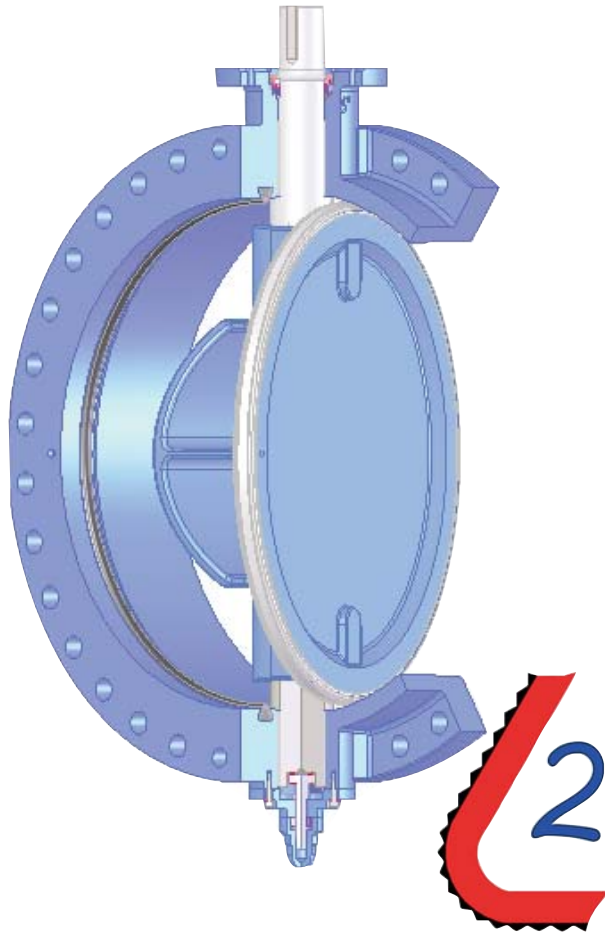


# K-FLO

## BUTTERFLY VALVES

VALVES FROM 24" THRU 168"



K-FLO 47 SERIES WITH  
L2 EPOXY RETAINED SEAT

Crispin

PO Box 411  
Berwick PA 18603

S2 - Shaft Dia., 150B  
S3 - Shaft Dia., 250B

dia.  
es  
es  
B)  
es)  
s)

D

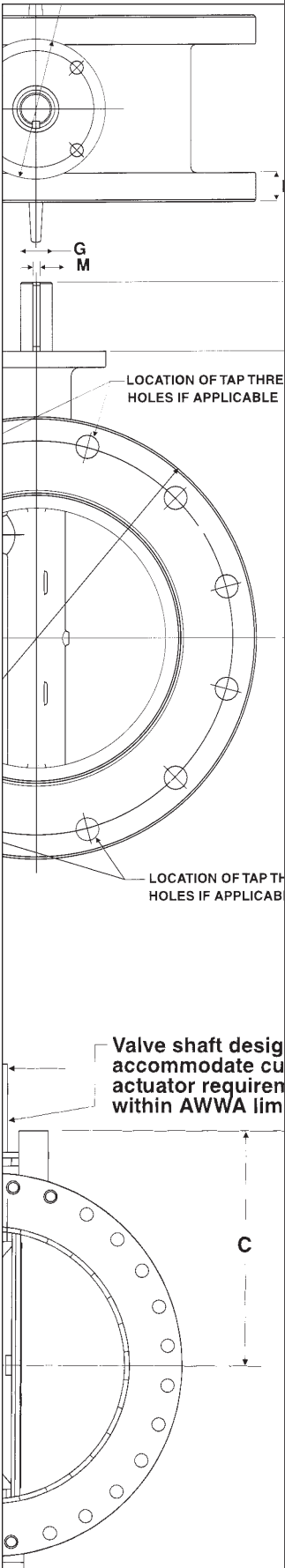
K  
F

SIZES 3" & 4" ONLY

que Plug

B

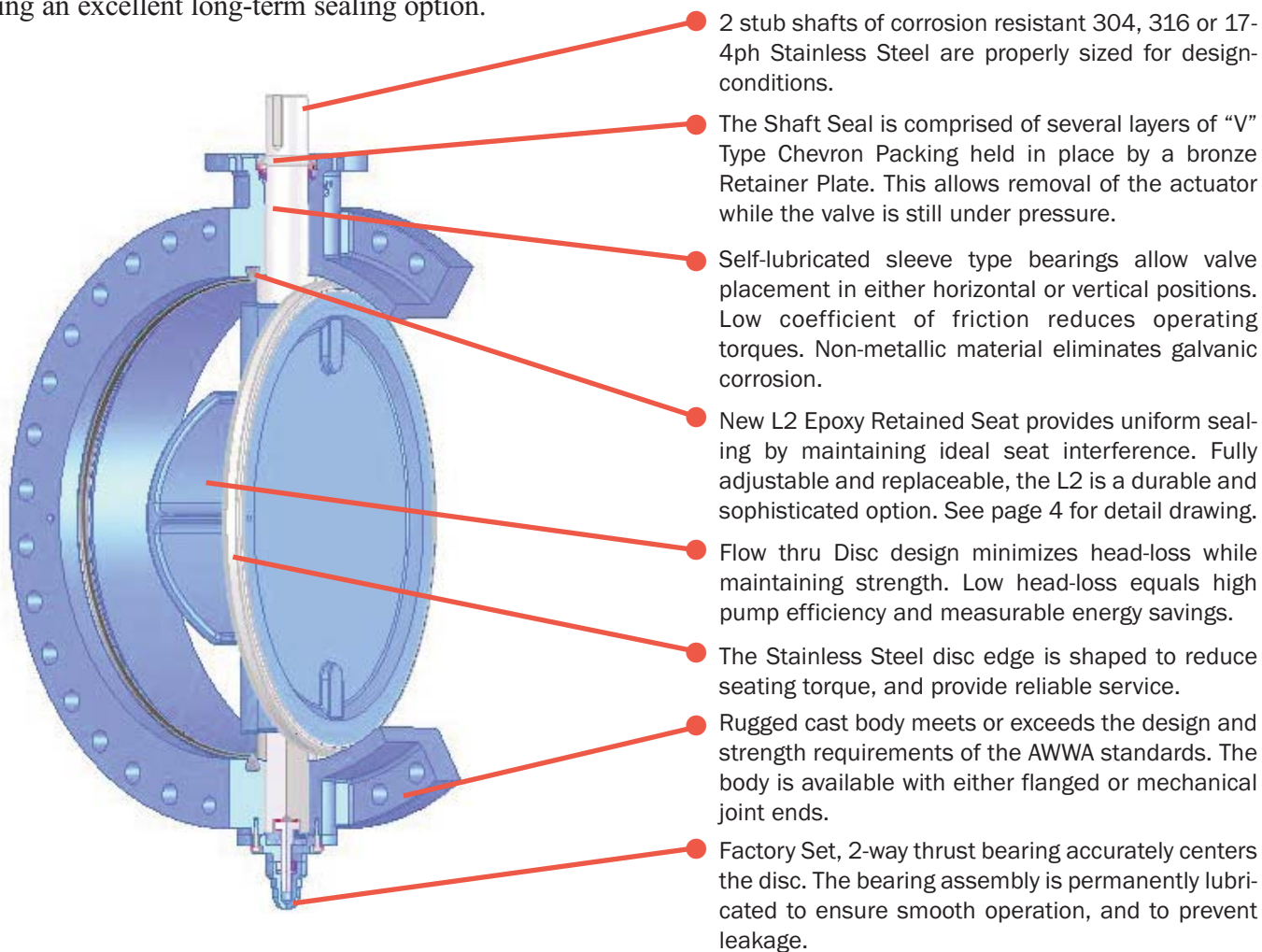
800-247-VALV  
www.crispinvalve.com



# 47 SERIES L<sub>2</sub>: Sizes 24"-168"

Crispin/K-Flo is pleased to announce that customers now have more than an “either/or” choice when selecting a Seat-In-The-Body AWWA Butterfly Valve. The same great K-Flo 47 Series large diameter butterfly valve is now available with an epoxy retained rubber seat. An industry favorite for over 30 years, the epoxy retained seat provides full port flow equal to or greater than all major leading valve designs.

Instead of casting a step in the body designed to receive the seat and retaining hardware of our standard 47 series valve seat, we machine a dovetail groove in the body to accept the seat extrusion. Next, a special 2-part epoxy is injected behind the seat and into the groove. This epoxy will not bond to the seat extrusion nor the body groove. With the disc in the closed position, the epoxy pushes the extrusion out to make a solid seal against the full circumference of the disc. Once hardened, the epoxy maintains the ideal interference between the seat and the disc thus producing an excellent long-term sealing option.



- 2 stub shafts of corrosion resistant 304, 316 or 17-4ph Stainless Steel are properly sized for design-conditions.
- The Shaft Seal is comprised of several layers of “V” Type Chevron Packing held in place by a bronze Retainer Plate. This allows removal of the actuator while the valve is still under pressure.
- Self-lubricated sleeve type bearings allow valve placement in either horizontal or vertical positions. Low coefficient of friction reduces operating torques. Non-metallic material eliminates galvanic corrosion.
- New L2 Epoxy Retained Seat provides uniform sealing by maintaining ideal seat interference. Fully adjustable and replaceable, the L2 is a durable and sophisticated option. See page 4 for detail drawing.
- Flow thru Disc design minimizes head-loss while maintaining strength. Low head-loss equals high pump efficiency and measurable energy savings.
- The Stainless Steel disc edge is shaped to reduce seating torque, and provide reliable service.
- Rugged cast body meets or exceeds the design and strength requirements of the AWWA standards. The body is available with either flanged or mechanical joint ends.
- Factory Set, 2-way thrust bearing accurately centers the disc. The bearing assembly is permanently lubricated to ensure smooth operation, and to prevent leakage.

## MATERIALS

### SIZES

24"-72" in AWWA Class 75, 150, 250 (meets or exceeds AWWA C504)  
 Sizes 78" and above are AWWA compliant.

### BODY

Cast Iron (ASTM A126, Class B)  
 Ductile Iron (ATM A536, Grade 65-45-12)

### SEAT

Buna-N; EPDM Optional

### SHAFT

ASTM A276, Grade 304 or 316 Stainless Steel  
 Optional: 17-4pH Stainless Steel on Class 250B

### DISC

Ductile Iron (ASTM A536, Grade 65-45-12)  
 w/ 316 Stainless Steel Edge

### BEARINGS

TFE Lined with Fiberglass backing.

\* Class 250B valves with AWWA Type “E” and “F” flanges are available. Please contact the factory.

- Series 47 valves fully comply w/ AWWA C504's latest edition.
- Series 47 valves have passed the proof of design tests of AWWA C504
- Consult factory for 75B shaft diameters.

- “Q” Dimension is the minimum allowable inside diameter at the centered body face to protect the disc sealing edge from damage when opening the valve.
- Consult factory for valve dimensions in sizes greater than 72" and mech. joint dims.

# 47 SERIES L<sub>2</sub> Dimensional Data

K-FLO Model 474 (Flanged x Flanged, AWWA Class 150B)

Bare Stem

Size in.	A	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.	K in.	L in.	M in.	N in.	P in.	Q in.	WT. lbs
24	39 <sup>9</sup> / <sub>16</sub>	32	20	29 <sup>1</sup> / <sub>2</sub>	2	8	7 <sup>9</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	3	2 <sup>3</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>16</sub> x 5 <sup>5</sup> / <sub>8</sub> x 4	10	(16) <sup>21</sup> / <sub>32</sub>	(4)1 <sup>1</sup> / <sub>4</sub> "-7	(16) <sup>13</sup> / <sub>8</sub>	770
30	47 <sup>1</sup> / <sub>4</sub>	38 <sup>3</sup> / <sub>4</sub>	23 <sup>3</sup> / <sub>8</sub>	36	2 <sup>3</sup> / <sub>16</sub>	12	8 <sup>9</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	3 <sup>5</sup> / <sub>8</sub>	3	1 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>4</sub> x 3 <sup>5</sup> / <sub>8</sub>	10	(16) <sup>21</sup> / <sub>32</sub>	(4)1 <sup>1</sup> / <sub>4</sub> "-7	(24) <sup>13</sup> / <sub>8</sub>	1300
36	56	46	27	42 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	12	11 <sup>9</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>4</sub> x 3 <sup>5</sup> / <sub>8</sub>	10	(16) <sup>21</sup> / <sub>32</sub>	(4)1 <sup>1</sup> / <sub>2</sub> "-6	(28) <sup>15</sup> / <sub>8</sub>	1896
42	62 <sup>15</sup> / <sub>16</sub>	53	30 <sup>1</sup> / <sub>2</sub>	49 <sup>1</sup> / <sub>2</sub>	2 <sup>11</sup> / <sub>16</sub>	12	14 <sup>9</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>8</sub>	5	4	3 <sup>3</sup> / <sub>4</sub> x 1 x 4 <sup>7</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>4</sub>	(16) <sup>13</sup> / <sub>16</sub>	(4)1 <sup>1</sup> / <sub>2</sub> "-6	(32) <sup>15</sup> / <sub>8</sub>	2685
48	70 <sup>3</sup> / <sub>8</sub>	59 <sup>1</sup> / <sub>2</sub>	34 <sup>1</sup> / <sub>2</sub>	56	2 <sup>13</sup> / <sub>16</sub>	15	16 <sup>1</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>8</sub>	4	3 <sup>3</sup> / <sub>4</sub> x 1 x 4 <sup>7</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>4</sub>	(16) <sup>13</sup> / <sub>16</sub>	(4)1 <sup>1</sup> / <sub>2</sub> "-6	(40) <sup>15</sup> / <sub>8</sub>	3830
54	77 <sup>11</sup> / <sub>16</sub>	66 <sup>1</sup> / <sub>4</sub>	37 <sup>7</sup> / <sub>8</sub>	62 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>16</sub>	15	19 <sup>1</sup> / <sub>16</sub>	6	6 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	7 <sup>7</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub> x 5 <sup>3</sup> / <sub>8</sub>	14	(16) <sup>13</sup> / <sub>16</sub>	(4)1 <sup>3</sup> / <sub>4</sub> "-5	(40) 2	5090
60	86 <sup>7</sup> / <sub>8</sub>	57 <sup>5</sup> / <sub>8</sub>	41 <sup>1</sup> / <sub>4</sub>	69 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>16</sub>	15	22 <sup>1</sup> / <sub>16</sub>	6	7 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>	7 <sup>7</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub> x 5 <sup>3</sup> / <sub>8</sub>	14	(16) <sup>11</sup> / <sub>16</sub>	(8)1 <sup>3</sup> / <sub>4</sub> "-5	(44) 2	6355
66	95 <sup>5</sup> / <sub>8</sub>	64 <sup>3</sup> / <sub>16</sub>	45 <sup>3</sup> / <sub>16</sub>	76	3 <sup>7</sup> / <sub>16</sub>	18	23 <sup>9</sup> / <sub>16</sub>	6	7 <sup>3</sup> / <sub>4</sub>	6	1 x 1 <sup>1</sup> / <sub>2</sub> x 5 <sup>3</sup> / <sub>8</sub>	16	(16) <sup>15</sup> / <sub>16</sub>	(8)1 <sup>3</sup> / <sub>4</sub> "-5	(44) 2	8220
72																
78																
84																
90																
96																

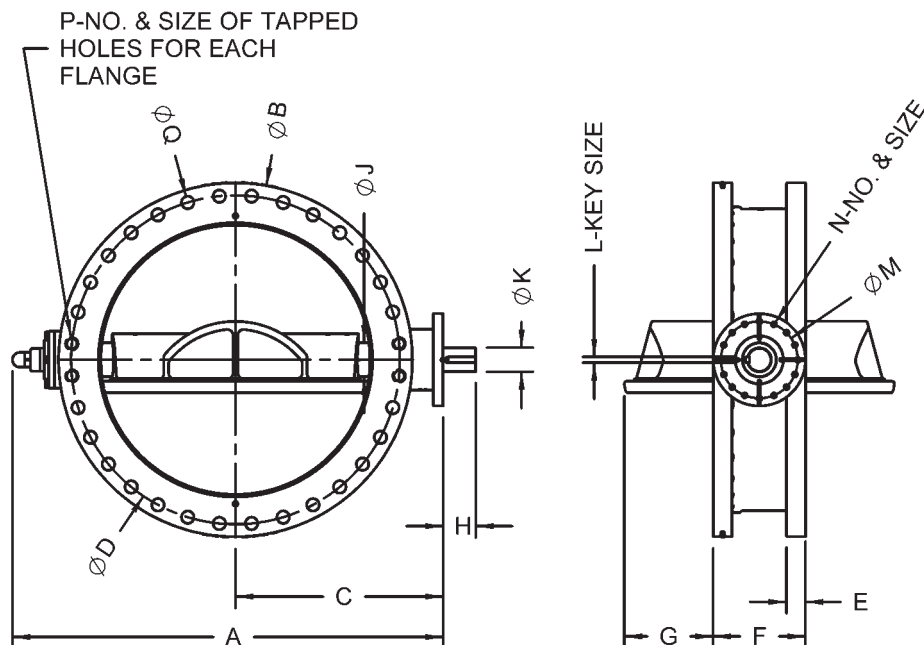
Please contact the factory for additional information.

# 47 SERIES L<sub>2</sub> Dimensional Data

K-FLO Model 477 (Mech. Joint x Mech. Joint, AWWA Class 150B)

Bare Stem

Size in.	A	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.	K in.	L in.	M in.	N in.	Q in.	WT. lbs
24	35 <sup>15</sup> / <sub>16</sub>	36 <sup>9</sup> / <sub>16</sub>	18 <sup>7</sup> / <sub>16</sub>	30	1 <sup>5</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	3	2 <sup>3</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>16</sub> x 5 <sup>5</sup> / <sub>8</sub> x 2 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub>	(4) <sup>3</sup> / <sub>4</sub> -10	(12) <sup>7</sup> / <sub>8</sub>	835
30	46 <sup>7</sup> / <sub>8</sub>	39 <sup>1</sup> / <sub>8</sub>	25 <sup>3</sup> / <sub>8</sub>	36 <sup>7</sup> / <sub>8</sub>	1 <sup>13</sup> / <sub>16</sub>	18	5 <sup>5</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	3 <sup>5</sup> / <sub>8</sub>	3	1 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>4</sub> x 3 <sup>1</sup> / <sub>2</sub>	11 <sup>3</sup> / <sub>4</sub>	(4)1-8	(16)1 <sup>1</sup> / <sub>8</sub>	1535
36	53 <sup>7</sup> / <sub>8</sub>	46	28 <sup>3</sup> / <sub>4</sub>	43 <sup>3</sup> / <sub>4</sub>	2	22	6 <sup>3</sup> / <sub>8</sub>	4 <sup>7</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>4</sub> x 3 <sup>5</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>4</sub>	(4)1-8	(20)1 <sup>1</sup> / <sub>8</sub>	2560
42	58 <sup>13</sup> / <sub>16</sub>	53 <sup>1</sup> / <sub>8</sub>	30 <sup>15</sup> / <sub>16</sub>	50 <sup>5</sup> / <sub>8</sub>	2	22	8 <sup>13</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>8</sub>	5	4	3 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub> x 5	11 <sup>3</sup> / <sub>4</sub>	(4)1-8	(24)1 <sup>3</sup> / <sub>8</sub>	3615
48	65 <sup>13</sup> / <sub>16</sub>	60	34 <sup>11</sup> / <sub>16</sub>	57 <sup>1</sup> / <sub>2</sub>	2	24	10 <sup>15</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>8</sub>	5 <sup>5</sup> / <sub>8</sub>	4	3 <sup>3</sup> / <sub>4</sub> x 1 x 5 <sup>5</sup> / <sub>8</sub>	16	(4)1 <sup>3</sup> / <sub>4</sub> -5	(28)1 <sup>3</sup> / <sub>8</sub>	4610



# K-FLO SERIES L<sub>2</sub> SPECIFICATIONS

## 1.00 GENERAL

### 1.01 WORK INCLUDED

- Furnish labor, materials, equipment and incidentals necessary to install butterfly valves.

### 1.02 QUALITY ASSURANCE

#### A. ACCEPTABLE MANUFACTURERS

1. Crispin-KFlo (Series 500 for 3" to 20" and Series 47 with L2 Epoxy Retained Seat for 24" and larger)
2. Engineer pre-approved equal

#### B. EXPERIENCE REQUIREMENTS

The Manufacturer shall have had a successful experience in manufacturing tight closing Buna-N or other acceptable synthetic rubber-seated butterfly valves for this type service in the size indicated. The Manufacturer shall have at least 10 years experience in the manufacture of valves. All butterfly valves of the same type shall be the product of one Manufacturer. All materials used shall be new, of high grade, and with properties best suited to the working environment.

#### C. MANUFACTURER'S REPRESENTATIVE FOR STARTUP AND TESTING

The Valve Vendor or Manufacturer shall provide the services of a competent Manufacturers' representative for a sufficient period of time as required to insure proper adjustment, installation, and operation of the valve.

### 1.03 SUBMITTALS

A. Certificate of Compliance or complete list of all deviation from the drawings and specifications.

B. Submit installation and assembly drawings complete with seat installation details, showing the manufacturer's dimensions, weights, and loadings.

C. Submit any and all electrical schematic, wiring diagrams, and interconnection diagrams showing wiring, controls, interlocks, and terminals. Label each terminal and wire showing which control or electrical power wire connects to which terminal. Submit manufacturer's catalog data for electrical equipment and enclosures.

D. Submit flow coefficient, Cv, and maximum pressure drop at rated flow rate for each valve size used.

E. Submit manufacturer's installation instructions and certification.

F. Provide O&M manual and spare parts list with descriptive literature, including a cross-section view of valve and all operators, which indicate materials of construction, weights, principal dimensions and other important details.

## 2.00 PRODUCTS

### 2.01 BUTTERFLY VALVES

A. All butterfly valves shall be of the tight-closing, rubber-seated type, conforming to the design standards of ANSI/AWWA C504 latest revision, except where noted herein. Valves shall be bubble-tight at the rated pressure in either direction and shall be suitable for throttling service and/or operation after long periods of inactivity. Maximum operating non-shock shut-off pressure and maximum operating non-shock line pressure is 150 psi. Each valve shall be performance and leak tested as specified in AWWA C504 revised as follows: In addition to the testing requirements of AWWA C504, each butterfly valve shall be thoroughly cleaned and opened at least three (3) times prior to testing.

B. All items shall have the name or symbol of the maker, the nominal size, date of manufacture, and the working pressure for which they are designed, cast, stamped, or permanently marked on the body.

C. Butterfly valves shall be Class 150B, unless otherwise indicated and of the flanged short body design. The valve bodies shall be constructed of cast iron ASTM A-126, Class B or ductile iron in accordance with ASTM A-536 with ANSI B16.1 flange drilling or for mechanical joint ends shall conform to ANSI/AWWA C11 1/A21.1 standard. Flanges shall conform to AWWA Class D standards.

D. Discs for valve sizes 3" – 20" shall be of the concentric design. Valve discs shall be constructed of 316 stainless steel for sizes 3" to 8" and epoxy coated ductile iron ASTM A-536 for sizes 10" to 20". Discs for valve sizes 24" and larger shall be of the "Flow Thru" and offset design to provide a full 360 degree seating surface and shall be constructed from epoxy coated ductile iron ASTM A-536. Valve disc shall have a 316 stainless steel seating edge. Valve disc shall seat at 90 degrees to the access of the pipe and shall require no torque to hold it in the closed position.

E. Valves 3" – 20" shall have a one piece through shaft constructed of stainless steel ASTM A-276, grade 304, corresponding to the requirements of AWWA C504, latest revision. The shaft shall be fastened to the disc by means of a threaded disc pin providing a posi-

tive leak proof connection of the shaft to the disc. Valves 24" and larger shall have stub shafts of stainless steel ASTM A-276, grade 304, corresponding to the design requirements of AWWA C504, latest revision. Secure valve to shaft by means of smooth-sided stainless steel, taper or dowel pins.

F. The resilient seat shall be Buna-N or EPDM for valves 3" – 20" and shall be simultaneously bonded and vulcanized to body of the valve. All interior surfaces in contact with water, excluding stainless steel and disc, shall be completely rubber lined. Seats for valves 3"–20" shall be designed so that they will require no internal adjustment or maintenance to seat against a pressure differential of 150 psi on either side of the valve. The resilient seat shall be Buna-N or EPDM for valves 24" and larger and shall be mechanically retained in the valve body without retaining rings, segments, screws or hardware of any kind in the flow stream, within a dovetail groove by means of an epoxy injection process which moves the seat against the disc to conform to the exact radius of the disc with uniform contact pressure. Valve seats shall be field adjustable around the full 360° circumference and replaceable without dismantling the actuator, disc or shaft and without removing the valve from the line. The seat shall be fully adjustable by local epoxy injection and can be replaceable in the field. Valves with seat designs that are located on the disc, or that use snap rings, will not be acceptable. The valve port diameter shall not be less than 1.25" of the valve diameter.

G. All bearings shall be of the self-lubricating, corrosion-resistant, sleeve type. Bearings shall be designed for horizontal and/or vertical shaft loading. The valve assembly shall be furnished with a factory set two-way thrust bearing designed to center the valve disc in the valve seat at all times.

H. Shaft packing shall be self adjusting V-type. The packing gland shall be located only in the top trunnion of the valve body where the shaft protrudes for actuator connection. The packing assembly shall incorporate a bronze packing retainer accompanied by several rings of packing. Packing shall be retained such that the actuator may be removed from the valve while under pressure.

I. The interior of valves 3" – 20" shall be completely rubber lined. The valve disc shall either be all 316 stainless steel or be ductile iron with epoxy coating from an AWWA NSF- 61 coating system. The use of liquid epoxy on body interior surfaces shall not be allowed. Valves 24" and larger: the interior of the valve body and the exterior of the valve disc shall be cleaned and sandblasted and lining shall be applied as per the Manufacturer's instructions. The lining material shall be in compliance with ANSI/NSF Standard 61, for contact with potable water. The lining material shall be "Pota -Pox" as manufactured by Tnemec, or equal. The interior lining shall be applied in a minimum of two coats, at 4–5 mils per coat; the total dry thickness shall be 8 – 10 mils.

J. The exterior surfaces shall be cleaned and sandblasted and coating shall be applied in accordance with the Manufacturer's instructions. Surface face cleanliness shall be inspected and any contaminants on the surface shall be removed prior to the coating operations. The coating material shall be "Pota-Pox" as manufactured by Tnemec, or equal. The coating material shall be applied in a minimum of two coats, at 4–5 mils per coat; the total dry thickness shall be 8– 10 mils.

SEAT STRUCTURE DETAIL

