves and ES-1 electric switch to provide fast pilot actuation from a pneumatic signal.



MPA Actuators Can:

- Remotely actuate any number of valves and switches simultaneously in different strategic locations from a single miniature 3-way valve
- Make an ES-1 into a pressure switch
- Act as an air relay, i.e., one pressure source to another.
- Operate the MAV-4D from a single impulse.
- Serve as a pressure interlock or safety device, i.e., turn off power when pressure fails, etc.
- Provide an electric take off from a pneumatic source to start and stop power, actuate electric counters, indicator lights on panel boards, etc.



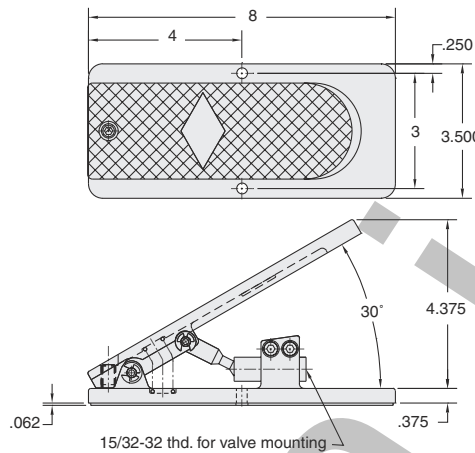
VALVE ACTUATORS



FPA-1



Adjustable travel needle type foot pedal



Construction: Sturdy cast aluminum and black oxidized steel

Control Devices: May be fitted with any Clippard 2, 3 or 4-way valve or MAR-1C pressure controller with a 15/32-32 mounting thread

Mounting: To floor or other structure with two 9/32" mounting holes stroke plunger adjustable to accommodate a variety of valves

"Hands-free" touch-of-toe operation of endless types of automated and semi-automated machinery and equipment, jigs and fixtures, is possible thru use of this sturdy treadle type foot pedal, combined with Clippard miniature valves, plunger type air pressure controls, and electrical switch.

A sliding link mechanism between treadle and mounting sleeve actuates the component, and a set screw at the back of pedal base adjusts treadle travel.

Pedal is spring loaded at approximately 1/2 lb. for return to "off" position.

Note for MBA-1, 11925 & 12296:

When mounting on a valve, a space should be provided between the body and the actuator according to the chart to the right:

Valve mtg. thd.	MBA-1	11925	12296
.250 thd length	.125"	.062"	.062"
.373 thd length	.218"	.188"	.188"

A mounting nut (supplied with valve), mounting bracket or washers should be used to obtain the required spacing.

MBA-1



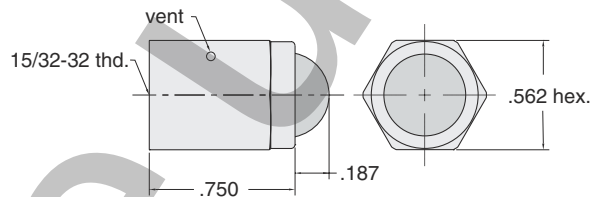
Ball cam actuator permits the valves and electrical switch to be operated by mechanical movement depressing the ball from any direction

Construction: Body - brass
Ball - stainless steel retained in housing

Temperature Range: 32° to 230° F

Operation: Will actuate valve while depressed from any (360°) direction

Mounting: 15/32-32 female to mount to Clippard miniature valves and electric switch



11925



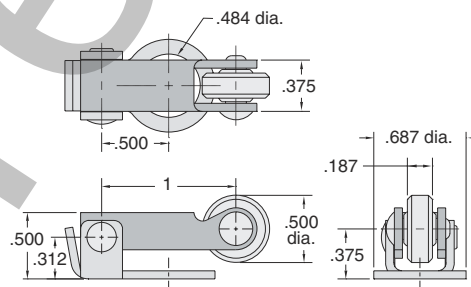
Roller cam follower actuator

Construction: Stainless steel with nylon roller

Temperature Range: 32° to 230° F

Mounting: 31/64" dia. mounting hole fits 15/32-32 threaded mounting section of valve bodies

Operation: Mounts to valve body, actuates valve when mechanically depressed; valve spring provides return



12296



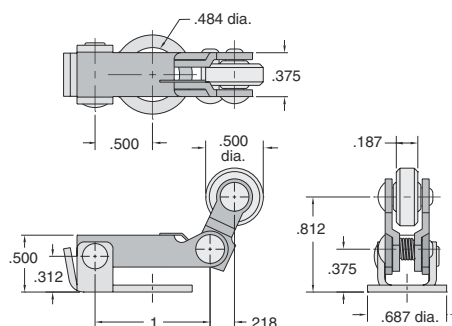
Roller, double-pivoted one way cam follower actuator

Construction: Stainless steel with nylon roller

Temperature Range: 32° to 230° F

Mounting: 31/64" dia. mounting hole fits 15/32-32 threaded mounting section of valve bodies

Operation: Mounts to valve body, actuates valve when depressed by activating cam or linear travel device in one direction only; no actuation on return travel





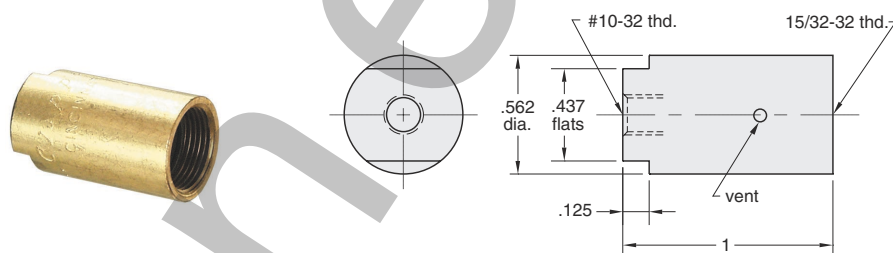
AIR PILOTED VALVE ACTUATORS

MINIMUM PRESSURE REQUIRED (PSIG)**											
Clippard Valve	Pressure (psig)				Vacuum (in Hg)	Clippard Valve	Pressure (psig)				Vacuum (in Hg)
	w/MPA3	w/MPA-5	w/MPA-7	w/MPA-10	w/MVA-10		w/MPA3	w/MPA-5	w/MPA-7	w/MPA-10	w/MVA-10
ES-1 Switch	12	4	2	*	*	FV-3	41	15	7.5	4.0	8.2
MAV-2 Valve	23	8	4	2.0	4.2	FV-3P	41	15	7.5	4.0	8.2
MAV-3 Valve	23	8	4	2.0	4.2	FV-4	41	15	7.5	4.0	8.2
MAV-4 Valve	36	11	5.5	3.5	7.2	FV-4P	41	15	7.5	4.0	8.2
MJV-4 Valve	36	11	5.5	3.5	7.2	FV-5	41	15	7.5	4.0	8.2
MAV-4D Valve	13	4	1.5	1.0	2.0	FV-5P	41	15	7.5	4.0	8.2
MJV-4D Valve	13	4	1.5	1.0	2.0	FV-3D	14	5	2.5	1.5	3.2
MJV-2 Valve	30	10	5	3.0	6.2	FV-3DP	14	5	2.5	1.5	3.2
MJV-3 Valve	30	10	5	3.0	6.2	FV-4D	14	5	2.5	1.5	3.2
MAVO-2 Valve	27	9	4.5	2.5	5.2	FV-4DP	14	5	2.5	1.5	3.2
MAVO-3 Valve	27	9	4.5	2.5	5.2	FV-5D	14	5	2.5	1.5	3.2
MJVO-2 Valve	30	10	5	3.0	6.2	FV-5DP	14	5	2.5	1.5	3.2
MJVO-3 Valve	30	10	5	3.0	6.2						

**with 100 psi to valve inlet; *consult factory

MPA-3

Single acting spring return miniature air pilot actuator



Input Pressure: 250 psig max.

Bore Size: .375

Construction: Body - brass
Springs - stainless steel
Seals - Buna-N rubber
Piston - Delrin®

Force Factor: .1

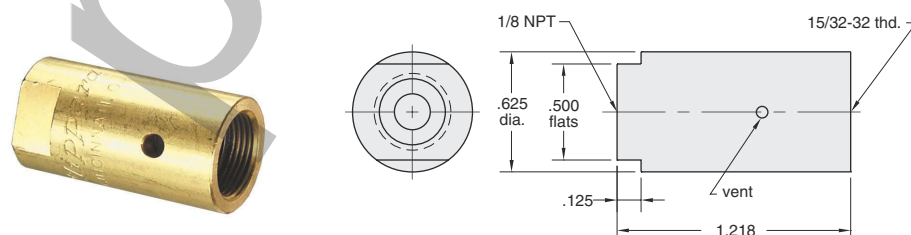
Mounting: 15/32-32 female thread to mount to Clippard miniature valves and components

Ports: 10-32

Temperature Range: 32° to 230° F

MPA-3P

Single acting spring return miniature air pilot actuator



Input Pressure: 250 psig max.

Bore Size: .375

Construction: Body - brass
Springs - stainless steel
Seals - Buna-N rubber
Piston - Delrin®

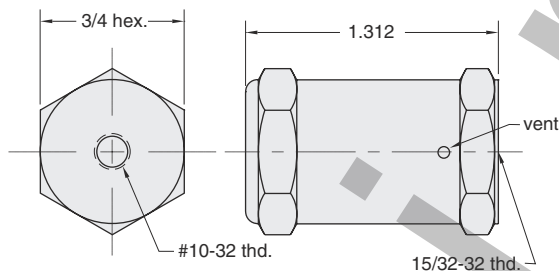
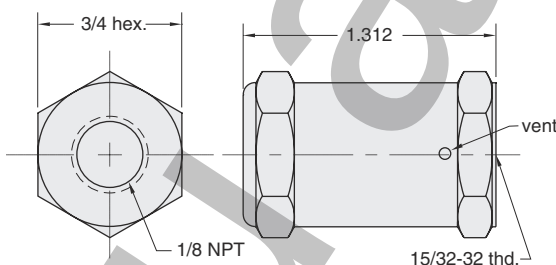
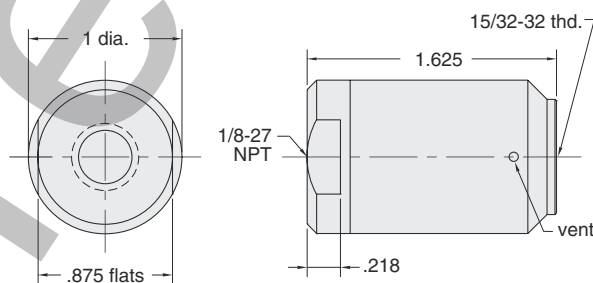
Force Factor: .1

Mounting: 15/32-32 female thread to mount to Clippard miniature valves and components

Ports: 1/8 NPT

Temperature Range: 32° to 230° F

AIR PILOTED VALVE ACTUATORS

**MPA-5****Single acting spring return miniature air pilot actuator****Input Pressure:** 250 psig max.**Bore Size:** .625**Construction:** Body - brass
Springs - stainless steel
Seals - Buna N rubber
Piston - Delrin®**Force Factor:** .3**Mounting:** 15/32-32 female thread to mount to Clippard miniature valves and components**Ports:** 10-32**Temperature Range:** 32° to 230° F**MPA-5P****Single acting spring return miniature air pilot actuator****Input Pressure:** 250 psig max.**Bore Size:** .625**Construction:** Body - brass
Springs - stainless steel
Seals - Buna N rubber
Piston - Delrin®**Force Factor:** .3**Mounting:** 15/32-32 female thread to mount to Clippard miniature valves and components**Ports:** 1/8 NPT**Temperature Range:** 32° to 230° F**MPA-7****Single acting spring return miniature air pilot actuator****Input Pressure:** 250 psig max.**Bore Size:** .825" dia.**Construction:** Body - aluminum and brass
Springs - stainless steel
Seals - Buna N rubber
Piston - Delrin®**Force Factor:** .6**Mounting:** 15/32-32 female thread to mount to Clippard miniature valves and components**Ports:** 1/8-27 NPT**Temperature Range:** 32° to 230° F



VALVE ACTUATORS

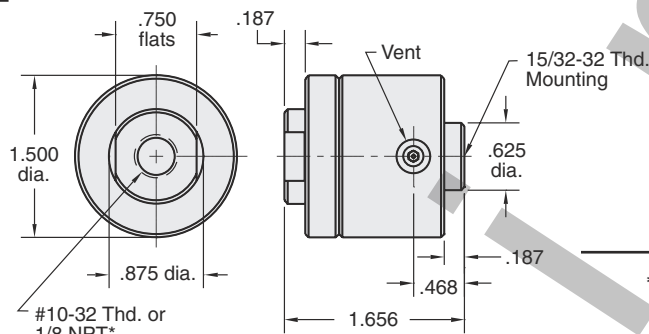
MPA-10



MPA-10P



Single acting spring return **pilot actuator**



Bore Size: 1.250" dia.

Input Pressure: 150 psig maximum

Inlet Port: #10-32 female thread

Mounting: 15/32-32 female thread to mount to Clippard Minimatic® valves and components; no spacers or washers are required when assembled to any Clippard valve; may be used with 15018-2 mounting bracket

Force Factor: 1.2

Temperature Range: 32° to 230° F

* **Inlet Port:** 1/8 NPT female thread

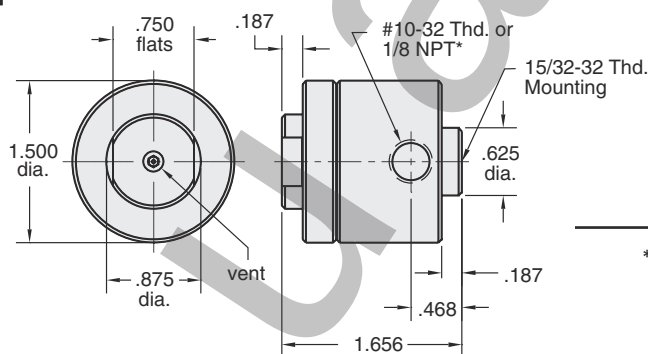
MVA-10



MVA-10P



Single acting spring return **vacuum actuator**



Input Pressure: 30 in. Hg vacuum

Inlet Port: #10-32 female thread

Mounting: 15/32-32 female thread to mount to Clippard Minimatic® valves and components; no spacers or washers are required when assembled to any Clippard valve; may be used with 15018-2 mounting bracket

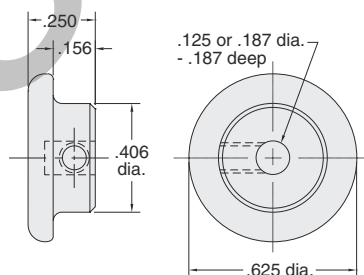
Temperature Range: 32° to 230° F

* **Inlet Port:** 1/8 NPT female thread

11916-1 1/8 STEM 11916-2 3/16 STEM



Round solid brass 5/8" dia. **push button**



Use: Mounts directly on valve stem for manual operation of valve; prevents overtravel of valve stem by providing a positive stop

Mounting: 1/8" or 3/16" dia. mounting hole fits valve stems; locks in place by set screw (Allen wrench furnished)

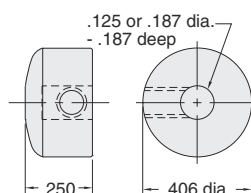
Temperature Range: 32° to 230° F

Note: Individually packaged or bulk quantities available

11916-3 1/8 STEM 11916-4 3/16 STEM



Round solid brass 13/32" dia. **push button**



Use: Mounts directly on valve stem for manual operation of valve; small size permits attachment to valve before valve is mounted through 15/32" dia. hole; prevents overtravel of valve stem by providing a positive stop

Mounting: 1/8" or 3/16" dia. mounting hole fits valve stems; locks in place by set screw (Allen wrench furnished)

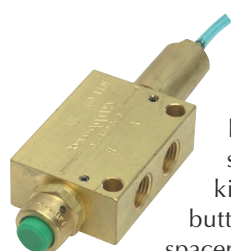
Temperature Range: 32° to 230° F

Note: Individually packaged or bulk quantities available

PUSH BUTTON ACTUATORS



Captivated Push Buttons

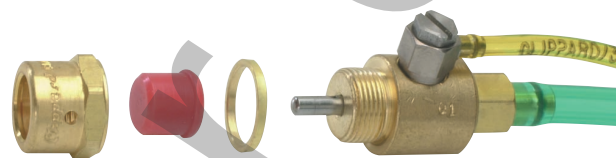


Clippard also offers the captivated push button for use with a large variety of stem operated valves. Captivated push buttons are sold as kits, adaptable to either 1/8" diameter stems or 3/16" diameter stems. Each kit includes a colored acetyl push button, brass housing nut, 1/16" brass spacer, and lock washer for assembly. The standard furnished mounting nut has a bright chromate finish. Black chrome or nickel-plated finishes are also available by adding the suffix -BC or -NP to the part number.

Captivated push buttons can be used on individual stem operated valves or in panel mount application by omitting the 1/16" brass spacer. These push buttons are available in a variety of colors, allowing you to color code, or easily differentiate between valves when designing control systems.

The design of these push buttons allows maximum actuation of the valve with no overtravel or side load to the valve stem. This assures superior performance and long life.

Captivated push buttons are commonly used as limit valves in conjunction with pneumatic cylinders, slides, and any variety of mechanical actuators. The rugged design coupled with precise actuation of stem operated valves make it perfect for applications where repetitive cycling of the valve is necessary. Designed to work with Clippard MAV, MJV, and FV series, these push buttons integrate easily into Minimatic® systems, providing optimal quality and efficiency in miniature pneumatic control.



P C - □ □ (- □)

Pushbutton Captivated

Valve Stem dia.

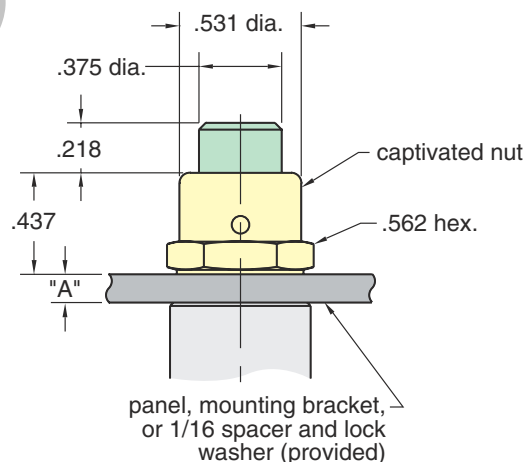
- 1 1/8 dia.
- 2 3/16 dia.

Push Button color

- B** - Black
- G** - Green
- R** - Red
- W** - White
- Y** - Yellow

Options

- BC** - Black chrome
- NP** - Nickel plated



Spacing Required for Proper Actuation of Push Button

Valve	"A" Dim.
MAV-2, MAV-3 MAVO-2, MAVO-3	3/32"
MAV-4, MAV-4D MJV-4, MJV-4D	5/32"
MJV-2, MJV-3 MJVO-2, MJVO-3 FV-3, FV-4, FV-5	7/32"

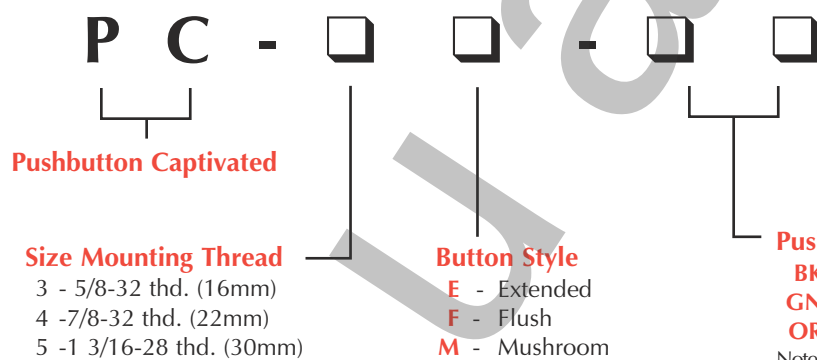


PUSH BUTTON ACTUATORS

Heavy Duty Push Button Actuators

Heavy Duty Push Button Actuators can be used on individual stem operated valves or in panel mounting applications. These push buttons are available in a variety of colors, allowing you to color code, or easily differentiate between valves when designing control systems. They feature a built-in spring so the button always returns to the extended position when released with no additional load on the valve.

The design of these push buttons allows complete actuation of the valve with no overtravel or side load to the valve assuring superior performance and long life.



PC-3E-□□



PC-4E-□□



PC-5E-□□



PC-3F-□□



PC-4F-□□



PC-5F-□□



PC-3M-□□



PC-4M-□□



PC-5M-□□



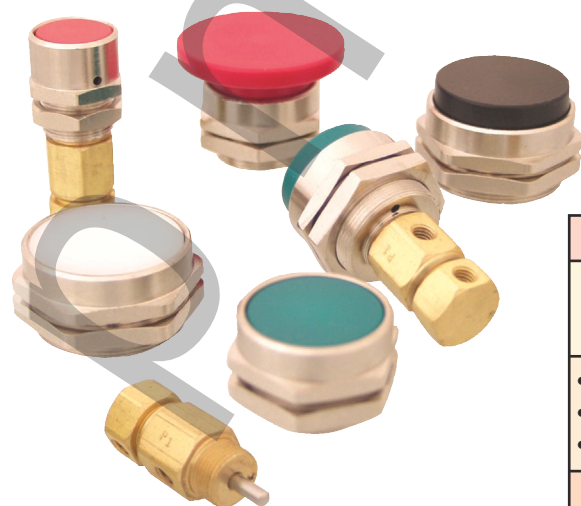
PUSH BUTTON ACTUATORS



Features

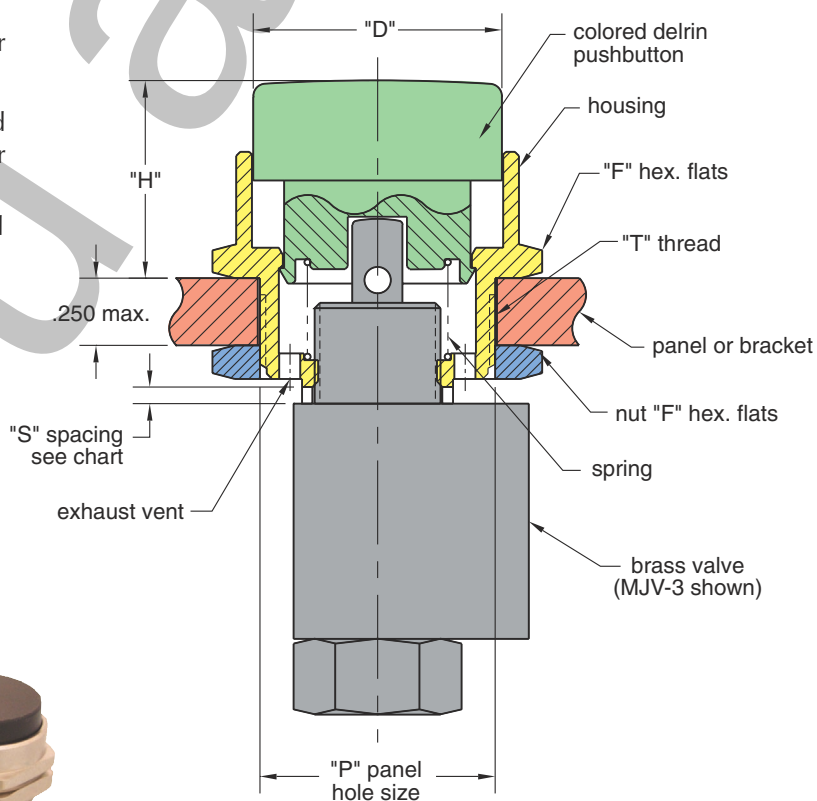
- Assembles directly to the valve; no adapters required
- Ideal for mounting on panels or brackets, up to 1/4" thick panel
- Self-contained assembly; no loose parts
- Stainless steel spring returns button to extended position with no added load to the valve stem
- Three sizes: 16 mm (5/8 dia.), 22 mm (7/8 dia.) and 30 mm (1-3/16 dia.)
- Flush, extended and mushroom style buttons
- Caution: Pushbuttons are easily depressed. Maintain positive outlook when in use.
- Five bright colors for visibility and operator recognition. Other colors available upon request
- Nickel plated brass housing and nut, molded Delrin® button and stainless steel spring for long life and corrosion resistance
- Protects the valve from overtravel and side load

Different valve models vary in mounting thread length, stem extension and stroke. To accommodate these differences, the chart below lists the recommended spacing ("S") to insure complete valve actuation. Provided with each button is a 1/16" thick spacer ring that may be used in place of a panel or bracket to obtain proper spacing. The lockwasher provided may be used with no significant effect on spacing.



DIMENSIONS

SIZE	MODEL	"D" Dia.	"H" Hgt.	"T" Thd.	"P" +1/32 Panel Hole -0	"F" Hex Flats
5/8-32 (16 mm) mtg. thd.	PC-3E-□□	.625"	.734"			
	PC-3F-□□	.625"	.500"	5/8-32	5/8" dia.	3/4"
	PC-3M-□□	1.165"	.906"			
7/8-32 (22 mm) mtg. thd.	PC-4E-□□	.925"	.734"			
	PC-4F-□□	.925"	.500"	7/8-32	7/8" dia.	1-1/16"
	PC-4M-□□	1.500"	.906"			
1 3/16-32 (30 mm) mtg. thd.	PC-5E-□□	1.165"	.734"			
	PC-5F-□□	1.165"	.500"	1 3/16-32	1-3/16 dia.	1-5/16"
	PC-5M-□□	1.500"	.906"			



SPACING "S" REQUIRED FOR PROPER VALVE ACTUATION

Valve series	MAV-2 MAV-3	MAVO-2 MAVO-3	MAV-4 MJV-4	MAV-4D MJV-4D	MJV-2,-3 MJVO-2,-3 FV-3, FV-4, FV-5
• Mounting thd.	1/4"		1/4"		3/8"
• Stem extension	5/16"		3/8"		5/16"
• Valve stroke	1/8"		3/16"		1/8"
"S" Minimum	none		none		1/16"
Maximum	1/16"		1/16"		1/8"



PUSH BUTTON ACTUATORS

Minimatic® Actuators

Easily actuated, clearly identifiable panel controls are the hallmark of a professional control system.

Whether the system is a single valve machine control...or an operating console for controlling complex pneumatic systems...you will find the actuator you require.

The line includes round push buttons, in flush, extended, and mushroom styles. Also included are key locking controls, and twist actuators. An electric switch is also available where a combination of electric and pneumatic switching is desired in a single panel.

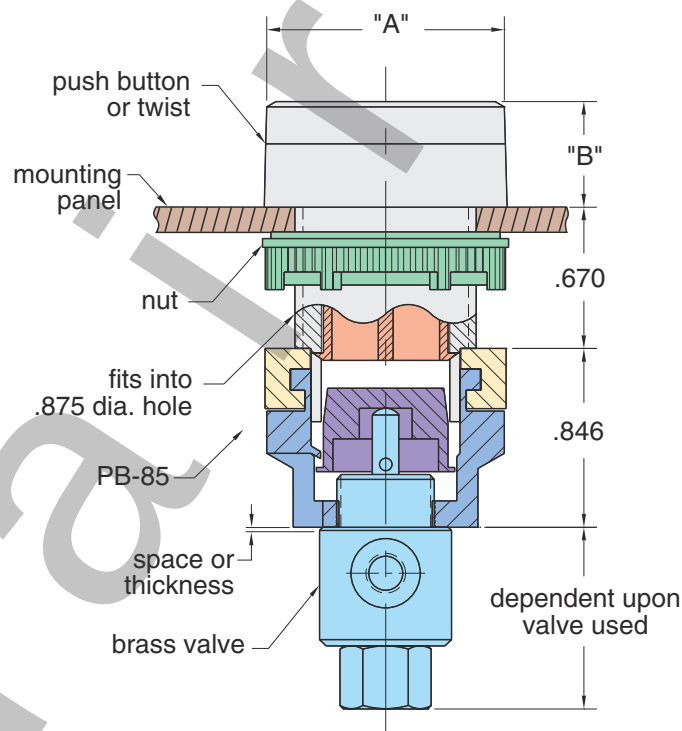
Dimensions

Size 22			Size 30		
Model	"A"	"B"	Model	"A"	"B"
PS-P2F	1.156	.492	PL-P2F	1.440	.550
PS-P2E	1.156	.736	PL-P2E	1.440	.960
PS-P2M	1.575	.965	PL-P2M	1.575	1.043
PS-L3M	1.575	.965	PL-L3M	1.575	1.043
PS-P4K	1.156	2.320	PL-P4K	1.440	2.280
PS-L4M	1.575	2.320	PL-L4M	1.575	2.280
PS-T2T	1.156	1.043	PL-T2T	1.440	1.403
PS-T3T	1.156	1.043	PL-T3T	1.440	1.043
PS-T3K	1.156	2.320	PL-T3K	1.440	2.280

Actuator Mounting Chart

The following chart gives the necessary spacing required between the shoulder of the valve and the base of the adaptor.

Valves	PB-85
MAV-2, -2P, -2R, -3R, -3, -3P MAVO-2, -3	None
MJV-2, -3 MJVO-2, -3	1/8"
MAV-4, -4D MJV-4, -4D	None
ES-1	None
FV-3, -3P, -3D, -3DP FV-4, -4P, -4D, -4DP FV-5, -5P, -5D, -5DP	1/8"



Manual Actuator Features

- Attractive and rugged: precision molded ABS plastic
- Two sizes: 30 mm (1 13/64" dia.) in 20 models
22 mm (7/8" dia.) in 20 models
- 4 bright colors for visibility and operator recognition
- Flush, extended, and mushroom styles
- Custom adaptor mates manual actuator with 26 different Clippard 2, 3, and 4 way valves. Valve and adaptor slide on and lock onto actuator in seconds. Easily removed.
- Special wrench fits both sizes, speeds assembly
- Actuators may be mounted or dismounted in panel independent of valve and adaptor
- 19 legend plates available plus blank plates in each size
- Valve and adaptor may be locked onto actuator in any of four positions to ease installation inside panel
- Anti-rotation rings available for secure mounting
- Key lockable push buttons for security and/or safety

PUSH BUTTON ACTUATORS



Legend Text	22 Size Part #	33 Size Part #
Blank	PS-01	PL-01
Start	PS-02	PL-02
Stop (red)	PS-03	PL-03
Forward	PS-04	PL-04
Reverse	PS-05	PL-05
Fast	PS-06	PL-06
Slow	PS-07	PL-07
On	PS-08	PL-08
Off (red)	PS-09	PL-09
Reset	PS-10	PL-10
Raise	PS-11	PL-11
Lower	PS-12	PL-12
Emergency Stop (red)	PS-13	PL-13
Run / Jog	PS-31	PL-31
Auto / Hand	PS-32	PL-32
Forward / Reverse	PS-33	PL-33
Fast / Slow	PS-34	PL-34
Open / Close	PS-35	PL-35
Up / Down	PS-36	PL-36
Off / On	PS-37	PL-37

Legend Plates*

Plastic legend plate, two sizes, with a black field and white inscription (red as noted). Inscription plates are interchangeable in both sizes.



Accessories for Manual Actuators

Mounting Wrench

Fits both 22 Size and 30 Size manual actuators.

PB-60



Valve Adaptor

Adapts all manual actuators to any Clippard standard 2-, 3-, or 4-way brass valve. Made of ZYTEL® ST-901 Supertough Nylon.

PB-85

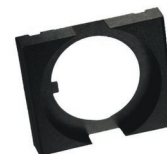


ZYTEL® is a registered trademark of DuPont

Square Bezel

Converts any 22 Size actuator to a square actuator.

PS-65



Replacement Mounting Nut

Mounting nut that holds manual actuators to panel. Included with manual actuators. 22 Size only.

PS-55



Anti-Rotation Ring

Holds push button in one position. Included with all twist manual actuators.

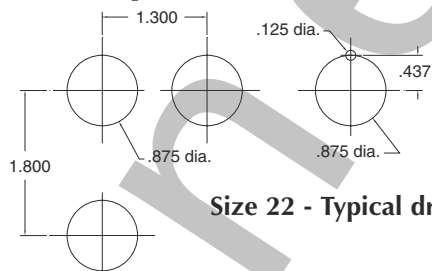
PS-50 (22 Size)

PL-50 (30 Size)

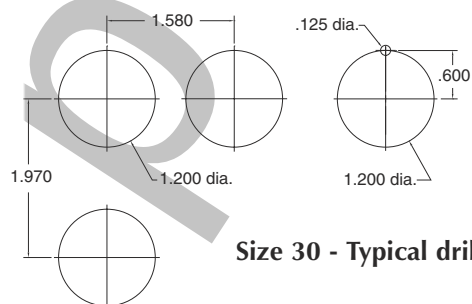


Mounting Clippard Manual Actuators

These drill plans are for units fitted with optional anti-rotation ring



Size 22 - Typical drill plan

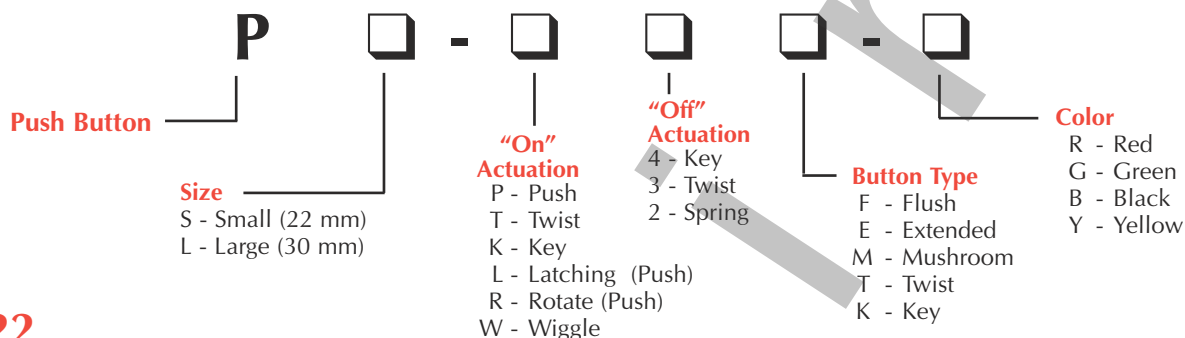


Size 30 - Typical drill plan



PUSH BUTTON ACTUATORS

MANUAL ACTUATORS



Size 22

Flush Push Button



PS-P2F-R
PS-P2F-G
PS-P2F-B
PS-P2F-Y

Manual push "In". Spring return.

Extended Push Button



PS-P2E-R
PS-P2E-G
PS-P2E-B
PS-P2E-Y

Manual push "In". Spring return.

Manual Push Mushroom



PS-P2M-R
PS-P2M-G
PS-P2M-B

Manual push "In". Spring return.

Automatic Push/Turn Mushroom



PS-L3M-R
PS-L3M-G
PS-L3M-B

Manual push "In" Latches "In". Turn clockwise to unlatch. Spring return.

Push Key Push Button



PS-P4K-B

Manual push "In". Spring return. Turn key counter-clockwise to lock "Out"; clockwise to unlock. Key withdrawable locked or unlocked. Black only.

Push Key Mushroom



PS-L4M-R

Manual push "In". Automatic latches "In". Turn key clock-wise to release. Spring return. Key withdrawable "Out" position only. Red only.

Spring Return Twist 45°



PS-T2T-B

Turn clockwise and hold for "In". Release for spring return. Black only.

Maintained Twist 90°



PS-T3T-B

Turn clockwise to latch "In". Turn counter-clockwise to release. Black only.

Key Twist 90° Maintained



PS-T3K-B
PS-K3K-B

(PS-K3K-B) Same as PS-T3K-B except key is withdrawable in "Out" position only.
(PS-T3K-B) Turn key clockwise to latch "In". Turn key counter-clockwise to release. Key with-drawable in both positions. Black only.

PUSH BUTTON ACTUATORS



Size 30

Flush Push Button



PL-P2F-R
PL-P2F-G
PL-P2F-B
PL-P2F-Y

Manual push "In". Spring return.

Extended Push Button



PL-P2E-R
PL-P2E-G
PL-P2E-B
PL-P2E-Y

Manual push "In". Spring return.

Key Twist 90° Maintained



PL-T3K-B
PL-K3K-B

(PL-K3K-B) Same as PL-T3K-B except key is withdrawable in "Out" position only.

(PL-T3K-B) Turn key clockwise to latch "In". Turn key counterclockwise to release. Key with-drawable in both positions. Black only.



Automatic Push/Turn Mushroom



PL-L3M-R
PL-L3M-G
PL-L3M-B

Manual push "In". Latches "In". Turn clockwise to unlatch. Spring return.

Push Key Push Button



PL-P4K-B

Manual push "In". Spring return. Turn key counter-clockwise to lock "Out"; clockwise to unlock. Key withdrawable locked or unlocked. Black only.

Push Key Mushroom



PL-L4M-R

Manual push "In". Automatic latches "In". Turn key clock-wise to release. Spring return. Key withdrawable "Out" position only. Red only.

Spring Return Twist 45°



PL-T2T-B

Turn clockwise and hold for "In". Release for spring return. Black only.

Maintained Twist 90°



PL-T3T-B

Turn clockwise to latch "In". Turn counter-clockwise to release. Black only.

Manual Push Mushroom



PL-P2M-R
PL-P2M-G
PL-P2M-B

Manual push "In". Spring return.