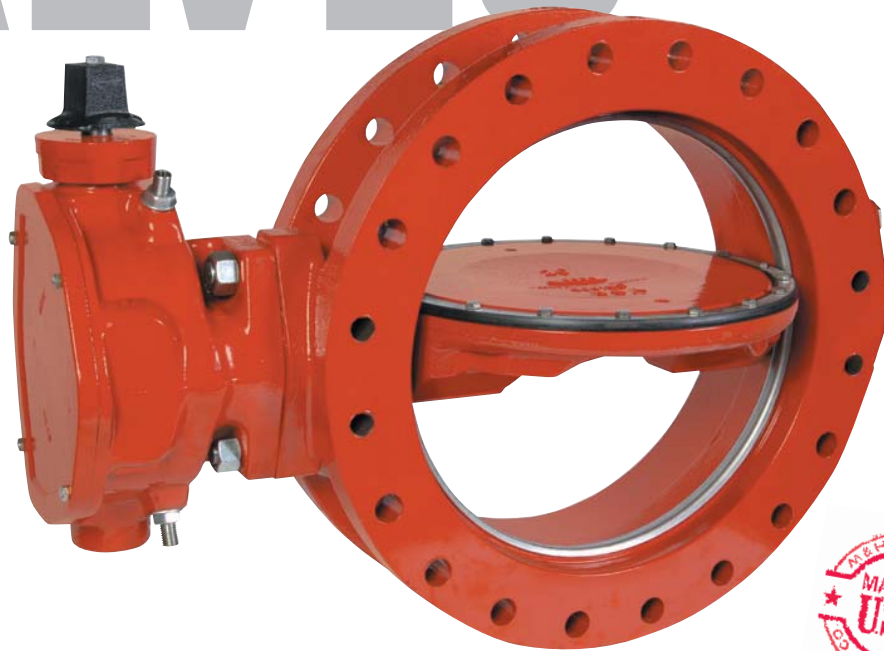


An industry leader in underground and in-plant applications.

BUTTERFLY VALVES

STYLE 4500 3" – 24"
STYLE 1450 30" – 54"

Consult factory for
sizes 60" – 120"



C504 • Class 150B & 250B



M&H VALVE COMPANY

M&H Valve is a division of McWane, Inc.

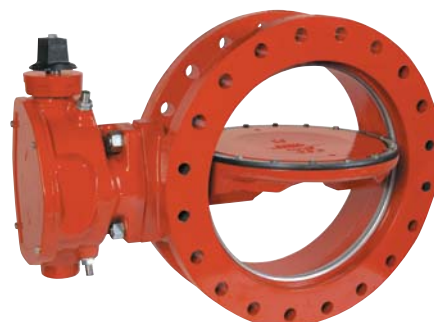
www.mh-valve.com



For Generations



M&H VALVE COMPANY



AWWA Class 250B Butterfly Valves

M&H Style 4500: 4" – 24"

1450: 30" – 48"

RECOMMENDED SPECIFICATIONS

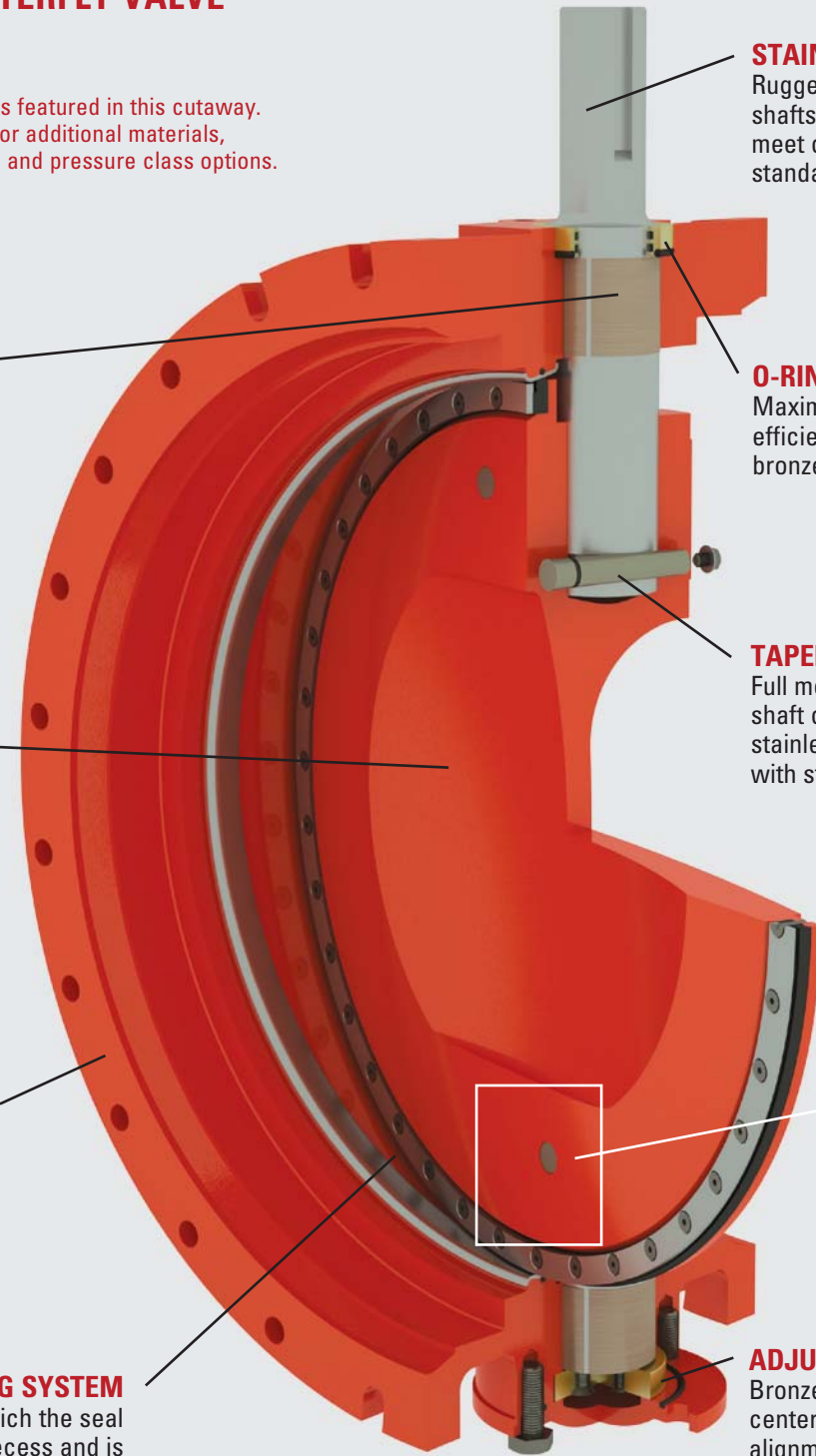
1. All butterfly valves shall be of the rubber-seated, tight-closing type. They shall meet or exceed AWWA standard C504, latest edition, Class 250. All valves shall be M&H 4500/1450 butterfly valves, or approved equal.
2. Both ends shall be ANSI A21.11 mechanical joint or per flanged ANSI B16.1 (or as otherwise noted on plans and specs).
3. Valve shafts shall be ASTM A564 Type 630 stainless steel. Each valve shaft shall be of a one-piece design for valves 12" and smaller and a two-piece design for valves 14" and larger. Valve shafts shall have a minimum diameter extending through the valve bearings and into the valve disc as specified in AWWA C504. All valve shafts must meet or exceed the minimum connection torque requirement set forth in AWWA C504.
4. All valve bodies and vanes 4" – 48" shall be of high-strength ductile iron to ASTM A536, Grade 70-50-05 with ASTM A276 Type 304 stainless steel body seat.
5. Rubber valve seats shall be a full-circle 360 degree, seat not penetrated by the valve shaft. Valve seat shall be EPDM for cold or high water temperature applications.
6. The valve seat will be attached to the valve vane by 18-8 Type 304 stainless steel self-locking fasteners. The valve seat must be easily field adjustable and replaceable without any special tools or lengthy curing time.
7. Valve shaft seals shall be of the O-ring type and utilize the same elastomer as specified for the valve seats and for the intended service. Valves using self-compensating split V-type packing will not be accepted. All valve shaft seals must be easily field replaceable.
8. Valve actuator shall be of the traveling nut type, sealed and lubricated for underground or in-plant service. Operator shall be capable of withstanding an overload input torque of 450 ft-lbs. at full-open or full-closed position without damage to the valve operator. Operators for valves 14" and larger must have a 304 stainless steel external stop limiting device and travel adjustment. The travel adjustments must be able to be operated without removing the valve from the line or removing the actuator cover. No internal travel adjustment devices will be acceptable. All valve actuators must be sized per AWWA C504. Certification of proof of design and torque requirements shall be submitted to the owner upon request.
9. Handcrank, Handwheel or Chainwheel – All manual operators for service other than underground shall have a position indicator and shall be totally enclosed and permanently lubricated. Actuators shall be designed to produce the required operating torque with a maximum rim pull of 80 lb. on handwheel or chainwheel and a maximum input of 150 ft. lb. on operating nuts.
10. Cylinder – Cylinder operator shall be of the base mounted configuration. Cylinder barrel shall be of molybdenum-disulfide lined glass fiber reinforced epoxy tubing, to provide a corrosion-free, self-lubricated high-strength barrel. Rod seal shall be of urethane, molybdenum-disulfide filled, to provide a self-lubricated, long life seal.
11. The valve interior and exterior surfaces shall be coated in accordance with the latest revisions of AWWA C504 and must be NSF 61 Certified.

ENGINEERING FEATURES

STYLE 1450 BUTTERFLY VALVE

30" – 54"

The Class 150B 36" valve is featured in this cutaway. Check out mh-valve.com for additional materials, end configurations by size and pressure class options.



STAINLESS STEEL SHAFT

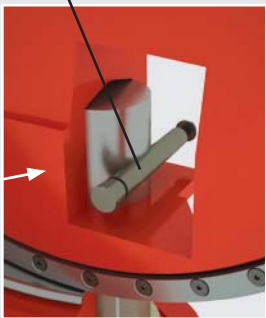
Ruggedly constructed valve shafts of 304 stainless steel meet or exceed AWWA standard C504.

O-RING CARTRIDGE

Maximum shaft sealing efficiency with a non-adjustable bronze O-ring cartridge

TAPER PINS

Full metal-to-metal contact, vane to shaft connection is accomplished by stainless steel taper pins secured with stainless steel lock nuts.



BEARINGS

Generously sized, stainless steel backed, Teflon bearings provided on operator and thrust ends are self-lubricated, providing low friction support for the life of the valve. No maintenance is required.

OFFSET VANE DESIGN

Newly engineered vane provides large free flow area without sacrificing vane strength. Vane construction is of A536 ductile iron to meet or exceed AWWA standard C504.

VALVE BODY

Heavy duty ASTM A536 ductile iron body designed and manufactured to meet or exceed AWWA standard C504.

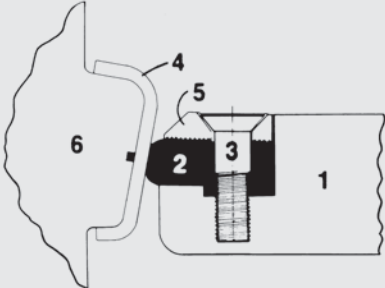
SEALING SYSTEM

Sealing system in which the seal is locked into a vane recess and is further restrained by a segmented clamp ring. Seal relaxation when the valve is in the open position is eliminated.

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

ADJUSTABLE THRUST BEARING

Bronze thrust bearing accurately centers vane in valve body. Accurate alignment is held in installation position. Factory adjusted for life of the valve.



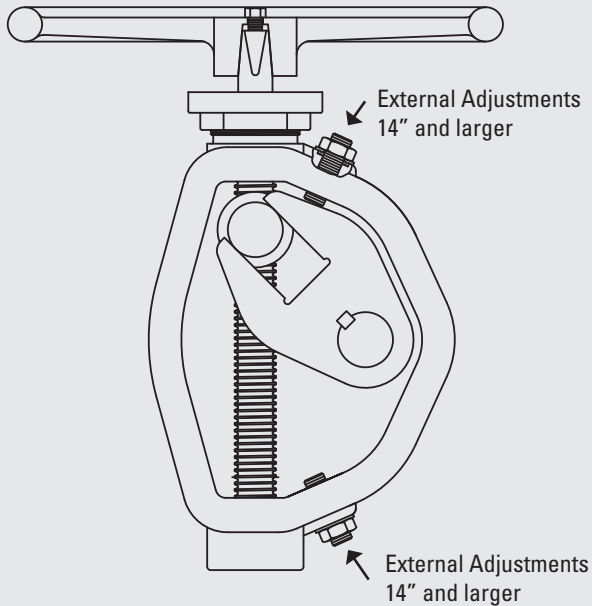
- 1 VANE
- 2 360 DEGREE RUBBER SEAT
- 3 STAINLESS STEEL SELF-LOCKING SCREW FASTENER; WITH NYLON SLEEVE
- 4 STAINLESS STEEL BODY SEAT RING
- 5 STAINLESS STEEL SEAT RETAINING RING
- 6 VALVE BODY

AWWA C504 BUTTERFLY VALVES



M&H VALVE COMPANY

Traveling Nut Operator 3" – 42" Butterfly Valves



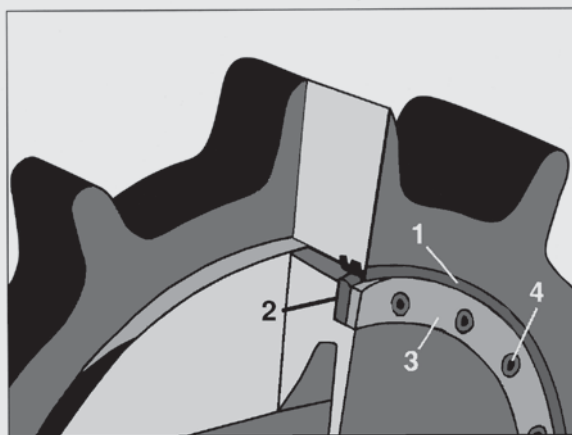
450 FT-LBS. OVERLOAD PROTECTION. Overloads developed by excessive input torque are absorbed instead of being transmitted to mechanism and valve. Lets you apply up to 450 ft-lbs. input torque at open and closed positions without damage to valve or operator.

PERMANENTLY SEALED. Underground operator is permanently lubricated and sealed from ground water.

REDUCES WATER HAMMER. Operator design is such that constant input speed results in variable output speed with slowing down of valve closure at ends of travel. This effect reduces water hammer, while maintaining rated output torque throughout entire travel.

AWWA OPERATING NUT. The two-inch square operating nut on the underground operator is clearly marked with "open" and direction arrow. All other operators have position indicators, which clearly show "open-shut" positions.

Rubber to Stainless Seating Style 4500 3" – 24" Butterfly Valves



RUBBER TO STAINLESS SEATING provides bubble-tight, permanent closure.

The unique vane-seat and body-seat construction of the M&H butterfly valve assures you of 100% bubble-tight sealing for the life of the valve.

The 304 **STAINLESS STEEL SEAT (1)** is made integral with the valve body for a permanent, corrosion-resistant seating area.

The **RUBBER SEAT (2)** is vulcanized to the stainless steel **SEAT-RETAINING RING (3)**, which is firmly clamped to the vane by stainless steel **SELF-LOCKING SCREW FASTENERS (4)**. This construction forms a positive lock between vane and rubber seat, which assures 360 degree leak-free seating.

ACCESSORIES / OPTIONS



FLOOR STANDS

F5500 N.R.S.
F5505 N.R.S. INDICATING



FLOOR BOX

F5695 BUSHED TO MEET STEM
DIAMETER SPEC
MAX. LENGTH 12"
MAX. STEM DIAMETER 2 1/4"



MOTOR OPERATOR



CYLINDER OPERATOR



STEM GUIDES

F5660



T-HANDLE VALVE WRENCHES

F2520 RIGID WRENCH



EXTENSION STEMS

UP TO 2 1/4" DIAMETERS
ANY LENGTH

SIZE **MIN. LENGTH*** **MAX. LENGTH***

#1	2 1/2"	17"
#2	15"	24"
#3	24"	35"

* Distance from wall



COMMITTED TO ENVIRONMENTAL RESPONSIBILITY

M&H VALVE COMPANY IS COMMITTED TO PROTECTING OUR NATURAL RESOURCES THROUGH ENVIRONMENTALLY RESPONSIBLE MANUFACTURING PRACTICES, INCLUDING THE USE OF 80+% RECYCLED CONTENT IN OUR HYDRANTS AND VALVES.

To learn more about our commitment to the environment, call 800-829-2569.



www.mh-valve.com



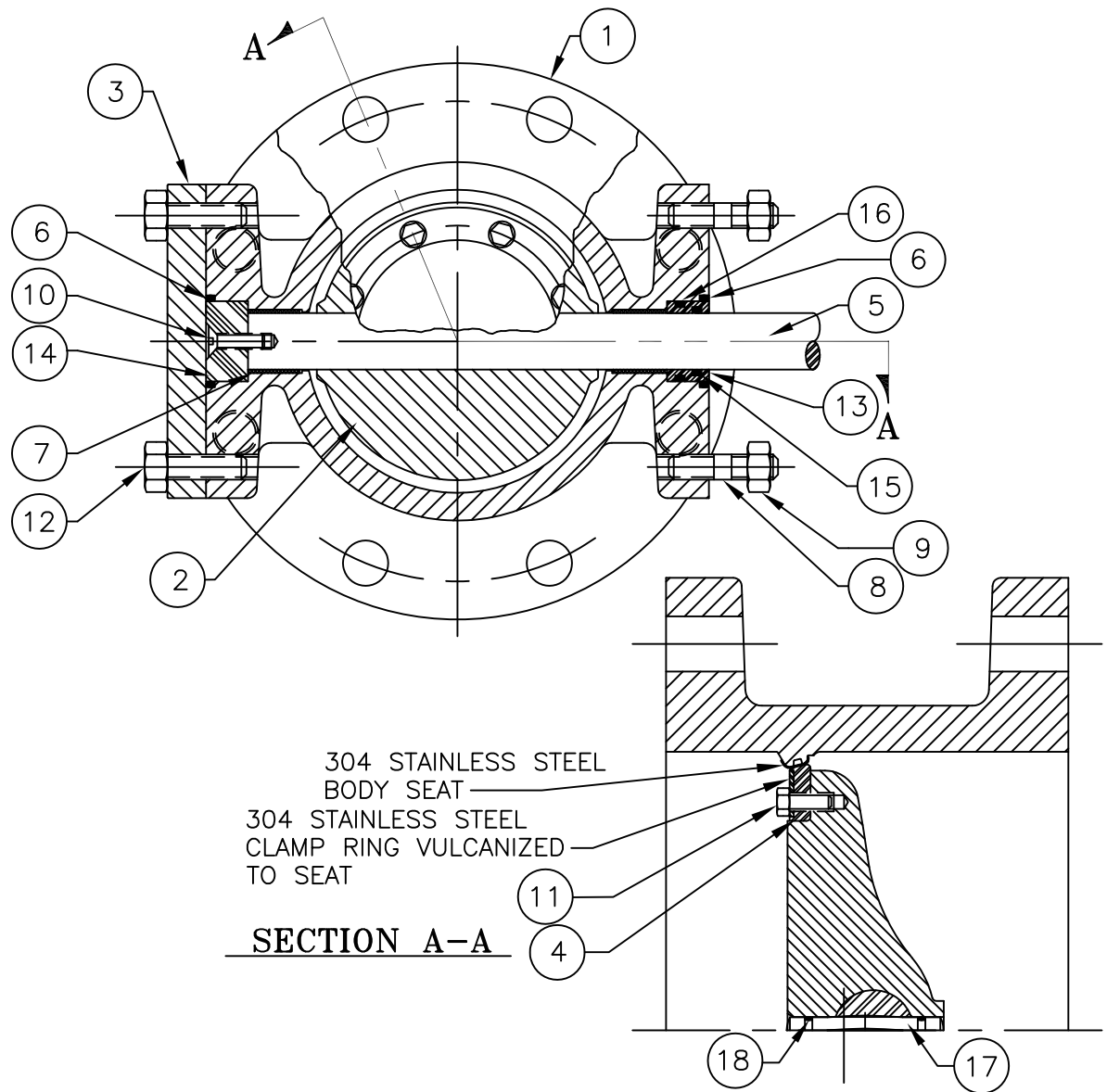
M&H VALVE COMPANY

605 West 23rd Street • Anniston, Alabama 36201
PHONE 256-237-3521 FAX 888-549-5309



For Generations

M&H Valve is a division of McWane, Inc.

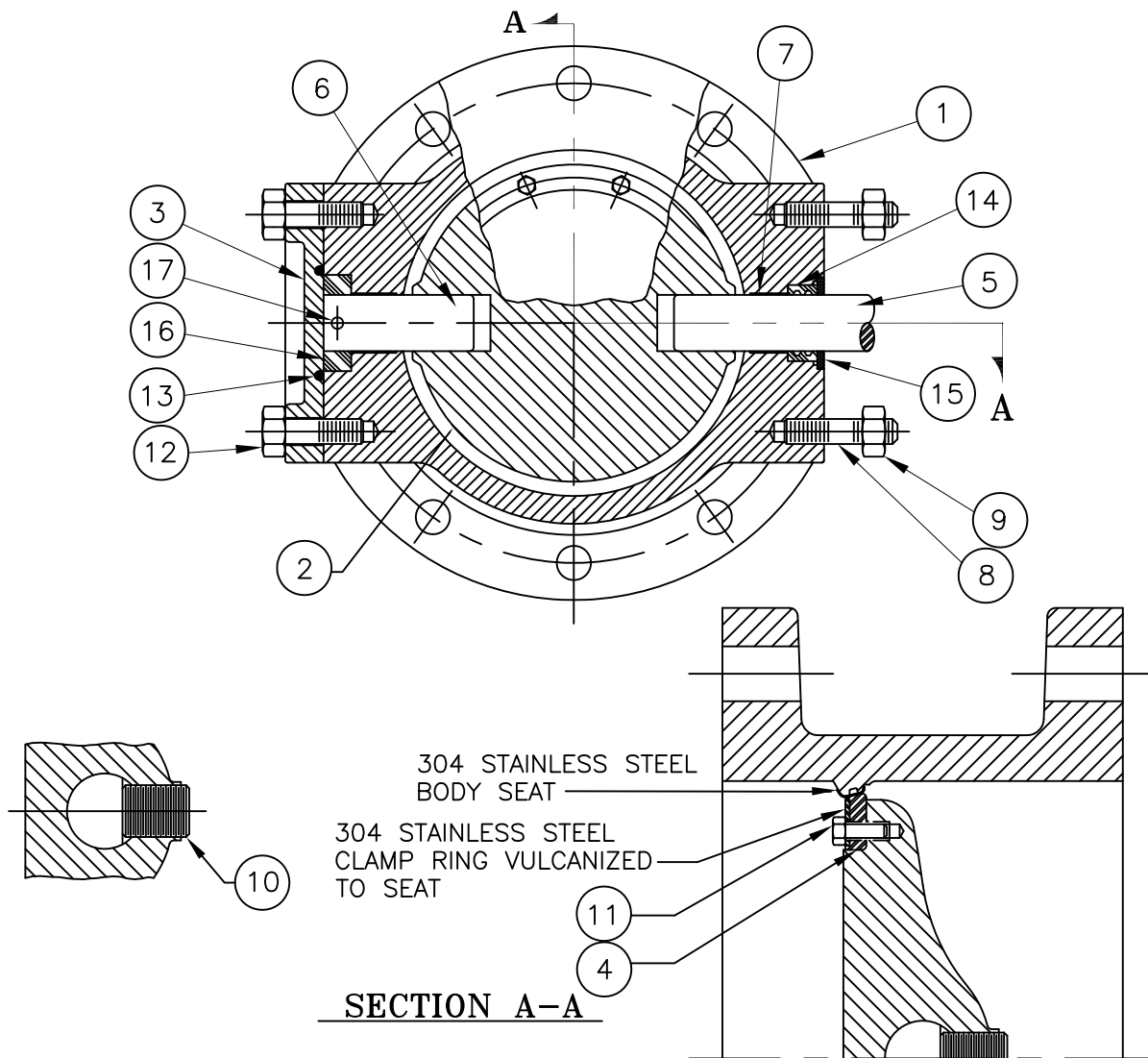


ITEM #	DESCRIPTION	MATERIAL
1	BODY, VALVE	DUCTILE IRON ASTM A-536 GR. 70-50-05
2	VANE	DUCTILE IRON ASTM A-536 GR. 70-50-05
3	COVER, END	CAST IRON, A-126, CLASS B
4	SEAT RING, VANE	EPDM WITH 304 STAINLESS STEEL INSERT
5	SHAFT	TYPE 630, CONDITION H1100 STN. STL. ASTM A-564
6	O-RING, BODY	BUNA-N
7	BEARING, BODY	NYLATRON GS NYLON
8	STUD	STEEL, ASTM A-307, ELCTRO ZINC PLATED
9	NUT, HEAVY HEX	STEEL, ASTM A-563, GRADE A, ELCTRO ZINC PLATED
10	SOCKET SCREW, FLAT HEAD HEX	STAINLESS STEEL, 18-8
11	CAPSCREW, HEX	STAINLESS STEEL, 18-8 WITH NYLOK INSERT
12	CAPSCREW, HEX	STEEL, ASTM A-307, ELCTRO ZINC PLATED
13	CARTRIDGE SEAL	ACETAL
14	THRUST DISK	ACETAL
15	"O" RING CARTRIDGE, INSIDE	BUNA-N
16	"O" RING CARTRIDGE, OUTSIDE	BUNA-N
17	GROOVED PIN	393 STAINLESS STEEL
18	O-RING, GROOVED PIN	BUNA-N

M&H VALVE COMPANY
ANNISTON, ALABAMA
A DIVISION OF MCWANE INC.

DWN: MMR
DATE: 8/18/11
DWG. NO.
BFE-25-45A

3" THRU 12" STYLE 4500
CLASS 250 BUTTERFLY VALVE
SUB-ASSEMBLY / MATERIAL LIST
FLANGED ENDS

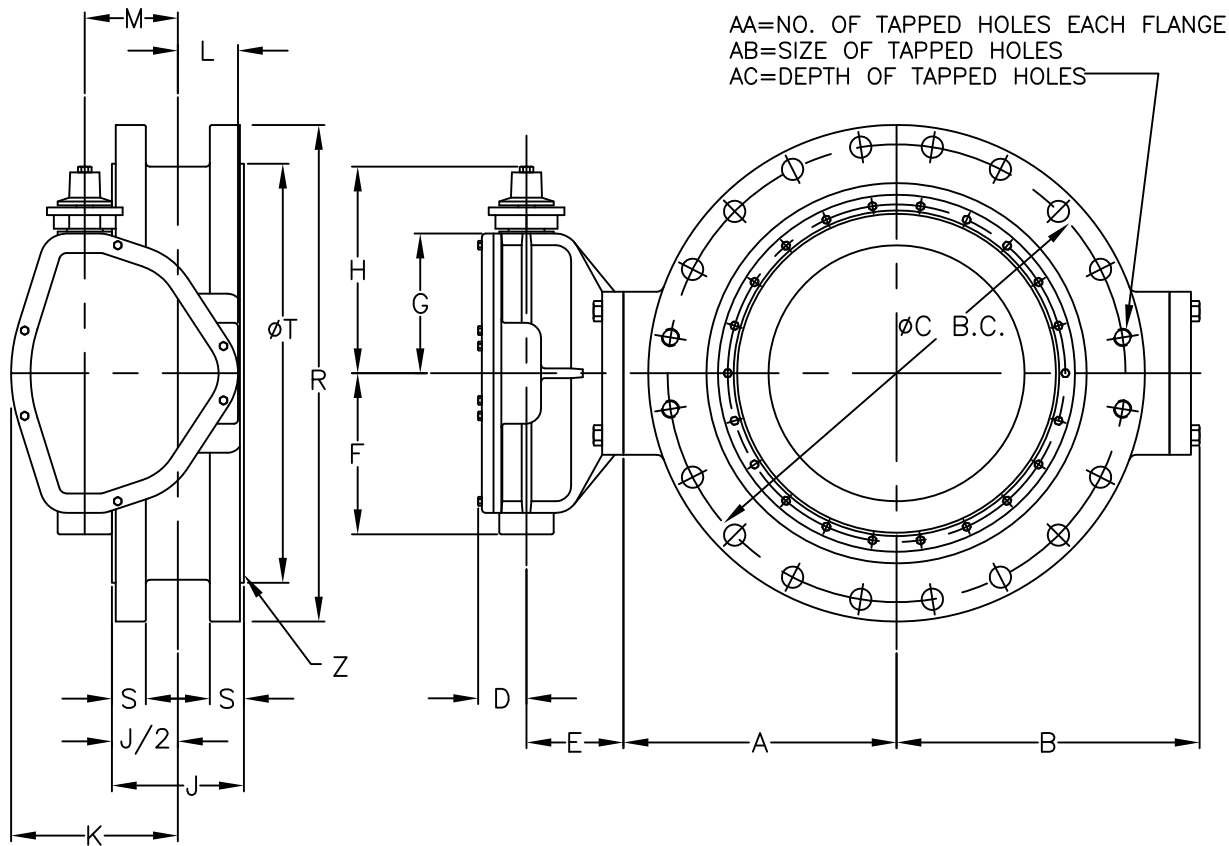


ITEM #	DESCRIPTION	MATERIAL
1	BODY, VALVE	DUCTILE IRON ASTM A-536 GR. 70-50-05
2	VANE	DUCTILE IRON ASTM A-536 GR. 70-50-05
3	COVER, END	CAST IRON, A-126, CLASS B
4	SEAT RING, VANE	EPDM WITH 304 STAINLESS STEEL INSERT
5	SHAFT, OPERATOR	TYPE 630, CONDITION H1100 STN. STL. ASTM A-564
6	SHAFT, THRUST	304 STAINLESS STEEL, ASTM A-276
7	BUSHING	REINFORCED TEFLON
8	STUD	STEEL, ASTM A-307, ELCTRO ZINC PLATED
9	NUT, HEX	STEEL, ASTM A-307, GRADE A, ELCTRO ZINC PLATED
10	TORQUE PLUG, SHAFT	304 STAINLESS STEEL, ASTM A-276
11	CAPSCREW, HEX	STAINLESS STEEL, 18-8 WITH NYLOK INSERT
12	BOLT, HEX HEAD	STEEL, ASTM A-307, GRADE B, ELCTRO ZINC PLATED
13	O-RING, END COVER	BUNA-N
14	SHAFT SEAL	BUNA-S
15	SEAL RING	STEEL, C-1018
16	THRUST COLLAR	BEARING BRONZE, ASTM B-144, ALLOY 3B
17	ROLL PIN	STAINLESS STEEL, A.I.S.I. 420

M&H VALVE COMPANY
ANNISTON, ALABAMA
A DIVISION OF MCWANE INC.

DWN: MMR
DATE: 8/18/11
DWG. NO.
BFE-25-45B

14" THRU 24" STYLE 4500
CLASS 250 BUTTERFLY VALVE
SUB-ASSEMBLY / MATERIAL LIST
FLANGED ENDS



VALVE SIZE	OPERATOR MODEL	D	E	F	G	H	K	L	M	N
3" - 4"	65	2	3 9/16	3 5/8	3	7 3/4	3 7/16	2 1/4	1 3/8	16 1/2
6"	150	2	3 9/16	3 5/8	3	7 3/4	3 7/16	2 1/4	1 3/8	16 1/2
8"	250	2 1/8	3 11/16	4 1/4	3 7/8	8 3/4	4 1/2	2 3/8	2	24
10" & 12"	510	2 3/8	4 1/2	5 9/16	5 3/16	10 1/2	6 1/8	2 3/4	3 1/8	36
14", 16", 18" & 20"	1250	3 3/16	5 3/4	8 3/8	7	12 5/16	7 7/8	3 1/4	4	48
24"	2200	3 3/16	6 1/4	10 3/8	9	14 5/16	10 3/4	3 7/8	6	72

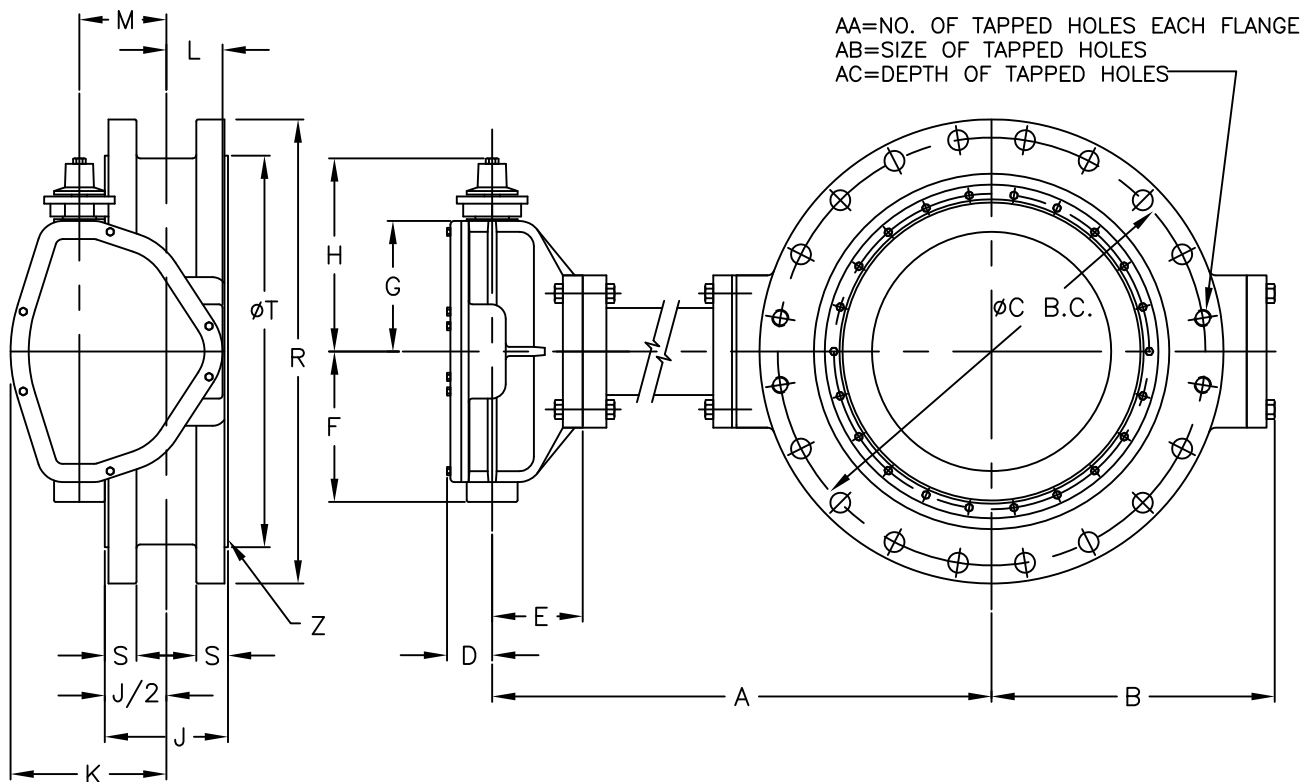
VALVE SIZE	A	B	C	J	P	Q	R	S	T	AA	AB	AC	WEIGHT
3"	4	5 1/8	6 5/8	5 1/2	8	3/4	10	1 1/4	-	8	3/4-10	1 3/16	85
4"	4	5 1/8	7 7/8	5 1/2	8	3/4	10	1 1/4	6 15/16	4	3/4-10	1 3/16	85
6"	5	6 1/8	10 5/8	5 3/4	12	3/4	12 1/2	1 7/16	9 11/16	4	3/4-10	1 3/8	110
8"	7	7 3/8	13	6 7/8	12	7/8	15	1 5/8	11 15/16	4	7/8-9	1 9/16	160
10"	7 3/4	9 1/2	15 1/4	9 1/4	16	1	17 1/2	1 7/8	14 1/16	4	1-8	1 1/2	252
12"	9 1/2	10 7/8	17 3/4	9 1/2	16	1 1/8	20 1/2	2	16	4	1 1/8-7	1 9/16	330
14"	11 7/16	12 3/16	20 1/4	9 1/2	20	1 1/8	23	2 1/8	18 15/16	8	1 1/8-7	1 5/8	515
16"	13 3/16	13 15/16	22 1/2	9 5/8	20	1 1/4	25 1/2	2 1/4	21 1/16	8	1 1/4-7	1 3/4	600
18"	14 5/16	15 13/16	24 3/4	9 5/8	24	1 1/4	28	2 3/8	23 5/16	8	1 1/4-7	1 3/4	775
20"	15 7/8	17 3/8	27	9 5/8	24	1 1/4	30 1/2	2 1/2	25 9/16	8	1 1/4-7	1 3/4	900
24"	18 19/32	19 5/16	32	9 3/4	24	1 1/2	36	2 3/4	30 5/16	8	1 1/2-6	1 7/8	1180

- NOTE 1: FLOW MAY BE IN EITHER DIRECTION
 NOTE 2: VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
 NOTE 3: REFERENCE AWWA C-504 FLANGES & DRILLING (A.N.S.I. 250)
 NOTE 4: "N" = NUMBER OF TURNS TO CLOSE
 NOTE 5: "P" = NUMBER OF BOLTS ON EACH FLANGE
 NOTE 6: "Q" = DIAMETER OF BOLTS
 NOTE 7: OPERATED BY 2" AWWA OPERATING / WRENCH NUT
 NOTE 8: RATED AND TESTED FOR 250 PSI WORKING PRESSURE
 NOTE 9: "Z" = (1/16 or .0625 RAISED FACE ON EACH FLANGE) 4~24 ONLY

M&H VALVE COMPANY
 ANNISTON, ALABAMA
 A DIVISION OF MCWANE INC.

DWN: TRIJ
 DATE: 8/18/11
 DWG. NO.
 BFE-25-45C

3" THRU 24" STYLE 4500
 CLASS 250 BUTTERFLY VALVE
 BURIED OPERATOR
 FLANGED ENDS



AA=NO. OF TAPPED HOLES EACH FLANGE
 AB=SIZE OF TAPPED HOLES
 AC=DEPTH OF TAPPED HOLES

VALVE SIZE	OPERATOR MODEL	D	E	F	G	H	K	L	M	N
4"	65	2	3 9/16	3 5/8	3	7 3/4	3 7/16	2 1/4	1 3/8	16 1/2
6"	150	2	3 9/16	3 5/8	3	7 3/4	3 7/16	2 1/4	1 3/8	16 1/2
8"	250	2 1/8	3 11/16	4 1/4	3 7/8	8 3/4	4 1/2	2 3/8	2	24
10" & 12"	510	2 3/8	4 1/2	5 9/16	5 3/16	10 1/2	6 1/8	2 3/4	3 1/8	36
14", 16", 18" & 20"	1250	3 3/16	5 3/4	8 3/8	7	12 5/16	7 7/8	3 1/4	4	48
24"	2200	3 3/16	6 1/4	10 3/8	9	14 5/16	10 3/4	3 7/8	6	72

VALVE SIZE	A	B	C	J	P	Q	R	S	T	AA	AB	AC	WEIGHT
3"	NOTE AA	5 1/8	6 5/8	5 1/2	8	3/4	10	1 1/4	-	8	3/4-10	1 3/16	85
4"	NOTE AA	5 1/8	7 7/8	5 1/2	8	3/4	10	1 1/4	6 15/16	4	3/4-10	1 3/16	85
6"	NOTE AA	6 1/8	10 5/8	5 3/4	12	3/4	12 1/2	1 7/16	9 11/16	4	3/4-10	1 3/8	110
8"	NOTE AA	7 3/8	13	6 7/8	12	7/8	15	1 5/8	11 15/16	4	7/8-9	1 9/16	160
10"	NOTE AA	9 1/2	15 1/4	9 1/4	16	1	17 1/2	1 7/8	14 1/16	4	1-8	1 1/2	252
12"	NOTE AA	10 7/8	17 3/4	9 3/8	16	1 1/8	20 1/2	2	16	4	1 1/8-7	1 9/16	330
14"	NOTE AA	12 3/16	20 1/4	9 3/8	20	1 1/8	23	2 1/8	18 15/16	8	1 1/8-7	1 5/8	515
16"	NOTE AA	13 15/16	22 1/2	9 1/2	20	1 1/4	25 1/2	2 1/4	21 1/16	8	1 1/4-7	1 3/4	600
18"	NOTE AA	15 13/16	24 3/4	9 1/2	24	1 1/4	28	2 3/8	23 5/16	8	1 1/4-7	1 3/4	775
20"	NOTE AA	17 3/8	27	9 1/2	24	1 1/4	30 1/2	2 1/2	25 9/16	8	1 1/4-7	1 3/4	900
24"	NOTE AA	19 5/16	32	9 5/8	24	1 1/2	36	2 3/4	30 5/16	8	1 1/2-6	1 7/8	1180

NOTE 1: FLOW MAY BE IN EITHER DIRECTION

NOTE 2: VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.

NOTE 3: REFERENCE AWWA C-504 FLANGES & DRILLING (A.N.S.I. 250)

NOTE 4: "N" = NUMBER OF TURNS TO CLOSE

NOTE 5: "P" = NUMBER OF BOLTS ON EACH FLANGE

NOTE 6: "Q" = DIAMETER OF BOLTS

NOTE 7: OPERATED BY 2" AWWA OPERATING / WRENCH NUT

NOTE 8: RATED AND TESTED FOR 250 PSI WORKING PRESSURE

NOTE 9: "Z" (1/16 or .0625 RAISED FACE ON EACH FLANGE) 4~24 ONLY

NOTE 10: MAXIMUM LENGTH OF TORQUE TUBE (15 FEET)--BONNET SUPPORTS SHOULD BE USED ON ALL BONNETS EXCEEDING 6 FEET CENTERLINE OF VALVE TO CENTERLINE OF OPERATOR. ALL BONNET SUPPORTS SHALL BE SUPPLIED BY CUSTOMER

NOTE AA: "A" VARIES TO ENGINEER SPECIFICATIONS

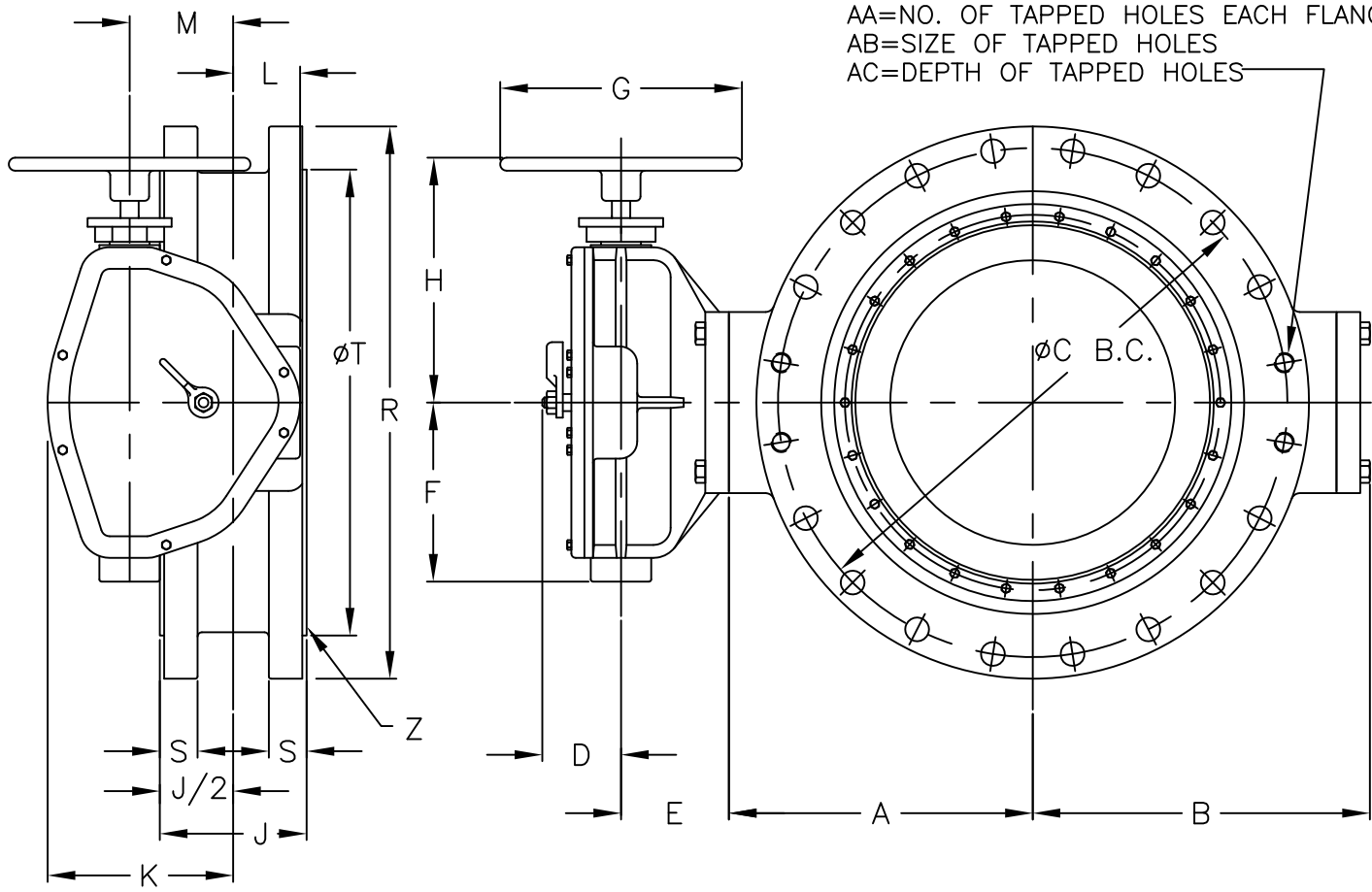
*NOTE AB: APPROX. WEIGHT PER EACH FOOT OF EXTENDED BONNET 125LBS(3"-12"), 150LBS(14"-16"), 180LBS(18"-24")

M&H VALVE COMPANY
 ANNISTON, ALABAMA
 A DIVISION OF MCWANE INC.

DWN: TRIJ
 DATE: 8/18/11
 DWG. NO.
 BFE-25-45D

3" THRU 24" STYLE 4500
 CLASS 250 BUTTERFLY VALVE
 EXTENDED BONNET
 BURIED OPERATOR
 FLANGED ENDS

AA=NO. OF TAPPED HOLES EACH FLANGE
 AB=SIZE OF TAPPED HOLES
 AC=DEPTH OF TAPPED HOLES

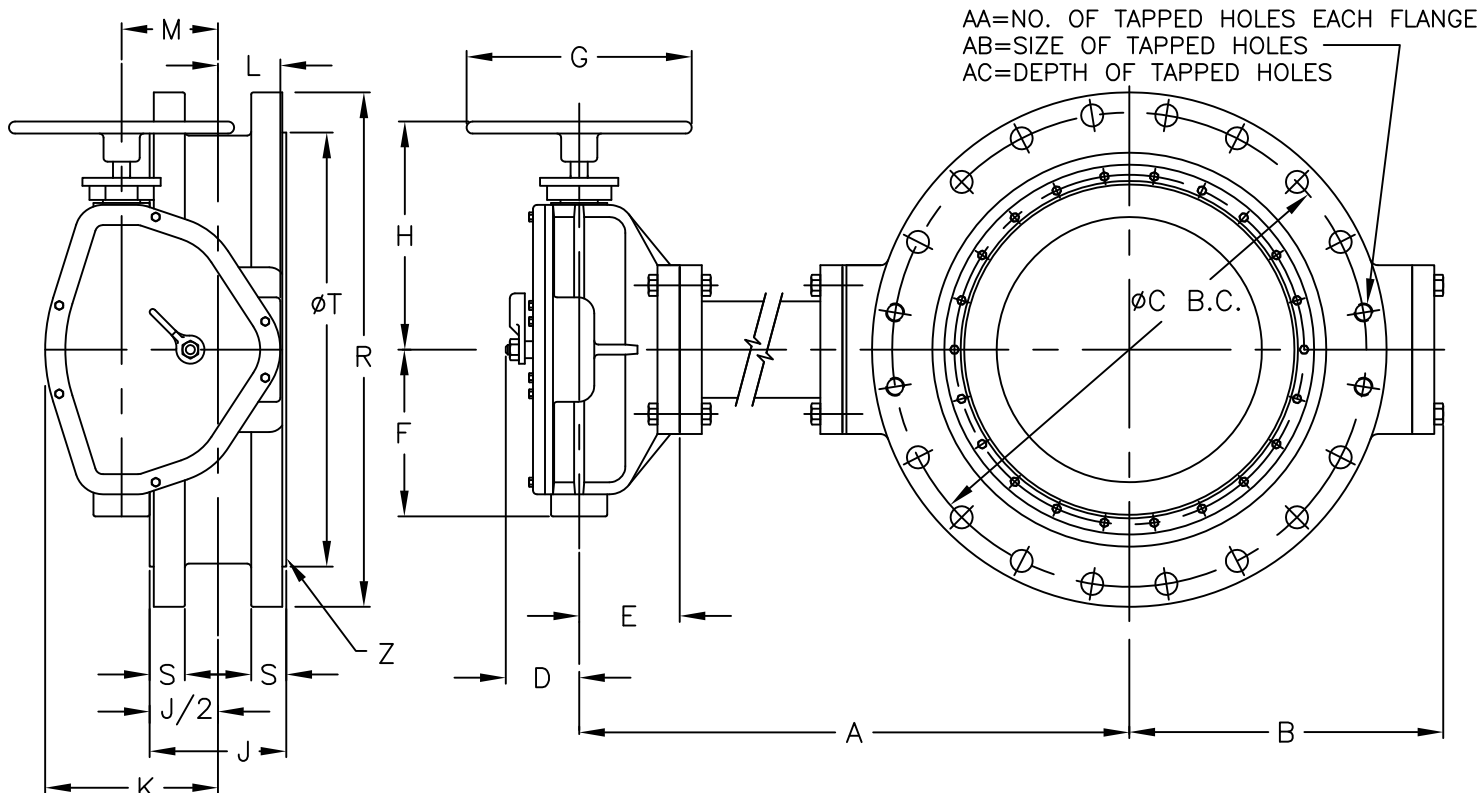


VALVE SIZE	OPERATOR MODEL	D	E	F	G	H	K	L	M	N
4"	65	2 15/16	3 9/16	3 5/8	7 1/2	7 3/4	3 7/16	2 1/4	1 3/8	16 1/2
6"	150	2 15/16	3 9/16	3 5/8	7 1/2	7 3/4	3 7/16	2 1/4	1 3/8	16 1/2
8"	250	3	3 11/16	4 1/4	14	8 3/4	4 1/2	2 3/8	2	24
10" & 12"	510	3 3/16	4 1/2	5 9/16	14	10 1/2	6 1/8	2 3/4	3 1/8	36
14",16",18" & 20"	1250	4 1/16	5 3/4	8 3/8	18	12 5/16	7 7/8	3 1/4	4	48
24"	2200	4 1/16	6 1/4	10 3/8	18	14 5/16	10 3/4	3 7/8	6	72

VALVE SIZE	A	B	C	J	P	Q	R	S	T	AA	AB	AC	WEIGHT
3"	4	5 1/8	6 5/8	5 1/2	8	3/4	10	1 1/4	-	8	3/4-10	1 3/16	85
4"	4	5 1/8	7 7/8	5 1/2	8	3/4	10	1 1/4	6 15/16	4	3/4-10	1 3/8	85
6"	5	6 1/8	10 5/8	5 3/4	12	3/4	12 1/2	1 7/16	9 11/16	4	3/4-10	1 3/8	110
8"	7	7 3/8	13	6 7/8	12	7/8	15	1 5/8	11 15/16	4	7/8-9	1 9/16	160
10"	7 3/4	9 1/2	15 1/4	9 1/4	16	1	17 1/2	1 7/8	14 1/16	4	1-8	1 1/2	252
12"	9 1/2	10 7/8	17 3/4	9 3/8	16	1 1/8	20 1/2	2	16	4	1 1/8-7	1 9/16	330
14"	11 7/16	12 3/16	20 1/4	9 3/8	20	1 1/8	23	2 1/8	18 15/16	8	1 1/8-7	1 5/8	515
16"	13 3/16	13 15/16	22 1/2	9 1/2	20	1 1/4	25 1/2	2 1/4	21 1/16	8	1 1/4-7	1 3/4	600
18"	14 5/16	15 13/16	24 3/4	9 1/2	24	1 1/4	28	2 3/8	23 5/16	8	1 1/4-7	1 3/4	775
20"	15 7/8	17 3/8	27	9 1/2	24	1 1/4	30 1/2	2 1/2	25 9/16	8	1 1/4-7	1 3/4	900
24"	18 19/32	19 5/16	32	9 5/8	24	1 1/2	36	2 3/4	30 5/16	8	1 1/2-6	1 7/8	1180

- NOTE 1: FLOW MAY BE IN EITHER DIRECTION
- NOTE 2: VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
- NOTE 3: REFERENCE AWWA C-504 FLANGES & DRILLING (A.N.S.I. 250)
- NOTE 4: "N" = NUMBER OF TURNS TO CLOSE
- NOTE 5: "P" = NUMBER OF BOLTS ON EACH FLANGE
- NOTE 6: "Q" = DIAMETER OF BOLTS
- NOTE 7: RATED AND TESTED FOR 250 PSI WORKING PRESSURE
- NOTE 8: "Z" = (1/16 or .0625 RAISED FACE ON EACH FLANGE) 4~24 ONLY

<p>M&H VALVE COMPANY ANNISTON,ALABAMA A DIVISION OF MCWANE INC.</p>	DWN: TRIJ	<p>3" THRU 24" STYLE 4500 CLASS 250 BUTTERFLY VALVE POSITION INDICATOR HANDWHEEL OPERATOR FLANGED ENDS</p>
	DATE: 8/18/11	
	DWG. NO. BFE-25-45E	



VALVE SIZE	OPERATOR MODEL	D	E	F	G	H	K	L	M	N
4"	65	2 15/16	3 9/16	3 5/8	7 1/2	7 3/4	3 7/16	2 1/4	1 3/8	16 1/2
6"	150	2 15/16	3 9/16	3 5/8	7 1/2	7 3/4	3 7/16	2 1/4	1 3/8	16 1/2
8"	250	3	3 11/16	4 1/4	14	8 3/4	4 1/2	2 3/8	2	24
10" & 12"	510	3 3/16	4 1/2	5 9/16	14	10 1/2	6 1/8	2 3/4	3 1/8	36
14", 16", 18" & 20"	1250	4 1/16	5 3/4	8 3/8	18	12 5/16	7 7/8	3 1/4	4	48
24"	2200	4 1/16	6 1/4	10 3/8	18	14 5/16	10 3/4	3 7/8	6	72

VALVE SIZE	A	B	C	J	P	Q	R	S	T	AA	AB	AC	WEIGHT
3"	NOTE AA	5 1/8	6 5/8	5 1/2	8	3/4	10	1 1/4	-	8	3/4-10	1 3/16	85
4"	NOTE AA	5 1/8	7 7/8	5 1/2	8	3/4	10	1 1/4	6 15/16	4	3/4-10	1 3/16	85
6"	NOTE AA	6 1/8	10 5/8	5 3/4	12	3/4	12 1/2	1 7/16	9 11/16	4	3/4-10	1 3/8	110
8"	NOTE AA	7 3/8	13	6 7/8	12	7/8	15	1 5/8	11 15/16	4	7/8-9	1 9/16	160
10"	NOTE AA	9 1/2	15 1/4	9 1/4	16	1	17 1/2	1 7/8	14 1/16	4	1-8	1 1/2	252
12"	NOTE AA	10 7/8	17 3/4	9 3/8	16	1 1/8	20 1/2	2	16	4	1 1/8-7	1 9/16	330
14"	NOTE AA	12 3/16	20 1/4	9 3/8	20	1 1/8	23	2 1/8	18 15/16	8	1 1/8-7	1 5/8	515
16"	NOTE AA	13 15/16	22 1/2	9 1/2	20	1 1/4	25 1/2	2 1/4	21 1/16	8	1 1/4-7	1 3/4	600
18"	NOTE AA	15 13/16	24 3/4	9 1/2	24	1 1/4	28	2 3/8	23 5/16	8	1 1/4-7	1 3/4	775
20"	NOTE AA	17 3/8	27	9 1/2	24	1 1/4	30 1/2	2 1/2	25 9/16	8	1 1/4-7	1 3/4	900
24"	NOTE AA	19 5/16	32	9 5/8	24	1 1/2	36	2 3/4	30 5/16	8	1 1/2-6	1 7/8	1180

NOTE 1: FLOW MAY BE IN EITHER DIRECTION

NOTE 2: VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.

NOTE 3: REFERENCE AWWA C-504 FLANGES & DRILLING (A.N.S.I. 250)

NOTE 4: "N" = NUMBER OF TURNS TO CLOSE

NOTE 5: "P" = NUMBER OF BOLTS ON EACH FLANGE

NOTE 6: "Q" = DIAMETER OF BOLTS

NOTE 7: RATED AND TESTED FOR 250 PSI WORKING PRESSURE

NOTE 8: "Z" (1/16 or .0625 RAISED FACE ON EACH FLANGE) 4~24 ONLY

NOTE 9: MAXIMUM LENGTH OF TORQUE TUBE (15 FEET)--BONNET SUPPORTS SHOULD BE USED ON ALL BONNETS EXCEEDING 6 FEET CENTERLINE OF VALVE TO CENTERLINE OF OPERATOR. ALL BONNET SUPPORTS SHALL BE SUPPLIED BY CUSTOMER

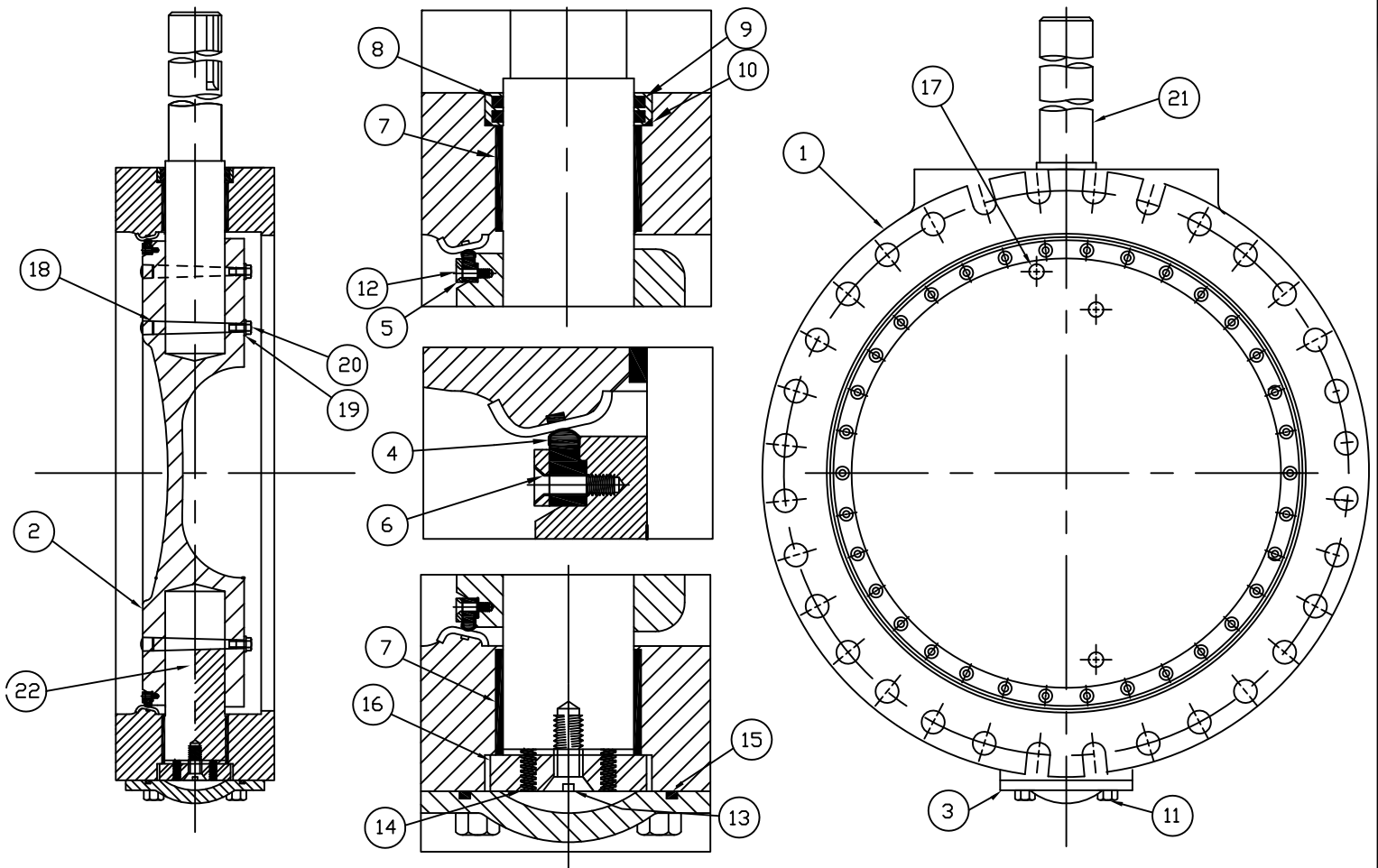
NOTE AA: "A" VARIES TO ENGINEER SPECIFICATIONS

*NOTE AB: APPROXIMATE WEIGHT PER EACH FOOT OF EXTENDED BONNET 125(3"-12"), 150(14"-16"), 180(18"-24")

M&H VALVE COMPANY
ANNISTON, ALABAMA
A DIVISION OF MCWANE INC.

DWN: TRIJ
DATE: 8/18/11
DWG. NO.
BFE-25-45F

3" THRU 24" STYLE 4500
CLASS 250 BUTTERFLY VALVE
WITH EXTENDED BONNET
POSITION INDICATOR
HANDWHEEL OPERATOR
FLANGED ENDS

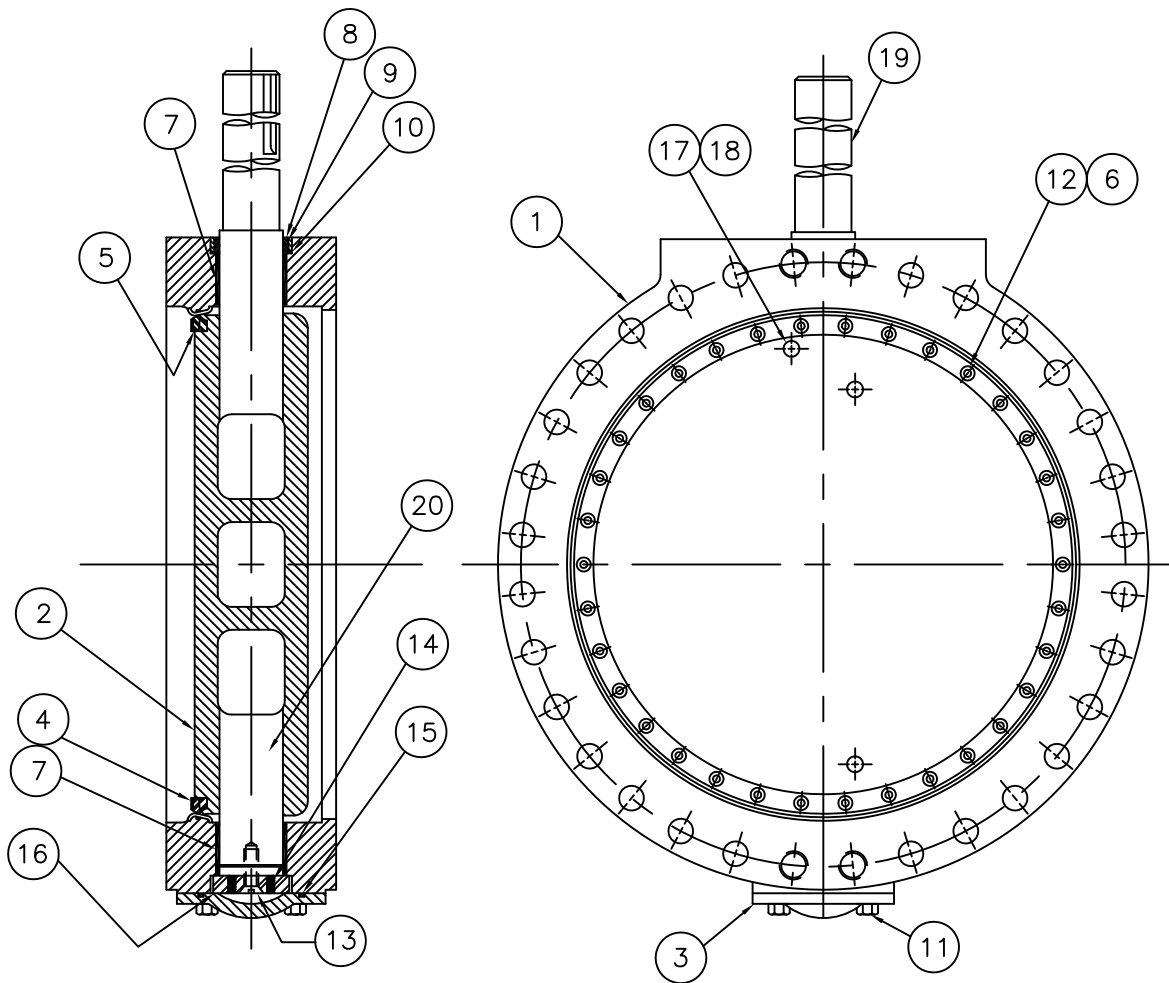


ITEM #	DESCRIPTION	MATERIAL
1A	VALVE BODY	DUCTILE IRON, ASTM A-536, Grade 70-50-05
1B	BODY RING (Permanently Attached)	304 STAINLESS STEEL
1C	BODY O-RING (Permanently Attached)	BUNA-N
2	VANE	DUCTILE IRON, ASTM A-536, Grade 70-50-05
3	END COVER PLATE	DUCTILE IRON, ASTM A-536, Grade 70-50-05
4	RUBBER VANE SEAT RING	EPDM
5	SEGMENTED CLAMP RING (4)	304 STAINLESS STEEL, ASTM A-276
6	SEALING WASHER	NYLON
7	SHAFT SLEEVE BEARING	FIBERGLIDE BACKED WITH STAINLESS STEEL
8	SHAFT O-RING CARTRIDGE	BRONZE
9	O-RING SHAFT SEALS (2)	BUNA-N
10	OUTSIDE O-RING CARTRIDGE SEAL	BUNA-N
11	END COVER PLATE HEX BOLTS	STEEL, ASTM A-307,ELECTRO ZINC PLATED
12	FLAT HEAD SOCKET SCREW (For Rubber Vane Seat Ring)	18-8 STAINLESS STEEL (WITH LOCTITE)
13	FLAT HEAD SOCKET SCREW (For Thrust Bearing)	18-8 STAINLESS STEEL (WITH NYLON INSERT)
14	ALLEN HEAD SET SCREW (For Thrust Bearing)	18-8 STAINLESS STEEL (WITH NYLON INSERT)
15	END COVER PLATE O-RING	BUNA-N
16	THRUST BEARING	BRONZE
17	TAPER PIN (3)	416 STAINLESS STEEL
18	TAPER PIN O-RING (3)	BUNA-N
19	TAPER PIN WASHER (3)	416 STAINLESS STEEL
20	TAPER PIN BOLT (3)	304 STAINLESS STEEL
21	SHAFT (OPERATOR)	STAINLESS STL ASTM A-564. H1100 TYPE 630
22	SHAFT (THRUST SIDE)	304 STAINLESS STEEL

M&H VALVE COMPANY
ANNISTON,ALABAMA
A DIVISION OF MCWANE INC.

DWN: MMR
DATE: 8/18/11
DWG. NO.
BFE-25-14AA

30" & 36" STYLE 1450
CLASS 250 BUTTERFLY VALVE
SUB-ASSEMBLY / MATERIAL LIST
(NON-ADJUSTABLE PACKING)
FLANGED ENDS

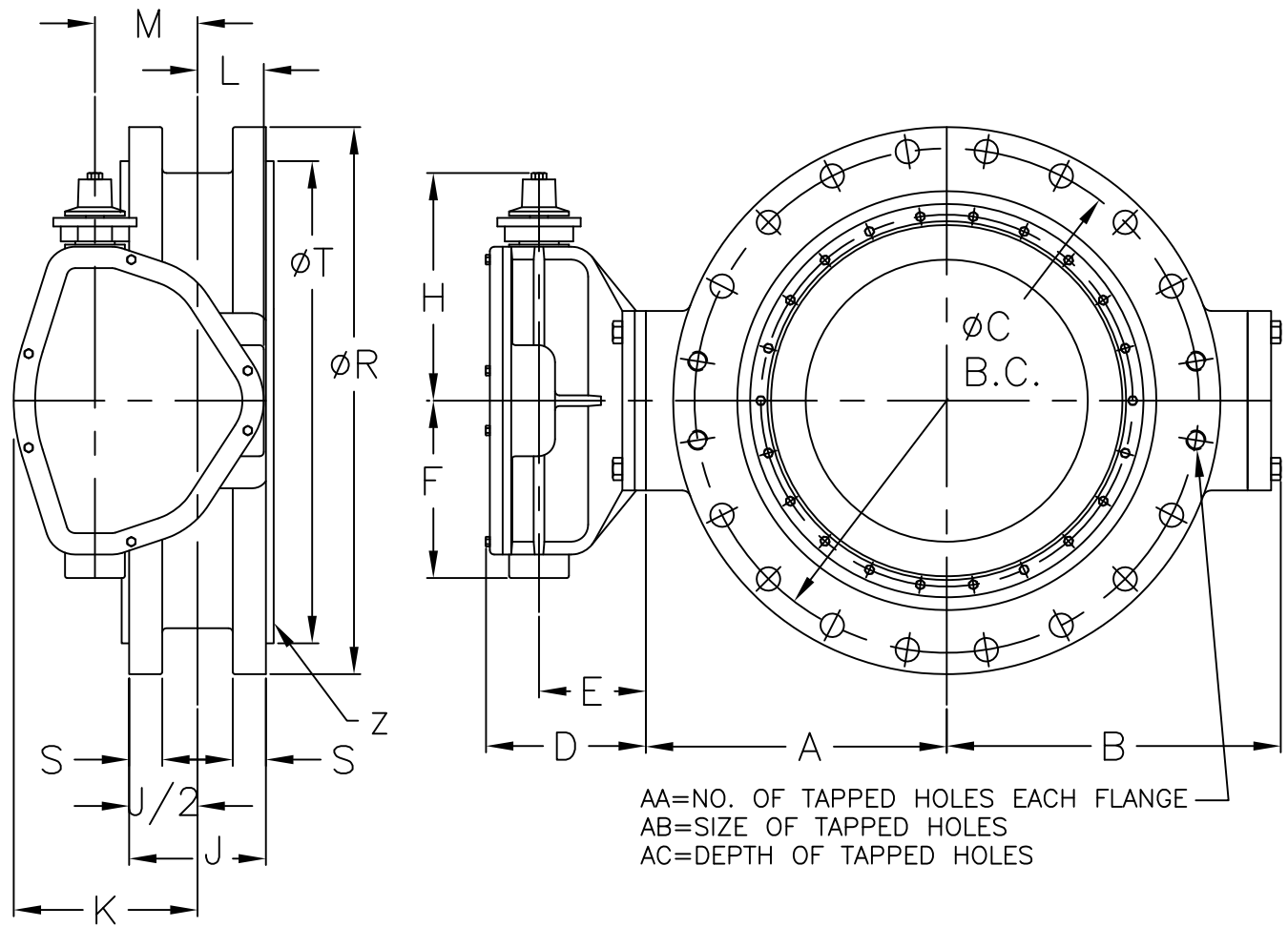


ITEM NO.	DESCRIPTION	MATERIAL
1	BODY, VALVE	DUCTILE IRON, ASTM A-536, GR. 70-50-05 W/304 STN. STL. SEAT
2	VANE	DUCTILE IRON, ASTM A-536 GR. 70-50-05
3	END COVER	DUCTILE IRON, ASTM A-536 GR. 70-50-05
4	SEAT RING, VANE	EPDM
5	CLAMP RING, SEAT	304 STAINLESS STEEL
6	SEALING WASHER	NYLON
7	BUSHING, BODY	FIBERGLIDE
8	CARTRIDGE, SHAFT	BRONZE
9	SEAL, SHAFT	BUNA-N
10	SEAL, CARTRIDGE	BUNA-N
11	BOLT, END COVER	COMMERCIAL 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 PLATE	BRONZE
17	TAPER PIN	416 STAINLESS STEEL
18	TAPER PIN BOLT	18-8 STAINLESS STEEL
19	SHAFT (OPERATOR)	TYPE 630, CONDITION H1100 STN STL ASTM A-564
20	SHAFT (THRUST)	304 STAINLESS STEEL

M&H VALVE COMPANY
ANNISTON, ALABAMA
A DIVISION OF MCWANE INC.

DWN: MMR
DATE: 8/18/11
DWG. NO.
BFE-25-14AB

42" & 48" STYLE 1450
CLASS 250 BUTTERFLY VALVE
SUB-ASSEMBLY / MATERIAL LIST
(NON-ADJUSTABLE PACKING)
FLANGED ENDS



	OPERATOR MODEL	D	E	F	H	K	L	M	N
30"	2200	9 1/16	6 1/4	10 3/8	14 1/2	10 3/4	3 7/8	6	72
36" & 42"	4350	10 1/16	6 1/16	15 1/8	18	13 5/16	4 3/16	7 1/2	90

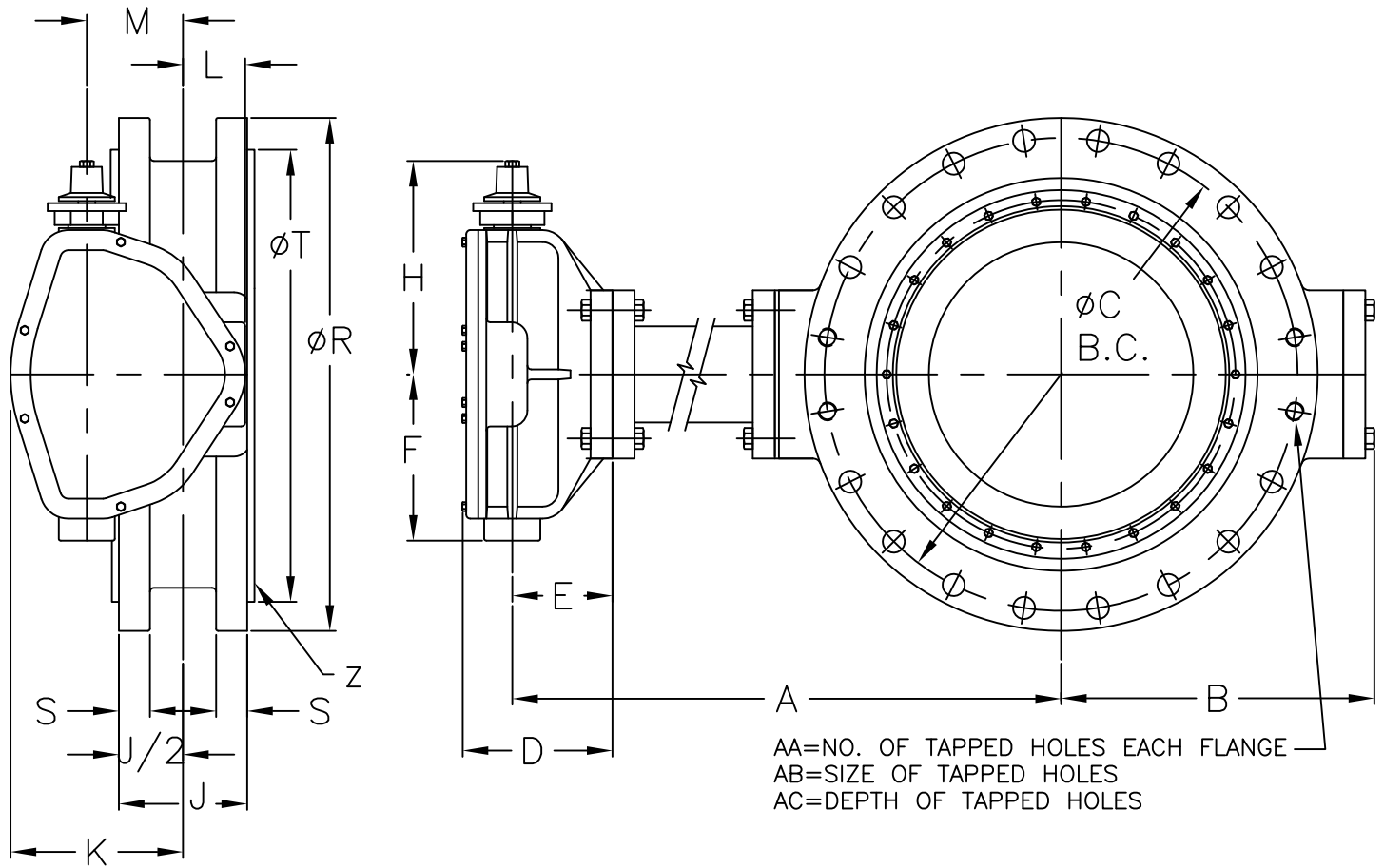
VALVE SIZE	A	B	C	J	P	Q	R	T	S	AA	AB	AC	WEIGHT
30"	22.71	23.63	39.25	13.75	28	1.75	43	37.187	3	4	1 3/4-5	2.00	1850
36"	26.15	27.06	46	14.00	32	2.00	50	43.688	3.38	4	2-4 1/2	2.25	2600
42"	30.00	30.94	52.75	14.13	36	2.00	57	50.438	3.69	8	2-4 1/2	3.25	4500

- NOTE 1: FLOW MAY BE IN EITHER DIRECTION
- NOTE 2: VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
- NOTE 3: REFERENCE AWWA C-504 FLANGES & DRILLING (A.N.S.I. 250)
- NOTE 4: "N" = NUMBER OF TURNS TO CLOSE
- NOTE 5: "P" = NUMBER OF BOLTS ON EACH FLANGE
- NOTE 6: "Q" = DIAMETER OF BOLTS
- NOTE 7: OPERATED BY 2" AWWA OPERATING / WRENCH NUT
- NOTE 8: RATED AND TESTED FOR 250 PSI WORKING PRESSURE
- NOTE 9: "Z" = (1/16 or .0625 RAISED FACE ON EACH FLANGE)

M&H VALVE COMPANY
 ANNISTON, ALABAMA
 A DIVISION OF MCWANE INC.

DWN: TRIJ
 DATE: 8/18/11
 DWG. NO.
 BFE-25-14B

30" THRU 42" STYLE 1450
 CLASS 250 BUTTERFLY VALVE
 BURIED OPERATOR
 FLANGED ENDS



	OPERATOR MODEL	D	E	F	H	K	L	M	N
30"	2200	9 1/16	6 1/4	10 3/8	14 1/2	10 3/4	3 7/8	6	72
36" & 42"	4350	10 1/16	6 1/16	15 1/8	18	13 5/16	4 3/16	7 1/2	90

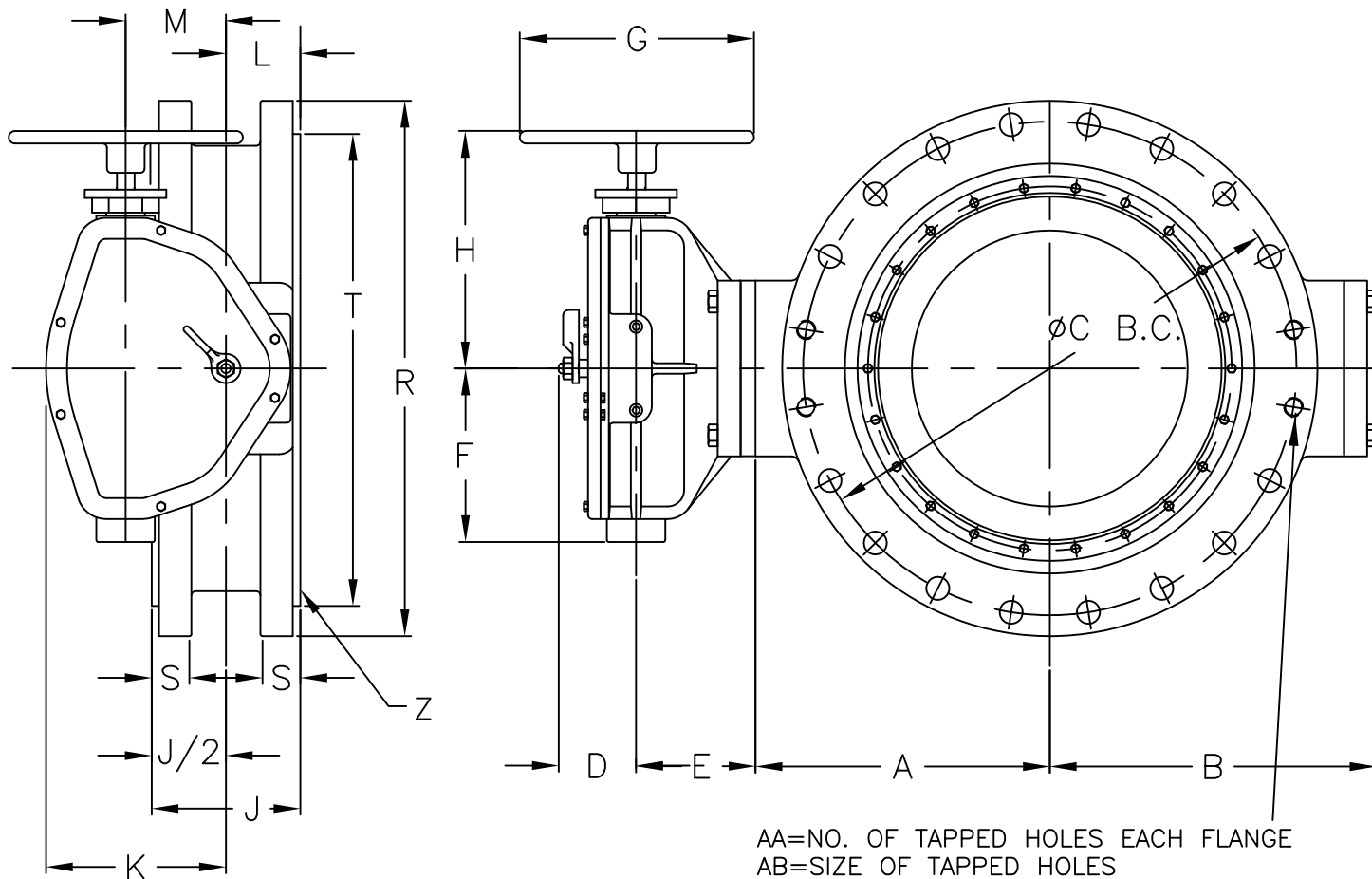
VALVE SIZE	A	B	C	J	P	Q	R	T	S	AA	AB	AC	*WEIGHT
30"	NOTE AA	23.63	39.25	13.75	28	1.75	43	37.187	3	4	1 3/4-5	2.00	1850
36"	NOTE AA	27.06	46.0	14.00	32	2.00	50	43.688	3.38	4	2-4 1/2	2.25	2600
42"	NOTE AA	30.94	52.75	14.13	36	2.00	57	50.438	3.69	8	2-4 1/2	3.25	4500

- NOTE 1: FLOW MAY BE IN EITHER DIRECTION
 NOTE 2: VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
 NOTE 3: REFERENCE AWWA C-504 FLANGES & DRILLING (A.N.S.I. 250)
 NOTE 4: "N" = NUMBER OF TURNS TO CLOSE
 NOTE 5: "P" = NUMBER OF BOLTS ON EACH FLANGE
 NOTE 6: "Q" = DIAMETER OF BOLTS
 NOTE 7: OPERATED BY 2" AWWA OPERATING / WRENCH NUT
 NOTE 8: RATED AND TESTED FOR 250 PSI WORKING PRESSURE
 NOTE 9: "Z" = (1/16 or .0625 RAISED FACE ON EACH FLANGE)
 NOTE 10: MAXIMUM LENGTH OF TORQUE TUBE (15 FEET)--BONNET SUPPORTS SHOULD BE USED ON ALL BONNETS EXCEEDING 6 FEET CENTERLINE OF VALVE TO CENTERLINE OF OPERATOR. ALL BONNET SUPPORTS SHALL BE SUPPLIED BY CUSTOMER
 NOTE AA: "A" VARIES TO ENGINEER SPECIFICATIONS
 *NOTE AB: APPROXIMATE WEIGHT PER EACH FOOT OF EXTENDED BONNET 150LBS(30"-42")

M&H VALVE COMPANY
 ANNISTON, ALABAMA
 A DIVISION OF MCWANE INC.

DWN: TRIJ
 DATE: 8/22/11
 DWG. NO.
 BFE-25-14C

30" THRU 42" STYLE 1450
 CLASS 250 BUTTERFLY VALVE
 EXTENDED BONNET
 BURIED OPERATOR
 FLANGED ENDS



	OPERATOR MODEL	D	E	F	G	H	K	L	M	N
30"	2200	4 3/16	6 1/4	10 3/8	18	14 5/16	10 3/4	3 7/8	6	72
36" & 42"	4350	5 5/8	6 1/16	14 5/16	27	18	13 5/16	4 3/16	7 1/2	90

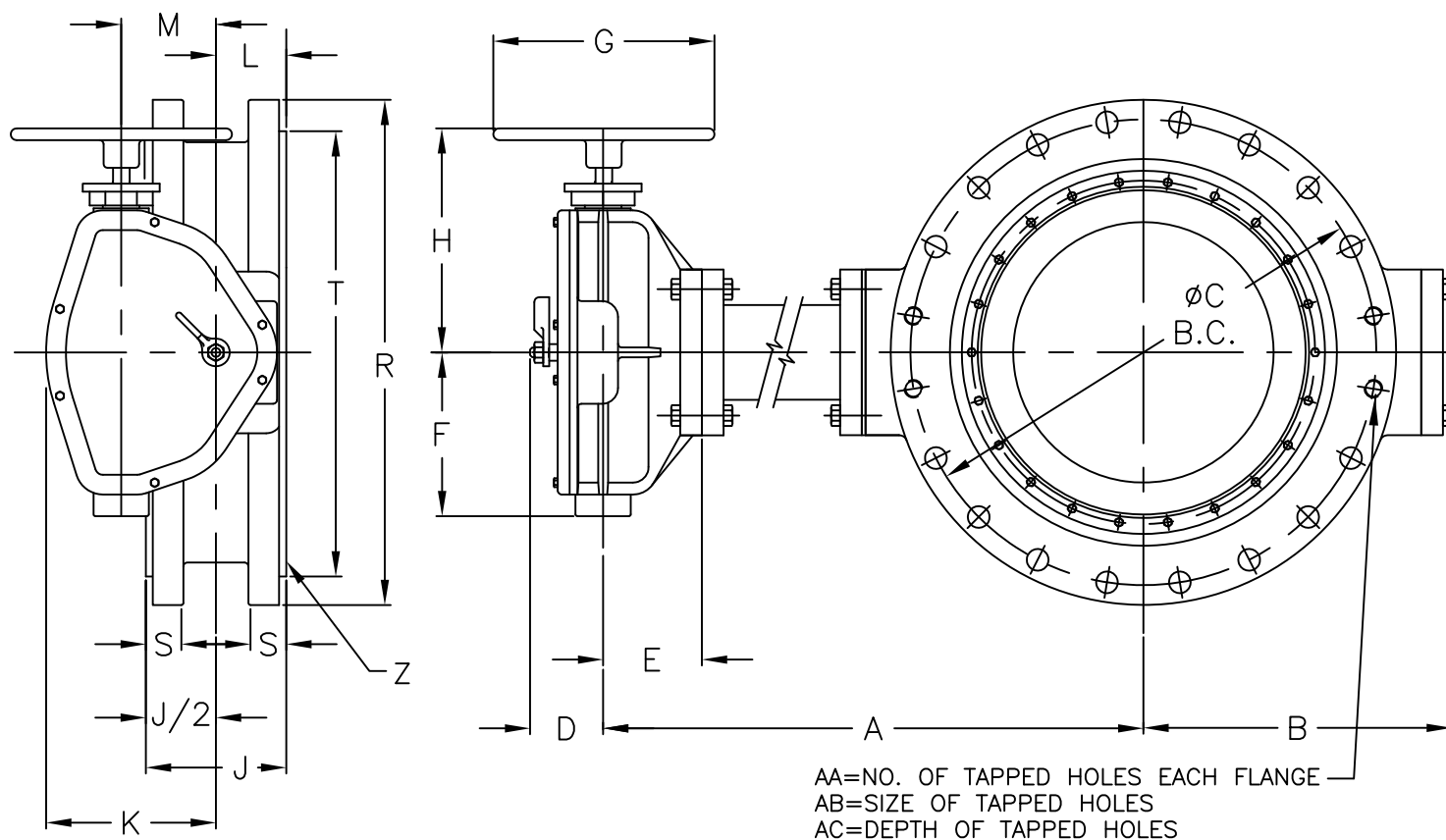
VALVE SIZE	A	B	C	J	P	Q	R	T	S	AA	AB	AC	WEIGHT
30"	22.71	23.63	39.25	13.75	28	1.75	43	37.187	3	4	1 3/4-5	2.00	1850
36"	26.15	27.06	46	14.00	32	2.00	50	43.688	3.38	4	2-4 1/2	2.25	2600
42"	30.00	30.94	52.75	14.13	36	2.00	57	50.438	3.69	8	2-4 1/2	3.25	4500

- NOTE 1: FLOW MAY BE IN EITHER DIRECTION
 NOTE 2: VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
 NOTE 3: REFERENCE AWWA C-504 FLANGES & DRILLING (A.N.S.I. 250)
 NOTE 4: "N" = NUMBER OF TURNS TO CLOSE
 NOTE 5: "P" = NUMBER OF BOLTS ON EACH FLANGE
 NOTE 6: "Q" = DIAMETER OF BOLTS
 NOTE 7: RATED AND TESTED FOR 250 PSI WORKING PRESSURE
 NOTE 8: "Z" = (1/16 or .0625 RAISED FACE ON EACH FLANGE)

M&H VALVE COMPANY
 ANNISTON, ALABAMA
 A DIVISION OF MCWANE INC.

DWN: TRIJ
 DATE: 8/22/11
 DWG. NO.
 BFE-25-14D

30" THRU 42" STYLE 1450
 CLASS 250 BUTTERFLY VALVE
 POSITION INDICATOR
 HANDWHEEL OPERATOR
 FLANGED ENDS



	OPERATOR MODEL	D	E	F	G	H	K	L	M	N
30"	2200	4 3/16	6 1/4	10 3/8	18	14 5/16	10 3/4	3 7/8	6	72
36" & 42"	4350	5 5/8	6 1/16	14 5/16	27	18	13 5/16	4 3/16	7 1/2	90

VALVE SIZE	A	B	C	J	P	Q	R	T	S	AA	AB	AC	WEIGHT
30"	NOTE AA	23.63	39.25	13.75	28	1.75	43	37.187	3	4	1 3/4-5	2.00	1850
36"	NOTE AA	27.06	46	14.00	32	2.00	50	43.688	3.38	4	2-4 1/2	2.25	2600
42"	NOTE AA	30.94	52.75	14.13	36	2.00	57	50.438	3.69	8	2-4 1/2	3.25	4500

NOTE 1: FLOW MAY BE IN EITHER DIRECTION

NOTE 2: VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.

NOTE 3: REFERENCE AWWA C-504 FLANGES & DRILLING (A.N.S.I. 250)

NOTE 4: "N" = NUMBER OF TURNS TO CLOSE

NOTE 5: "P" = NUMBER OF BOLTS ON EACH FLANGE

NOTE 6: "Q" = DIAMETER OF BOLTS

NOTE 7: RATED AND TESTED FOR 250 PSI WORKING PRESSURE

NOTE 8: "Z" = (1/16 or .0625 RAISED FACE ON EACH FLANGE)

NOTE 9: MAXIMUM LENGTH OF TORQUE TUBE (15 FEET)--BONNET SUPPORTS SHOULD BE USED ON ALL BONNETS EXCEEDING 6 FEET CENTERLINE OF VALVE TO CENTERLINE OF OPERATOR. ALL BONNET SUPPORTS SHALL BE SUPPLIED BY CUSTOMER

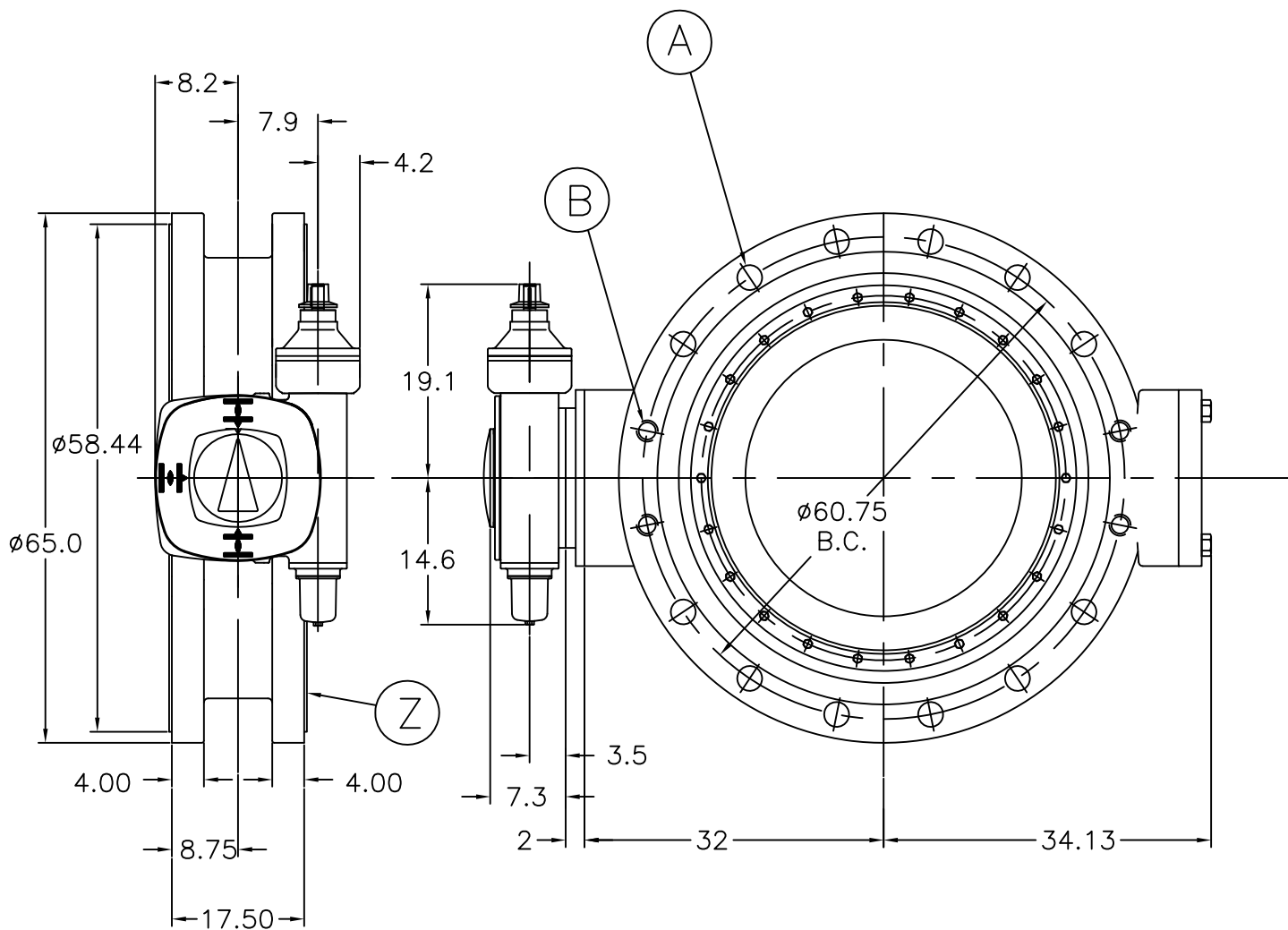
NOTE AA: "A" VARIES TO ENGINEER SPECIFICATIONS

*NOTE AB: APPROXIMATE WEIGHT PER EACH FOOT OF EXTENDED BONNET 150LBS(30"-42")

M&H VALVE COMPANY
 ANNISTON, ALABAMA
 A DIVISION OF MCWANE INC.

DWN: TRIJ
 DATE: 8/22/11
 DWG. NO.
 BFE-25-14E

30" THRU 42" STYLE 1450
 CLASS 250 BUTTERFLY VALVE
 EXTENDED BONNET
 HANDWHEEL OPERATOR
 FLANGED ENDS

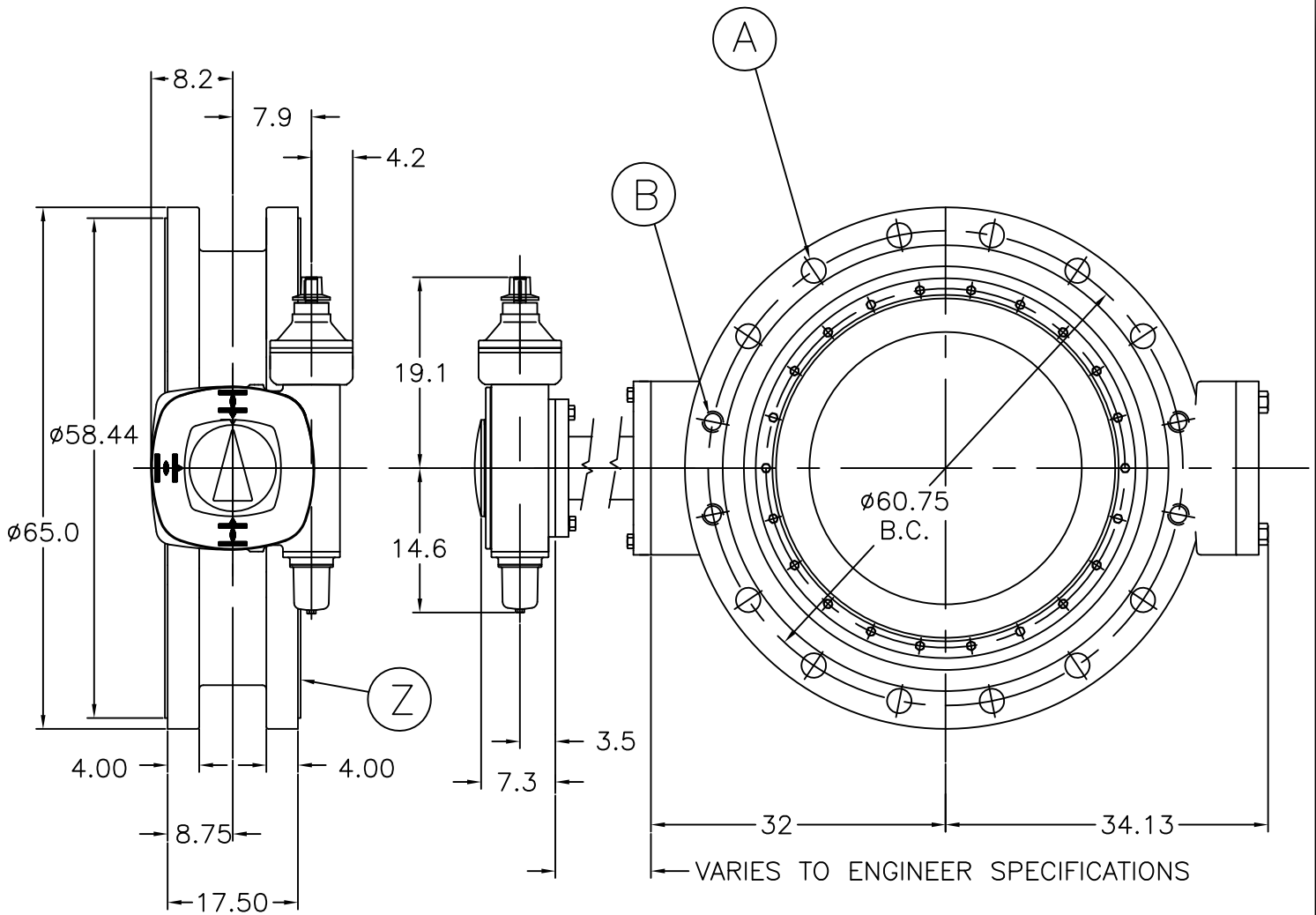


- NOTE 1: FLOW MAY BE IN EITHER DIRECTION
 NOTE 2: VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
 NOTE 3: REFERENCE AWWA C-504-B & DRILLING (A.N.S.I. 250)
 NOTE 4: NUMBER OF TURNS TO CLOSE = 108
 NOTE 5: OPERATED BY 2" AWWA OPERATING / WRENCH NUT
 NOTE 6: A = (32) $\phi 2.0$ " BOLTS PER FLANGE
 NOTE 7: B = (8) 2.0-4.5 UNC x 2.25 DEEP TAPPED HOLES EACH FLANGE
 NOTE 8: "Z" = (1/16" OR .0625 RAISED FACE ON EACH FLANGE)
 NOTE 9: RATED AND TESTED FOR 250 PSI WORKING PRESSURE
 NOTE 10: APPROXIMATE WEIGHT = 6300lbs.

M&H VALVE COMPANY
 ANNISTON, ALABAMA
 A DIVISION OF MCWANE INC.

DWN: TRIJ
 DATE: 9/19/11
 DWG. NO.
 BFE-25-48A

48" STYLE 1450
 CLASS 250 BUTTERFLY VALVE
 (AUMA GS200.3/GZ200.3:8 GEAR BOX)
 BURIED OPERATOR
 FE X FE ENDS

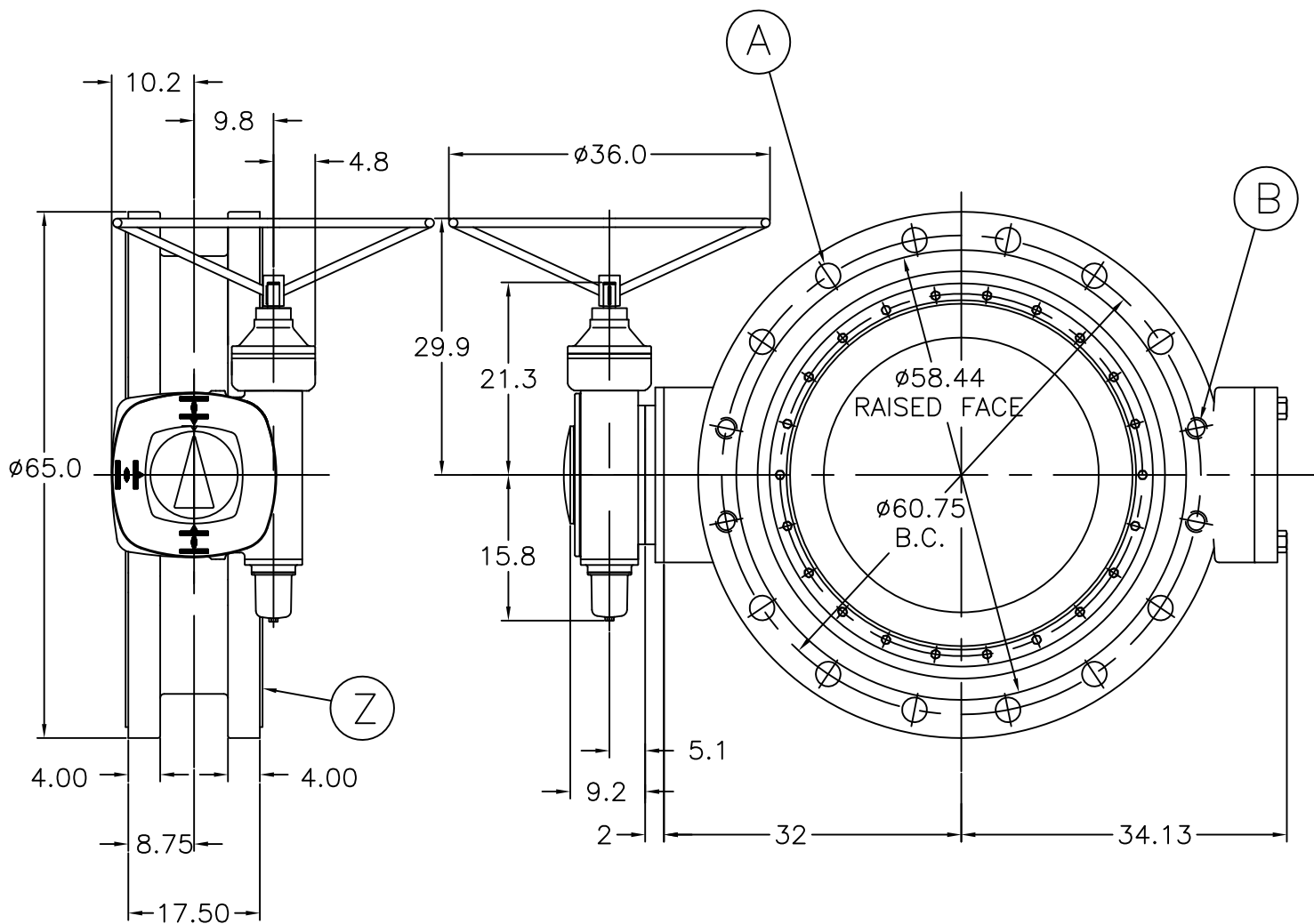


- NOTE 1: FLOW MAY BE IN EITHER DIRECTION
 NOTE 2: VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
 NOTE 3: REFERENCE AWWA C-504-B & DRILLING (A.N.S.I. 250)
 NOTE 4: NUMBER OF TURNS TO CLOSE = 108
 NOTE 5: OPERATED BY 2" AWWA OPERATING / WRENCH NUT
 NOTE 6: A = (32) $\phi 2.0$ " BOLTS PER FLANGE
 NOTE 7: B = (8) 2.0-4.5 UNC x 2.25 DEEP TAPPED HOLES EACH FLANGE
 NOTE 8: "Z" = (1/16" OR .0625 RAISED FACE ON EACH FLANGE)
 NOTE 9: RATED AND TESTED FOR 250 PSI WORKING PRESSURE
 NOTE 10: APPROXIMATE WEIGHT = 6300lbs.

M&H VALVE COMPANY
 ANNISTON, ALABAMA
 A DIVISION OF MCWANE INC.

DWN: TRIJ
 DATE: 9/19/11
 DWG. NO.
 BFE-25-AA2

48" STYLE 1450
 CLASS 250 BUTTERFLY VALVE
 (AUMA GS200.3/GZ200.3:8 GEAR BOX)
 BURIED OPERATOR & EXTENDED BONNET
 FE X FE ENDS

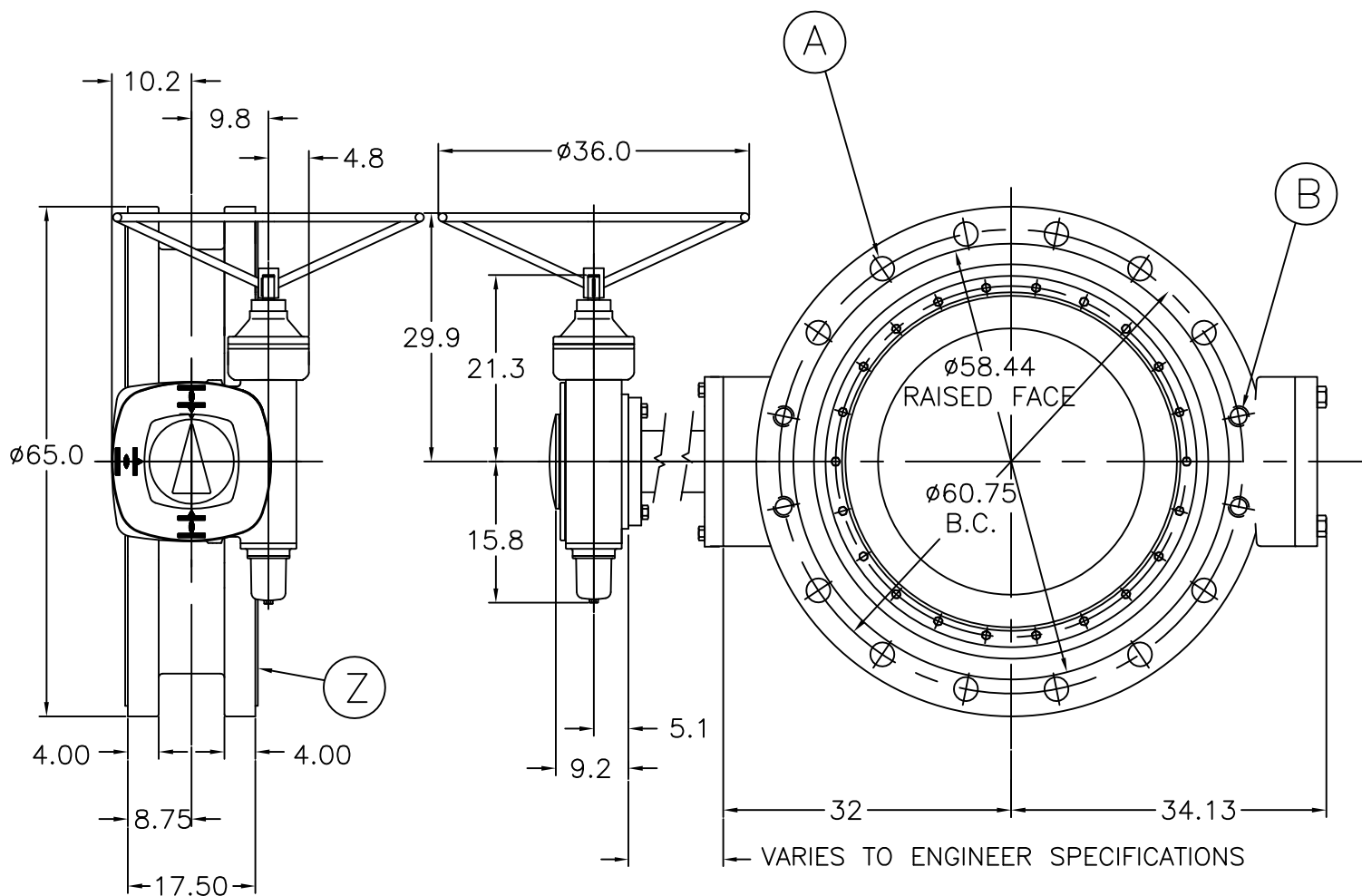


- NOTE 1: FLOW MAY BE IN EITHER DIRECTION
 NOTE 2: VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
 NOTE 3: REFERENCE AWWA C-504-B & DRILLING (A.N.S.I. 250)
 NOTE 4: NUMBER OF TURNS TO CLOSE = 103
 NOTE 5: MANUAL POSITION INDICATOR
 NOTE 7: B = (8) 2.0-4.5 UNC x 2.25 DEEP TAPPED HOLES EACH FLANGE
 NOTE 8: "Z" = (1/16" OR .0625 RAISED FACE ON EACH FLANGE)
 NOTE 9: RATED AND TESTED FOR 250 PSI WORKING PRESSURE
 NOTE 10: APPROXIMATE WEIGHT = 6300lbs.

M&H VALVE COMPANY
 ANNISTON, ALABAMA
 A DIVISION OF MCWANE INC.

DWN: TRIJ
 DATE: 9/19/11
 DWG. NO.
 BFE-25-48B

48" STYLE 1450
 CLASS 250 BUTTERFLY VALVE
 (AUMA GS250.3/GZ250.3:8 GEAR BOX)
 HANDWHEEL OPERATOR
 FE X FE ENDS



- NOTE 1: FLOW MAY BE IN EITHER DIRECTION
 NOTE 2: VALVE SHAFT WILL MEET OR EXCEED REQUIREMENTS OF SHAFT TABLE PER AWWA STANDARD C-504 FOR APPLICABLE CLASS.
 NOTE 3: REFERENCE AWWA C-504-B & DRILLING (A.N.S.I. 250)
 NOTE 4: NUMBER OF TURNS TO CLOSE = 103
 NOTE 5: MANUAL POSITION INDICATOR
 NOTE 7: B = (8) 2.0-4.5 UNC x 2.25 DEEP TAPPED HOLES EACH FLANGE
 NOTE 8: "Z"= (1/16" OR .0625 RAISED FACE ON EACH FLANGE)
 NOTE 9: RATED AND TESTED FOR 250 PSI WORKING PRESSURE
 NOTE 10: APPROXIMATE WEIGHT = 6300lbs.

M&H VALVE COMPANY
 ANNISTON, ALABAMA
 A DIVISION OF MCWANE INC.

DWN: TRIJ
 DATE: 9/19/11
 DWG. NO.
 BFE-25-AA4

48" STYLE 1450
 CLASS 250 BUTTERFLY VALVE
 (AUMA GS250.3/GZ250.3:8 GEAR BOX)
 HANDWHEEL OPERATOR &
 EXTENDED BONNET - FE X FE ENDS