

# CUSTOM EQUIPMENT SOLUTIONS

---



## Pulp & Paper Solutions

Custom Equipment Solutions  
sales@gocesco.com  
(704) 845 - 0755





CESCO offers  
the most  
complete line  
of process &  
utility  
equipment  
solutions for  
the pulp and  
paper industry  
in the  
southeastern  
United States.



[www.alfalaval.com](http://www.alfalaval.com)

5400 International Trade Drive  
Richmond, VA 23231  
(804) 222-5300

**barriquand**

TECHNOLOGIES  
THERMIQUES

[www.barriquand.com](http://www.barriquand.com)

9 Rue Saint-Claude,  
42300 Roanne, France  
+33 4 77 44 22 20

**EKATO**

[www.ekato.com](http://www.ekato.com)

48 Spruce Street  
Oakland, NJ 07436  
(201) 825-4684

**ferrum**

[www.ferrum.net](http://www.ferrum.net)

Industriestrasse 11  
CH-5503 Schafisheim  
Switzerland  
+41 62 889 14 11





www.gea.com  
9165 Rumsey Rd  
Columbia, MD 21045  
(844) 432-2329



**HEATEC**<sup>®</sup>  
an Astec Industries Company

www.heatec.com  
5200 Wilson Rd  
Chattanooga, TN 37410  
(423) 821-5200



www.ipec-inc.com  
1901 Allen Drive Fort  
Atkinson, WI 53538  
(920) 568-0475



**SGL GROUP**  
THE CARBON COMPANY

www.sglgroup.com  
21945 Drake Rd  
Strongsville, OH 44149  
(440) 572-3600



**CESCO**  
partners with  
industry  
leading  
design, supply,  
and service  
companies,  
with global  
experience in  
the pulp and  
paper industry.





CESCO adds value based on many years of varied project work, incorporating lessons-learned from each project. We specialize in consultative selling, bringing the best recommendations from project references, where we have interfaced with world-class end-users, and engineering companies.

# SULZER

[www.sulzer.com](http://www.sulzer.com)  
1 Sulzer Way  
Tulsa, OK 74131  
(918) 446-6672



[www.ccithermal.com](http://www.ccithermal.com)  
5918 Roper Road  
Edmonton, Alberta  
Canada T6B 3E1  
(800) 661-8529

# TITAN

---

## METAL FABRICATORS

[www.titanmf.com](http://www.titanmf.com)  
52 Balboa Circle  
Camarillo, CA 93012  
(805) 487-5050



[www.veoliawatertechnologies.com](http://www.veoliawatertechnologies.com)  
120 S State College Blvd #100,  
Brea, CA 92821  
(714) 986-5300



# SUMMARY OF PRODUCT OFFERINGS

---



Alfa Laval Spiral Heat Exchanger



Whittier Filtration's AutoJet

## Components:

- Tanks; Storage, Process, & Utility
- Agitators (Top & Side-entry)
- Heat Exchangers, Evaporators, & Condensers (Shell & Tube, Gasketed Plate, Brazed Plate, Semi Welded Plate, All-welded Plate, Spiral, COMPABLOC CrossFlow, & Platular)
- Centrifuges (Batch & Continuous)
- Filters (Pressure Leaf, Candle, Sand, Multi-Media)
- Filter Housings (Cartridge, Lenticular Depth)
- Dryers & Coolers (Flash, Ring, Fluidized Bed, Rotary Drum, & Column)
- Graphite & Exotic Metal Process Equipment (heat exchangers, pumps, systems, column internals)
- Teflon-lined & Glass-Lined Process Equipment (Tanks/Columns, Pipe, Bellows, etc.)

## Skids

- Tank Skids
- Process Vacuum Skids
- Utility Skids (Heat Exchanger, Process Chillers, Temperature Control, & Hot Oil Skids)
- Filtration Skids (Microfiltration, Ultrafiltration, Nanofiltration, RO-EDI, Pressure Leaf, Rotary Drum & Horizontal Vacuum Skids, Manifolded-Cartidge Skids, etc.)
- Mass Transfer (Fermentation, Distillation, Solvent Recovery, Pervaporation, Liquid-liquid Extraction, Evaporation)
- Clean-In-Place (CIP) & Clean-Out of-Place (COP)
- Water Generation & Treatment Purified Water Generation, Storage & Distribution, pH Neutralization, Boiler Feed, Bio-Kill, Ion Exchange, Multi-Media, Sand Filtration)
- Wet Scrubber Skids
- Energy Recovery & Integration Systems



## Heat Transfer



The Alfa Laval Inc. Line-up of Heat Exchanger



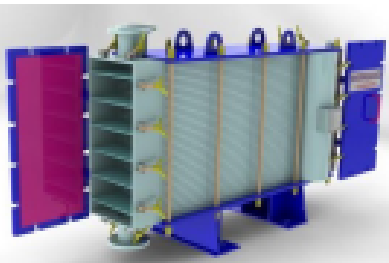
Alfa Laval  
Compabloc  
Exchanger



Alfa Laval  
Gasketed Plate  
Heat Exchanger



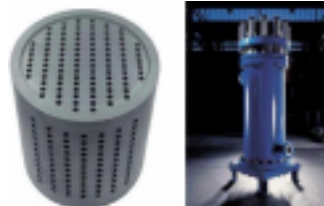
Alfa Laval  
Spiral Heat  
Exchanger



Barriquand  
PLATULAR®  
Exchanger (left)



SGL Carbon  
Graphite  
Shell & Tube



SGL Carbon  
Graphite  
Block Exchanger

## TANKS/COLUMNS/REACTORS FOR BIOFUELS



Titan Metal Fabricators  
titanium column for  
biodiesel production



Titan Metal Fabricators  
titanium thermo-syphon  
reboiler for biodiesel  
production

# COMPONENT SOLUTIONS

Custom Equipment Solutions offers the most complete line of process & utility equipment solutions for the pulp & paper industry in the southeastern United States.

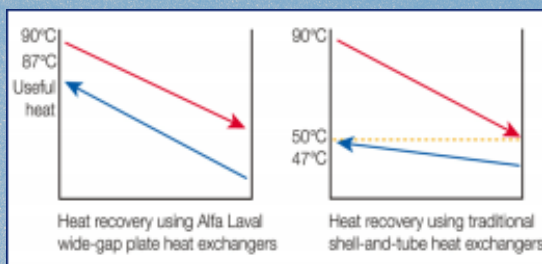
CESCO offers industry leading heat transfer solutions for process & utility applications. Whether your application calls for a liquid-liquid heater or cooler, a condenser or an evaporator, we have a solution

### Various Materials of Construction:

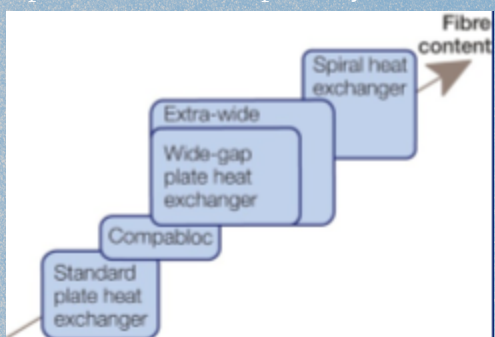
- Carbon Steel (SA-36, SA-516-70, C.S)
- Stainless Steel, solid and clad (304L, 316L, 317L, 904L & 6Mo Grades)
- Duplex Stainless (2205, 2304, 2507)
- Hastelloy (B-2, B-3, C-22, C-276, C-2000) Nickel Alloys (Nickel, Monel, Inconel, Alloy 20, AL6XN and others)
- Titanium
- Tantalum
- Zirconium
- Niobium
- Carbon graphite



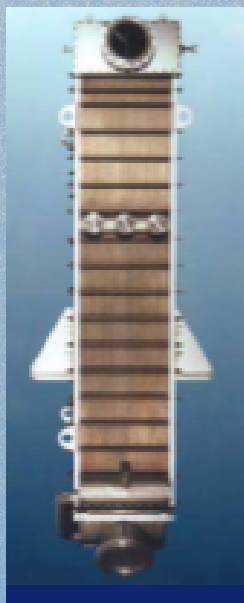
# COMPONENT SOLUTIONS



The key to economical heat recovery is the ability of plate technology to deliver temperature cross capability.



Selection chart for Alfa Laval's heat exchangers, and their ability to handle high solids fibrous content

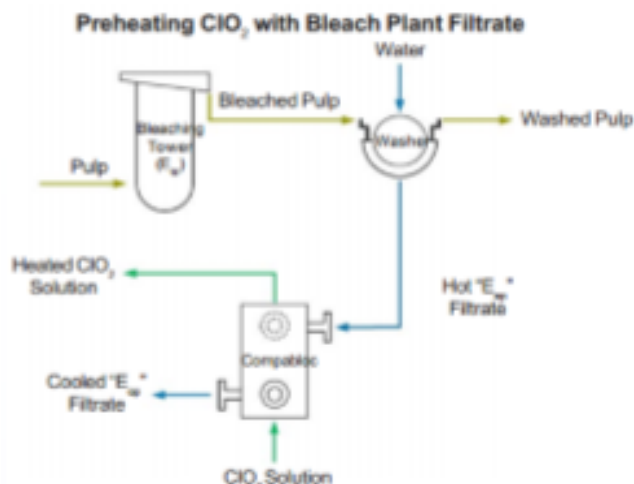


Left: Barriquand PLATULAR® Heat Exchanger Type DIXASP  
Steam/Black Liquor Heater  
Channel A: Steam at 138°C  
Channel B: Black Liquor 76 → 111°C

Below: Alfa Laval Spiral Heat Exchanger for foul condensate service; 63" diameter x 72" wide; 3,300 sq ft of heat transfer area; 26,000 lb



# HEAT TRANSFER SOLUTIONS



By utilizing the waste heat from the filtrate stream to preheat chlorine dioxide solution with an Alfa Laval COMPABLOC, one mill reported steam savings of more than \$592,000 per year



Alfa Laval wide-gap plate heat exchangers are available in standard channel spacings of 11 and 17 mm, depending on the model.

Typical proven applications include:

## Pulp and paper

Bleaching effluent heat recovery (or cooling)

White water heating or cooling

Steam heaters/condensers

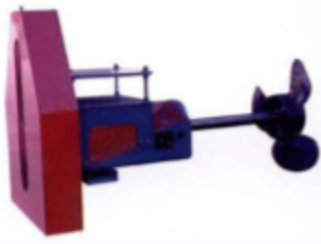
Duties containing particles or fibres, for example, green liquor



Barriquand PLATULAR® Heat Exchanger Type DIXASP Pulp Wash Water Heater Channel A: 14,687 kg/h Steam at 143.6°C Channel B: 249,480 kg/h Pulp Wash Water 50 → 80°C 15 mm free-flow channels.



# Mixer Solutions



LiquidMix Pillow  
Block Style Side-  
Entry Mixer



LiquidMix Top-  
Entry Mixer

## CENTRIFUGATION & FILTRATION SOLUTIONS



Ferrum Continuous Pusher Centrifuge

Alfa Laval ALDRUM drum thickener dewatering de-inking sludge from flotation cells, enabling an 80% reduction in the volume of sludge sent to the screw press.

Whittier Filtration's AutoJet® premium self-cleaning leaf filter designed for efficient filtration in the most severe applications, with a patented sluicing design.

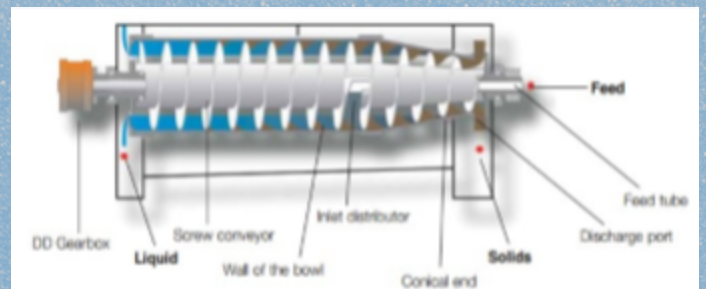
The Komline-Sanderson Horizontal Vacuum Belt Filter has been used for lignin, cellulose, and biomass.

# COMPONENT SOLUTIONS

CESCO offers top-entry and side-entry mixers (1/2" to 8" shaft diameters), specifically designed for rugged pulp and paper applications, simplifying .

Ferrum Pusher Centrifuges are used to de-water and wash sodium sulfate, and depending on the precipitator ash composition, sodium carbonate crystals. The crystals are returned to the black liquor for chemical recovery. The centrate, with the concentrated chloride and potassium, recirculates back to the crystallizer and is partially purged to remove the components from the liquor cycle.

As part of the chemical recovery system, an Alfa Laval decanter centrifuge may be used to recover green liquor dregs. Vacuum filtration methods can be limited in capacity & may result in cake solids of no more than 40%. The decanter centrifuge has been shown to produce cake solids in excess of 60%.





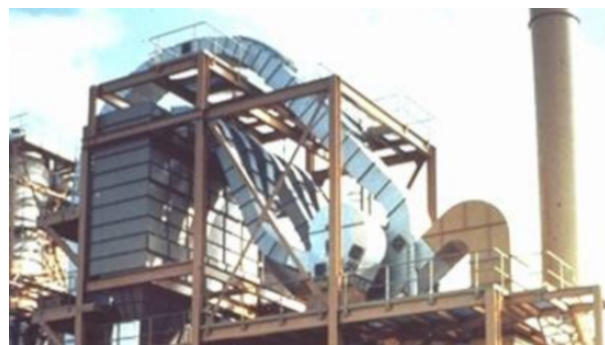
# COMPONENT SOLUTIONS

The GEA Ring Dyer uses centrifugal forces to provide extended residence time for the heavier wetter particles while allowing the lighter dryer particles to be transferred to product collection. The Ring Dyer's use of the disintegrator/disperser in combination with the manifold provides close control of particle size, product moisture and exhaust temperature to ensure the best product quality.

GEA's Flash Dryer enables energy savings and system integration and is suitable for operation with solvent and recovery thereof. It is cost effective and reliable with low maintenance and cleaning requirements (good for regular grade changes) and promotes product quality.



# DRYING SOLUTIONS



GEA Ring Dyer



GEA Flash Dryer

# ELECTRIC HEATING SOLUTIONS



CCI Heavy duty forced air heater



CCI Control Panel Heater



CCI Immersion oil heater





# PROCESS & UTILITY SKID SOLUTIONS



SGL Carbon skid  
for dilution of  
sulfuric acid

IPEC Heat  
Transfer Skid



IPEC Heat  
Transfer Skid



Croll-Reynolds  
Skid Mounted  
Dual Jet Venturi  
Scrubber



CCI Thermal packaged  
vertical hot water  
boiler for dual energy  
systems; electric-  
oil/electric-gas



Whittier Filtration  
Auto-Jet® Pressure  
Leaf Filtration Skid



## Skid Solutions

- Project Management
- Process Engineering
- Mechanical Engineering
- Electrical Engineering
- Automation
- Testing & Inspection
- Field Installation

Some advantages of executing a project utilizing skid include:

1. Singular Responsibility
2. Lower Administrative Costs
3. Better Cash Flow Management
4. Reduction of Risk
5. Minimize Construction & Design Discrepancies & Costs
6. Reduce The Decision Cycle

CESCO has proven experience with many major mills and has supplied equipment to plant sites all over the world. Whether you are in Virginia, the Carolinas, Georgia, Tennessee, or overseas you can find equipment that CESCO has sold.