

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 350

LECTURE 10

LECTURE 10: THE HADRONIC COLLIDER

PHYSICS DEPARTMENT

PHYSICS 350

LECTURE 10

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
 (Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)
 As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by: Bota Welding, LLC 402 - 56th Street, Niagara Falls, NY 14304
(Name and address of manufacturer)

2. Manufactured for: Thermal Kinetics Systems, LLC 667 Tiftt Street Buffalo, NY 14220
(Name and address of purchaser)

3. Location of installation: Unknown
(Name and address)

4. Type: Vertical TP-4105 - 6018-MQ-4107 109 2007
(Hours or vert. term) (Mfg's serial No.) (CIN) (Drawing No.) (Mat'l Id. No.) (Year built)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE The design, construction, and workmanship conform to ASME Rules, Section VIII, Div. 1 2004
 to 2005
(ASME Code) (Year)

6. Shell SA-240 TP-304L .25 0 3' 11-1/2" 9' 9-7/8"
(Mat'l Spec. No., Grade) (Nom. Thk. (in.)) (Cor. Allow. (in.)) (Diam. T.D. (ft. & in.)) (Length Overall (ft. & in.))

7. Seams: Type 1 None 70 N/A Type 1 None 2
(Long. (Welded, Dbl. Supt. Lap Joints)) (R.T. (Spot or Full)) (E.P. (%) (H.T. Temp. (F)) (Time (hr)) (Circ. (Welded, Dbl. Supt. Lap Joints)) (R.T. (Spot or Full)) (No. of Courses))

8. Heads: (a) Matl SA-240 TP-304L (b) Matl SA-240 TP-304L
(Spec. No., Grade) (Spec. No., Grade)

Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a) TOP	.1875	0			2:1				Concave
(b) BOTTOM	.25	0				30			Concave

If removable, bolts used (describe other fastenings):
(Mat'l Spec. No., Grade, Size, No.)

9. MAWP 50 15 psi at max temp. 250 250 °F
(Internal) (external) (Internal) (external)
 Min. design metal temp. -20 °F at 50 psi. Hydro. pneu., or comb. test press. 65 psi

10. Nozzles, inspection, and safety valve openings:

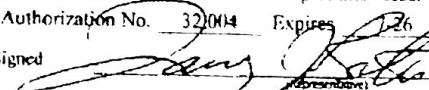
Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Matl	Nom. Thk	Reinforcement Material	How Attached	Location
Level	1	3"	stud-pad	SA-240 TP-304L	1.437	N/A	UW16.1©	shell
CIP	1	6"	CI150Fg	SA-312 TP-304L	.2800	N/A	UW16.1©	shell
Feed	1	8"	CI150Fg	SA-312 TP-304L	.3220	N/A	UW16.1©	head
Liquid Outlet	1	10"	CI150Fg	SA-312 TP-304L	.3650	N/A	UW16.1©	Cone
Vapor Outlet	1	14"	W.E	SA-312 TP-304L	.3750	SA240typ304L	UW16.1©	head

11. Supports: Skirt YES Lugs 2 Legs Others Attached Welded
(Yes or No) (No) (Describe) (Where and How)

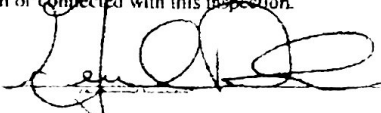
12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:
(Name of part, item number, MFG name and identifying stamp)

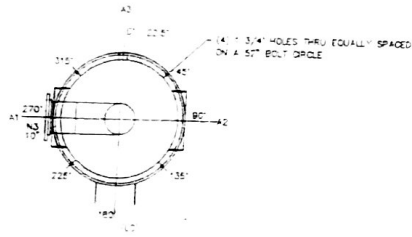
Impact Test Exempt Per UHA-51(d)&(g) UCS 66(c), Owner/User responsible for Pressure Relief Valve
 (2)1/4"SA240 stiffener rings welded to shell(1) welded to head Cir seam 70% E. 2 Lifting Lugs welded to head.

CERTIFICATE OF SHOP/FIELD COMPLIANCE

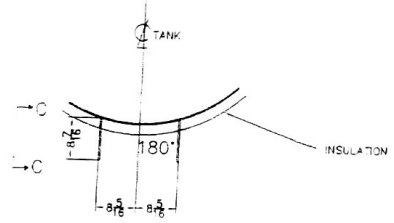
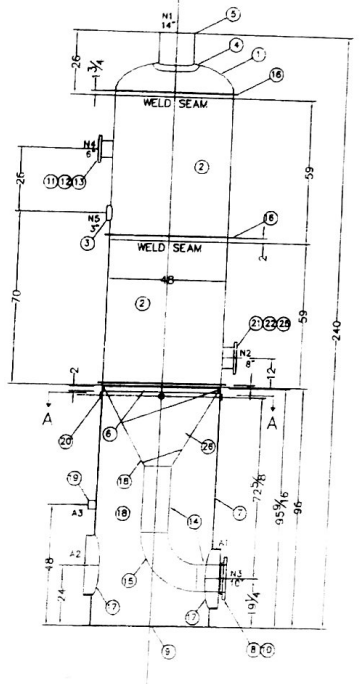
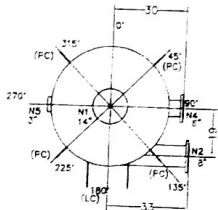
We certify that the statements made in this report are correct and that all details of design, material, construction and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1. U Certificate of Authorization No. 321004 Expires 12/26/2009
 Date 1/19/07 Co. Name Bota Welding, LLC Signed 

CERTIFICATE OF SHOP/FIELD INSPECTION

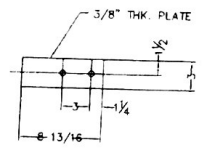
Vessel constructed by Bota Welding, LLC at 402 - 56th Street, Niagara Falls, NY 14304
 I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of New York and employed by HSB CT
 have inspected the component described in this Manufacturer's Data Report on 1/19/07, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.
 Date 1/19/07 Signed  Commissions NB11103ANY5078



SECTION A-A

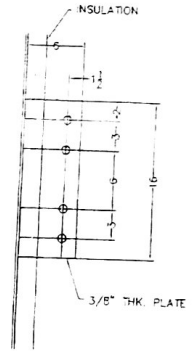


LADDER SUPPORT CLIP
3 SETS REQ'D (23)



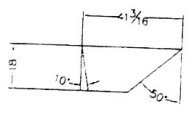
SECTION C-C

DESIGN DATA	
CODE	ASME VII DIVI STAMPED AND REGISTERED
SPECIFIC DRAWING/CONTENT	1/20
DESIGN PRESS ED/FW	(psig)
OPERATING PRESS	10.2 (psig)
OPERATING TEMP	189 (F)
MDMT	-20 DEG F
CORROSION ALLOWANCE	NONE
HYDRAULIC TEST PRESSURE	65 PS



PLATFORM SUPPORT CLIP
5 PCS REQ'D (24)

- NOTES:
- 1) ALL BOLT HOLES TO STRADDLE NATURAL CENTERLINES UNLESS NOTED OTHERWISE
 - 2) ALL STAINLESS STEEL TO BE L GRADE AND CERTIFIED
 - 3) FOR ALL INTERIOR AND EXTERIOR SURFACES SEE THERMAL KINETICS CLEANING AND BLASTING SPEC. GE-I.B.Q. CLASS 1
 - 4) ALL TOLERANCES PER ASME PRESSURE VESSEL CODE LATEST EDITION, SECTION VIII DIVISION 1
 - 5) WMD 80 MPH, EXP. C WF = 1.0



(25)

AS BUILT DRAWING

NOZZ	SERVICE	SIZE	RATING	TYPE	REMARKS	DEGREE
A3	FIRE PROTECTION	3"	ATMD	PLAIN		0°
A2	SKIRT ACCESS	24"	ATMD	PLAIN		90°
A1	SKIRT PENETRATION FOR N3	24"	ATMD	PLAIN		270°
N5	LEVEL TRANSMITTER	3"	50#	W/P	LT-011	270°
N4	OF	6"	50#	LJ		90°
N3	LIQUID OUTLET	10"	50#	LJ	TO PG-4105	270°
N2	FEED	8"	50#	LJ	FR ET-4113	90°
N1	VAPOR OUTLET	14"		BW	TO ET-4105	

PC: PLATFORM CLIP
LC: LADDER CLIP

BOTA WELDING	
System: THERMAL-KINETICS	
TP-4105	
DATE: 11/21/98	DRAWING SCALE: Not Scale
CHECKED BY: [Signature]	CUSTOMER ORG NUMBER: 6018-NQ-4107
DESIGNED BY: [Signature]	DATE: 11/21/98

REV	BY	DATE	DESCRIPTION
1	[Signature]	11/21/98	ISSUED FOR FAB