

FLUID POWER

PRODUCT OVERVIEW



An industry leader in the design and manufacturing of highly engineered heat transfer products sold through a global network of distribution partners.

We **COOL**
what you
POWER

We are an API Heat Transfer Company.

Sold through a global network of distribution partners, Thermal Transfer Products offers a complete portfolio of standard products available from API Heat Transfer. This includes a broad range of fluid power related heat exchangers (oil-water, oil-air, air-air) utilized in mobile and industrial applications, along with custom engine cooling models.

We are a global network of distribution partners.

As a recognized industry leader, TTP catalogs a wide offering of standard oil coolers and builds custom designed OEM Engine coolers and modules for Industrial Fluid Power and Mobile markets. We design and build heat exchangers from Aluminum and Copper materials—both components and multi-tiered cooling modules. We have extensive experience engineering to applications in the Mobile, Industrial, Compressor and Process industries.



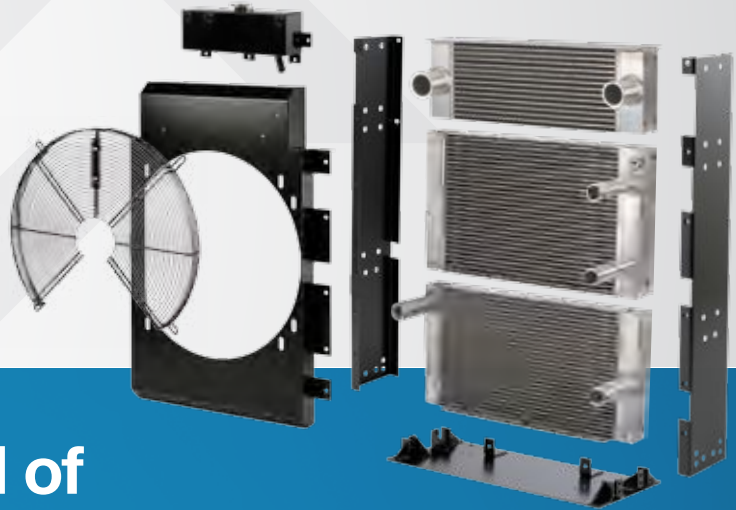
TTP Headquarters – Racine, WI USA

ISO
9001:2008
REGISTERED

We serve these markets.

Industrial Machinery
Agriculture
Material Handling
Fluid Power

Construction
Oil & Gas
Specialty Equipment
Turf Care



We are a world of heat transfer solutions.

- Racine, Wisconsin
- Franklin, Wisconsin
- Iron Ridge, Wisconsin
- Montgomery, Alabama
- Buffalo, New York
- Arcade, New York
- Birmingham, UK
- Coventry, UK
- Bretten, Germany
- Pune, India
- Suzhou, China



ÖLÖLKÜHLER OLIE KOELER REFRIGERADOR DE ACEITE OLJE-KYLARE RADIATEUR D'HUILE OIL COOLER RADIATORE DELL'OLIO 油冷却器 OL
 ELER RADIATEUR D'HUILE 油冷却器 OIL COOLER RADIATORE DELL'OLIO ÖLKÜHLER REFRIGERADOR DE ÓLEO OLIE KOELER RADIATEUR D'
 LKÜHLER REFRIGERADOR DE ÓLEO OLIE KOELER オイルクーラー REFRIGERADOR DE ACEITE OLJE-KYLARE RADIATEUR D'HUILE OIL COOLER
 OLIE KOELER REFRIGERADOR DE ACEITE OLJE-KYLARE RADIATEUR D'HUILE OIL COOLER RADIATORE DELL'OLIO ÖLKÜHLER REFRIGERADOR
 JE-KYLARE オイルクーラー RADIATEUR D'HUILE OIL COOLER REFRIGERADOR DE ACEITE OLJE-KYLARE RADIATEUR D'HUILE OIL COOLER 油
 GERADOR DE ÓLEO OLIE KOELER RADIATEUR D'HUILE OIL COOLER RADIATORE DELL'OLIO ÖLKÜHLER オイルクーラー REFRIGERADOR DE ÓLEO

Mobile Cooling

Our Mobile solutions offer oil coolers, radiators, and charge air coolers with or without electric DC fans and Hydraulic fan motor drives. Built from brazed aluminum or copper round tube and fin, and are available in standard catalog product and custom designed OE modules.

Market Focus

Agriculture
Construction
Forestry
Material Handling
Mining
Off-Highway
On-Highway
Specialty
Turf Care



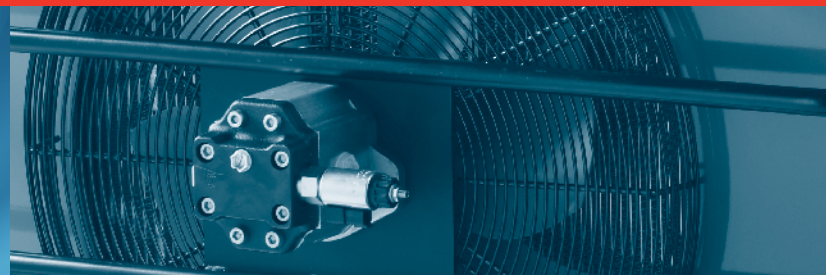
Turn-key Cooling Module

Our Product Series

MA	DH	DF	M
MF	AOC	AOVHM	BOL

New Technology

Brushless DC Fan TTP now offers axial fans equipped with Brushless DC electric motors. These fans are a featured option on many P-Bar Series MA standard catalog oil coolers. Brushless motors offer benefits for extended life including low current draw on start up, custom fan speed control and lower ambient noise.



MA



DH



M



DF



MF



AOC



AOVHM



Turn-key Cooling Module



Industrial Cooling

Our Industrial solutions offer air cooled oil coolers built with or without electric AC motors and water cooled shell & tube coolers designed for multiple fluid types and built from aluminum, copper and steel for fluid power related applications.

Market Focus

Hydraulic Presses
Injection Molding and Extrusion
Hydraulic Power Units
Oil & Gas
Wind Energy
Paper Industry



Our Product Series

AOC	EC	K	AOL	CA2000
SSA	A	AOVH	RM	SSC
EK	B	AO	EKT	OCA
BOL	HC	AOF	COL	COLW
BP	PF			

New Technology

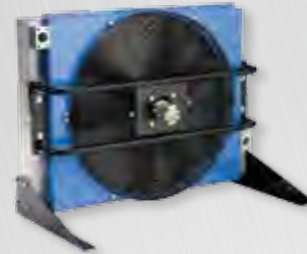
Cool Loop COLW Series Water cooled Cool Loop offline fluid conditioning system. Utilizes a high efficiency EK Series shell & tube heat exchanger.

Bypass Valves TTP now offers two bypass valve options on standard BOL models—a factory installed integrated relief valve and a temperature controlled bypass valve with integrated pressure relief.

BP Series Our BP Series heat exchangers are rugged, compact, cost-effective and reliable over long periods of time with minimal maintenance.

PF Series Our PF Series heat exchangers are a compact, serviceable design and flexible cost saving alternative.

HC Series TTP introduces the HC-Series shell & tube heat exchangers. "Hybrid" design based on interchangeability between previous TTP C-Series and Basco Type 500 units.



BOL



AOL



COL



EK B



COLW



CA



OCA



BP



PF



PVR



Compressor



TTP manufactures air to air aftercoolers, water to air aftercoolers, and air to oil lube oil coolers for air compressor applications in both catalog and custom OE models. Our high quality products provide outstanding cooling performance in rotary screw, piston and centrifugal air compressors, as well as vacuum systems and blower lube oil coolers.

Market Focus

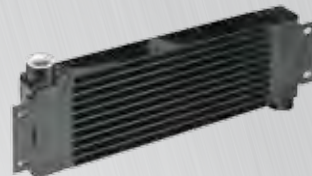
Oil & Gas
Power
Pharmaceutical
Waste Water
Printing
Auto
Plastics
Paper
Metals
Transit

Our Product Series

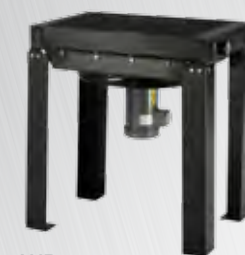
BGA	UPA	AA	AHP(H)
ACOC(H)	AB	HC	AOL



UPA



BGA



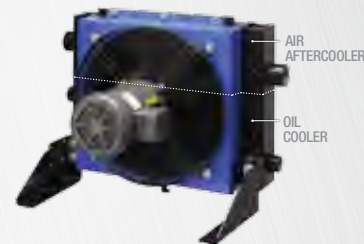
AHP



AHP(H)



ACOC



ACOC(H)



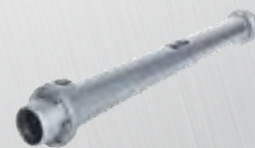
AOL



AA



HC



AB



Process Cooling

TTP process coolers cover a wide variety of industrial process applications, across many industries. These coolers are used in the daily plant operations to provide a means of highly reliable, compact and efficient cooling. Our process coolers cover a variety of industrial applications beyond Hydraulics Oil Cooling—chillers, fuel heaters, biogas, natural gas, de-ionized water, refrigerant air cooling, condenser and more.

Market Focus

Chemical Processes
Mining
Pulp & Paper
Marine
Power Generation

Hydraulic Power Units
Food Industry
Oil & Gas
Plastic Injection Molding
Extrusion Machinery

Our Product Series

BPW	BPSW	AOL	UC/UCV
PF	PVR	HC	EK
USSC/USSCV (stainless steel)			

New Technology

Brazed Plate Heat Exchangers

BP Series heat exchangers are rugged, compact, cost-effective and reliable over long periods of time with minimal maintenance. The compact design and multiple mounting options lead to optimization of heat transfer for compact industrial applications. 316 stainless steel construction and standard SAE connections are features of this highly efficient technology.

Plate & Frame Heat Exchangers

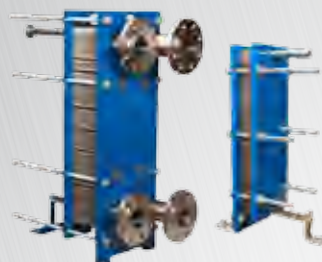
PF Series heat exchangers are a compact, serviceable design and flexible cost saving alternative. The unique designs produce high heat transfer coefficients for a given application. Large heat exchanging surfaces in a very compact, space-saving frame. Double sealing design prevents the possibility of mixing the two process fluids. Readily expanded for greater capacities. Low temperature approaches/differences. Capable of handling large volumetric flows with low pressure drops.



BPW/BPSW



Optional Mounting Bracket
(except 8x3 plates)



PF



EK



PVR



HC



UC

Available Contraction Materials

- Carbon Steel
- Stainless Steel
- Duplex & Super Duplex Stainless
- Copper & Copper Alloys
- Nickel & Nickel Alloys
- Hastelloy
- Chrome-Moly Alloys
- Titanium
- Alloy-Lined, Clad, Explosion-Clad & Weld Overlay

Available Certifications & Registrations

TEMA
ASME
C-TPAT
ISO 9001
API
ABS
GOST-R
NR-13
PED
HTRI



NEW Products



MAGHEX Fan Controller On Board Electronic Oil Cooling

This combined sensor and controller is designed to mount directly to the heat exchanger. It provides accurate temperature control by cycling the electric cooling fan to maintain desired oil temperature. A single housing reduces wiring and mechanical installation. The MAGHEX magnetic wand is used to set up and program the sensor.



BP Series

Our BP Series heat exchangers are rugged, compact, cost-effective and reliable over long periods of time with minimal maintenance. The compact design and multiple mounting options lead to optimization of heat transfer for compact industrial applications. 316 stainless steel construction and standard SAE connections are features of this highly efficient technology.



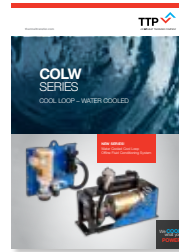
Plate & Frame Heat Exchangers

PF Series heat exchangers are a compact, serviceable design and flexible cost saving alternative. The unique designs produce high heat transfer coefficients for a given application. Large heat exchanging surfaces in a very compact, space-saving frame. Double sealing design prevents the possibility of mixing the two process fluids. Readily expanded for greater capacities. Capable of handling large volumetric flows with low pressure drops.



Cool Loop COL Series

Ideal for independent cooling and filtering of system oils. Low to medium pressure applications utilizing low noise screw pump technology. Bar and Plate brazed aluminum P-BAR core with optional T-BAR core.



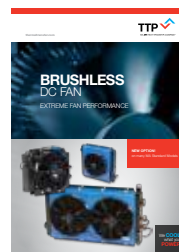
Cool Loop COLW Series

Water cooled Cool Loop offline fluid conditioning system. Utilizes a high efficiency EK Series shell & tube heat exchanger. Pump flows ranging 9.5 to 45 GPM (50 Hz) (30 to 140 LPM). Standard SAE connections on customer-integrated ports (BSPP adapters available).



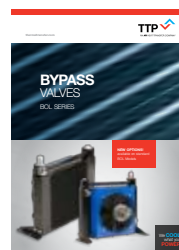
HC Series

TTP introduces the HC-Series shell & tube heat exchangers. "Hybrid" design based on interchangeability between previous TTP C-Series and Basco Type 500 units. The HC Series remains the industry standard in ultimate value and long-term reliability. This proven fixed tubesheet design shell and tube heat exchanger offers the cost effectiveness that comes with having a highly standard design, while easily providing for various options to meet specific application requirements.



Brushless DC Fan

TTP now offers axial fans equipped with Brushless DC electric motors. These fans are a featured option on many P-Bar Series MA standard catalog oil coolers. Brushless motors offer benefits for extended life including low current draw on start up, custom fan speed control and lower ambient noise.



Bypass Valves for BOL Series

TTP now offers two bypass valve options on standard BOL models—a factory installed integrated relief valve and a temperature controlled bypass valve with integrated pressure relief.

Engine Cooling

Flexible Cooling Solutions for Diesel, Gas, Alternative Fuels & E-Fan Integration

TTP can supply complete cooling packages, including in-house designed framing, fan shroud, finger guard, expansion tank, and more. Modules are pressure and leak tested, assembled and packaged.



TUBULAR MICRO CHANNEL EXTRUSION



T-BAR is a proprietary extrusion design and one of the most clever cooling technologies available on the market today. Highly engineered on the front end, equals simplicity on the application end. T-BAR has unrivaled strength and rigidity, which ensures reliable field performance. T-BAR is factory zinc coated for cathodic protection, seam/leak free extruded and ultimately reliable.

Superior Performance

Aluminum has up to 25% higher heat transfer capacity in comparison to a traditional copper/brass cooling package.

Look to T-BAR for demanding applications where performance is an absolute.

CUSTOM PLATE & BAR DESIGN



P-BAR is the most efficient design solution in heat transfer today, utilizing an aggressive hot side turbulator. Perfect for all fluid medias in diesel engine cooling applications demands, while offering remarkable heat rejection levels for new Tier systems. P-BAR is a cost effective solution and excels in core combination packaging.

Superior Performance

Aluminum has up to 30% higher heat transfer capacity in comparison to a traditional copper/brass cooling package.

Look to P-BAR as an industry standard solution & available globally.

SEAM WELDED TUBE



S-BAR is a high strength automotive design, utilizing a seam welded, free flowing tube design. Constructed in a tube to header plate fashion, with options for multiple rows, fin types and tank material (plastic or metal). S-Bar is the choice for engine water jacket cooling in lower HP ranges and OEM production volumes. Engineered for challenging heat loads and demanding ambient conditions.

Superior Performance

S-BAR high flow tubes offer higher heat transfer capacity in comparison to traditional radiator cooling package designs.

Look to S-BAR for high volume OE applications in small HP ranges.



NEW Oil Cooler Store

XSELECTOR

Introducing TTP's new ecommerce online sales tool!

New ecommerce store to shop, size for performance or interchange a competitive brand for TTP oil coolers.

ttopilcoolerstore.com

4 methods to select an oil cooler

- Shopping catalog
- Known TTP part number
- Cross over a competitor
- Size a cooler using XSELECTOR
- Known TTP part number



Shop the catalog

- Broken down by media, application
- Link to model catalog page for more information
- Link to each model's page
- Link to ModelSmith for help by options



Cross over a competitor

- Enter full or partial TTP part number
- Review images of models and starting prices



Size a cooler using XSELECTOR

- Shop by sizing for performance

The XSELECTOR Software program from TTP allows you to:

- Perform cooler heat transfer sizing and analysis on coolers for Air Cooled and Water Cooled applications.
- Now perform cooler heat transfer sizing and analysis on Air Cooled (Air Blast) coolers found in our P-Bar Series and Braze Plate in our BP Series
- Size our Proprietary T-Bar core (OCA only)

*The Aftercoolers and COL units are not included in the software

Available fluids that can be selected include:

- ISO grade oils from ISO 32 to ISO 220
- Water
- Various water/glycol mixes

Projected results allow the user to select the cooling solution from a list of performing heat exchangers.

Final model selection choice can be decided from the following sizing results:

- Performance
- Material
- Weight
- Size
- Price factor



Find TTP on a world of applications:

Agricultural Harvesting Machines
Air Compressor Lube Oil Cooling Systems
Aviation Fuels
Bearing Lubricating Systems
Blow Molding Machines
Brake Retarders
Broaching Machines
Brush Cutters
Chemical Process Heaters & Coolers
Chillers Compressed Air Aftercoolers
Compressed Air Cooling
Compression Molders
Cutting Oil Cooling
Die Casting Machines
Hydrostatic Drives
Induction Brazing Machines
Industrial Lasers
Injection Molding Machines
Machine Tools
Mining Equipment

Paint Heating
Paper Making Machines
Pavement Compactors
Plastic Film Making Machines
Plastic Injection Molding Machines
Quenching Oil Coolers
Redi-Mix Concrete Trucks
Reduction Gears
Rough Terrain Fork Lifts
Diesel Engine Lube Oil Systems
Dynamometers
Engine Jacket Water/Glycol
Engine Oil Cooling Extruders
Fluid Drive Centrifugals
Fluid Power Systems
Gasoline Engine Lube Oil Systems
Gear Shapers
Gearbox Lube Oil Cooling
Golf Course Turf Mowers
Hydrostatic Drives
Heat Transfer Fluids

Hydraulic Couplings
Hydraulic Winches
Hydraulically Operated Robots
Solvent Coolers
Specialty Vehicles
Spraying Equipment
Stoker Drives
Street Sweepers
Test Stands
Timber Harvesting Machines
Torque Converter Oil Cooling
Torque Converters
Tractors
Transformers
Transmission Cooling
Trucks-Off Road
Tube Formers & Testers
Turbine Oil Cooling
Vacuum Pump Seal Oil Cooling
Water & Process Heating
Welding Machines

Tech Center



Our Tech Center capabilities include:

Performance Validation and Enhancement

- Performance testing of new or existing designs with service fluids including Water and Glycol
- Bench test comparison testing between API Heat Transfer designs and designs by other manufacturers
- Test facilities for Pasteurization, Evaporation and Dealcoholization running with original customer's products

Montgomery Materials Lab

- Measurement validation of fin, tube and component profiles
- Mechanical tensile testing
- Hardness testing
- Failure Analysis
- Burst testing
- X-ray analysis of chemical composition
- Scanning electron microscopy (SEM)
- Optical microscopy
- Metallography/microstructural analysis
- Fourier transform infrared spectroscopy
- Differential scanning calorimetry
- Corrosion exposure testing

Buffalo Lab

- Calorimetric Performance Testing
- Pressure and Thermal Cycle Testing
- Computational Fluid Dynamics (CFD)
- Thermal Contact Resistances Measurement

Bretten Lab

- Single phase flow stands for thermal performance and pressure drop testing
- Pilot plants
- Utilities

Our fully equipped multiple-disciplinary Technical Centers in Montgomery, AL, Buffalo, NY and Bretten, Germany are available for expert application engineering, metallurgical and analytical support. Working with our customers and OEMs, we provide heat exchanger performance modeling, performance analysis and mechanical testing.

- Integrated heat transfer performance test platform.
- Sophisticated laboratory analytical services providing metallurgical, chemical and polymer analysis using EDS x-ray, FTIR and DSC, as well as a wide array of mechanical and material properties analysis.
- Durability, life cycle and corrosion testing platforms to validate designs and optimize materials and performance.
- Providing the technology and expertise to support the development of new products to meet the current and future needs of our customers.



See how our performance can improve yours.

With manufacturing facilities, R&D locations and sales support all over the world, we're where you need us to be. **Contact your TTP sales rep or visit thermaltransfer.com.**

TTP HEADQUARTERS

5215 21st Street | Racine, WI 53406, USA | +1.262.554.8330 | ttpsales@apiheattransfer.com

API HEAT TRANSFER GLOBAL HEADQUARTERS

2777 Walden Avenue | Buffalo, NY 14225, USA | +1.716.684.6700 | apiheattransfer.com