

Model R

Multi-Stage Steam Turbine

The Dresser-Rand Model R multi-stage steam turbine is a versatile, API 612-compliant turbine engineered to meet demanding applications up to 25,000 kW. The multi-stage Model R turbine is designed to drive generators for independent power plants, compressors, and other mechanical equipment for industrial processing and institutional power plants. These efficient steam turbines also are used in food processing, ethanol, waste-to-energy, and biomass applications.

Casing Design

Casing splits (horizontal or vertical) are precision-ground with metal-to-metal joints, eliminating the need for gaskets. Casings conform to ASME Section VIII standards and NEMA standards for allowable stress levels; each section of the turbine casing is hydrostatically tested to meet API 612 requirements.

Exhaust orientation is available in up, down, side, or axial configurations in condensing or non-condensing designs.

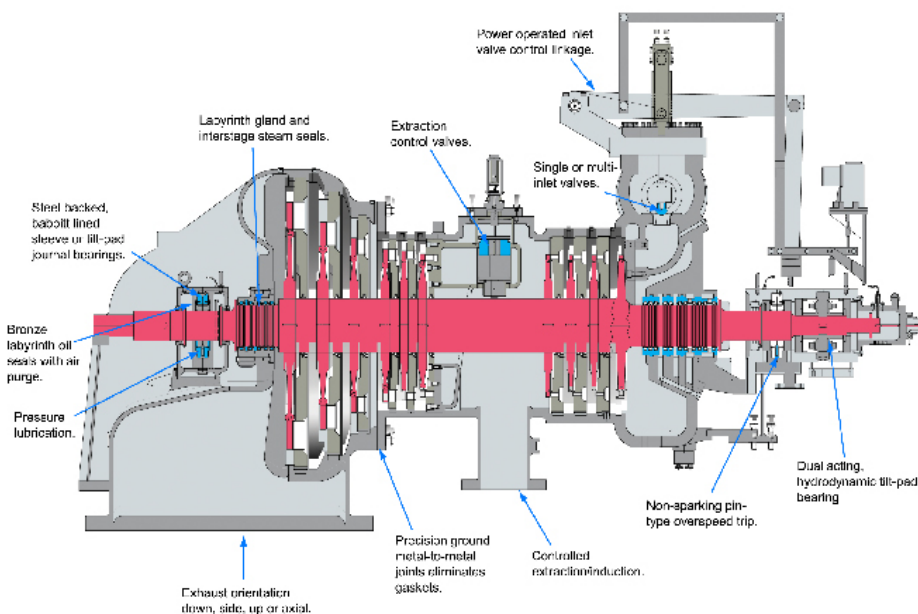
Overspeed Trip System

The overspeed trip system is a two-out-of-three electronic system with dual solenoid activation of an independent trip and and throttle valve.

The trip and throttle valve functions as a quick-closing valve (manual or automatic) by electronic trip actuators. It also functions as a manually operated throttle valve for bringing the steam turbine up to speed. Choose from a D-R mechanical trip and throttle valve, or a Dresser-Rand Gimpel™ oil-operated trip and throttle valve.

Governors

The Model R turbine is typically supplied with the Woodward Peak 150 governor control system. It provides tight control of speed (NEMA D) and includes an input for a 4-20 mA remote speed control signal that can be used for a process-generated input to control the speed setting. Other features include dual-speed control dynamics and overspeed trip test capabilities.



For more information on **Model R steam turbines** contact one of the following locations:

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Dresser-Rand

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For a complete list of D-R products and services, visit us at www.dresser-rand.com or contact us at the following locations:

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Multi-Inlet Valves

The Model R turbine is available with single- or multiple- governor-controlled inlet valves that optimize the steam turbine's performance throughout the operating range.

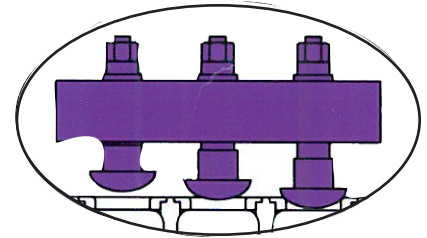


Illustration of two inlet valves open

Multi-inlet valves are opened and closed in sequence by the turbine governor controlling the flow of steam to a separate group of nozzles. These valves are opened and closed to minimize losses at partial loads allowing higher efficiencies to be maintained under all load conditions.

Dresser-Rand recommends multi-valve construction for turbines driving synchronous generators that are paralleled with other generators or a utility.

Rotors, Seals, and Bearings

Rotors are available in a forged or built-up design with a flexible or stiff shaft for up to 15 stages. Labyrinth gland or inter-stage steam seals are provided to accommodate operating conditions or client preference.

Labyrinth-type oil seals retain pressure-fed lubrication in the bearing housings and prevent contamination from foreign material. Steam slingers also protect bearing housings from steam and condensate.



The Model R turbine incorporates dual-acting, hydrodynamic tilting pad thrust-bearing to position the rotor axially and absorb internal thrust; spherically seated or tilting pad-type journal bearings are standard. Exhaust- and steam-end bearing covers allow easy access to the bearing housing without removing the casing cover.

Additional design features:

- Controlled extraction / induction
- Back pressure / condensing
- Non-automatic extraction (bleed)
- Up to 24" (600 mm) inlet (for pressures as low as atmospheric)
- Up to 72" (1830 mm) exhaust
- Single- and dual-flow exhaust
- Full arc of admission

Specifications

Model	Power HP (kW)	Inlet Pressure psig, (bar)	Inlet Temp °F (°C)	Exhaust psig, (bar)	RPM
R	33500 (25000)	900 (62)	900 (483)	400 (28)	15000
Inlet Diameter In (mm)	Exhaust Diameter In (mm)	Stages	Casing Design	Inlet Options	
24 (600)	72 (1830)	15	Horizontally split	Multi-valve	

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