

# APPLICATION FOR RENEWAL OF APPROVAL FOR VALVES AND FITTINGS

1. AAR APPROVAL No. E-177007  
 2. Date of Application 9/7/2017  
 3. Previous AAR Approval E-077036
4. Applicant: McKenzie Valve & Machining LLC  
 5. Address: 145 Airport Road, McKenzie, TN 38201  
 6. Drawing No. See #12      7. Latest rev. See #12      8. Date of latest rev. See #12  
 9. Description of device: 4" Internal Ball Valve      10. Device ID No. See Attached Table

**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>79358</u> Rev. <u>V</u> Date <u>2/3/1995</u>	No. <u>79358</u> Rev. <u>X</u> Date <u>5/23/2014</u>	S.T. No. <u>n/a</u>
No. _____ Rev. ____ Date _____	No. <u>501631</u> Rev. <u>C</u> Date <u>5/23/2014</u>	S.T. No. <u>n/a</u>
No. _____ Rev. ____ Date _____	No. <u>501642</u> Rev. <u>C</u> Date <u>5/23/2014</u>	S.T. No. <u>n/a</u>
No. _____ Rev. ____ Date _____	No. <u>80395</u> Rev. <u>S</u> Date <u>5/23/2014</u>	S.T. No. <u>n/a</u>
No. _____ Rev. ____ Date _____	No. <u>504382</u> Rev. <u>B</u> Date <u>5/23/2014</u>	S.T. No. <u>n/a</u>

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

**CHANGES**

**REASONS FOR CHANGES**

- |   |   |
|---|---|
| 14. a. <u>See the attached table.</u><br>b. _____<br>c. _____<br>d. _____<br>(if needed use supplemental sheet) | a. <u>See the attached table.</u><br>b. _____<br>c. _____<br>d. _____ |
|---|---|

15. Normal operational effect of changes of device: None

16. Drawing submitted with this application: All drawings listed in the attached table.

**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: Jarred Beaubouef *Jarred Beaubouef* Title: Product Engineer

APPROVAL AAR Tank Car Committee:

Date Approved: 12/8/2017      *Kimberly*  
 \_\_\_\_\_  
 (Signature) on behalf of Committee



McKenzie Valve & Machining Co.  
145 Airport Rd.  
McKenzie, TN 38201

September 7, 2017

Mr. Ken Dorsey  
Executive Director of Tank Car Safety  
Association of American Railroads  
425 3rd Street, SW, Suite 1000  
Washington, DC 20024

Re: AAR Renewal Applications E-177007

Mr. Dorsey:

Enclosed is the subject application for renewal of a 4" internal ball valve.

This valve design was previously approved under E-077036. Since the fitting has been in service for many years without incident, we are seeking a renewal of approval.

The following are enclosed as part of the application:

- Form AAR 4-7 with an attached table listing all related models/drawings
- All applicable valve assembly drawings
- Application Fee of \$400

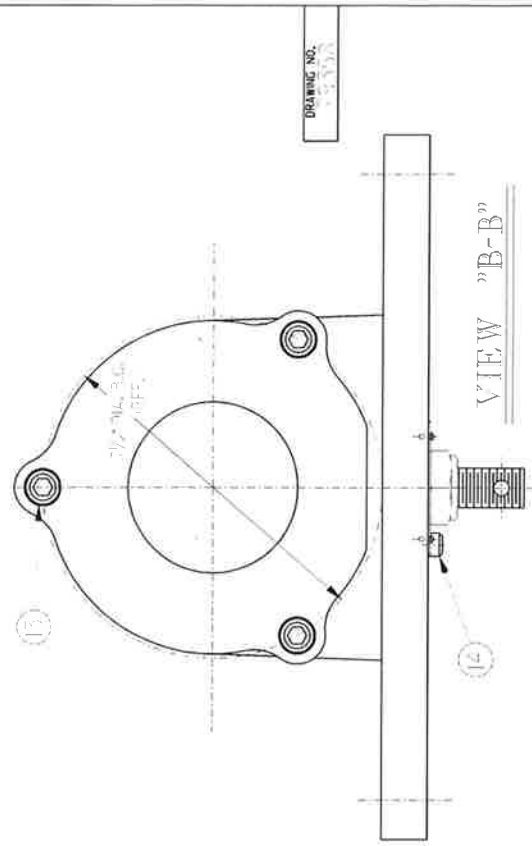
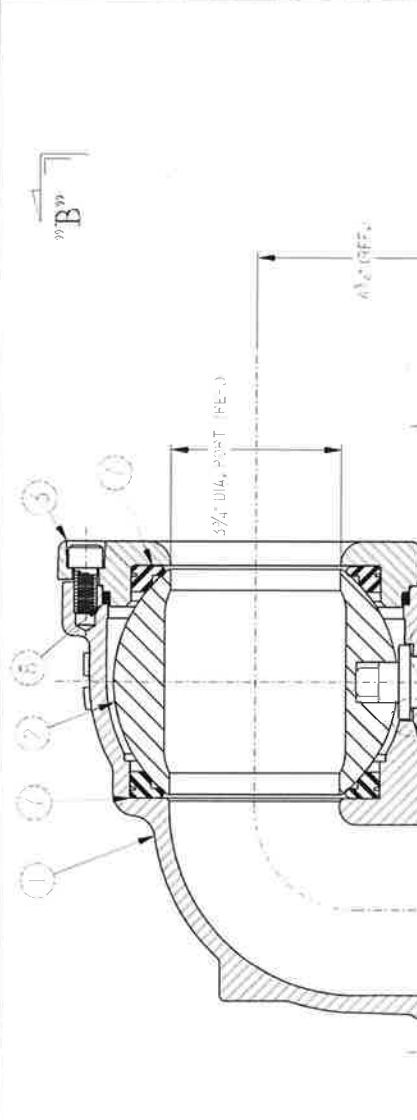
Please contact me at (318) 449-8263 or [beaubouefj@mckvalve.com](mailto:beaubouefj@mckvalve.com) if there are any questions regarding the application.

Sincerely,

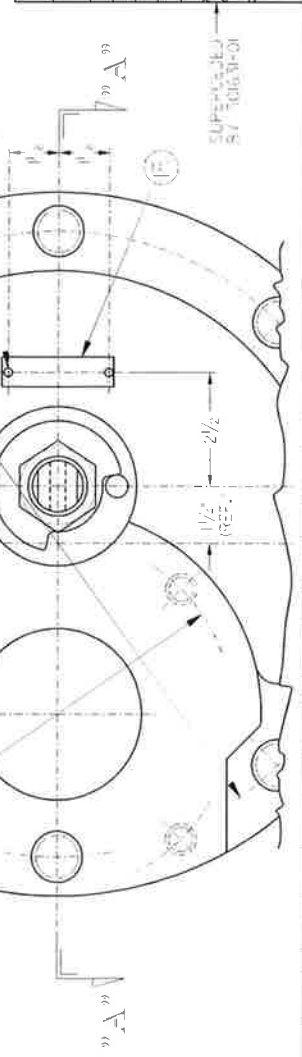
Jarred Beaubouef  
Product Engineer  
McKenzie Valve

Updates to Approved Drawings					
Drawing	Device ID / Model No.	Rev.	Date	Changes	Reason for Changes
79358	4-UFIRA-2236-TT-CCW	V	2/3/1995	N/A - Approved on Previous Application	N/A
		W	5/2/2011	Changes in materials that are compatible with the intended commodity service - Added option for Grafoil stem seals	To meet customer requirements
		X	5/23/2014	Changes in materials of construction - Packing gland material was changed from 316 SST to 17-4PH	To improve product reliability
New Internal Ball Valve Assemblies					
Drawing	Device ID / Model No.	Rev.	Date	Changes	Reason for Changes
501631	4-UFIRA-2236-TT-CW	C	5/23/2014	External Change - Cam stop installed such that the valve closes when the handle is rotated clockwise	To meet customer requirements
501642	4-UFIRA-3636-TT-CW	C	5/23/2014	Changes in materials of construction - Stainless steel body	To meet customer requirements
80395	4-UFIRA-3636-TT-CCW	S	5/23/2014	External Change - Cam stop installed such that the valve closes when the handle is rotated clockwise	To meet customer requirements
504382	4-UFIRA-3636-MT-CCW	B	5/23/2014	Changes in materials of construction - Stainless steel body	To meet customer requirements
				Changes in materials that are compatible with the intended commodity service - Seat material was changed to modified Teflon	To meet customer requirements

BILL OF MATERIAL					
SYM.	PART NO.	REQ.	DESCRIPTION	MATERIAL	WT. (LBS.)
1	2140-01	1	WELD	SAE 1020	0.11
2	1790-01	1	WELD	SAE 1020	0.11
3	2-510-01	1	RETAINER PLATE	SAE 1020	0.11
4	1320-01	1	SEAL RING	SAE 1020	0.11
5	2000-01	1	STEEL	SAE 1020	0.11
6	2000-01	1	STEEL	SAE 1020	0.11
7	4-200-01	2	SEAL RING	SAE 1020	0.11
8	4-200-01	1	WELD	SAE 1020	0.11
9	1-400-01	1	WELD	SAE 1020	0.11
10	2000-01	1	STEEL	SAE 1020	0.11
11	3000-01	1	WELD	SAE 1020	0.11
12	1-400-01	1	WELD	SAE 1020	0.11
13	3000-01	1	WELD	SAE 1020	0.11
14	3000-01	1	WELD	SAE 1020	0.11
15	1020-01	1	STEEL	SAE 1020	0.11
16	3000-01	2	WELD	SAE 1020	0.11



LINE	SYMBOL #9	PART NO.	SYMBOL #12	MATERIAL	REMARKS
09	1100-01	100-01	100-01	SAE 1020	
08	1100-01	100-01	100-01	SAE 1020	
07	1100-01	100-01	100-01	SAE 1020	
06	1100-01	100-01	100-01	SAE 1020	
05	1100-01	100-01	100-01	SAE 1020	
04	1100-01	100-01	100-01	SAE 1020	
03	1100-01	100-01	100-01	SAE 1020	
02	1100-01	100-01	100-01	SAE 1020	
01	1100-01	100-01	100-01	SAE 1020	



**UNION TANK CAR CO.**  
 1000 W. 10TH ST. ST. LOUIS, MO. 63101  
 PHONE 431-1000

DATE: 10/10/52  
 DRAWN BY: J.E. BROWN  
 CHECKED BY: J.E. BROWN  
 SCALE: 1" = 1" (AS SHOWN)  
 SHEET NO. 1 OF 1  
 DRAWING NO. 1000-01

NOTE:  
 1. DIM. 10 TO BE 1/4 DIA. & 1/4" L.  
 2. DIM. 11 TO BE 1/4 DIA. & 1/4" L.  
 3. DIM. 12 TO BE 1/4 DIA. & 1/4" L.

REVISIONS:  
 1. 10/10/52 J.E.B. 1000-01

REVISION	DATE	BY	CHKD	APP'D	DESCRIPTION
1	10/10/52	J.E.B.	J.E.B.	J.E.B.	1000-01

APPROVED FOR FABRICATION: \_\_\_\_\_  
 DATE: 10/10/52

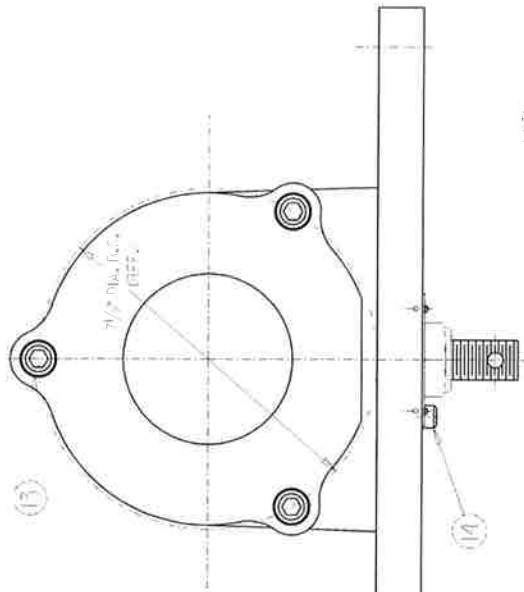
APPROVED FOR ASSEMBLY: \_\_\_\_\_  
 DATE: 10/10/52

APPROVED FOR SHIPPING: \_\_\_\_\_  
 DATE: 10/10/52

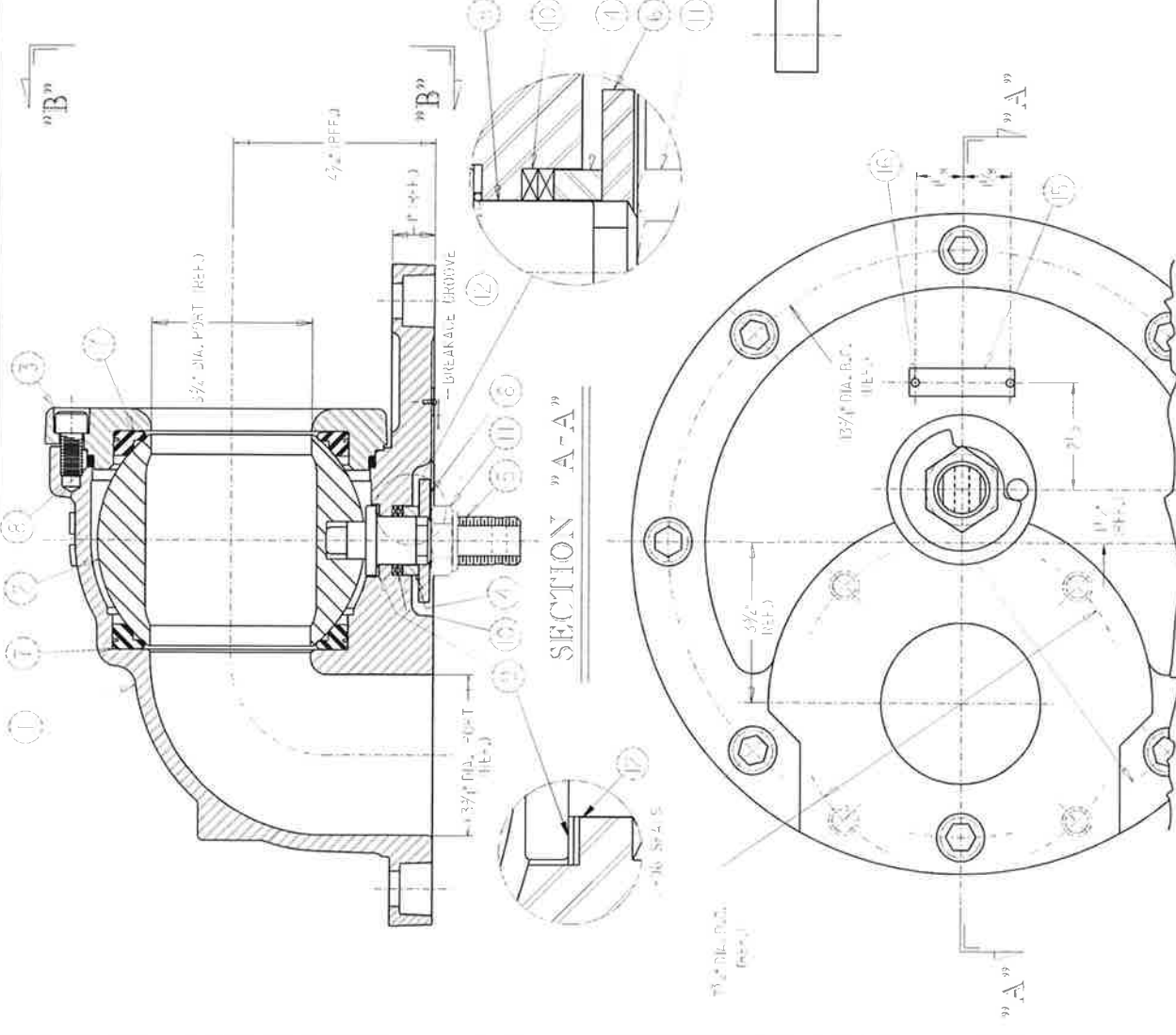
**BILL OF MATERIAL**

SYM.	PART NO.	RED.	DESCRIPTION	MATERIAL	WT. LBS.
1	21761-01	1	1 (22)	A-276 SST	0.1
2	17918-01	1	1 1/4" I.D.	304 SST	0.1
3	21376-01	1	1 RETAINER PLATE	A-276 SST	0.1
4	13171-01	1	1 O-RING, PACKING GLAND	17-2H SST	0.02
5	20654-01	1	1 STEM	SST	0.1
6	20333-01	1	1 STOP	A-276	0.05
7	44294-02	1	1 SEAT RING	A-276	0.05
8	44291-04	1	1 O-RING, T-FRINGE	17-2H SST	0.01
9	TABLE 0	1	1 1/4" I.D. O-RING	17-2H SST	0.01
10	229-6822	1	1 1/4" I.D. O-RING	17-2H SST	0.01
11	507-8805	1	1 O-RING, T.H.E., 1/4" I.D.	17-2H SST	0.01
12	SEE TABLE	1	1 O-RING, O-RING, 3/8" I.D.	SEE TABLE	0.01
13	507-9207	3	3 O-RING, 1/4" I.D. x 1/4" O.D. x 1/4" THK.	304 SST	0.03
14	507-11627	1	1 O-RING, 1/4" I.D. x 1/4" O.D. x 1/4" THK.	304 SST	0.01
15	102352-05	1	1 STAINLESS STEEL PLATE	A-276 SST	0.1
16	303-8735	2	2 3/8" I.D. x 1/2" I.D. x 1/2" THK. DRIVE TIE	304	0.1

DRAWING NO. 501631



NOTE: 1. SYM. #1 TO #17 ARE FOR THE VALVE AND HANDLE. 2. SYM. #18 TO #22 ARE FOR THE BALL AND SEAT.



LINE	SYM. #9	PART NO.	MATERIAL	SYM. #12
06	44691-31	44694-02	304 SS CH. CARB. WIP. ADPT.	
05	44281-23	208-6809	WITNESS EXTREME - 17	
04	44261-25	205-1241	304 SS WIP. ADPT.	
03	44261-23	205-1241	304 SS WIP. ADPT.	
02	44261-25	205-1241	304 SS WIP. ADPT.	
01	44261-23	205-1241	304 SS WIP. ADPT.	

DATE	SCALE	WORK	TEST	DATE

4" INTERNAL BALL TYPE UFR 2236TT HANDLE OPERATES CW TO CLOSE

DATE	SCALE	WORK	TEST	DATE

501631

UNION TANK CAR CO.  
EAST OREGON, OREGON 97030

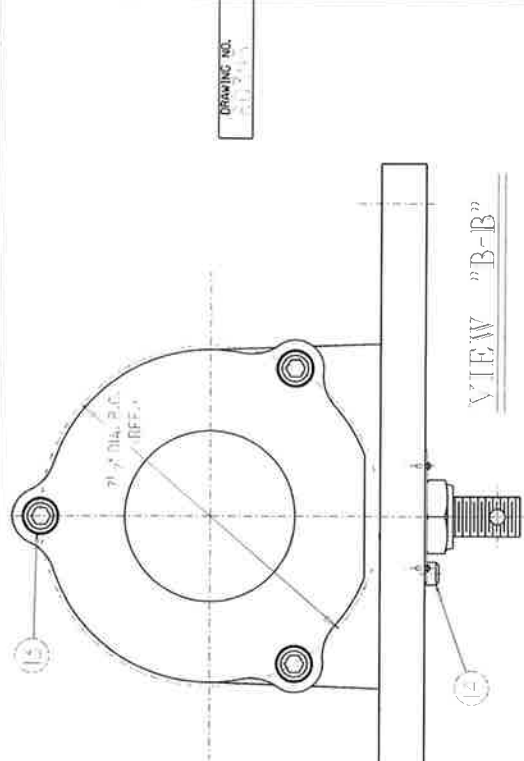
DEFAULT TOLERANCES - S/A DRAWING  
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED  
FRACTIONAL DIMENSIONS: 1/16"  
ANGULAR DIMENSIONS: ± 1°

REVISION	DATE	BY	CHKD	APP'D	DESCRIPTION

1 - 1/2" I.D. x 1/2" THK. PLATE  
1 - 1/2" I.D. x 1/2" THK. PLATE  
1 - 1/2" I.D. x 1/2" THK. PLATE



SYA	PART NO.	REQ.	DESCRIPTION	MATERIAL	MT. ASSY.
1	258701-01	1	100V	306 SST	8
2	1435-01	1	1435	306 SST	8
3	4250-01	1	HEATING ELEMENT	306 SST	8
4	4250-01	1	HEATING ELEMENT	306 SST	8
5	4250-01	1	HEATING ELEMENT	306 SST	8
6	SEE TABLE	1	HEATING ELEMENT	306 SST	8
7	4250-01	1	HEATING ELEMENT	306 SST	8
8	4250-01	1	HEATING ELEMENT	306 SST	8
9	4250-01	1	HEATING ELEMENT	306 SST	8
10	218-01	1	HEATING ELEMENT	306 SST	8
11	374-01	1	HEATING ELEMENT	306 SST	8
12	4250-01	1	HEATING ELEMENT	306 SST	8
13	4250-01	1	HEATING ELEMENT	306 SST	8
14	374-01	1	HEATING ELEMENT	306 SST	8
15	4250-01	1	HEATING ELEMENT	306 SST	8
16	304-01	1	HEATING ELEMENT	306 SST	8



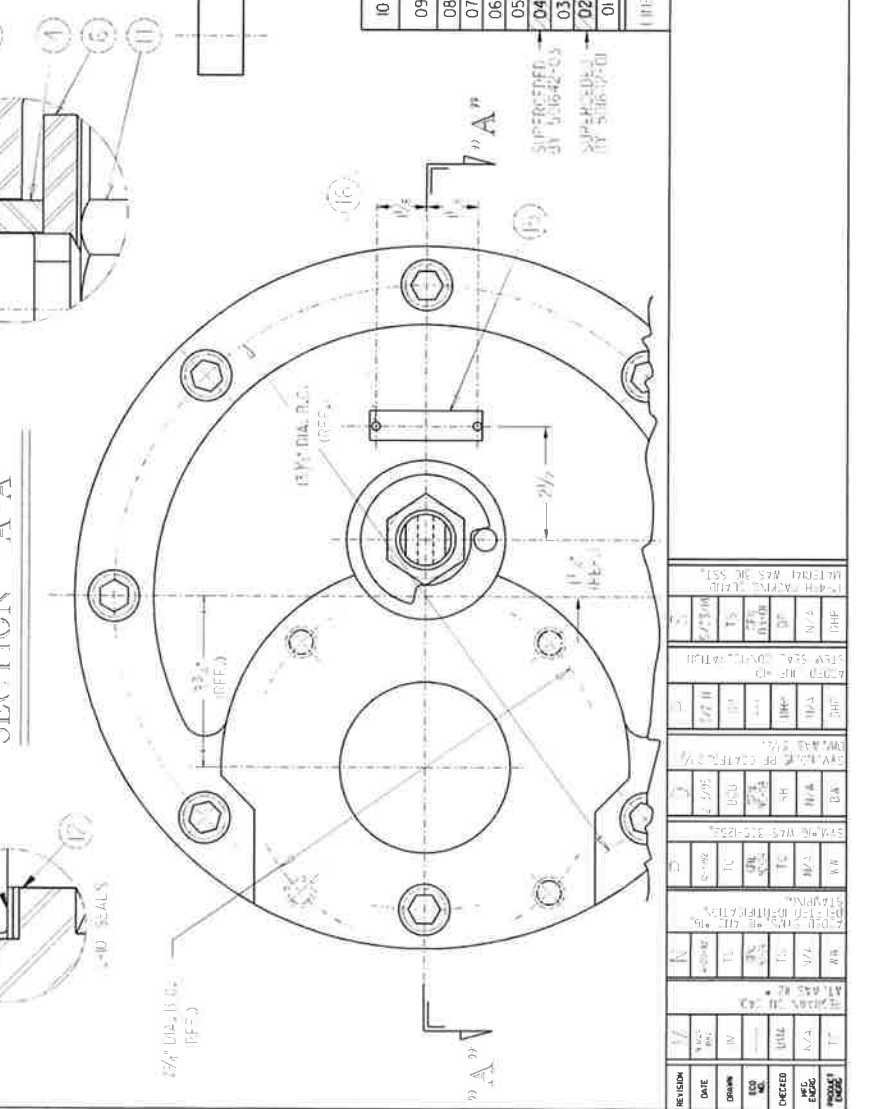
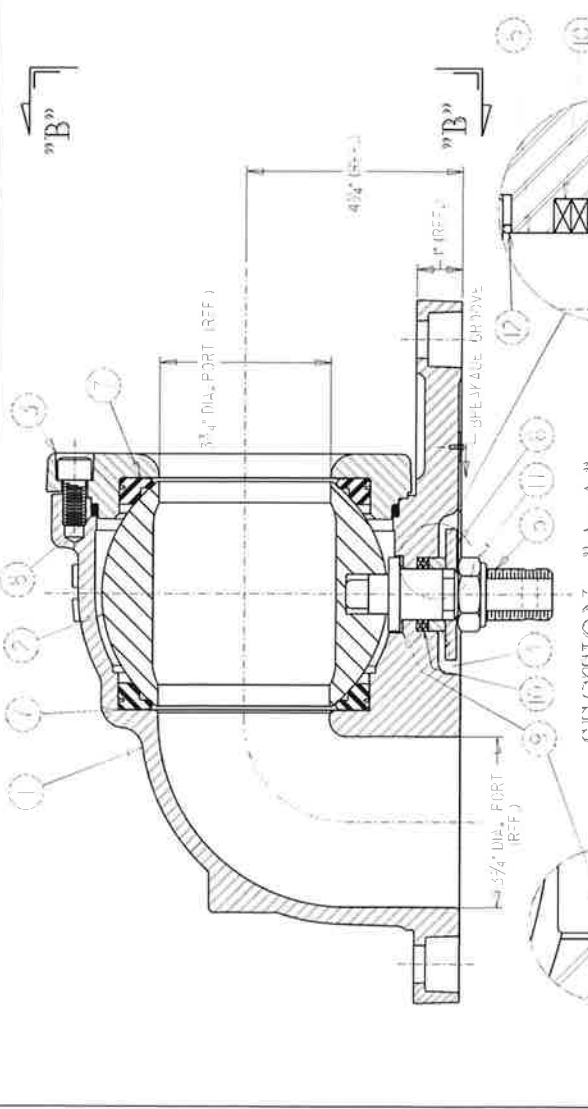
NOTE:  
 1. 304 SS TO BE 1 1/2" DIA. X 1/2" L. X 1/2" DIA. TUBULAR  
 CONSISTING OF ONE HEATER TUBE  
 ONE 3/4" DIA. TUBE

ITEM	PART NO.	QTY	DESCRIPTION	UNIT
10	4250-01	1	HEATING ELEMENT	EA
09	4250-01	1	HEATING ELEMENT	EA
08	4250-01	1	HEATING ELEMENT	EA
07	4250-01	1	HEATING ELEMENT	EA
06	4250-01	1	HEATING ELEMENT	EA
05	4250-01	1	HEATING ELEMENT	EA
04	4250-01	1	HEATING ELEMENT	EA
03	4250-01	1	HEATING ELEMENT	EA
02	4250-01	1	HEATING ELEMENT	EA
01	4250-01	1	HEATING ELEMENT	EA

**U** UNION TANK CAR CO.  
 1000 W. 10th St. - Chicago, Ill. 60608  
 TEL: 312-467-1000

DATE: \_\_\_\_\_  
 SCALE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_

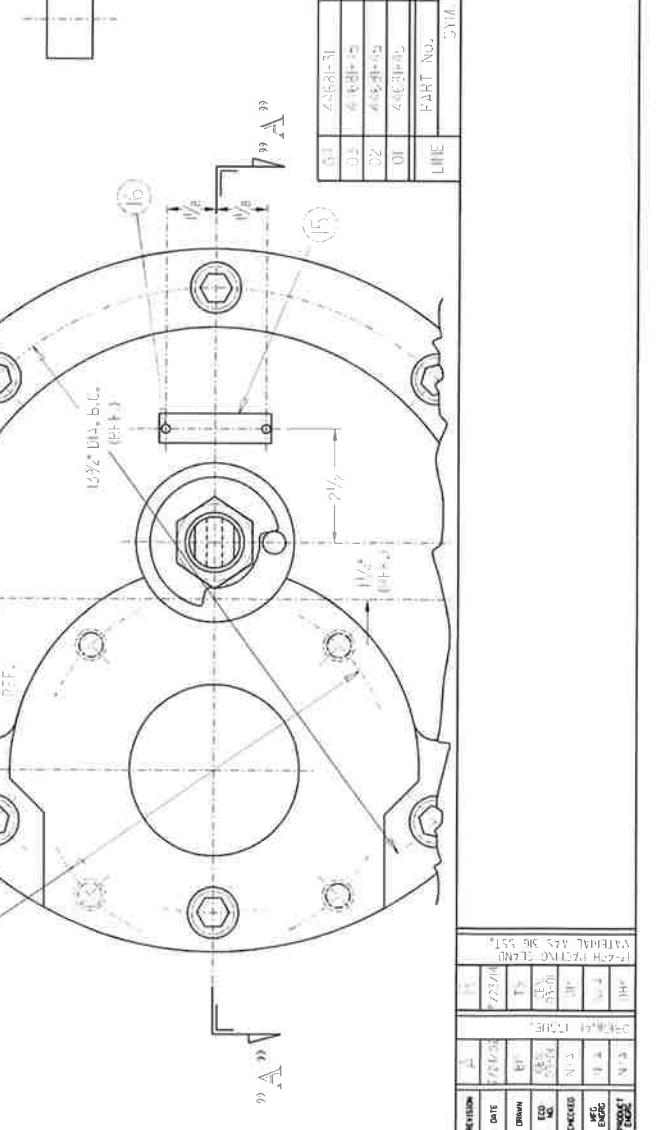
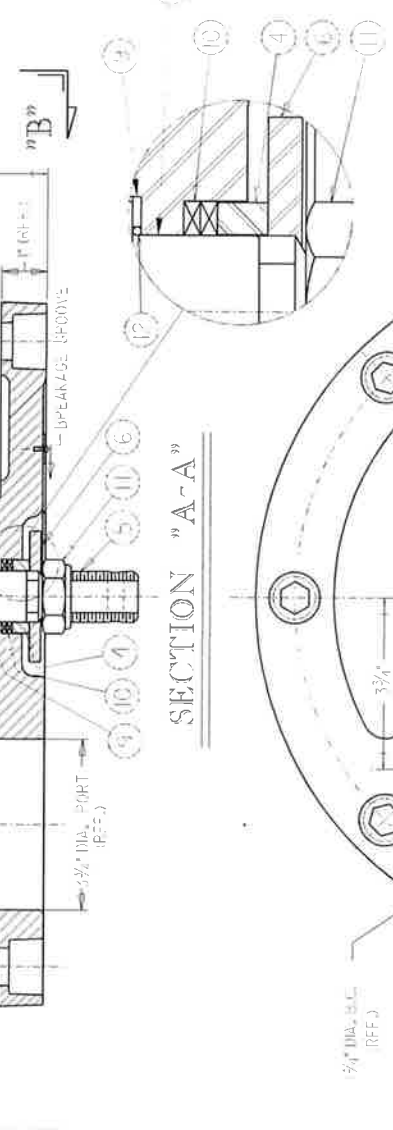
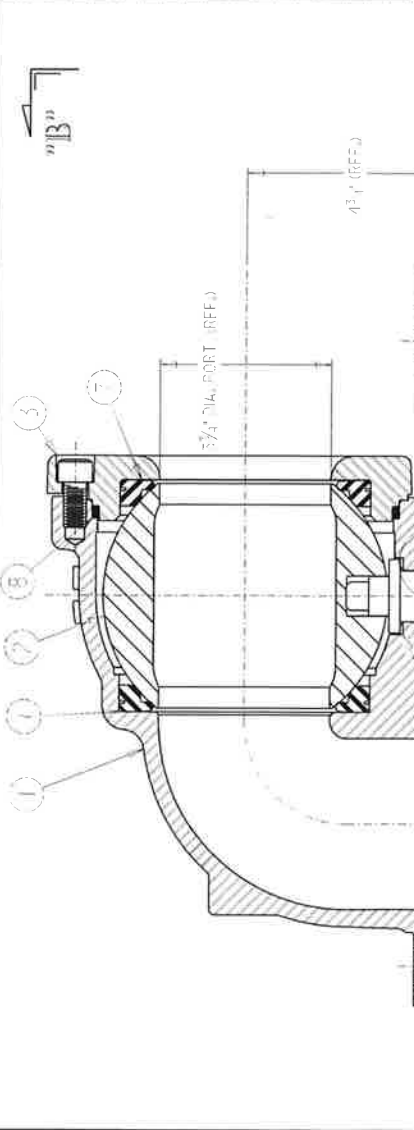
REVISION: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_



BILL OF MATERIAL

SYM.	PART NO.	QTY.	DESCRIPTION	MATERIAL	WT. LBS.
1	20RTS-01	1	BODY	316 SST	8.0
2	1498-01	1	BALL	316 SST	0.1
3	2763-01	1	RETAINER PLATE	316 SST	0.1
4	132T-01	1	SLEEVE, PACKING SLAVE	1/2" CH. SST	0.1
5	20S55-01	1	STEM	SST	1.1
6	20332-01	1	STOP	316	0.1
7	44275-01	2	SEAT, RING	316 FF 316	0.2
8	44274-02	1	GASKET, RING	316 (0.0435)	0.1
9	1468-15	1	GASKET, RING	316 (0.0435)	0.1
10	20H-4022	1	PA. RING, CH. ROD (R)	316 (0.0435)	0.1
11	304-8615	1	LOCK NUT, HEX, 1/2"-20 UNF-2	316 (0.0435)	0.1
12	304-8615	1	WASHER, 1/2" DIA. x 1/4" THK	316 (0.0435)	0.1
13	304-8615	1	WASHER, 1/2" DIA. x 1/4" THK	316 (0.0435)	0.1
14	304-8615	1	WASHER, 1/2" DIA. x 1/4" THK	316 (0.0435)	0.1
15	108222-02	1	STAMP, W. T. 2-A1	316 (0.0435)	0.1
16	304-8745	2	SCREW, 1/2" x 1/4" DIA. HD. 316F, TYP. II	316	0.1

DRAWING NO. 504382



VIEW "B-B"

1. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 2. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 3. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 4. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 5. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 6. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 7. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 8. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 9. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 10. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 11. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 12. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 13. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 14. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 15. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)  
 16. SYM. TO BE 1/2" DIA. x 1/4" THK. (SEE DIM. 11)

**U** UNION TANK CAR CO.  
 601 S. WASHINGTON ST.  
 ST. LOUIS, MO. 63102

**B** LATEST REVISION

4" INTERNAL BALL TYPE UFR 3636MT  
 HANDLE OPERATES CCW TO CLOSE

DATE: 11/15/51  
 DRAWN BY: J. W. BROWN  
 CHECKED BY: J. W. BROWN  
 PROJECT: 504382

LINE	PART NO.	QTY.	DESCRIPTION	MATERIAL
01	44681-31	1	GASKET, RING	316
02	44681-15	1	GASKET, RING	316
03	44681-01	1	GASKET, RING	316
04	44681-02	1	GASKET, RING	316

DEFAULT TOLERANCES - S/A DRAWING  
 ALL DIMENSIONS ARE UNLESS OTHERWISE NOTED  
 FRACTIONAL DIMENSIONS: ± 1/16"  
 ANGULAR DIMENSIONS: ± 1°

REVISION	DATE	BY	CHKD	APP
1	11/15/51	J. W. BROWN	J. W. BROWN	J. W. BROWN