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.

Locate a representative at YoungTouchstone.com or contact our sales and marketing offices in Racine, Wisconsin at 262-639-1010 for quality product, service, and responsive support.
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 530 hp 470 kw.

Applications

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

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

OCS-175 through OCS-600

UNION

CAPPED

STRAINER

UNION

STRAINER

OCS-1000 through OCS-3100

UNION

CAPPED

STRAINER

UNION

STRAINER

ONE PASS OIL FLOW

TWO PASS OIL FLOW

OCS construction features

Type E External Drive

- Manifold — Tubular steel, automatically mounted 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 blad. 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 stably balanced for vibration-free performance.
- Adjustable Drive (External Drive) — Simple belt tension adjustment. Lifetime-sheared 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 workers in close proximity to cooler.
- Finish — Medium gray paint.

Type D Direct Drive

Operating Pressure: 200 psi 1400 psi
Test Pressure: 350 psi 2100 psi
Maximum Operating Temperature: 400°F 250°F

Cores

Steel tubes are mechanically expanded 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 insert. ed in each tube improve heat transfer more than 100% by eliminating laminar oil flow.

Tanks

Unique Young Touchstone patented, automatic induction, high temperature, brazing method ensures permanent bond and positive contact of tube to manifold, eliminating leaks and providing maximum service life.
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 coolers, 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 530 hp 470 kw.

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

PIPING DIAGRAMS

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

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

ONE PASS OIL FLOW

TWO PASS OIL FLOW

OCS-175 through OCS-600

Fig. 5

UNION

STRAINER

CAPPED

OCS-1000 through OCS-3100

Fig. 6

UNION

STRAINER

CAPPED

Fig. 7

Fig. 8

OCS construction features

TYPE E EXTERNAL DRIVE

Manifold — Tubular steel, automatic mounting, 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) — Single 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 ratio of heat transfer.

Fan Guard Screen and Core Guard — Provide necessary protection for vulnerable parts of the unit and for workers working proximity to cooler.

Motors —Totally enclosed Fan Cooled type standard. (Explosion proof option).

Finish — Medium gray paint.

OPERATING PRESSURE

<table>
<thead>
<tr>
<th>TYPE</th>
<th>OPERATING PRESSURE</th>
<th>200 psi</th>
<th>1400 VPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>TEST PRESSURE</td>
<td>300 psi</td>
<td>2100 VPA</td>
</tr>
<tr>
<td>200</td>
<td>MAXIMUM OPERATING TEMPERATURE</td>
<td>400°F</td>
<td>2050</td>
</tr>
</tbody>
</table>
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.

Locate a representative at YoungTouchstone.com or contact our sales and marketing offices in Racine, Wisconsin at 262-639-1010 for quality product, service, and responsive support.