



Quality System Documentation

**PARAMOUNT
Job # 1J105033B
COMBO PIPING**

Contents

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Receiving/Transfer Reports, MTR's

Weld Procedures/Welder Qualifications

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PRESSURE PIPING SPECIFICATION SHEET

(For Construction/Repair/Alteration of Pressure Piping Systems Less Than or Equal to 500 Litres, Aggregate Internal Volume)

Owner: PARAMOUNT RESOURCES Contractor: DYNACORP FABRICATORS INC. AQP: 1270 (s)
 Plant Location: Portable Job #: 1J105033B

Material List				Piping Sketch (Reference attached drawings if appropriate) (use for recording RT No's. & Welder Symbols)				
Item No.	Description	Mat'l Spec. & Grade	Sch./ Rating					
7120-01-01	4" Inlet Spool	SA 350 LF2 SA 333-6	CI 2500 XXH					
7120-01-02	3" Inlet Spool	SA 350 LF2 SA 333-6	CI 2500 XXH					
7220-01-01	3" outlet Spool	SA 350 LF2 SA 333-6	CI 2500 XXH					
7310-28-01	4" drain Spool	SA 105N SA 106B	CI 150 STD					
7320-01-01	4" Drain Spool	SA 105N SA 106B	CI 150 STD					
7320-01-02	2" Spool	SA 350 LF2 SA 420 WPL6	CI 2500 XXH					
7510-24-01	3" PSV Spool	SA 105N SA 106B	CI 300 STD					
7510-24-02	2" Pipe Spool	SA 105B SA 106B	CI 150 STD					
7520-01-01	1.5" Pipe Spool	SA 350 LF2 Sa 420 WPL6	CI 2500 XXH					
7520-01-02	3"Pipe Spool	SA 105N SA 106b	CI 300 STD					

Line No.	Design Pressure	Design Temp. Min. / Max.	Corr. All.	Code ASME B31.1/B31.3	Service (e.g., Normal, Cat. D, M, K)	Severe Cyclic Yes/No	Test Pressure	Test Medium
7310-28-01	170 psi	-50/100F	0.0625	B31.3	M	YES	255 psi	Water
7510-24-01	170 psi	-50/100F	0.0625	B31.3	M	YES	255 psi	Water
7320-01-01	170 psi	-50/100F	0.0625	B31.3	M	YES	255 psi	Water
7220-01-01	5000 psi	-50/100F	0.0625	B31.3	M	YES	7500 psi	Water
7120-01-02	5000 psi	-50/100F	0.0625	B31.3	M	YES	7500 psi	Water
7520-01-01	5000 psi	-50/100F	0.0625	B31.3	M	YES	7500 psi	Water
7520-01-02	500 psi	-50/100F	0.0625	B31.3	M	YES	750 psi	Water

(Note: Pneumatic tests must have prior approval from ABSA.)

WOM 2

Welding Procedure Specification No's: _____

Line No.	MT / PT Extent %	Radiography Extent %	Hardness Testing	Ultrasonic - Other NDE Description / Extent %	Other Requirements
All Lines		100%			100% MPI ON ALL FILLET WELDS

NDE Contractor: INSPECTRUM Post Weld Heat Treatment Yes/N.A.: YES
 Post Weld Heat Treatment Time/Temp.: 60MIN/1150F PWHT Contractor: NORWELD
 Approved by Owner: _____ Date: _____
 Approved by Contractor: Claude M. Dineen QCM Date: DEC. 31, 2010
 Comments: _____

WORK COMPLETED AND ACCEPTED (AB-83 completed)

Contractor Signature: _____ Date: _____



PRESSURE PIPING CONSTRUCTION AND TEST DATA REPORT

In accordance with the provisions of the PESR Section 31(1)

Shop Construction ☒; **Field Construction** ☐;
Final Data Report ☐; **Partial Data Report** ☐ (from one ABSA-
 authorized Contractor to another ABSA- authorized Contractor).

Complete both sides of this Form

1. Constructed By: Dynacorp Fabricators Inc. Owner's Job No: 1J105033B
(Name of ABSA authorized primary contractor or subcontractor)
8600 92 Street Grande Prairie, AB T8V 7S3
(Address)

Certificate of Authorization Permit No. AQP-1270 Expiry Date: December 11, 2011

2. Constructed For: PARAMOUNT RESOURCES

(Name of primary contractor if different from above)

4700 Bankers Hall West 888rd Calgary AB T2P 5C5

(Address)

Certificate of Authorization Permit No. AQP- Expiry Date:
(Required when the primary contractor undertakes some/all of the quality functions, e.g., NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

3. Owner: Paramount 4700 Bankers Hall West 888 3rd Calgary AB T2P 5C5
(Name and address)

(Location of installation)

Certificate of Authorization Permit No. AQP- Expiry Date:
(Required when the owner undertakes some/all of the quality functions, e.g., NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

4. Piping Design Alberta Registration No.: PP- (Required if aggregate piping volume is over 0.5m³)

5. WP No.: WP-1073.2; Company: Dynacorp Fabricators Inc.; Owner's WP No. (If used): WP-
(Alberta Registration No.)
 WPS No(s). used: WOM-2; Owner's WPS No(s). (If used):

6. Code: ASME B31.1 Non Boiler External Piping ☐; ASME B31.1 Boiler External Piping ☐;
ASME B31.3 ☒ - Service category: Normal ☐, D ☐, M ☒, High Pressure ☐; B31.5 ☐; B31.9 ☐.

Drawing No. Rev. No. Line No.	Fluid (Air/Stm. Etc.)	Des. Press. kPa	Des. Temp. °C (Max. & Min.)	Pressure Test kPa	Test Medium	Pipe Mat'l Spec. & Grade	C.A. mm	Pipe NPS & Schedule	Flange Material & Rating	PWHT/ Preheat Temp. °C	R.T. %	Other NDE
A-DR-4-01	Hydro Carbon	170psi	200/-50F	255 psi	Water	SA 106B	0.0625	STD	SA 105N Cl 150	1150F	100%	-
A-PR-3-02	Hydro Carbon	170psi	200/-50F	255 psi	Water	SA 106B	0.0625	STD	SA 105N Cl 150	1150F	100%	-
A-BD-4-03	Hydro Carbon	170psi	200/-50F	255 psi	Water	SA 106B	0.0625	STD	SA 105N Cl 150	1150F	100%	-
F-PO-3-04	Hydro Carbon	5000 psi	200/-50F	7500 psi	Water	SA 333-6	0.0625	XXH	SA 350 LF2	1150F	100%	-
F-PI-3-05	Hydro Carbon	5000 psi	200/-50F	7500 psi	Water	SA 333-6	0.0625	XXH	SA 350 LF2	1150F	100%	-
A-PR-01.5-06	Hydro Carbon	5000 psi	200/-50F	7500 psi	Water	SA 333-6	0.0625	XXH	SA 350 LF2	1150F	100%	-
A-PR-1.5-06	Hydro Carbon	500 psi	200/-50F	750 psi	Water	SA 106B	0.0625	STD	SA 105N	1150F	100%	-

Partial Data Reports certified by sub-contractors are listed below and attached to this Data Report ☐

No.	Line No.	Spool No.	Drg. No. (with Rev. No.)	Sub-contractor (Name)	AQP No. (if from Alberta)	Expiry (if from Alberta)

Remarks: For partial data report provide information about the code work that was not completed by the subcontractor (e.g., hydrotest, PWHT etc.). For final data report provide information about the code work that was not completed by subcontractors and subsequently completed by the primary contractor (e.g., hydrotest of entire assembly, PWHT etc.)

Endorse certificate 'A' or 'B'

A. CERTIFICATE OF COMPLIANCE

Signed by the subcontractor when supplying this certificate as a
Partial Data Report

We certify that the statements in this Data Report are correct and that materials, construction and workmanship of the piping fabrication conform to the registered quality system and the applicable Piping code(s).

Date: _____
Subcontractor

Print Authorized Representative's Name

Signature

This certificate is not valid unless it forms part of a Final Data Report signed by Primary Contractor

B. CERTIFICATE OF COMPLIANCE

Signed by the primary contractor when supplying this certificate as a
Final Data Report

We certify that the statements in this Data Report are correct and that piping job no. 1J105033B described in this Data Report was constructed in accordance with the Province of Alberta Safety Codes Act and Regulations, and applicable ASME Piping Code(s).

Date: Dec. 31, 2010 Dynacorp Fabricators

Primary Contractor

Claude McDonald QCM

Print Authorized Representative's Name

Claude McDonald
Signature

CERTIFICATE OF INSPECTION

I, the undersigned, employed by _____ have inspected the piping

job no. _____ described in this Pressure Piping Construction and Test Data Report and state that, to the best of my knowledge and belief, the Contractor has constructed this piping in accordance with the applicable Sections of the ASME Piping Codes and the Province of Alberta Safety Codes Act and Regulations.

Date: _____

Date: _____

Print Owner's Inspector's Name Owner's Inspector's Signature

Name: _____ Sign.: _____

ABSA Safety Codes Officer
(BOILER EXTERNAL PIPING ONLY)



DRAWING LOG

JOB #:

DESCRIPTION:

CUSTOMER:

UPDATED:

1J105024-34

SANDFILTER/BLOWDOWN COMBO UNIT

PARAMOUNT

13/09/2010

DRAWING NUMBER	DRAWING DESCRIPTION	PREVIOUS REV	CURRENT REV	ISSUE DATE	COPIES ISSUED FOR					
					INFORM	REVIEW	APPROV.	BID	CONST.	AS BUILT
1002-0015	SKID MOUNTED COMBO UNIT	2	3	13/09/2010					X	
1002-0015 PID	SKID MOUNTED COMBO UNIT	2	3	13/09/2010					X	
1002-0015 LL	LINE LIST	0	0	24/08/2010					X	
1J104961-IL	INSTRUMENT LIST	1	2	13/09/2010					X	
1J104961-VL	VALVE LIST	-	0	24/08/2010					X	
2001-0023	FILTER SKID	0	1	24/08/2010					X	
2001-0023-101	SKID WELDMENT	-	0	24/08/2010					X	
2001-0023-102	PLATFORM WELDMENT	0	1	24/08/2010					X	
2001-0023-105	LADDER	-	0	24/08/2010					X	
2001-0023-106	PICK UP ROLL END PLATE	0	1	24/08/2010					X	
2001-0023-103	HANDRAIL WELDMENT	-	0	24/08/2010					X	
2001-0023-108	REMOVABLE GRATING SUPPORT	-	0	24/08/2010					X	
2001-0023-202	CUSTOM PIPE CLAMP	-	0	24/08/2010					X	
2001-0023-312	PIPE SUPPORT	-	0	24/08/2010					X	
5001-0007	VERTICAL SANDFILTER	A1	A2	24/08/2010					X	
5001-0007-101	MACHINING DETAIL	0	1	24/08/2010					X	
5001-0007-102	MACHINED FORGING	-	0	24/08/2010					X	
5001-0007-103	MACHINED FORGING	-	0	24/08/2010					X	
5001-0007-104	MACHINING DETAIL	-	0	24/08/2010					X	
5001-0007-301	DAVIT ASSEMBLY	-	0	24/08/2010					X	
ECIL-WD01	WELD DETAILS	-	1	24/08/2010					X	
ECIL-FT01	FABRICATION TOLERANCES	-	1	24/08/2010					X	
5001-0001-107	SCREEN	-	0	24/08/2010					X	
5001-0001-108	SCREEN ASSEMBLY	-	0	24/08/2010					X	
5005-0001	VERTICAL BLOWDOWN	-	B1	24/08/2010					X	
5005-0001-203	LIFTING LUG	-	0	24/08/2010					X	
5005-0001-205	BAR CUT AS PER DRAWING	-	0	24/08/2010					X	
5005-0001-206	LADDER	-	0	24/08/2010					X	
5005-0001-001	DAVIT ASSEMBLY	-	0	24/08/2010					X	
ECIL-WD01	WELD DETAILS	-	1	24/08/2010					X	
ECIL-FT01	FABRICATION TOLERANCES	-	1	24/08/2010					X	
7120-01	2500# INLET PIPING SYSTEM	-	0	24/08/2010					X	
7120-01-01	INLET SPOOL	-	0	24/08/2010					X	
7120-01-02	INLET SPOOL	-	0	24/08/2010					X	
7120-01-03	INLET/OUTLET FLANGE PROTECTOR	-	0	24/08/2010					X	
7220-01	2500# OUTLET PIPING SYSTEM	-	0	24/08/2010					X	
7220-01-01	PIPING SPOOL	-	0	24/08/2010					X	
7310-28	150# DRAIN PIPING SYSTEM	-	0	24/08/2010					X	
7310-28-01	DRAIN SPOOL	-	0	24/08/2010					X	
7320-01	2500# DRAIN PIPING SYSTEM	-	0	24/08/2010					X	
7320-01-01	PIPING SPOOL	-	0	24/08/2010					X	
7320-01-02	PIPING SPOOL	-	0	24/08/2010					X	
7510-24	150# PSV PIPING SYSTEM	0	1	24/08/2010					X	
7520-01	2500# PSV PIPING SYSTEM	1	2	24/08/2010					X	
7510-24-01	PIPING SPOOL	-	0	24/08/2010					X	
7510-24-02	PIPING SPOOL	-	0	24/08/2010					X	
7520-01	2500# PSV PIPING SYSTEM	0	1	13/03/2010					X	
7520-01-01	PIPING SPOOL	-	0	24/08/2010					X	
7520-01-02	PIPING SPOOL	0	1	13/03/2010					X	

ISSUED FOR CONSTRUCTION

JOB NO. _____

PURCH

SHOP

QC

STICK

signature

date

13 SEPT 10

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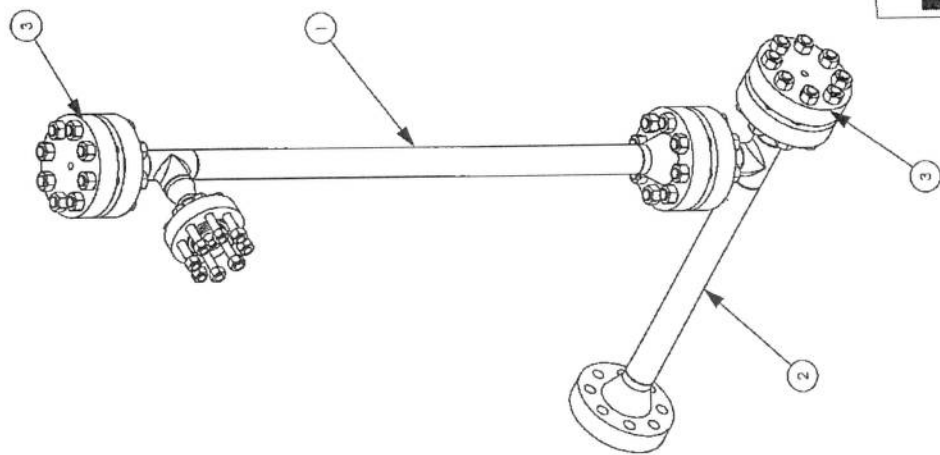
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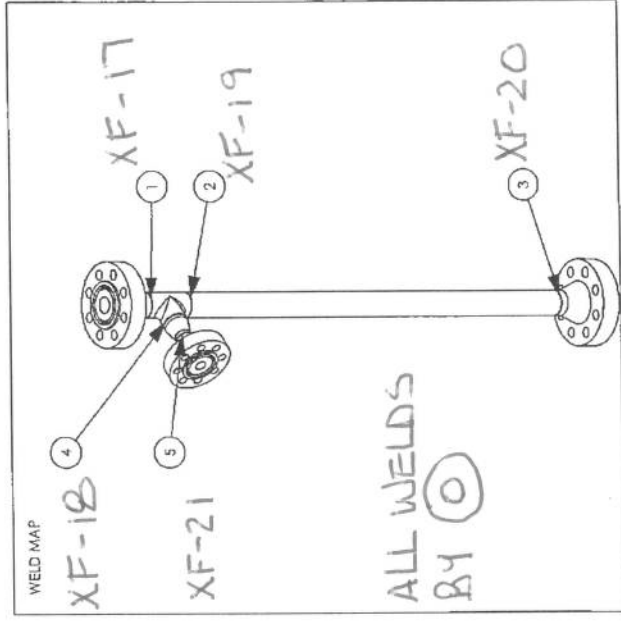
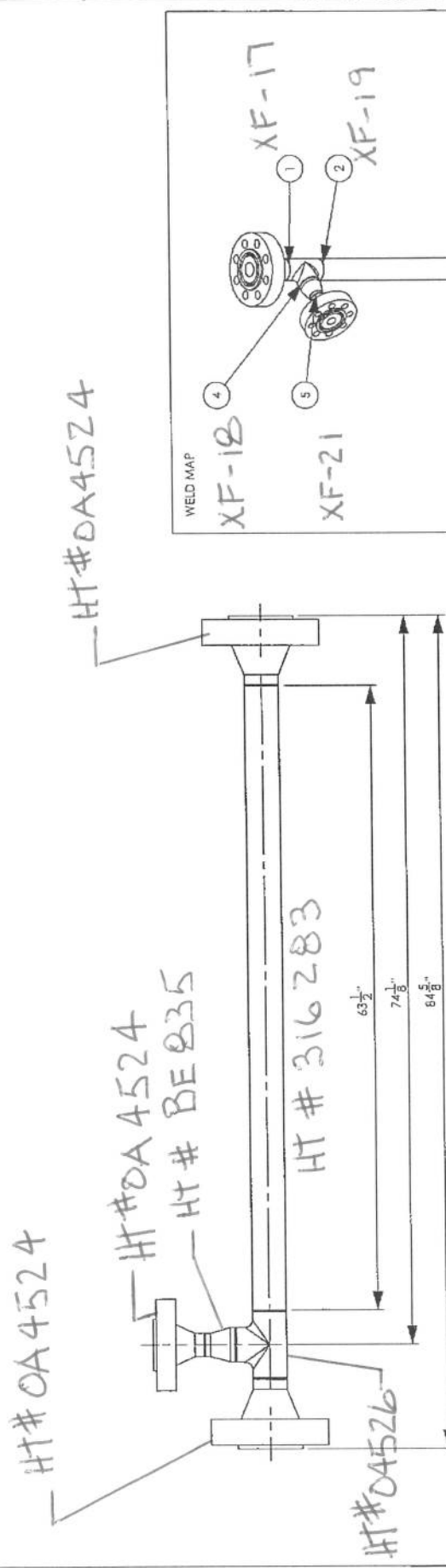
ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	LENGTH	MATERIAL
1	1	7120-01-01	INLET PIPING SPOOL		
2	1	7120-01-02	INLET PIPING SPOOL		
3	2	LF3250RTJ3TAPO.5	3" NPS CLASS 2500 RING TYPE JOINT BLIND FLANGE TAPPED 1/2" NPT		SA-350-LF2-1
4	8	STU1X7B7M	1" STUD X 7" LG		SA-193-87M
5	24	STU1.25X9B7M	1-1/4" STUD X 9" LG		SA-193-87M
6	16	NUT12HM	1" HEAVY SERIES HEX NUT		SA-194-2HM
7	48	NUT1.252HM	1-1/4" HEAVY SERIES HEX NUT		SA-194-2HM
8	1	GASR24RTJ316	R26 RING GASKET OVAL TYPE		316
9	3	GASR32RTJ316	R32 RING GASKET OVAL TYPE		316

ISSUED FOR CONSTRUCTION

JOB NO. _____
 PURCH _____ SHOP _____
 STICK _____
 QC _____
 24 AUG 10
 date
 signature

DYNACORP FABRICATORS INC. 8600 124th Street Grande Prairie, AB T6V 7S3 Phone: (780) 538-0037		THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF DYNACORP. IT IS TO BE USED FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF DYNACORP.	
DRAWN BY: C.M. CHECKED BY: C.M. DATE: 2010/03/02		NAME: _____ DATE: _____ SIGNATURE: _____	
PROJECT: 2500# INLET PIPING SYSTEM GENERAL ASSEMBLY F-PH-3-05		COMPANY: DYNACORP	
TOTAL: _____ JOB NO.: _____ DRAWING NO.: 7120-01		REV: _____ SHEET: 0 OF: 3	

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	LENGTH	MATERIAL
1	1	UTF2500XXHRTJWN	2" NPS CLASS 2500 XXH RTJ WELD NECK FLANGE		SA-350-LF2-1
2	2	UTF2500XXHRTJWN	3" NPS CLASS 2500 XXH RTJ WELD NECK FLANGE		SA-350-LF2-1
3	1	LTW32XXH-CR	3" X 2" NPS XXH WALL BUTTWELD CONCENTRIC REDUCER		SA-420-WPL6
4	1	LTW3XXH-TEE	3" NPS XXH WALL BUTTWELD TEE		SA-420-WPL6
5	1	PIP3XXH-Q33	3" NPS XXH 0.600" NOM. 0.525" MIN. SMLS PIPE	63 1/2"	SA-333-6



1J105024 1J105030
 1J105025 1J105031
 1J105026 1J105032
 1J105027 1J105033
 1J105028 1J105033
 1J105029 1J105034

ISSUED FOR CONSTRUCTION
 JOB NO. _____
 PURCH. SHOP _____
 STICK _____
 QC _____
 24 AUG 10
 signature _____
 date _____

WELD MAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WELD SYM.															
X-RAY #	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
WELD PROC.	B31.3, 2008ED, FLUID SERV. CAT. (M)														

FILLET WELD	100 % MPI ON FILLET WELDS
HYDRO. PRESS.	7500PSI
DES. TEMP.	-50 TO 200F
PWHT	60 MIN @ 1150°F ±50°F

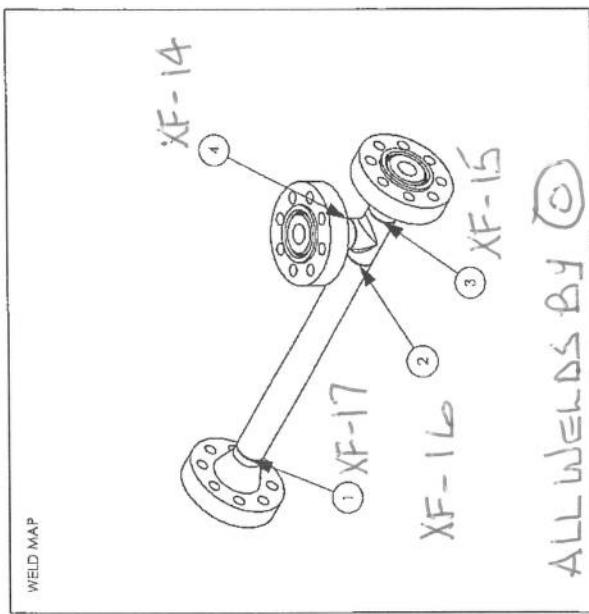
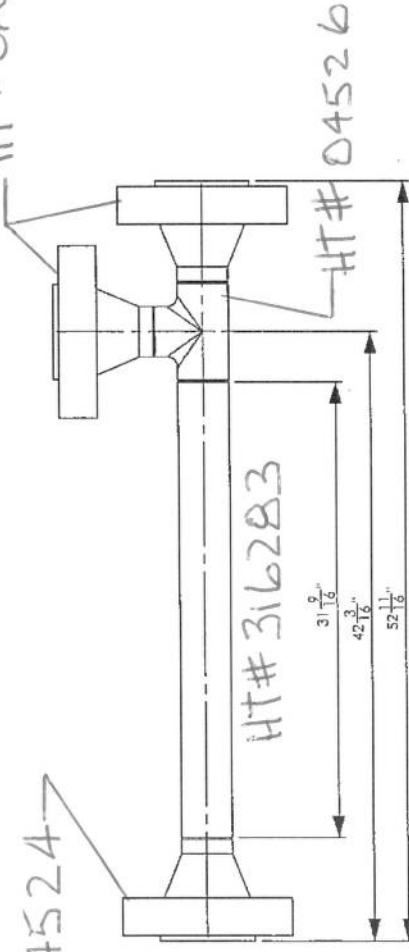
INLET SPOOL	DATE	2010/3/30	APP.	
DWN	CJM			
SWG. NO.		7120-01-01		
SHEET				2 OF 3

DYNACORP
 FABRICATORS INC.
 Grande Prairie
 Ph: (780) 538-0037
 Calgary
 Ph: (403) 217-1332

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ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	LENGTH	MATERIAL
1	1	LTW3XXHTEE	3" NPS XXH WALL BUTTWELD TEE		SA-420-WPL6
2	1	PF3XXH333	3" NPS XXH 0.600" NOM. 0.525" MIN. SMLS PIPE	31 9/16"	SA-333-6
3	3	LF32500XXHRTJWN	3" NPS CLASS 2500 XXH RTJ WELD NECK FLANGE		SA-350-LF2-1

HT# OA4524



1J105030
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ISSUED FOR CONSTRUCTION

JOB NO. STICK
PURCH SHOP
signature date 24 Aug 10

WELD MAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WELD SYM.															
X-RAY #	0000														
WELD PROC.	WCM-2														

FILLET WELD	100 % MPTON FILLET WELDS	DES. PRESS	5000PSI
HYDRO. PRESS.	7500PSI	X-RAY	100%
DES. TEMP.	-50 TO 200 F		
PWHT	60 MIN @ 1150 °F ±50 °F		

Grand Prairie
Ph: (780) 538-0037
Calgary
Ph: (403) 217-1332

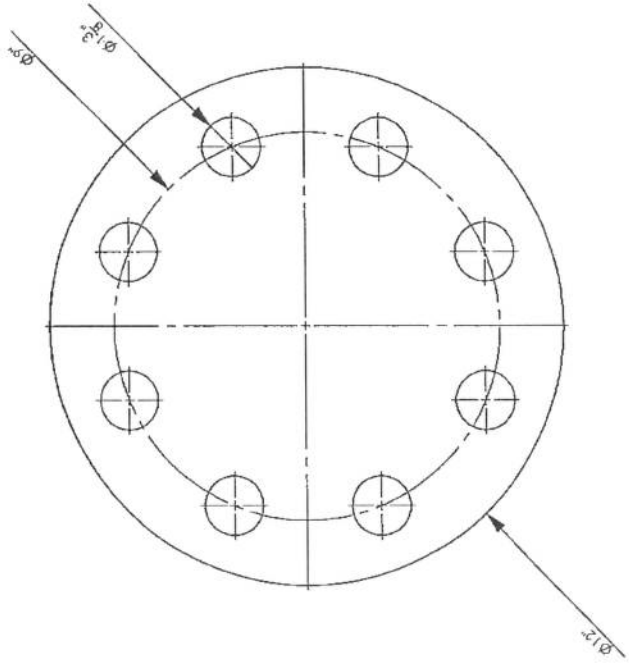
INLET SPOOL

OWN CJM DATE 2010/3/30 APPS -

DWG. 7120-01-02 SHEET 3 OF 3

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ISSUED FOR CONSTRUCTION

JOB NO. _____
 PURCH SHOP QC STICK
 signature _____ date _____

DYNACORP
 FABRICATING
 8400 92nd Street
 Granite Falls, AB
 T8V 7S3
 Phone: (403) 538-0037
 www.dynacorp.ca

DRAWN BY	NAME	DATE
DRG	ANG	20/04/26
CALC		
CALC BR		
CALC		

INLET/OUTLET FLANGE PROTECTOR
 3/16" PLATE CUT AS SHOWN
 COMPANY
 REV. SHEET
 0 1 OF 1 A

SCALE	JOB NO.	DWG. NO.	REV.	SHEET
1:4		7120-01-03	0	1 OF 1

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	LENGTH	MATERIAL
1	1	7220-01-01	INLET PIPING SPOOL		
2	1	17F32500RTJ8TAPO.5	3" NPS CLASS 2500 RING TYPE JOINT BLIND FLANGE TAPPED 1/2" NPT		SA-350-LF2-1
3	16	STU1.25X987M	1-1/4" STUD X 9" LG		SA-193-B7M
4	32	NUT1.252HM	1-1/4" HEAVY SERIES HEX NUT		SA-194-2HM
5	2	GASR32RTJ316	R32 RING GASKET OVAL TYPE		316

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1J105029

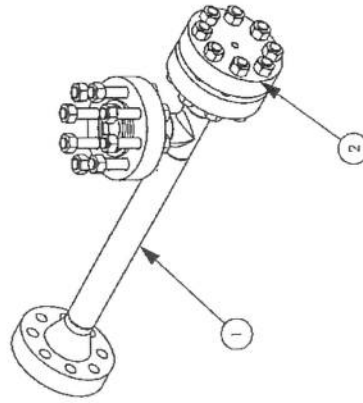
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1J105034



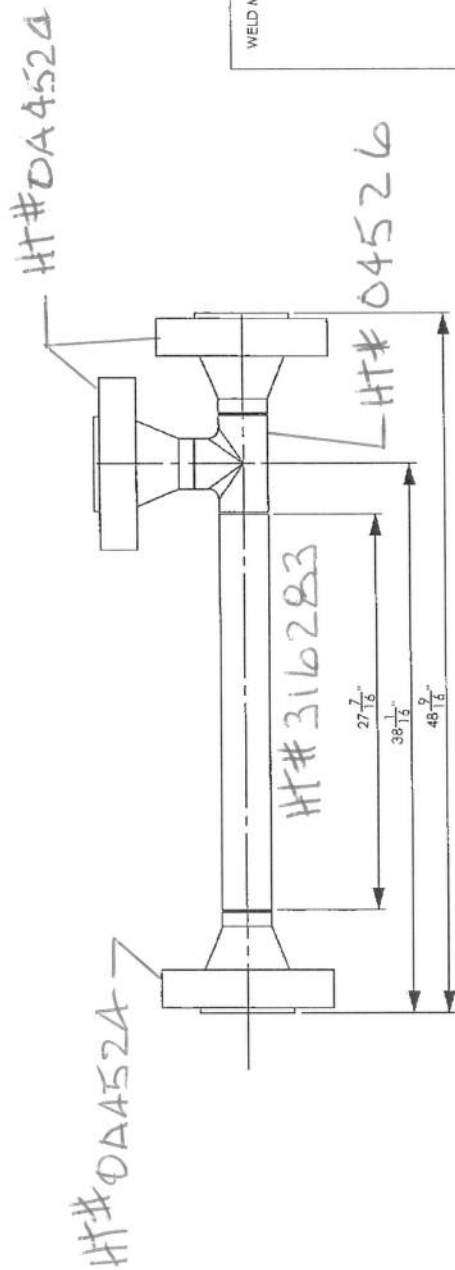
ISSUED FOR CONSTRUCTION

JOB NO. _____
PURCH SHOP QC STICK
signature 24 AUG 10 date

DYNACORP
P A B R I C A T O R S I N C
244109 Partridge Place SW
Graceland, AL 36034
Phone: (404) 538-0037
www.dynacorp.ca

DESIGNED BY CJM	DATE 2010/07/20	2500# OUTLET PIPING SYSTEM	
CHECKED BY G.A.	DATE -	GENERAL ASSEMBLY F-PO-3-04	
CALCULATED BY G.A.	DATE -	COMPANY DYNACORP	
PROPERTY AND CONFIDENTIALITY THIS INFORMATION IS CONFIDENTIAL AND NOT TO BE DISCLOSED OR REPRODUCED WITHOUT THE WRITTEN PERMISSION OF DYNACORP		SCALE -	REV. 0
JOB NO. 7220-01		REV. 0	
SHEET 1 OF 2		A	

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	LENGTH	MATERIAL
1	1	LTW3XXHTEE	3" NPS XXH WALL BUTTWELD TEE		SA-420-WPL6
2	1	PP3XXH333	3" NPS XXH 0.400" NOM. 0.525" MIN. SMLS PIPE	27' 7 1/8"	SA-333-6
3	3	LT32500XXHRTJWN	3" NPS CLASS 2500 XXH RTJ WELD NECK FLANGE		SA-350-LF2-1



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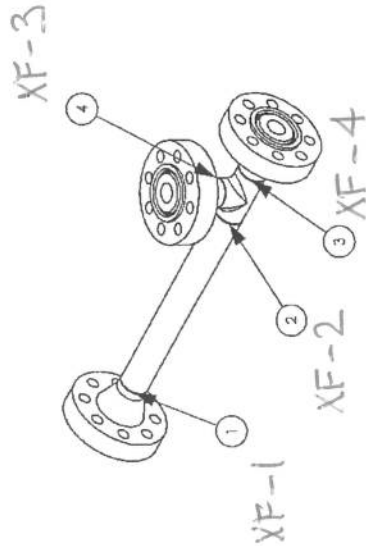
ISSUED FOR CONSTRUCTION

JOB NO. _____
 PURCH SHOP QC STICK
 24 AUG 10 date
 signature

WELD MAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WELD SYM.															
X-RAY #	0000														
WELD PROC.	WOM-2														
B31.3, 2008ED. FLUID SERV. CAT.(M)															

FILLET WELD	100 % MPI ON FILLET WELDS
HYDRO. PRESS.	7500PSI
DES. TEMP.	-50 TO 200F
X-RAY	100%
PWHT	60 MIN @ 1150°F ±50°F

WELD MAP



ALL WELDS BY (D)

DYNACORP
 FABRICATORS INC.

Grande Prairie
 Ph: (780) 538-0037
 Calgary
 Ph: (403) 217-1332

PIPING SPOOL

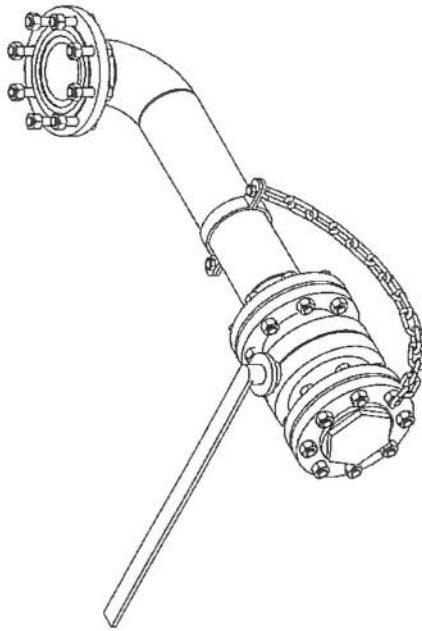
DWN	CJM	DATE	2010/3/30	APR	
SWG. NO.			7220-01-01		
SHEET					2 OF 2

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1J105024
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1J105034

ISSUED FOR CONSTRUCTION

JOB NO. _____
PURCH SHOP QC STICK
signature _____
24 AUG 10
date



ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	LENGTH	MATERIAL
1	1	7310-28-01	DRAIN SPOOL		
2	1	48A151	4" CL150 RAISED FACE BALL VALVE FLOATER FF		NACE-20
3	1	FLA4150RTHD	4" NPS CLASS 150 RAISED FACE THREADED FLANGE		SA-105N
4	24	STUD.425X3.587M	5/8" STUD X 3-1/2" LG		SA-193-B7M
5	48	NUT0.4050HM	5/8" HEAVY SERIES HEX NUT		SA-194-2HM
6	3	GAS4150FG316VC	4" NPS CLASS 150 RAISED FACE FLEX GASKET TYPE CG		316-VC
7	1	CLAMP 4IN PIPE FIG 212	4" GRINNELL CLAMP		
8	1	CHAIN 1/8 PASSING LINK	2/O PLATED PASSING LINK CHAIN	30"	
9	1	THD4HEXPLUG	4" NPT THREADED HEX PLUG		SA-105N

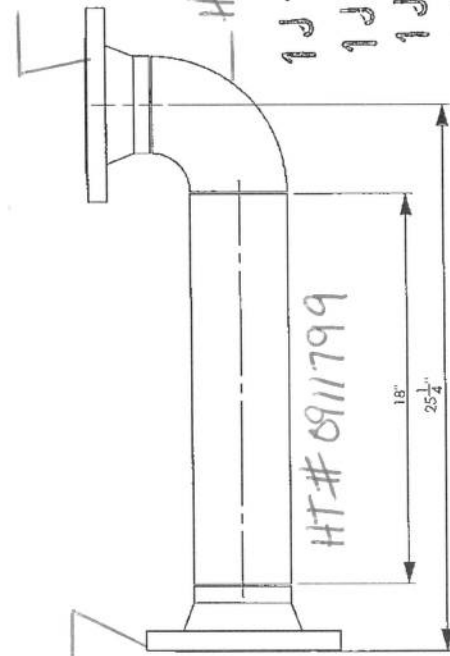
DYNACORP P A R I C A T O R S I N C 8400 92nd Street Gardnrs Prairie, AB T8V 7S3		Phone: (403) 217-1332 www.dynacorp.ca	
DRAWN BY: EJM		DATE: 2010/08/03	
CHECKED BY: [Signature]		CALC. BY: [Signature]	
DESIGNED BY: [Signature]		DATE: [Signature]	
PROJECT AND CONFIDENTIAL		NOT TO BE REPRODUCED OR USED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF DYNACORP	
150# DRAIN PIPING SYSTEM		PIPING ASSEMBLY A-DR-4-01	
COMPANY: DYNACORP		JOB NO. 7310-28	
SCALE		REV. 0	
1 OF 2		A	

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	LENGTH	MATERIAL
1	2	FLA150STD8FVN	4" NPS CLASS 150 STD WALL RAISED FACE WELD NECK FLANGE		SA-105N
2	1	WEL4X90STD8RELL	4" NPS STD WALL 90DEG. SHORT RADIUS BUTTWELD ELBOW		SA-234-WPB
3	1	PIP45TD106	4" NPS STD [540] 0.237" NOM. 0.207" MIN. SMLS PIPE	18"	SA-106-B

HT# ASD1

HT# JL405

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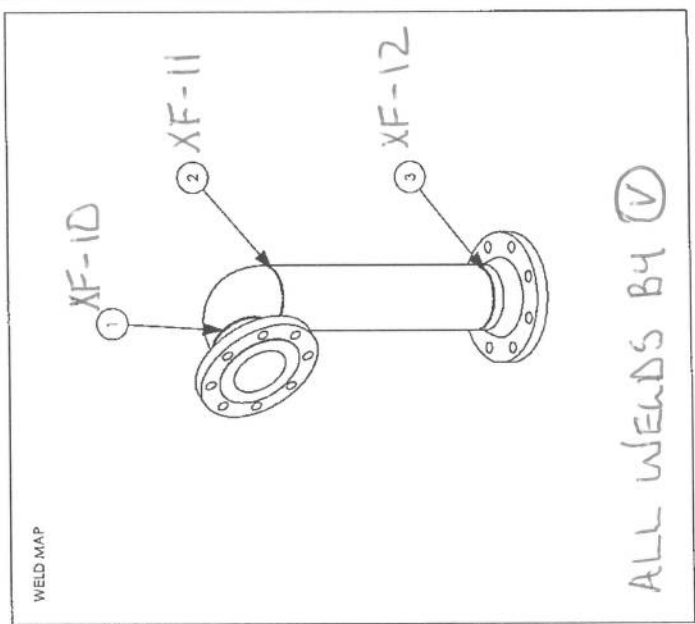


ISSUED FOR CONSTRUCTION

JOB NO. _____
PURCH _____ SHOP _____ STICK _____
DATE 24 AUG 10
signature _____

WELD MAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WELD SYM.															
X-RAY #	VVV														
WELD PROC.	WOM-2														

FILLET WELD	100 % MPI ON FILLET WELDS	DES. PRESS.	170PSI
HYDRO. PRESS.	255PSI	X-RAY	100%
DES. TEMP.	-20 TO 200F		
PWHT	60 MIN @ 1150°F ±50°F		



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Calgary
Ph: (403) 217-1332

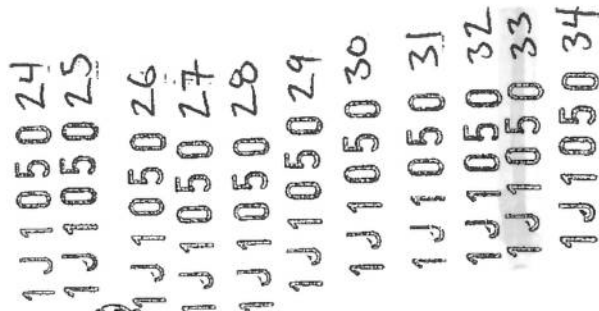
DRAIN SPOOL

DWN CJM DATE 2007/07/19 APP -

7310-28-01

2 OF 2

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ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	MATERIAL
1	1	7320-01-01	DRAIN SPOOL	
2	1	7320-01-02	DRAIN SPOOL	
3	1	28A2501	2" NPS CLASS 2500 RTJ BALL VALVE TRUNION RP	NACE-50F
4	1	2G02501	2" CL2500 RTJ GLOBE VALVE	NACE-50F2
5	2	LTF22500RTJ8TAPO.5	2" NPS CLASS 2500 RING TYPE JOINT BLIND FLANGE TAPPED 1/2" NPT	SA-350-LF2-1
6	1	FLA81500FB	8" NPS CLASS 150 RAISED FACE BLIND FLANGE	SA-105N
7	8	STU0.625X3.587M	5/8" STUD X 3-1/2" LG	SA-193-B7M
8	8	STU0.75X4.597M	3/4" STUD X 4-1/2" LG	SA-193-B7M
9	48	STU1.X757M	1" STUD X 7" LG	SA-193-B7M
10	16	NUT0.6252-M	5/8" HEAVY SERIES HEX NUT	SA-193-B7M
11	16	NUT0.752-M	3/4" HEAVY SERIES HEX NUT	SA-194-2HM
12	96	NUT1.2HM	1" HEAVY SERIES HEX NUT	SA-194-2HM
13	6	GASR268TJ316	824 RING GASKET OVAL TYPE	316
14	1	GAS4150FG316VC	4" NPS CLASS 150 RAISED FACE FLEX GASKET TYPE CG	316-VC
15	1	GAS8150FG316VC	8" NPS CLASS 150 RAISED FACE FLEX GASKET TYPE CG	316-VC

ISSUED FOR CONSTRUCTION

JOB NO. _____ PURCH SHOP _____ QC _____ STICK _____
signature _____ 24 Aug 10 date

signature

24 AUG date

STICK

KG 10

DECEMBER

DOWN

244109 Partridge Place SW
FARMINGTON, UT 84403

Grande Prairie, AB
T8V 7S3

322

Phone: (780) 538-0037

www.ayhospitals.co.uk

2500# PIPING SYSTEM

FOAM IN PIPING SYSTEMS

A BD 403

A-664-4-03

CORP

DWG. NO.

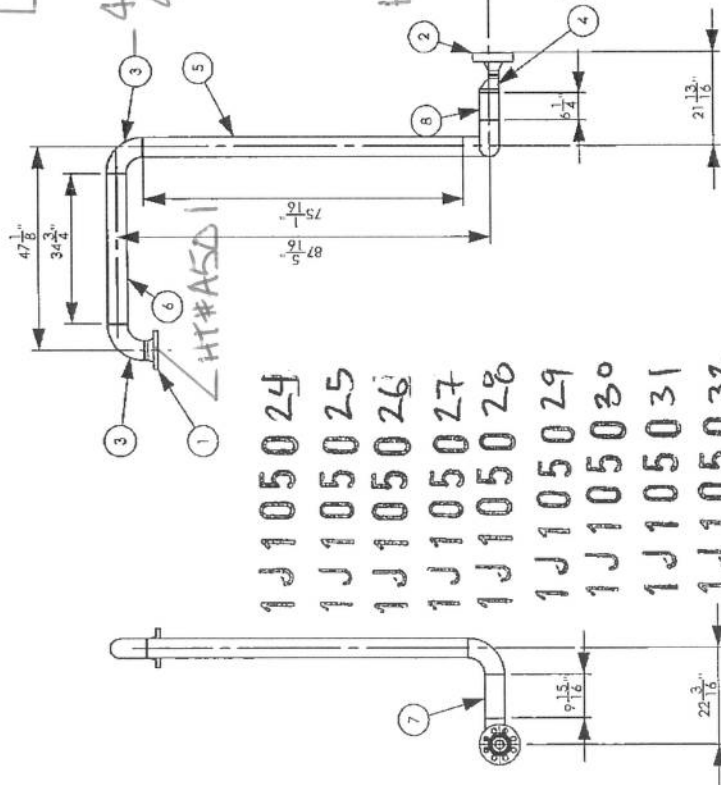
7320-0

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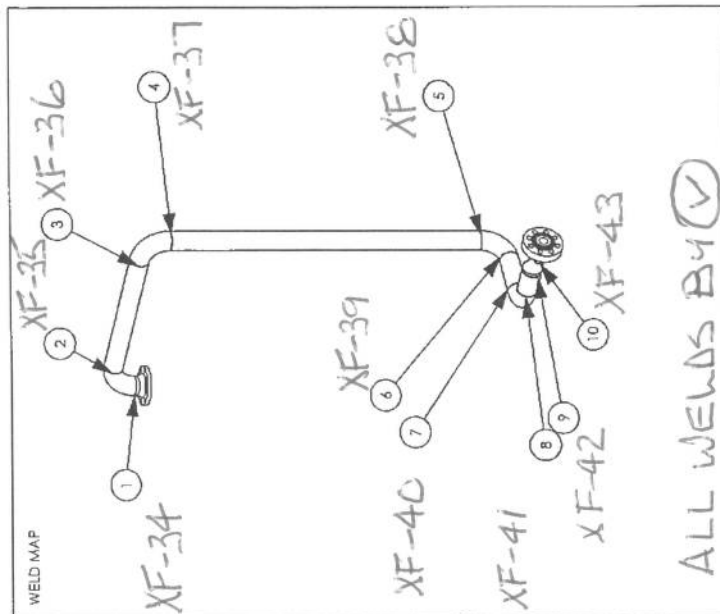
ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	LENGTH	MATERIAL
1	1	FLA150STD106	4" NPS CLASS 150 STD WALL RAISED FACE WELD NECK FLANGE		SA-105N
2	1	FLA250STD106	2" NPS CLASS 250 STD (SCH40) RTJ WELD NECK FLANGE		SA-105N
3	4	WEL4X90STD106	4" NPS STD WALL 90DEG. BUTTWELD ELBOW		SA-234-WPB
4	1	WEL4X2STD106	4" X 2" NPS STD WALL BUTTWELD ECCENTRIC REDUCER		SA-234-WPB
5	1	PIP45TD106	4" NPS STD (S40) 0.237" NOM. 0.207" MIN. SMLS PIPE	75 1/16"	SA-106-B
6	1	PIP45TD106	4" NPS STD (S40) 0.237" NOM. 0.207" MIN. SMLS PIPE	34 3/4"	SA-106-B
7	1	PIP45TD106	4" NPS STD (S40) 0.237" NOM. 0.207" MIN. SMLS PIPE	9 15/16"	SA-106-B
8	1	PIP45TD106	4" NPS STD (S40) 0.237" NOM. 0.207" MIN. SMLS PIPE	6 1/4"	SA-106-B

ALL PIPE HT#0911799

4 @ LF301
4" STD 90° BUEL



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ISSUED FOR CONSTRUCTION

JOB NO. _____

PURCH SHOP QC STICK

24 AUG 10

signature _____ date

WELD MAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WELD SYM.	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
X-RAY #															
WELD PROC.	B31.3, 2008ED, FLUID SERV. CAT. (M)														

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Calgary
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DYNACORP
FABRICATORS INC.

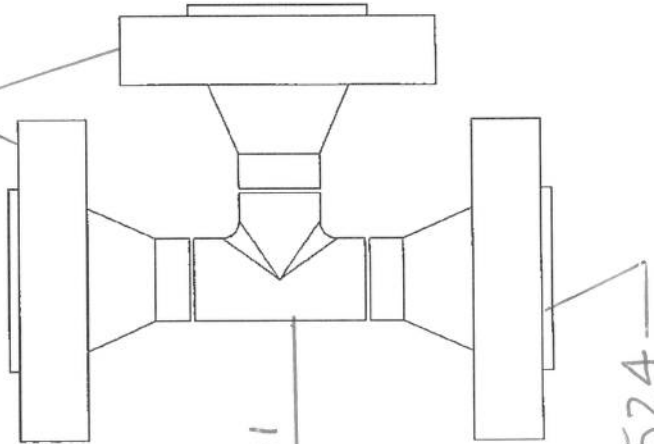
PIPING SPOOL

DWG. NO.	CJM	DATE	APPR
7320-01-01		2010/3/30	

SHEET
2 OF 3

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	LENGTH	MATERIAL
1	3	1JF22500XXHRTJWN	2" NPS CLASS 2500 XXH RTJ WELD NECK FLANGE		SA-350-LP2-1
2	1	1TW200XHTEE	2" NPS XXH WALL BUTT WELD TEE		SA-420-WPL6

HT# 0A4524



- 1J105024
- 1J105025
- 1J105026
- 1J105027
- 1J105028
- 1J105029
- 1J105030
- 1J105031
- 1J105032
- 1J105033
- 1J105034

HT# 690001

HT# 0A4524

ISSUED FOR CONSTRUCTION

JOB NO. _____
 PURCH SHOP _____
 QC _____
 24 AUG 10 _____
 signature _____ date

WELD MAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WELD SYM.															
X-RAY #	000														
WELD PROC.	E31.3, 2008ED, FLUID SERV. CAT.(M)														

FILLET WELD	100 % MPI ON FILLET WELDS
HYDRO. PRESS.	7500 PSI
DES. TEMP.	-50 TO 200 F
PWHT	60 MIN @ 1150 F ±50 F

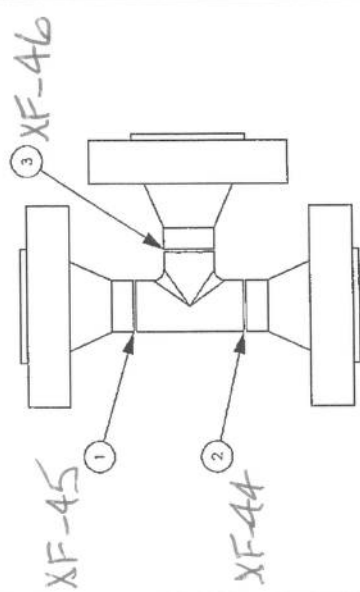
PIPING SPOOL

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 Calgary
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DYNACORP
 FABRICATORS INC

DWN	CJM	DATE	2010/3/30	APPR	-
NO.			7320-01-02		
SHEET					3 OF 3

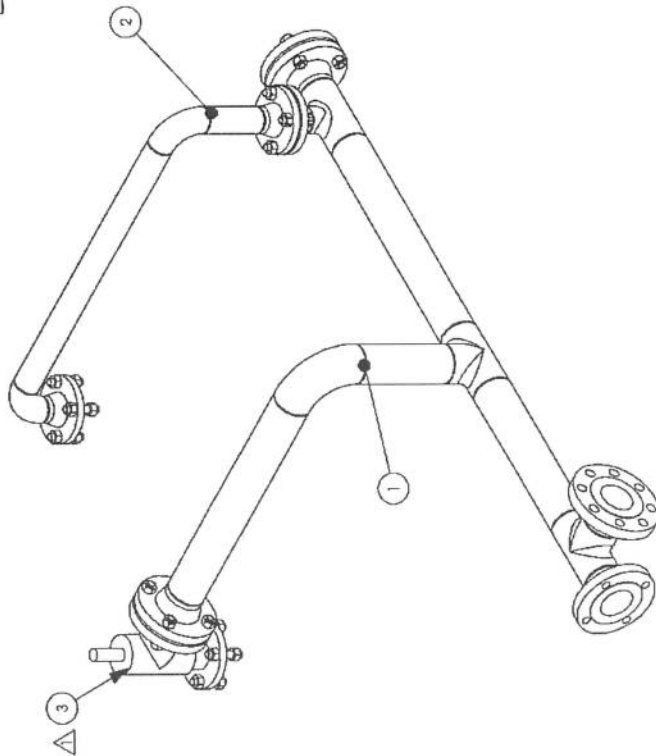
WELD MAP



ALL WELDS BY (C)

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ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	MATERIAL
1	1	7510-24-01	PIPING SPOOL	
2	1	7510-24-02	PIPING SPOOL	
3	1	PSV-201	2" CL 150 RF X 3" CL 150 RF PSV SET @ 170PSI TAYLOR -20F TO 300F	CS/NACE
4	1	FLA3150RFBTAPO.S	3" NPS CLASS 150 RAISED FACE BUND FLANGE TAPPED 1/2" NPT	SA-105N
5	20	STU0.625X3.587M	5/8" STUD X 3-1/2" LG	SA-193-B7M
6	41	NUT0.6252HM	5/8" HEAVY SERIES HEX NUT	SA-194-2HM
7	3	GAS2150FG316VC	2" NPS CLASS 150 RAISED FACE FLEX GASKET TYPE CG	316-VC
8	2	GAS3150FG316VC	3" NPS CLASS 150 RAISED FACE FLEX GASKET TYPE CG	316-VC



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ISSUED FOR CONSTRUCTION

JOB NO.

PURCH SHOP

QC

STICK

signature

24 Aug 10

date

DYNACORP
 FABRICATORS INC.
 8600 92nd Street
 Grande Prairie, AB
 T6V 7J3
 Phone: (780) 538-0037
 Fax: (780) 538-0037
 www.dynacorp.ca

NAME DATE
 C.M. 30/06/05
 D.W. 30/06/05
 C.A. 30/06/05
 C.A. 30/06/05

150# PSV PIPING SYSTEM
 GENERAL ASSEMBLY
 A-PR-3-02

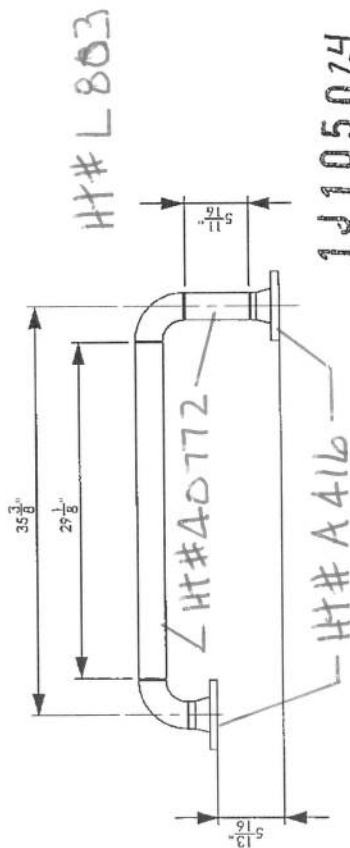
COMPANY

REV.

1 OF 3

A

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	LENGTH	MATERIAL
1	2	FLA2150STD8FWN	2" NPS CLASS 150 STD WALL RAISED FACE WELD NECK FLANGE		SA-105N
2	2	WEL2X90STD106	2" NPS STD WALL 90DEG BUTTWELD ELBOW		SA-234-WPB
3	1	PIP2STD106	2" NPS STD (S40) 0.154" NOM. 0.135" MIN. SMLS PIPE	29' 1/8"	SA-106-B
4	1	PIP2STD106	2" NPS STD (S40) 0.154" NOM. 0.135" MIN. SMLS PIPE	5' 11/16"	SA-106-B



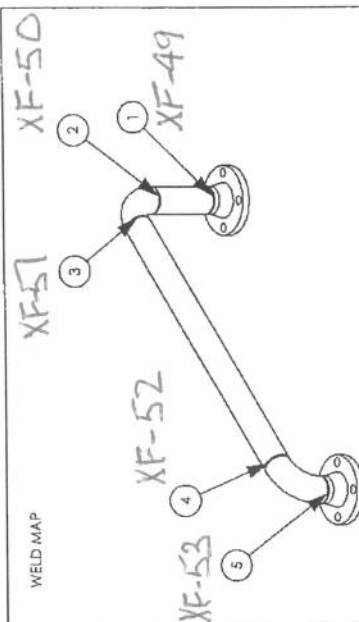
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ISSUED FOR CONSTRUCTION

JOB NO. _____
 PURCH. SHOP _____
 QC _____
 STICK _____
 date 24 Aug 10

WELD MAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WELD SYM.															
X-RAY #															
WELD PROC.															

WCM-2
 831.3, 2008ED, FLUID SERV. CAT.(M)
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ALL WELDS BY ⑥

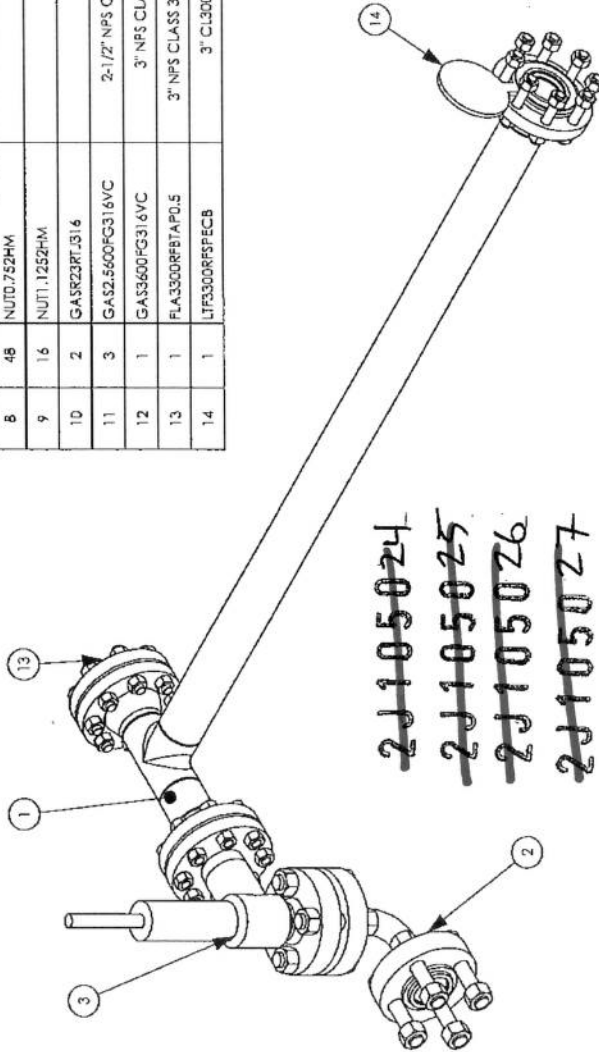
DYNACORP
 FABRICATORS INC.
 Grande Prairie
 Ph: (780) 538-0037
 Calgary
 Ph: (403) 217-1332

PIPING SPOOL

DRAW. NO.	DATE	APPR	SHEET
7510-24-02	2010/3/30		3 OF 3

ISSUED FOR CONSTRUCTION

JOB NO. _____
 PURCH SHOP QC STICK
 signature _____
 13 SEPT 10
 date

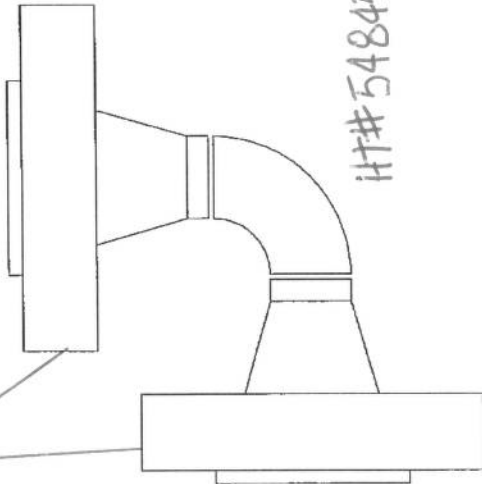


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- ~~2J105034~~

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	MATERIAL
1	1	7520-01-02 REV1	PIPING SPOOL	
2	1	7520-01-01	PIPING SPOOL	
3	1	PSV1.51500RTJX3300	PSV 1-1/2" CL3500 RTJ X 3" CL300 RF LESER	NACE-S0F
4	8	STU0.75X4.87M	3/4" STUD X 4" LG	SA-193-87M
5	8	STU0.75X4.87M	3/4" STUD X 4-1/2" LG	SA-193-87M
6	8	STU0.75X5.87M	3/4" STUD X 5" LG	SA-193-87M
7	8	STU1.125X7.87M	1-1/8" STUD X 7" LG	SA-193-87M
8	48	NUT0.752HM	3/4" HEAVY SERIES HEX NUT	SA-194-2HM
9	16	NUT1.1252HM	1-1/8" HEAVY SERIES HEX NUT	SA-194-2HM
10	2	GASR23RTJ316	R23 RING GASKET OVAL TYPE	316
11	3	GAS2.5600FG316VC	2-1/2" NPS CLASS 600 RAISED FACE FLEX GASKET TYPE CG	316-VC
12	1	GAS3600FG316VC	3" NPS CLASS 600 RAISED FACE FLEX GASKET TYPE CG	316-VC
13	1	FLA3300RFBAPD.5	3" NPS CLASS 300 RAISED FACE BLIND FLANGE TAPPED 1/2" NPT	SA-105N
14	1	LIF3300RFBECB	3" CL300 RAISED FACE SPECTACLE BLIND FLANGE	SA-350-LF2

DYNACORP FABRICATORS, INC. 244109 Portage Place SW Grand Rapids, MI 49503 Phone: (616) 539-0037 www.dynacorp.com				2500# PSV PIPING SYSTEM			
DATE	13/09/2010	NAME	SAH	DATE	13/09/2010		
DRAWN BY	SAH	CHECKED BY	SAH	DATE	13/09/2010		
CALC.	SAH	CALC. REV.	SAH	DATE	13/09/2010		
PROPERTY AND CONFIDENTIAL NO INFORMATION CONTAINED HEREIN IS TO BE RELEASED OR DISCLOSED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF DYNACORP, INC.			COMPANY PARAMOUNT				
JOB NO. 7520-01 REV1			SHEET 1 OF 3				

HT# 34442



HT# 548450

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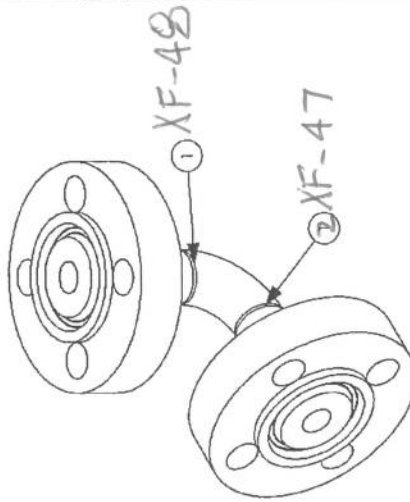
JOB NO. _____
PURCH _____ SHOP _____ STICK _____
signature _____ 24 AUG 10 _____
date

WELD MAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WELD SYM.															
X-RAY #															
WELD PROC.															
WOM-2															
B31.3, 2008ED, FLUID SERV. CAT.(M)															

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ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	LENGTH	MATERIAL
1	2	LT1.52500XXHRTJWN	1-1/2" NPS CLASS 2500 XXH RTJ WELD NECK FLANGE		SA-350-L2-1
2	1	LTW1.5X90XXHELL	1 1/2" NPS XXH WALL 90DEG. BUTTWELD ELBOW		SA-420-WPL6

WELD MAP



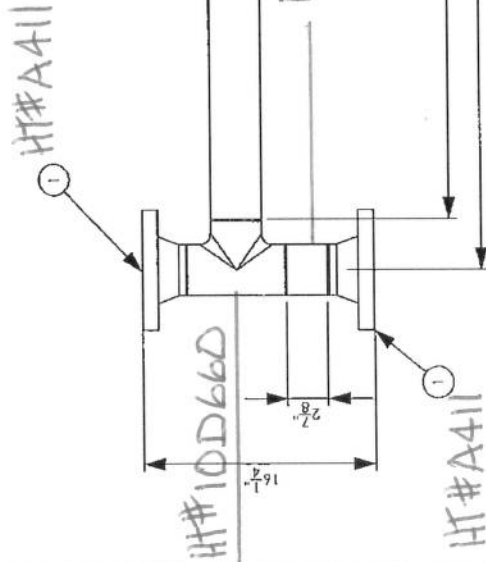
ALL WELDS BY (V)

DYNACORP
FABRICATORS INC.
Grande Prairie
Ph: (780) 538-0037
Calgary
Ph: (403) 217-1332

PIPING SPOOL

DWN	CJM	DATE	APPR	SHEET
		2010/3/30		2 OF 3
DWG. NO.	7520-01-01			

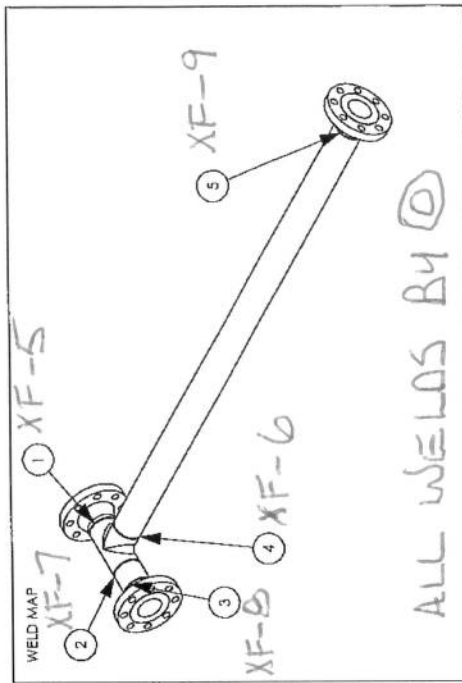
ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	LENGTH	DIAL
1	3	FL33003DRFWN	3" NPS CLASS 300 STD WALL RAISED FACE WELD NECK FLANGE		SA-105N
2	1	WELSTDTEE	3" NPS STD WALL BUTTWELD TEE		SA-234-WPB
3	1	PIP3STD106	3" NPS STD (S40) 0.216" NOM. 0.189" MIN. SMLS PIPE	64 5/8"	SA-106-B
4	1	PIP3STD106	3" NPS STD (S40) 0.216" NOM. 0.189" MIN. SMLS PIPE	27/8"	SA-106-B



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ISSUED FOR CONSTRUCTION

JOB NO. _____
 PURCH _____ SHOP _____ STICK _____
 QC _____
 13 SEPT 10 date
 signature _____



Grande Prairie
 Ph: (780) 538-0037
 Calgary
 Ph: (403) 217-1332

DYNACORP
 FABRICATORS INC.

PIPING SPOOL

FILET WELD	100 % MPI ON FILET WELDS
HYDRO. PRESS.	DES. PRESS. 500PSI
SSS. TEMP.	X-RAY 100%
FWHT	60 MIN @ 1150°F ±50°F

WELD MAP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WELD SYM.															
X-RAY #															
WELD PROC.															

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 It is to be used for the purpose of fabrication only and is not to be used for any other purpose.
 That to which it is specifically furnished, without the expressed written permission of Dynacorp Fabricators Ltd.

DYNACORP
FABRICATORS, INC.

24

[illegible]

2" STD A106
HT# 40772

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE F-59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. / N° : 6869Sv06 Page/Page: 1 / 5 Date/Date: 08.08.2006
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(A01) V&M FRANCE	(A05.1) V&M-Order-No. / N° de Cde V&M/ TH2922 (A08.2) Suborder / Suborder
(A06.1) Customer / Client CCTF CORPORATION 5407 -53RD AVENUE T6B 3G2 EDMONTON AB T6B 3G2	(A07.1) Order-No. / N° de Cde VM1713
(A06.2) Orderer / Emetteur VALLOUREC TUBES CANADA / BURLINGTON, ONTARIO L7R 3X5	(A07.2) Order-No. / N° de Cde VM1713 Date / Date 19.05.2006
	(A07.3) Order-No. / N° de Cde4877003-00
(B01, B02, B04) Description of the product Description du produit	Hot finished seamless line pipe angle 30° (+5 / -0), root face 1.6 mm (± 0.8) Ends bevelled, Inside without rust protection - Outside dry varnish Tubes sans soudure, fins à chaud, pour conduite angle 30° (+5 / -0), méplat 1,6 mm (± 0,8) Extrémités chanfreinées, Inter sans protection - Exter vernis sec API spec. 5 L, PSL1, 03.2004 ASTM A 106 - 04 A / ASTM A 530 - 04 ASME SA 106, Edition 2004 / ASME SA 530, Edition 2004 ASME Boiler and Pressure Vessel Code, Sect. II, Part. A, Edition 2004, Addenda 2005 CSA Z 245.1:2002 Nace Standard MR 0175-2003 Paragraph 3.2 Spec. CECN-3, Rev. D, dated 06.2002 Grade B Grade B acc. to ASTM A 106 / ASME SA 106 Grade 290 acc. to CSA Z 245.1, Cat. I ROCKWELL C HARDNESS <= 22 GUARANTEED DURETE ROCKWELL C <= 22 GARANTIE

MATERIAL ACCEPTED

 2nd Edition used
 for verification

Addenda

QC

date

(A13) V&M Item Poste	(A09) Cust. Item Poste	(B14) Item text Texte du poste	(B04) Dimensions Dimensions	(B10) Single length Long. Indiv.
4		SKU No 2520029	NPS 2 SCH 40 OD-Tolerance + 0.75 % - 0.75 % WT-Tolerance + 20 % - 12.5 % NPS 2 SCH 40 Tol. sur DE + 0.75 % - 0.75 % Tol. sur EP + 20 % - 12.5 %	Fixed length 38.6 Ft + 4 In - 0 In Longueur fixe 38.6 Ft + 4 In - 0 In

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE F-59680 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. / N° : 6869Sv06 Page/Page: 3 / 5 Date/Date: 08.08.2006
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(C72)

PRODUCT CHEMICAL ANALYSIS / ANALYSE CHIMIQUE PRODUIT

(B07.1) Heat Coulée	(C00.1) Test Piece Eprouvette	C %	SI %	Mn %	P %	S %	Cr %	Mo %	NI %	Cu %	Ti %
min		-	0,10	0,29	-	-	-	-	-	-	-
max		0,26	0,50	1,06	0,030	0,030	0,40	0,15	0,40	0,40	0,04
40772	01KE332	0,16	0,20	0,76	0,011	0,003	0,08	0,03	0,07	0,19	0,02
40772	02KE332	0,16	0,20	0,76	0,011	0,003	0,08	0,03	0,07	0,19	0,02

(B07.1) Heat Coulée	(C00.1) Test Piece Eprouvette	Nb/Cb %	V %	B %	0002 %	2528 -	0014 %	1099 %	0001 %		
min		-	-	-	-	3,00	-	-	-		
max		0,11	0,08	0,001	0,15	-	1,00	0,40	0,03		
40772	01KE332	0,00	0,00	0,000	0,02	4,84	0,37	0,31	0,00		
40772	02KE332	0,00	0,00	0,000	0,02	4,92	0,37	0,30	0,00		

0002	V+NB+TI
2528	MN/C
0014	CR+CU+MO+NI+V
1099	C+F(MN/6+SI/24+CU/15+NI/20+((CR+MO+V+NB)/5)+5*B)
0001	NB+V

(B04)

HEAT TREATMENT / TRAITEMENT THERMIQUE

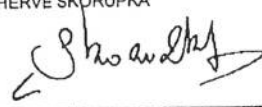
HOT FINISHED NORMALIZED CONDITION MIN 920°C (1688 F) COOLING AIR
FINI A CHAUD ETAT NORMALISE MIN 920°C (1688 F) REFROIDISSEMENT AIR

TENSILE TEST RESULTS / RESULTATS D'ESSAI DE TRACTION

(C10.1) Type / Type	Tube strip specimen / Eprouvette prismatique
(C03) Test temperature / Température d'essai	Room temperature / Température ambiante
(C02) Direction / Orientation	longitudinal / longitudinal

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE F-59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. / N° : 6869Sv06 Page/Page: 5 / 5 Date/Date: 08.08.2006
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(A05, Z02, Z03)

Date / Date	08.08.2006
Validated by Validé par	Inspection Representative Agent Réceptionnaire
	HERVE SKORUPKA 
☎	+ (33) 3 27 23 14 56
☎	+ (33) 3 27 23 15 25
@	herve.skorupka@vmtubes.fr
Stamp / Cachet	

This testimonial and certification respectively may neither be modified nor used for other products. Offences are regarded as falsification of documents and will be subject to criminal prosecution.
 Ce certificat, ou cette attestation ne doit être ni modifié ni appliqué pour d'autres produits. Tous changements ou application pour d'autres produits seront considérés comme falsification de documents et fraude et seront sujet à la juridiction pénale.

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE	 VALLOUREC & MANNESMANN TUBES Vallourec Group	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. : 3767Sv10 Page: 1 / 5 Date: 06.05.2010
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3 XXH A333

V&M FRANCE	V&M-Order-No. LA1892 Suborder
Customer CCTF CORPORATION 5407 -53RD AVENUE EDMONTON AB T6B 3G2 T6B 3G2	Order-No. VM2378
Orderer VALLOUREC TUBES CANADA INC. / BURLINGTON, ONTARIO L7L 6G4	Order-No. VM2378 Date 26.01.2010
	Order-No. 4887395-00
Description of the product	Hot finished seamless pipes for low-temperature service Sour service Ends bevelled acc. to ASME B 16.25, figure 2 A, angle 37.5° (± 2.5), root face 1.6 mm (± 0.8) Inside without rust protection Outside dry varnish ASTM A 333 M - 05 ASTM A 999 M - 04 A ASME SA 333 M, Edition 2007 / ASME SA 999 M, Edition 2007 ASME Boiler and Pressure Vessel Code, Sect. II, Part. A, Edition 2007, Addenda 2009b Nace MR 0175 / ISO 15156-2:2003 / COR.1:2005 / EN ISO 15156-2:2003, Annexe A.2.1.2 Nace Standard MR 0103-2005, Paragraphe 2.1 CSA Z245.1:2009 Spec. CECN-4, Rev. G, dated 03.2007 Grade 6 Grade 1 Grade 290 acc. to CSA Z245.1, Cat. II

(A13) V&M Item	(A09) Cust. Item	(B14) Item text	(B09) Dimensions	(B10) Single length
2		SKU No 2531807	NPS 3 XXS OD-Tolerance + 0.031 in - 0.031 in WT-Tolerance + 15 % - 12.5 %	Fixed length 38.6 Ft + 4 in - 0 in

MATERIAL ACCEPTED

Code Edition used for verification 07 Addenda 09
QC Dec 16/10
 QC date

3" XXH A333
 HT# 310283

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE	 VALLOUREC & MANNESMANN TUBES Vallourec Group	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. : 3767Sv10 Page: 2 / 5 Date: 06.05.2010
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(A13) V&M Item	(A09) Cust. Item	(B07.1) Heat	(B08) Quantity	(B11) Total length ft	(B13) Weight lb
2		316283	28	1.082,41	20.126

(C71)

HEAT CHEMICAL ANALYSIS

For each reduction of 0,01% carbon below 0.30 %, an increase of 0,05% manganese above 1.06 % would be permitted to a maximum of 1,35% manganese.

(B07.1) Heat	(B15) Process	C %	Si %	Mn %	P %	S %	Cr %	Mo %	Ni %	Cu %	Ti %
min	-	-	0,10	0,40	-	-	-	-	-	-	-
max	-	0,26	0,50	1,06	0,025	0,025	-	-	-	-	0,11
316283	Oxygen (BOF)	0,12	0,21	1,28	0,010	0,001	0,050	0,010	0,040	0,030	0,02

(B07.1) Heat	Nb/Cb %	V %	B %	2528 -	1099 %							
min	-	-	-	3,00	-							
max	0,11	0,11	0,001	-	0,40							
316283	0,00	0,01	0,000	10,67	0,30							

2528	MN/C
1099	C+F(MN/6+SI/24+CU/15+NI/20+((CR+MO+V+NB)/5)+5*B)

Heats fully killed

(B04)

HEAT TREATMENT

NORMALIZED CONDITION MIN 920°C (1688 F) COOLING AIR

TENSILE TEST RESULTS

Type (C10.1)	Tube strip specimen
Test temperature (C03)	Room temperature
Direction (C02)	longitudinal

SIMPLE LENGTH

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE	(A01)  VALLOUREC & MANNESMANN TUBES Vallourec Group	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. : 3767Sv10 Page: 3 / 5 Date: 06.05.2010
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TENSILE TEST RESULTS

(B07.1) Heat	(C00.1) Test Piece	(C10.2) Dimension	(C11) YS	(C12) TS	(C13.2) Elong.						
		in / sq in	R _{p0.2} psi	R _m psi	2" %						
min		-	42000	60000	35,0						
max		-	-	-	-						
316283	01CN111	0,73x0,65 0,48	43089	64996	44,2						
316283	02CN111	0,72x0,69 0,50	42944	64851	45,6						

(C10.2)	Dimension	Test piece dimensions
		Test piece area

IMPACT TEST RESULTS

Type (C40)	Charpy V
Test temperature (C03)	-49 °F
Direction (C02)	longitudinal

(B07.1) Heat	(C00.1) Test Piece	(C41) Dimension	(C42.1) Impact1	(C42.1) Impact2	(C42.1) Impact3	(C43.1) Mean	(C42.2) Shear fr1	(C42.2) Shear fr2	(C42.2) Shear fr3	(C43.2) Mean	
		in / sq in	ft-lbf	ft-lbf	ft-lbf	ft-lbf	%	%	%	%	
min		-	16,2	16,2	16,2	19,9	-	-	-	-	
max		-	-	-	-	-	-	-	-	-	
316283	04CN111	0,39x0,39 0,12	276,2	280,2	272,1	276,1	100	100	100	100	

(C41)	Dimension	Test piece dimensions
		Test piece area

HARDNESS TEST RESULTS

99 HRB EQUIVALENT TO 22 HRC

Method of test (C30)	Rockwell B
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V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE	VALLOUREC & MANNESMANN TUBES Vallourec Group	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. : 3767Sv10 Page: 4 / 5 Date: 06.05.2010
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HARDNESS TEST RESULTS

(B07.1) Heat	(C00.1) Test Place	(C31.1) HRB	(C31.1) HRB	(C31.1) HRB	(C32.1) Mean						
min		-	-	-	-						
max		99,0	99,0	99,0	-						
316283	03CN111	75,0	75,0	75,0	75,0						
316283	04CN111	75,0	74,8	75,0	74,9						

(C50)

TECHNOLOGICAL AND OTHER TESTS ON SPECIMENS

Test	Conditions	Test rate	Result
Flattening test	Essai d'aplatissement (spécifique)		Satisfactory

(D54)

OTHER TESTS ON PIPE

Test	Conditions	Test rate	Result
Hydrostatic test	3000 PSI 5 SEC	100% each lot	Satisfactory
Appearance & Dimensions	Aspect & Dimensions (spécifique)	100% each lot	Satisfactory
Eddy Current test	CSA Z245-1	100% each lot	Satisfactory

(A04, B06)

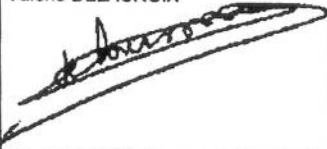
MARKING, IDENTIFICATION

2	Paint stenciled on one side	 V & M FRANCE A/SA333 Z245.1-07 1 + 6 + 290 CAT II HF XXS S LT 50 F 3 1/2 X 0.600 88.90 X 15.24 SS HT HEAT NUMBER LENGTH LENG TH VM2378 4887395-00
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(Z01)

The supplied products are in compliance with the requirements of the order

(A05, Z02, Z03)

Date	06.05.2010
Validated by	Inspection Representative
	Valérie DELACROIX 
☎	+ (33) 3 27 23 14 56
☎	+ (33) 3 27 23 15 25
@	valerie.delacroix@vmtubes.fr

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE	VALLOUREC & MANNESMANN TUBES Vallourec Group	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004
No. : 3767Sv10 Page: 5 / 5 Date: 06.05.2010		

Stamp	
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Indication in parentheses correspond to attributes according to EN 10168

This testimonial and certification respectively may neither be modified nor used for other products. Offences are regarded as falsification of documents and will be subject to criminal prosecution.

3" STD A106

Contract No: 2110001376

P.O.NO.CNF10067A

Customer: CHINA INDUSTRIAL METAL CO.LTD.

HENGYANG VALIN STEEL TUBE CO., LTD

MILL TEST CERTIFICATE

Add: 10 Dalixincun, Hengyang City, Hunan, China

Tel and Fax: +86 734 8873739 8872942

Cable: 6993

P.C. 421001

DESCRIPTION: SEAMLESS CARBON STEEL PIPES

Date: APR 19, 2010

TOTAL: 909PIECES, 24BUNDLES, 51.84MT

Page: 1/1

SPEC: ASTM/ASME SA53/A53/106/SA106/API 5L B/X42 CSA Z245.1 GRADE 290,NACE MR0175/ISO15156.2/NACE MR 0103										CERTIFICATE NO: 2010-03-0419									
NO.	BATCH NO.	HEAT NO.	STEEL GRADE	SIZE		BUNDLES	PIECES	FEET	THEORETICAL WEIGHT(MT)	ACTUAL WEIGHT(MT)									
1	903101722	1011032	B/290/X42	2"*0.154"*21FT		5	293	6153	10.202	N/A									
2.1	903101723	0925013	B/290/X42	2"*0.154"*40FT		3	116	4640	7.694	N/A									
2.2	903101724	1011032	B/290/X42	2"*0.154"*40FT		1	37	1480	2.454	N/A									
3	510461205	1011127	B/290/X42	1"*0.179"*21FT		2	235	4935	4.874	N/A									
4	903101715	1011033	B/290/X42	3"*0.216"*21FT		4	146	3066	10.551	N/A									
5.1	903302019	0912544	B/290/X42	4"*0.237"*40FT		6	56	2240	10.971	N/A									
5.2	903302020	0912542	B/290/X42	4"*0.237"*40FT		3	26	1040	5.094	N/A									
Total						24	909	23554	51.84	N/A									
NO.	DELIVERY CONDITION	NONDESTRUCTIVE TEST		CHEMICAL COMPOSITION (%)															
		PIPE BODY ET	PIPE END MPI	TYPE:	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Ti	Nb	Mn:C	CE(IIW)	
1	HOT-ROLLED	OK	OK	P	0.15	0.31	1.08	0.013	0.003	0.04	0.02	0.02	0.01	0.01	0.002	0.001	7.20	0.34	
2.1	HOT-ROLLED	OK	OK	L	0.16	0.32	1.09	0.013	0.003	0.04	0.02	0.02	0.01	0.01	0.002	0.001	6.81	0.35	
				P	0.14	0.29	1.06	0.012	0.002	0.04	0.02	0.02	0.01	0.01	0.002	0.001	6.69	0.35	
				P	0.15	0.31	1.07	0.012	0.002	0.04	0.02	0.02	0.01	0.01	0.002	0.001	7.13	0.34	
2.2	HOT-ROLLED	OK	OK	L	0.14	0.32	1.09	0.01	0.004	0.09	0.03	0.04	0.01	0.01	0.003	0.001	7.79	0.34	
				P	0.15	0.33	1.07	0.012	0.003	0.04	0.02	0.02	0.01	0.01	0.002	0.001	7.13	0.34	
				P	0.15	0.33	1.07	0.012	0.003	0.04	0.02	0.02	0.01	0.01	0.002	0.001	7.13	0.34	
3	NORMALIZED	OK	OK	L	0.16	0.31	1.07	0.013	0.003	0.04	0.02	0.02	0.01	0.01	0.002	0.001	6.69	0.35	
				P	0.14	0.32	1.11	0.017	0.007	0.07	0.03	0.03	0.01	0.01	0.003	0.001	7.93	0.34	
				P	0.14	0.33	1.1	0.017	0.007	0.07	0.03	0.03	0.01	0.01	0.003	0.001	7.86	0.34	
4	HOT-ROLLED	OK	OK	L	0.14	0.33	1.11	0.016	0.004	0.04	0.02	0.03	0.01	0.01	0.004	0.001	7.93	0.34	
				P	0.14	0.31	1.08	0.015	0.004	0.04	0.02	0.03	0.02	0.01	0.004	0.001	7.71	0.34	
				P	0.15	0.31	1.07	0.015	0.004	0.04	0.02	0.03	0.02	0.01	0.004	0.001	7.13	0.34	
5.1	HOT-ROLLED	OK	OK	L	0.16	0.34	1.09	0.016	0.004	0.04	0.02	0.02	0.01	0.01	0.003	0.001	6.81	0.35	
				P	0.15	0.32	1.1	0.013	0.004	0.07	0.02	0.04	0.02	0.01	0.004	0.001	7.33	0.35	
				P	0.15	0.33	1.1	0.013	0.004	0.07	0.02	0.04	0.02	0.01	0.004	0.001	7.33	0.35	
5.2	HOT-ROLLED	OK	OK	L	0.15	0.33	1.09	0.016	0.004	0.08	0.03	0.04	0.01	0.01	0.004	0.001	7.27	0.35	
				P	0.15	0.34	1.09	0.013	0.004	0.07	0.02	0.04	0.02	0.01	0.004	0.001	7.27	0.35	
				P	0.16	0.34	1.09	0.013	0.004	0.07	0.02	0.04	0.02	0.01	0.004	0.001	6.81	0.35	
				L	0.15	0.31	1.11	0.013	0.003	0.08	0.03	0.03	0.01	0.01	0.003	0.001	7.40	0.35	
NO	TENSILE STRENGTH σ _b (PSI)		YIELD STRENGTH σ _s (PSI)		ELONGATION (%)	IMPACT			HARDNESS	HYDROSTATIC TEST (Psi/s)	FLATTEN TEST	BEND TEST							
	strip ,L ₀ =19mm,L _o =50mm					SIZE	AK (J)	Or/Tem	(HRC ≤22)										
1	72500		53650		35	10*3*55	30/38/34	T/0°C	OK	2500	N/A	OK							
2.1	72500		54375		32	10*3*55	26/30/28	T/0°C	OK	2500	N/A	OK							
2.2	72500		54375		32	10*3*55	26/30/28	T/0°C	OK	2500	N/A	OK							
	Full ,L ₀ =50mm																		
3	80475		55100		46	10*3*55	22/22/24	T/0°C	OK	850	N/A	OK							
	strip ,L ₀ =19mm,L _o =50mm																		
4	69600		49300		35.5	10*3*55	46/64/96	T/0°C	OK	2500	OK	N/A							
	strip ,L ₀ =25mm,L _o =50mm																		
5.1	70325		47125		40.5	10*3*55	33/31/32	T/0°C	OK	2210	OK	N/A							
5.2	71050		51475		41.5	10*3*55	32/31/33	T/0°C	OK	2210	OK	N/A							

REMARKS: 1. We hereby certify that this certificate of quality is issued and signed by the manufacturer.

2. We hereby certify that the properties described herein meet the requirement of the above specification

3. We hereby certify that this certificate is issued accordance with EN10204 3.1

4. Type: P-Product analysis, L-Ladle analysis;

5. Hardness to NACE MR0175/ISO15156 AND NACE MR0103

QUALITY MANAGER: *Wang*

MATERIAL ACCEPTED

Code Edition used
for verification

Addenda

QC

date



110057

DYNACORP

[illegible]

Code Edition used
for verification

1806

OC

07

Appendix

date

8" 5160 A106

Ht. # WB92-1806 QND date 11/11/77



WANTAI LIBAO STEEL PIPE CO., LTD.

MILL TEST CERTIFICATE

NO. 185 XINGFU MIDDLE ROAD, YANTAI, CHINA
TEL: 0086 535-6843946/6854750 FAX: (0535)6842245
HTTP://WWW.LIJIACSTEEL.TUBE.COM

(EN:0204 3.1)

PAGE) OF 1

PURCHASER	TRANS. BY PIPING PRODUCTS LTD.,	DESCRIPTION OF GOODS	PIPE
DIMENSION STANDARD	ASME B36.10	CUSTOMER'S NO.	CERTIFICATE NO. DGTGCG90115000X300
MATERIAL SPECIFICATION	ASTM A106-3-2006, ASME SA106-B-2007, API 5L B-2007 CSA Z245.1-2007 Gr. 241 Cat I NACE MR0175-2003/ISO 15156	DATE OF DELIVERY P. O. NO.	SUB. "CONTRACT" NO. DATE OF ISSUE 20090417 20090417
		STAMP OF M.I.L. INSPECTOR	QUALITY LICENSE NO.

O.D.	219.1mm	W.T.	23.Diam	Length	5.8-6.7N	Total Length	Total Bundles	Order Quantity	Hot finished Seamless																		
Total Pieces			Total Weight			Delivery Condition			As-Rolled			Tensile Test: S.L.=L			Impact Test			Hardness Brinell (HB)			Pieces			Weight MT			
Chemical Composition			M.P.I.			Visual & Dimensions			Coating			Drift Test			Hydrostatic Pressure			Duration of Time									
C Si Mn P S Cu Ni Cr V Mo Ti B Nb CE			U.T.			Flattening			Ring Tensile			King Expansion			Gauge Length			Heat Treatment			Macrostructure			J=5.65SQRT (F0)			
Heat No.	1	2	0.22	0.19	0.24	0.44	0.015	0.038	0.01	0.01	0.02	0	0.02	0	0.08	0.15	0.01	0.001	0.01	0	0	0	0	0	0	0	0
MIN			0.22	0.19	0.24	0.44	0.015	0.038	0.01	0.01	0.02	0	0.02	0	0.08	0.15	0.01	0.001	0.01	0	0	0	0	0	0	0	0
MAX			0.22	0.19	0.24	0.44	0.015	0.038	0.01	0.01	0.02	0	0.02	0	0.08	0.15	0.01	0.001	0.01	0	0	0	0	0	0	0	0
WD92-1806			0.22	0.19	0.24	0.44	0.015	0.038	0.01	0.01	0.02	0	0.02	0	0.08	0.15	0.01	0.001	0.01	0	0	0	0	0	0	0	0
E.T.			0.22	0.19	0.24	0.44	0.015	0.038	0.01	0.01	0.02	0	0.02	0	0.08	0.15	0.01	0.001	0.01	0	0	0	0	0	0	0	0
Expansion			0.22	0.19	0.24	0.44	0.015	0.038	0.01	0.01	0.02	0	0.02	0	0.08	0.15	0.01	0.001	0.01	0	0	0	0	0	0	0	0
NOTES			0.22	0.19	0.24	0.44	0.015	0.038	0.01	0.01	0.02	0	0.02	0	0.08	0.15	0.01	0.001	0.01	0	0	0	0	0	0	0	0
Remark			0.22	0.19	0.24	0.44	0.015	0.038	0.01	0.01	0.02	0	0.02	0	0.08	0.15	0.01	0.001	0.01	0	0	0	0	0	0	0	0
WE HERECERTIFY THAT THE MATERIAL HEREIN DESCRIBED HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE REQUIREMENTS OF ABOVE SPECIFICATIONS AND PURCHASE ORDER, AND MET THE REQUIREMENTS.																											
***C NO.: DPCICV923044																											
QUST OF QUALITY CONTROL DEPT.																											

Material Receiving Report

Rec. Date: Oct 26, 2010
 PO#: 1P5568
 Supplier: Apex
 Rec'd By: D. Glubis



Record of Actual Code Required Markings					Material spec.	Manufacturer	Color Code
Job No.	Mat. Track No.	Qty	Diam.	Thickness Plate, Heads, Pipe Wall			
15105033 B							
		3	3"		3" 2500# RTJ Blind Flange 1/2" Tap		0
		4	2"	.466"	2" 2500# XXH RTJ Neck Flange		0
		8	3"	.609"	3" 2500# XXH Ring Joint Neck Flange		0
		1	3"	.511"	3" X 2" XXH Concentric Reducer		0
		3	3"	.710"	3" XXH Blw Tee		0
		1	4"	.472"	4" 150# RF Threaded Flange		B
		3	4"	.243"	4" 150# Sch 40 RF Neck Flange		B
		1	4"	.258"	4" Sch 40 Short Radius 90deg Elbow		B
		2	2"		2" 2500# RTJ Blind Flange 1/2" Tap		0
		1	8"		8" 150# RF Blind Flange		B
		1	2"	.188"	2" 2500# Std RTJ Weld Neck Flange		B
		4	4"	.251"	4" Sch 40 90deg Long Radius Elbow		B
		1	4"	.236"	4" X 2" Std Eccentric Reducer		B
		1	2"	.486"	2" XXH Weld Tee		0
		1	3"		3" 150# RF Blind Flange 1/2" Tap		B

HT# D1001088 3" 2500 RTJ Blind Flange A350

RESULT OF MATERIAL TEST 材料試験成績書

EN10204/DIN50049-3.1B

Customer 契約先	Allied Fitting Canada	Sheet No. 番 号	10081003
Order No. 注文番号	P.O.30910AFJ (085)	Date 年月日	2010/6/10
Material 材料	コード No. 2004 ASTM A350/ASME SA350 LF2 CL1	UT	MT
Heat Treatment 熱処理	ASTM A370-STD.	NDT 非破壊検査	PT

Type of Specimen 試験片	ASTM A370-STD.	Normalizing 焼入れ	908°C/3.20h	Quenching 焼入れ	good	Dimension & Visual 寸法及び外観検査
-------------------------	----------------	--------------------	-------------	------------------	------	--------------------------------

Specification for Dimension or Drawing No. フランジ規格又は図面番号		ASME B16.5-2003 Smooth Finish to MSS-SP8 NACE MR0175-2003 NACE MR0103-2003	
Item No. 項目	1	Type of Flanges 図面フランジ番号	2500 BL RTJ
Work No. 製造番号	D1001088	Size サイズ	3"
Quantity (PCS) 数量 : 枚数	50	Yield Point 降伏点 N/mm ²	min BLE 250 325
Tensile 引張強さ N/mm ²	485~655 524	Elongation 伸び %	min. BLE 22 31
Reduction of area 絞り %	30 66	Hardness かたさ	H B min. 151 ave. 153 max. 155
Charpy 衝撃値 (10x10 mm -46 °C)	Average 平均値 Σ/N ≥ 20	Impact Test 衝撃試験	シャルピー 衝撃値 -46 °C J ≥ 16 75 62 79 85

Item No. 項目	Heat No. 溶解番号	Chemical Composition 化学成分 (%)															
		C (x100)	Si (x100)	Mn (x100)	P (x100)	S (x100)	Ni (x100)	Cr (x100)	Mo (x100)	Cu (x100)	V (x100)	Nb (x100)	As	Fe	Si	As	OE
1	D1001088(Heat Analysis)	20	24	92	11	2	2	2	7	1	1	1	1	1	1	1	0.373
	D1001088(Product Analysis)	20	27	93	12	3	2	2	6	1	1	1	1	1	1	1	0.373

We hereby certify that the material herein described has been manufactured in accordance with the standards and specification specified by you and it satisfies the requirements.
(上記の注文品は、制約の規格又は仕様に従って製造され、その要求に満足していることを証明します。)

C/W .5" NPT TAP

MATERIAL ACCEPTED

Code Edition used for verification 07 Addenda 09
QC Nov. 19/10 date

P. Hashimoto

SURVEYOR



FUTAWA FLANGE WORKS CO., LTD.
株式会社
〒596-0001 堺市東区上町6丁目3番6号



品 質 管 理 部

HT# 0A4524 2" 2500 RTJNF A350

MATERIAL ACCEPTED

Addenda

Code Edition used
for verification 07

書 画 09
date Nov. 19/10

RESULT OF MATERIAL TEST 材料試験成績書

EN10204/DIN50049-3.1B

Allied Fitting Canada

Customer
契約先

Order No.
注文番号

P.O.60810AFJ
(134)

Material

ASTM A350/ASME SA350 LF2 CL1

コードNo.

2004

NDI
非破壊検査

U T

M T

P T

Sheet No.
番 号

10081901-3

Date
年月日

2010/8/19

2010/8/19

Type of Specimen
試験片

ASTM A370-STD.

Heat Treatment
熱処理

Normalizing
焼ならし

906°C/1.50h

Quenching
焼入れ

Dimension & Visual
寸法及び外観検査

good

Specification for Dimension or Drawing No.

フランジ規格又は図面番号

ASME B16.5-2003 Smooth Finish to MSS-SP6
NACE MR0175-2003 NACE MR0103-2003

Type of Flanges
該当フランジ品名

Type
品名

2500 WN RTJ XXH

Quantity (PCS)
数量 : 枚数

200

Yield Point
降伏点

N/mm²

min 以上

Tensile
引強さ

N/mm²

485~655

Elongation
伸び

%

min. 以上

Reduction
of area
絞り

%

30

Hardness
かたさ

H B

ave.

min.

max.

154

156

158

Average
平均値

Σ/N ≥ 20

72

Minimum
最低値

J ≥ 16

59

73

85

Impact Test
衝撃試験

Charpy
衝撃値

(10x10 mm -46 °C)

Chemical Composition 化学成分 (%)

Item No. 項目	Heat No. 溶解番号	Chemical Composition																*A		*B		*CE	
		C (x100)	Si (x100)	Mn (x100)	P (x1000)	S (x1000)	Ni (x100)	Cr (x100)	Mo (x100)	Cu (x100)	V (x100)	Nb(x100)	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	
1	0A4524(Heat Analysis)	19	21	90	12	9	10	2	Tr	1	1	0	4.1	1.8	3.0	0.346	0.358	100	32	1.8	3.0	0.43	
	0A4524(Product Analysis)	20	23	89	13	10	10	2	1	1	1	1	6.0	3.0	3.0	0.358							

We hereby certify that the material herein described has been manufactured in accordance with the standards and specification specified by you and it satisfies the requirements.

(上記の注文品は、御指定の規格又は仕様に従って製造され、その要求に満足していることを証明します。)

Y. Hashimoto

SURVEYOR



FUTAWA FLANGE WORKS CO.

株式会社 フタワフレンジ製作

〒596-0001 岸和田市磯上町6丁目3番6

TEL 0727-377100 FAX 0727-377101



品質管理 部

HT# 0A4524 3" 2500 RTJNF A350

MATERIAL ACCEPTED

Code Edition used
for verification

Addenda

07

09

Date

Nov. 19/10

date

成績書

EN10204/DIN50049-3.1B

Customer
契約先

Allied Fitting Canada

Sheet No.

Date

2010/8/19

10081902-1

Order No.
注文番号P.O.60810AFJ
(134)

Material

コードNo. 1108-0
ASTM A105N-2005
ASME SA105-2007
Section II Part A

NDI

非破壊検査

U T

M T

P T

Type of Specimen
試験片

ASTM A370-STD.

Heat Treatment
熱処理Normalizing
焼ならしQuenching
焼入れDimension & Visual
寸法及び外観検査

good

Specification for Dimension or Drawing No.

焼もどし

Tension Test

Bending Test

Hardness

ASME B16.5-2003 Smooth Finish to MSS-SP6
NACE MR0175-2003 NACE MR0103-2003Item No.
項目Flange No.
製造番号Size
サイズType
品名Quantity (PCS)
数量 : 枚数Yield Point
降伏点Tensile Strength
引張強さElongation
伸びReduction of area
絞りBending Test
曲げ試験
R=1.5tHardness
かたさ

1

0A4524

3"

2500 WN RTJ XXH

73

315

521

30

66

152

2

0A4527

3"

2500 WN RTJ XXH

77

316

518

33

63

153



FUTAWA FLANGE WORKS CO.,LTD.

株式会社 フタワフレンジ製作所

〒596-0001 岸和田市磯上町 6 丁目 3 番 6 号

TEL 0724-37-1001 代

FUTAWA

品名 質 管 理 部

SURVEYOR

Y. Hashimoto

We hereby certify that the material herein described has been manufactured in accordance with the standards and specification specified by you and it satisfies the requirements.

*A) The sum of copper, nickel, chromium, molybdenum and vanadium shall not exceed 1.00%.

*B) The sum of chromium and molybdenum shall not exceed 0.32%.

*CE) -C-0.97(Mn/6+Si/24+Cu/15+Ni/20+(Cr+Mo+V+Nb)/5+5B)

HT# BE835 3x2 Con Reducer A420

ETK Corporation

INSPECTION CERTIFICATE

(EN10204:2004 3.1 / ISO 10474:1991 3.1B)

1499-1, SONG JUNG-DONG,
GANGSEO-GU, BUSAN, KOREA
Tel : 82-51-831-8550
Fax : 82-51-831-6886

Customer	Allied Fitting Canada		Certificate No.	20100703263	Date	2010/07/19
P.O No.	52710-TK		Project Name			
Job No.			POR/Req'n No.			
Specification for Material	ASTM/ASME A/SA420 WPL6(07 Ed.&08 Add.)NACE MR0175 /ISO 15156-2 AND NACE MR0103-2007		Starting Material	SEAMLESS PIPE		
Specification for Inspection	ASME B16.9-2007		Dimension and Visual Inspection	GOOD		
Heat Code No [HCN]	No.	Descriptions				Q'ty (Pcs)
BH112	0039	ECC REDUCER	SCH80	B.W	10" x 8"	16
BE553	0039	ECC REDUCER	SCH80	B.W	10" x 8"	4
BE835	0040	CON REDUCER	XX-S	B.W	3" x 2"	100
						Heat Treatment
						N: 910°C
						N: 910°C
						N: 910°C

CHEMICAL COMPOSITION (%)

Heat Code No [HCN]	Spec.	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Co	C.F	Raw Heat No/Raw Maker
	Max.	0.23	0.40	1.35	0.035	0.040	0.40	0.30	0.12	0.40	0.080	0.020	0.42	
	Min.	-	0.15	0.50	-	-	-	-	-	-	-	-	-	
BH112	L	0.12	0.23	1.28	0.010	0.003	0.03	0.12	0.01	0.02	0.000	0.000	0.363	J0L2514/SUMITOMO
BE553	L	0.10	0.23	1.30	0.010	0.005	0.02	0.11	0.00	0.01	0.000	0.000	0.341	J0L1267/SUMITOMO
BE835	L	0.11	0.26	1.27	0.009	0.004	0.02	0.11	0.01	0.02	0.000	0.000	0.348	J9LC105/SUMITOMO

MECHANICAL PROPERTIES

Heat Code No [HCN]	Spec	Y.S		T.S	E.L (%)	Hardness Test			* Impact Test(J)		
		Ksi				HB			Temp.(°C)		Size(2mm-v)
		Max.	Min.			237			-46		
		35		85	30				Act.		Ave.
BH112	P	46.8		66.9	54.2	139	141	143	203.2	199.5	200.2
BE553	P	44.5		63.1	56.7	144	146	148	213.0	213.7	215.2
BE835	P	48.6		68.3	51.2	145	147	146	210.0	209.2	210.0

We hereby certify that the material herein has been made and tested in accordance with the above specification and also with the requirements called for by the above order.

Remark : * CSA Z245.11-05 Gr241 CAT II Sour Service

* Impact Specimen Size & Spec. Value Legend:
 Size Min. Ave. HB: Brinell AC: Air Cool
 BH112 10X10X55mm 13.6 17.6 ST: Solution Treatment OC: Oil Cool
 BE553 10X10X55mm 13.6 17.6 SR: Stress Relieving WC: Water Quenched
 BE835 10X10X55mm 13.6 17.6 N: Normalized WC: Water Cool
 T: Tempered L: Ladle
 A: Annealed P: Product
 G: Quenched
 (G): Hot-Dip Galvanized Coating
 Y.S: 0.2% Offset Method

Reviewed by :

Witnessed by :

Approved by :

Director of Quality Assurance Dept

MATERIAL ACCEPTED

Code Edition used
for verification

Addenda

QC

date

Nov. 19/10

HT #A412 4" 150 RFTF A100



信盛(姜堰)五金锻造有限公司

SHINSEI (JIANGYAN) STEEL FLANGES CO., LTD.

江苏省姜堰市经济开发区天目路688号(邮编: 225500)

NO.688, TIANMU ROAD, JIANGYAN ECONOMIC DEVELOPMENT ZONE,

JIANGYAN CITY, JIANGSU, CHINA (225500)

TEL:(0086)523-88206028

FAX:(0086)523-88206058

SHINSEI

E-mail:shinsei@ssflanges.com.cn

SSWJ/QD8.2.4A-04

ACCORDING TO EN10204-3.1/2004

MILL TEST & INSPECTION CERTIFICATE

CUSTOMER:SEYBOLD INTERNATIONAL CORP

DATE:05/28/10

CERT NO:10050066

ORDER NO:7002187(20410psj)

PAGE:7

ITEM	RAW MATERIAL HEAT NO.	SHINSEI HT.CD.	DESCRIPTION		QUANTITY	SPECIFICATION: ASTM/ASME SA105N-2005					
039	2302-01628	A312	THRF 3" 150 NPT		7 PCS	DIMENSION: ASME/ANSI B16.5-2003 SURFACE: BY VISUAL...GOOD					
039	2302-03879	A359	THRF 3" 150 NPT		493 PCS						
040	09703787	A297	THRF 4" 150 NPT		41 PCS						
040	09708817	A412	THRF 4" 150 NPT		359 PCS						
048	10702752	A481	WNRF STD 4" 150		239 PCS						
048	09708817	A412	WNRF STD 4" 150		160 PCS						
048	09708323	A389	WNRF STD 4" 150		1 PCS						
CHEMICAL COMPOSITION (%)											
ITEM	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	CE
Min	-	0.100	0.600	-	-	-	-	-	-	-	-
Max	0.350	0.350	1.050	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.430
039	0.190	0.240	0.900	0.015	0.003	0.020	0.040	0.010	0.002	0.006	0.352
039	0.190	0.250	0.950	0.015	0.003	0.020	0.030	0.010	0.002	0.004	0.358
040	0.190	0.240	0.960	0.008	0.007	0.090	0.060	0.040	0.009	0.003	0.373
040	0.180	0.240	0.960	0.010	0.012	0.140	0.060	0.050	0.016	0.004	0.369
048	0.190	0.250	0.950	0.015	0.005	0.100	0.090	0.050	0.012	0.005	0.38
048	0.180	0.240	0.960	0.010	0.012	0.140	0.060	0.050	0.016	0.004	0.369
048	0.200	0.260	1.000	0.016	0.009	0.008	0.060	0.040	0.008	0.005	0.384
MECHANICAL TEST											
ITEM	Tensile Strength (KSI)	Yield Strength (KSI)	Elong- Gation (%)	R of A (%)	Hardness (HB)	Remark: HEAT TREATMENT:NORMALIZE AT 860°C MATERIAL IN ACC. WITH NACE MR. 01.75/03 (ONLY HARDNESS) ISO9001:2000 & PED97/23/EC CERTIFIED AD2000-MERKBLATT WO CERTIFIED					
Min	70.0	36.0	22.0	30.0	-						
Max	-	-	-	-	187.0						
039	72.6	48.0	30.8	59.0	142.0	WE CERTIFY THE ABOVE MENTIONED FLANGES HAVE BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE SPECIFICATIONS SHOWN Q.C. MANAGER INSPECTOR					
039	71.6	52.5	38.2	72.5	142.0						
040	73.0	57.1	31.4	68.1	143.0						
040	76.1	53.1	34.0	63.0	143.0						
048	75.4	48.1	35.2	67.2	145.0						
048	76.1	53.1	34.0	63.0	143.0						
048	73.0	48.7	36.1	64.2	145.0						

MATERIAL ACCEPTED

接下页

Code Edition used
for verification

Addenda

QC

date

Nov. 19/10

HT# A501 4" 150 STD RFNF A105



信盛(姜堰)五金锻造有限公司

SHINSEI (JIANGYAN) STEEL FLANGES CO., LTD.

江苏省姜堰市经济开发区天目路688号(邮编: 225500)

NO.688, TIANMU ROAD, JIANGYAN ECONOMIC DEVELOPMENT ZONE,

JIANGYAN CITY, JIANGSU, CHINA (225500)

TEL:(0086)523-88206028

FAX:(0086)523-88206058

SHINSEI

E-mail:shinsei@ssflanges.com.cn

SSW/QD8.2.4A-04

ACCORDING TO EN10204-3.1/2004

MILL TEST & INSPECTION CERTIFICATE

CUSTOMER:SEYBOLD (ALLIED)

CERT NO:10080135

ORDER NO:7002793(61110ASJ)

DATE:2010-08-30

PAGE:5

ITEM	RAW MATERIAL HEAT NO.	SHINSEI HT.CD.	DESCRIPTION		QUANTITY	SPECIFICATION: ASTM/ASME SA105N-2005					
017	1022-64	A444	LJ 10" 150		11 PCS	DIMENSION: ASME/ANSI B16.5-2003 SURFACE: BY VISUAL...GOOD					
018	10-103782	A472	LJ 12" 150		75 PCS						
019	10-103793	A461	LJ 14" 150		25 PCS						
020	10-103793	A461	LJ 16" 150		25 PCS						
021	08103	A568	LJ 24" 150		25 PCS						
022	10701341	A463	WNRF STD 4" 150		12 PCS						
022	2302-13407	A501	WNRF STD 4" 150		797 PCS						
CHEMICAL COMPOSITION (%)											
ITEM	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	CE
Min	-	0.100	0.600	-	-	-	-	-	-	-	-
Max	0.350	0.350	1.050	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.430
017	0.180	0.190	0.960	0.019	0.013	0.040	0.080	0.080	0.015	0.004	0.368
018	0.210	0.250	0.950	0.021	0.006	0.010	0.030	0.020	0.001	0.001	0.377
019	0.200	0.240	0.920	0.019	0.005	0.010	0.030	0.020	0.002	0.001	0.362
020	0.200	0.240	0.920	0.019	0.005	0.010	0.030	0.020	0.002	0.001	0.362
021	0.200	0.210	0.840	0.020	0.010	0.017	0.011	0.016	0.002	0.002	0.345
022	0.220	0.230	0.970	0.022	0.010	0.040	0.050	0.030	0.005	0.005	0.398
022	0.200	0.260	0.930	0.022	0.004	0.020	0.050	0.010	0.003	0.006	0.369
MECHANICAL TEST											
ITEM	Tensile Strength (KSI)	Yield Strength (KSI)	Elon- Gation (%)	R of A (%)	Hardness (HB)	Remark: HEAT TREATMENT:NORMALIZE AT 860°C MATERIAL IN ACC.WITH NACE MR0175-2003(ONLY HARDNESS) ISO9001:2000 & PED97/23/EC CERTIFIED AD2000-WERKBLATT WO CERTIFIED					
Min	70.0	36.0	22.0	30.0	-						
Max	-	-	-	-	187.0						
017	75.0	48.5	34.0	64.1	140.0	WE CERTIFY THE ABOVE MENTIONED FLANGES HAVE BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE SPECIFICATIONS SHOWN Q.C. MANAGER INSPECTOR					
018	75.4	53.7	35.9	71.5	140.0						
019	71.9	48.7	34.4	66.1	142.0						
020	71.9	48.7	34.4	66.1	142.0						
021	73.5	47.6	33.0	59.0	156.0						
022	75.7	40.6	29.4	61.4	145.0						
022	73.0	52.5	35.8	70.3	141.0						

MATERIAL ACCEPTED

接下页

Code Edition used
for verification

Addenda

QC

date

Nov. 19/10

HT# 9404560 2" 2500 RTJ Blind Flange A350

RESULT OF MATERIAL TEST 材料試験成績書

EN10204/DIN50049-3.1B

Customer 英利光	Order No. 注文番号	Material 材料	Code No. コードNo.	2004	NDI 非破壊検査	Date 年月日	2010/6/10	Sheet No. 番号	10061001
P.O.30910AFJ (085)		ASTM A350/ASME SA350 LF2 CL1				UT	MT	PT	

Type of Specimen 試験片	ASTM A370-STD.	Heat Treatment 熱処理	908°C/2.00h	Quenching 焼入れ	Dimension & Visual 寸法及び外観検査
ASTM A370-STD.		Normalizing 焼ならし	908°C/2.00h	Quenching 焼入れ	good

Specification for Dimension or Drawing No.				Tension Test 引張試験				Hardness		Impact Test 衝撃試験	
ASME B16.5-2003 Smooth Finish to MSS-SP8 NACE MR0175-2003 NACE MR0103-2003				Yield Point 降伏点		Tensile Strength 引張強さ		Elongation 伸び		Reduction of area 絞り	
Type of Flange 該当フランジ品名				N/mm ²		N/mm ²		%		%	
Type 品名				min.		max.		min.		max.	
Size サイズ				min.		max.		min.		max.	
Quantity (PCS) 数量 : 枚数				min.		max.		min.		max.	
Item No. 項目	Work No. 製造番号	Size サイズ	Type 品名	Quantity (PCS) 数量 : 枚数	Yield Point 降伏点	Tensile Strength 引張強さ	Elongation 伸び	Reduction of area 絞り	Hardness	Impact Test 衝撃試験	Dimension & Visual 寸法及び外観検査
1	8901942	3"	2500 WN RTJ XXH	150	250	485~655	22	30	HB	Charpy シャルピー 衝撃値 (10x10 mm -46 °C)	good
2	9404560	2"	2500 BL RTJ	2	330	517	31	60	min.	Average 平均値	
3	9404560	2"	2500 WN RTJ XXH	250	330	528	32	70	max.	Σ/N ≥ 20 J ≥ 16	
						528	32		150	72	62 76 78
									153	156	76 85 68
									153	155	76 85 68

Heat No. 熔解番号		Chemical Composition 化学成分 (%)															
Item No. 項目		C (x100)	Si (x100)	Mn (x100)	P (x100)	S (x100)	Cr (x100)	Ni (x100)	Mo (x100)	Cu (x100)	V (x100)	Nb (x100)	%A	%B	%CE		
		max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下	max. 以下
1	8901942(Heat Analysis)	19	20	90	15	9	1	1	1	1	1	0	4.2	1.9	0.346	32	0.43
2	8901942(Product Analysis)	20	21	91	18	8	1	1	1	1	1	1	4.8	2.0	0.359		
3	9404560(Heat Analysis)	21	23	96	10	5	1	1	1	1	1	1	19.3	17.1	0.399		
	9404560(Product Analysis)	20	22	98	9	6	1	1	1	1	1	1	17.8	15.3	0.403		
		21	23	96	10	5	1	1	1	1	1	1	19.3	17.1	0.399		
		20	22	98	9	6	1	1	1	1	1	1	17.8	15.3	0.403		
		21	23	96	10	5	1	1	1	1	1	1	19.3	17.1	0.399		

We hereby certify that the material herein described has been manufactured in accordance with the standards and specification specified by you and it satisfies the requirements.
(上記の注文品は、調剤定の規格又は仕様に従って製造され、その要求に満足していることを証明します。)

*A) The sum of copper, nickel, chromium, molybdenum and vanadium shall not exceed 1.00%.
*B) The sum of chromium and molybdenum shall not exceed 0.12%.
*CE) -C=0.97Mo/6+Si/24-Cu/15+Ni/20+(Cr+Mo+V+Nb)/5+6B)

SURVEYOR

MATERIAL ACCEPTED

Code Edition used for verification 07 Addenda 09
date Nov. 19110

C/W .5" NPT TAP



FUTAWA FLANGE WORKS CO., LTD
株式会社フタワフランヂ製作所
〒596-0001 大阪府堺市東区大田町8番6号



品質管理部

HT # 673 8" 150 RF Blind Flange A105

MATERIAL ACCEPTED
Code Edition used 07 Addenda 09
for verification 09 Nov. 1910
QC date

NORMA (INDIA) LIMITED

48, Site IV Industrial Area, Sahibabad, Ghaziabad-201010 (U.P) INDIA.
Tel: 91-120-2896091, 2895404 Fax: 91-120-2895930 E-mail: norma@norma.com

NORMA/LAB NO-1038/53110ads/10-11

INVOICE NO. E-068

ALLIED FTG L.P.

CANADA.

Customer:-

P. Order. No: 53110ads

Component 8"-150 # BLRF FLG.

Drawing No. ANSI B16.5- 2009

Machining STD ASME B16.5- 2009

Quantity:-

TEST RESULTS

CHEMICAL COMPOSITION

Elements %	Specified Composition	Actual NORMA LAB	MILL T.C.
Carbon	0.35max.	0.23	0.22
Manganese	0.60-1.05	0.90	0.94
Silicon	0.10-0.35	0.22	0.18
Sulphur	0.040max.	0.005	0.025
Phosphorous	0.035max.	0.019	0.035
Chromium	0.30max.	0.018	0.026
Nickel	0.40max.	0.010	0.008
Copper	0.40max.	0.014	0.008
Molybdenum	0.12max.	0.001	0.001
Vanadium	0.080max.	0.005	0.001
Carbon Equivalent (CE)	0.47max.	0.386	0.382

MECHANICAL PROPERTIES.

PROPERTIES	SPECIFIED	OBTAINED	Specified carbon as per Purchase Order 0.25max.
Yield Strength (mpa)	250.00 min.	357.52	Serrated face as per MSS-SP-6 With in limits of 125-250AARH
Tensile Strength (mpa)	485.00 min.	517.12	H.T:-Normalised at temp. 900c.
%Elongation in 50mm / 4D	22.00 min	31.7	CARBON EQUIVALENT (CE) $CE = C + \frac{Mn}{6} + \frac{Cu+Mo+V}{5} + \frac{Ni+Cu}{15}$
Hardness HB.	187. max.	156.	MARKING AS PER MSS-SP-25-1978 8"-150 SA105N 673 B16.5 NORMA INDIA.
% Reduction of Area	30.00 min.	59.61	

Remarks:- We here by certify that the material described here in has been tested in accordance with the applicable specifications referred above and meets the requirements as per EN10204/3.1B & NACE Standard-MR0175-2003

Checked by:

Metallurgist

Certified by:

Quality Control Manager

Works Test Certificate

DATE:-03-06-10

Forging specification ASME SA105N -09

ASTM A105N -09

Steel Supplier BHUSHAN POWER & STEEL.

Mill Heat No. B-685

NORMA HEAT NO-673

216Nos.

HT# 08982 2" 2500 STD RTJWNH A105



23813 CORTENOVA (Lecco) Italy
Via Provinciale, n. 20/22
Tel. +39 0341 988011 - Fax +39 0341 988012
http://www.galpertisrl.com
e-mail: quality@galpertisrl.com

Marchio Produttore/Manufacturer's Mark



TUV

Certificato n° Certificate n°	Data Date
481	06/04/2007

Codice Cliente Customer reference	Cliente Client	D.D.T. N° D.D.T. N°	Data Date
00914	ALLIED FITTING L.P.	DDT07-000338	19/03/2007

Codice Colata Heat Code	Colata Fornitore Heat Supplier	Origine Origin	Ordine Order	Materiale Material	Q.tà Q.ty	Descrizione Description
37821	37821	European	102306GI	A/SA 105/N	71	WN 2500 2" RF S160 SA/A105N
08982	08982	European	102306GI	A/SA 105/N	23	WN 2500 2" RF XXH SA/A105N
08982	08982	European	102306GI	A/SA 105/N	20	WN 2500 2" RJ STD SA/A105N
08982	08982	European	102306GI	A/SA 105/N	48	WN 2500 2" RJ XH SA/A105N
37821	37821	European	102306GI	A/SA 105/N	75	WN 2500 2" RJ S160 SA/A105N
08982	08982	European	102306GI	A/SA 105/N	60	WN 2500 2" RJ XXH SA/A105N
22569	22569	European	102306GI	A/SA 105/N	75	WN 2500 3" RF S160 SA/A105N
22569	22569	European	102306GI	A/SA 105/N	8	WN 2500 3" RJ S160 SA/A105N
650742	650742	European	102308GI	A/SA 105/N	25	WN 900 5" RF S120 SA/A105N

Codice Colata Heat Code		Analisi Chimiche / Chemical Analysis													
37821	C%	0,225	H%		Mn%	1,100	Si%	0,240	Ni%	0,080	Mo%	0,020	CEQ	0,450	
	O%		V%	0,005	Fe%		Cr%	0,090	Nb%	0,001	Ti%				
	P%	0,011	S%	0,014	Cu%	0,180	Al%	0,030	Sn%	0,010	N%				
08982	C%	0,120	H%		Mn%	0,980	Si%	0,250	Ni%	0,100	Mo%	0,030	CEQ	0,357	
	O%		V%	0,054	Fe%		Cr%	0,170	Nb%	0,024	Ti%	0,002			
	P%	0,011	S%	0,002	Cu%	0,300	Al%	0,015	Sn%	0,014	N%				
22569	C%	0,190	H%		Mn%	1,140	Si%	0,250	Ni%	0,090	Mo%	0,020	CEQ	0,419	
	O%		V%	0,001	Fe%		Cr%	0,090	Nb%	0,001	Ti%	0,003			
	P%	0,013	S%	0,006	Cu%	0,190	Al%	0,021	Sn%	0,012	N%	0,010			
V+Nb+Ti=0,005%															
650742	C%	0,170	H%		Mn%	0,730	Si%	0,180	Ni%	0,050	Mo%	0,001	CEQ	0,310	
	O%		V%	0,002	Fe%		Cr%	0,070	Nb%		Ti%				
	P%	0,010	S%	0,002	Cu%	0,070	Al%	0,027	Sn%		N%				

MATERIAL ACCEPTED

Code Edition used
for verification

Addenda

01

09

QC

date

Servizio Controllo Qualità / Quality Dept

HT# LF301 4" STD 90 DEG SR ELBOW A234



INSPECTION CERTIFICATE

PANTECH STEEL INDUSTRIES SDN. BHD. (90771-A)
 LOT 13258 & 13259, Jalan Haji Abd. Manan,
 Off Jalan Maru, 42200 Klang, Selangor, Malaysia.
 Tel: 603-3393 1633 Fax: 603-3393 1733 E-mail: pantech2@streamyx.com



Cert. No.: QIA 0009726
 PTD 97/23/TC Annex 1 Clause 4.3
 Cert. No.: 0034/PPTD/NA/M/00076/2

WROUGHT CARBON STEEL BUTTWELDING FITTINGS

INSPECTION DOCUMENT: EN10204:2004 Type 3.1

Purchaser: ALLIED FITTING CORP

Certificate No: PSI 87528
 Date: 21-Aug-10

Order No.	Invoice No.	Specification for Pipe	Specification for Fittings: Made from Seamless Pipe	Specification for Inspection											
523100PS-3	E 6767	ASTM A108 - 08 / API 5L - 07 PSL1 Gr. B & NACE MR0175 - 03	ASTM A234 - 07 / ASME SA 234 - 07 WPB	ASME B16.9 - 07											
Heat No.	Product & Size		Quantity (pcs)	Pipe Mill	Pipe Heat No.										
LF 406	6" 90 DEG LR STD ELBOW		201	JIANGYIN CITY SEAMLESS STEEL TUBE	10-203605										
LF 301	4" 90 DEG LR STD ELBOW		744	BOASHAN IRON & STEEL	309368										
JK 904	2 1/2" 180 DEG LR STD ELBOW		25	YANTAI STEEL PIPE PLANT	W581-4303										
LD 505	2" 180 DEG LR XS ELBOW		50	JIANGYIN CITY SEAMLESS STEEL TUBE	610010188										
JN 402	4" 180 DEG LR XS ELBOW		25	PANGANG GROUP CHENGDU IRON & STEEL	D0642545										
Visual Examination		Dimensional Inspection		Heat Treatment		Magnetic Particle Testing									
GOOD		GOOD		H		N.A									
GOOD		GOOD		H		N.A									
GOOD		GOOD		H		N.A									
GOOD		GOOD		H		N.A									
GOOD		GOOD		H		N.A									
Specification Min Max Heat No.	Chemical Composition (%)										Tensile Test ¹⁾			Hardness	
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	CE	YS	TS	E	(HB)
	x100	x100	x100	x1000	x1000	x100	x100	x100	x100	x1000	x100	(KSI)	(MPa)	(%)	
	-	10	29	-	-	-	-	-	-	-	-	240	415	22	-
	30	-	108	50	58	40	40	15	40	80	3	50	-	655	-
LF 406	16	26	45	23	10	0	2	1	0.3	3	25	347	478	32.0	120
LF 301	19	24	53	29	4	2	2	1	2	4	30	402	525	29.9	101
JK 904	18	22	47	23	9	1	5	0	2	7	28	320	473	31.6	143
LD 505	23	22	49	13	7	4	4	0.1	10	3	34	330	440	38.0	100
JN 402	17	26	55	14	10	4	4	1	10	0	28	331	495	35.3	106

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE SPECIFICATION AND PURCHASE ORDER AND SATISFIED THE REQUIREMENTS.
 TENSILE REQUIREMENT: CONFORMS TO ASTM A370 STANDARD, LONGITUDINAL DIRECTION, GAUGE LENGTH 2" (50mm)

NOTE:

- N: Normalised at 910°C
- Q: Heated to 910°C and quenched in water
- T: Tempered between 590°C - 690°C
- S: Stress relieved in temperature between 595°C - 690°C and cooled in still air
- H: Hot formed in temperature between 620°C - 930°C and cooled in still air



MATERIAL ACCEPTED

Code Edition used for verification: 07 Addenda 09
 QC Nov 19/10 date

HT# 6G2808 4x2" STD Eccentric Reducer A234

MATERIAL ACCEPTED

Code Edition used
for verification

07

Addenda

09

QC

Nov. 19/11

date

PURCHASER : SEYBOLD

ASTM A234 WPB-05

STANDARD : ASME SA234 WPB-01

CSA Z45.11 Gr.241 Cat I

MATERIALS : ASTM A106 Gr.B / JIS G3103 SB410

INSP. SPEC. : ASME B16.9 - 03



INSPECTION CERTIFICATE

RIGID

INDUSTRIES CO., LTD.

8 MEI-CHUNG RD. NIAO-SUNG,
KAOHSIUNG HSIEN, 83301 TAIWAN
TEL: 886-77310527-8
FAX: 886-77315887

DATE: 2007 - 03 - 19

ORDER NO: 6063/101006AST

P.I. NO: 6J08-1

CERTIFI NO: 150

ACCORDING TO EN10204/DIN50049/3.1

ITEM NO.	PRODUCT & SIZE	QUANTITY PCS	MFG NO.	VISUAL & DIMENSIONAL INSPECTION	HARDNESS MAX 197 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	IMPACT TEST (J)
11	CON-RED 6X2"	20	6G9127	GOOD	131 - 139	N		
12	CON-RED 6X5"	10	69051	GOOD	125 - 138	N		
13	CON-RED 8X4"	40	6A5943	GOOD	133 - 153	N		
14	CON-RED 10X6"	30	68078	GOOD	134 - 140	N		
15	CON-RED 12X8"	10	6J5101	GOOD	130 - 146	N		
16	CON-RED 12X10"	10	6L3201	GOOD	144 - 166	N		
17	ECC-RED 4X2"	100	6G2808	GOOD	84 - 93	N		
18	ECC-RED 4X2"	70	6C5213	GOOD	139 - 149	N		
19	ECC-RED 10X6"	15	6I4161	GOOD	156 - 158	N		
20	ECC-RED 10X6"	10	6J3240	GOOD	135 - 142	N		

ITEM NO.	MATERIAL CHARGE NO.	CHEMICAL COMPOSITION %										PHYSICAL TEST			
		C x100	Si x100	Mn x100	P x1000	S x1000	Cu x100	Ni x100	Cr x100	Mo x100	V x100	Nb x1000	Y S KSI	T S KSI	E %
		MIN.	10	29									35.0	60.0	
		MAX.	30	135	50	58	40	40	40	15	8	20	95.0	95.0	50
11	311127	18	26	53	7	4	7	3	2	1	<1	<1	39.6	65.6	40.5
12	0631751	18	26	58	12	5	9	5	7	2	<1	<1	50.1	81.3	36.0
13	J5K4343	12	25	126	21	5	3	2	11	1	<1	<1	46.8	69.0	45.5
14	0632778	16	24	66	12	8	12	5	3	2	<1	<1	46.4	71.1	37.0
15	0632001	14	29	73	11	5	11	4	6	2	<1	<1	48.6	74.7	43.0
16	0632001	14	29	73	11	5	11	4	6	2	<1	<1	48.6	74.7	43.0
17	85D2108	20	27	46	20	12	1	1	1	1	1	3	50.3	66.3	38.0
18	308313	19	26	57	9	4	7	3	3	1	<1	<1	45.4	69.9	37.5
19	0632161	14	28	62	13	5	11	5	4	2	<1	<1	45.0	68.9	42.0
20	J6K5140	11	25	129	15	4	2	2	11	1	<1	<1	47.7	68.0	50.2

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C-980°C, AIR COOLING.

N: NORMALIZING AT TEMPERATURE 880°C X 0.5HR, AIR COOLING.

NACE MR-01-75 & NACE MR 0103 SATISFACTORY

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT.

Qu E Lan

MANAGER OF Q. A. DEPT.

HT# 69001 2" Weld Tee A420
690001

MATERIAL ACCEPTED
Code Edition used 07 Addenda 09
for verification 07
date Nov. 19/10
QC

Purchaser:
購買者名

INSPECTION CERTIFICATE 検査証明書

EN 10204/3.1

BENKAN BENKAN JAPAN KK
KIRYU FACTORY
551 2-CHOME AIOI-CHO
KIRYU CITY-GUNMA PREF. JAPAN
TEL (0277) 54-8146
4951272225
Date: 日付 M D Y
MAY 25 2010 4E90690001
Certificate No. 証明書番号

Order No. 注文番号
E000218EN/NOV
Job No. 工事番号
J-386

Specification for Material 材料規格
ASTM A420/A420M-07 GR. WPL6
ASME SA420/SA420M-07 ED.

Specification for Inspection 検査規格
ASME B16.9-2007

Visual Examination 外観検査
GOOD

Dimensional Inspection 寸法検査
GOOD

Quantity 数量
175

Product & Size 品名及び寸法
SEAMLESS I(S) WPL6 2 XXS

Material Heat No. 製鋼番号
34265

Material Manufacturer 素材供給メーカー
MKK TUBES

Chemical Composition 化学成分 %
C Si Mn P S Ni Cr Mo Cu V

Specification 規定値
X 100 100 100 100 100 100 100 100 100 100

Min. 最小
15 40 135 35 40 40 30 12 40 80

Max. 最大
13 19 115 14 2 2 4 1 3 3

Impact Test (J) 衝撃試験
10X7.5X2V AT -45°C

Y S T S E
XXXX XXXXXX %

240 415 30

655

456 48

AVE. 279

SPEC. AVE. 13.6

MIN. 10.8

MADE FROM SEAMLESS PIPE

*CEQ = C + MN/6 + (CR+MO+V)/5 + (NI+CU)/15

MAGNETIC PARTICLE EXAMINATION : GOOD

CARBON CONTENT : 0.23% MAX.

NORMALIZING : 910°C X 0.25HR. AIR COOLING.

COLD FORMED

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.
上記注文品は検査済の品または仕様に従って製造され、その検査事項を満足していることを証明します。
* 1: The symbol "T" after wall thickness means min. wall. 壁厚記号の後に "T" は min. 壁厚を意味します。
* 2: TS = Yield strength 引張強さ TS = Tensile strength 引張強さ E = Elongation 伸び

Shimada
Manager of Quality Assurance Section
品質保証部長

**SHINSEI**

信盛(姜堰)五金锻造有限公司

SHINSEI (JIANGYAN) STEEL FLANGES CO., LTD.

江苏省姜堰市经济开发区天目路688号(邮编: 225500)

NO.688, TIANMU ROAD, JIANGYAN ECONOMIC DEVELOPMENT ZONE,
JIANGYAN CITY, JIANGSU, CHINA (225500)

TEL: (0086)523-88206028

FAX: (0086)523-88206058

E-mail: shinsei@ssflanges.com.cn

SSWJ/QD8.2.4A-04

ACCORDING TO EN10204-3.1/2004

MILL TEST & INSPECTION CERTIFICATE

CUSTOMER: SEYBOLD INTERNATIONAL CORP

CERT NO: 10050066

ORDER NO: 7002187 (20410psj)

DATE: 05/28/10

PAGE: 1

ITEM	RAW MATERIAL HEAT NO.	SHINSEI HT. CD.	DESCRIPTION	QUANTITY	SPECIFICATION: ASTM/ASME SA105N-2005
003	68020801127067	A026	BLRF 1" 150	1 PCS	DIMENSION: ASME/ANSI B16.5-2003 SURFACE: BY VISUAL... GOOD
003	1303-22122	A119	BLRF 1" 150	499 PCS	
006	2302-03879	A359	BLRF 3" 150	330 PCS	
007	10701343	A464	BLRF 4" 150	695 PCS	
007	09709441	A428	BLRF 4" 150	5 PCS	
007	09702326	A454	BLRF 4" 150	300 PCS	
007	09702326	A454	BLRF 4" 150	1 PCS	
008	2201-06016	A076	BLRF 5" 150		

CHEMICAL COMPOSITION (%)											
ITEM	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	CE
Min	-	0.100	0.600	-	-	-	-	-	-	-	-
Max	0.350	0.350	1.050	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.430
003	0.190	0.240	0.970	0.013	0.010	0.080	0.070	0.040	0.010	0.008	0.377
003	0.190	0.250	0.940	0.020	0.009	0.020	0.040	0.010	0.0006	0.0045	0.358
006	0.190	0.250	0.950	0.015	0.003	0.020	0.030	0.010	0.002	0.004	0.358
007	0.210	0.250	1.000	0.014	0.007	0.040	0.040	0.030	0.050	0.004	0.4
007	0.210	0.250	1.000	0.014	0.007	0.040	0.040	0.030	0.050	0.004	0.381
007	0.190	0.220	0.960	0.011	0.008	0.110	0.090	0.040	0.013	0.004	0.404
007	0.200	0.240	0.990	0.011	0.010	0.080	0.120	0.040	0.031	0.003	0.365
007	0.200	0.240	0.990	0.011	0.010	0.080	0.120	0.040	0.031	0.003	0.365
008	0.190	0.230	0.990	0.019	0.011	0.020	0.030	0.010	0.007	0.003	0.365

MECHANICAL TEST					
ITEM	Tensile Strength (KSI)	Yield Strength (KSI)	Elongation (%)	R of A (%)	Hardness (HB)
Min	70.0	36.0	22.0	30.0	-
Max	-	-	-	-	187.0
003	77.3	44.9	30.6	65.6	145.0
003	71.5	46.6	35.4	64.9	137.0
006	71.6	52.5	38.2	72.5	142.0
007	76.6	48.6	28.7	63.1	140.0
007	74.0	42.9	33.6	68.8	140.0
007	72.0	45.2	37.2	66.0	141.0
008	71.5	39.8	35.2	67.9	137.0

Remark:
HEAT TREATMENT: NORMALIZE AT 860°C
MATERIAL IN ACC. WITH NACE MR. 01.75/03 (ONLY HARDNESS)
ISO9001:2000 & PED97/23/EC CERTIFIED
AD2000-WERKBLATT WO CERTIFIED

WE CERTIFY THE ABOVE MENTIONED FLANGES HAVE BEEN
MANUFACTURED AND TESTED IN ACCORDANCE WITH THE
SPECIFICATIONS SHOWN

Q.C. MANAGER

INSPECTOR

HT# A359 3" 150 RF Blind Flange A105

接下页

C/W .5" NPT TAP

MATERIAL ACCEPTED

Code Edition used
for verification

Addenda

QC

date



信盛(姜堰)五金锻造有限公司

SHINSEI (JIANGYAN) STEEL FLANGES CO., LTD.

江苏省姜堰市经济开发区天目路688号(邮编: 225500)

NO.688, TIANMU ROAD, JIANGYAN ECONOMIC DEVELOPMENT ZONE,

JIANGYAN CITY, JIANGSU, CHINA (225500)

TEL: (0086) 523-88206028

FAX: (0086) 523-88206058

E-mail: shinsei@ssflanges.com.cn

SHINSEI

SSWJ/QD8.2.4A-04

ACCORDING TO EN10204-3.1/2004

MILL TEST & INSPECTION CERTIFICATE

CUSTOMER: SEYBOLD INTERNATIONAL CORP

CERT NO: 10050067

ORDER NO: 7002188 (20410asj)

DATE: 05/28/10

PAGE: 6

ITEM	RAW MATERIAL HEAT NO.	SHINSEI HT. CD.	DESCRIPTION	QUANTITY	SPECIFICATION: ASTM/ASME SA105N-2005
036	1203-21652	A127	BLRF 1-1/4" 300	20 PCS	DIMENSION: ASME/ANSI B16.5-2003 SURFACE: BY VISUAL...GOOD
036	1103-21711	A242	BLRF 1-1/4" 300	5 PCS	
037	10701341	A463	WNRF STD 3" 300	131 PCS	
037	09704535	A341	WNRF STD 3" 300	1 PCS	
037	09708821	A411	WNRF STD 3" 300	116 PCS	
039	2302-01870	A322	WNRF STD 8" 300	4 PCS	
039	1021-13	A438	WNRF STD 8" 300	195 PCS	
039	1021-13	A438	WNRF STD 8" 300	195 PCS	

CHEMICAL COMPOSITION (%)											
ITEM	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	CE
Min	-	0.100	0.600	-	-	-	-	-	-	-	-
Max	0.350	0.350	1.050	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.430
036	0.200	0.220	0.950	0.012	0.005	0.030	0.030	0.010	0.001	0.003	0.368
036	0.210	0.250	0.970	0.012	0.002	0.020	0.020	0.010	0.0032	0.0022	0.379
037	0.220	0.230	0.970	0.022	0.010	0.040	0.050	0.030	0.005	0.005	0.398
037	0.200	0.230	0.970	0.012	0.004	0.120	0.050	0.040	0.011	0.004	0.388
037	0.200	0.260	0.980	0.011	0.014	0.160	0.050	0.060	0.014	0.004	0.392
039	0.200	0.240	0.970	0.015	0.003	0.020	0.050	0.010	0.002	0.006	0.375
039	0.190	0.230	1.010	0.013	0.010	0.125	0.045	0.050	0.022	0.006	0.385

MECHANICAL TEST					
ITEM	Tensile Strength (KSI)	Yield Strength (KSI)	Elongation (%)	R of A (%)	Hardness (HB)
Min	70.0	36.0	22.0	30.0	-
Max	-	-	-	-	187.0
036	72.4	44.5	32.0	52.0	137.0
036	73.2	56.6	33.0	63.4	137.0
037	75.7	40.6	29.4	61.4	145.0
037	71.4	50.6	36.0	66.8	141.0
037	77.2	54.0	30.2	64.8	141.0
039	70.9	55.6	34.0	68.0	141.0
039	79.6	59.5	33.2	71.8	140.0

Remark: HEAT TREATMENT: NORMALIZE AT 860°C
 MATERIAL IN ACC. WITH NACE MR. 01.75/03 (ONLY HARDNESS)
 ISO9001:2000 & PED97/23/EC CERTIFIED
 AD2000-MERKBLATT NO CERTIFIED

WE CERTIFY THE ABOVE MENTIONED FLANGES HAVE BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE SPECIFICATIONS SHOWN

Q.C. MANAGER

周丽芹
INSPECTOR

HT# A411 3" 300 STD RFWNF A105

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MATERIAL ACCEPTED

Code Edition used for verification

07

Addenda

09

00

Nov. 19 110

date

HT# 931233 3' 150 STD RFWNF A105



SAN ENG STEEL FORGING CO LTD
311, Jen Hsin Road, Jen Wu Hsiang
Kaohsiung Hsien, Taiwan, R.O.C.
TEL: 07-3724249; FAX: 07-3712923
URL: www.saneng.com.tw
e-mail: saneng@ksts.seed.net.tw

MILL TEST CERTIFICATE

EN10204-3.1.B/DIN50049(3.1.B)
Customer: SEYBOLD INTERNATIONAL CORP.
Order No.: Z002870(1)-ALLIED

MATERIAL ACCEPTED

Code Edition used
for verification

07 Addenda

09

Certificate No.: SE-2870A

Date: 06/09/2010

Page: 2 OF 3

Order No.: Z002670(1)-ALLIED

Page: 2 OF 3

PRODUCT

MATERIAL SPECIFICATIONS

DIMENSIONAL SPECIFICATIONS

FORGED CARBON STEEL FLANGES

ASTM A105-09/ASME SA105-09

ASME B16.5-09
CSA Z245.12

Item No.	CUSTOMER P/N	DESCRIPTION	QUANTITY	CHEMICAL COMPOSITION (%)																CE(*)
				C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N					
			Min Max	0.350 0.218	0.100 0.280	0.600 1.020	0.035 0.010	0.040 0.009	0.400 0.009	0.300 0.015	0.400 0.054	0.120 0.002	0.080 0.003	0.020 0.005	-	-	-			
11		150 SORF 3" A105N	200 PCE	0.218	0.280	1.020	0.010	0.009	0.009	0.015	0.054	0.002	0.003	0.005	0.006		0.397			
12		150 SORF 4" A105N	500 PCE	0.200	0.290	0.940	0.017	0.009	0.170	0.150	0.130	0.020	0.002	0.001	0.012		0.411			
13		300 THRF 3" A105N	200 PCE	0.190	0.160	1.080	0.012	0.011	0.070	0.090	0.050	0.005	0.003	0.005	0.009		0.397			
14		150 WNRF STD 3" A105N	200 PCE	0.222	0.320	1.040	0.012	0.017	0.005	0.016	0.053	0.002	0.006	0.005	0.008		0.403			
15		150 WNRF STD 3" A105N	300 PCE	0.219	0.280	1.020	0.010	0.009	0.008	0.015	0.054	0.002	0.003	0.005	0.006		0.397			
16		150 WNRF STD 4" A105N	100 PCE	0.214	0.260	1.000	0.011	0.014	0.008	0.021	0.051	0.002	0.004	0.001	0.004		0.389			
17		150 WNRF STD 6" A105N	146 PCE	0.200	0.170	1.110	0.010	0.015	0.070	0.040	0.030	0.005	0.003	0.005	0.010		0.401			
18		150 WNRF STD 8" A105N	54 PCE	0.210	0.160	1.110	0.014	0.015	0.100	0.050	0.070	0.005	0.003	0.005	0.011		0.417			
19		150 WNRF STD 8" A105N	20 PCE	0.200	0.170	1.120	0.018	0.013	0.250	0.110	0.070	0.020	0.010	0.001	0.009		0.434			
20		150 WNRF STD 18" A105N	100 PCE	0.209	0.260	1.010	0.012	0.014	0.012	0.034	0.055	0.002	0.023	0.005	0.007		0.389			

Item No.	Heat No.	T.S.(*) (MPa)	Y.S.(*) (MPa)	E.L.(*) (%)	Hardness (HB)	R.A.(*) (%)	Impact Test			Material Supplier	HEAT TREATMENT(*)		REMARKS
							Temp:	Minimum:	Joule		1	2	
11	921032	511.9	347.2	34.0	187	30.0				NTMK	880°CX3HRS	CONFORMS WITH NACE MR0103-07 AND NACE	
12	64319	513.9	319.7	33.2	155	65.9				RED OCTOBER		MR0175/ISO15156.2	
13	10832	523.7	323.6	34.0	150	66.8				OEMK		CONFORMS WITH Z245.12 CAT 1 GR.248 SOUR	
14	931233	515.8	333.4	34.0	153	67.0				NTMK		SERVICE-05	
15	921032	511.9	347.2	34.0	155	66.0				NTMK		TEST SPECIMEN ORIENTATION: TRANSVERSE	
16	920946	511.9	341.3	34.8	154	67.7				OEMK			
17	13182	517.8	333.4	35.6	150	64.9				OEMK			
18	48946	521.7	313.8	34.4	157	70.0				SEAH BESTEEL			
19	274166	529.6	360.9	34.8	158	68.0				NTMK			
20	931278	511.9	321.7	34.2	155								

*1: T.S.=Tensile Strength, Y.S.=Yield Strength, E.L.=Elongation, R.A.=Reduction of Area.

*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T.=Solution Treated, S.R.=Stress Relieved, A.C.=Air Cooled, F.C.=Furnace Cooled, W.C.=Water Cooled, O.C.=Oil Cooled.

*3: C.E. Value = C + (Mn/16) + (Cr + Mo + V) / 5 + (Ni + Cu) / 15

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

Manager of Quality Assurance Dept



*1: T.S. = Tensile Strength, Y.S. = Yield Strength, E.L. = Elongation, R.A. = Reduction of Area.
*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T.=Solution Treated, S.R.=Stress Relieved, A.C.=Air Cooled, F.C.=Furnace Cooled, W.C.=Water Cooled, O.C.=Oil Cooled.
*3: C.E. Value = $C + (Mn / 6) + (Cr + Mo + V) / 5 + (Ni + Cu) / 15$

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

Manager of Quality Assurance Dept

HT# A416 2" 150 STD RFWNF AIUO



SHINSEI

信盛(姜堰)五金锻造有限公司

SHINSEI (JIANGYAN) STEEL FLANGES CO., LTD.

江苏省姜堰市经济开发区天目路688号(邮编: 225500)

NO.688, TIANMU ROAD, JIANGYAN ECONOMIC DEVELOPMENT ZONE,

JIANGYAN CITY, JIANGSU, CHINA (225500)

TEL:(0086)523-88206028

FAX:(0086)523-88206058

E-mail:shinsei@ssflanges.com.cn

SSWJ/QD8.2.4A-04

ACCORDING TO EN10204-3.1/2004

MILL TEST & INSPECTION CERTIFICATE

CUSTOMER:SEYBOLD INTERNATIONAL CORP

CERT NO:10050012

ORDER NO:7002187 (20410psj)

DATE:05/11/10

PAGE:4

ITEM	RAW MATERIAL HEAT NO.	SHINSEI HT. CD.	DESCRIPTION		QUANTITY	SPECIFICATION: ASTM/ASME SA105N-2005					
057	09708823	A416	WNRF STD 2" 150		49 PCS	DIMENSION: ASME/ANSI B16.5-2003 SURFACE: BY VISUAL...GOOD					
058	B80009003	A142	WNFF STD 2-1/2" 150		2 PCS						
058	2201-06013	A073	WNFF STD 2-1/2" 150		3 PCS						
058	09703781	A309	WNFF STD 2-1/2" 150		95 PCS						
061	1203-21652	A127	THRF 1-1/4" 300 NPT		50 PCS						
062	10701341	A463	WNRF STD 3" 300		288 PCS						
CHEMICAL COMPOSITION (%)											
ITEM	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	CE
Min	-	0.100	0.600	-	-	-	-	-	-	-	-
Max	0.350	0.350	1.050	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.430
057	0.200	0.250	0.980	0.011	0.010	0.140	0.090	0.050	0.013	0.004	0.397
058	0.190	0.230	1.030	0.001	0.006	0.120	0.004	0.004	0.0012	0.008	0.373
058	0.190	0.230	0.930	0.019	0.008	0.020	0.040	0.010	0.005	0.003	0.357
058	0.200	0.220	0.940	0.007	0.004	0.080	0.060	0.040	0.009	0.003	0.379
061	0.200	0.220	0.950	0.012	0.005	0.030	0.030	0.010	0.001	0.003	0.368
062	0.220	0.230	0.970	0.022	0.010	0.040	0.050	0.030	0.005	0.005	0.398
MECHANICAL TEST											
ITEM	Tensile Strength (KSI)	Yield Strength (KSI)	Elon- Gation (%)	R of A (%)	Hardness (HB)	Remark: HEAT TREATMENT: NORMALIZE AT 860°C MATERIAL IN ACC. WITH NACE MR. 01.75/03 (ONLY HARDNESS) ISO9001:2000 & PED97/23/EC CERTIFIED AD2000-MERKBLATT WO CERTIFIED					
Min	70.0	36.0	22.0	30.0	-	WE CERTIFY THE ABOVE MENTIONED FLANGES HAVE BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE SPECIFICATIONS SHOWN					
Max	-	-	-	-	187.0						
057	73.3	48.6	35.6	65.3	142.0						
058	75.3	53.3	33.0	59.0	137.0						
058	73.8	41.6	33.6	67.0	137.0						
058	72.4	51.2	28.6	58.0	142.0						
061	72.4	44.5	32.0	52.0	137.0						
062	75.7	40.6	29.4	61.4	145.0						

张峰豪

Q.C. MANAGER

周丽芹

INSPECTOR

MATERIAL ACCEPTED

Code Edition used
for verification

07

Addenda

09

QC

date

Nov. 19/10



INSPECTION CERTIFICATE

PANTECH STEEL INDUSTRIES SDN. BHD. (PANT-14)
LOT 13258 & 13259, Jalan Haji Abd. Manan,
Off Jalan Meru, 42200 Klang, Selangor, Malaysia.

Tel: 603-3393 1633 Fax: 603-3393 1733 E-mail: pantech12@streamyx.com



Cert. No.: KJ 0402924
PD 9772/PC Annex 1 Clause 4.3
Cert. No.: 0038/PIC/NA/NA/007072

WROUGHT CARBON STEEL BUTTWELDING FITTINGS

INSPECTION DOCUMENT: EN10204:2004 Type 3.1

HT # LF401 3" STD 90DEG LR ELBOW A234

Certificate No: PSI 87521
Date: 21-Aug-10

Purchaser: ALLIED FITTING CORP

Order No.	Invoice No.	Specification for Pipe	Specification for Fittings: Made from Seamless Pipe	Specification for Inspection												
22610DPS-1	E 6765	ASTM A106 - 08 / API 5L - 07 PSL1 Gr. B & NACE MR0175 - 03	ASTM A234 - 07 / ASME SA 234 - 07 WPB	ASME B16.9 - 07												
Heat No.	Product & Size		Quantity (pcs)	Pipe Mill	Pipe Heat No.											
LF 803	3" 90 DEG LR STD ELBOW		570	JIANGYIN CITY SEAMLESS STEEL TUBE	1-05019											
LF 401	3" 90 DEG LR STD ELBOW		2310	JIANGYIN CITY SEAMLESS STEEL TUBE	2-02604											
LF 404	5" 90 DEG LR STD ELBOW		690	JIANGYIN CITY SEAMLESS STEEL TUBE	10-102669											
Visual Examination		Dimensional Inspection	Heat Treatment	Magnetic Particle Testing												
GOOD		GOOD	H	N.A												
GOOD		GOOD	H	N.A												
GOOD		GOOD	H	N.A												
Specification		Chemical Composition (%)						Tensile Test ¹		Hardness						
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	CE	YS	TS	E	(HB)	
Min	x100	x100	x100	x1000	x1000	x100	x100	x100	x100	x1000	x100	x100	(KSI)	(MPa)	(%)	
Max	-	10	29	-	-	-	-	-	-	-	-	240	415	22	-	
Heat No.	30	-	108	50	58	40	40	15	40	80	50	-	655	-	197	
LF 803	18	24	53	16	4	0	1	0	1	4	28	367	457	28.0	117	
LF 401	17	27	46	29	25	2	4	2	4	3	27	389	505	30.5	113	
LF 404	18	21	51	27	6	0	1	1	1	5	28	379	494	30.5	105	

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE SPECIFICATION AND PURCHASE ORDER, AND SATISFIED THE REQUIREMENTS.

TENSILE REQUIREMENT: CONFORMS TO ASTM A370 STANDARD, LONGITUDINAL DIRECTION, GAUGE LENGTH "Z" (50mm)

NOTE:

- N: Normalised at 910°C
- Q: Heated to 910°C and quenched in water.
- T: Tempered between 590°C - 690°C.
- S: Stress relieved in temperature between 595°C - 690°C and cooled in still air.
- H: Hot formed in temperature between 620°C - 900°C and cooled in still air.



Quality Assurance Manager

MATERIAL ACCEPTED

Code Edition used for verification: 07
Addenda: 09
Date: Nov. 19/10
QC

MATERIAL ACCEPTED

HT # 10D660 3" STD Weld Tee

Code Edition used
for verification

07

Addenda

09

Nov 22/10

DATE: 2010-6-22

QC

INSPECTION CERTIFICATE

PURCHASER: SEYBOLD INTERNATIONAL CORP

SHANGHAI GATEWAY FITTINGS CO., LTD
951, Kesheng Road Beiguan, Malu town, Jia-ding District,
Shanghai, China

ORDER NO: 7002474

STANDARD: ASTM A234/ASME SA234-07 WPB

MATERIALS: ASTM A106 Gr.B

INSP SPEC.: ASME B16.9-07

TEL: 86-21-69155661 FAX: 86-21-69155662

P.I.NO:

10FI-2/3

CERTIFLNO:

10FI-2/3

MATERIALS: ASTM A106 Gr.B										UNSP.SPEC: ASME B16.9-07										TEL: 86-21-69155661 FAX: 86-21-69155662									
ITEM NO.		PRODUCT & SIZE		QUANTITY PCS		MFG NO.		VISUAL & DIMENTI ONAL		HARDNESS MAX.197 HB		HEAT TREATMENT		MAGNETIC PARTICLE EXAMINATION															
11		Ecc Reducer-12X8" STD		25		10D648		GOOD		91-97		N		OK															
12		Elbow 90 LR-16" STD		50		10D325		GOOD		90-99		A																	
13		Elbow 90 SR-8" XH		20		10D289		GOOD		90-105		A																	
14		Tee-4X3" STD		200		10D692		GOOD		79-100		N		OK															
15		Tee-6X3" STD		49		10D693		GOOD		92-98		N		OK															
16		Tee-12X8" STD		25		10D681		GOOD		93-99		N		OK															
17		Tee-11/2" STD		250		10D655		GOOD		95-102		N		OK															
18		Tee-3" STD		750		10D660		GOOD		73-84		N		OK															
19		Tee-4" STD		300		10D662		GOOD		98-102		N		OK															
20		Tee-5" STD		100		10D664		GOOD		87-95		N		OK															

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C - 980°C, AIR COOLING.

N: NORMALIZING AT TEMPERATURE 880°C*0.5 HR, AIR COOLING.

NACE MR-01-75: SATISFACTORY

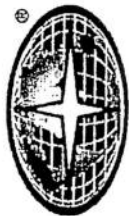
WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT.

MILL TEST CERTIFICATE ACCORDING TO EN10204/3.1

K C GUAN

MANAGER OF Q. A. DEPT

HT# L803 2" STD 90DEG LR ELBOW



INSPECTION CERTIFICATE

PANTECH STEEL INDUSTRIES SDN. BHD. (509731-A)
 LOT 13268 & 13269, Jalan 11/1j, Abd. Manan,
 Off Jalan Meni, 42200 Klang, Selangor, Malaysia.
 Tel: 603-3393 1633 Fax: 603-3393 1733 E-mail: pantech2@streamyx.com

WROUGHT CARBON STEEL BUTTWELDING FITTINGS
 INSPECTION DOCUMENT: EN10204:2004 Type 3.1



Cert. No.: ZLR 0403936
 PED 97235C Annex 1, Clause 4.3
 Cert. No.: 0034/PED/AM/0403936

Certificate No : PSI 66816
 Date : 8-Jul-10

Purchaser : ALLIED FITTING CORP

Order No.	Invoice No.	Specification for Pipe	Specification for Fittings: Made from Seamless Pipe	Specification for Inspection											
22210PS-4	E 6652	ASTM A106 - 08 / API 5L - 07 PSL1 Gr. B & NACE MR0175 - 03	ASTM A234 - 07 / ASME SA 234 - 07 WPB	ASME B16.9 - 07											
Heat No.	Product & Size		Quantity (pcs)	Pipe Mill	Pipe Heat No.										
LD 504	2" 90 DEG LR STD ELBOW		48	JIANGYIN CITY SEAMLESS STEEL TUBE	0100101274										
LB 902	2" 90 DEG LR STD ELBOW		60	JIANGYIN CITY SEAMLESS STEEL TUBE	09-214184										
L 803	2" 90 DEG LR STD ELBOW		31	JIANGYIN CITY SEAMLESS STEEL TUBE	09-214177										
LD 204	10" 90 DEG LR STD ELBOW		87	JIANGYIN CITY SEAMLESS STEEL TUBE	1040339										
LC 702	10" 90 DEG LR STD ELBOW		3	PANGANG GROUP CHENGDU IRON & STEEL	1081018										
Visual Examination		Dimensional Inspection	Heat Treatment	Magnetic Particle Testing											
GOOD		GOOD	H	N.A											
GOOD		GOOD	H	N.A											
GOOD		GOOD	H	N.A											
GOOD		GOOD	H	N.A											
GOOD		GOOD	H	N.A											
Specification		Chemical Composition (%)										Tensile Test ¹			Hardness
		C x100	Si x100	Mn x100	P x1000	S x1000	Ni x100	Cr x100	M ₂ x100	Cu x100	V x1000	CE x100	YS (KSI / MPa)	TS (%)	E (HB)
Min		-	10	29	-	-	-	-	-	-	-	240	415	22	-
Max		30	-	108	50	58	40	40	15	40	80	-	655	-	197
Heat No.		19	21	46	13	9	2	5	0.3	10	0	29	325	474	33.6
LD 504		18	23	55	28	5	1	1	0	1	2	28	324	437	28.8
LB 902		17	24	50	20	5	0	1	1	1	5	27	392	478	30.8
L 803		15	28	58	10	8	4	11	1	11	4	29	307	442	41.7
LD 204		17	23	46	11	10	5	4	1	13	2	27	358	495	32.3
LC 702															

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE SPECIFICATION AND PURCHASE ORDER, AND SATISFIED THE REQUIREMENTS.

TENSILE REQUIREMENT: CONFORMS TO ASTM A370 STANDARD, LONGITUDINAL DIRECTION, GAUGE LENGTH 2" (50mm)

NOTE:

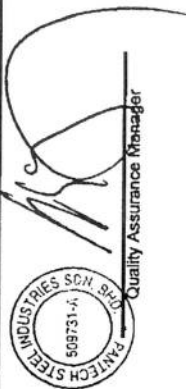
N: Normalized at 910°C
 Q: Heated to 910°C and quenched in water.
 T: Tempered between 500°C - 650°C.
 S: Stress relieved in temperature between 550°C - 650°C and cooled in still air.
 H: Hot formed in temperature between 620°C - 820°C and cooled in still air.

YS: Yield Strength
 TS: Tensile Strength
 E: Elongation

MATERIAL ACCEPTED

Addenda

Code Edition used 07
 for verification 00
 date Nov. 22/10
 QC



Quality Assurance Manager

HT# A501 3' 300 BF Blind Flange A105



信盛(姜堰)五金锻造有限公司

SHINSEI (JIANGYAN) STEEL FLANGES CO., LTD.

江苏省姜堰市经济开发区天目路688号(邮编: 225500)

NO.688, TIANMU ROAD, JIANGYAN ECONOMIC DEVELOPMENT ZONE,

JIANGYAN CITY, JIANGSU, CHINA (225500)

TEL:(0086)523-88206028

FAX:(0086)523-88206058

E-mail:shinsei@ssflanges.com.cn

SSW/QD8.2.4A-04

ACCORDING TO EN10204-3.1/2004

MILL TEST & INSPECTION CERTIFICATE

CUSTOMER:SEYBOLD (ALLIED)

CERT NO:10070080

ORDER NO:7002560 (42810ASJ)

DATE:2010-07-27

PAGE:3

ITEM	RAW MATERIAL HEAT NO.	SHINSEI HT.CD.	DESCRIPTION				QUANTITY	SPECIFICATION: ASTM/ASME SA105N-2005			
013	2302-13407	A501	BLRF 3" 300				300	PCS	DIMENSION: ASME/ANSI B16.5-2003		
014	1103-21708	A156	SWRF S/160 1/2" 300				50	PCS	SURFACE: BY VISUAL...GOOD		
015	2201-09043	A158	THRF 1-1/2" 300 NPT				10	PCS			
015	2302-03882	A358	THRF 1-1/2" 300 NPT				190	PCS			
016	10-103792	A462	WNRF STD 12" 300				50	PCS			
017	10-103792	A462	WNRF S/40 12" 300				50	PCS			
018	1103-21711	A242	BLRF 1" 600				100	PCS			
CHEMICAL COMPOSITION (%)											
ITEM	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	CE
Min	-	0.100	0.600	-	-	-	-	-	-	-	-
Max	0.350	0.350	1.050	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.430
013	0.200	0.260	0.930	0.022	0.004	0.020	0.050	0.010	0.003	0.006	0.369
014	0.220	0.220	0.990	0.020	0.004	0.010	0.040	0.010	0.002	0.002	0.395
015	0.190	0.230	0.940	0.015	0.005	0.020	0.030	0.010	0.0012	0.0033	0.356
015	0.190	0.250	0.950	0.016	0.002	0.020	0.020	0.010	0.001	0.005	0.356
016	0.210	0.240	0.930	0.015	0.008	0.010	0.020	0.020	0.002	0.001	0.372
017	0.210	0.240	0.930	0.015	0.008	0.010	0.020	0.020	0.002	0.001	0.372
018	0.210	0.250	0.970	0.012	0.002	0.020	0.020	0.010	0.0032	0.0022	0.379
MECHANICAL TEST							Remark: HEAT TREATMENT:NORMALIZE AT 860°C MATERIAL IN ACC. WITH NACE MR0175-2003 (ONLY HARDNESS) ISO9001:2000 & PED97/23/EC CERTIFIED AD2000-MERKBLATT WO CERTIFIED				
ITEM	Tensile Strength (KSI)	Yield Strength (KSI)	Elong- Gation (%)	R of A (%)	Hardness (HB)						
Min	70.0	36.0	22.0	30.0	-						
Max	-	-	-	-	187.0						
013	73.0	52.5	35.8	70.3	141.0						
014	74.9	52.7	37.0	65.9	137.0						
015	71.8	52.3	27.2	65.7	137.0						
015	71.7	53.6	37.0	74.2	141.0						
016	73.2	49.1	35.9	65.7	143.0						
017	73.2	49.1	35.9	65.7	143.0						
018	73.2	56.6	33.0	63.4	137.0						
WE CERTIFY THE ABOVE MENTIONED FLANGES HAVE BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE SPECIFICATIONS SHOWN											
							Q.C. MANAGER		INSPECTOR		

C/W .5" NPT TAP

接下页

MATERIAL ACCEPTED

Code Edition used for verification

Addenda

07

09

QC

date

Nov 22/10

SPEC

Machine & Supply Ltd.

4305-76 Avenue NW, Edmonton, Alberta T6B 2H7
Telephone (780) 463-2909 Fax (780) 463-2912

HT# 353B 3" RF Blind Flange .A350

MATERIAL ACCEPTED

Code Edition used
for verification

07

Addenda 09

MILL TEST REPORT

QC

date

ITEM NUMBER	DESCRIPTION	SPECIFICATION	HEAT CODE
1	3" - 300 RF SPEC BLIND	SA-516-70-N	353B

CHEMICAL ANALYSIS

HEAT CODE	C	MN	P	S	SI	NI	CR	MO	CEV	OTHER
353B	0.182	1.12	0.007	0.0010	0.321	0.043	0.071	0.025	0.39	

PHYSICAL PROPERTIES

HEAT CODE	YIELD KSI	TENSILE KSI	EL%	RA%	IMPACT TEST FT. LB
353B	53.5	74.5	28.0 (8")		CHP-V - 51 °F 134 136 90 AV 120

HEAT CODE	HEAT TREATMENT	MAX BRINELL	OTHER
353B	Normalized @ 1634 +27/-27 °F	145 Conforms to NACE MR 01 75 / ISO 15156-2 2003 ANNEX A	

WE CERTIFY THAT THE PRODUCTS COVERED BY THIS REPORT COMPLY WITH APPLICABLE REQUIREMENTS OF ASTM AND/OR ASME SPECIFICATIONS, AS NOTED FOR EACH LINE ITEM.

WE HERBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT, AS CONTAINED IN THE RECORDS OF THE COMPANY.

Sara Lynn Minton

HT# 34442 1.5" 2500 RTJ Neck Flange A350

Moizieux-Gauchon Industrie
S.A. au Capital de 1,544,490 Euros
Siège Social : Boite Postale n° 6 - 42130 BOËN FRANCE
Dépt. Broches et Pièces Forjées - Tél. 04 77 96 80 00
Fax Commercial 04 77 96 80 01/02 - Administratif 04 77 96 80 03
250 927 377 R.C.S. MONTBRISON - SHET 330 827 377 0001 - Cofec N° 2844

N° DU DOCUMENT
Document N° 345500
Nummer des Dokuments 345500

CERTIFICAT DE RÉCEPTION PAR L'USINE 3.1.B EN 10204
INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS

CLIENT
Customer
Kunde
ALLIED FITTING CANADA
2307 43RD AVENUE
76 203 EDMONTON ALBERTA
CANADA

Poinçon d'usine - Manufacturer stamp - Herstellerzeichen (MGI)

Ligne Item	N° Ordre Fabric. Batch N° Hersteller Nr	DÉSIGNATION - Description - Gegenstand	N° de Commande Client Customer's order N° Bestell Nr.	N° de Commande Usine Plant order number Werksbestellnummer	Quantité Totale Total quantity Gesamtmenge	Norme ou spécification du produit Product standard or specification Produktnorm bzw. Spezifikation
031		1 1/2 WN 2500 LBS ENF IIS FSC	98542	042402483	39	ASTM A350/A352M SECT. 11 PART 106/101
031						LF2 CLASS 1
MARQUAGE Marking Kennzeichnung					Masse en kg Mass Masse	N° et origine des outils utilisés Number and origin of tools used Nummer und Ursprung der verwendeten Schneiden
					1183	34442 0001

ANALYSE SUR COULÉE EN % SELON LES DONNÉES DU FABRICANT - Ladle analysis according to the manufacturer's requirements - Schmelzanalyse nach Angaben des Herstellers

	f %	Si %	Mn %	P %	S %	Cr %	Mo %	W %	Co %	Al %	Fe %	%	%	%	%	%
IMPOSES Requirements Anforderungen	MINI	MAXI														
	0.2500	0.1500	0.6000	0.0350	0.0400	0.3000	0.4000	0.0500	0.4000	0.0200	0.0500					
OBTEINUS Obtained - Ergebnisse	0.2000	0.2500	1.0600	0.0140	0.0070	0.0800	0.0500	0.0500	0.0500	0.0050	0.0050					

TRACTION - Tensile test - Zugversuch (1)

$\sigma = 32.5 \text{ MPa}$ $A_5 : L_0 = 2"$

	F - FORGÉ AF - As Forged F - Warmgeschmiedet	N - NORMALISÉ N - Normalized N - Normalgeglüht	TR - TREMPÉ QT - Quenched TR - Abgeschreckt	925 °C Tempered Angelassen	500 °C	POSITION AGE	R _m MPa Tensile strength Zugfestigkeit	R _{0.2} MPa Yield strength 0.2 % Streckgrenze	R _{0.01} MPa Yield strength 1 % Streckgrenze	ALONGEMENT Elongation Bruchdehnung	STRICTION Reduction of area Einschnürung	DURETE Hardness Härte	POSITION AGE	HB	UNITÉ Einheit	MOY.
AUTRES ESSAIS Other tests - Weitere Prüfungen OBSERVATIONS Observations - Anmerkungen						L	485 655	250		22	30	197	T		15	20
						L	550	414		32	52	155	T		70 / 84 / 90	81

ESSAI DE FLEXION PAR CHOC
Impact test - Kerschlagzähigkeit (1)

$$CEIL = C + \frac{(M_0/5)}{(C + M_0 + 5)} + \frac{(M_1 + M_2/15)}{(C + M_0 + 5)}$$
$$\frac{(C + M_0 + 5)}{(C + M_0 + 5)} = 0.47$$
$$\frac{(C + M_0 + 5)}{(C + M_0 + 5)} = 0.23$$
$$\frac{(C + M_0 + 5)}{(C + M_0 + 5)} = 0.10$$

MATERIAL IN ACCORDANCE WITH ENCE 01.75/2000

MATERIAL ACCEPTED

Les contrôles dimensionnels et d'aspect et les essais sont conformes à la commande et aux normes spécifiées.
(1) Les résultats des essais mécaniques ont été obtenus dans notre laboratoire ou dans un laboratoire agréé.
Dimensional and Visual inspection and test are carried out in our laboratory or in an approved laboratory.
(2) Mechanical test results have been obtained in our laboratory or in an approved laboratory.
Die dimensionskontrollen und die Proben stimmen mit der Bestellung und den angegebenen Normen ein.
(3) Die Ergebnisse der mechanischen Proben wurden in unserem Labor oder in einem genehmigten Labor erhalten.

Document original à signature informatique authentifiée par le logo MGI.
Original computer signed copy authenticity is guaranteed by the green MGI logo.
Das original Dokument wird durch Computerschrift mit grünem MGI Zeichen ausgestellt.

EXPERT DE L'USINE
Qualified Inspector
Werksachverständiger
NOM ET QUALITÉ
Name and qualification
Name und Eigenschaft

Responsable CQ
Responsible
Romeo Jordaiche

Code Edition used
for verification
07 Addenda 09
00 Non-2210
QC date

DATE
Datum
29/11/2002

MACHINED TO RTJ

HT# 1070F 2.5" 300 STD RFWNF A105

MUNISH FORGE PVT. LTD																												
VILL. GOBINDGARH, ADJOINING PHASE - VII FOCAL POINT LUDHIANA, PHONE:-2673307, 2673407																												
AN ISO 9001 : 2000 CERTIFIED COMPANY																												
(CERTIFICATE AS PER BS EN 10204 - 3.1B)																												
INVOICE NO. & DATE		CUSTOMER'S NAME		PART NO. / NAME		MATERIAL SPECIFICATION		STANDARD		QUANTITY		CERTIFICATE NO.			1783/06													
				2 1/2 " 300 WNRF STD		ASTM A105N/ASME SA 105 - NACE MRO 175		ANSI B16.5-2003 (REVISION OF ASME B16.5-1996)		45 Pcs		DATE			30 - 09 - 2006													
												P.O. NO. & DATE																
												LAB REF. NO.			1070F													
DESCRIPTION		QTY (PCs)	HEAT NO.	CHEMICAL COMPOSITION																								
SPECIFIED		45	-	C	0.25 MAX	Mn	1.05 MAX	P	0.035 MAX	S	0.040 MAX	Si	0.10 MAX	Cu	0.40 MAX	Ni	0.40 MAX	Cr	0.30 MAX	Mo	0.12 MAX	V	0.05 MAX	Cb	0.02 MAX	CE%	0.43 MAX	
MILL TEST REPORT OBSERVED			06201652	0.24	1.01	0.021	0.018	0.26																				
BY US		45	1070F	0.25	0.93	0.016	0.025	0.28	0.013	0.005	0.017	0.002	0.001															0.41
GRAIN SIZE :-		6.0ASTM																										
INCLUSION RATING		A 1.0 B 1.0 C 1.5 D 1.0																										
GRAIN FLOW		SATISFACTORY																										
MECHANICAL PROPERTIES																												
HEAT NO.	DESCRIPTION	YIELD STRENGTH Kg / mm ²	TENSILE STRENGTH Kg / mm ²	% ELONGATION	% REDUCTION	HARDNESS BHN																						
-	SPECIFIED	25.30	49.28	22 MIN	30 MIN	137-187																						
1070F	OBSERVED	35.38	53.53	25.91	54.29	146-156																						
SPECIAL REMARKS: - WE CERTIFY THAT THE MATERIAL SUITS THE REQUIREMENT OF P.O. / RELEVANT SPECIFICATION. CARBON STEEL FLANGES ARE FORGED, NORMALIZED & FULLY MACHINED WITH SERRATED FINISH. FLANGES ARE PAINTED WITH BLACK PAINT & MARKED AS :																												
MUNISH 2 1/2 WNRF STD A 105N B16.5 H1070 F INDIA																												
A.Q.C.M. (MATERIAL)		A.Q.C.M.. (MACHINE)		FLANGE SHOP (W.M)		MANAGER (Q.C)																						
[Signature]		[Signature]		[Signature]		FOR MUNISH FORGE LTD.																						

MATERIAL ACCEPTED

Code Edition used for verification 07 Addenda 09 date Nov. 22/10 QC

HT # KA301C 3" x 2.5" STD Concentric Reducer A234



INSPECTION CERTIFICATE

PANTECH STEEL INDUSTRIES SDN. BHD.
 LOT 13258 & 13259, Jalan Haji Abd. Manan,
 Off Jalan Meru, 42200 Klang, Selangor, Malaysia.
 Tel: 603-3393 1633 Fax: 603-3393 1733 E-mail: pantech@pantechsteel.com



Cert. No.: PSI 049328
 PPS 9723AC Annex 1, Group A3
 Cert. No.: 049328/PSI/ANNEX1/049328

WROUGHT CARBON STEEL BUTTWELDING FITTINGS

INSPECTION DOCUMENT: EN10204:2004 Type 3.1

Certificate No.: PSI 66518
 Date: 28-Jun-10

Purchaser: ALLIED FITTING CANADA

Order No.	Invoice No.	Specification for Pipe	Specification for Fittings: Made from Seamless Pipe	Specification for Inspection											
52110PPS-2	E 6612	ASTM A106 - 08 / API 5L - 07 PSL1 Gr. B & NACE MR0175 - 03	ASTM A234 - 07 / ASME SA 234 - 07 WPB / CSA Z245.11 - 05 Cat. I Gr.241	ASME B16.9 - 07											
Heat No.	Product & Size		Quantity (pcs)	Pipe Mill	Pipe Heat No.										
JF 209C	3" x 1" STD CON RED		50	YANTAI STEEL PIPE PLANT	00831020										
GC 202C	3" x 1 1/4" STD CON RED		25	YANTAI GENERAL STEEL PIPE	06-5120										
HH 802C	3" x 2" STD CON RED		1000	TENARIS	29421										
KA 301C	3" x 2 1/2" STD CON RED		300	PANGANG GROUP CHENGOU IRON & STEEL	8412844										
Visual Examination		Dimensional Inspection	Heat Treatment		Magnetic Particle Testing										
GOOD		GOOD	S		N.A										
GOOD		GOOD	S		N.A										
GOOD		GOOD	S		N.A										
GOOD		GOOD	S		N.A										
Specification		Chemical Composition (%)										Tensile Test ⁻¹			Hardness
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	CE	YS x100 (ksi / MPa)	TS	E (%)	(HB)
Min	-	10	29	-	-	-	-	-	-	-	-	240	415	22	-
Max	30	-	106	50	58	40	40	15	40	80	50	-	655	-	197
Heat No.	19	22	46	16	12	4	2	1	12	5	29	368	600	30.0	136
JF 209C	20	23	52	11	8	3	5	0.4	7	6	32	300	475	30.5	190
GC 202C	19	24	55	25	6	2	4	1	5	4	30	358	528	32.8	97
HH 802C	19	24	56	22	8	2	4	0.4	5	5	31	352	491	30.0	89
KA 301C															

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE SPECIFICATION AND PURCHASE ORDER, AND SATISFIED THE REQUIREMENTS.

TENSILE REQUIREMENT: CONFORMS TO ASTM A370 STANDARD, LONGITUDINAL DIRECTION, GAUGE LENGTH 2" (50mm)

NOTE:

- N: Normalized at 910°C
- Q: Heated to 910°C and quenched in water.
- T: Tempered between 500°C - 600°C.
- S: Stress relieved in temperature between 550°C - 600°C and cooled in still air.
- H: Hot formed in temperature between 620°C - 800°C and cooled in still air.

YS: Yield Strength

TS: Tensile Strength

E: Elongation

MATERIAL ACCEPTED

Code Edition used for verification 07 Addenda 09

QC No. 22/10 date



Material Receiving Report

DYNACORP
A DYNACORP COMPANY

Job No.	15105033	B
---------	----------	---

Rec. Date:

PO#:

Supplier:

Nov 1, 2010

1P6095

Meridian

Rec'd

By: _____

Record of Actual Code Required Markings

Mat.	Track No.
------	-----------

Qty

Diam.

Thickness
Plate, Heads,
Pipe Wall

2 ii

144221

Product Description

Baker 2" d500 RTJ Choke Valve

Material spec.	Manufacturer
100% cotton	ABC Textiles
100% polyester	XYZ Fabrics
100% wool	DEF Yarns
100% silk	GHI Linens
100% linen	JKL Textiles
100% rayon	MNO Fabrics
100% bamboo	PQR Textiles
100% hemp	STU Fabrics
100% jute	VWX Textiles
100% sisal	YZA Fabrics
100% cotton/polyester blend	BCD Textiles
100% polyester/cotton blend	EFG Fabrics
100% wool/cotton blend	HIJ Textiles
100% silk/cotton blend	KLM Fabrics
100% linen/cotton blend	NOP Textiles
100% rayon/cotton blend	QRS Fabrics
100% bamboo/cotton blend	TUV Textiles
100% hemp/cotton blend	WXY Fabrics
100% jute/cotton blend	ZAB Textiles
100% sisal/cotton blend	ACD Fabrics
100% cotton/linen blend	DEF Textiles
100% polyester/linen blend	GHI Fabrics
100% wool/linen blend	JKL Textiles
100% silk/linen blend	MNO Fabrics
100% linen/rayon blend	PQR Textiles
100% rayon/bamboo blend	STU Fabrics
100% bamboo/hemp blend	VWX Textiles
100% hemp/jute blend	YZA Fabrics
100% jute/sisal blend	BCD Textiles
100% sisal/cotton blend	EFG Fabrics
100% cotton/polyester blend	HIJ Textiles
100% polyester/cotton blend	KLM Fabrics
100% wool/cotton blend	NOP Textiles
100% silk/cotton blend	QRS Fabrics
100% linen/cotton blend	TUV Textiles
100% rayon/cotton blend	WXY Fabrics
100% bamboo/cotton blend	ZAB Textiles
100% hemp/cotton blend	ACD Fabrics
100% jute/cotton blend	DEF Textiles
100% sisal/cotton blend	GHI Fabrics
100% cotton/polyester blend	JKL Textiles
100% polyester/cotton blend	MNO Fabrics
100% wool/cotton blend	PQR Textiles
100% silk/cotton blend	STU Fabrics
100% linen/cotton blend	VWX Textiles
100% rayon/cotton blend	YZA Fabrics
100% bamboo/cotton blend	BCD Textiles
100% hemp/cotton blend	EFG Fabrics
100% jute/cotton blend	HIJ Textiles
100% sisal/cotton blend	KLM Fabrics
100% cotton/polyester blend	NOP Textiles
100% polyester/cotton blend	QRS Fabrics
100% wool/cotton blend	TUV Textiles
100% silk/cotton blend	WXY Fabrics
100% linen/cotton blend	ZAB Textiles
100% rayon/cotton blend	ACD Fabrics
100% bamboo/cotton blend	DEF Textiles
100% hemp/cotton blend	GHI Fabrics
100% jute/cotton blend	JKL Textiles
100% sisal/cotton blend	MNO Fabrics
100% cotton/polyester blend	PQR Textiles
100% polyester/cotton blend	STU Fabrics
100% wool/cotton blend	VWX Textiles
100% silk/cotton blend	YZA Fabrics
100% linen/cotton blend	BCD Textiles
100% rayon/cotton blend	EFG Fabrics
100% bamboo/cotton blend	HIJ Textiles
100% hemp/cotton blend	KLM Fabrics
100% jute/cotton blend	NOP Textiles
100% sisal/cotton blend	QRS Fabrics
100% cotton/polyester blend	TUV Textiles
100% polyester/cotton blend	WXY Fabrics
100% wool/cotton blend	ZAB Textiles
100% silk/cotton blend	ACD Fabrics
100% linen/cotton blend	DEF Textiles
100% rayon/cotton blend	GHI Fabrics
100% bamboo/cotton blend	JKL Textiles
100% hemp/cotton blend	MNO Fabrics
100% jute/cotton blend	PQR Textiles
100% sisal/cotton blend	STU Fabrics
100% cotton/polyester blend	VWX Textiles
100% polyester/cotton blend	YZA Fabrics
100% wool/cotton blend	BCD Textiles
100% silk/cotton blend	EFG Fabrics
100% linen/cotton blend	HIJ Textiles
100% rayon/cotton blend	KLM Fabrics
100% bamboo/cotton blend	NOP Textiles
100% hemp/cotton blend	QRS Fabrics
100% jute/cotton blend	TUV Textiles
100% sisal/cotton blend	WXY Fabrics
100% cotton/polyester blend	ZAB Textiles
100% polyester/cotton blend	ACD Fabrics
100% wool/cotton blend	DEF Textiles
100% silk/cotton blend	GHI Fabrics
100% linen/cotton blend	JKL Textiles
100% rayon/cotton blend	MNO Fabrics
100% bamboo/cotton blend	PQR Textiles
100% hemp/cotton blend	STU Fabrics
100% jute/cotton blend	VWX Textiles
100% sisal/cotton blend	YZA Fabrics
100% cotton/polyester blend	BCD Textiles
100% polyester/cotton blend	EFG Fabrics
100% wool/cotton blend	HIJ Textiles
100% silk/cotton blend	KLM Fabrics
100% linen/cotton blend	NOP Textiles
100% rayon/cotton blend	QRS Fabrics
100% bamboo/cotton blend	TUV Textiles
100% hemp/cotton blend	WXY Fabrics
100% jute/cotton blend	ZAB Textiles
100% sisal/cotton blend	ACD Fabrics
100% cotton/polyester blend	DEF Textiles
100% polyester/cotton blend	GHI Fabrics
100% wool/cotton blend	JKL Textiles
100% silk/cotton blend	MNO Fabrics
100% linen/cotton blend	PQR Textiles
100% rayon/cotton blend	STU Fabrics
100% bamboo/cotton blend	VWX Textiles
100% hemp/cotton blend	YZA Fabrics
100% jute/cotton blend	BCD Textiles
100% sisal/cotton blend	EFG Fabrics
100% cotton/polyester blend	HIJ Textiles
100% polyester/cotton blend	KLM Fabrics
100% wool/cotton blend	NOP Textiles
100% silk/cotton blend	QRS Fabrics
100% linen/cotton blend	TUV Textiles
100% rayon/cotton blend	WXY Fabrics
100% bamboo/cotton blend	ZAB Textiles
100% hemp/cotton blend	ACD Fabrics
100% jute/cotton blend	DEF Textiles
100% sisal/cotton blend	GHI Fabrics
100% cotton/polyester blend	JKL Textiles
100% polyester/cotton blend	MNO Fabrics
100% wool/cotton blend	PQR Textiles

Color	Code
Black	000000
Blue	0000FF
Brown	8B4513
Gold	FFD700
Green	008000
Grey	808080
Light Blue	ADD8E6
Light Green	90EE90
Light Purple	DDA0DD
Light Yellow	FFFFE0
Orange	FF8C00
Pink	FF69B4
Purple	800080
Red	FF0000
White	FFFFFF
Yellow	FFFF00

Job No.	15105033	B
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CP5531

FOT US NO. S30037

SALES ORDER: S43222

NOVEMBER 29, 2010

MATERIAL ACCEPTED
Code Edition used
for verification 07
Addenda 09
QC 06
date Dec 3 2010



4302 Profit * San Antonio, Texas 78219-2622
Office: (210) 304-5650 * Fax: (210) 304-5640 *
Wats: 1-800-688-5650

STATEMENT OF COMPLIANCE

SERIAL NUMBER: 144221

SALES ORDER NUMBER: S43222

EQUIPMENT: 2" PRESS RDUC VALVE BTE CHOKE 2,500

FORUM HEREBY CERTIFIES THAT THE ABOVE REFERENCE EQUIPMENT HAS BEEN DESIGNED,
MANUFACTURED, AND TESTED TO CONFORM WITH FORUM SPECIFICATIONS.

FORUM STANDARDS AND SPECIFICATIONS:
DESIGNED IN ACCORDANCE WITH THE METHODS IN API 6A.
MEETS SPECIFICATIONS OF ANSI 16.5.
TESTED IN ACCORDANCE WITH THE SPECIFICATIONS IN ANSI 16.37.

COMPLIANCE WITH NACE MR-0175: 2002 EDITION

A handwritten signature in black ink, appearing to read "Jeanette Gil Jadallah". The signature is stylized with a large, looping "J" and "G".

NOVEMBER 29, 2010
JEANETTE GIL JADALLAH
Quality Assistant



4302 Profit * San Antonio, Texas 78219-2622
Office: (210) 304-5650 * Fax: (210) 304-5640 *
Wats: 1-800-688-5650

Sales Order Number: S43222

CERTIFICATION DATA DOSSIER

SECTIONS 1-2

2" PRESS RDUC VALVE BTE CHOKE 2,500
COMMODITY NUMBER: 952GAN78JC0N
SERIAL NUMBER: 144221

Statement of Compliance
Hydrostatic Test Report
Mill certification w/ Charpy results
Nace compliant

NOVEMBER 29, 2010



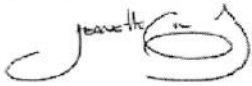
4302 Profit * San Antonio, Texas 78219-2622
Office: (210) 304-5650 * Fax: (210) 304-5640 *
Wats: 1-800-688-5650

PURCHASE ORDER No.: CP5531

DATE: NOVEMBER 29, 2010

SALES ORDER No.: S43222

COMMODITY No.: 952GAN78JC0N

DESCRIPTION	2" PRESS RDUC VALVE BTE CHOKE 2,500
SERIAL No.	144221
MFG. ORDER No.	REL51353
PRESSURE TEST CHART No.	N/A
SHELL TEST	9,275 PSI @ 3 MINUTES
DISC TEST	6,170 PSI @ 3 MINUTES
TEST MEDIUM AND TEMPERATURE	WATER @ ROOM TEMPERATURE
	CLASS "C" CERTIFICATION Body Heat Code Number: KPR Bonnet Heat Code Number: 62984 Cap Screw Hex Heat Code Number: 2R585
SIGNED ON BEHALF OF FORUM SAN ANTONIO	
NAME:	JEANETTE GIL JADALLAH



5142 EVANSTON AVE. • MUSKEGON, MI 49442 • (231) 766-2351

Steel Castings

MATERIAL CERTIFICATION

BAKER SUPPLY PRODUCTS
4302 PROFIT

SAN ANTONIO, TX 78219

Part Number: W52117910
Description: CST BDY BTE 3in CL1500 STL
Material Spec: BAKBR MS-22015 REV. A
P.O. Number: 221669

<u>Pour Date</u>	<u>Heat Number</u>	<u>Quantity</u>	<u>Heat Code</u>
3/11/2010	1DA61		KPR

CHEMICALS

C: 0.29	Mn: 0.89	Si: 0.47	Ni: 0.53
Cr: 0.53	Mo: 0.20	Al: 0.048	S: 0.008
P: 0.000	Cu: 0.08	V: 0.02	W: 0.00
Ti: 0.033			

PHYSICALS

Hardness (BHN):	201	Charpy Temperature (F):	-50
Tensile Strength (psi):	99138	Charpy Results (ft-lbs):	28,24,26
Yield Strength (psi):	76744	Charpy Average (ft-lbs):	26
Elongation (%):	28	Reduction of Area (%):	56

Remarks:

HEAT TREAT: Normalized at 1750F for 1 hour, air cooled; Austenitized at 1750 for 2 hours, oil or polymer quenched; Tempered at 1100F to a hardness of 235 BHN maximum.

BHN: 197

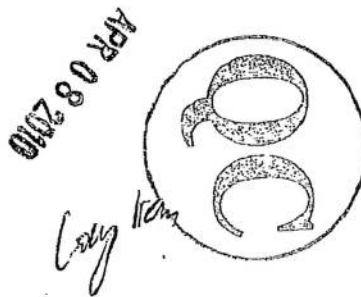
ISO 9001:2000 Registered
Certificate No. FM 69154

EA #: 61577

Address: 5142 Evanston Ave. Muskegon MI 49442



'PED' Annex 1 Section 4.3 Certified for
ASTM A216, A351, A352.
SMA Certificate No. 512178



Bruce Gilbert

3/31/2010

Bruce Gilbert / Tom Leiter

Date

CERTIFICATE OF TEST



Received 5/3/10

Page 01 of 02

Certification Date
30-APR-2010

CUSTOMER ORDER NUMBER
VERBAL GEORGE
CUSTOMER PART NUMBER

EARLE M. JORGENSEN COMPANY
6201 LUMBERDALE
HOUSTON TX 77092

Invoice Number
S981574

SOLD TO: I & R MACHINING INC
P O BOX 181
ELGIN TX 78621

SHIP TO: I& R MACHINING INC
401 HIGHWAY 290
ELGIN TX 78621

Description: E4130 HR NORM Q&T BAR API 6A PSL3 NACE MR0175
4-3/4 RD X 20' R/L
HEAT: 62984
ITEM: 505819
Line Total: 4825 LB

Specifications:

NACE MR-01-75
EN 10204 3.1
ASTM A370

API 6A PSL 3
ASTM A29
ASTM A304

AMS-H-6875A
ASTM A322

CHEMICAL ANALYSIS

C	MN	SI	P	S	CR	NI	MO
0.319	0.56	0.24	0.008	0.002	1.01	0.1	0.2
AL	CU	SN	V	TI	B	CA	NB
0.028	0.17	0.012	0.003	0.0038	0.0001	0.0016	0.002
AS	SB	CO	PB				
0.006	0.001	0.011	0.001				

RCPT: R121834
MILL: ABS

COUNTRY OF ORIGIN: ITALY

MECHANICAL PROPERTIES

DESCRIPTION	YLD STR	ULT TEN	%ELONG	%RED	HARDNESS
	KSI	KSI	IN 02 IN	IN AREA	BHN
TEST PC/QTC	78.0	104.0	25.2	68.0	230

Forum SPD
P/N 052120830
GRAIN SIZE : 7 - Heat # 62984

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination.

We hereby certify that the material covered by this report will meet the applicable requirements described herein, including any specification forming a part of the description.

The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under Federal statutes.

Material did not come in contact with mercury while in our possession.

MICHAEL BOSCH

MANAGER, QUALITY ASSURANCE

CERTIFICATE OF TEST



Page 02 of 02

Certification Date
30-APR-2010

CUSTOMER ORDER NUMBER
VERBAL GEORGE
CUSTOMER PART NUMBER

EARLE M. JORGENSEN COMPANY
6201 LUMBERDALE
HOUSTON TX 77092

Invoice Number
8981574

SOLD TO: I & R MACHINING INC
P O BOX 181
ELGIN TX 78621

SHIP TO: I& R MACHINING INC
401 HIGHWAY 290
ELGIN TX 78621

Description: E4130 HR NORM Q&T BAR API 6A PSL3 NACE MR0175
4-3/4 RD X 20' R/L
HEAT: 62984
ITEM: 505819
Line Total: 4825 LB

IMPACT TEST		UOM ft-lbs								
TYPE	TEMP	ORNT	SMPL#1	#2	#3	AVG	%	LAT	DESCRIPTION	
CHARPY	-75 F	LONG	29.0	34.0	32.0	31.7			10MMx10MM	

MATERIAL IS FREE FROM MERCURY CONTAMINATION
NO WELD REPAIR PERFORMED ON MATERIAL
THERMAL TREATMENT: OK

COMMENTS

MELT PRACTICE: EF/VD
REDUCTION RATIO: 11:1
TEST PIECE IS A 4" x 4" x 8" QTC
MECHANICAL PROPERTIES OBTAINED FROM QTC
HEAT TREATMENT:
NORMALIZING @ 1652 DEG F FOR 275 MINUTES - AIR COOLED
AUSTENITIZING @ 1616 DEG F FOR 276 MINUTES - WATER QUENCHED
WATER STARTING TEMP 86 DEG F - FINISH TEMP 113 DEG F
TEMPERING @ 1292 DEG F FOR 348 MINUTES - AIR COOLED
TIMES AND TEMPERATURES MONITORED BY ATMOSPHERE THERMOCOUPLES
PASSED UT TEST PER ASTM A388 OR EQUIVALENT EC STANDARD
LATERAL EXPANSION: 0.65/0.92/0.73 (MM)
SHEAR PERCENTAGE: 43/46/37
HEAT TREAT LOT NUMBER: 64066

MATERIAL IS FREE FROM RADIOACTIVITY

Forum SPD
P/N 052120830
Heat # 62984



The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination.

We hereby certify that the material covered by this report will meet the applicable requirements described herein, including any specification forming a part of the description.

The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes.

Material did not come in contact with mercury while in our possession.

MICHAEL BOSCH

MANAGER, QUALITY ASSURANCE

ALLOY & STAINLESS FASTENERS

11625 CHARLES ST
HOUSTON, TX 77041
ADMIN 713-929-0300
SALES 713-466-3031
SALES 713-466-9591 FAX

* CERTIFICATE *
* OF TEST *

To: MAINTENANCE TOOL & SUPPLY
DBA: MTS THREADED PRODUCTS CO.
P.O. BOX 4748
CORPUS CHRISTI, TX 78469

Customer P/O # 20575

Our Order # 452239

Line	Qty	UOM	Description	LOT																					
1	800	EA	5/8-11 x 1 1/2 SOCKET HEAD C/S ASTM A320 L7M TEMPERING TEMP: 1260 DEG.F CHARPY IMPACTS -100 DEG.F=43/35/39 FT LBS 100% HARDNESS TESTED:93-99 HRB COUNTRY OF ORIGIN: TAIWAN	238737																					
<table><tr><td>Heat No. 2R585</td><td>TENSILE (PSI) 109000</td><td>YIELD (PSI) 92500</td></tr><tr><td>ELONGATION 25</td><td>RED. OF AREA 69</td><td>HARDNESS (HB) 216</td></tr><tr><td>MACRO ETCH S1/R1/C1</td><td>ASTM SPEC DATE 09</td><td></td></tr></table>				Heat No. 2R585	TENSILE (PSI) 109000	YIELD (PSI) 92500	ELONGATION 25	RED. OF AREA 69	HARDNESS (HB) 216	MACRO ETCH S1/R1/C1	ASTM SPEC DATE 09		<table><tr><td></td><td>CARBON .38</td><td>MANGANESE .82</td></tr><tr><td>PHOSPHORUS .021</td><td>SULFUR .008</td><td>SILICON .22</td></tr><tr><td>CHROMIUM .88</td><td>MOLY. .15</td><td></td></tr><tr><td></td><td></td><td></td></tr></table>		CARBON .38	MANGANESE .82	PHOSPHORUS .021	SULFUR .008	SILICON .22	CHROMIUM .88	MOLY. .15				
Heat No. 2R585	TENSILE (PSI) 109000	YIELD (PSI) 92500																							
ELONGATION 25	RED. OF AREA 69	HARDNESS (HB) 216																							
MACRO ETCH S1/R1/C1	ASTM SPEC DATE 09																								
	CARBON .38	MANGANESE .82																							
PHOSPHORUS .021	SULFUR .008	SILICON .22																							
CHROMIUM .88	MOLY. .15																								

Date: 12/28/09

We hereby certify that the foregoing data is a true copy of the data furnished to us by the producing mill.

ALLOY & STAINLESS FASTENERS

QC *2/9/10*
PO# 221929
PART# WWG11M1HAW

DYNACORP

[illegible]

Material Receiving Report

Rec. Date:

Nov 10, 2010

DYNACORP

PO#: 195558

Supplier: Meridian

Job No. 151050338

Mat.
ack No.

Diam.

Thickness
Plate, Heads,
Pipe Wall

Heat #	Sein/ht
1	11/11/25

1

11

30937-010-112

2" 250# RTJ Ball Valve Tri-Union

1

4

36737-020-123

4" 150# GF Full Port Floater Ball Valve

Record of Actual Code Required Markings

Product Description

Material spec.

Color	Code
Black	000000
Blue	0000FF
Brown	8B4513
Green	008000
Grey	808080
Orange	FF8C00
Pink	FF69B4
Purple	800080
Red	FF0000
White	FFFFFF
Yellow	FFFF00

Rec'd

By:

HT # 30937-010-112 2" 2500 RTJ Ball Valve Trunnion

		MATERIAL TEST REPORT ISO EN 10204 2004-3.1		TC No. 30937-10 (80039851) DATE: 2010.06.03 PAGE: 1 OF 20	
CUSTOMER: JAS Flocomponents LP Edmonton Canada		QUANTITY 43	PART No. 10385806	PRODUCT CODE TB3-F20J25LH-S3	PRODUCT DESCRIPTION 2BS25J V1, L70/30555 [-FU-TL, -ING] SIDE ENTRY 3PC TRUNNION MOUNTED BALL VALVE, 2, 2500L ASTM A350 LF2, AISI 4140+ENP/PEEK RTJ END 30937-010-112
PURCHASE ORDER D-3606		PRESSURE TEST (Mpa/PSI)		OTHER INSPECTION	
PROJECT NAME		HYDROSTATIC		VISUAL	
		SHELL 64.0/9282	SEATS/BACKSEAT 48.8/6787	RESULT OK	DIMENSION OK
			PNEUM SEATS 0.8/87	OPERATION OK	MARKING OK

APPLICABLE STANDARDS AND SPECIFICATION

- P/T RATING: ASME B18.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API 6D (2008) ASME B18.34 (2009)
- TEST: API 6D (2008)
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P. Q. AND MATERIAL SPECIFICATION
- VALVES CONFORM TO NACE STANDARD MR. 01-75/ISO 15156 (2003e)
- VALVES CONFORM TO CSAZ245.15-09 SOUR SERVICE

MATERIAL ACCEPTED

Code Edition used for verification: 07 Addenda: 09

QC Nov 23/10 date

WITNESSED BY: _____

NEWAY VALVE
Q. C. Manager

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.



MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 30937-10 (80039551)
DATE: 2010.08.03
PAGE: 4 OF 20

MATERIAL COMPONENTS AND PROPERTIES

Heat treatment	Temp °C (°F)	Holding time (h)			Cooling media		Furnace	
		1H/25MM, ≥ 1H			AIR		GAS OR ELECTRIC	
		1H/25MM, ≥ 1H			WATER		GAS OR ELECTRIC	
		1H/25MM, ≥ 1H			AIR			

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

SERIAL NO.	PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS														MECHANICAL PROPERTIES							
				C	MN	SI	S	P	CR	NI	MO	CU	V	NB	AL	FE	C. E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
				%	%	%	%	%	%	%	%	%	%	%	%	%	%	Mpa	Mpa	%	%	HB	TEMP °C	Avg	Min
				MAX.	0.300	1.350	0.300	0.040	0.035	0.300	0.400	0.120	0.400	0.080	0.020			655				187	-50	27.000	22.000
				MIN.	0.600	0.150											485	250	22	30					
30937-010-65	CLOSURE L	ASTM-A350-2007 LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005			0.361	555	405	30	76	174	150	157	164	
30937-010-65	CLOSURE R	ASTM-A350-2007 LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005			0.361	555	405	30	76	174	150	157	164	
30937-010-66	CLOSURE R	ASTM-A350-2007 LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005			0.361	555	405	30	76	174	150	157	164	
30937-010-66	CLOSURE L	ASTM-A350-2007 LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005			0.361	555	405	30	76	174	150	157	164	
30937-010-66	BODY	ASTM-A350-2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011		0.405	530	355	35	76	174	81	82	157	
30937-010-67	BODY	ASTM-A350-2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011		0.405	530	355	35	76	174	81	82	157	
30937-010-67	CLOSURE L	ASTM-A350-2007 LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005		0.361	555	405	30	76	174	150	157	164		
30937-010-67	CLOSURE R	ASTM-A350-2007 LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005		0.361	555	405	30	76	174	150	157	164		
30937-010-69	CLOSURE R	ASTM-A350-2007 LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005		0.361	555	405	30	76	174	150	157	164		
30937-010-69	CLOSURE L	ASTM-A350-2007 LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005		0.361	555	405	30	76	174	150	157	164		
30937-010-69	BODY	ASTM-A350-2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011		0.405	530	355	35	76	174	81	82	157	



MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 30937-10 (80039851)
DATE: 2010.06.03
PAGE: 9 OF 20

MATERIAL COMPONENTS AND PROPERTIES

Heat treatment	Temp °C (°F)	Holding time (h)		Cooling media		Furnace	
		1H/25MM, ≥1H	1H/25MM, ≥1H	AIR	GAS OR ELECTRIC	GAS OR ELECTRIC	GAS OR ELECTRIC
NORMALIZE	850~920°C (1562~1688°F)						
QUENCHED	910~940°C (1670~1724°F)						
TEMPER	593~649°C (1099~1200°F)						

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

CHEMICAL ANALYSIS

MECHANICAL PROPERTIES

				C %	MN %	SI %	S %	P %	CR %	NI %	MO %	CU %	V %	NB %	AL %	FE %	C.E.	TS Mpa	YS Mpa	E %	R %	HARD HB	IMPACT TEST (JOULE)		
																							TEMP °C	Avg	Min
				0.300	1.350	0.300	0.040	0.035	0.300	0.400	0.120	0.400	0.080	0.020				655				187	-50	27.000	22.000
					0.800	0.150												485	250	22	30				
30937-010-84	BODY	ASTM-A350-2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	76	174	81	82	157
30937-010-85	CLOSURE R	ASTM-A350-2007 LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005				0.381	555	405	30	78	174	150	157	164
30937-010-85	CLOSURE L	ASTM-A350-2007 LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005				0.381	555	405	30	76	174	150	157	164
30937-010-85	BODY	ASTM-A350-2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	76	174	81	82	157
30937-010-86	BODY	ASTM-A350-2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	78	174	81	82	157
30937-010-86	CLOSURE L	ASTM-A350-2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	78	174	81	82	157
30937-010-86	CLOSURE R	ASTM-A350-2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	76	174	81	82	157
30937-010-89	CLOSURE R	ASTM-A350-2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	76	174	81	82	157
30937-010-89	CLOSURE L	ASTM-A350-2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	78	174	81	82	157
30937-010-89	BODY	ASTM-A350-2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	78	174	81	82	157
30937-010-90	BODY	ASTM-A350-2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	78	174	81	82	157

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 30937-10 (80039851)
DATE: 2010.06.03
PAGE: 10 OF 20

MATERIAL COMPONENTS AND PROPERTIES

Heat treatment	Temp °C (°F)	Holding time(h)	Cooling media	Furnace
NORMALIZE	850~920°C (1562~1688°F)	1H/25MM, ≥1H	AIR	GAS OR ELECTRIC
QUENCHED	910~940°C (1670~1724°F)	1H/25MM, ≥1H	WATER	GAS OR ELECTRIC
TEMPER	593~649°C (1099~1200°F)	1H/25MM, ≥1H	AIR	

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

SERIAL NO.	PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS																						
				C	MN	SI	S	P	CR	NI	MO	CU	V	NB	AL	FE	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)			
			MAX.	0.300	1.350	0.300	0.040	0.035	0.300	0.400	0.120	0.400	0.080	0.020					655	250	22	30	187	-50	27.000	22.000
			MIN.		0.800	0.150													485							

30937-010-90	CLOSURE L	ASTM-A350 -2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011				0.405	530	355	35	76	174	81	82	157
30937-010-90	CLOSURE R	ASTM-A350 -2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011				0.405	530	355	35	78	174	81	82	157
30937-010-91	BODY	ASTM-A350 -2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011				0.405	530	355	35	76	174	81	82	157
30937-010-91	CLOSURE L	ASTM-A350 -2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011				0.405	530	355	35	76	174	81	82	157
30937-010-91	CLOSURE R	ASTM-A350 -2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011				0.405	530	355	35	78	174	81	82	157
30937-010-93	BODY	ASTM-A350 -2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011				0.405	530	355	35	76	174	81	82	157
30937-010-93	CLOSURE L	ASTM-A350 -2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011				0.405	530	355	35	76	174	81	82	157
30937-010-93	CLOSURE R	ASTM-A350 -2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011				0.405	530	355	35	78	174	81	82	157
30937-010-95	CLOSURE R	ASTM-A350 -2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011				0.405	530	355	35	78	174	81	82	157
30937-010-95	CLOSURE L	ASTM-A350 -2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011				0.405	530	355	35	76	174	81	82	157
30937-010-95	BODY	ASTM-A350 -2007 LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011				0.405	530	355	35	78	174	81	82	157



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MATERIAL COMPONENTS AND PROPERTIES

Heat treatment	Temp °C (°F)	Holding time (h)	Cooling media	Furnace
NORMALIZE	850~920°C (1562~1698°F)	1H/25MM, ≥ 1H	AIR	GAS OR ELECTRIC
QUENCHED	910~940°C (1670~1724°F)	1H/25MM, ≥ 1H	WATER	GAS OR ELECTRIC
TEMPER	593~649°C (1099~1200°F)	1H/25MM, ≥ 1H	AIR	

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

SERIAL NO.	PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
				C	MN	SI	S	P	CR	NI	MO	CU	V	NB	AL	FE	C. E.	TS	YS	E	R	HARD	TEMP °C	IMPACT TEST (J/OULE)	
			MAX	0.300	1.350	0.300	0.040	0.035	0.300	0.400	0.120	0.400	0.080	0.020			655				187	-50	27.000		
			MIN.	0.800	0.150											485	250	22	30						
30937-010-101	BODY	ASTM-A350-LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.080	0.005	0.011			0.405	530	355	35	78	174	81	82	157
30937-010-101	CLOSURE L	ASTM-A350-LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.080	0.005	0.011			0.405	530	355	35	78	174	81	82	157
30937-010-101	CLOSURE R	ASTM-A350-LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.080	0.005	0.011			0.405	530	355	35	78	174	81	82	157
30937-010-111	BODY	ASTM-A350-LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.080	0.005	0.011			0.405	530	355	35	78	174	81	82	157
30937-010-111	CLOSURE L	ASTM-A350-LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005			0.381	555	405	30	78	174	150	157	164	
30937-010-111	CLOSURE R	ASTM-A350-LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005			0.381	555	405	30	78	174	150	157	164	
30937-010-112	BODY	ASTM-A350-LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.080	0.005	0.011			0.405	530	355	35	78	174	81	82	157
30937-010-112	CLOSURE L	ASTM-A350-LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005			0.381	555	405	30	78	174	150	157	164	
30937-010-112	CLOSURE R	ASTM-A350-LF2	XT0053	0.200	0.910	0.230	0.004	0.014	0.030	0.010	0.002	0.020	0.005			0.381	555	405	30	78	174	150	157	164	
30937-010-129	BODY	ASTM-A350-LF2	XT0042	0.210	0.880	0.250	0.005	0.017	0.020	0.010	0.003	0.020	0.005	0.013			0.384	570	430	31	77	165	148	136	139
30937-010-129	CLOSURE L	ASTM-A350-LF2	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.080	0.005	0.011			0.405	530	355	35	78	174	81	82	157

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MATERIAL COMPONENTS AND PROPERTIES

Heat treatment	Temp °C (°F)	Holding time (h)	Cooling media	Furnace
NORMALIZE	850~920°C (1562~1688°F)	1H/25MM, ≥ 1H	AIR	GAS OR ELECTRIC
QUENCHED	910~940°C (1670~1724°F)	1H/25MM, ≥ 1H	WATER	GAS OR ELECTRIC
TEMPER	593~649°C (1099~1200°F)	1H/25MM, ≥ 1H	AIR	

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

SERIAL NO.	PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
				C %	MIN %	SI %	S %	P %	CR %	NI %	MO %	CU %	V %	NB %	AL %	FE %	C.E.	TS Mpa	YS Mpa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
				0.300	1.350	0.300	0.040	0.035	0.300	0.400	0.120	0.400	0.080	0.020			655				187	-50	27.000	22.000	
					0.600	0.150											485	250	22	30					
30937-010-129	CLOSURE R	ASTM-A350-2007	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	76	174	81	82	157
30937-010-130	BODY	ASTM-A350-2007	XT0042	0.210	0.880	0.250	0.005	0.017	0.020	0.010	0.003	0.020	0.005	0.013			0.384	570	430	31	77	185	148	136	139
30937-010-130	CLOSURE L	ASTM-A350-2007	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	76	174	81	82	157
30937-010-130	CLOSURE R	ASTM-A350-2007	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	78	174	81	82	157
30937-010-131	BODY	ASTM-A350-2007	XT0042	0.210	0.880	0.250	0.005	0.017	0.020	0.010	0.003	0.020	0.005	0.013			0.384	570	430	31	77	165	148	136	139
30937-010-131	CLOSURE L	ASTM-A350-2007	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	76	174	81	82	157
30937-010-131	CLOSURE R	ASTM-A350-2007	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	78	174	81	82	157
30937-010-132	BODY	ASTM-A350-2007	XT0042	0.210	0.880	0.250	0.005	0.017	0.020	0.010	0.003	0.020	0.005	0.013			0.384	570	430	31	77	165	148	136	139
30937-010-132	CLOSURE L	ASTM-A350-2007	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	77	165	148	136	139
30937-010-132	CLOSURE R	ASTM-A350-2007	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	78	174	81	82	157
30937-010-133	CLOSURE R	ASTM-A350-2007	XT0033	0.210	0.990	0.220	0.007	0.013	0.090	0.070	0.010	0.060	0.005	0.011			0.405	530	355	35	78	174	81	82	157



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MATERIAL COMPONENTS AND PROPERTIES

Heat treatment	Temp °C (°F)	Holding time (h)	Cooling media	Furnace
QUENCHED	870°C (1598°F)	1.25H	OIL	GAS OR ELECTRIC
TEMPER	730°C (1346°F)	1.5H	AIR	GAS OR ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

SERIAL NO.	PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS																					
				C	MN	SI	S	P	CR	MO	NI														
				%	%	%	%	%	%	%	%	%	%	%	%										
			MAX.	0.480	1.000	0.350	0.040	0.035	1.100	0.250															
			MIN.	0.380	0.750	0.150			0.800	0.150															

30937-010-80	BOLT	ASTM-A320 -2003 L7M	K10030901	0.390	0.930	0.250	0.003	0.010	0.910	0.200								741	667	21	54	217	82	62	61
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MATERIAL COMPONENTS AND PROPERTIES

Heat treatment	Temp °C (°F)	Holding time (h)	Cooling media	Furnace
QUENCHED	880°C (1616°F)	1H/25MM, > 1H	OIL	GAS OR ELECTRIC
TEMPER	650°C (1202°F)	1H/25MM, > 1H	WATER	GAS OR ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

SERIAL NO.	PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS														MECHANICAL PROPERTIES							
				C %	MN %	SI %	S %	P %	CR %	MO %	NI %	CU %	V %	AL %	NB %	FE %	C.E.	TS Mpa	YS Mpa	E %	R %	HARD		IMPACT TEST (JOULE)	
																						HB	20°C	Avg	Min
				MAX. 0.480	1.000	0.350	0.030	0.035	1.100	0.250											269	229			
				MIN. 0.330	0.750	0.150			0.800	0.150							689	517	17	35					
30937-010-13	BALL	AISI4140	Q18156	0.390	0.840	0.340	0.016	0.025	0.920	0.150							770	590	25	50	250				
30937-010-28	BALL	AISI4140	Q18156	0.390	0.840	0.340	0.016	0.025	0.920	0.150							770	590	25	50	250				
30937-010-37	BALL	AISI4140	Q18156	0.390	0.840	0.340	0.016	0.025	0.920	0.150							770	590	25	50	250				
30937-010-42	BALL	AISI4140	Q18156	0.390	0.840	0.340	0.016	0.025	0.920	0.150							770	590	25	50	250				
30937-010-43	BALL	AISI4140	Q18156	0.390	0.840	0.340	0.016	0.025	0.920	0.150							770	590	25	50	250				
30937-010-58	BALL	AISI4140	Q18156	0.390	0.840	0.340	0.016	0.025	0.920	0.150							770	590	25	50	250				
30937-010-59	BALL	AISI4140	Q18156	0.390	0.840	0.340	0.016	0.025	0.920	0.150							770	590	25	50	250				
30937-010-65	BALL	AISI4140	W0D5E59	0.400	0.910	0.200	0.006	0.015	1.030	0.230							786	672	28	68	242				
30937-010-66	BALL	AISI4140	W0D5E59	0.400	0.910	0.200	0.006	0.015	1.030	0.230							786	672	28	68	242				
30937-010-67	BALL	AISI4140	W0D5E59	0.400	0.910	0.200	0.006	0.015	1.030	0.230							786	672	28	68	242				
30937-010-69	BALL	AISI4140	W0D5E59	0.400	0.910	0.200	0.006	0.015	1.030	0.230							786	672	28	68	242				



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MATERIAL COMPONENTS AND PROPERTIES

Heat treatment	Temp °C (°F)	Holding time	Cooling media	Furnace
QUENCHED	880°C (1616°F)	1H/25MM, > 1H	OIL	GAS OR ELECTRIC
TEMPER	650°C (1202°F)	1H/25MM, > 1H	WATER	GAS OR ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

SERIAL NO.	PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS														MECHANICAL PROPERTIES							
				C %	MN %	SI %	S %	P %	CR %	MO %	NI %	CU %	V %	AL %	NB %	FE %	C.E.	TS Mpa	YS Mpa	E %	R %	HARD HB	IMPACT TEST (Joule)		
																							TEMP °C	Avg	Min
				MAX. 0.480 MIN. 0.330	1.000 0.750	0.350 0.150	0.030 0.150	0.035 0.100	0.250 0.150								689	517	17	35	229	20°C	55		
30937-010	STEM	AlSi4140	1-223	0.410	0.820	0.290	0.019	0.024	0.910	0.160							780	620	22	50	240				
30937-010	SEAT RING	AlSi4140 AlSi4140	N1173	0.420	0.790	0.230	0.020	0.015	1.020	0.180							1125	950	25	49	235				
30937-010-81	BALL	AlSi4140 AlSi4140	W0D5E59	0.400	0.910	0.200	0.008	0.015	1.030	0.230							786	672	28	68	242				
30937-010-82	BALL	AlSi4140 AlSi4140	W0D5E59	0.400	0.910	0.200	0.008	0.015	1.030	0.230							786	672	28	68	242				
30937-010-83	BALL	AlSi4140 AlSi4140	W0D5E59	0.400	0.910	0.200	0.008	0.015	1.030	0.230							786	672	28	68	242				
30937-010-84	BALL	AlSi4140 AlSi4140	W0D5E59	0.400	0.910	0.200	0.008	0.015	1.030	0.230							786	672	28	68	242				
30937-010-85	BALL	AlSi4140 AlSi4140	Q18156	0.390	0.840	0.340	0.016	0.025	0.920	0.150							770	590	25	50	250				
30937-010-86	BALL	AlSi4140 AlSi4140	W0D5E59	0.400	0.910	0.200	0.008	0.015	1.030	0.230							786	672	28	68	242				
30937-010-89	BALL	AlSi4140 AlSi4140	W0D5E59	0.400	0.910	0.200	0.008	0.015	1.030	0.230							786	672	28	68	242				
30937-010-90	BALL	AlSi4140 AlSi4140	W0D5E59	0.400	0.910	0.200	0.008	0.015	1.030	0.230							786	672	28	68	242				
30937-010-91	BALL	AlSi4140 AlSi4140	W0D5E59	0.400	0.910	0.200	0.008	0.015	1.030	0.230							786	672	28	68	242				



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MATERIAL COMPONENTS AND PROPERTIES

Heat treatment	Temp °C (°F)	Holding time (h)	Cooling media	Furnace
QUENCHED	880°C (1616°F)	1H/25MM, > 1H	OIL	GAS OR ELECTRIC
TEMPER	650°C (1202°F)	1H/25MM, > 1H	WATER	GAS OR ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

SERIAL NO.	PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS														MECHANICAL PROPERTIES							
				C	MN	SI	S	P	CR	MO	NI	CU	V	AL	NB	FE	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
				%	%	%	%	%	%	%	%	%	%	%	%	%	%	Mpa	Mpa	%	%	HB	TEMP °C	Avg	Min
				MAX. MIN.	0.480 0.330	1.000 0.750	0.350 0.150	0.030 0.150	0.035 0.800	1.100 0.150	0.250 0.150						689	517	17	35	269 229	20°C	55		
30937-010-93	BALL	AlSi4140	W0D5E59		0.400	0.910	0.200	0.006	0.015	1.030	0.230						786	672	28	68	242				
30937-010-95	BALL	AlSi4140	W0D5E59		0.400	0.910	0.200	0.006	0.015	1.030	0.230						786	672	28	68	242				
30937-010-101	BALL	AlSi4140	W0D5E59		0.400	0.910	0.200	0.006	0.015	1.030	0.230						786	672	28	68	242				
30937-010-111	BALL	AlSi4140	W0D5E59		0.400	0.910	0.200	0.006	0.015	1.030	0.230						786	672	28	68	242				
30937-010-112	BALL	AlSi4140	W0D5E59		0.400	0.910	0.200	0.006	0.015	1.030	0.230						786	672	28	68	242				
30937-010-129	BALL	AlSi4140	W0D5E59		0.400	0.910	0.200	0.006	0.015	1.030	0.230						786	672	28	68	242				
30937-010-130	BALL	AlSi4140	W0D5E59		0.400	0.910	0.200	0.006	0.015	1.030	0.230						786	672	28	68	242				
30937-010-131	BALL	AlSi4140	W0D5E59		0.400	0.910	0.200	0.006	0.015	1.030	0.230						786	672	28	68	242				
30937-010-132	BALL	AlSi4140	W0D5E59		0.400	0.910	0.200	0.006	0.015	1.030	0.230						786	672	28	68	242				
30937-010-133	BALL	AlSi4140	W0D5E59		0.400	0.910	0.200	0.006	0.015	1.030	0.230						786	672	28	68	242				
30937-010-135	BALL	AlSi4140	W0D5E59		0.400	0.910	0.200	0.006	0.015	1.030	0.230						786	672	28	68	242				

HT # 30737-020-123 4" 150 RF Floater Ball Valve

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CUSTOMER: JAG flocomponents LP Edmonton Canada		QUANTITY 91	PART No. 10021635	PRODUCT CODE FB2-F40R01N	PRODUCT DESCRIPTION 4B1R, 000/12892 [-FU, -B7M/2HM] FLOATING BALL VALVE 2PC TYPE, 4, 150LB ASTM A216 WCB, F316/PTFE RAISED FACE END 30737-020-123				
PURCHASE ORDER RED-3563		PRESSURE TEST (Mpa/PSI)			OTHER INSPECTION				
PROJECT NAME		HYDROSTATIC		PNEUM SEATS	RESULT OK	VISUAL OK	DIMENSION OK	OPERATION OK	MARKING OK
		SHELL 3.2/464.	SEATS/BACKSEAT 2.2/319.						
APPLICABLE STANDARDS AND SPECIFICATION - P/T RATING: ASME B16.34 - MAIN MATERIAL: RELEVANT ASTM STANDARD - DESIGN: ISO17292-2004 (E) AP1608 (2006) - TEST: API598 (2009) EN12288 (2003) - TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P. O. AND MATERIAL SPECIFICATION - VALVES CONFORM TO NACE STANDARD MR.0175 LATEST REVISION									
MATERIAL ACCEPTED Code Edition used for verification: 07 Addenda 09 QC date: Nov. 23/10									
WITNESSED BY: _____		We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order. Ken Li NEWAY VALVE Q. C. Manager							



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PAGE: 15 OF 29

MATERIAL COMPONENTS AND PROPERTIES

Heat treatment	Temp °C (°F)	Holding time(h)	Cooling media	Furnace
NORMALIZE	910±10°C (1670±50°F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

SERIAL NO.	PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS														MECHANICAL PROPERTIES							
				C	MN	SI	S	P	CR	NI	MO	CU	V	AL	NB	FE	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
				%	%	%	%	%	%	%	%	%	%	%	%	%	%	Mpa	Mpa	%	%	HB	TEMP °C	Avg	Min
			MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030				855	250	22	35	237				
			MIN.													485				135					
30737-020-121	BODY	WCB	U1423	0.194	0.992	0.411	0.014	0.021	0.051	0.029	0.009	0.051	0.006				0.378	598	395	27	44	157			
30737-020-122	BODY	WCB	U1488	0.205	1.004	0.426	0.016	0.022	0.078	0.031	0.012	0.057	0.011				0.398	522	329	27	41	150			
30737-020-122	BONNET	WCB	U1291	0.190	1.007	0.423	0.010	0.021	0.066	0.024	0.007	0.042	0.006				0.378	515	324	27	46	150			
30737-020-123	BONNET	WCB	U1437	0.207	1.060	0.445	0.014	0.022	0.043	0.026	0.007	0.049	0.004				0.399	608	407	26	40	163			
30737-020-123	BODY	WCB	U1410	0.191	0.995	0.415	0.014	0.022	0.047	0.026	0.007	0.043	0.004				0.373	517	306	27	41	157			
30737-020-124	BODY	WCB	U1457	0.201	1.021	0.450	0.021	0.024	0.086	0.044	0.009	0.047	0.006				0.397	540	364	25	37	151			
30737-020-124	BONNET	WCB	U1457	0.201	1.021	0.450	0.021	0.024	0.086	0.044	0.009	0.047	0.006				0.397	540	364	25	37	151			
30737-020-125	BONNET	WCB	U1488	0.205	1.004	0.426	0.016	0.022	0.078	0.031	0.012	0.057	0.011				0.398	522	329	27	41	150			
30737-020-125	BODY	WCB	U1582	0.206	1.003	0.424	0.012	0.022	0.077	0.032	0.006	0.052	0.009				0.397	515	295	28	44	169			
30737-020-126	BODY	WCB	U1264	0.205	1.060	0.421	0.011	0.024	0.001	0.001	0.001	0.031	0.004				0.385	521	317	26	47	150			
30737-020-126	BONNET	WCB	U1488	0.205	1.004	0.426	0.016	0.022	0.078	0.031	0.012	0.057	0.011				0.398	522	329	27	41	150			

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Diam.

Plate, Heads, Pipe Wall

Heat #
Serial

15

1048868

Product Description

15" 2500# X 3" 300# RF Leser PSU Valve

Material spec.	Manufacturer
100% cotton	ABC Textiles
100% polyester	XYZ Fabrics
100% wool	DEF Yarns
100% silk	GHI Looms
100% linen	JKL Weavers
100% rayon	MNO Spinning
100% bamboo	PQR Textiles
100% hemp	STU Fabrics
100% jute	VWX Yarns
100% sisal	YZA Looms
100% cotton	ABC Textiles
100% polyester	XYZ Fabrics
100% wool	DEF Yarns
100% silk	GHI Looms
100% linen	JKL Weavers
100% rayon	MNO Spinning
100% bamboo	PQR Textiles
100% hemp	STU Fabrics
100% jute	VWX Yarns
100% sisal	YZA Looms

Color	Code
Black	000000
Blue	0000FF
Brown	8B4513
Green	008000
Grey	808080
Orange	FF8C00
Pink	FF69B4
Purple	800080
Red	FF0000
White	FFFFFF
Yellow	FFFF00

Rec'd

PO#:	185581
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Supplier:	Arinch
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Rec. Date: Nov 19 2010

PO#:	185581
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TRANSMITTAL OF CERTIFICATES

LESER GmbH & Co. KG · Postfach 26 16 51 · 20506 Hamburg · Germany

LESER LLC
10615 Texland Blvd Ste 100
Charlotte NC 28273
USA

Customers Oder-No.:	4500055095
LESER-Job-Nr.:	20119000 / 10
LESER-Customers-No.:	166549
LESER-Contact:	Oliver Demmer
Fon:	040 25165 187
Fax:	040 25165 587
eMail:	demmer.o@leser.com

1 LESER Product designation

API Series Safety Relief Valve, Type 526,
Orifice D,
closed bonnet, gastight cap H2,
for steam, gas and liquid service

Art.-No.	Cold differential test pressure		Option Code: 0,050230,6310.946			
5263.5042	344,74 barg	5000,00 psig	Further SV-Info: 18,51 413,70			
Tag-No.:	LESER-Job-No.	Pos.-No.	Serial-No.:	Body material	Nominal size: Inlet Outlet	Pressure rating: Inlet Outlet
	20119000	10	10488668	1.4408 CF8M	Prince Edward Island 0000166549	Newfoundl 2 = Stahl

2 Inspection certificates

Name	Description	Standard	Edition
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3 Material inspection certificates according to DIN EN 10204

The allocation of the inspection certificates to each part is given by LESER-Code as well as by heat no/batch stated below:

Pos	Description	Material	Manufacturer	Cast	LESER-Code
1	Body	1.4408 CF8M	Anugraha	CB2628	

4 Additional certificates and documents

MATERIAL ACCEPTED

Code Edition used for verification: 07

QC

Addenda: 09

date: Nov 30, 2016

LESER CERTIFICATE FOR GLOBAL APPLICATION

Inspection certificate 3.1 according to DIN EN 10204

Declaration of conformity according to Pressure Equipment Directive 97/23/EC

LESER GmbH & Co. KG · Postfach 26 16 51 · 20506 Hamburg · Germany

LESER LLC

10615 Texland Blvd Ste 100

Charlotte NC 28273

USA

Customers Order No.:	4500055095
LESER-Job-No.:	20119000 / 10
LESER-Customers-No.:	166549

LESER-Contact:	Oliver Demmer
Fon:	040 25165 187
Fax:	040 25165 587
eMail:	demmer.o@leser.com

This LESER CGA confirms that the undermentioned LESER safety valves are manufactured and certified according to the rules world-wide. LESER makes the world-wide employment possible of the safety valves by the reference on these regulations.

1 Test object

API Series Safety Relief Valve, Type 526,
Orifice D,
closed bonnet, gastight cap H2,
for steam, gas and liquid service

Art.-No.	Cold differential test pressure		Option Code: 0,050230,6310.946			
5263.5042	344,74 barg	5000,00 psig	Further SV-Info: 18,51 413,70			
Tag-No.:	LESER-Job-No.	Pos.No.	Serial-No.:	Body material	Nominal size: Inlet Outlet	Pressure rating: Inlet Outlet
	20119000	10	10488668	1.4408 CF8M	Prince Edward Island 0000166549	Newfoundl 2 = Stahl
Kind of certification	VdTUEV-Type test approval		EC Type-examination		ASME certification	
Rules	AD 2000-Merkblatt A2:		DIN EN ISO 4126-1:		ASME-Code Sec.VIII, Div.1:	
Certification No./ valid until	D/G:	TÜV-SV 07-1082 31.08.12	G/S:	072021111Z0012/2/26 01.05.13	G/S:	M37246 11.03.12
	F:	TÜV-SV 07-1082 31.08.12	L:	072021111Z0012/2/26 01.05.13	L:	M37257 11.03.12
Flow diameter	d ₀	14 [mm]	-	14 [mm]	-	0,551 [in.]
Flow area	A	153,9 [mm ²]	A	153,9 [mm ²]	A	0,238 [sq.in.]
Certified derated coefficient of discharge	a _w	D/G: 0,00 F: 1,00	K _{dr}	G/S: 0,00 L: 1,00	K	G/S: 0,455 L: 0,000
Certified capacity						
Lift	H	0,5 [mm]	h	0,5 [mm]	l	0,02 [in.]
Overpressure	c	D/G: 10 [%] F: 10 [%]	c	G/S: 10 [%] L: 10 [%]	-	G/S: 10[%] L: 10[%]
Cold differential test pressure	p	344,74 [bar g]	p _e	344,74 [bar g]	cdtp	5.000,0 [psig]
Temperature	T	[°C]	T	[°C]	T	20 [°F]
Backpressure	p _a	0,00 [bar g]	-	0,00 [bar g]	-	0,00 [psig]
Set pressure	p	344,74 [bar g]	p	344,74 [bar g]	p	5.000,0 [psig]

2 Conformity assessment procedure and LESER Management Systems

Conformity assessment procedure: Category IV according to PED 97/23/EC Modul B D/D1
Notified Body: TÜV NORD Systems GmbH & Co. KG, Große Bahnstraße 31, D-22525 Hamburg
Certification No.: 0045

LESER Management Systems: Quality Management System DIN EN ISO 9001:2000 Certification No. 07 100 0068
Environmental Management System DIN EN ISO 14001:2005 Certification No. 07 104 0068
Production Quality Assurance PED 97/23/EC Modul D/D1 Certification No. 07 2020111 Z 0008/0/01
ASME Certificate of Authorization ASME Code Sec.VIII, Div.1 27,806

3 Regulations

LESER certifies with this CGA that design, marking, production an approval of this pressure equipment corresponds to the requirements of the following regulatione (directives, codes, rules and standards).

Harmonized standards: Other regulations:

DIN EN ISO 4126-1	PED 97/23/EC	VdTÜV SV 100	ASME-Code Sec. II	API RP 521
DIN EN ISO 4126-7	AD 2000-Merkblatt A2	TRD 110	ASME-Code Sec. VIII Div.1	API Std. 526
DIN EN 12266-1	AD 2000-Merkblatt A4	TRD 421	ASME PTC 25	API Std. 527
DIN EN 12266-2	AD2000-Merkblatt HP0	TRD 721	API RP 520	API RP 576

	Directive	DIN EN ISO	DIN EN 12266		ASME CODE	API			AD2000 Merkblatt			TRD	LESER Standard
	97/23/EC Annex 1	4126-1	Teil 1	Teil 2	Sec.VIII Div.1	526	527	576	A2	A4	HPO	TRD 110	LWN
Cdtp test	3.2.3	6.5			UG 136(d)(4)	4.2	2/3/4	6.2.14	11.1 11.4				331-12-E
Seat tightness test		6.6	4.4 (P12)		UG 136(d)(5)	4.3	2/3/4	6.2.17					331-13-E 331-16-E
Back seat tightness test				4. (P21)	UG 136(d)(3)								331-15-E
Test of operability		7		4. (F20)					11.3				221-17-E
Design review										6.1.(1)		4.2.1(1)	300.00-E
Shell tightness test			4.4 (P11)									4.2.1(4)	331-14-E
Hydrostatic testing	3.2.2 7.4	6.3.1 6.3.2	4.4 (P10)		UG 136(d)(2)					6.1.(4)		4.2.1(5)	331-09-E 331-18-E
Nondestructive testing					UG 136(f)					6.1.(5)		4.2.1(6)	331-03 bis 331-06-E
Material identification										6.1.(6)		4.2.1(7)	331-07-E
Marking					UG 77				8	7.1	4	5.	201.04-E

4 Material suitability and marking

4.1. LESER certifies that the suitability of the used materials corresponds to the regulations quoted in chapter 3.

4.2. The marking of the materials as well as their transmission took place as follows:

Pos	Description	Material	Manufacturer	Cast	LESER-Code
1	Body	1.4408 CF8M	Anugraha	CB2628	

5 Tests

The tests specified in the following one were realized on basis of the stated LESERS works standard (LWN) without any objection:

5.1. Shell test

Design review in respect of stresses and technical safety:

Shell tightness test:

Hydrostatic testing:

Nondestructive testing:

Material identification check for alloyed materials:

The realization of the test took place through:

LWN 300.00-E

LWN 331-14-E

LWN 331-09-E; 331-18-E

LWN 331-03-E bis 331-06-E

LWN 331-07-E

LESER GmbH & Co.KG

5.2. Valve setting and testing

Seat tightness

Back seat tightness

Operability

Cold differential test pressure

LWN 331-13-E; 331-16-E

LWN 331-15-E

LWN 221-17-E

LWN 331-12-E

Setting at

with

at

according to LWN 220.04.

☒ air

☒ ambient temperature

☐ water

☐ saturated steam temperature

344,74 ☒ barg ☐ psig

☐ saturated steam

☐ _____ ☐ °C ☐ °F

The safety valve is protected by a seal marked with:

Setting and testing were done by:

LESER GmbH & Co. KG



6 CERTIFICATE OF SHOP COMPLIANCE

By the signature of the Certified Individual (CI) noted below, we certify that the statements made in this report are correct and that all details for design,

material, construction, and workmanship of the pressure relief devices are conform with the requirements of Section VIII, Division 1 of the

ASME Boiler and Pressure Vessel Code.

UV Certificate of Authorization No. 27,806

Martin Leser
LESER GmbH & Co. KG

Date: 11.11.2010

Manfred Orlowski
Inspection Representative Works Hohenwestedt
Certified Individual (CI)

 ANUGRAHA VALVE CASTINGS LIMITED 391/2, S.G.PUDUR, ARASUR VILLAGE, COIMBATORE – 641 407, INDIA PH : 91-422-2360124, 2360910, FAX : 91-422-2360026, E-Mail –anugraha@anugrahavalvecastings.com															
THE QUALITY MANAGEMENT SYSTEM ISO 9001:2008 IS CERTIFIED BY :										LLOYD'S, U.K., CERT. No:MUM0060546					
										TÜV NORD, GERMANY., CERT. No : 44 100 084158-E3					
INSPECTION CERTIFICATION ACCORDING TO EUROPEAN STANDARD EN 10204 3.1															
Foundry	Name Anugraha Valve Castings Limited					Address Coimbatore, India					Trade Mark A				
Inspection certificate	Certificate No: AVCL/LES/1490					Date of delivery: 04.06.2010									
	With consent of: TÜV NORD for : 1.4408/CF8M					Registration No: 07 202 1423 WP 1091/08									
Purchaser	LESER GmbH & Co. K.G, Hamburg														
	Purchase order No: 4500049197					Date of issue: 15.04.2010									
Article	Pos.No	Item													
		1½" X 3" BODY - 103.3300-02-B04 (103 33 40)													
Material designation	CF8M 1.4408	ASME Section II A, SA-351 DIN EN 10213					Edition/Addenda : 2007 ref.to LESER Work Standard (LWN) 289.07								
Requirements	LWN 289.01-E and LWN 290.05-E These LESER Work Standards cover all requirements for above mentioned materials and additional requirements given in PED (pressure Equipment Directive 97/23/EC): ASME Code:Section VIII + Section IIA: AD-2000-Merkblatt:A2,A4, W5,W10,HP2/1; DIN EN 10213, 1559-1, 1559-2, DIN 1690 Part 10; BNIF359-01; MSS SP 55; NACE MR0175; SEW110;TRD: 103,110														
List of delivery	Pos.No	Number of Pieces	LESER Article number				Unit Weight	Heat No.	Test No						
		See Annexure													
Chemical composition	Required	Min. Max.	Pos.No	C	Si	Mn	S	P	Cr	Ni	Mo	V	Cu	-	Total
				-	-	-	-	-	18.00	9.00	2.00	-	-	-	-
	Actual value		0.070	1.50	1.50	0.030	0.040	20.00	12.00	2.50	-	0.50	-	-	
Mechanical properties	Required	Min. Max.	Pos.No	Rp Yield Strength 1% (N/mm²)	Rm Tensile Strength (N/mm²)	A5 Elongation After fracture(%)	Z Reduction of area (%)	(HRC) Hardness HBW	KV (J) Impact value Charpy-V, (J) EN10045-1						
				210	485	30	-	-	Min,Avg.60J at -196°C				ø		
				-	640	-	-	(22HRC)237	1	2	3	Avg			
	Actual value		See Annexure												
Heat treatment	Pos.No	Solution Annealed		Temperature		Hold Time		Cooling media							
		Solution Annealing Heated to 1080°C To 1120°C Soaked and Quenched in Water Soaking Time See Annexure													
Supplementary information	Declared that the casting are free from radioactive contamination.														
Quality Level	DIN 1690 Part 10, Class D										☒ fulfilled				
	BN IF 359-01 (specified in LWN 290.05-E)										☒ fulfilled				
	MSS SP-55										☒ fulfilled				
Visual inspection and dimension check	Without objections										☒ fulfilled				
Assessment	Castings fulfil the requirements of LWN 289.01-E and LWN 290.05-E										☒ fulfilled				
Inspection representative	Stamp	04.06.2010		Name : P.Moorthi											
		Date of validation		Official position : GM/QA											
LESER internal entries	Check of this certificate by LESER QM	Cert. No:													
		Code-No:													
		Approved:													
	Ordering by LESER customer	LESER-Order-No													
		Cust. TAG - No:													

ANUGRAHA VALVE CASTINGS LIMITED
391/2, S.G.PUDUR, ARASUR VILLAGE, COIMBATORE - 641 407, INDIA.

ANNEXURE to Inspection Certificate No: AVCL/LES/1490 Dt:04/06/2010

Heat No.	Qty (Nos)	Weight (Kgs)	%C	%Si	%Mn	%S	%P	%Cr	%Ni	%Mo	%V	%Cu	%Ce	Total	YS MPa 1% Rp	TS MPa	%E	%RA	BHN HBW	Impact(J)				Soaking	
																				1	2	3	Avg.	SA	T
CB2628	5	33.00	0.051	0.95	1.20	0.008	0.034	18.115	9.532	2.064	-	0.339	-	-	301.04	511.07	47.83	-	149	106.0	98.0	124.0	109.3	4.00	--
CB2630	1	33.00	0.065	0.93	1.23	0.007	0.034	18.465	9.686	2.118	-	0.284	-	-	320.64	517.97	49.33	-	158	106.0	120.0	112.0	112.7	2.30	--
CB2650	4	33.00	0.060	0.97	1.17	0.006	0.031	18.355	9.545	2.159	-	0.278	-	-	319.80	540.10	50.50	-	163	106.0	86.0	98.0	96.7	4.00	--

P.Moorthi
GM/QA
WORKS INSPECTOR

This Certificate was issued by DP-equipment and is valid without signature

ANUGRAHA VALVE CASTINGS LIMITED						
WORKS : 391/2 S.G.PUDUR, ARASUR VILLAGE PALLADAM TALUK COIMBATORE - 641 407. PH:2360124,2360910, FAX:91-0422-2360026,E-mail:anugraha@anugrahavalvecastings.com						
LIQUID PENETRANT INSPECTION REPORT						
Customer :		LESER GmbH & CO. KG				
Report No. :		LES/DPI/283				
Date :		04/06/2010				
Item :		1 1/2"x3" BODY				
Drawing No. :		103.3300-02-B04				
PO. No. :		4500049197 Dt: 15/04/2010				
Specification :		1.4408/ASM ECF8M				
Area Coverage :		ALL ACCESSIBLE AREA				
Procedure Ref :		ASTM E 165				
Acceptance STD :		DIN 1690 PART 2				
Surface Condition :		UNMACHINED				
Stage of Test :		AFTER HEAT TREATMENT				
Method :		SOLVENT REMOVABLE				
Type :		VISIBLE				
Minimum Light Intensity :		1000 lux				
Cleaner :		SPOTCHECK SKC - I				
Batch No. & Date :		10C01 - MAR10				
Penetrant :		SPOTCHECK SKL - SP1				
Batch No. & Date :		10C05 - MAR10				
Developer :		SPOTCHECK SKD - S2				
Batch No. & Date :		10C03 - MAR10				
Sl.No.	Heat No.	Quantity	DPI No.	Marking	Remarks	
1	CB2628	5	PT1- PT5	PT	--	
2	CB2630	1	PT1	PT	--	
3	CB2650	4	PT1- PT4	PT	--	
Description of Indication						
Result			ACCEPTABLE TO DIN 1690 PART 2 SEVERITY LEVEL ES3			
Customer/External Inspection Agency			 M.GNANA ANAND NDT Level-II(PT) Operator		 D.JOSHVA JEEVAKUMAR NDT Level-II(RT.UT.MT.PT) NDT Incharge	

UNIFORM STATUTORY DECLARATION FORM FOR THE REGISTRATION OF FITTING DESIGNS

NEW BRUNSWICK
INUVIT

NOVA SCOTIA
YUKON

PRINCE EDWARD ISLAND
NORTHWEST TERRITORIES

NEWFOUNDLAND AND LABRADOR

MANUFACTURERS NAME: LESER GmbH & Co. KG
 MANUFACTURERS ADDRESS: Wendenstrasse 133 - 135, 20537 Hamburg, Germany
 PLANT LOCATIONS: Itzehoe Strasse 63, 24594 Hohenwestedt, Germany

CATEGORY OF FITTINGS TO BE REGISTERED. CIRCLE ONE CATEGORY ONLY

- ☐ Pipe fittings, including couplings, tees, elbows, Ys, plugs, unions, pipe caps, or reducers
- ☐ Flanges: all flanges
- ☐ Valves: all line valves
- ☐ Expansion joints, flexible connections, and hose assemblies: all types
- ☐ Strainers, filters, separators, and steam traps
- ☐ Measuring devices, including pressure gauges, level gauges, sight glasses, levels, or pressure transmitters
- ☒ Certified capacity-rated pressure relief devices acceptable as primary over pressure protection on boilers, pressure vessels, piping and fusible plugs
- ☐ Pressure retaining components that do not fall into one of the above categories
- ☐ Nuclear components: Class 1 ☐ Class 2 ☐ Class 3 ☐ (Meeting AECB or ASME requirements)

TITLE OF THE STANDARD OF CONSTRUCTION

ASME VIII
PED
AD-2000

HOW MANUFACTURERS NAME, TRADEMARK, OR LOGO AS IT WILL APPEAR ON THE PRODUCT

LESER GmbH & Co. KG
Wendenstr. 133-135, 20537 Hamburg

TYPE OF CONSTRUCTION

FORGED ☐ WELDED ☒ WROUGHT ☐
 CAST ☒ OTHER ☐
 DESCRIBE OTHER:

LIST OF SUPPORTING DOCUMENTATION AND IDENTIFICATION OF THE ACTUAL ITEMS TO BE REGISTERED:

Type 526

- Catalogue pages
- ASME VIII Certificate and rating sheets
- Sample name plate
- EC-type-examination
- Certificate TÜV

DECLARATION:

Martin Leser (see note 3) employed by LESER GmbH & Co. KG and being the person having full authority and responsibility for the quality of the end product do solemnly declare that the information contained in this form is true and to the best of my knowledge represents the product for which registration is sought. The dimensions, materials of construction, pressure and temperature ratings, and identification markings are in accordance with the herein named standards. I further declare that the manufacture of these fittings is regulated by a Quality Control Program which extends to each plant where fabrication occurs in whole or in part and has been verified by TUV CERT, ASME as being suitable for that purpose and I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath.

Signature of Declarer: _____

Declared before me at Hamburg

is 28th day of June 2002

Commissioner of Oaths

Notary Public: (sign) _____

(Affix Official seal to the right)



THIS SPACE FOR THE
OFFICIAL SEAL

This space for Regulatory Authority Use

This registration must be revalidated after ten (10) years from the date of acceptance.

REGISTRATION NO: **060873.92**

ID#: _____

Notes:

- 1. All fittings shall be registered in the name of the Manufacturer.
- 2. Each category shall be supported with two Statutory Declaration forms and one copy of supporting documentation.
- 3. The declaration shall be made by the person having full authority and responsibility for the quality of the end product.
- 4. Quality control programs shall be resubmitted for validation

THE REGISTRATION EXPIRES ON

2012 Aug. 02

ALBERTA BOILERS SAFETY ASSOCIATION	
PROVINCE OF ALBERTA SAFETY ACT	
060873.92	
OCT 07 2002	Signed <u>Desai</u>
Yr. Mo. Day	

Taylor Valve Technology, Inc

8300 Southwest 8th Street

Oklahoma City, Oklahoma

Serial Number : 7134-2

telephone: 405.787.0145 facsimile: 405.789.8198

Certificate Number: 40505.4439

OG01316.2C

email: info@taylorvalve.com

Customer : KINGS ENERGY SERVICES

Date : 23-Nov-10

277, 28042 HWY 11

RED DEER COUNTY, ALBERTA

Sales Order # : 7134

T4S 2L4

Customer P.O. # : 0

Safety Relief Valve Certification

Taylor Valve Technology, Inc. Safety Relief Valves are designed, manufactured and tested in accordance with the provisions of the ASME Boiler and Pressure Vessel Code, Section VIII. This Valve is certified to relieve within plus or minus 2 psi of the set pressure 70 psig or below, and plus or minus 3% of set point for pressures above 70 psig, as allowed for within the provisions of ASME. The published relieving capacities have been certified by the National Board of Boiler and Pressure Vessel Inspectors.

Valve Specifications

Model Number : Taylor Model 8200 Soft Seat	Orifice :	H
Body Size : 2 Inch	Orifice Diameter :	1.078 Inches
Part Number : 82H5871341-40-60-0	Orifice Area :	0.913 In ²
Body Configuration : 2 Inch Flanged Body	Operating Temperature :	70 °F
	Spring Range :	111-180 PSI
	Set Pressure :	170 PSIG

Materials

Body : WCB Carbon Steel	Spring : MP35N or Equal
Seat Frame : Carbon Steel	Guide : 304 Stainless Steel
Seat Housing : 316 Stainless Steel	Adjustment Screw : Carbon Steel with EN Plating
Trim : Nace	Options : None
Seat : FKM 90d	

Set Pressure Specifications

	Customer Units	ASME Units
Set Pressure :	170 psig	Set Pressure : 170 psig
ASME High Set Limit :	175 psig	ASME High Set Limit : 175 psig
ASME Low Set Limit :	165 psig	ASME Low Set Limit : 165 psig

ASME (90%) rated capacity at set pressure for indicated fluid, specific gravity and temperature.

Certifying Fluid : Air	2,824 SCFM	Spec Gravity : 1.00	Temp : 60 oF
------------------------	------------	---------------------	--------------

API 520 (100%) calculated capacity at set pressure for indicated fluid, specific gravity and temperature.

Test Fluid : Air	3,106 SCFM	Spec Gravity : 1.00	Temp : 60 oF
------------------	------------	---------------------	--------------

Prepared by : CALEY ROONEY

Department : Customer Service

Signed

CALEY ROONEY

Approved by : CALEY ROONEY

Department : Quality

Signed

CALEY ROONEY

MATERIAL ACCEPTED

Code Edition used
for verification

QC

Addenda

date

07 09
Nov 30, 2010



8600 – 92 Street
Grande Prairie, AB T8V 7S3
Phone (780) 538-0037
Fax (780) 538-9226

MATERIAL TRANSFER REPORT

ORIGINATING JOB # Stock
CONSUMABLE JOB # 1J105033B

Date: NOV 29 2010

No.	Qty	Description	Material Thickness	Heat No.	Q.C.I Init.	QCM
1	120"	3" STD A106 PIPE	0.218"	1022685v		CMS
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

3" STD A106 PIPE
HT# 102268SV

Contract No.: 2110001441

HENGYANG VALIN STEEL TUBE CO., LTD

MILL TEST REPORT

Add: 10 Dalixincui
Tel and Fax: 84 8873739 8872942
Cable: 93
421001

Date: MAY 28, 2010

Description: SEAMLESS CARBON STEEL PIPE FOR OIL AND GAS USE.

TOTAL: 1225PIECES, 42BUNDLES, 88.529MT, 25036.41FT

SPEC.: ASTM A53B-2007/A106B-2008, ASME SA533B/SA106B-2007, API 5L B/X42, PSL2-2008, NACE MR-0175-2004/

ISO 15156-2(REGION 3)/MR-0103/SS (CSA Z245.1 GRADE 290 CATEGORY I)

CERTIFICATE NO: 10-1-5-31

NO.	BATCH NO.	HEAT NO.	STEEL GRADE	SIZE	BUNDLES	PIECES	FEET	QUANTITY (MT)	ACTUAL WEIGHT(MT)									
									C	Si	Mn	P	S	Ca	Ni	Cr	Mo	V
8	904301425	1021164V	B/X42/GR 290	2"0.218"20FT	4	176	3522.31	8.036										
9	904301426	1022686V	B/X42/GR 290	3"0.216"20FT	7	257	5143.37	17.684										
10	904301611	1022686V	B/X42/GR 290	3"0.438"20FT	7	134	2661.76	17.442										
11	904301614	1021164V	B/X42/GR 290	3"0.438"20FT	4	21	420.28	2.734										
12	904101307	1022706V	B/X42/GR 290	4"0.237"20FT	8	26	1040.68	6.771										
CHEMICAL COMPOSITION %																		
NO.	CONDITION	ET	UT	TYPE	C	Si	Mn	P	S	Ca	Ni	Cr	Mo	V	Ti	B	Nb	CE
8	HOT-ROLLED	OK	N/A	P	0.12	0.13	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.024	0.0002	0.030	0.310
	HOT-ROLLED	OK	N/A	L	0.12	0.11	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.024	0.0002	0.030	0.320
	HOT-ROLLED	OK	N/A	L	0.12	0.11	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.023	0.0001	0.028	0.310
9	HOT-ROLLED	OK	N/A	L	0.12	0.11	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.023	0.0001	0.028	0.310
	HOT-ROLLED	OK	N/A	L	0.12	0.11	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.023	0.0001	0.028	0.310
	HOT-ROLLED	OK	N/A	L	0.12	0.11	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.023	0.0001	0.028	0.310
10	HOT-ROLLED	OK	N/A	L	0.12	0.12	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.022	0.0001	0.027	0.311
	HOT-ROLLED	OK	N/A	L	0.12	0.12	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.022	0.0001	0.027	0.311
	HOT-ROLLED	OK	N/A	L	0.12	0.12	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.022	0.0001	0.027	0.311
11	HOT-ROLLED	OK	N/A	L	0.12	0.12	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.022	0.0001	0.027	0.311
	HOT-ROLLED	OK	N/A	L	0.12	0.12	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.022	0.0001	0.027	0.311
	HOT-ROLLED	OK	N/A	L	0.12	0.12	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.022	0.0001	0.027	0.311
12	HOT-ROLLED	OK	N/A	L	0.12	0.12	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.022	0.0001	0.027	0.311
	HOT-ROLLED	OK	N/A	L	0.12	0.12	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.022	0.0001	0.027	0.311
	HOT-ROLLED	OK	N/A	L	0.12	0.12	0.25	0.05	0.02	0.03	0.01	0.01	0.01	0.01	0.022	0.0001	0.027	0.311
TENSILE STRENGTH																		
NO	σ b (PSI)	σ s (PSI)	YIELD STRENGTH	δ (%)	Temp (°C)	IMPACT TEST	AKV (J)	Orientation	HARDNESS	HYDROSTATIC TEST(PSI)	FLATTEN TEST	BEND TEST						
8	65250	50025	strip, L, bo=19mm, Lo=50mm	35	N/A	Dime(mm)	N/A	N/A	HRC≤22	3000	N/A	OK						
9	68150	51475		36.5	N/A		N/A	N/A	OK	3000	N/A	OK						
10	67425	52925		38.5	N/A		N/A	N/A	OK	3000	OK	N/A						
	63800	46400		42.5	N/A		N/A	N/A	OK	3000	OK	N/A						
	68150	50025		41	N/A		N/A	N/A	OK	3000	OK	N/A						
11	63800	47125		45	N/A		N/A	N/A	OK	3000	OK	N/A						
12	65975	51475	strip, L, bo=25mm, Lo=50mm	38.5	N/A		N/A	N/A	OK	2660	OK	N/A						



REMARKS: 1. We hereby certify that this certificate of quality is issued and signed by the manufacturer.
2. We hereby certify that the properties described herein meet the requirement of the above spec.
3. We hereby certify that this certificate is issued accordance with EN 10204.3.1/DIN 50049.3.1B AND NACE MR-0175/MR-0103/15156-2(REGION 3)
4. TYPE: P-Product analysis L-Ladle analysis;
5. ORIGIN: MADE IN CHINA
6. #1 =H/C

QUALITY MANAGER:

MATERIAL ACCEPTED

Code Edition used for verification 07 Addenda 09
QC Dec date



8600 – 92 Street
Grande Prairie, AB T8V 7S3
Phone (780) 538-0037
Fax (780) 538-9226

MATERIAL TRANSFER REPORT

ORIGINATING JOB # STOCK
CONSUMABLE JOB # 1J105033B

Date: DEC 2 2010

No.	Qty	Description	Material Thickness	Heat No.	Q.C.I Init.	QCM
1	1	2" SCH 40 90DEG ELBOW WPB	0.173"	08N00001		
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

MATERIAL ACCEPTED

Code Edition used for verification 07 Addenda 09
QC Dec 27/16 date

Purchaser:

INSPECTION CERTIFICATE

TO EN10204 3.1



Thai Benkan Co., Ltd.
 58 Soi Wutkrumai, Bangkru, Prapadaeng,
 Samutprakan, 10130 Thailand.

D M Y Certificate No.
 02/04/2009 T- 2009200154

E-No. MB-566 Purchase Order No. 4885059 Job No.

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe		Specification for Inspection ASME B18.9-2007		Visual Examination	Dimensional Inspection	
		ASTM A234-07/ASME SA234-07 GR WPB CSA Z245.11 Gr 241 Cml 1 NACE MR0175480 18156-2-2000314MR0103-2007						
		Product & Size		(T:*)	Quantity	Heat Treatment (Note 1)	Hardness Actual Data	Item No.
1	08N00001	90 EL WPB 2 S40		7510346	328/500	A	HB : 120 - 150	7510346
2	09B00018	90 EL WPB 2 S40		7510346	172/500	A	HB : 120 - 150	7510346
3	08N20074	RC WPB 4 X 1 1/2 S40			20	N	HB : 130 - 145	7513390
4	51N20011	RC WPB 3 X 2 STD/XS			14/80	N	HB : 138 - 148	7510428
5	06D20072	RE WPB 4 X 2 1/2 S40			15	N	HB : 135 - 150	7514891

Specification Min . Max . Material Heat No.	Chemical Composition %												Tension Test #2		
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E
	x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa.	
		10	29										240	415	30
	30		106	50	58	40	40	40	15	80	20		655		
1 53194	17	19	73	17	3	14	9	16	5	0	0	35	333	504	33
2 57071C	15	19	75	16	4	20	9	13	4	0	0	33	328	493	33
3 J8L9445	19	21	81	23	7	3	2	6	1	0	1	34	302	486	37
4 J8KA294	21	20	78	8	6	2	3	4	1	0	0	35	332	508	40
5 331409	14	20	105	14	1	2	3	11	1	0	0	34	314	470	37

(Note 1) A : Hot formed with final temperature between 620 °C-980°C, Air Cooling N : Normalizing 910°Cx0.5 HR. Air Cooling *N : Normalizing 910°Cx0.5 HR. Air Cooling (Specification for material made from plate) S : Stress Relieving 675° Cx0.5 HR. Air Cool

The fittings was manufactured, sampled, tested, and inspected in accordance with the specification, and was found to meet the requirements.

C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

Quality Assurance Manager
 Thai Benkan Co., Ltd.

DYNACORP FABRICATORS INC.

Welding Procedure Specification

in accordance with

ASME Sections VIII, IX, B31.1 & B31.3

WPS No.:

WOM-2 Revision 2

Supporting PQR No. (s):

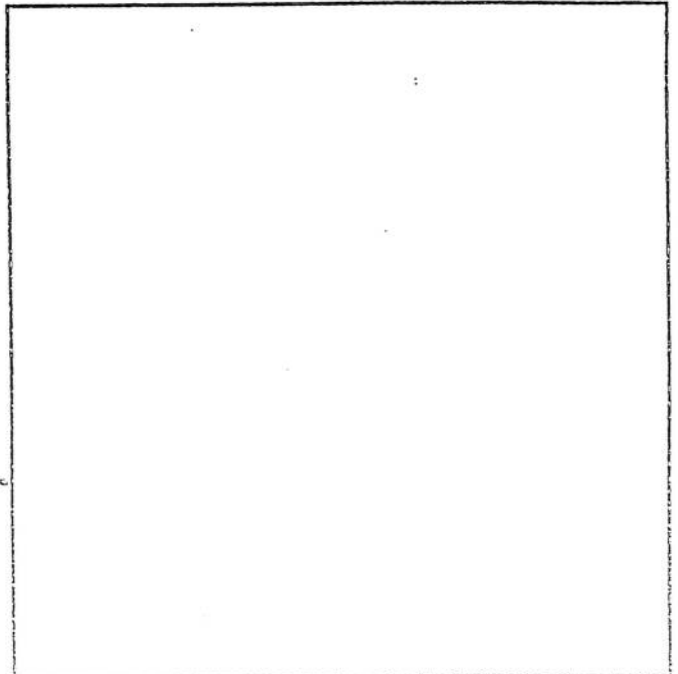
WOM-2-1 Revision 1, WOM-2-2, WOM-5-1, WOM-5-2

Qualified for

Process(es):	SMAW / SMAW	Position(s):	All
Filler Metal F-No.:	F-3 / F-4	A-No.:	A-1 / A-1
AWS Class.:	E6010 / E7018-1	Weld Type(s):	Groove, Fillet
Base Metal:	P-1 Group 1 or 2	To:	P-1 Group 1 or 2
Typical Materials P-1 Gr. 1:	SA-36, SA-53, SA-106 A/B, SA-234 WPB, SA-350 LF1, SA-516 60/65, SA-CSA G40.21 Gr. 38W / 44W		
P-1 Gr. 2:	SA-105, SA-106 C, SA-234 WPC, SA-350 LF2, SA-516 70, SA-537 Cl. 1, SA-660 WCB / WCC		
Diameter Range:	All	Condition(s):	Post Weld Heat Treated
Thickness Range:	0.062" to 8.00"		Normal and <u>Sour Service</u>
	0.125" to 8.00"		Low Temperature

Revision 2: Editorial review and update to the current edition of the ASME codes and addition of PQR's to increase thickness range qualification.

Provincial Registration	
ALBERTA BOILERS SAFETY ASSOCIATION	
PROVINCE OF ALBERTA	
SAFETY CODES ACT	
WELDING PROCEDURE	
Reg. No. WP	1073.2
Spec No.	WOM-2 (REV 2)
Weld Process	SMAW
Matl. Gr. P No.	1 Gr 1+2
to P No.	1 Gr 1+2
Elec. Gr. F No.	3+4
A No.	1
Th. Qual. For	203mm
PWHT	YES
MIN Th. QUAL	3.2 mm FOR CVD-466
Yr. 11 Mo. 11 Day 20	Signed
R. ROSSBERG, P. ENG.	
WELDING SPECIALIST	



**DYNACORP FABRICATORS INC
WELDERS'S LOG**

Location:

WELDER	SYMBOL	PROCESS /METHOD	BASE METALS	FILLER METAL "F" NUMBER (S)	BACKING	MINIMUM OD (in)	DEPOSIT THICKNESS (IN)	POSITIONS	UPHILL/ DOWNHILL	CORED/ SOLID	INSERT	BACKING GAS	GTAW CURRENT	GMAW X-FER	EXPIRY DATE P.Q. CD
Nick Wanke W-23775	"A"	SAW	P1 / P1	"F"6	With Metal	NPS 2 7/8"OD	Max to be welded	1G	FLAT						Aug 15/2011
Nick Wanke W-23775	"A"	SMAW / FCAW	P1	"F"3 / "F"6	With or without / WM	NPS 1"	.250 max to be welded	ALL	UPHILL						May 3/2011
Nick Wanke W-23775	"A"	GMAW / SMAW	P1	"F"6 / "F"4	With or without / WM	NPS 1"	.110"/Max to be welded	1G/ALL	DOWNHILL / UPHILL						May 3/2012
Kevin Cabral W-22216	"K"	SMAW / SMAW	P1 / P1	"F"3 / "F"4	With or with out / WM	NPS 1"	.188"/.500"	ALL	UPHILL						July 30/2011
Kevin Cabral W-22216	"K"	GMAW / SMAW	P1 / P1	"F"6 / "F"4	With or with out / WM	NPS 1"	.110"/Max to be welded	1G/ALL	DOWNHILL/UPHILL						Dec 5/2011
Kevin Cabral W-22216	"K"	SMAW / FCAW	P1 / P1	"F"3 / "F"6	With or with out / WM	NPS 1"	.250"/Max to be welded	ALL	UPHILL						May 29/2012
Terry Hanson MW-71638	"D"	SAW	P1 / P1	"F"6	With Metal	NPS 2 7/8"	Max to be welded	1G	FLAT						Dec 3/2011
Cameron Blair W-27172	"C"	SMAW / SMAW	P1 / P1	"F"3 / "F"4	With or with out / WM	NPS 2 1/2"	.236"/.630"	ALL	UPHILL						Nov 5/2011
Cameron Blair W-27172	"C"	SMAW / FCAW	P1 / P1	"F"3 / "F"6	With or with out / WM	NPS 1"	.250"/Max to be welded	ALL	UPHILL						Dec 5/2011
Cameron Blair W-27172	"C"	GMAE / SMAW	P1/P1	"F"6/"F"4	With or with out / WM	NPS 1"	.110"/Max to be welded	1G/ALL	DOWNHILL/UPHILL						May 3/2012
Nathan Alexander W-28127	"W"	SMAW / SMAW	P1 / P1	"F"3 / "F"4	With or with out / WM	NPS 2 1/2"	.236"/.630"	ALL	UPHILL						Dec 3/2011
Nathan Alexander W-28127	"W"	SMAW / FCAW	P1 / P1	"F"3 / "F"6	With or with out / WM	NPS 1"	.250"/Max to be welded	ALL	UPHILL						Dec 5/2011
Nathan Alexander W-28127	"W"	GMAW / SMAW	P1 / P1	"F"6 / "F"4	With or with out / WM	NPS 1"	.250"/Max to be welded	1G/ALL	DOWN/ UPHILL						Dec 5/2011
Mike Sombberger MW-71638	"M"	SAW	P1 / P1	"F"6	With Metal	NPS 2 7/8"OD	Max to be welded	1G	FLAT						Dec 3/2011
Kyle Radcliffe W-28133	"T"	SMAW / FCAW	P1 / P1	"F"3 / "F"6	With or Without/ WM	NPS 1"	0.250" / Max to be Welded	ALL	UPHILL						May 29/2012
Kyle Radcliffe W-28133	"T"	GMAW / SMAW	P1 / P1	"F"6 / "F"4	With or Without/ WM	NPS 1"	0.110" / Max to be Welded	1G / ALL	DOWNHILL / UPHILL						May 29/2012
Dan Hayden W-19785	"6"	SMAW / SMAW	P1 / P1	"F"3 / "F"4	With or Without/ WM	NPS 1"	.250" / .438"	ALL	UPHILL						March 11/2011
Dan Hayden W-19785	"6"	GMAW / SMAW	P1/P1	"F"6 / "F"4	With or Without/ WM	NPS 1"	0.110" / Max to be Welded	1G / ALL	DOWNHILL / UPHILL						July 10/2012
Dan Hayden W-19785	"6"	SMAW / FCAW	P1/P1	"F"3 / "F"6	With or Without/ WM	NPS 1"	0.250" / Max to be Welded	ALL	UPHILL						JULY 10/2012
Clint Simmons W-28140	"3"	SMAW / SMAW	P1 / P1	"F"3 / "F"4	With or Without/ WM	NPS 1"	.188" / .684"	ALL	UPHILL						March 22/2012
Clint Simmons W-28140	"3"	SMAW / SMAW	P1 / P1	"F"3 / "F"4	With or Without/ WM	NPS 1"	.248" / .188"	ALL	DOWN / UPHILL						March 22/2012
Clint Simmons W-28140	"3"	GMAW / SMAW	P1 / P1	"F"6 / "F"4	With or Without/ WM	NPS 1"	.110" / .Max to be Welded	1G / ALL	DOWN / UPHILL						May 29/2012
Craig Read	"7"	SAW	P1 / P1	"F"6	With Metal	NPS 2 7/8"	Max to be welded	1G	FLAT						Dec 3/2011
Jamie French	"F"	SAW	P1 / P1	"F"6	With Metal	NPS 2 7/8"	Max to be welded	1G	FLAT						Dec 3/2011
Patrick Hanes	"2"	SAW	P1 / P1	"F"6	With Metal	NPS 2 7/8"	Max to be welded	1G	FLAT						Dec 3/2011

Location:

Quality Control Manual Exhibit 11.2



Alberta

14980

Grade "A" Pressure Welder's
Certificate of Competency

This is to certify that **Dan Hayden**
having complied with provisions of the Safety Codes Act, is authorized to engage
in pressure welding in accordance with the prescribed Regulations.



W-19785

File no.

Chief Inspector and Administrator

Dated at Edmonton
March 15, 2002

ABSA

the pressure equipment safety authority

Card

004135

PERFORMANCE QUALIFICATION

Process(es)	SAW SAW	Materials (P. No.)	Pi-Pi
Filler Metal	F3 F4	Min. Outside	10D
Group (F.No.)		Pipe Diameter	
Max Deposited	250" 438"	Position(s)	ALL
Weld Metal		Qualified	
Backing	with/without/with	Backing Gas	
Progression	uphill downhill		
P.Q. Expiry Date	Mar 28/11	Welding Examiner Signature	Barry Nichol
		Examiner File No.	E-00357

Card No 4419

PERFORMANCE QUALIFICATION

Process(es)	GMAW SMAW	Materials (P. No.)	Q1-Q1
Filler Metal	F6 F4	Min. Outside	10D
Group (F.No.)		Pipe Diameter	
Max Deposited	0.110" MAX TO BE WELDED	Position(s)	1G/ALL
Weld Metal		Qualified	
Backing	with with	Backing Gas	
Progression	down		
P.Q. Expiry Date	July 10/12	Welding Examiner Signature	Dylan Deagle
		Examiner File No.	E-00357

Card No 4420

PERFORMANCE QUALIFICATION

Process(es)	SAW FCAW	Materials (P. No.)	Q1-Q1
Filler Metal	F3 F6	Min. Outside	10D
Group (F.No.)		Pipe Diameter	
Max Deposited	0.250" MAX TO BE WELDED	Position(s)	ALL
Weld Metal		Qualified	
Backing	with with	Backing Gas	
Progression	uphill downhill		
P.Q. Expiry Date	July 10/12	Welding Examiner Signature	Dylan Deagle
		Examiner File No.	E-00357

012/842194

45995A

JOURNEYMAN CERTIFICATE

THIS IS TO CERTIFY THAT
DANIEL JAMES HAYDEN
HAS COMPLETED AN ALBERTA APPRENTICESHIP PROGRAM AND HAVING ACHIEVED
THE STANDARDS ESTABLISHED UNDER THE ALBERTA APPRENTICESHIP AND
INDUSTRY TRAINING ACT, IS HEREBY AUTHORIZED TO WORK IN THE TRADE AS A
JOURNEYMAN AND TO USE THE TITLE CERTIFIED JOURNEYMAN

WELDER

EFFECTIVE DATE
April 2nd, 2002

ISSUE DATE
April 9th, 2002

DIL LYLE CRESS
MINISTER OF LEARNING

SHIRLEY DUL, EXECUTIVE
DIRECTOR OF APPRENTICESHIP
& INDUSTRY TRAINING

A.O.Q.P. No. 7111-C



WELDER PERFORMANCE QUALIFICATION CARD

NAME: **Daniel Hayden** ABSA FILE NO. **W-19785**
This card is issued pursuant to the Alberta Safety Codes Act and the Pressure
Welders' Regulation. The Performance Qualification is in accordance with Section IX
of the ASME Code and subject to the limitations on the reverse side.
Date of Test: **Mar 28, 2009**
Signature of Welder or Machine Operator: **D Hayden**
Welding Examiner (Print/Type): **Barry Nichol** Card **004135**

A.O.Q.P. No. 7111-C



WELDER PERFORMANCE QUALIFICATION CARD

NAME: **Dan Hayden** ABSA FILE NO. **W-19785**
This card is issued pursuant to the Alberta Safety Codes Act and the Pressure
Welders' Regulation. The Performance Qualification is in accordance with Section IX
of the ASME Code and subject to the limitations on the reverse side.
Date of Test: **July 10, 2010**
Signature of Welder or Machine Operator: **D Hayden**
Welding Examiner (Print/Type): **Dylan Deagle** Card **No 4419**

A.O.Q.P. No. 7111-C



WELDER PERFORMANCE QUALIFICATION CARD

NAME: **Dan Hayden** ABSA FILE NO. **W-19785**
This card is issued pursuant to the Alberta Safety Codes Act and the Pressure
Welders' Regulation. The Performance Qualification is in accordance with Section IX
of the ASME Code and subject to the limitations on the reverse side.
Date of Test: **July 10, 2010**
Signature of Welder or Machine Operator: **D Hayden**
Welding Examiner (Print/Type): **Dylan Deagle** Card **No 4420**

SYMBOL "6"



Grade "C" Pressure Welder's Certificate of Competency



This is to Certify that: CHRISTOPHER J. CAMPBELL
(Name of Welder)

has passed a Performance Qualification Test and is permitted to engage in pressure welding in accordance with the prescribed Regulation while in the employment of DYNACORP at GRAND PRAIRIE
(Name of Company) (Location of Job)

who have complied with the provisions of The Safety Codes Act.



CERTIFICATE No. 18195 Dated this Oct 16 2010
Chief Inspector and Administrator

THIS CERTIFICATE EXPIRES SEPT 13/11 Form No. AB-114 Rev (10/2006)

PERFORMANCE QUALIFICATION GRADE "C" PRESSURE WELDER

(In accordance with Section IX, A.S.M.E. Code)

This qualification becomes null and void on termination of employment with the company, named on the Certificate on the reverse side, or upon the expiry date of the Certificate.

Process(es) 5MAN 2MAN Material (P.No.) P1 & P1
Max Deposited Weld Metal 0.25" 0.622" Minimum Pipe Dia. 1NPS (1")
Filler Metal Group (F.No.) F3 F4 Position(s) Qualified ALL
Backing NO YES Progression UPHILL
Date of Test Sept 13 2010 Signature of Safety Codes Officer Henry P. Wicks



Grade "C" Pressure Welder's Certificate of Competency



This is to Certify that: CHRISTOPHER J. CAMPBELL
(Name of Welder)

has passed a Performance Qualification Test and is permitted to engage in pressure welding in accordance with the prescribed Regulation while in the employment of DYNACORP at GRAND PRAIRIE
(Name of Company) (Location of Job)

who have complied with the provisions of The Safety Codes Act.



CERTIFICATE No. 18194 Dated this Oct 16 2010
Chief Inspector and Administrator

THIS CERTIFICATE EXPIRES SEPT 13/11 Form No. AB-114 Rev (10/2006)

PERFORMANCE QUALIFICATION GRADE "C" PRESSURE WELDER

(In accordance with Section IX, A.S.M.E. Code)

This qualification becomes null and void on termination of employment with the company, named on the Certificate on the reverse side, or upon the expiry date of the Certificate.

Process(es) 5MAN 2MAN Material (P.No.) P1 & P1
Max Deposited Weld Metal 0.25" 0.622" Minimum Pipe Dia. 1" NPS
Filler Metal Group (F.No.) F3 F6 Position(s) Qualified ALL
Backing NO YES Progression UPHILL
Date of Test Oct 16 2010 Signature of Safety Codes Officer Henry P. Wicks



Grade "C" Pressure Welder's Certificate of Competency



This is to Certify that: CHRISTOPHER J. CAMPBELL
(Name of Welder)

has passed a Performance Qualification Test and is permitted to engage in pressure welding in accordance with the prescribed Regulation while in the employment of DYNACORP at GRAND PRAIRIE
(Name of Company) (Location of Job)

who have complied with the provisions of The Safety Codes Act.



CERTIFICATE No. 18193 Dated this SEPT 13 2010
Chief Inspector and Administrator

THIS CERTIFICATE EXPIRES SEPT 13 2011 Form No. AB-114 Rev (10/2006)

PERFORMANCE QUALIFICATION GRADE "C" PRESSURE WELDER

(In accordance with Section IX, A.S.M.E. Code)

This qualification becomes null and void on termination of employment with the company, named on the Certificate on the reverse side, or upon the expiry date of the Certificate.

Process(es) 6MAN 5MAN Material (P.No.) P1 & P1
Max Deposited Weld Metal 0.110" 0.30" Minimum Pipe Dia. 1" OD
Filler Metal Group (F.No.) F6 F4 Position(s) Qualified ALL
Backing NO YES Progression UPHILL
Date of Test Oct 16 2010 Signature of Safety Codes Officer Henry P. Wicks

SYMBOL "V"

Card

PERFORMANCE QUALIFICATION

Process(es) <u>SMAW SMAW</u>	Materials (P No.) <u>P1-P11</u>
Filler Metal <u>F3 F4</u>	Min. Outside Pipe Diameter <u>1" OD</u>
Max Deposited <u>104" max TO BE WELDED</u>	Position(s) Qualified <u>ALL</u>
Backing <u>WITH/WITHOUT/WITH</u>	Backing Gas <u>—</u>
Progression <u>uphill uphill</u>	
P.Q. Expiry Date <u>Aug 29/11</u>	Examiner File No. <u>E00039</u>

Welding Examiner Signature [Signature]

Grande Prairie Regional College

WELDER PERFORMANCE QUALIFICATION CARD

NAME: Jeremy Winders ABSA FILE NO. W-22

This card is issued pursuant to the Alberta Safety Codes Act and the Pressure Welders' Regulation. The Performance Qualification is in accordance with Section IX of the ASME Code and subject to the limitations on the reverse side.

Date of Test Aug 29, 2009 Signature of Welder or Machine Operator [Signature]

Welding Examiner (Print/Type) Barry Nichol Card 00424



012/934027 69516A

JOURNEYMAN CERTIFICATE

THIS IS TO CERTIFY THAT JEREMY TYLER WINDERS HAS COMPLETED AN ALBERTA APPRENTICESHIP PROGRAM AND HAVING ACHIEVED THE STANDARDS ESTABLISHED UNDER THE ALBERTA APPRENTICESHIP AND INDUSTRY TRAINING ACT, IS HEREBY AUTHORIZED TO WORK IN THE TRADE AS A JOURNEYMAN AND TO USE THE TITLE CERTIFIED JOURNEYMAN

WELDER

EFFECTIVE DATE: July 18th, 2005 ISSUE DATE: July 26th, 2005

HONOURABLE DAVE HANCOCK, Q.C. MINISTER OF ADVANCED EDUCATION

Alberta GOVERNMENT

SHIRLEY DUL, EXECUTIVE DIRECTOR OF APPRENTICESHIP & INDUSTRY TRAINING

Card No. 4462

PERFORMANCE QUALIFICATION

Process(es) <u>GMAW SMAW</u>	Materials (R No.) <u>P1-P1</u>
Filler Metal <u>F6 F4</u>	Min. Outside Pipe Diameter <u>1" OD</u>
Max Deposited <u>110" MAX TO BE WELDED</u>	Position(s) Qualified <u>GR/AU</u>
Backing <u>w/with with</u>	Backing Gas <u>—</u>
Progression <u>Down uphill</u>	
P.Q. Expiry Date <u>Oct 12/12</u>	Examiner File No. <u>E00357</u>

Welding Examiner Signature [Signature]

Alberta Municipal Affairs and Housing 19167

the pressure equipment safety i

Grade "B" Pressure Welder's Certificate of Competency

This is to certify that Jeremy Winders having complied with provisions of the Safety Codes Act, is authorized to e in pressure welding in accordance with the prescribed Regulations.

Dated at Edmonton October 06, 2005

W-22447 File no. [Signature] Chief Inspector and Administrator

Grande Prairie Regional College A.O.Q.P. No. 7111-0

WELDER PERFORMANCE QUALIFICATION CARD

NAME: Jeremy Winders ABSA FILE NO. W-22447

This card is issued pursuant to the Alberta Safety Codes Act and the Pressure Welders' Regulation. The Performance Qualification is in accordance with Section IX of the ASME Code and subject to the limitations on the reverse side.

Date of Test Oct 12, 2010 Signature of Welder or Machine Operator [Signature]

Welding Examiner (Print/Type) Dylan Seagle Card No. 4462

SYMBOL "O"

**DYNACORP**
FABRICATORS INC.8600 92 Street
Grande Prairie, AB T8V 7S3

CERTIFYING STATEMENT

I have reviewed the:

Written Practice:	Second Edition Feb 17, 2007 Revision 3
NDE Procedures:	RT:- 1, 2, 3, 4, 5, 6 MT:-1 PT:-1
and personnel certification records and vision examination records of all Examiners that will perform NDE at Emission Control International Ltd.	

For: Inspectrum Testing Inc. Box 736, Grande Prairie, AB T8V 3R5

It is my opinion that the specified NDE procedures are in accordance with ASME Section V requirements as referenced by the applicable construction Code and that the Written Practice complies in all respects with the requirements of the construction Code accepted Edition/Addenda of SNT-TC-1A.

Based upon my review of the above referenced documents I hereby certify that personnel performing and evaluating NDE have been qualified and certified in accordance with their employers written practice and that the demonstration of procedure(s) to the satisfaction of the AI, as required by the ASME Code, Section V, paragraph T-150, has been completed as specified within the Emission Control International Ltd. written quality system.

Therefore:

Inspectrum Testing Inc.
(Name of NDE Company)

are hereby appointed to perform:

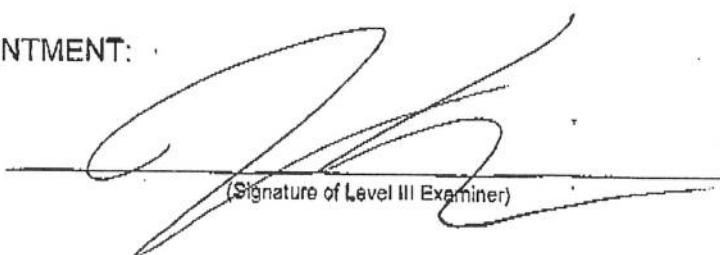
RT, PT, MT
(RT, UT, PT, MT, ET, VT and/or LT)For: Dynacorp Fabricators Inc.

APPOINTMENT OF LEVEL III EXAMINERS

Joel Kish is by this statement appointed to act as the Level III Examiners on behalf of:Dynacorp Fabricators Inc. in the following methods: RT, PT, MT
(Signature of QCM)October 20, 2009
(Date)October 20, 2011
(Appointment Expiry Date)

LEVEL III EXAMINER ACCEPTANCE OF APPOINTMENT:

I hereby accept the appointment as indicated above.


(Signature of Level III Examiner)

INSPECTRUM FORM #200

P.O. Box 736
Grande Prairie, AB.
T8V 3R5
Fax # 780 539-1777
Toll Free 1-866-NDT XRAY

Ph. # 780 539-0000

INSPECTRUM TESTING INC.

Radiographic Inspection

75244

Page 1 of 2

Client: DYNACORP

Location: GRANDE PRAIRIE

Date: Dec. 2/10

AFE#

P.O.# 1P6518

Item Inspected: PIPING FAB WELDS

Job# 15105033B

Exposure Device: E1050

Source#: 64401 B

EFSS: 3.089mm IR-192 ☒ Cobalt 60 ☐ X-Ray ☐

Acceptance Code: ASME B31.3 SC

Film Brand: AGFA Class: 1

Material: C/S

#Film/Cassette: 1

Film #	Size, Location, Thickness	Welder ID	Insp. Tech	# of Exp.	SOD in.	OFD in.	Type and Location of Discontinuities (rejectable discontinuities circled)	Accept	Reject
XF13	3" XXH	0	R3	4	2.90	.600		✓	
14								✓	
15								✓	
16							S @ 25 cm.	✓	
XF17	3" XXH		R3	4	2.90	.600		✓	
18								✓	
19								✓	
20								✓	
XF21	2" XXH	✓	R3	4	1.94	.436		✓	
XF22	2" STD	✓	R3	3	2.22	.154		✓	
XF23	3" STD		R3	3	3.28	.216	P @ 18 cm.	✓	
24							BT @ 23 cm. water stain @ 6 cm.	✓	
25								✓	
26							P @ 18 cm.	✓	
27							S @ 28 cm.	✓	
28							IUC @ 25 cm.	✓	
29							P @ 15 cm.	✓	
30								✓	
31								✓	
32							S @ 7 cm.	✓	
33								✓	
XF34	4" STD	✓	R3	3	4.26	.237	S @ 12, 35 cm.	✓	

Inspection Technique
Single Wall Exposure:
R1, R2, R2A, R6
Double Wall Exposure
R3, R3A, R4, R5

Viewing Technique
Single Wall
R1, R2, R3, R6
Double Wall
R4, R5

AB - Arc Burn
BT - Burn Through
CK - Crack
EP - Excessive Penetration
P - Porosity

EUC - External Undercut
IUC - Internal Undercut
HB - Hollow Bead
IP - Incomplete Penetration

S - Slag
IC - Internal Concavity
LF - Lack of Fusion
LR - Low Reinforcement
MA - Misalignment

Inspection Performed By:

PHIL BORN

(Print)

[Signature]

(Signature)

SNT-TC-1A II

CGSB L II

CGSB # 13053

Consumables:

19-3" 1-4"
2-2" film

Unit# _____ Km _____

In _____ Out _____

Personnel KEVIN

I am in full agreement of report contents

Client Representative [Signature]

Cost Estimate:

\$ _____ + Tax
(Invoice to follow by mail)

P.O. Box 736
Grande Prairie, AB.
T8V 3R5
Fax # 780 539-1777
Toll Free 1-866-NDT XRAY

Ph. # 780 539-0000

INSPECTRUM TESTING INC.

Radiographic Inspection

75247

Page 1 of 1

Client: DYNACORP

Location: GRANDE PRAIRIE

Date: Dec. 3/10

AFE#

P.O.# IP6535

Item Inspected: PIPING FAB WELDS

Job# IJ105033B

Exposure Device: E1050 Source#: 64401B

EFSS: 3.089mm IR-192 ☒ Cobalt 60 ☐ X-Ray ☐

Acceptance Code: ASME B31.3 SC

Film Brand: AGFA

Class: 1

Material: C/S

#Film/Cassette: 1

Film #	Size, Location, Thickness	Welder ID	Insp. Tech	# of Exp.	SOD in.	OFD in.	Type and Location of Discontinuities (rejectable discontinuities circled)	Accept	Reject
	REPAIRS								
XF35R	4" STD	V	R3	1	4.26	.237	repaired	✓	
XF39R	↓	↓			↓			✓	
XF49	2" STD	6	R3	3	2.22	.154		✓	
50	↓	↓					Por. @ 2-5 cm. S @ 1.7 cm		X
51							P @ 17 cm	✓	
52							S @ 7 cm	✓	
53								✓	
XF50R	2" STD	6	R3	1	2.22	.154	repaired P @ 5 cm.	✓	

Inspection Technique
Single Wall Exposure:
R1, R2, R2A, R6
Double Wall Exposure
R3, R3A, R4, R5

Viewing Technique
Single Wall
R1, R2, R3, R6
Double Wall
R4, R5

AB - Arc Burn
BT - Burn Through
CK - Crack
EP - Excessive Penetration
P - Porosity

EUC - External Undercut
IUC - Internal Undercut
HB - Hollow Bead
IP - Incomplete Penetration

S - Slag
IC - Internal Concavity
LF - Lack of Fusion
LR - Low Reinforcement
MA - Misalignment

Inspection Performed By:

PHIL BORN

(Print)

[Signature]

(Signature)

SNTTC-1A ✓

CGSB L ✓

CGSB # 13053

Consumables:

2-4" 3 f.i./m
6-2" }

Unit# _____ Km _____

In _____ Out _____

Personnel KEVIN

I am in full agreement of report contents

Client Representative [Signature]

Cost Estimate:

\$ _____ + Tax

(Invoice to follow by mail)

INSPECTRUM FORM #200

FAX: (780) 539-5916

22757

CLIENT Dyna-Corp

JOB NO. 1310 503313
1310 503413

CUST P.O. NO. 1P6554

SHIP STATE/
PROVINCE

PROCEDURE REFERENCE			
RATE OF RISE UNRESTRICTED SOAK TEMP.		RATE OF COOL UNRESTRICTED FROM	
400 °F HR. MAX 800 °F		500 °F HR. MAX 800 °F	
1150 ± 25 °F			
SOAK PERIOD		HRS.	
		1 HR	
PREHEAT		PREHEAT	
0 °F MIN.		0 °F MAX	
		INSULATION REMOVED	
		AT 0 °F	
SPECIAL REMARKS			
Left in oven until ambient temp			
RECORDER NUMBER		CHART SPEED	
12A343397		5 mm/min	
		CALIBRATED	
		Jan 05/11	

APPROVED BY _____ DATE _____

[illegible]

EQUIPMENT CONSUMABLES	QUANTITY
Stress Oven 35'	
Lm mtrcc - 1½ hrs to load & block ovenload	
(12/07/10) Lm - 1½ hrs to unblock oven.	
Stress relieve misc. spooling as requested	

SIGHT TIME					HOURS		
TECH	DATE	START	FINISH	REGULAR	O.T.	D.T.	
WM	12/06/10	11 AM					

TRAVEL TIME		HOURS	VEHICLE	MILEAGE
TECH	DATE			

[illegible]NAME Alfred K. Wood DATE _____



HEAT TREATMENT INSTRUCTIONS

PO# 1P6554

JOB NO.: 1J105032B, 1J105033B, 1J105034B CUSTOMER: Paramount DATE: Dec. 6/10

COMPONENT DESCRIPTION: Piping

DWG. NO. AND LINE NO.	DIAMETER	THICKNESS	MATERIAL	LENGTH	WEIGHT
	NPS 2", 3", 1" & 1.5"	0.154" - 0.600"	SA106B, SA333-6		

TYPE OF HEAT TREATMENT: STRESS RELIEF P-No. 1

HEATING

Temperature to be raised from 800°F (427°C) to 1100°F (594°C) at a maximum rate of 400 °F (°C) per hour. NOTE: THIS VALUE MUST NEVER EXCEED 400°F (222°C) PER HOUR.

[Calculated rate = 400 degrees F/hr. (222 degrees C/hr.) Divided by the maximum metal thickness of the shell or head plate in inches]

HOLDING

Temperature to be held at a minimum of 1150°F (621°C) for 60 minutes.

[Holding time to be determined by Table UCS-56 for Nominal Thickness as specified in UW-40(f)]

COOLING

Temperature to be lowered from 1100°F (594°C) to 800°F (427°C) at a maximum rate of 500 °F (°C) per hour. NOTE: THIS VALUE MUST NEVER EXCEED 500°F (278°C) PER HOUR.

[Calculated rate = 500 degrees F/hr. (278 degrees C/hr.) Divided by the maximum metal thickness of the shell or head plate in inches]

From 800°F (427°C) items may be cooled in still air.

Additional requirements:

- ♦ Job number and description required on heat treatment charts along with the operator's signature & date.
- ♦ Reporting of thermocouple attachment method and location, and verification of furnace thermocouple calibration is required.
- ♦ A sufficient number of thermocouples shall be located to control and maintain uniform distribution of temperature on all vessels and parts. Thermocouples shall be directly attached to the item or provision shall be made for thermocouple placement at bottom, centre and top of the furnace charge in accordance with the ASME Code.
- ♦ During the heating period, there shall not be a greater variation in temperature throughout the portion of the vessel being heated than 250°F (139°C) within any 15 ft. (4.6 m) interval of length. An adequate number of thermocouples must be used to ensure this Code requirement is met. This limitation is also applicable to the temperature variations between the different thicknesses of various vessel components.
- ♦ During the holding period, there shall not be a greater difference than 150°F (83°C) between the highest and lowest temperature throughout the portion of the vessel being heat treated, except where the range is further limited by these instructions.
- ♦ If Capacitor Discharge welding is used to attach thermocouples an ASME Code Section IX Welding Procedure Specification is required (WPS qualification is not required), and the energy output must be limited to 125 Watt-Seconds. No other welding is permitted on vessels or parts. [0.5 X Capacitance in farads X Voltage² = W-Sec.]
- ♦ The method of thermocouple removal shall not damage the heat treated item.

Quality Control Inspector Signature: *For Beath*Date: *Dec 6/10*

Thermocouple Attachment Method:

Location(s):

Furnace Heat Number: *22757*Furnace Operator Signature: *S Muller*Date: *DEC 06, 10*

NORWELD STRESS LTD.

CERTIFICATE OF CALIBRATION

Owner <u>Norweld Stress</u>	Job No.	Certificate No. <u>0267</u>
--------------------------------	---------	--------------------------------

Instrument Model <u>Yokogawa</u>	Serial No. <u>12A343397</u>
Range: ☒ 0-2000°F ☐ Other	Sensor Type: ☒ K ☐ Other
Environmental Conditions: Temperature <u>19</u> °C	Humidity <u>60</u> %
Date of Cal. <u>Oct 05, 2010</u>	Next Cal. Due <u>JAN 05, 2011</u>

INSTRUMENT USED TO PERFORM CALIBRATION

Certificate No. 564290-00-1 Serial No. 3011329 Next Cal. Due June 07, 2011

CALIBRATION DATA

ALL ENTRIES ARE °F UNLESS OTHERWISE NOTED

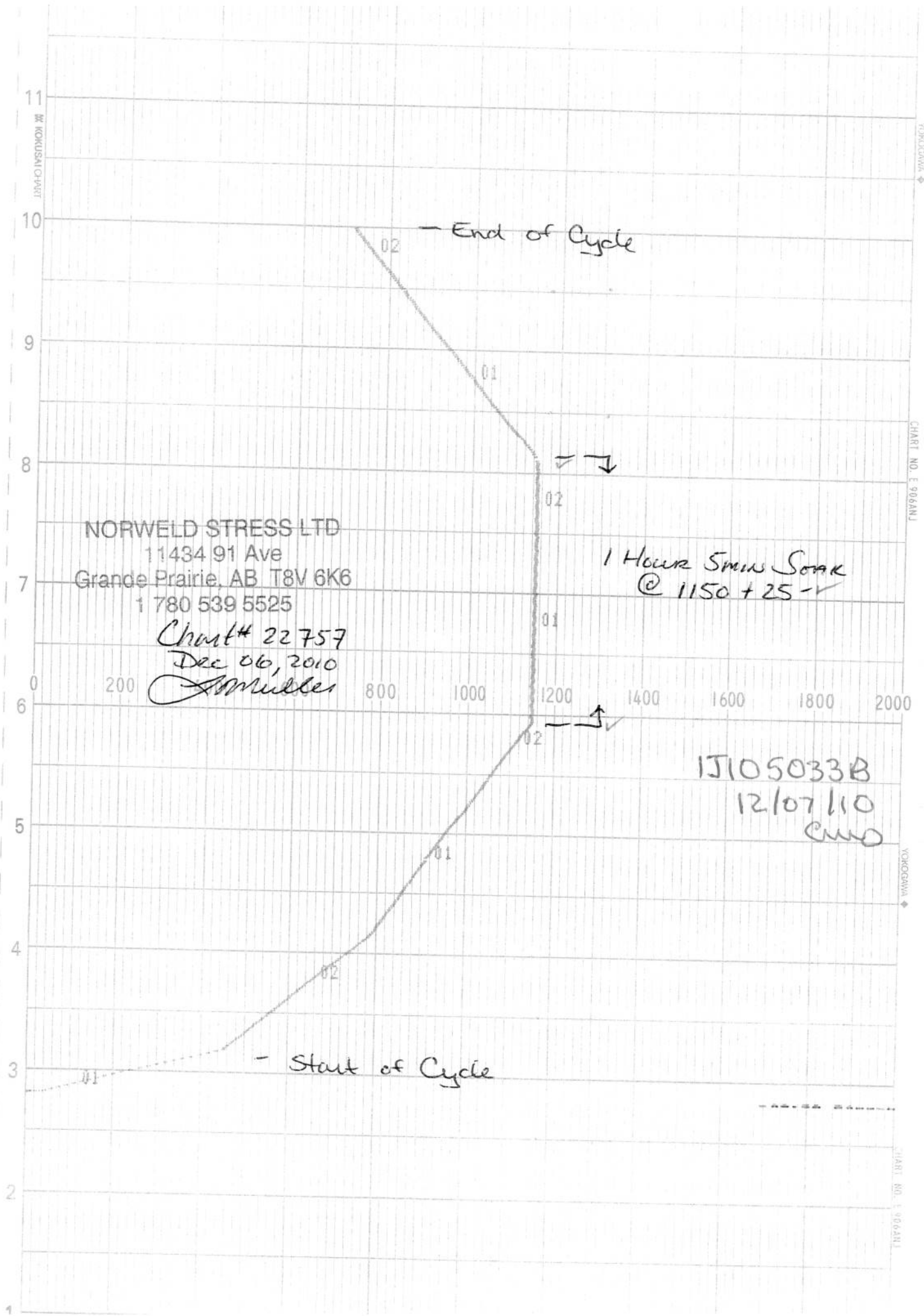
Signal Input	As Found	As Left	Accuracy (Tolerance)
Test Temp. "a" <u>200</u>	<u>200</u>	<u>200</u>	± <u>6</u>
Test Temp. "b" <u>500</u>	<u>501</u>	<u>501</u>	± <u>6</u>
Test Temp. "c" <u>700</u>	<u>701</u>	<u>701</u>	± <u>6</u>
Test Temp. "d" <u>1000</u>	<u>1001</u>	<u>1001</u>	± <u>6</u>
Test Temp. "e" <u>1400</u>	<u>1401</u>	<u>1401</u>	± <u>6</u>

CONDITION FOUND: ☒ In Tolerance ☐ Out of Tolerance

I, LEE MULLER (print name) certify that the above work was performed and that calibration was within Norweld Stress Ltd. quality assurance guidelines.



Signature L Muller
 No # 9
 Employee No.
Grande Prairie, Alberta
 Office





HYDRO TEST REPORT

JOB # 1J105033B

Date of Test: December 08, 2010

Job Description: Combo Piping

Check Box ☐ Test Witnessed by ABSA

Name of ABSA Inspector

PRE TEST INFORMATION

ACTUAL TEST INFORMATION

Test Medium:

Water

Time On:

09:00 am

Ambient Temperature

70F

Time Off:

09:15 am

Specific Test Pressure

1100 psi

Actual Test Pressure

1100 psi

Specified Test Hold Time

15 min.

Actual Hold Time

15 min.

Chart Recorder #

PT-26

Calibration Date

12/28/09

Test Gauge Number (s)

DYNW-205

Test Gauge Range

0-2000 psi

Gauge Calibration Date

04/07/10

Remarks:

Claude McDonald QCM

QC Manager or QC Inspector

Test Performed by: Richard Marshall

Certificate of Calibration

Report number Arkane-Cal Report05073

ARKANE WORKS

Manufacturer	Model	Gauge Number	Serial Number	Calibration Date	Expiration Date
Mercury	MERCURY 1500 PSI	DYNACORP-783763-S	PT-26 783763	28/12/2009 3:45:23 PM	28/12/2010 3:45:23 PM

All instrument calibrations are verified for accuracy before they are shipped. The recommended calibration interval for this instrument is 12 months from the date of verification.

As Received Condition:

In tolerance

As Left Condition:

In tolerance

All calibrations are performed in a controlled environment by qualified personnel using instrumentation and methods which guarantee that specifications claimed are reliable. Calibrations conform to ANSI/NCSS 2540-1-1994, MIL-STD 45662A, 10CFR21 and 10CFR50 when specified by customer documentation. Laboratory ambient conditions throughout this calibration were:

Temperature 20 to 24° C
Humidity 30 to 55% RH
Pressure 100 to 103 kPa

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology through the following report numbers:

Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
Crystal Engineering	AX33-36/5000PSI	3471-738613	169875	31/03/2010 12:00:00 AM	$\pm(0.05\% \text{ of Reading} + 0.005\% \text{ of F.S.})$

This certificate shall not be reproduced except in full, without written approval.

As Received Test Results

1500 PSI

Reference Reading	Gauge Reading	Condition	Difference	Difference (% of Reading)	Allowable Tolerance
0.0	0	Pass	0.0		30.0
301.9	300	Pass	-1.9	-0.63%	30.0
598.5	600	Pass	1.5	0.25%	15.0
896.4	900	Pass	3.6	0.40%	15.0
1195.6	1200	Pass	4.4	0.37%	30.0
1492.9	1500	Pass	7.1	0.47%	30.0
741.9	750	Pass	8.1	1.08%	15.0
0.0	0	Pass	0.0		30.0

As Left Test Results

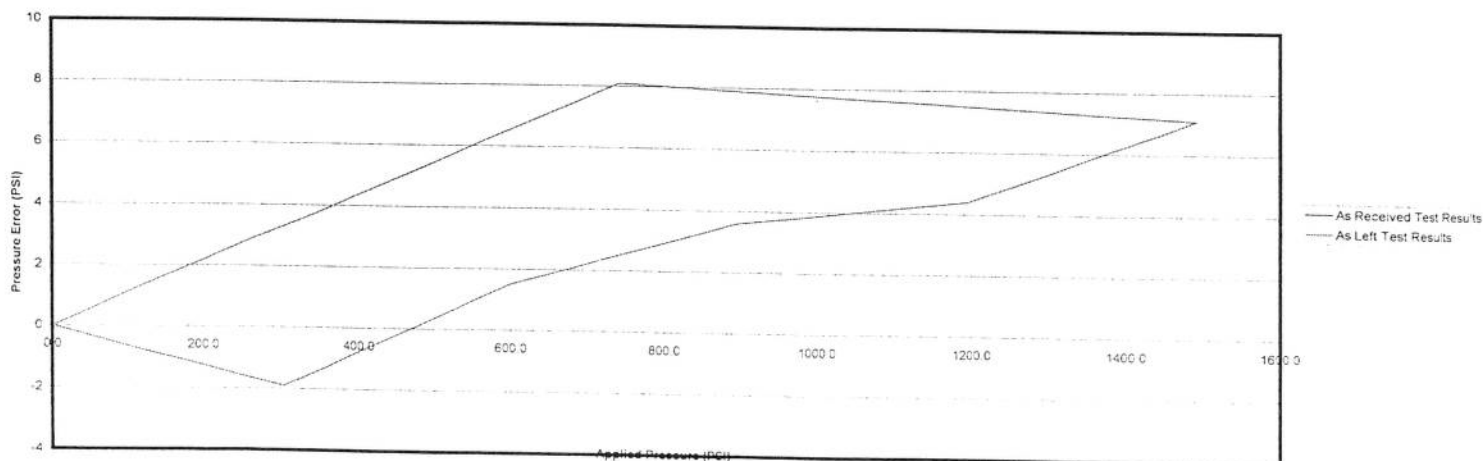
1500 PSI

Reference Reading	Gauge Reading	Condition	Difference	Difference (% of Reading)	Allowable Tolerance
0.0	0	Pass	0.0		30.0
301.9	300	Pass	-1.9	-0.63%	30.0
598.5	600	Pass	1.5	0.25%	15.0
896.4	900	Pass	3.6	0.40%	15.0
1195.6	1200	Pass	4.4	0.37%	30.0
1492.9	1500	Pass	7.1	0.47%	30.0
741.9	750	Pass	8.1	1.08%	15.0
0.0	0	Pass	0.0		30.0

Laboratory Representative
Gwen Thetrault or Darren Miller

Quality Representative
Ted Hornsby or Darren Miller

Pressure Error Graph for Gauge # DYNACORP-783763-S, S/N MERCURY 1500 PSI, Report # Arkane-Cal Report05073



Certificate of Calibration

Report number Arkane-Cal Report08911

ARKANE WORKS

Manufacturer	Model	Company / Unit	Gauge Number	Serial Number	Calibration Date	Expiration Date
WIKA	PG-2,000PSI	DYNACORP	DYNW DYNA-205	DYNW 205	07/04/2010	07/04/2011

All instrument calibrations are verified for accuracy before they are shipped. The recommended calibration interval for this instrument is 12 months from the date of verification.

As Received Condition:

In tolerance

As Left Condition:

In tolerance

All calibrations are performed in a controlled environment by qualified personnel using instrumentation and methods which guarantee that specifications claimed are reliable. Calibrations conform to ANSI/NCSL Z540-1-1994, MIL-STD 45662A, 10CFR21 and 10CFR50 when specified by customer documentation. Laboratory ambient conditions throughout this calibration were:

Temperature 20 to 24° C
Humidity 30 to 55% RH
Pressure 100 to 103 kPa

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology through the following report numbers:

Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
Crystal Engineering	10KPSIXP21	66468	110515	4-Mar-11	0-20% of FS: +/- 0.02% FS, 20%-100% of FS: +/- 0.1% reading

As Received Test Results

This certificate shall not be reproduced except in full, without written approval.

2000 PSI

Reference Reading	Gauge Reading	Condition	Difference	Difference (% of Reading)	Allowable Tolerance
0	0	Pass	0		20
494	500	Pass	6	1.20%	20
998	1000	Pass	2	0.20%	20
1494	1500	Pass	6	0.40%	20
2008	2000	Pass	-8	-0.40%	20
0	0	Pass	0		20

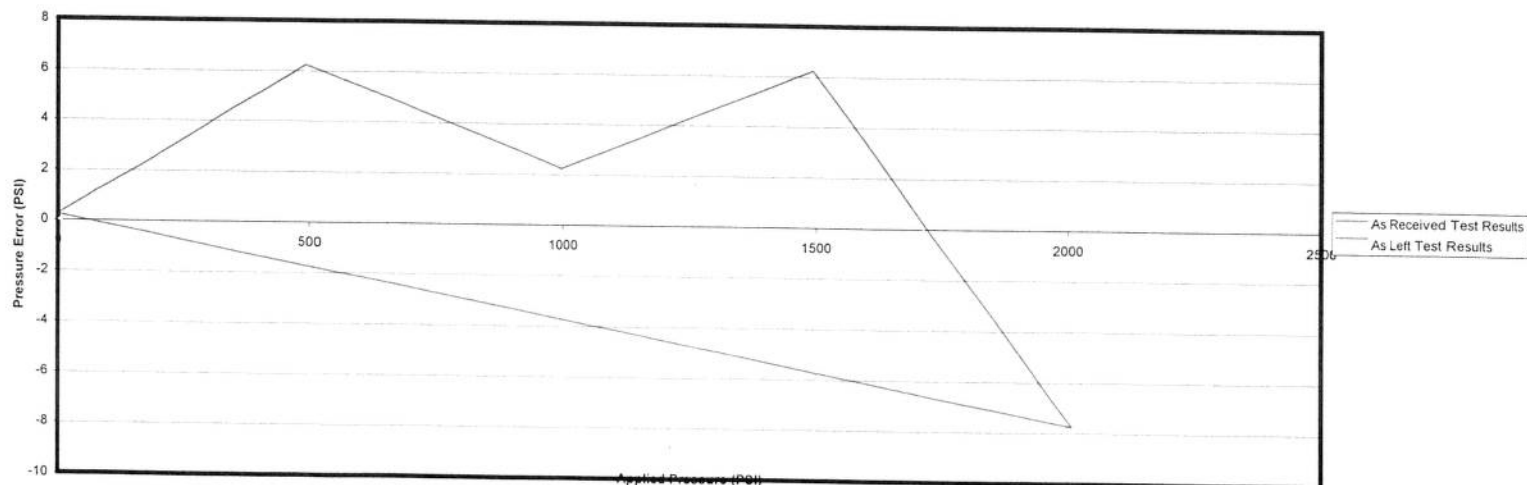
As Left Test Results

2000 PSI

Reference Reading	Gauge Reading	Condition	Difference	Difference (% of Reading)	Allowable Tolerance
0	0	Pass	0		20
494	500	Pass	6	1.20%	20
998	1000	Pass	2	0.20%	20
1494	1500	Pass	6	0.40%	20
2008	2000	Pass	-8	-0.40%	20
0	0	Pass	0		20

Laboratory Representative
Gwen T/Darren M/Julie G/Q Hatch

Pressure Error Graph for Gauge # DYNA-205, S/N PG-2,000PSI, Report # Arkane-Cal Report08911





PRESSURE TEST EXAMINATION GUIDE		1J105033B
PRESSURE TEST PREPARATION	Q.C. INSP.	
All punch list items corrected.	Cms	
Test blinds are of correct thickness.	Cms	
All items which could be damaged by test isolated or removed (control valves, safety valves, instruments, expansion joints, etc.)	Cms	
Equipment with internals (i.e. filters) that could be damaged is isolated as required.	Cms	
Vents and drains correctly installed.	Cms	
Open and Closed position of all valves verified.	Cms	
Shipping bars in place – bellows.	—	
Hanger stops in place.	—	
PRESSURE TEST COMPLETION	Q.C. INSP.	
All temporary blinds (blanks) removed.	Cms	
Temporary gaskets changed for correct gaskets.	Cms	
Temporary supports removed.	Cms	
Shipping bars removed from bellows.	—	
Spring hanger stops removed - cold setting checked.	—	
Pressure Relief Valves – “UV” or “V” symbol as applicable and at correct set pressure and capacity installed.	Cms	
Safety valve vents are correct size - adequately supported - drain holes and or weather hoods installed.	Cms	
Screens for pumps and compressors installed (initial start-up and permanent screens).	—	
Date: December 08, 2010		



HYDRO TEST REPORT

JOB # 1J105033B

Date of Test: December 14, 2010

Job Description: Combo Piping

Check Box ☒ Test Witnessed by ABSA

Name of ABSA Inspector

PRE TEST INFORMATION

ACTUAL TEST INFORMATION

Test Medium:

Water

Time On:

06:30 am

Ambient Temperature

70F

Time Off:

08:15 am

Specific Test Pressure

255 psi

Actual Test Pressure

255 psi

Specified Test Hold Time

60 min.

Actual Hold Time

105 min.

Chart Recorder #

PT-41

Calibration Date

12/28/09

Test Gauge Number (s)

DYNG-101

Test Gauge Range

0-1000 psi

Gauge Calibration Date

11/24/10

Remarks:

Claude McDonald QCM

QC Manager or QC Inspector

Test Performed by: Richard Marshall

Certificate of Calibration

Report number Arkane-Cal Report08909

ARKANE WORKS

Manufacturer	Model	Company / Unit	Gauge Number	Serial Number	Calibration Date	Expiration Date
MDI	GAUGETECH 1.000	DYNACORP	DYNG 102	PG-1000-02	07/04/2010	07/04/2011

All instrument calibrations are verified for accuracy before they are shipped. The recommended calibration interval for this instrument is 12 months from the date of verification.

As Received Condition: In tolerance

As Left Condition: In tolerance

All calibrations are performed in a controlled environment by qualified personnel using instrumentation and methods which guarantee that specifications claimed are reliable. Calibrations conform to ANSI/NCSL Z540-1-1994, MIL-STD 45662A, 10CFR21 and 10CFR50 when specified by customer documentation. Laboratory ambient conditions throughout this calibration were:

Temperature 20 to 24° C
Humidity 30 to 55% RH
Pressure 100 to 103 kPa

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology through the following report numbers:

Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
Crystal Engineering	10KPSIXP2I	66468	110515	4-Mar-11	0-20% of FS: +/- 0.02% FS, 20%-100% of FS: +/- 0.1% reading

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As Received Test Results

1000 PSI

Reference Reading	Gauge Reading	Condition	Difference	Difference (% of Reading)	Allowable Tolerance
0	0	Pass	0		10
252	250	Pass	-2	-0.80%	10
509	500	Pass	-9	-1.80%	10
760	750	Pass	-10	-1.33%	10
1005	1000	Pass	-5	-0.50%	10
0	0	Pass	0		10

As Left Test Results

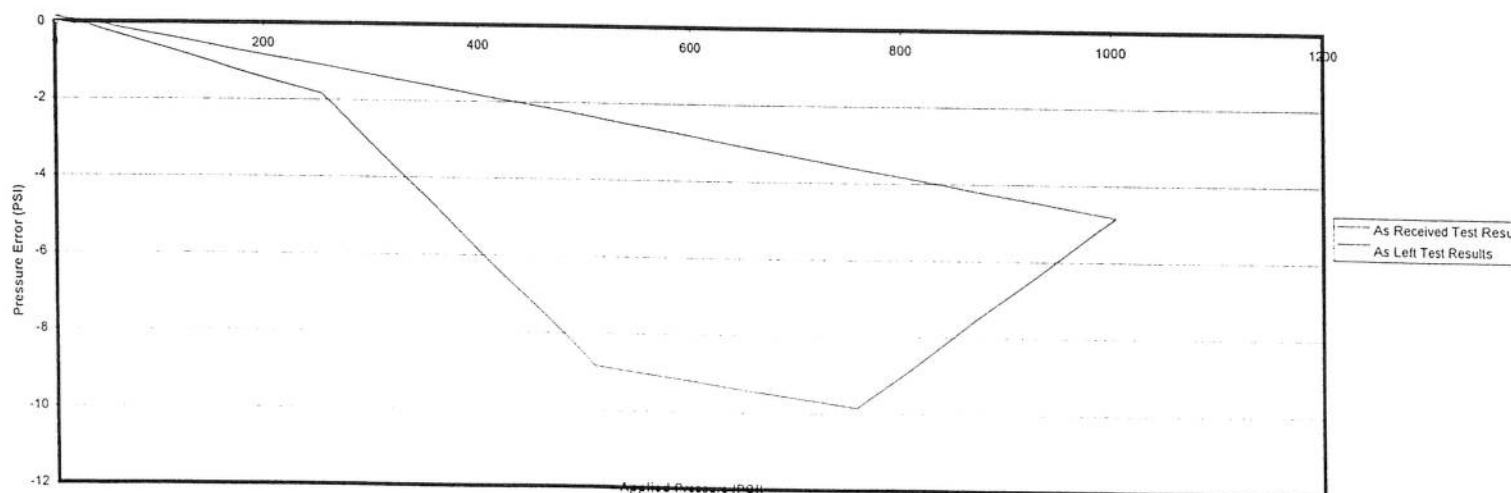
1000 PSI

Reference Reading	Gauge Reading	Condition	Difference	Difference (% of Reading)	Allowable Tolerance
0	0	Pass	0		
252	250	Pass	-2	-0.80%	
509	500	Pass	-9	-1.80%	
760	750	Pass	-10	-1.33%	
1005	1000	Pass	-5	-0.50%	
0	0	Pass	0		

Gwen Tetrault

Laboratory Representative
Gwen T/Darren M/Julie G/Q Hatch

Pressure Error Graph for Gauge # DYNG 102, S/N GAUGETECH-1,000, Report # Arkane-Cal Report08909



Certificate of Calibration

Report number Arkane-Cal Report05072

ARKANE WORKS

Manufacturer	Model	Gauge Number	Serial Number	Calibration Date	Expiration Date
Mercury	MERCURY 1000 PSI	DYNACORP-816334 S	PT-41 816334	28/12/2009 7:42:28 AM	28/12/2010 7:42:28 AM

All instrument calibrations are verified for accuracy before they are shipped. The recommended calibration interval for this instrument is 12 months from the date of verification.

As Received Condition:

In tolerance

As Left Condition:

In tolerance

All calibrations are performed in a controlled environment by qualified personnel using instrumentation and methods which guarantee that specifications claimed are reliable. Calibrations conform to ANSI/NCSL Z540-1-1994, MIL-STD 45662A, 10CFR21 and 10CFR50 when specified by customer documentation. Laboratory ambient conditions throughout this calibration were:

Temperature 20 to 24° C
Humidity 30 to 55% RH
Pressure 100 to 103 kPa

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology through the following report numbers:

Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
Crystal Engineering	AX33-36/5000PSI	3471-738613	169875	31/03/2010 12:00:00 AM	+/- (0.05% of Reading + 0.005% of F.S.)

As Received Test Results

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Reference Reading	Gauge Reading	Condition	Difference	Difference (% of Reading)	Allowable Tolerance
0.0	0	Pass	0.0	0.0%	20.0
253.5	250	Pass	-3.5	-1.40%	10.0
502.0	500	Pass	-2.0	-0.40%	10.0
748.9	750	Pass	1.1	0.15%	10.0
994.4	1000	Pass	5.6	0.56%	20.0
490.8	500	Pass	9.2	1.84%	10.0
0.0	0	Pass	0.0	0.0%	20.0

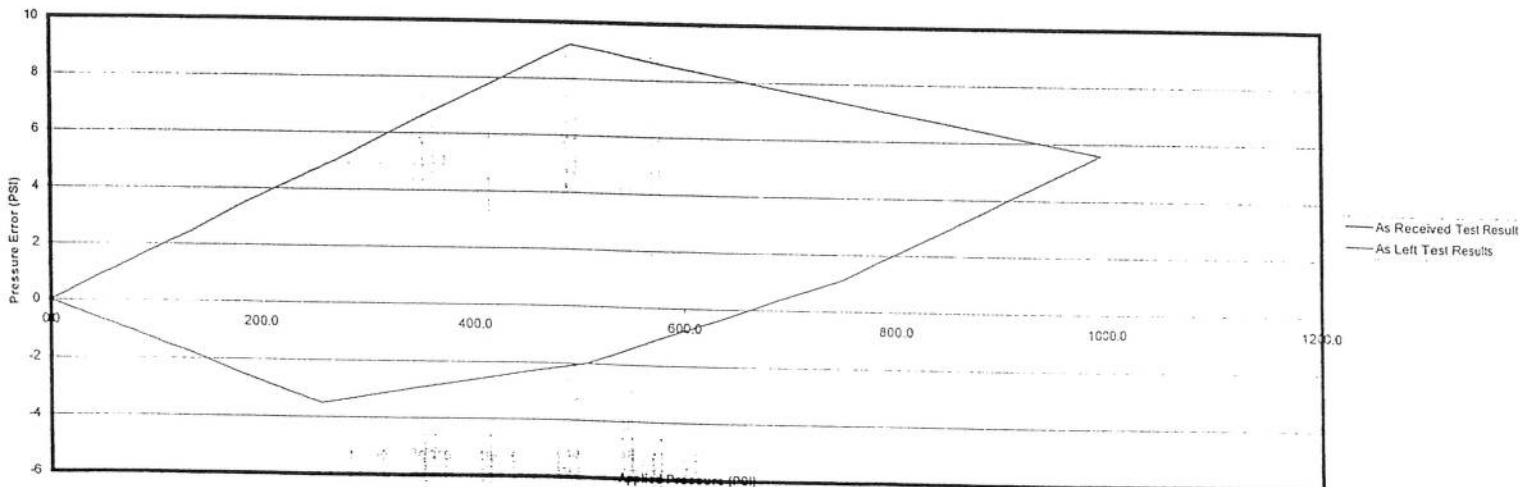
As Left Test Results

Reference Reading	Gauge Reading	Condition	Difference	Difference (% of Reading)	Allowable Tolerance
0.0	0	Pass	0.0	0.0%	20.0
253.5	250	Pass	-3.5	-1.40%	10.0
502.0	500	Pass	-2.0	-0.40%	10.0
748.9	750	Pass	1.1	0.15%	10.0
994.4	1000	Pass	5.6	0.56%	20.0
490.8	500	Pass	9.2	1.84%	10.0
0.0	0	Pass	0.0	0.0%	20.0

Laboratory Representative
Gwen Thetrault or Darren Miller

Quality Representative
Ted Hornsby or Darren Miller

Pressure Error Graph for Gauge # DYNACORP-816334-S, S/N MERCURY 1000 PSI, Report # Arkane-Cal Report05072





PRESSURE TEST EXAMINATION GUIDE		1J105033B
PRESSURE TEST PREPARATION	Q.C. INSP.	
All punch list items corrected.	Cms	
Test blinds are of correct thickness.	Cms	
All items which could be damaged by test isolated or removed (control valves, safety valves, instruments, expansion joints, etc.)	Cms	
Equipment with internals (i.e. filters) that could be damaged is isolated as required.	Cms	
Vents and drains correctly installed.	Cms	
Open and Closed position of all valves verified.	Cms	
Shipping bars in place – bellows.	—	
Hanger stops in place.	—	
PRESSURE TEST COMPLETION	Q.C. INSP.	
All temporary blinds (blanks) removed.	Cms	
Temporary gaskets changed for correct gaskets.	Cms	
Temporary supports removed.	Cms	
Shipping bars removed from bellows.	—	
Spring hanger stops removed - cold setting checked.	—	
Pressure Relief Valves – “UV” or “V” symbol as applicable and at correct set pressure and capacity installed.	Cms	
Safety valve vents are correct size - adequately supported - drain holes and or weather hoods installed.	Cms	
Screens for pumps and compressors installed (initial start-up and permanent screens).	—	
Date: December 14, 2010		



HYDRO TEST REPORT

JOB # 1J105033B

Date of Test: December 08, 2010

Job Description: Combo Piping

Check Box ☒ Test Witnessed by ABSA

Name of ABSA Inspector

PRE TEST INFORMATION

ACTUAL TEST INFORMATION

Test Medium:

Water

Time On:

1:15 pm

Ambient Temperature

70F

Time Off:

1:30 pm

Specific Test Pressure

7500 psi

Actual Test Pressure

7500 psi

Specified Test Hold Time

15 min.

Actual Hold Time

15 min.

Chart Recorder #

PT-40

Calibration Date

02/18/10

Test Gauge Number (s)

DYNA-1005

Test Gauge Range

0-10000 psi

Gauge Calibration Date

09/13/10

Remarks:

Claude McDonald QCM

QC Manager or QC Inspector

Test Performed by: Richard Marshall

PT-40

ARKANE WORKS

Certificate of Calibration

Report number Arkane-Cal Report08148

Manufacturer	Model	Gauge Number	Serial Number	Calibration Date	Expiration Date
Barton	0-10,000	DYNACORP-265C-789	265C-789	29/12/2009 8:16:45	29/12/2010 8:16:45

All instrument calibrations are verified for accuracy before they are shipped. The recommended calibration interval for this instrument is 12 months from the date of verification.

As Received Condition:

In tolerance

As Left Condition:

In tolerance

All calibrations are performed in a controlled environment by qualified personnel using instrumentation and methods which guarantee that specifications claimed are reliable. Calibrations conform to ANSI/NC SL Z540-1-1994, MIL-STD 45662A, 10CFR21 and 10CFR50 when specified by customer documentation.

Laboratory ambient conditions throughout this calibration were:

Temperature 20 to 24° C
Humidity 30 to 55% RH
Pressure 100 to 103 kPa

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology through the following report numbers:

Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
Crystal Engineering	10KPSIXP2I	762122	103634	14/09/2010 0:00:00	0-20% of FS: +/- 0.02% FS, 20%-100% of FS: +/- 0.1% reading

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As Received Test Results

10000 PSI

Reference Reading	Gauge Reading	Condition	Difference	Difference (% of Reading)	Allowable Tolerance
0	0	Pass	0		200
2534	2500	Pass	-34	-1.36%	100
5063	5000	Pass	-63	-1.26%	100
7578	7500	Pass	-78	-1.04%	200
10076	10000	Pass	-76	-0.76%	200
5004	5000	Pass	-4	-0.08%	100
0	0	Pass	0		200

As Left Test Results

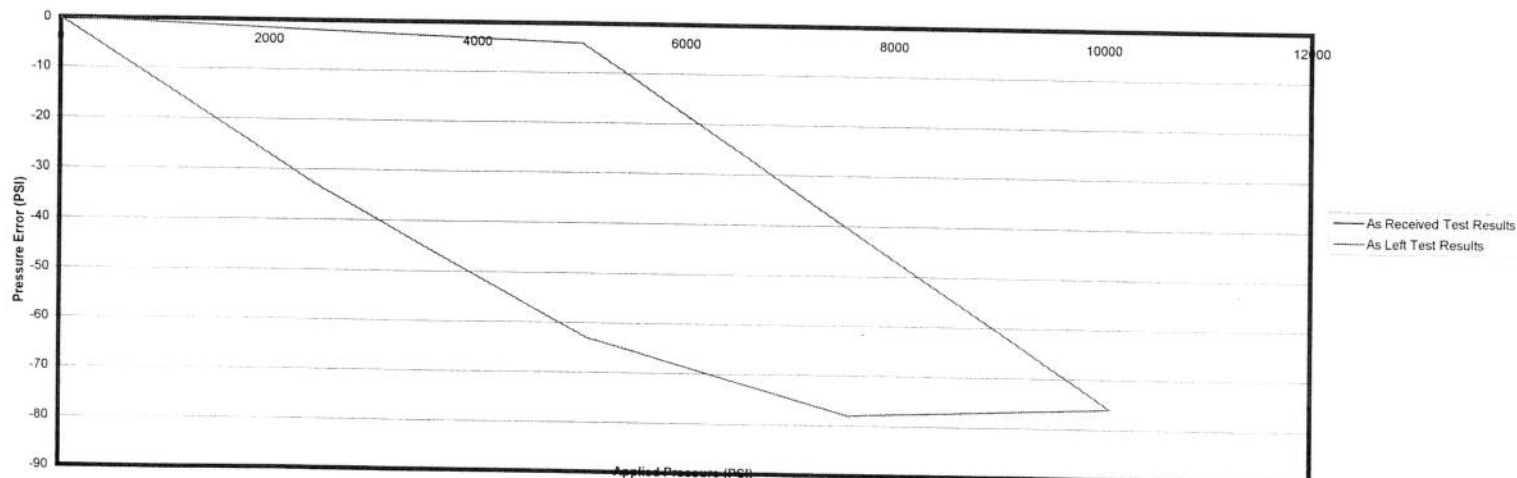
10000 PSI

Reference Reading	Gauge Reading	Condition	Difference	Difference (% of Reading)	Allowable Tolerance
0	0	Pass	0		200
2534	2500	Pass	-34	-1.36%	100
5063	5000	Pass	-63	-1.26%	100
7578	7500	Pass	-78	-1.04%	200
10076	10000	Pass	-76	-0.76%	200
5004	5000	Pass	-4	-0.08%	100
0	0	Pass	0		200

Laboratory Representative
Gwen Thetrault or Darren Miller

Quality Representative
Ted Hornsby or Darren Miller

Pressure Error Graph for Gauge # DYNACORP-265C-789, S/N 0-10,000, Report # Arkane-Cal Report08148



Certificate of Calibration

Report number Arkane-Cal Report10536

ARKANE WORKS

Manufacturer	Model	Company / Unit	Gauge Number	Serial Number	Calibration Date	Expiration Date
WIKA	PG-10.000PSI	DYNACORP	DYNA-1005	PG-10.000 PSI	13/09/2010	13/09/2011

All instrument calibrations are verified for accuracy before they are shipped. The recommended calibration interval for this instrument is 12 months from the date of verification.

As Received Condition:

In tolerance

As Left Condition:

In tolerance

All calibrations are performed in a controlled environment by qualified personnel using instrumentation and methods which guarantee that specifications claimed are reliable. Calibrations conform to ANSI/NCSL Z540-1-1994, MIL-STD 45662A, 10CFR21 and 10CFR50 when specified by customer documentation. Laboratory ambient conditions throughout this calibration were:

Temperature 20 to 24° C
Humidity 30 to 55% RH
Pressure 100 to 103 kPa

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology through the following report numbers:

Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
Crystal Engineering	10KPSIXP2I	66468	110515	4-Mar-11	0-20% of FS: +/- 0.02% FS, 20%-100% of FS: +/- 0.1% reading

As Received Test Results

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10000 PSI

Reference Reading	Gauge Reading	Condition	Difference	Difference (% of Reading)	Allowable Tolerance
0	0	Pass	0		100
2500	2500	Pass	0	0.00%	100
4996	5000	Pass	4	0.08%	100
7494	7500	Pass	6	0.08%	100
9997	10000	Pass	3	0.03%	100
1	0	Pass	-1		100

As Left Test Results

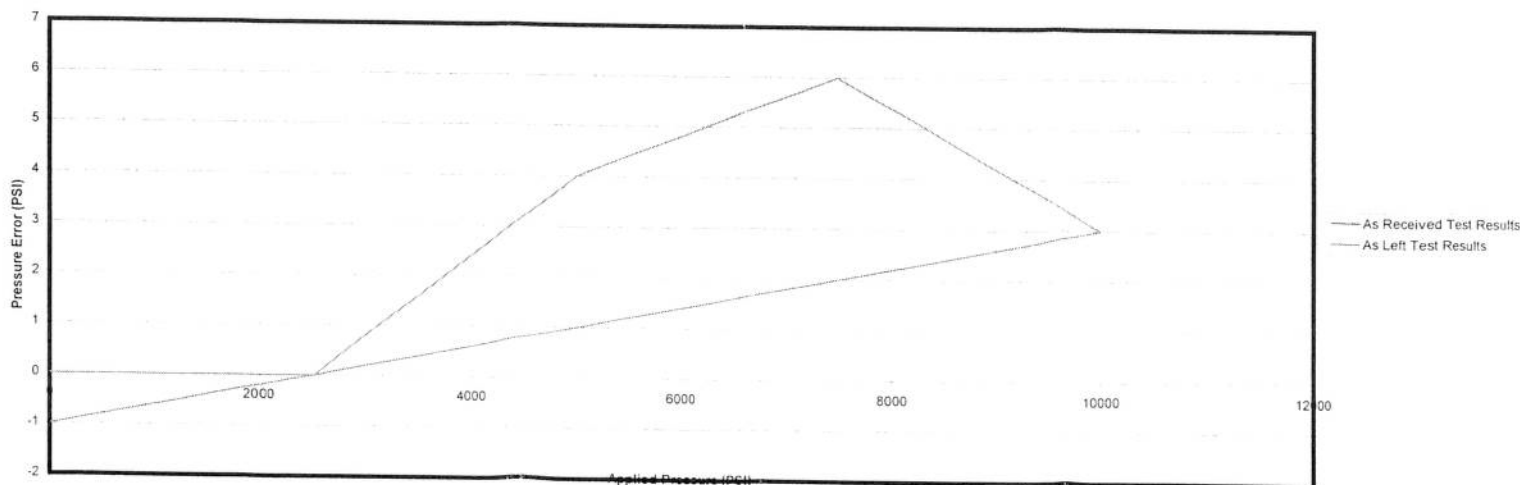
10000 PSI

Reference Reading	Gauge Reading	Condition	Difference	Difference (% of Reading)	Allowable Tolerance
0	0	Pass	0		100
2500	2500	Pass	0	0.00%	100
4996	5000	Pass	4	0.08%	100
7494	7500	Pass	6	0.08%	100
9997	10000	Pass	3	0.03%	100
1	0	Pass	-1		100

Gwen Thetraul

Laboratory Representative
Gwen T/Darren M/Julie G/Q Hatch

Pressure Error Graph for Gauge # DYNA-1005, S/N PG-10,000PSI, Report # Arkane-Cal Report10536





PRESSURE TEST EXAMINATION GUIDE		1J105033B
PRESSURE TEST PREPARATION	Q.C. INSP.	
All punch list items corrected.	Cms	
Test blinds are of correct thickness.	Cms	
All items which could be damaged by test isolated or removed (control valves, safety valves, instruments, expansion joints, etc.)	Cms	
Equipment with internals (i.e. filters) that could be damaged is isolated as required.	Cms	
Vents and drains correctly installed.	Cms	
Open and Closed position of all valves verified.	Cms	
Shipping bars in place – bellows.	—	
Hanger stops in place.	—	
PRESSURE TEST COMPLETION	Q.C. INSP.	
All temporary blinds (blanks) removed.	Cms	
Temporary gaskets changed for correct gaskets.	Cms	
Temporary supports removed.	Cms	
Shipping bars removed from bellows.	—	
Spring hanger stops removed - cold setting checked.	—	
Pressure Relief Valves – “UV” or “V” symbol as applicable and at correct set pressure and capacity installed.	Cms	
Safety valve vents are correct size - adequately supported - drain holes and or weather hoods installed.	Cms	
Screens for pumps and compressors installed (initial start-up and permanent screens).	—	
Date: December 08, 2010		