

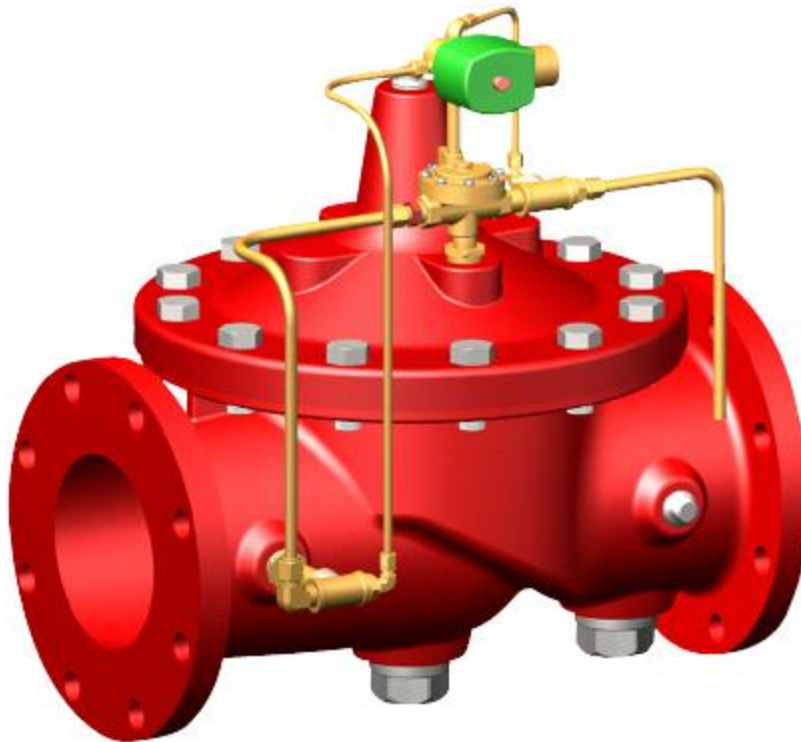


ImacoFire Co.

Fire Fighting Equipment



DELUGE VALVE



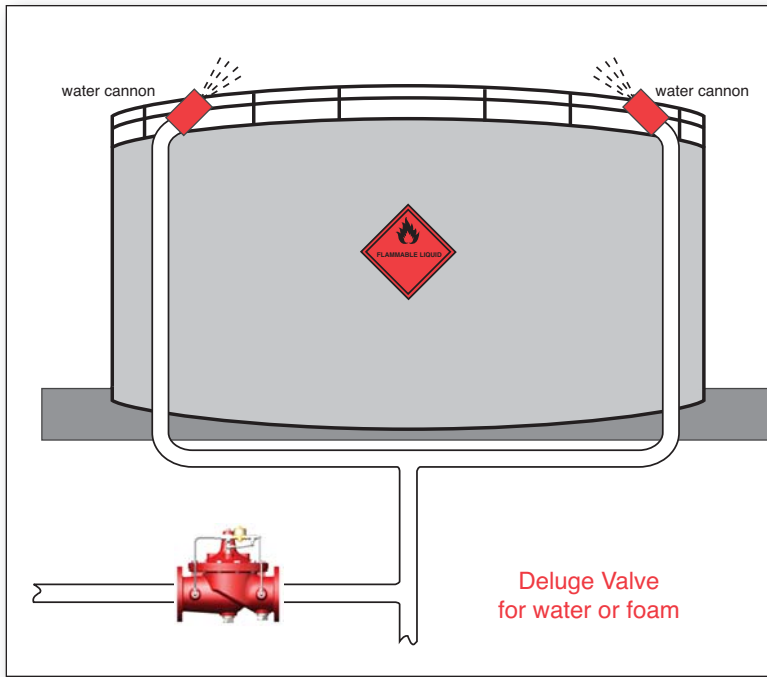
Deluge Valve Applications

imacoFire Deluge Valves are available in a variety of configurations and size providing highly accurate performance in the most demanding of fire protection applications.

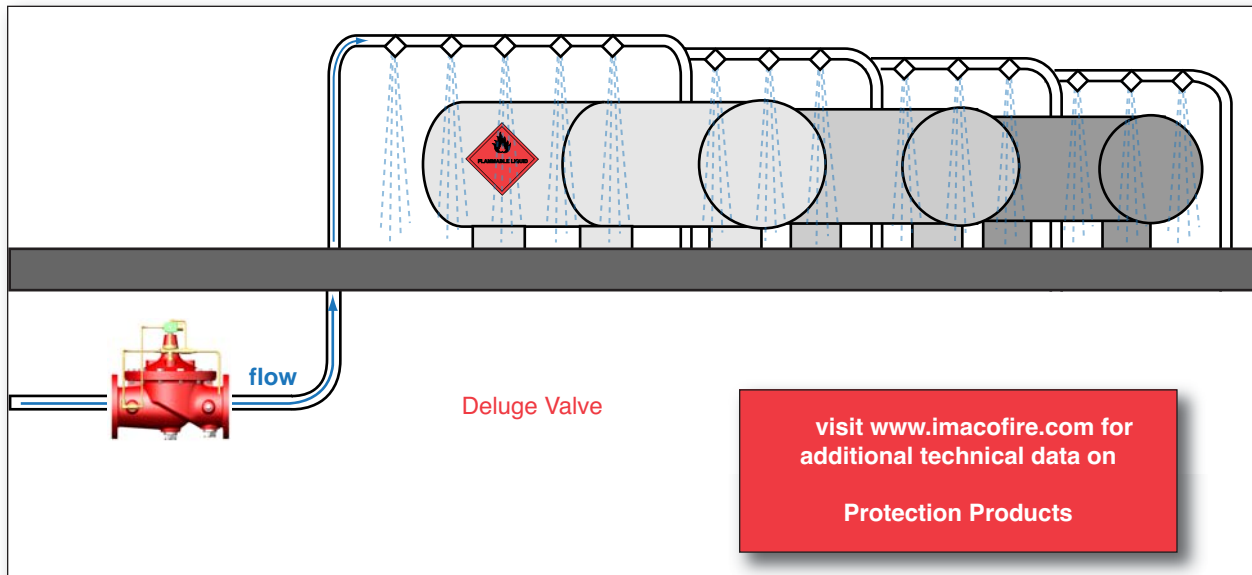
- Hydraulic, Pneumatic or Electronic-Controlled Operation
- Fast-Acting, Drip-Tight Closure
- Available in a wide range of materials to meet unique application requirements

Industrial Fire Protection Deluge Valve Applications

Water Cannon for Flammable Materials Storage



Water Curtain for Flammable Materials Storage



Typical Applications



Chemical and flammable materials storage



Helicopter Landing Pads



Rail and roadway tunnels



Water curtain systems



Mining Operations



Power Plants



Aviation facilities



Refineries

visit www.imacofire.com for additional technical data on

Protection Products

Solenoid Operated Deluge Valve

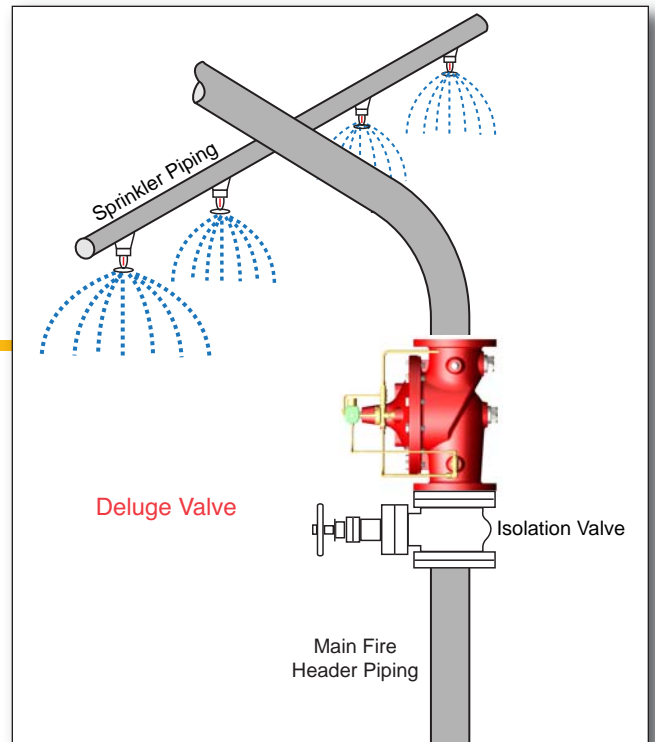


- Fast acting solenoid control
- Reliable drip-tight shut-off
- Utilizes a three-way solenoid to open or close the valve
- Globe or angle patterns
- 150 and 300 Class
- 3" - 10"
- For water or foam

Pneumatically Operated Remote Control Deluge Valve



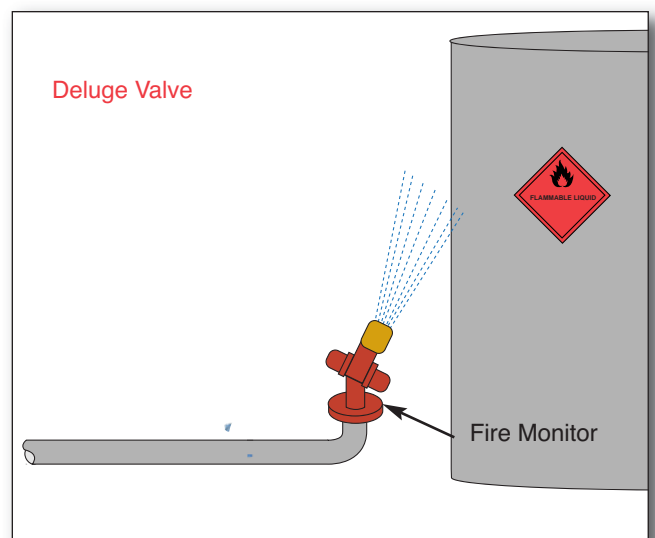
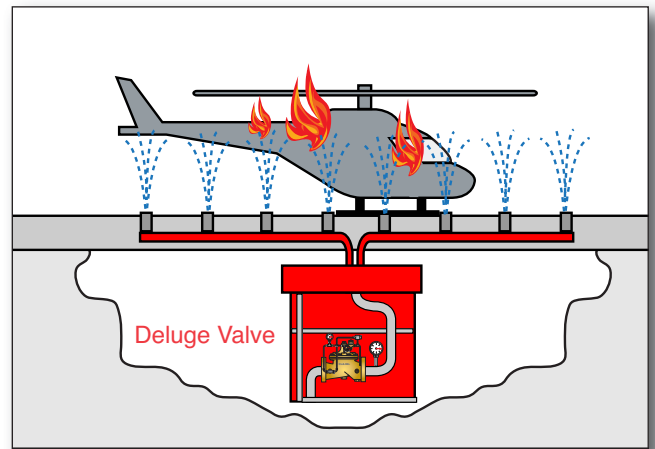
- Reliable deluge service for fresh or seawater applications
- Quick response to remote control operation
- 150 and 300 Class
- Ideal for pressure up to 400 psi
- Main Valve 3" - 10"
- For water or foam



Deck Integrated Fire Fighting System (DIFFS) for Helipads



The DIFFS utilizes Automatic Deluge Control Valve to quickly dispense foam or water, extinguishing flames in less than 15 seconds.



DELUGE SKID



Technical Data

MODEL IMF-DVS

NOMINAL SIZE 200NB, 150NB, 100NB, 80NB, 50NB

MAX. SERVICE PRESSURE 17.5 Bar

MAX. TEST PRESSURE 24 Bar

TRIM STAINLESS STEEL

FINISH RAL 3000 painted

ORDERING INFORMATION Size, Deluge valve model, Trim Type Mounting (Vertical or Horizontal)

Model IMFDVS consists of preassembled Deluge system mounted on the frame. The entire package is pre wired and connections are flanged to provide minimal installation time. The package includes inlet, outlet and bypass valves, pressure switches, solenoid valves, inlet and outlet connections, common drain connection and junction box for electrical connection. Pressure switches are provided on the outlet of the deluge valve to indicate the actuation of the valve. In addition another pressure switch is provided in pneumatic line for indication of low pressure or fire condition with pneumatic release trims. The skid is provided with corrosion resistant stainless steel nameplate. Stainless steel name plates are provided for valves for easy identification.

INSTALLATION

1. Place the skid at the desired location on the proper foundation and secure it with the anchoring bolts.
2. Connect the water inlet and system piping.
3. Connect the common drain connection to an open drain.
4. Do not restrict or reduce the drain piping.
5. Connect the detection network piping
6. Complete the field wiring of junction box.
7. Refer to appropriate deluge valve catalogue for valve commissioning, installation and troubleshooting instructions.

Note: Support the external piping firmly to prevent strain and stresses on the piping of the skid/cabinet and its components.

ADVANTAGES

- Professionally pre-assembled and factory tested
- UL Listed modular package
- Quick and convenient installation
- Can be custom designed and manufactured
- Cost effective and reduced installation time



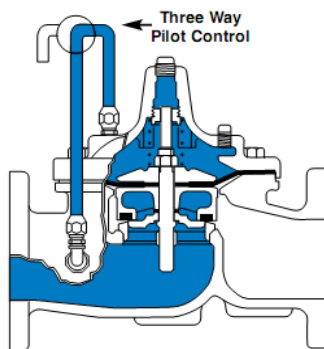
MODEL IMF -DVS

GENERAL DESCRIPTION

Deluge Skid is pre-assembled Deluge system package. Deluge valve skid comes in three different types of actuations – 1. Pneumatic release, 2. Hydraulic release 3. Electric release. Deluge Valve is known as a system control valve in a deluge system, used for fast application of water in a spray system. Deluge valve protects areas such as power transformer installation, storage tank, conveyor protection and other industrial application etc. With the addition of foaming agent it can be used to protect aircraft hangar and inflammable liquid fire.

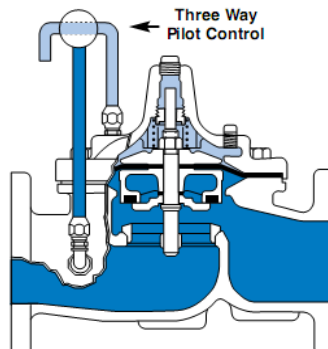


Principles of Operation



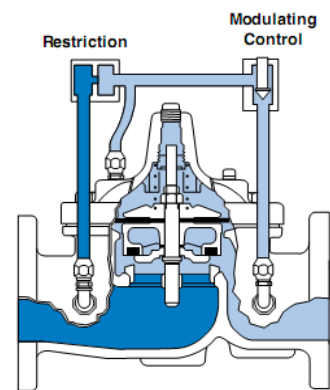
Tight Closing Operation

When pressure from the valve inlet (or an equivalent independent operating pressure) is applied to the diaphragm chamber the valve closes drip-tight.



Full Open Operation

When pressure in diaphragm chamber is relieved to a zone of lower pressure (usually atmosphere) the line pressure (5 psi Min.) at the valve inlet opens the valve.



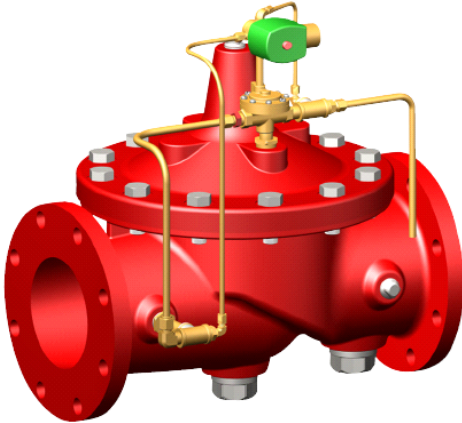
Modulating Action

Valve modulates when diaphragm pressure is held at an intermediate point

With the use of a ImacoFire, "modulating control," which reacts to line pressure changes, the pressure above the diaphragm is varied, allowing the valve to throttle and compensate for the change.



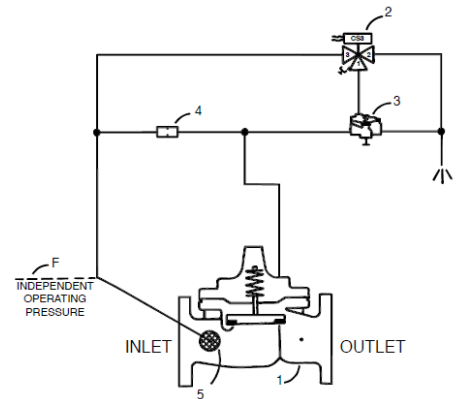
Solenoid Operated Deluge Valve



- *Fast Acting Solenoid Control*
- *Reliable Drip Tight Shut-off*
- *Simple Design, Proven Reliable*
- *Easy Installation & Maintenance*

Schematic Diagram

Item	Description
1	Hytrol Main Valve
2	CS3 Solenoid Control
3	100-01 Hytrol Pilot Valve
4	X58C Restriction Orifice
5	X46A Flow Clean Strainer



Specifications

SIZES	Globe: 3" - 10" flanged Angle: 3" - 10" flanged
END DETAILS	Ductile Iron 150 ANSI B16.42 flanged Cast Steel 150 ANSI B16.5 flanged
PRESSURE RATINGS	150 class, 175 psi maximum (Ductile Iron) 150 class, 285 psi maximum (Cast Steel) 300 class, 400 psi maximum
TEMPERATURE RANGE	Water: to 180° F. Max

Functional Data

Valve Size	Inches	3	4	6	8	10	
	mm.	80	100	150	200	250	
C _v Factor	Globe Pattern	Gal./Min. (gpm.)	115	200	440	770	1245
		Litres/Sec. (l/s.)	27.6	48	105.6	184.8	299
	Angle Pattern	Gal./Min. (gpm.)	139	240	541	990	1575
		Litres/Sec. (l/s.)	33.4	58	130	238	378

Cover Capacity

Valve Size	Displacement
3"	.080 gal
4"	.169 gal
6"	.531 gal
8"	1.26 gal
10"	2.51 gal

MATERIALS

Main valve body & cover:

Ductile Iron ASTM A-536*
Cast Steel ASTM A216-WCB*
Naval Bronze ASTM B61
Nickel Aluminum Bronze ASTM B148
Super Duplex Stainless Steel
Stainless Steel ASTM A743-CF-8M

Main valve trim:

Bronze / Stainless Steel

Pilot control system:

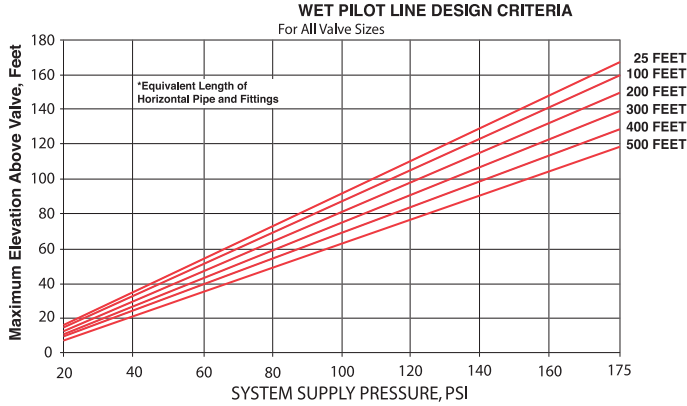
Cast Bronze ASTM B61





Solenoid Operated Deluge Valve

To calculate the maximum wet sprinkler pilot height above the valve, use the graph below.

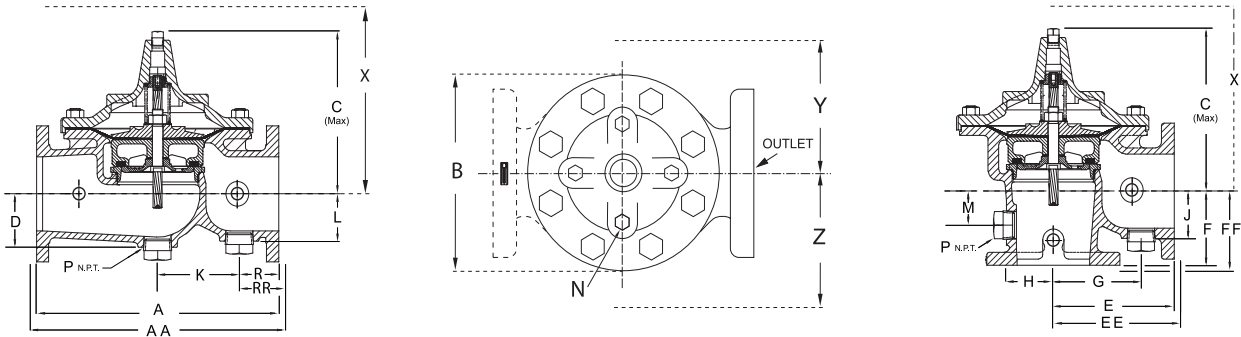


Functional Data

Valve Size		Inches	3	4	6	8	10
		mm	80	100	150	200	250
C _v Factor	Globe Pattern	Gal./Min. (gpm)	115	200	440	770	1245
		Litres/Sec. (l/s)	27.6	48	105.6	184.8	299
	Angle Pattern	Gal./Min. (gpm)	139	240	541	990	1575
		Litres/Sec. (l/s)	33.4	58	130	238	378

*Based on 1/2 inch schedule 40 pipe, C=120
If system supply pressure is variable, use minimum value

WET PILOT LINE EQUIVALENT LENGTHS MUST BE RECALCULATED FOR SYSTEMS USING PILOT LINE SIZES AND FITTINGS OTHER THAN THAT SPECIFIED IN THE ABOVE GRAPH



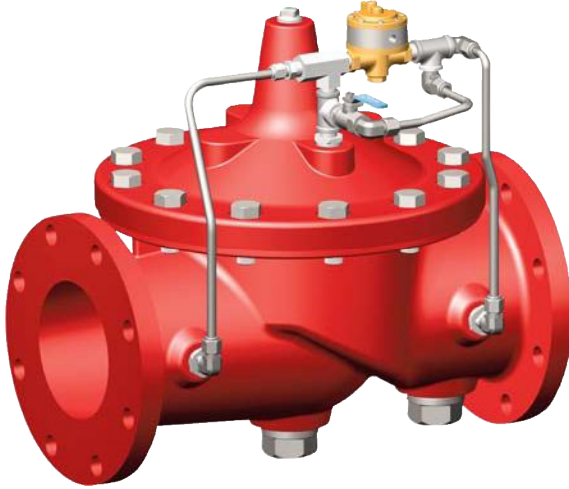
Valve Size (Inches)	3	4	6	8	10
A 150 ANSI	12.00	15.00	20.00	25.38	29.75
AA 300 ANSI	13.25	15.62	21.00	26.38	31.12
B Dia.	9.12	11.50	15.75	20.00	23.62
C Max.	8.19	10.62	13.38	16.00	17.12
D	2.56	3.19	4.31	5.16	8.50
E 150 ANSI	7.00	8.50	10.00	12.69	14.88
EE 300 ANSI	--	8.81	10.50	13.19	--
F 150 ANSI	4.00	4.97	6.00	8.00	8.62
FF 300 ANSI	--	5.28	6.50	8.50	--
G	4.75	5.94	7.25	8.50	10.50
H	2.69	2.81	3.88	5.31	6.56
J	2.56	2.81	3.81	4.81	5.81
K	7.00	4.03	6.75	17.00	15.50
L	2.56	2.81	3.81	4.81	8.50
M	1.75	2.41	2.75	4.00	4.24
N NPT	1/2"-14	3/4"-14	3/4"-14	1"-11 1/2	1"-11 1/2
P NPT	1/4"-11 1/2	2"-11 1/2"			
R 150 ANSI	2.50	3.47	3.25	4.19	7.12
RR 300 ANSI	3.12	3.78	3.75	4.69	7.81
X Pilot System	15.00	17.00	29.00	31.00	33.00
Y Pilot System	11.00	12.00	20.00	22.00	24.00
Z Pilot System	11.00	12.00	20.00	22.00	24.00

Valve Size (mm)	80	100	150	200	250
A 150 ANSI	305	381	508	645	756
AA 300 ANSI	337	397	533	670	791
B Dia.	232	292	400	508	600
C Max.	208	270	340	406	435
D	65	81	110	131	216
E 150 ANSI	178	216	254	322	378
EE 300 ANSI	--	224	267	350	--
F 150 ANSI	102	126	152	203	219
FF 300 ANSI	--	134	165	216	--
G	121	151	184	216	267
H	68	71	99	135	167
J	65	71	97	122	148
K	178	102	171	432	394
L	65	71	97	122	216
M	45	61	70	102	108
N NPT	1/2"-14	3/4"-14	3/4"-14	1"-11 1/2	1"-11 1/2
P NPT	1/4"-11 1/2	2"-11 1/2"			
R 150 ANSI	64	88	83	106	181
RR 300 ANSI	79	96	95	119	198
X Pilot System	381	432	737	787	838
Y Pilot System	279	305	508	559	610
Z Pilot System	279	305	508	559	610





Pneumatically Operated Remote Control Valve For Freshwater and Seawater Service



- Single Seat with Resilient Disc Insures Tight Seal
- Simply Designed with Few Working Parts
- Quick Response to Remote Control
- Fully Supported Frictionless Diaphragm
- Leak-proof Service Assured – No Packing Glands
- Single Tube Line Required for Control
- Opens Wide for Minimum Flow Resistance

Specifications

Sizes	Globe: 1 1/2" - 24" flanged
End Details	125 and 250 ANSI B16.1
Pressure Ratings	150 class - 250 psi Max. 300 class - 400 psi Max.
Temperature Range	Water: to 180° F. Max.

Materials	Main valve body & cover:
	Ductile Iron ASTM A-536*
	Cast Steel ASTM A216-WCB*
	Naval Bronze ASTM B-61
	Nickel Aluminum Bronze ASTM B148
	Super Duplex Stainless Steel
	Stainless Steel ASTM A743-CF-8M

Main valve trim:

Bronze ASTM B61
Monel
Stainless Steel 316

Pilot control system:

Cast bronze ASTM B61 with monel trim
Stainless Steel 316 Tubing & Fitting

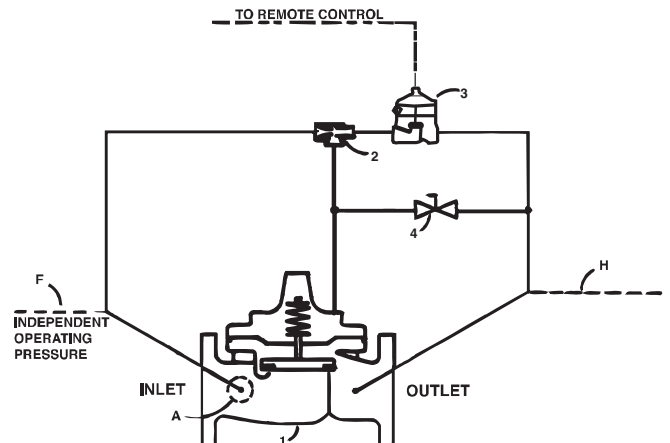
*Internally & Externally Epoxy Coated

Schematic Diagram

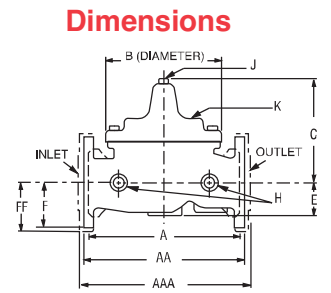
Item	Description
1	100-01 Hytrol (Main Valve)
2	X47A Ejector
3	100-02 Powertrol
4	CK2 Ball Valve

Optional Features

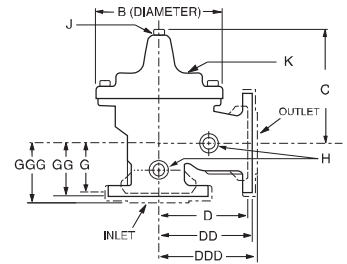
Item	Description
A	X46A Flow Clean Strainer
F	Independent Operating Pressure
H	Drain to Atmosphere



Valve Size (Inches)	1½	2	2½	3	4	6	8	10	12	14	16	24	36
A Threaded	7.25	9.38	11.00	12.50	—	—	—	—	—	—	—	—	—
AA 150 ANSI	8.50*	9.38	11.00	12.00	15.00	20.00	25.38	29.75	34.00	39.00	41.38	61.50	76.00
AAA 300 ANSI	9.00*	10.00	11.62	13.25	15.62	21.00	26.38	31.12	35.50	40.50	43.50	63.24	78.00
B Dia.	5.62	6.62	8.00	9.12	11.50	15.75	20.00	23.62	28.00	32.75	35.50	53.16	66.00
C Max.	5.50	6.50	7.56	8.19	10.62	13.38	16.00	17.12	20.88	24.19	25.00	43.93	61.50
CC Max.	—	5.00	—	6.50	8.80	11.10	—	—	—	—	—	—	—
D Threaded	3.25	4.75	5.50	6.25	—	—	—	—	—	—	—	—	—
DD 150 ANSI	4.00*	4.75	5.50	6.00	7.50	10.00	12.75	14.88	17.00	19.50	20.81	—	—
DDD 300 ANSI	4.25*	5.00	5.88	6.38	7.88	10.50	13.25	15.56	17.75	20.25	21.62	—	—
E	1.12	1.50	1.69	2.56	3.19	4.31	5.31	9.25	10.75	12.62	15.50	17.75	24.56
F 150 ANSI	2.50	3.00	3.50	3.75	4.50	5.50	6.75	8.00	9.50	10.50	11.75	19.25	28.00
FF 300 ANSI	3.06	3.25	3.75	4.13	5.00	6.25	7.50	8.75	10.25	11.50	12.75	—	—
G Threaded	1.88	3.25	4.00	4.50	—	—	—	—	—	—	—	—	—
GG 150 ANSI	4.00*	3.25	4.00	4.00	5.00	6.00	8.00	8.62	13.75	14.88	15.69	—	—
GGG 300 ANSI	4.25*	3.50	4.31	4.38	5.31	6.50	8.50	9.31	14.50	15.62	16.50	—	—
H NPT Body Tapping	¾	¾	½	½	¾	¾	1	1	1	1	1	1	2
J NPT Cover Center Plug	¼	½	½	½	¾	¾	1	1	1¼	1½	2	1½	2
K NPT Cover Tapping	¾	¾	½	½	¾	¾	1	1	1	1	1	1	2
Valve Stem Internal Thread UNF	10-32	10-32	10-32	¼-28	¼-28	¾-24	¾-24	¾-24	¾-24	¾-24	½-20	¾-16	¾-16
Stem Travel	0.4	0.6	0.7	0.8	1.1	1.7	2.3	2.8	3.4	4.0	4.5	6.75	10.12
Approx. Ship Wt. Lbs.	15	35	50	70	140	285	500	780	1165	1600	2265	6200	11470



(Globe)



(Angle)

When Ordering, Please Specify

1. Catalog No. 403 Series
2. Valve Size
3. Pressure Class
4. Trim Material
5. Adjustment Range
6. Desired Options
7. When Vertically Installed

Valve Size (mm)	40	50	65	80	100	150	200	250	300	350	400	600	900
A Threaded	184	238	279	318	—	—	—	—	—	—	—	—	—
AA 150 ANSI	216*	238	279	305	381	508	645	756	864	991	1051	1562	1930
AAA 300 ANSI	229*	254	295	337	397	533	670	790	902	1029	1105	1606	1981
B Dia.	143	168	203	232	292	400	508	600	711	832	902	1350	1676
C Max.	140	165	192	208	270	340	406	435	530	614	635	1116	1562
CC Max.	104	127	—	165	223	281	—	—	—	—	—	—	—
D Threaded	83	121	140	159	—	—	—	—	—	—	—	—	—
DD 150 ANSI	102*	121	140	152	191	254	324	378	432	495	528	—	—
DDD 300 ANSI	108*	127	149	162	200	267	337	395	451	514	549	—	—
E	29	38	43	65	81	110	135	235	273	321	394	451	624
F 150 ANSI	64	76	89	95	114	140	171	203	241	267	298	489	711
FF 300 ANSI	78	83	95	105	127	159	191	222	260	292	324	—	—
G Threaded	48	83	102	114	—	—	—	—	—	—	—	—	—
GG 150 ANSI	102*	83	102	102	127	152	203	219	349	378	399	—	—
GGG 300 ANSI	102*	89	110	111	135	165	216	236	368	397	419	—	—
H NPT Body Tapping	¾	½	½	¾	¾	1	1	1	1	1	1	2	2
J NPT Cover Center Plug	½	½	½	¾	¾	1	1	1¼	1½	2	1½	2	2
K NPT Cover Tapping	¾	½	½	¾	¾	1	1	1	1	1	1	2	2
Valve Stem Internal Thread UNF	10-32	10-32	10-32	¼-28	¼-28	¾-24	¾-24	¾-24	¾-24	¾-24	½-20	¾-16	¾-16
Stem Travel	10	15	18	20	28	43	58	71	86	102	114	171	257
Approx. Ship Wt. Kgs.	7	16	23	32	64	129	227	354	528	726	1027	2812	5200

Valve Capacity

Valve Sizes (inches)	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	24"	36"
Max. Continuous (gpm)	125	208	300	460	800	1800	3100	4900	7000	8500	11000	28000	—
Max. Intermittent (gpm)	280	460	650	1000	1800	4000	7000	11000	16000	19000	25000	63000	—

Functional Data

Valve Size	Inches														
	mm.														
C _v Factor	Globe Pattern	Gal./Min. (gpm.)	32	54	85	115	200	440	770	1245	1725	2300	2940	7655	13320
		Litres/Sec. (l/s.)	7.7	13	20.4	27.6	48	105.6	184.8	299	414	552	706	1837	3200
	Angle Pattern	Gal./Min. (gpm.)	29	61	101	139	240	541	990	1575	2500*	3060*	4200*	—	—
		Litres/Sec. (l/s.)	7	14.6	24.2	33.4	58	130	238	378	600	734.4	1008	—	—

*Estimated

Pilot System Specifications

Materials

Standard Pilot System Materials

Pilot Control: Bronze ASTM B61
 Trim: Monel
 Rubber: Buna-N® Synthetic Rubber

Optional Pilot System Materials

Pilot Systems are available with optional Stainless Steel or Monel materials at extra cost.
 Note: Available with remote sensing control.

Temperature Range

Water: to 180°F