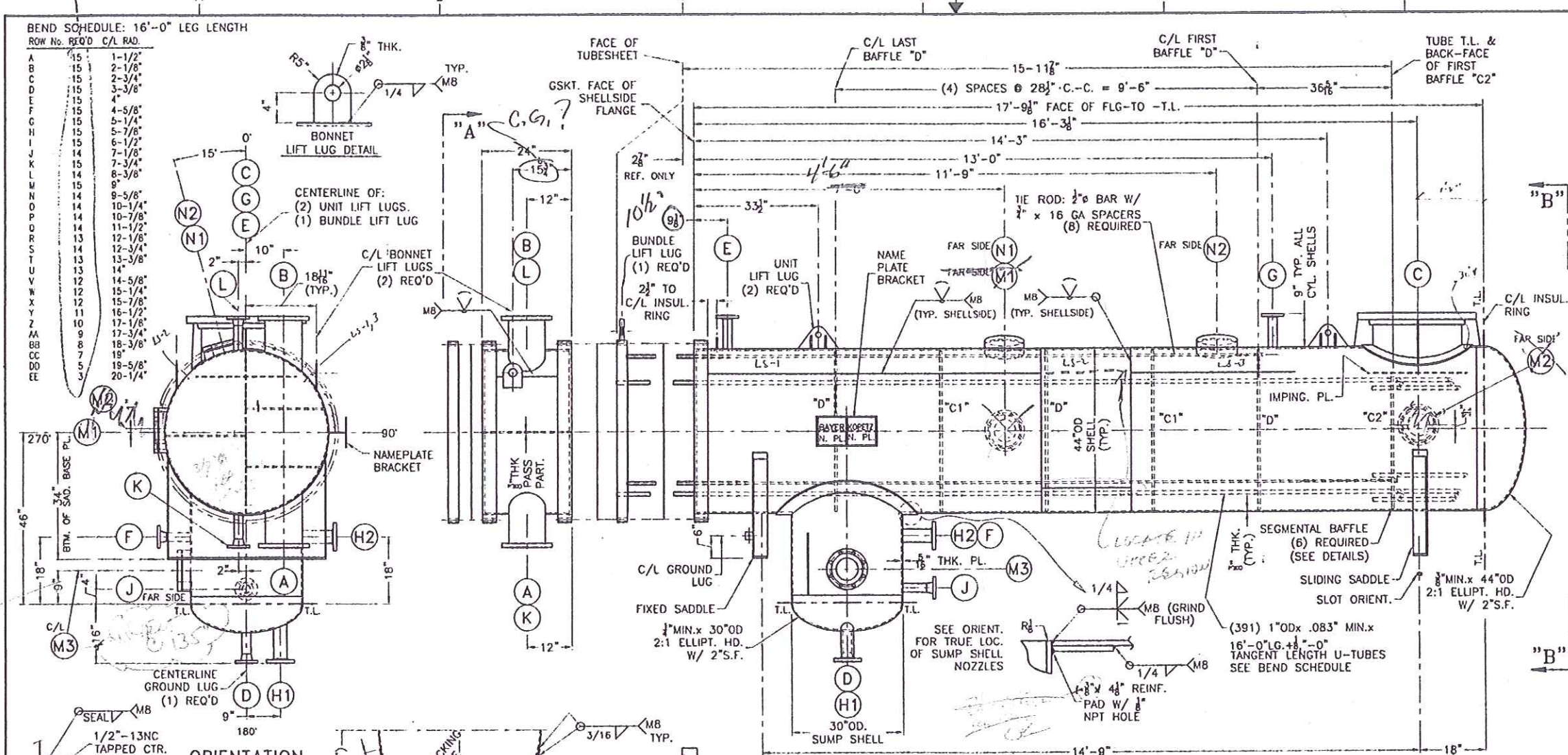




**ORIENTATION (VIEW "A-A")**

1/4" x 2" x 2" TAPPED CTR. HOLE

**GROUND LUG DETAIL**

**"FINAL WELD INSPECTION"**

BY: \_\_\_\_\_ DATE: \_\_\_\_\_

**WELD PROC. FILLER MAT.**

|     |        |             |
|-----|--------|-------------|
| MB  | E316L  | IF EITHER   |
| MB  | ER316L | BASE MAT'L. |
| TGB | ER316L | IS 316L     |
| MB  | E308L  | IF BOTH     |
| MB  | ER308L | BASE METALS |
| TGB | ER308L | ARE 304     |

**WELD PROCEDURE OPTIONS:**  
FOR MB ARE MGB OR TGB

IN ADDITION TO TOLERANCES SPECIFIED HERE THE FABRICATOR MUST COMPLY WITH ADDITIONAL TOLERANCES INCLUDED IN BAYER ENGINEERING STANDARDS OR SPECIFICATIONS MADE A PART OF THIS ORDER. FAILURE TO COMPLY WITH ALL TOLERANCE SPECIFICATIONS WILL BE CAUSE FOR REJECTION. EQUIPMENT GENERALLY IS JOINED-UP WITH PREFABRICATED PIPING, REQUIRING ACCURATE NOZZLE LOCATIONS AND FACE ALIGNMENTS WITHIN THE SPECIFIED TOLERANCES.

| HORIZONTAL EQUIPMENT SUPPORT TOLERANCES |                                                           |  |  |
|-----------------------------------------|-----------------------------------------------------------|--|--|
| TOLERANCE                               | DESCRIPTION OF TOLERANCE                                  |  |  |
| +0 - 1/8"                               | HORIZONTAL EQUIPMENT, CENTERLINE TO BOTTOM OF SUPPORT.    |  |  |
| +1/4"                                   | HORIZONTAL EQUIPMENT, BASELINE TO CENTERLINE OF SUPPORT.  |  |  |
| +1/4"                                   | CENTERLINE TO CENTERLINE OF HORIZONTAL EQUIPMENT SUPPORTS |  |  |

| VERTICAL EQUIPMENT SUPPORT TOLERANCES |                                 |                                 |                                      |
|---------------------------------------|---------------------------------|---------------------------------|--------------------------------------|
| EQUIPMENT DIAMETER                    | SUPPORT LOCATION BELOW BASELINE | SUPPORT LOCATION ABOVE BASELINE | SUPPORT OUT OF LEVEL ACROSS DIAMETER |
| 7'-0" AND UNDER                       | +0 - 1/4"                       | -0 - +1/4"                      | 1/8"                                 |
| OVER 7'-0" TO 10'-0"                  | +0 - 3/16"                      | -0 - +5/16"                     | 3/16"                                |
| OVER 10'-0" TO 13'-0"                 | +0 - 3/8"                       | -0 - +3/8"                      | 1/4"                                 |
| OVER 13'-0" TO 16'-0"                 | +0 - 7/16"                      | -0 - +7/16"                     | 5/16"                                |
| OVER 16'-0"                           | +0 - 1/2"                       | -0 - +1/2"                      | 3/8"                                 |

**FABRICATION TOLERANCES**

| METAL EQUIPMENT     | DESCRIPTION OF TOLERANCE                                                                                               |
|---------------------|------------------------------------------------------------------------------------------------------------------------|
| SHOP FABRICATED     |                                                                                                                        |
| ±1/8"               | FACE OF NOZZLE TO CENTERLINE OF EQUIPMENT.                                                                             |
| ±1/4"               | CENTERLINE OF NOZZLE TO BASELINE OR DATUM REFERENCE.                                                                   |
| 1/2 DEG             | NOZZLE FLANGE FACE ALIGNMENT, CENTERLINE TO EDGE, IN DEGREES RISE.                                                     |
| ±1/8"               | PLAN LOCATION OF NOZZLES OR SUPPORT LUGS FROM EQUIP. CENTERLINE OR DATUM REFERENCE.                                    |
| ±1/4" OR 1/64" TYP. | HEIGHT OF NOZZLE, FROM BASELINE TO FACE OF TOP NOZZLE. (SEE NOZZLE LAST TO HOLD TOLERANCE AND ALIGNMENT TO A MINIMUM.) |
| ±1/4"               | FACE OF BOTTOM NOZZLE TO BASELINE OR DATUM REFERENCE.                                                                  |

**KOPETZ NAMEPLATE DETAIL**

NAT'L. B.D. NO. \_\_\_\_\_

CERTIFIED BY  
**KOPETZ MFG., INC.**  
DECATUR, ILLINOIS

SERIAL NO. 88101 YEAR 1998

M.A.W.P. (PSIG)

|       |       |        |
|-------|-------|--------|
| SHELL | 15 ED | 150 RT |
| JKT.  |       | 150 RT |
| TUBE  |       | 150 RT |

DESIGN TEMP. 400

M.D.M.T. SHELL -20 F IS ED 150 RT PSIG

M.D.M.T. JKT. -20 F PSIG

M.D.M.T. TUBE -20 F 150 RT PSIG

**DRAWINGS AND REVISIONS**

| NO. | DATE    | DESCRIPTION      | BY  | CHKD. | APPR. |
|-----|---------|------------------|-----|-------|-------|
| 0   | 4/24/98 | ORIGINAL DRAWING | RDJ | JMP   | JAP   |

**REFERENCE DRAWINGS OR SPECIFICATIONS**

| DOCUMENT NO.             | TITLE                     |
|--------------------------|---------------------------|
| 0242-01-32-279 (CURRENT) | ENGINEERING SPECIFICATION |
| D83-0242-M279-2          | ADDITIONAL DETAILS        |

**EXCHANGER**

BAYER CORP. PITTSBURGH, PA

NATIONAL BOARD NO. \_\_\_\_\_

U.S. PAT. NO. 98101

C-06-J-00433

DATE 03 02 98

YEAR 1998

MANUFACTURER'S DATA

NFR NAME: KOPETZ MFG., INC.

STREET / P.O. BOX: 1500 N. COUNTRY CLUB RD.

CITY: DECATUR STATE: ILLINOIS ZIP: 62521

TELEPHONE NO.: (217) 422-8638 FAX NO.: (217) 422-4921

ENGINEERING CONTACT: AL POPE

NFR SERIAL NO.: 88101 SHOP ORDER NO.: 97-101

NFR B.V.G. NO.: L88-101-A REV.: 0

**44" x 16'-0" TUBE LGTH. AEU HORIZ. EXCHANGER**

**OVERHEAD CONDENSER**

**ITEM NO. 0242-32-279**

**GENERAL ARRANGEMENT**

PROJ. LOC. BUSBY PARK, SC PROJ. NO. 6192 AREA 0242

SCALE AS NOTED

**D83-0242-M279-1**

**MATERIALS OF CONSTRUCTION**

|                                  | SHELL SIDE       | JACKET | TUBE SIDE          |
|----------------------------------|------------------|--------|--------------------|
| SHELL & REIN. HEADS & PASS PARTS | SA-240 316L      |        | SA-240 316L        |
| TUBES                            | SA-240 316L      |        | SA-240 316L        |
| NOZZLE FLANGES                   | SA-182 F316L     |        | SA-182 F316L       |
| NOZZLE NECK PIPE                 | SA-312 TP316L    |        | SA-312 TP316L      |
| COUPLINGS & PLUGS                | SA-182 F316L     |        | SA-182 F316L       |
| N.P. BKT. FOR LUGS               | SA-240 304       |        | SA-240 304         |
| TIE RODS & SPACERS               | 316L S.S.        |        | 316L S.S.          |
| CROSS BAFFLES                    | SA-240 304       |        | SA-240 304         |
| SADDLE SUPPORT                   | SA-240 304       |        | SA-240 304         |
| LIFT LUGS                        | SA-240 304       |        | SA-240 304         |
| EXTERNAL BOLTS                   | SA-182 B716CH    |        | SA-182 B716CH      |
| NUTS                             | SA-182 2H16CH    |        | SA-182 2H16CH      |
| ROD FLANGE                       | SA-182 F316L     |        | SA-182 F316L       |
| NOZ. NECK PLATE                  | SA-240-316L      |        | SA-240-316L        |
| ROD FLG. GASKETS                 | 1/16" CYLON 3510 |        | 1/16" GARLOCK 3000 |
| INSUL. RODS                      | 304 S.S.         |        | 304 S.S.           |
| INSUL. TAB CLIPS                 | SA-240-304       |        | SA-240-304         |

**DESIGN CONDITIONS**

|                  | SHELL SIDE                                    | TUBE SIDE                     |
|------------------|-----------------------------------------------|-------------------------------|
| DESIGN PRESS.    | 15 PSI EXT TO 150 PSI INT                     | 150 PSI INT                   |
| DESIGN TEMP.     | 400°F                                         | 400°F                         |
| OPERATING PRESS. | -13.2 PSIG                                    | 50.3 PSIG                     |
| OPERATING TEMP.  | 115°F                                         | 88°F                          |
| CORR. ALLOW.     | 1/16"                                         | 1/16" EXCEPT ON TUBES         |
| CODE (1995 ED)   | ASME SECT. VIII, DIV. 1 95 AD                 | ASME SECT. VIII, DIV. 1 95 AD |
| CODE STAMP       | U-W REQUIRED WITH NATIONAL BOARD REGISTRATION |                               |
| STRESS RELIEF    | NONE                                          | NONE                          |
| RADIOGRAPH       | SPOT X-RAY PER U-W-52                         | SPOT X-RAY PER U-W-52         |
| JOINT EFF.       | 85%                                           | 85%                           |
| HYDRO TEST       | 275-PSIG W/ GASE AT 100°                      | 240-PSIG W/ GASE AT 100°      |
| SP. GR. CONTENTS | 1.0                                           | 1.0                           |
| MOIST.           | -20° F AT 15 PSI EXT TO 150 PSI INT           | -20° F AT 150 PSI INT         |

**CAPACITIES AND WEIGHTS**

|                | 970-SHELL 360-TUBE | 970-SHELL 360-TUBE | 970-SHELL 360-TUBE | 970-SHELL 360-TUBE |
|----------------|--------------------|--------------------|--------------------|--------------------|
| OPERATING CAP. | 170 TONS           | 170 TONS           | 170 TONS           | 170 TONS           |
| FULL CAPACITY  | 170 TONS           | 170 TONS           | 170 TONS           | 170 TONS           |
| EMPTY WEIGHT   | 30,800 LBS         | 30,800 LBS         | 30,800 LBS         | 30,800 LBS         |
| OPERATING WT.  | 30,800 LBS         | 30,800 LBS         | 30,800 LBS         | 30,800 LBS         |

**GENERAL NOTES**

- BOLT HOLES TO STRADDLE SHOWN CENTERLINES (0-180 & 90-270)
- FABRICATOR TO PROVIDE PROTECTIVE SHEETS FOR ALL FLANGES AND OPENINGS.
- FABRICATOR SHALL PROVIDE GASKETS, BOLTS AND HEX NUTS FOR ALL MATING PARTS INCLUDING BLIND FLANGES WHERE NOTED.
- SPARE SET OF GASKETS IS REQUIRED BY KOPETZ.
- INDICATE MACHINE FINISHED SURFACES IN MICROINCHES WITH ANSI SYMBOL, e.g. 125/10, 125/10, 125/10, ETC.
- INSULATION SUPPORTS ARE NOT REQUIRED.
- SURFACE PREPARATION NONE
- PAINTING NONE
- LIST OF APPLICABLE BAYER STANDARDS: 43716, 15110, 15113
- AUTHORIZED INSPECTOR: KEMPER INSURANCE COMPANIES

**FITTING SCHEDULE**

**BAYER REFERENCE DATA**

PURCH. ORDER NO. C-06-J-00433

| ITEM NUMBER | ASSET NUMBER | PURCH. ORDER DATE |
|-------------|--------------|-------------------|
| 0242-32-279 |              | 03/02/98          |

**MANUFACTURER DATA**

NFR NAME: KOPETZ MFG., INC.

STREET / P.O. BOX: 1500 N. COUNTRY CLUB RD.

CITY: DECATUR STATE: ILLINOIS ZIP: 62521

TELEPHONE NO.: (217) 422-8638 FAX NO.: (217) 422-4921

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NFR SERIAL NO.: 88101 SHOP ORDER NO.: 97-101

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**Bayer**

**44" x 16'-0" TUBE LGTH. AEU HORIZ. EXCHANGER**

**OVERHEAD CONDENSER**

**ITEM NO. 0242-32-279**

**GENERAL ARRANGEMENT**

PROJ. LOC. BUSBY PARK, SC PROJ. NO. 6192 AREA 0242

SCALE AS NOTED

**D83-0242-M279-1**

#106175

