

Condenser

Shell & Tube By 

Do You Want to Know This Vessel?



At first glimpse, it is nothing but a giant vessel. However, if you thoroughly look at it, there is something, something that you never know before. This is what we call "Shell and Tube Condenser" by ITC.

The shell is constructed of ASTM-A-516 Grade 70 steel designed to handle 20 bars pressure. Moreover, ITC group has enhanced the shell's durability to be more endured at high pressure resulting it to tolerate over 31 bars, which is hydraulic pressure, without damaging the steel.

The bundle of tubes manufactured from ASTM-A285 Grade C flange quality steel is attached inside the shell for water to pass through. This water serves as the key element of heat exchange.

When the two substances (water and gaseous ammonia) flow inside the condenser, heat exchange occurs. Ammonia gas turns to the liquid state while the water becomes warmer and exits the tube. Based on 40 °C condensing temperature, water can get warmer from 31 °C to 37 °C. Then, the condensation cycle (liquid ammonia) will repeat itself over and over again whilst the water re-circulates and moves through the cooling tower.

I.T.C. (1993) CO., LTD.

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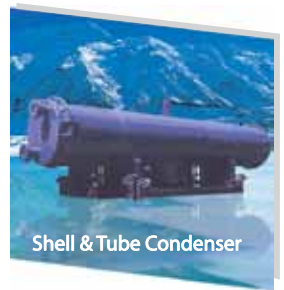
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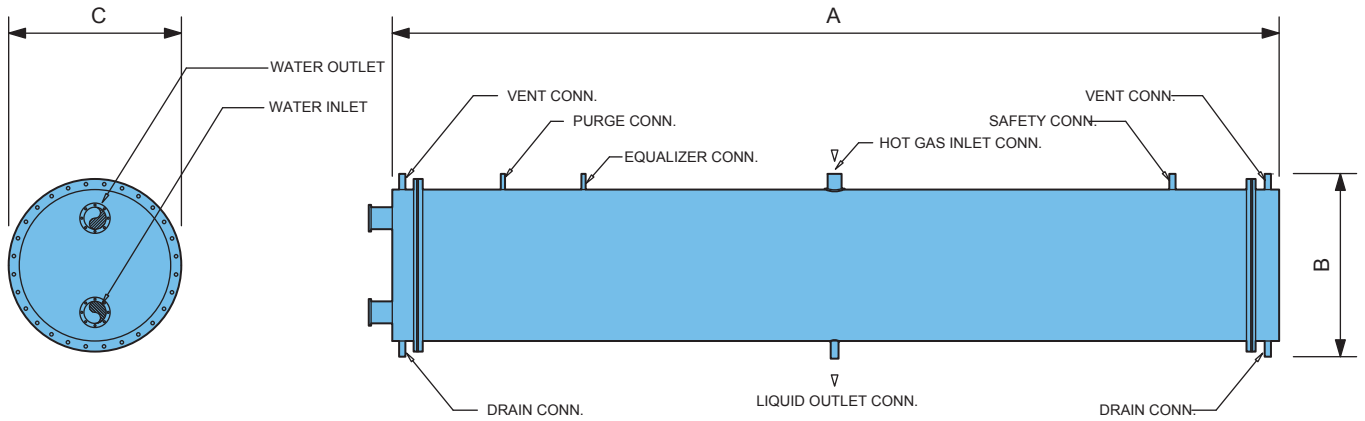


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SHELL & TUBE CONDENSER



GENERAL SPECIFICATION

- SHELLS:** The shells are designed for a working pressure of 20.7 Bar (g) and are fabricated out of ASTM-A-516 Grade 70 steel. All condenser shells are tested at 31 Bar (g), hydrostatic.
- TUBE SHEETS:** Tube sheets are manufactured from ASTM-A-285 Grade C flange quality steel.
- WATER HEADS:** Water heads are steel fabricated. Standard water heads are available for 4, 6, 8, or 12 passes.
- WATER CONNECTIONS:** All condensers have flanged water connections for which companion flanges.
- WATER VALVES :** Two iron body, bronze mounted gate valves will be furnished when ordered.
- AMMONIA CONNECTION:** All ammonia connections are plain ends for welding.
- AMMONIA VALVES:** The following ammonia valves are optional and will be furnished when ordered; gas inlet, liquid outlet, purge valve, oil drain and dual safety relief valve. Valves will be of the same size as the ammonia connection.
- STEEL SADDLES:** Available at extra cost.
- CONSTRUCTION:** All shell and tube condensers are designed and fabricated according to the A.S.M.E. unfired pressure vessel code.

| MODEL | CAPACITY | | WATER FLOW m ³ /hr | A | B | C | WATER INCH | | DRAIN inch | DRY WEIGHT kg |
|-------------------|-----------|-------|-------------------------------|------|------|------|------------|-------|------------|---------------|
| | kCal/hr | kWr | | mm | mm | mm | IN | OUT | | |
| HSTC-14-3-2.5-D | 80,000 | 93 | 13.33 | 3300 | 550 | 450 | 2-1/2 | 2-1/2 | 1/2 | 925 |
| HSTC-14-3-3.1-D | 95,000 | 110 | 15.83 | 3300 | 550 | 450 | 2-1/2 | 2-1/2 | 1/2 | 1,040 |
| HSTC-18-3-4.1-D | 130,000 | 151 | 21.67 | 3400 | 630 | 530 | 3 | 3 | 1/2 | 1,330 |
| HSTC-20-3-7.1-D | 220,000 | 256 | 36.67 | 3500 | 680 | 580 | 3 | 3 | 1/2 | 1,952 |
| HSTC-20-6-21.3-B | 330,000 | 384 | 55.0 | 6500 | 680 | 580 | 4 | 4 | 1/2 | 2,815 |
| HSTC-24-6-26.9-B | 420,000 | 488 | 70.0 | 6500 | 790 | 690 | 5 | 5 | 1/2 | 3,440 |
| HSTC-30-3-12.7-D | 400,000 | 465 | 66.7 | 3500 | 940 | 840 | 5 | 5 | 1/2 | 3,130 |
| HSTC-30-6-38.0-B | 600,000 | 698 | 100.0 | 6500 | 940 | 840 | 5 | 5 | 1/2 | 4,800 |
| HSTC-36-6-57.3-B | 900,000 | 1,046 | 150.0 | 6500 | 1090 | 990 | 6 | 6 | 3/4 | 6,125 |
| HSTC-36-6-76.6-B | 1,200,000 | 1,395 | 200.0 | 6500 | 1090 | 990 | 8 | 8 | 3/4 | 8,200 |
| HSTC-42-6-102-B | 1,600,000 | 1,860 | 266.7 | 6500 | 1270 | 1170 | 8 | 8 | 1 | 10,560 |
| HSTC-48-6-102.7-B | 1,900,000 | 2,209 | 316.7 | 6500 | 1420 | 1320 | 10 | 10 | 1 | 12,200 |

Note : Capacity based on 40°C Condensing Temp., Water In/Out = 31/37°C

- 1.) Other capacity and dimension are available, please contact manufacturer.
- 2.) Specifications are subjected to change without notice.