



Tomlinson Thermal Oil Heaters

Australia's largest certified
package boiler company.



**The Environmental
Group Limited**
Engineering a Sustainable Future

The Environmental Group Limited

www.environmental.com.au

Working across the Circular Economy

Our Purpose

Engineering a sustainable future.

Our Mission

To enable our clients to contribute to a cleaner environment by safely delivering pivotal solutions while generating value for our shareholders, staff, and partner industries.

Our Team

Our local experts are dedicated to reducing waste and boosting energy performance. Trusted worldwide to provide the highest standards of service and support.

Tomlinson Energy Services

Part of The Environmental Group

Tomlinson Energy Services is Australia's leading provider of packaged boiler solutions, delivering the highest combustion efficiency to keep operating costs low and performance high.

We specialise in custom design, installation, commissioning, and national servicing and repairs, complemented by our 24/7 emergency support.

With offices and a dedicated service team across Australia, Tomlinson Energy Services ensures boilers operate at peak performance for maximum efficiency and reliability.



Thermal Oil Heaters

A Century of Excellence

100% Australian Design

Tomlinson Energy is Australia's leading boiler specialist, providing 24/7 emergency and service support across the Asia-Pacific region. We supply economical, high-efficiency solutions for steam boilers, hot water systems, and thermal oil heaters. In addition, we offer in-house technology from renowned brands, including Tomlinson Boilers, Bosch, Fulton Condensing Boilers, and John Thompson Package Boilers.

PRESSURE DEAERATORS



Thermal Oil Heaters

Thermal oil heaters by INTEC® are successfully used for supplying process heat to industrial plants of various industries such as wood, textile, chemical, oleochemical, petrochemical, plastics, pulp and paper, solar power, ship building and food industries.

Compared to heating systems using hot water or steam, thermal oil as a heat transfer medium offers the advantage, that it can be heated nearly without any pressure until a temperature of 320 °C. With synthetic oils, even temperatures up to 400 °C can be reached. For this reason, in most industrial processes heat transfer oil plants have finally achieved predominance in the supply of process energy.

INTEC® Thermal oil heaters are characterized by the following features:

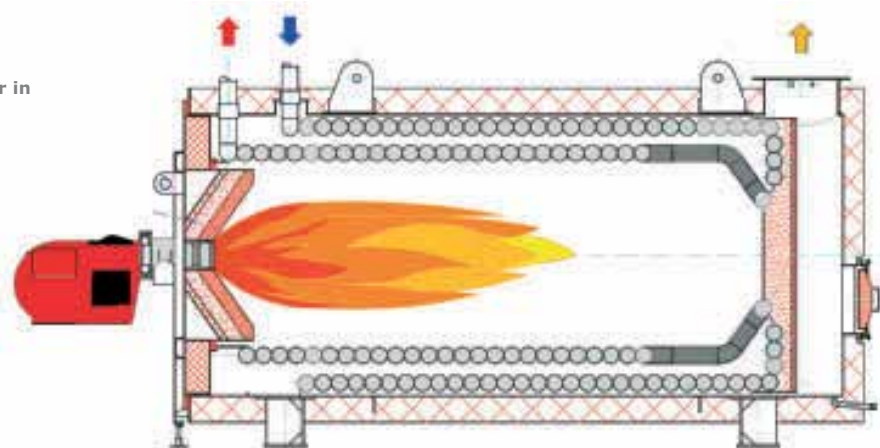
- **High efficiency due to generously dimensioned coil surface**
- **Tailor-made design to individual customer requirements**
- **Environmental friendly operation due to low emission values**
- **High operational reliability**
- **Low operating costs**
- **Long service life**

Our team of specialist together with our high quality production will ensure, that your thermal oil heating plant will meet best suitable your demand.

CAPACITY

Thermal oil heaters by INTEC® using fuels such as natural gas fuel oil are operated in the capacity range of 100 kW up to 25,000 kW. Heater systems with higher capacity values may be offered upon request.

INTEC® thermal oil heater in cross-section



FUELS

For heat generation with thermal oil heaters manufactured by INTEC® conventional fuels such as heavy oil, light oil and natural gas are usually burnt.

If one of the above-mentioned fuels is not available, it is possible to use electrical energy for the heating process.

Depending on the application certain production waste in gaseous or liquid form may be considered for additional incineration.

In order to be able to use biomass and other solid fuels, INTEC® offers own developed combustion systems and dust burners.



Thermal oil heater fired with natural gas with a capacity of 1.6 MW, installed in Texas, USA, application in the food industry



Electric heater with an output of 150 kW with six heating elements for exact regulation of capacity

REMOVAL OF LOW-BOILERS

With time the thermal oil experiences a degradation which leads also to a reduced flame temperature. In order to reduce this effects and to increase the life time of the oil, INTEC® has developed a method to continuously remove the low-boiling fraction during operation.

EFFICIENCY

System efficiency may be further improved by usage of an INTEC combustion air pre-heater, exactly matching the INTEC®-heater. Thus, it is possible to either reduce fuel consumption or to increase performance by applying the same amount of fuel. Although these installations require higher investment costs, the invested capital will pay off within a short period of time.

LAYOUT

Depending on the space requirements and the customer's preference, the heater can be installed either in vertical or in horizontal direction.

At the end of the first pass the flue gas is turned around, still having high temperature. Usually this area is clad with refractory material to keep the bottom of the heater at low temperature. Alternatively it is possible to replace the refractory material by an oil-cooled plate.

In case of horizontal installation, we are able to insert an inspection hatch in the baseplate or to install a hinged heater cover in order to facilitate cleaning and maintenance. For vertical heaters the burner can be mounted either on top (down-firing) or at the bottom (up-firing).

On customer's request, it is possible to pre-mount and to pre-wire heaters with capacity of up to 2,000 kW together with other components (burner, pump, valves and fittings) on a framework. Thus, the work required for installation at the customer's site is considerably reduced.



Heater in up-firing layout, capacity: 9.6 MW with built-in combustion air preheater and subsequent stack, total height: 25 m, heating of a particle-board press (Romania)



Horizontal heater with a net capacity of 10 MW with combustion air preheater, access door at the reserving chamber for the inspection of the combustion area (Malaysia)



API 560 DESIGN

INTEC® supplies fired heaters to API 560 and ISO 13705.

A typical API 560 fired heater design consists of:

- Radiant Section
- Convective Section
- Air Preheater
- Stack
- Burner
- Control System

Due to INTEC® own design of combustion and heat transfer systems, we achieve the excellent solutions with respect to high thermal efficiency, low emissions and reliable operation.

INTEC® supplies cylindrical type direct fired heaters, equipped with low NOx natural draft or forced draft burners.

To increase efficiency, preheating of combustion air can be achieved by adding a variety of heat exchangers.

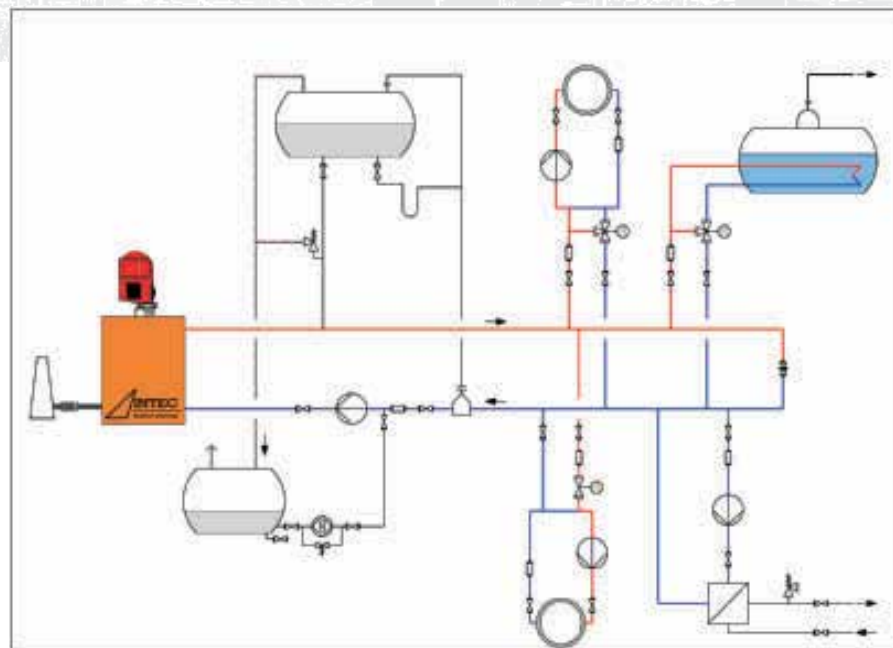
INTEC® heater in API 560 design, with separate radiant and convective section, air preheater and stack, fired by natural gas and fuel oil residue, Indonesia

SAFETY DEVICES

Emphasis is put not only on efficiency, but also on operational reliability:

- The burner will automatically switch off, should the maximum admissible thermal oil outlet temperature or the flue-gas temperature after the heater be exceeded
- In order to protect the thermal oil, the burner capacity is reduced during cold start until the minimum temperature is exceeded. Following that, capacity output of the burner is increased until reaching the setpoint value
- The burner shuts down immediately if the pump stops running
- To avoid over heating and thus damaging of the thermal oil, a minimum volume of the oil must always flow through the heater. A flow control device approved for this type of installation controls the minimum oil flow through every single pipe coil
- The filling level of the thermal oil in the expansion tank is monitored by a float switch. If the filling level is too low, the plant will switch off
- If the plant is shut down, the circulation pump is operated for a certain period of time to carry away heat that may have accumulated

In order to achieve high safety standards, INTEC® thermal oil systems comply with the regulations of the German Industrial Norm DIN 4754.



INTEC® plants allow the connection of different consumers



The main components of the INTEC® heaters are manufactured in Germany at INTEC Rohrtechnik GmbH, providing the highest quality level

MANUFACTURING

In order to be able to meet the quality levels required by our clients and us, the core components of the INTEC® plants are manufactured in Germany by our subsidiary INTEC Rohrtechnik GmbH. For the manufacturing of large components, we dispose of produc-

tion facilities with a surface of 2,500 m² and cranes with an ultimate load of 25 t per unit. Our machine park is specialised on the cold forming of tubes up to a nominal diameter of DN 250 as well as on the machining of metal sheets up to a thickness of 25 mm.

APPROVALS

Our subsidiary INTEC Rohrtechnik GmbH is able to produce our products certified according to:

- AD 2000 - HPO
- Germanischer Lloyd, Lloyd's Register
- Bureau Veritas, RINA, DNV
- ASME B & PV-Code, Section VIII, Division 1
- GOST (Ru)
- SELO (Boiler & Pressure Vessel Manufacture Licensing of P.R.China)



Horizontal heater for the food industry, premounted and wired as compact unit



Thermal oil heater used to heat a plant for producing particleboard near Moscow, Russia, with a capacity of 12 MW



Extractable tube bundle of a waste heat boiler with automatic cleaning using a soot blower



Radiation boiler with opening for dust burner, including an oil-cooled combustion chamber cover

Contact Us



Maximising Energy Efficiencies for a Sustainable Future

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