



OCS



AIR COOLED OIL COOLERS WITH OSHA GUARDS

# OCS applications / piping diagrams

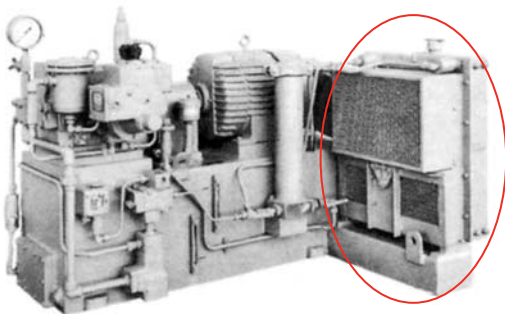
Young Touchstone Cooled Oil Coolers provide efficient cooling for a wide variety of mobile and stationary power equipment. They are designed for a broad range of applications including hydraulic circuits, lube oil cooling, reduction gearing, marine transmissions, process cooling, and torque converters. These units offer Young Touchstone engineered high pressure round tube and plate fin cores, mechanically bonded tube and fin construction with die formed reinforcing fin collars.

A superior tube to manifold bond provides maximum service life. They have the advantage of providing ample cooling in areas where water is costly or unavailable or where water circuit piping is undesirable and inconvenient. Air cooling also eliminates the consideration of freezing water coolants during the winter.

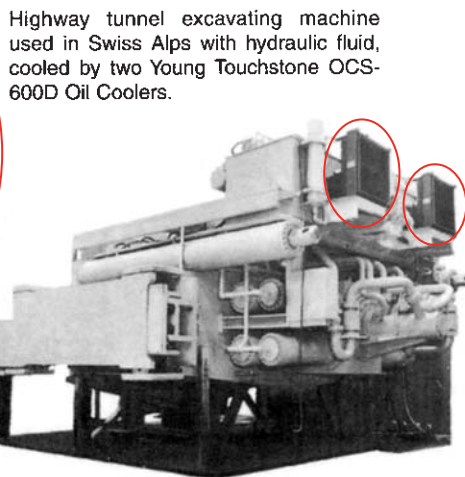
There are eight standard OCS Oil Coolers with a top thermal capacity of 630 hp 470 kw.

## APPLICATIONS

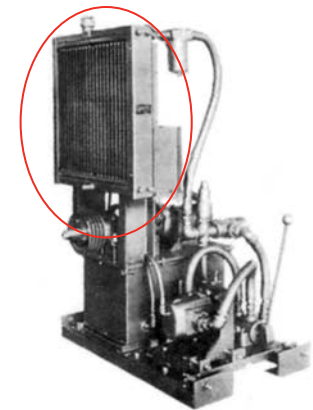
- hydraulic circuits**
- lube oil cooling**
- reduction gearing**
- marine transmissions**
- process cooling**
- torque converters**



Hydraulic power unit incorporating an OCS-175E Oil Cooler to cool the hydraulic fluid. Typical applications for these units include milling machines, tube mills and pipe forming presses.



Highway tunnel excavating machine used in Swiss Alps with hydraulic fluid, cooled by two Young Touchstone OCS-600D Oil Coolers.



Young Touchstone Model OCS-175E Oil Cooler cooling the oil in the hydraulic power unit which operates the carriage on a saw in a lumber mill application.

### ONE PASS OIL FLOW

### PIPING DIAGRAMS

### TWO PASS OIL FLOW

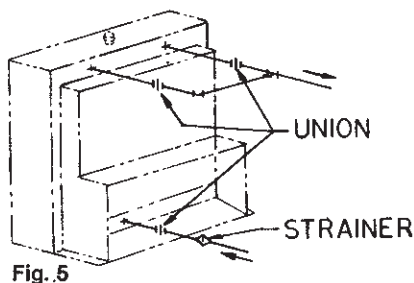


Fig. 5

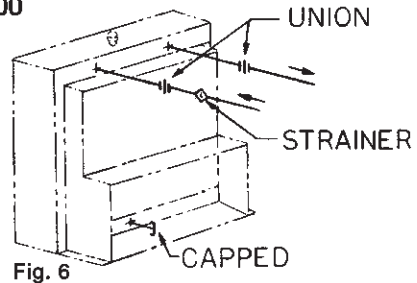


Fig. 6

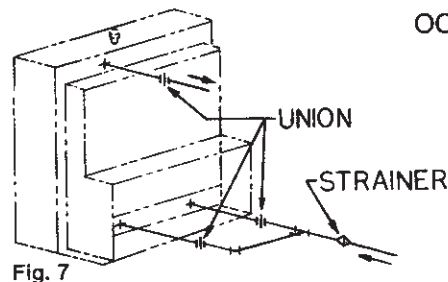


Fig. 7

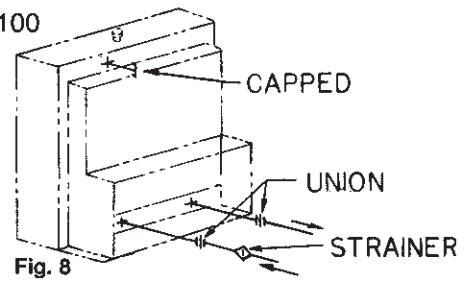
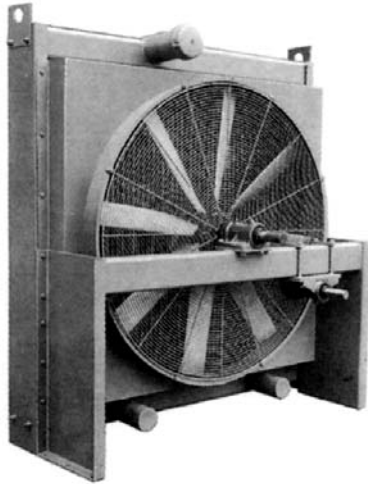


Fig. 8

## TYPE E EXTERNAL DRIVE



**Manifold** — Tubular steel, automatic induction high temperature, brazed tubes to provide leak-proof performance. Inlet and outlet tank connections are designed to insure the lowest possible pressure drop.

**Fiberglass Reinforced** — Nylon blade fan with cast aluminum hub designed for -50°F to +250°F operation.

**Aerodynamically Designed Fan** — Heavy duty, aerodynamically designed fans with aluminum blades and steel hubs are statically balanced for vibration-free performance.

**Adjustable Drive (External Drive)** — Simple belt tension adjustment. Lifetime-sealed ball bearings provide permanent lubrication.

**High Pressure Round Tube and Plate Fin Core** — Standard units are built with aluminum fins and round steel tubes which provide the great strength consistent with a maximum rate of heat transfer.

**Fan Guard Screen and Core Guard** — Provide necessary protection for vulnerable parts of the unit and for workmen in close proximity to cooler.

**Motors** — Totally Enclosed Fan Cooled type standard. (Explosion proof optional).

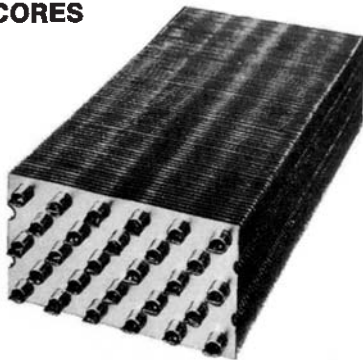
**Finish** — Medium gray paint.

## TYPE D DIRECT DRIVE



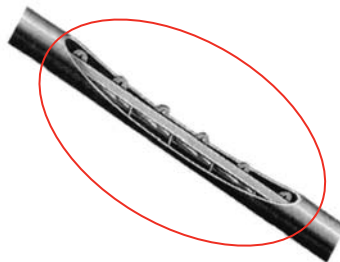
OPERATING PRESSURE	<b>200 psi</b>	1400 kPa
TEST PRESSURE	<b>300 psi</b>	2100 kPa
MAXIMUM OPERATING TEMPERATURE	<b>400F</b>	205C

### CORES



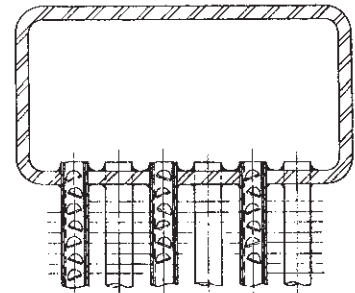
Steel tubes are mechanically expansion bonded to aluminum fins. Die-formed fin collars provide precision tube to fin contact for maximum heat transfer.

### PATENTED TURBULATORS



Exclusive patented Young Touchstone Turbulators inserted in each tube improve heat transfer more than 100% by eliminating laminar oil flow.

### TANKS



Unique Young Touchstone-pioneered, automatic induction, high temperature, brazing method ensures permanent bond and positive contact of tube to manifold, eliminating leaks and providing maximum service life.

## Company Profile

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Young Touchstone, a Wabtec company, with over 75 years of heat transfer experience, has steadily become one of the manufacturing leaders of radiators, oil coolers, heat exchangers and charge-air-coolers. Superior quality, continuous improvement, efficient production and productive ideas and design capabilities have provided Young Touchstone a competitive advantage in the marketplace. These market advantages have allowed the company to become a manufacturing leader in the rail, off-highway, department of defense, industrial and power generation industries. Young Touchstone products become standards on which the industry depends. The company's high quality products are benchmarks in the marketplace.

With over 100 patents in heat exchanger and cooling system design, Young Touchstone has become the leader in cooling system design for large diesel and gas engines. Young Touchstone prides itself to be the global leader in the design, manufacture, and marketing of heavy duty heat transfer components and systems that meet or exceed our customer's expectations for performance, quality, delivery, and cost.

Young Touchstone ISO 9001 certified facilities provide both pre-configured and custom engineered products supported by extensive R&D, engineering, and manufacturing operations with designs based upon:

- Wabtec's Quality and Performance System (QPS) Value Systems Mapping for Continuous Improvement

- Wabtec's Customer Focused Product Development System (PDS)
- Finite Element Analysis (FEA) Trained Engineers
- EDS I-deas Product Design and Unigraphics CAD Software Programs
- Simulation and Software Design Tools Compatible for Computation Fluid Dynamics (CFD)
- State-of-the-Art Prototype and Production Testing Laboratories
- Life Cycle testing for Thermal, Pressure, Vibration, Shock, Salt Spray, Ambient, Oil/Water, Oil/Air, Water/Air and Air/Air Environments

Advanced design technology has led to Young Touchstone market exclusives in the power generation and rail markets such as the proven Mechanical Bond Core and superior O-Ring Tank Sealing utilized in products available for all industry segments.

All Young Touchstone products are field supported by exclusive industry leading application engineering software designed to provide cost effective, on the site, performance proven solutions for all radiator, oil cooler, charge-air-cooler, and heat exchanger products.

With U.S. operations headquartered in Jackson, Tennessee plus additional operations in Racine, Wisconsin and Lexington, Tennessee, Young Touchstone facilities total over 400,000 square feet. Look to Young Touchstone, a powerful market leader in heat transfer products, providing choice and a measurable difference in the marketplace.