

**FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS**  
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by J.D. Cousins, Inc. 667 Tifft St. Buffalo, NY 14220  
(Name and address of manufacturer)
2. Manufactured for ARCO Chemical Co. P.O. Box 709 Newtown Square, PA 19073  
(Name and address of purchaser)
3. Location of installation SAME - Newtown Square Facility  
(Name and address)
4. Type Heat Exchanger 488-7 C-4814-1 5909 1988  
(Name of vessel, tank) (Mfg's serial No.) (CRN) (Drawing) (Nat'l. 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. 1988  
Year

87  
Addenda (date)

Code Case No.

Special service per US-1984C

Items 6-11 incl. to be completed for single shell vessels, jackets or sheets of heat exchangers

6. Shell: SA53-B .365 0'-10.020" 6'-0"  
(Matl. Spec. No., Grade) (Nom. Thk. (in.)) (Corr. Allow. (in.)) (Diam. I.D. (ft & in.)) (Length (Overall) (ft & in.))
7. Seams: ERW Pipe wld. sing. groove 80 1  
(Long (Dbl., Sngl.)) (R.T. (Spot or Full)) (EN (in.)) (H.T. Temp. (F))
- Time 1 Grth (Dbl., Sngl.) R.T. (Spot, Partial, or Full) No. of Courses

8. Heads: (a) Matl. SA53-B (b) Matl. SA53-B  
(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)										
(b)										

If removable, bolts used (describe other fastenings)

(Matl. Spec. No., Gr., Size, No.)

9. Type of Jacket None Proof Test None
10. Jacket Closure None If bar, give dimensions None If bolted, describe or sketch.
11. MAWP 100 psi at max. temp. 350 °F. Min. temp. (when less than -20° F) see remarks °F.  
Hydro. test press. 150 psi.

Items 12 and 13 to be completed for tube sections

12. Tubesheets: SA105 10.020" 1.1875" welded  
(Stationary Matl. (Spec. No., Gr.)) (Diam. (in.) (Subject to pressure)) (Nom. Thk. (in.)) (Corr. Allow. (in.)) (Attach (Welded Bolted))
- SA214 3/4 16 BWG 43 straight  
(Floating Matl. (Spec. No., Gr.)) (Diam. (in.)) (Nom. Thk. (in.)) (Corr. Allow. (in.)) (Attach) (Type (Straight or "U"))
13. Tubes: SA214 3/4 16 BWG 43 straight  
(Matl. (Spec. No., Gr.)) (O.D. (in.)) (Nom. Thk. (in. or Gauge)) (Number) (Type (Straight or "U"))

Items 14-17 incl. to be completed for double shell heat exchangers

14. Shell: SA53-B .365 0'-10.020" 8" & 4"  
(Matl. (Spec. No., Grade)) (Nom. Thk. (in.)) (Corr. Allow. (in.)) (Diam. I.D. (ft & in.)) (Length (Overall) (ft & in.))
15. Seams: ERW Pipe wld. dbl. fillet 80 1  
(Long (Dbl., Sngl.)) (R.T. (Spot or Full)) (EN (in.)) (H.T. Temp. (F))
- Time 1 Grth (Dbl., Sngl.) R.T. (Spot, Partial, or Full) No. of Courses
16. Heads: (a) Matl. SA516-70 (b) Matl. same  
(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)	<u>ends</u>	<u>.317</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>10.020</u>	<u>flat</u>
(b)	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>

If removable, bolts used (describe other fastenings)

(Matl. Spec. No., Gr., Size, No.)

17. MAWP 75 psi at max. temp. 350 °F. Min. temp. (when less than -20° F) None °F.  
Hydro. test press. 115 psi.

## Form U-1 (Back)

### 10. Nozzles, Inspection and Safety Valve Openings:

[illegible]

19. Supports: Skirt no Lugs 2 Legs 4 Other Welded to shell  
(Yes or no) (No.) (No.) (Describe) (Where and how)

20. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: \_\_\_\_\_

Model FS-1072 BEM Vert. Vent Condenser. TAG HE-950. Tested horizontally. -----  
 shell side minimum design metal temperature is  $-20^{\circ}\text{F}$  @ 100 PSIG  
 tube " " " " " is  $-20^{\circ}\text{F}$  @ 75 psig.  
 ARCO P.O. NS S 1107 8099

## CERTIFICATE OF SHOP 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 19 90  
 Date 7-8-88 Co. name J.D. Cousins, Inc. Signed [Signature]

# CERTIFICATE OF SHOP INSPECTION

Vessel constructed by J.D. Cousins, Inc. 81 BUFFALO, NY

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 H.S.B. I.&I. Co.

of Hartford, CT has inspected the pressure vessel described in this Manufacturer's Data Report on July 11, 1988 and states 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 the 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: 7-11-88 Signed: [Signature] Commission: AK 9725

# CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly construction of all parts of this vessel conforms with the requirements of Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code.

"U" Certificate of Authorization No. \_\_\_\_\_ expires \_\_\_\_\_, 19\_\_\_\_.

Date \_\_\_\_\_ Co. name \_\_\_\_\_ Signed \_\_\_\_\_  
(Assembles that notified and announced field research)

## CERTIFICATE OF FIELD ASSEMBLY INSPECTION

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 \_\_\_\_\_ and employed by \_\_\_\_\_

\_\_\_\_\_ of \_\_\_\_\_ have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items \_\_\_\_\_ not included in the

certificate of shop inspection, have been inspected by me and that, to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with ASME Code, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of \_\_\_\_\_ psi. 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.

<b>Date</b>	<b>Signed</b>	<b>Commissions</b>
-------------	---------------	--------------------

(Authorized Inspector) \_\_\_\_\_ (Not Board Last endorsement), State, Prov. and No. \_\_\_\_\_