CANALTA CONTROLS LTD.

Meter Tube / Orifice Fitting Inspection Report

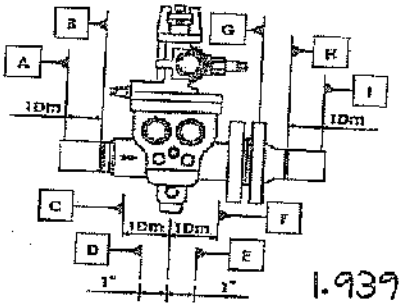
FITTING: Part Number 260RFDC0480-W00WFTT Serial Number DO20273 Date APR 4/11

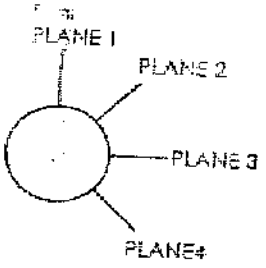
Body Heat Number H5074 Top Housing Heat Number 00563 Overall Length 10 5/8"

Line Size 2" Schedule 80 ANSI Class 600 Flange Type RFxW Material WCB

METER TUBE: Part Number

Overall Length 5744 U/S Length 31 D/S Length 26 1/4 Plate To Conditioner/Vanes 16





1.939

INSPECTED TO:

AGA 3, 2nd ED. (85 Ed.) ☐

AGA 3,3rd / 4th ED. (92 / 00 Ed.) [X]

METER TUBE / ORIFICE FITTING INTERNAL DIAMETER:

PLANE	UPSTREAM POINTS A	B	C	D	E	F	DOWNSTREAM POINTS G	H	I
1	1.940	1.940	1.938	1.937	1.938	1.938	1.944	1.934	1.939
2	1.940	1.938	↑	↑	↑	↑	↓	1.937	1.938
3	1.939	1.945						1.936	1.938
4	1.938	1.946	↓	↓	↓	↓		1.939	1.941
AVERAGE	1.939	1.942	1.938	1.937	1.938	1.939	1.944	1.936	1.939
TEMP.	66.2	64.3	70	70	70	70	62.9	65.9	64.9
ROUGHNESS	120	120	110	110	110	110	120	120	120
Q.C Inspector	mm	mm	JW	JW	JW	JW	JT	JT	JT
	mm	mm					mm	mm	mm

Date :

PRESSURE TAP TESTS:

0.375" [X]

0.500" ☐

	TOP U/S RIGHT	U/S LEFT	D/S RIGHT	D/S LEFT	BOTTOM U/S RIGHT	U/S LEFT	D/S RIGHT	D/S LEFT
TAP SIZE ± 0.016"	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
TAP LOCATION	-4	-2	-6	-6	-5	-5	-2	-3
PRESSURE TEST	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
INSPECTOR	JW							

ECCENTRICITY:

	RIGHT	LEFT		TOP	BOTTOM
HORIZONTAL			VERTICAL		
HORIZONTAL TOLERANCE	0.006		VERTICAL TOLERANCE	0.023	
HORIZONTAL ECC.	0.002		VERTICAL ECC.	0.005	
INSPECTOR	JW		Date APR 5/11		

PLATE SEAL GAP AND ORIFICE PLATE:

Plate Seal Gap 0.562" [X] 0.688" ☐ 0.813" ☐ 0.875" ☐

	Top	Bottom	Right	Left
Seal gap width +0.007/-0.003"	0.561	0.561	0.561	0.561
ORIFICE PLATE THICKNESS				
PLATE WITH SEAL				
INSPECTOR				

Plate Carrier Width 4.123

Plate Carrier Height 5.520

Orifice Plate Heat Number 2XWB

Orifice Plate Bore 1.000

Orifice Plate Material 304SS

Edge Sharpness(AGA 2.4.2): Pass [X] Fail ☐

Inspector JX Date APR 15 2011

HYDRO TEST RESULTS: Station 12

Test Pressure (PSI) 2240 Duration (minutes) 120 Technician JV Date 4/14/11 Witness JV PASS [X] FAIL ☐

PNEUMATIC TEST RESULTS: Station 11

Test Pressure (PSI) 960 Duration (minutes) 15 Technician JV Date Witness JV PASS [X] FAIL ☐

BLANK PLATE SEAL TEST RESULTS: Max. Pressure/Vacuum Applied 1500 Station 10 Date

Vacuum applied to D/S ☐ Pressure Applied to U/S [X] PASS [X] FAIL ☐ Technician JV Witness JV

Canalta Controls Ltd.
8770-85 Ave
Red Deer, AB T4P 1A5
Canada
Ph#(403) 342-4484
Fax: (403) 348-7110
email: canalta@canaltacontrols.com

DUAL CHAMBER ORIFICE FITTING DATASHEET

GENERAL	1	TAG NO.		
	2	LINE NO.		
	3	LINE SIZE/SCH.		2" SCH80
	4	DESIGN STANDARD		API 14.3/AGA 3 4th (2000) Ed, Part 2
	5	QUANTITY		1
ORIFICE PLATE	6	MATERIAL		304SS
	7	THICKNESS	IN	0.125
	8	BETA (β)= d/D (Installed)		0.52
	9	BORE DIA "d"	IN	1.000
	10	MAX ALLOWABLE BETA (β)= d/D		0.75
	11	MAX ALLOWABLE ORIFICE BORE DIA "d"	IN	1.375
	12	VENT	DRAIN	No / No
	13	SEAL RING	MATERIAL	K-STYLE / 316SS
	14	PLATE HOLDER MATERIAL		4130 Carbon Steel
ORIFICE FITTING	15	BODY MATERIAL		A216 WCB
	16	BODY SIZE & RATING		2" 600RF
	17	SEAL GAP		0.562"
	18	TRIM MATERIAL		4130 CS
	19	BODY STYLE		Flange x Weld
	20	SEAT STYLE		Grease
	21	TAP HOLE DIA	IN	0.375
	22	INSIDE DIAMETER	IN	1.939
	23	STUD BOLT MATERIAL		A193 B7M
	24	NUT MATERIAL		A194 2HM
	25	DESIGN STANDARD		B16.34-2009
	26	TAP LOCATION		1.000" From Plate Face
	27	TAP CONNECTION STYLE		1/2" NPT
	28	SHAFT ORIENTATION		~~LEFT~~ RIGHT
	29	NO. OF TAPS		4
METER TUBE	30	TUBE MATERIAL		A106B
	31	OUTER CONNECTIONS		2" 600RF
	32	FLANGE MATERIAL		A105N
	33	STUD BOLT MATERIAL		A193 B7M
	34	FLOW CONDITIONER	TYPE/MATERIAL	Yes / CPA TDR/316SS
	32	CONDITIONER/VANE CONNECTION		2"-PINNED
	35	NUT MATERIAL		A194 2HM
	36	GASKET MATERIAL		304SS Flexitallic Gasket
	37	DESIGN STANDARD		B31.3-2008
SERVICE CONDITIONS	38	FLUID AND STATE		
	39	CORROSIVE COMPONENT		
	40	MIN FLOW:	MAX FLOW:	
	41	NORMAL FLOW:		
	42	INLET PRESS. (PSIG)	DESIGN PRESS. (PSIG)	
	43	MAX DIFFERENTIAL	" W.C	
	44	DESIGN TEMP °F	OPERATING TEMP. °F	
	45	S.G		

Drawings Approved For Construction
Signature:
Date:

Customer: Flint Process
Customer PO#:
Ref#:

Quote #: SQ1378
SHT: 1 of 1
WO #: 861
Line ID:

Drawing: DCA-PC-F

DIMENSIONS (INCHES)	
OAL	57
UL1	15
UL2	19
DL	26
N1	12
N2	6
N3	0
N4	0

Overall Length Tolerance +/- 1/4"

Non-Destructive Testing

Radiography	10% (by shop rate) ASME B31.3 Normal
MPI	No
Liquid Penetrant	No
Hardness	No
Hydrotest (PSIG)	1 Hour @ 2220
Corrosion Allowance	1/16"
PWHT	No
CWP (PSIG)	1480

WPS
- [x] GGL-1N (RT/LT-FCAW)
- [ ] GGL5 (Low Temp-SMAW)
- [ ] GGL6 (Reg Temp-SMAW)

Applicable Customer Specs:
None

RIGHT HAND

CONNECTIONS	N1	N2	N3	N4
STYLE	T.O.L	T.O.L		
SIZE	3/4"	1"		
RATING	3000#	3000#		
ORIENTATION	0°	0°		
MATERIAL	A105N	A105N		

NOTES:
Stock Part #

Rev	Description	By	Date
0	Issued For Construction	DMC	8-Mar-2011

CUSTOMER APPROVAL
Signature:
Printed Name: Antonio M.

VMA	VELMURUGAN ALLOYS (P) LTD., 65 / 2 - A,B & C, PUDUPALAYAM B.P.O., AVINASHI Tk, COIMBATORE - 641 654.	TEST CERTIFICATE (EN 10204 - 3.1B)	TC NO. : VM/B/2985 DATE : 28.12.04
CUSTOMER CANALTA CONTROL VALVES, 6770-65TH AVENUE, RED DEER, ALBERTA, CANADA - T4P 1A5		SPECIFICATION REFERENCE 1. ASTM A216 WCB - 2004 Edition 2. NACE MR0175	MELT No. H5074 VENDOR MARK FLS
PURCHASE ORDER NO. TWP - 0412C		ORDER ACCEPTANCE NO. OA - 65	DATE OF POURING 11.10.04

CHEMICAL COMPOSITION %

SPECIFICATION	C	Si	S	P	Mn	Ni	Cr	Mo	V	Cu	*RE	
Minimum	–	–	–	–	–	–	–	–	–	–	–	
Maximum	0.30	0.60	0.045	0.040	1.00	0.50	0.50	0.20	0.03	0.30	1.0	
Achieved	0.20	0.37	0.016	0.019	0.85	0.12	0.25	0.03	0.006	0.02	0.41	

HEAT TREATMENT

NORMALISING : Temperature raised to 920°C, Soaked for 2 hours and then atmospheric air cooled.

MECHANICAL PROPERTIES

SPECIFICATION	Y.S (ksi)	UTS (ksi)	% ELONG.	% RED. IN AREA	NOTCH TOUGHNESS (at °C) J		BEND TEST		HARDNESS (BHN)
					Values	Avg.	ANGLE	D	
Minimum	36	70	22	35	–	–	–	–	–
Maximum	–	95	–	–	–	–	–	–	237
Achieved	42.2	74.2	37.0	64.0	–	–	–	–	144

DETAILS OF CASTINGS

Sl.No	DESCRIPTION	DRAWING No./ REV.	PART No.	POURED QTY.
1	2"Model DC Body	260DC04 - TT / 09		3 Nos.
2	3"Model DC Top Housing	360DC14 / 10		1 No.

REMARKS :

1. The above stated ksi values have been calculated based on original tested N/mm^2 values.
2. * RE = Ni + Cr + Mo + V + Cu .

CERTIFIED THAT

1. THE ABOVE GIVEN DETAILS ARE CORRECT.
2. THE MATERIAL CONFIRMS TO ABOVE SPECIFICATION

Prepared by:	Checked by : Chemist	A.A.NATARAJAN AUTHORISED WORK'S INSPECTOR/ MANAGER - QUALITY ASSURANCE

	FLOW LINK SYSTEMS (P) LTD FOUNDRY UNIT-II 65/2-A,B & C, PUDUPALAYAM B.P.O. AVINASHI Tk, COIMBATORE- 641 654. INDIA.	**TEST CERTIFICATE** (EN 10204-3.1)	TC NO : I-0961 DATE : 12.03.11

CUSTOMER	SPECIFICATION REFERENCE	MELT NO/ DATE OF POURING
CANALTA CONTROLS LTD. 6759 - 65 AVENUE, BAY #1, RED DEER, ALBERTA, T4P 1X5, CANADA.	1. ASTM A216-08 Gr.WCB 2. NACE MR 0175	0056J / 05.01.11 FOUNDRY MARK FLS

PURCHASE ORDER NO	ORDER ACCEPTANCE NO
Tag No. - 16019	10-745-A4

CHEMICAL COMPOSITION %

SPECIFICATION	C	Si	S	P	Mn	Ni	Cr	Mo	V	Cu	Al	*RE
Minimum	--	--	--	--	--	--	--	--	--	--	--	--
Maximum	0.30	0.60	0.045	0.04	1.00	0.50	0.50	0.20	0.03	0.30	--	1.00
Achieved	0.202	0.38	0.009	0.021	0.99	0.06	0.08	0.018	0.003	0.02	--	0.18

HEAT TREATMENT: NORMALIZED: Temperature raised to 920°C, Soaked for 3 hours and then air-cooled.

MECHANICAL PROPERTIES

SPECIFICATION	Y.S. (ksi)	UTS (ksi)	%ELONG. in 50mm (4d) / ~~in 50mm (5d)~~	% RED. IN AREA	NOTCH TOUGHNESS (at °C) J		BEND TEST		HARDNESS
					Values	Avg.	ANGLE	D	(HB)
Minimum	36	70	22	35	--	--	--	--	--
Maximum	--	95	--	--	--	--	--	--	237
Achieved	46.0	76.7	36.2	65.3	--	--	--	--	151

DETAIL OF CASTINGS

S.NO.	DESCRIPTION	DRAWING NO / REV.	PART NO	POURED QTY
1	2" MODEL DC TOP HOUSING	260DC14/12	--	12

REMARKS:

1. The above stated ksi values have been calculated based on original tested N/MM² values.
2. *RE = Ni + Cr +Mo+ V + Cu

CERTIFIED THAT

1. THE ABOVE GIVEN DETAILS ARE CORRECT.
2. THE MATERIAL CONFORMS TO ABOVE SPECIFICATION.
3. THE MATERIAL IS FREE OF CONTAMINATION FROM RADIOACTIVE ELEMENT OR RADIATION.

THE PARTS WERE MANUFACTURED,TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND CERTIFIED IN ACCORDANCE WITH EN 10204-3.1

Prepared by:	Checked by:	
M.RANJITH KUMAR	A.RAKKIYANNAN	A.RAJENDRAN ASSISTANT MANAGER -QUALITY MANUFACTURER'S AUTHORIZED INSPECTOR

MILL TEST CERTIFICATE

ACCORDING TO : EN-10204-3.1

MANUFACTURER: SHANDONG FLYING CASTING AND FORGING CO.LTD

PRODUCT:PIPE FITTINGS DATE:NOV 18,2010

INVOICE NO.	MATERIAL GRADE	STANDARD	Technical Requirements
R2010073	A105-09	MSS SP -97	

ITEM	HEAT NO.	SIZE	DESCRIPTION	QTY (PCS)	INSPECTIONRESULT	
					Visual inspection:	Dimensional inspection:
			FORGED HIGH PRESSURE PIPE FITTINGS, MSS SP -97			
1	00153	1"x 3"--3.1/2"	3000# A105 Threadolets, NPT	1000	Acceptable	Acceptable
2	00174	3/4"x 3"--5"	3000# A105 Threadolets,NPT	989	Acceptable	Acceptable
	01233	3/4"x 3"--5"	3000# A105 Threadolets,NPT	1011	Acceptable	Acceptable

		CHEMICAL COMPOSITION %										MECHANICAL PROPERTIES				
ITEM	HEAT NO	C%	Si%	Mn%	P%	S%	Cr%	Ni%	Mo%	V%	Cu%	BRINELL HARDNESS	TENSILE STRENGTH MPA	YIELD STRENGTH 0.2% offset MPA	ELONGATION in 2 inch %	REDUCTION OFAREA,MIN %
	MIN		0.10	0.60									485	250	22	30
	MAX	0.35	0.350	1.05	0.035	0.040	0.500	0.400	0.120	0.08	0.4	187				
1	00153	0.21	0.17	0.85	0.021	0.005	0.014	0.010	0.014	0.010	0.010	155	501	258	30	33
2	00174	0.15	0.15	0.80	0.020	0.005	0.010	0.012	0.012	0.010	0.010	157	500	255	33	35
	01233	0.19	0.27	0.91	0.013	0.008	0.010	0.020	0.010	0.010	0.012	152	535	355	33	35

APPROVEDChief of Inspection Section:LJL

SHANDONG FLYING CASTING & FORGING CO., LTD.
804 ROOM,No.1 BUILDING 18 MIDDLE DONGHAI ROAD QINGDAO CHINA
TEL: +86 532 85064444 / 85061468
FAX: +86 532 85062336
E-MAIL:kjx@plumbingchina.com
WEB:www.chinaplumbing.com

CERTIFICATE OF INSPECTION AND TEST EN10204 3.1B

INV NO.:G06048 P/I NO.:RPF06048R1

ASTM A105N FITTINGS ASME B16.11

DESCRIPTION	SIZE / DN	QTY	HEAT NO.	CHEMICAL COMPOSITION										PHYSICAL TEST					
				C%	Mn%	P%	S%	Si%	Cu%	Ni%	V%	Cr%	Mo%	YIELD POINT	TENSILE STRENGTH	ELONGATION	Hardness	Reduction of Area	Result
				≤0.35	0.60-1.05	≤0.040	≤0.050	≤0.35	≤0.40	≤0.40	≤0.08	≤0.30	≤0.12	(MPA)	(MPA)	(%)		(%)	
ASTM A105N Forged Steel,Class 3000,Threaded Fittings, NPT																			
ASME B16.11 Spec- **Black color**																			
NPT Thread-O-Lets																			
	1/2"	10000	H1213	0.19	0.61	0.033	0.032	0.25	0.01	0.01	0.01	0.01	0.01	327	487	35	165	31	OK
NPT Thread-O-Lets																			
	3/4"	10000	H1213	0.19	0.61	0.033	0.032	0.25	0.01	0.01	0.01	0.01	0.01	327	487	35	165	31	OK
NPT Thread-O-Lets																			
	1"	5000	**H1213**	0.19	0.61	0.033	0.032	0.25	0.01	0.01	0.01	0.01	0.01	327	487	35	165	31	OK
NPT External Hex Plugs																			
	1/2"	25000	H1213	0.19	0.61	0.033	0.032	0.25	0.01	0.01	0.01	0.01	0.01	327	487	35	165	31	OK
NPT Internal Hex Plug																			
	1/2"	5000	H1213	0.19	0.61	0.033	0.032	0.25	0.01	0.01	0.01	0.01	0.01	327	487	35	165	31	OK

INSPECTOR:CHUN ZHANG

For and on behalf of
SHANDONG FLYING CASTING & FORGING COMPANY LIMITED

DATE: AUG 04,2006

Authorized Signature(s)

江苏奔球制管有限公司
JIANGSU BENQIU TUBE-MAKING CO.,LTD.

产品质量证明书
INSPECTION CERTIFICATION

编号 No: 2007050123　　QR15.1-03

共 ____ 页第 ____ 页

合同编号 Contract No		钢号 Steel Grade	20	总捆数 Total Bundles(件)	7
订货单位 Customer	张家港华友钢管有限公司	标准 Specification	ASTM A106Gr. B	总重量 Total Weight(kg)	11104
产品名称 Product	冷拔无缝钢管	长度范围 Length Scope(mm)	6000	许可证号 License	
规格 Size(mm)	60.3*5.54	交货状态 Delivery Condition	热处理	签发日期 Date of Issue	2007年05月10日

序号 No	炉号 Heat No	批号 Lot No	捆数 Bundles	支数 Pieces	重量 Weight (kg)	化学成份 % Chemical Composition											机械性能 Mechanical Properties				
						C	Mn	Si	S	P	Cr	Ni	Cu	Mo	V	Als	屈服强度 (YS)ReL N/mm²	抗拉强度 (TS)Rm N/mm²	伸长率 (EL) A (%)	收缩率 (RE) Z (%)	硬度 Harness ( )
1	07-114	705501A	1	37	1682	0.19	0.52	0.20	0.007	0.009	0.05	0.03	0.08				350/350	505/505	34/34		
2	07-114	705502A	1	37	1684	0.19	0.52	0.20	0.007	0.009	0.05	0.03	0.08				340/340	495/495	35/35		
3	07-114	705502A	1	25	1127	0.19	0.52	0.20	0.007	0.009	0.05	0.03	0.08				340/340	495/495	35/35		
4	07-114	705501A	1	37	1663	0.19	0.53	0.20	0.007	0.009	0.05	0.03	0.08				350/350	505/505	34/34		
5	07-114	705501A	1	37	1682	0.19	0.52	0.20	0.007	0.009	0.05	0.03	0.08				350/350	505/505	34/34		

序号 No	金相 Metallography									
	晶粒度 (级) Grain Size	带状组织 (级) Bands	魏氏组织 (级)	显微组织 Micro Tissue	低倍检验	脱碳 Decarburized Layer(mm)		非金属夹杂物 (级) Non-Metallic Inclusions (Grade)			
						内表 Inside	外表 Outside	A	B	C	D
1											
2											
3											
4											
5											

压扁 Flattening	扩口 Expansion	冷弯 Cold bend	顶锻 Forging Test	涡流探伤 ET	超声探伤 UT	水压试验 Hydrostatic Test	表面及尺寸 Visual & Dimensions
合格				合格			合格

说明 Note
一、产品其余检验项目均经检验符合产品技术条件要求
二、有异议时请标明钢号、炉（批）号、规格，发货日期，并保留供货状态的实物

质量证明书章 Quality Certify Seal 专用章

地址：江苏省张家港市金港镇江海中路
Jianghai Middle Road Jingang Town Zhangjiagang City Jiangsu Province
电话（Tel）：0512-58375005　传真（Fax）：0512-58375008
邮政编码（P.C）215632

签发人：
Issued by :

证书审核人：
Chief of Quality Inspection Station:

江苏奔球制管有限公司
JIANGSU BENQIU TUBE-MAKING CO.,LTD.

产品质量证明书
INSPECTION CERTIFICATION

编号 No: 2007050123　　QR15.1-03

共 2 页第 2 页

合同编号 Contract No		钢号 Steel Grade	20	总捆数 Total Bundles(件)	7
订货单位 Customer	张家港华友钢管有限公司	标准 Specification	ASTM A106Gr.B	总重量 Total Weight(kg)	11104
产品名称 Product	冷拔无缝钢管	长度范围 Length Scope(mm)	6000	许可证号 License	
规格 Size(mm)	60.3*5.54	交货状态 Delivery Condition	热处理	签发日期 Date of Issue	2007年05月10日

序号 No	炉号 Heat No	批号 Lot No	捆数 Bundles	支数 Pieces	重量 Weight (kg)	化学成份 % Chemical Composition											机械性能 Mechanical Properties				
						C	Mn	Si	S	P	Cr	Ni	Cu	Mo	V	Als	屈服强度 (YS)ReL N/mm²	抗拉强度 (TS)Rm N/mm²	伸长率 (EL) A (%)	收缩率 (RE) Z (%)	硬度 Hatness ( )
1	07-114	705501A	1	37	1663	0.19	0.52	0.20	0.007	0.009	0.05	0.03	0.08				350/350	505/505	34/34		
2	07-114	705501A	1	37	1663	0.19	0.52	0.20	0.007	0.009	0.05	0.03	0.08				350/350	505/505	34/34		
3																					
4																					
5																					

序号 No	金相 Metallography										
	晶粒度(级) Grain Size	带状组织(级) Bands	魏氏组织(级)	显微组织 Micro Tissue	低倍检验	脱碳 Decarburized Layer(mm)		非金属夹杂物(级) Non-Metallic Inclusions (Grade)			
						内表 Inside	外表 Outside	A	B	C	D
1											
2											
3											
4											
5											

压扁 Flattening	扩口 Expansion	冷弯 Cold bend	顶锻 Forging Test	涡流探伤 ET	超声探伤 UT	水压试验 Hydrostatic Test	表面及尺寸 Visual & Dimensions
合格				合格			合格

说明 Note
一、产品其余检验项目均经检验符合产品技术条件要求
二、有异议时请标明钢号、炉(批)号、规格、发货日期，并保留供货状态的实物

质量证明书 专用章 Mass Quality Seal

地址：江苏省张家港市金港镇江海中路
Jianghai Middle Road Jingang Town Zhangjiagang City Jiangsu Province
电话(Tel)：0512-58375005　传真(Fax)：0512-58375008
邮政编码(P.C)215632

签发人：
Issued by :

证书审核人：
Chief of Quality Inspection Station:

MILL TEST CERTIFICATE

ACCORDING TO : EN-10204-3.1

MANUFACTURER: SHANDONG FLYING CASTING AND FORGING CO.LTD

PRODUCT:FLANGES **DATE:JAN 06,2011**

INVOICE NO.	MATERIAL GRADE	STANDARD	Technical Requirements
R2010096	A105-09	ASME B16.5-2009	

ITEM	HEAT NO.	DESCRIPTION	QTY (PCS)	INSPECTIONRESUET	
				Visual inspection:	Dimensional inspection:
1	10F24604	4" 600# RF WN SCH 80 A105N	100	Acceptable	Acceptable
2	10F24503	3" 300# RF WN SCH 40 A105N	25	Acceptable	Acceptable
3	10F24602	2" 600# RF WN SCH 80 A105N	250	Acceptable	Acceptable
4	10F24603	3" 600# RF WN SCH 80 A105N	400	Acceptable	Acceptable
5	10F24606	6" 600# RF WN SCH 80 A105N	25	Acceptable	Acceptable
6	10F24502	2" 150# RF WN SCH 80 A105	25	Acceptable	Acceptable
7	10F24701	1" 600# RF Threaded Flange (1" NPT) A105N	250	Acceptable	Acceptable

		CHEMICAL COMPOSITION %										MECHANICAL PROPERTIES				
ITEM	HEAT NO.	C%	Si%	Mn%	P%	S%	Cr%	Ni%	Mo%	V%	Cu%	BRINELL HARDNESS	TENSILE STRENGTH MPA	YIELD STRENGTH 0.2%offset MPA	ELONGATION in 2 inch, %	REDUCTION OFAREA,MIN %
	MIN		0.10	0.60									485	250	22	30
	MAX	0.35	0.350	1.05	0.035	0.040	0.300	0.400	0.120	0.08	0.4	187				
1	10F24604	0.17	0.25	0.82	0.02	0.013	0.01	0.011	0.012	0.01	0.014	165	515	340	34	35
2	10F24503	0.17	0.2	0.65	0.024	0.01	0.01	0.015	0.01	0.011	0.012	160	520	345	30	33
3	10F24602	0.2	0.25	0.75	0.021	0.011	0.01	0.011	0.012	0.01	0.014	164	515	340	34	35
4	10F24603	0.14	0.17	0.7	0.02	0.012	0.012	0.01	0.012	0.012	0.012	175	525	340	30	36
5	10F24606	0.15	0.2	0.71	0.024	0.013	0.01	0.011	0.011	0.011	0.014	165	515	345	34	35
6	10F24502	0.15	0.22	0.7	0.02	0.01	0.011	0.014	0.012	0.01	0.010	170	520	340	31	33
7	10F24701	0.17	0.25	0.82	0.024	0.013	0.01	0.011	0.011	0.01	0.014	165	515	345	30	35

NORMALIZED AT 920°C FOR 5 HOURS, COOLED IN STILL WATER

APPROVEDChief of Inspection Section:LIL

ITEM	HEAT NO.	CHEMICAL COMPOSITION %										MECHANICAL PROPERTIES				
		C%	Si%	Mn%	P%	S%	Cr%	Ni%	Mo%	V%	Cu%	BRINELL HARDNESS	TENSILE STRENGTH MPA	YIELD STRENGTH 0.2% offset MPA	ELONGATION in 2 inch %	REDUCTION OF AREA, MIN %
	MIN		0.10	0.60									485	250	22	30
	MAX	0.35	0.350	1.05	0.035	0.040	0.300	0.400	0.120	0.08	0.4	187				
1	10F13004	0.190	0.190	0.750	0.018	0.021	0.150	0.180	0.039	0.030	0.260	157	537	272	31	33
2	10F13103	0.160	0.180	0.760	0.023	0.020	0.110	0.210	0.035	0.031	0.210	152	522	276	31	32
3	10F13208	0.190	0.190	0.750	0.018	0.021	0.150	0.180	0.039	0.030	0.260	157	537	272	31	33
4	10F13108	0.180	0.180	0.730	0.014	0.021	0.120	0.210	0.038	0.027	0.270	158	538	278	31	32
5	10F13003	0.190	0.190	0.750	0.018	0.021	0.150	0.180	0.039	0.030	0.260	157	537	272	31	33
6	10F13302	0.160	0.180	0.760	0.023	0.020	0.110	0.210	0.035	0.031	0.210	152	522	276	31	32
7	10F13403	0.190	0.190	0.750	0.018	0.021	0.150	0.180	0.039	0.030	0.260	157	537	272	31	33
8	10F13002	0.190	0.190	0.750	0.018	0.021	0.150	0.180	0.039	0.030	0.260	157	537	272	31	33
9	10F13008	0.210	0.170	0.800	0.026	0.020	0.120	0.200	0.032	0.032	0.210	156	532	278	30	32
10	10F13502	0.160	0.180	0.760	0.023	0.020	0.110	0.210	0.035	0.031	0.210	152	522	276	31	32
11	10F13503	0.210	0.170	0.800	0.026	0.020	0.120	0.200	0.032	0.032	0.210	156	532	278	30	32
12	10F13506	0.210	0.170	0.800	0.026	0.020	0.120	0.200	0.032	0.032	0.210	156	532	278	30	32
13	10F13508	0.210	0.170	0.800	0.026	0.020	0.120	0.200	0.032	0.032	0.210	156	532	278	30	32
14	10F13608	0.210	0.170	0.800	0.026	0.020	0.120	0.200	0.032	0.032	0.210	156	532	278	30	32
15	10F13610	0.210	0.170	0.800	0.026	0.020	0.120	0.200	0.032	0.032	0.210	156	532	278	30	32
16	10F13708	0.210	0.170	0.800	0.026	0.020	0.120	0.200	0.032	0.032	0.210	156	532	278	30	32
17	10F13810	0.210	0.170	0.800	0.026	0.020	0.120	0.200	0.032	0.032	0.210	156	532	278	30	32
18	10F13910	0.210	0.170	0.800	0.026	0.020	0.120	0.200	0.032	0.032	0.210	156	532	278	30	32
19	10F20602	0.210	0.170	0.800	0.026	0.020	0.120	0.200	0.032	0.032	0.210	156	532	278	30	32
20	10F20612	0.190	0.190	0.750	0.018	0.021	0.150	0.180	0.039	0.030	0.260	157	537	272	31	33
21	10F20634	0.210	0.170	0.720	0.018	0.020	0.100	0.150	0.035	0.032	0.270	154	528	276	31	35
22	10F20601	0.190	0.200	0.720	0.015	0.016	0.150	0.170	0.036	0.035	0.260	157	535	274	31	32
23	10F2061	0.190	0.200	0.720	0.015	0.016	0.150	0.170	0.036	0.035	0.260	157	535	274	31	32
24	10F20611	0.170	0.190	0.780	0.017	0.014	0.160	0.180	0.034	0.035	0.220	160	534	275	32	33

NORMALIZED AT 920°C FOR 5 HOURS, COOLED IN STILL WATER

APPROVED Chief of Inspection Section: LIL

MILL TEST CERTIFICATE

ACCORDING TO : EN-10204-3.1

MANUFACTURER: SHANDONG FLYING CASTING AND FORGING CO.LTD

PRODUCT:FLANGES **DATE:DEC 1,2010**

INVOICE NO.	MATERIAL GRADE	STANDARD	Technical Requirements
R2010088	A105-09	ASME B16.5-2009	

ITEM	HEAT NO.	DESCRIPTION	QTY (PCS)	INSPECTIONRESULT	
				Visual inspection:	Dimensional inspection:
		FLANGES,ANSI B16.5		Acceptable	Acceptable
1	10F13004	4" 600# RF WN 80 A105N	50	Acceptable	Acceptable
2	10F13103	3" 300# RF WN 40 A105N	25	Acceptable	Acceptable
3	10F13208	8" 150# RF WN 40 A105	25	Acceptable	Acceptable
4	10F13108	8" 300# RF WN 40 A105N	25	Acceptable	Acceptable
5	10F13003	3" 600# RF WN 80 A105N	400	Acceptable	Acceptable
6	10F13302	2" 150# RF WN 80 A105	25	Acceptable	Acceptable
7	10F13403	3" 1500# RJ WN 160 A105N	25	Acceptable	Acceptable
8	10F13002	2" 600# RF WN 80 A105N	250	Acceptable	Acceptable
9	10F13008	8" 600# RF WN 80 A105N	25	Acceptable	Acceptable
10	10F13502	2" 2500LB RTJ Blind Flanges A105N	2	Acceptable	Acceptable
11	10F13503	3" 2500LB RTJ Blind Flanges A105N	2	Acceptable	Acceptable
12	10F13506	6" 2500LB RTJ Blind Flanges A105N	2	Acceptable	Acceptable
13	10F13508	8" 2500LB RTJ Blind Flanges A105N	2	Acceptable	Acceptable
14	10F13608	8" 300LB RF BLIND A105N	2	Acceptable	Acceptable
15	10F13610	10" 300LB RF BLIND A105N	2	Acceptable	Acceptable
16	10F13708	8" 600LB RTJ BLIND A105N	2	Acceptable	Acceptable
17	10F13810	10" 600LB RF BLIND A105N	2	Acceptable	Acceptable
18	10F13910	10" 900LB RTJ BLIND A105N	2	Acceptable	Acceptable
19	10F20602	½" 300ANSI RF BLIND FLANGES A105N	4	Acceptable	Acceptable
20	10F20612	½" 600 ANSI RF BLIND FLANGE A105N	5	Acceptable	Acceptable
21	10F20634	¾" 900 ANSI RTJ BLIND FLANGES A105N	3	Acceptable	Acceptable
22	10F20601	1" 150 ANSI RF BLIND FLANGES A105	2	Acceptable	Acceptable
23	10F2061	1" 900 ANSI RTJ BLIND FLANGES A105N	2	Acceptable	Acceptable
24	10F20611	1" 600 ANSI RF BLIND FLANGES A105N	2	Acceptable	Acceptable

RADIOGRAPHIC EXAMINATION REPORT

Industrial Services
Inspection Services Canada
ISO 9001: 2000

2507 - 64 Avenue, Edmonton, Alberta T6P 1K1
Phone (780) 417-7777 Fax (780) 417-1185

RT - 6580-07 - CL

CLIENT: Cassils Controls Ltd. INVOICE ADDRESS: DATE: 8-Apr-11

WORK LOCATION: Red Deer Shop TEAM PROCEDURE:

EXAMINATION STANDARD: ASME V Article 2 ACCEPTANCE STANDARD: ASME B31.3 Severe

EXAMINATION OF: Flint Process piping

TEAM JOB NO.	6580
BRANCH:	Red Deer
PO NO.:	3213
SO No.:	1861-6
PAGE:	1 OF 1

DEFECT LEGEND:			
IF - INCOMPLETE FUSION	UC - UNDERCUTTING	P - POROSITY	HB - HOLLOW BEAD
IP - INCOMPLETE PENETRATION	S - SLAG	IC - INTERNAL CONCAVITY	CR - CRACK
EP - EXCESSIVE PENETRATION	BT - BURN THROUGH	LC - LOW COVER	AB - ARC BURN
	SH - SHRINKAGE	EC - HOLLOW BEAD	

TECHNIQUES	
EXPOSURE	VIEWING
1. SINGLE WALL	3. SINGLE WALL
2. DOUBLE WALL	4. DOUBLE WALL

TYPE OF ENERGY: Ir192
PHYSICAL SIZE: 0.125"
IQI TYPE: ASTM Wire

INTENSIFYING SCREENS: 0.005"/0.010" Pb
FILM PER CASSETTE: 1
WELD MATERIAL:

FILM MANUFACTURER: GE

RADIOGRAPH IDENTIFICATION				RADIOGRAPH GEOMETRY									RADIOGRAPH RESULTS		
WELD ID	LOCATION	WELD SIZE	WELDER	TECHNIQUE	EXPOSURES PER WELD	WELD DEPOSIT THICKNESS	BASE MATERIAL THICKNESS	REINFORCE THICKNESS	SOURCE-OBJECT DISTANCE	OBJECT-FILM DISTANCE	FILM TYPE	IQI SIZE	INTERPRETATION	COMMENTS	STATUS
X1		2"ks	T	2/3	3	.343"	.218"	.125"	2.032"	.343"	I	A		D020273	Accept

INTERPRETATION IS IN ACCORDANCE WITH THE ABOVE MENTIONED STANDARD, TO THE BEST OF MY PROFESSIONAL ABILITY

TECHNICIAN (PRINT): Charles Lasouski TECHNICIAN (SIGN): CGSB/SNT LEVEL: II/II REG NO. 11255 ASSISTANT: Craig Olson

THE ABOVE REPRESENTATION IS A PROFESSIONAL OPINION, FINAL INTERPRETATION IS THE RESPONSIBILITY OF THE CLIENT. I HAVE REVIEWED AND AM IN FULL AGREEMENT WITH THE CONTENTS OF THIS REPORT.

CLIENT REPRESENTATIVE (PRINT): CLIENT REPRESENTATIVE (SIGN): DATE: