

Jamesbury™ flanged ball valves

Reactor discharge valves

series 530S & 5300, 8" - 12"

series 6300, 6" - 10"

Digester blow valves

series 530SB & 5300SB, 8" - 12"

series 6300B, 6" - 10"

Installation, maintenance and
operating instructions

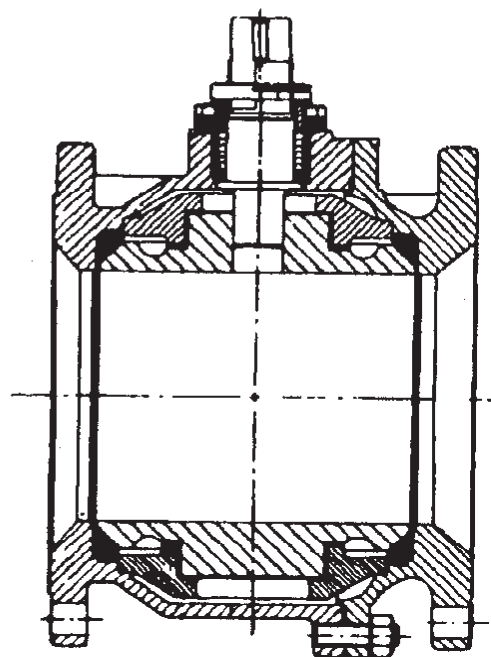


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Subject to change without prior notice.

READ THESE INSTRUCTIONS FIRST!

These instructions provide information about safe handling and operation of the valve.

If you require additional assistance, please contact the manufacturer or manufacturer's representative.

SAVE THESE INSTRUCTIONS!

Addresses and phone numbers are printed on the back cover.

1. GENERAL

This instruction manual contains important information regarding the installation, operation and maintenance of the Jamesbury™ Reactor Discharge Valves 8" - 12" 530S & 5300, 6" - 10" 6300 Digester Blow Valves, 8" - 12" 530SB & 5300SB and 6" - 10" 6300B Flanged Ball Valves. Please read these instructions carefully and save them for future reference.

WARNING:

AS THE USE OF THE VALVE IS APPLICATION SPECIFIC, A NUMBER OF FACTORS SHOULD BE TAKEN INTO ACCOUNT WHEN SELECTING A VALVE FOR A GIVEN APPLICATION. THEREFORE, SOME OF THE SITUATIONS IN WHICH THE VALVES ARE USED ARE OUTSIDE THE SCOPE OF THIS MANUAL. IF YOU HAVE ANY QUESTIONS CONCERNING THE USE, APPLICATION OR COMPATIBILITY OF THE VALVE WITH THE INTENDED SERVICE, CONTACT VALMET FOR MORE INFORMATION.

1.1 SAFETY PRECAUTIONS

WARNING:

DO NOT EXCEED THE VALVE PERFORMANCE LIMITATIONS!

EXCEEDING THE PRESSURE OR TEMPERATURE LIMITATIONS MARKED ON THE VALVE IDENTIFICATION PLATE MAY CAUSE DAMAGE AND LEAD TO UNCONTROLLED PRESSURE RELEASE, DAMAGE OR PERSONAL INJURY MAY RESULT.

WARNING:

SEAT AND BODY RATINGS!

THE PRACTICAL AND SAFE USE OF THIS PRODUCT IS DETERMINED BY BOTH THE SEAT AND BODY RATINGS. READ THE IDENTIFICATION PLATE AND CHECK BOTH RATINGS. THIS PRODUCT IS AVAILABLE WITH A VARIETY OF SEAT MATERIALS. SOME OF THE SEAT MATERIALS HAVE PRESSURE RATINGS THAT ARE LESS THAN THE BODY RATINGS. ALL OF THE BODY AND SEAT RATINGS ARE DEPENDENT ON VALVE TYPE AND SIZE, SEAT MATERIAL, AND TEMPERATURE. DO NOT EXCEED THESE RATINGS!

WARNING:

BEWARE OF BALL MOVEMENT!

KEEP HANDS, OTHER PARTS OF THE BODY, TOOLS AND OTHER OBJECTS OUT OF THE OPEN FLOW PORT. LEAVE NO FOREIGN OBJECTS INSIDE THE PIPELINE. WHEN THE VALVE IS ACTUATED, THE BALL FUNCTIONS AS A CUTTING DEVICE. DISCONNECT ANY PNEUMATIC SUPPLY LINES, ANY ELECTRICAL POWER SOURCES AND MAKE SURE SPRINGS IN SPRINGRETURN ACTUATORS ARE IN THE FULL EXTENDED/ RELAXED STATE BEFORE PERFORMING ANY VALVE MAINTENANCE. FAILURE TO DO THIS MAY RESULT IN DAMAGE OR PERSONAL INJURY!

WARNING:

WHEN HANDLING THE VALVE OR VALVE/ACTUATOR ASSEMBLY, TAKE ITS WEIGHT INTO ACCOUNT! REFERENCE THE APPLICABLE TECHNICAL BULLETIN FOR VALVE WEIGHTS.

NEVER LIFT THE VALVE OR VALVE/ACTUATOR ASSEMBLY BY THE ACTUATOR, POSITIONER, LIMIT SWITCH OR THEIR PIPING. PLACE LIFTING DEVICES SECURELY AROUND THE VALVE BODY. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN DAMAGE OR PERSONAL INJURY FROM FALLING PARTS.

2. INSTALLATION

If there is weepage past the stem seals upon installation, it means the valve may have been subject to wide temperature variations in shipment. Leak tight performance will be restored by a simple stem nut adjustment described in the **MAINTENANCE** section.

These valves may be installed for flow in either direction. To ensure that good installation is achieved, standard piping practices should be followed.

WARNING:

THE VALVE SHOULD BE TIGHTENED BETWEEN FLANGES USING APPROPRIATE GASKETS AND FASTENERS COMPATIBLE WITH THE APPLICATION, AND IN COMPLIANCE WITH APPLICABLE PIPING CODES AND STANDARDS. CENTER THE FLANGE GASKETS CAREFULLY WHEN FITTING THE VALVE BETWEEN FLANGES. DO NOT ATTEMPT TO CORRECT PIPELINE MISALIGNMENT BY MEANS OF FLANGE BOLTING!

3. MAINTENANCE

3.1 GENERAL

Although *Jamesbury* valves are designed to work under severe conditions, proper preventative maintenance can significantly help to prevent unplanned downtime and in real terms reduce the total cost of ownership. Valmet recommends inspecting valves at least every five (5) years. The inspection and maintenance frequency depends on the actual application and process condition.

WARNING

FOR YOUR SAFETY, IT IS IMPORTANT THAT THE FOLLOWING PRECAUTIONS BE TAKEN PRIOR TO REMOVAL OF THE VALVE FROM THE LINE OR BEFORE ANY DISASSEMBLY:

1. WEAR ANY PROTECTIVE CLOTHING OR EQUIPMENT NORMALLY REQUIRED WHEN WORKING WITH THE FLUID INVOLVED.
2. **DEPRESSURIZE THE LINE AND CYCLE THE VALVE AS FOLLOWS:**
 - A. PLACE THE VALVE IN THE OPEN POSITION AND DRAIN THE LINE.
 - B. CYCLE THE VALVE TO RELIEVE RESIDUAL PRESSURE IN THE BODY CAVITY BEFORE REMOVAL FROM THE LINE.
 - C. AFTER REMOVAL AND BEFORE ANY DISASSEMBLY, CYCLE THE VALVE AGAIN SEVERAL TIMES.

Routine maintenance consists of tightening the stem nut (15) periodically to compensate for stem seal wear.

Overhaul maintenance consists of replacing seats and seals. A standard Repair kit consisting of these parts may be obtained through your Valmet distributor.

TABLE 1
REPAIR KITS

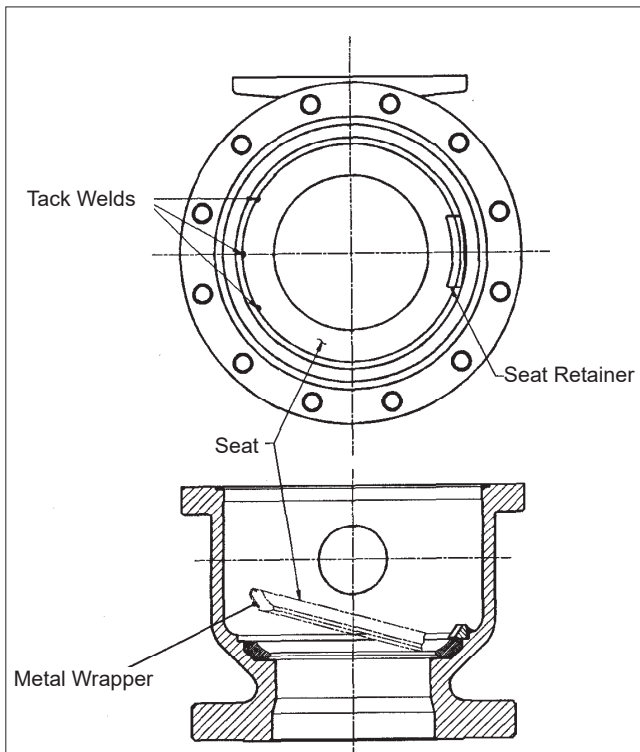
Valve Size	6" 6300 8" 530S 8" 5300	8" 6300 10" 530S 10" 5300	10" 6300 12" 530S 12" 5300
Filled TFE Seats	RKY34QA	RKY35QA	RKY36QA
Valve Size	6" 6300B 8" 530SB 8" 5300B	8" 6300B 10" 530SB 10" 5300B	10" 6300B 12" 530SB 12" 5300B
316SS/Filled TFE Seats	RKN67WN*	RKN69WN*	RKN72WN*

* These kits contain two types of bearing spacers (28). See **Figure 5** for the proper bearing spacer to be used.

3.2 DISASSEMBLY

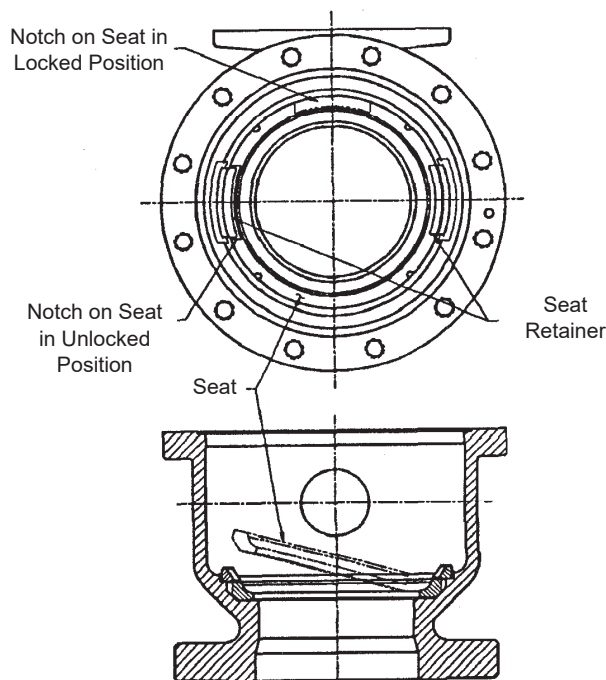
NOTE: If complete disassembly becomes necessary, replacement of all seats and seals is recommended. Refer to the Repair Kit chart on page one.

1. Follow the steps in the **WARNING** section before performing any work on the valve.
2. Open and close the valve and leave in the closed position.
3. Place the valve in a vertical position with the body cap (2) facing upward and the ball closed. (**parts are numbered per Figure 5.**)
4. Remove the stem nut (15) stem nut lock (9) (if fitted), compression ring (21) and four hex head cap screws (29).
5. Remove the stem (4) and stem retainer (30) as a subassembly. It may be necessary to loosen with a block of wood and hammer.
6. Push down on top of the stem (4) to remove it from the stem retainer (30).
7. Remove the secondary stem seal (7) and the stem bearing (8) from the stem. Pry out and discard the upper stem seal set (32) from the stem retainer (30), **BEING CAREFUL NOT TO SCRATCH ANY SEALING SURFACES.**
8. Remove and discard the stem retainer seal (25) from the body.
9. Remove the body fasteners (11) for 6300 and 5300 valves, or (34) for 530S valves.
10. Lift the body cap (2) off of the body (1), **BEING CAREFUL NOT TO NICK OR SCRATCH THE BALL.**
11. Remove the ball (3) and trunnion plates (26) as a subassembly. (The subassembly consists of the ball with, a trunnion plate on both ends with their appropriate bearings and spacers.)
12. Pull each trunnion plate away from the ball and remove the bearing spacer (28) and trunnion bearing (27).



DIGESTER BLOW VALVES

Figure 1



REACTOR DISCHARGE VALVES

Figure 2

13. Remove the seat (5) from the body (1) and body cap (2) using the proper disassembly method for that type seat as follows:

A. 316SS/Filled TFE Metal Wrapped Seats, DIGESTER BLOW VALVES:

Remove the seats by first chipping and grinding away the tack welds that are holding the seat (5) in its cavity on the side opposite the seat retainer (See Figure 1). Lift the seat from the cavity and remove as shown in Figure 1. Repeat procedure for second seat.

B. Filled TFE Seats, REACTOR DISCHARGE VALVES

Remove the seats by first rotating the seat so that the large notch that is cut on the outside diameter of the seat lines up with one of the seat retainers (See Figure 2). Lift the seat from the cavity and remove it as shown in Figure 2. Repeat procedure for second seat.

NOTE: If the seat is cemented in its cavity by pipeline media, it may be cut and removed using extreme caution not to damage the metal sealing surface in the seat cavity.

3.3 ASSEMBLY

NOTE: If necessary seats, seals and bearings can be lubricated with a lubricant compatible with the media.

1. Place the body (1) and the body cap (2) in a vertical position with the body joint facing upward. Assemble a seat (5) in the body and body cap using the proper assembly method for that type seat as follows:

A. 316SS/Filled TFE Metal Wrapped Seats:

Insert a seat (5) by sliding one side under the seat retainer and dropping the seat into the cavity, see Figure 1. Seat is then tack welded in three places opposite the seat retainer as shown in Figure 1. Repeat the procedure for the second seat.

B. Filled TFE Seats:

Insert a seat (5) by sliding one side under one seat retainer and aligning the notch on the outside diameter of the seat with the opposite seat retainer. Drop the seat into the cavity so that the notch passes over the seat retainer (See Figure 2). Rotate seat 90° so that it is locked in place. Repeat procedure for the second seat.

2. Insert a trunnion bearing (27) into each trunnion plate (26) counterbore.
3. Place a bearing spacer (28) over each ball trunnion. Repair kits contain two types of spacers (28). Choose the proper bearing spacer (28) per Figure 5.
4. Fit a trunnion plate over each ball trunnion until the plate rests against the bearing spacer (28). This operation must be performed with care and without excessive force or the bearings may be damaged. The plate should be started squarely on the trunnion and evenly tapped with a plastic mallet. With new bearings it may be necessary to tap and rotate the plate all the way on. Lubrication is helpful. Once installed, without cocking, the plate will be snug but can be smoothly rotated with a mallet or block of wood.
5. Align the trunnion plates relative to the ball port as shown in Figure 5. This will approximate proper position when the ball and trunnion plate subassembly is lowered into the body.

6. With the ball in the closed position as shown in **Figure 5**, lower the ball/trunnion plate subassembly partially into the body.
NOTE: This procedure is critical and careful attention must be paid to points A and B of the plates as shown in **Figure 5**. The outside diameter of the trunnion plate must pilot in the body counter-bore. Carefully lower the subassembly until a trunnion plate enters the counter-bore. Usually one plate will enter the counter-bore and the other plate will be out of position. When this happens it is due to the plates not being in perfect alignment per step 5, or not being parallel to each other. Use a plastic mallet or block of wood to rotate the second trunnion plate and cause it to drop into position. It might be necessary to lift the ball slightly. Lower the subassembly until the trunnion plates are seated in the bottom of the cavity.
7. Slide the stem bearing (8) over the top of the stem (4) and down to the stem shoulder. Place a secondary stem seal (7) over the stem and down on top of the stem bearing (8).
8. Slide the stem retainer (30) over the stem and down on top of the secondary stem seal (7).
9. Slide the upper stem seal set (32) over the stem and down into the stem retainer. ("V" shape of stem seals must point away from the ball (**See Figure 5**).
10. Slide the compression ring (21) over the stem and down to the upper stem seal set (32) in the stem retainer.
11. Place the stem nut (15) with the side marked "top" up over the stem and thread it down until contact is made with the compression ring. (Use a wrench on the bottom stem blade to keep the stem from turning.)
12. Tighten the stem nut until the stem seal set is fully seated, then tighten the nut an additional 1/8 to 1/4 turn.
13. Place the stem retainer seal (25) in the bonnet groove of the body (1).
14. Place the stem subassembly into the body bonnet hole and engage the stem in the ball slot. The groove on top of the stem should be parallel to the ball waterway.
15. Align the stem retainer flange holes with the tapped holes in the body bonnet. Lubricate the hex head cap screws (29) with Never-Seez or equivalent. Place the four hex head cap screws (29) through the stem retainer flange and thread into the body. Tighten with sequence and torque per **Table 4** and **Figure 4**. Install the drive key (33) on the key drive stems.
16. Place the body seal (6) in the body groove. **NOTE:** The ball must be in the closed position before proceeding to step 17. Do not install the body cap (2) with the ball in any other position.
17. Lower the body cap (2) with the seat onto the body, pay careful attention to the alignment with the trunnion plates as described in step 6. **NOTE:** Some valves have an alignment pin (41) or have the bolt holes spaced so that the body cap can only be installed one way.
18. Using Never-Seez or equivalent, lubricate the threads and underside face of each body fastener. Tighten with sequence and torque per **Table 4** and **Figure 4**. **REMounting ACTUATOR** When an actuator is remounted on the valve it may be necessary to readjust the actuator travel stops to ensure proper setting of the ball in the open and closed position. Follow the procedure in step 19 for proper adjustment.
19. Adjust the actuator stop adjusting screws for proper ball position when in the full open and full closed position. For proper alignment, follow these guidelines:
 - A. Valve Open Position: Allowable misalignment of the ball port in relation to the body port should not exceed 1/16".
 - B. Valve Closed Position: Scribe a pencil mark on the ball as shown in **Figure 3**. Open the valve and measure dimension.

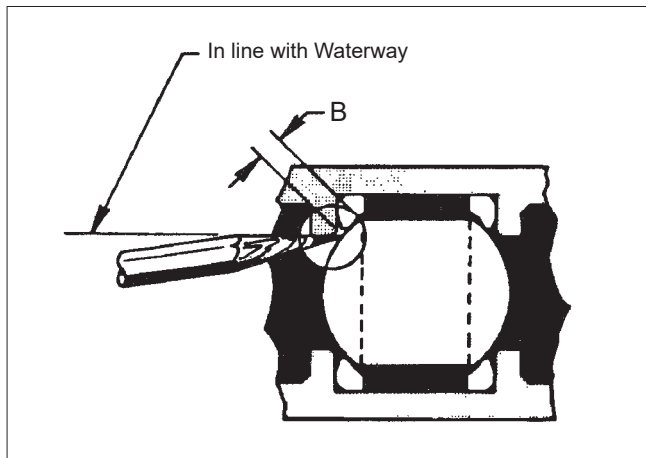


Figure 3

4. SERVICE / SPARE PART

We recommend that valves be directed to our service centers for maintenance. The service centers are equipped to provide rapid turn-around at a reasonable cost and offer new valve warranty with all reconditioned valves.

NOTE: When sending goods to the service center for repair, do not disassemble them. Clean the valve carefully and flush the valve internals. Include the material safety datasheet(s) (MSDS) for all media flowing through the valve. Valves sent to the service center without MSDS datasheet(s) will not be accepted. Send valves to the service center in the half open position.

For further information on spare parts and service or assistance visit our web-site at **www.valmet.com/flowcontrol/valves**.

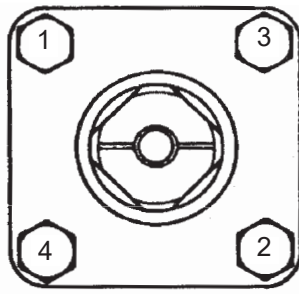
NOTE: When ordering spare parts, always include the following information:

- a. Valve catalog code from identification plate,
- b. If the valve is serialized – the serial number (from identification plate)
- c. From **Figure 5**, the ballooned part number, part name and quantity required.

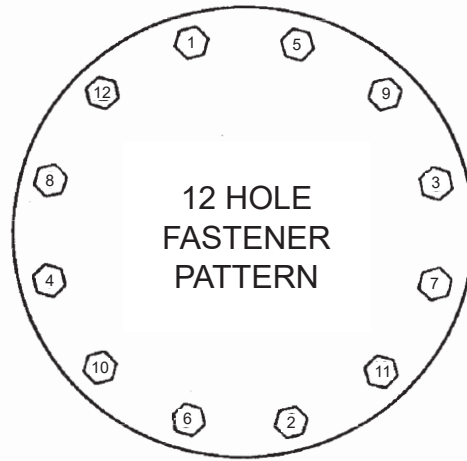
5. WELDING WARNING

WARNING:

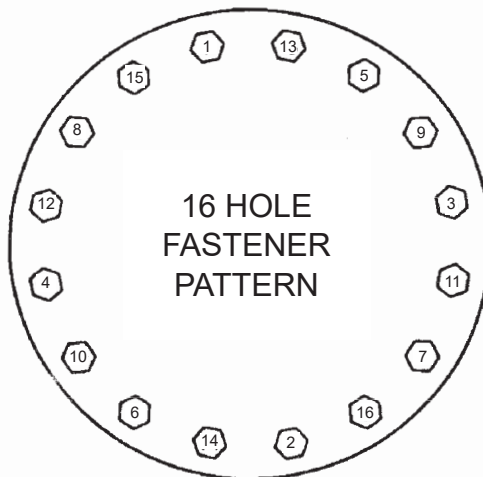
WELDING AND/OR GRINDING OF STAINLESS STEEL AND OTHER ALLOY STEELS CONTAINING CHROMIUM METAL MAY CAUSE THE RELEASE HEXAVALENT CHROMIUM. HEXAVALENT CHROMIUM, CHROMIUM(VI) OR CR(VI), IS KNOWN TO CAUSE CANCER. BE SURE TO USE ALL APPROPRIATE PPE WHEN WELDING METALS CONTAINING CHROMIUM. IF YOU HAVE ANY QUESTIONS CONSULT YOUR SUPERVISOR.



Stem Retainer



6", 10" 6300, 8" 530S/5300



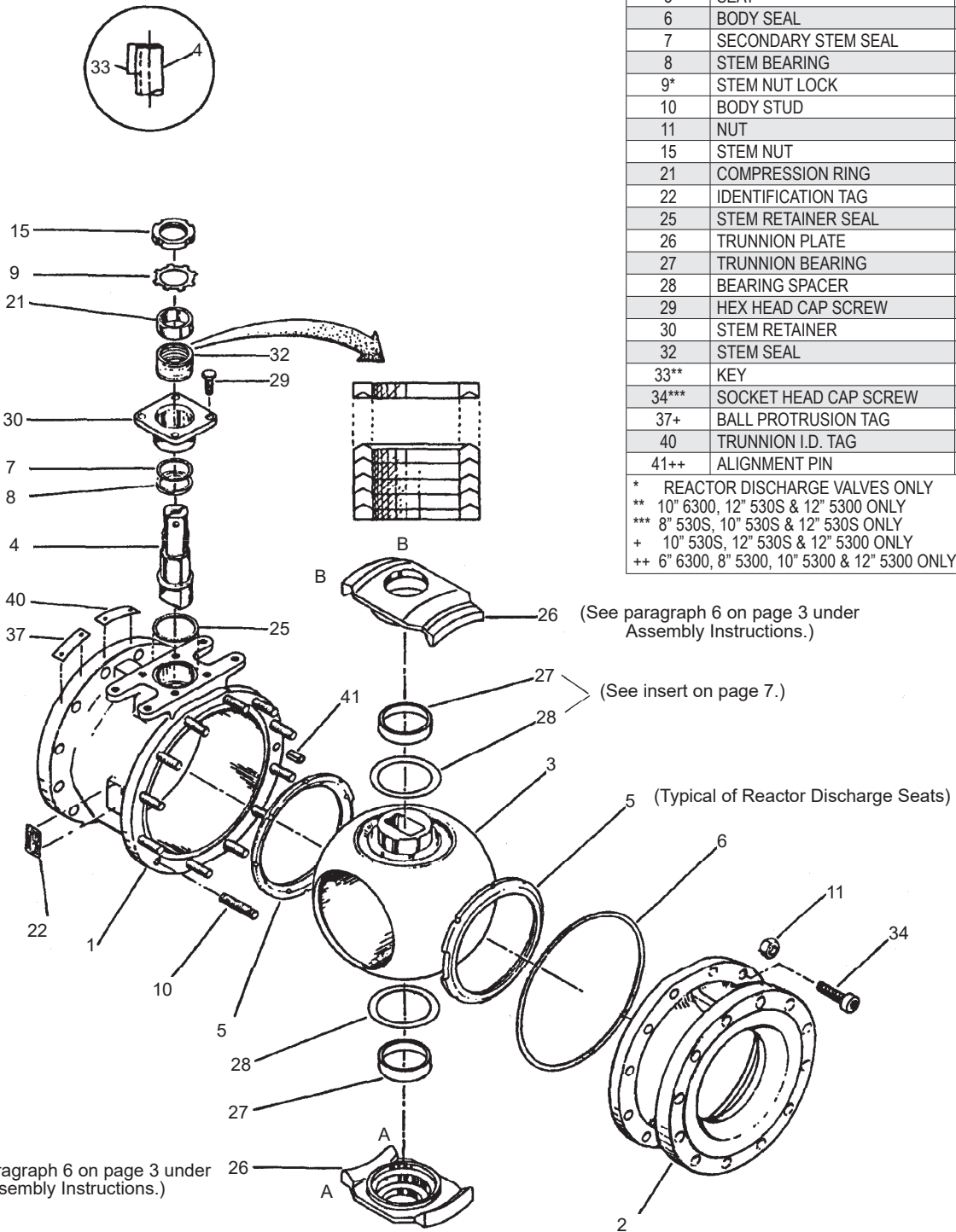
10" - 12" 530S/5300

Figure 4

TABLE 2	
BALL POSITION	
VALVE SIZES	DIMENSION "B"
6" 6300 (B) 8" 530S (B) 8" 5300 (B)	1-3/32
8" 6300 (B) 10" 530S (B) 10" 5300 (B)	1-3/16
10" 6300 (B) 12" 530S (B) 12" 5300 (B)	1-9/16

TABLE 3		
BODY/BODY CAP FASTENERS		
VALVE SIZE	BODY BOLT SIZE	QTY
6" 6300 (B)	3/4	12
8" 530S (B)	7/8	12
8" 5300 (B)	7/8	12
8" 6300 (B)	1	12
10" 530S (B)	7/8	16
10" 5300 (B)	7/8	16
10" 6300 (B)	1 1/4	12
12" 530S (B)	1 1/8	16
12" 5300 (B)	1 1/8	16

TABLE 4					
RECOMMENDED TORQUES (LB.-FT.)					
FASTENER SIZE	LAST DIGIT IN FIG. NO.	1	2	4	5
	FASTENER MATERIAL	A193 GR. B7	A193 GR. B8	K MONEL®	A193 GR. B7M
	FASTENER IDENT. MARK	B7	B8	K	B7M
1/2"		75-85	70-85	65-75	55-65
5/8"		160-190	155-180	140-160	125-145
3/4"		250-290	235-275	210-245	190-220
7/8"		380-445	290-340	325-380	290-340
1"		575-630	435-510	495-540	435-510
1-1/8"		850-1000	526-615	690-805	650-760
1-1/4"		1160-1360	715-840	940-1100	885-1030

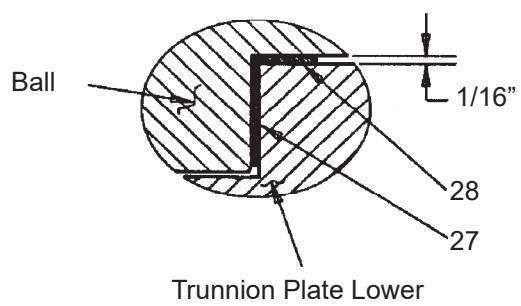
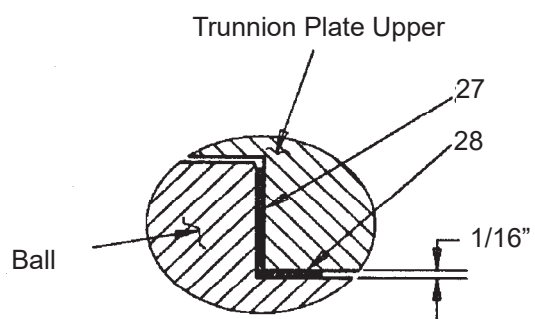


VALVE PARTS		
ITEM NO.	PART NAME	QTY
1	BODY	1
2	BODY CAP	1
3	BALL	1
4	STEM	1
5	SEAT	2
6	BODY SEAL	1
7	SECONDARY STEM SEAL	1
8	STEM BEARING	1
9*	STEM NUT LOCK	1
10	BODY STUD	TABLE 3
11	NUT	TABLE 3
15	STEM NUT	1
21	COMPRESSION RING	1
22	IDENTIFICATION TAG	1
25	STEM RETAINER SEAL	1
26	TRUNNION PLATE	2
27	TRUNNION BEARING	2
28	BEARING SPACER	2
29	HEX HEAD CAP SCREW	4
30	STEM RETAINER	1
32	STEM SEAL	1 SET
33**	KEY	1
34***	SOCKET HEAD CAP SCREW	TABLE 3
37+	BALL PROTRUSION TAG	1
40	TRUNNION I.D. TAG	1
41++	ALIGNMENT PIN	1

* REACTOR DISCHARGE VALVES ONLY
 ** 10" 6300, 12" 530S & 12" 5300 ONLY
 *** 8" 530S, 10" 530S & 12" 530S ONLY
 + 10" 530S, 12" 530S & 12" 5300 ONLY
 ++ 6" 6300, 8" 5300, 10" 5300 & 12" 5300 ONLY

Figure 5

FLAT TRUNNION PLATE



COUNTER BORED TRUNNION PLATE

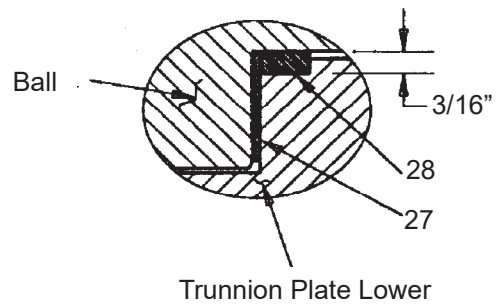
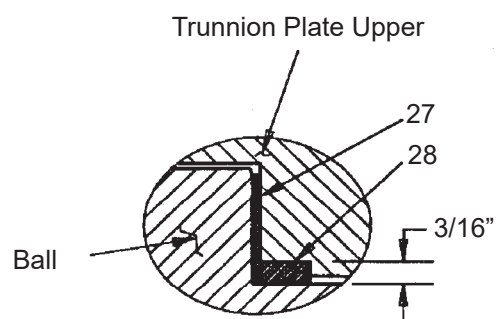


Figure 6

Valmet Flow Control Oy

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