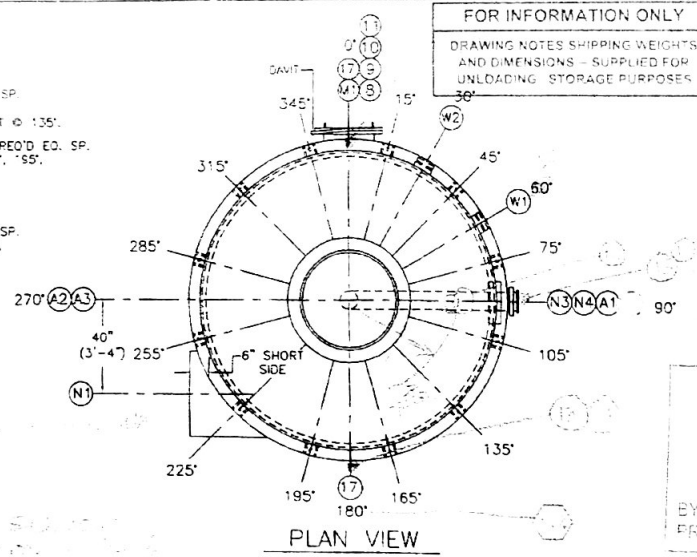


NOZZLE (N) IS IN THE CENTER OF THE TOP HEAD (T)
 NOZZLE (N) IS IN THE CENTER OF THE BOTTOM HEAD (B)
 (2) LIFT JOGS (L) REQ'D EQ. SP. ON SHELL @ 45° & 225°
 (3) TAIL LUGS (L) ON SKIRT @ 135°
 (4) ANCHOR CHAIRS (E) REQ'D EQ. SP. @ 15°, 45°, 75°, 105°, 135°, 165°, 195°, 225°, 255°, 285°, 315°, & 345°
 (5) GROUNDING LUGS (L) REQ'D EQ. SP. @ 0° & 180°
 (6) SKIRT VENTS (S) REQ'D EQ. SP. @ 0°, 45°, 90°, 135°, 180°, 225°, 270°, & 315°

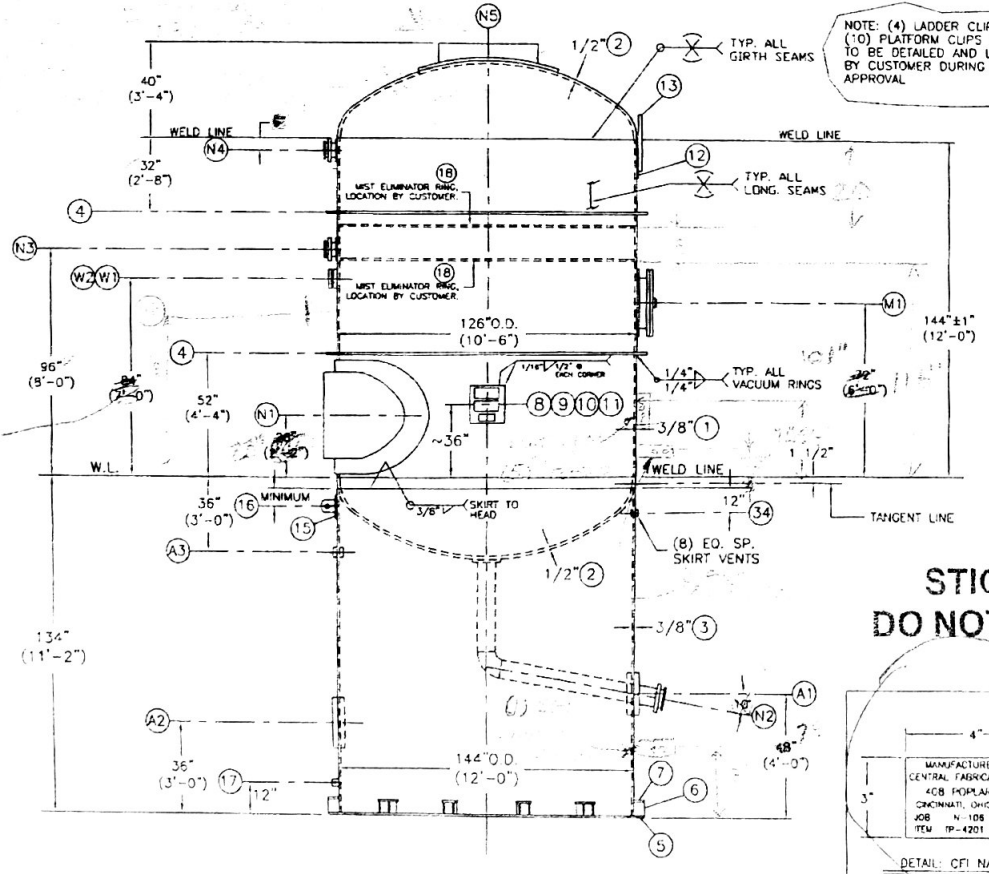


FOR INFORMATION ONLY
 DRAWING NOTES SHIPPING WEIGHTS AND DIMENSIONS - SUPPLIED FOR UNLOADING STORAGE PURPOSES

DEGREE	DIMENSION ON A 144" O.D.
1°	1 1/4"
5°	5 1/2"
10°	12 9/16" (1'-0 5/16")
15°	18 7/8" (1'-6 7/8")
30°	37 11/16" (3'-1 11/16")
45°	56 9/16" (4'-8 9/16")
60°	75 3/8" (6'-3 3/8")
90°	113 1/8" (9'-5 1/8")
135°	169 5/8" (14'-1 5/8")
180°	226 3/16" (18'-10 3/16")
225°	282 3/4" (23'-6 3/4")
270°	339 5/16" (28'-3 5/16")
315°	395 7/8" (32'-11 7/8")
360°	452 3/8" (37'-8 3/8")

THE THERMAL KINETICS SYSTEMS, INC.
 RECEIVED
 06/11/2004
 BY PROJECT #

NOTE: (4) LADDER CLIPS AND (10) PLATFORM CLIPS ARE TO BE DETAILED AND LOCATED BY CUSTOMER DURING DRAWING APPROVAL



STICK FILE
 DO NOT REMOVE

MANUFACTURED BY
 CENTRAL FABRICATORS, INC
 408 POPPASH ST.
 CHICAGO, ILL 60614
 JOB N-106
 REV TP-4201

NATIONAL BOARD NO. CERTIFIED BY CENTRAL FABRICATORS, INC. U.S.A. N.P.
 SHELL 25/F.V. P.S.I. AT 200 °F
 JACKETS P.S.I. AT °F
 TUBES P.S.I. AT °F
 COIL P.S.I. AT °F
 MOMT -20 °F AT 25 P.S.I.
 SERIAL NO. N-106 BUILT 1/2007

MARKING & DESCRIPTION				SERVICE	TEU	QUANTITY	PART DESCRIPTION	MATERIAL
N1	36"	FABRICATED PIPE (2) & REIN. PAD (2)	WAPOR METE	1	3	3/8" x 144" (12'-0") x 36" (3'-0") 1/2" THICK BOLDED	SA312 304LSS	
N2	8"	SCH 40 STUB END & 150# FLG. & REIN. PAD (2) & 90° ELBOW (2) & 8" SCH 40 PIPES (2)	UPPER RETURN	1	2	1/2" NDE W/PER PROTECTED	SA312 304LSS	
N3	6"	SCH 40 STUB END & 150# FLG. & REIN. PAD (2)	LOWER COP	1	2	3/8" NDE W/PER PROTECTED	SA312 304LSS	
N4	6"	SCH 40 STUB END & 150# FLG. & REIN. PAD (2)	UPPER COP	1	2	3/8" x 45 REO'D (12" MAX.) x 394 11/16" (12'-0") (11/16")	SA-36	
N5	36"	FABRICATED PIPE (2) & REIN. PAD (2)	WAPOR DRAINAGE	1	2	ROLLED TO AN 126" O.D. (2) COURSES	SA-36	
M1	24"	FABRICATED MANWAY (2) & UNERS (2) BLIND FLG. (2) & OSKT (2) & STUOS W/NUTS (2) & HANDLES (2) & REIN. PAD (2)	MANWAY	4	2	1/2" x 4 1/2" DIA. x 410" (32'-2") ROLLED	SA-36	
W1	4"	150# SIZE SIGHT GLASS ASSEMBLY INCLUDING 304LSS WELD PAD (2) GLASS, G.S. COVER FLG. & BOLTING. RATED FOR 25PSIG/TV @ 200°F	SKYGLASS	1	5	3/4" x 6" BAR x 422 1/8" (33'-6 1/8") ROLLED	SA-36	
W2	4"	150# SIZE SIGHT GLASS ASSEMBLY INCLUDING 304LSS WELD PAD (2) GLASS, G.S. COVER FLG. & BOLTING. RATED FOR 25PSIG/TV @ 200°F	SKYGLASS	1	24	1/2" x 4" x 6" OLSETT	SA-36	
A1	20"	FABRICATED PIPE (2) SKIRT OPENING	NO OPENING	3	1	3/4" x 3" W/IN. CLEARANCE NAMEPLATE BRACKET	JOHNS	
A2	24"	FABRICATED PIPE (2) SKIRT OPENING	SKIRT ACCESS	10	1	3" x 4" MANUFACTURED BY CFI NAMEPLATE	JOHNS	
A3	3"	SCH 40 PIPE x 3" LONG SKIRT ACCESS	SKIRT ACCESS	11	1	THERMAL KINETICS NAMEPLATE	JOHNS	
10)	ALL WELDING TO BE PER THE FOLLOWING CFI WELDING PROCEDURE SPECIFICATIONS (WPS NO):							
11)	ALL FLANGE BOLT HOLES TO STRADDLE MAJOR VESSEL CENTERLINES @ 180° & 90°-270° UNLESS NOTED OTHERWISE							
12)	ALL EXTERIOR CARBON STEEL, INCLUDING THE INSIDE OF THE SKIRT, WILL RECEIVE (1) COAT OF SHDP PRIMER 'RUSTOLEUM 769'. DUE TO THE POSSIBILITY OF DAMAGE TO PAINT DURING SHIPPING AND HANDLING, WE CANNOT ACCEPT RESPONSIBILITY FOR THE CONDITION OF THE PAINT AT THE POINT OF DELIVERY.							
13)	ALL REINFORCING PADS TO HAVE A 1/8" NPT WEEP HOLE. SCAP TEST @ 30 PSIG PRIOR TO HYDROTEST.							
14)	VESSEL INTERIOR AND EXTERIOR TO BE CLEANED AFTER FABRICATION. ALL DIRT, GRIME, AND GREASE MARKS TO BE REMOVED. WELDS TO BE FREE OF SPATTER.							
15)	ALL FLANGES TO BE 'PLASTIC FLANGE' PROTECTED FOR SHIPMENT							
16)	ALL WELDS TO BE SMOOTH/AS-WELDED. WELDS DO NOT NEED TO BE GROUND SMOOTH AND/OR FLUSH.							
17)	HEAVIER WALL PIPE MAY BE SUBSTITUTED FOR THE PIPE SPECIFIED IN THE NOZZLE SCHEDULE, BASED ON MATERIAL AVAILABILITY.							
18)	CENTRAL FABRICATORS, INC HAS REVIEWED ALL THE PROVIDED APPLICABLE SPECIFICATIONS AND INCORPORATED THEM INTO THESE APPROVAL DRAWINGS. IN THE EVENT OF A DISCREPANCY BETWEEN THE THERMAL KINETICS SPECIFICATIONS AND THESE APPROVAL DRAWINGS, THESE APPROVAL DRAWINGS WILL TAKE PRECEDENCE.							
19)	ANY NOZZLES WHICH PENETRATE THRU THE SHELL AS WELL AS NOZZLES FLUSH WITH THE INSIDE OF THE VESSEL ARE TO HAVE AN 1/8" RADIUS. NO INTERNAL SHARP EDGES ALLOWED.							
20)	THE FOLLOWING CHART ILLUSTRATES THE MAXIMUM AMOUNT OF LOADING EACH NOZZLE IN THIS VESSEL CAN HANDLE:							
NOZZLE		FORCE(LBS.)	BENDING MOMENT (FT/LBS.)					
N1		4,000	4,500					
N2		2,300	3,374					
N3		1,500	1,750					
N4		1,500	1,750					
N5		8,700	17,169					
21) ALL WETTABLE PARTS TO BE 304LSS. HOWEVER, CFI MAY SUBSTITUTE 316LSS FOR 304LSS BASED ON MATERIAL AVAILABILITY.								

BILL OF MATERIALS

REVISIONS

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		

DESIGN CONDITIONS
 25 PSIG/FULL VACUUM @ 200°F

HYDROSTATIC TEST CONDITIONS
 33 PSIG @ AMBIENT CONDITIONS

ESTIMATED VESSEL WEIGHT: FULL OF WATER
 EMPTY 105,004
 20,004

HEAT TREATMENT = NONE
 CORROSION ALLOWANCE = NONE (0.00")
 X-RAY = NONE
 MINIMUM DESIGN METAL TEMPERATURE (MDMT) = -20°F @ 25 PSIG

N-106
 P.O. #73338-04-2

CENTRAL FABRICATORS, INC.
 CORROSION RESISTANT PROCESS EQUIPMENT

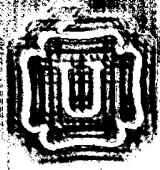
(1) TP-4201 SEPARATOR
 13'-6" O.D. x 12'-0" H.S.
 DRAWING NO. 10/5/06

DESIGNED BY: DEM
 DATE: 10/5/06
 CHECKED BY: ANGER
 DATE: 10/5/06

SHEET NO. 1 OF 3
 DRAWING NO. 10/5/06

NB 8007

J D COUSINS INC



25
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25/15

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2016

2007

42011

SEPARATOR



Thermal Kinetics Systems, LLC

Evaporation, Distillation, Chemical Reaction, Process Design & Energy Conservation

667 Tiffitt Street
(716) 826-3836

Buffalo, New York 14220
Fax (716) 826-3853

Project No.

Vessel ID.

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

1. Manufactured and certified by J.D. Cousins, Inc. 667 Tift Street Buffalo NY 14220 USA
(Name and address of manufacturer)

2. Manufactured for THERMAL KINETICS, 667 TIFT ST. BUFFALO, NY 14220
(Name and address of purchaser)

3. Location of installation CENTRAL ILLINOISE ENERGY, 23133 EAST COUNTY HWY 6, CANTON, IL. 61520
(Name and address)

4. Type Vert. 1206-9 - CF-8386 REV 0 8007 2007
(Horiz. or vert., tank) (Mfr's serial No.) (CRN) (Drawing no.) (Natl. Bd. 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, Division 1 2004 Edition

to 2005 Addenda
Addenda (Date) Code Case Nos. Special Service per UG-120(d)

6. Shell: SA-240-304L .375 0 10'-5 1/4" 12'-0"
Matl. (Spec. No., Grade) Nom. Thk. (in.) Corr. Allow. (in.) Diam. I. D. (ft. & in.) Length (overall) (ft. & in.)

7. Seams: 1 None 70 - 1 None 70 3
Long. (Welded, Dbl., Sngl., Lap, Butt) R. T. (Spot or Full) Eff. (%) H. T. Temp. (°F) Time (hr) Girth (Welded, Dbl., Sngl., Lap, Butt) R. T. (Spot or Full) Eff. (%) No. of Courses

8. Heads: (a) Matl. SA-240-304L (b) Matl. SA-240-304L
(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	.239	0	-	-	2:1	-	-	-	CONCAVE
(b) BOTTOM	.239	0	-	-	2:1	-	-	-	CONCAVE

If removable, bolts used (describe other fastenings) N/A
(Matl., Spec. No., Gr., Size, No.)

9. MAWP 25 15 psi. at max. temp. 200 F 200 F °F.
(internal) (external) (internal) (external)

Min. design metal temp. -20 °F at 25/FV psi. ~~hydrox pneu.~~ ~~test pressure~~ 28 psi.

10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Matl.	Nom. Thk.	Reinforcement Matl.	How Attached	Location
Inlet	1	36"	PIPE	SA-240-304L	.375	SA-240-304L	UW16.1	SHELL
Outlet	1	36"	PIPE	SA-240-304L	.375	SA-240-304L	UW16.1	TOP HEAD
Inlet	1	8"	LAPJT	SA-312-304L	.322	SA-240-304L	UW16.1	BOT HEAD
CIP	2	6"	LAPJT	SA-312-304L	.280	SA-240-304L	UW16.1	SHELL

11. Supports: Skirt YES Lugs 3 Legs - Other VACUUM RINGS Attached WELDED TO HD/SHELL
(Yes or no) (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: N/A
(Name of part, item number, Mfr's name and identifying stamp)

VESSEL PNEUMATIC TESTED IN THE HORIZONTAL POSITION. PO# 73338-04-2 TP-4201 SEPARATOR.

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. 1219

expires 1/31/2008
 Date 3/8/07 Co. Name J.D. Cousins, Inc. Signed Darryl Bailey
(Manufacturer) (Representative)

CERTIFICATE OF SHOP / FIELD INSPECTION

Vessel constructed by J.D. Cousins, Inc. at 667 Tift Street Buffalo, NY 14220 USA

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 NY and employed by OneBeacon AMERICA INSURANCE CO., BOSTON, MASS. have inspected the component described in this Manufacturer's Data Report on 3-8-07, 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 3-8-07 Signed Robert [Signature] Commissions NB11535A - NY 5138
(Authorized Inspector) [Natl Board (incl. endorsements), State, Prov. and No.]

RC 3-8-07
3/8/07