

ECCENTRIC PLUG VALVE SIZES 3" -48"

INSTALLATION & OPERATION MANUAL

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INTRODUCTION

With a proven design, our Eccentric Port Plug Valves (EPV) are well established in the marketplace as a reliable engineered product capable of bi-directional flow at fully rated pressures. This manual will provide you with the information needed to properly install, operate, and maintain the valve to provide long service life.

The valves are fully tested per the appropriate standard and properly packaged by the manufacturer. Our Plug Valves can be used in a variety of water and wastewater services including: Pump Isolation, Open/Close, Throttling, Modulating, Control Balancing, Heavy Solids, and more.

Our Plug Valves are available with mechanical joint or flanged end connections along with electric, pneumatic, or hydraulic actuators to operate the valves.

RECEIVING & STORAGE

Inspect valves upon receipt to ensure correct material, quantity, and any optional equipment has been received. Also inspect all received equipment for any damage which may have occurred during shipment. Contact the McWane Plant & Industrial sale team to report any issues with materials received.

The valves should be stored in a manner to protect them from weather. Water and debris should not be allowed to collect in or on the valve. Valves should be stored with the plug partly open. Proper slinging and handling methods should be used when moving the valves. Do not place slings or other devices around operating shaft, or through the flow way. Do not use attached actuators for lifting.

INSTALLATION

WARNING: Installation of valves should be performed by experienced installers. Valves should never be used as structural supports and movement into place. Valves are heavy and may include accessories or bolt on pieces which should be handled with caution.

NOTE: BEFORE INSTALLING THE VALVE:

1. Check that the valve and end joints are clean.
2. Check for damage to the valve.
3. Open and close the valve to insure proper operation.
4. Close valve plug before placing in trench.

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 affect the performance of the valve.

1. Handle valve carefully. Do not drop into position. Do not use attached actuators or other mechanisms as lifting devices. Do not place slings or chains through port openings.

2. Prepare pipe ends according to pipe manufacturer's instructions. Install valve per proper method according to end joint type. All piping should be properly supported to avoid line stress on the valve. Do not use the valves as a jack to force a pipeline into position.

3. Valves should be positioned for orientation for flow and any attached actuators. The valve is designed to operate with flow in two directions. The valve is normally used in the "direct flow" direction (seat on downstream of flow), with flow against the back of the plug. In buried installation, any valve boxes should be installed such that no load is transferred to the valve. Provisions should be made to prevent dirt and debris from entering the valve box and getting on top of the valve which could impair the operation of the valve.

4. In buried installations, do not backfill before the system is tested. Leave valves exposed while in the pipeline is being pressurized.

5. Do not test systems to greater than valve's rated working pressure.

6. With the valve in the open position, the entire system should be thoroughly flushed to prevent the valve closing on debris and damaging the seat.

7. When Plug Valves are installed in a horizontal line, the preferred installation is with the plug rotating 90° upward to open. Utilizing this orientation can lessen the effect of solids preventing plug operation

8. Plug Valves may be installed vertically, however, whenever possible horizontal orientation is preferred.

9. When installed in a vertical line where solids exist, the seat is ideally positioned up, preventing solid build up in the valve body.

10. When installed in high pressure systems it is recommended to have the plug seat on the outlet side of the valve.

11. In low pressure/low flow systems with solids present, install valve with flow against plug face.

OPERATION

Do not operate valves in systems that exceed the rated working pressure of the valve (3"-12" 175 psi, 14"-48" 150 psi). System should be completely flushed before valve is actuated in normal cycle. The EPV opens and closes through 90 degree of travel. The manual actuator has mechanical stops for fully open or closed position. Excessive force will improve seating or closing but could damage the actuator or the seat (if debris in line is holding plug open).

The EPV closes by rotating the rubber covered plug in the seat. On non-gearred valves this is done with a quarter turn of the operating nut. On geared valves the number of turns to open vary by gear type and valve size.

SIZE	MANUAL	GEARED	#TURNS
3"-8"	X		1/4
3"-12"		X	10
10"-12"		X	13
14"-16"		X	17
18"		X	38
20"		X	57
24"		X	96
30"		X	174
42"-48"		X	232
			594

NOTE: For valves with electric actuators, see actuator O&M.

If the actuator has become difficult to operate before completing the necessary number of turns (based on valve and actuator size) do not force. Open the valve fully and start over. The flow in the valve may flush obstructions from the seat area. If the plug is forced into the seat, damage to seats or actuator may result. Frequency of operation should be based on the media being conveyed. Systems with higher solids contents should be exercised on a regular basis, suggested weekly.

MAINTENANCE

Semi-annual inspections are minimum recommended. Valve should not be disassembled unless a break down has occurred. The valve and/or actuator should not be opened, disassembled, or adjusted unless a break down in normal operation occurs.

Inspections should include checking gasketed joints for leakage. During regular inspection, the valve should be opened and closed with pressure in the pipeline with personnel employing all appropriate safety. The valve should function freely without vibration.

With the valve closed and pressure against the plug, a check for leakage is possible by "listening" to the valve for flow. As stethoscope will help in this procedure. Attached actuators should be inspected per manufacturer's recommendations provided with those units. A permanent record of the period inspections should be maintained for each valve.

NOTE: There are no lubrication requirements, unless disassembling.

PROCEDURES

DISASSEMBLY OF 3"-8" ECCENTRIC PLUG (1/4 TURN)

NOTE: Line pressure must be 0 psi and drained if possible.

1. Put the valve in the fully open position.
2. Remove locknut.
3. Remove Belleville spring washers.
4. Remove operating nut.

5. Loosen and remove (2) follower nuts.
6. Remove gland brake follower. This will relieve the sealing pressure on the V-Packing.
7. Loosen and remove the cover cap screws. Mark the position of the cover to body with a scribe or other markers.
8. Using (2) pry bars, one on each side of the cover and break the cover loose from the body. Remove the cover by sliding straight up over end of shaft.
- NOTE:** A suitable lubricant should be applied to the plug shaft to allow the packing to slide smoothly and prevent damage. (*Mystic FG-2 Food Grade Grease or equivalent).
9. The plug can now be removed by turning and lifting out of the body.
10. Inspect top and bottom bearings for damage and replace if necessary.
11. Clean and inspect the nickel seating surface in the body. If seating surface is damaged, body should be replaced.
12. Inspect plug sealing surface for nicks and wear. Replace if necessary.
13. Insert plug into body and orient in the open position.
14. Slide nylatron thrust washer onto shaft of plug.
15. Inspect cover O-ring, and place in recess of body.
16. Remove old v-packing from recess.
17. Slide cover onto plug shaft. Align cover with scribe mark.
18. Install cover cap screws and tighten.
19. Slide packing set over plug shaft and into packing recess in cover. The follower gland can be used to drive the packing into the cover.
20. Install brake onto top of packing. Tapered end of brake should point up.
21. Install gland/brake follower
22. Install follower nuts and tighten to seal packing.
23. Replace operating nut with adjusting stud installed in top of plug.
24. Replace bellvue spring washers and lock nut.

DISASSEMBLY OF 3"-48" ECCENTRIC PLUG (WITH ACTUATORS)

NOTE: Line pressure must be 0 psi and drained if possible.

1. Put the valve in the fully open position.
2. Remove cap screws securing the actuator (worm gear, motor operator, cylinder actuator, etc.), then lift off the actuator. Retain keys, couplings etc. for reassembly of the actuator.
3. Loosen and remove (2) follower nuts.

4. Remove gland/brake follower. This will relieve the sealing pressure on the V-Packing.
5. Loosen and remove the cover cap screws. Mark the position of the cover to body with a scribe or other markers.
6. Using (2) pry bars, one on each side of the cover and break the cover loose from the body. Remove the cover by sliding straight up over end of shaft.
- NOTE:** A suitable lubricant should be applied to the plug shaft to allow the packing to slide smoothly and prevent damage. (*Mystic FG-2 Food Grade Grease or equivalent).
7. The plug can now be removed by turning and lifting out of the body.
8. Inspect top and bottom bearings for damage and replace if necessary.
9. Clean and inspect the nickel seating surface in the body. If seating surface is damaged or cut across the entire horizontal or vertical surface of the nickel, the entire body should be replaced to prevent leaks.
10. Inspect plug sealing surface for nicks and wear. Replace if necessary.
11. Insert plug into body and orient in the open position.
12. Slide nylatron thrust washer onto shaft of plug.
13. Inspect cover O-ring, and place in recess of body.
14. Remove old v-packing from cover recess.
15. Slide cover onto plug shaft and align cover with scribe mark.
16. Install cover cap screws and tighten.
17. Slide packing set over plug shaft and into packing recess in cover. The follower gland can be used to drive the packing into the cover.
18. Install follower nuts and tighten to seal packing.
19. Actuator can be reinstalled.

INSTRUCTIONS TO ROTATE GEAR BOX ON 4"-12"

1. Completely close the valve against the closed stop.
2. Back off operating nut or handwheel (1) turn to relieve closing torque on internals of gear.
3. Remove position indicator plate or buried service cover if equipped.
4. Loosen and remove the cap screw , lock washer , and large flat washer under the indicator plate (or cap on buried service).
5. Loosen and remove the (4) cap screws retaining

the worm gear to the gear mounting stand. (Do not remove the gear mounting stand from the valve cover).

6. Lift worm gear off of flange adapter and rotate to the desired position. NOTE: Gear operators can only be rotated in 90° increments.

7. Reassemble in reverse order.

8. Operate valve and check for correct closure . Re-adjust closed stop if necessary (Refer to stop adjustment procedures, see Troubleshooting.)

and brake. NOTE: Addition of a penetrating oil or lubricant to the packing area may aid in freeing up the operation.

3. Repeat adjustments as necessary.

4. When valve operates freely, tighten the upper follower nut to secure gland/brake follower. (Assure the gland/brake follower is level and not binding the brake/packing when operated).

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Joint leakage	Loose fasteners	Tighten fasteners
Shaft Leakage	Loose gland	Tighten Gland
	Packing worn	Tighten packing gland/ replace packing
Seat Leakage	Debris on seat	Flush valve to clean seats
	Damaged seat	Inspect and/or replace valve body
	If none of the above	*Adjust closed position stops
Difficult to Operate	Gland/Brake too tight	**Loosen Gland

PARTS & SERVICE

Parts and service are available from your local representative or the factory. For availability and pricing of spare parts please contact the MPI sales team:

McWane Plant & Industrial

www.mcwanepi.com

Phone: 866-924-8674

Email: sales@mcwanepi.com

** Inspection for the above should be done semi annually at a minimum.

*INSTRUCTIONS FOR ADJUSTING STOPS...

.. FOR MANUAL QUARTER-TURN OP NUT / LEVER OPERATED VALVES:

1. Loosen jam nut. To allow for additional closing travel, loosen square head cap screw.
2. Close valve. Repeat if necessary, until valve seals.

... FOR GEAR OPERATED VALVES:

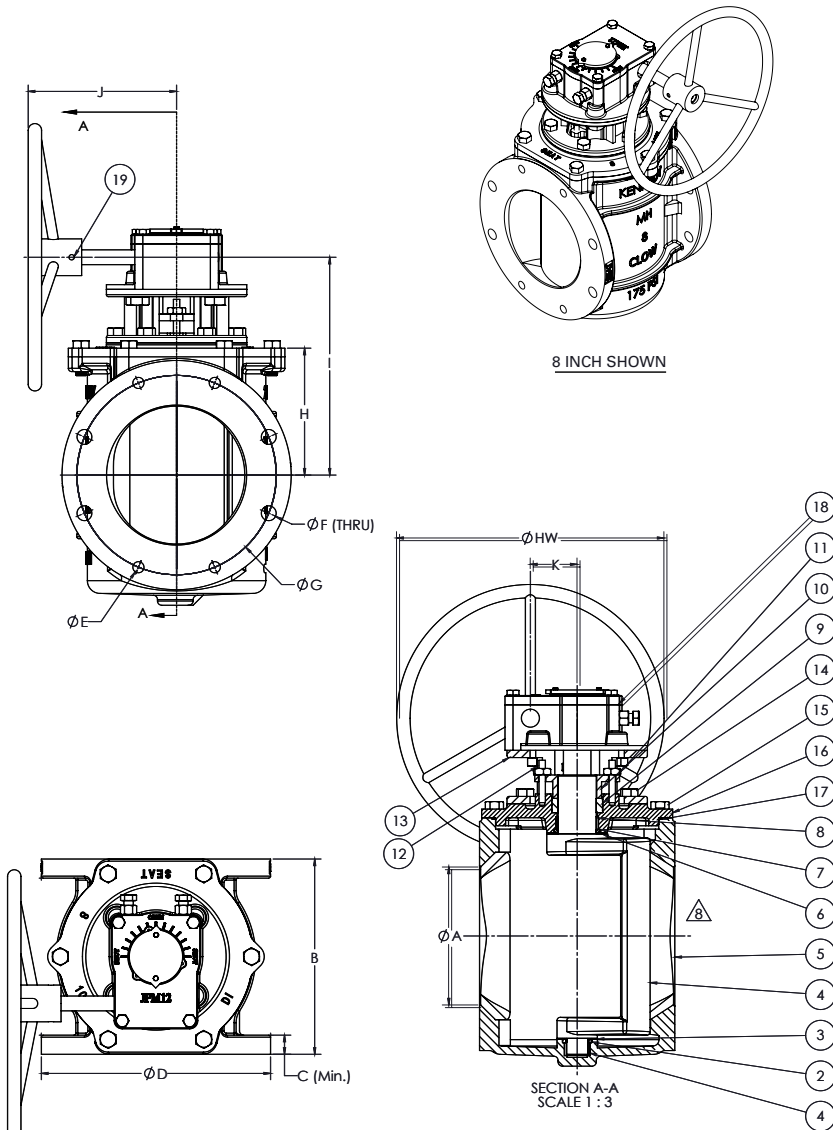
NOTE: Close stop adjustment bolt is located closest to input shaft of worm gear.

1. Loosen lock nut. Loosen stop set screw ½ turn at a time. Close valve. Repeat as needed to attain seal.

**INSTRUCTIONS FOR LOOSENING GLAND / BRAKE FOR QUARTER-TURN OP NUT / LEVER OPERATED VALVES:

1. Loosen upper gland follower nuts. Adjust lower follower nut counterclockwise to raise the follower gland.
2. Operate the valve several times to relax the packing

**100% FULL FLOW ECCENTRIC PLUG VALVE
 WITH FLANGED ENDS AND GEAR - HW
 SIZES 3" -12"**



NOTE:

1. Body castings are tri-marked with "Clow", "Kennedy", and "M&H".
2. For services with 3"-8" Plug Valves in excess of 25 PSI, use of a gear is recommended.
3. Gear model and brand are subject to change without notice.

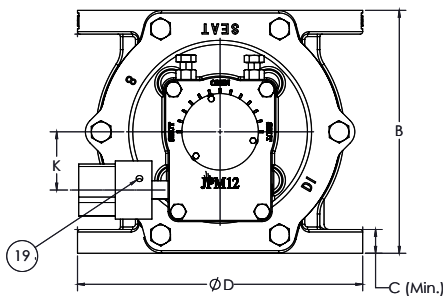
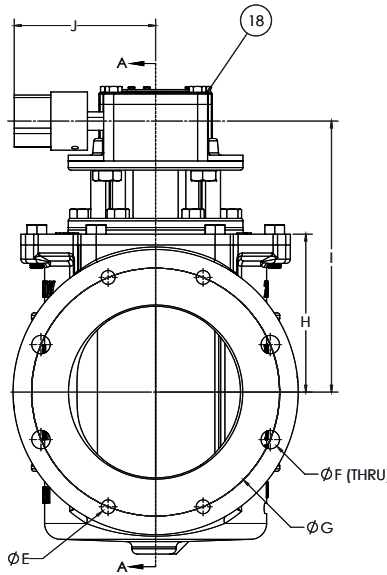
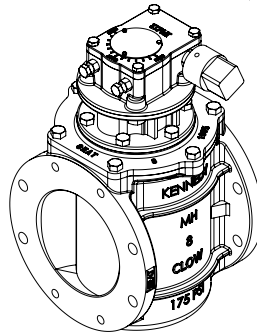
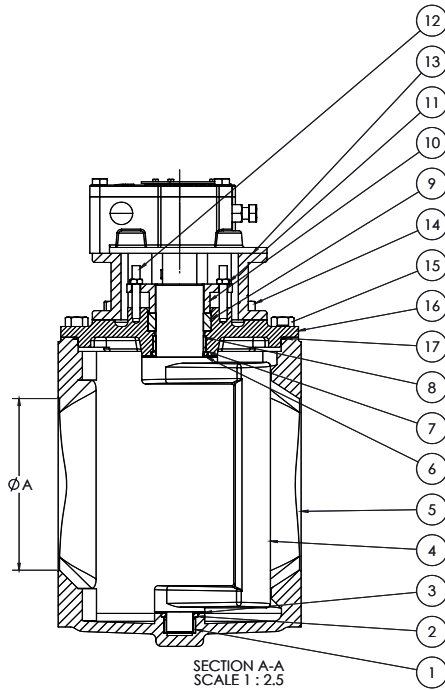
SIZE RANGE	WATER WORKING PRESSURE PSI	HYDROSTATIC TEST PSI
3-12	175 PSI	262.5 PSI
14-16	150 PSI	225 PSI

ITEM	PART NAME	ASTM DESIGNATION	QTY
1	Lower Sleeve Bearing	Sintered Alloy SS316	1
2	Lower Grit Seal	NBR	1
3	Lower Thrust Washer	PTFE	1
4	Plug	ASTM A536 65-45-12 OR 70-50-05 +NBR	1
5	Body	ASTM A536 65-45-12 OR 70-50-05	1
6	Upper Thrust Washer	PTFE	1
7	Upper Grit Seal	NBR	1
8	Upper Sleeve Bearing	Sintered AlloySS316	1
9	V-Packing	NBR	1
10	Follower Gland	ASTM A536 65-45-12 OR 70-50-05	1
11	Hex Nuts	Stainless Steel ASTM A276.T316	2
12	Studs	Stainless Steel ASTM A276.T316	2
13	Adapter	ASTM A536 65-45-12 OR 70-50-05	1
14	Adapter Bolts	Stainless Steel ASTM A276.T316	6
15	Cover Bolts	Stainless Steel ASTM A276.T316	4
16	Cover	ASTM A536 65-45-12 OR 70-50-05	1
17	Cover O-ring	NBR	1
18	JPM Gear w/ HW	-----	1
19	Slot Type Spring Pin	ASTM A29 1566	1

DIMENSIONS															
A	B	C	D	E	F	G	H	I	J	K	Weight (lbs.)	JPM Gear	Gear Ratio	No. Turns to Open (Approx.)	Ø HW (in.)
3	8.00	.75	7.50	4 x 5/8-11 I .79	---	6.00	3.76	7.50	8.8	2.8	75 lbs.	JPM12A	40	10	8
4	9.00	.94	9.00	4 x 5/8-11 I .79	4 x .75	7.50	4.63	8.28	8.8	2.8	100 lbs.	JPM12A	40	10	8
6	10.50	1.02	11.00	4 x 3/4-10 I .79	4 x .81	9.50	5.78	10.30	8.8	2.8	165 lbs.	JPM12FA	40	10	12
8	11.50	1.13	13.50	4 x 3/4-10 I .79	4 x .88	11.75	7.48	12.54	8.8	2.8	230 lbs.	JPM12FA	40	10	16
10	13.00	1.19	16.00	8 x 7/8-9 I .79	4 x 1.00	14.25	8.88	14.02	11.3	3.9	340 lbs.	JPM14A	53	13	20
12	14.00	1.26	19.00	8 x 7/8-9 I .79	4 x 1.00	17.00	11.00	16.38	12.1	3.9	480 lbs.	JPM14A	53	13	24
14	17.00	1.38	21.00	8 x 1-8 UNS I 1.54	4 x 1.13	18.75	12.88	18.00	14.9	4.9	720 lbs.	JPM15A	68	17	30
16	17.75	1.44	23.50	8 x 1-8 UNS I 1.06	8 x 1.13	21.25	14.69	22.50	14.9	4.9	850 lbs.	JPM15A	68	17	30

**100% FULL FLOW ECCENTRIC PLUG VALVE
 WITH FLANGED ENDS AND GEAR - OP NUT
 SIZES 3" - 16"**

8 INCH SHOWN, BURIED GEAR



SIZE RANGE	WATER WORKING PRESSURE PSI	HYDROSTATIC TEST PSI
3-12	175 PSI	262.5 PSI
14-16	150 PSI	225 PSI

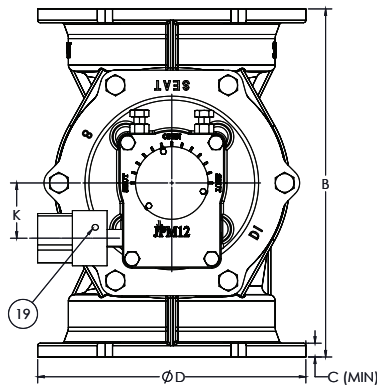
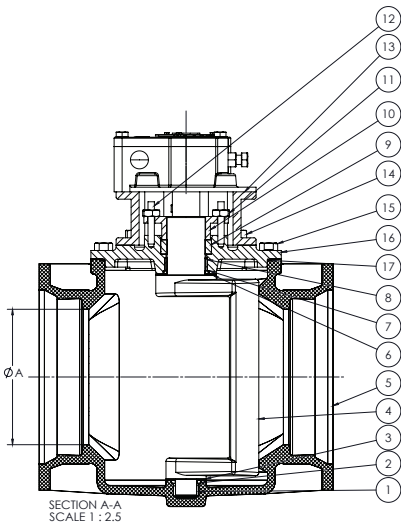
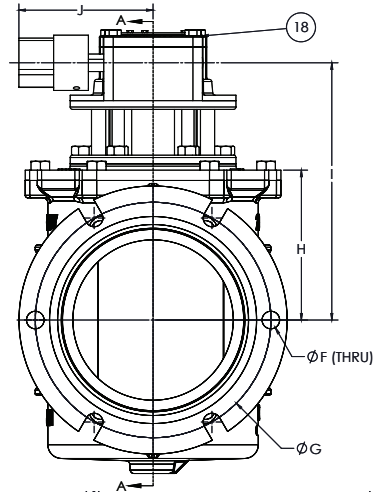
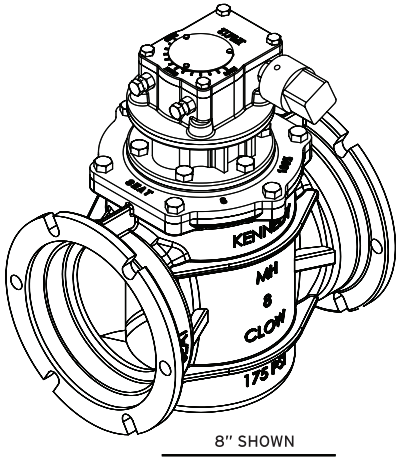
ITEM	PART NAME	ASTM DESIGNATION	QTY
1	Lower Sleeve Bearing	Sintered Alloy SS316	1
2	Lower Grit Seal	NBR	1
3	Lower Thrust Washer	PTFE	1
4	Plug	ASTM A536 65-45-12 OR 70-50-05 +NBR	1
5	Body	ASTM A536 65-45-12 OR 70-50-05	1
6	Upper Thrust Washer	PTFE	1
7	Upper Grit Seal	NBR	1
8	Upper Sleeve Bearing	Sintered AlloySS316	1
9	V-Packing	NBR	1
10	Follower Gland	ASTM A536 65-45-12 OR 70-50-05	1
11	Hex Nuts	Stainless Steel ASTM A276.T316	2
12	Studs	Stainless Steel ASTM A276.T316	2
13	Adapter	ASTM A536 65-45-12 OR 70-50-05	1
14	Adapter Bolts	Stainless Steel ASTM A276.T316	6
15	Cover Bolts	Stainless Steel ASTM A276.T316	4
16	Cover	ASTM A536 65-45-12 OR 70-50-05	1
17	Cover O-ring	NBR	1
18	JPM Gear w/ OP Nut	-----	1
19	Slot Type Spring Pin	ASTM A29 1566	1

NOTE:

1. Body castings are tri-marked with "Clow", "Kennedy", and "M&H".
2. For services with 3"-8" Plug Valves in excess of 25 PSI, use of a gear is recommended.
3. Gear model and brand are subject to change without notice.

DIMENSIONS														
A	B	C	D	E	F	G	H	I	J	K	Weight (lbs.)	JPM Gear	Gear Ratio	No. Turns to Open (Approx.)
3	8.00	.75	7.50	4 x 5/8-11 \downarrow .79	---	6.00	3.76	7.50	9.01	2.8	75 lbs.	JPM12B	40	10
4	9.00	.94	9.00	4 x 5/8-11 \downarrow .79	4 x .75	7.50	4.63	8.28	9.01	2.8	100 lbs.	JPM12B	40	10
6	10.50	1.02	11.00	4 x 3/4-10 \downarrow .79	4 x .81	9.50	5.78	10.30	9.41	2.8	165 lbs.	JPM12FB	40	10
8	11.50	1.13	13.50	4 x 3/4-10 \downarrow .79	4 x .88	11.75	7.48	12.54	9.41	2.8	230 lbs.	JPM12FB	40	10
10	13.00	1.19	16.00	8 x 7/8-9 \downarrow .79	4 x 1.00	14.25	8.88	14.02	10.08	3.9	340 lbs.	JPM14B	53	13
12	14.00	1.26	19.00	8 x 7/8-9 \downarrow .79	4 x 1.00	17.00	11.00	16.38	10.08	3.9	480 lbs.	JPM14B	53	13
14	17.00	1.38	21.00	8 x 1-8 UNS \downarrow 1.54	4 x 1.13	18.75	12.88	18.00	10.71	4.9	720 lbs.	JPM15B	68	17
16	17.75	1.44	23.50	8 x 1-8 UNS \downarrow 1.06	8 x 1.13	21.25	14.69	22.50	10.71	4.9	850 lbs.	JPM15B	68	17

**100% FULL FLOW ECCENTRIC PLUG VALVE
 WITH MECHANICAL JOINT ENDS AND GEAR - OP NUT
 SIZES 3" - 16"**



SIZE RANGE	WATER WORKING PRESSURE PSI	HYDROSTATIC TEST PSI
3-12	175 PSI	262.5 PSI
14-16	150 PSI	225 PSI

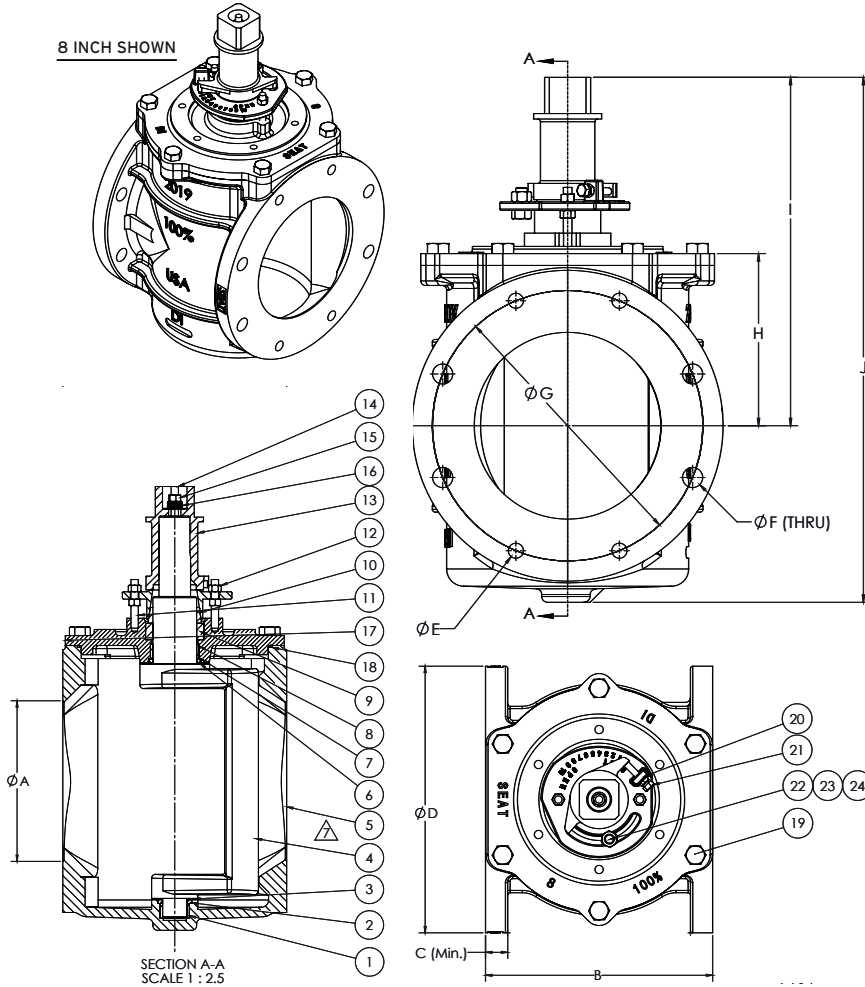
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5	Body	ASTM A536 65-45-12 OR 70-50-05	1
6	Upper Thrust Washer	PTFE	1
7	Upper Grit Seal	NBR	1
8	Upper Sleeve Bearing	Sintered Alloy SS316	1
9	V-Packing	NBR	1
10	Follower Gland	ASTM A536 65-45-12 OR 70-50-05	1
11	Hex Nuts	Stainless Steel ASTM A276.T316	2
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18	JPM Gear w/ Op Nut	-----	1
19	Slot Type Spring Pin	ASTM A29 1566	1

NOTE:

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DIMENSIONS														
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3	11.50	.58	7.62	4 x .75 THRU	6.19	3.76	7.50	9.01	2.8	75 lbs.	JPM12B	40	10	
4	14.25	.60	9.06	4 x .88 THRU	7.50	4.65	8.28	9.01	2.8	100 lbs.	JPM12B	40	10	
6	15.75	.63	11.06	6 x .88 THRU	9.50	5.78	10.30	9.41	2.8	165 lbs.	JPM12FB	40	10	
8	17.36	.66	13.39	6 x .88 THRU	11.75	7.48	12.54	9.41	2.8	230 lbs.	JPM12FB	40	10	
10	19.37	.70	15.62	8 x .88 THRU	14.25	8.88	14.02	10.08	3.9	340 lbs.	JPM14B	53	13	
12	20.75	.73	17.88	8 x .88 THRU	16.25	11.00	16.38	10.08	3.9	480 lbs.	JPM14B	53	13	
14	24.50	.79	20.25	10 x .88 THRU	18.75	12.88	18.00	10.71	4.9	720 lbs.	JPM15B	68	17	
16	27.25	.85	22.50	12 x .88 THRU	21.00	14.69	22.50	10.71	4.9	850 lbs.	JPM15B	68	17	

**100% FULL FLOW ECCENTRIC PLUG VALVE
 WITH FLANGED ENDS AND DIRECT DRIVE - OP NUT
 SIZES 3" - 8"**



ITEM	PART NAME	ASTM DESIGNATION	QTY
1	Lower Sleeve Bearing	Sintered Alloy SS316	1
2	Lower Grit Seal	NBR	1
3	Lower Thrust Washer	PTFE	1
4	Plug	ASTM A536 65-45-12 OR 70-50-05 +NBR	1
5	Body	ASTM A536 65-45-12 OR 70-50-05	1
6	Upper Thrust Washer	PTFE	1
7	Upper Grit Seal	NBR	1
8	Upper Sleeve Bearing	Sintered Alloy SS316	1
9	V-Packing	NBR	1
10	Brake	PPS 40% Glass Filled	1
11	Cover Studs	Stainless Steel ASTM A276.1316	4
12	Cover Stud Hex Nuts	Stainless Steel ASTM A276.1316	2
13	2" Sq. OP-Nut	ASTM A536 65-45-12 OR 70-50-05	1
14	Plug Stem Stud	Stainless Steel ASTM A276.1316	1
15	Hex Locking Nut	Stainless Steel ASTM A276.1316	1
16	Disc Spring Washer	Stainless Steel ASTM A276.1316	5
17	Cover	ASTM A536 65-45-12 OR 70-50-05	1
18	Cover O-ring	NBR	1
19	Cover Bolts	Stainless Steel ASTM A276.1316	4
20	Hex Jam Nut	Stainless Steel ASTM A276.1316	1
21	Followe Sq. Head Set Screw	Stainless Steel ASTM A276.1316	1
22	Socket Head Capscrew	Stainless Steel ASTM A276.1316	1
23	Washer	Stainless Steel ASTM A276.1316	1
24	Hex Jam Nut	Stainless Steel ASTM A276.1316	1

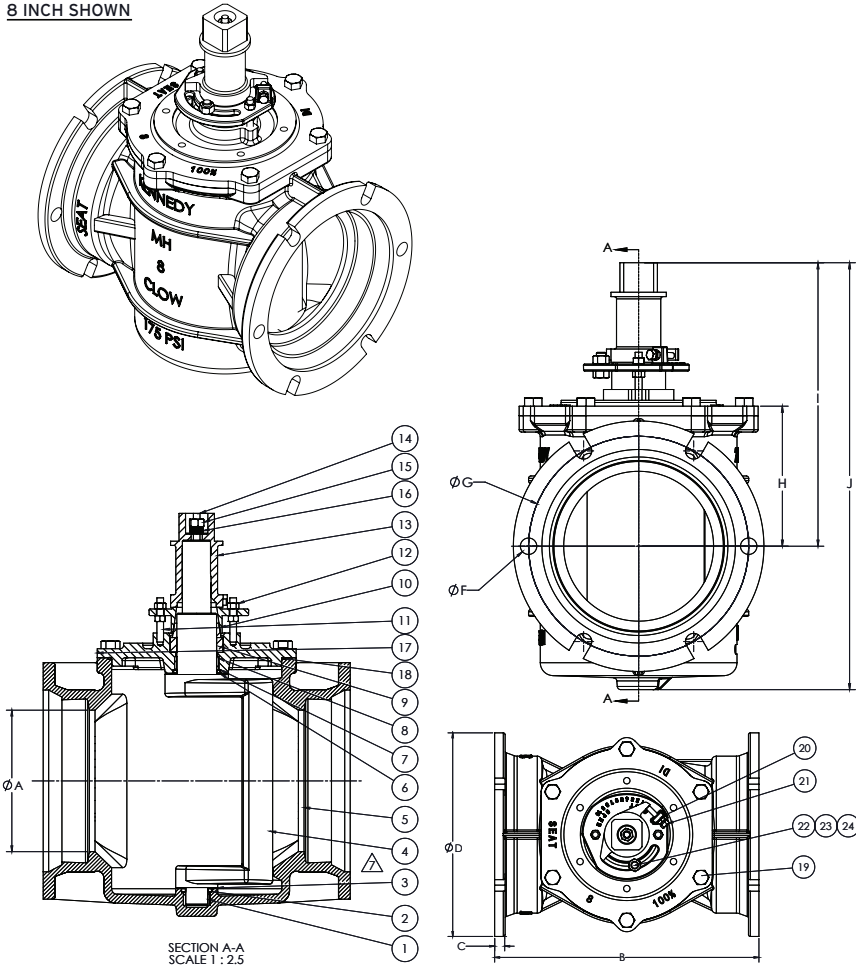
NOTE:

1. Body castings are tri-marked with "Clow", "Kennedy", and "M&H".
2. 2" OP Nut accepts standard 2" lever / wrench.
3. For service in excess of 25 PSI, use of a gear is recommended.

DIMENSIONS										
A	B	C	D	E	F	G	H	I	J	Weight (lbs.)
3	8.00	.75	7.50	4 x 5/8-11 ↓ .79	---	6.00	3.76	9.38	13.24	50 lbs.
4	9.00	.94	9.00	4 x 5/8-11 ↓ .79	4 x .75	7.50	4.65	10.15	14.86	75 lbs.
6	10.50	1.02	11.00	4 x 3/4-10 ↓ .79	4 x .81	9.50	5.78	12.96	18.75	125 lbs.
8	11.50	1.13	13.50	4 x 3/4-10 ↓ .79	4 x .88	11.75	7.48	15.13	22.79	185 lbs.

**100% FULL FLOW ECCENTRIC PLUG VALVE
 WITH MECHANICAL JOINT ENDS AND DIRECT DRIVE - OP NUT
 SIZES 3" - 8"**

8 INCH SHOWN



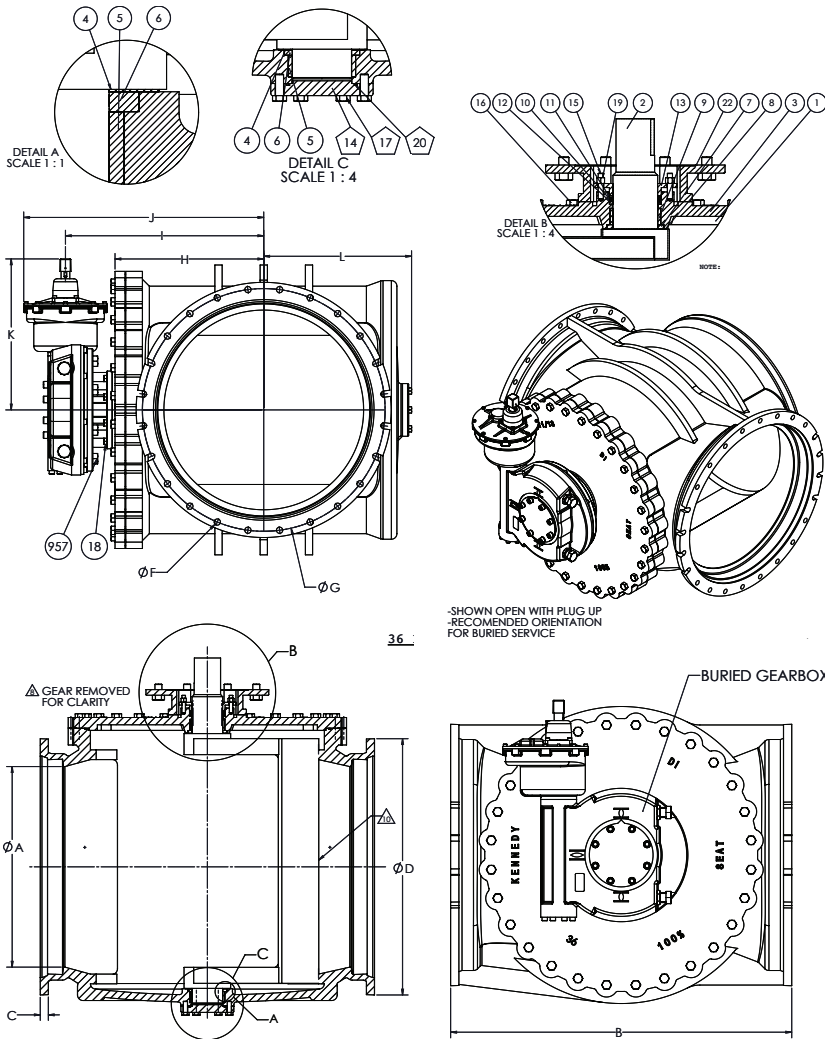
ITEM	PART NAME	ASTM DESIGNATION	QTY
1	Lower Sleeve Bearing	Sintered Alloy SS316	1
2	Lower Grit Seal	NBR	1
3	Lower Thrust Washer	PTFE	1
4	Plug	ASTM A536 65-45-12 OR 70-50-05 +NBR	1
5	Body	ASTM A536 65-45-12 OR 70-50-05	1
6	Upper Thrust Washer	PTFE	1
7	Upper Grit Seal	NBR	1
8	Upper Sleeve Bearing	Sintered Alloy SS316	1
9	V-Packing	NBR	1
10	Brake	PPS 40% Glass Filled	1
11	Cover Studs	Stainless Steel ASTM A276.1316	4
12	Cover Stud Hex Nuts	Stainless Steel ASTM A276.1316	2
13	2" Sq. OP-Nut	ASTM A536 65-45-12 OR 70-50-05	1
14	Plug Stem Stud	Stainless Steel ASTM A276.1316	1
15	Hex Locking Nut	Stainless Steel ASTM A276.1316	1
16	Disc Spring Washer	Stainless Steel ASTM A276.1316	5
17	Cover	ASTM A536 65-45-12 OR 70-50-05	1
18	Cover O-ring	NBR	1
19	Cover Bolts	Stainless Steel ASTM A276.1316	4
20	Hex Jam Nut	Stainless Steel ASTM A276.1316	1
21	Followe Sq. Head Set Screw	Stainless Steel ASTM A276.1316	1
22	Socket Head Capscrew	Stainless Steel ASTM A276.1316	1
23	Washer	Stainless Steel ASTM A276.1316	1
24	Hex Jam Nut	Stainless Steel ASTM A276.1316	1

NOTE:

1. Body castings are tri-marked with "Clow", "Kennedy", and "M&H".
2. For service in excess of 25 PSI, use of a gear is recommended.

DIMENSIONS									
A	B	C	D	F	G	H	I	J	Weight (lbs.)
3	11.50	.58	Ø 7.62	4 x .75 THRU	Ø 6.19	3.76	9.38	13.24	70 lbs.
4	14.25	.60	Ø 9.06	4 x .88 THRU	Ø 7.50	4.65	10.15	14.86	100 lbs.
6	15.75	.63	Ø 11.06	6 x .88 THRU	Ø 9.50	5.78	12.96	18.75	145 lbs.
8	17.36	.66	Ø 13.39	6 x .88 THRU	Ø 11.75	7.48	15.13	22.79	200 lbs.

**100% FULL FLOW ECCENTRIC PLUG VALVE
 WITH MECHANICAL JOINT ENDS AND GEAR FOR BURIED SERVICE
 SIZES 18" -36"**



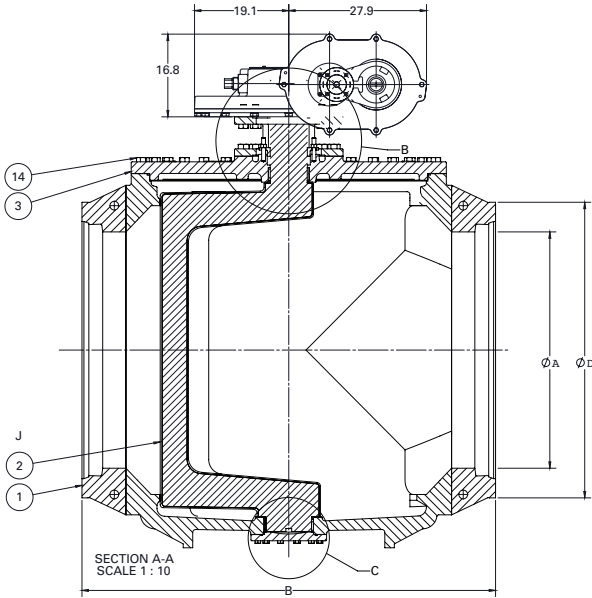
ITEM	PART NAME	ASTM DESIGNATION
1	Body - MJ	ASTM A536 65-45-12 OR 70-50-05
2	Plug	ASTM A536 65-45-12 OR 70-50-05 +NBR
3	Cover	ASTM A536 65-45-12 OR 70-50-05
4	Bottom Thrust Washer	PTFE
5	Bottom Bearing	Sintered Alloy SS316
6	GRT Guard Shaft Seal (Lower)	NBR
7	GRT Guard Shaft Seal (Upper)	NBR
8	Upper Thrust Washer	PTFE
9	Upper Bearing Washer	Sintered Alloy SS316
10	V2-Packing-A N6225-55	NBR
11	V2-Top-Packing-A N6225-55	NBR
12	V2-Bottom-Packing-A N6225-55	NBR
13	FP Guard (For Actuator)	ASTM A536 65-45-12 OR 70-50-05
14	Bottom Cover	ASTM A536 65-45-12 OR 70-50-05
15	Cover Studs	Stainless Steel ASTM A276.1316
16	Hexagon Cover Bolts	Stainless Steel ASTM A276.1316
17	Bottom Cover Bolts	Stainless Steel ASTM A276.1316
18	Hexagon Adapter Bolts	Stainless Steel ASTM A276.1316
19	Cover Stud Hex Nut	Stainless Steel ASTM A276.1316
20	O-ring - Bottom Cover	NBR
21	O-ring - Top Cover	NBR
22	FP Adapter - Close	ASTM A536 65-45-12 OR 70-50-05
957	Gear Bolts	Stainless Steel ASTM A276.1316

NOTE:

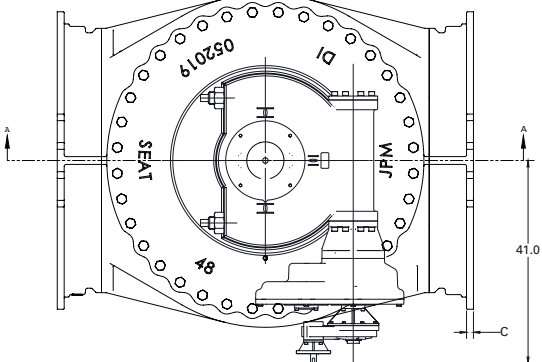
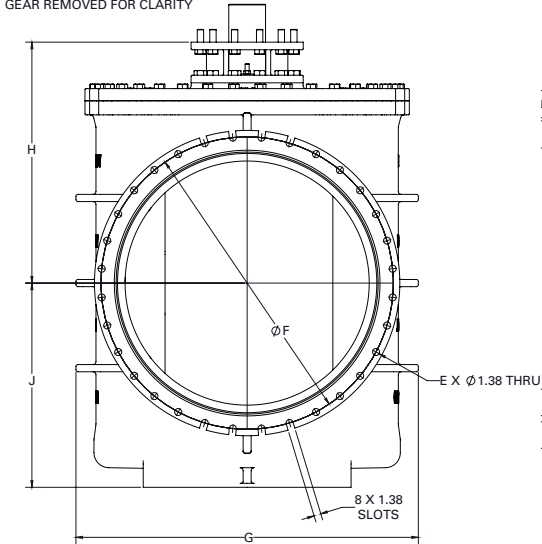
1. Interior and exterior ferrous metal surfaces are epoxy coated.
2. Only 30" and 36" valves have a bottom cover plate (see pentagon ballon items).
3. Mount in orientation shown for buried service.
4. Gearbox for buried service will not have position indicator.
5. Body castings are tri-marked with "Clow", "Kennedy", and "M&H".

DIMENSIONS											Weight (lbs.)	Rotork Gear	Gear Ratio	Turns to Open (Approx.)	Water Working Press. PSI	Hydrostatic Test Press. PSI
A	B	C	D	F	G	H	I	J	K	L						
18	29.25	1.00	Ø 24.84	12 x Ø 7/8 THRU	Ø 23-1/4	16.42	21.50	27.6	15.5	18.3	1262	IW6 AWWA-IP68	152:1	38	150 PSI	225 PSI
20	31.00	1.02	Ø 27.08	14 x Ø 7/8 THRU	Ø 25-1/2	17.09	22.25	28.6	15.5	17.4	1537	IW6 AWWA-IP68	228:1	57		
24	42.00	1.02	Ø 31.57	16 x Ø 7/8 THRU	Ø 30	21.06	26.37	35.4	21.6	21.8	3421	IW7 AWWA-IP68	384:1	96		
30	51.00	1.32	Ø 39.12	20 x Ø 1-1/8 THRU	Ø 36-7/8	22.19	30.69	37.2	27.2	22.5	6135	IW9 AWWA-IP68	696:1	174		
36	60.00	1.45	Ø 46.00	24 x Ø 1-1/8 THRU	Ø 43-3/4	26.81	35.75	43.2	27.2	26.6	8515	IW9 AWWA-IP68	928:1	232		

**100% FULL FLOW ECCENTRIC PLUG VALVE
 WITH FLANGED ENDS AND ROTORK GEAR
 SIZES 42" -48"**



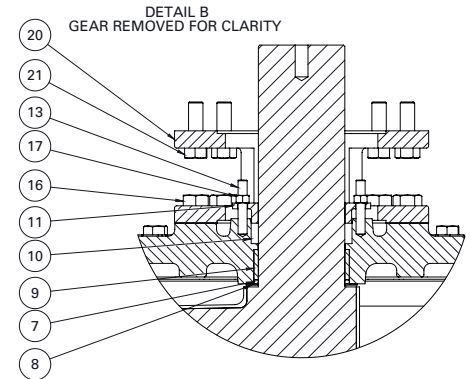
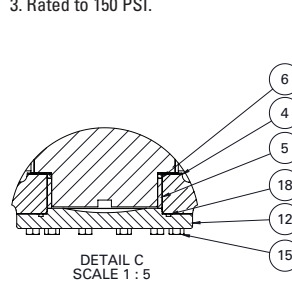
GEAR REMOVED FOR CLARITY



ITEM	PART NAME	ASTM DESIGNATION
1	Body	ASTM A536 65-45-12 OR 70-50-05
2	Plug	ASTM A536 65-45-12 OR 70-50-05 +NBR
3	Cover	ASTM A536 65-45-12 OR 70-50-05
4	Bottom Thrust Washer	PTFE
5	Bottom Bearing	Sintered Alloy SS316
6	GRT Guard Shaft Seal (Lower)	NBR
7	GRT Guard Shaft Seal (Upper)	NBR
8	Upper Thrust Washer	PTFE
9	Upper Bearing	Sintered Alloy SS316
10	V-Packing	NBR
11	Follower Gland	ASTM A536 65-45-12 OR 70-50-05
12	Bottom Cover	ASTM A536 65-45-12 OR 70-50-05
13	Gland Stud	Stainless Steel ASTM A276 T316
14	Cover Bolt	Stainless Steel ASTM A276 T316
15	Bottom Cover Bolt	Stainless Steel ASTM A276.1316
16	Stand Bolt	Stainless Steel ASTM A276.1316
17	Gland Nut	Stainless Steel ASTM A276.1316
18	O-ring - Bottom Cover	NBR
19	O-ring - Top Cover	NBR
20	Stand	ASTM A536 65-45-12 OR 70-50-05
21	Gear Bolt	Stainless Steel ASTM A276.1316
22	Rotork IW12/IR4/AS5 2374:1	- - -

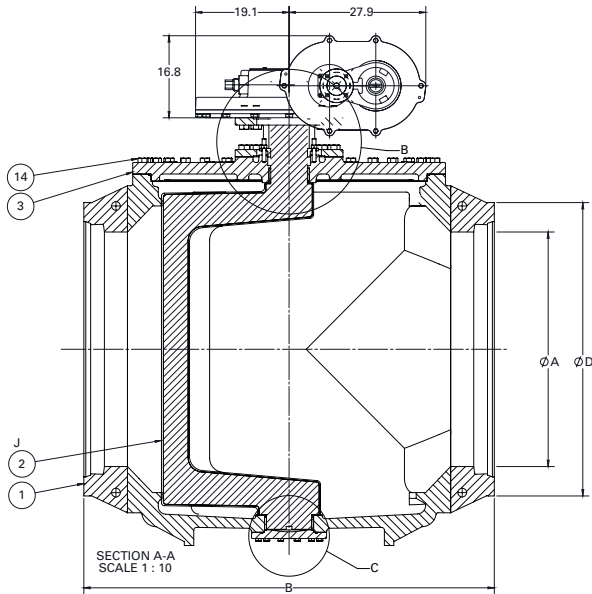
NOTE:

1. Interior and exterior ferrous metal surfaces are epoxy coated.
2. Body castings tri-marked with "Clow", "Kennedy", and "M&H".
3. Rated to 150 PSI.

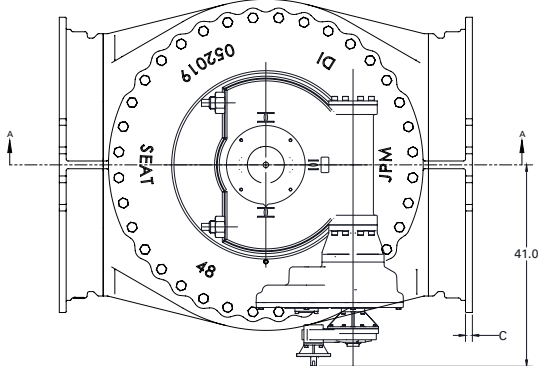
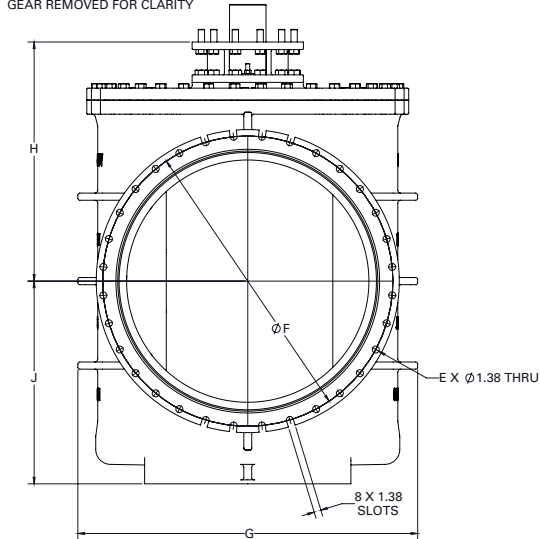


DIMENSIONS									
A (SIZE)	B	C	D	E	F	G	H	J	K
Ø42.00	72.00	2.63	Ø53.00	32	Ø49.50	59.5	43.23	37.40	Ø23.62
Ø48.00	84.00	2.75	Ø59.50	40	Ø56.00	67.3	47.37	40/16	Ø27.56

**100% FULL FLOW ECCENTRIC PLUG VALVE
 WITH MECHANICAL JOINT ENDS AND ROTORK GEAR
 SIZES 42" -48"**



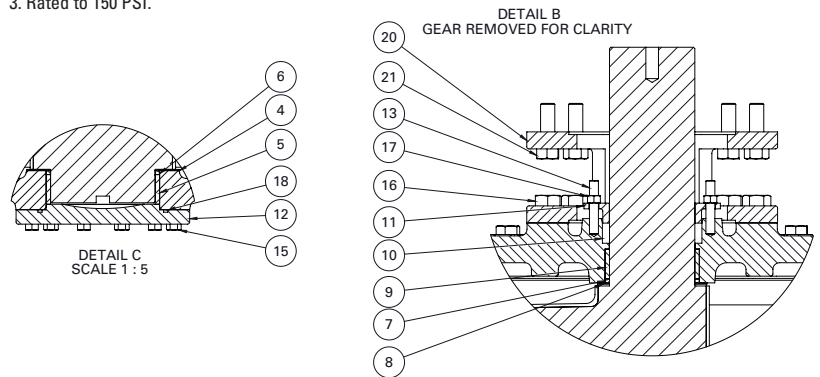
GEAR REMOVED FOR CLARITY



ITEM	PART NAME	ASTM DESIGNATION
1	Body	ASTM A536 65-45-12 OR 70-50-05
2	Plug	ASTM A536 65-45-12 OR 70-50-05 +NBR
3	Cover	ASTM A536 65-45-12 OR 70-50-05
4	Bottom Thrust Washer	PTFE
5	Bottom Bearing	Sintered Alloy SS316
6	GRT Guard Shaft Seal (Lower)	NBR
7	GRT Guard Shaft Seal (Upper)	NBR
8	Upper Thrust Washer	PTFE
9	Upper Bearing	Sintered Alloy SS316
10	V-Packing	NBR
11	Follower Gland	ASTM A536 65-45-12 OR 70-50-05
12	Bottom Cover	ASTM A536 65-45-12 OR 70-50-05
13	Gland Stud	Stainless Steel ASTM A276 T316
14	Cover Bolt	Stainless Steel ASTM A276 T316
15	Bottom Cover Bolt	Stainless Steel ASTM A276.1316
16	Stand Bolt	Stainless Steel ASTM A276.1316
17	Gland Nut	Stainless Steel ASTM A276.1316
18	O-ring - Bottom Cover	NBR
19	O-ring - Top Cover	NBR
20	Stand	ASTM A536 65-45-12 OR 70-50-05
21	Gear Bolt	Stainless Steel ASTM A276.1316
22	Rotork IW12/IR4/AS5 2374:1	---

NOTE:

1. Interior and exterior ferrous metal surfaces are epoxy coated.
2. Body castings tri-marked with "Clow", "Kennedy", and "M&H".
3. Rated to 150 PSI.



DIMENSIONS								
A (SIZE)	B	C	D	E	F	G	H	J
Ø42.00	72.00	1.40	Ø53.35	20	Ø50.62	59.5	43.23	37.40
Ø48.00	84.00	1.40	Ø60.00	24	Ø57.50	67.3	47.37	40/16