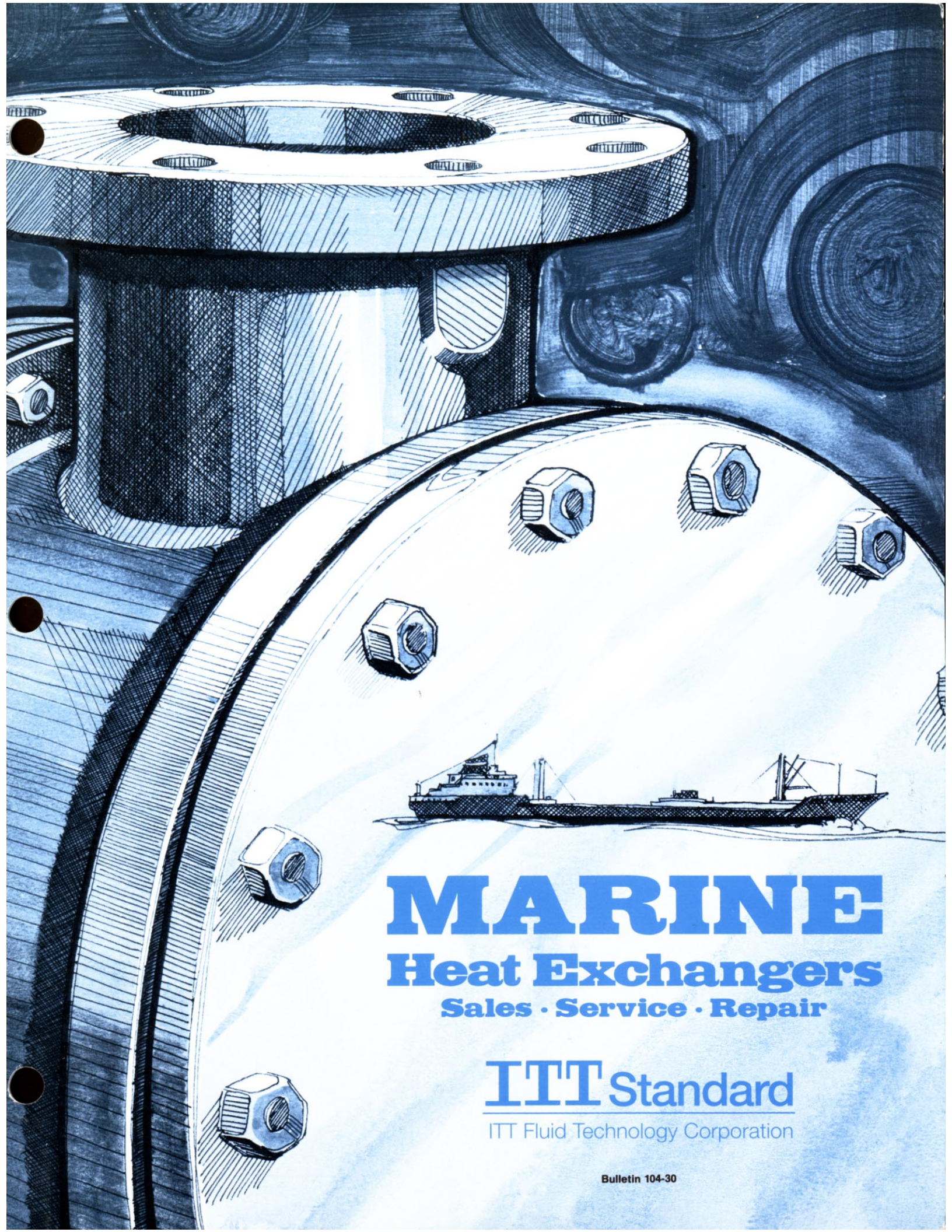




MARINE

Heat Exchangers

Sales • Service • Repair

ITT Standard

ITT Fluid Technology Corporation

ITT Standard heat exchangers for:

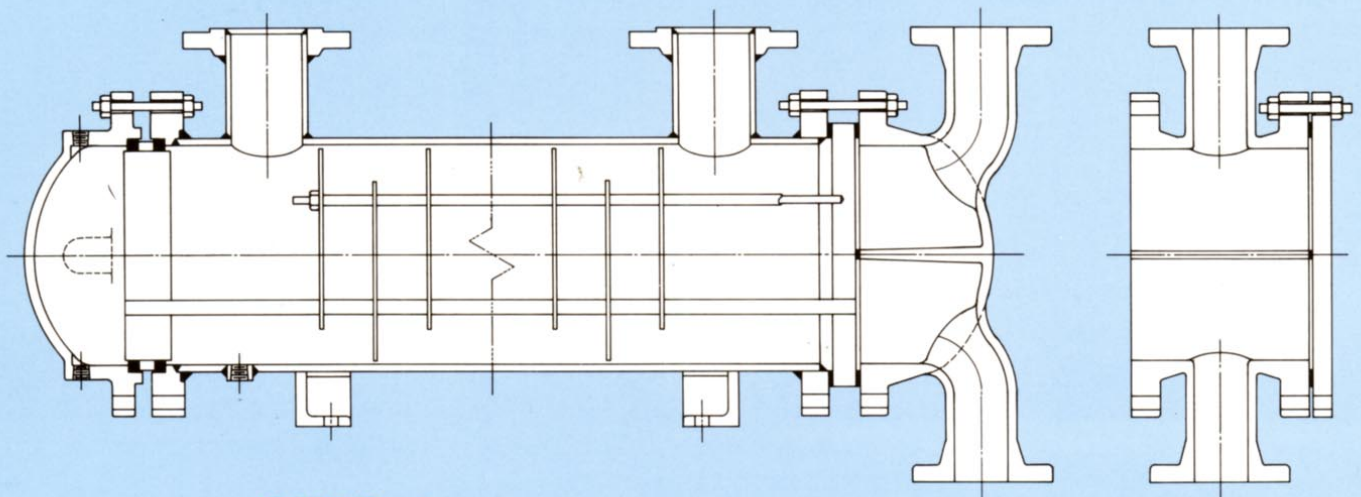
Cooling lube oil in main propulsion diesels, steam and gas turbines, generator engines, reduction gears, clutches, fans, pumps, compressors . . . **cooling water** for diesel jackets, compressors, electronics . . . **heating water, fuel oil and lube oil** for many shipboard uses.

We've been building heat exchangers for marine applications since 1917 . . . first as Ross, then as American-Standard and now as ITT Standard. Today practically every U.S. Commercial or U.S. Naval ship in commission has Ross or American-Standard heat exchangers aboard. So do many other vessels operating from ports and on inland waterways all over the world.

Quality is the most important reason. Our comprehensive, fully documented quality assurance program meets the current inspection codes issued by Lloyd's of Lon-

don, the U.S. Coast Guard, the American Bureau of Shipping, U.S. Navy specification MIL-I-45208, and The Canadian Board of Steamship Inspection.

We built the first shell-and-tube heat exchanger available off-the-shelf, our now famous BCF® and HCF, in popular sizes. And we're noted for the ready availability of our pre-engineered units. When you install ITT Standard heat exchangers you benefit from our extensive parts and service operations, too. We're there when you need us—worldwide.



CPK Series

Details: Most popular design in commercial marine service for water and oil cooling with either fresh or sea water. Removable bundle design with straight tubes, and packed floating tubesheet. One-pass and two-pass models. 3" through 31" shell diameters. Request Bulletin 104-38 for additional information.

tubes— $\frac{3}{8}$ ", $\frac{5}{8}$ " or $\frac{3}{4}$ " dia., admiralty, 90/10 or 70/30 copper-nickel

tubesheets—Muntz metal, naval brass, 90/10 or 70/30 copper-nickel

shell—carbon steel

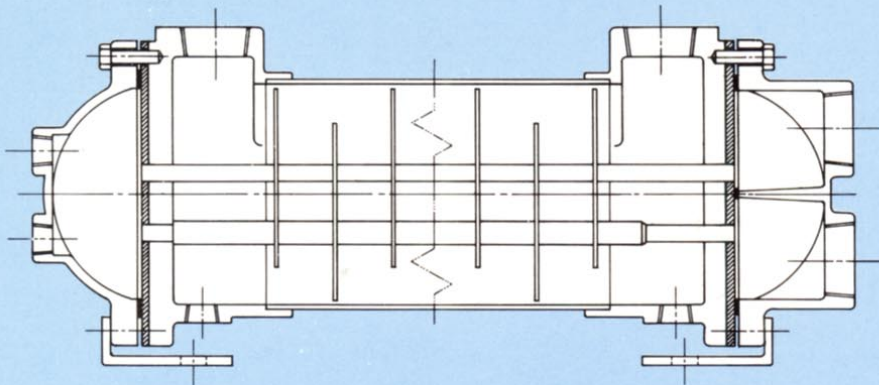
bonnets—cast-iron, or cast-bronze

alternate

channels available—cast-iron, or cast-bronze

Alternate
channel construction

	shellside	tubeside
design pressure	150 psig 10.5 kg/cm ²	75 psig 5.3 kg/cm ²
design temperature	300° F 149° C	300° F 149° C



Type HCF-B

Details: Where lower heat loads are encountered in freshwater and lube oil cooling. Fixed tubesheet, straight-tube design, fabricated from stocked components. One-, two- or four-pass models. 2" through 8" shell diameters. Complete units available from stock in "BCF" version. See Bulletin 104-23 for details.

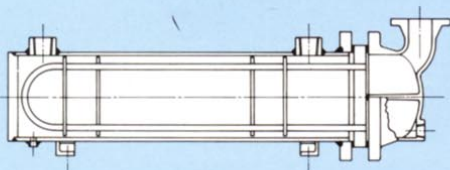
tubes— $\frac{1}{4}$ ", $\frac{3}{8}$ " or $\frac{5}{8}$ " dia., admiralty, 90/10 or 70/30 copper-nickel

tubesheet—brass or 90/10 copper-nickel face plate

shell—brass

bonnets—cast-iron or cast-bronze

	shellside	tubeside
design pressure	200 psig 14.1 kg/cm ²	150 psig 10.5 kg/cm ²
design temperature	300° F 149° C	300° F 149° C



C-330 Series

Details: U-tube, removable bundle design. Two-pass models. For heating water or oil with steam in the tubes. 4" through 10" shell diameters.

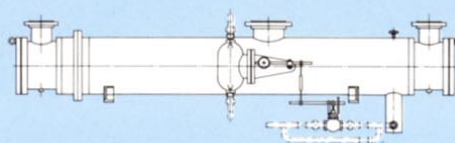
tubes— $\frac{3}{8}$ " or $\frac{1}{2}$ " dia., steel, admiralty or stainless steel, either bare-tube or finned-tube design

tubesheets—carbon steel

shell—carbon steel

bonnet—cast steel

	shellside	tubeside
design pressure	150/300 psig 10.5/21.2 kg/cm ²	150 psig 10.5 kg/cm ²
design temperature	250° F 121° C	400° F 204° C



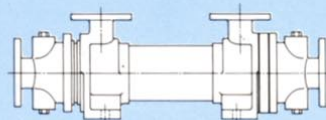
Tank Cleaning Heater (with internal drain cooler)

Details: Straight-tube, one-pass model designed for heating sea water to flush cargo tanks. Tubes and tubesheets are 90/10 copper-nickel with either bronze or copper-nickel waterboxes. The shell has an integral sub-cooling section to cool the condensate below 212° F. Furnished with liquid level controls to maintain the condensate level in the shell.

Navy coolers to MIL-C-15730

ITT Standard manufactures a complete line of Type A oil and water coolers for surface vessels and submarine service, meeting the requirements of MIL-C-15730.

Standard coolers are Classes 3, 4 and 5, freshwater and seawater cooled. Special high-pressure seawater coolers in Classes 1 and 2 are available on request.



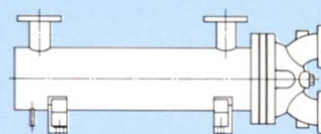
Navy BCP

Details: Removable bundle design with straight tubes and packed floating head. Brazed shell assembly using red brass shell, bronze hubs with cast bronze bonnets. One- or two-pass tube side. 3" through 8" shell diameters.



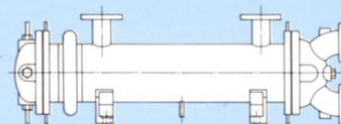
Navy EP

Details: Removable bundle design with straight tubes and packed floating tubesheet. Welded shell construction with cast bonnets. One- or two-pass tube side with single or double tubesheet. 3" through 23" shell diameters.



Navy EU

Details: Standard U-tube, removable bundle design. Welded shell construction with cast bonnet. Two-pass tube side with single or double tubesheet. 4" through 23" shell diameters. Available with high-pressure tube side on request.

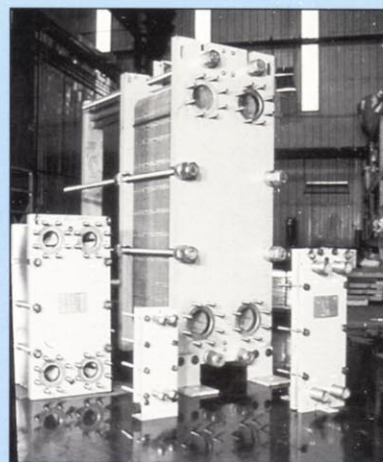


Navy EF

Details: Standard fixed bundle cooler with double-tube/double-tubesheet construction. Specifically designed for hydraulic cooling applications. All-welded shell with cast bonnets. One- or two-pass tube side. 4" through 12" shell diameters.

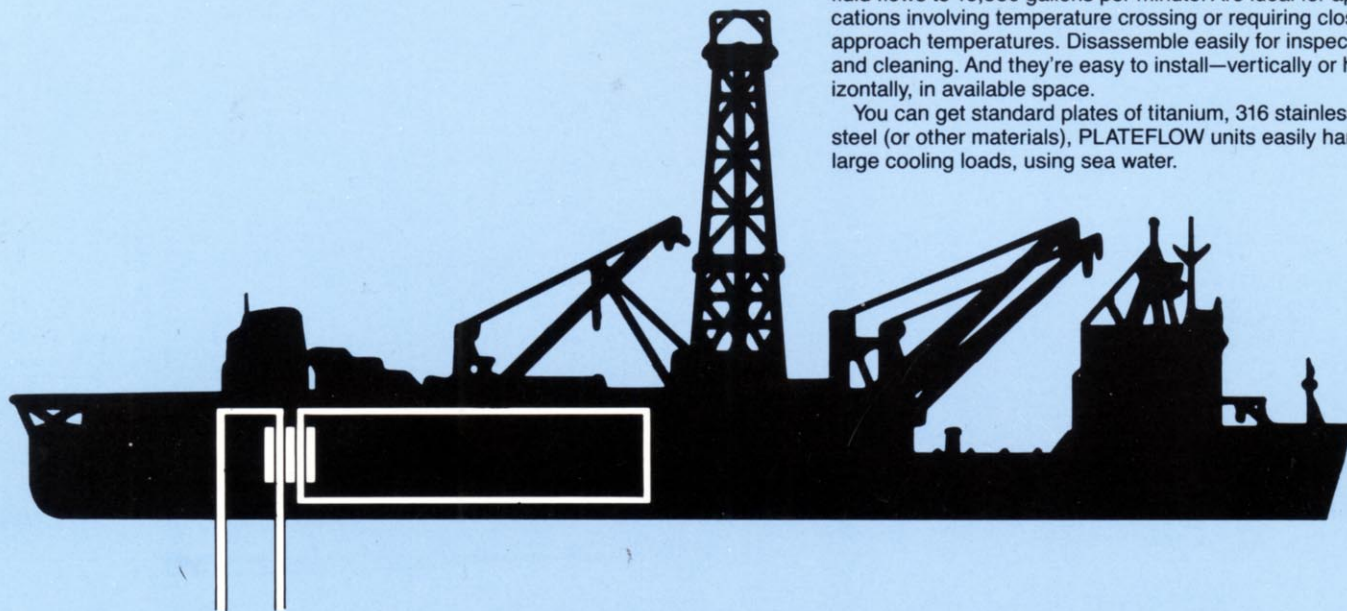
PLATEFLOW[®] heat exchangers.

compact,
versatile,
easy-to-clean.



Compact PLATEFLOW heat exchangers handle high heat loads in less space—give close temperature control of fluid flows to 10,550 gallons per minute. Are ideal for applications involving temperature crossing or requiring close approach temperatures. Disassemble easily for inspection and cleaning. And they're easy to install—vertically or horizontally, in available space.

You can get standard plates of titanium, 316 stainless steel (or other materials), PLATEFLOW units easily handle large cooling loads, using sea water.



ideal for closed-circuit systems.

Use fresh water and inexpensive processing equipment for on board ship or rig. Then discharge heat overboard through a compact PLATEFLOW heat exchanger. You save space and weight and cut maintenance costs.

Get exactly the PLATEFLOW unit you need. Based on your needs, our computer can specify the right unit.

Unit Type	Surface Per Plate (sq. ft.)	Frame Width (inches)	Frame Height (inches)	Connection Size (inches)
PF15	1.30	13.000	32.812	2
PF20	1.62	11.875	32.125	2
PF35	2.58	18.125	38.625	4
PF41	6.67	25.590	76.250	6
PF45	8.07	28.375	81.688	6
PF50	5.38	30.125	64.375	8
PF60	17.33	31.125	89.750	8
PF65	11.52	33.500	93.875	8
PF70	17.33	41.750	112.250	12
PF71	19.80	46.063	121.312	14

Our Plateflow model successfully passed the U.S. Navy shock and vibration tests in accordance with military specifications Mil-S-901C & Mil-Std-167B.