

APPLICATION FOR APPROVAL OF VALVES AND FITTINGS

Applicant Union Tank Car Company AAR No. E-137036
 Description of Device Thermometer-well (Thermowell)

Applicant No. 509786, 509787, 510122 Device Ident. No. UTW Date 07/26/2013
510126

1. Manufacturer McKenzie Valve and Machining LLC
 Address 145 Airport Road City McKenzie State TN Zip 38201
 2. Test facility McKenzie Valve and Machining LLC Address 145 Airport Road
 3. Test date 07/08/2013 4. Observer Donald Prince

TEST PROCEDURE: 5. Weight or mass of device 1.3 - 2.1 lb. (0.59 - 1 kg)

6. Description of prototype testing: 3 Valves were hydro tested at 1.5 x CWP,

7. Description of production testing: 100% 80-100 PSIG test of seat/seal test with air or nitrogen

8. Cycles	Min. Temp.	@ Pressure	Cycles	Max. Temp.	@ Pressure	Test Medium	Remarks
	°F	psi		°F	psi		
	°C	kPa		°C	kPa		
Cycles	Min. Temp.	@ Pressure	Cycles	Max. Temp.	@ Pressure	Test Medium	Remarks
<u>N/A</u>	<u>70</u> °F	<u>750</u> psi	<u>N/A</u>	<u>70</u> °F	<u>750</u> psi	<u>water</u>	<u>Hydro Shell</u>
<u>3 valves</u>	<u>21</u> °C	<u>5,171</u> kPa	<u>6 valves</u>	<u>21</u> °C	<u>5,171</u> kPa		<u>Test</u>

9. Cycles	Min. Temp.	@ Pressure	Cycles	Max. Temp.	@ Pressure	Test Medium	Remarks
	°F	psi		°F	psi		
	°C	kPa		°C	kPa		
Cycles	Min. Temp.	@ Pressure	Cycles	Max. Temp.	@ Pressure	Test Medium	Remarks
<u>N/A</u>	<u>70</u> °F	<u>750</u> psi	<u>N/A</u>	<u>70</u> °F	<u>750</u> psi	<u>water</u>	<u>Hydro Shell</u>
<u>3 valves</u>	<u>21</u> °C	<u>5,171</u> kPa	<u>6 valves</u>	<u>21</u> °C	<u>5,171</u> kPa		<u>Test</u>

Cycles	Min. Temp.	@ Pressure	Cycles	Max. Temp.	@ Pressure	Test Medium	Remarks
	°F	psi		°F	psi		
	°C	kPa		°C	kPa		
Cycles	Min. Temp.	@ Pressure	Cycles	Max. Temp.	@ Pressure	Test Medium	Remarks

10. Initial commodity (or commodity type) * 11. Flow rate (if applicable) N/A gpm (N/A L/min)


Applicable drawings	Material	Drawing Number latest revision	Precedent	
			Drawing Number	Application/Certificate
12. Device application				
13. Device assembly	CS/SST	509786, 509787, 510122, 510126		Submitted
14. Device details				

15. Quality control statement: Manufacturer is M1003 certified and maintains a rigid quality control program to verify that all required specifications and tests are adhered to.

*Approval is sought for use with all nonregulated and regulated commodities which are compatible with use of top fittings.

REVISIONS:

CERTIFICATION: The above data is correct and conforms with AAR Specifications for Tank Cars, Appendix A. The devices tested conform with drawings listed above.

By: Donald Prince  7/26/13 Title: Chief Product Engineer - Valves

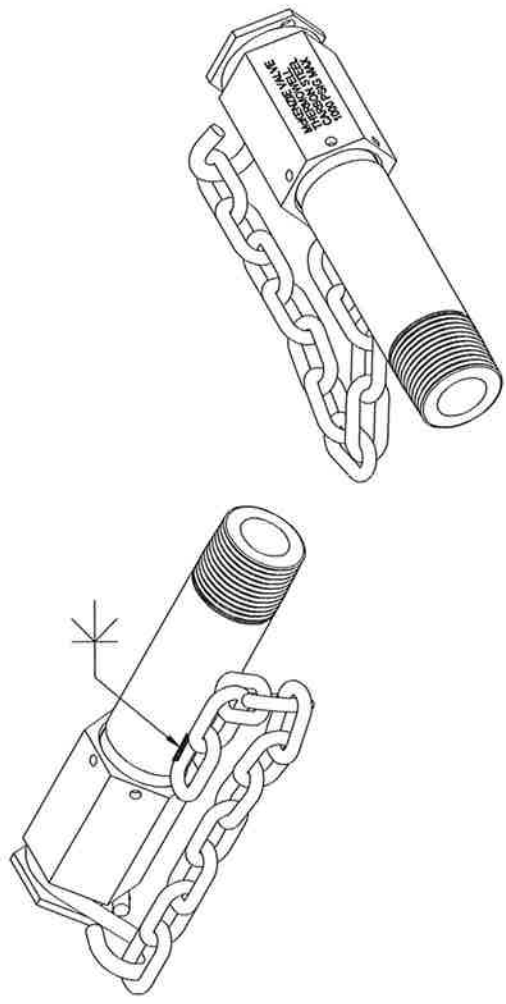
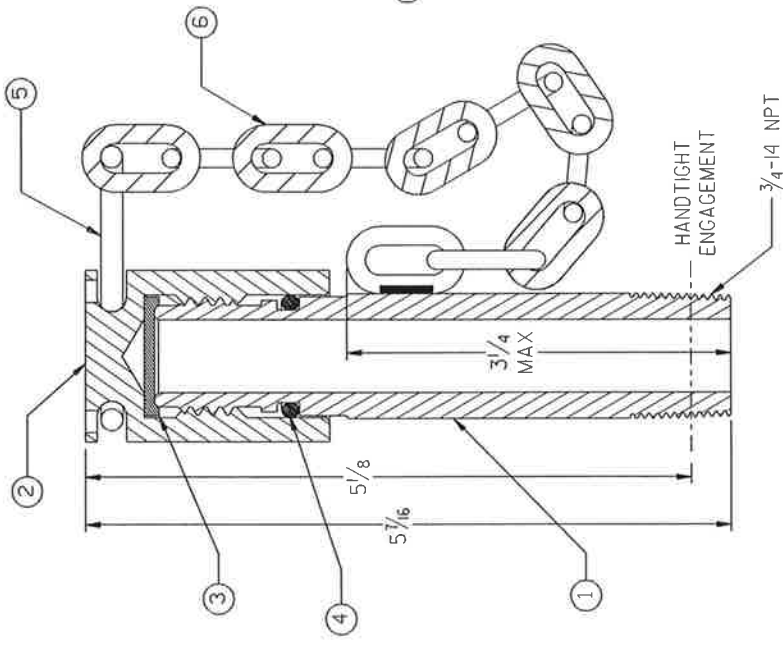
APPROVAL AAR Tank Car Committee

Date Approved SEP 02 2014 
 (Signature) on behalf of Tank Car Committee

E-137036

BILL OF MATERIAL

SYM.	PART NO.	REQ.	DESCRIPTION	MATERIAL	WT. (LBS.)
1	110886-01	1	BODY, THERMOWELL, 3/4 NPT	CS	0.68
2	110887-01	1	CAP, THERMOWELL, 3/4 NPT	CS	0.40
3	DD80014-1	1	GASKET, 1 X 1/8 THK	BUNA-N	0.01
4	208-16033	1	O-RING, SIZE 2-210	BUNA-N	0.01
5	110888-01	1	S-HOOK	CS	0.042
6	110889-01	1	CHAIN, 1/8IN PROOF COIL	CS	0.133



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

UNION TANK CAR COMPANY
 1000 W. 10TH ST. & BARRAGE AVE.
 EAST CHICAGO, ILLINOIS 60626
 LATEST REVISION

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THERMOMETER WELL
 3/4" NPT MOUNT
 CARBON STEEL

DRAWN BY	DATE	SCALE	WEIGHT	CHECKED
DP	3/26/12	FULL	1.3"	TS

MFG.	PRODUCT	DHP
N/A		

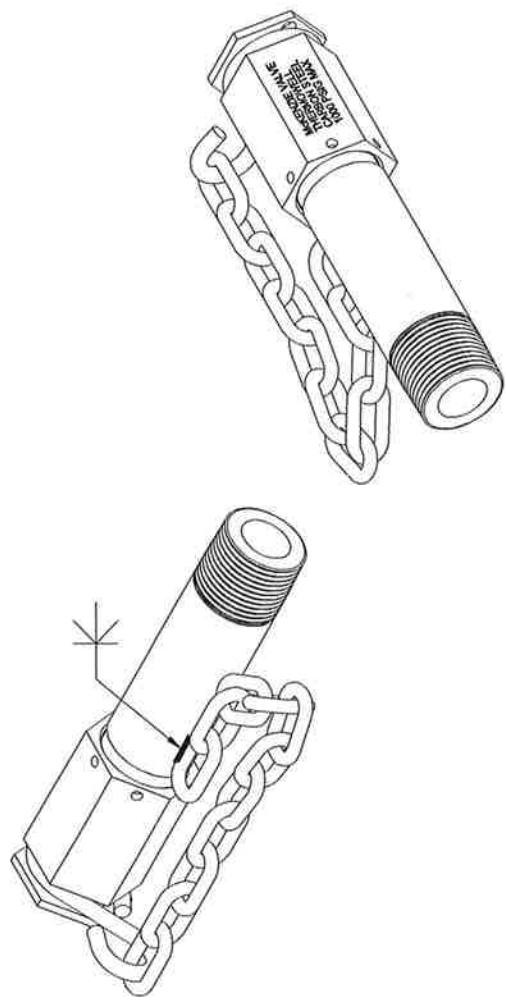
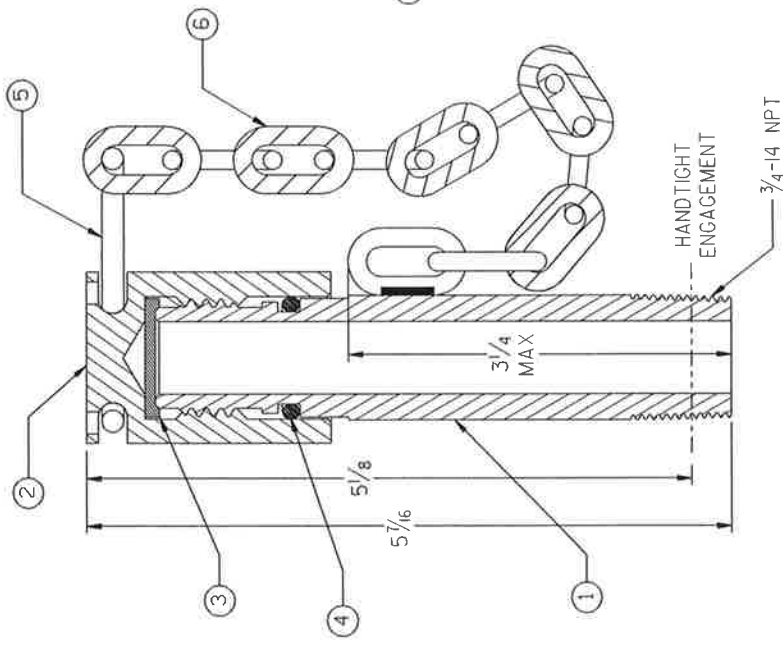
ENGINEERING APPROVALS
 DRAWING NO. 509786

FIRST USED WITH: _____ REPRO OF: _____ SEQUENCE NO. 6215

B-SIZE

BILL OF MATERIAL

SYM.	PART NO.	REQ.	DESCRIPTION	MATERIAL	WT. (LBS.)
1	110886-02	1	BODY, THERMOWELL, 3/4 NPT	316 SS	0.68
2	110887-02	1	CAP, THERMOWELL, 3/4 NPT	316 SS	0.40
3	DD00014-1	1	GASKET, 1X 1/8 THK	BUNA-N	0.01
4	208-16033	1	O-RING, SIZE 2-210	BUNA-N	0.01
5	110888-02	1	S-HOOK	SST	0.042
6	110889-02	1	CHAIN, 1/8IN 2-ROOF COIL	SST	0.133



DEFAULT TOLERANCES - S/A DRAWING
 ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
 FRACTIONAL DIMENSIONS: $\pm \frac{1}{16}$
 ANGULAR DIMENSIONS: $\pm 1^\circ$

UTLX
 THE TANK CAR PEOPLE
 UNION TANK CAR COMPANY
 2515 E. HARVARD AVE
 EAST OREGON, OREGON 97022
 LATEST REVISION **A**

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THE THERMOMETER WELL
 3/4" NPT MOUNT
 316 STAINLESS STEEL

DRAWN BY	DATE	SCALE	WEIGHT	CHECKED
DP	3/27/12	FULL	1.3#	TS
WELDING	MFG.	PRODUCT	DRAWING NO.	
N/A	DHP	509787	509787	

ENGINEERING APPROVALS

REVISION	DATE	DRAWN	ECO. NO.	CHECKED	MFG. ENGRG	PRODUCT ENGRG
A	21 MAR 2012	DP	GEN. 03-01	TS	N/A	DHP

ORIGINAL ISSUE.

FIRST USED WITH: _____ REPRO OF: _____ SEQUENCE NO. 6215

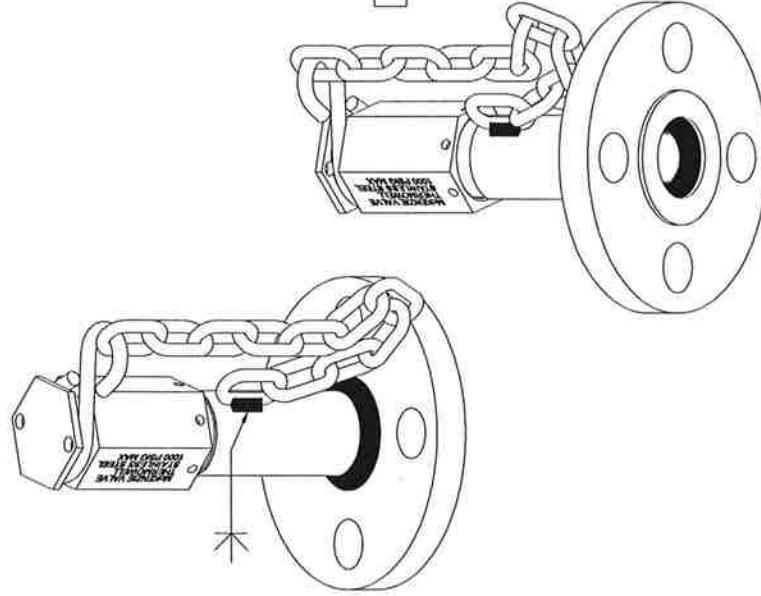
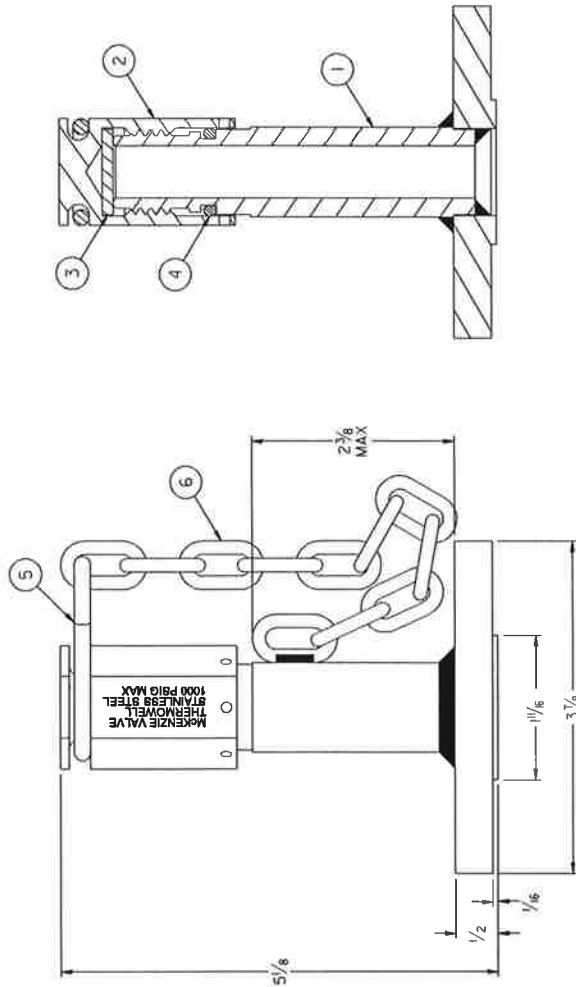
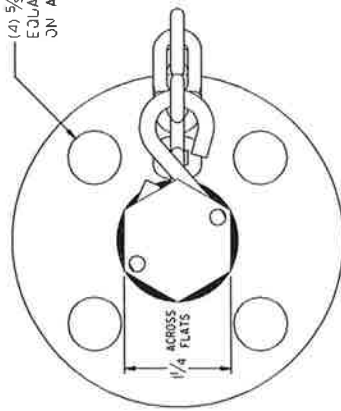
B-SIZE

BILL OF MATERIAL			MATERIAL		# T. (LBS.)	
SYM.	PART NO.	REQ.	DESCRIPTION			
1	510121-02	1	BODY & FLANGE S/A, WELDING	SST	1.85	
2	10887-02	1	CAP, THERMOWELL	SST	0.40	
3	080014-1	1	GASKET, 1X, 7/8 THK	BUNA-N	0.01	
4	208-16033	1	O-RING, SIZE 2-210	BUNA-N	0.01	
5	10888-02	1	S-HOOK	SST	0.042	
6	10889-02	1	CHAIN, 7/16IN. PROOF-COIL	SST	0.133	

NOTES:

1. CENTER THE WELDED CHAIN LINK BETWEEN 5/8 DIA. BOLT HOLES.

(4) 5/8 DIA. HOLES
EQUALLY SPACED
ON A 2 3/4 DIA. R.C.



UTLX THE TANK CAR PEOPLE
UNION TANK CAR COMPANY
SAFETY REGION
AT ALL TIMES WEAR YOUR SAFETY BELT

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510126
DRAWING

DATE	SCALE	WEIGHT	CHECKED
07/27/02	FULL	Z3045*	DP
N/A	N/A	DHP	
ISSUED FOR APPROVALS			
510126			
DRAWING NO.			

FLANGED THERMOMETER WELL S/A
STAINLESS STEEL

REPRO OF: 5019186 - SEQUENCE NO. 526

DEFAULT TOLERANCES - S/A DRAWING
ALL DIMENSIONS UNLESS SPECIFIC TOLERANCE NOTED
FRACTIONS DECIMALS
INCHES MILLIMETERS
FRACTIONS DECIMALS

REVISION	DATE	BY	CHKD	APPV	REASON
A	07/27/02	TS	DP	N/A	DHP
B	07/27/02	TS	DP	N/A	DHP

ORIGINAL ISSUE:
DHP

DELETED SEPARATED FINISH
FOR GASKET SURFACE

C-SIZE

E-137036