THERMAL – Helical Exchanger (THX)

The Helical Heat Exchanger (THX) is engineered for processes demanding top thermal efficiency within a minimal footprint. Its concentric helical coil design (coils within coils) induces continuous secondary turbulence, significantly boosting heat transfer coefficients compared to straight-tube exchangers.

Custom-engineered for low or high operating pressures (0 to 500 bar), the THX handles everything from clean liquids to viscous or particulate-laden products in heating, cooling, and condensation duties.





Key Helical Design Advantages:

- Ultra-compact concentric coil geometry delivering maximum heat transfer area in tight plant layouts;
- Operating range from 0 to 500 bar — high-pressure versions run at higher velocities, further reducing unit footprint and product residence time;
- High thermal efficiency across thin liquids, viscous fluids, and particulate-bearing products;
- Inherent thermal expansion absorption from the helical coil geometry, increasing mechanical fatigue life;
- Designed with service access for inspection and maintenance, with optional integrated safety relief valve.

Quality & Applications:

- Food, chemical, petrochemical, pharmaceutical, and utility industries;
- Certified materials of construction and 100% custom thermal/mechanical sizing;
- Every THX undergoes liquid penetrant testing (PT) and hydrostatic pressure testing prior to shipment.

Notice: Every THX unit is custom-sized according to flow rate, viscosity, pressure, and available plant footprint.

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Safety & Maintenance Instructions:

Utility Isolation:	Before performing any maintenance or inspection, ensure the equipment is shut down and locked out from all water, steam, process fluid, and power sources.
Pressure & Vacuum Relief:	Heat exchangers may operate under pressure or vacuum. Gradually and completely relieve internal pressure before opening any connections or flanges. Never tighten unions while the unit is operating.
Temperature Check:	The equipment may operate at high temperatures. Allow the unit to cool down to safe handling levels before servicing.
Overpressure Protection:	Never exceed the specified design pressure or temperature. Whenever overpressure risks exist (improper valve closure, pump shutoff head, etc.), properly sized safety relief devices must be installed.
Gasket Maintenance:	Periodic inspection and annual replacement of all gaskets (or shorter intervals depending on process media) is recommended to prevent leaks. Periodic hydrostatic tests must be performed by qualified personnel.

⚠ During operation and maintenance of thermal equipment, proper PPE is mandatory: safety helmet, safety glasses, thermal/mechanical gloves, safety boots, and hearing protection.

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