COPPUS® Single Stage Steam Turbines

**RLHA**

Forged single discs wheel shrunk and keyed to shaft

Axial split casting

Linier type split sleeve bearings

Flinger type, non-sparking seals

Oil ring lubrication

Cooling water jackets

True center line support

Stainless steel nozzles

Stainless steel gland housings

50,000 hour L-10 life thrust bearing

Removable split carbon ring gland housings

Hard chrome plated shaft

Snap-acting bolt type trip

Woodward® TG governor

Permanently lubricated rod end ball joints

Removat stainless steel steel sleeve

Low friction carbon sleeve

**COPPUS STEAM TURBINES**

For over 80 years COPPUS steam turbines have been recognized around the world as rugged, versatile drive solutions for lube oil pumps, feed water pumps, fans, generators and other mechanical drive applications. COPPUS turbines are routinely specified by the petroleum, petrochemical, chemical, sugar, paper, food processing and other industries that require continuous or standby emergency power.

**COPPUS RLHA STEAM TURBINES**

The RLHA turbine is an axial split horizontal turbine with split sleeve bearings, available in 4 frame sizes offering up to 4,000 HP (2,980 kw). The axial split casing allows easy access for on-site inspection and repair. The time-tested reliability of the RLHA turbine makes it an ideal selection for continuous operation applications for pumps, fans and generators operating in the most demanding industrial environments.

**COPPUS RLHB STEAM TURBINE**

The RLHB offers anti-friction journal bearings, in place of the split sleeve bearings found on the RLHA, for applications where quick starts are required. The RLHB also takes advantage of oil ring or oil mist lubrication systems, eliminating the need for higher cost forced feed lubrication for speeds up to 5,000 RPM.

RLHB features rugged anti-friction journal bearings.
COPPUS RLA STEAM TURBINES

The RLA is a radially split horizontal turbine available in 8 frame sizes offering 1 to 1000 HP (745 KW). The RLA has a reputation as a low maintenance, easy to operate ‘workhorse’. Field proven to be an ideal choice for an economical backup or continuous drive for pumps and fans.

COPPUS RLVA STEAM TURBINE

The RLVA turbine offers all the same features as the RLA with the added benefit of the space saving vertical design. Available in 8 frame sizes to meet a wide variety of applications that includes pump drives for on board ships, and pump and fan drives for oil refineries, gas pipe lines and other industries where space is limited.

RLVA turbines are designed to meet API 611, NEMA and marine standards. Configurations are available for a wide range of shaft extensions, thrust bearings and flange mounting arrangement.

Standard features on COPPUS Turbines include:

- Meet or exceed strict API 611 requirements.
- Overspeed mechanical trip valve.
- Snap-acting overspeed trip.

Sealing Gland Housing on the RLA & RLVA is split for easy removal and inspection of carbon rings.
Meets API 611 standards.

The snap-acting bolt type trip mechanism introduced by COPPUS in the mid 80’s set new industry standards for Overspeed Trip Systems.

The independent system stops the turbine under any load condition by activating the force-actuated trip valve. It is capable of three consecutive non-trending trip-outs within +/-2% of set trip speed.

The Overspeed Trip Collar, installed on the turbine shaft, houses an adjustable, spring loaded bolt. The bolt is retained until a pre-selected trip speed is reached. When the turbine shaft exceeds the selected speed the bolt is instantly released to unlatch the trip valve. The snap-action tripping is positive, precise and repeatable.

The Overspeed Trip Valves are designed to minimize pressure drop ensuring the highest available pressure at the nozzle ring for doing work.

When released by the Overspeed Trip mechanism or the manual trip lever the valve is instantly closed to shut off steam. The single-seated valve will bring a fully, un-loaded turbine to a complete stop.

For manual resetting against full-line pressure, a pilot valve relieves unbalanced pressure.

Optional Features for COPPUS Turbines Include:
- Forged steel wheels.
- Special shaft materials.
- Part load and overload hand valves.
- Kingsbury® thrust bearings.
- Copper free construction for corrosive atmospheres.
- Single row wheels.
- Lagging, “blanket type” insulation.
- High back pressure construction.
- Electronic or hydraulic NEMA Class D governors and variable speed controls.
- Solenoid trips for remote shutdown.
- Extended inlet pressure and temperature constructions.
**Selecting the right turbine**

COPPUS Steam Turbines are available in 15 horizontal and 8 vertical sizes allowing greater flexibility in matching the right turbine to the desired application. Need a quote? Visit our web site at [www.dresser-rand.com](http://www.dresser-rand.com).

### RLA and RLVA Specifications (maximum)

<table>
<thead>
<tr>
<th>Specifications (max.)</th>
<th>FRAME SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12M</td>
</tr>
<tr>
<td>Wheel Diameter</td>
<td>12 in.</td>
</tr>
<tr>
<td></td>
<td>305 mm</td>
</tr>
<tr>
<td>Power HP/ KW</td>
<td>60 hp</td>
</tr>
<tr>
<td></td>
<td>44 kw</td>
</tr>
<tr>
<td>Speed (RPM)</td>
<td>6000</td>
</tr>
<tr>
<td>Inlet Pressure - P₁</td>
<td>670 psig</td>
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<tr>
<td></td>
<td>46.2 barg</td>
</tr>
<tr>
<td>Inlet Temperature - T₁</td>
<td>825°F/440°C</td>
</tr>
<tr>
<td>Back Pressure - P₂</td>
<td>105 psig</td>
</tr>
<tr>
<td></td>
<td>7.2 barg</td>
</tr>
<tr>
<td>Inlet Diameter</td>
<td>3/4 in.</td>
</tr>
<tr>
<td></td>
<td>19 mm</td>
</tr>
<tr>
<td>Exhaust Diameter</td>
<td>3 in.</td>
</tr>
<tr>
<td></td>
<td>76 mm</td>
</tr>
<tr>
<td>Approx. Wt. (LBS/KG)</td>
<td>800 lbs</td>
</tr>
<tr>
<td></td>
<td>273 kg</td>
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</table>

### RLHA/RLHB Specifications (maximum)

<table>
<thead>
<tr>
<th>WHEEL DIA. in./mm</th>
<th>MAX. POWER HP/kW</th>
<th>MAX. SPEED RPM</th>
<th>MAX P₁ PSIG BARG</th>
<th>MAX T₁ TEMP T₁ O°F / °C</th>
<th>MAX P₂ PSIG BARG</th>
<th>APPROX. WT. lbs/kg</th>
<th>Inlet Dia. in/mm</th>
<th>Exhaust Dia. in/mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 in. 381 mm</td>
<td>450 HP 333 kW</td>
<td>6000</td>
<td>600 psig 41.5 barg</td>
<td>750°F/400°C</td>
<td>105 psig 7.2 barg</td>
<td>880 lbs 400 kg</td>
<td>3 in. 76 mm</td>
<td>6 in. 152 mm</td>
</tr>
<tr>
<td>19 in. 483 mm</td>
<td>1575 1170 kW</td>
<td>6300</td>
<td>875 psig 60.3 barg</td>
<td>825°F/440°C</td>
<td>175 psig 20.7 barg</td>
<td>1900 lbs 863 kg</td>
<td>4 in. 102 mm</td>
<td>10 in 254 mm</td>
</tr>
<tr>
<td>24 in. 610 mm</td>
<td>2500 1865 kW</td>
<td>6300</td>
<td>900 psig 62 barg</td>
<td>950°F/570°C</td>
<td>300 psig 20.7 barg</td>
<td>3400 lbs 1545 kg</td>
<td>6 in. 152 mm</td>
<td>10 in 254 mm</td>
</tr>
<tr>
<td>28 in 711 mm</td>
<td>4000 2980 kW</td>
<td>5500</td>
<td>900 psig 62 barg</td>
<td>950°F/570°C</td>
<td>300</td>
<td>3600 lbs 1636 kg</td>
<td>6 in. 152 mm</td>
<td>10 in 254 mm</td>
</tr>
</tbody>
</table>

**Demand the Best! Demand Genuine COPPUS Parts and Service.**

Behind every COPPUS Turbine stands a worldwide network of sales engineers and service professionals. Factory and factory authorized service centers located around the world enables us to respond quickly to your parts, upgrades, service, and technical support needs.

To locate your nearest factory representative visit our Web Site at [www.dresser-rand.com](http://www.dresser-rand.com)
Special Applications

COPPUS RLHA28E
A specialized single stage steam turbine that provides useful power from relatively low pressure, high volume steam conditions. The design of the RLHA28E allows users to cost effectively utilize a single stage steam turbine to drive pumps, fans, compressors, generators and other equipment for applications where typical single stage steam turbines cannot accommodate the high steam flow conditions.

The RLHA28E utilizes a large steam casing with nozzle capacity in the top and bottom half, as well as large inlet and exhaust connections to accommodate large volumes of steam.

The large nozzle area and 16” exhaust, also allow the single stage RLHA28E to be used for condensing applications when the higher efficiency of a multi-stage turbine would not be cost effective.

RLHA28E Maximum Capabilities and Specifications (Axial Split Casing)

| WHEEL DIA | MAX. POWER | MAX. SPEED | MAX. TEMP | MAX. INLET | MAX. EXHIT | APROX. WT. |
| mm | HP/kW | RPM | °F/°C | psig/psig | psig/psig | Lbs/kg |
| 254 | 4400 | 950 | 1050 | 320 | 4000 | 1800 |

For additional information on this turbine download product catalog #C-202 from our website.

COPPUS RLHA24S
A Special Purpose, high-speed single stage steam turbine. Applications requiring API-612 Special Purpose steam turbines are defined as horizontal turbines used to drive equipment that is usually not spared, is relatively large in size (power) or in critical service.

The RLHA24S combines Special Purpose design requirements with the extremely rugged RLHA single stage casing. It provides a cost effective solution for dependable, critical service applications.

The RLHA24S designs this is an axial split, horizontal turbine with split sleeve bearings allowing easier access for on-site inspection and repair.

RLHA24S Maximum Capabilities and Specifications (Axial Split Casing)

| WHEEL DIA | MAX. POWER | MAX. SPEED | MAX. TEMP | MAX. INLET | MAX. EXHIT | APROX. WT. |
| mm | HP/kW | RPM | °F/°C | psig/psig | psig/psig | Lbs/kg |
| 254 | 2500 | 900 | 590 | 300 | 300 | 110 |

For additional information on this turbine download product catalog #C-203 from our website.