

## DESIGN NOTES

1. ALL BOLT HOLES TO STRADDLE NATURAL CENTER LINES.

## MATERIAL NOTES:

1. SEE BILL OF MATERIALS

## MACHINING NOTES

- UNLESS OTHERWISE INDICATED, MACHINE SURFACES TO RECEIVE WORKMAN LIKE FINISH.
- 1. THE EXCHANGER ITEM NO. AND THE OHMSTEDE SERIAL NO. SHALL BE DIE-STAMPED ON THE PERIPHERAL EDGE OF THE FOLLOWING PARTS (WHERE APPLICABLE):  
GIRTH FLANGES & TUBESHEETS.
- 2. THE STATIONARY TUBESHEET IS TO BE STAMPED "TOP" FOR PROPER ORIENTATION.
- 3. GASKET CONTACT SURFACES (OTHER THAN NOZZLES):  
THE FLATNESS TOLERANCE (MAXIMUM DEVIATION FROM A PLANE) ON PERIPHERAL GASKET CONTACT SURFACES SHALL BE 1/32" (.8mm) WITHIN A 20° ARC, AS DETERMINED BY THE USE OF A DIAL INDICATOR. GIRTH FLANGE TOLERANCE SHALL BE MEASURED AFTER THE FLANGE HAS BEEN WELDED TO THE CYLINDER OR HEAD AND PWHT (IF REQUIRED). FLATNESS TOLERANCE ON THE TUBESHEET SHALL BE MEASURED AFTER THE TUBES HAVE BEEN ROLLER EXPANDED.

## FABRICATION NOTES

1. ALL MATING BODY FLANGES AND TUBESHEETS SHALL BE MATCH MARKED FOR PERMANENT ASSEMBLY REFERENCE.
2. THE PERMISSIBLE OUT-OF-ROUNDNESS OF THE COMPLETED SHELL SHALL ALLOW A METAL TEMPLATE TO PASS COMPLETELY THROUGH THE SHELL WITHOUT BINDING. THE TEMPLATE SHALL CONSIST OF TWO RIGID DISCS, EACH WITH A DIAMETER EQUAL TO THAT OF THE BAFFLES, RIGIDLY MOUNTED ON A SHAFT AND SPACED NOT LESS THAN 12" (305mm) APART.

## ASSEMBLY NOTES

1. TUBES ARE ROLLER EXPANDED TO TUBESHEETS.
2. ALL EXTERNAL BOLTING SHALL BE COATED WITH AN ANTI-SEIZE COMPOUND. THREAD LUBE TO BE ZINC AND CADMIUM FREE.
3. ALL MACHINED SURFACES AND THREADED CONNECTIONS SHALL BE COATED WITH A READILY REMOVABLE RUST PREVENTATIVE, SUCH AS SHELL ENsis S, ASHLAND OIL COMPANY TECTYL 890, OR E.F. HOUGHTON & COMPANY RUST VETO 344.
4. ALL THREADED CONNECTIONS SHALL BE PLUGGED TO PREVENT DAMAGE.
6. HYDROTEST PRESSURE SHALL BE HELD FOR A PERIOD OF ONE (1) HOUR MINIMUM. HYDROTEST SHALL BE CONDUCTED USING POTABLE WATER. MINIMUM WATER TEMPERATURE FOR HYDROTEST SHALL BE 60 DEG. F. (15 DEG. C.) THE SHELLSIDE AND THE TUBESIDE SHALL BE TESTED SEPARATELY IN SUCH A MANNER THAT LEAKS AT THE TUBE JOINTS CAN BE DETECTED FROM AT LEAST ONE SIDE. AFTER ASSEMBLY, A 50 PSIG AIR TEST SHALL BE APPLIED TO THE TUBESIDE WITH THE SHELL SIDE FULL OF WATER. ANY BUBBLES OBSERVED SHALL BE CAUSE FOR REJECTION.

7. WHEN INSTALLING GASKETS, A LIGHT COAT OF SPRAY ADHESIVE MAY BE APPLIED ON THE GASKET SEALING SURFACE TO HOLD THE GASKET IN PLACE DURING ASSEMBLY. THE USE OF TAPE, SHELLAC, GLUE COMPOUNDS, LEAD OR GREASE ON GASKET SURFACES IS NOT PERMITTED.
8. FLOATING HEAD FLANGES SHALL BE RE-TIGHTENED AFTER THE TUBESIDE HYDROTEST IS COMPLETED AND PRIOR TO INSTALLATION OF THE BUNDLE INSIDE THE SHELL.

## SHIPPING NOTES

1. EXCHANGER ITEM NO., THE PURCHASE ORDER NO. AND THE EXCHANGER SHIPPING WEIGHT SHALL BE STENCILED ON BOTH SIDES OF THE SHELL IN A CONSPICUOUS LOCATION, IN LETTERS AT LEAST 3" HIGH.
2. ALL FLANGED OPENINGS SHALL BE PROVIDED WITH 1/4" THICK WOOD SHIPPING COVERS SECURED WITH A MINIMUM OF FOUR (4) BOLTS.

## INSPECTION NOTES

1. THE INSIDE AND OUTSIDE OF THE EXCHANGER SHALL BE CLEAN AND FREE OF ALL SLAG, LOOSE SCALE, DIRT, GRIT, WELD SPLATTER, PIECES OF METAL, PAINT, OIL, AND OTHER FOREIGN MATTER BEFORE HYDROTESTING AND PAINTING. THE EXCHANGER SHALL BE THOROUGHLY DRAINED AFTER HYDROTEST. SURFACE PREPARATION AND PAINTING MATERIALS SHALL BE KEPT OUT OF THE EXCHANGER.
2. REQUIREMENTS FOR NON-DESTRUCTIVE EXAMINATIONS SHALL BE IN ACCORDANCE WITH THE CUSTOMER SPECIFICATIONS, PURCHASE ORDER, AND APPLICABLE SECTIONS OF THE ASME CODE.

## PAINTING NOTES

1. FOR CARBON STEEL SURFACES: BLAST TO SSPC-SP6 (COMMERCIAL BLAST) TO 1.5-2.5 ANCHOR PROFILE. PRIME WITH HI-TEMP COATINGS 1027CU1 TO 5.0-6.0 MIL DFT. FINISH WITH HI-TEMP COATINGS 1000VS TO 1.5-2.0 MIL DFT. TOTAL DFT TO BE 6.5 -8.0 MILS. COLOR TO BE GRAY.
1. FOR STAINLESS STEEL SURFACES: SOLVENT CLEAN PER SSPC-SP1. PRIME WITH HI-TEMP COATINGS 1027 STAINLESS TO 5.0-6.0 MIL DFT. FINISH WITH HI-TEMP COATINGS 1000VS TO 1.5-2.0 MIL DFT. TOTAL DFT TO BE 6.5 -8.0 MILS. COLOR TO BE GRAY.

						CUSTOMER: INVISTA
						OHMSTEDE JOB NO.: 328446
						P. O. NO.: 3801214850/66416553
						ITEM NO.: 5001-7017-04
						SERVICE: SOUTH RECYCLE COLUMN BOTTOMS COOLER
1	REV PER CUST. COMMENTS	RC	PI	12/27/13	GENERAL NOTES	
0	RELEASE FOR FAB/CUST. REVIEW	BR	PI	12/13/13		
NO.	REVISIONS	BY	CHK.	DATE CHK.	OHMSTEDE	DRAWING NO. 328446-GN