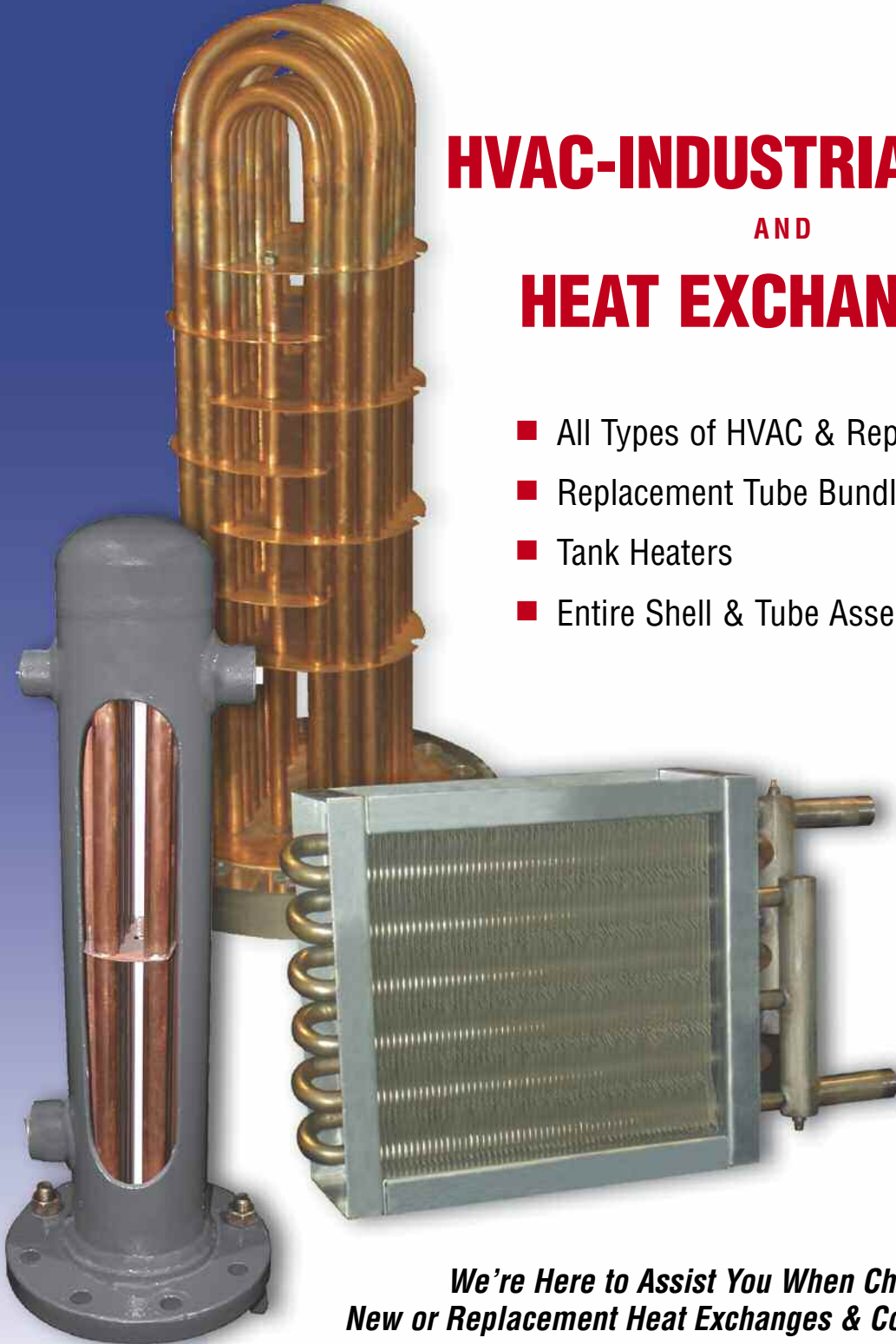


MultiTherm HEAT TRANSFER FLUIDS®
YOUR HEAT TRANSFER NEEDS ARE OUR ONLY CONCERN

HVAC-INDUSTRIAL COILS AND HEAT EXCHANGERS

- All Types of HVAC & Replacement Coils
- Replacement Tube Bundles
- Tank Heaters
- Entire Shell & Tube Assemblies

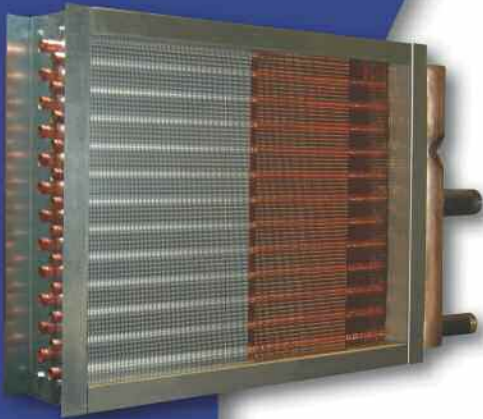


*We're Here to Assist You When Choosing the Right
New or Replacement Heat Exchanges & Coils for Your Application.*

1-800-339-7540

TYPES OF HVAC-INDUSTRIAL COILS

Replacement or New



Steam-Steam Distributing Coil

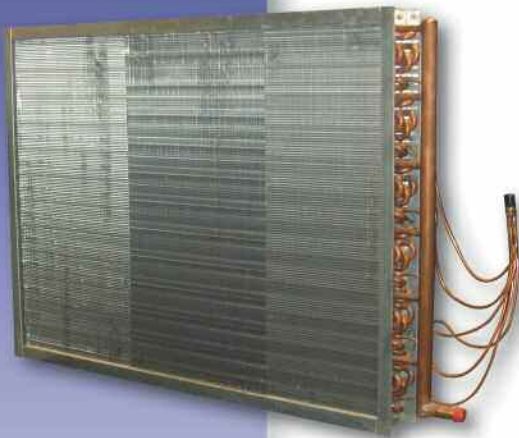
MultiTherm builds both standard steam and steam distributing coils for HVAC and industrial process applications. Standard steam coils are used when entering air temperatures are 40°F or above, and are constructed of 5/8" OD tubes. Tube thickness can vary from .025" wall to .049" wall, depending on the duty and steam pressure.

Steam distributing coils are tube within a tube design and are often referred to as "non-freeze" coils. Steam distributing coils are generally used when entering air temperatures to the coil are 40°F or below. Steam distributing coils can be manufactured in 5/8" OD with 3/8" inner tube or 1" OD with 5/8" inner tube.



Hot Water Coil / Chilled Water Coils

MultiTherm has been a leader in the design of water coils for over 40 years. We build both hot water and chilled water coils for a wide variety of applications and duties. MultiTherm builds 1 or 2 row hot water coils or 3 thru 12 row chilled water coils for both HVAC or process type jobs. The construction for any water coil is basically the same, except that hot water coils generally do not exceed 1 or 2 rows, while chilled water coils are required to be deeper and are usually 3 thru 12 rows. In addition, MultiTherm builds glycol coils for ethylene or propylene.



DX-Evaporator Coils

MultiTherm builds DX evaporator coils with the widest range of circuiting control and splits in the industry. We use a unique intertwined circuiting arrangement to allow use of the full face area for distinct uniform refrigerant distribution. In addition, you can also select from face splits or row splits for 2, 3, or even 4 compressors on the same coil. Our DX coils are available in 1/2" or 5/8" OD copper tubes with a preselected distributor based on the coil load and refrigerant used.

MultiTherm has been building replacement coils for the HVAC Industry for over 40 years. During this time, we have built up a huge library of cross reference information on coils for replacement. As a major manufacturer, we have a terrific chance of replicating it by the coil model number.

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TYPES OF HVAC-INDUSTRIAL COILS

Replacement or New



Condenser Coils

The vast majority of requests that MultiTherm receives for condenser coils are to replace existing coils. Replacement condenser coils require a whole different set of criteria than other coils.

- 1 Thin fin material - Fins tend to bend or be damaged during cleaning
- 2 Fins too close - Fin spacing is often 14 fins/inch to 20 fins/inch. Coils easily blocked by dirt
- 3 Excessive vibration - Prop fans are too close to coils and vibration causes tube sheets to cut into tubes.
- 4 Electrolytic corrosion -Usually found in ocean areas from salt air. Bond between fin and tube disappears.
- 5 General corrosion - Fins supply 70% of the heat transfer and fins are just damaged and fall apart.

MultiTherm engineers have great experience in designing condenser coils that solve one or all of these problems. Simultaneously we can suggest alternative coil designs that eliminate practical problems in the field.

MultiTherm has seen just about every condenser coil problem that you could see over the last 40 years. We can vary tube diameter, fin thickness or fin spacing to help you solve your problem. We can coat coils or we can provide alternative materials of construction so that your condensate coils do not fail prematurely.



Booster Coils

MultiTherm stocks (36) sizes of (1) row coils and (36) sizes of (2) row coils for duct mounted Hot Water Booster Coils. These sizes range from 6" x 6" to 30" x 60" and are available from 8 fins/inch thru 14 fins/inch. Many are available on a 1 day shipment and all are available on 3-5 day shipments. Hot Water Duct Booster Coils are built with either 1" flanges on all four sides for easy duct mounting or slip & drive casings for insertion into duct. There are multiple feed patterns to match performance and pressure drop requirements. MultiTherm is a leader in building Booster Coils. We recognize that small coils are every bit as important as big coils and when you have a heating problem, it requires an immediate solution.

QUICK SHIP PROGRAM

Standard Ship

Almost all coils ship in 4-5 weeks as standard. There are some exceptions, based on special materials, but 95% of all coils will ship in 4-5 weeks with no premium.

10 Work Day Ship

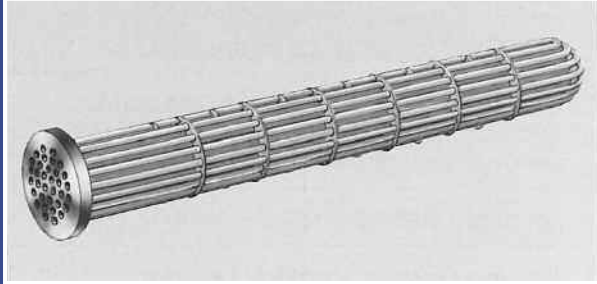
Most coils can ship in 10 work days (2 weeks) for a premium of 15% to 25%, based on the size of the job. We guarantee that the coil will ship on time or you don't pay the additional premium.

5 Work Day Ship

For major coil emergencies, you can have your coil ship in 5 work days (1 week). The required premium for this shipment is 30% to 50%. We guarantee shipment or you don't pay the premium.

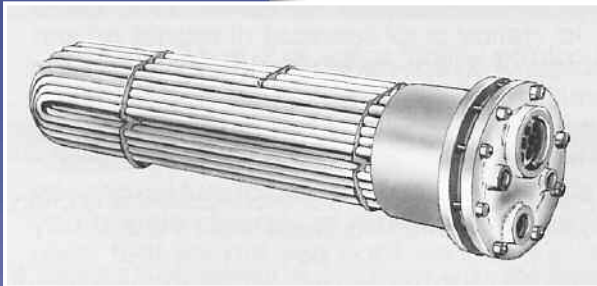
TUBE BUNDLES, TANK HEATERS AND SHELL & TUBE HEAT EXCHANGERS

Descriptions & Features



Tube Bundles

MultiTherm can duplicate any existing Bundle to include dimensions, materials and performance. We can build “U” tube bundles, straight tube “floating” tubesheet bundles, or we can retube fixed tubesheet heat exchangers when the bundle is not removable. MultiTherm is not locked into any one material. Most bundles tend to be built with copper tubes and steel tubesheets. MultiTherm can offer a wide variety of materials, including: carbon steel, stainless steel, cupro-nickel, admiralty brass and many others. We also offer our special expedited shipment schedules for emergency replacement. MultiTherm can ship any copper or cupro-nickel bundle in one week or less.



Tank Heaters

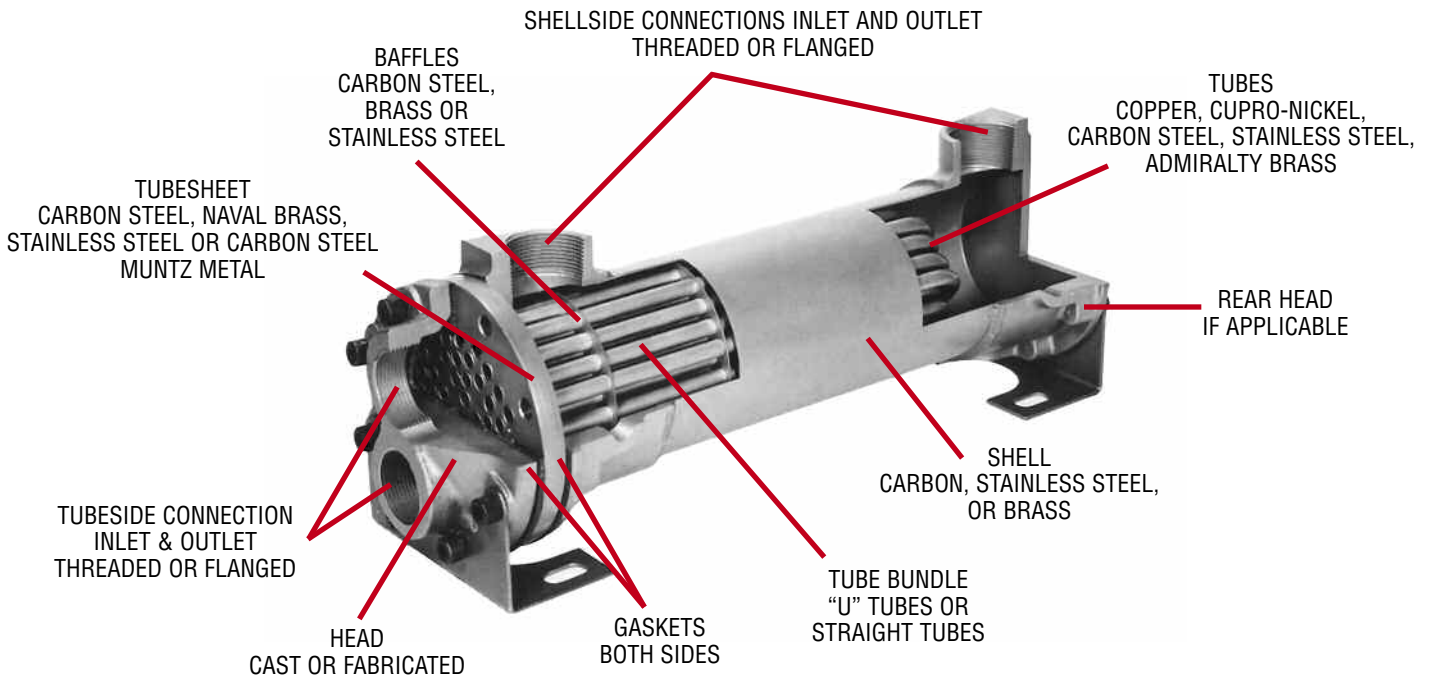
MultiTherm builds tank heaters for either steam or hot water use. We offer either the bundle by itself, or we offer the entire tank heater assembly which includes: the bundle, cast or fabrication head, and sleeve which the bundle slides into. We have very few limitations on length or diameter and can size your tank heaters to match your existing tank. MultiTherm also offers the same wide variety of materials for tubes and tubesheets that we offer for our tube bundles. We also build tank heaters in one week or less on an expedited order.



Shell & Tube Heat Exchangers

MultiTherm has a great deal of experience in the design and manufacturing process of shell and tube heat exchangers. We build “U” tube heat exchangers, straight tube “fixed” tubesheet exchangers and straight tube “floating” tubesheet exchangers. We build our units for high thermal efficiency and we give you rugged construction for tough day to day operations. We offer you total flexibility to meet your most demanding requirements...special connection sizes and locations, various tube connection sizes and locations, various tube diameters and spacing, tube lengths, and special materials. MultiTherm exchangers can be built to ASME Section VIII, Division 1 stamp, or “U” and “UM” Stamp.

SAMPLE BUNDLE AND HEAT EXCHANGER



One of the problems that a lot of people seem to have when dealing with heat exchangers or tube bundles is the terminology used by our industry when describing the various parts of the exchanger. Using the picture above, we will identify and correctly name each component part.

TUBE BUNDLE TUBE COUNTS

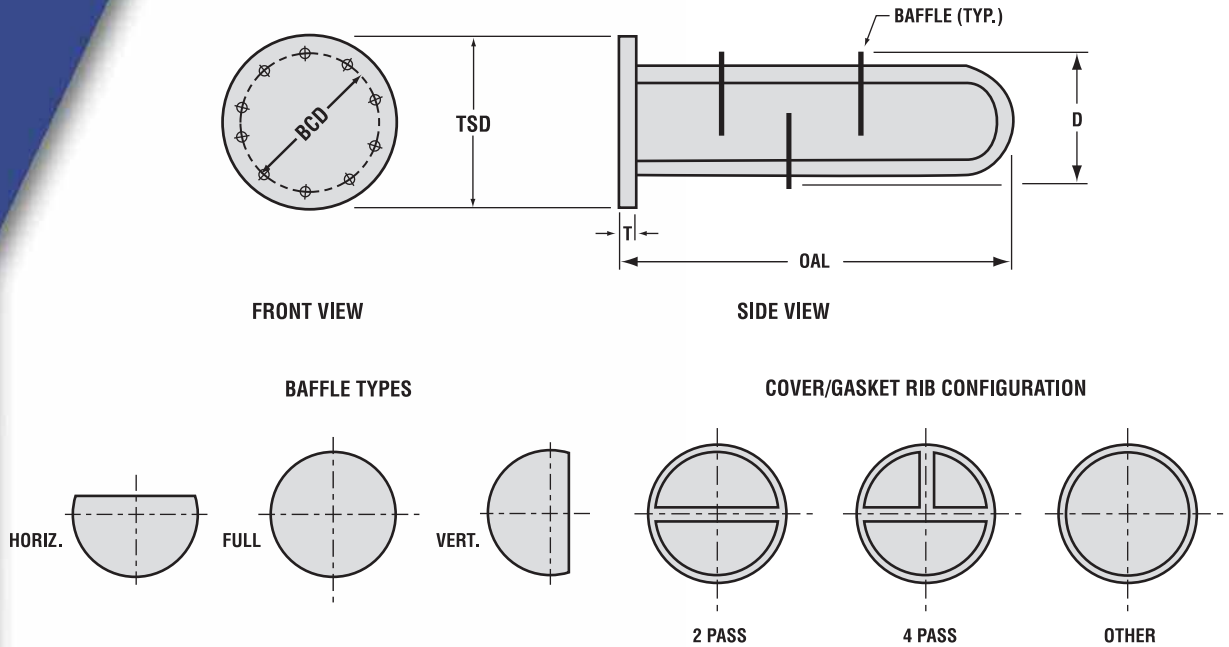
Standard Number of U-Tubes per Shell Size (2 Pass)

3/4" O.D. Tubes		1 1/4" O.D. Tubes	
SHELL SIZE	NUMBER OF U-TUBES	SHELL SIZE	NUMBER OF U-TUBES
4"	5	6"	3
5"	7	8"	7
6"	13	10"	13
8"	24	12"	18
10"	38	14"	24
12"	57	16"	30
14"	71	18"	43
16"	96	20"	55
18"	127		
20"	165		

Tube Counts are based on 15/16" triangular pitch for 3/4" O.D. tubes and 1 9/16" triangular pitch for 1 1/4" O.D. tubes. Four, Six and Eight Pass tube bundles have slightly lower tube counts. (Consult Factory)
For nominal tube bundles larger than 20". (Consult Factory)

“U” TUBE BUNDLE

Dimensions



DIMENSIONS

Item #	MultiTherm Model Number	D	OAL	T	TSD	Bolt Circle DIA. BCD	# of Bolt Holes	Bolt Hole Size	# of Baffles	Baffle Spacing
These numbers refer to descriptions on page 7.		1	2	3	4	5	6	7	8	9

Note: Bundles that are installed in steam converters require only tube supports or (1) or (2) baffles. Steam fills up the shell because it's a gas and requires no baffling to redirect the steam back and forth over the bundle. These steam/water exchangers do require tube supports (which resemble baffles) to hold the bundle together. Longer bundles require more supports than shorter bundles.

CONSTRUCTION

Tube Diameter	Tube Material	Tube Thickness	# Straight Tubes	# “U” Tubes	Shell or Sleeve Diameter I.D.	Passes Tubes	Tubesheet Material
10	11	12	13	14	15	16	17

“U” TUBE BUNDLE

How to Measure

Below is a step-by-step description of all the component parts of a tube bundle that are required for duplication. Please note the corresponding component number on the table on page 6.

1. **“D” Bundle Diameter** - This is the overall diameter required to fit the bundle in an existing shell or tank. This dimension includes any baffles or tube supports. A good way to get an accurate “D” diameter is to measure the circumference and divide by 3.14. This gives you the diameter of the bundle.
2. **“OAL” Overall Length** - Measured from the face of the tubesheet over the entire length to include the last blend.
3. **“T” Tubesheet Thickness** - Tubesheet thickness varies from 5/8" to 3" thick.
4. **“TSD” Tubesheet Diameter** - The tubesheet diameter is always larger than the “D” dimension or bundle diameter.
5. **Bolt Holes** - Some tubesheets have bolt holes and some do not. Often the bolts that go through the head and shell bypass the tubesheet — that is the bolts go around the tubesheet and not through it.
6. In this case there is no bolt hole pattern and 5-6-7 are not applicable. The tubesheet is boltless.

In other cases, the tubesheet is the same size as the head or shell flange and the bolts go through the tubesheet. You must know the number of bolt holes and the size of each bolt hole. Also measure the center to center distance between bolt holes. Always pick holes directly opposite from each other, such as 12 o'clock and 6 o'clock.

8. **Number Baffles** - Please see note on page 6.
9. **Baffle Spacing** - Distance between baffles or tube supports if there are tube supports in lieu of baffles.
10. **Tube Diameter** - Typical tube diameters are 3/8", 1/2", 5/8", 3/4", 1 1/4" O.D. Most steam converters and water/water exchangers are 3/4" O.D. Please note that 3/4" O.D. tubes have approximately 5/8" I.D.s. Some tank heater bundles have 1 1/4" O.D. tubes.
11. **Tube Materials** - Most HVAC exchangers have copper tubes and these are easy to identify. There are alternate tube materials available if you need them. Some examples are: 90/10 or 70/30 cupro-nickel, carbon steel, carpenter 20 or exotic materials like titanium.
12. **Tube Thickness** - Most 3/4" O.D. copper tubes are 18 GA and most 1 1/4" O.D. copper tubes are 16 GA. MultiTherm recommends and uses 16 GA for both O.D.s. Heavier walls are available if required.
13. **Straight Tubes** - Some bundles have tubesheets at both ends and there are straight tubes between. Count the number of straight tubes.
14. **“U” Tubes** - Most replacement bundles are “U” tube type. Count the number of complete “U”s.
15. **Shell or Sleeve Diameter** - Specify the O.D. or the I.D. of the unit that the bundle will slide into. What we are really interested in identifying is the space available to slide the bundle into.
16. **Tube Passes** - Look at the tubesheet to identify the number of passes the liquid or steam makes through the tubes. Most bundles are 2 pass, but can be 4 or 6 also.
17. **Tubesheet Material** - Most tubesheets are carbon steel, because this is the most economical material available. Alternate materials are: stainless steel, titanium, copper faced steel, or brass.

SPECIFICATION TO CHANGE WITHOUT NOTICE

MultiTherm reserves the right to change dimensional construction, performance or any other criteria shown in this catalog without notice to its customers.

CONDITION OF SALE

Acceptance of Orders. Purchase orders are subject to acceptance and approval by MultiTherm (seller). No Terms or Conditions appearing on purchase orders or other related documents that are contrary to our Standard Terms and Conditions shall be binding unless specifically agreed to before and by the Seller in writing.

Cancellation of Orders. The Purchaser can cancel or modify an order upon written notice and Purchaser shall pay all costs (cancellation or modification) and changes as determined in an equitable way by seller.

Quotations. Any quotation in writing by MultiTherm may or may not include freight charges within the quoted price(s). Regardless, all equipment is sent F.O.B. Factory and it is the Purchaser's responsibility to make any claim for loss or damage with transportation (delivering) carrier.

WARRANTY

MultiTherm warrants to the original user its manufactured equipment against any defects in material or workmanship for a period of only one year from date of shipment. The equipment must be properly applied, installed and maintained under design conditions. The Seller's (MultiTherm) obligation is limited to repair or replacement, at its option, on any part or parts which upon seller's examination at its factory, shall appear to have become defective. No expense, liability or responsibility will be accepted by MultiTherm for repair made outside its factory without written approval from Seller.



A leader in the HVAC business for over 40 years.