

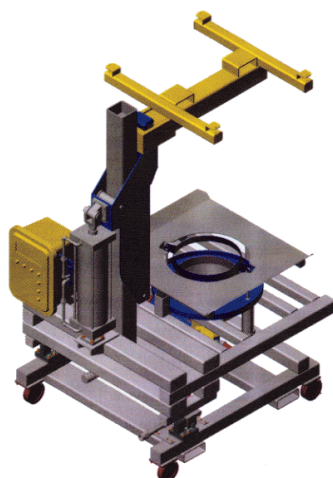
Virginia Heat Transfer

AND PROCESS EQUIPMENT, INC.

www.vaheat.com

Heat Transfer, Separation, Solids Handling, Tanks, and Service

Alfa Laval, PICK Heater, Young Industries, Heatec, Rubicon, and More





Heat Transfer

Plate Heat Exchangers, Shell and Tubes, Sanitary, Condensers, Heaters

Design and supply for plate heat exchangers, shell and tube heat exchangers, wfi exchangers, welded compact exchangers, direct injection and indirect steam heaters, interchangers, vaporizers, evaporators, hot water heaters, scraped surface exchangers, air to air exchangers, air to liquid exchangers, humidity control units, and hot oil heaters. We've solved many difficult heat transfer problems over the years. Whether you need a stand along heat exchanger or a complete processing skid, we'll work to find the perfect solution for you.



Separation

Decanters, High Speed Centrifuges, Membranes, Filters, and Strainers

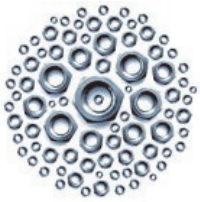
Design and supply for decanters and high speed centrifuges for de-watering, clarifying, and concentrating. Sheet and spiral membrane systems for ultra and micro-filtration duties for food, beverage, and industrial applications. Self-cleaning automatic back flush strainers for use on river water. Sterile beer filtration units. Fuel conditioning systems and lube oil filters. Also available are stand alone cleaning systems for quench oils, coolants, and wash waters.



Tanks and Valves

Stainless Steel, HDPE, FRP, PE, and PP Tanks plus Accessories and Mix-Proof Valves

From 2 liters to 40,000 gallons, we'll find the right tank for you. Small chemical and beverage containers available with linings and built ready for transport and to ASME code. Disposable multi-purpose containers available up to 15 gallons. Jacketed vessels available along with batch heat transfer calculations for your heating or cooling loads. Wide variety of plastic tanks available in many standard sizes. Tank accessories include lids, tank cleaning equipment, and sanitary mix-proof valves.



Utilities

Hot Water Generation, Cleaning-in-Place (CIP) Systems, Boiler Heat Recovery, Hot Oil Systems, Cooling Tower Cleaning, Humidity Control

Direct contact and indirect generation of hot water from steam, complete skids available. No operator input needed. Complete line of sanitary CIP skids with tanks and cleaning nozzles available. Boiler blow down heat recovery packages with fast pay back available. Hot oil systems for plant-wide distribution. Generate hot water with natural gas or off gas via a direct fired burner. Humidity control stations. Onsite cleaning of your cooling tower and complete heat exchanger audits available.

Manufacturing Partners



Solids Handling

Powder and Granular Solids Handling Systems for Bulk Bag Unloading and Plant Distribution

Complete supply of bag dump stations for 50 pound bags, super sack unloading systems, large and small scale dilute and dense phase conveying systems. Supply of rotary and diverter valves. Ribbon blenders, bin discharging equipment, dust control systems, mechanical rope conveyors, and fluidization solutions for powders to eliminate the moving parts associated with screw conveyors.



Parts, Service, Maintenance, and Training

Complete Range of Parts and Services Available for All Manufacturers of Plate Heat Exchangers

Plate heat exchanger services include troubleshooting, regasketing, mechanical cleaning, cleaning-in-place (CIP), complete plate pack replacement, refurbishment, site supervision of your staff, and a complete suite of training programs are available. We service plate heat exchangers from any manufacturer. Complete maintenance kits are available with all of the parts that you need for a successful reconditioning, or we'll handle everything for you. The choice is yours.

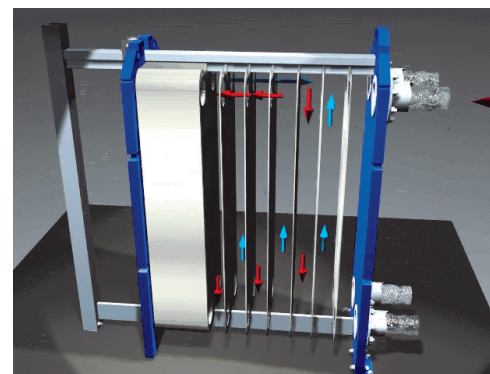
Not Just Heat Exchangers, Heat Transfer Solutions: At Virginia Heat Transfer, we'll take the time to understand your problem from all angles and custom design a heat transfer solution just for you. So, whether your problem calls for a heat exchanger, a complete process skid, or just some troubleshooting, you can put our 35 plus years of experience to work for you.



Liquid to Liquid Duties

Depending on your application, typical liquid to liquid heat exchange can be accomplished with plate heat exchangers, shell and tube heat exchangers, or spiral heat exchangers. Shell and tube heat exchangers can be applied in high temperature or pressure applications in general services.

Plate heat exchangers are available in gasketed and welded styles. Plate heat exchangers utilize a purely countercurrent flow pattern which allows for maximum heat recovery. Plate heat exchangers can be expanded for future capacity increases and they come apart easily for routine maintenance and cleaning. If the operating conditions or an aggressive media won't allow for gaskets, there are several welded, compact heat exchangers available as well. Plate heat exchangers can be especially attractive for duties requiring high alloys than to their high overall heat transfer coefficients.



Condensers

Shell and tube style heat exchangers have been used for condensing duties for years. Additionally, there are now plate style condensers available which have been designed specifically for condensing duties. With asymmetric connections and plate spacings, a plate condenser can save space and installation costs. Both total condenser and partial condensers available.

Economizers

Save energy costs by transferring your valuable heat from one process stream to another. Integrate heat between process streams or from one utility stream to another. A common location for an economizer is on boiler blow down streams. The valuable heat in your boiler blow down can be recovered into your boiler feed water.

Evaporators, Air to Air, and Air to Liquid

Skid mounted evaporation systems are available to reduce waste water volume reduction and product concentration. Air to air units are available for installation into your existing ductwork to recovery heat from flue gases. Air to liquid units can be used to preheat water with flue gases as well.



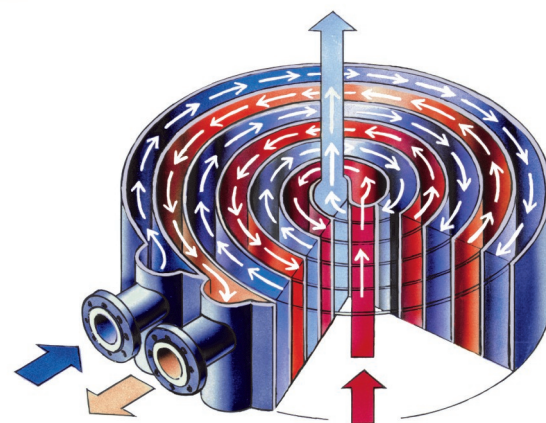


Slurries and Fouling Applications

The spiral heat exchanger is perfect for slurry streams and heavy fouling applications. Its single channel design forces the fluid through a rectangular channel and the spiral configuration is easily accessed for periodic cleaning. Spiral heat exchangers have been widely used in services such as paper pulp streams, municipal waste water, oleum, and others.

Evaporators and Vaporizers

Complete evaporation stations are available for concentration of wastewater, food products, milk, and process streams. Vaporizers for use on distillation columns or process injections are also available. Water conservation is becoming more and more important, don't overlook evaporation as a feasible means to minimize your water treatment bill.



Steam Heating

Complete line of steam heaters including shell and tube style and plate style steam heaters. These units can be delivered with all the necessary steam controls already mounted and ready to accept your piping. Control panels with logic are also available. Whether you're making hot water or need to heat a process stream, we have the solution. You can even use vent steam from your existing system in some cases.

Sanitary Applications

Sanitary plate heat exchangers, shell and tube exchangers, scraped surface exchangers, and complete skids available for sanitary processes. Applications include food processing, dairy, pharmaceutical, life sciences, and others. Designs are available to eliminate the possibility of cross contamination and ensure the highest level of sanitary contact with your products.

Systems supplied can include Cleaning-in-Place (CIP) modules, Water for Injection coolers, temperature control skids for tanks, direct steam injection for cooking, pasteurization systems, and closed loop water systems.



Complete Separation and Tank Solutions:

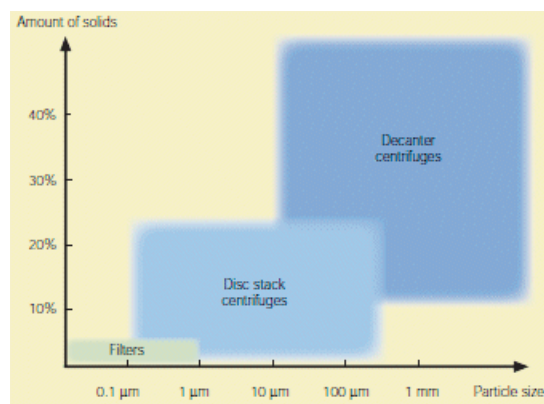
Whether you need to separate two or more liquids or recover valuable solids, we have just what you need including high speed, disc stack centrifuges and horizontal decanters. Our tank solutions range from a stand-alone tank to a turn-key system ready for operation with the push of a button. Rotary jet tank cleaning nozzles available for your toughest cleaning jobs.



Liquid Recovery

Have a valuable liquid stream that is contaminated with small solids or another insoluble liquid? A high speed centrifuge may be able to handle the job continuously. Centrifuges use high rotation speeds to exert extreme centrifugal forces on process fluids to accomplish the needed separation. Solids are forced outward onto the bowl wall and can be periodically ejected. Liquids can be separated according to their density differences as well. The disc stack provides additional “settling area”. Imagine if you could take a settling tank, shrink it, wrap it in a circle, and push a fast forward button. The centrifuge does in a fraction of a second what would take a settling tank hours or even days.

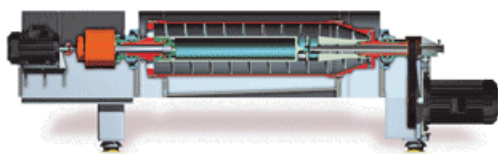
Example application have included gas turbine fuel treatment, kaolin waste water clarification, and oil cleaning in many industries. Ensure your fluids are clean is key to equipment longevity



Sanitary application include separation of mammalian cells cultures as well as beer and vegetable oil clarification duties.

Solids Recovery

Are your solids the valuable resource that you need to recover? If so, a horizontal decanter centrifuge may be able to help significantly improve your recovery rate. Initially designed for the municipal waste water market, the decanter centrifuge has since been applied to many other applications.



Separation takes place in a horizontal cylindrical bowl equipped with a scroll conveyor. The product is led into the bowl through a stationary inlet tube and is then smoothly accelerated in a full-flow feed zone design. Centrifugal forces of up to 3,500 G make the solids accumulate on the inner surface of the bowl.

The conveyor rotates in the same direction as the bowl, but at a different speed. This moves the solids towards the conical end of the bowl. The solids leave the bowl through the solids discharge openings into the casing.

Separation takes place throughout the length of the cylindrical part of the bowl, and the clarified liquid leaves the bowl by flowing over adjustable plate dams into the casing.



Tanks, Tank Cleaning, Mix-Proof Valves, and Process Skids

Virginia Heat Transfer partners with industry-leading manufacturers to ensure that all of your stainless steel fabrication needs can be met accurately.

- Stainless tanks available from 15 to 60,000 liters.
- 100% stainless steel fabrication facility
- Standard and custom designs available
- Complete systems and CIP (Clean-In-Place) skids available

In addition to tanks and skids, Virginia Heat Transfer also offers a complete line of mix-proof valves and tank cleaning devices from Alfa Laval.



From static spray balls to dynamic rotary spray heads, the Toftejorg product line from Alfa Laval has shown to provide superior cleaning with a minimal amount of water. Each tank is individually simulated to ensure that cleaning nozzle can adequately clean the entire tank surface.

- Lower your water consumption
- Get better cleaning results
- Decrease your cleaning cycle
- Excellent technical support

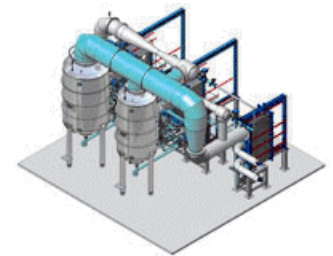
All that you can ask for from your tank cleaning equipment supplier.



Mix-proof valves enable the simultaneous flow of two different products or fluids through the same valve without the risk of cross-contamination. This enhances plant flexibility and efficiency of the dairy, food and beverage, and bio-pharm industries.

From a simple hot water generator to a complex heating/cooling system, let us discuss a turnkey process skid to solve your processing problem. Examples include:

- Evaporation systems
- Rail car cleaning systems with detergent dosing and heating
- Tank temperature control loop systems
- Clean-In-Place Systems
- Bio-Kill and Reactor Systems
- Boiler feedwater heaters



We've supplied skids to customers in the food, pharma, industrial, and power industries. Let us help you.

Solids Handling Solutions:

From full scale pneumatic conveying all the way down to a simple diverter valve, Virginia Heat Transfer partners with Young Industries to find an optimal solution to any solids handling needs for our customers. Super sack unloading, bag dump stations, bag houses, valves, blenders, and more.

Bag Unloading and Bins

Need to transfer solids or powders from a 50 pound bag or bulk bag container? Young Industries has a complete line of solids handling equipment designed to solve even the toughest applications.

Applications can range from conveying straight up, a few feet horizontally, or a complex, complete pneumatic conveying system. Bag dump stations for bagged powders include dust control and can be equipped with a small scale dense phase conveyor called a Product Pump to push your powders to their final destination. Alternatively, the bag dump stations can also be flanged directly onto your tanks.

For bulk bags, Young Industries can tailor a solution using a Direct-From-Bag (DFB) unloader. The DFB can be stationary or mounted on castors for portability. The solids can be conveyed by traditional dense phase conveying or via Young's custom fluidization media called the Stinger.

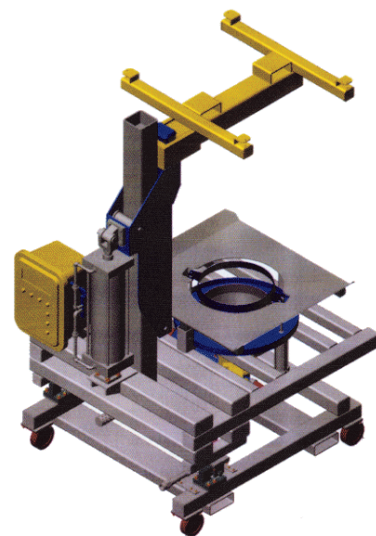


Stinger media can be used to line piping or bin bottoms to solve bridging and flow issues. The Stinger gently lifts the powders off of the wall of the pipes or vessels via air or gas and allows powders to take on the flow characteristics usually seen in liquids. The result is fast conveying on your powders without the moving mechanical parts which can wear and increase the life cycle cost of your equipment.

Any of the bag unloading systems can be used for metering by pairing them with load cells. A predetermined amount of powder can be added to any batch.

Young Industries also offers the following bin solutions:

- Silent Flow Bin Discharger—no more “live bottom” noise or bin damage
- Stinger Trans Flow Air Pads—retrofit existing bins to eliminate bridging
- Custom bin fabrication
- TransVair mechanical conveyors for easy lifting from grade into bins





Complete Pneumatic Conveying Systems

Young Industries offers a wide range of pneumatic conveyors . These pneumatic systems range in capacity from 1,000 to 200,000 pounds per/hour utilizing a multitude of configurations to meet the specific design requirements.

Dilute phase conveyor configurations can include:

- Positive pressure systems
- Negative pressure systems
- Combination positive/negative pressure systems
- Closed loop systems

Whether you need to unload or load rail cars, or just move solids from silos to your process, Young Industries can complete your project from start to finish.

Solids Handling Valves and Mixers

Young Industries rotary valves include a standard 8-vane rotor design with many configurations for your application including:

- High capacity drop through air lock valves
- Low headroom drop through air lock valves
- Blow through valve for sticky solids
- Cantilevered and quick clean valves for fast and easy maintenance
- Side entry and drop through valves

Diverter valve configurations can include:

- Swing gate and rotary plug models
- Gravity and bucket model

Young Industries also offers a complete line of mixers including:

- Horizontal ribbon mixers (heat transfer jackets can be included)
- Multi-shaft continuous mixers
- Multi-port gravity blenders



Utilities and Service Offerings:

We offer a full range of hot water generators, hot oil systems, heat recovery systems, heat exchanger maintenance services, cooling tower cleaning, and equipment diagnostics. Let us help you optimize your process by identifying water conservation opportunities at your plant. We've also helped many clients set up a preventative maintenance program on heat transfer equipment as well.



Utility Offerings

Our utility offerings include:

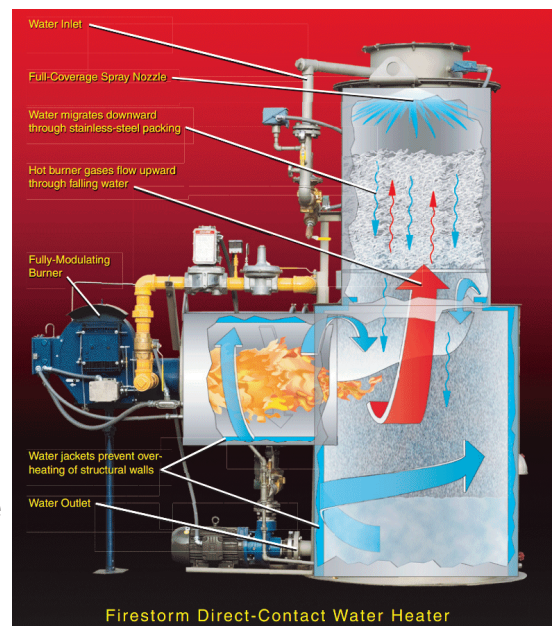
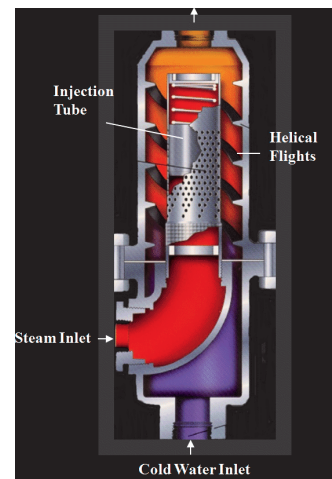
- Hot water generators (electric, steam injection, indirect heating, direct fired)
- Temperature control units for jacketed tanks
- Chillers (air and water cooled)
- Direct steam injectors
- Boiler economizers
- Hot oil systems
- Stack gas economizers

In addition to these offerings, we've also helped clients close water utility loop and clean and recycle water streams. We've also helped clients debottleneck chiller loop and hot water systems.

If you need to generate hot water, there are several options available ranging from direct steam injection from PICK Heaters to an indirect steam heating skid. For small scale needs, a temperature control unit with an electric heater makes an excellent option. For large scale hot water needs where steam is not available, a direct fired hot water generator from Heatec makes a great choice.

If you need chiller capacity, we've got you covered with a full range of chiller options available. Let us discuss your needs and determine if an air cooled chiller is right for you or if a water cooled chiller may be better. We've even paired our chillers with processing skids for a complete solution to our clients processing issues.

Have a large boiler? Have four (4) large boilers? Then you may be throwing hot water and money right down the drain. Let us discuss way to increase the efficiency of your existing boiler operations by utilizing a stack gas economizer or a boiler blow down heat recovery system.





Service Offerings

At Virginia Heat Transfer, we have over 35 years of combined experience with plate heat exchangers. Whether you need hard-to-find parts, a total cleaning solution, on site cleaning, routine maintenance, re-gasketing, or help with troubleshooting a problem, we can help.

Manufacturers Served:

Alfa Laval
Tranter
APV
AGC
GEA
Sondex
Viex
Vicarb
Mueller
Polaris
ITT

Services Include:

On-site cleaning
On-site re-gasketing
On-site plate reconfiguration
Chemical cleaning
Troubleshooting
Re-rating for new service duty
Maintenance contracts
Factory maintenance of entire plate packs
Replacement plates and gaskets
Replacement new heat exchangers
Site supervisor of your staff
Maintenance training and equipment audits



Virginia Heat Transfer provides on-site cleaning for all makes and models of plate heat exchanger, shell and tubes, and chillers. We also provide hydroblasting services for plate heat exchangers. We'll examine your situation and together we'll decide the best course of action.

Want to do the work yourself? No problem, we can provide parts with detailed instruction sheets customized for your heat exchanger as well. Give us call today to see a sample set of instructions.

We also offer complete cooling tower hydroblasting services and fill replacement for any make or model cooling tower. A dirty cooling tower can cost you thousands and lower the efficiency of all of the heat transfer equipment at your site. Keep your tower and your heat exchangers in top operating condition.



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AND PROCESS EQUIPMENT, INC.

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