

**The advanced technology you need today and tomorrow.**

Rely on the leader in advanced cooling technology for performance-proven solutions in locomotive cooling systems. Let our engineers recommend custom solutions that fit your space and performance specifications precisely.

**FLAT-ROUND® Mechanical-Bond Technology**

Our signature core provides leak-free radiators and air-to-water charge-air cooling in the most punishing diesel engine cooling applications. Single and dual core designs, side-by-side or front-to-back arrangements, can be configured with various tube rows and fin densities for optimal performance.

Heavy duty headers and mechanical-bond tube-to-header joints eliminate the number-one leak path in soldered or brazed-header cores. There is no solder to corrode or crack, no braze to fatigue, no rubber grommets to replace. Young Touchstone's exclusive O-Ring tank seals replace conventional gaskets, and eliminate the second-most common leak path in soldered- or brazed-header cores.

Flat plate fins are soldered to brass tubes for maximum core strength. Welded-seam heavy-wall brass tubes have no soldered lock-seams to corrode or leak.

*FLAT-ROUND® is a registered trademark of Young Touchstone*



**CuproBraz® Technology teams with FLAT-ROUND® construction for stronger more efficient cooling systems.**

We've combined cutting edge CuproBraz® technology with proven FLAT-ROUND® Mechanical-Bond tube-to-header construction to produce the toughest, most efficient cooling systems in the industry.

CuproBraz® cores provide leak-free radiators and air-to-air charge-air cooling using anneal resistant copper and brass developed to meet the high temperature and pressure requirements facing the next levels of emissions regulations.

CuproBraz® cores combine high strength copper fins with flat brass tubes to provide heat exchangers that are more durable, compact and efficient than conventional brazed aluminum.

CuproBraz® core design and construction incorporate features that provide maximum durability especially important in radiator and charge-air-cooling applications where severe thermal stress, excessive shock and vibration, thermal cycling, and high operating pressures are present.

*CuproBraz® is a registered trademark of the International Copper Association Ltd.*



## FLAT-ROUND® Mechanical-Bond Locomotive Radiators

FLAT-ROUND® Mechanical-Bond radiators have been used in heavy-rail locomotive service for more than 40 years. Typical construction is built to last the life of the locomotive.

FLAT-ROUND® Mechanical-Bond radiators combine the superior air-flow and heat transfer of flat tubes with the durability of round tube mechanical bonding.

FLAT-ROUND® Mechanical-Bond radiators are the premium heat exchanger for continuous operation in severe applications.

FLAT-ROUND® Mechanical-Bond radiator cores are available with flat plate fins or with CuproBraz® serpentine fins.

Normal maintenance is cleaning of core face with high pressure steam and straightening of fins. Infrequent tube leaks or tube-to-header leaks are repaired through a simple tube-plugging procedure; no messy or dangerous solder or braze is required.



## Quality

At Young Touchstone, quality and performance are our top priorities. That's why we employ advanced engineering and quality procedures to ensure our products are designed and manufactured to the highest standards. Techniques such as Failure Mode and Effects Analysis prevent field problems on new products before they leave the factory. Plus, our process quality is continually improved using Statistical Engineering, SPC and problem-solving techniques that identify and remedy problems at the root cause.

## Engineering

Using the industry's most advanced engineering technology, Young Touchstone engineers use the latest tools including FEA, CFD and simulation software to optimize design and market requirements. All drawings are completed in three dimensional solid models and can be shared and translated in most formats.

## Applications

Young Touchstone Applications Engineers use advanced computer modeling tools to accurately predict component performance.

## Customer Service

Dedicated Customer Service representatives provide fast response to all customer inquiries. That means up to the minute status on all orders, including shipment tracing and product availability.