Package Boiler

The packaged boiler is so called because it comes as a complete factory-assembled Package with all mountings, accessories and control instrumentation are installed on it. Once it delivered to site, boiler requires only the steam, feed water pipe line. fuel supply connections and electrical connections to be made for package boiler to become operational and produce steam. Package boilers are generally of a shell type internally fired furnace with fire tube design so as to achieve high heat transfer rates from both radiation heating surface and convection heating surface.

Package type fire tube and water tube boilers are shown in pictures.
Important features of a package type boiler.

Packaged boiler required Small combustion space and high heat release rate resulting in faster evaporation and steam production.

It contains a large no of small diameter tubes leading to good convective heat transfer in second and third pass.

Forced or induced draft systems are installed on this boiler to achieve good boiler combustion efficiency about 80%.

Mostely 3 Number of passes resulting in better overall heat transfer.

Package boiler as compare to other boilers provides high thermal efficiency levels.

These types of boiler are less costly than water tube boiler erected on site of same capacity. Provides quick steam because of small water volume and large heating surface.

Mostelly used for process steam some times used for power production.

It can be easily started and stop. Less man power is required.

Not suitable for very large amount of steam production. 45 ton/hr steam production is the limit for a package boiler. Mostly natural circulation is used.

Packaged boiler classifications

Packaged boilers can be water tube or fire tube. These boilers are
classified single pass 2 pass and 3 pass boilers. based on the number of times the hot combustion gases pass through the tubes of the boiler. Package boilers can be further classified to Wet back boiler and dry back boilers. Water tube packaged boiler mostly come in the form of “D” type “A” and “O” type configurations.