

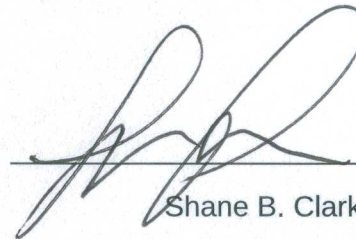
# UNIVERSITY OF CALIFORNIA, SAN DIEGO

7835 Trade St. #100  
San Diego, CA 92121  
+1-858-536-3225

## CONTENTS CERTIFICATE

DATE: 28-APR-2021

SIGNATURE: \_\_\_\_\_



Shane B. Clark

MATERIAL	CONTENTS	PRESSURE	FILL DATE	LOT NUMBER	CYLINDER NUMBER	CYLINDER SPECIFICATION	ORIGINAL TEST DATE	UE TEST DATE
Natural Air		1825psig @ 19C	01-JUL-20	17992	CC178269	DOT-3AL-2015	Oct-03	Apr-21
Natural Air		1800psig @ 19C	29-NOV-18	17992	CC178444	DOT-3AL-2015	Oct-03	Apr-21
Natural Air		1750psig @ 19C	29-NOV-18	17992	CC180655	DOT-3AL-2015	Nov-03	Apr-21



## Recertification Report

From: 1/1/2000 - 4/6/2021

Disposition Codes

P = Pass C = Calibrate

F = Fail I = Invalid

Pass: 6

Fail: 0

Total: 6

Date	UE Operator	Serial Number	Cylinder		Service		Cylinder		DOT	Lot #	Test Results	
			OD	Length	Gas	LTD	Month/Year	Material	Rating		UE	Visual
4/1/2021	Gus Sanchez Level II	CC178269	8.0	48.0	CD	LUX	10/2003	3AL	2015	17992	P	P
4/1/2021	Gus Sanchez Level II	CC177841	8.0	48.0	CD	LUX	10/2003	3AL	2015	17992	P	P
4/1/2021	Gus Sanchez Level II	CC180655	8.0	48.0	CD	LUX	11/2003	3AL	2015	17992	P	P
4/1/2021	Gus Sanchez Level II	CC177837	8.0	48.0	CD	LUX	10/2003	3AL	2015	17992	P	P
4/1/2021	Gus Sanchez Level II	CC178444	8.0	48.0	CD	LUX	10/2003	3AL	2015	17992	P	P
4/1/2021	Gus Sanchez Level II	CC177811	8.0	48.0	CD	LUX	10/2003	3AL	2015	17992	P	P

- The star mark was applied where appropriate and the user/owner must remove it if the cylinder is not used and maintained in accordance with CFR Title 49
- In accordance with CFR 49 § 180.205(i)(2) the cylinders noted with a result of "FAIL" are CONDEMNED and may not be filled with hazardous material and offered for transportation in commerce where use of a specification packaging is required. Tests performed under DOT-SP 14920 RIN H776

Dapco Industrial Ultrasonic Cylinder Inspection System Model: RTS 300

Transducer	Frequency	Size
Thickness	5.0 Mhz	1/2 inch diameter
Longitudinal	3.5 Mhz	5/8 inch diameter
Transversal	3.5 Mhz	5/8 inch diameter
Oblique	2.25 Mhz	5/8 inch diameter

FROM :

FAX NO. :

Mar. 01 2005 02:16PM P18

**Arrowhead Industrial Services, Inc.**  
**Compressed Gas Container Specialists**  
**REPORT OF INSPECTION OF GAS CONTAINERS**

Our  
File **LUXFER-03**.....  
Prod # 50232....  
Sales  
Order # 6609931...

Report
No. <b>L.R10626</b>
Sheet No. ....
of ..... sheets

P/N: N150

Manufactured for  
Location at Luxfer Gas Cylinders  
Riverside, California

Manufactured by  
Location at Luxfer Gas Cylinders  
Riverside, California

Consigned to  
Location at Luxfer Gas Cylinders  
Riverside, California

Quantity 103 Size 8.00 inches(203.200 mm) outside diameter by 47.873 inches(1215.974mm)long.  
Marks stamped into the shoulder of the cylinders.MIN.VOLUME:1800cu.in.(29.50Ltr)

Specifications: TC - 3ALM 139  
DOT - 3AL 2015

Serial numbers CC177803 to CC177905 Inclusive

Inspector's Mark



Identifying symbol (registered) LUXFER

Test date 10 A 03

Tare weights (yes or no) NO

Other marks (if any)

These containers were made by process of extrusion. These cylinders were heat treated by the process of solution heat treat and aging.

The material used was identified by the following alloy numbers 6061.

The material used was verified as to chemical analysis and record thereof is attached hereto. The heat numbers were marked on the material. See hydrostatic test sheets.

All material, such as plates, billets and seamless tubing, was inspected and each container was inspected both before and after closing in the ends; all that was accepted was found free from seams, cracks, laminations, and other defects which might prove injurious to the strength of the container. The process of manufacture and heat treatment of containers were supervised and found to be efficient and satisfactory.

The container walls were measured and the minimum thickness noted was .358 inch(9.042 mm). The outside diameter was determined by a close approximation to be 8.00 inches(203.200 mm). The wall stress was calculated to be 32,104.38 pounds per square inch (221.360 megapascals) under an internal pressure of 3358 pounds per square inch (23.152 megapascals). Hydrostatic tests, flattening tests, tensile test of material, and other test as prescribed in Department of Transportation Specification No. 3AL and Transport Canada Specification No. 3ALM were made in the presence of the inspector and all material and containers accepted were found to be in compliance with the requirements of that specification. Records thereof are attached hereto.

I hereby certify that all of these containers proved satisfactory in every way and comply with the requirements of Department of Transportation Specification No. 3AL and Transport Canada Specification No. 3ALM except as follows:

Exceptions:

R. Gerry Wilson  
Arrowhead Industrial Services, Inc.

Inspector:

  
Allen J. Schmidt  
October 16, 2003

FROM :

FAX NO. :

Mar. 01 2005 02:16PM P19

## ARROWHEAD INDUSTRIAL SERVICES, INC.

## RECORD OF CHEMICAL ANALYSIS FOR ALUMINUM COMPRESSION GAS CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

REPORT DATE: October 16, 2004

OR Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

SYMBOL LUXFER

NUMBERED CC177803 TO CC177905 INCLUSIVE

ALUMINUM ALLOY 6061

ILL	HEAT	CHECK														
DATE	NO.	ANALYSIS														
CODE	NO.	NUMBER	CU	SI	FE	MN	MG	ZN	TI	GA	NI	PB	IN	PT	V	CR
25 (S)	277621		0.24	0.60	0.16	0.03	0.90	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.080
26 (S)	279121		0.24	0.59	0.16	0.03	0.90	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.080

ALUMINUM WAS MANUFACTURED AND MILL ANALYSIS MADE BY:

KITIMAT WORKS, ALCAN ALUMINUM, CANADA.

CRESSONA ALUMINUM COMPANY, CRESSONA, PA.

SHAWINIGAN WORKS, ALCAN ALUMINUM, CANADA.

ALCOA, SPANTSH FORK, UT.

ORIGINALS OF CERTIFIED MILL ANALYSIS AND CHECK ANALYSIS REPORTS ARE IN THE FILES OF THE MANUFACTURERS.

CHECK ANALYSIS MADE BY: ALCAN INGOT IN SEBREEF, KENTUCKY; ALCAN INGOT IN HENDERSON, KENTUCKY; OR

TIMCO ALUMINUM SMELTERS IN FONTANA, CA

APPLICABLE CODES ARE STAMPED INTO EACH CYLINDER

ARROWHEAD INDUSTRIAL SERVICES, INC.  
RIVERSIDE, CA

FROM :

FAX NO. :

Mar. 01 2005 02:17PM P20

## ARROWHEAD INDUSTRIAL SERVICES, INC.

## RECORD OF PHYSICAL ANALYSIS FOR COMPLETED CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

OR Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

NUMBERED CC177803 TO CC177905 INCLUSIVE

REPORT DATE: October 16, 2003

SYMBO: LUXFER

QTY	CYLINDERS	YIELD STRENGTH	TENSILE	ELONGATION	ROCKWELL "R"	2 1/8" RADIUS
QTY*	REPRESENTED	AT 0.2% OFFSET	STRENGTH	% IN	HARDNESS	FLATTENING
	SERIAL NOS.	(POUNDS/SQ. IN.)	(POUNDS/SQ. IN.)	2.0"AW		TEST
1	CC177803 THRU CC177827	47800	52500	17.0	62.0	PASSED
		47600	52200	17.0	62.0	9T FLAT TEST
2	CC177858 THRU CC177885	46400	52500	18.0	61.0	PASSED
		45900	52200	21.0	61.0	9T FLAT TEST
3	CC177886 THRU CC177905	47800	52600	16.0	62.0	PASSED
		48100	53100	17.0	62.0	9T FLAT TEST

APPLICABLE CODES ARE STAMPED INTO EACH CYLINDER  
TENSILE TESTS MADE ON 0.5" WIDTH BY 2.0" GAUGE LENGTH. ASTM B557

ARROWHEAD INDUSTRIAL SERVICES, INC.  
RIVERSIDE, CA

FROM :

FAX NO. :

Mar. 01 2005 02:17PM P21

## ARROWHEAD INDUSTRIAL SERVICES, INC.

## RECORD OF HYDROSTATIC TESTS ON ALUMINUM COMPRESSED GAS CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

OR LUXFER

NUMBERED CC177803 TO CC177908 INCLUSIVE

TEST PRESSURE: 1360

CYLINDER S/N	CAST CODE	HEAT LOT	TARE WEIGHT (LBS.)	WATER CAPACITY (LBS.)	TOTAL EXPANSION (CC)	PERMANENT EXPANSION (CC)	RATIO	TYPE	HYDRO TEST DATE
CC177803	925	041C	48.88	65.23	186.20	0.00	0.32	3	15 Oct 2003
CC177804	925	041C	48.73	65.32	186.50	1.10	0.59	3	15 Oct 2003
CC177805	925	041C	48.86	65.18	186.40	1.30	0.70	3	15 Oct 2003
CC177806	925	041C	48.83	65.17	192.00	2.20	1.15	3	15 Oct 2003
CC177807	925	041C	48.81	65.22	191.40	2.40	1.25	3	15 Oct 2003
CC177808	925	041C	48.83	65.20	186.00	2.10	1.13	3	15 Oct 2003
CC177809	925	041C	48.76	65.18	188.10	3.30	1.75	3	15 Oct 2003
CC177810	925	041C	48.75	65.21	190.90	1.00	0.52	3	15 Oct 2003
CC177811	925	041C	48.74	65.24	191.30	1.00	0.52	3	15 Oct 2003
CC177812	925	041C	48.93	65.16	187.40	2.10	1.12	3	15 Oct 2003
CC177813	925	041C	48.81	65.13	189.00	1.30	0.69	3	15 Oct 2003
CC177814	925	041C	48.77	65.19	193.00	2.40	1.24	3	15 Oct 2003
CC177815	925	041C	48.80	65.18	190.50	1.50	0.79	3	15 Oct 2003
CC177816	925	041C	48.83	65.22	192.50	2.40	1.25	3	15 Oct 2003
CC177817	925	041C	48.87	65.12	189.90	1.20	0.63	3	15 Oct 2003
CC177818	925	041C	48.76	65.14	192.20	1.50	0.78	3	15 Oct 2003
CC177819	925	041C	48.85	65.14	190.20	2.70	1.42	3	15 Oct 2003
CC177820	925	041C	48.73	65.12	187.50	1.90	1.01	3	15 Oct 2003
CC177821	925	041C	48.81	65.21	189.20	2.60	1.37	3	15 Oct 2003
CC177822	925	041C	48.73	65.20	190.50	2.00	1.02	3	15 Oct 2003
CC177823	925	041C	48.73	65.23	191.80	1.50	0.78	3	15 Oct 2003
CC177824	925	041C	48.90	65.06	188.30	2.90	1.54	3	15 Oct 2003
CC177825	925	041C	48.71	65.13	187.40	2.30	1.23	3	15 Oct 2003
CC177826	925	041C	48.68	65.23	192.20	3.20	1.66	3	15 Oct 2003
CC177827	925	041C	48.69	65.20	193.40	3.00	1.55	3	15 Oct 2003
CC177828	926	087D	48.68	65.15	187.00	1.00	0.56	3	15 Oct 2003
CC177829	926	087D	48.73	65.15	186.80	2.00	1.07	3	15 Oct 2003
CC177830	926	087D	48.70	65.18	189.80	1.20	0.63	3	15 Oct 2003
CC177831	926	087D	48.77	65.06	190.80	1.70	0.89	3	15 Oct 2003
CC177832	926	087D	48.70	65.16	188.40	2.70	1.43	3	15 Oct 2003
CC177833	926	087D	48.65	65.23	188.30	2.80	1.49	3	15 Oct 2003
CC177834	926	087D	48.67	65.17	190.60	1.50	0.79	3	15 Oct 2003
CC177835	926	087D	48.69	65.23	190.30	1.30	0.68	3	15 Oct 2003
CC177836	926	087D	48.73	65.11	180.50	1.90	1.01	3	15 Oct 2003
CC177837	926	087D	48.70	65.15	189.30	2.20	1.16	3	15 Oct 2003
CC177838	926	087D	48.63	65.06	190.20	3.10	1.63	3	15 Oct 2003
CC177839	926	087D	48.67	64.97	190.70	0.50	0.26	3	15 Oct 2003
CC177840	926	087D	48.69	65.02	189.00	1.30	0.69	3	15 Oct 2003
CC177841	926	087D	48.69	64.96	190.60	1.80	0.94	3	15 Oct 2003
CC177842	926	087D	48.69	65.05	190.10	2.00	1.05	3	15 Oct 2003
CC177843	926	087D	48.77	65.00	190.20	1.70	0.89	3	15 Oct 2003
CC177844	926	087D	48.70	65.05	188.20	2.00	1.06	3	15 Oct 2003
CC177845	926	087D	48.77	65.04	189.40	2.70	1.43	3	15 Oct 2003
CC177846	926	087D	48.72	65.10	190.60	1.40	0.73	3	15 Oct 2003
CC177847	926	087D	48.71	65.04	190.20	1.00	0.55	3	15 Oct 2003
CC177848	926	087D	48.71	65.10	188.00	2.40	1.28	3	15 Oct 2003
CC177849	926	087D	48.60	65.13	188.40	2.90	1.54	3	15 Oct 2003
CC177850	926	087D	48.63	65.13	190.80	1.30	0.68	3	15 Oct 2003
CC177851	926	087D	48.65	65.10	190.30	1.50	0.79	3	15 Oct 2003
CC177852	926	087D	48.75	65.06	186.90	1.70	0.91	3	15 Oct 2003
CC177853	926	087D	48.65	65.07	187.70	1.40	0.75	3	15 Oct 2003
CC177854	926	087D	48.68	65.06	190.50	2.30	1.21	3	15 Oct 2003
CC177855	926	087D	48.68	65.07	191.50	2.30	1.20	3	15 Oct 2003
CC177856	926	087D	48.68	65.09	187.20	1.20	0.64	3	15 Oct 2003
CC177857	926	087D	48.65	65.09	187.00	2.20	1.18	3	15 Oct 2003
CC177858	926	086H	48.59	65.21	190.50	1.30	0.68	3	15 Oct 2003
CC177859	926	086H	48.62	65.06	191.00	2.00	1.05	3	15 Oct 2003
CC177860	926	086H	48.65	65.02	188.30	2.30	1.22	3	15 Oct 2003
CC177861	926	086H	48.51	65.07	188.60	2.20	1.17	3	15 Oct 2003
CC177862	926	086H	48.64	64.98	191.60	1.80	0.94	3	15 Oct 2003
CC177863	926	086H	48.53	65.03	190.90	1.30	0.68	3	15 Oct 2003
CC177864	926	086H	48.50	65.02	188.00	1.70	0.90	3	15 Oct 2003
CC177865	926	086H	48.59	65.15	188.40	2.10	1.11	3	15 Oct 2003
CC177866	926	086H	48.54	65.09	192.70	2.70	1.40	3	15 Oct 2003
CC177867	926	086H	48.52	65.13	191.70	2.40	1.25	3	15 Oct 2003
CC177868	926	086H	48.60	65.06	189.00	2.20	1.16	3	15 Oct 2003
CC177869	926	086H	48.67	65.10	188.60	1.80	0.95	3	15 Oct 2003
CC177870	926	086H	48.53	65.19	192.20	1.70	0.88	3	15 Oct 2003

OR CYLINDERS WEIGHED WITHOUT VALVES  
 OR CYLINDERS WEIGHED WITH VALVES  
 OR CYLINDERS WEIGHED WITH VALVES AND HANDLES  
 OR CYLINDERS WEIGHED WITH PERMANENT NECK RINGS  
 OR CYLINDERS WEIGHED WITH VALVES AND COLLARS

ARROWHEAD INDUSTRIAL SERVICES, INC.  
 RIVERSIDE, CA

FROM :

FAX NO. :

Mar. 01 2005 02:17PM P22

## ARROWHEAD INDUSTRIAL SERVICES, INC.

## RECORD OF HYDROSTATIC TESTS OF ALUMINUM COMPRESSED GAS CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

OR LUXFER

NUMBERED CC177803 TO CC177905 INCLUSIVE

TEST PRESSURE: 1160

CYLINDER S/N	CAST CODE	HEAT LOT	TARE WEIGHT (LBS.)	WATER CAPACITY (LBS.)	TOTAL EXPANSION (CC)	PERMANENT EXPANSION (CC)	RATIO	CODE	HYDRO TEST DATE
CC177871	926	086H	48.59	65.07	192.90	2.40	1.24	3	15 Oct 2003
CC177872	926	086H	48.68	65.07	190.30	3.10	1.63	3	15 Oct 2003
CC177873	926	086H	48.63	65.14	199.80	1.50	0.79	3	15 Oct 2003
CC177874	926	086H	48.65	65.08	190.20	0.70	0.37	3	15 Oct 2003
CC177875	926	086H	48.61	65.07	191.40	2.00	1.04	3	15 Oct 2003
CC177876	926	086H	48.69	65.02	188.18	2.30	1.22	3	15 Oct 2003
CC177877	926	086H	48.64	65.13	189.70	2.90	1.32	3	15 Oct 2003
CC177878	926	086H	48.62	65.06	189.70	1.70	0.90	3	15 Oct 2003
CC177879	926	086H	48.61	65.19	190.30	1.10	0.58	3	15 Oct 2003
CC177880	926	086H	48.62	65.08	189.30	3.00	1.58	3	15 Oct 2003
CC177881	926	086H	48.56	65.15	189.40	2.80	1.48	3	15 Oct 2003
CC177882	926	086H	48.59	65.12	193.80	2.00	1.03	3	15 Oct 2003
CC177883	926	086H	48.63	65.05	191.20	1.70	0.89	3	15 Oct 2003
CC177884	926	086H	48.63	65.09	188.30	3.30	1.75	3	15 Oct 2003
CC177885	926	086H	48.63	65.07	189.40	2.20	1.16	3	15 Oct 2003
CC177886	926	086C	48.64	65.04	190.90	2.00	1.05	3	15 Oct 2003
CC177887	926	086C	48.56	65.12	194.00	3.00	1.55	3	15 Oct 2003
CC177888	926	086C	48.63	65.04	191.60	2.00	1.04	3	15 Oct 2003
CC177889	926	086C	48.63	65.04	188.10	3.90	2.07	3	15 Oct 2003
CC177890	926	086C	48.72	65.12	191.90	2.30	1.20	3	15 Oct 2003
CC177891	926	086C	48.77	65.09	191.80	2.60	1.36	3	15 Oct 2003
CC177892	926	086C	48.62	65.09	187.90	2.80	1.49	3	15 Oct 2003
CC177893	926	086C	48.63	65.08	190.50	3.50	1.84	3	15 Oct 2003
CC177894	926	086C	48.56	65.14	191.10	1.30	0.68	3	15 Oct 2003
CC177895	926	086C	48.62	65.15	194.10	2.50	1.29	3	15 Oct 2003
CC177896	926	086C	48.52	65.07	189.30	2.20	1.16	3	15 Oct 2003
CC177897	926	086C	48.63	65.16	189.10	3.10	1.64	3	15 Oct 2003
CC177898	926	086C	48.63	65.23	193.60	1.70	0.88	3	15 Oct 2003
CC177899	926	086C	48.62	65.08	191.10	2.70	1.41	3	15 Oct 2003
CC177900	926	086C	48.56	65.13	189.20	3.30	1.74	3	15 Oct 2003
CC177901	926	086C	48.62	65.10	188.60	3.10	1.64	3	15 Oct 2003
CC177902	926	086C	48.56	65.10	192.80	2.40	1.24	3	15 Oct 2003
CC177903	926	086C	48.66	65.12	193.90	2.40	1.24	3	15 Oct 2003
CC177904	926	086C	48.56	65.08	190.40	3.80	2.00	3	15 Oct 2003
CC177905	926	086C	48.64	65.03	187.60	1.80	0.96	3	15 Oct 2003

NOTES

FOR CYLINDERS WEIGHED WITHOUT VALVES

FOR CYLINDERS WEIGHED WITH VALVES

FOR CYLINDERS WEIGHED WITH VALVES AND HANDLES

FOR CYLINDERS WEIGHED WITH PERMANENT NECK RINGS

FOR CYLINDERS WEIGHED WITH VALVES AND COLLARS

ARROWHEAD INDUSTRIAL SERVICES, INC.  
RIVERSIDE, CA

&lt;END REPORT&gt;

FROM :

FAX NO. :

Mar. 01 2005 02:10PM P2

Our  
File: LUXFER-03  
Prod # 50233  
Sales  
Order # 6609031

**Arrowhead Industrial Services, Inc.**  
**Compressed Gas Container Specialists**

**REPORT OF INSPECTION OF GAS CONTAINERS**

Report  
No. J.R10617  
Sheet No. 1 of 1  
of 1 sheets

P/N: N150

Manufactured for  
Location at Luxfer Gas Cylinders  
Riverside, California

Manufactured by  
Location at Luxfer Gas Cylinders  
Riverside, California

Consigned to  
Location at Luxfer Gas Cylinders  
Riverside, California

Quantity 412 Size 8.00 inches(203.200 mm) outside diameter by 47.873 inches(1215.974mm)long.  
Marks stamped into the shoulder of the cylinders. MIN.VOLUME:1800cu.in.(29.50Ltr)

Specifications: TC - 3ALM 139  
DOT - 3AL 2015

Serial numbers CC178111 to CC178522 inclusive

Inspector's Mark



Identifying symbol (registered) LUXFER

Test date 10 A 03

Tare weights (yes or no) NO

Other marks (if any)

These containers were made by process of extrusion. These cylinders were heat treated by the process of solution heat treat and aging.

The material used was identified by the following alloy numbers 6061.

The material used was verified as to chemical analysis and record thereof is attached hereto. The heat numbers were marked on the material. See hydrostatic test sheets.

All material, such as plates, billets and seamless tubing, was inspected and each container was inspected both before and after closing in the ends; all that was accepted was found free from seams, cracks, laminations, and other defects which might prove injurious to the strength of the container. The process of manufacture and heat treatment of containers were supervised and found to be efficient and satisfactory.

The container walls were measured and the minimum thickness noted was .356 inch(9.042 mm). The outside diameter was determined by a close approximation to be 8.00 inches(203.200 mm). The wall stress was calculated to be 32,104.38 pounds per square inch (221.360 megapascals) under an internal pressure of 3358 pounds per square inch (23.152 megapascals). Hydrostatic tests, flattening tests, tensile test of material, and other test as prescribed in Department of Transportation Specification No. 3AL and Transport Canada Specification No. 3ALM were made in the presence of the inspector and all material and containers accepted were found to be in compliance with the requirements of that specification. Records thereof are attached hereto.

I hereby certify that all of these containers proved satisfactory in every way and comply with the requirements of Department of Transportation Specification No. 3AL and Transport Canada Specification No. 3ALM except as follows:

Exceptions:

R. Gerry Wilson  
Arrowhead Industrial Services, Inc.

Inspector:

Allen J. Schmidt  
October 15, 2003

FROM :

FAX NO. :

Mar. 01 2005 02:11PM P4

## ARROWHEAD INDUSTRIAL SERVICES, INC.

## RECORD OF PHYSICAL ANALYSIS FOR COMPLETED CYLINDERS

REPORT DATE: October 15, 2003

SYMBOL LUXFER

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

OR Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

NUMBERED CC178111 TO CC178522 INCLUSIVE

NO	CYLINDERS REPRESENTED SERIAL NOS.	YIELD STRENGTH AT 0.2% OFFSET (POUNDS/SQ. IN.)	TENSILE STRENGTH (POUNDS/SQ. IN.)	ELONGATION % IN 2.0" **	ROCKWELL "C" HARDNESS	2-1/8" RADIUS FLATTENING TEST
38	CC178148 THRU CC178173	47700	52400	16.0	63.0	PASSED
39	CC178174 THRU CC178200	47100	52100	17.0	63.0	9T FLAT TEST
40	CC178201 THRU CC178227	47800	52500	17.0	62.0	PASSED
41	CC178228 THRU CC178254	47600	52200	17.0	62.0	9T FLAT TEST
42	CC178255 THRU CC178281	48000	53500	18.0	64.0	PASSED
43	CC178282 THRU CC178308	47500	52800	17.0	64.0	9T FLAT TEST
44	CC178309 THRU CC178335	47500	52800	17.0	64.0	9T FLAT TEST
45	CC178336 THRU CC178362	47500	52800	17.0	64.0	9T FLAT TEST
46	CC178363 THRU CC178389	47500	52800	17.0	64.0	9T FLAT TEST
47	CC178390 THRU CC178416	47500	52800	17.0	64.0	9T FLAT TEST
48	CC178417 THRU CC178443	47500	52800	17.0	64.0	9T FLAT TEST
49	CC178444 THRU CC178470	47500	52800	17.0	64.0	9T FLAT TEST
50	CC178471 THRU CC178497	47500	52800	17.0	64.0	9T FLAT TEST
51	CC178498 THRU CC178524	47500	52800	17.0	64.0	9T FLAT TEST
52	CC178525 THRU CC178551	47500	52800	17.0	64.0	9T FLAT TEST
53	CC178552 THRU CC178578	47500	52800	17.0	64.0	9T FLAT TEST
54	CC178579 THRU CC178605	47500	52800	17.0	64.0	9T FLAT TEST
55	CC178606 THRU CC178632	47500	52800	17.0	64.0	9T FLAT TEST
56	CC178633 THRU CC178659	47500	52800	17.0	64.0	9T FLAT TEST
57	CC178660 THRU CC178686	47500	52800	17.0	64.0	9T FLAT TEST
58	CC178687 THRU CC178713	47500	52800	17.0	64.0	9T FLAT TEST
59	CC178714 THRU CC178740	47500	52800	17.0	64.0	9T FLAT TEST
60	CC178741 THRU CC178767	47500	52800	17.0	64.0	9T FLAT TEST
61	CC178768 THRU CC178794	47500	52800	17.0	64.0	9T FLAT TEST
62	CC178795 THRU CC178821	47500	52800	17.0	64.0	9T FLAT TEST
63	CC178822 THRU CC178848	47500	52800	17.0	64.0	9T FLAT TEST
64	CC178849 THRU CC178875	47500	52800	17.0	64.0	9T FLAT TEST
65	CC178876 THRU CC178902	47500	52800	17.0	64.0	9T FLAT TEST
66	CC178903 THRU CC178929	47500	52800	17.0	64.0	9T FLAT TEST
67	CC178930 THRU CC178956	47500	52800	17.0	64.0	9T FLAT TEST
68	CC178957 THRU CC178983	47500	52800	17.0	64.0	9T FLAT TEST
69	CC178984 THRU CC179010	47500	52800	17.0	64.0	9T FLAT TEST
70	CC179011 THRU CC179037	47500	52800	17.0	64.0	9T FLAT TEST
71	CC179038 THRU CC179064	47500	52800	17.0	64.0	9T FLAT TEST
72	CC179065 THRU CC179091	47500	52800	17.0	64.0	9T FLAT TEST
73	CC179092 THRU CC179118	47500	52800	17.0	64.0	9T FLAT TEST
74	CC179119 THRU CC179145	47500	52800	17.0	64.0	9T FLAT TEST
75	CC179146 THRU CC179172	47500	52800	17.0	64.0	9T FLAT TEST
76	CC179173 THRU CC179200	47500	52800	17.0	64.0	9T FLAT TEST
77	CC179201 THRU CC179227	47500	52800	17.0	64.0	9T FLAT TEST
78	CC179228 THRU CC179254	47500	52800	17.0	64.0	9T FLAT TEST
79	CC179255 THRU CC179281	47500	52800	17.0	64.0	9T FLAT TEST
80	CC179282 THRU CC179308	47500	52800	17.0	64.0	9T FLAT TEST
81	CC179309 THRU CC179335	47500	52800	17.0	64.0	9T FLAT TEST
82	CC179336 THRU CC179362	47500	52800	17.0	64.0	9T FLAT TEST
83	CC179363 THRU CC179389	47500	52800	17.0	64.0	9T FLAT TEST
84	CC179390 THRU CC179416	47500	52800	17.0	64.0	9T FLAT TEST
85	CC179417 THRU CC179443	47500	52800	17.0	64.0	9T FLAT TEST
86	CC179444 THRU CC179470	47500	52800	17.0	64.0	9T FLAT TEST
87	CC179471 THRU CC179497	47500	52800	17.0	64.0	9T FLAT TEST
88	CC179498 THRU CC179524	47500	52800	17.0	64.0	9T FLAT TEST
89	CC179525 THRU CC179551	47500	52800	17.0	64.0	9T FLAT TEST
90	CC179552 THRU CC179578	47500	52800	17.0	64.0	9T FLAT TEST
91	CC179579 THRU CC179605	47500	52800	17.0	64.0	9T FLAT TEST
92	CC179606 THRU CC179632	47500	52800	17.0	64.0	9T FLAT TEST
93	CC179633 THRU CC179659	47500	52800	17.0	64.0	9T FLAT TEST
94	CC179660 THRU CC179686	47500	52800	17.0	64.0	9T FLAT TEST
95	CC179687 THRU CC179713	47500	52800	17.0	64.0	9T FLAT TEST
96	CC179714 THRU CC179740	47500	52800	17.0	64.0	9T FLAT TEST
97	CC179741 THRU CC179767	47500	52800	17.0	64.0	9T FLAT TEST
98	CC179768 THRU CC179794	47500	52800	17.0	64.0	9T FLAT TEST
99	CC179795 THRU CC179821	47500	52800	17.0	64.0	9T FLAT TEST
100	CC179822 THRU CC179848	47500	52800	17.0	64.0	9T FLAT TEST

FROM :

FAX NO. :

Mar. 01 2005 02:12PM P7

## ARROWHEAD INDUSTRIAL SERVICES, INC.

## RECORD OF HYDROSTATIC TESTS OF ALUMINUM COMPRESSED GAS CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

NUMBERED CC178111 TO CC178522 INCLUSIVE

TEST PRESSURE: 3360

CYLINDER S/N	CAST CODE	HEAT LOT	TARE WEIGHT (LBS.)	WATER CAPACITY (LBS.)	TOTAL EXPANSION (CC)	PERMANENT EXPANSION (CC)	RATIO	CODE	HYDRO TEST DATE
CC178247	926	085F	48.91	65.83	189.30	2.30	1.22	3	15 Oct 2003
CC178248	926	085F	48.98	65.85	191.20	2.80	1.46	3	15 Oct 2003
CC178249	926	085F	48.90	65.80	191.50	2.70	1.41	3	15 Oct 2003
CC178250	926	085F	48.92	65.90	189.10	2.10	1.11	3	15 Oct 2003
CC178251	926	085F	48.94	65.85	188.70	1.70	0.90	3	15 Oct 2003
CC178252	926	085F	48.98	65.86	192.20	2.70	1.40	3	15 Oct 2003
CC178253	926	085F	48.91	65.81	192.60	2.90	1.53	3	15 Oct 2003
CC178254	926	085F	49.04	65.86	189.30	2.20	1.05	3	15 Oct 2003
CC178255	926	085F	49.00	65.81	188.50	1.70	0.90	3	15 Oct 2003
CC178256	926	085F	49.00	65.84	191.40	2.00	1.04	3	15 Oct 2003
CC178257	926	085F	49.03	65.79	191.60	2.20	1.15	3	15 Oct 2003
CC178258	926	085F	48.95	65.88	188.00	1.50	0.80	3	15 Oct 2003
CC178259	926	085F	49.07	65.81	188.60	1.50	0.79	3	15 Oct 2003
CC178260	926	085F	48.97	65.85	190.90	2.00	1.05	3	15 Oct 2003
CC178261	926	085F	48.94	65.85	191.40	2.50	1.31	3	15 Oct 2003
CC178262	926	085F	48.93	65.87	189.40	2.20	1.16	3	15 Oct 2003
CC178263	926	085A	48.96	65.87	188.80	1.40	0.74	3	15 Oct 2003
CC178264	926	085A	49.06	65.78	191.00	0.70	0.37	3	15 Oct 2003
CC178265	926	085A	49.13	65.75	191.70	2.60	1.36	3	15 Oct 2003
CC178266	926	085A	49.26	65.70	188.50	0.80	0.42	3	15 Oct 2003
CC178267	926	085A	49.32	65.72	186.60	0.70	0.38	3	15 Oct 2003
CC178268	926	085A	49.35	65.62	190.80	2.50	1.31	3	15 Oct 2003
CC178269	926	085A	49.09	65.67	190.00	2.30	1.21	3	15 Oct 2003
CC178270	926	085A	49.14	65.64	187.60	1.70	0.91	3	15 Oct 2003
CC178271	926	085A	49.17	65.71	189.20	1.60	0.85	3	15 Oct 2003
CC178272	926	085A	49.24	65.66	191.00	3.30	1.73	3	15 Oct 2003
CC178273	926	085A	49.07	65.75	190.60	3.70	1.94	3	15 Oct 2003
CC178274	926	085A	49.18	65.69	191.50	3.00	1.57	3	15 Oct 2003
CC178275	926	085A	49.21	65.81	187.70	3.20	1.70	3	15 Oct 2003
CC178276	926	085A	49.02	65.73	190.40	2.20	1.16	3	15 Oct 2003
CC178277	926	085A	49.16	65.64	189.70	3.10	1.63	3	15 Oct 2003
CC178278	926	085A	49.12	65.78	188.20	2.40	1.28	3	15 Oct 2003
CC178279	926	085A	49.15	65.95	189.20	1.90	1.00	3	15 Oct 2003
CC178280	926	085A	49.15	65.79	193.30	4.00	2.07	3	15 Oct 2003
CC178281	926	085A	49.00	65.77	194.00	3.30	1.70	3	15 Oct 2003
CC178282	926	085A	48.95	65.69	190.40	2.40	1.26	3	15 Oct 2003
CC178283	926	085A	49.15	65.65	189.10	2.20	1.18	3	15 Oct 2003
CC178284	926	085A	49.15	65.77	191.90	2.40	1.25	3	15 Oct 2003
CC178285	926	085A	49.02	65.74	191.90	3.00	1.56	3	15 Oct 2003
CC178286	926	085A	49.07	65.67	189.60	3.90	2.05	3	15 Oct 2003
CC178287	926	085A	48.97	65.71	188.30	2.80	1.49	3	15 Oct 2003
CC178288	926	085A	48.95	65.79	192.10	3.10	1.61	3	15 Oct 2003
CC178289	926	085A	49.27	65.68	193.40	2.60	1.34	3	15 Oct 2003
CC178290	926	085A	49.02	65.67	188.60	2.90	1.54	3	15 Oct 2003
CC178291	926	085A	49.06	65.78	190.20	2.90	1.52	3	15 Oct 2003
CC178292	926	085B	48.87	65.87	190.60	2.40	1.26	3	15 Oct 2003
CC178293	926	085B	48.86	65.92	192.90	2.70	1.50	3	15 Oct 2003
CC178294	926	085B	48.80	65.96	189.40	2.50	1.32	3	15 Oct 2003
CC178295	926	085B	48.91	65.84	189.20	2.50	1.32	3	15 Oct 2003
CC178296	926	085B	48.92	65.86	193.60	3.90	2.01	3	15 Oct 2003
CC178297	926	085B	49.07	65.83	193.20	3.40	1.76	3	15 Oct 2003
CC178298	926	085B	48.98	65.72	193.50	2.30	1.19	3	15 Oct 2003
CC178299	926	085B	48.90	65.82	191.30	2.00	1.05	3	15 Oct 2003
CC178300	926	085B	48.91	65.70	188.30	1.70	0.90	3	15 Oct 2003
CC178301	926	085B	48.90	65.02	188.50	1.80	0.95	3	15 Oct 2003
CC178302	926	085B	48.85	65.86	193.00	3.60	1.87	3	15 Oct 2003
CC178303	926	085B	49.04	65.79	191.00	2.70	1.41	3	15 Oct 2003
CC178304	926	085B	49.08	65.77	190.40	3.20	1.68	3	15 Oct 2003
CC178305	926	085B	49.12	65.95	189.10	2.60	1.37	3	15 Oct 2003
CC178306	926	085B	48.94	65.78	191.90	3.50	1.82	3	15 Oct 2003
CC178307	926	085B	48.93	65.73	191.70	2.50	1.30	3	15 Oct 2003
CC178308	926	085B	48.95	65.83	188.40	1.00	0.53	3	15 Oct 2003
CC178309	926	085B	48.95	65.84	189.60	1.00	0.53	3	15 Oct 2003
CC178310	926	085B	48.93	65.73	192.50	2.10	1.09	3	15 Oct 2003
CC178311	926	085B	49.02	65.77	192.50	2.10	1.09	3	15 Oct 2003
CC178312	926	085B	48.93	65.78	189.70	3.00	1.58	3	15 Oct 2003
CC178313	926	085B	49.16	65.89	190.00	3.00	1.58	3	15 Oct 2003
CC178314	926	085B	48.95	65.74	192.50	4.00	2.08	3	15 Oct 2003

CODE

FOR CYLINDERS WEIGHED WITHOUT VALVES  
 FOR CYLINDERS WEIGHED WITH VALVES  
 FOR CYLINDERS WEIGHED WITH VALVES AND HANDLES  
 FOR CYLINDERS WEIGHED WITH PERMANENT NECK RINGS  
 FOR CYLINDERS WEIGHED WITH VALVES AND COLLARS

FROM :

FAX NO. :

Mar. 01 2005 02:13PM P9

## ARROWHEAD INDUSTRIAL SERVICES, INC.

## RECORD OF HYDROSTATIC TESTS OF ALUMINUM COMPRESSED GAS CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

OR LUXFER

NUMBERED CC178111 TO CC178523 INCLUSIVE

TEST PRESSURE: 3380

YLINDER S/N	GAST CODE	HEAT LOT	TARE WEIGHT (LBS.)	WATER CAPACITY (LBS.)	TOTAL EXPANSION (CC)	PERMANENT EXPANSION (CC)	RATIO	GRADE	HYDRO TEST DATE
CC178383	926	086B	49.05	65.75	108.10	3.70	1.75	3	15 Oct 2003
CC178384	926	086B	48.97	65.75	101.50	3.70	1.62	3	15 Oct 2003
CC178385	926	086B	48.82	65.73	101.90	3.70	1.93	3	15 Oct 2003
CC178386	926	086B	48.92	65.76	186.20	2.50	1.34	3	15 Oct 2003
CC178387	926	086B	49.09	65.82	186.20	3.00	1.59	3	15 Oct 2003
CC178388	926	086B	48.84	65.76	192.30	3.90	2.03	3	15 Oct 2003
CC178389	926	086B	49.07	65.77	192.10	3.30	1.72	3	15 Oct 2003
CC178390	926	086B	49.09	65.73	190.30	2.70	1.42	3	15 Oct 2003
CC178391	926	086B	49.46	65.62	190.50	2.10	1.10	3	15 Oct 2003
CC178392	926	086B	49.16	65.72	193.10	2.00	1.04	3	15 Oct 2003
CC178393	926	086B	49.10	65.70	194.00	2.10	1.06	3	15 Oct 2003
CC178394	926	086B	48.85	65.75	193.60	1.60	0.83	3	15 Oct 2003
CC178395	926	086B	49.15	65.63	194.00	1.50	0.77	3	15 Oct 2003
CC178396	926	086B	49.15	65.70	186.50	2.00	1.07	3	15 Oct 2003
CC178397	926	086B	49.13	65.68	186.20	2.00	1.07	3	15 Oct 2003
CC178398	926	086B	49.31	65.55	191.20	3.30	1.73	3	15 Oct 2003
CC178399	926	086B	49.10	65.76	191.50	3.80	1.90	3	15 Oct 2003
CC178400	926	086B	49.14	65.66	187.10	3.40	1.82	3	15 Oct 2003
CC178401	926	086B	49.12	65.53	186.50	2.70	1.45	3	15 Oct 2003
CC178402	926	086B	49.05	65.71	193.20	3.30	1.72	3	15 Oct 2003
CC178403	926	086B	49.20	65.75	192.10	2.90	1.51	3	15 Oct 2003
CC178404	926	086B	49.33	65.56	190.30	1.80	0.95	3	15 Oct 2003
CC178405	926	086B	49.28	65.56	192.40	1.90	0.99	3	15 Oct 2003
CC178406	926	086B	49.13	65.71	191.40	3.60	1.88	3	15 Oct 2003
CC178407	926	086B	49.16	65.64	192.10	3.60	1.87	3	15 Oct 2003
CC178408	926	086B	49.10	65.69	186.80	2.50	1.34	3	15 Oct 2003
CC178409	926	086B	49.11	65.66	187.30	2.70	1.44	3	15 Oct 2003
CC178410	926	086B	49.22	65.59	192.00	3.60	1.87	3	15 Oct 2003
CC178411	926	085C	49.01	65.73	190.50	3.30	1.73	3	15 Oct 2003
CC178412	926	085C	48.93	65.82	186.90	2.60	1.39	3	15 Oct 2003
CC178413	926	085C	48.92	65.79	187.30	2.70	1.44	3	15 Oct 2003
CC178414	926	085C	48.92	65.73	193.60	1.80	0.67	3	15 Oct 2003
CC178415	926	085C	48.97	65.75	193.20	1.20	0.62	3	15 Oct 2003
CC178416	926	085C	48.97	65.81	186.60	1.80	0.96	3	15 Oct 2003
CC178417	926	085C	48.96	65.80	187.60	2.50	1.33	3	15 Oct 2003
CC178418	926	085C	48.96	65.73	192.40	1.30	0.68	3	15 Oct 2003
CC178419	926	085C	49.00	65.79	194.50	1.30	0.62	3	15 Oct 2003
CC178420	926	085C	49.01	65.82	186.40	2.80	1.50	3	15 Oct 2003
CC178421	926	085C	48.99	65.77	186.00	2.60	1.40	3	15 Oct 2003
CC178422	926	085C	48.99	65.79	191.80	3.90	2.03	3	15 Oct 2003
CC178423	926	085C	49.01	65.80	192.90	3.70	1.92	3	15 Oct 2003
CC178424	926	085C	48.96	65.91	186.90	1.60	0.86	3	15 Oct 2003
CC178425	926	085C	49.05	65.86	187.40	1.70	0.91	3	15 Oct 2003
CC178426	926	085C	49.01	65.81	193.20	1.20	1.66	3	15 Oct 2003
CC178427	926	085C	48.93	65.70	192.10	3.00	1.56	3	15 Oct 2003
CC178428	926	085C	48.99	65.77	106.80	2.60	1.39	3	15 Oct 2003
CC178429	926	085C	48.96	65.75	127.10	2.80	1.34	3	15 Oct 2003
CC178430	926	085C	49.10	65.70	190.80	2.00	1.05	3	15 Oct 2003
CC178431	926	085C	49.12	65.75	191.20	1.70	0.89	3	15 Oct 2003
CC178432	926	085C	49.04	65.71	186.40	1.70	0.91	3	15 Oct 2003
CC178433	926	085C	49.00	65.81	186.20	1.40	0.75	3	15 Oct 2003
CC178434	926	085C	49.01	65.76	192.50	2.90	1.51	3	15 Oct 2003
CC178435	926	085C	48.94	65.74	192.40	2.80	1.46	3	15 Oct 2003
CC178436	926	085C	48.99	65.76	186.90	1.70	0.91	3	15 Oct 2003
CC178437	926	085C	49.01	65.81	187.10	1.80	0.90	3	15 Oct 2003
CC178438	926	085C	48.94	65.71	192.80	1.30	0.67	3	15 Oct 2003
CC178439	926	085C	48.91	65.80	192.40	1.20	0.62	3	15 Oct 2003
CC178440	926	085C	48.98	65.82	186.50	1.50	0.80	3	15 Oct 2003
CC178441	926	085D	49.03	65.67	186.40	1.40	0.75	3	15 Oct 2003
CC178442	926	085D	49.18	65.82	193.50	3.00	1.96	3	15 Oct 2003
CC178443	926	085D	49.04	65.73	191.30	2.70	1.41	3	15 Oct 2003
CC178444	926	085D	49.08	65.68	186.50	2.20	1.18	3	15 Oct 2003
CC178445	926	085D	49.01	65.76	186.40	2.40	1.29	3	15 Oct 2003
CC178446	926	085D	49.02	65.74	182.80	3.80	1.97	3	15 Oct 2003
CC178447	926	085D	49.02	65.74	190.90	3.30	1.73	3	15 Oct 2003
CC178448	926	085D	48.97	65.65	188.50	2.40	1.27	3	15 Oct 2003
CC178449	926	085D	49.07	65.67	186.80	2.50	1.34	3	15 Oct 2003
CC178450	926	085D	49.09	65.65	191.40	3.20	1.67	3	15 Oct 2003

FOR CYLINDERS WEIGHED WITHOUT VALVES  
 FOR CYLINDERS WEIGHED WITH VALVES  
 FOR CYLINDERS WEIGHED WITH VALVES AND HANDLES  
 FOR CYLINDERS WEIGHED WITH PERMANENT NECK RINGS  
 FOR CYLINDERS WEIGHED WITH VALVES AND COLLARS

FROM :

FAX NO. :

Mar. 01 2005 02:14PM P11

## ARROWHEAD INDUSTRIAL SERVICES, INC.

## RECORD OF HYDROSTATIC TESTS OF ALUMINUM COMPRESSED GAS CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.  
OR LUXFER

NUMBERED CC178111 TO CC178522 INCLUSIVE

TEST PRESSURE: 3350

CYLINDER S/N	CART CODE	HEAT LOT	TARE WEIGHT (LBS.)	WATER CAPACITY (LBS.)	TOTAL EXPANSION (CC)	PERMANENT EXPANSION (CC)	RATIO	HYDRO TEST DATE
CC178519	925	041F	49.05	65.41	189.20	1.90	1.00	15 Oct 2003
CC178520	925	041F	49.15	65.36	189.20	1.40	0.74	15 Oct 2003
CC178521	925	041F	49.02	65.44	189.90	1.60	0.84	15 Oct 2003
CC178522	925	041F	48.92	65.50	190.00	3.20	1.68	15 Oct 2003

CODES

~~FOR CYLINDERS WEIGHED WITHOUT VALVES~~~~FOR CYLINDERS WEIGHED WITH VALVES~~

FOR CYLINDERS WEIGHED WITH VALVES AND HANDLES

FOR CYLINDERS WEIGHED WITH PERMANENT NECK RINGS

FOR CYLINDERS WEIGHED WITH VALVES AND COLLARS

ARROWHEAD INDUSTRIAL SERVICES, INC.  
RIVERSIDE, CA

&lt;END REPORT&gt;

FROM :

FAX NO. :

Mar. 01 2005 02:14PM P12

Our  
File **LUXFER-03**  
Prod # 51638, 51753.  
Sales  
Order # 35600, 35667,  
6659181

**Arrowhead Industrial Services, Inc.**  
**Compressed Gas Container Specialists**

**REPORT OF INSPECTION OF GAS CONTAINERS**

Report
No. <b>LR10809</b>
Sheet No. _____
of _____ sheets

P/N: N150

Manufactured for  
Location at Luxfer Gas Cylinders  
Riverside, California

Manufactured by  
Location at Luxfer Gas Cylinders  
Riverside, California

Consigned to  
Location at Luxfer Gas Cylinders  
Riverside, California


Quantity 141 Size 8.00 inches(203.200 mm) outside diameter by 47.873 inches(1215.974mm)long.  
Marks stamped into the shoulder of the cylinders MIN.VOLUME:1800cu.in.(28.50Ltr)

Specifications: TC - 3ALM 139  
DOT - 3AL 2015

Serial numbers CC180647 to CC180687 Inclusive

Inspector's Mark 

Identifying symbol (registered) LUXFER

Test date 11  03

Tare weights (yes or no) NO

Other marks (if any)

These containers were made by process of extrusion. These cylinders were heat treated by the process of solution heat treat and aging.

The material used was identified by the following alloy numbers 6061.


The material used was verified as to chemical analysis and record thereof is attached hereto. The heat numbers were marked on the material. See hydrostatic test sheets.

All material, such as plates, billets and seamless tubing, was inspected and each container was inspected both before and after closing in the ends; all that was accepted was found free from seams, cracks, laminations, and other defects which might prove injurious to the strength of the container. The process of manufacture and heat treatment of containers were supervised and found to be efficient and satisfactory.

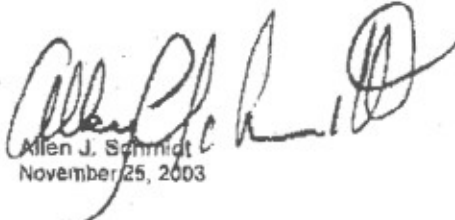
The container walls were measured and the minimum thickness noted was .356 inch(9.042 mm). The outside diameter was determined by a close approximation to be 8.00 inches(203.200 mm). The wall stress was calculated to be 32,104.38 pounds per square inch (221.360 megapascals) under an internal pressure of 3358 pounds per square inch (23.152 megapascals). Hydrostatic tests, flattening tests, tensile test of material, and other test as prescribed in Department of Transportation Specification No. 3AL and Transport Canada Specification No. 3ALM were made in the presence of the inspector and all material and containers accepted were found to be in compliance with the requirements of that specification. Records thereof are attached hereto.

I hereby certify that all of these containers proved satisfactory in every way and comply with the requirements of Department of Transportation Specification No. 3AL and Transport Canada Specification No. 3ALM except as follows:

Exceptions:

  
R. Gerry Wilson  
Arrowhead Industrial Services, Inc.

Inspector:

  
Allen J. Schmidt  
November 25, 2003

FROM :

FAX NO. :

Mar. 01 2005 02:14PM P13

## ARROWHEAD INDUSTRIAL SERVICES, INC.

## RECORD OF CHEMICAL ANALYSIS FOR ALUMINUM COMPRESSED GAS CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

REPORT DATE: November 25, 2003

FOR Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

SYMBOL LUXFER

NUMBERED CC180547 TO CC180687 INCLUSIVE

ALUMINUM ALLOY 6061

MILL HEAT CODE*	HEAT NO.	CHECK ANALYSIS NUMBER	CU	SI	FE	MN	MG	ZN	TI	GA	NI	PB	SN	BI	V	CR
930 (S)	315321		0.24	0.60	0.06	0.01	0.90	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.080
953 (S)	325021		0.24	0.61	0.16	0.01	0.91	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.080

ALUMINUM WAS MANUFACTURED AND MILL ANALYSIS MADE BY:

(A) KITIMAT WORKS, ALCAN ALUMINUM, CANADA.

(C) CRESSONA ALUMINUM COMPANY, CRESSONA, PA.

(S) SHAWINIGAN WORKS, ALCAN ALUMINUM, CANADA.

(B) ALCOA, SPANISH FORK, UT.

THE ORIGINALS OF CERTIFIED MILL ANALYSIS AND CHECK ANALYSIS REPORTS ARE IN THE FILES OF THE MANUFACTURERS.

\*\* CHECK ANALYSIS MADE BY: ALCAN INGOT IN SEBREE, KENTUCKY; ALCAN INGOT IN HENDERSON, KENTUCKY; OR

TIMCO ALUMINUM SMELTERS IN FONTANA, CA

\* APPLICABLE CODES ARE STAMPED INTO EACH CYLINDER

  
 ARROWHEAD INDUSTRIAL SERVICES, INC.  
 RIVERSIDE, CA

03/02/2005

17:41

UCSD GRD → 1538785#166443862153

NO.245

015

FROM :

FAX NO. :

Mar. 01 2005 02:15PM P14

## ARROWHEAD INDUSTRIAL SERVICES, INC.

## RECORD OF PHYSICAL ANALYSIS FOR COMPLETED CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.  
 FOR Luxfer Gas Cylinders, Divn. of Luxfer, Inc.  
 NUMBERED CC180547 TO CC180687 INCLUSIVE

REPORT DATE: November 25, 2003  
 SYMBOL: LUXFER

LOT CODE*	CYLINDERS REPRESENTED SERIAL NOS.	YIELD STRENGTH AT 0.2% OFFSET (POUNDS/SQ. IN.)	TENSILE STRENGTH (POUNDS/SQ. IN.)	ELONGATION % IN 2.0***	ROCKWELL "B" HARDNESS	2-1/8" RADIUS FLATTENING TEST
1113	CC180647 THRU CC180676	47400	52900	17.0	64.0	PASSED
	CC180677 THRU CC180687	46900	52400	17.0	64.0	9T FLAT TEST
1113	CC180547 THRU CC180576	47100	52400	18.0	64.0	PASSED
	CC180576 THRU CC180577	45500	50900	15.0	64.0	9T FLAT TEST
	CC180578 THRU CC180579					
	CC180580 THRU CC180580					
	CC180581 THRU CC180616	47900	52700	19.0	65.0	PASSED
	CC180617 THRU CC180646	48000	52800	17.0	65.0	9T FLAT TEST

FROM :

FAX NO. :

Mar. 01 2005 02:15PM P16

## ARROWHEAD INDUSTRIAL SERVICES, INC.

## RECORD OF HYDROSTATIC TESTS OF ALUMINUM COMPRESSED GAS CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

OR LUXFER

NUMBERED CC180547 TO CC180687 INCLUSIVE

TEST PRESSURE: 3360

CYLINDER S/N	CAST CODE	HEAT LOT	TARE WEIGHT (LBS.)	WATER CAPACITY (LBS.)	TOTAL EXPANSION (CC)	PERMANENT EXPANSION (CC)	RATIO	GROUP	HYDRO TEST DATE
CC180615	950	081A	48.92	65.38	190.40	2.50	1.31	3	24 Nov 2003
CC180616	950	081A	48.88	65.30	193.00	2.90	1.50	3	24 Nov 2003
CC180617	950	081B	48.92	65.22	193.10	2.90	1.50	3	24 Nov 2003
CC180618	950	081B	48.96	65.20	190.10	3.80	1.94	3	24 Nov 2003
CC180619	950	081B	48.92	65.29	191.20	3.50	1.83	3	24 Nov 2003
CC180620	950	081B	48.94	65.30	193.80	3.50	1.81	3	24 Nov 2003
CC180621	950	081B	48.94	65.26	193.70	2.50	1.28	3	24 Nov 2003
CC180622	950	081B	48.95	65.31	191.70	2.00	1.04	3	24 Nov 2003
CC180623	950	081B	48.93	65.26	190.40	3.60	1.89	3	24 Nov 2003
CC180624	950	081B	48.93	65.26	192.70	1.50	0.78	3	24 Nov 2003
CC180625	950	081B	48.96	65.36	191.90	1.70	0.89	3	24 Nov 2003
CC180626	950	081B	48.93	65.26	193.10	3.80	1.97	3	24 Nov 2003
CC180627	950	081B	48.92	65.29	192.50	3.60	1.87	3	24 Nov 2003
CC180628	950	081B	48.95	65.26	193.40	2.00	1.03	3	24 Nov 2003
CC180629	950	081B	49.01	65.23	192.30	2.70	1.40	3	24 Nov 2003
CC180630	950	081B	49.00	65.34	190.60	1.30	0.68	3	24 Nov 2003
CC180631	950	081B	49.04	65.25	190.20	0.80	0.42	3	24 Nov 2003
CC180632	950	081B	49.03	65.32	191.20	3.60	1.88	3	24 Nov 2003
CC180633	950	081B	49.95	65.28	192.60	3.10	1.61	3	24 Nov 2003
CC180634	950	081B	49.01	65.20	191.10	2.80	1.47	3	24 Nov 2003
CC180635	950	081B	48.96	65.30	190.20	3.70	1.95	3	24 Nov 2003
CC180636	950	081B	49.02	65.26	191.00	1.10	0.58	3	24 Nov 2003
CC180637	950	081B	49.22	65.10	192.80	2.10	1.09	3	24 Nov 2003
CC180638	950	081B	49.08	65.13	190.60	2.40	1.26	3	24 Nov 2003
CC180639	950	081B	49.00	65.14	190.30	2.60	1.37	3	24 Nov 2003
CC180640	950	081B	49.13	65.15	192.50	2.70	1.40	3	24 Nov 2003
CC180641	950	081B	49.10	65.13	193.60	2.20	1.14	3	24 Nov 2003
CC180642	950	081B	49.17	65.19	191.80	3.50	1.82	3	24 Nov 2003
CC180643	950	081B	48.86	65.36	189.60	2.40	1.27	3	24 Nov 2003
CC180644	950	081B	49.11	65.11	193.20	2.20	1.14	3	24 Nov 2003
CC180645	950	081B	49.07	65.12	194.00	1.30	0.67	3	24 Nov 2003
CC180646	950	081B	49.17	65.07	190.00	1.50	0.79	3	24 Nov 2003
CC180647	953	U113F	49.25	65.08	191.10	1.90	0.99	3	24 Nov 2003
CC180648	953	U113F	49.22	65.15	191.30	2.90	1.52	3	24 Nov 2003
CC180649	953	U113F	49.21	65.21	191.60	2.50	1.30	3	24 Nov 2003
CC180650	953	U113F	49.21	65.22	191.50	3.10	1.62	3	24 Nov 2003
CC180651	953	U113F	47.51	66.88	189.90	2.90	1.53	3	24 Nov 2003
CC180652	953	U113F	47.51	66.84	192.00	2.40	1.25	3	24 Nov 2003
CC180653	953	U113F	47.52	66.86	192.10	2.50	1.30	3	24 Nov 2003
CC180654	953	U113F	47.50	66.87	192.10	1.80	0.94	3	24 Nov 2003
CC180655	953	U113F	47.54	66.90	189.90	2.30	1.21	3	24 Nov 2003
CC180656	953	U113F	47.47	66.87	194.40	1.90	0.98	3	24 Nov 2003
CC180657	953	U113F	47.47	66.87	190.70	0.70	0.37	3	24 Nov 2003
CC180658	953	U113F	47.49	66.61	194.40	2.60	1.34	3	24 Nov 2003
CC180659	953	U113F	47.47	66.65	191.40	2.30	1.20	3	24 Nov 2003
CC180660	953	U113F	47.49	66.64	192.00	2.20	1.15	3	24 Nov 2003
CC180661	953	U113F	47.48	66.70	191.80	2.00	1.04	3	24 Nov 2003
CC180662	953	U113F	47.49	66.69	192.30	3.90	2.03	3	24 Nov 2003
CC180663	953	U113F	47.46	66.62	190.80	3.40	1.78	3	24 Nov 2003
CC180664	953	U113F	47.48	66.62	191.70	1.90	0.99	3	24 Nov 2003
CC180665	953	U113F	47.39	66.63	191.90	1.70	0.89	3	24 Nov 2003
CC180666	953	U113F	47.47	66.62	190.00	1.90	1.00	3	24 Nov 2003
CC180667	953	U113F	48.91	65.28	191.00	2.10	1.10	3	24 Nov 2003
CC180668	953	U113F	48.83	65.27	190.00	2.50	1.32	3	24 Nov 2003
CC180669	953	U113F	48.75	65.28	191.20	3.00	1.65	3	24 Nov 2003
CC180670	953	U113F	48.80	65.27	191.30	2.50	1.28	3	24 Nov 2003
CC180671	953	U113F	48.85	65.33	191.60	3.40	1.77	3	24 Nov 2003
CC180672	953	U113F	48.78	65.26	190.70	1.90	1.00	3	24 Nov 2003
CC180673	953	U113F	48.76	65.24	194.30	0.70	0.36	3	24 Nov 2003
CC180674	953	U113F	48.81	65.27	190.70	1.80	0.94	3	24 Nov 2003
CC180675	953	U113F	48.80	65.33	189.90	1.80	0.95	3	24 Nov 2003
CC180676	953	U113F	48.83	65.24	190.30	1.40	0.74	3	24 Nov 2003
CC180677	950	U113H	48.90	65.37	191.00	2.10	1.09	3	24 Nov 2003
CC180678	950	U113H	48.84	65.37	189.20	2.80	1.48	3	24 Nov 2003
CC180679	950	U113H	48.78	65.42	190.50	3.00	1.57	3	24 Nov 2003
CC180680	950	U113H	48.80	65.40	191.60	1.20	0.63	3	24 Nov 2003
CC180681	950	U113H	48.83	65.36	190.90	1.10	0.58	3	24 Nov 2003
CC180682	950	U113H	48.81	65.41	190.20	1.40	0.68	3	24 Nov 2003

DOES

FOR CYLINDERS WEIGHED WITHOUT VALVES

FOR CYLINDERS WEIGHED WITH VALVES

FOR CYLINDERS WEIGHED WITH VALVES AND HANDLES

FOR CYLINDERS WEIGHED WITH PERMANENT NECK RINGS

FOR CYLINDERS WEIGHED WITH VALVES AND COLLARS

ARROWHEAD INDUSTRIAL SERVICES, INC.  
RIVERSIDE, CA

FROM :

FAX NO. :

Mar. 01 2005 02:16PM P17

## ARROWHEAD INDUSTRIAL SERVICES, INC.

## RECORD OF HYDROSTATIC TESTS OF ALUMINUM COMPRESSED GAS CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.

FOR LUXFER

NUMBERED CC180547 TO CC180687 INCLUSIVE

TEST PRESSURE: 3240

CYLINDER S/N	CAST CODE	HEAT LOT	TARE WEIGHT (LBS.)	WATER CAPACITY (LBS.)	TOTAL EXPANSION (CC)	PERMANENT EXPANSION (CC)	RATIO	CODE	HYDRO TEST DATE
CC180683	950	0113H	46.99	65.39	191.20	2.40	1.26	3	24 Nov 2003
CC180684	950	0113H	46.01	65.27	191.50	3.10	1.62	3	24 Nov 2003
CC180685	950	0113H	48.79	65.34	189.00	4.00	2.05	3	24 Nov 2003
CC180686	950	0113H	48.84	65.36	189.10	2.60	1.37	3	24 Nov 2003
CC180687	950	0113H	48.02	65.37	189.90	1.90	1.00	3	24 Nov 2003

CYLINDERS WEIGHED WITHOUT VALVES

1 FOR CYLINDERS WEIGHED WITH VALVES

2 FOR CYLINDERS WEIGHED WITH VALVES AND HANDLES

3 FOR CYLINDERS WEIGHED WITH PERMANENT NECK RINGS

4 FOR CYLINDERS WEIGHED WITH VALVES AND COLLARS

ARROWHEAD INDUSTRIAL SERVICES, INC.  
RIVERSIDE, CA

&lt;END REPORT&gt;