Holo-Flite®
Thermal Processor
Holo-Flite® Thermal Processor

Holo-Flite® is an indirect heat exchanger utilizing a hollow screw for heating, cooling or drying bulk solids, filter cakes, pastes or sludges. Metso has over 60 years experience in the application design and manufacturing of indirect heat exchanger systems and components. The Holo-Flite® is a proven and efficient thermal processor with over 3,000 installations worldwide.

Process principle
In the Metso Holo-Flite® processor, individual particles are heated or cooled as they come in contact with the surfaces of the hollow flights, shaft and trough. The product to be processed is continuously conveyed in an axial direction by means of the rotating screw flights along a jacketed trough.

Indirect heat exchange
The Holo-Flite® processor is an indirect heat exchanger where heat is transferred by conduction from a heat transfer medium through a heat transfer surface to the material being processed.

The heat transfer fluid is normally water, steam or thermal oil. The material processed does not come in contact with the heat transfer medium resulting in little contamination of the product.

Excellent product temperature control
Since the Holo-Flite® operator has control over heat transfer medium temperature and screw speed, the heat transfer process can be closely controlled. Because the heat transfer medium is normally recycled, heat losses are minimized and a high degree of efficiency is achieved.

Wide range of operating temperature
The raising and lowering of product temperature beyond a narrow range can often exceed the expansion and contraction capabilities of metals and welded joint design. The unique Twin Pad design of the Metso Holo-Flite® accommodates these extreme expansion and contraction variations and allows successful operation of up to 1,200 degree Celsius.

Effective product conveyance
The Metso Holo-Flite® operates normally at screw speeds of five revolution per minute or less. Low horsepower drives are therefore sufficient and wear on screw and trough are virtually non existent. At these slow speeds gentle mixing of the product occurs and particle degradation and agitation of fine particles causing dusting are therefore minimized.

Versatile design
To meet the various application requirements, the Metso Holo-Flite® can be supplied with single, double or quadruple screw configuration.

Additionally, Holo-Flite® units can be manufactured to operate under vacuum or pressure. All units are designed and fabricated per A.S.M.E. Code, Section VIII Unfired Pressure Vessels.
Process advantages

Eliminates product contamination
• Heat transfer agent does not come in contact with the product

Highest thermal efficiency
• Heat transfer agent is continuously recycled

Economical operation
• Lower power consumption
• Mechanical simplicity
• Continuous operation
• Low maintenance
• No operator required

Minimal dusting
• Gentle rotation (1-2 rpm) with little outside air in a controlled atmosphere

Temperature control
• Process materials at closely-controlled temperatures and eliminates hot spots

Operating advantages

Patented Twin Pad screw design
• Screw speed and temperature can be changed to accommodate variations in material throughput and thermal requirements
• Flow of heat transfer agent can be co-current or counter-current to the flow of material
• Low horsepower requirements
• Slow screw speeds results in maximum component life

Holo-Flite® configurations
• Six screw sizes: 7, 12, 16, 24, 30, and 36 inch (18, 30, 40, 61, and 90 cm) diameter
• Holo-Flite® units come with single, double or quad screws
• Various drive arrangement are available to meet individual requirements
• Standard materials of construction are available for abrasive applications
• Design and fabrication per A.S.M.E. Code Section VIII-Unfired Pressure Vessels to 150 psig.
Laboratory and rental services

Metso can test your product on both a preliminary feasibility or on a full-scale production basis with either a lab-size unit or a production-size Holo-Flite®. We can perform heating, cooling, drying, cooking and solvent evaporation tests quickly and accurately with your samples.

Metso can also provide Holo-Flite® rental units for in-plant testing. The units come with self-contained electrical hot oil heater. All rental units are complete with vapor dome and variable speed drive and are on skids for ease of shipment and installation.

**Applications**

**Chemical processing**
- Cooling: Calcium carbonate, Caustic flakes, Iron oxide, Sodium tripolyphosphate.
- Drying: Alumina, Carbon black, Sodium, Chloride, Plastics.
- Heating: Pesticides, Potassium chloride.

**Industrial power applications**
- Heating: Limestone filler, Petroleum coke.
- Drying: Volume reduction of hazardous and non-hazardous wastes.
- Cooling: Incinerator ash, Fluidized bed boiler ash and limestone, coke from a calciner.

**Mineral processing & coal drying**
- Drying: Molybdenum and fine coal.

**Food processing and environmental**
- Many “one of a kind” heating and drying applications
Holo-Flite® screw construction specifications

Front flight
Conveys material continuously through the Holo-Flite® processor.

Rotary joint
Allows screw to rotate while providing a seal to stationary piping.

Siphon tube
Allows inlet and outlet heat transfer agent to move through the same end of the screw.

Block plate
Prevents intermixing of inlet and outlet heat transfer agent.

Hollow stempipe
Seamless, heavy-walled pipe.

Back flight
The jacketed portion of the flight allows the heat transfer agent to circulate through the flights.

Shaft
Extends through the trough housing and is supported by bearings.

Outer Twin Pad wrap
Wrapped around the stempipe. Flight are welded to this wrap, allowing them to expand and contract independently of the stempipe. The Holo-Flite® Processor is the only machine with this patented feature.
Life Cycle Service
Metso offers replacement parts to keep your machine running properly. By having qualified representatives at the office and in the field, we can predict worn screws to keep optimum performance.

Unit size & type designation:
Each Holo-Flite® processor is designated by a group of numbers and letters arranged to specifically identify the unit as indicated to the right.

<table>
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<tr>
<th>Unit Size</th>
<th>A) Nominal Length</th>
<th>B) C/L Inlet</th>
<th>C) Overall Length</th>
<th>D) Overall Width</th>
<th>E) Overall Height</th>
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</table>
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