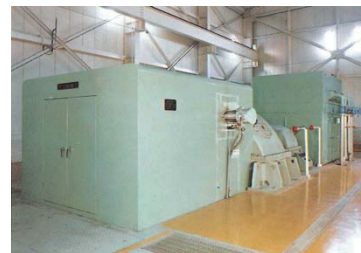


Steam Turbine Facilities for Environment-oriented Power Generation

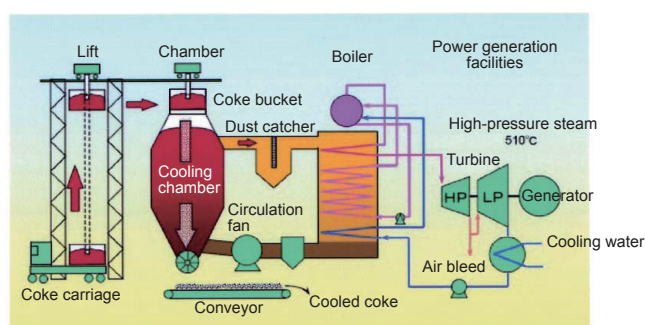
Features

- ◆ For Waste Heat Recovery Power Generation
Using the steam generated by waste heat recovery equipment, energy efficiency can be improved.
 - By using the steam from Coke Dry Quenching (CDQ) equipment in the Steel Plant,
 - By using the steam from Gas Turbine Combined Cycle Power Plant (CCPP)
 - By using the steam from Cement Waste Heat Recovery Power Plant, etc
- ◆ For Incineration Plant and Waste Material Fired Power Plant
Using the steam generated by garbage incinerator and waste material fired boiler, energy can be used effectively.
 - By using the steam from Garbage Incinerator
 - By using the steam from Refuse-Derived Fuel (RDF) Fired Boiler, etc
- ◆ For Biomass Fired Power Plant
Using the steam generated by Biomass Fuel Fired Boiler, Environmental load can be decreased.
 - By using the steam from Wood-chip Fired Boiler
 - By using the steam from Baggase Fired Boiler, etc
- ◆ For Effective Utilization of Surplus Steam
Using surplus steam generated in the factory process, surplus energy can be used effectively.
 - Mixing steam turbine for Gas Turbine Combined Cycle, etc
(Which has main inlet steam port and intermediate inlet steam port)

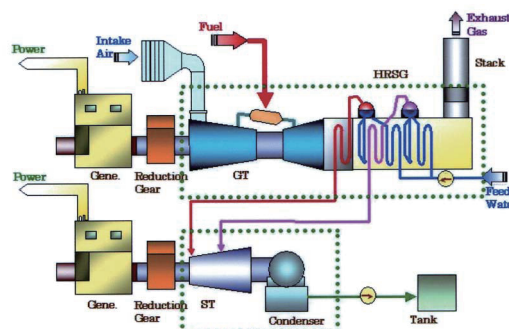


Basic Concept or Summary

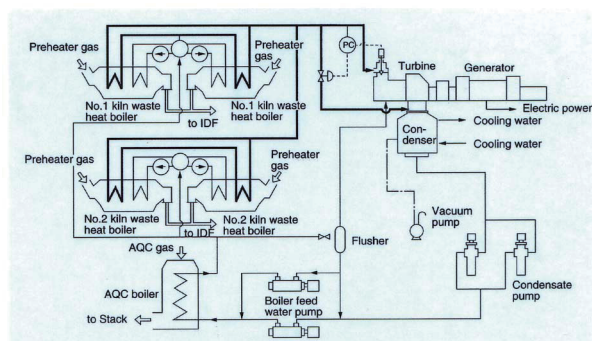
- ◆ Steam is generated by Cokes Quenching Device, and it can be used for Steam Turbine Generator.



- ◆ Steam is generated by waste heat recovery boiler added to exhaust piping of a gas turbine, and it can be used for Steam Turbine Generator.



- ◆ Steam is generated by waste heat recovery boiler added to cement manufacturing process, and it can be used for Steam Turbine Generator.



- ◆ Waste heat which used to be cast out in the past can be converted into electric energy, and eventually energy efficiency can be greatly improved and great energy-saving effect can be expected.

Effects or Remarks

- ◆ Developed by Kawasaki's original own technology and have been improved by investigating and introducing the latest technologies to improve the efficiency.
- ◆ The output is in the range of 2 to 150 MW and the design is optimized to suit the conditions of the amount of steam generated.



Steam turbine for CDQ



Mixed-gas turbine

Installation in Practice or Schedule

- | | |
|-----------------|---|
| Domestic | Steam turbines for CDQ: 14 units
Steam turbines for CCPP: 14 units
Steam turbines for cement waste heat recovery equipment: 17 units
Steam turbines for incineration: 31 units
Steam turbines for biomass power generation: 6 units |
| Overseas | Steam turbines for CDQ: 13 units
Steam turbines for CCPP: 12 units
Steam turbines for cement waste heat recovery equipment: 15 units
Steam turbines for incineration: 4 units
Steam turbines for biomass power generation: 19 units |

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