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www.tssa.org

December 05, 2014

ALICIA CZERNIAWSKI
ANRIC ENTERPRISES
701 EVANS AVE SUITE 202
TORONTO ON M9C 1A3
CA

Service Request Type: BPV-PV Registration
Service Request No.: 1520606
Your Reference No.: ENG-1408-0262
Registered to: CP INDUSTRIES INC

Dear ALICIA CZERNIAWSKI,

Technical Standards and Safety Authority (TSSA) is pleased to inform you that your submission has been reviewed and registered as follows:

CRN No.: R1130.5
Main Design No.: 531D-300390 Rev 01, 531E-101090 Rev -, 531D-201090

A stamped copy of the approved registration and invoice for engineering services will be mailed to you shortly. Should you have any questions or require further assistance, however, please contact a Customer Service Advisor at 1.877.682.TSSA (8772) or e-mail customerservices@tssa.org. We will be happy to assist you. When contacting TSSA regarding this file, please refer to the Service Request number provided above.

Yours truly,

A handwritten signature in blue ink, appearing to read 'Kaivan Kia'.

Kaivan Kia P. Eng., PMP
Mechanical Engineer, BPV
Tel.: 416-734-3457
Fax: 416-231-6183
Email: kkia@tssa.org

MATERIAL	CHEMICAL COMPOSITION IN PERCENT								MECH. PROPERTIES				Y/T. RATIO (FOR DESIGN)	TEST PRESSURE	37.2 MPa 372 BAR	BURST PRESSURE	
	C.	Si.	Mn.	P.	S.	P+S	Mo.	Cr.	T.S.		Y.S. (MIN)						ELONGATION
34CrMo4	0.31	0.10	0.50	0.015	0.010	0.020	0.15	0.90	Kgf/mm ²	N/mm ² (MPa)	Kgf/mm ²	N/mm ² (MPa)	GL.5.65 \sqrt{So}	0.90 (MAX)	WORKING PRESSURE AT 15°C	24.8 MPa 248 BAR	55.8 MPa 558 BAR
	0.38	0.40	0.80	(MAX)	(MAX)	(MAX)	0.30	1.20	103.9-112	1020-1100	87.6	860	14% (MIN)				

DESIGN, MANUFACTURING, TESTING, ACCEPTANCE

AS PER ANSI NGV 2

MANUFACTURING PROCESS : HOT SPINNING OF SEAMLESS STEEL TUBE.

HEAT TREATMENT - QUENCHED & TEMPERED

HARDENING AT : 860°C ± 30°C - 30 Minute (Min)

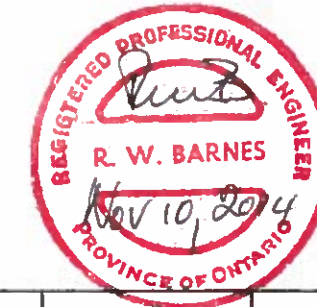
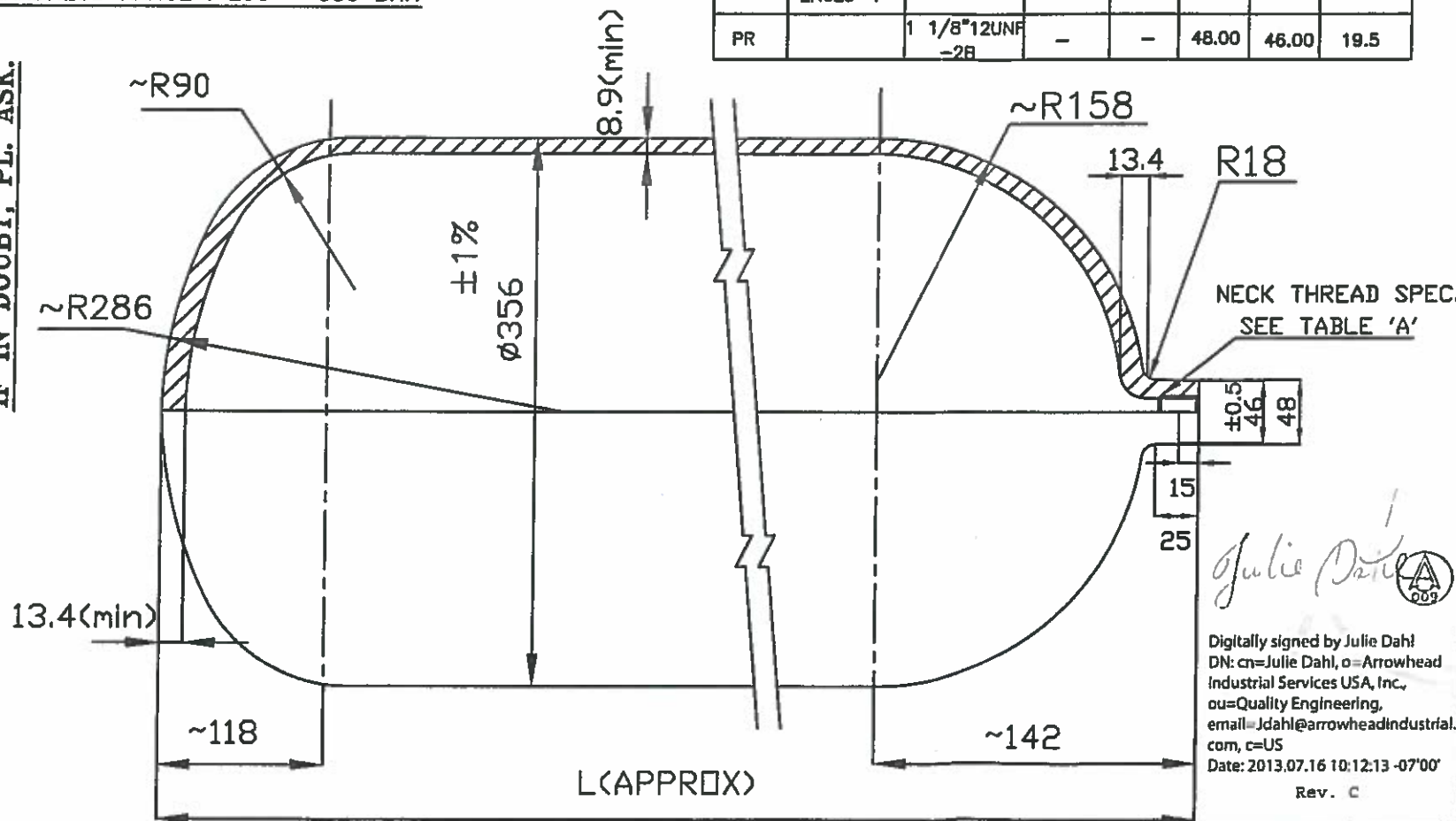
TEMPERING AT : 570°C ± 30°C - 45 Minute (Min)

HARDNESS RANGE : 295 - 330 BHN

NOTE:- ALL DIMENSIONS ARE IN MM.

THREAD SPECIFICATION TABLE-'A'							
CODE	STD.	TYPE	TAPER ON DIA	PITCH	NECK DIA(D)	NECK DIA(d)	THREAD LENGTH
NG		(3/4"-NGT)	1:16	14,TPI	48.00	46.00	18.00
DN	(DIN-477)	28.8	3:25	14,TPI	48.00	46.00	22.00
EN	EN629-1	25E	3:25	14,TPI	48.00	46.00	22.00
PR		1 1/8"12UNF-2B	-	-	48.00	46.00	19.5

IF IN DOUBT, PL. ASK.



Boilers and Pressure Vessels Safety Program
 Registered Authority
REGISTERED
 CRN: R1130.5
 Signed: [Signature]
 Date: Dec 5/14

SUFFIX TO DRG NO	NOMINAL WATER CAPACITY LTR.	TARE. WT. Kg. (APPROX)	LENGTH 'L' mm (APPROX)
/P	180.0	173.0	2175
/O	170.0	182.0	2065
/N	160.0	173.0	1950
/M	150.0	163.0	1840
/L	140.0	154.0	1725
/K	130.0	144.0	1610
/J	120.0	135.0	1500
/I	110.0	125.0	1385
/H	100.0	116.0	1270
/G	90.0	106.0	1155
/F	85.0	101.0	1095
/E	80.0	97.0	1040
/D	75.0	92.0	985
/C	60.0	78.0	820
/B	55.0	73.0	760

CRN Covers additional drawings:
 531E-101090 Rev.
 531D-201090 Rev.
 KK
 12/5/14

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Digitally signed by Julie Dahl
 DN: cn=Julie Dahl, o=Arrowhead Industrial Services USA, Inc., ou=Quality Engineering, email=Jdahl@arrowheadindustrial.com, c=US
 Date: 2013.07.16 10:12:13 -07'00'
 Rev. C

01	Thread 1 1/8"12UNF-2B & Water Capacity 110-180 Ltrs added	13.07.2013	Ayush	V.K.K
RevNo	Revision note	Date	Checked	Approved

Itemref	Quantity	material	---	Article No./Reference
Designed by Jaspal	Checked by Ayush	Approved by V.K.K	date	File Name 356X8.9 ANSI NGV-2
Owner	EKC		Title/Name	φ356 x 8.9 SEAMLESS GAS CYLINDER
			Drawing number	531D-300390

MATERIAL	CHEMICAL COMPOSITION IN PERCENT								MECH. PROPERTIES				Y/T. RATIO (FOR DESIGN)	TEST PRESSURE	5400 psig 372 BAR	BURST PRESSURE	
	C.	Si.	Mn.	P.	S.	P+S	Mo.	Cr.	T.S.		Y.S. (MIN)	ELONGATION					
34CrMo4	0.31	0.10	0.50	0.015	0.010	0.020	0.15	0.90	ksi	N/mm ² (MPa)	ksi	N/mm ² (MPa)	GL.5.65√So	0.90 (MAX)	WORKING PRESSURE AT 15°C	3600 psig 248 BAR	8100 psig 558 BAR
	0.38	0.40	0.80	(MAX)	(MAX)	(MAX)	0.30	1.20	143.5	990	121.8	840	14% (MIN)				

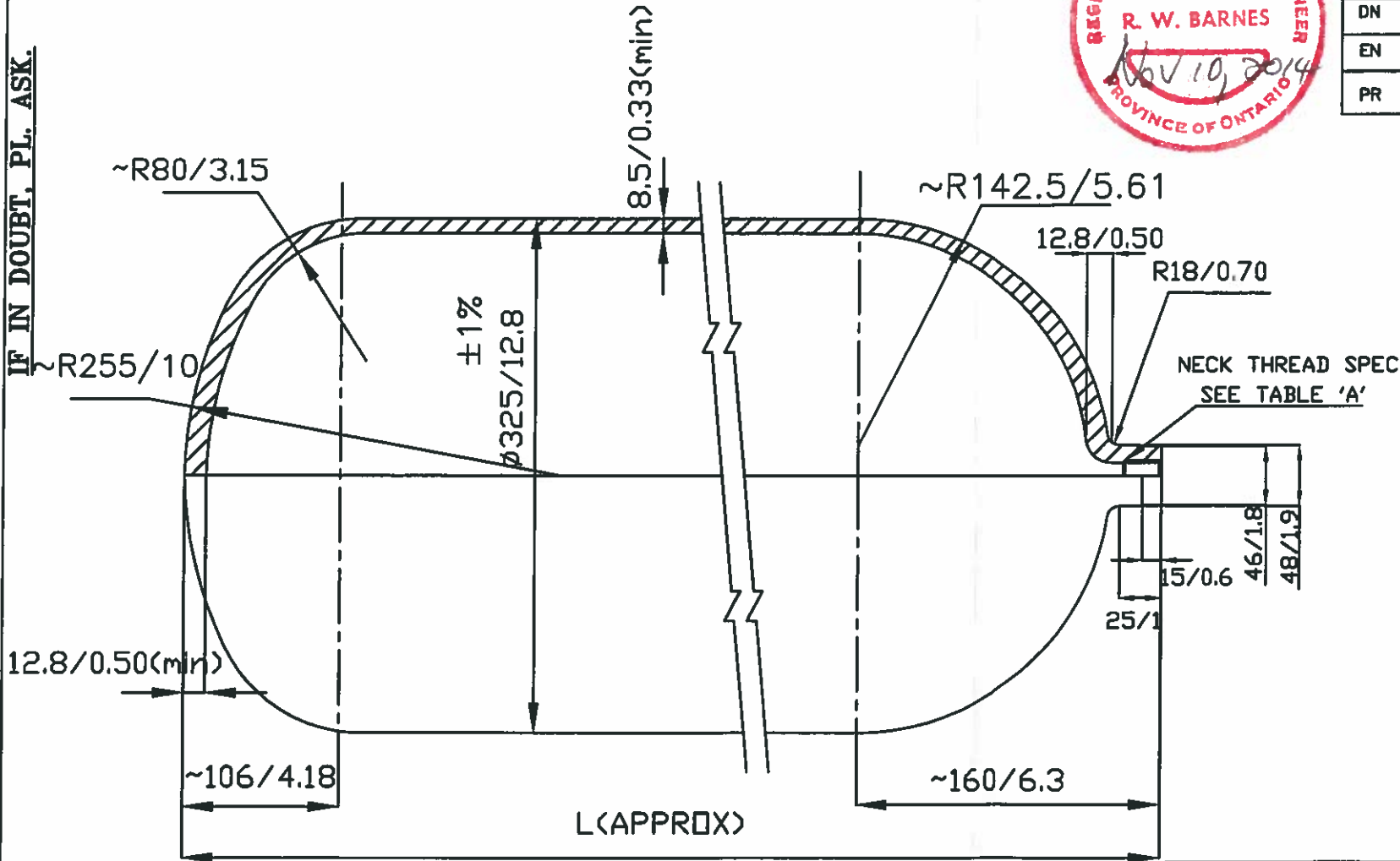
DESIGN, MANUFACTURING, TESTING, ACCEPTANCE
AS PER ANSI NGV 2
MANUFACTURING PROCESS : HOT SPINNING OF
SEAMLESS STEEL TUBE.

NOTE:- ALL DIMENSIONS ARE IN MM/INCHES

THREAD SPECIFICATION TABLE-'A'							
CODE	STD.	TYPE	TAPER ON DIA	PITCH	NECK DIA(D)	NECK DIA(d)	THREAD LENGTH
NG		(3/4"-NGT)	1:16	14,TPI	48.00	46.00	18.00
DN	(DIN-477)	28.8	3:25	14,TPI	48.00	46.00	22.00
EN	EN629-1	25E	3:25	14,TPI	48.00	46.00	22.00
PR		1 1/8"12UNF -2B	-	-	48.00	46.00	19.5

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IF IN DOUBT, PL. ASK.



/P	140.0	167.0/368	2045/80.52
/O	130.0	157.0/346	1910/75.20
/N	120.0	146.0/322	1770/69.69
/M	110.0	136.0/300	1630/64.18
/L	100.0	126.0/278	1495/58.86
/K	90.0	115.0/254	1355/53.35
/J	85.0	110.0/243	1290/50.74
/I	80.0	105.0/232	1220/48.04
/H	75.0	99.0/218	1150/45.28
/G	70.0	94.0/207	1080/42.52
/F	65.0	89.0/196	1010/39.77
/E	60.0	84.0/185	945/37.21
/D	55.0	78.0/172	875/34.45
/C	51.0	74.0/163	813/32.00
/B	50.0	73.0/161	805/31.70
/A	49.0	72.0/159	787/31.00
SUFFIX TO DRG NO	NOMINAL WATER CAPACITY LTR.	TARE.WT.Kg/Lbs (APPROX)	LENGTH'L'mm/inch (APPROX)



Item ref	Quantity	material	---	Article No./Reference
Designed by	Checked by	Approved by - date	File Name 325X8.5 ANSI NGV-2	Date 12-04-2014
Owner			Title/Name ø325/12.8 x 8.5/0.33 SEAMLESS GAS CYLINDER	Scale N.T.S.
EKC INTERNATIONAL-DUBAI			Drawing number 531D-201090	

RevNo	Revision note	Date	Checked	Approved

MATERIAL	CHEMICAL COMPOSITION IN PERCENT								MECH. PROPERTIES				Y/T. RATIO (FOR DESIGN)	TEST PRESSURE	5400 psig 372 BAR	BURST PRESSURE	
	C.	Si.	Mn.	P.	S.	P+S	Mo.	Cr.	T.S.		Y.S. (MIN)	ELONGATION					
34CrMo4	0.31	0.10	0.50	0.015	0.010	0.020	0.15	0.90	ksi	N/mm ² (MPa)	ksi	N/mm ² (MPa)	GL.5.65 $\sqrt{S_o}$	0.90 (MAX)	WORKING PRESSURE AT 15°C	3600 psig 248 BAR	8100 psig 558 BAR
	0.38	0.40	0.80	(MAX)	(MAX)	(MAX)	0.30	1.20	143.5	990	121.8	840	14% (MIN)				

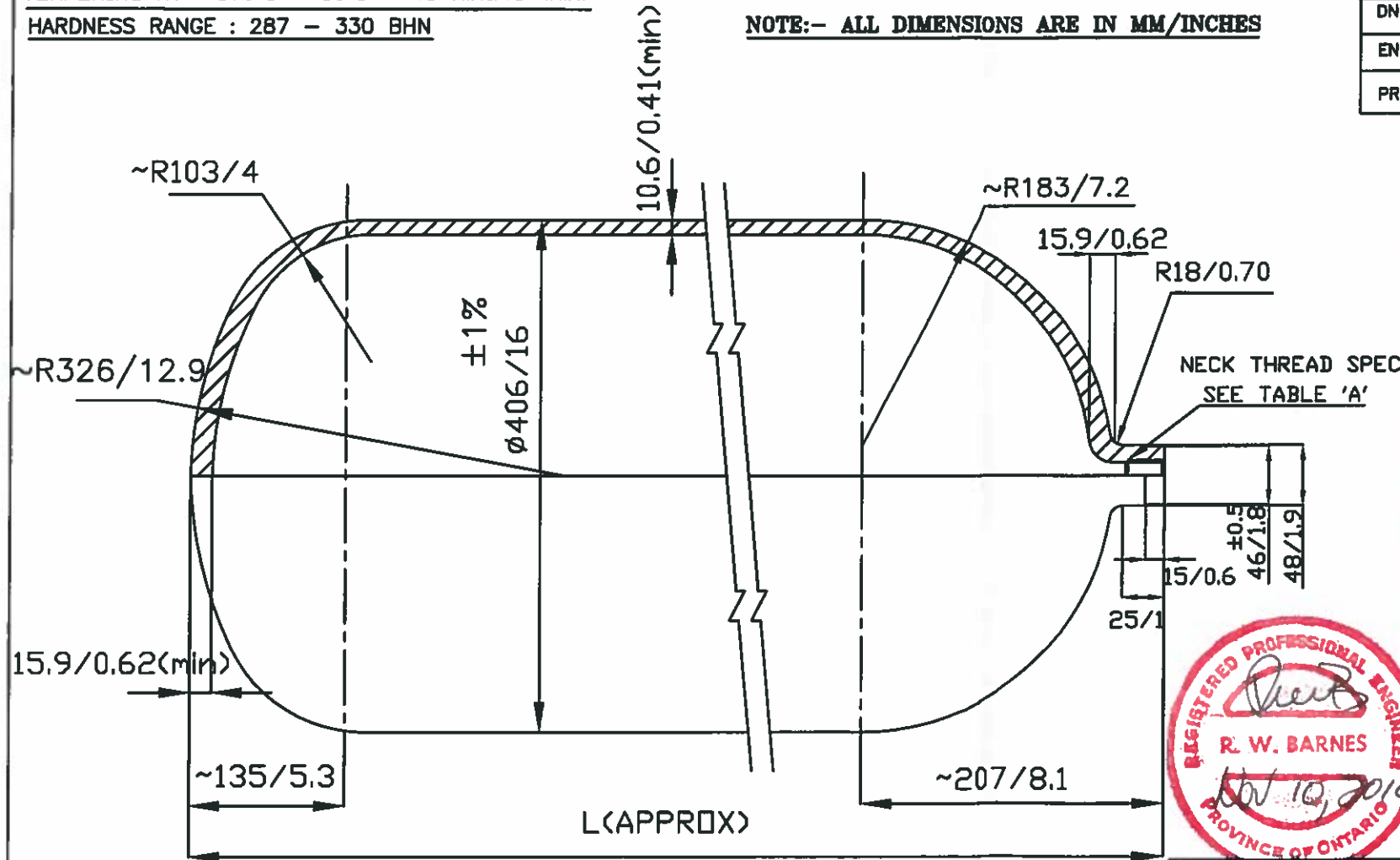
DESIGN, MANUFACTURING, TESTING, ACCEPTANCE, AS PER ANSI NGV 2
MANUFACTURING PROCESS : HOT SPINNING OF SEAMLESS STEEL TUBE

IF IN DOUBT, PL. ASK.

HEAT TREATMENT - QUENCHED & TEMPERED
HARDENING AT : 860°C ± 30°C - 30 Minute (Min)
TEMPERING AT : 570°C ± 30°C - 45 Minute (Min)
HARDNESS RANGE : 287 - 330 BHN

THREAD SPECIFICATION TABLE--'A'							
CODE	STD.	TYPE	TAPER ON DIA	PITCH	NECK DIA(D)	NECK DIA(d)	THREAD LENGTH
NG		(3/4"-NGT)	1:16	14,TPI	48.00	46.00	18.00
DN	(DIN-477)	28.8	3:25	14,TPI	48.00	46.00	22.00
EN	EN629-1	25E	3:25	14,TPI	48.00	46.00	22.00
PR		1 1/8"12UNF -2B	-	-	48.00	46.00	19.5

NOTE:- ALL DIMENSIONS ARE IN MM/INCHES



/O	190.0	239.0/527	1820/71.66
/N	180.0	228.0/503	1730/68.12
/M	170.0	218.0/481	1645/64.77
/L	160.0	207.0/457	1555/61.23
/K	150.0	197.0/435	1465/57.68
/J	140.0	186.0/410	1380/54.34
/I	130.0	176.0/388	1290/50.79
/H	121.0	166.0/366	1219/48.0
/G	120.0	165.0/364	1205/47.45
/F	110.0	155.0/342	1115/43.90
/E	100.0	145.0/320	1025/40.36
/D	96.0	140.0/309	990/39.0
/C	90.0	134.0/296	940/37.01
/B	85.0	129.0/285	895/35.24
/A	80.0	124.0/274	850/33.47

Item ref	Quantity	Material	---	Article No./Reference
Designed by	Checked by	Approved by - date	File Name	Date
			406X10.6 ANSI NGV-2	12-04-2014
Owner	Title/Name			Scale
EKC	#406/16 x 10.6/0.41 SEAMLESS GAS CYLINDER			N.T.S.
Drawing number			531E-101090	

RevNo	Revision note	Date	Checked	Approved

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