HTRI

HTRI Xchanger Suite® 7

Design, rate, and simulate heat transfer equipment

HTRI ***X****changer Suite*, from the global leader in process heat transfer and heat exchanger technology, includes components for heat transfer and associated calculations of heat exchangers and fired heaters. HTRI's calculation methods are backed by 50 years of extensive research and data collected on industrially relevant heat transfer equipment. Based on the results of this ongoing effort, we update our methods to meet your evolving engineering needs.

All ***X****changer Suite* components are highly flexible, allowing rigorous specification of the exchanger geometry. This capability makes the best use of HTRI's proprietary heat transfer and pressure drop correlations and allows the most accurate performance predictions possible for all exchangers.

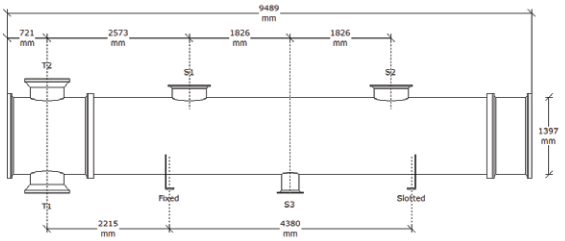
***Xchanger Suite* includes components for the design, rating, simulation and/or analysis of**

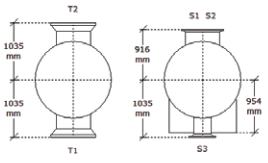
- heat exchangers
  - air coolers and economizers (***X****ace*®)
  - shell and tube (***X****ist*®)
  - hairpin (***X****hpe*®)
  - jacketed pipes (***X****jpe*®)
  - plate-fin (***X****pfe*®)
  - plate and frame (***X****phe*®)
  - spiral plate (***X****spe*®)
  - vibration analysis (***X****vib*®)
- fired heaters (***X****fh*®)

FEATURES

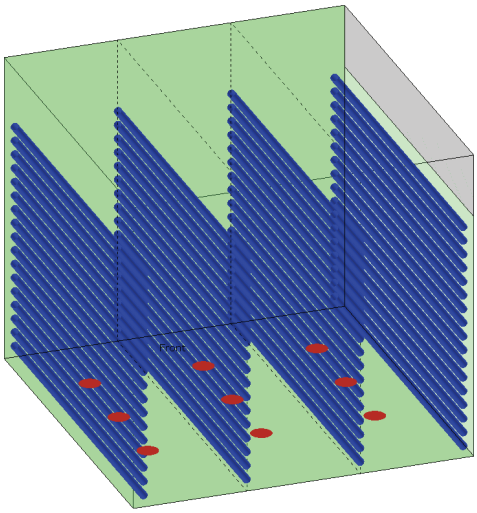
- Calculation modules are fully incremental and calculate localized heat transfer and pressure drop using local fluid properties.
- Color coded text allows you to distinguish between user input, default values, and program-calculated input.
- Suite includes VMGThermo™, an extensive and rigorous fluid physical property generator.
- Extensive output reports provide detailed results including local profiles of all important parameters.
- Comprehensive online help provides background information, graphs, explanation of input panels and output reports, user tips, and more.
- Graphs and scale drawings provide in-depth visualization of calculated results.
- Extensive, user-extendable databank for materials of construction.
- Quick Calc tools let you easily perform unit conversions and select exchanger types.
- Interfaces to
  - process simulators
  - physical property databanks
  - mechanical design programs
  - integrated engineering software
  - Microsoft® Excel®
  - CAPE-OPEN compliant applications

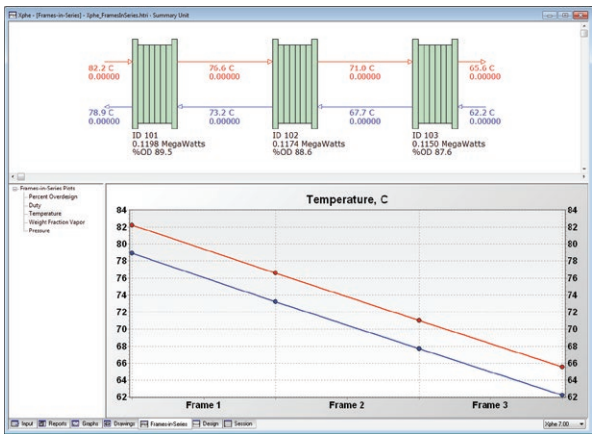
Imports shell-and-tube and plate-fin exchanger input files from HTFS™, Honeywell's UniSim® Heat Exchangers, and Aspen Exchanger Design & Rating products.





	Nozzles	OD, mm	Rating	Design	Shell	Tube	Weight	kg	Company	HTRI	
S1	Inlet	622.3		Pres (KPAG)	517.107	517.107	Bundle	17275	Customer		Ref
S2	Inlet	622.3		Temp (C)	171.11	71.11	Dry	24274	Item		
S3	Outlet	317.5		Passes	1	2	Wet	40027	Service		
T1	Inlet	615.95		Thick (mm)	12.7	1.651			TEMA	AJ21L	Setting Plan
T2	Outlet	615.95							Date	1/17/2013	By
									Diagram		Rev





HTRI Xchanger Suite® 7

Design, rate, and simulate virtually any type of shell-and-tube exchanger including kettles, hairpins, thermosiphons, reflux condensers, and falling film evaporators. ***X**ist* supports all standard TEMA exchanger types, and includes integrated tools for flow-induced vibration calculations and tube layout design.

Design, rate, and simulate air coolers and economizers including natural draft (fans off) and forced draft conditions. ***X**ace* includes vendor fan selection calculations and options to simulate the effect of flow and temperature maldistribution.

Simulate the performance of cylindrical and box heaters. ***X**fh* uses a Hottel zoning method to calculate localized radiant and process side performance. Additional combustion and convection section modules allow evaluation of a complete process fired heater.

Simulate and design multi-stream axial and crossflow plate-fin exchangers using an incremental model with research-based heat transfer and pressure drop correlations. ***X**pfe* contains graphical layout tools that make even complex stream arrangements easy to create.

Design, rate, and simulate plate-and-frame exchangers using user-defined plate types or plates selected from an internal manufacturers' databank. ***X**phe* contains a port maldistribution model that calculates the flow through each plate channel.

Rate and simulate single-phase spiral plate exchangers using an incremental model with HTRI-validated heat transfer and pressure drop correlations. ***X**spe* models cocurrent and countercurrent spiral flow (Type I exchangers).

Calculate flow-induced vibration for a tube in a shell-and-tube exchanger using a rigorous finite element based algorithm. ***X**vib* considers fluidelastic instability and vortex shedding mechanisms for both plain and U-tubes.

HTRI® **Heat Transfer Research, Inc.**
+1.979.690.5050 ◉ htri@htri.net ◉ www.htri.net

201304