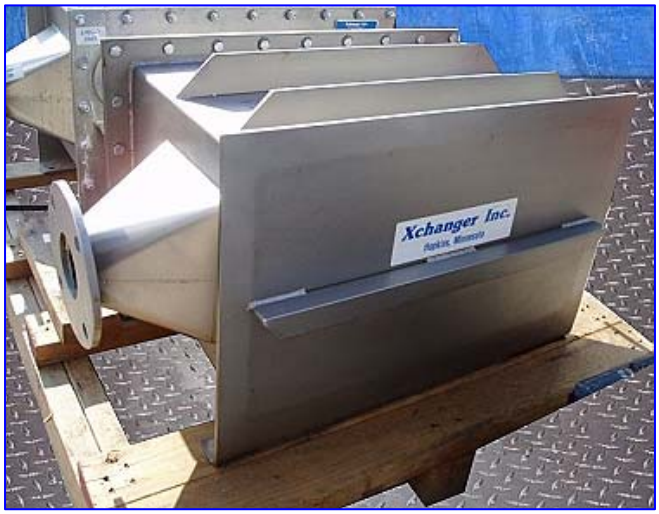
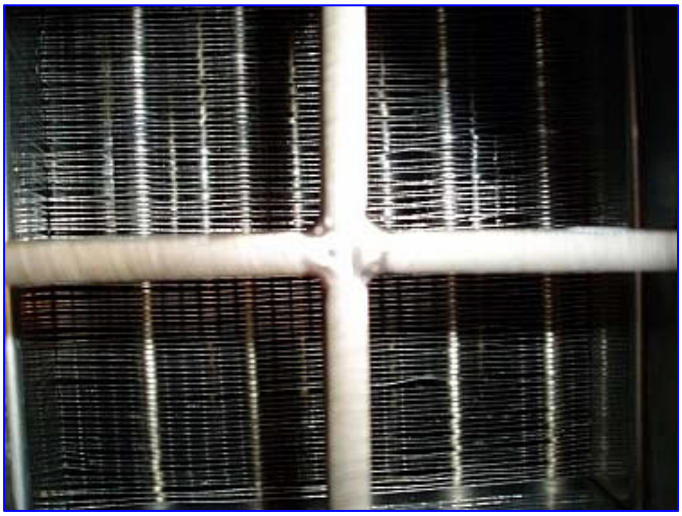
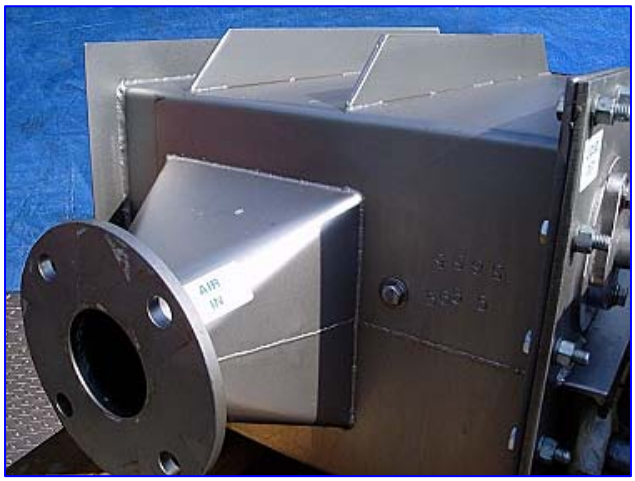
| New Un-used Xchanger Inc. Heat Exchangers | |
|---|---|
| **Mfg: Xchanger Inc.** | **Model: C-075** |
| **Stock No. SPPP833.3a** | **Serial No. 0298-B5655-1 and 0298-B5655-2** |

(2) New Un-used Xchanger Inc. Heat Exchangers. Model: C-075. S/N: 0298-B5655-1 and 0298-B5655-2. 304 stainless steel construction. Heat exchange capacity: 17,034 Btu/hr. Process media side (Nitrogen): volumetric flow rate: 315 cu. ft/min., temperature in/out: 120/70 °F, inlet pressure (absolute): 24.696 psi, velocity: 806.4 ft/min. Service media side (50% Ethylene Glycol): volumetric flow rate: 4.2 gpm, temperature in/out: 25/35 °F, velocity: 60 ft/min. Maximum pressure: 50 psi. Inlets: (1) 1 in. dia. coolant port with a 4 in. dia. flange and (4) 1/2 in. dia. thru holes at a center-to-center distance of 2-1/2 in., (1) 3 in. dia. air port with a 7-1/2 in. dia. flange and (4) 3/4 in. dia. thru holes at a center-to-center distance of 4-1/4 in. Outlets: (1) 1 in. dia. coolant port with a 4 in. dia. flange and (4) 1/2 in. dia. thru holes at a center-to-center distance of 2-1/2 in., (1) 3 in. dia. air port with a 7-1/2 in. dia. flange and (4) 3/4 in. dia. thru holes at a center-to-center distance of 4-1/4 in. Overall dimensions: 24 in. L x 17-1/2 in. W x 35 in. H. ACN77

C-Series heat exchangers heat and cool low pressure gas streams. Internal cores are removable through the front and back sides of housing with no need for disassembly. Fin-tube core. The fluid circuit consists of several parallel tube circuits which are designed to work "down hill" to prevent trapping.





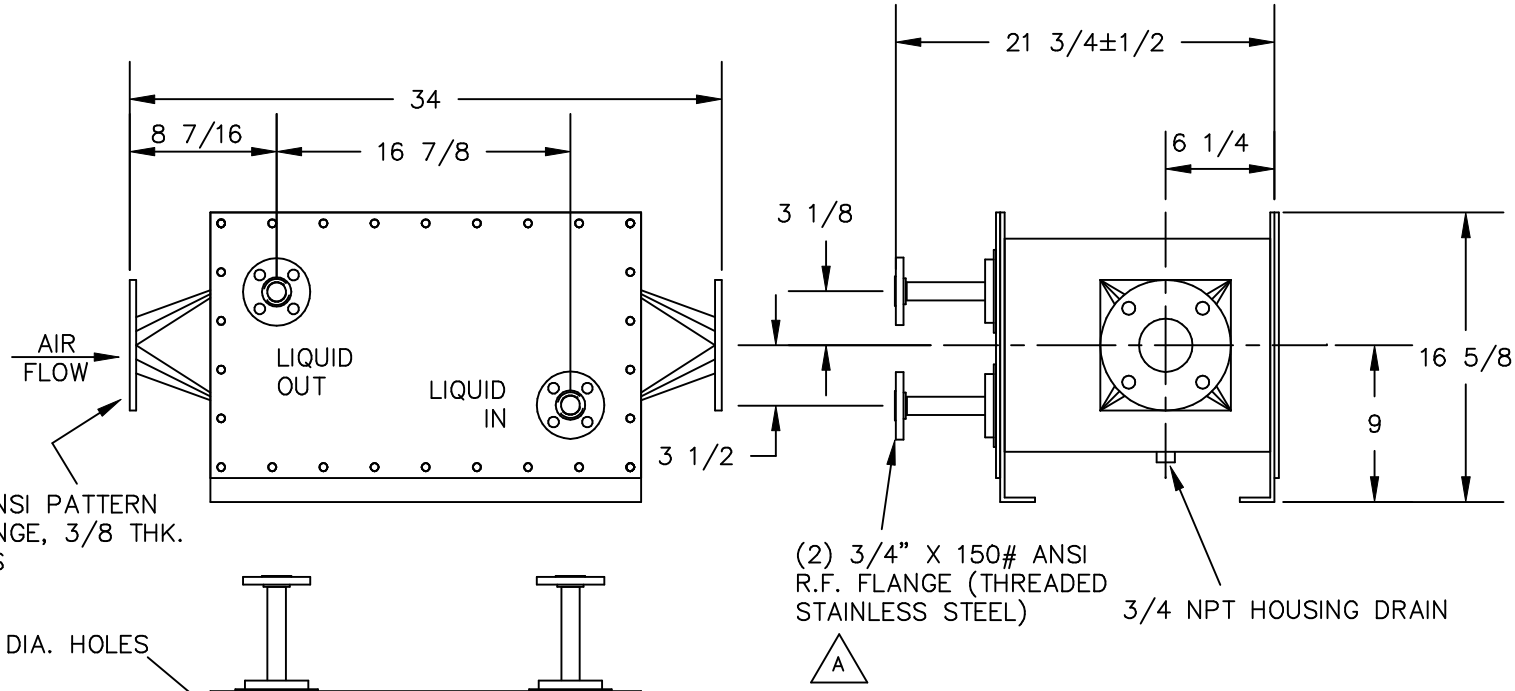

Xchanger Inc.

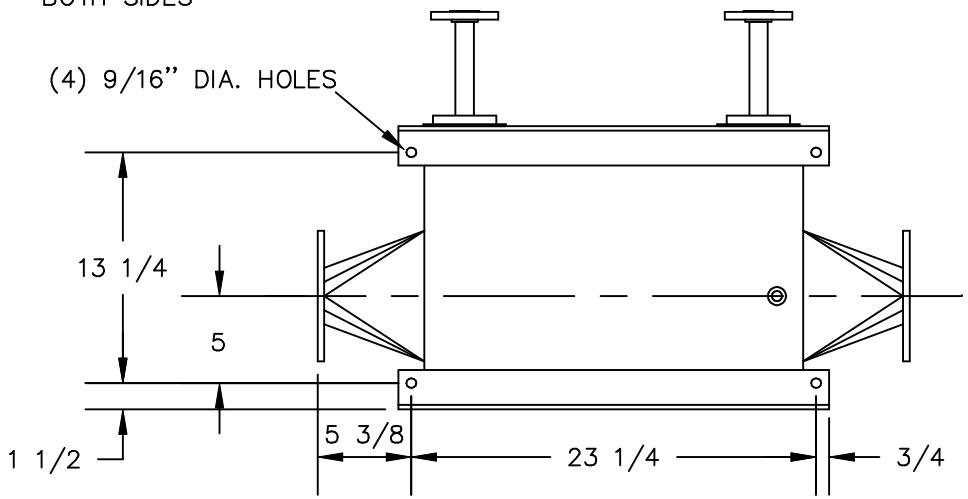
# CERTIFIED

By MJR Date 12-7-95

XCHANGER INC.

24729




BOTTOM VIEW

BEST ENGINEERING
P.O.: 29843-168
FOUR (4) REQUIRED

1. FASTENERS NOT IN PROCESS GAS CONTACT WILL BE ZINC PLATED STEEL, OTHERS WILL BE STAINLESS STEEL
2. AIR & LIQUID CONNECTIONS MUST BE AS SHOWN
3. PERFORMANCE AND CONSTRUCTION PER DATA SHEET DATED DECEMBER 5, 1995 REF. #19973
4. **CAUTION: This coil not drainable – protect from freezing**

| TOLERANCES (UNLESS OTHERWISE NOTED) | | Xchanger Inc. 1401 SOUTH 7TH ST HOPKINS, MN 55343 | | MODEL C-075 HEAT EXCHANGER ASSEMBLY | | | |
|---|---|---|---|---|---|---|---|
| DECIMAL ± .13 | FRACTIONAL ± 1/8 | DRAWN BY: MJR APPROVED BY: | SCALE: 1" = 1'-0" DATE: 12-7-95 | JOB NUMBER B4456 | SHEET 1 OF 1 | DRAWING NUMBER 24729 | REV. A |

# Xchanger, Inc.

1401 South 7th Street, Hopkins, MN 55343 Tel: (612) 933-2559, FAX: (612) 933-5647

| | | | |
|---|---|---|---|
| Computer Sizing | | DATE: | December 5, 1995 |
| Best Engineering | | | |
| Nick Kourassis | | | |
| PH: 714.288.8000, FAX: 714.288.3788 | | | |
| XCHANGER, INC. MODEL: C-075 | | ENGINEER: Paul Boedecker | REF #: 19973 |

| PERFORMANCE | PROCESS MEDIA SIDE | SERVICE MEDIA SIDE |
|---|---|---|
| FLUID CIRCULATED | Nitrogen | Ethylene Glycol 50% |
| VOLUMETRIC FLOW RATE | 315.0 Std. ft^3/min | 4.2 gal/min |
| TOTAL FLUID ENTERING | 1,371.5 lb/hr | 2,253.5 lb/hr |
| LIQUID | | 2,253.5 lb/hr |
| VAPOR | | |
| NON-CONDENSIBLES | 1,371.5 lb/hr | |
| VAPORIZED OR (COND.) | | |
| TEMPERATURE IN | 120.0 °F | 25.0 °F |
| TEMPERATURE OUT | 70.0 °F | 35.0 °F |
| INLET PRESSURE (ABSOLUTE) | 24.696 lb/in^2 | |
| VELOCITY (STANDARD) | 806.4 ft/min | 1.0 ft/sec |
| PRESSURE LOSS | 3.6 in. water | 0.7 lb/in^2 |
| FOULING FACTOR | 0.00010 ft^2-°F-hr/BTU | 0.00100 ft^2-°F-hr/BTU |
| TOTAL HEAT EXCHANGED: 17,034 BTU/hr | | |

| AVERAGE MEDIA PROPERTIES | | |
|---|---|---|
| THERMAL CONDUCTIVITY | 0.01502 BTU/hr-ft-°F | 0.19067 BTU/hr-ft-°F |
| SPECIFIC HEAT | 0.24840 BTU/lb-°F | 0.75583 BTU/lb-°F |
| ABSOLUTE VISCOSITY | 0.04406 lb/ft-hr | 22.95083 lb/ft-hr |
| DENSITY | 0.11652 lb/ft^3 | 67.03653 lb/ft^3 |
| LATENT HEAT OF VAPOR | | |

| CONSTRUCTION | | |
|---|---|---|
| DESIGN TEMPERATURE | -70 to 200 °F | -70 to 400 °F |
| DESIGN PRESSURE (GAUGE) | -5.5 to 11.0 lb/in^2 | -15.0 to 200.0 lb/in^2 |
| TEST PRESSURE (GAUGE) | 16.5 lb/in^2 | 300.0 lb/in^2 |
| CYCLIC PRESSURE | No | Not Applicable |
| TEST PROCEDURE | Hydro Test | Bubble Test |
| DESIGN CALCULATIONS | Not Supplied | Not Supplied |
| ASME CODE STAMP | Not Applicable | Not Applicable |

| | |
|---|---|
| TUBE MATERIAL : 304L Stainless Steel | HOUSING MATERIAL : 304 Stainless Steel |
| FIN MATERIAL : 304 Stainless Steel | CASING MATERIAL : 304 Stainless Steel |
| SEALANT MATERIAL : Silicone | PHENOLIC COATING : None |
| REMOVABLE CORE : Yes, Front Only | MIST ELIMINATOR : None |
| TUBE CIRCUIT TYPE: Trapped | WEIGHT (DRY/WET) : 221 / 227 lb |
| ASM. DRAWING NO. : 10746 | GAS FLOW DIR. : Horizontal |

**CONNECTIONS**

PROCESS INLET : 3" ANSI 150 lb pattern FFF, 3/8" thick
PROCESS OUTLET : 3" ANSI 150 lb pattern FFF, 3/8" thick
SERVICE INLET : 3/4" Pipe with 3/4" C.S. ANSI 150 lb RFF
SERVICE OUTLET : 3/4" Pipe with 3/4" C.S. ANSI 150 lb RFF

**NOTES**

Construction material suitability must be determined by customer.
Rotary lobe blower type pulsation must be dampened by a chambered silencer.
This unit is not designed for cycling process gas pressure.