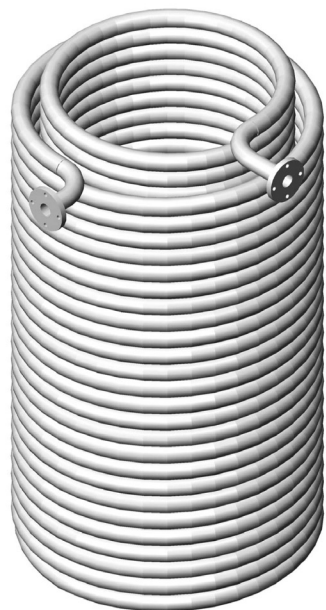


Thermal Fluid Heater Series

Main Features

- The heaters are primarily designed for heating of designated type of thermal oils for high temperature or small heating system, yet water may be used as heating medium (hot water boiler) for low temperature or small heating application.
- **QMB-Seatech** designs and manufactures various types of thermal fluid heater in three series:
 - YL** - vertical oil-fired series, with top-fired burner
 - YW** - horizontal oil-fired series, with side-fired burner
 - FL** - vertical economizer series, for recovering waste heat from the main engine's exhaust
- Applicable for heating of cargo oils, fuel oil and cylinder jacket cooling water for various type of marine diesel engines and as well as heating of domestic water and air-conditioning on board ship.
- Usually, either **YL** or **YW** oil-fired type thermal fluid heaters work in conjunction with **FL** economizer type thermal fluid heaters.
- Capacities of **YL** and **YW** depend on burning fuel of heavy oil or diesel oil. It regulates the fluid temperature at a predetermined setting automatically.
- The capacity of **FL** depends on the exhaust gas temperature and quantity from the main engine. In low load condition, insufficient temperature is compensated by means of oil-fired thermal fluid heaters. On the other hand, excess heat generated is dumped automatically to the dumping cooler; alternative, the amount of heat transfer is controlled by means of exhaust gas by-pass dampers. Thereby, it regulates the fluid temperature at a predetermined setting.
- The boiler features automatic control and various safety protections for automatic operation under normal condition and manual operation in case of emergency or cold starting and shut down the boiler system for a lengthily time.



Mono-tube Coil

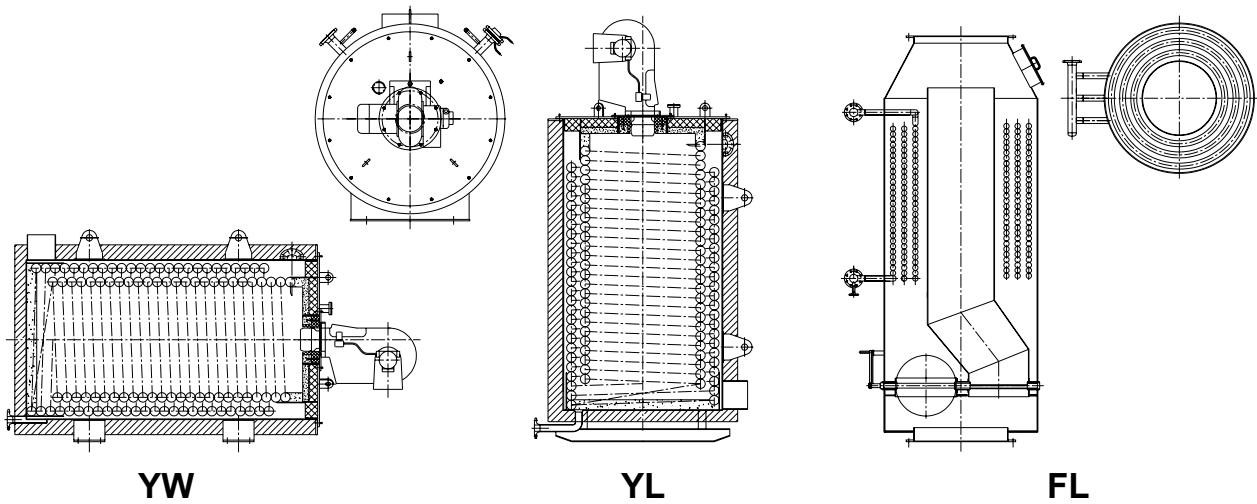


Multi-tube Coil

Thermal Fluid Heater Series

Construction

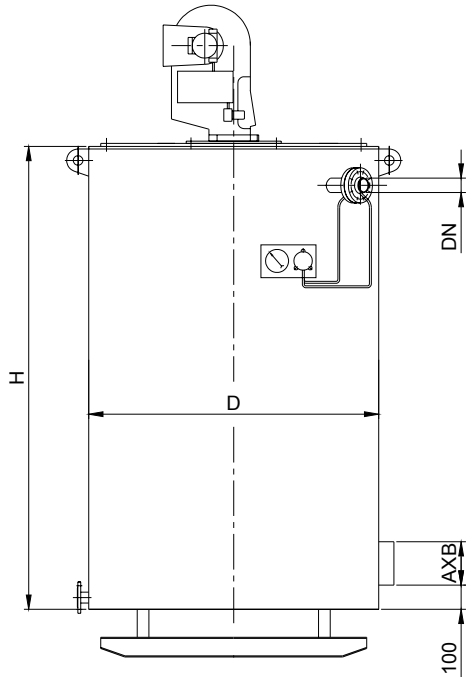
- **YL** and **YW** types construct with a gas-tight cylindrical outer-shell, mono tube coil (small capacity) or multiple concentric tube coils (large capacity), joined with inlet/outlets headers. The innermost coil forms the furnace with necessary refractory lined at ends. Fire extinguishing / water cleaning nozzles are provided at the lower chamber.
- **FL** also constructs with a gas-tight cylindrical outer-shell, a number of concentric tube coils joined with inlet/outlets headers and as well as an internal by-pass passage for leading all/part of the exhaust gas out without heating up the thermal fluid. Fire extinguishing / water cleaning nozzles are provided at the lower and upper smoke chambers respectively.
- The tube coils are so dimensioned to optimize the heat transfer from flue gas and as well as maintains high gas velocity so as to minimize soot deposition.
- The heater is assembled by means of welding. Inspection doors at the uptake and the inlet chamber provide good access for cleaning, inspection and maintenance.
- Necessary transportation and support lugs are fitted on the outer-shell. Moreover, it is primed with anti-corrosion paint and covered with insulation & lagging, prior to delivery.



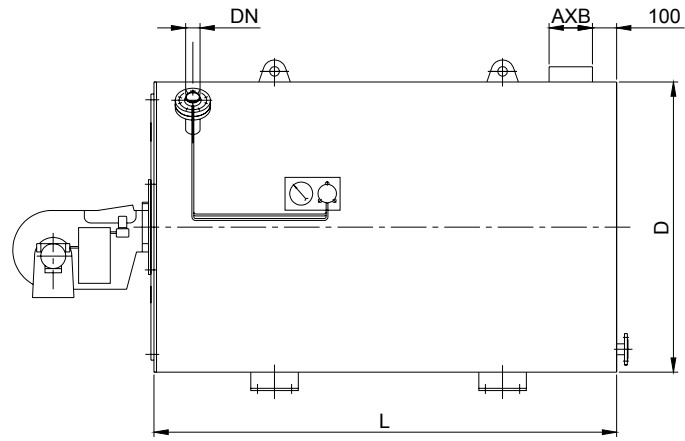
Scope of delivery:

- Thermal fluid heater bodies
- Burner & fuel oil supply system
- Control panel
- Necessary instrumentation & control
- Thermal fluid oil circulating pumps
- Thermal fluid oil filling pump
- Dump cooler or exhaust gas by-pass damper
- Expansion tanker, deaerator, etc.

Thermal Fluid Heater Series



YL Series



YW Series

Capacity (kW)	Design pressure (MPa)	H / L (mm)	ØD (mm)	DN (mm)	AXB (mm)	Thermal Oil volume (m ³)	Dry weight (kg)	
							YL	YW
600	1	2152	1320	65	185x360	0.42	1970	2120
800	1	2370	1440	65	210x400	0.54	2350	2450
1000	1	2450	1526	65	228x450	0.60	2690	2870
1200	1	2970	1622	80	250x500	0.97	3650	3850
1400	1	3230	1800	80	280x560	1.24	4850	5050
1800	1	3500	2000	100	315x630	1.92	6050	6300
2000	1	3600	2112	100	340x680	2.09	7800	7800
2400	1	4000	2110	125	355x710	1.55	8500	8800
3000	1	4680	2236	125	400x800	2.40	10000	11000
3500	1	4860	2466	125	450x900	2.75	11500	13000
4000	1	5430	2566	150	480x960	4.20	16000	17000
4600	1	5980	2656	150	500x1000	4.72	19000	20000
6000	1	7050	2816	150	560x1120	6.10	23000	24000

1. Design pressure up to 1.3 MPa.
2. Dimension of thermal fluid heater including insulation.
3. Weight of boiler excluding mountings, burner
4. Thermal oil temperature up to 350°C.
5. Design and performance may be changed without prior notice.

Piping Schematic

