

MICROSTEAM TURBINE POWER SYSTEM

POWER SKID:

Size: 78 cm W x 107 cm L x 198 cm H

Turbine

- Radial outflow design for high efficiency and erosion resistance
- Titanium rotor
- 28,000 rpm
- 4 inch 300# inlet flange
- 6 inch 300# outlet flange

Gearbox

- Rated for 300 kW
- 10 kW loss
- 96.5% efficient at 275 kW design point
- Gear ratio 9.286:1
- Oil flow: 22.71 lpm

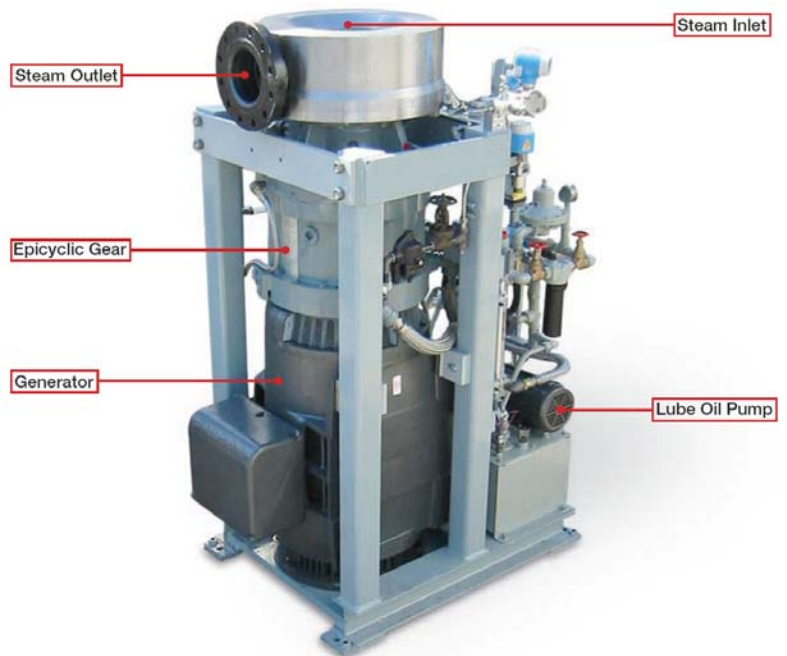
Generator

- 50 Hz Induction Generator
- 275 kW, 400V AC, 3Ph,
450 F.L. Amps, 0.89 Power Factor
- 95% efficiency at full load

Lube Oil Package

- A/C pump with D/C pump for backup
- Mobil DTE 24

Junction Box with quick disconnect plugs



Microsteam Turbine Power Skid



CONTROL PANEL:

- 25.4 cm color operator touch screen
- Control Microsystems PLC
- Basler GPS100 multifunction generator protection relay
- Quick disconnect cables to eliminate field wiring
- Remote monitoring and automatic data logging
- Single button start
- 24V DC batteries and charger
- NEMA 12 housing – 61 cm W x 48 cm D x 183 cm H
- All components CE certified

GENERATOR CIRCUIT BREAKER PANEL:

- Generator circuit breaker - 24V DC shunt trip with contactors
- NEMA 12 housing – 86 cm W x 51 cm D x 183 cm H

MICROSTEAM TURBINE POWER SYSTEM DETAILS (CONTINUED)

OTHER COMPONENTS (SHIPPED LOOSE):

- Control Valve – 3 inch 300# globe valve with pneumatic positioner (fail closed)
- Trip Valve – 3 inch 300# butterfly valve with pneumatic actuator (fail closed)
- Inlet Separator – 4 inch moisture separator with level switch, steam trap, and isolation valve
- Inlet and Outlet RTDs and transmitters (2)
- Inlet and Outlet pressure gauges (2)
- Outlet pressure transmitter (1)
- Vacuum breaker
- 8 cable assemblies to connect the junction boxes and panels (7.6 m standard length)

ITEMS NOT INCLUDED IN SCOPE OF SUPPLY (TO BE SUPPLIED BY CUSTOMER)

Site Requirements:

- Steam inlet and outlet piping and connections
- Turbine balancing steam connection
- Strainer on inlet pipe upstream of control and trip valves
- Connection to 50 Hz, 400V AC, 3Ph power grid
- 40 lpm of cooling water for oil cooler
- 5.5 barg dry plant air supply for seal, trip valve, and instrumentation
- Drain line and connection for inlet and outlet separator (condensate)
- Drain line and connection for case drain (water)
- Foundational pad to support Power Skid (2500 kg)
- Dedicated analog fax line for remote monitoring (Ethernet connection negotiable)

Installation:

- Steam blow or chemical cleaning of piping required prior to turbine installation
- Engineer to perform piping design and engineering to meet allowable turbine flange connection requirements
- Engineer to confirm electrical interconnect requirements with utility
- Customer to provide installation of control valve, trip valve, inlet separator, outlet separator, outlet pressure transmitter and inlet temperature transmitter

ADDITIONAL INFORMATION

Startup/Commissioning:

- Energent factory tests each Microsteam Turbine Power System prior to shipment using nitrogen and connecting the unit to the grid
- Services available at standard rates

Warranty:

- 1 year parts and labor subject to terms and conditions