

Vertical Oil-fired/Exhaust Gas Composite Boiler Series

The **QMB-Seatech** vertical type oil-fired/exhaust gas composite boiler series consists of three models, generating saturated steam by means of burning of fuel oil and as well as recovering waste heat from main engine's flue gas for energy saving, applicable for shipboard heating of heavy fuel oil, jacket cooling water, oil tanks, domestic water, air-conditioning, etc.

The boilers feature automatic control and fail-safe design for unmanned operation of modern ships. Alternatively, the boilers can be operated manually in case of emergency or cold starting.

Base on engine room layout consideration and specific requirements, the customer can choose among **ZYC, LYF & ZYS** types, with differences in tube configurations and capacity as follows:

	ZYC	LYF	ZYS
Oil-fired side	Inclined water tube design	Smoke tube design (plain tube or swirl tube)	Pin-tube design
<i>Steam output: Up to 6500 kg/h x 0.7 MPa (working pressure)</i>			
Exhaust gas side	Smoke tube design	Smoke tube design	Smoke tube design
<i>Steam output: Depends on main engine exhaust gas data (quantity & temperature)</i>			

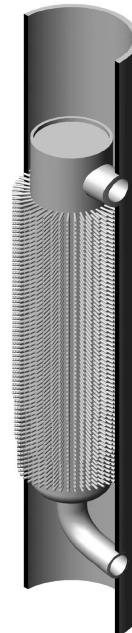
Tube Configurations

Swirl Tube



The swirl tube is corrugated so as to optimize heat exchange surface and generate turbulent flow for the purpose of reduction of soot deposit.

Pin-tube Element

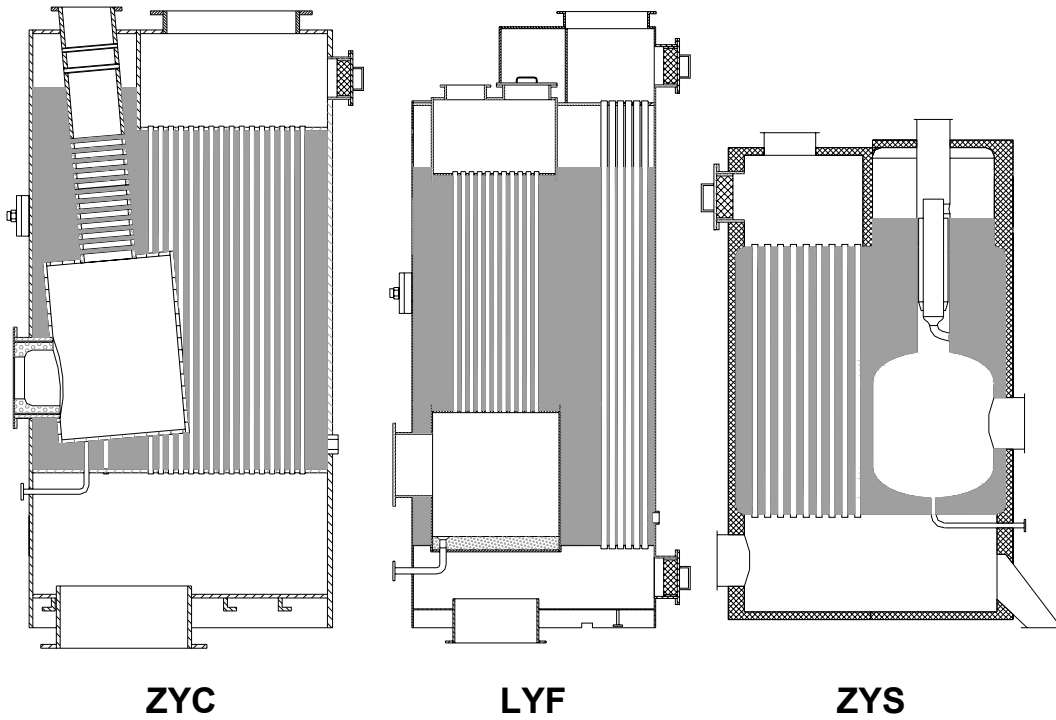


Each element is a smoke/water tube construction. The pin-tube consisted of numerous studs to optimize heat exchange efficiency, is enclosed by a sleeve tube welded to the tube plates.

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Boiler Construction

The boilers are in common assembled 100% by welding, the boiler shell and inner cores forms the water/steam chamber. The inner cores are consisted of two heat exchange areas, i.e. oil-fired section and exhaust gas section: The oil-fired section include a furnace in the lower part connected to convection part with water tube/smoke tube/pin-tube configurations on top; while the exhaust gas section is composed of smoke tubes, based on steam output versus main engine flue gas data.



Note:

1. Boilers are delivered based on a technical specification agreed with the customer who specified technical requirements, scope of delivery and classification.
2. Basic design data should include boiler model, type, specifications, steam output, working pressure, fuel oil type, feed water temperature, power supply, etc.; furthermore, main engine data, such as engine type, power, flue gas quantity/temperature, permissible pressure resistance, etc. should be provided.
3. Specific requirements beyond standard on request.