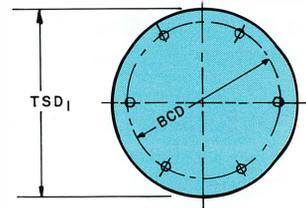
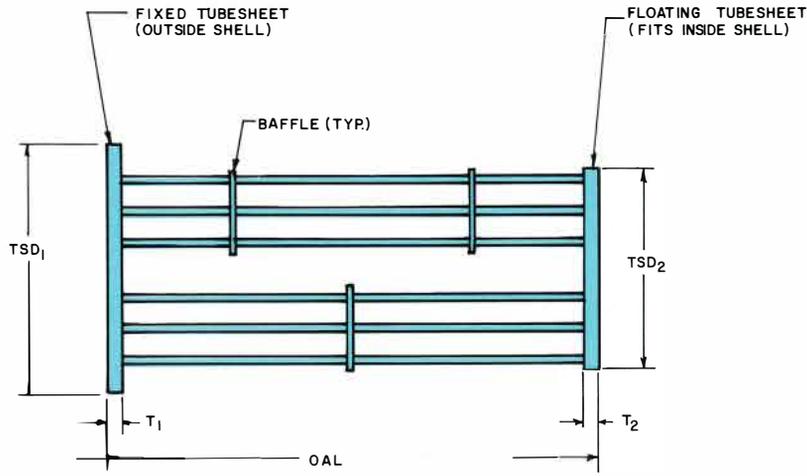


Straight Tube Bundle – How To Measure

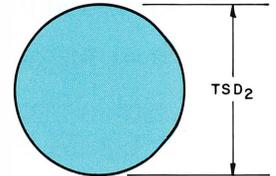
Below is a step-by-step description of all the component parts of a straight tube, “floating” tubesheet bundle that are required for duplication. Please note the corresponding component numbers on page 8.

1. **TSD1 – TUBESHEET “FIXED”** — This is the diameter of the large tubesheet that fits up to the outside of the shell. It’s “fixed” thru bolting to the shell and/or head.
2. **TSD2 – TUBESHEET “FLOATING”** — This is the diameter of the small tubesheet that slides into the inside of the shell. It often fits into some type of “O” ring assembly.
3. **T1 – “FIXED” TUBESHEET THICKNESS** — Varies from $\frac{5}{8}$ ” to 2” thick.
4. **T2 – “FLOATING” TUBESHEET THICKNESS** — Varies from $\frac{3}{4}$ ” to 3” thick.
5. **OAL – OVERALL LENGTH** — Measured from the face of the tubesheet to the face of the tubesheet.
6. **BOLT CIRCLE – BCD** — Measure the center to center distance between the bolt holes. Always pick holes directly opposite from each other such as 12 o’clock and 6 o’clock.
7. **NUMBER OF BOLT HOLES** — Count the number of holes thru the tubesheet.
8. **NUMBER OF BAFFLES** — Pull the bundle and count the number of baffles on the bundle. Sometimes baffles are really just tube supports that keep the bundle together.
9. **BAFFLE SPACING** — Dimension between the baffles or tube supports.
10. **TUBE DIAMETERS** — Typical tube diameters are $\frac{3}{8}$ ”, $\frac{1}{2}$ ”, $\frac{5}{8}$ ”, $\frac{3}{4}$ ”, 1” O.D. Please note that we require tube O.D. and that tube I.D. is smaller, based on wall thickness.
11. **TUBE MATERIALS** — Many floating tubesheet exchangers are process type, so tubes can be a variety of materials. Some examples are 90/10 cupro/nickle, 70/30 cupro/nickle, admiralty brass, carbon steel, 304 or 316 stainless steel, or exotic metals.
12. **TUBE THICKNESS** — USA can recommend thickness for various duties, but the best way is to measure the gauge of tubes.
13. **NUMBER OF STRAIGHT TUBES** — Count the total number of tubes in the bundle.
14. **SHELL I.D.** — Specify the actual inside diameter of the shell that the bundle will slide into.
15. **PASSES TUBES** — Look at the tubesheet to determine the number of passes the liquid or steam or gas makes thru the tubes. Typical bundles are 1 pass, 2 pass, or 4 pass.
16. **TUBESHEET MATERIAL** — Most tubesheets are carbon steel because this is the most economical material available. Alternate materials are: stainless steel, brass, copper faced steel, carpenter 20, or titanium.

Straight Tube Bundle – Dimensions

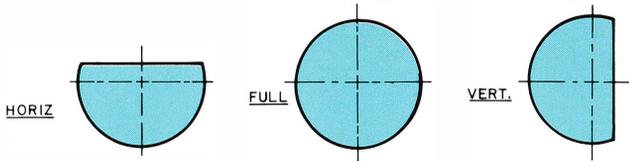


FIXED TUBESHEET

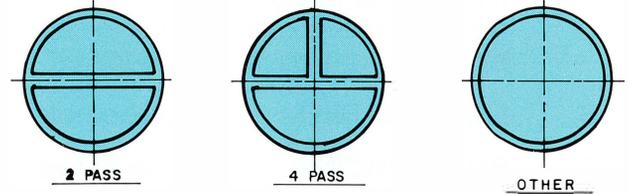


FLOATING TUBESHEET

BAFFLE TYPES



COVER/GASKET RIB CONFIGURATION



DIMENSIONS

| ITEM # | USA MODEL NUMBER | TSD 1 | TSD 2 | T 1 | T 2 | OAL | BOLT CIRCLE BCD | # OF BOLT HOLES | # OF BAFFLES | BAFFLE SPACING |
|---|------------------|-------|-------|-----|-----|-----|-----------------|-----------------|--------------|----------------|
| These numbers refer to descriptions on facing page. | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | | | | | | | | | | |
| | | | | | | | | | | |

CONSTRUCTION

| TUBE DIAMETER | TUBE MATERIAL | TUBE THICKNESS | # STRAIGHT TUBES | SHELL I.D. | PASSES TUBES | TUBESHEET MATERIAL |
|---------------|---------------|----------------|------------------|------------|--------------|--------------------|
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | | | | | | |
| | | | | | | |