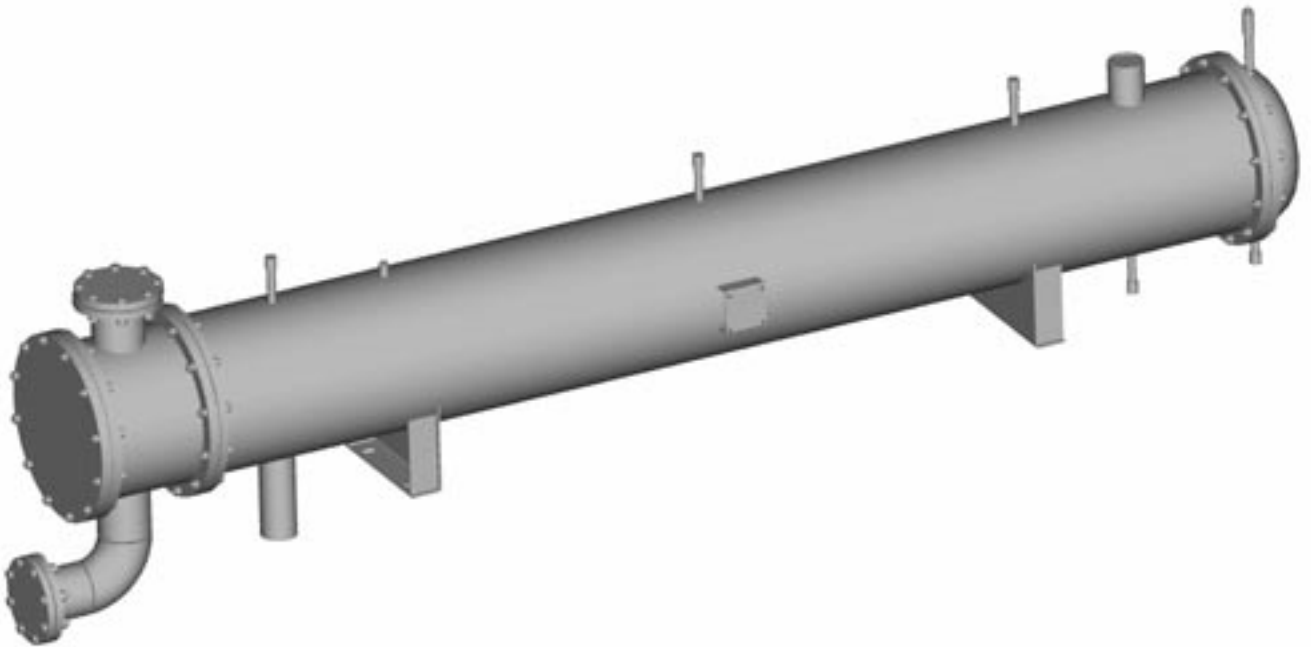


Specifications - Engineering Data - Dimensions

HORIZONTAL SHELL and TUBE CONDENSERS

**DESCRIPTION**

Shell and Tube Condensers are available with a refrigeration capacity range from 10 tons to over 1000 tons. To optimize price and efficiency, condensers are specifically sized according to each customer's application. With the proper tube material selection, they can be applied to many refrigerants including R-717, R-22, and R-134A. Shell diameters start at 8" and are available up to 48". Bonnets ranging from single pass to 10 pass provide maximum selection flexibility. Multiple-shell arrangements can be utilized to match large refrigeration systems.

OPTIONAL ACCESSORIES and FEATURES

MATERIALS - Shell: carbon and stainless steel. Tubes: carbon, stainless, copper, and copper alloy. Tubesheets: carbon and stainless steel with or without clad alloys.

STRUCTURAL STEEL SUPPORTS - For single condensers or multiple-shell arrangements.

MECHANICAL SPECIFICATIONS

TYPICAL DESIGN CONDITIONS -

Shell Chamber:	250 PSIG @ 250°F
	250 PSIG @ -20°F
Tube Chamber:	150 PSIG @ 250°F
	150 PSIG @ -20°F

For applications below -20°F but no colder than -150°F, dual rating per UCS-66(b) will be applied. Higher pressures are available.

CODES - All condensers are designed, fabricated, tested, inspected, and stamped in compliance with ASME Boiler and Pressure Vessel Code Section VIII, Div. 1 and have the option of meeting Tubular Equipment Manufacturer's Association (TEMA) B, C, or R Ratings.

SHELLS - 24 inches in diameter and smaller are constructed of carbon steel pipe. Shells exceeding 24 inches in diameter are constructed of plate which is machine submerged arc welded along the longitudinal and circumferential joints.

CHANNEL BONNETS (Heads) - Partitions direct liquid flow through tubes. Bonnets are designed for 1 through 10 passes. Nonasbestos gasket material is installed between the precision machined tubesheets and liquid bonnets.

TUBESHEETS - Tubes are expanded into tubesheets with seal welding as an option.

TUBES - Condensers can be fabricated with a wide variety of tube types. Sizes: 5/8 to 1-1/4" OD, plain or finned.

If the tube type is not chosen by the customer, Frick will select a tube which will optimize performance and life for each application.

LIQUID CONNECTIONS IN CHANNEL BONNETS ARE PIPE STUBS 6" LONG - Slip-on ASME Class 150/300 raised-face flanges, bolts, and gaskets are optional and shipped separately.

REFRIGERANT CONNECTIONS - 1/2, 3/4, and 1 inch are SA-105 threaded fittings welded to the shell. Connections 1-1/4 inches and larger are typically pipe stubs 6 inches long designed for field welding. However, nozzle type may be specified by the customer.

FINISH - Primer/topcoat.

SHIPMENT - Units are charged with 5 psi nitrogen in both chambers, prior to shipment.

CONDENSER SELECTION

Please consult with Frick for condenser selections. The following information is required for a proper selection:

REQUIRED INFORMATION

1. Refrigerant
2. Evaporator tons capacity and compressor BHP or total heat of rejection
3. Condenser temperature or pressure
4. Water temperature entering condenser
5. Water temperature leaving condenser or gpm water available
6. Evaporator temperature or pressure
7. Type of water supply
8. Pressure drop limitation
9. Overall length limitation

EXAMPLE

1. Ammonia
2. 150 tons requiring 175 BHP
3. 181.1 psig
4. 80°F
5. 87°F
6. 10°F
7. Treated cooling tower water
8. 10 psi maximum
9. 18 feet



YORK Refrigeration Systems
100 CV Avenue, P.O. Box 997 Waynesboro, Pennsylvania USA 17268-0997
Phone: 717-762-2121 • Fax: 717-762-8624 • www.frickcold.com