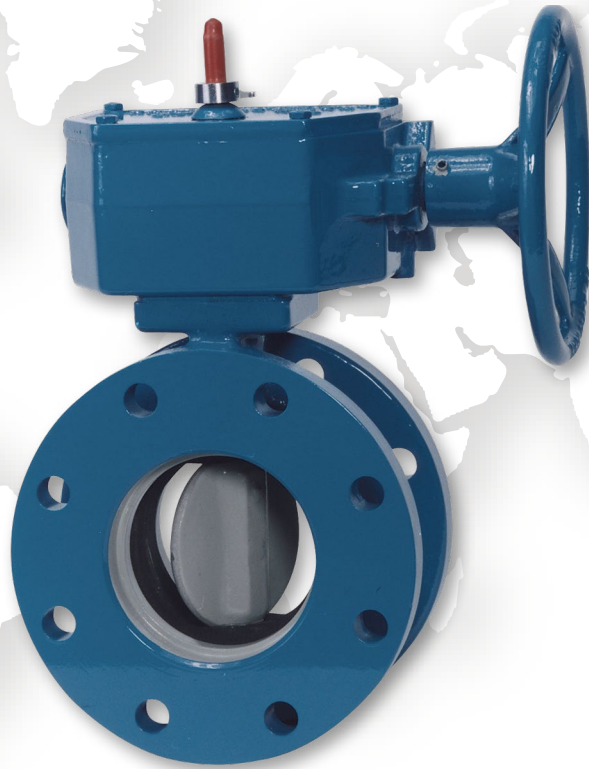


# PRATT®

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## HP250II® AND HP250™ BUTTERFLY VALVES

Engineering Creative Solutions for Fluid Systems Since 1901



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## TABLE OF CONTENTS

### PRATT® HP250II®

Scope of Line .....	1
Design and Construction Details .....	1
Pipe Mating Chart .....	1
Features and Benefits .....	2
E-LOK® Seating System .....	2
Seat on Body Design Advantage .....	3
HP250II Suggested Specification .....	4
Dimensional Data .....	4-6

### PRATT HP250™

Scope of Line .....	7
HP250 Suggested Specification .....	7
Dimensional Data .....	8

# SCOPE OF LINE

## Pratt® HP250II® Butterfly Valve



### SIZES:

- 3" Through 20" Bonded Seat
- 24" Through 48" E-LOK® Seat

### BODY STYLES:

- End Connections
- Flanged
- Mechanical Joint
- Flanged x Mechanical Joint

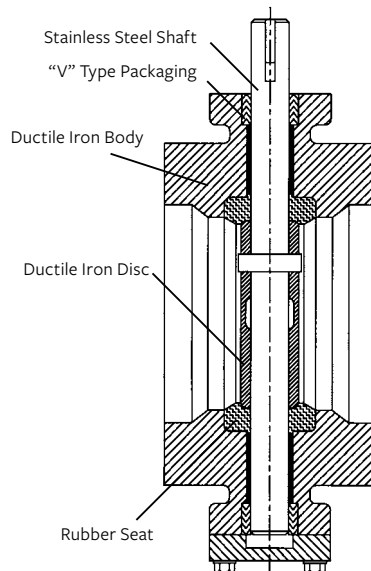
### PRESSURE CLASS:

- AWWA 250 B

### ACTUATION OPTIONS\*:

- Nut
- Handwheel
- Buried Service

\*Consult factory for other end connections and actuation options



## DESIGN AND CONSTRUCTION

- Ductile Iron Valve Body
- Stainless Steel Shaft
- Ductile Iron or Nickel Aluminum Bronze Disc
- Rubber Seat

## MATING CHART

### STEEL

### CAST IRON/DUCTILE IRON

HP250™	AWWA C207-01 Class F	ANSI B16.1 Class 250
HP250II	AWWA C207-01 Class B Class D Class E MSS Sp-44 Steel C1.150 ASME B16.47-96 Steel C1.150 Series A	ANSI B16.1 Class 150 AWWA C110 Class 125

# HP250II® BUTTERFLY VALVE

## FEATURE

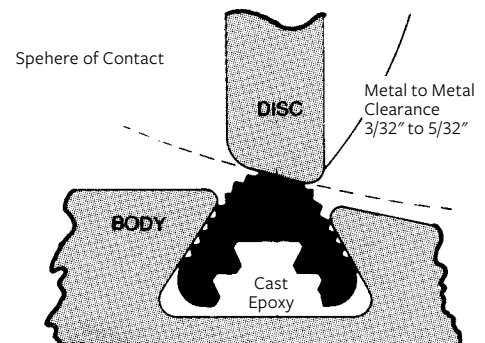
- Higher Pressures
- Wedge Size Range
- Low Seating / Unseating Torques
- Unique Disc Design
- Adjustable / Replaceable Seat on 24" and larger
- Choice of Valve Ends
- Actuators and Accessories

## BENEFIT

- Working pressures to 250 psi with temperatures to 150° F.
- Available in sizes 3" - 72" (flanged ends); 6" - 48" (mechanical joint ends).
- Increases seat life and reduces actuator size.
- Provides more strength, less weight, and greater free-flow area than conventional disc designs.
- E-LOK® design retains seat in body without metal hardware. If adjustable or replacement is required, both can be done in the field utilizing simple hand tools.
- Flange and Mechanical Joint. Flanges are in full accordance with ANSI B16.1, Class 125# cast iron flanges where applicable. Mechanical joint ends conform to ANSI 21.11. For ANSI Class 250# Flange, see page 8.
- Available with manual traveling nut or worm gear, electric motor or cylinder actuators; plus full range of extensions, indicators, positioners, remote controls and other accessories.

## A PROVEN STANDARD FOR BUBBLE-TIGHT CLOSURE

The E-LOK seating system features a rubber seat that provides multiple sealing lines which permit higher levels of radial compression. The multiple ridges are designed to reduce rubber stress levels for lower seating torques and better seating action. Unique epoxy injection process locks the seat against the disc with uniform pressure control around the entire periphery to provide a bubble-tight seal. Design also allows easy seat replacement without removing the valve from the line where possible.



# THE PRATT® SEAT ON BODY DESIGN ADVANTAGE

A key aspect of butterfly valve design relates to location of the rubber seat. Essentially the seat can be positioned on the body or on the disc per AWWA C504.

But the sum of the Pratt design, testing, and field experience has proven conclusively that seat on body design is preferred because it provides maximum reliability.

The major advantage of seat on body design is that the risk of damage to the rubber seat is minimized because the sealing edge of the disc is much harder than any corrosion deposits built up within the valve body or pipeline. (See Figures 1 and 2) This is important because build up can interfere with the swing radius of the disc. Additionally, seats on body are recessed and thus more protected than seat on disc designs.

Seat on disc designs are much more susceptible to damage because it is the relatively soft rubber seat on the disc that comes into contact with corrosion deposits and build up. Also any solid materials flowing in the fluid can impinge on a rubber seat located on the disc. (See Figure 3)

Another disadvantage of seat on disc design is that since the maximum velocity in a pipeline occurs at the upstream and downstream leading edges of the disc, the rubber seat on disc designs are much more susceptible to wear, vibration and potential loosening of hardware.

Conclusion: Pratt seat on body designs which do not depend on retaining hardware in the waterway for seat retention have recognized these potential problems and addressed them in advance. Successful field performance has substantiated the credibility of this design approach!!

## PRATT – RUBBER SEAT ON BODY DESIGNS

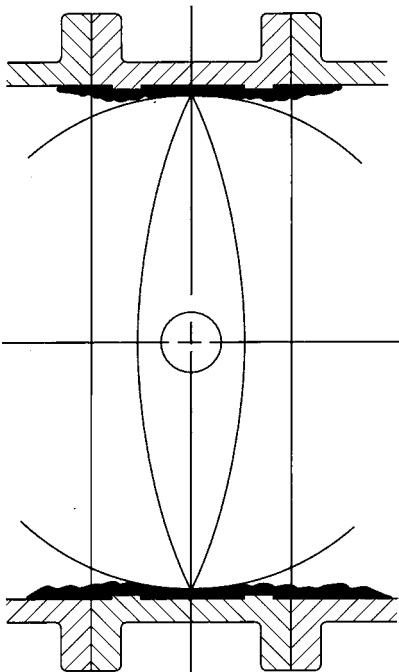


FIGURE 1

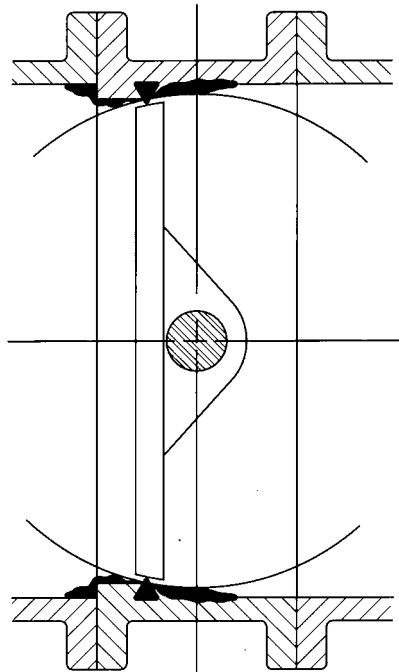


FIGURE 2

## RUBBER SEAT ON DISC

### DESIGN BY OTHERS

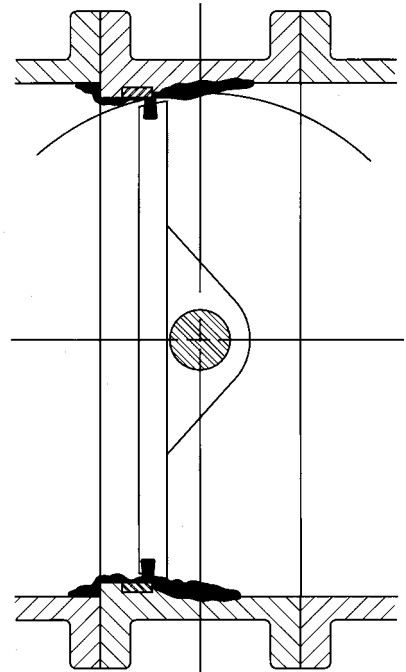


FIGURE 3



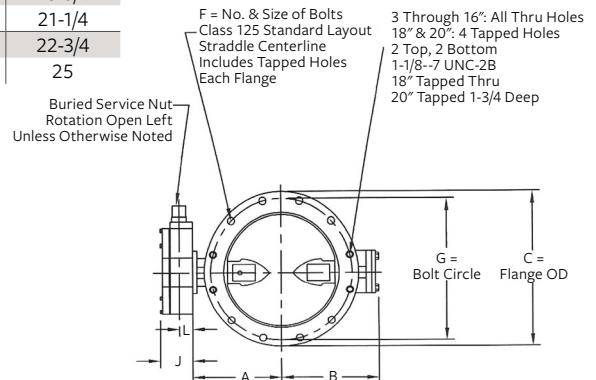
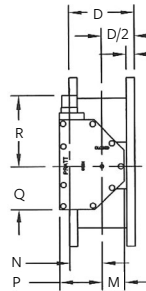
## HP250II® 3"-20", DUCTILE IRON BODY, ANSI 125# FLANGED ENDS

ACTUATOR VALVE SIZE	VALVE SIZE	J	L	M	N	P	Q	R	NUMBER OF TURNS
MDT-2S	3-8"	4-11/16	2	2-1/8	2	4-1/2	4-1/2	8-1/4	32
MDT-2S	10-14"	5-5/8	2-7/16	3-1/4	3-5/32	5-5/8	5-3/8	10-3/8	30
MDT-4S	16" & 18"	6-3/8	2-27/32	3-3/8	4	7-5/16	6-3/4	11-5/16	40
MDT-5	20"	7-9/16	3-15/32	4-1/2	5-1/2	8-3/4	10	17	44

VALVE SIZE	A	B	C	D	E	F	G
3	4-3/4	3-1/4	7-1/2	5	13/16	4-5/8	6
4	5-1/2	3-1/2	9	5	1	8-5/8	7-1/2
6	5-1/8	5-1/8	11	5	1-1/16	8-3/4	9-1/2
8	7-3/4	6-1/2	13-1/2	6	1-3/16	8-3/4	11-3/4
10	9	9-11/16	16	8	1-3/16	12-7/8	14-1/4
12	10-1/2	11-3/16	19	8	1-5/16	12-7/8	17
14	11-7/8	12-5/8	21	8	1-3/8	12-1	18-3/4
16	13-1/2	14-3/8	23-1/2	8	1-7/16	16-1	21-1/4
18	14-3/8	15-1/4	25	8	1-9/16	16-1-1/8	22-3/4
20	16	16-7/8	27-1/2	8	1-11/16	20-1-1/8	25

### Notes:

- All dimensions shown in inches.
- "D" dimension  $\pm 1/16$ " for 3" thru 10" valves.  
"D" dimension  $\pm 1/8$ " for 12" thru 20" valves.
- Flange through bolt holes will be  $1/8$ " larger than diameter of bolt.
- Dimensions and drilling of end flanges conform to the American Cast Iron Flange Standards, Class 125 (B16.1).
- Valves manufactured & tested in accordance with AWWA Specification C504 latest revision, Class 250B.
- Recommendation for mating flanges: Where insulating bushings are used, it is necessary that bolt holes be drilled oversize by an amount equal to two times the insulating sleeve thickness to maintain the same minimum clearance for bolts.



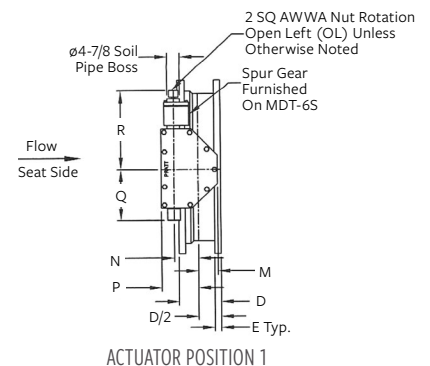
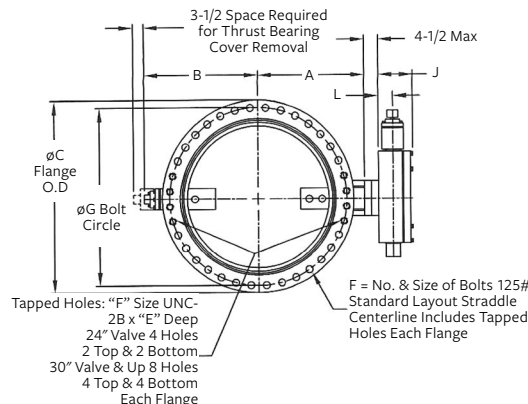
## HP250II® 24"-48", DUCTILE IRON BODY, ANSI 125# FLANGED ENDS

ACTUATOR VALVE SIZE	J	L	M	N	P	Q	R	NUMBER OF TURNS
MDT-5	7-9/16	3-15/32	4-1/2	5-1/2	8-3/4	10	17	44
MDT-5S	8-5/16	3-15/16	5-1/2	3-5/8	10-1/2	15-15/16	19-7/8	136
MDT-6S	10-3/16	5-1/16	7	8-1/4	12-5/8	14-3/16	26-1/2	215

VALVE SIZE	A	B	C	D	E	F	G
24	18-5/8	18-3/8	32	8	1-7/8	20-1-1/4	29-1/2
30	21-1/2	24-1/8	38-3/4	12	2-1/8	28-1-1/4	36
36	25-7/16	28-1/4	46	12	2-3/8	32-1-1/2	42-3/4
42	29-7/8	32-11/16	53	12	2-5/8	36-1-1/2	49-1/2
48	34-1/16	36-7/8	59-1/2	15	2-3/4	44-1-1/2	56

### Notes:

- All dimensions shown in inches.
- "D" dimension  $\pm 1/8$ " for 24" and larger valves.
- For bolts smaller than 1-3/4", bolt holes will be  $1/8$ " larger than diameter of bolt. For bolts 1-3/4" or larger, bolt holes will be  $1/4$ " larger than diameter of bolt.
- Dimensions and drilling of end flanges conform to the American Cast Iron Flange Standards, Class 125 (B16.1).
- Valves manufactured & tested in accordance with AWWA Specification C504 latest revision, Class 250B.
- Recommendation for mating flanges: Where insulating bushings are used, it is necessary that bolt holes be drilled oversize by an amount equal to two times the insulating sleeve thickness to maintain the same minimum clearance for bolts.
- Caution: it is recommended that valves be installed into piping system in accordance with AWWA M-11 to prevent any undue piping stress, deflection or bending that may effect the performance of the valve.
- Extension stem can be used with standard valve boxes or 5" soil pipe.



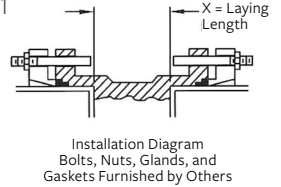
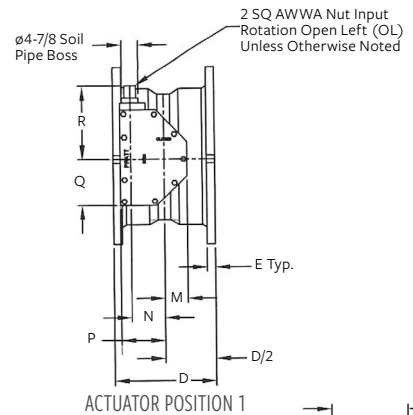
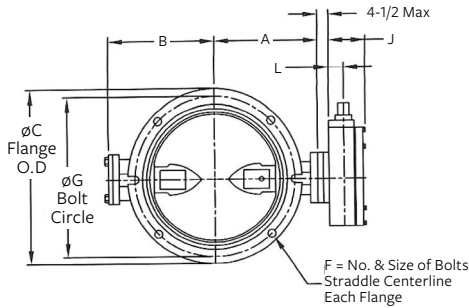
## HP250II® 4"-20" DUCTILE IRON BODY, MECHANICAL JOINT

ACTUATOR SIZE	VALVE SIZE	J	L	M	N	P	Q	R	NUMBER OF TURNS
<b>MDT-2S</b>	3-8"	4-11/16	2	2-1/8	2	4-1/2	4-1/4	8-1/4	32
<b>MDT-2S</b>	10-14"	5-5/8	2-7/16	3-1/4	3-5/32	5-5/8	5-3/8	10-3/8	30
<b>MDT-4S</b>	16" & 18"	6-3/8	2-27/32	3-3/8	4	7-5/16	6-3/4	11-5/16	40
<b>MDT-5</b>	20"	7-9/16	3-15/32	4-1/2	5-1/2	8-3/4	10	17	44

VALVE SIZE	A	B	C	D	E	F	G	X
<b>4</b>	5-1/2	3-1/2	9	8-1/8	1	4-3/4	7-1/2	3-1/8
<b>6</b>	6-1/2	5-1/8	11	8-1/2	1	6-3/4	9-1/2	3-1/2
<b>8</b>	7-3/4	6-1/2	13-1/4	8-5/8	1-1/8	6-3/4	11-3/4	3-5/8
<b>10</b>	9	7-7/8	15-9/16	10	1-3/16	8-3/4	14	5
<b>12</b>	10-1/2	11-3/8	17-15/16	10-1/2	1-1/4	8-3/4	16-1/4	5-1/2
<b>14</b>	11-7/8	12-3/4	20-5/16	11-1/2	1-5/16	10-3/4	18-3/4	4-1/2
<b>16</b>	13-1/2	14-3/8	22-9/16	12	1-3/8	12-3/4	21	5
<b>18</b>	14-3/8	15-1/4	24-11/16	12-1/4	1-3/8	12-3/4	23-1/4	5-1/4
<b>20</b>	16	16-7/8	27-3/32	12-1/2	1-1/2	14-3/4	25-1/2	5-1/2

### Notes:

- All dimensions shown in inches. "D" dimension  $\pm 1/16$ " for 3" thru 10" valves. "D" dimension  $\pm 1/8$ " for 12" thru 20" valves.
- Dimensions and drilling of mechanical joint end conform to ANSI/AWWA C111/A21.11.
- Recommendation for mating flanges: Where insulating bushings are used, it is necessary that bolt holes be drilled oversize by an amount equal to two times the insulating sleeve thickness to maintain the same minimum clearance for bolts.
- Valves manufactured & tested in accordance with AWWA Specification C504 latest revision, Class 150B.



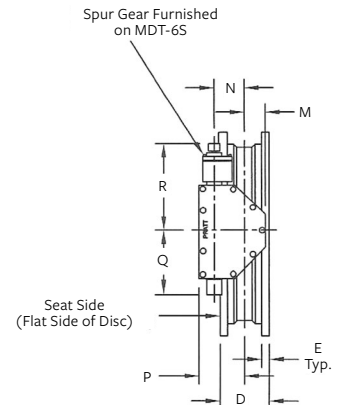
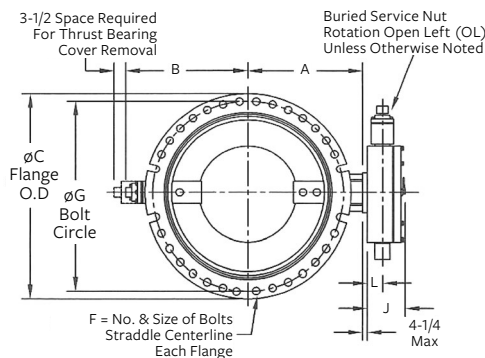
## HP250II® 24"-48" DUCTILE IRON BODY, MECHANICAL JOINT

ACTUATOR SIZE	J	L	M	N	P	Q	R	NUMBER OF TURNS
<b>MDT-4S</b>	6-3/8	2-27/32	3-3/8	4	7-5/16	6-3/4	11-5/16	40
<b>MDT-5</b>	7-9/16	3-15/32	4-1/2	5-1/2	8-3/4	10-7/16	17	44
<b>MDT-5S</b>	8-5/16	3-15/16	5-5/8	3-5/8	10-5/8	15-15/16	19-7/8	136
<b>MDT-6S</b>	10-3/16	5-1/16	7	8-1/4	12-5/8	18-5/8	26-1/2	215

VALVE SIZE	A	B	C	D	E	F	G	X
<b>24</b>	18-5/8	18-5/8	31-9/16	13-1/4	1-5/8	16-3/4	30	6-3/8
<b>30</b>	21-1/2	24-3/8	39	18	1-13/16	20-1	36-7/8	10
<b>36</b>	25-7/16	28-1/4	45-7/8	22	2	24-1	43-3/4	14
<b>42</b>	29-7/8	32-7/8	53	22	2	28-1-1/4	50-5/8	14
<b>48</b>	34-1/16	37-1/8	59-7/8	24	2	32-1-1/4	57-1/2	16

### Notes:

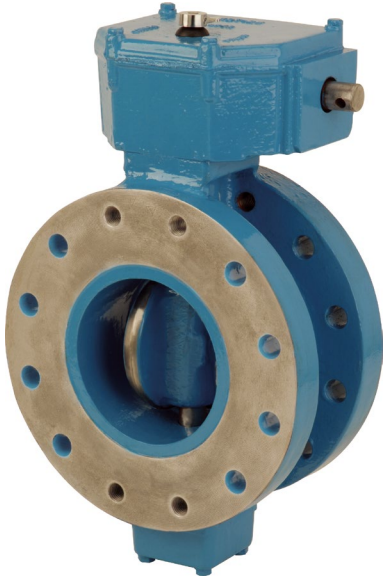
- All dimensions shown in inches. "D" dimension  $\pm 1/8$ ". Bolt holes will be 1/8" larger than diameter of bolt.
- Dimensions and drilling of mechanical joint end conform to ANSI AWWA C111 A21.11.
- Caution: it is recommended that valves be installed into piping system in accordance with AWWA M-11 to prevent any undue piping stress, deflection or bending that may effect the performance of the valve.





# SCOPE OF LINE

## Pratt® HP250™ Butterfly Valve



### SIZES:

- 4" Through 48"

### BODY STYLE:

- Flanged, 250#

### PRESSURE CLASS:

- AWWA 250 B

### ACTUATION OPTIONS\*:

- Nut
- Handwheel
- Buried Service

\*Consult factory for other end connections and actuation options

## PRATT® HP250™ BUTTERFLY VALVE, 250# FLANGED ENDS SPECIFICATION

### HP250™ BUTTERFLY VALVE CLASS 250 FOR BURIED SERVICE

Valves shall be manufactured with a 250 psi rating. The valves shall be capable of operating at pressures of 250 psi and will comply with the following details:

#### VALVE BODIES

Valve Bodies shall be constructed of ductile iron ASTM A-536. End connections shall be ANSI Class 250 with 250# drilling pattern.

#### VALVE DISCS

Valve Discs shall be made from ductile iron ASTM A-536. Discs shall be furnished with 316 stainless steel seating edge to mate with the rubber seat.

#### VALVE SEAT

Valve Seat shall be Buna-N rubber located on the valve body.

#### VALVE SHAFTS

Valve Shafts shall be stainless steel ASTM A-564 Type 630 Condition H-1150. Stub shafts or through shafts are acceptable.

#### SHAFT SEALS

Shaft Seals shall be standard self-adjusting split "V" type packing. Shaft seals shall be of a design allowing replacement without removing the valve shaft.

#### VALVE BEARINGS

Valve bearings shall be sleeve type that are corrosion resistant and self-lubricating.

#### VALVE ACTUATORS

Valve actuators shall be fully grease packed and have stops in the open / closed position. The actuator shall have a mechanical stop which will withstand an input torque of 450 ft/lbs. against the stop. The traveling nut shall engage alignment grooves in the housing. The actuators shall have a built in packing leak bypass to eliminate possible leakage into the actuator housing.

#### VALVE INTERIOR AND EXTERIOR SURFACES

Valve Interior and Exterior Surfaces except for seating shall be coated with two coats of epoxy paint in accordance with TT-C-494A and AWWA C504.

#### ALL VALVES

All valves shall be hydrostatic and leak tested. The leak test shall be performed at a differential pressure of 250 psi with the disc in a closed position. In a slightly open position, internal hydrostatic pressure equal to 500 psi shall be applied to the inside of the valve body for five minutes.

# HP250™ 4"-48"

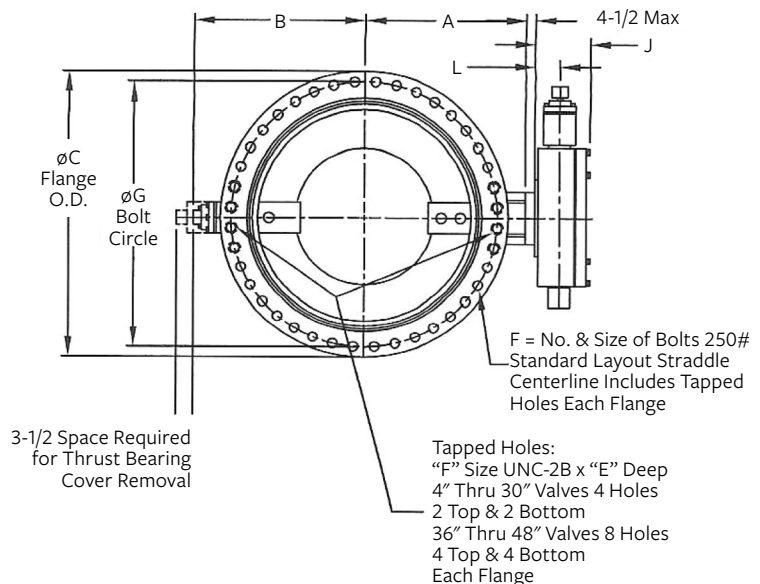
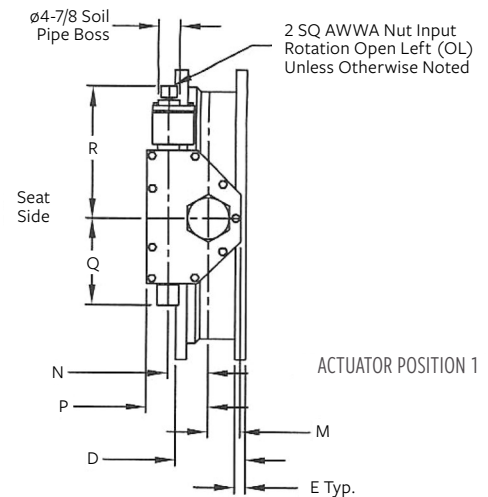
Cast or Ductile Iron, ANSI 250# Flanged, 250# Drill

ACTUATOR SIZE	J	L	M	N	P	Q	R	NUMBER OF TURNS
<b>MDT-2S</b>	4-11/16	2	2-1/8	2	4-1/2	4-1/2	8-1/4	32
<b>MDT-3S</b>	5-5/8	2-7/16	3-1/4	3-5/32	5-5/8	5-3/8	10-3/8	30
<b>MDT-4S</b>	6-3/8	2-27/32	3-3/8	4	7-5/16	6-3/4	11-5/16	40
<b>MDT-5</b>	7-15/16	3-27/32	4-1/2	5-1/2	8-3/4	10	17	44
<b>MDT-5S</b>	8-11/16	4-5/16	5-1/2	3-5/8	10-1/2	15-15/16	19-7/8	136
<b>MDT-6S</b>	10-9/16	5-7/16	7	8-1/4	12-5/8	14-3/16	26-1/2	215

VALVE SIZE	A	B	C	D	E	F	G
<b>4</b>	5-1/2	5	10	5	1-1/4	8-3/4	7-7/8
<b>6</b>	7-1/4	8-3/8	12-1/2	6	1-1/2	12-3/4	10-5/8
<b>8</b>	8-1/2	9-5/8	15	8	1-5/8	12-7/8	13
<b>10</b>	9-3/4	11	17-1/2	8	1-7/8	16-1	15-1/4
<b>12</b>	11-1/2	12-5/8	20-1/2	8	2	16-1-1/8	17-3/4
<b>14</b>	12-3/4	13-7/8	23	12	2-1/8	20-1-1/8	20-1/4
<b>16</b>	14	15-1/8	25-1/2	12	2-1/4	20-1-1/4	22-1/2
<b>18</b>	15-1/4	16-3/8	28	12	2-3/8	24-1-1/4	24-3/4
<b>20</b>	17	17-5/8	30-1/2	12	2-1/2	24-1-1/4	27
<b>24</b>	19-3/4	20-1/4	36	12	2-3/4	24-1-1/2	32
<b>30</b>	25-5/8	26	43	12	3	28-1-3/4	39-1/4
<b>36</b>	28-1/8	31-1/8	50	15	3-3/8	32-2	46
<b>42</b>	32-1/8	35-1/8	57	15	3-11/16	36-2	52-3/4
<b>48</b>	36-1/4	39-5/8	65	15	4	40-2	60-3/4

## Notes:

- All dimensions shown in inches.
- "D" dimension  $\pm 1/8"$
- For bolts smaller than 1-3/4, bolt holes will be 1/8" larger than diameter of bolt. For bolts 1-3/4 or larger, bolt holes will be 1/4" larger than diameter of bolt.
- Dimensions and drilling of end flanges conform to the American Cast Iron Flange Standards, Class 250 (B16.1).
- Recommendation for mating flanges: Where insulating bushings are used, it is necessary that bolt holes be drilled oversize by an amount equal to two times the insulating sleeve thickness to maintain the same minimum clearance for bolts.
- Caution: it is recommended that valves be installed into piping system in accordance with AWWA M-11 to prevent any undue piping stress, deflection or bending that may effect the performance of the valve.
- Extension stem can be used with standard valve boxes or 5" soil pipe.

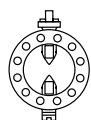


## NOTES

# PRATT®

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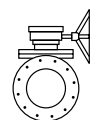
## PRATT® Product Guide



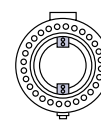
**MODEL 2FII**



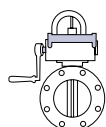
**MONOFLANGE MKII**



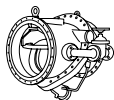
**PLUG VALVES**



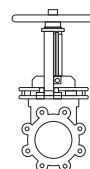
**TRITON® XR70**



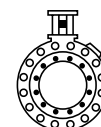
**INDICATING BUTTERFLY  
VALVES UL & FM APPROVED**



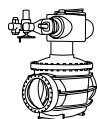
**TILTING DISC  
CHECK VALVES**



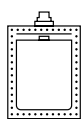
**KNIFE GATE VALVES**



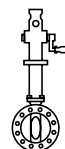
**N-STAMP NUCLEAR  
BUTTERFLY VALVES**



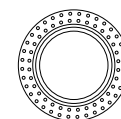
**CONE VALVES**



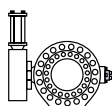
**RECTANGULAR**



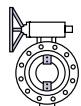
**PIVA POST INDICATING VALVES  
ASSEMBLY UL & FM APPROVED**



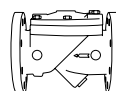
**SLEEVE VALVES**



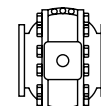
**RUBBER SEATED  
BALL VALVES**



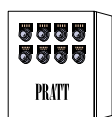
**TRITON® 250**



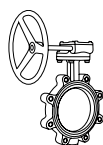
**CHECK VALVES**



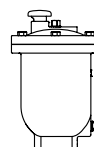
**METAL SEATED  
BALL VALVE**



**CONTROL SYSTEMS**



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