

# APPLICATION FOR RENEWAL OF APPROVAL FOR VALVES AND FITTINGS

- 1. AAR APPROVAL No. E-141086
- 2. Date of Application 5/5/14
- 3. Previous AAR Approval E041023

- 4. Applicant: The Greenbrier Companies
- 5. Address: 100 Clark Street, St. Charles, MO 63301
- 6. Drawing No. 5-Y-0689 7. Latest rev. M 8. Date of latest rev. 06-29-23
- 9. Description of device: Bottom outlet ball valve – low profile 10. Device ID No. 2040A / S2040A

**CERTIFICATION:** The subject device is **unchanged** from the previous approval, and conforms with the latest revision of AAR Specifications for Tank Cars, Appendix A. The device conforms with drawing listed above.

11. By: \_\_\_\_\_ Title: \_\_\_\_\_

If device is **changed** since latest approval, fill in the following blanks

12. Reference Previous Drawing	New Drawing	If on Service Trial
No. <u>5-Y-0689</u> Rev. <u>L</u> Date <u>02-21-18</u>	No. <u>5-Y-0689</u> Rev. <u>M</u> Date <u>06-29-23</u>	S.T. No. _____
No. _____ Rev. ____ Date _____	No. _____ Rev. ____ Date _____	S.T. No. _____
No. _____ Rev. ____ Date _____	No. _____ Rev. ____ Date _____	S.T. No. _____

13. New drawing supersedes previous one  or does not obsolete it

### CHANGES

### REASONS FOR CHANGES

- 14. a. add a PTFE gasket option to cover-body joint a. improve reliability
- b. \_\_\_\_\_ b. \_\_\_\_\_
- c. \_\_\_\_\_ c. \_\_\_\_\_
- d. \_\_\_\_\_ d. \_\_\_\_\_

(if needed use supplemental sheet)

15. Normal operational effect of changes of device: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

16. Drawing submitted with this application: 5-Y-0689 Rev M

**CERTIFICATION:** The above data is correct and conforms with AAR Specifications for Tank Cars, Appendix A. The device conforms with drawing listed above.

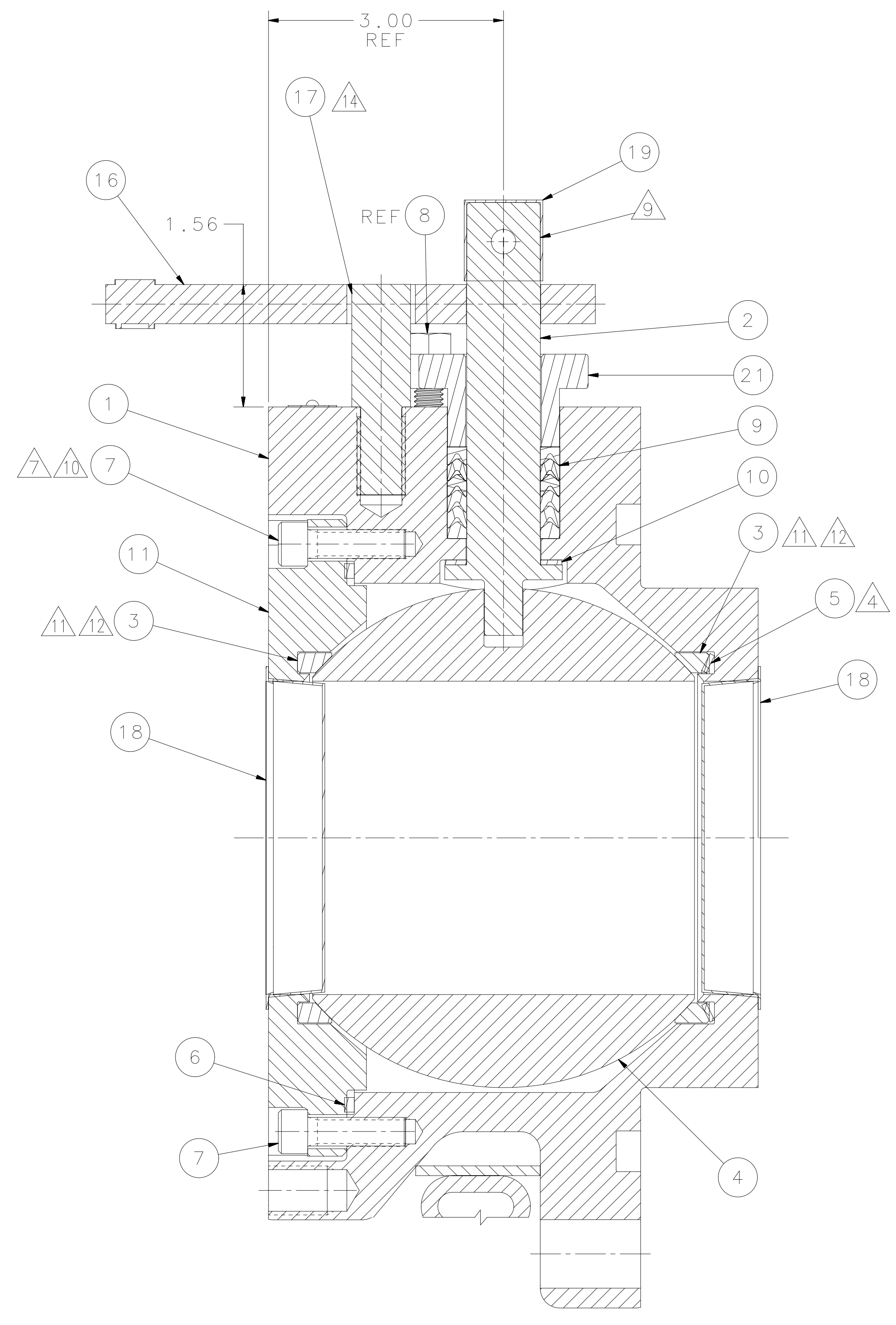
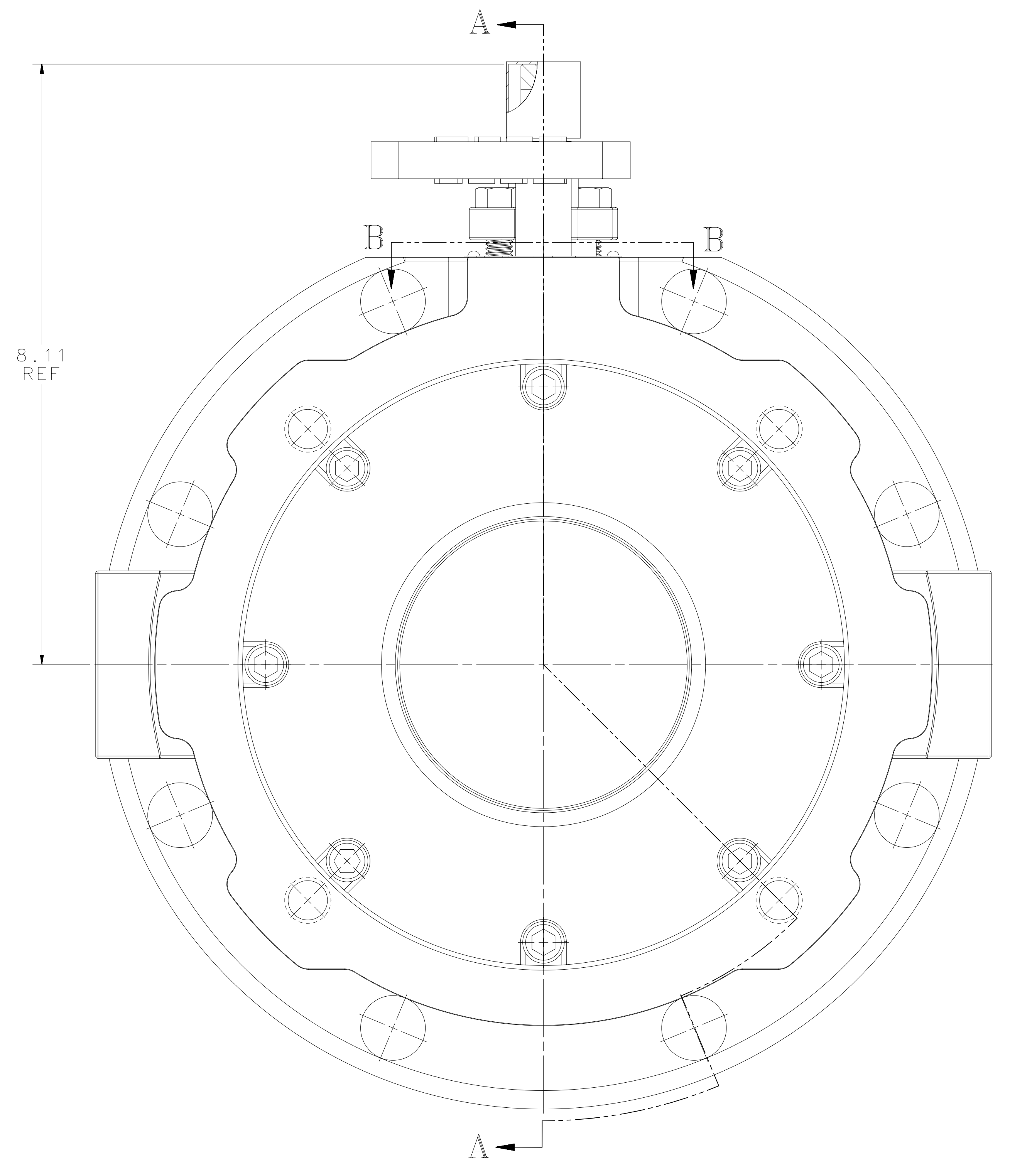
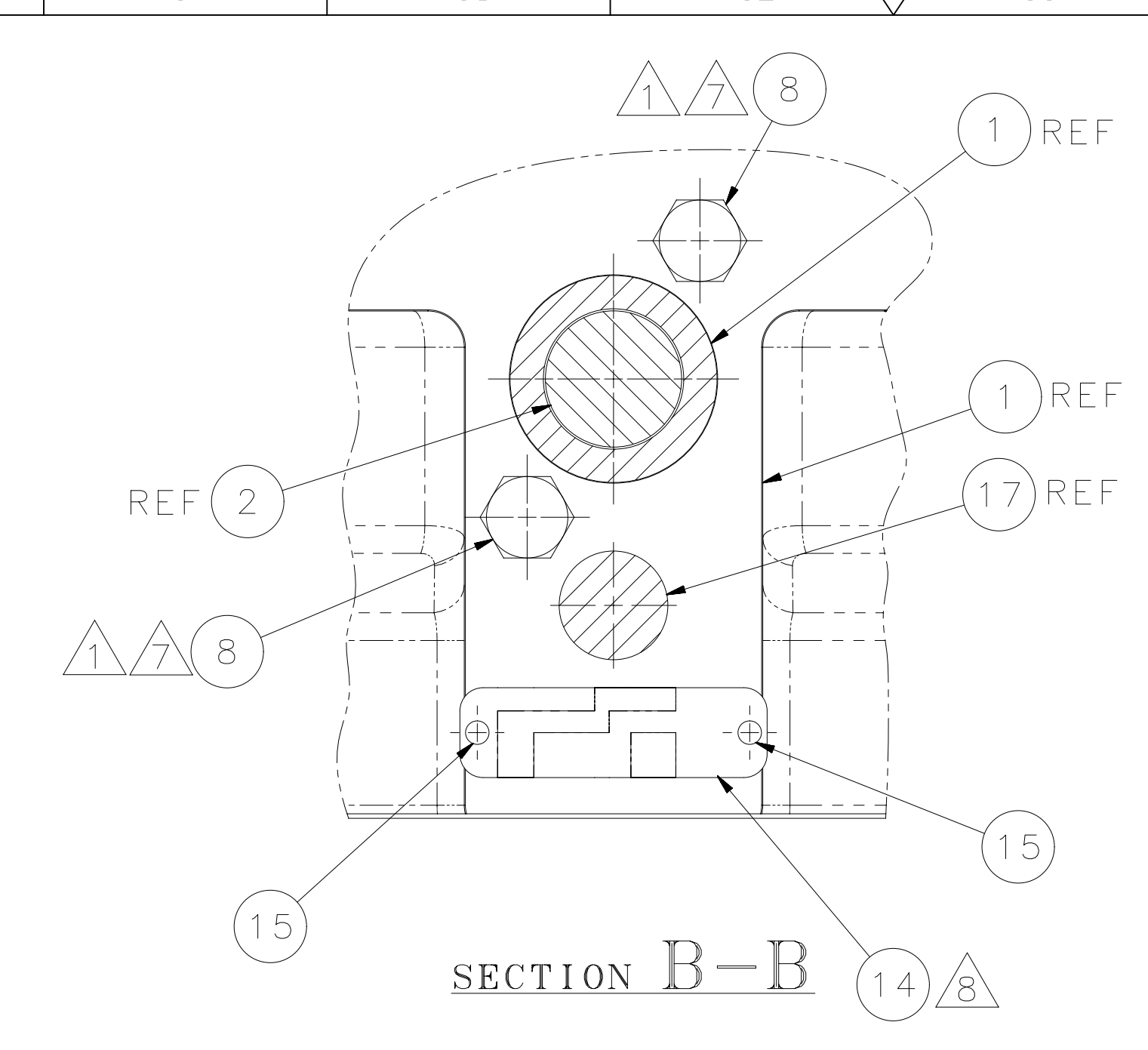
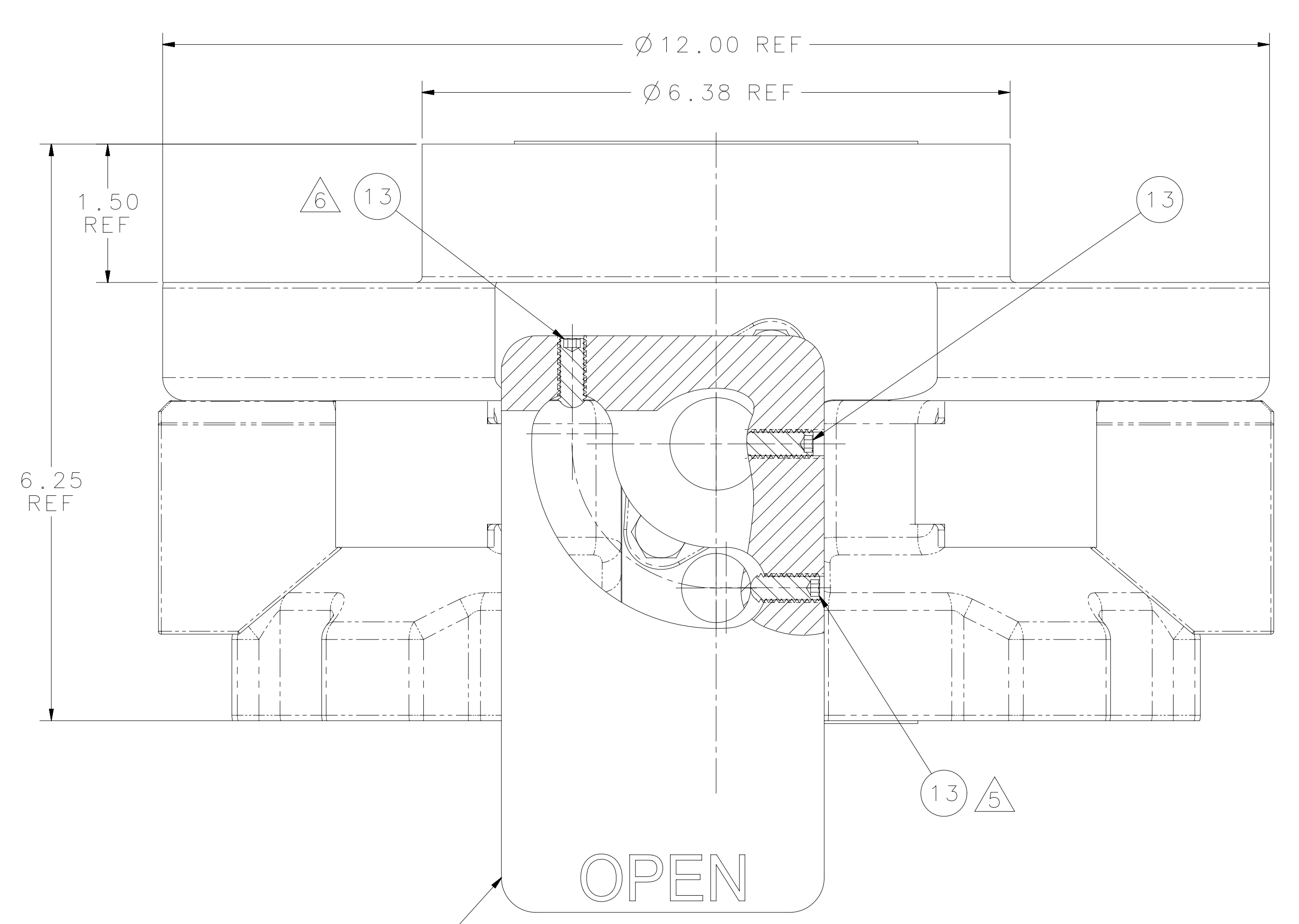
17. By: Chris Recker Title: Manager-Special Products Engineering

APPROVAL AAR Tank Car Committee:

Date Approved: 8/4/2023

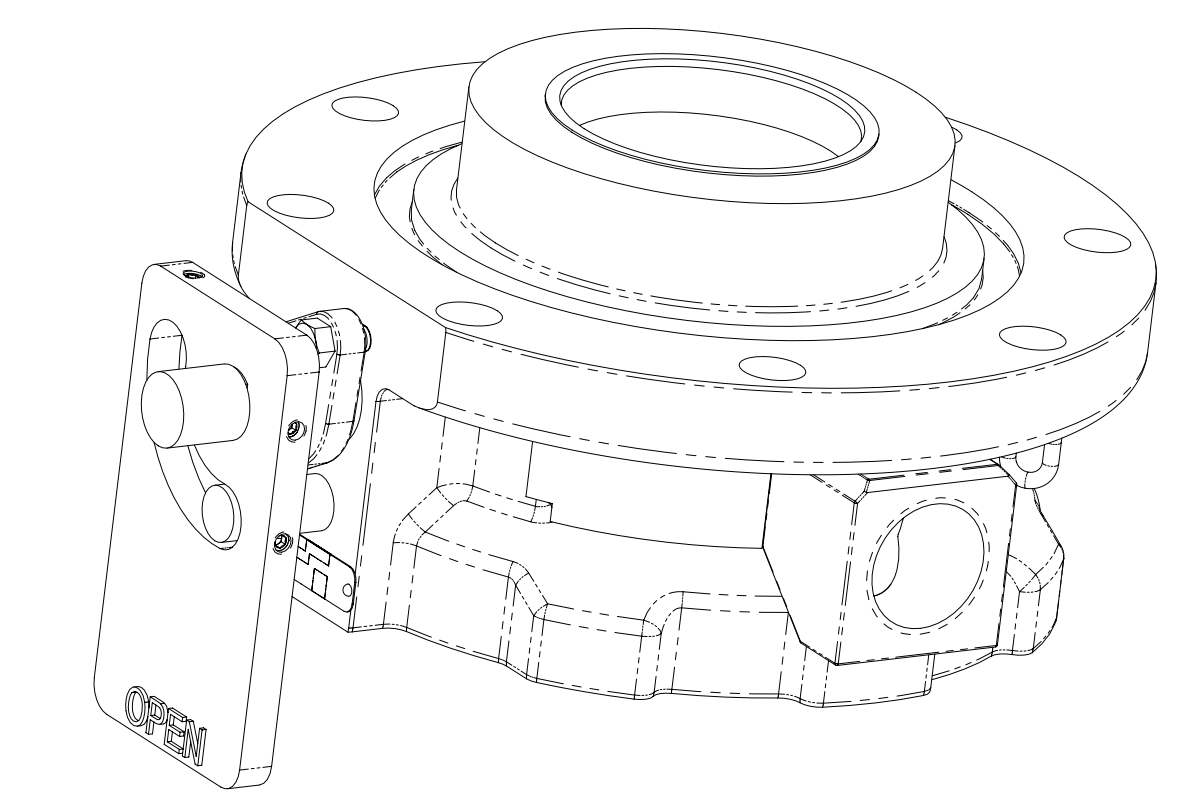


(Signature) on behalf of Committee Form

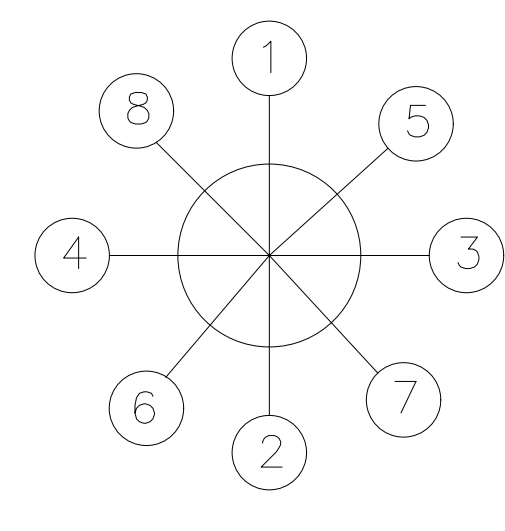


SECTION A-A

PARTS LIST					DESCRIPTION & MATERIAL	NOTES
ITEM	QTY	DWG NO.	PART NO.	SAP NO.		
1	1	5-U-3487-06	1023017	1023017	BODY- VALVE, MODEL 2040, CS	
2	1	3-W-6024-00	1018886	1018886	STEM- 2040 VALVE, MACHINING	
3	2	3-U-3495-00	1017682	1017682	SEAL- BALL, MOD 2040	11,12
4	1	4-U-3493-00	1020928	1020928	BALL- OUTLET VALVE BOT 4 IN	
5	1	2-U-3496-00	1014803	1014803	SPRING- SEAL, MOD 2040	4
6	1		100038868		O-RING- SIZE 2-261, 7.012 OD X .139 TK, PTFE, 55 DUR	
7	8		1027328	1027328	SCREW-CAP, SOCKET HEAD; 3/8-16 UNC-2A X 1-1/4"; ASTM A320 CLASS 2 GR B8	7,10
8	2		1027554	1027554	BOLT-REGULAR HEX; 3/8-16 X 1-1/4; ASTM A193, GR B8	1,7
9	1	2-U-7514-00	1015005	1015005	RINGS- PACKING	
10	1	2-U-4277-00	1014842	1014842	GASKET-STEM, 2030 2040	
11	1	4-U-1879-00	1020896	1020896	COVER- VALVE, MOD 2040	
12	A/R	-	1027336	1027336	THREADLOCKER-LOCTITE 272 HIGH STRENGTH HIGH TEMPERATURE RED, HTM 27240	
13	3		1027329	1027329	SCREW-SET, SOCKET HEAD, OVAL POINT, 5/16-18 X 3/4", STEEL W/NYLOCK INSERT	5,6
14	1	2-Y-2154-00	1016617	1016617	NAMEPLATE- BALL VALVE	8
15	2		1026997	1026997	SCREW-DRIVE, ROUND HEAD; NO. 2 X 1/4"; TYPE U; TYPE 316 SST	
16	1	3-W-9394-00	1019428	1019428	STOP- VALVE, MODEL 2040	
17	1	2-W-8857-00	1016253	1016253	STUD- STOP, 2040 VALVE	14
18	2		1003319	1003319	CAP PLUG-TAPERED, DIA. 3.93 X .75, LOW DENSITY POLYETHYLENE, CAP PLUG NO. T1063	
19	1		1027330	1027330	CAP-SLEEVE, DIA. 15/16, LOW DENSITY POLYETHYLENE, CAPPLUG NO. SC-15/16	M
20	A/R	-	1026990	1026990	LUBRICANT-BOSTIK NEVER-SEEZ; REGULAR GRADE	7
21	1	3-W-5973-00	1018881	1018881	PACKING GLAND- VALVES, MACHINING	1
22	A/R	-	1017244	1017244	SEALANT-NORDSTROM, 555 SIZE B	11
23	A/R	-	1037330	1037330	LUBRICANT-MOLYKOTE 111	12



- NOTES:
- TIGHTEN THE PACKING ADJUSTING BOLTS (ITEM 8) EVENLY AGAINST THE PACKING GLAND (ITEM 21) INITIALLY TO 2 FT/LB. -DO NOT EXCEED A TORQUE OF 5 FT/LB AFTER TESTING-
  - PRODUCTION TEST PER ARI ENGINEERING STANDARD ES2020.
  - VALVE RATED FOR RAILROAD TANK CAR APPLICATION TO 100 PSI AND 300° F.
  - SPRING SEAL (ITEM 5) TO BE INSTALLED AS INDICATED.
  - SET SCREW (ITEM 13) TO BE ADJUSTED AT THE OPEN POSITION SIDE TO INSURE ALIGNMENT OF THE 4 IN. DIA HOLE IN THE BALL WITH THE 4 IN. DIA OPENING IN THE VALVE BODY AND BOTTOM COVER.
  - SET SCREW (ITEM 13) TO BE ADJUSTED AT THE CLOSED POSITION SIDE TO INSURE SEAL WIDTH IS IN FULL CONTACT WITH BALL SURFACE.
  - APPLY LIGHT COATING OF LUBRICANT (ITEM 20) TO CAP SCREW (ITEM 7) AND BOLT (ITEM 8) PRIOR TO ASSEMBLY.
  - STAMP NAMEPLATE (ITEM 14) WITH SERIAL # & OTHER INFO PER ARI ENGINEERING STANDARD ES1083.
  - HANDLE AND ASSOCIATED HARDWARE ARE NOT SUPPLIED WITH VALVE ASSEMBLY. SEE LOT SPECIFIC BOTTOM OUTLET ARRGT DWG.
  - TORQUE CAP SCREWS (ITEM 7) TO 30 ± 2 FT LB IN THE FOLLOWING SEQUENCE:
  - APPLY SEALANT (ITEM 22) ON THE BACK SIDE OF SEAL (ITEM 3) ONLY. APPLY EVENLY APPROX 1/32 THICK.
  - APPLY LUBRICANT (ITEM 23) TO THE SURFACE OF SEALS (ITEM 3) THAT CONTACT BALL (ITEM 4). APPLY EVENLY APPROX 1/64 THICK.
  - UNIT OF MEASURE IN MRP SYSTEM. ACTUAL QUANTITY TO BE DETERMINED BY MANUFACTURING.
  - APPLY LOCTITE (ITEM 12) TO THREADS OF STUD (ITEM 17).



DESCRIPTION:  
TYPE: 2040A, CARBON STEEL BODY AND SST TRIM WITH 1-1/2 NPT STEAM FTG CONN

NOTICE:  
THIS DRAWING AND THE INFORMATION CONTAINED THEREIN ARE CONFIDENTIAL AND THE PROPERTY OF ARI. NO USE OR DISCLOSURE OF THE DRAWING OR INFORMATION CONTAINED THEREIN SHALL BE MADE WITHOUT PRIOR WRITTEN CONSENT OF ARI.

REV	DATE	DR	CK	DESCRIPTION	EST WT	93.61 LB
M	06-29-23	CJR	MRW	ITEM 6 WAS 2U349700/1014804	TOL UNLESS NOTED	
L	02-21-18	BAM	PDC	ADDED "REF" TO "LOT NO" FORMAT, EFF LOT 28-70436	DEC +/- .03	
-	-	-	-	MODELED IN NX, UPDATED FORMAT, ADDED ISO VIEW.	FRAC +/- 1/32	
-	-	-	-	MOVED & ROTATED STOP (ITEM 16) SO THAT CLOSED POSITION IS 90° (COUNTERCLOCKWISE) PER PLANT	ANG +/- 2°	
-	-	-	-	REQUEST & ASSY PROCEDURE, EST WT WAS 96.85 LB.	DRAFTER MFM04-25-17	
-	-	-	-	MOVED SECTION A-A TO SHI 1, REMOVED SHI 2.	CHECKER CJR04-24-17	
-	-	-	-	REDRAWN ON SEPERATE LINE DWG, ADDED NOTE NOS.	MODELER MFM04-24-17	
-	-	-	-	TO NOTES COLUMN IN BOM, MOVED NOTE(14) TO NOTE LIST, EFF LOT NR	STR ENGR	
K	04-25-17	MFM	CJR	PROJ ENGR	CJR04-24-17	
A	-	-	-	ORIGINAL ISSUE	ANALYSIS #	
RV	-	-	-	-	-	-

SAP NO.: 1023662  
PART NO.: 1023662

UNLESS OTHERWISE NOTED ALL DIMS. ARE IN INCHES	NR
	REF LOT NO
<b>GREENBRIER MANUFACTURING OPERATIONS</b>	
VALVE ARRGT- BOTTOM OUTLET 4" MOD 2040A	
DWG NO. 5-Y-0689-00	SIZE E
SCALE 1:1	SHEET 1 OF 1