Therma-Flite
Bulk Transfer & Thermal Processing Technology

Providing Innovative Solutions for Demanding Problems

Electric-Scru® Heat Exchanger

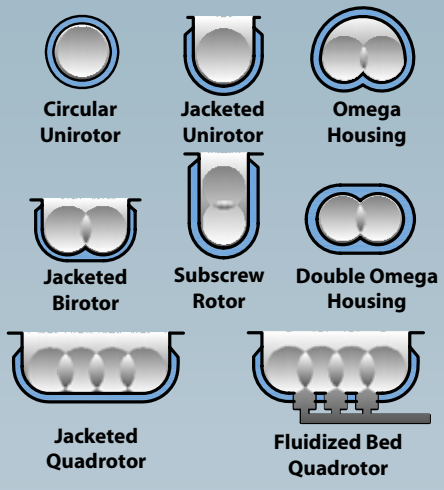
Holo-Scru® Heat Exchanger

Pyro-Scru® Heat Exchanger

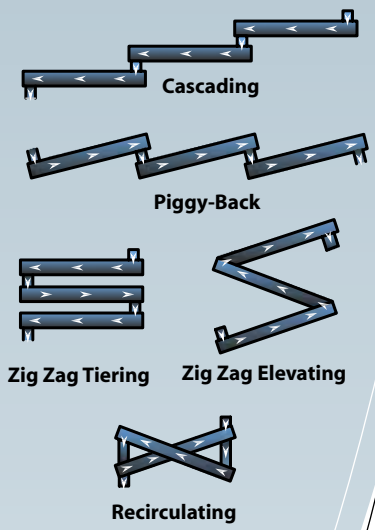
A Company With History

Therma-Flite has a long history of screw conveyor technology and auger design, manufacturing equipment for chemical and process industries all over the world. Therma-Flite (then known as Christian Engineering) designed, built and sold the first Holo-Scru® heat exchanger in 1939 for the food industry. After World War II Holo-Scru® heat exchangers became more widely used in the chemical and construction industries. Our processors have lasted longer and processed a larger quantity as well as variety of material than any other manufacturer in the world. Using different construction materials, varied flight designs, new rotor configurations, diverse heat-transfer mediums, and custom designing nearly every project, Therma-Flite has not only set the bar — we have completely re-engineered it.

Screw Set Configurations



Installation Configurations



Why Choose Screw Processors

Therma-Flite screw processors are all continuous, indirectly heated or cooled processors, meaning the material flows into the equipment and out of the equipment in a continuous stream and the heating medium, such as water, steam, thermal oil or hot gasses are never in direct contact with the feed stock. The result is accurate thermal processing without material degradation or contamination. The screw type thermal processor has a greater density of heat transfer surface area per cu.ft. of equipment volume than most other thermal processor technology. As a result is the size and foot print of a Therma-Flite screw processor is typically smaller than other thermal processing technology.

Customizable Systems For Your Application: In addition to this significant design benefit, Therma-Flite's heat exchangers are purpose-built to suit each installation. Units can be constructed from a variety of materials, from carbon steel to specialized high temperature and corrosion resistant alloys. Abrasive products are not a problem. Rotors and housings can be fabricated utilizing wear-resistant hard surfacing and incorporate innovative flight designs such as replaceable flight sections and double-lead flighting for reduced RPM. Therma-Flite's screw type processors are available with single, twin, or quad rotors up to 60 inches in diameter. Equipment can be supplied bare bones or as a complete system incorporating: PLC Controls, Touch Screen HMI interface, Bulk Feed and Bulk Cooling systems, condenser, and thermal fluid heaters. Equipment can be pre-piped, skid-mounted, and prewired for easy installation.

ELECTRIC-SCRU®

The Electric-Scru is an indirectly heated screw type continuous processor for the efficient, controlled heating and thermal desorption of bulk materials. The Electric-Scru can generate process temperatures of over 1200°F while operating at sub-ambient vacuums as low as 50 millitorr or at pressures as high as 500 psi. The Electric-Scru processor uses resistance heating to heat the rotors and housing. The system can be designed to put out over 2 megawatts of energy. The Electric-Scru is fully insulated and can be skid mounted to facilitate easy on-site installation. Depending on the application, the Electric-Scru can incorporate single, double or quadruple rotors. The Electric-Scru processor can be fabricated from plain carbon steel for low temperature applications or specialized high temperature, corrosion-resistant alloys for higher temperature applications.

- **Max Operating Temperature: 1200˚F**
- **Max Operating Pressure 350 psi**
- **Max Operating Vacuum 50 millitorr**

HOLO-SCRU®

Heat Transfer Mediums Include: Thermal Oil, Steam, Liquid Salts, & Water:

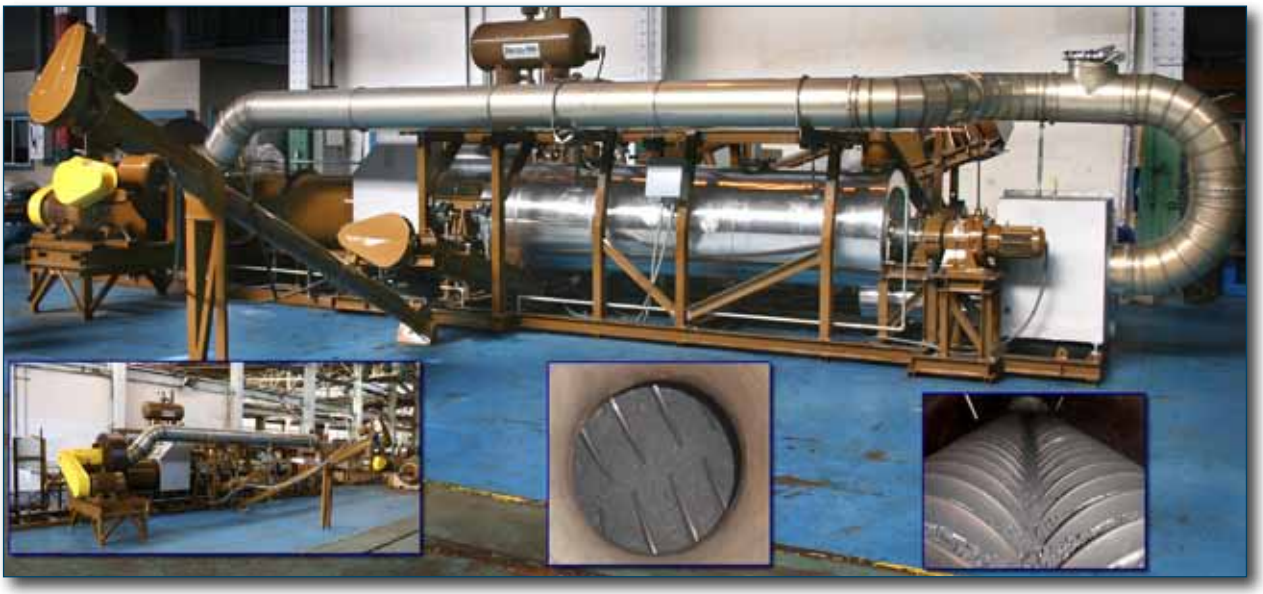
With over two thousand installations worldwide, hollow screw processors are the most widely used and versatile thermal processors for bulk materials on the market. The Therma-Flite Holo-Scru is a continuous, indirectly heated screw type heat exchanger that can be used for heating, cooling, drying and a variety of other processes where there is a need to put heat into or take heat out of flowable materials. The Holo-Scru consists of hollow flighted rotors and a jacketed housing through which a medium such as water, steam, or thermal heat transfer fluids are circulated. Holo-Scru processors are available with single, twin, or quad rotors up to 60 inches in diameter. Holo-Scru processors used for heating have the highest thermal efficiency due to the continual closed loop recycling of heat transfer medium. The result is almost all the heat put into the system is imparted into the bulk material with very little being lost to the environment.

- **Max Operating Temperature: 720˚F**
- **Max Operating Pressure 350 psi**
- **Max Operating Vacuum 50 millitorr**

PYRO-SCRU® Hot gas fired indirectly heated screw processor.

Therma-Flite's "PYRO-SCRU" is a screw type heat exchanger designed for continuous process indirect heating of bulk solid products. The Pyro-Scru utilizes heated air as the heat transfer medium. The heated air can come from a direct-fired air heater or waste heat, to supply a high temperature air/combustion gas mixture through the rotors and housing, providing indirect heat transfer to the product. The hot air remains isolated from the product chamber. Optional direct fired heating can be incorporated into the design for certain processes.

- **Max Operating Temperature: 1600˚F**
- **Max Operating Pressure 35 psi**
- **Max Operating Vacuum 10 in H20**



For additional infomation and technical data specific to the Holo-Scru, Pyro-Scru and Electric-Scru, contact Therma-Flite's technical staff on how to put screw-type continuous feed heat exchanger processors to work for your application. We will help you chose the right system, at the right price, with operational parameters and equipment tailored to your unique requirements. We will review all the options with you, visit your site, and arrange a demonstration if required. Therma-Flite's dedication to customer service is unparalleled. Give us a call to see for yourself.

Partial Customer List

Air Products
Alcoa
Allen-Sherman-Hoff
Allen Bradley Company
Allis Chalmers
Alstom Power
Amax
Amoco
Arizona Public Service
AT&T
Babcock & Wilcox
Bechtel Petroleum
Bethlehem Corporation
Boise Cascade
Box USA
Bussman Corporation
C&H Sugar
Cabot Corporation
Chemical Waste Management
Chevron Research Company
Climax Molybdenum Company
Coal Technology Corporation
Combustion Engineering
Compania Minera El Indio
Conoco Phillips
Dedert Corp Thermal Processing
Denver Equipment Company
Detroit Stoker Company
Diamond Shamrock Corp.
Dow Chemical
Energy Factors
Energy Products of Idaho
Exxon Research & Engineering
Fluor Daniel Corporation
Fluor Engineering Corporation
Foster Wheeler Boiler Corp.
Foster Wheeler Energy Corp.
General Mills
Greenfield Environmental
Gulf Chemical
Gulf Coast Transit
Gulf Oil
Guntert & Zimmerman
Hershey Chocolate
Hewlett Packard
Intenco Incorporated
International Titanium
Kaiser Aluminum
Kellogg Salada Canada
M&M Mars Candy
Mearl Corporation
Nabisco
Nassau Metals
Nichols Engineering
Owens Corning Fiberglass
Patterson Equipment
Peterson Manufacturing
Pfizer Corporation
Phelps-Dodge
Phoenix Metals
Procedyne
Proctor & Gamble
Pyropower Corp.
Rineco Chemicals
Rollins Environmental
RTI International
Shaklee Corporation
Solar Turbines
South Lake Utility District
Stauffer Chemical Company
Tenneco Oil Exploration
Thermal Processes
Timet Metal Corp.
Union Carbide Agriculture
Union Oil
US Bureau of Mines
Utility Engineers
Wausau Paper Mills
Westinghouse – Haztech
Westward Seafood
Wyoming Mineral Corp.
Xerox Corporation

PROCESS TECHNOLOGY

Calcining
Cooking
Cooling
Crystallizing
Drying
Heating
Pyrolizing
Thermal Desorption

INDUSTRIES SERVED

Chemical
Food Processing
Mining etc.
Petro-Chemical
Power Generation
Environmental
MSW & HAZ Waste Treatment
Sludge and Wastewater
Waste Water Treatment
Paper & Pulp

SERVICES OFFERED

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Design
Manufacture of Process Equipment
Equipment Repair
Fabrication / Welding
Field Service
Machine Work
Technical Support

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