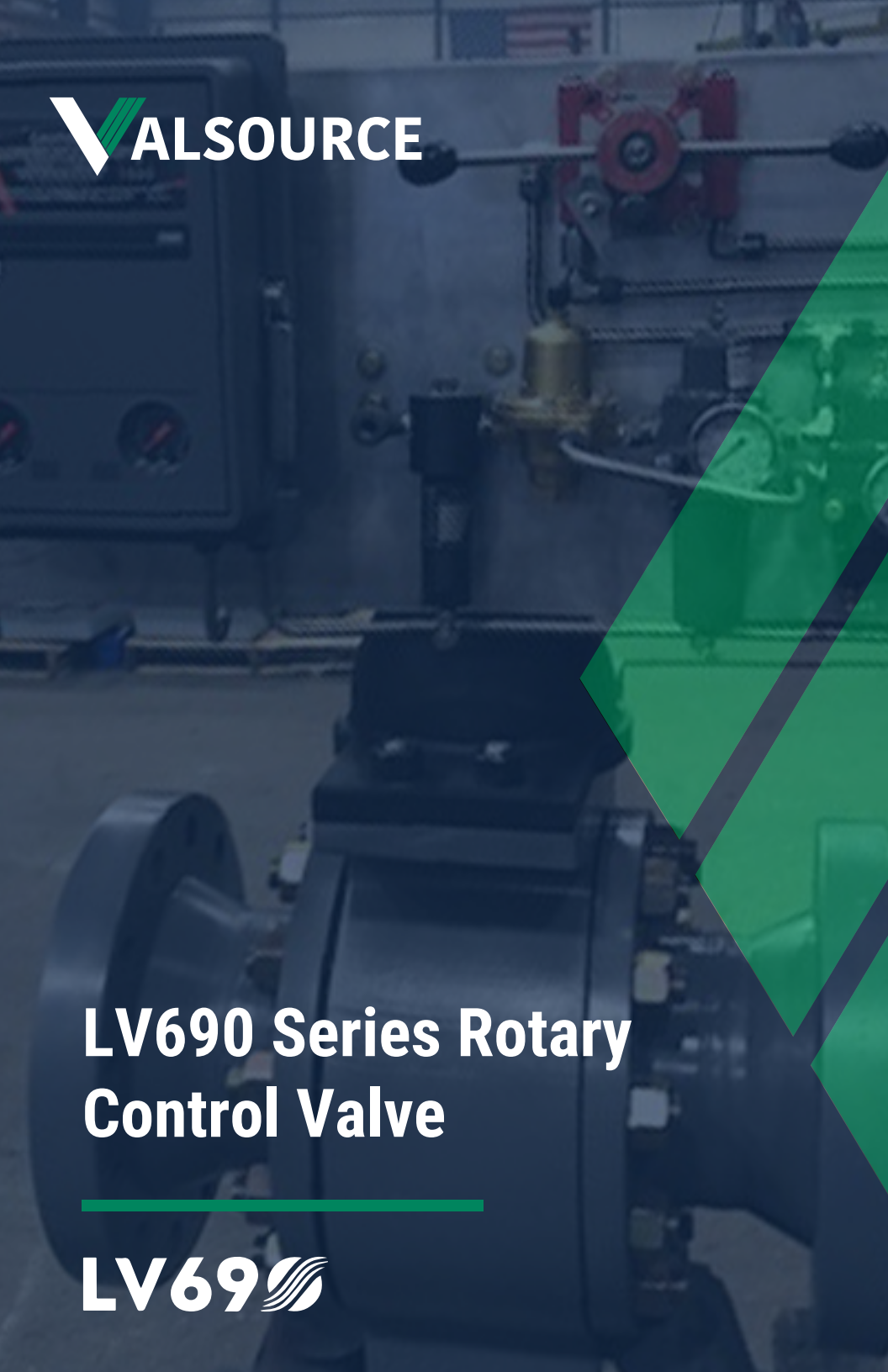


VALSOURCE

LV690 Series Rotary Control Valve

LV690

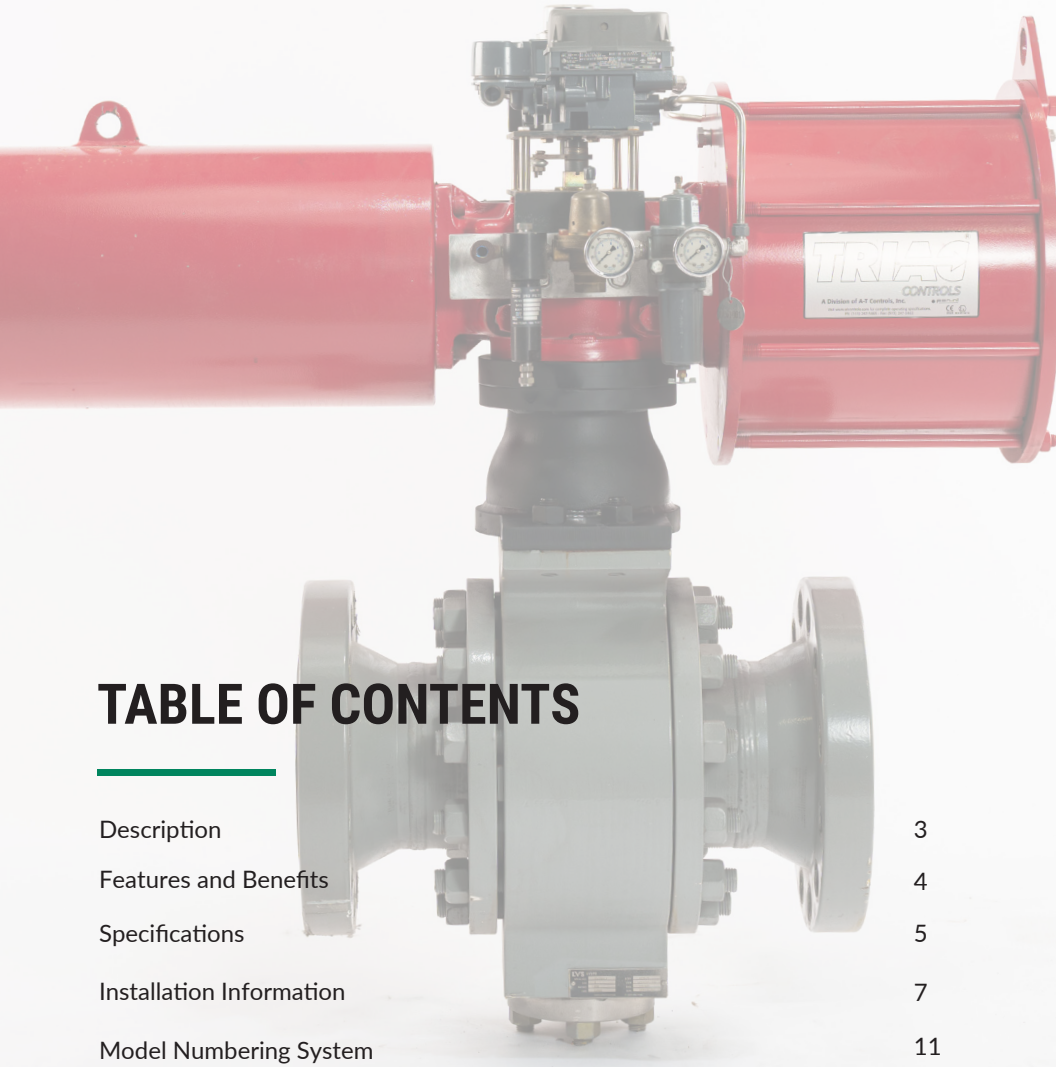


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ABOUT US

Valsource is globally recognized for providing valves and valve services with facilities in Pasadena, TX, Port Allen, LA, and Youngsville, LA. This success has provided momentum to further establish Valsource as a quality valve manufacturer in the valve industry. This is demonstrated through our LV690 Series Rotary Control Valve.

DESCRIPTION

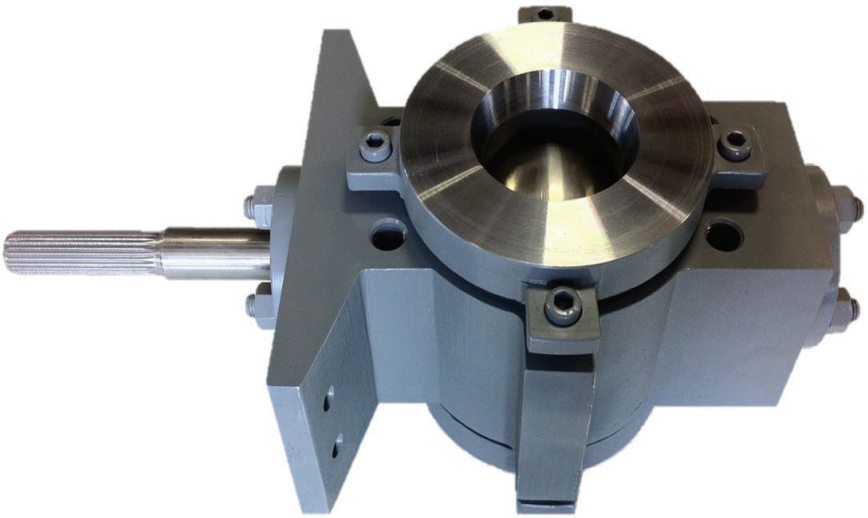
The LV690 series rotary control valve utilizes a heavy-duty construction which is suitable for both modulating service and on-off applications. The valve is typically installed in gas transmission and liquid pipelines applications. The LV690 is designed to function with either a single or dual ball seal (see Figure 1). The single seal offering provides tight shutoff in the forward flow direction while the dual seal offering combines tight shutoff with bi-directional flow capability.



FEATURES AND BENEFITS

The LV690 Series Rotary Control Valve incorporates the following features:

- Superb Flow Control – Modified equal percentage flow characteristic.
- Tight Shutoff – Leakage rate is 0.0001% of the maximum capacity.
- Solid Construction – The CL600 LV690 series valves are rated for 1500 psi maximum static pressure differential at 180 °F; the CL900 valves are rated for 2250 psi maximum static pressure differential at 100 °F.
- Ease of Maintenance – The two-piece ball and shaft construction provides for trim replacement with minimum replacement parts. A long service life is assured by a pressure balanced drive shaft construction utilizing PTFE lined bearings and a pressure assisted shaft seal.
- Sour Service Construction – The LV690 valve is constructed of materials that meet the requirements of NACE MR0175-2021.
- Self-Centering Ball and Shaft Connection – The drive shaft of the LV690 series valve utilizes a taper design (see Figure 2) for connection with the ball.
- Actuator Flexibility – The drive shaft of LV690 series valve is offered with either a keyed actuator connection or a clamped spline option (see Figure 3).



SPECIFICATIONS

Valve Body Information

Type
- Wafer- Ball Control Valve
- Lug Style
- 3-Piece - Rotary Pipeline Ball Control Valve

Available Sizes
- NPS 4” through 24”

End Connections
- Flangless Wafer Construction
- Lug Construction
- 3-Piece Body Construction 6D End to End STD

Body Pressure Rating
- *Can offer 150 and 300 class as well on 3-Piece Body Construction upon special request*

Materials of Construction
- See Table 1

Actuator Mounting

- Right-hand or Left-hand actuator mounting with shaft options for either keyed or clamped spline type actuators

Options

- Sour service trim

Valve Trim Information

Seal Types and Flow Direction
- Single Seal – Forward Flow
- Dual Seal – Bi-directional Flow *(Dual Seal offering is required for bi-directional shutoff and includes a tapped and plugged connection which can be utilized to test seal integrity when used in a double block and bleed system.)*

Rated Travel
- 90 Degrees

Flow Coefficients
- See Table 2

Flow Characteristic
- **Modified Equal Percentage**

Maximum Allowable Pressure Drop at Shutoff
- See Figure 3

Shutoff Classification
- 0.0001% of valve capacity *(This value is less than 1% of ANSI/FCI 70-2 Class IV.)*

Ball Seal Temperature Limits
- -50 to 180°F

Approximate Weights and Dimensions

- See Figure 4 & 5 and Table 4 & 5

Figure 1: Sectional View, Ball Seal Detail, LV690 Rotary Control Valve

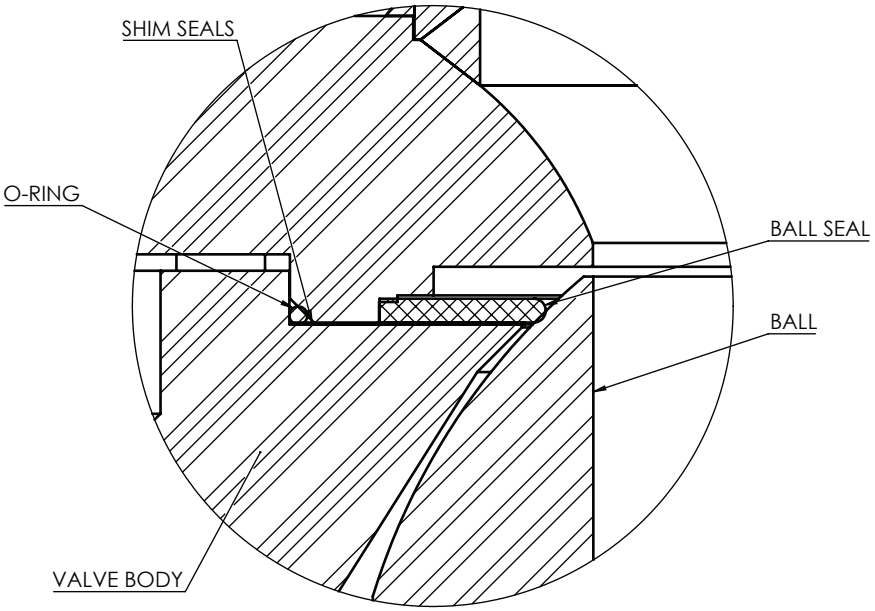


Figure 2: Drive Shaft Options, LV690 Rotary Control Valve

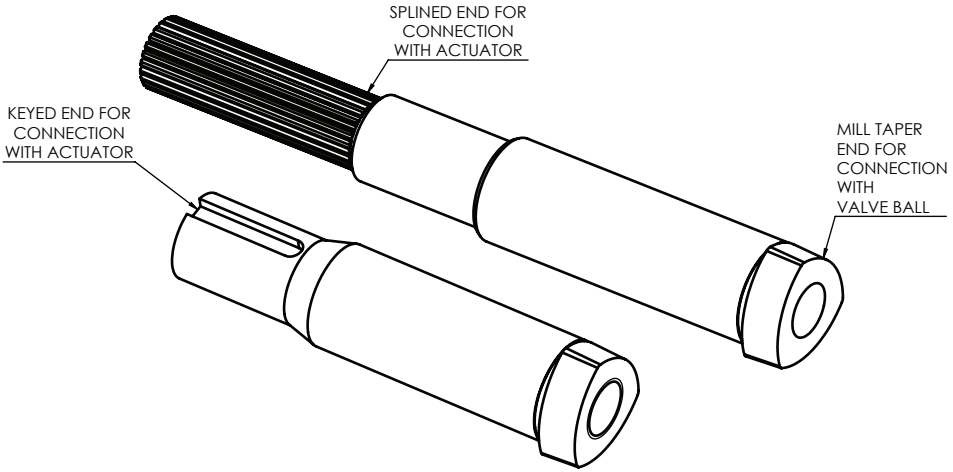


Table 1: Materials of Construction

Valve Component	Standard Offering Material	Sour Service Offering Material
Valve Body, Body Outlet, and Seal Protector Ring	All Bodies are Heat Treated	ASME SA516 Grade 70, Carbon Steel Plate, Heat Treated
Drive Shaft, Follower Shaft	All stems are 17-4 HH150	S17400 (17-4PH SS) H1150 DBL
Ball	316 SS	316 SS
Ball Seal	Polyoxymethylene (POM)	Polyoxymethylene (POM)
Bearings	PTFE Composition-lined S31600	PTFE Composition-lined S31600
O-Rings	FKM	Fluorocarbon
Shaft Seal with Backup Ring	FKM Poly Pak	FKM Poly Pak
Seal Carrier	S31600 SS	S31600 SS
Seal Carrier Stud Bolts	Grade B7 Steel	Grade B7M Steel
Seal Carrier Hex Nuts	Grade 2H Steel	Grade 2HM Steel

Installation Information

The LV690 series valves may be installed in any position, but installation in a horizontal pipeline with the shaft oriented horizontally and having the ball close down is recommended. When installing the single seal offering, the valve must be installed so that flow through the pipeline matches that of the flow direction arrow on the valve body. The actuator may be oriented to either the right-hand or left-hand positions as viewed from the valve inlet. When installing the dual seal offering, the valve must be installed so that the highest pressure condition occurs upstream of the valve as indicated by the flow direction arrow on the valve body.

Note: Valsource does not assume the responsibility for proper selection, installation, operation, and maintenance of any product.

Table 2: Flow Coefficients for Either Forward or Reverse Flow (Values are Approximate)

Coefficients	Valve Size	Degrees of Rotation								
		10	20	30	40	50	60	70	80	90
C_v	4	- - -	6.73	19.0	40	69	113	182	335	498
C_v	6	- - -	15.6	42.9	76	129	204	309	567	855
C_v	8	1.47	27.9	91.7	178	309	477	721	1220	2189
C_v	10	42.7	85.4	174	305	483	763	1149	1800	3054
C_v	12	40.5	121	266	498	812	1231	1871	3060	5799
C_v	16	68	204	448	812	1339	2029	3010	4630	8130
C_v	20	132	330	726	1320	2180	3300	4880	7520	13200
C_v	24	183	458	1010	1830	3020	4580	6770	10400	18299

Figure 3: Maximum Allowable Pressure Drop at Shutoff, (Max Temp 180deg F)

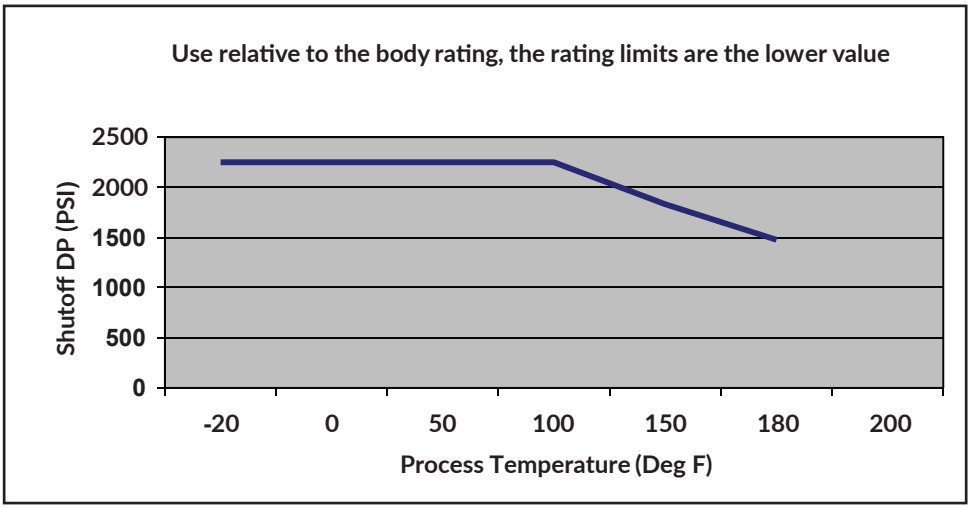


Figure 4: Design Illustrations and Dimensions

4"-24"

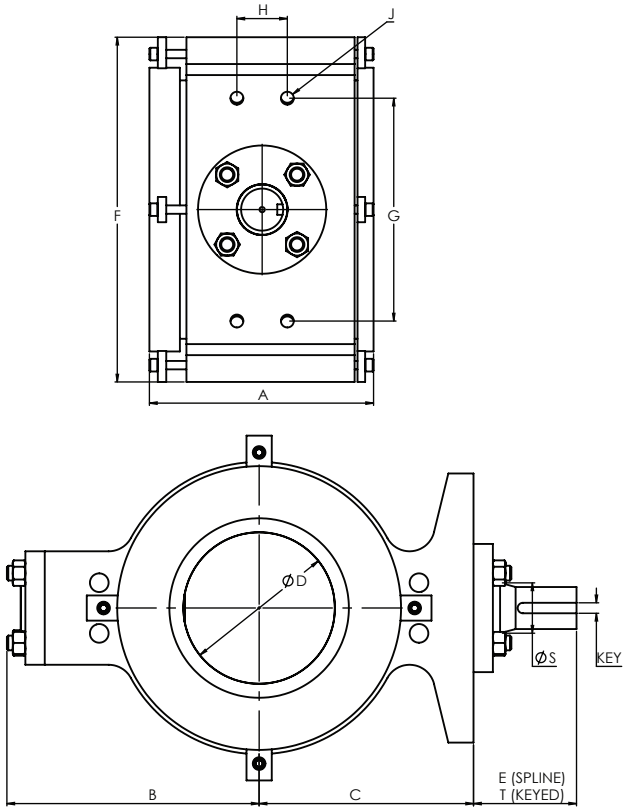


Table 4: Dimensions (inches) and Approximate Weights (Pounds)

Valve Size	Weight	A	B	C	D	E	F	G	H	J	S	Key	T
4	160	7.62	7.75	6.38	3	8.25	11	9.25	1.81	5/8- UNC	1.25	5/16	4
6	290	9	9.38	7.62	4	14	12.88	10.75	2	3/4-UNC	2	1/2	4
8	490	9.56	12.88	10.62	6	15	16.25	13.25	3	7/8-UNC	2.5	5/8	6
10	760	11.69	13.5	11.31	7.38	14	17.5	13.25	3	7/8- UNC	2.75	5/8	6
12	950	13.31	15	12.75	9	14	19	13.25	3	7/8-UNC	3	5/8	6
16	1375	15.75	18.125	15.44	11.5	18.5	24.12	21	5	1-1/8-UNC	4	7/8	8
20	3641	21	21.5	18.88	14.62	- - -	34	21	5	1-1/4-UNC	5	1	8
24	6797	26.75	24.75	21.5	17.25	- - -	39	21	5	1-1/4-UNC	6	1 1/4	10

Figure 5: 3-Piece Body Design Illustrations and Dimensions

4"-24"

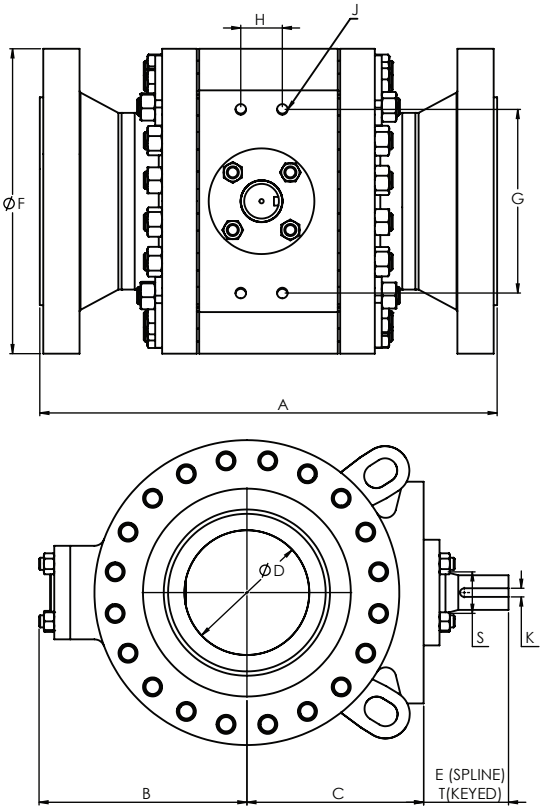


Table 5: Dimensions (inches) and Approximate Weights (Pounds)

Valve Size	Weight (600)	Weight (900)	A (600)	A (900)	B	C	D	E	F	G	H	J	S	Key	T
4	286	344	17	18	7.75	6.38	3	8.25	11	9.25	1.81	5/8- UNC	1.25	5/16	4
6	575	730	22	24	9.38	7.62	4	14	12.88	10.75	2	3/4-UNC	2	1/2	4
8	920	1255	26	29	12.88	10.62	6	15	16.25	13.25	3	7/8-UNC	2.5	5/8	6
10	1524	1884	31	33	13.5	11.31	7.38	14	17.5	13.25	3	7/8- UNC	2.75	5/8	6
12	2000	2594	33	38	15	12.75	9	14	19	13.25	3	7/8-UNC	3	5/8	6
16	3311	3939	39	44.5	18.125	15.44	11.5	18.5	24.12	21	5	1-1/8-UNC	4	7/8	8
20	6226	- - -	47	- - -	21.5	18.88	14.62	- - -	34	21	5	1-1/4-UNC	5	1	8
24	8420	- - -	55	- - -	24.75	21.5	17.25	- - -	39	21	5	1-1/4-UNC	6	1 1/4	10

MODEL NUMBERING SYSTEM

4 (Valve Size, NPS)
6
8
10
12
16
20
24

-LV690

- 6 ANSI CL600
- 9 ANSI CL900

-1 (Single Seal)
-2 (Dual Seal)

-S (Standard Materials)
-N (Sour Service Materials)

-S (Splined Shaft)
-K (Keyed Shaft)

-W (Wafer Style)
-L (Lug Style)
-F (Flanged)

-RF (Rasied Face)
-RTJ (Ring Type Joint)

Example: **6-LV690-6-2-S-K-F-RF** 6" LV690 Series Rotary Control Valve ANSI 600 with dual ball seal configuration, standard material, keyed shaft, flanged style, and raised face.

4 (Valve Size, NPS)
6
8
10
12
16
20
24

-LV690

- 6 ANSI CL600
- 9 ANSI CL900

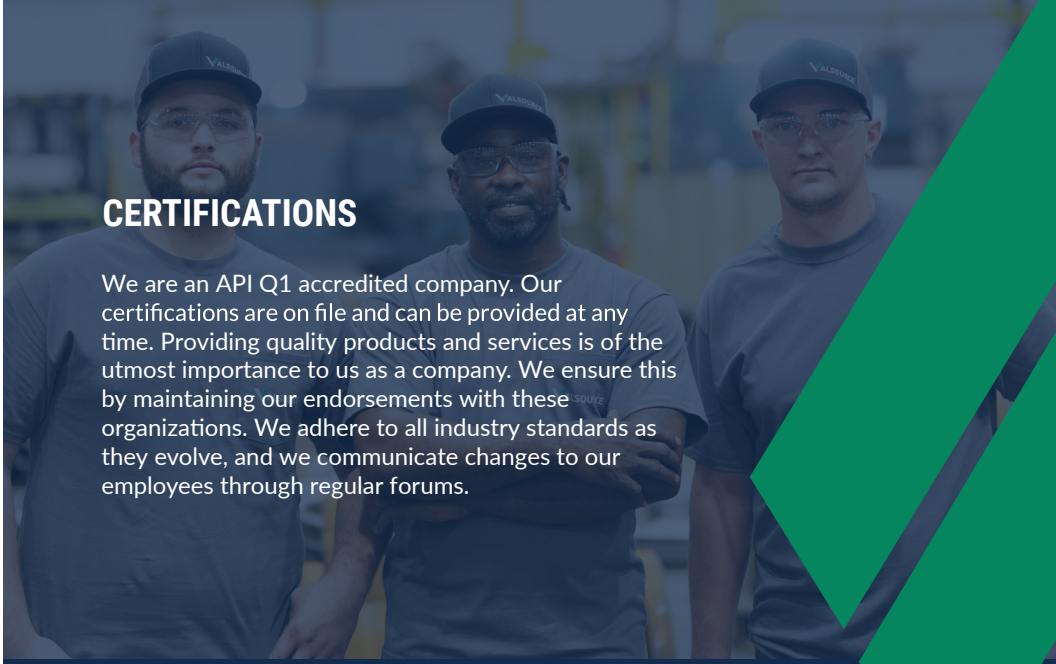
-1 (Single Seal)
-2 (Dual Seal)

-S (Standard Materials)
-N (Sour Service Mater

-S (Splined Shaft)
-K (Keyed Shaft)

-W (Wafer Style)
-L (Lug Style)
-F (Flanged)

-RF (Rasied Face)
-RTJ (Ring Type Joint)



CERTIFICATIONS

We are an API Q1 accredited company. Our certifications are on file and can be provided at any time. Providing quality products and services is of the utmost importance to us as a company. We ensure this by maintaining our endorsements with these organizations. We adhere to all industry standards as they evolve, and we communicate changes to our employees through regular forums.

VALSOURCE

Locations

We are available 24/7 to service your valve needs. For more information, you can reach us at 877-474-1113, sales@valsource.net, or at any of the following locations:

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www.valsource.net

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VS_LV690_BR_002 Aug_2023