



## Type D Series

**2-Way • Cast Bronze Bodies**  
**Velvetrol® Internal Piston Pilot Operated**  
**General Purpose Solenoid Valves**  
**Manual Open • Adjustable Closing Speed**  
**Normally Closed or Normally Open**

**For General Purpose Applications:** Air & Inert Gases | Water & Aqueous Liquids | Oils | Steam

**Pressures:** 5psi minimum to 1200psi maximum | Full Port

**Temperature:** -40°F to 450°F | Class F & H Coils

**Mounting:** Install in horizontal line with coil upright and on top (unless ordered with -76 vertical mounting option)

**Pipe Sizes:** 3/4"-2" NPT • Full Port

**Normally Closed or Normally Open**

Service Ratings	Complete pricing, service & electrical ratings are shown on the List Price Schedule. Valves will be furnished for 5-150 PSI and 120 VAC unless otherwise specified.	
Normally Closed		Normally Open
<b>D-3T</b>	Air & Inert Gases, Water & Aqueous Liquids, Oils (400SSU or 30SAE) 5-150psi 300°F Max. Fluid Temp, Class F & H Coils 12, 24, 120, 240 & 480 VAC 12, 24, 32, 48, 115, 230 VDC, 26 Watts Max.	<b>DR-3T</b>
<b>DS-3T</b>	Air & Inert Gases, Water & Aqueous Liquids, Oils (400SSU or 30SAE) 10-400psi (Normally Open 10-300psi) 300°F Max. Fluid Temp, Class F & H Coils 12, 24, 120, 240 & 480 VAC 12, 24, 32, 48, 115, 230 VDC, 26 Watts Max.	<b>DR-3T</b>
<b>DST</b>	Liquid Service Only – Water & Aqueous Liquids, Oils (400SSU or 30SAE) 10-700psi 300°F Max. Fluid Temp, Class F & H Coils 12, 24, 120, 240 & 480 VAC 12, 24, 32, 48, 115, 230 VDC, 26 Watts Max.	<b>N/A</b>
<b>DL</b>	Air & Inert Gases, Water & Aqueous Liquids, Oils (400SSU or 30SAE) 10-700psi (Liquids & Oil), 10-400psi (Air & Inert Gases) 300°F Max. Fluid Temp, Class F & H Coils 12, 24, 120, 240 & 480 VAC 12, 24, 32, 48, 115, 230 VDC, 26 Watts Max.	<b>N/A</b>
<b>DHP</b>	Liquid Service Only – Water & Aqueous Liquids, Oils (400SSU or 30SAE) 20-1200psi 300°F Max. Fluid Temp, Class F & H Coils 12, 24, 120, 240 & 480 VAC 12, 24, 32, 48, 115, 230 VDC, 26 Watts Max.	<b>N/A</b>
<b>Add: L</b>	Provides adjustment to control flowrate.	<b>Add: L</b>
<b>Add: -1</b>	High Temp (Class H) Coils – Fluid Temps to 450° Max – Steam to 200psi	<b>Add: -1</b>
<b>Add: -2</b>	Explosion Proof Coil Housing – meets Class 1 Div 2, Class 1 Group D, Class 2 Group E, F, G NEMA 7 Explosion Proof. Also meets NEMA 4 Watertight/Corrosive Resistant & NEMA 5 Dusttight. Previously identified as “-24” and “-25”.	<b>Add: -2</b>
<b>Add: -81, -84</b>	-81 Factory Slow Close Option (Reduces Water Hammer) -84 Factory Quick Close Option	<b>Add: -81, -84</b>
<b>Add: -76</b>	Spring Loaded Pilot for vertical mounting. Limitations apply. Consult factory.	<b>Add: -76</b>

#### Construction:

- **Class F & H Coils** are watertight/corrosive resistant, molded of filled polyester with 18" leads and ½" conduit connector.
- **Bodies** are rated to 1200 PSI and cast in bronze.
- **Plunger Tubes** are Stainless Steel silver soldered to the brass bonnet.
- **Piston Assemblies** are brass with filled Teflon™ **piston rings**, Stainless Steel **expanders**, and Teflon™ **seat discs**.
- **Seat Screw** seats are Teflon™ (-3T).
- **Pilot Valves** are 430 FR Stainless Steel. **Piston springs** are Stainless Steel.

#### Specials:

- Slow Close (-81) or Quick Close (-84) factory settings available at no charge.
- Spring-loaded pilot (-76) for vertical mounting available. Limitations apply. Consult factory.
- Teflon™ coated pistons & other special assemblies available.
- Non-standard coils available with voltage, wattage, and lead wire length to your specifications.

Teflon™ is a DuPont Company trademark. Viton® is a registered trademark of DuPont Dow Elastomers. See Price Schedule for "Terms and Conditions of Sale".

### General Purpose Type D Series

#### Performance, Ordering, and Installation Guide

**Ordering Data:** Specify the pipe size, type, fluid, operating pressure, temperature range, electrical specifications, and backpressure (if any).

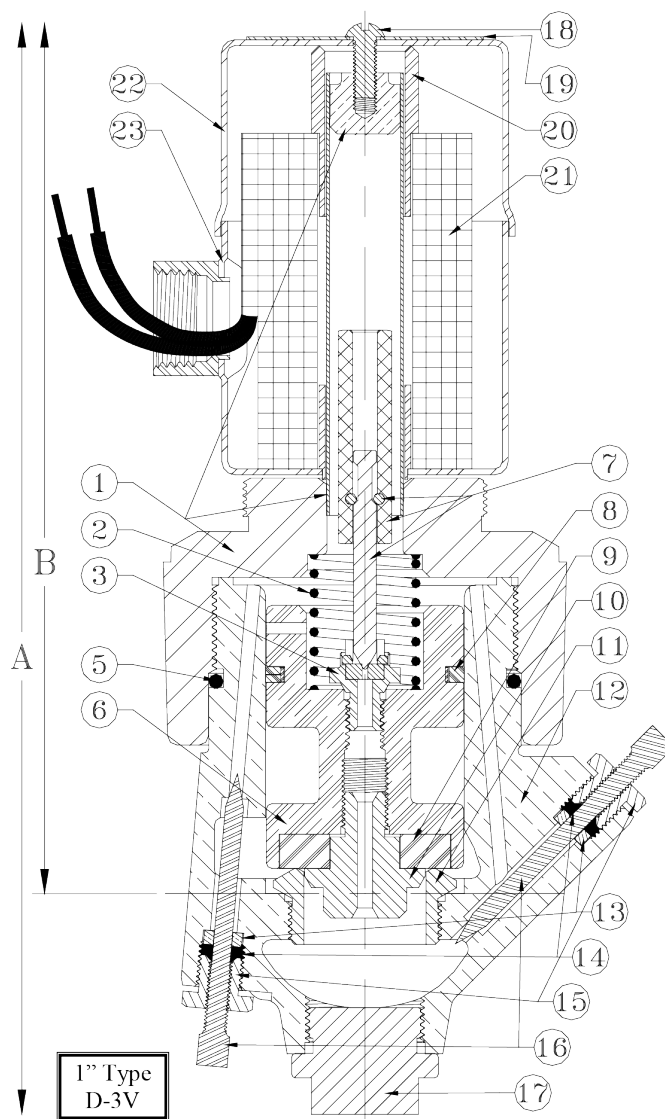
**Flow Characteristics:** See flow curves in Bulletin 5-FL, or Cv Factors listed below and in Bulletin CP-1

**Operation:** Piston pilot operated, minimum pressure drop of 5psi or 10psi ( $\Delta P$ ), depending on pressure rating, is required across valve for operation. Turn stem marked "ADJ" clockwise to increase closing time. Turn stem marked "MAN OPN" counterclockwise to open the valve manually. Turn clockwise until seated to close valve for normal operation.

**Mounting:** Mount in horizontal line with coil vertical ( $\pm 7^\circ$ ) and on top (unless ordered with -76 spring loaded pilot for vertical mounting). Install 40 mesh strainer (not larger) ahead of the valve. Check for proper coil voltage. Make sure that the flow arrow on the valve body is pointing in the direction of flow.

**Flow Control:** (with "L" designation) Turn flow control stem (in bottom plug) clockwise to DECREASE flow and counterclockwise to INCREASE flow.

**Servicing:** Solenoid valves should be frequently checked for operation, cleanliness, and internal wear. Repair Kits are factory available – be sure to specify size, type, serial number or operating data, voltage, pressure, etc.)



Valve Weight (lb)	3/4"	1"	1-1/4"	1-1/2"	2"
D	12	13	24	26	30
DR	16	17	28	30	34
D-2	12	13	24	26	30
DR-2	16	17	28	30	34

## Physical Dimensions of Type D Valves

	D			DR		
Dimension	3/4" – 1"	1-1/4" – 1-1/2"	2"	3/4" – 1"	1-1/4" – 1-1/2"	2"
A	8.95	9.83	11.35	9.91	10.80	12.30
B	7.15	7.71	8.75	8.10	10.80	12.30
End-to-End Length	4.25	6.13	6.19	1.25	6.13	6.19

	D-2			DR-2		
Dimension	3/4" – 1"	1-1/4" – 1-1/2"	2"	3/4" – 1"	1-1/4" – 1-1/2"	2"
A	9.05	9.99	11.50	10.20	11.11	12.61
B	7.25	7.86	8.86	8.40	8.99	9.99
End-to-End Length	4.25	6.13	6.19	1.25	6.13	6.19

## Parts Details

1	N.C. Bonnet Assembly
	N.O. Bonnet Assembly
	N.C. XP Bonnet Assembly
	N.O. XP Bonnet Assembly
2	Piston Spring
	HP Piston Spring
3	Seat Screw
5	Bonnet Seal
6	Piston Only
7	N.C. Pilot Assembly
	N.O. Pilot Assembly
	N.C. XP Pilot Assembly
	N.O. XP Pilot Assembly
8	Piston Ring & Expander
9	Seat Disc
10	Disc Screw
11	Seat Ring (N/A on 1-1/4" – 2")
12	Body
13	Packing Retainer
14	Packing
15	Packing Gland
16	Adjustment Stem
17	Bottom Plug
18	Coil Screw
19	Nameplate
20	N.C. Top Nip
	N.O. Top Nip
	XP End Plate
21	Coil
22	N.C. Coil Cover
	N.O. Coil Cover
	N.C. XP Coil Cover
	N.O. XP Coil Cover
23	Coil Housing
	XP Coil Housing
Cv Factor	3/4" = 6.3
	1" = 11.52
	1-1/4" = 18.0
	1-1/2" = 28.0
	2" = 50.0