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Engineering & Manufacturing
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SOLUTIONS FOR EXTENDING EXCHANGER LIFE

HYDROPLUG EXPANSION DATA SHEET

| | | |
|------------------------------|---------|-------|
| DATE | CONTACT | PHONE |
| HYDROPLUG EXPANSION END USER | | JOB # |

SCOPE OF APPLICATION AND SPECIFICATIONS

| | | |
|--|-----------------------------|---|
| NUMBER OF TUBES | NUMBER OF PLUGS REQUIRED | APPROXIMATE START DATE |
| TYPE OF UNIT: <input type="radio"/> <i>Heat Exchanger</i> <input type="radio"/> <i>Boiler</i> <input type="radio"/> <i>Condenser</i> <input type="radio"/> <i>Other (Describe):</i> <input type="radio"/> <i>Feedwater Heater</i> | | WHERE WILL PLUG BE INSTALLED? <input type="radio"/> <i>TUBE</i> <input type="radio"/> <i>TUBESHEET HOLE</i> |
| DESIRED HYDROPLUG MATERIAL | DESIRED LENGTH OF HYDROPLUG | |

TUBES

| | | | |
|---|---------------------|---|--------------------------------------|
| QTY TUBES | MATERIAL | ACTUAL YIELD | ACTUAL TENSILE |
| O.D. | WALL THICKNESS/GAGE | WALL (CIRCLE ONE): <i>Avg. / Min. / Nominal</i> | |
| ACTUAL TUBE I.D. MEASUREMENT | | | TYPE: <i>Seamless / Welded Drawn</i> |
| U-BEND OR STRAIGHT | | OVERALL LENGTH OF TUBE | |
| SETTING OF TUBE TO TUBESHEET PRIMARY FACE: <i>Recessed / Flush / Protruding</i> | | | |
| ARE THE TUBES WELDED TO THE TUBESHEET: | | <i>Yes / No</i> | |

TUBESHEET

| | | | |
|---|----------------------------------|--|----------------|
| TOTAL THICKNESS | MATERIAL | ACTUAL YIELD | ACTUAL TENSILE |
| CLAD: <i>Yes / No</i> | CLAD THICKNESS | CLAD MATERIAL | |
| SHELL ATTACHED: <i>Yes / No</i> | PARTITION PLATE: <i>Yes / No</i> | | |
| IF "YES" TO EITHER OF THE ABOVE: DISTANCE FROM TUBESHEET FACE AND OUTSIDE OF SHELL/DIVIDER PLATE(S)/FLANGE/OBSTRUCTIONS | | | |
| IF "YES" TO EITHER OF THE ABOVE: SHORTEST DISTANCE BETWEEN HOLE CENTER LINE AND SHELL/PLATE | | | |
| TUBESHEET HOLES | | | |
| DIAMETER | CHAMFER: <i>Yes / No</i> | WHERE IS THE CHAMFER LOCATED: <i>Face / Back</i> | |
| DEGREE OF CHAMFER | | DEPTH OF THE CHAMFER | |

GROOVES

| | | | |
|---|---|--|--|
| NUMBER | Note: as a minimum, placement of the 1 st groove should begin 1/2" from the face of the tubesheet or in the center based on tubesheet thickness. | | |
| TEMA: <i>Yes / No</i> | IF "NO", PLEASE PROVIDE SPECIFICATIONS IN THE AREA PROVIDED ON PAGE 2. | | |
| CUSTOMER RECEPTIVE TO HYDRAULIC EXPANSION GROOVE: <i>Yes / No</i> | Note: hydraulic expansion groove is a single wide groove (centered in sheet if possible). | | |

LIGAMENT

| | | |
|-----------|-------|--------------|
| THICKNESS | PITCH | HOLE PATTERN |
|-----------|-------|--------------|

HYDROPLUG EXPANSION DATA SHEET (CON'T)

TUBE-TO-TUBESHEET WELD

| | |
|--|--|
| ARE TUBES WELDED: <i>Yes / No</i> | IF "YES": <i>Seal Welded / Strength Welded</i> |
| WHAT IS THE MAXIMUM COUNTER SINK O.D. FOR WELD | |

EXPANDING PRESSURE REQUIREMENTS

| |
|--------------------|
| HYDROTEST PRESSURE |
|--------------------|

SPECIFICATIONS (IF APPLICABLE)

Please provide any available drawings, sketches, or blueprints, as well as performance requirements regarding working and test pressure of the vessel.

Drawings Supplied: *Yes / No*

EXTERNAL EXTENSIONS

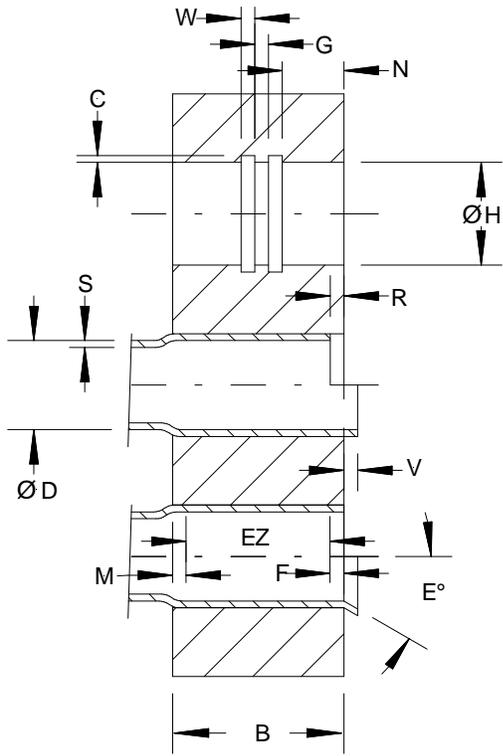
For expansion which require going around an interference such as a channel, shell, partition plate, or any other obstruction, creating a situation where expansion would take place at a distance from the tubesheet face.

| |
|--|
| DISTANCE FROM OUTSIDE FACE OF SHELL OR PLATE TO FACE OF TUBESHEET |
| IS THERE ACCESS FOR A STOP COLLAR TO BE LOCATED AT TUBESHEET FACE OR OUTSIDE OF SHELL: <i>Yes / No</i> |

Signature: _____ Date: _____

DATA SHEET SUPPLEMENT

The Data Sheet Supplement form is provided as an aid and can be useful when gathering information for filling out the data sheet. Only the completed Data Sheet must be sent in.

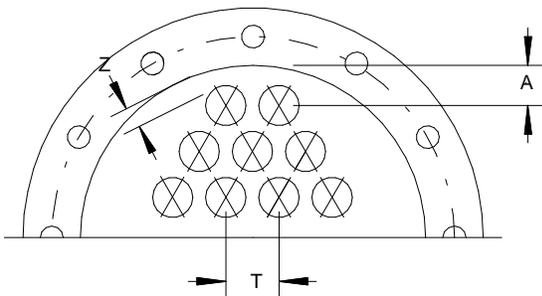


 Tube o.d. (D) _____
 Tube wall thickness (S) _____
 Tube material _____

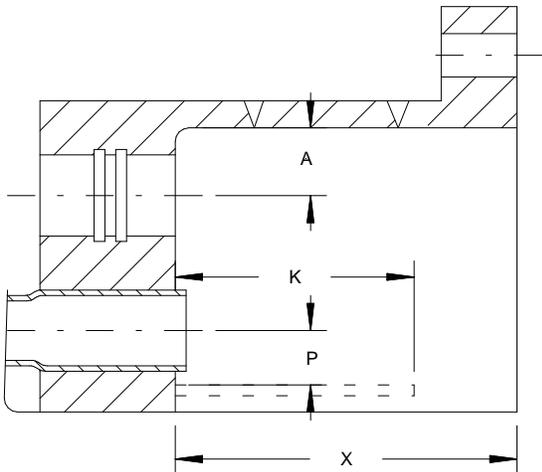
 Tube Hole Diameter (H) _____
 Tube Sheet Thickness (B) _____
 Tube sheet mat'l _____

 Quantity Grooves _____
 Groove width (W) _____
 Groove depth (C) _____
 Gap between grooves(G) _____
 Distance to 1st groove (N) _____

 Expansion zone (EZ) _____
 E.Z. front setback (F) _____
 E. Z. rear setback (M) _____
 Tube protrusion(V) _____
 Tube recess (R) _____
 Bell/Flare angle ° (E) _____



 Hole center -to-center (T) _____
 Center-to-shell (A) _____
 Hole o.d. \-to-shell (Z) _____



 Center-to-shell (A)
 (same as above)
 Division plate height (K) _____
 Hole Center to div. plate (P) _____
 Depth of channel (X) _____