



High Temp Type Q-1 & QR-1 Series

**2-Way • Cast Bronze Bodies • Packless
Velvetrol® Internal Piston Pilot Operated
High Temp Solenoid Valves
Normally Closed or Normally Open**

For High Temp Applications: Steam | Hot Water | Hot Air | Hot Oils
(Q-1-3T & Q-1-3EP UL Listed for Steam Applications)

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

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

Pipe Sizes: 1/8" – 3" 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
Q-1-3T, Q-1-3EP 	Steam, Hot Air, Hot Water, Hot Oils (400SSU or 30SAE) UL Listed for Steam 5-150psi (-3EP 5-50psi) 365°F Max. Fluid Temp (-3EP 300°F), Class H Coils 24, 120, 240, 480 VAC (60 Hz), 26 Watts Max.	
Q4-1-3T, Q4-1-3EP	Steam, Hot Water, Hot Air, Hot Oils (400SSU or 30SAE) Steam to 200psi, Hot Water, Hot Air, Hot Oils to 10-400psi (-3EP 5-50psi) (Normally Open 5-150psi, 10-300psi) 450°F Max. Fluid Temp (-3EP 300°F), Class H Coils 12, 24, 120, 240, 480 VAC, 26 Watts Max. 12, 24, 32, 48, 115, 230 VDC, 26 Watts Max.	QR-1-3T, QR-1-3EP
Add: -2	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".	Add: -2
Add: -81, -84	-81 Factory Slow Close Option (Reduces Water Hammer) -84 Factory Quick Close Option	Add: -81, -84
Add: -76	Spring Loaded Pilot for vertical mounting. Limitations apply. Consult factory.	Add: -76

Construction:

- **Class H Coils** are watertight/corrosive resistant, molded of filled polyester with 18" leads and 1/2" conduit connector.
- **Bodies** are rated to 400 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™ or Ethylene Propylene **seat discs**.
- **Seat Screw** seats are Teflon™ (-3T) or Ethylene Propylene (-3EP).
- **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.

Performance, Ordering, and Installation Guide

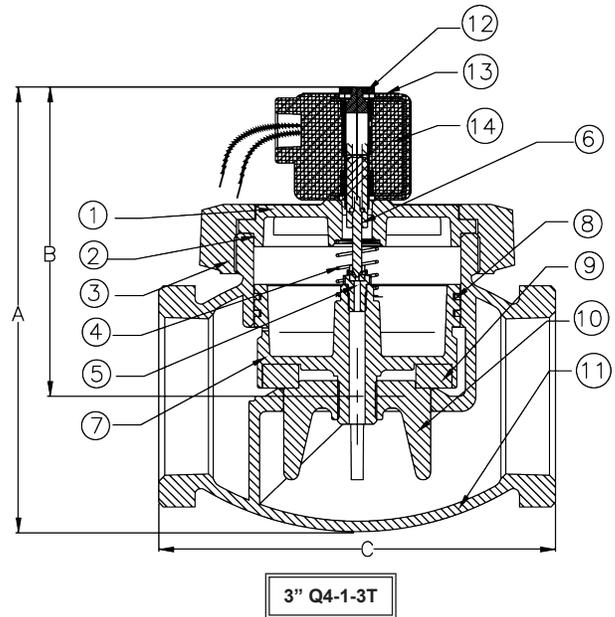
Ordering Data: Specify the pipe size, type, fluid, operating pressure, temperature range, electrical specifications, and backpressure (if any).

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 (ΔP), depending on pressure rating, is required across valve for operation.

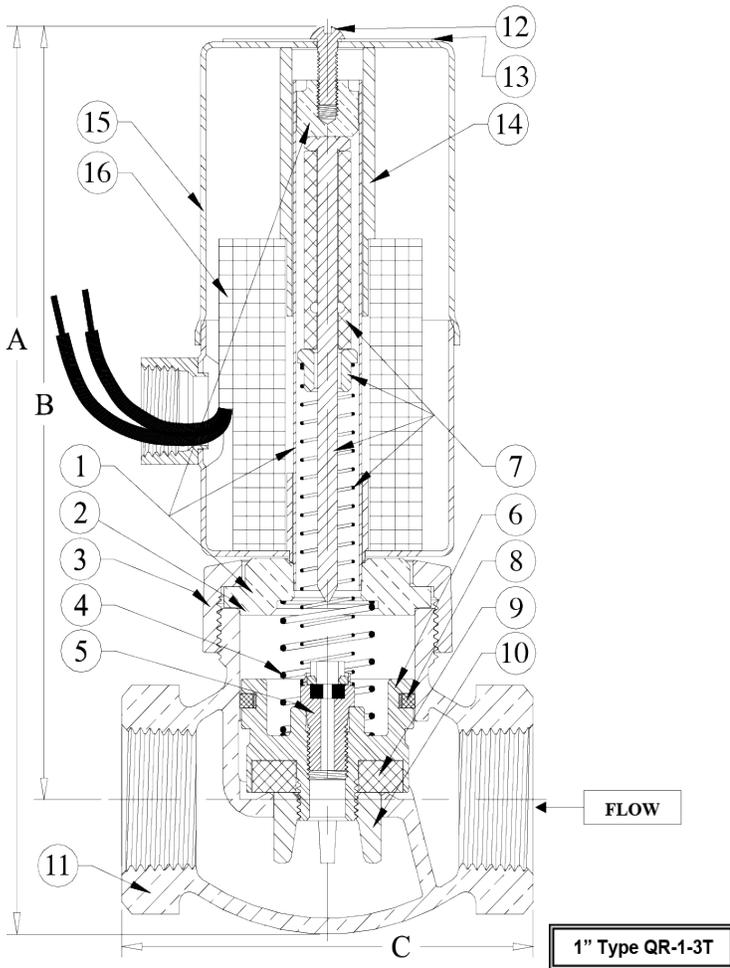
Mounting: Mount in horizontal line with coil vertical ($\pm 7^\circ$) and on top (unless ordered with -76 spring loaded pilot for vertical mounting). Install 40 mesh strainer (not larger) ahead of the valve. Check for proper coil voltage. Make sure that the flow arrow on the valve body is pointing in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

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.)



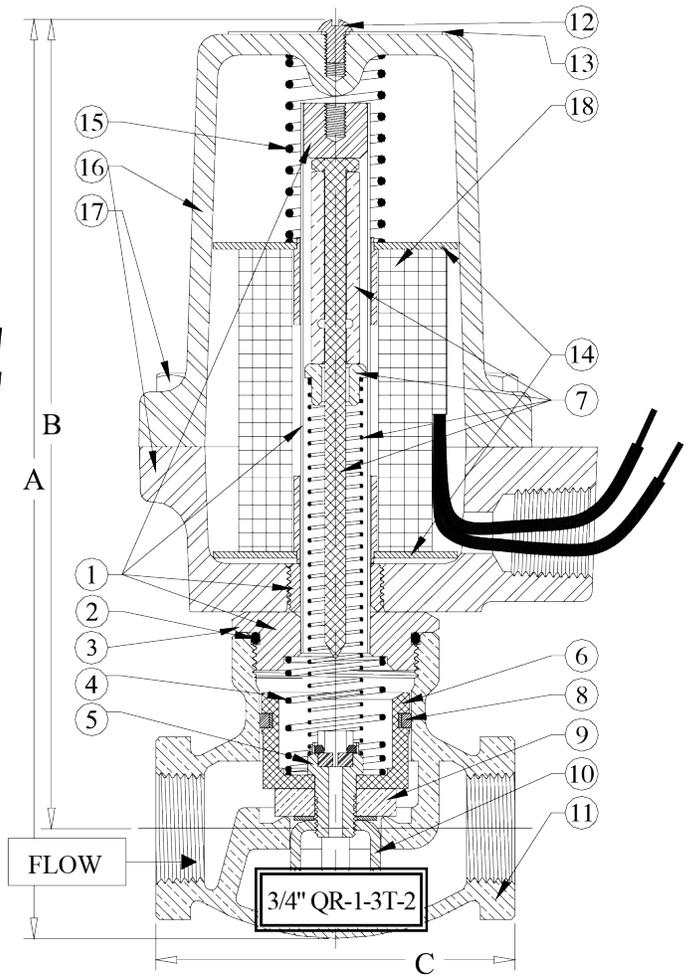
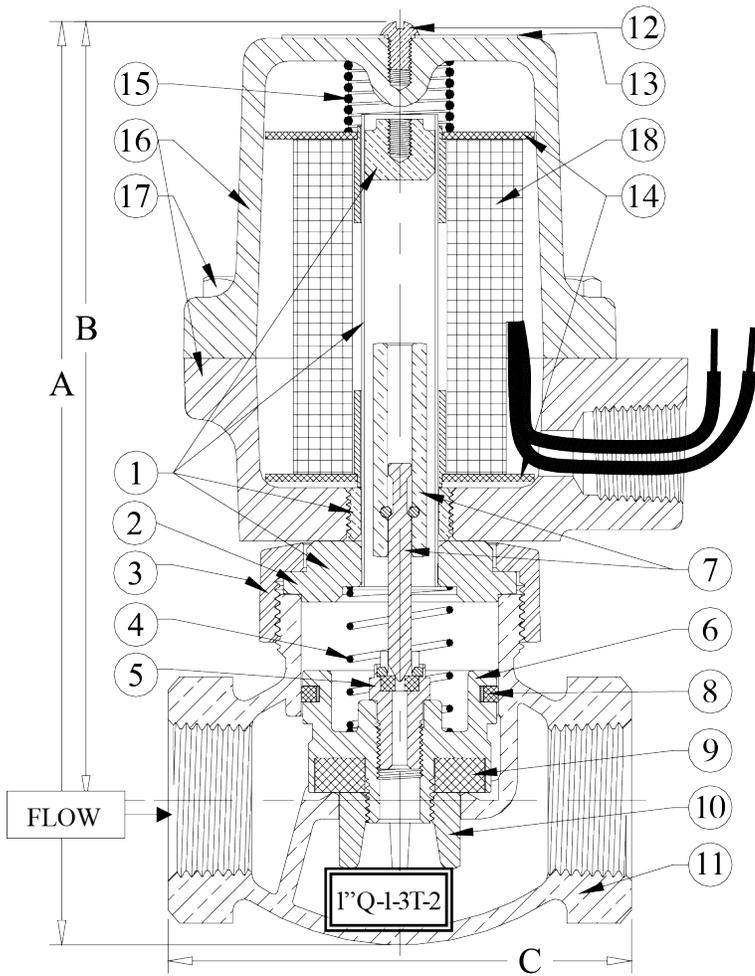
Normally Closed Parts Details

1	Bonnet Assembly
2	Bonnet Seal (N/A on 1" - 1-1/2")
3	Bonnet Ring (N/A on 1/8" - 3/4")
4	Piston Spring
5	Seat Screw
6	Pilot Valve
7	Piston
8	Piston Ring & Expander
9	Seat Disc
10	Guide Nut
11	Body
12	Coil Nut
13	Nameplate
14	Coil



Normally Open Parts Details	
1	N.O. Bonnet Assembly
2	Bonnet Seal (N/A on 1" - 1-1/2")
3	Bonnet Ring (N/A on 1/8" - 3/4")
4	Piston Spring
5	Seat Screw
6	Piston
7	Pilot Assembly
8	Piston Ring & Expander
9	Seat Disc
10	Guide Nut
11	Body
12	Coil Screw
13	Nameplate
14	N.O. Nip
15	Coil Can Assembly
16	Coil

Valve Size	Cv Factor	Standard Valve Dimensions							
		Normally Closed				Normally Open			
		A	B	C	Weight (lbs.)	A	B	C	Weight (lbs.)
1/8"	1.3	6.31	5.5	2.75	3	7.31	6.5	2.75	4
1/4"	2.1	6.31	5.5	2.75	3	7.31	6.5	2.75	4
3/8"	2.3	6.31	5.5	2.75	3	7.31	6.5	2.75	4
1/2"	3.8	6.31	5.5	2.75	3	7.31	6.5	2.75	4
3/4"	5.1	6.69	5.7	3.25	4	7.69	6.7	3.25	4
1"	11.6	7.0	5.83	3.81	5	8.0	6.83	3.81	5
1-1/4"	12.1	7.7	6.3	4.25	6	8.7	7.3	4.25	7
1-1/2"	26	8.27	6.64	4.88	8	9.27	7.64	4.88	9
2"	48	8.88	6.94	5.88	13	9.88	7.94	5.88	14
2-1/2"	75	9.63	7.3	7.00	18	10.63	8.3	7.00	18
3"	100	10.6	7.8	8.25	27	11.6	8.8	8.25	27



Normally Closed -2 XP Parts Details

1	N.C. XP Bonnet Assembly
2	Bonnet Seal (N/A on 1" - 1-1/2")
3	Bonnet Ring (N/A on 1/8" - 3/4")
4	Piston Spring
5	Seat Screw
6	Piston
7	N.C. XP Pilot Assembly
8	Piston Ring & Expander
9	Seat Disc
10	Guide Nut
11	Body
12	Coil Screw
13	Nameplate
14	XP Coil End Plates
15	Coil Spring
16	N.C. XP Enclosure
17	XP Bolts
18	Coil

Normally Open -2 XP Parts Details

1	N.O. XP Bonnet Assembly
2	Bonnet Seal (N/A on 1" - 1-1/2")
3	Bonnet Ring (N/A on 1/8" - 3/4")
4	Piston Spring
5	Seat Screw
6	Piston
7	N.O. XP Pilot Assembly
8	Piston Ring & Expander
9	Seat Disc
10	Guide Nut
11	Body
12	Coil Screw
13	Nameplate
14	XP Coil End Plates
15	Coil Spring
16	N.C. XP Enclosure
17	XP Bolts
18	Coil

Physical Dimensions of Normally Closed Valves

Size	A	B	C	Weight
1/8	7	6.19	2.75	7 lbs.
1/4	7	6.19	2.75	7 lbs.
3/8	7	6.19	2.75	7 lbs.
½	7	6.19	2.75	7 lbs.
¾	7.38	6.38	3.25	8 lbs.
1	7.63	6.44	3.81	9 lbs.
1-1/4	8.38	6.88	4.25	10 lbs.
1-1/2	8.88	7.25	4.88	12 lbs.
2	9.81	7.69	5.88	17 lbs.
2-1/2	10.13	8.25	7	22 lbs.
3	11.19	8.38	8.25	31 lbs.

The Explosion proof NEMA 7 housing is constructed of two (2) machined, enamel painted sand-cast gray iron parts bolted together, threaded onto the bonnet assembly and rigidly cemented in place. Once assembled, the housing will not rotate. Also meets Watertight NEMA 4 and Dusttight NEMA 5 ratings.

***Also for -3B, -3EP, -3T Valves**

Physical Dimensions of Normally Open Valves

Size	A	B	C	Weight
1/8	8.13	7.31	2.75	8 lbs.
1/4	8.13	7.31	2.75	8 lbs.
3/8	8.13	7.31	2.75	8 lbs.
½	8.13	7.31	2.75	8 lbs.
¾	8.50	7.50	3.25	9 lbs.
1	8.75	7.56	3.81	10 lbs.
1-1/4	9.50	8.00	4.25	11 lbs.
1-1/2	10.00	8.38	4.88	13 lbs.
2	10.94	8.81	5.88	18 lbs.
2-1/2	11.25	9.38	7	22 lbs.
3	12.31	9.50	8.25	31 lbs.