

1. Manufactured and certified by Industrial Alloy Fabricators, Inc. 2345 Quince St. Forest Grove, OR 97116  
(name and address of manufacturer)  
2. Manufactured for DEDERT CORP. 20,000 GOVERNORS DRIVE OLYMPIA FIELDS, IL 60461-1074  
(name and address of purchaser)  
3. Location of installation UNKNOWN  
(name and address)

4. Type: VERTICAL HEAT EXCHANGER D-1894 NA D-1894 R2A 1616 1994  
(horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exch., etc) (Mfg's serial No.) (CRN) (Drawing No.) (Nat'l Bd. No.) (Year built)

5. ASME Code, Section VIII, Div. 1 1992 Edition 92 Addenda NA NA  
Edition and Addenda (date) Code Case No. Special Service per UG-120(d)

Items 6-11 Incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multi-chamber vessels.

6. Shell (a) No. of course(s): 8 (b) Overall length (ft & in.): 30'-0"

| Course(s) |               |                   | Material            | Thickness |       | Long Joint (Cat A) |      |      | Circum. Joint (Cat. A, B & C) |      |      | Heat Treatment |      |      |      |       |      |
|-----------|---------------|-------------------|---------------------|-----------|-------|--------------------|------|------|-------------------------------|------|------|----------------|------|------|------|-------|------|
| No.       | Diameter, in. | Length (ft & in.) | Spec./Grade or Type | Nom.      | Corr. | Type               | Full | Spot | None                          | Eff. | Type | Full           | Spot | None | Eff. | Temp. | Time |
| 8         | 27" OD        | 30'-0"            | SA-240 316L         | 3/16"     | 0"    | 1                  | NONE |      |                               | 70%  | 1    | NONE           |      |      | 70%  | NA    | NA   |
| NA        |               |                   |                     |           |       |                    |      |      |                               |      |      |                |      |      |      |       |      |
| NA        |               |                   |                     |           |       |                    |      |      |                               |      |      |                |      |      |      |       |      |

7. Heads: (a) NA (b) NA  
(Mat'l Spec. No., Grade or Type) H.T.-Time & Temp. (Mat'l Spec. No., Grade or Type) H.T.-Time & Temp.

| (Weld Spec. No., Grade or Type, H.T., Time & Temp) |                              |           |       |        |         |            |            |        |          | (Weld Spec. No., Grade or Type, H.T., Time & Temp) |         |            |      |      |      |      |
|--|------------------------------|-----------|-------|--------|---------|------------|------------|--------|----------|--|---------|------------|------|------|------|------|
|  | Location (Top, Bottom, Ends) | Thickness |       | Radius |         | Elliptical | Conical    | Heml.  | Flat     | Side to Pressure                                   |         | Category A |      |      |      |      |
|  |                              | Min.      | Corr. | Crown  | Knuckle | Ratio      | Apex Angle | Radius | Diameter | Convex   | Concave | Type       | Full | Spot | None | Eff. |
| (a)  | NA                           |           |       |        |         |            |            |        |          |  |         |            |      |      |      |      |
| (b)  | NA                           |           |       |        |         |            |            |        |          |  |         |            |      |      |      |      |

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

8. Type of jacket FLAT PLATE BUSTLE Jacket closure Weld Bar  
(Describe as ogee & weld, bar, etc.)

If bar, give dimensions 3/8" x 27" ID x 33" OD If bolted, describe or sketch.

9. MAWP 30 -15 psi at max. temp. 275 275 deg F Min. design metal temp. 0 deg F at 30/-15 psi.  
(internal) (external) (internal) (external)

10. Impact test No Impact test required per: UHA-51(a)  
(Indicate yes or no and the component(s) impact tested)

11. Hydro., Pneu., or comb. test press. Hydro @ 60 psi Proof test NA

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: SA-240 316L 2'-2-5/8" 1" 0" Welded  
Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)

NA Floating (Mat'l Spec. No.) Dia., in. Nom. thk., in. Corr. Allow., in. Attachment

13. Tubes: SA-249 TP316L 1-1/2" .049" 130 Straight  
Mat'l Spec. No., Grade or Type O.D., in. Nom. thk., in. or gauge Number Type (Straight or U)

Items 14-15 Incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell (a) No. of course(s): 2 (b) Overall length (ft & in.): 2'-8"

| Course(s) |               |                   | Material            | Thickness |       | Long Joint (Cat A) |                 |     | Circum. Joint (Cat. A, B & C) |                 |      | Heat Treatment |      |
|-----------|---------------|-------------------|---------------------|-----------|-------|--------------------|-----------------|-----|-------------------------------|-----------------|------|----------------|------|
| No.       | Diameter, in. | Length (ft & in.) | Spec./Grade or Type | Nom.      | Corr. | Type               | Full,Spot, None | Eff | Type                          | Full,Spot, None | Eff. | Temp.          | Time |
| 2         | 27" OD        | 2'-8"             | SA-240 316L         | 3/16"     | 0"    | 1                  | NONE            | 70% | 1                             | NONE            | 70%  | NONE           | NA   |
| NA        |               |                   |                     |           |       |                    |                 |     |                               |                 |      |                |      |
| NA        |               |                   |                     |           |       |                    |                 |     |                               |                 |      |                |      |

15. Heads: (a) SA-516 70 \* (b) SA-516 70 \*  
(Mat'l Spec. No., Grade or Type) H.T.-Time & Temp. (Mat'l Spec. No., Grade or Type) H.T.-Time & Temp.

| (Wat. Spec. No., Grade or Type), Time & Temp |                              |           |       |        |         |            |            |        |          | (Wat. Spec. No., Grade or Type), Time & Temp |         |            |      |      |      |      |
|--|------------------------------|-----------|-------|--------|---------|------------|------------|--------|----------|--|---------|------------|------|------|------|------|
|  | Location (Top, Bottom, Ends) | Thickness |       | Radius |         | Elliptical | Conical    | Heml.  | Flat     | Side to Pressure                             |         | Category A |      |      |      |      |
|  |                              | Min.      | Corr. | Crown  | Knuckle | Ratio      | Apex Angle | Radius | Diameter | Convex                                       | Concave | Type       | Full | Spot | None | Eff. |
| (a)  | TOP                          | 1.04"     | 0"    | NA     | NA      | NA         | NA         | NA     | 33"      | NO   | NO      | NONE       | NA   |      |      | 100% |
| (b)  | BOTTOM                       | 1.04"     | 0"    | NA     | NA      | NA         | NA         | NA     | 33"      | NO   | NO      | NONE       | NA   |      |      | 100% |

If removable, bolts used (describe other fastening) SA-193 B7 5/8" diameter 28 required (EACH END)  
(Mat'l Spec. No., Grade, Size, No.)



## FORM U-1 (back)

Nat'l Bd. # 1616

16. MAWP 30 -15 psi at max. temp. 275 275 deg F Min. design metal temp 0 deg F at 30/-16 psi  
 (internal) (external) (internal) (external)

17. Impact test NO IMPACT TEST REQUIRED PER: UHA-51(a)

(Indicate yes or no and the component(s) impact tested)

18. Hydro., Pneu., or comb. test press. 61 psi Proof test NA

19. Nozzles, inspection, and safety valve openings:

| Purpose (Inlet, Outlet, Drain.) | No | Diameter or Size | Flange Type | Material     |        | Nozzle Thk. |       | Reinf.   | How Attached |        | Location      |
|---------------------------------|----|------------------|-------------|--------------|--------|-------------|-------|----------|--------------|--------|---------------|
|                                 |    |                  |             | Nozzle       | Flange | Nom.        | Corr. | Material | Nozzle       | Flange | (Insp. Open.) |
| IN/OUT                          | 2  | 10" IPS          | 150# LJ     | SA-240 316L  | SA-105 | 3/16"       | 0"    | INTEGRAL | WELDED       | LOOSE  | NA            |
| OUTLET                          | 1  | 3" IPS           | 150# LJ     | SA-312TP316L | SA-105 | .216"       | 0"    | INTEGRAL | WELDED       | LOOSE  | NA            |
| VENT                            | 1  | 2" IPS           | 150# LJ     | SA-312TP316L | SA-105 | .154"       | 0"    | INTEGRAL | WELDED       | LOOSE  | NA            |
| INLET                           | 1  | 4" IPS           | 150# LJ     | SA-312TP316L | SA-105 | .237"       | 0"    | INTEGRAL | WELDED       | LOOSE  | NA            |
| VNT/DRAIN                       | 4  | 1" IPS           | CPLG        | SA-182 F316L | NA     | 3000#       | 0"    | INTEGRAL | WELDED       | NA     | NA            |
| SGT GLASS                       | 1  | 6" IPS           | PAD         | SA-240 316L  | NA     | 1"          | 0"    | INTEGRAL | WELDED       | NA     | NA            |
| GAUGE                           | 1  | 1/2" IPS         | CPLG        | SA-182 F316L | NA     | 3000#       | 0"    | INTEGRAL | WELDED       | NA     | NA            |

20. Supports: Skirt No Lugs NA Legs NA Others SUPPORT RING Attached SHELL/WELDED  
 (Yes or No) (No.) (No.) (Describe) (Where and How)

21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report

(List the name of part, item number, mfg's. name and identifying number)

NA

NA

22. Remarks: Pressure Relief Devices to be provided by others per UG-125 SEE ATTACHED 'U-4' FORM

Hydro Tested in the: HORIZONTAL Position Inspection Openings PER UG-46 (f)(7)

SHELL SIDE HAS 3 EXTERNAL VACUUM STIFFENING RINGS. \* = CLAD WITH 3/16" SA-240 316L

CHANNEL SIDE HAS AN INTERNAL PASS PARTITION PLATE.

## 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. 12,619 Expires April 30, 19 96

Date 02/24/94 Name Industrial Alloy Fabricators, Inc.  
 (Manufacturer)

Signed [Signature]  
 (Representative)

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of OR and employed by The Building Codes Agency of OREGON have inspected the pressure vessel described in this Manufacturer's Data Report on 02/24, 1994, 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 02/24/94 Signed [Signature]  
 (Authorized Inspector)

Commissions NA 11456 "A" and 11456  
 (Nat'l Board incl. endorsement, State, Province and No.)

## CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, Division 1.

U Certificate of Authorization No. NA Expires         , 19         

Date          Name NA  
 (Assembler)

Signed           
 (Representative)

## CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and 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          not included in the certificate of shop inspection, have been inspected by me and 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.

Date          Signed           
 (Authorized Inspector)

Commissions           
 (Nat'l Board incl. endorsement, State, Province and No.)

FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET  
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

DEDERT

POS 83-5452

2/2

1. Manufactured and certified by Industrial Alloy Fabricators, Inc. 2345 Quince St. Forest Grove, OR 97116  
(name and address of manufacturer)
2. Manufactured for DEDERT CORP. 20,000 GOVERNORS DRIVE OLYMPIA FIELDS, IL 60461-1074  
(name and address of purchaser)
3. Location of installation UNKNOWN  
(name and address)
4. Type: VERTICAL HEAT EXCHANGER D-1894  
(horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exch., etc.) (Mfg's serial No.)
- NA D-1894 R2A 1616 1994  
(CRN) (Drawing No.) (Nat'l Bd No.) (Year built)

Data Report

Item Number

Remarks

Form U-1

Item 19

## Nozzles, inspection, and safety valve openings:

| Purpose (Inlet, Outlet, Drain.) | No. | Diameter or Size | Flange Type | Material    |        | Nozzle Thk. |       | Reinf. Material | How Attached |        | Location (Insp. Open.) |
|---------------------------------|-----|------------------|-------------|-------------|--------|-------------|-------|-----------------|--------------|--------|------------------------|
|                                 |     |                  |             | Nozzle      | Flange | Nom.        | Corr. |                 | Nozzle       | Flange |                        |
| VPR DUCT                        | 1   | 10-3/4" OD       | STUB        | SA-240 316L | NA     | 3/16"       | 0"    | INTEGRAL        | WELDED       | NA     | NA                     |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |
| NA                              |     |                  |             |             |        |             |       |                 |              |        |                        |

Certificate of Authorization:

Type

U

No

12,619

Expires

April 30

19 96

Date 02/24/ 94Name Industrial Alloy Fabricators, Inc.

(manufacturer)

Signed

(representative)

Date 02/24/ 94

Name

(Authorized Inspector)

Commissions NB 11456 "A" D&E 11456

(Nat'l Board incl. endorsement, State, Province and No.)

Similar to form obtained from:

The National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Ave., Columbus, OH 43229

NB-67

Rev. 4