10285.35W

FA456	187
	152
	235
	160
	231
	234
	203
	205
	222
	245
	159
	181
	244
	145
	189
	111
	194
	170
	182
	230
	186
	178
	116
	226
	169
	151
	199
	156

FA456	202
	208
	192
	227
	161
	155
	223
	184
	177
	240
	173
	164
	241
	237
	185
	198
	239
	195
	153
	234

59752

MTE Report No: 59752
Part#: 10285
WO#:

Certificate of compliance and test report – welded or brazed cylinders
Manufactured under Dept. of Transportation regulations

Manufacturer: MANCHESTER TANK & EQUIP.

Location: 3630 Manchester Drive, ELKHART, IN 46514 USA

CYLINDER DESCRIPTION AND DESIGN CRITERIA:

DOT spec. 4BA

Service Pressure: 400 psi

Nominal size: 12.000in. I.D.x 13.625in. Long

Test Pressure: 800 psi

Nominal volumetric capacity: 47.6 lb

Minimum wall: 0.119 in.

Tare weight range: 27.00 - 29.00 lb

Calculated stress @ T.P: 34989 psi

Joint Efficiency:

MANUFACTURING PROCESS:

Construction: (Welded, brazed, type seams, etc)

These Cylinders were made by process of electric arc welding two semi-elliptical heads with Joggle butt joint.

MATERIAL AND HEAT TREATMENT:

Material was type 3 authorized in Table 1 of Appendix A of Part 178.

The material was identified by Heat Numbers: 229720

REPORT DETAILS:

Quantity: 145

Test date: 10/2018

Serial# Range: FA456102 – FA456246

Heat no. or code: G108

Identifying symbol: M4499

Lot numbers: 1 - 1

MARKINGS:

Inspector's mark: JS

MANUFACTURED FOR: STOCK

CONSIGNED TO:

I hereby certify that I have determined that cylinders described on this report comply with the requirements of Dept. of Transportation specification Title 49 CFR, Section 178.51

Remarks: Tare Weights include valves.

Signed:
JIM SOMMER

Location: ELKHART, IN

Date: 10-19-18

MTE Report No: 59752

Record of chemical analysis of material for cylinders

Serial no range: FA456102 to FA456246 inclusive

Cylinder size: 12.000in. I.D. x 13.625in. long

Cylinder Manufacturer: MANCHESTER TANK & EQUIP.

Heat and Code number.	Type of Analysis (ladel/check	Chemical Analysis									
		C Ni	Mn Cu	P Cr	S Mo	Si Ti	Al Mg	Cb Zn	V Fe	Other 1 Name – Sym Other 2 Name - Sym	
G108 - 229720	Ladle	0.200 0.040	0.530 0.120	0.015 0.090	0.002 0.020	0.230 0.001	0.020 0.000	0.000 0.000	0.001 0.000	- -	
MANUF BY: NORTHSTAR TESTED BY: NORTHSTAR											

Material manufacturer: Manufacturers listed in above data.

The above analyses have been verified to comply with material authorized by the specification. Chemical Analyses were made by Companies listed in above data.

Location: ELKHART, IN

Date: 10-19-18

MTE Report No: 59752

Record of physical test of material for cylinders

Serial no range: FA456102 to FA456246 inclusive

Cylinder size: 12.000 in. I.D. x 13.625 in. long

Cylinder Manufacturer: MANCHESTER TANK & EQUIP.

Type of heat treatment: Cylinders were heat treated in excess of 1100F, in accordance with the 4BA Cylinder Spec.

First Serial# Last Serial# Min Wall Thick Wall Stress	Lot number	Heat Code	Yield strength Psi	Tensile strength Psi	Yield/ tensile ratio*	Elongation % in Inches** Length	Elongation % in Inches** %	Red in area %	Weld test * tensile bend	Flat test *	Burst test *	Cycle test *
FA456102	1-HT	G108	54773	75279	%	3.096	18.9	53.1	SAT			
FA456246	1-HB	G108	58335	76960	%	3.024	21.4	57.4				
0.125 in	1-S											
33344 psi	1-W			91056					SAT			

HT – Head Top HB – Head Bottom S – Side Wall W – Weld PM – Parent Material SAT - Satisfactory

* Where applicable

** Insert gage length of specimen

Location: ELKHART, IN

Date: 10-19-18

Record of hydrostatic tests of cylinders (sample basis)

Serial no range: FA456102 to FA456246 inclusive

Cylinder size: 12.000 in. I.D. x 13.625 in. long

Cylinder Manufacturer: MANCHESTER TANK & EQUIP.

Test method: Water Jacket method, per CGA C-1.

Test pressure: 800 psi

Lot #	Serial # Range	Lot Size	Permanent Expansion Cm^3	Total Expansion Cm^3	% Ratio of Permanent to Total Expansion	Volumetric Capacity (lbs.)
1	FA456102 - FA456246	145	1.30	59.30	2.2	47.6

The above results represent sample cylinders selected from each lot. All other cylinders in the lot were subjected To a proof pressure of 800 psi and showed no defects.

Location: ELKHART, IN

Date: 10-19-18