

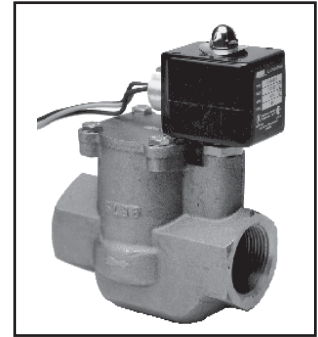
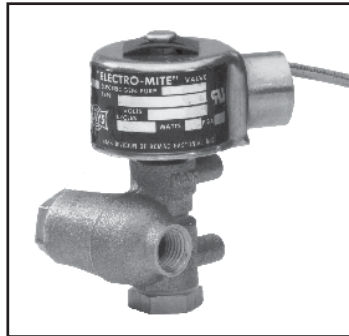


Industrial Products & Parts

HAYS FLUID CONTROLS

114 Eason Road / P.O. Box 580 Dallas, NC 28034-0580

PHONE: (704) 922-9565 • TOLL FREE 1-800-354-4297 • FAX (704) 922-9595



ELECTROFLO 1-3

ELECTRO-STEAM 1-9

MARFAID 1-15

ELECTRO-MITE 1-27



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Continuous Duty — Rating given to a valve that can be energized indefinitely without overheating or failure under normal operating conditions.

Cv Factor — The quantity of 60° F water, expressed in gallons per minute which will flow through a valve with a one psi pressure drop.

Direct-Acting — A solenoid valve where all flow passes through the orifice that is opened directly by the Electromagnet and plunger.

Electromagnet — A device consisting of an iron or steel core which is magnetized by electric current in a coil which surrounds it.

Flow Capacity — Amount of flow through a valve in reference to pressure drop and rate, in gallons per minute or cubic feet per minute as measured at the outlet of the valve.

Flow Rate — Amount of fluid that passes a given point in a given period of time.

General Purpose Valve — A normally closed valve intended to control the flow of a fluid, but not depended upon to act as a safety valve.

Inlet Port — Port which provides a passage from the source of fluid or gas.

Normally Closed Solenoid Valve — A valve in which the inlet port is closed when the solenoid coil is de-energized and open when the solenoid coil is energized.

Outlet Port — Port where the fluid or gas leaves the valve.

Pilot Operated — A solenoid valve that operates on a minimum and maximum pressure differential and uses a small orifice to control the opening and closing of a piston or diaphragm.

Port — An opening or passageway for the inlet or outlet of fluid or gas in a valve.

Pressure, Differential (Drop) or Delta-P (ΔP) — The difference in pressure measured between two given points.

Solenoid — A cylindrical coil of insulated wire in which an axial magnetic field is established by the flow of electric current. This flow causes the plunger to move along the coil axis.

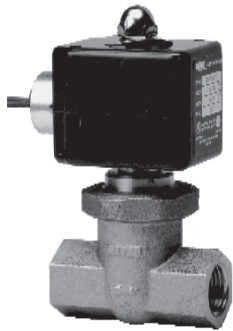
Solenoid Valve — A valve that is opened or closed by an Electromagnetic. This action is achieved by the movement of a magnetic plunger to seal off or open a port when voltage is applied.

Two-Way Normally Closed Valve — A valve in which the orifice is closed in the de-energized position and no flow can exist between the inlet and outlet ports.

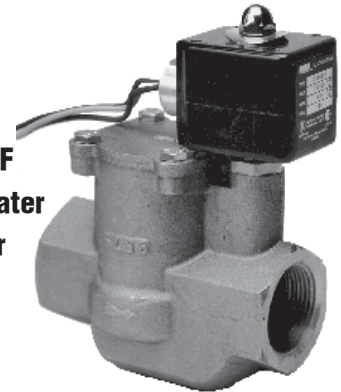
Two-Way Valve — A valve that has a single orifice which may be normally open or normally closed.

Series 2110 - Water
Series 3108 - Water

- 2-way Normally Closed
- Pilot-Operated
- Piston-Type
- Bronze Construction
- UL Listed
- Variety of Voltages
- Maximum Temperature 195° F
- Pressure Range 5 -150 psi water
- Pressure Range 5 -100 psi air
- Horizontal Installation



**Series 2110
 Electroflo**
 3/8", 1/2", & 3/4" Sizes



**Series 2110
 Electroflo**
 1", 1 1/4", 1 1/2", & 2" Sizes



**Series 3108
 Duo-Electroflo**
 1/2" Size

SPECIAL FEATURES

Proven design.
 Many years of field experience have made these valves the standard in the industry.

Wide range of operating pressures & temperatures.
 5 psi to 150 psi pressure and temperatures to 195°F affords broad application and tremendous flexibility.

Highest quality.
 Long life bronze castings and waterproof coils insure performance consistency for a long life.

Rugged reliability saves money.
 Because of low incidence of down time and maintenance.

Maximum flow.
 Minimum pressure drop internal design of this pilot operated piston-type valve assures exceptional flow performance.

Two way—normally closed.
 Fail safe positive valve closing in the event of power failure prevents flooding or overflowing.

TYPICAL APPLICATIONS

- Commercial Laundry Equipment and Facilities
- Commercial Dishwashers, Bottlewashers, Pot/Pan Washers
- Car & Truck Wash Facilities
- Irrigation Systems
- Humidification
- Water Treatment
- Poultry Incubators/Watering Equipment
- Industrial Maintenance, Repair, and Operation

TO ORDER ELECTROFLO

Specify: catalog number, voltage and size

Series 2110-Water			
Catalog Number	Voltage		
2110 - 6721	12V DC		
2110 - 6821	24V DC		
2110 - 6421	24V AC 50/60HZ		
2110 - 6021	120V 60HZ	110V	50HZ
2110 - 6521	208V 60HZ		
2110 - 6121	240V 60HZ	220V	50HZ

Note: All Voltages available in all sizes
 Sizes Available $\frac{3}{8}$ " , $\frac{1}{2}$ " , $\frac{3}{4}$ " , 1" , $1\frac{1}{4}$ " , $1\frac{1}{2}$ " and 2"

To Order: Specify Catalog Number & Size

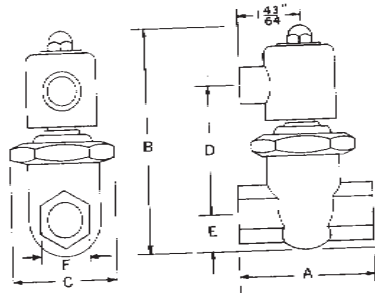
Example: Electroflo Valve with 24 volt Solenoid, Pipe Size $\frac{3}{8}$ " , Medium is water.

Order: 2110 - 6421 $\frac{3}{8}$ "

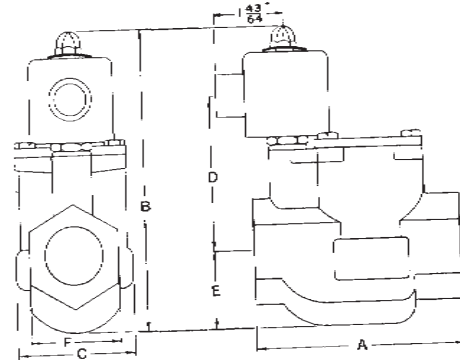
TECHNICAL DATA

Series 2110

3/8", 1/2", & 3/4"



1", 1 1/4", 1 1/2", & 2"

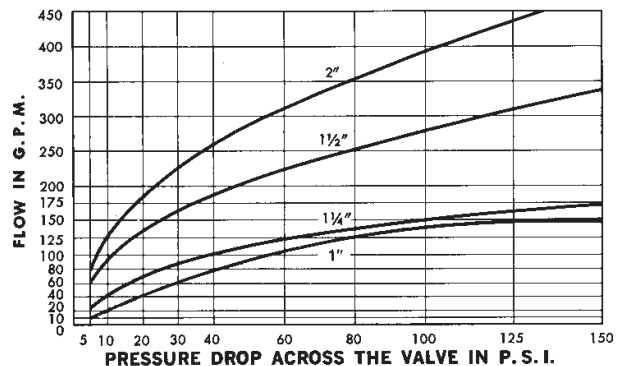
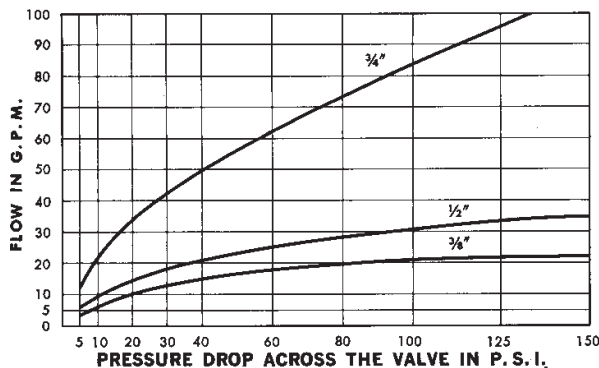


2110: For fluids compatible with bronze, 430 Stainless Steel, Ethylene Propylene, and Teflon

PIPE SIZE (VALVE SIZE)							
Dimension	3/8"	1/2"	3/4"	1" & 1 1/4"	1 1/2"	2"	
A	2 ¹⁷ / ₃₂ "	2 ²¹ / ₃₂ "	3 ³ / ₄ "	4 ¹³ / ₁₆ "	5 ⁷ / ₁₆ "	6 ¹ / ₃₂ "	
B	5 ¹ / ₁₆ "	5 ¹ / ₁₆ "	6 ¹ / ₃₂ "	6 ³¹ / ₃₂ "	7 ³¹ / ₃₂ "	8 ³ / ₁₆ "	
C	1 ⁵⁵ / ₆₄ "	1 ⁵⁵ / ₆₄ "	2 ¹³ / ₁₆ "	2 ³ / ₄ "	3 ¹ / ₈ "	3 ³ / ₄ "	
D	2 ²⁷ / ₃₂ "	2 ²⁷ / ₃₂ "	3 ¹ / ₂ "	3 ⁵ / ₈ "	4 ⁵ / ₁₆ "	4 ²¹ / ₃₂ "	
E	1 ¹ / ₁₆ "	1 ¹ / ₁₆ "	1"	1 ³ / ₄ "	1 ¹ / ₂ "	1 ¹⁵ / ₁₆ "	
F	1 ⁵ / ₁₆ "	1 ³ / ₃₂ "	1 ³ / ₈ "	2 ¹ / ₁₆ "	2 ³ / ₈ "	2 ⁷ / ₈ "	

Pipe Size	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Cv Flow Factor	2.3	3.3	7.5	9.8	15	28	39

FLOW CAPACITY CHARTS



- * Electroflo requires minimum 5 psi pressure differential for reliable operation.
- * Must be installed in horizontal piping with solenoid in vertical position.
- * Valve should be sized to flow requirement not pipe size.
- Average closing time: 3/8" — 3/4" 1-3 sec., 1" — 2" 2-5 sec.
- * Solenoid Data on following page (1-6).



ELECTROFLO — Solenoid Valves

Solenoid Electrical Data	Volts	Catalog Number	Max. Watts. Holding	Amps Inrush	Amps Holding	Duty
Coil with 1/2" NPT Conduit outlet and 30" lead wires. Fits all valve sizes.	12 V. DC	88919	24		2.00	Continuous
	24 V. DC	88920	24		1.00	Continuous
	24 V. AC	88904	14	1.85	1.07	Continuous
	120 V. AC	88905	19	0.55	0.32	Continuous
	208 V. AC	88906	18	0.31	0.18	Continuous
	240 V. AC	88907	20	0.30	0.17	Continuous

Consult factory for other voltages.

Coils carry a Nema 4 rating.

PARTS LIST

Series 2110

3/8" • 1/2" • 3/4" • 1" • 1 1/4" • 1 1/2" • 2"

1-6

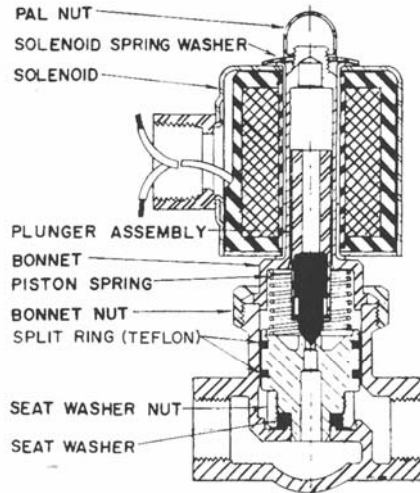
Series 2110					
	3/8" & 1/2"	3/4"	1" & 1 1/4"	1 1/2"	2"
*Plunger Assembly	7319503	→	→	→	→
Bonnet	83021	73026	83192	→	→
*Bonnet Gasket			82224	→	→
Bonnet Nut	10011252	76028			
Bolted Cap			76744	7674701	7668801
**O" Ring			87407	88606	88607
Cap Bolt			84552	88234	85459
*Pal Nut	83069	→	→	→	→
*Solenoid Spring Washer	83600	→	→	→	→
*Piston Spring	82486	82488	82486	→	→
Piston Assembly	*7735501	*77300	7643101	7646901	7647001
Teflon Split Piston Ring (2 Req'd)	8502901	8503002	*8503102	*86549	*86550
Piston Seat Washer	8222301	8249801	*84048	*84571	*84518
Piston Seat Washer Nut	82222	86030	76745	76750	7673801
*Repair Kit - Series 2110	11569	11570	11571	11572	11573

* = Parts in Repair Kit.

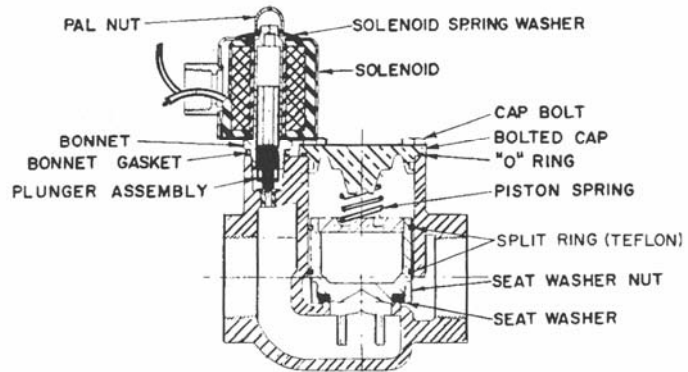
NOTE: Arrow denotes same Catalog Number.



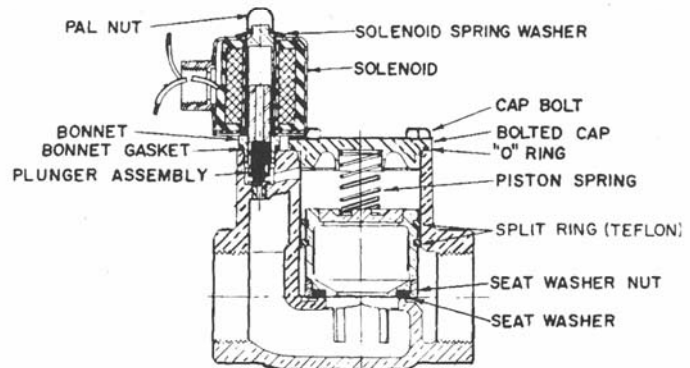
3/8", 1/2" & 3/4"
Electro - Flo



1" & 1-1/4"
Electro - Flo

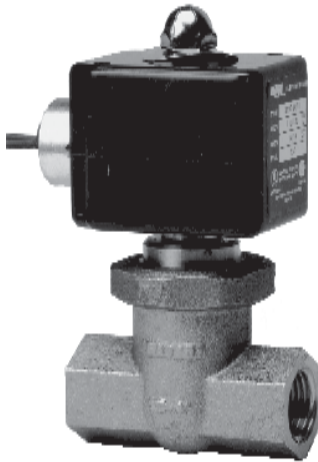


1-1/2" & 2"
Electro - Flo

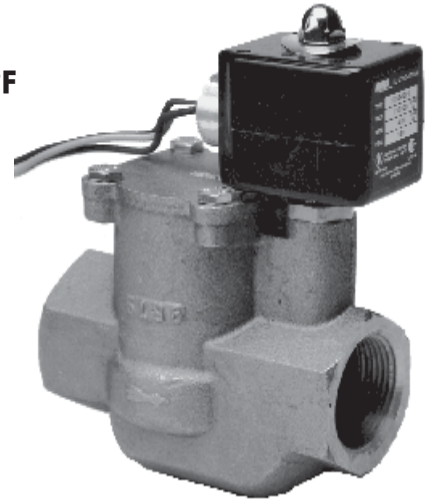


Series 2192 — Solenoid Valves

- 2-Way Normally Closed
- Pilot Operated
- Piston Type
- UL Listed
- Bronze Construction
- Maximum Temperature 365°F
- Pressure Range 5 -150 psi
- Horizontal Installation
- Class H requirements



Series 2192
3/8", 1/2", 3/4" Sizes



Series 2192
1", 1 1/4", 1 1/2", & 2" Sizes

SPECIAL FEATURES**Maximum flow**

Minimum Pressure Drop. Internal design of this pilot operated, piston type valve assures exceptional flow performance.

Reliable operation

A proven design with millions of cycles in operation are evidence of the reliability of the Electro-Steam.

Two-way Normally Closed

Line pressure assures positive valve closing and maintains shutoff.

Long life means real savings

Lead wires & coil have high temperature insulation. Internal components are of materials which provide low friction and minimum wear.

Design simplicity

Electro-Steam has only two moving parts which means consistent performance and low maintenance.

Easy access to all components

Removal of the bonnet and/or cap provides easy access to the two internal components making maintenance, when necessary, easy and convenient.

TYPICAL APPLICATIONS

- Automatic and Remote Control of Steam
- Commercial Laundry Equipment & Facilities
- Commercial Dishwashers
- Bottlewashers
- Pot & Pan Washers
- Industrial Maintenance Repair and Operation
- Boiler Blow Down

TO ORDER ELECTRO-STEAM

1-10

Series 2192-Steam				
Catalog Number	Voltage			
2192 - 6721	12V DC			
2192 - 6821	24V DC			
2192 - 6421	24V AC 50/60HZ			
2192 - 6021	120V AC 60HZ	110V	50HZ	
2192 - 6521	208V AC 60HZ			
2192 - 6121	240V AC 60HZ	220V	50HZ	
Note: All Voltages available in all sizes Sizes Available $\frac{3}{8}$ " , $\frac{1}{2}$ " , $\frac{3}{4}$ " , 1" , $1\frac{1}{4}$ " , $1\frac{1}{2}$ " and 2"				

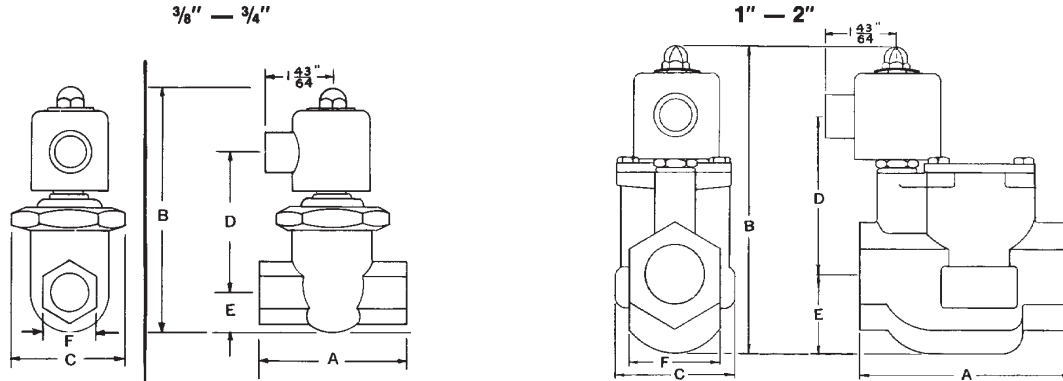
To Order: Specify Catalog Number & Size

Example: Electrosteam Valve with 120 volt AC Solenoid, Pipe Size $\frac{3}{4}$ " , Medium is steam.

Order: 2192 - 6021 $\frac{3}{8}$ "

TECHNICAL DATA

Dimensions

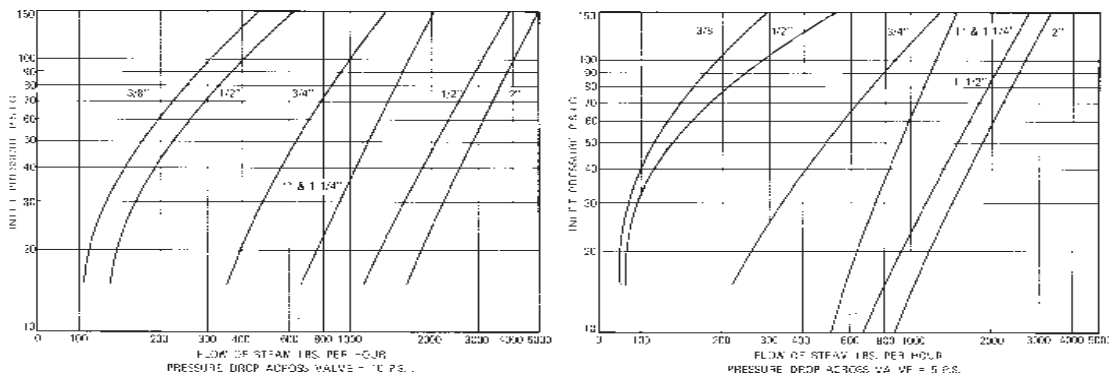


Dimensions	Pipe Size (Valve Size)					
	3/8"	1/2"	3/4"	1" & 1 1/4"	1 1/2"	2"
A	2 17/32"	2 21/32"	3 3/4"	4 13/16"	5 7/16"	6 1/32"
B	5 1/16"	5 1/16"	6 1/32"	6 31/32"	7 11/32"	8 3/16"
C	1 31/32"	1 31/32"	2 13/16"	2 3/4"	3 1/8"	3 3/4"
D	2 27/32"	2 27/32"	3 1/2"	3 5/8"	4 5/16"	4 21/32"
E	1 1/16"	1 1/16"	1"	1 3/4"	1 1/2"	1 15/16"
F	1 5/16"	1 3/32"	1 3/8"	2 1/16"	2 3/8"	2 7/8"

PIPE SIZE	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Cv FLOW FACTOR	2.3	3.3	7.5	9.8	15	28	39

NOTE: Cv Factor - The quantity of 60°F water, expressed in gallons per minute which will flow through a valve with a one psi pressure drop.

FLOW CAPACITY CHARTS



- * Electrosteam requires minimum 5 psi pressure differential for reliable operation.
- * Must be installed in horizontal piping with solenoid in vertical position.
- * Valve should be sized to flow requirement not pipe size.
- Average closing time: 3/8" — 3/4" 1-3 sec., 1" — 2" 2-5 sec.



ELECTRO-STEAM — Piston/Pilot Type

Series 2192 Valve — Class H — 5 to 150 psi — 365° F.

Solenoid Electrical Data	Volts	Catalog Number	Max. Watts. Holding	Amps Inrush	Amps Holding	Duty
Coil with 1/2" NPT Conduit outlet and 30" lead wires. Fits all valve sizes.	12 V. DC	88919	24		2	Continuous
	24 V. DC	88920	24		1	Continuous
	24 V. AC	88922	12	1.68	0.97	Continuous
	120 V. AC	88923	14	0.68	0.22	Continuous
	208 V. AC	88924	12	0.19	0.11	Continuous
	240 V. AC	88925	12	0.17	0.1	Continuous

Consult factory for other voltages.
Coils carry a Nema 4 rating.

PARTS LIST

Electro-Steam Valves — Series 2192

3/8" • 1/2" • 3/4" • 1" • 1 1/4" • 1 1/2" • 2"

Series 2192					
	3/8" & 1/2"	3/4"	1" & 1 1/4"	1 1/2"	2"
*Plunger Assembly	78600	→	→	→	→
Bonnet	83021	73026	83192	→	→
*Bonnet Gasket		→	88980	→	→
Bonnet Nut	10011252	76028			
Bolted Cap			76744	7674701	7668801
**O" Ring			88983	88981	88982
Cap Bolt			84552	88234	85459
*Pal Nut	83069	→	→	→	→
*Solenoid Spring Washer	83600	→	→	→	→
*Piston Spring	82486	82488	82486		
Piston Assembly	*76332	*77798	7643104	7646904	7647004
Teflon Split Piston Ring (2 Req'd)	86334	86331	*86548	*86549	*86550
Piston Seat Washer	85553	85567	*86155	*86473	*86474
Piston Seat Washer Nut	82222	86030	76745	76750	7673801

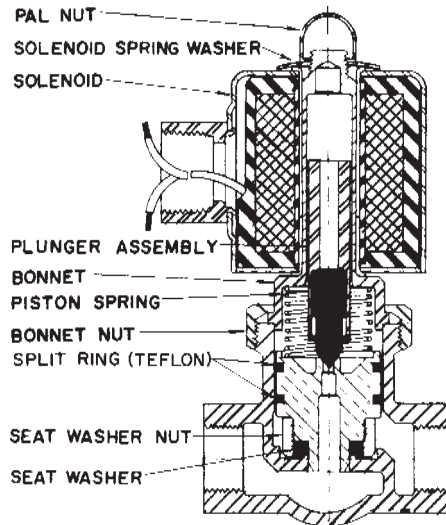
*Recommended Spare Parts

*Repair Kit	12442	12443	12444	12445	12446
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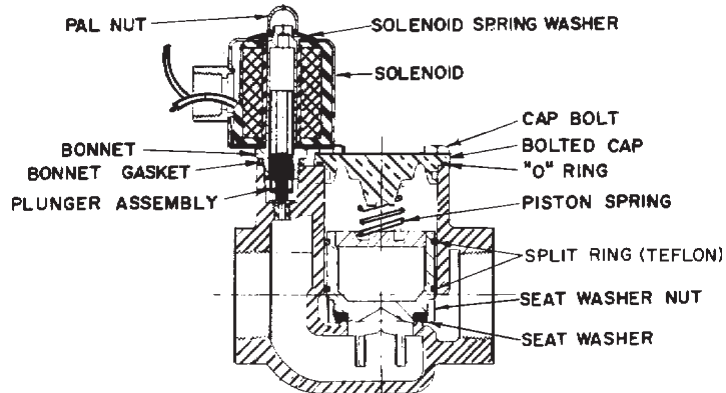
NOTE: Arrow denotes same Catalog Number.

PARTS IDENTIFICATION

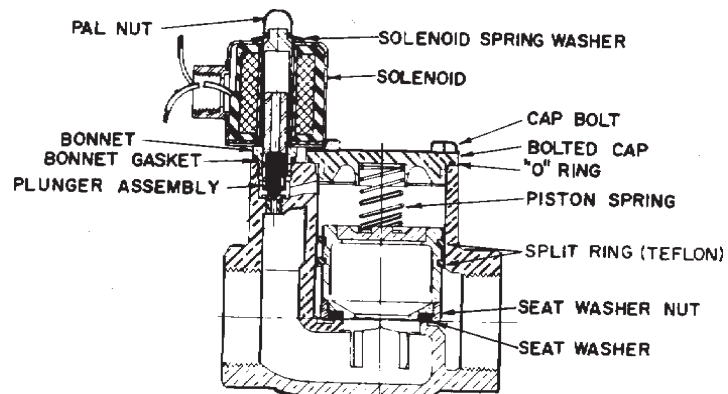
3/8", 1/2", 3/4"
 Series 2192
 Electro-Steam Valve



1", 1 1/4"
 Series 2192
 Electro-Steam Valve



1 1/2", 2"
 Series 2192
 Electro-Steam Valve





Sizes : 2, 2-1/2" x 3", 3"

Series 3125

- 2-Way Normally Closed
- Pilot Operated
- Diaphragm Type
- Bronze Construction
- Wide Variety of Voltages
- Maximum Temperature - 190° F
- Pressure Range 5-150 psi
- Horizontal or Vertical Installation

SPECIAL FEATURES:

Large fill requirements accomplish quickly.

Full ported flow-way and large body chamber gives maximum flow with minimum pressure drop

Reliable Operation

Design feature of the valve closing with the pressure provides positive closing and prevents leakage. Will not jam on small particles such as sand.

Fail safe features

Valve automatically closes should electricity fail or flexing portion of the diaphragm is ruptured

Long life means real savings

Valve design is frost proof and the valve cap and body are of durable cast bronze. All materials are selected for maximum service life.

Versatile installation

Valve can be installed in both vertical and horizontal piping. The bleed screw feature offers the convenience of manual (non-electrical) operation during installation

Easy access to internal components

Entire valve cap and solenoid can be removed as a unit to provide easy access to internal components. Correct assembly is assured by use of an asymmetrical bolt pattern.



Marfaid - Solenoid Valves

TYPICAL APPLICATIONS:

Commercial Laundry Equipment and Facilities

Dishwashers

Bottlewashers

Pot & Pan Washers

Car & Truck Wash Facilities

Irrigation

Humidification

Poultry Incubators / Watering Equipment

Industrial Maintenance, Repair and Operation

Water Reclamation

Fountain Displays

1-16

TO ORDER MARFAID:

CATALOG NUMBER	VOLTAGE
3125-6421	24v / AC / 60 HZ
3125-6021	120v / AC / 60 HZ
3125-6521	208v / AC / 60 HZ
3125-6121	240v / AC / 60 HZ

Note: All voltages available in all sizes

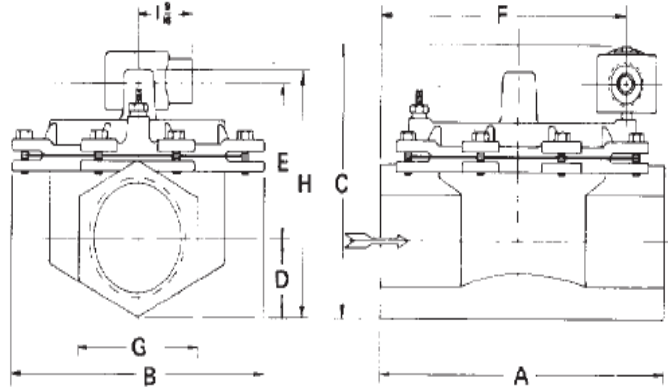
To order: Specify Catalog Number & Size

Example: Marfaid Valve with 120 volt AC solenoid, Pipe Size 1-1/2", Medium is water.

Order: 3125-6021-1-1/2"

DIMENSIONAL DATA:

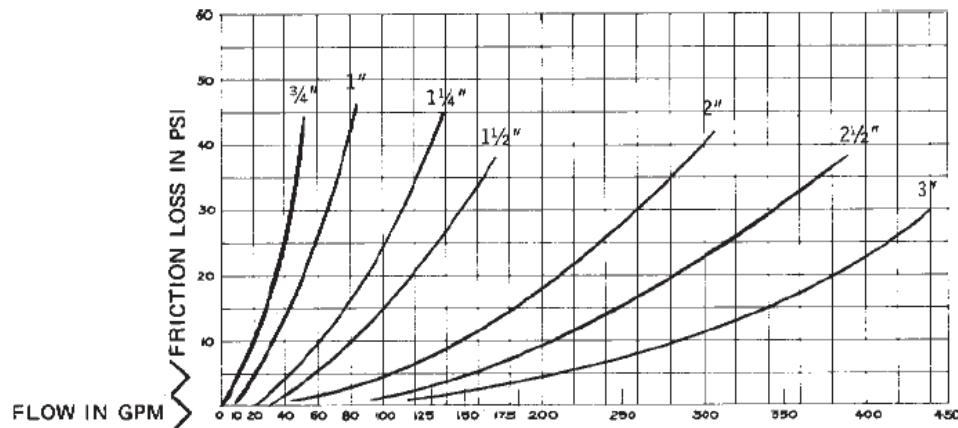
Dimension	Pipe Valve (Valve Size Inches)		
A	6-1/2	9-3/4	9-3/4
B	5	7-7/8	7-7/8
C	6-1/8	7-13/16	7-13/16
D	1-11/16	2-3/8	2-3/8
E	3-1/2	4-7/16	4-7/16
F	5-5/16	7-13/16	7-13/16
G	2-7/8	4-1/8	4-1/8
H	5-9/16	7-1/4	7-1/4



FLOW CAPACITY CHART:

The average friction loss or pressure drop and GPM flow rates shown apply to 3125 valves.

- Valves require a minimum 5 psi pressure drop for reliable operation
- Valves should be sized according to flow requirements (G.P.M.), not pipe size

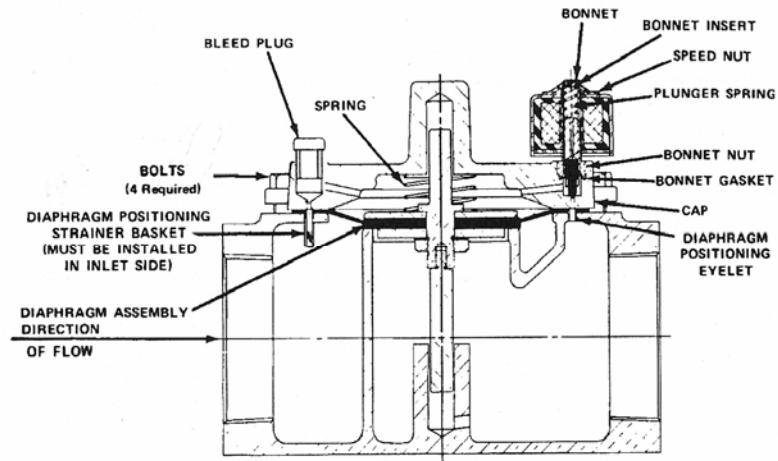


Note: Cv Factor - The quantity of 60° F water, expressed in gallons per minute which will flow through a valve with a one psi pressure drop.

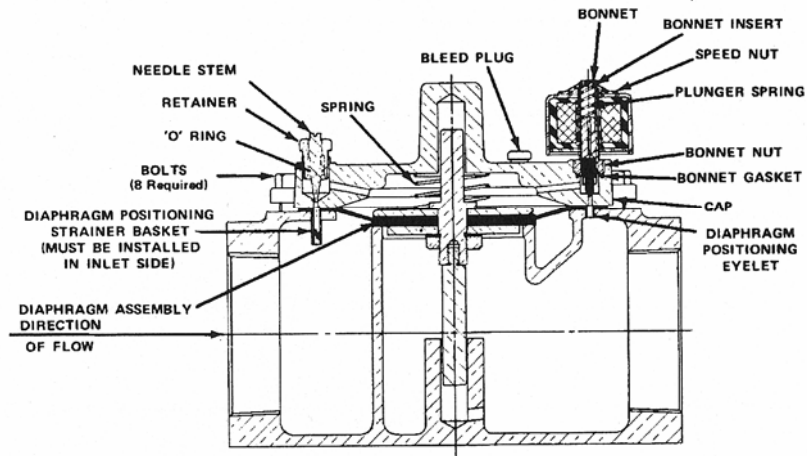
Recommended for water, and liquids compatible with bronze 302, 305 and 430 Stainless Steel and Ethylene Propylene.

PARTS IDENTIFICATION:

2" with bleed screw

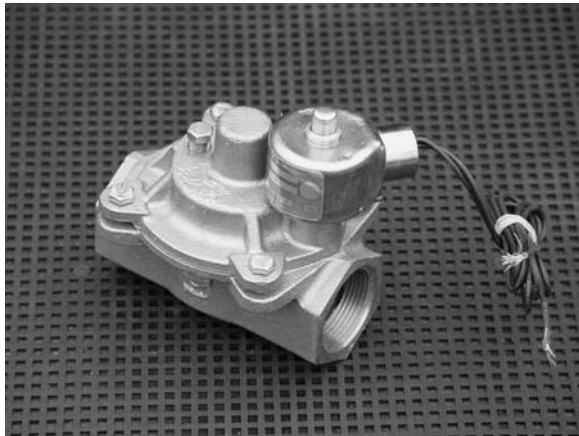


2-1/2" x 3", 3"
with bleed screw





NOTES



Sizes : 2, 2-1/2" x 3", 3"

Series 3110-3112

- Diaphragm Type
- Manual Operation with Bleed Screw
- Able to test without electrical power (Valuable during installation)
- Flow Adjustment
- Maximum Temperature - 190° F
- Pressure Range 5-150 psi
- Horizontal or Vertical Installation

SPECIAL FEATURES:

Maximum Flow-Minimum Pressure Drop.

Full ported flow-way and large body chamber gives maximum flow with minimum pressure drop

Reliable Operation

Design feature of the valve closing with the pressure provides positive closing and prevents leakage. Will not jam on small particles such as sand.

Fail safe features

Valve automatically closes should electricity fail or flexing portion of the diaphragm is ruptured

Long life means real savings

Materials in the Marfaid are designed to provide long dependable service which means real value because of its reliability and consistent performance

Faster System Balancing

Series 3112 Marfaid has a flow adjustment to speed up effective system and zone balancing. This feature also makes it possible to adjust flow at each Marfaid to accommodate later changes in a zone or a system.



Marfaid - Solenoid Valves

TYPICAL APPLICATIONS:

Turf & Irrigation

Industrial Maintenance & Repair

Humidification

Fountain Display

TO ORDER MARFAID:

CATALOG NUMBER

VOLTAGE

3110-6421

24v / AC / 60 HZ

3110-6021

120v / AC / 60 HZ

3112-6421

24v / AC / 60 HZ

3112-6021

120v / AC / 60 HZ

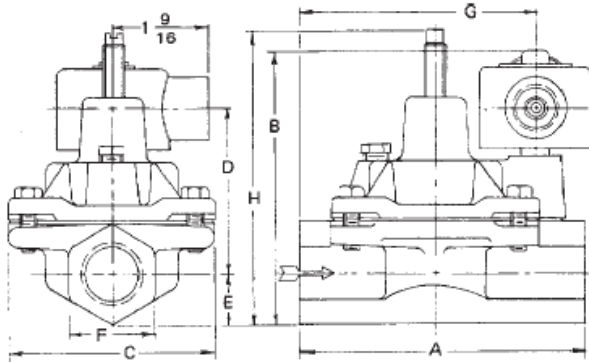
Note: All voltages available in all sizes

To order: Specify Catalog Number & Size

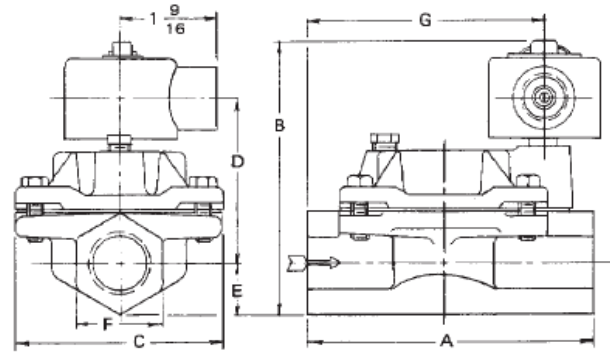
Example: Marfaid Valve with 120 volt AC solenoid, Pipe Size 1-1/2", with flow adjustment: Order: 3112-6021-1-1/2"

TECHNICAL DATA:

Series 3112 - with Bleed Screw and Flow Adjustment



Series 3110 - with Bleed Screw



Dimension	Pipe Valve (Valve Size Inches)		
	2	2-1/2 x 3*	3
A	6-1/2	9-3/4	9-3/4
B	6-1/8	7-3/4	7-3/4
C	5	7-7/8	7-7/8
D	3-1/2	4-7/16	4-7/16
E	1-11/16	2-3/8	2-3/8
F	2-7/8	4-1/8	4-1/8
G	5-5/16	7-13/16	7-13/16
H** (MAX)	7-3/8	9	9

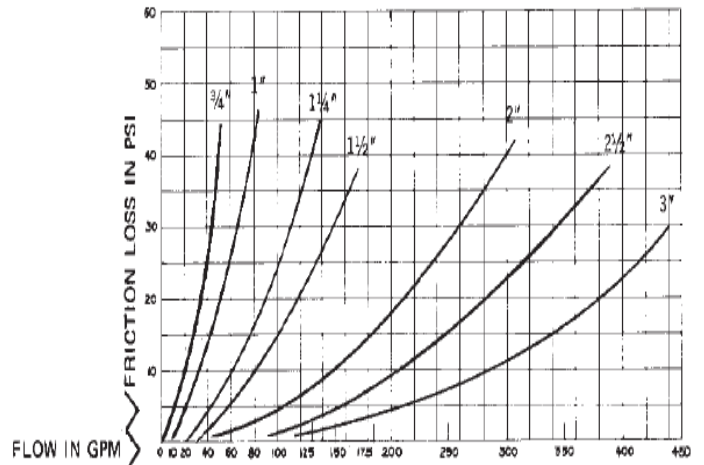
*2-1/2 x 3" sizes not available in 3110 Series.

** Applies only to 3112 Series.

Note: 1/2" NPT conduit connection can be turned 360° on the 3110 Series and 270° on the 3112 Series.

The average friction loss or pressure drop and gpm flow rates shown apply to the 3110 and 3112 Series Valves with the Flow Adjustment full open on 3112 Series Valves.

For weights and packaging refer to price list.





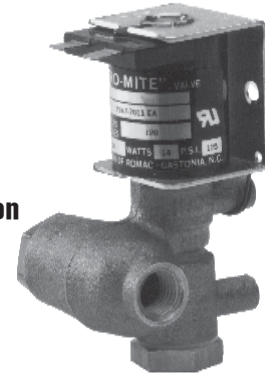
NOTES

Series 2150 - Solenoid Valve

- 1/4" Solenoid Valve
- Direct Acting
- Integral Strainer
- Optional Flow Control
- UL Listed
- Maximum Temperature 140° F
- Pressure Range 0 -150 psi
- Horizontal or Vertical Installation



Conduit



Appliance

SPECIAL FEATURES

Trouble free performance

Electro-Mite is designed for continuous or intermittent operation with minimal down time or maintenance.

Constant flow rate

With a variable pressure range the Electro-Mite with the innovative Hays Flow Control will deliver a constant flow rate.

Mount in any position

Gives flexibility to placement so that valve may be positioned to the task.

Highest quality . . . long life

Using the highest quality in terms of component materials, and production technology each Electro-Mite will provide outstanding performance for a long period.

Wide range of voltages

Hays Electro-Mite gives a large selection of voltages to achieve the desired results.

TYPICAL APPLICATIONS

- Poultry Equipment
- Sterilizers
- Heating Systems
- Washing Machines
- Car Wash Equipment
- Spraying Equipment
- Laboratory Equipment
- Humidification

TO ORDER ELECTRO-MITE

Specify: model, coil type, voltage, & flow rate

1-28

Model Series #	Strainer	Flow Control	Mounting Bosses	Elastomers
2154	Yes	No	No	Buna N and Ethylene Propylene
2157	Yes	Yes	Yes	Buna N and Ethylene Propylene
2167	Yes	Yes	Yes	Viton and Ethylene Propylene

		Flow Rates									
Coil Type	Voltage	² / ₁₀	¹ / ₄	³ / ₁₀	⁴ / ₁₀	¹ / ₂	⁶ / ₁₀	⁷ / ₁₀	³ / ₄	1	1 ¹ / ₄
Conduit	24V	3411	3421	3431	3441	3451	3461	3471	3481	3412	3422
	120V	3011	3021	3031	3041	3051	3061	3071	3081	3012	3022
	208V	3511	3521	3531	3541	3551	3561	3571	3581	3512	3522
	240V	3111	3121	3131	3141	3151	3161	3171	3181	3112	3122
Appliance	24V	8411	8421	8431	8441	8451	8461	8471	8481	8412	8422
	120V	8011	8021	8031	8041	8051	8061	8071	8081	8012	8022
	208V	8511	8521	8531	8541	8551	8561	8571	8581	8512	8522
	240V	8111	8121	8131	8141	8151	8161	8171	8181	8112	8122

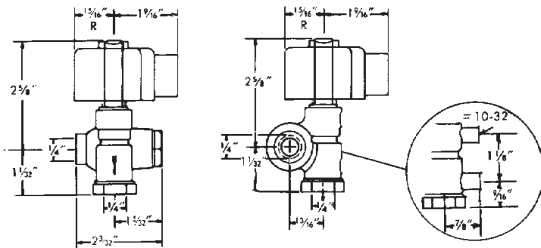
Example: ¹/₄" Electro-Mite Valve with Flow Control, with mounting bosses. 120 volt conduit coil and flow rate ¹/₂ GPM.

Order: 2157 - 3051

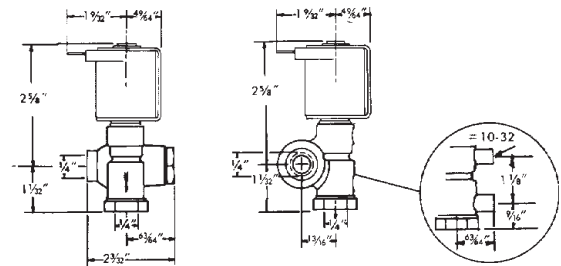
TECHNICAL DATA

Dimensions

Conduit



Appliance



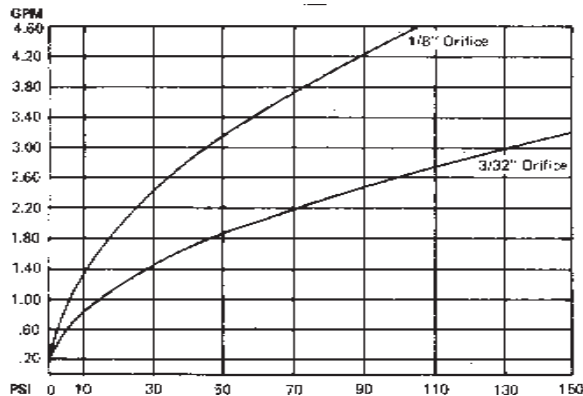
Materials of construction for wetted parts:

2154: Bronze, 360 Brass, 302, 305 and 430 F Stainless Steel, Inconel, Teflon, Ethylene Propylene and Buna N.

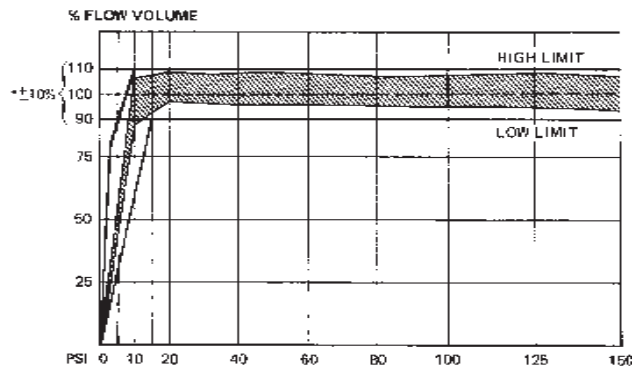
2157 and 2167: Bronze, 360 Brass, 302, 305 and 430 F Stainless Steel, Inconel, Teflon, Ethylene Propylene and Viton.

FLOW CAPACITY CHARTS

Flow Data with Strainer Only



Typical Flow Data with Strainer and Flow Control



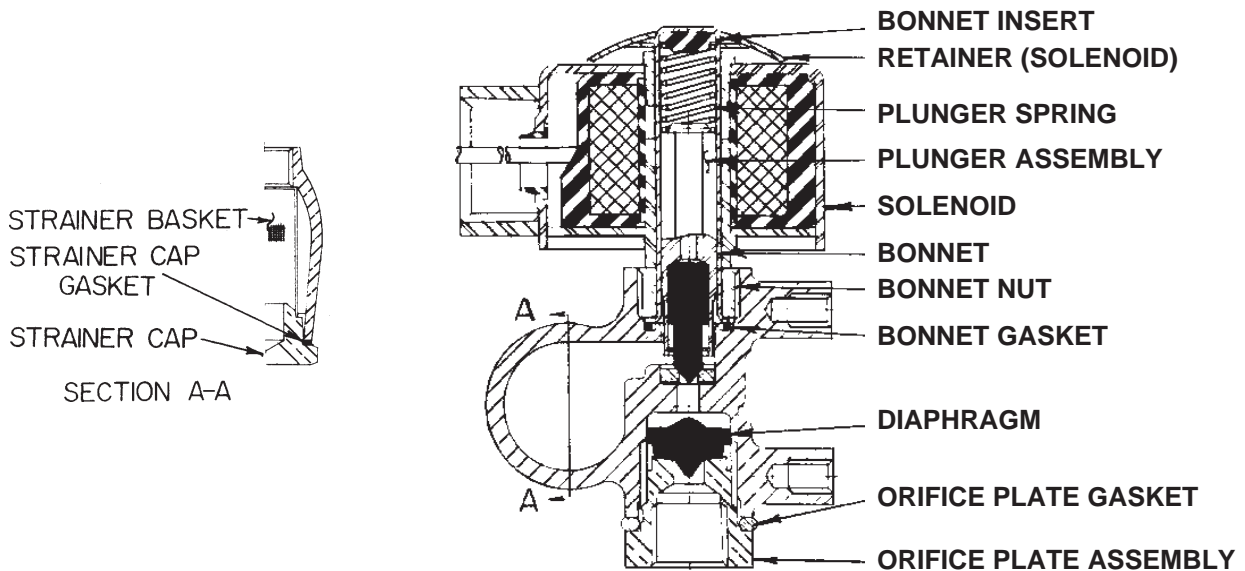
Cv Flow Factor .26 for 2154.

* **Electro-Mite Valves with Strainer and Flow Control.** Direct acting valve with 1/4" F.I.P. inlet & outlet. Valves will deliver flow rates as shown:

GPM (Range)	Pressure Range	Tolerance	Temperature
2/10 - 3/4 GPM	15 - 150 psi	± 10%	180° F
1 — 1 1/4 GPM	0 - 100 psi	± 10%	180° F
Flow Rates (GPM) 2/10, 1/4, 3/10, 4/10, 1/2, 6/10, 7/10, 3/4, 1, 1 1/4			

Solenoid Data	Coil Type	Voltage	Catalog Number	Watts Holding	Volts/Amps. In Rush	Volts/Amps. Holding	Duty
Coils are Epoxy molded & waterproof	Conduit	24V. AC 60 Hz.	74604	14	62	31	Continuous
		120V. AC 60 Hz.	74265	14	62	31	Continuous
		208V. AC 60 Hz.	74268	14	62	31	Continuous
		240V. AC 60 Hz.	74266	14	62	31	Continuous
	Appliance	24V. AC 60 Hz.	10010963	14	80	40	Appliance
		120V. AC 60 Hz.	10010964	14	80	40	Appliance
		208V. AC 60 Hz.	87861	14	80	40	Appliance
		240V. AC 60 Hz.	10010965	14	80	40	Appliance

PARTS LIST



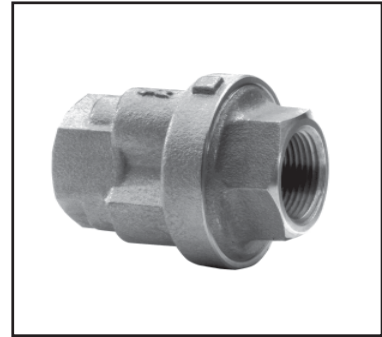
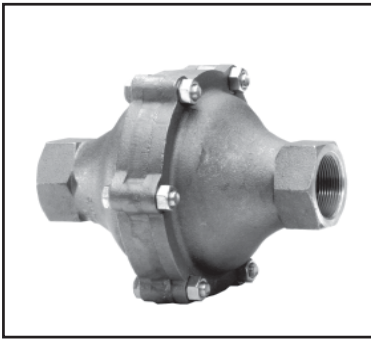
1-30

	Series 2154, 2157 For Water and Air	Series 2167 For Oils and Solvents
Part Name	Catalog No.	Catalog No.
Plunger Assembly	*7419706	*7475702
Plunger Spring	*84198	*84198
Bonnet with Bonnet Insert	*7419203	*7419203
Bonnet Nut	*84194	*84194
Bonnet Gasket	*84195	*84818
Retainer	*10010958	*10010958
Strainer Cap	10011930	10011930
Strainer Cap Gasket (O-Ring)	86913	88235
Strainer Basket (40 x 40 Mesh)	82950	82950
Strainer Basket (80 x 80 Mesh)	87832	87832
Diaphragm "C"	85685	84666
Orifice Plate Gasket	10012866	10012866
Spanner Nut Bonnet	*84539	*84539
Orifice Plate Assembly	Consult Factory	Consult Factory
* Repair Kit	11574	11574



NOTES





MESURFLO 2300

2 - 3



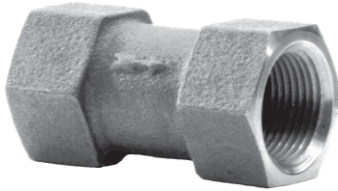
2-1

HAYS FLUID CONTROLS

114 Eason Road / P.O. Box 580 Dallas, NC 28034-0580
PHONE: (704) 922-9565 • TOLL FREE 1-800-354-4297 • FAX (704) 922-9595

Series 2305 & Series 2307

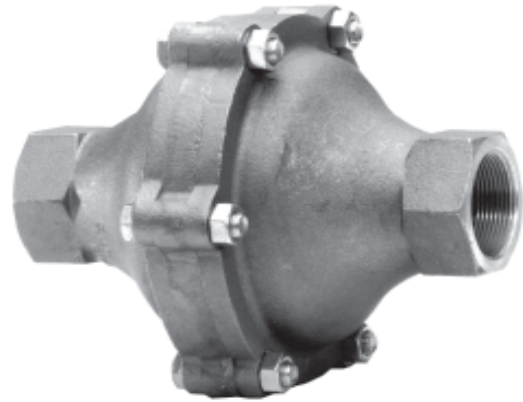
- Constant flow regardless of pressure fluctuation
- Quiet operation
- Pressure Differential Range 15 - 150 psid
- Temperature Range 32° to 160° F
- Accuracy $\pm 10\%$
- Suitable for Most Coolants
- Consult factory for differential pressures lower than 15 psid



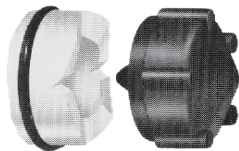
Series 2305 - 1/4" 3/8", 1/2", 3/4" IPS



Series 2307 - 3/4", 1" IPS



Series 2307 - 1 1/4", 1 1/2" IPS



Flow Control Assembly

SPECIAL FEATURES

Unique Hays design

Patented Flow Control Assembly provides a constant flow rate on a consistent basis.

Flexing diaphragm is self-cleaning

Maintains clear orifice by flexing action of patented diaphragm assembly which significantly reduces clogging.

Long-life means real savings

Mesurflo Controls will operate efficiently for many years which means little or no down time and loss of productivity.

Diaphragm area is proportioned to pressure

Each Mesurflo is designed specifically to deliver the prescribed flow rate.

Mesurflo can be used for large flow rates.

Mesurflo controls are placed parallel in a single housing providing the specified flow rate even on large flow rates.



TYPICAL APPLICATIONS

- Irrigation and Crop Dusting
- Swimming Pool Filters
- Industrial Equipment Cooling Systems
- Electronic Power Tube Cooling Systems
- Welding Equipment Cooling Systems
- Pump, Compressor, & Vacuum Equipment Cooling Systems
- Industrial Time Fill & Meter Equipment
- Tankless Heater & Heat Transfer Systems
- Water Stream & Water Spray Control
- Film Process & Rinse Systems
- Industrial & Medical Stills
- Water Conservation Applications
- Water Table Drawdown
- Water Source Heat Pumps
- Pump & Dump Systems

TO ORDER MESURFLO

Specify: catalog number and pipe size

2-4

CATALOG NUMBERS				
GPM	1/4" I.P.S.	3/8" I.P.S.	1/2" I.P.S.	3/4" I.P.S.
2/10	2305-0011			
1/4	2305-1011			
3/10	2305-0031	2305-0031		
4/10	2305-0041	2305-0041		
1/2	2305-1021	2305-1021	2305-1021	
6/10	2305-0061	2305-0061	2305-1061	
3/4	2305-1031	2305-1031	2305-1031	
1	2305-1041	2305-1041	2305-1041	2305-1041
1 1/4	2305-1051	2305-1051	2305-1051	2305-1051
1 1/2	2305-1061	2305-1061	2305-1061	2305-1061
1 3/4	2305-1071	2305-1071	2305-1071	2305-1071
2	2305-1081	2305-1081	2305-1081	2305-1081
2 1/2			2305-1091	2305-1091
3			2305-1101	2305-1101
3 1/2			2305-1111	2305-1111
4			2305-1121	2305-1121
4 1/2				2305-1131
5				2305-1141
6				2305-1151
7				2305-1161
8				2305-1171
9				2305-1181
10				2305-1191

CATALOG NUMBERS						
GPM	3/4" I.P.S.	1" I.P.S.	GPM	1-1/4" I.P.S.	GPM	1-1/2" I.P.S.
8	2307-1171	2307-1171	18	2307-1271	50	2307-1451
9	2307-1811	2307-1181	19	2307-1281	55	2307-1461
10	2307-1191	2307-1191	20	2307-1291	60	2307-1471
11	2307-1201	2307-1201	21	2307-1301	65	2307-1481
12	2307-1211	2307-1211	22	2307-1311	70	2307-1491
13	2307-1221	2307-1221	24	2307-1321	75	2307-1501
14	2307-1231	2307-1231	26	2307-1331	80	2307-1511
15	2307-1241	2307-1241	28	2307-1341	85	2307-1521
16	2307-1251	2307-1251	30	2307-1351	90	2307-1531
17	2307-1261	2307-1261	32	2307-1361	95	2307-1541
18	2307-1271	2307-1271	34	2307-1371	100	2307-1551
19		2307-1281	36	2307-1381		
20		2307-1291	38	2307-1391		
21		2307-1301	40	2307-1401		
22		2307-1311	42	2307-1411		
			44	2307-1421		
			46	2307-1431		
			48	2307-1441		

Example: 3/8 Mesurflo with 6/10 GPM
 Order: 2305-0061 3/8"

NOTE: Consult factory for fluids other than water.

TECHNICAL DATA for 2300 series only

How the Mesurflo Controls the Flow

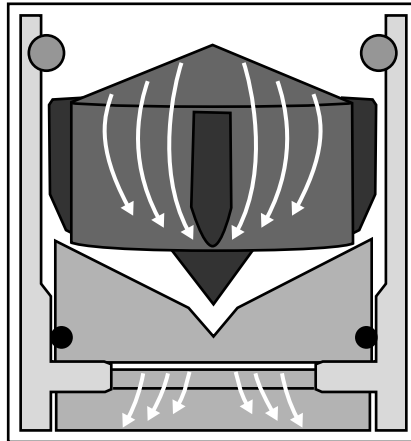


Figure 1 PSID-0
Diaphragm-original shape

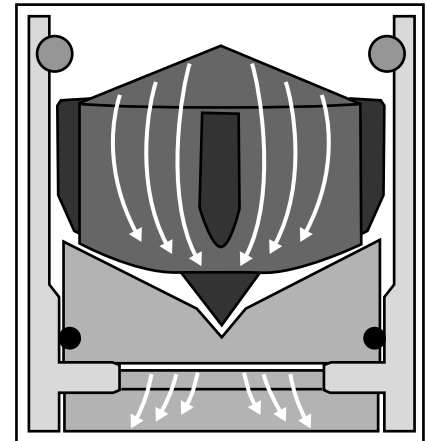


Figure 2 PSID-15
Diaphragm-starting to flex
into contoured orifice plate

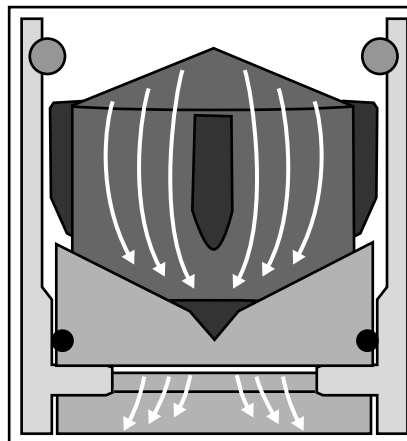
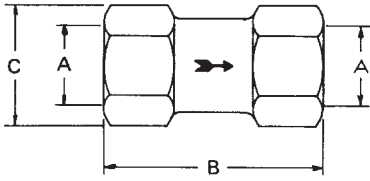


Figure 3 PSID-80
Diaphragm-is fully flexed into
the orifice plate.

For a pressure differential range of 15 to 150 psi, the rubber diaphragm will flex into the contoured orifice plate to increase flow restriction as the pressure drop increases. Both the rubber diaphragm and the contoured orifice plate are rigidly controlled to provide a constant flow rate over the pressure differential range. This “flexing” of the rubber diaphragm against the fixed orifice plate makes the Mesurflo difficult to clog and will not damage due to cavitation. The “flexing” action actually chews up debris preventing clogging. Outside of the pressure drop window, the controller performs similar to a fixed orifice.

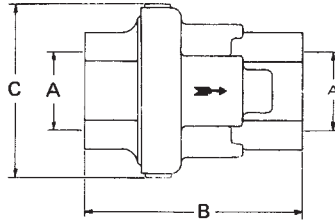
Note to piping system designers:

The HAYS Mesurflo is a constant flow rate device. Since it is a variable orifice that changes to govern the flow, it can not be described with a Cv or a pressure drop at a given flow for piping system design purposes. Conversely, the designer may assume a constant flow rate over the pressure differential range of 15 to 150 psid as one uses constant pressure in system design.



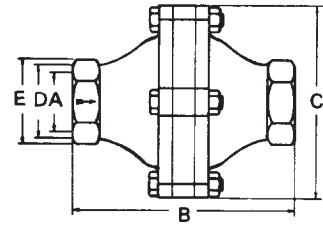
2305

1/4", 3/8", 1/2", 3/4"



2307

3/4", 1"



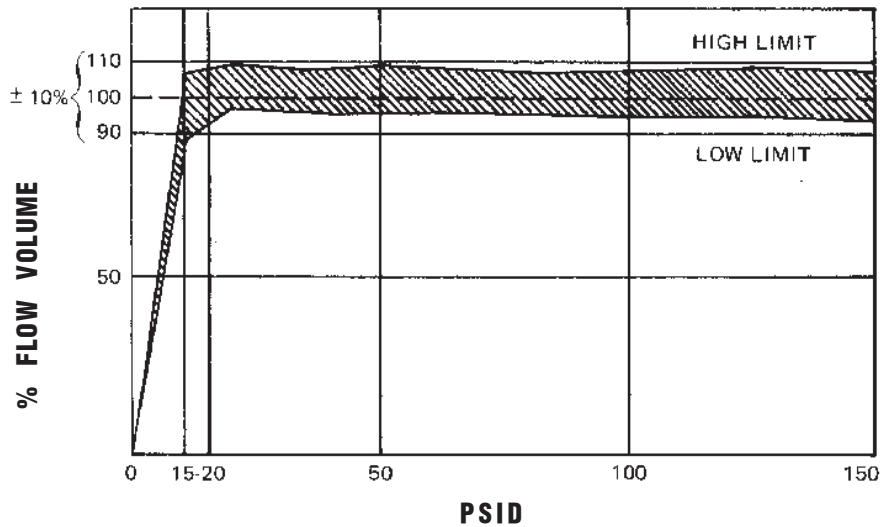
2307

1 1/4", 1 1/2"

DIMENSIONS

	2305				2307		2307	
A. Pipe Size	1/4"	3/8"	1/2"	3/4"	3/4"	1"	1 1/4"	1 1/2"
B. Overall Length	2"	1 3/4"	2 7/32"	2 9/16"	3 19/32"	3 19/32"	6 3/16"	8 7/8"
C. Diameter Across Corners	1 1/16"	1 1/16"	1 1/4"	1 17/32"	2 7/8"	2 7/8"	2 5/16"	2 3/4"
D. Hex Flats							2"	2 3/8"
E. Diameter							5 1/4"	7 3/8"

FLOW CAPACITY CHART





1-800-354-4297 FAX 704-922-9595
www.haysfluidcontrols.com

INDUSTRIAL TERMS AND CONDITIONS

SPECIFICATIONS

Specifications, as set forth in all printed matter, are subject to change without notice.

FREIGHT ALLOWANCE:

All sales are F.O.B. manufacturer's point of shipment. Full freight will be prepaid and allowed on all sales of \$2000.00, based on the net price, provided the orders are shipped to the same destination within the Continental U.S.A., except Alaska and Hawaii. All shipments under \$2,000.00 net will be billed directly to the customer by the freight company or shipped prepaid and add.

Terms of Payment

Net 30 days. A service charge of 1-1/2% per month will be added to all past due accounts (equivalent to 18% annually). Purchaser is liable for all legal costs if the account is placed for collection.

Returns, Cancellations, Order Changes

Written factory approval is required for all returns. Returns will be accepted of product purchased within ninety, (90) days of order. A minimum service charge of thirty (30) percent of the invoice price will be charged for restocking of items in a new and unused condition. All shipments must be freight prepaid F.O.B. manufacturers' point of acceptance. **Cancelled orders of manufactured product will be subject to a thirty percent (30%) cancellation charge for the production, testing and quality assurance time associated with the order. Changes to orders of assembled product whether additions, deletions, changes in size or fittings will be subject to a rate of \$95.00/hour plus the costs of additional components reflecting engineering and production time associated with the changes.**

Merchandise returned because of defects in material or workmanship will be at seller's expense.

RECONSIGNMENT OF FREIGHT

All freight or reconsignment charges issued by the carrier, relevant to undeliverable or refused product, shall be invoiced to the buyer regardless of Hays Fluid Controls published freight allowance.

SHORTAGES

Shortages on shipments must be reported to HAYS within thirty, (30) working days after receiving material.

OBSOLESCENCE

No returns will be accepted because of design changes or new products in the company line. HAYS' retains the right to change design without prior notice.

DAMAGED MERCHANDISE

The responsibility for items lost or damaged in transit is that of the buyer. These claims should be filed with the transportation company.

CONDITIONS OF SALE

Changes in the price of items sold by HAYS may be executed without notice. The minimum amount of any sale is \$50.00 net.

SUITABILITY

Conditions and applications vary to such a large extent throughout the world, the purchaser must determine the suitability of HAYS' products for his application.



1-800-354-4297 FAX 704-922-9595
www.haysfluidcontrols.com

INDUSTRIAL TERMS AND CONDITIONS

SPECIAL TESTING

The purchaser shall pay the cost of any special inspection or testing, over and above the standard factory procedure.

ACCEPTANCE OF ORDERS

All orders are subject to the acceptance of Hays, a Division of Romac Industries, Inc. at the general office: 114 Eason Road, Dallas, NC 28034.

LIMITED WARRANTY

All Industrial goods sold hereunder are warranted to be free from defects in material and factory workmanship for a period of one year from the date of purchase. We will repair or replace at no cost goods that prove defective provided such products are installed in accordance with the best practices accepted in the trade. Any tampering, adjusting or other in the field changes the product, will result in the automatic void of the Hays Fluid Controls limited warranty. WE SHALL NOT BE RESPONSIBLE FOR ANY LABOR CHARGES OR ANY LOSS, INJURY OF DAMAGES WHATSOEVER, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES. The sole and exclusive remedy shall be limited to the replacement of the defective goods, which must be returned to us with written notice before replacement is made. Before installation and use, the ultimate purchaser shall determine the suitability of the product for his intended use and the ultimate purchaser assumes all risk and liability whatever in connection therewith. Where permitted by law, THE IMPLIED WARRANTY OF MERCHANT LIABILITY IS EXPRESSLY EXCLUDED. If the product(s) sold hereunder are "consumer product(s)". THE IMPLIED WARRANTY OF MERCHANTABILITY IS LIMITED TO A PERIOD OF ONE YEAR AND SHALL BE LIMITED SOLELY TO THE REPLACEMENT OF THE DEFECTIVE GOODS.

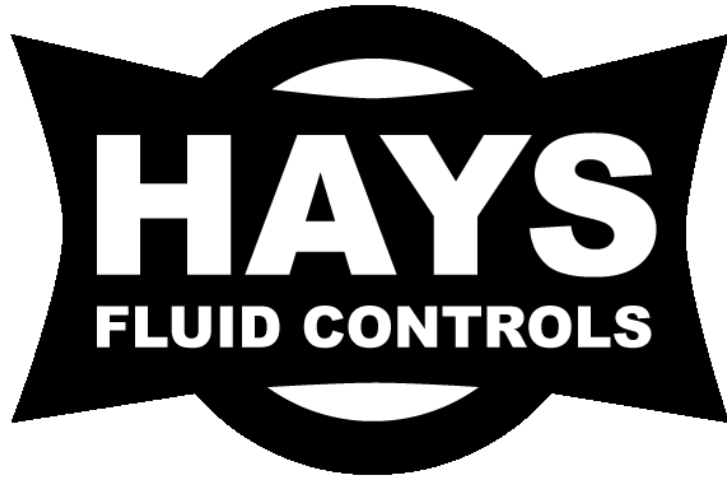
WARNING: When a Hays Fluid Controls Product is used to control a process of equipment where personal injury or property damage might occur as a result of failure to function properly, install safeguards which would protect persons and/or equipment in the event of any unexpected operation of the equipment.

BREAKAGE

All material is carefully packed. If an article is broken in transit, the condition of the package at its destination is no evidence of its original condition. When material is shipped to a customer and has been received for by a Transportation Company, in good condition, the shipment immediately becomes property of the consignee. NO ALLOWANCE WILL BE MADE FOR BREAKAGE IN TRANSIT, AND CONSIGNEE MUST LOOK TO TRANSPORTATION COMPANY FOR RELIEF. If the materials arrive "short count" or in broken or damaged condition, refuse it until the station agent notes the shortage or breakage on freight bill.

Every claim on account of defective material or workmanship or for any other cause shall be deemed waived by Customer Unless in writing sixty (60) days from the date of receipt of goods to which such claims relates. Claims for shortages must be made within thirty (30) days of receipt of shipment.

Hays Fluid Controls does not make any warranties of merchantability or of fitness for products and/or parts manufactured or sold by it, nor any other warranties of any kind, other than the express warranty set forth above. Any references by Hays to buyers specifications or requirements, are for identifications purposes only and are not to be construed as a warranty, express or implied, or any other undertaking on Hays' behalf except to the extent specifically stated and identified by Hays as such in writing.



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800-354-4297 (P) * 704-922-9595 (F)
WWW.HAYSFLUIDCONTROLS.COM