



MT-LAYOUT

TUBESHEET LAYOUT AND OPTIMIZATION PROGRAM

The MT-LAYOUT program optimizes the number of tubes that can be placed on the Shell & Tubes heat exchangers tubesheets.

The program operates under WINDOWS 9x/NT/2000/ME/XP operating systems and carries out an optimizing process in order to :

- Arrange the maximum possible number of tubes in an assigned tubesheet diameter
- Uniformly distribute tubes in each tube pass (near the same number of tubes in each pass)

The answers available by the program:

- Optimizes of the number of tubes allowed by a specified tubesheet diameter.
- Finds the minimum tubesheet diameter that can allocate the specified number of tubes.
- Allocates at the best a specified number of tubes in a tubesheet of a specified diameter.

Program Features

- Can handle tubesheets trough 16 passes.
- Can handle six different passes arrangements:
 - Mixed horizontal
 - Mixed vertical
 - Quadrant horizontal
 - Quadrant vertical
 - Ribbon horizontal
 - Ribbon vertical
- Verifies the $ro \cdot v^2$ value for compliance with TEMA specifications on I/O nozzles.
- Automatically allocates on the tubesheet:
 - Tie rods (according to TEMA or user specifications)
 - Sliding strips
 - Sealing strips
- Allows to specify the following systems of measurement units (user customizable):
 - Metric
 - English
 - S.I.

OUTPUTS	
	The results of MT-LAYOUT calculation consists of a tabular report and of Tubesheet Layout Drawings.
ASCII Report	All relevant input/output data are printed out.
Drawing	The Tubesheet Layout Drawing is automatically generated by MT-LAYOUT.
•	<p>The Drawing includes the following data:</p> <ul style="list-style-type: none"> • Dimensions and tolerances • Tubes number (Total and per pass) • Baffles cut • Impingement plate thickness • Tie rods • Sealing strips • Sliding strips
•	<p>The drawing can be generated in english or italian language (other languages using latin alphabet can easily be provided) and it is possible to choice between the following system of units:</p> <ul style="list-style-type: none"> • Metric • English • International Standard (S.I.) • User defined <p>The drawing is produced in DXF format for easy importing it in AUTOCAD, or in many other CAD programs which accept this very popular standard, for further enhancements.</p>

IMPORTING THERMAL RATING DATA	
<p>The MT-LAYOUT program allows the automatic importing of data coming from the thermal rating of the exchanger trough two different kinds of tools:</p> <ul style="list-style-type: none"> • Direct Interface • Neutral File 	
<p>Direct Interface This is an interface developed by Micro Techno for directly addressing the outputs of a specific program. The interfaces actually available are:</p> <ul style="list-style-type: none"> • Files *.dbo: Output Files of the H.T.R.I. Xist program for the thermal dimensioning of Shell&Tubes Heat Exchangers (HEAT TRANSFER RESEARCH Inc. - Houston, TX - U.S.A.) 	

Neutral File

The MT-LAYOUT program allows the automatic importing of data coming from the thermal rating of the exchanger, provided that such data are organized in a Neutral File (ASCII format). The file has to be generated by an external program before to start the MT-EXCH program.

The Neutral File Format is freely available !!!

MICRO TECHNO ENCOURAGES THERMAL RATING SOFTWARE DEVELOPERS TO INCLUDE THIS INTERFACE IN THEIR PACKAGES

One of the programs that already allows for this kind of interface is the **CC-THERM** program by **Chemstations Inc.** (Houston, TX).

OTHER INTERFACES

The MT-EXCH program can read directly from the MT-LAYOUT files data related to the tubes of the bundle and OTL (Outside Tubes Limit) without the need for manually reinputting these data.