FORM U-1 MANUFACTURERS' DATA REPORT FOR UNFIRED PRESSURE VESSELS

66-184 — As required by the Provisions of the ASME Code Rules and the National Board — 336-026-01085-11-000

1. Manufactured by SOUTHERN HEAT EXCHANGER CORPORATION, TUSCALOOSA, ALABAMA (Name and address of Manufacturer)

2. Manufactured for Hercules Inc. Wilmington, North Carolina (Name and address of Purchaser)

3. Type Horiz (Horiz. or Vert.) Kind HT EXCHR. (Tank, Jacketed, Heat Exch.) Vessel No. (673) (--) (Mfrs' Serial) (State & State No.) Nat'l Bd. No. 673 Yr. Built 1967

Items 4-9 incl. to be completed for single wall vessels (such as air tanks), jackets of jacketed vessels, or shells of Heat Exchangers

4. SHELL: Material A-53-B (Kind and Spec. No.) T.S. 60,000 (Fig. or F. B. & lowest T. S.) Nominal Thickness 5/16 in. Corrosion Allowance 1/16 Diam. 2ft. 2in. Length 18 0 in.

5. SEAMS: Long Seamless (Welded, Dbl., Single, Lap, Butt) S.R. No (Yes or No) X.R. No (Spot or Complete) Sectioned No (Yes or No) Efficiency 100 % — If riveted describe seams fully on reverse side of form

Girth Dbl Butt S.R. No X.R. Spot Sectioned No No. of Courses 1

6. HEADS: (a) Material A-212-B T.S. 70,000 (b) Material T.S.

Location (Top, bottom, ends)	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	5/16"			2:1				concave
(b)								

If removable, bolts used (Material, Spec. No., T.S., Size, Number) Other fastening (Describe or Attach Sketch)

7. STAYBOLTS: (Material) If hollow (Size of Hole) Attachment (Threaded, Welded) Pitch (Horiz.) X (Vert.) Diam. (Nominal)

8. JACKET CLOSURE: (Describe as ogee & weld, bar, etc. If bar give dimensions, if bolted, describe or sketch)

9. Constructed for maximum allowable working pressure[1] 150 psi. at Max. temp. 375 °F Min. temp. (when less than -20°) °F Pneumatic / Hydrostatic or Combination Test Pressure 225 psi.

Items 10 and 11 to be completed for tube sections.

10. TUBE SHEETS: Stationary. Material SA240 TP 316 (Kind & Spec. No.) Diam. 26 in. (Subject to Pressure) Thickness 1 1/4 Attachment Welded (Welded, Bolted)

Floating. Material (Kind & Spec. No.) Diam. in. Thickness in. Attachment

11. TUBES: Material SA249 TP 316 (Kind & Spec. No.) O.D. 3/4 in. Thickness 16 ~~inches~~ or gage. Number 628 Type Straight (Straight or U)

Items 12-15 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

12. SHELL: Material A240 TP 316 (Kind and Spec. No.) T.S. 75,000 (Fig. or F.B. & Spec. Min. T.S.) Nominal Thickness 1/4 in. Corrosion Allowance 0 in. Diam. 2ft. 2in. Length 2 ft. 10

13. SEAMS: Long Dbl Butt (Welded, Dbl., Single, Lap, Butt) S.R. No (Yes or No) X.R. Spot (Spot or Complete) Sectioned No (Yes or No) Efficiency 85 % — If riveted describe seams fully on reverse side of form

Girth Dbl Butt S.R. No X.R. Spot Sectioned No No. of courses 1

14. Heads (a) Material *A-212-B T.S. 70,000 (b) Material T.S. (c) Material T.S.

Location	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a) ~~Top, bottom~~ ends	1 3/4"						26"	
(b) Channel								
(c) Floating								

If removable, bolts used (a) 28 - 5/8" Dia (Material, Spec. No., T.S., Size, Number) (b)

(c) Other fastening STUDS SA193 GRADE B7 NUTS SA194 CLASS 2H (Describe or Attach Sketch)

15. Constructed for maximum allowable working pressure[1] 150 psi. at Max. temp. 375 °F Min. temp. (when less than -20°) °F Pneumatic / Hydrostatic or Combination Test Pressure 225 psi.

Items below to be completed for all Vessels where applicable.

16. SAFETY VALVE OUTLETS: Number Size Location

17. NOZZLES:

Purpose (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Thickness	Reinforcement Material	How Attached
In	1	24"	Flg'd	SA-240-316	3/16	-	Welded
Out	1	4"	Flg'd	SA-240-316	Sch 10	-	Welded
In-out	2	6"/3"	Flg'd	A53-B	Sch 40/80	-	Welded

18. INSPECTION OPENINGS: Manholes, No. Size Location
Handholes, No. Size Location
Threaded, No. Size Location

19. SUPPORTS: Skirt (Yes or No) Lugs (Number) Legs 2 (Number) Other (Describe) Attached weld to she (Where & How)

20. REMARKS: * SA240-316 S/S X 1/4 thick liner on heads

(Brief description of purpose of the vessel, as Air Tank, After Cooler, Jacketed Cooker, etc. State contents of each part.) (Over)

[1] List other internal or external pressures with coincident temperature when applicable.

9-61 CPCo 10M

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this unfired pressure vessel conform to the ASME Code for Unfired Pressure Vessels.

Date May 10 1967 Signed SOUTHERN HEAT EXCHANGER CORP. By Bonar L. Ingram
(Manufacturer)

Certificate of Authorization Expires DECEMBER 31, 1967

CERTIFICATE OF SHOP INSPECTION

VESSEL MADE BY SOUTHERN HEAT EXCHANGER CORP. at TUSCALOOSA, ALABAMA

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of Louisiana and employed by HARTFORD STEAM BOILER INSP. & INS. CO. of HARTFORD, CONN. have inspected the pressure vessel described in this manufacturer's data report on MAY 11 1967 19 ____, and state that to the best of my knowledge and belief, the manufacturer has constructed this pressure vessel in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code.

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 5-11-67 19 ____

Edward A. Benefiel Commissions NAT'L BOARD 6046
Inspector's Signature Edward A. Benefiel Nat'l Board or State and No.

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 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 manufactured and assembled this pressure vessel in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code. 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.

Date _____ 19 ____

_____ Commissions _____
Inspector's Signature Nat'l Board or State and No.