



THERMAL OIL HEATERS

PRODUCT OVERVIEW

ENEVA Thermal Oil Heaters are high-efficiency heat generation systems designed for industrial processes requiring high temperatures at low operating pressures.

These systems provide a reliable and safe alternative to steam-based heating, particularly in applications where high temperature stability, low pressure operation and long-term efficiency are critical. By utilizing a closed-loop thermal oil circulation system, ENEVA heaters ensure uniform heat distribution, stable outlet temperatures and corrosion-free operation.

WORKING AND DESIGN PRINCIPLE

ENEVA Thermal Oil Heaters operate based on an indirect heat transfer principle within a closed-loop system.

The heating process occurs as follows:

- 1- Fuel is burned in the combustion chamber
- 2- Heat is transferred to the thermal oil circulating inside the coil system
- 3- The heated oil is delivered to the process equipment
- 4- After releasing heat, the oil returns to the heater for reheating

The system incorporates seamless helical coil design, ensuring:

- Continuous and stable oil flow
- Controlled oil film temperature
- Optimized pressure drop and reduced pump energy consumption

Each heater is designed based on:

- Oil type (Mineral, synthetic) and operating temperature
- Required thermal capacity
- Process heat demand (intermittent, continuous) and oil flow rate
- Installation layout and space constraints



CONTROL & SAFETY SYSTEMS

ENEVA Thermal Oil Systems are designed in accordance with DIN 4754 standards and incorporate advanced safety architecture.

Key safety features include:

- Minimum oil flow control
- Monitoring of temperature and pressure drop
- Oil film and flue gas temperature limits
- Automatic shutdown and alarm systems
- PLC-based control and monitoring

This ensures safe, stable and fully controlled system operation under all conditions.

TECHNICAL SPECIFICATIONS (TYPICAL)

Thermal Capacity	200 kW – 10 MW
Oil Outlet Temperature	Up to 350 °C
Thermal Efficiency	Up to 95% (with economizer/recuperator)
Fuel Options	Natural gas, liquid fuels, biogas
Coil Material	Seamless carbon steel or alloy steel
Insulation	High-efficiency ceramic wool / rock wool
Design Configuration	Horizontal or vertical

DELIVERY OPTIONS

- Thermal oil heater unit
- Expansion tank and auxiliary tanks
- Circulation pump system
- Stack and flue gas system
- Control and automation system
- Instrumentation and safety devices
- Flue gas economizer
- Air preheater (recuperator)

TYPICAL APPLICATIONS

ENEVA Thermal Oil Heaters are widely used in:

- Chemical and petrochemical plants
- Textile and finishing lines
- Food processing industries
- Packaging and plastic production
- Asphalt and bitumen plants
- Sludge drying systems
- Industrial process heating applications

PRELIMINARY DIMENSIONS

MODEL, ENO		200	300	500	800	1.000	1.500	2.000	3.000	4.000	5.000	6.000	8.000	10.000
Thermal Output	kW	233	349	581	930	1.163	1.744	2.326	3.488	4.651	5.814	6.977	9.302	11.628
Length	mm	1.750	2.100	2.400	2.900	3.100	4.000	4.400	5.200	5.900	6.600	7.100	8.300	8.800
Width	mm	1.140	1.260	1.510	1.710	2.060	2.280	2.430	2.790	3.040	3.190	3.540	3.740	4.140
Height	mm	1.390	1.510	1.760	1.960	1.810	2.030	2.180	2.540	2.790	2.940	3.290	3.490	3.890
Oil Volume	lt	100	210	440	670	810	1.570	1.990	3.770	4.960	5.920	8.560	11.960	14.760
Stack Diameter	mm	250	250	300	400	450	450	500	600	700	800	900	1.000	1.100
Flue Gas Pressure Drop	mbar	2,0	2,5	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,5	11,5	12,0	14,0

WHY ENEVA?

- Project-specific thermal design and optimization
- Compliance with international standards and DIN 4754
- Optimized oil film temperature for extended oil life
- High efficiency and low operating costs
- Robust industrial design for long service life
- Complete system supply and engineering capability

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