15 MW Coal Fired Steam Power Plant Package

Boiler Component		
Model No.	**BL-WX-15**	**Unit**
Steam Flow	75	ton/hr
Steam Pressure	5.3	MPa
Steam Temperature	450	°C
Feedwater Inlet Temperature	150	°C

The boiler component consists of a coal-fired drum-type CFB boiler. The boiler component features a superheater, an economizer and an airheater.

Steam Turbine Component		
Model No.	**SC-RT-15**	**Unit**
Output	15	MW
Speed	3000	rpm
Steam Pressure	3.43	kPa.a
Steam Temperature	435	°C
Steam Flow	106	ton/hr
Exhaust Pressure	6.46	kPa.a
Steam Rate		
Design Condition	7.06	kg/kW.h
Condensing Condition	4.49	kg/kW.h
Heat Rate		
Design Condition	9705	kg/kW.h
Condensing Condition	11911	kg/kW.h
Feed Water Temperature	153	°C
Weight of Turbine	58	ton
Weight of Upper Half	15	ton
Weight of Turbine Rotor	7.56	ton
External Dimension	6 x 3.6 x 3.6	m
Center Height of Turbine	750	mm

The steam turbine component is based upon straight condensing structure. The principle design features of the unit are all structurally impulse, non-reheating, single cylinder type for power plants. The turbines use the advance 3-D technology for through flow path. The units are quite compact in structural size, but with high performance.

These steam turbines are fully CNC controlled by adapting hydraulic system. The products are equipped with protective monitoring system, which would ensure the safety and reliability of the steam turbines.

15 MW Coal Fired Steam Power Plant Package

This information sheet describes the packaged equipment for a coal-fired steam power plant with the output capacity of 15 MW. Essentially, the package consists of three main components of power generating equipment; namely the boiler, steam turbine and generator; plus some auxiliary devices associated wit these main operating compnents.

The package is based upon coal-fired Circulating Fuel Bed (CFB) technology for the boiler, in which the boiler-based thermal power generation is as the preferred fuel/cycle combination for power generation. The folloing is the optimized system configuration, which provides low total annual operating costs while maintaining reliability commensurate with the technical features and advantages of all components within the power plant equipment package.

Turbo-Generator Component (Generator)		
Model No.	**BL-WX-15**	**Unit**
Power	15	MW
Voltage	10.5	kV
Current	1031	A
Rotation	3000	rpm
Power Factor	0.8	
Frequency	50	Hz
Efficiency	97.6	%

Turbo-Generator Component (Exciter)		
Model No.	**BW-EX-15**	**Unit**
Power	80	kW
Voltage	250	V
Weight	1220	kg

Turbo-Generator Component (Cooler)		
Model No.	**BW-CO-15**	**Unit**
Cooling	360	kW
Cooling Flow	10	m^3/s

The Turbo-Generator component consists of one generator, one exciter and one cooler as the operating unit. The 3-phase synchronous turbo-generator component matches with their respective steam turbine component in power generating capacity. For example, the model number BW-CG-15 package (15 MW) would be used in conjunction with the model number SC-RT-15 steam turbine (15 MW) for a 15 MW power plant.

The cooling method for the equipment within the package is the closed-loop air-cooling type. The rotor is cooled by internal air flow. The air cooler is located under the generator. The excitation method is the AC brushless exciter with permanent pilot exciter type. The generator is equipped with high precision digital automatic voltage regulator (AVR).

Note:
(1) The rotational direction of all turbines is clockwise viewed downstream.
(2) The above data represent the maximum values of the specification of the machine.
(3) The vendor reserves the right to make changes to the specifications in order to improve the products.