

THE MOUSE VALVE SERIES

EV, ET, EC SERIES VALVES



Like a mouse, this valve is quiet, quick, eats very little (.67 watts) and is cute. Valves accept low voltage, low current signals, convert them into high pressure (100 psig) pneumatic outputs. Optional low pressure/medium flow and low pressure/high flow are available. (The air supply should be reasonably clean and dry for optimum performance. Recommended filtration is 40 micron.)

Valve caps are of molded Hytrel®. Depending upon valve type, cap is:

- plain top on 2-way models
- with exhaust holes in cap on certain 3-way models
- with fitting, as shown, for 3-way N.O. styles for N.C. exhaust (inlet when N.O.)

Low power coil uses only 0.67 watts at the rated voltage. Standard voltages include 6, 12 and 24. Other voltages are available.

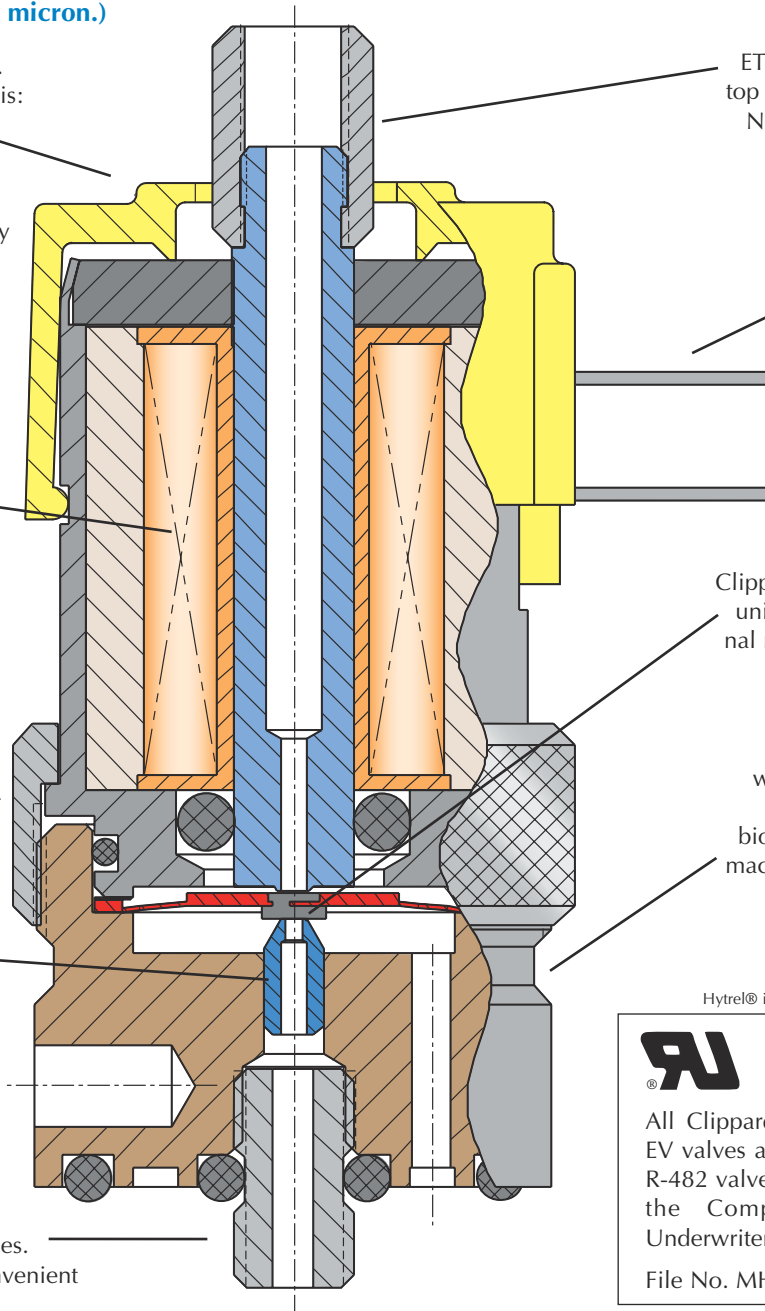
Adjusting ring may be loosened for positioning to orient connections.

DO NOT REMOVE.
Parts orientation will be lost and warranty voided.

Standard orifice is .025. Also available are:

- L - 0.040 orifice
- H - 0.060 orifice

Manifold mount base shown permits fast, secure mounting of electronic valves to manifolds for grouping in compact assemblies. Alternate standard model has convenient mounting holes.



ETO and similar styles have top 10-32 threaded fitting for N.C. exhaust or N.O. inlet.

Quick-connect spade lugs are of tinned brass and furnished on all ET models. EV models are available with 18" wire leads for popular voltages. EC models are furnished with .025" square pin connector.

Clippard Electronic Valves are unique, with only one internal moving part that travels a mere .007 inches.

Valves are small in size with a variety of mounting options. Ideal for use in biomedical, test equipment, machines, computer-directed industrial systems, and in portable devices.

Hytrel® is a registered trademark of DuPont



All Clippard standard ET, EC and EV valves and Clippard R-481 and R-482 valves are recognized under the Component Program of Underwriters Laboratories, Inc.

File No. MH 13573

Clippard Minimatic electronic valves are precision-built 2-way or 3-way control valves, utilizing a unique, patented, valving principle. There are no sliding parts. Complete poppet travel is a mere .007". As a result, low power consumption and exceptionally long life are major benefits of this design.

The valves are very quiet in operation and also very cool. No flow is needed for cooling. The valves' small size makes them well suited to a wide range of applications in biomedical, EDP, environmental test equipment, textile machines, packaging machinery, computerized industrial automation, and portable systems.



THE MOUSE VALVE SERIES

EV, ET, EC SERIES VALVES

FEATURES

Clippard Functional Simplicity

- The patented design of Clippard electronic valves is a deceptively simple arrangement, with a minimum of operating parts, and remarkably straightforward low power operation.
- The Clippard “spider” is the only moving part and its motion to operate the valve is a mere .007” travel.
- Low voltage D.C. inputs, signals from simple manual switching up to computer directed systems, move the spider in extremely fast response time... 5-10 milliseconds.
- The unit uses extremely low power (0.67 watts at the rated voltage) and is cool running. The valves are light in weight, compact in physical size and mount easily in space-saving packages.

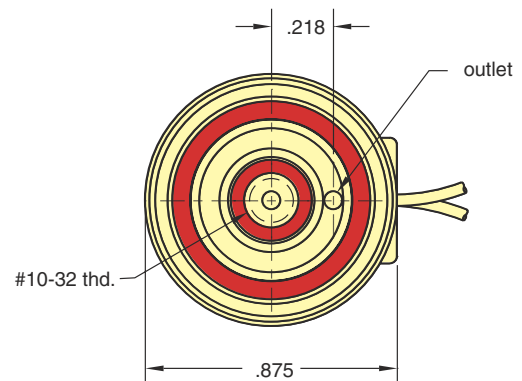


Quick Connect

Clippard ET valves feature spade lugs for simple, quick secure low voltage connections. Wire crimp-on spade lug connectors are available separately to adapt electronic wiring where necessary. Clippard original EV type valves are available in popular voltages with 18” wire leads. The EC model utilizes a .025” square pin connector.

Easy Mount

The complete line of EC, EV, and ET electronic valves are available with two mounting options. Standard base models have two 6-32 threaded, 7/32” deep mounting holes. Manifold models are equipped with a bottom stud, 5/32” long with 10-32 thread, which fits Clippard standard and special manifolds, accessory valves and subplates. Spanner holes in the valve body permit tightening.



ACCESSORIES



EVB-2 & EVB-3 Booster

Clippard EVB-2 & EVB-3 booster valves mate with manifold mount EC, EV, and ET valves and manifolds to provide increased flow. Direct piloting from a Clippard EC, EV and ET valve provides a flow of up to 6.1 SCFM at 100 psig.

2020/2021 High Flow Valves

Model 2020 and 2021 high flow valves are piloted 3-way valves that work with the Clippard EC, EV, and ET 3-way manifold valves. Output from the EC, EV, or ET will actuate the valve and produce output up to 22 SCFM at 100 psig. Piloted 4-way valves are also available as R-481 and R-482.

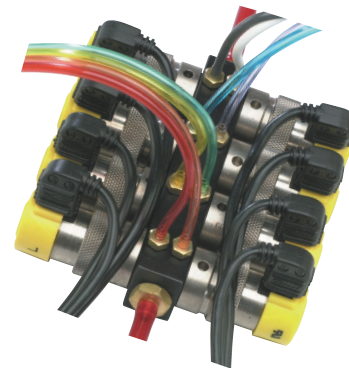


Dual Supply Manifold

At the left is shown the 15490-3 Clippard Dual Supply Manifold with two ET-3M electronic/pneumatic interface valves. 1/8" NPT inlet is seen at the left of the manifold with the dual 10-32 port outlets at the right.

Multi-Valve Manifolds

Multi-valve manifolds are available in two lengths with either single or double (top or top and bottom) rows of outputs for versatility in application. Input to all valves mounted on this manifold is through the manifold end. Outputs are individual 10-32 ports for hose barb fittings and vinyl or urethane hose.



Pilot Manifold

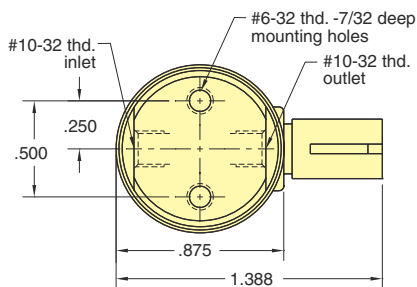
Here a Clippard ET valve is mounted to the 15491-1 Clippard Pilot manifold, making it possible for the ET-3M valve controlled by an electronic signal to actuate a larger air-piloted valve or an air cylinder.



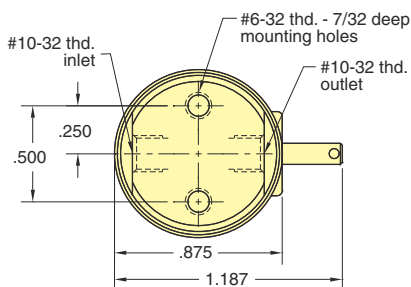
EV, ET, EC SERIES 2-WAY NORMALLY CLOSED VALVES

IN-LINE MOUNT

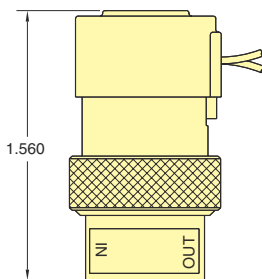
EC - 2 - □ - □



ET - 2 - □ - □



EV - 2 - □ - □



Type: Normally closed 2-way

Medium: air (40 micron filtration)

Temperature Range: 30° to 180° F

Power Consumption: 0.67 watt

Response: 5 - 10 ms

Mounting: In-line

Ports: 10-32

Operating Range: 90% to 150% of rated voltage

Air Flow: 0.6 SCFM @ 100 psig

"L" option - 0.5 SCFM @ 50 psig

"H" option - 0.45 SCFM @ 25 psig

Pressure Range :

28" Hg Vac. to 105 psig

"L" option:

28" Hg Vac. to 50 psig

"H" option:

28" Hg Vac. to 25 psig

NUMBERING SYSTEM

E □ - **2** - □ - □

C - Connector
T - Terminal Spades
V - Wire Leads

Voltages: *
6 - 6 Volts
12 - 12 Volts
24 - 24 Volts

Standard Options:
Blank - Standard orifice .025
L - 0.040 orifice (50 psig max)
H - 0.060 orifice (25 psig max)
V - Viton® seals

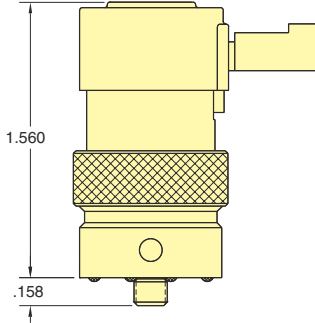
Non-Standard Options:
E - EPR seals
S - Silicon seals
D - Diode

* Consult factory for availability of non-standard voltages and other options

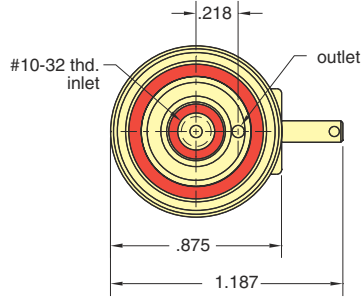
EV, ET, EC SERIES 2-WAY NORMALLY CLOSED VALVES MANIFOLD MOUNT



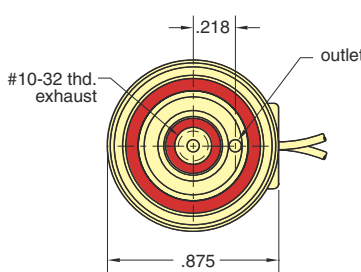
EC - 2M - □ - □



ET - 2M - □ - □



EV - 2M - □ - □



Type: Normally closed 2-way
Medium: air (40 micron filtration)
Temperature Range: 30° to 180° F
Power Consumption: 0.67 watt
Response: 5 - 10 ms
Mounting: Manifold
Ports: Manifold mounted with 10-32 stud
Operating Range: 90% to 150% of rated voltage

Air Flow: 0.6 SCFM @ 100 psig
 "L" option - 0.5 SCFM @ 50 psig
 "H" option - 0.45 SCFM @ 25 psig

Pressure Range :
 28" Hg Vac. to 105 psig
 "L" option:
 28" Hg Vac. to 50 psig
 "H" option:
 28" Hg Vac. to 25 psig

NUMBERING SYSTEM

E □ - 2 M - □ - □

C - Connector
T - Terminal Spades
V - Wire Leads

Voltages: *
6 - 6 Volts
12 - 12 Volts
24 - 24 Volts

Standard Options:
Blank - Standard orifice .025
L - 0.040 orifice (50 psig max)
H - 0.060 orifice (25 psig max)
V - Viton® seals
Non-Standard Options:
E - EPR seals
S - Silicon seals
D - Diode

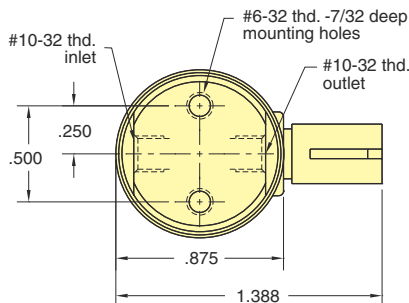
* Consult factory for availability of non-standard voltages and other options



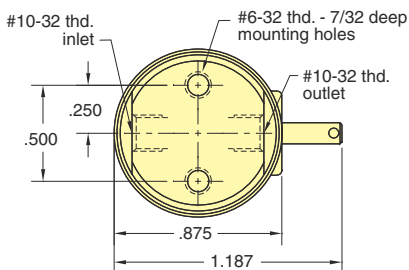
EV, ET, EC SERIES 3-WAY NORMALLY CLOSED VALVES

IN-LINE MOUNT

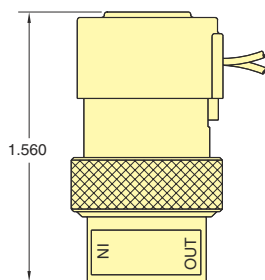
EC - 3 - □ - □



ET - 3 - □ - □



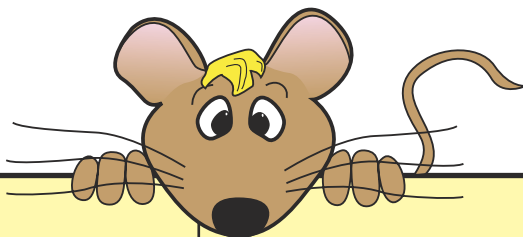
EV - 3 - □ - □



Type: Normally closed 3-way
Medium: air (40 micron filtration)
Temperature Range: 30° to 180° F
Power Consumption: 0.67 watt
Response: 5 - 10 ms
Mounting: In-line
Ports: 10-32
Operating Range: 90% to 150% of rated voltage

Air Flow: 0.6 SCFM @ 100 psig
 "L" option - 0.5 SCFM @ 50 psig
 "H" option - 0.45 SCFM @ 25 psig

Pressure Range :
 28" Hg Vac. to 105 psig
 "L" option:
 28" Hg Vac. to 50 psig
 "H" option:
 28" Hg Vac. to 25 psig



NUMBERING SYSTEM

E □ - 3 - □ - □

C - Connector
T - Terminal Spades
V - Wire Leads

Voltages: *
6 - 6 Volts
12 - 12 Volts
24 - 24 Volts

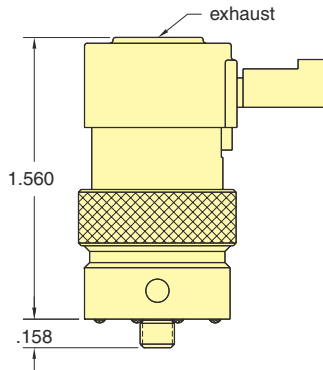
Standard Options:
Blank - Standard orifice .025
L - 0.040 orifice (50 psig max)
H - 0.060 orifice (25 psig max)
V - Viton® seals
Non-Standard Options:
E - EPR seals
S - Silicon seals
D - Diode

* Consult factory for availability of non-standard voltages and other options

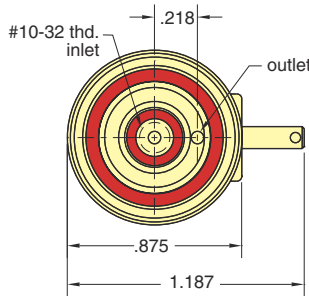
EV, ET, EC SERIES 3-WAY NORMALLY CLOSED VALVES MANIFOLD MOUNT



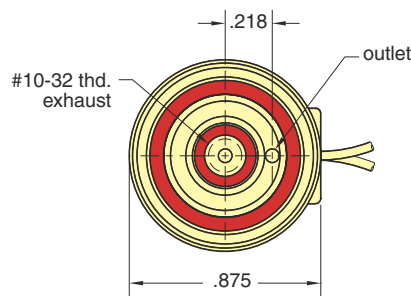
EC - 3M - □ - □



ET - 3M - □ - □



EV - 3M - □ - □



Type: Normally closed 3-way
Medium: air (40 micron filtration)
Temperature Range: 30° to 180° F
Power Consumption: 0.67 watt
Response: 5 - 10 ms
Mounting: Manifold
Ports: Manifold mounted with 10-32 stud
Operating Range: 90% to 150% of rated voltage

Air Flow: 0.6 SCFM @ 100 psig
 "L" option - 0.5 SCFM @ 50 psig
 "H" option - 0.45 SCFM @ 25 psig

Pressure Range :
 28" Hg Vac. to 105 psig
 "L" option:
 28" Hg Vac. to 50 psig
 "H" option:
 28" Hg Vac. to 25 psig

NUMBERING SYSTEM

E □ - 3 M - □ - □

C - Connector
T - Terminal Spades
V - Wire Leads

Voltages: *
6 - 6 Volts
12 - 12 Volts
24 - 24 Volts

Standard Options:
Blank - Standard orifice .025
L - 0.040 orifice (50 psig max)
H - 0.060 orifice (25 psig max)
V - Viton® seals
Non-Standard Options:
E - EPR seals
S - Silicon seals
D - Diode

* Consult factory for availability of non-standard voltages and other options



EV, ET, EC SERIES 2-WAY NORMALLY OPEN VALVES MANIFOLD MOUNT

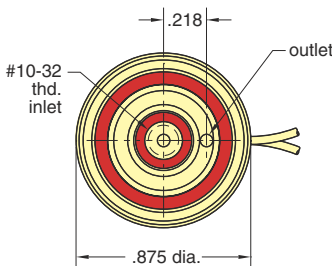
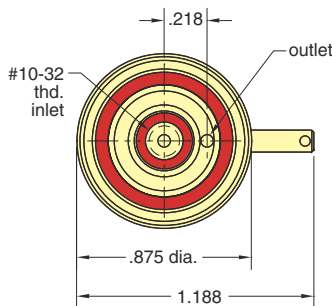
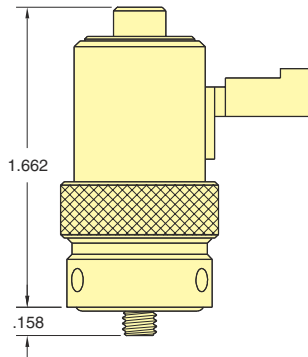
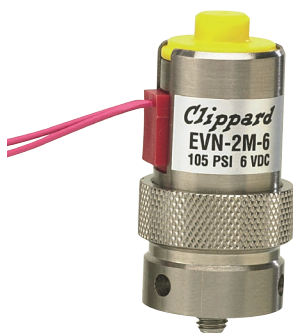
ECN - 2M - □ - □



ETN - 2M - □ - □



EVN - 2M - □ - □



Type: Normally open 2-way
Medium: air (40 micron filtration)
Temperature Range: 30° to 180° F
Power Consumption: 0.67 watt
Response: <15 ms
Mounting: Manifold
Ports: Manifold mounted with 10-32 stud
Operating Range: 90% to 150% of rated voltage
Air Flow: 0.9 SCFM@100 psig
Pressure Range :
 28" Hg Vac. to 105 psig

ECN, ETN & EVN series valves are 2 & 3-way N.O. solenoid valves. The normally open inlet is through the center mounting stud, so the valves can be supplied directly from the manifold without external tubing.

NUMBERING SYSTEM

E □ N - 2 M - □ - □

C - Connector
 T - Terminal Spades
 V - Wire Leads

Voltages: *
 6 - 6 Volts
 12 - 12 Volts
 24 - 24 Volts

Standard Options:
 Blank - Buna-N seals
 V - Viton® seals

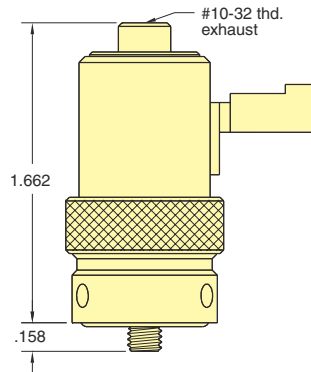
Non-Standard Options:
 E - EPR seals
 D - Diode

* Consult factory for availability of non-standard voltages and other options

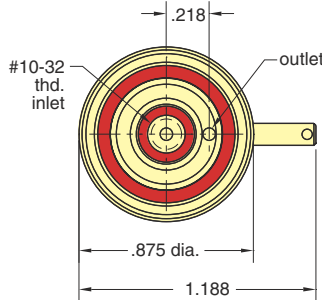
EV, ET, EC SERIES 3-WAY NORMALLY OPEN VALVES MANIFOLD MOUNT



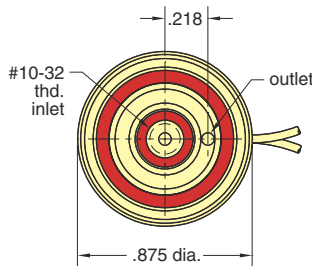
ECN - 3M - □ - □



ETN - 3M - □ - □



EVN - 3M - □ - □



Type: Normally open 3-way
Medium: air (40 micron filtration)
Temperature Range: 30° to 180° F
Power Consumption: 0.67 watt
Response: <15 ms
Mounting: Manifold
Ports: Manifold mounted with 10-32 stud
Operating Range: 90% to 150% of rated voltage
Air Flow: 0.9 SCFM@100 psig
Pressure Range :
 28" Hg Vac. to 105 psig

ECN, ETN & EVN series valves are 2 & 3-way N.O. solenoid valves. The normally open inlet is through the center mounting stud, so the valves can be supplied directly from the manifold without external tubing.

NUMBERING SYSTEM

E □ N - 3 M - □ - □

C - Connector
 T - Terminal Spades
 V - Wire Leads

Voltages: *
 6 - 6 Volts
 12 - 12 Volts
 24 - 24 Volts

Standard Options:
 Blank - Buna-N seals
 V - Viton® seals

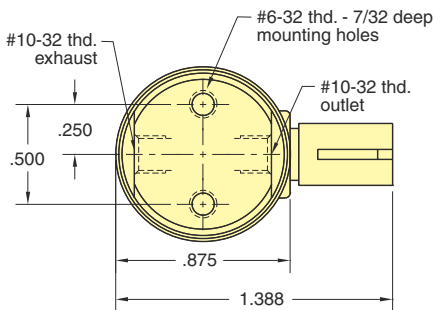
Non-Standard Options:
 E - EPR seals
 D - Diode

* Consult factory for availability of non-standard voltages and other options

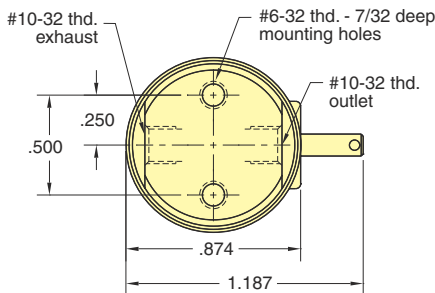


EV, ET, EC SERIES 3-WAY FULLY PORTED VALVES IN-LINE MOUNT

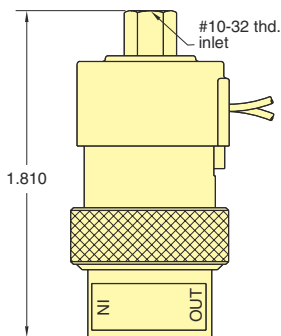
ECO - 3 - □ - □



ETO - 3 - □ - □



EVO - 3 - □ - □



Type: Fully ported 3-way

Medium: air (40 micron filtration)

Temperature Range: 30° to 180° F

Power Consumption: 0.67 watt

Response: 5 - 10 ms

Mounting: In-line

Ports: 10-32

Operating Range: 90% to 150%
of rated voltage

Air Flow: 0.6 SCFM @ 100 psig*

"L" option - 0.5 SCFM @ 50 psig

"H" option - 0.45 SCFM @ 25 psig

* When air supply is connected to the top port to operate valve normally open, main flow is 0.9 scfm and exhaust flow is 0.6 scfm at 100 psig.

Pressure Range :

28" Hg Vac. to 105 psig

"L" option:

28" Hg Vac. to 50 psig

"H" option:

28" Hg Vac. to 25 psig

NUMBERING SYSTEM

E □ O - 3 - □ - □

C - Connector
T - Terminal Spades
V - Wire Leads

Voltages: *
6 - 6 Volts
12 - 12 Volts
24 - 24 Volts

Standard Options:

Blank - Standard orifice .025
L - 0.040 orifice (50 psig max)
H - 0.060 orifice (25 psig max)
V - Viton® seals

Non-Standard Options:

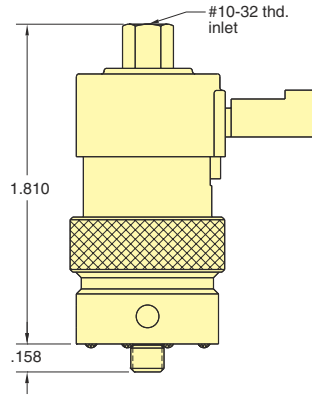
E - EPR seals
S - Silicon seals
D - Diode

* Consult factory for availability of non-standard voltages and other options

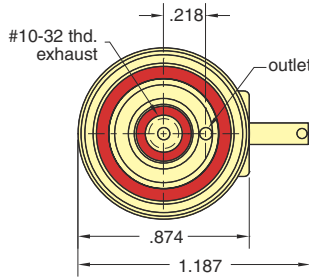
EV, ET, EC SERIES 3-WAY FULLY PORTED VALVES MANIFOLD MOUNT



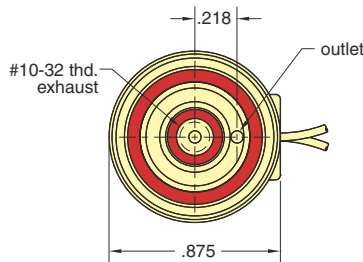
ECO - 3M - □ - □



ETO - 3M - □ - □



EVO - 3M - □ - □



Type: Fully ported 3-way

Medium: air

Temperature Range: 30° to 180° F

Power Consumption: 0.67 watt

Response: 5 - 10 ms

Mounting: Manifold

Ports: Manifold mounted with 10-32 stud

Operating Range: 90% to 150% of rated voltage

Air Flow: 0.6 SCFM @ 100 psig*

"L" option - 0.5 SCFM @ 50 psig

"H" option - 0.45 SCFM @ 25 psig

* When air supply is connected to the top port to operate valve normally open, main flow is 0.9 scfm and exhaust flow is 0.6 scfm at 100 psig.

Pressure Range :

28" Hg Vac. to 105 psig

"L" option:

28" Hg Vac. to 50 psig

"H" option:

28" Hg Vac. to 25 psig

NUMBERING SYSTEM

E □ O - 3 M - □ - □

C - Connector
T - Terminal Spades
V - Wire Leads

Voltages: *
6 - 6 Volts
12 - 12 Volts
24 - 24 Volts

Standard Options:

Blank - Standard orifice .025
L - 0.040 orifice (50 psig max)
H - 0.060 orifice (25 psig max)
V - Viton® seals

Non-Standard Options:

E - EPR seals
S - Silicon seals
D - Diode

* Consult factory for availability of non-standard voltages and other options

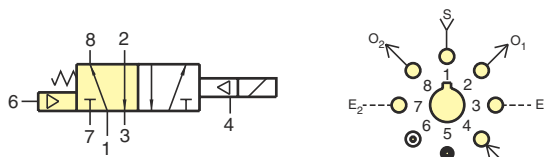


ET PILOTED 4-WAY VALVES

R-481



For more information please see page 286 in the Modular Valve section of this catalog.



Note: Supply pressure must be applied to both ports 1 & 4. Minimum pressure on port 4 should be 40 psi.

Type: 4-way combination electronic and modular spool type interface valve. Fully ported ET-3 & R401 hybrid

Medium: air, water, or oil; pilot - air only

Input Pressure: pilot - 45 psig minimum working - 0-150 psig

Air Flow: valve - @100 psig - 10 scfm

Voltages: R-481-6 6VDC
R-481-12 12VDC
R-481-24 24VDC

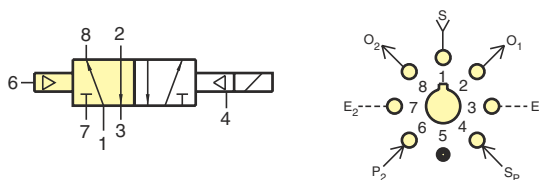
Mounting: Uses Octoport base and two captivated screws

Ports: valve has patented Octoport system

R-482



For more information please see page 286 in the Modular Valve section of this catalog.



Note: Supply pressure must be applied to both ports 1 & 4. Minimum pressure on port 4 should be 40 psi.

Type: 4-way combination electronic and modular spool type interface valve. Fully ported ET-3 & R402 hybrid

Medium: air, water, or oil; pilot - air only

Input Pressure: pilot - 45 psig minimum working - 0 to 150 psig

Air Flow: valve - @100 psig - 10 scfm

Voltages: R-482-6 6VDC
R-482-12 12VDC
R-482-24 24VDC

Mounting: Uses Octoport base and two captivated screws

Ports: valve has patented Octoport system

ET-C48 ET-C120

Black molded lug connectors are available for easy push on connection ET-C48 is 48" in length, ET-C120 is 120" in length



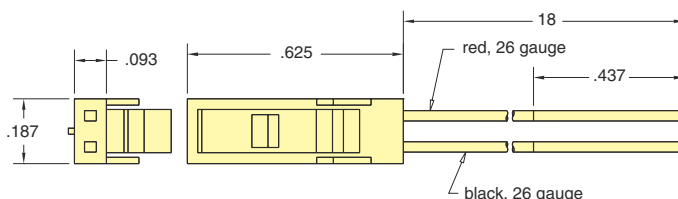
3831

Insulated crimp-on spade lug connectors are available for wiring up leads to connect electronic circuit to ET style valves. Accepts #22, #24, or #26 wire



C2-RB18

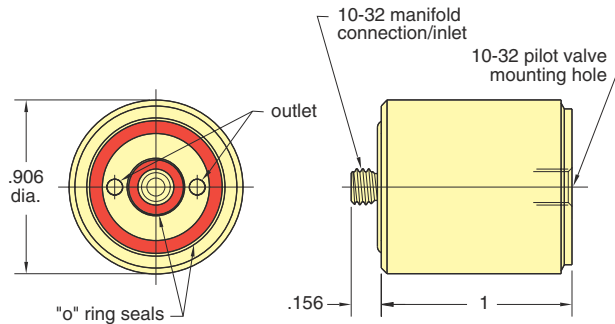
AMP connector #103959-1 with 18" wire leads for EC/ECO and EI/EIO valves



EVB-2

EC, EV, and ET piloted 2-way valve, manifold mount

Electronic Valve Booster Amplifies the flow capacity of EC, EV and ET type valves by over twelve times. Manifold style electronic valves mount onto booster body, which, in turn, mounts on Clippard manifolds.



Type: 2-way normally closed, pressure piloted valve

Medium: air

Input Pressure: 20 to 150 psig

Air Flow: 6.1 scfm - @ 100 psig

Response: 20 ms at 20 psig
13 ms at 100 psig

Mounting: Mounts to manifold

Ports: Inlet and outlet through manifold

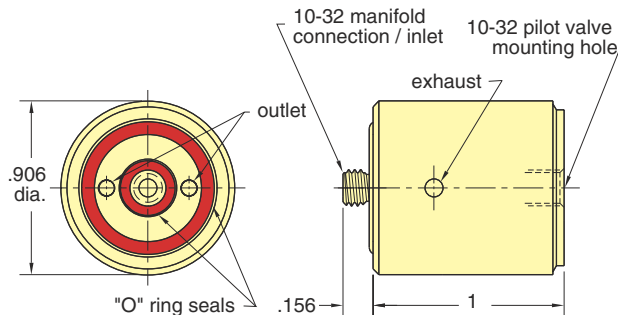
Materials: Nickel plated brass, acetyl, stainless steel and Buna-N

Additional Note Use only normally closed 3-way pilot valves in conjunction with EVB-2

EVB-3

EC, EV, and ET piloted 3-way valve, manifold mount

Electronic Valve Booster Amplifies the flow capacity of EC, EV and ET type valves by over twelve times. Manifold style electronic valves mount onto booster body, which, in turn, mounts on Clippard manifolds.



Type: 3-way normally closed, pressure piloted valve

Medium: air

Input Pressure: 20 to 150 psig

Air Flow: 6.1 scfm - @ 100 psig

Response: 20 ms at 20 psig
13 ms at 100 psig

Mounting: Mounts to manifold

Ports: Inlet and outlet through manifold

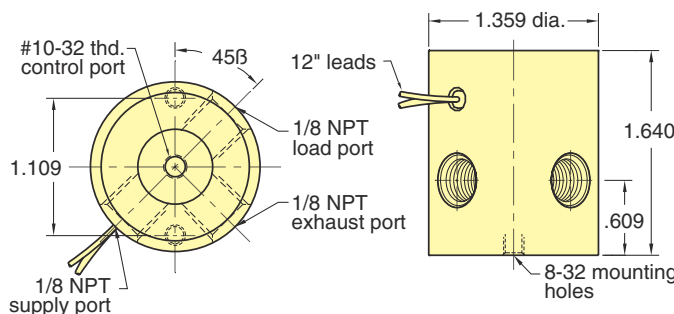
Materials: Nickel plated brass, acetyl, stainless steel and Buna-N

Additional Note Use only normally closed 3-way pilot valves in conjunction with EVB-3

2013 - □

Electronic Fluidamp

Low-power DC solenoid solid state output signals can be directly converted to high pressure pneumatic power without amplification



Type: 3-way normally closed, electronic valve

Medium: air

Input Pressure: 30 to 100 psig

Air Flow: 22 scfm at 100 psig

Bleed Flow: .10 scfm @ 100 psig

Filtration: 10 micron

Frequency Response: 50 Hz @ 100 psig
70 Hz @ 30 psig

Ports: 1/8" NPT female

Switching Speed: 10 ms.

Electrical Data

Continuous Overload: 350% @ 25°C ambient
250% @ 50°C ambient

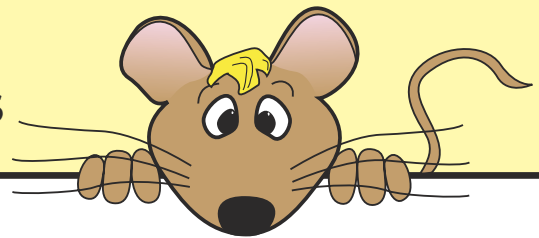
Power Consumption: Less than .50 watts at rated voltage (80 ma. @ 6V, 40 ma. @ 12 V, 20 ma. @ 24V)

Leads: 28 gauge stranded P.V.C. insulated

Standard Options: 2013-6 6 volts DC
2013-12 12 volts DC
2013-24 24 volts DC



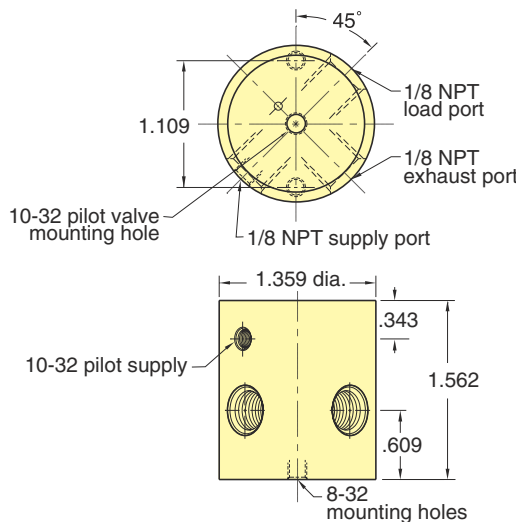
EV, ET, EC SERIES ACCESSORIES



2020/2021

High Flow EC, EV, and ET Piloted 3-way valves

Designed to be piloted by a Clippard EC, EV and ET manifold mount electronic valve. Output from the EC, EV and ET actuates the valve to produce outputs up to 22 scfm at 100 psig. Combines low wattage, long life and cool running of the EC, EV and ET valves with quick response and high flow of Clippard "Fluidamp" type valves. The 2020 and 2021 are identical in all respects except one. The 2020 has an external 10-32 port for the pressure supply to the EC, EV, and ET electronic pilot valve.



Type: 3-way normally closed, pressure piloted valve

Medium: air

Input Pressure: 30 to 100 psig

Pilot Pressure: (2020) 60% of supply pressure, minimum

Air Flow: 22 scfm at 100 psig

Response: approx. 20 ms

Mounting: Mounting holes provided

Ports: Inlet and outlet, exhaust 1/8" NPT Pilot supply on 2020 is 10-32 female

Materials: Anodized Aluminum, Stainless Steel and Buna-N

Additional Note Use only normally closed 3-way pilot valves in conjunction with 2020/2021

1549□ - □

Specialized Manifolds



Material: Nickel plated brass

Ports: 1/8" NPT thread stud, 10-32 body ports

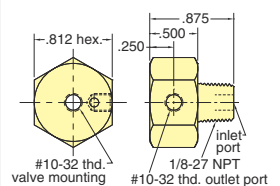
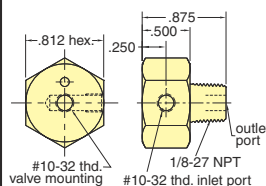
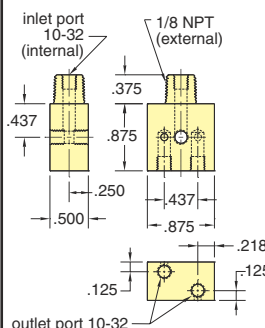
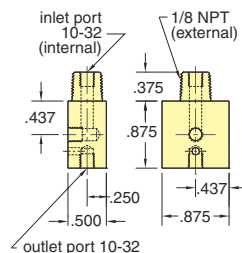
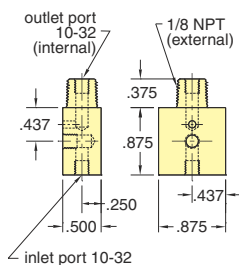
15490-1 Pilot manifold allows, EC, EV, and ET, controlled by electronic signal, to pilot through 1/8" NPT outlet a much larger air-piloted valve.

15490-2 Single supply manifold with 1/8" NPT inlet securely connected to air source, manifold provides rigid mounting for EC, EV and ET valve, 10-32 port outlet.

15490-3 Dual supply manifold allows two EC, EV or ET 3-way valves to be used as a 4-way by controlling them with a single pole double throw switch.

15491-1 Valve pilot adaptor may be used with a pneumatic cylinder to provide a complete system for efficient interface with electric or electronic circuits. This adaptor may be installed in any 1/8 NPT port and with supply air connected to the inlet port, provide air to a single acting cylinder when an electronic signal is received.

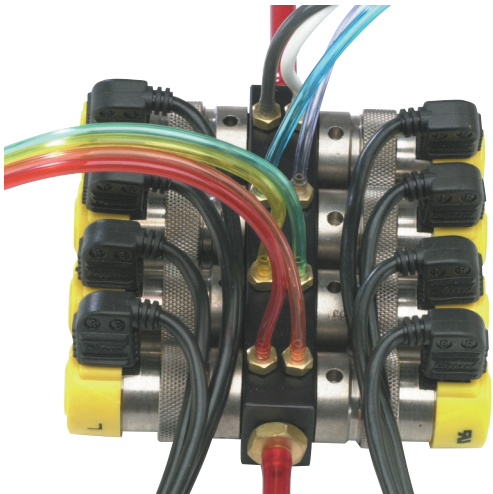
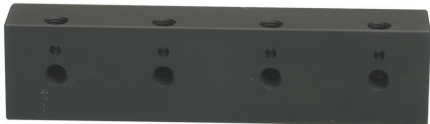
15491-2 Inline manifold may be installed in any 1/8 NPT supply port and provides rigid mounting for an EC, EV, or ET valve with a #10-32 threaded outlet port. With this manifold, an EC, EV, or ET valve controlled by an electronic signal, can pilot a much larger air-piloted valve through a #10-32 threaded outlet port.



1548 □ - □

Multi-Valve Manifolds

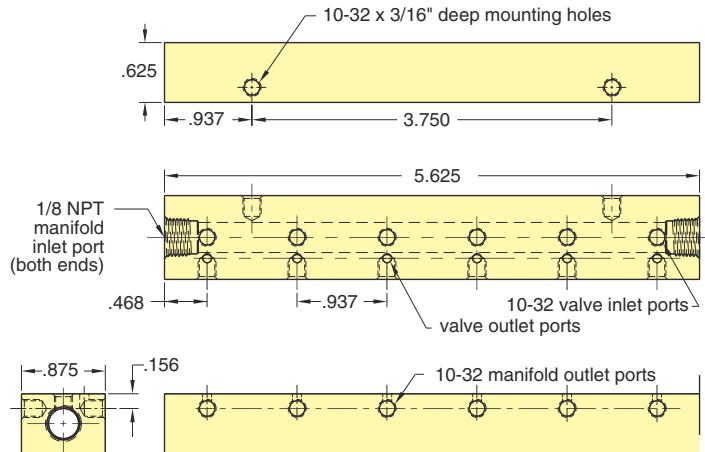
Construction: Black anodized aluminum



Eight ET valves mounted on a 1548-8

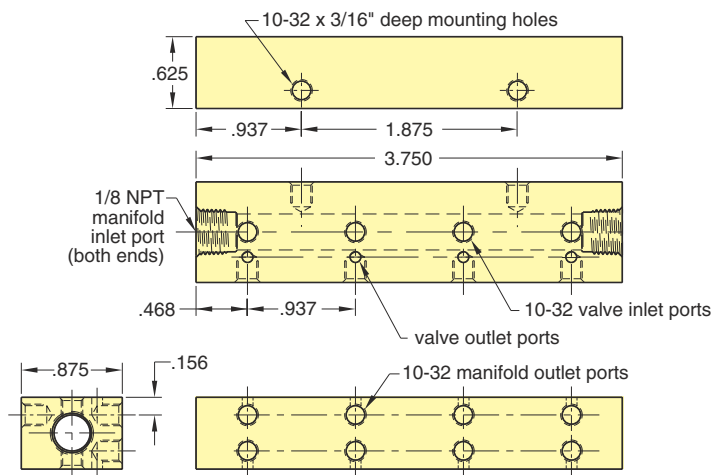
15481-6

Mounts six valves on one side only



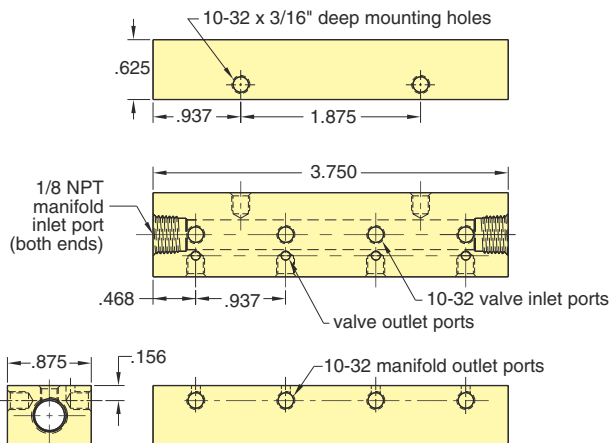
15482-8

Mounts eight valves, four each on opposite sides



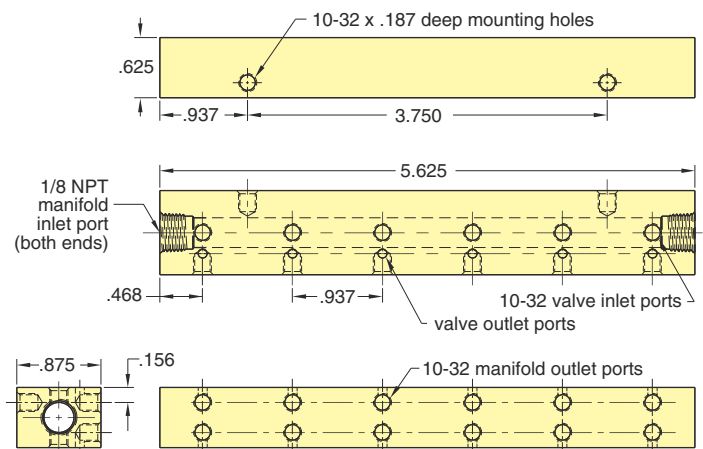
15481-4

Mounts four valves on one side only



15482-12

Mounts twelve valves, six each on opposite sides



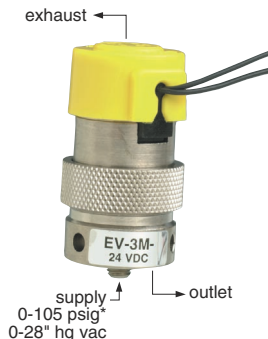


EV, ET, EC SERIES VALVES

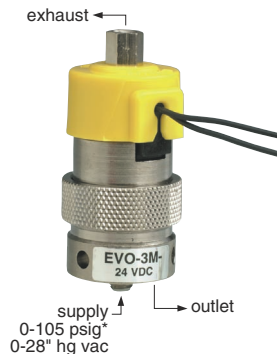
MODELS OFFERED



EV-2M
Normally Closed



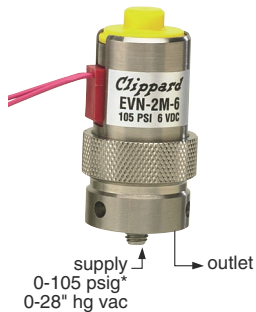
EV-3M
Normally Closed



EVO-3M
Normally Closed



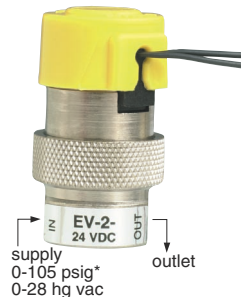
EVO-3M
Normally Open



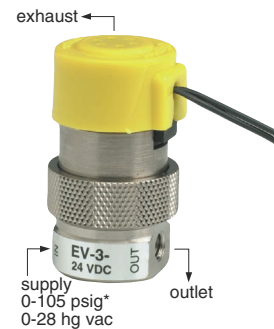
EVN-2M
Normally Open



EVN-3M
Normally Open



EV-2
Normally Closed



EV-3
Normally Closed



EVO-3
Normally Closed



EVO-3
Normally Open



EVO-3
as Diverter