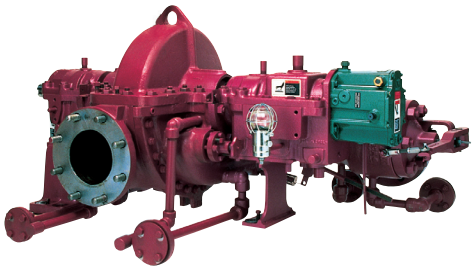
SST 500/700

Single-stage Steam Turbines



The API 611- and API 612-compliant single-stage steam turbine (SST) is a versatile, rugged steam turbine typically specified by the refining, petrochemical, food processing, steel, and other industries as an economical and reliable mechanical drive for lube oil pumps, process pumps, feed water pumps, fans, compressors, and generators.

Horizontal, Axial Split Casing

The axial split design allows the upper half of the casing to be removed for easier access to internal parts inspection and replacement. The sturdy metal-to-metal joint sealing casing design meets ASME section VIII and NEMA stress level standards compliant with API 612 requirements.

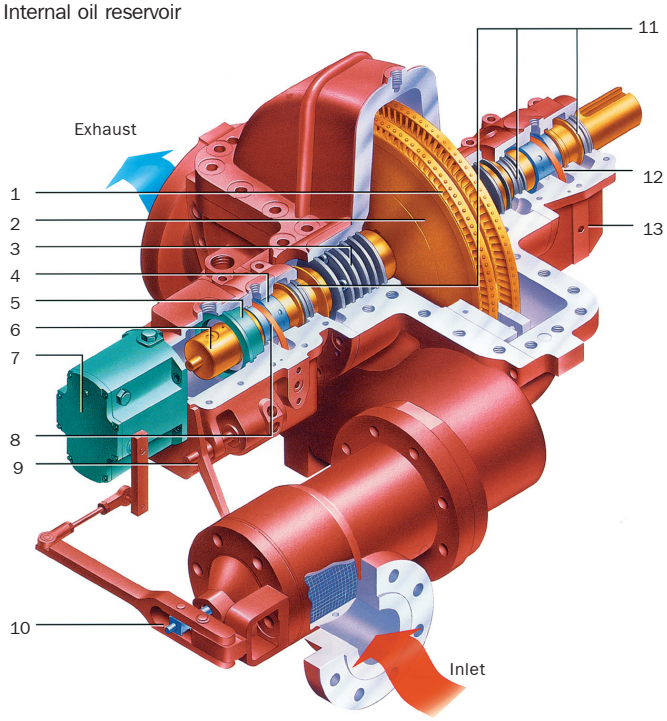
Overspeed Trip System

The SST safety valve and trip system work independently of the governor. They use a piloted venturi-type mechanical trip valve and provide positive closure to shut off steam to the turbine in the event of overspeed. The valve can be reset against full steam pressure.

Trip and Throttle Valve (optional)

The trip and throttle valve functions as a quick-closing valve (manual or automatic) that is actuated by the overspeed governor, a mechanical safety trip, or the optional electronic trip actuators. It also functions as a manually operated throttle valve for bringing the steam turbine up to speed (standard supply on SST 700LP). Choose from a Dresser-rand mechanical trip and throttle valve, or a Dresser-Rand Gimpel™ oil-operated trip and throttle valve.

1 High-efficiency blading
2 Keyed and shrunk wheel on shaft
3 Unique, angle-type carbon-ring packing
4 Industrial-type babbitt-lined journal bearings
5 High-capacity thrust bearing for positive rotor location
6 Nonsparking, bolt-type overspeed trip
7 Speed governor
8 Oil rings
9 Trip lever
10 Governor valve stem
11 Stationary, replaceable, nonsparking labyrinth bearing-case oil seals
12 Oil rings
13 Internal oil reservoir



Governors

The Woodward Class A TG governor is standard equipment on all SST models as a self-contained, hydraulic powered governor for high output and accurate speed control. Alternate governing systems are supplied as necessary based on operating conditions or when specified by the client.

Rotors, Bearings, and Seals

Two rows of single-disc, Curtis forged wheels are shrunk and keyed to the shaft to prevent wheel movement relative to the shaft throughout the steam turbine speed range. Solid rotor designs are available as an option for high-speed applications.

Journal bearings are split at the horizontal center line for easy access and replacement without removing the rotor. Bearings are bronze-backed and babbitt-lined for improved operating life. Standard oil ring or optional pressure lubrication can be used as required. Anti-friction ball bearings also are available for quick start applications or where mist-oil lubrication is specified.

DRESSER-RAND®

For more information on **single-stage steam turbines** contact our Worcester, MA technology center, or one of the following locations

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Form 2153

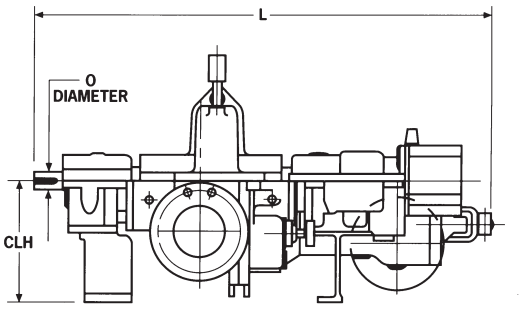
Steam sealing glands feature an angle-type carbon ring design with the packing case integral to the turbine casing. Inconel™ springs hold the rings in place. Optional labyrinth and mechanical seals also are available.

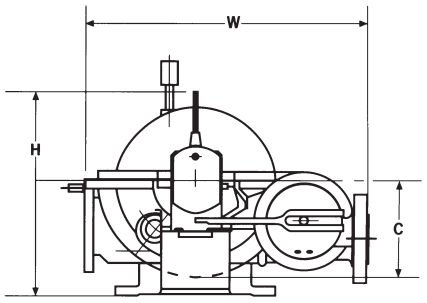
Features:

- Meets API 611
- Direct drive, oil relay (Woodward TG Series) constant speed governors
- Overspeed mechanical trip and safety shut-off
- Curtis forged wheel
- Carbon ring sealing glands
- Built-in, removable steam strainer
- Center line support

Optional Features:

- NEMA Class D and variable speed governors
- Manual or automatic hand valve controls
- Inpro™ oil seals
- Labyrinth or mechanical steam seals
- Copper-free construction for corrosive atmospheres
- Trip and throttle valves (standard on SST 700LP)
- Solenoid trips for remote shutdowns
- API 612 construction





Dimensions - in (mm)

	500	500H
L	4 inlet / 6 inlet	4 inlet / 6 inlet
	58 (1475) / 75 (1905)	63 (1600) / 75 (1905)
W	4 inlet / 6 inlet	4 inlet / 6 inlet
	41 (1040) / 44 (1120)	41 (1040) / 44 (1120)
H	30 (770)	30 (770)
CLH	14 (356)	14 (356)
C	16 (410)	16 (410)
O	3 (76)	3 (76)

	700	700H	700LP
L	4 inlet / 6 inlet	4 inlet / 6 inlet	4 inlet / 6 inlet / 8 inlet
	62 (5280) / 70 (1780)	61 (1550) / 73 (1860)	60 (1530) / 67 (1710) / 73 (1860)
W	4 inlet / 6 inlet	4 inlet / 6 inlet	4 inlet / 6 inlet / 8 inlet
	46 (1170) / 49 (1250)	46 (1170) / 49 (1250)	52 (1320) / 50 (1270) / 52 (1320)
H	38 (910)	41 (1050)	53 (1350)
CLH	19 (483)	19 (483)	19 (483)
C	21 (540)	22 (560)	21 (540)
O	3 (76)	3 (76)	3.5 (89)

Specifications

Model SST	Power HP (kW)	Inlet Pressure $psig_1$ (bar)	Inlet Temp °F (°C)	Exhaust $psig_2$ (bar)	RPM	Inlet Diameter In (mm)	Exhaust Diameter In (mm)
500	3500 (2600)	700 (48)	825 (440)	150 (10)	8000	6 (150)	8 (200)
500H	3500 (2600)	700 (48)	825 (440)	300 (20)	12000	6 (150)	8 (200)
700	3500 (2600)	700 (48)	825 (440)	75 (5)	6150	6 (150)	12 (300)
700H	3500 (2600)	700 (48)	825 (440)	150 (10)	5350	6 (150)	12 (300)
700LP	3500 (2600)	400 (28)	775 (413)	75 (5)	6150	8 (200)	16 (400)

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