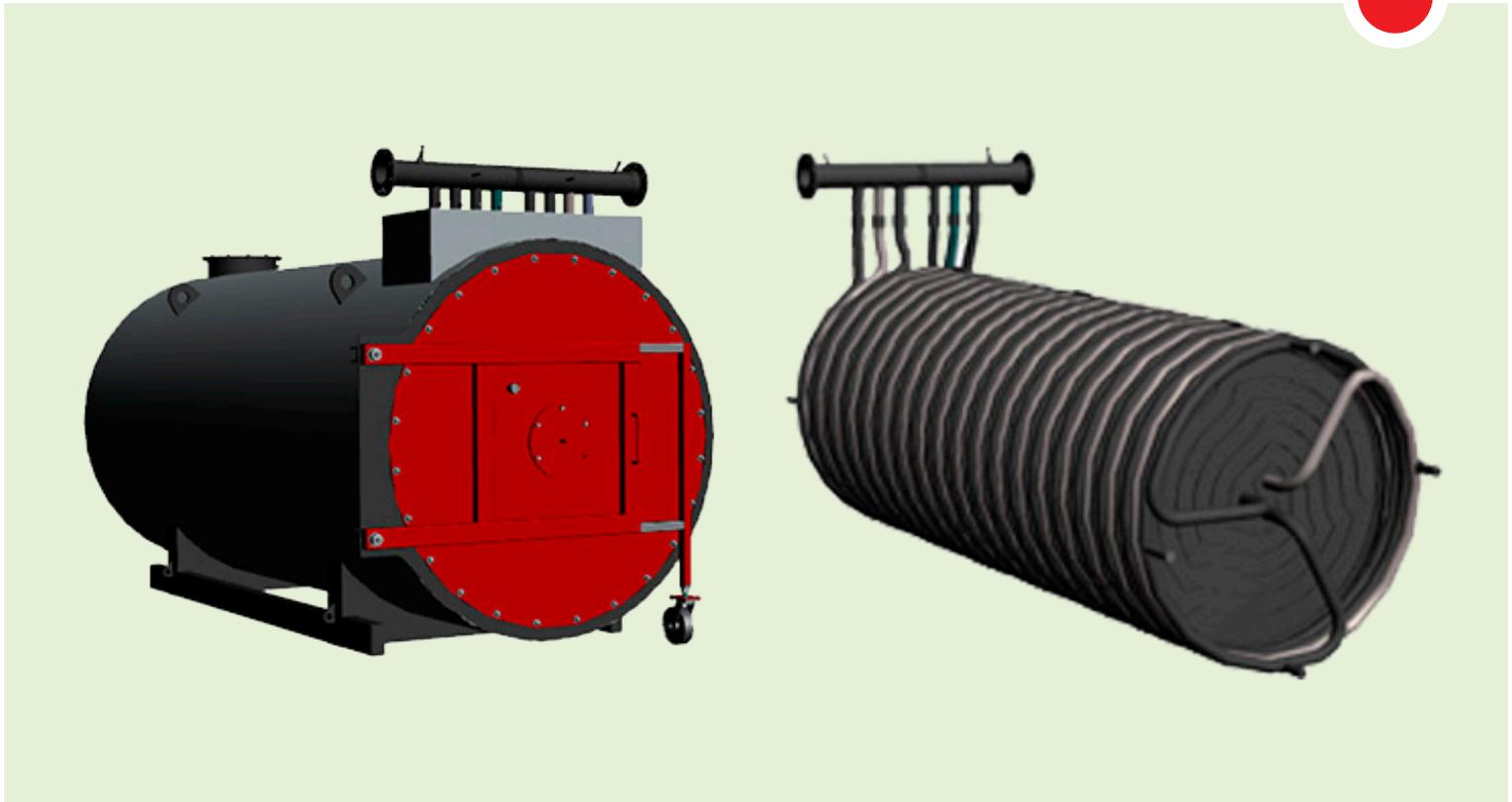


Thermal Oil Boiler – TOB-H

Oil and gas fired thermal oil boilers with capacities from 100 kW to 5.000 kW



Danstoker is a subsidiary of Thermax, being a pioneer in India on thermal oil since 1971. There are references to more than 16,000 plants globally. The well-documented technology and focus on system efficiency form the basis of Danstoker's series of thermal oil boilers.

Thermal oil boilers are most often used instead of steam and high temperature hot water boilers, with oil as the heat-carrying fluid. In general, a higher temperature level is achieved at low operating pressures.

With pressure less thermal oil systems, temperature up to 300°C is achieved. 400°C is achievable with pressurized thermal oil systems.

Horizontal thermal oil boilers are supplied as standard with oil-cooled end plates. This results in better operating economy and a maintenance-free solution.

Danstoker thermal oil boilers are offered with a complete range of accessories:

- **Primary circulation pump(s)**
- **Expansion tank**
- **Collection tank**
- **Filling and emptying pump**
- **Deaerator tank**
- **Thermo Clutch**
- **Air preheater**
- **Burner and control panel**

Our unique mixing pot (Thermo Clutch), allows the hot oil boiler to adapt to different process requirements with optimized flow design. In practice, the same hot oil boiler can cover a larger ΔT area on the secondary side. This technology ensures better boiler performance, lower energy consumption and optimized pump sizes.

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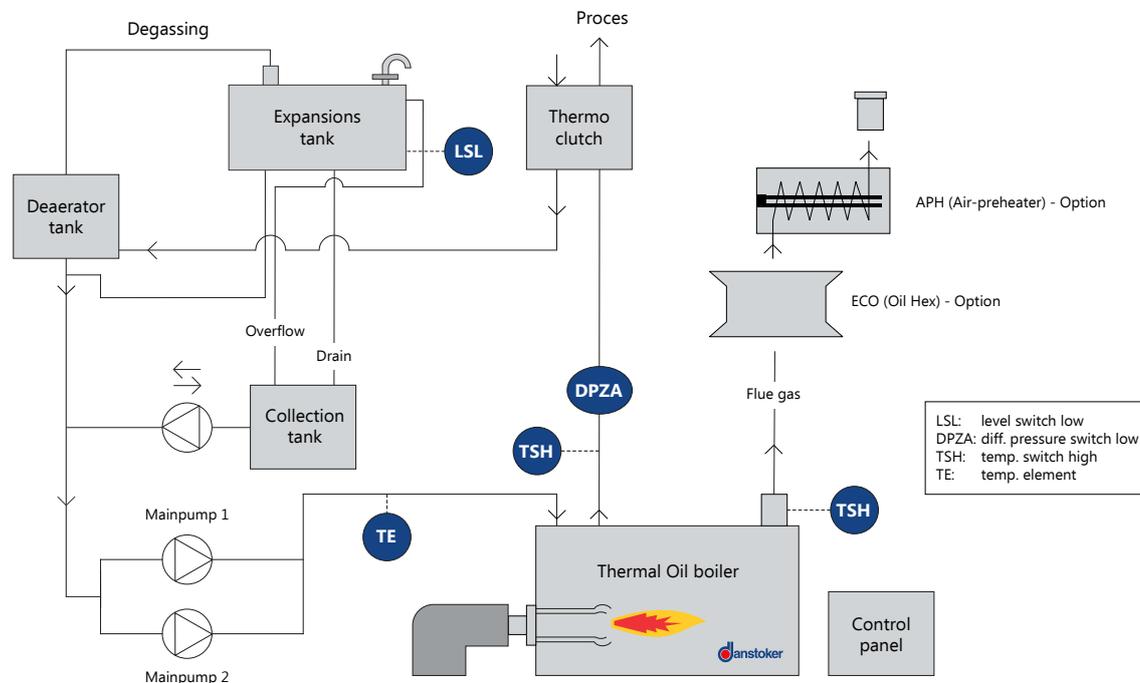


Technical specifications - TOB-H series

Technical specifications - Thermal oil boilers (horizontal)												
	Type	TOB-100-H	TOB-200-H	TOB-500-H	TOB-750-H	TOB-1000-H	TOB-1500-H	TOB-2000-H	TOB-2500-H	TOB-3000-H	TOB-4000-H	TOB-5000-H
Capacity	kW	100	200	500	750	1000	1500	2000	2500	3000	4000	5000
Capacity	kcal/hr	85985	171969	429922	644883	859845	1289767	1719690	2149613	2579535	3439381	4299226
Heat surface	m ²	13	19,4	34,6	49,9	63,6	89,6	122,3	161,3	183,7	242,7	323,1
Boiler oil volume	litr	67	101	342	490	840	1246	1930	2552	2890	4593	6105
Weight (dry)	kg	1175	1215	2223	2890	3711	4894	6294	6910	9230	11769	14887
Average flow	m ³ /h	6,11	12,23	30,57	45,85	61,13	91,70	122,27	152,84	183,40	244,54	305,67
Oil resistance	mLC	8,32	14,04	17,33	16,63	28,37	27,57	20,25	17,02	27,32	22,73	23,13
Furnace diameter	mm	435	525	730	830	1000	1200	1400	1755	1874	2100	2393
Furnace length	mm	1081	1399	1778	2286	2540	3048	3734	3962	4267	4978	5690
Thermal Oil Temperature	°C	280 & 300										
Flue gas resistance (Gas)	mmWc / mbar	7,5 / 0,7	26,2 / 2,6	58,3 / 5,7	87,7 / 8,6	102 / 10,0	116,7 / 11,4	123,5 / 12,1	117,9 / 11,6	135,1 / 13,2	152,3 / 14,9	161,9 / 15,9
Flue gas resistance (LO)	mmWc / mbar	7,5 / 0,7	27,7 / 2,7	59,1 / 5,8	88,7 / 8,7	103 / 10,1	117,9 / 11,6	124,6 / 12,2	118,9 / 11,7	136,3 / 13,4	153,8 / 15,0	163,1 / 16,0
Flue gas resistance (Gas+LO)	mmWc / mbar	NA	NA	59,1 / 5,8	88,7 / 8,7	103 / 10,1	117,9 / 11,6	124,6 / 12,2	118,9 / 11,7	136,3 / 13,4	153,8 / 15,0	163,1 / 16,0
Thermal Oil Flange	DN	40	40	80	100	100	150	150	150	200	200	250
Thermal Oil Outlet Flange	DN	40	40	80	100	100	150	150	150	200	200	250

Dimensions are shown in our dimensional sheet.

Typical P&I diagram for thermal oil systems



Options available

- Vertical/horizontal design
- Oil, gas or combi fired
- Air preheater (≥ 91% efficiency)
- ECO oil/flue gas (2-3% temp. depen.)
- High medie temperature up to 350°C
- Complete accessoires

Operation and safety

- STOP at low oil flow
- STOP at high oil temperature
- Precise oil temperature control
- STOP at low oil level
- STOP at high flue gas temperature
- High pressure safety valve



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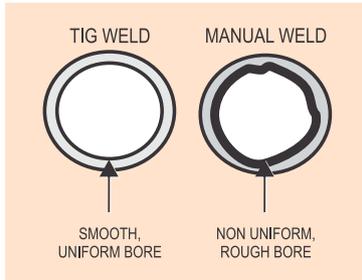
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Thermal Oil Boiler – TOB-H

Oil and gas fired thermal oil boilers with capacities from 100 kW to 5.000 kW

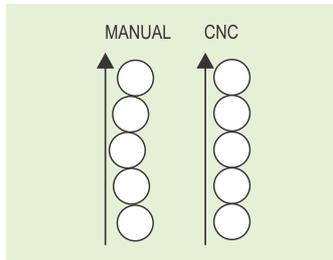


Manufacturing excellence



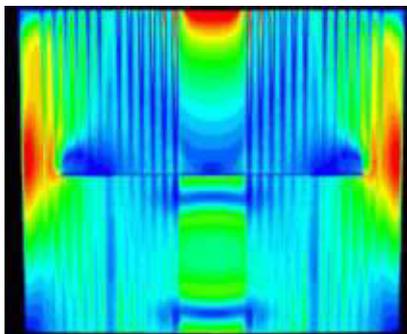
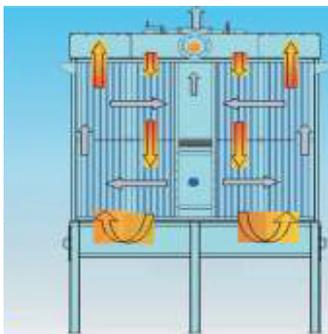
Fully automated tube to tube TIG Welding Machine enables smooth inform bore.

Causes less resistance on the oil side, which is an advantage.



CNC Coil Winding Machine ensures proper alignment, avoiding possibility of hot spots.

Air preheater (APH)



Air → Flue gas →

CFD analysis

Danstoker air preheater (APH) comes with a non-corrosive design, with a hybrid cross and counter flow design that has been validated with extensive CDF analysis.

Used for heating the combustion air, ensuring a high efficiency of the hot oil boiler.

System efficiency and NO_x emissions are opposing factors that are considered when designing the air preheater.

Advantages of APH design:

- Air is introduced in the intermediate flue gas zone which maximizes heat recovery and reduces stack temperature.
- Diverter damper in flue gas line facilitates online cleaning of the APH and use of only one module while the other is under cleaning.
- Modular APH helps to maintain efficiency even under part load conditions.
- No risk of dew point corrosion as the configuration ensures optimum steel temperatures.



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