

CLOW BUTTERFLY VALVES

CLOW VALVE COMPANY

**CLOW AWWA Butterfly Valves
Meet or Exceed the Requirements
of AWWA C504**

Size Range	4"—48"
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Size Range	Water Working Pressure psi	Bubble Tight Test psi	Hydrostatic Test psi
4"—12"	150	150	300
14"—48"	150	150	300

Available End Connections & Size Range

Model No.

Flange	3"—24"	4500
Flange	30"—48"	1450
Wafer	4"—20"	4500
M.J.	4"—24"	4500
M.J.	30"—48"	1450
Flange & M.J.	6"—8"—12"—16"	4500

Accessories (Illustrated in the gate valve section)

Floorstands	Chainwheels
Extension Stems	2" Operating Nuts
Stem Guides	Handwheels
Traveling Nut & Screw Actuator	"T" Handles
*Worm Gear Actuators	Floor Boxes
Hand Lever Actuators	*Limit Switches
*Electric Motor Actuators	
*Cylinder Actuators	

Valve Size Minimum Allowable Mating Pipe or Adapter Inside Diameter

	4"	3- ³ / ₈ "
	6"	5- ¹¹ / ₁₆ "
	8"	7- ³ / ₄ "
	10"	9- ⁷ / ₁₆ "
	12"	11- ⁹ / ₁₆ "
	14"	12- ⁷ / ₈ "
	16"	14- ¹³ / ₁₆ "
	18"	16- ¹³ / ₁₆ "
	20"	18- ¹⁵ / ₁₆ "
	24"	22- ⁷ / ₈ "
	30"	26- ¹ / ₂ "
	36"	33- ¹ / ₈ "
	42"	39- ¹ / ₈ "
	48"	44- ³ / ₈ "

*Note: Call Factory for Special Applications

CLOW BUTTERFLY VALVE LARGE DIAMETER

CLOW VALVE COMPANY

CLOW 1450 AWWA Butterfly Valves C504

- Style 1450 30"—48"
- Butterfly Valves

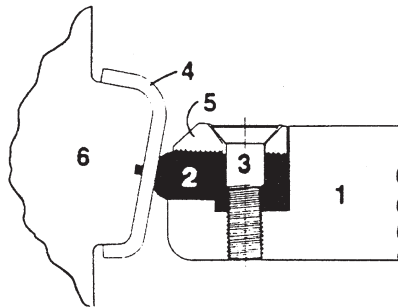
Rugged Stainless Steel Shafts.

All shafts are of 18-8 type 304 stainless steel keyed for operator connection and pinned to the vane with stainless steel taper pins secured with stainless steel lock nuts...full metal to metal contact is assured with no leakage to shaft ways CLOW Style 1450 shafts are manufactured to meet or exceed AWWA Standard C-504. Shaft diameters are as specified for the various valve classes.

Maintenance-Free. The CLOW Style 1450 butterfly valve is permanently lubricated and requires no periodic exercising or stem replacement. The closing action of the vane is self-cleaning and there are no pockets in which sediment formations can deposit, resulting in longer lifetime service.

Working Parts Corrosion-Free. All critical bearing and sealing surfaces are stainless steel, rubber, bronze or Teflon*. Your assurance of long life, easy and efficient valve operation. Further protection can be afforded the CLOW Style 1450 with the added option of AWWA C550 EPOXY coating on interior valve surfaces. C550 coating provides effective protection from corrosion caused by tuberculation.

UNIQUE ADJUSTABLE DESIGN ASSURES 360° UNINTERRUPTED SEALING



The CLOW Style 1450 incorporates a unique sealing system in which the seal is locked into a vane recess and is further restrained by a serrated clamp ring. Seal relaxation when the valve is in the open position is eliminated.

You are assured of uninterrupted 360° reliable and mechanically adjustable sealing as well as reduced wear and lower seating torque. Should field adjustment be required, one man with a torque wrench does the job in minutes without valve disassembly.

1—Vane; 2—360° Rubber Seat;
3—Stainless Steel Self-Locking Screw Fastener; with Nylon Sealing Sleeve;
4—Stainless Steel Body Seat Ring;
5—Stainless Steel Seat Retaining Ring;
6—Valve Body

For underground and in-plant applications, the Style 1450 is supplied with O-Ring shaft seals contained in bronze cartridge. Underground operators and end covers are permanently sealed against ground-water infiltration.

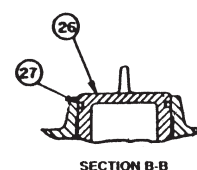
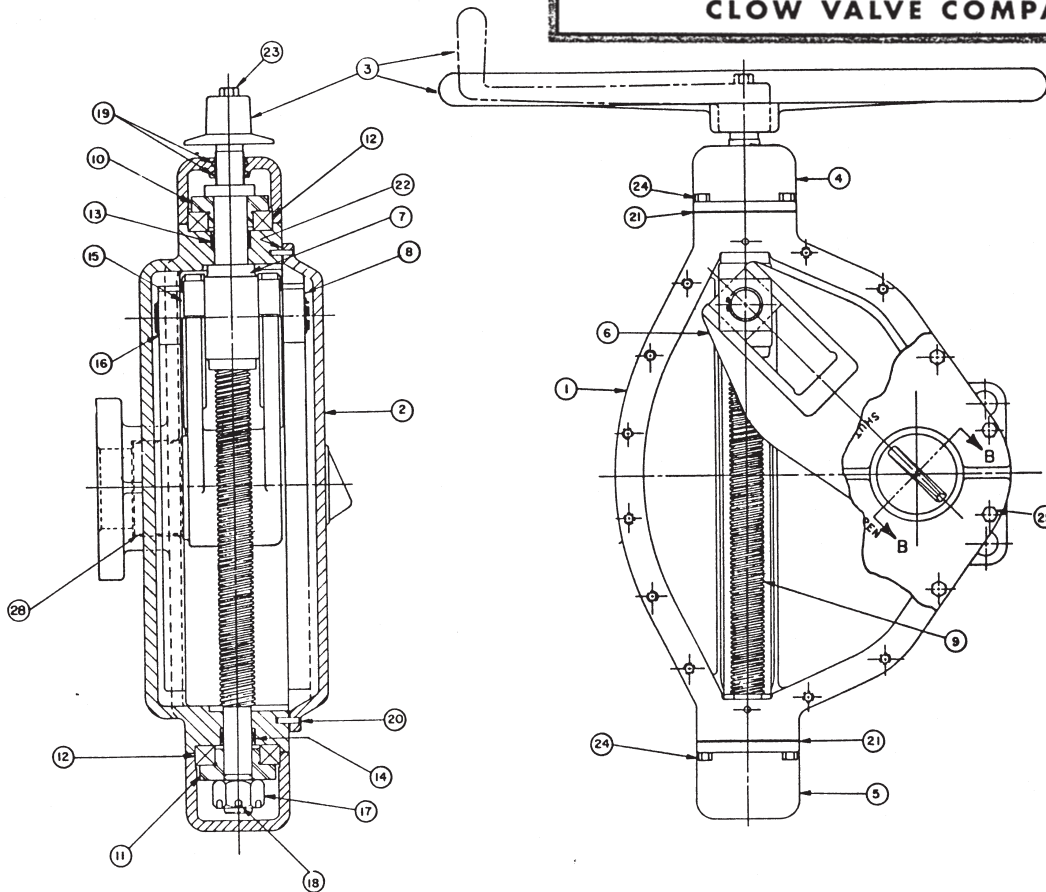
When municipalities, consultants and contractors install the CLOW Style 1450 butterfly valve, they are making a sound investment for the future in dependable, maintenance-free service, bottle-tight sealing and long valve life. The CLOW Style 1450 will prove to set a new industry standard for large diameter butterfly valves. Contact your nearest CLOW field representative soon for complete details.

*Dupont Registered Trademark

NSF APPROVED

SUB-ASSEMBLY 4350 MANUAL OPERATORS
FOR STYLE 1450 BUTTERFLY VALVE

CLOW VALVE COMPANY

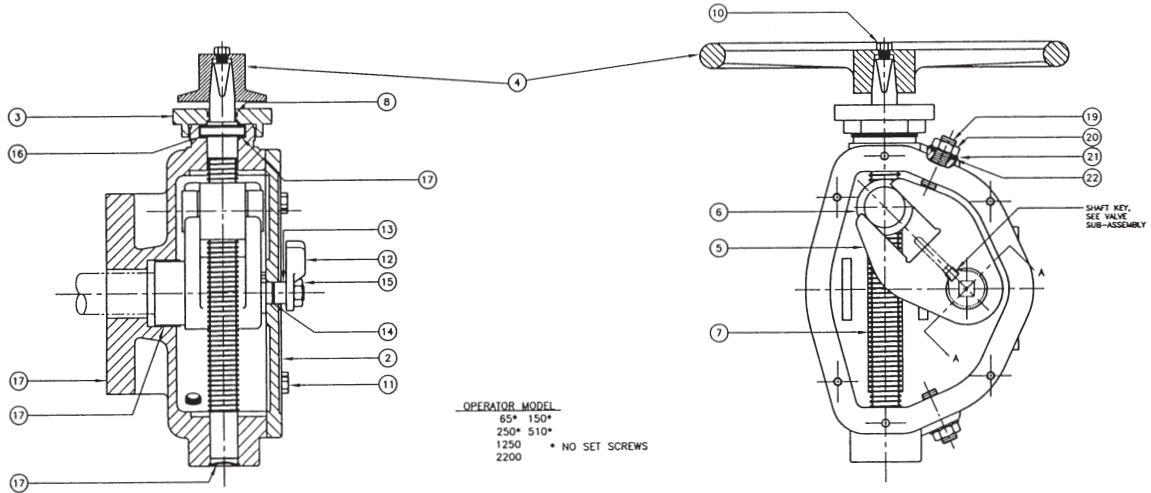


SECTION B-B

ITEM NO.	DESCRIPTION	MATERIAL
1	OPERATOR HOUSING	CAST IRON, ASTM A-126, CL. B
2	HOUSING COVER	CAST IRON, ASTM A-126, CL. B
3	AS REQUIRED	CAST IRON, ASTM A-126, CL. B
4	END CAP (INPUT)	CAST IRON, ASTM A-126, CL. B
5	END CAP (LOCKNUT)	CAST IRON, ASTM A-126, CL. B
6	LEVER	DUCTILE IRON, ASTM A-536, GR. 65-45-12
7	CROSSHEAD	DUCTILE IRON, ASTM A-536, GR. 65-45-12
8	CROSSHEAD SLEEVE	ALLOY IRON
9	INPUT SHAFT	CDS AISI M C1117 LEADED
10	BEARING RETAINER	CDS AISI M C1117 LEADED
11	BEARING RETAINER	CDS AISI M C1117 LEADED
12	ROLLER THRUST BEARING	COMM. STEEL
13	SLEEVE BEARING	OILITE BRONZE
14	SLEEVE BEARING	OILITE BRONZE
15	SPACER	COMM. STEEL
16	RETAINER RING	SPRING STEEL
17	SLOTTED NUT	COMM. STEEL
18	LOCK PIN	COMM. STEEL
19	END CAP SEAL	BUNA "N"
20	DOWEL PIN	COMM. STEEL
21	END CAP GASKET	PERMATIX FORM-A GASKET NO. 2
22	COVER GASKET	PERMATIX FORM-A GASKET NO. 2
23	HEX HEAD CAPSCREW	COMM. STEEL
24	HEX HEAD CAPSCREW	COMM. STEEL
25	HEX HEAD CAPSCREW	COMM. STEEL
26	INDICATOR CAP	CAST IRON, ASTM A-126 CL. B
27	INDICATOR CAP SEAL	BUNA "N"
28	BUSHING	REINFORCED TEFLON

SUB-ASSEMBLY 2200 MANUAL OPERATORS
FOR STYLE 1450 BUTTERFLY VALVE

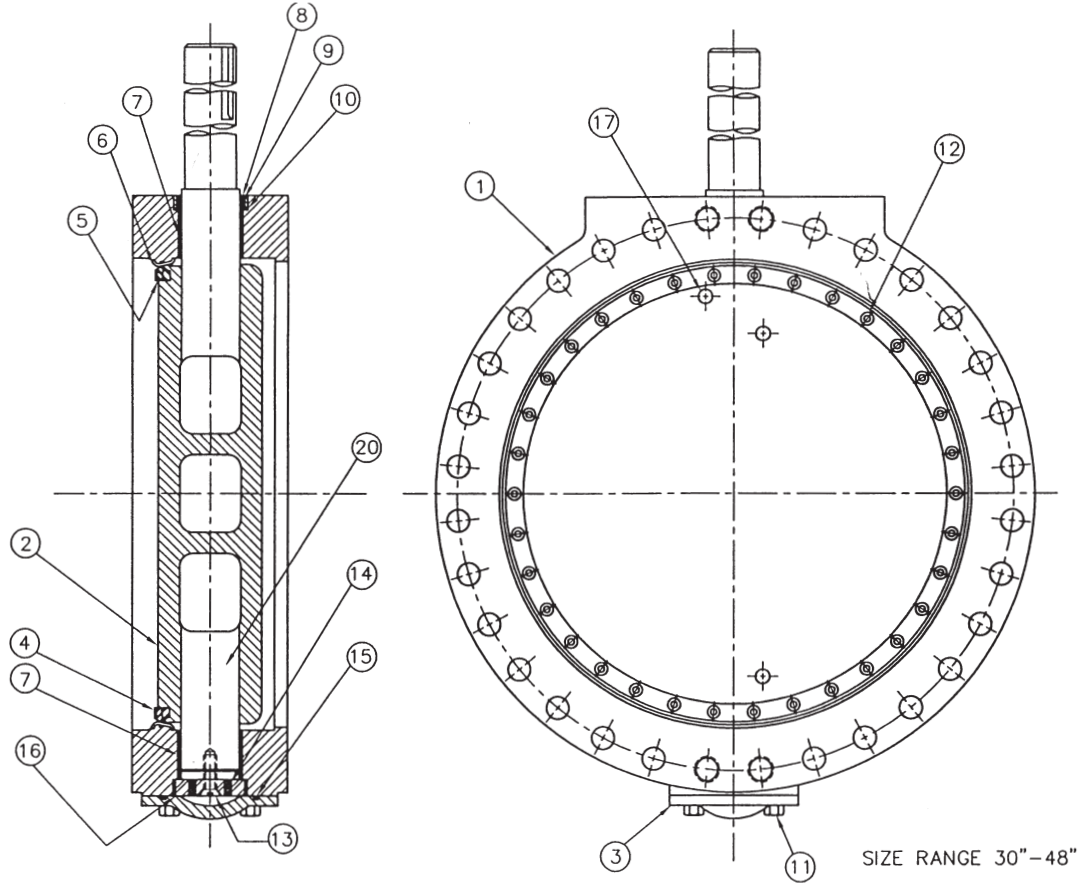
CLOW VALVE COMPANY



ITEM NO.	DESCRIPTION	MATERIAL
1	HOUSING OPERATOR	CAST IRON, A-126, CL. B
2	COVER, HOUSING	CAST IRON, A-126, CL. B
3	CAP, THRUST	CAST IRON, A-126, CL. B
4	AS REQUIRED	CAST IRON, A-126, CL. B
5	LEVER	DUCTILE IRON, A-536, GR. 80-45-06
6	CROSSHEAD	DUCTILE IRON, A-536, GR. 65-55-12
7	SHAFT, INPUT	C.D. STEEL, 12L14
8	SEAL (HOUSING)	BUNA "N"
9	SEAL (CAP)	BUNA "N"
10	GASKET, COVER	CORK-NEOPRENE
11	SHIELD, SHAFT	REINFORCED TEFLON
12	PLUG, EXPANSION	BRASS, COMM.
13	BOLT, HEX HD (AWWA NUT)	STEEL, COMM.
14	BOLT, HEX HD (COVER)	STEEL, COMM.
15	SLEEVE, CROSSHEAD	ALLOY IRON
16	RING, RETAINING	SPRING STEEL
17	INDICATOR	CAST IRON, A-126 CL. B
18	PIN, INDICATOR	STEEL, COMM.
19	SEAL, INDICATOR PIN	BUNA "N"
20	NUT, HEX	STEEL, COMM.
21	BEARING, NEEDLE	STEEL, COMM.
22	RACE, THRUST	HARDENED STEEL
23	SPACER	HARDENED STEEL
24	WASHER, THRUST	HARDENED STEEL
25	PIN, INPUT SHAFT	STEEL, COMM.
26	BUSHING	REINFORCED TEFLON

SUB-ASSEMBLY
 STYLE 1450 FLANGED END BUTTERFLY VALVE
 (NON-ADJUSTABLE PACKING)

CLOW VALVE COMPANY

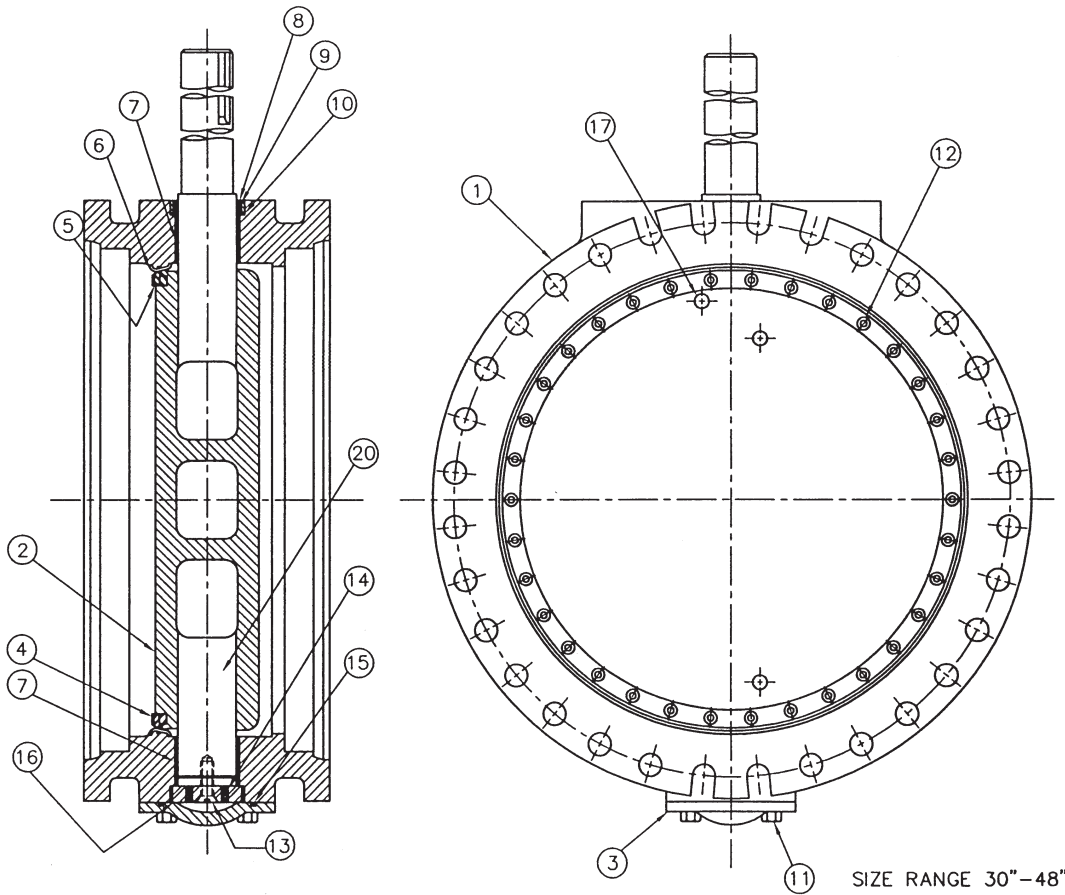


ITEM NO.	DESCRIPTION	MATERIAL
1	BODY, VALVE	CAST IRON A-126 CL.B W/304 STN. STL. SEAT
2	VALVE	DUCTILE IRON A-536 GR. 65-45-12★
3	END COVER	CAST IRON A-126 CL.B
4	SEAT RING, VANE	EPDM
5	CLAMP RING, SEAT	304 STAINLESS STEEL
6	SEALING WASHER	NYLON
7	BUSHING, BODY	FIBERGLIDE
8	CARTRIDGE, SHAFT	BRONZE
9	SEAL, SHAFT	EPDM
10	SEAL, CARTRIDGE	EPDM
11	BOLT, END COVER	COMM. STEEL
12	SOCKET SCREW-FLAT HEAD	18-8 STAINLESS STEEL W/NYLOK INSERT
13	SOCKET SCREW-FLAT HEAD	18-8 STAINLESS STEEL W/NYLOK INSERT
14	SET SCREW-FLAT POINT	18-8 STAINLESS STEEL W/NYLOK INSERT
15	END COVER SEAL	BUNA "N"
16	THRUST BEARING	BRONZE
17	TAPER PIN	STAINLESS STEEL
18	TAPER PIN NUT	18-8 STAINLESS STEEL
19	SHAFT(OPERATOR)	304 STAINLESS STEEL
20	SHAFT(THRUST)	304 STAINLESS STEEL
21	PLATE, NAME	STAINLESS STEEL

★ CAST IRON ASTM A-48 CL. 40 0N AWWA CL. 25 & 75 VALVES

SUB-ASSEMBLY STYLE 1450
MECHANICAL JOINT END BUTTERFLY VALVE
(NON-ADJUSTABLE PACKING)

CLOW VALVE COMPANY



SIZE RANGE 30" - 48"

ITEM NO.	DESCRIPTION	MATERIAL
1	BODY, VALVE	CAST IRON A-126 CL.B W/304 STN. STL. SEAT
2	VANE	DUCTILE IRON A-536 GR. 65-45-12*
3	END COVER	CAST IRON A-126 CL.B
4	SEAT RING, VANE	EPDM
5	CLAMP RING, SEAT	304 STAINLESS STEEL
6	SEALING WASHER	NYLON
7	BUSHING, BODY	FIBERGLIDE
8	CARTRIDGE, SHAFT	BRONZE
9	SEAL, SHAFT	EPDM
10	SEAL, CARTRIDGE	EPDM
11	BOLT, END COVER	COMM. STEEL
12	SOCKET SCREW-FLAT HEAD	18-8 STAINLESS STEEL W/NYLOK INSERT
13	SOCKET SCREW-FLAT HEAD	18-8 STAINLESS STEEL W/NYLOK INSERT
14	SET SCREW-FLAT POINT	18-8 STAINLESS STEEL W/NYLOK INSERT
15	END COVER SEAL	EPDM
16	THRUST BEARING	BRONZE
17	TAPER PIN	STAINLESS STEEL
18	TAPER PIN NUT	18-8 STAINLESS STEEL
19	SHAFT (OPERATOR)	304 STAINLESS STEEL
20	SHAFT (THRUST)	304 STAINLESS STEEL
21	PLATE, NAME	STAINLESS STEEL

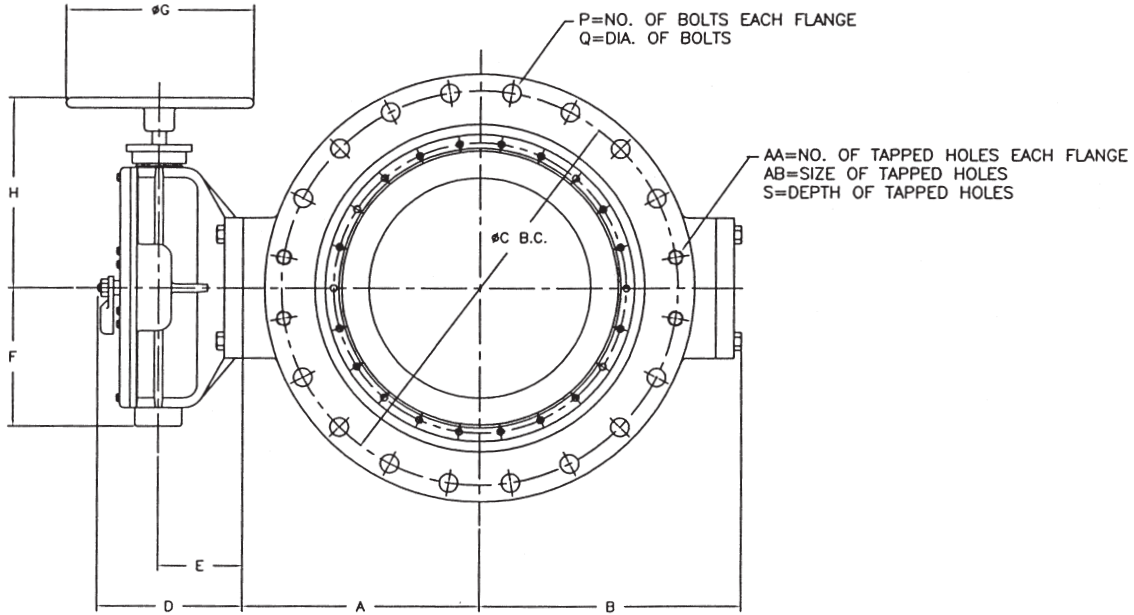
* CAST IRON ASTM A-48 CL. 40 ON AWWA CL. 25 & 75 VALVES

ASSEMBLY-STYLE 1450
 FLANGED BUTTERFLY VALVE
 WITH HANDWHEEL OPERATOR

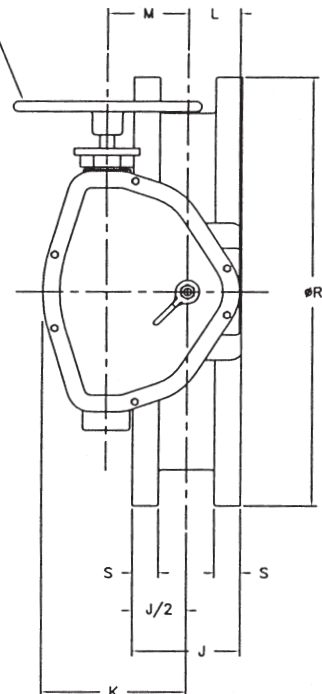
CLOW VALVE COMPANY

NOTES:

1. FLOW MAY BE IN EITHER DIRECTION
2. VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
3. REFERENCE AWWA C-504 FLANGES & DRILLING (A.N.S.I. 125)



N=NO. OF TURNS TO CLOSE



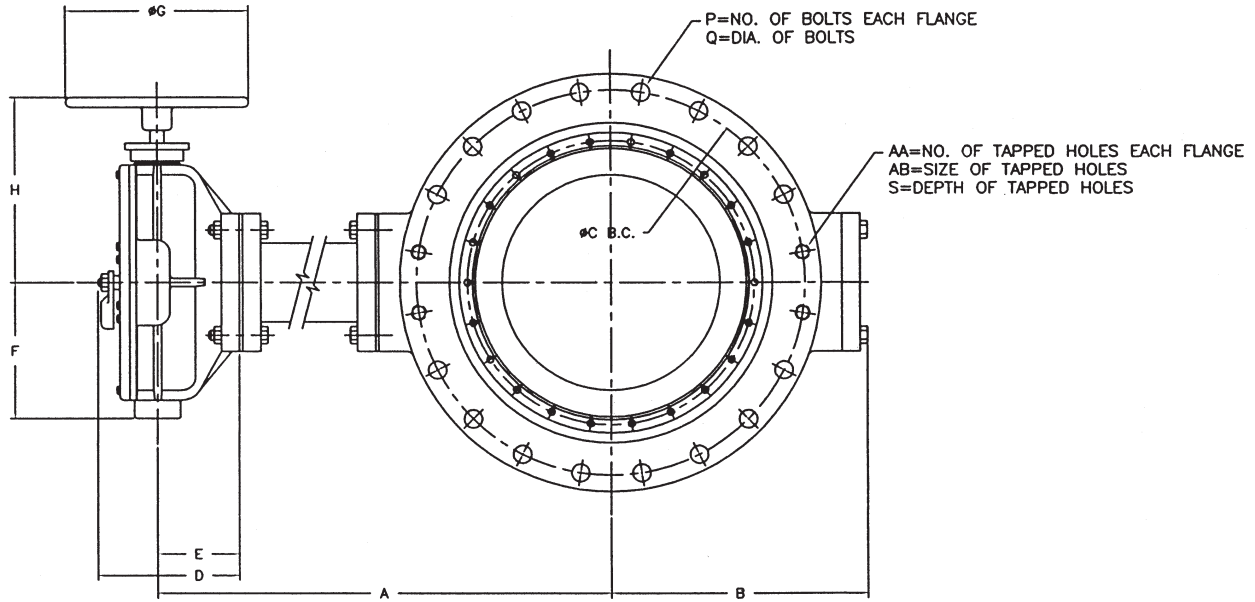
VALVE SIZE	A	B	C	J	P	Q	R	S	AA	AB
30"	20 $\frac{5}{8}$	21 $\frac{5}{8}$	36	12	28	1 $\frac{1}{4}$	38 $\frac{3}{4}$	2 $\frac{1}{8}$	4	1 $\frac{1}{4}$ -7
36"	24 $\frac{1}{4}$	25 $\frac{3}{8}$	42 $\frac{3}{4}$	12	32	1 $\frac{1}{2}$	46	2 $\frac{3}{8}$	4	1 $\frac{1}{2}$ -6
42"	28 $\frac{1}{4}$	28 $\frac{7}{8}$	49 $\frac{1}{2}$	12	36	1 $\frac{1}{2}$	53	2 $\frac{7}{8}$	4	1 $\frac{1}{2}$ -6

OPERATOR MODEL	D	E	F	G	H	K	L	M	N
2200	10 $\frac{5}{8}$	6 $\frac{1}{4}$	10 $\frac{5}{8}$	18	14 $\frac{1}{2}$	10 $\frac{3}{4}$	3 $\frac{3}{8}$	6	72
4350	11 $\frac{5}{8}$	6 $\frac{1}{8}$	15 $\frac{5}{8}$	27	18	13 $\frac{5}{8}$	4 $\frac{3}{8}$	7 $\frac{1}{2}$	90

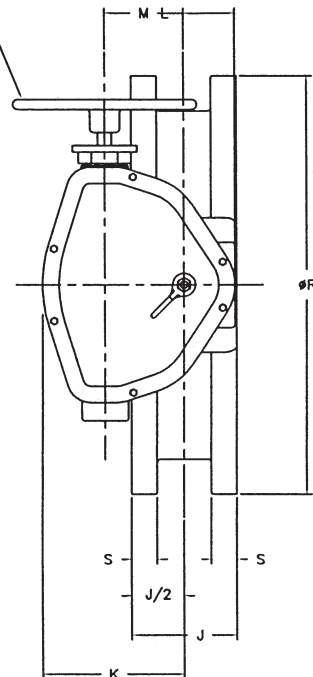
**ASSEMBLY STYLE 1450
FLANGED BUTTERFLY VALVE WITH HANDWHEEL
OPERATOR EXTENDED BONNET
CLOW VALVE COMPANY**

NOTES:

1. FLOW MAY BE IN EITHER DIRECTION
2. VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
3. REFERENCE AWWA C-504 FLANGES & DRILLING (A.N.S.I. 125)



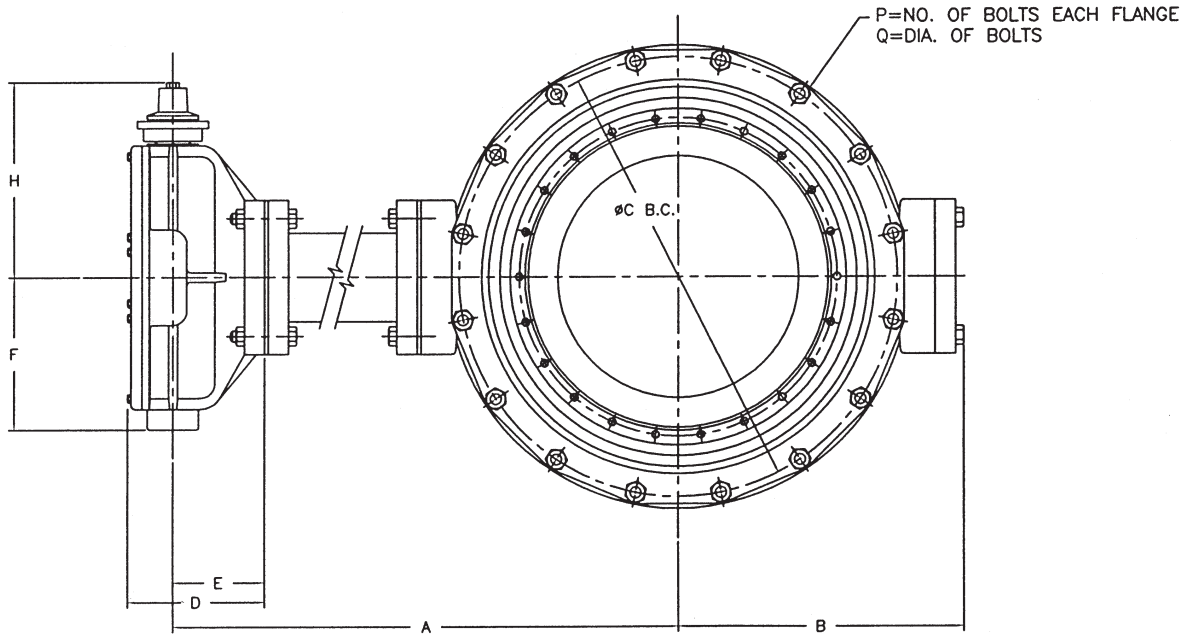
N=NO. OF TURNS TO CLOSE



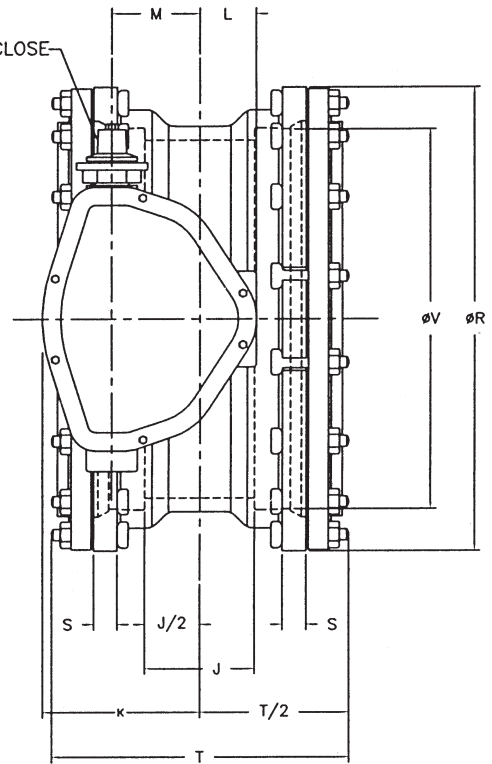
VALVE SIZE	A	B	C	J	P	Q	R	S	AA	AB
30"		21 $\frac{1}{8}$	36	12	28	1 $\frac{1}{4}$	38 $\frac{3}{4}$	2 $\frac{1}{2}$	4	1 $\frac{1}{4}$ -7
36"		25 $\frac{3}{16}$	42 $\frac{3}{4}$	12	32	1 $\frac{1}{2}$	46	2 $\frac{3}{8}$	4	1 $\frac{1}{2}$ -6
42"		28 $\frac{7}{8}$	49 $\frac{1}{2}$	12	36	1 $\frac{1}{2}$	53	2 $\frac{3}{8}$	4	1 $\frac{1}{2}$ -6

OPERATOR MODEL	D	E	F	G	H	K	L	M	N
2200	10 $\frac{9}{16}$	6 $\frac{1}{4}$	10 $\frac{5}{8}$	18	14 $\frac{1}{2}$	10 $\frac{3}{4}$	3 $\frac{3}{8}$	6	72
4350	11 $\frac{1}{16}$	6 $\frac{1}{16}$	15 $\frac{1}{8}$	27	18	13 $\frac{3}{16}$	4 $\frac{3}{16}$	7 $\frac{1}{2}$	90

**ASSEMBLY STYLE 1450
MECHANICAL JOINT BUTTERFLY VALVE
WITH BURIED OPERATOR EXTENDED BONNET
CLOW VALVE COMPANY**



AWWA 2" WRENCH NUT
N=NO. OF TURNS TO CLOSE

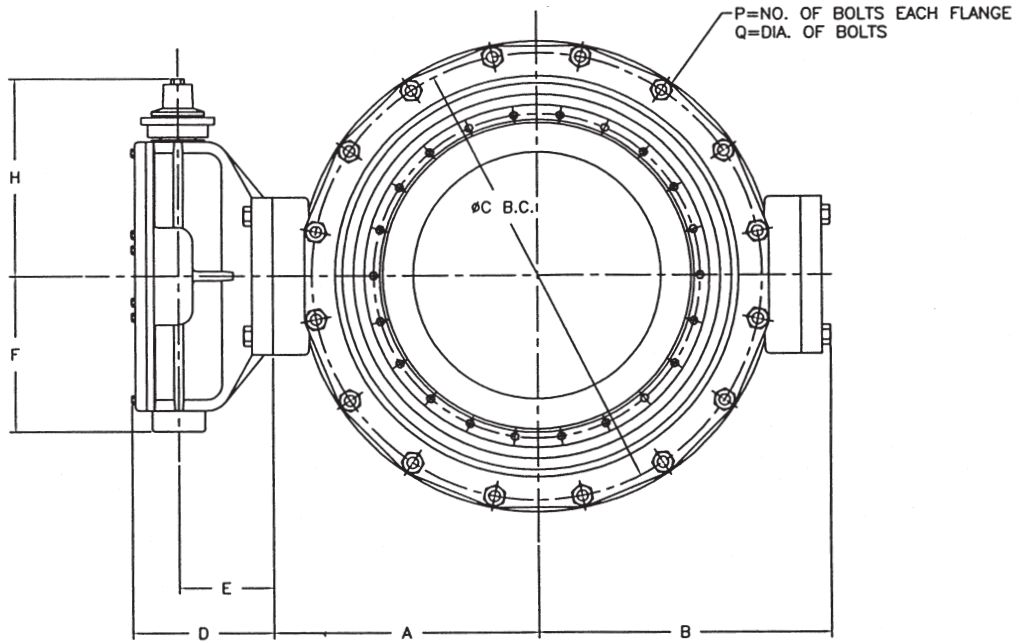


OPERATOR MODEL	D	E	F	H	K	L	M	N
2200	9 1/16	6 1/4	10 3/8	14 1/2	10 3/4	3 7/8	6	72
4350	10 1/16	6 1/16	15 1/8	18	13 5/16	4 3/16	7 1/2	90

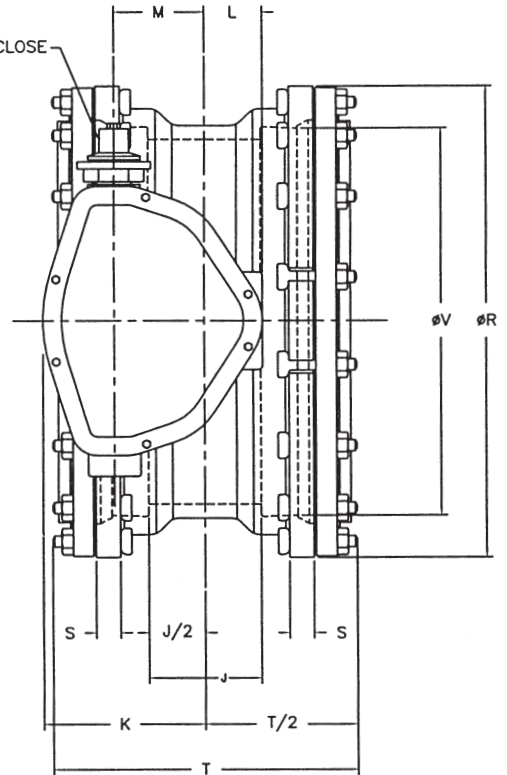
VALVE SIZE	A	B	C	J	P	Q	R	S	T	V
30"		21 1/4	36 7/8	12	20	1	39 1/8	1 13/16	28 3/8	32.17
36"		24 7/8	43 3/4	12	24	1	46	2	28 3/8	38.47
42"		28 7/8	50 5/8	12	28	1 1/4	53 1/8	2	28 3/8	44.67

ASSEMBLY-STYLE 1450
MECHANICAL JOINT BUTTERFLY VALVE
WITH BURIED OPERATOR

CLOW VALVE COMPANY



AWWA 2" WRENCH NUT
N=NO. OF TURNS TO CLOSE



VALVE SIZE	A	B	C	J	P	Q	R	S	T	V
30"	20 $\frac{1}{8}$	21 $\frac{1}{8}$	36 $\frac{7}{8}$	12	20	1	39 $\frac{1}{8}$	1 $\frac{13}{16}$	28 $\frac{3}{8}$	32.17
36"	24 $\frac{1}{4}$	25 $\frac{1}{2}$	43 $\frac{3}{4}$	12	24	1	46	2	28 $\frac{3}{8}$	38.47
42"	28 $\frac{1}{4}$	28 $\frac{3}{8}$	50 $\frac{3}{8}$	12	28	1 $\frac{1}{4}$	53 $\frac{1}{8}$	2	28 $\frac{3}{8}$	44.67

OPERATOR MODEL	D	E	F	H	K	L	M	N
2200	9 $\frac{7}{16}$	6 $\frac{1}{4}$	10 $\frac{3}{8}$	14 $\frac{1}{2}$	10 $\frac{3}{4}$	3 $\frac{3}{8}$	6	72
4350	10 $\frac{1}{16}$	6 $\frac{1}{16}$	15 $\frac{1}{8}$	18	13 $\frac{3}{16}$	4 $\frac{3}{16}$	7 $\frac{1}{2}$	90

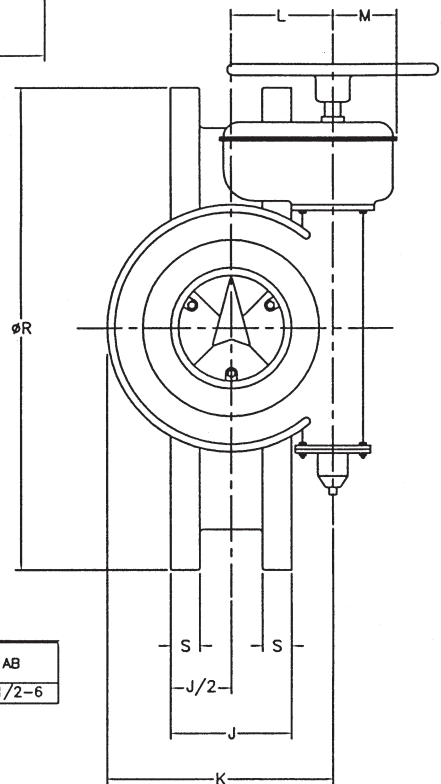
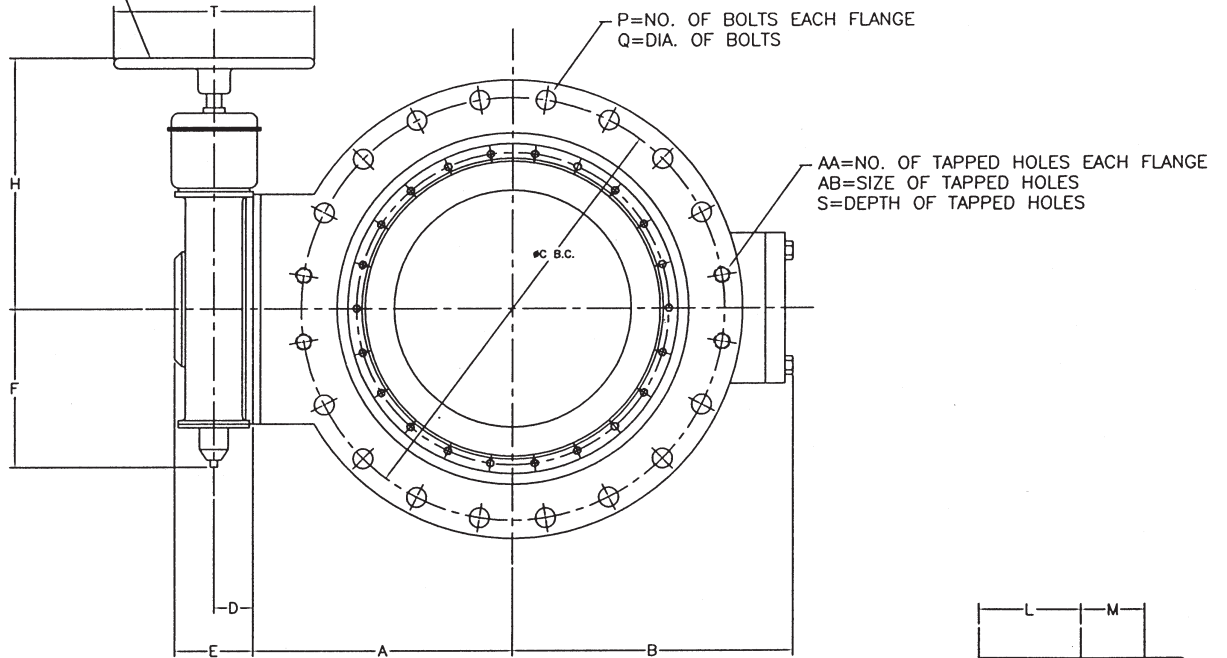
ASSEMBLY-STYLE 1450
 FLANGED BFV W/AUMA
 HANDWHEEL ACTUATOR

CLOW VALVE COMPANY

NOTES:

1. FLOW MAY BE IN EITHER DIRECTION
2. VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
3. REFERENCE AWWA C-504 FLANGES & DRILLING (A.N.S.I. 125)

N=NO. OF TURNS TO CLOSE



VALVE SIZE	A	B	C	J	P	Q	R	S	AA	AB
48"	32	32	56	15	44	1 1/2	59 1/2	2 3/4	8	1 1/2-6

OPERATOR MODEL	D	E	F	H	K	L	M	N	T
GS 200/GZ 16-8	4.0	8.3	15.8	20.7	16.4	7.9	4.5	106	16

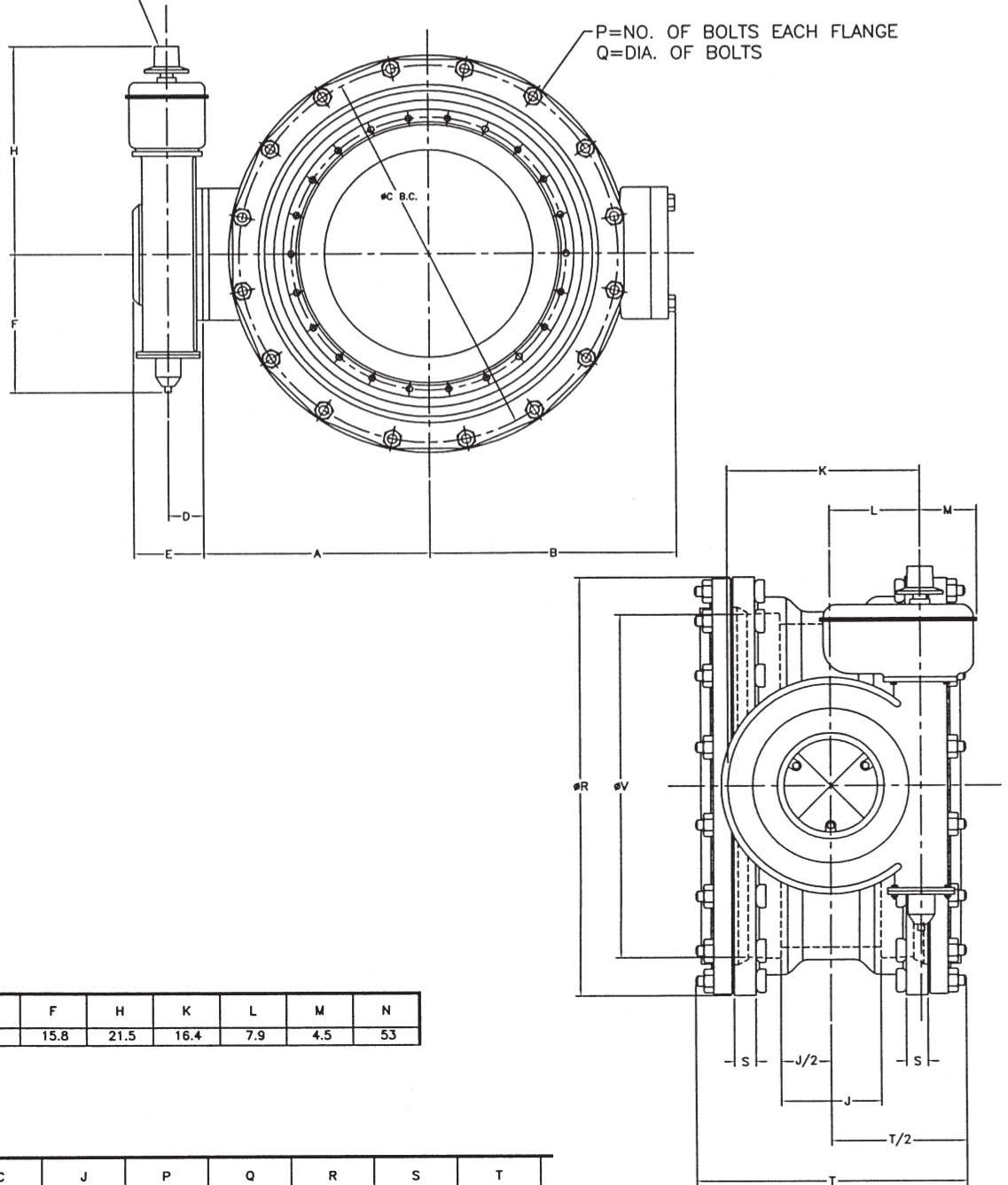
ASSEMBLY-STYLE 1450
M.J. BFV W/AUMA BURIED ACTUATOR

CLOW VALVE COMPANY

NOTES:

1. FLOW MAY BE IN EITHER DIRECTION
2. GASKETS, GLANDS & BOLTS FOR MECHANICAL JOINT ARE FURNISHED WITH VALVE WHEN SPECIFIED ON ORDER.
3. VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
4. REFERENCE AWWA STD. C-111 (A.N.S.I. A21-11)

AWWA 2" WRENCH NUT
N=NO. OF TURNS TO CLOSE



OPERATOR MODEL	D	E	F	H	K	L	M	N
GS 200/GZ 16-4	4.0	8.3	15.8	21.5	16.4	7.9	4.5	53

VALVE SIZE	A	B	C	J	P	Q	R	S	T
48"	32	32	57 1/2	15	32	1 1/4-6	60	2	31 3/8

CLOW BUTTERFLY VALVE SUGGESTED
SPECIFICATIONS 30" THROUGH 48"

CLOW VALVE COMPANY

A. General

All butterfly valves shall be of the rubber-sealed tight-closing type designed, manufactured and tested in conformance to AWWA Standard C-504, latest revision. All valves shall be CLOW Style 1450 Butterfly Valves, or approved equal. NSF approval is recommended.

B. Valve

Valve body shall be high-strength cast iron ASTM A126, Class B, with 18-8 Stainless Steel Body Seat. Valve vane (Disc) shall be of cast or ductile iron, ASTM A-536, Grade 65-45-12 having rubber seat mechanically secured with a serrated 18-8 Stainless Steel Clamp Ring and 18-8 Stainless Steel self-locked screws. Rubber Seat shall be a full-circle 360° seat not penetrated by the valve shaft. The vane shall be of a "Flow-Through" design incorporating three integral flow passages, in order to provide low flow resistance and assurance of high quality. Valve shafts shall be of two-piece stub shaft type, made of 18-8 Type 304 stainless steel with a diameter equal to or larger than specified for applicable valve class as defined by AWWA Standard C-504, latest revision. Rubber Seats shall be capable of ready replacement or adjustment without the use of special tools. For underground and in plant service, shaft seals shall be of the "O-Ring" type.

Seat – Valve seats must be easily replaceable in the field and in the pipeline without any use of special tools, syringes or adhesives.

C. Operator

The operator shall be of the traveling nut or worm gear type, self-locking in any position and sealed, gasketed and lubricated as needed. Operators to be equipped with external adjustment.

All valves shall close by turning the operator nut or handwheel in a clockwise direction (Open left). The operator shall be capable of meeting the torque requirements for opening and closing the valve against the pressure and flow rate specified.

**OPEN RIGHT VALVES CAN
BE FURNISHED AS AN OPTION
IF REQUIRED.**

For underground service, the minimum number of turns to close valve shall be no less than 2 turns per inch of valve size in order to minimize water hammer; and AWWA stops shall be provided capable of absorbing up to 450 foot-pounds of input torque without damage to the valve or operator.

For above-ground service, the operator shall provide position indication; and shall require no more than 80 pounds pull on the handwheel to provide necessary torque for specified pressure and flow rate.

Cylinder Operator shall meet all applicable provisions of AWWA Standard C-504, latest revision.

D. End Configurations

Flanged-end valves shall be of the short-body type having 125# flanges conforming to ANSI B16-1. Mechanical joint end valves shall conform to AWWA Standard C-111 (ANSI B21.11). Mechanical joint bolts, glands and gaskets (shall)(shall not) be supplied by the valve manufacturer.

E. Tests

All valves shall be tested for leakage at rated pressure, and tested hydrostatically at two times rated pressure—all in conformance with AWWA Standard C-504, latest revision.