


The Siemens logo is displayed in a white rectangular box in the top left corner. The background of the entire advertisement features a close-up of a steam turbine's internal components, with a woman in a white hard hat and business suit on the right side. The turbine's complex, curved blades are highlighted with a blue glow, and a digital overlay of binary code (0s and 1s) is visible in the background.

**SIEMENS**

# Efficiency: More value to your facility

Siemens steam turbine portfolio  
Steam turbines from 10 kW to 1,900 MW

[siemens.com/steamturbines](https://www.siemens.com/steamturbines)



# Steam turbines from 10 kW to 1,900 MW

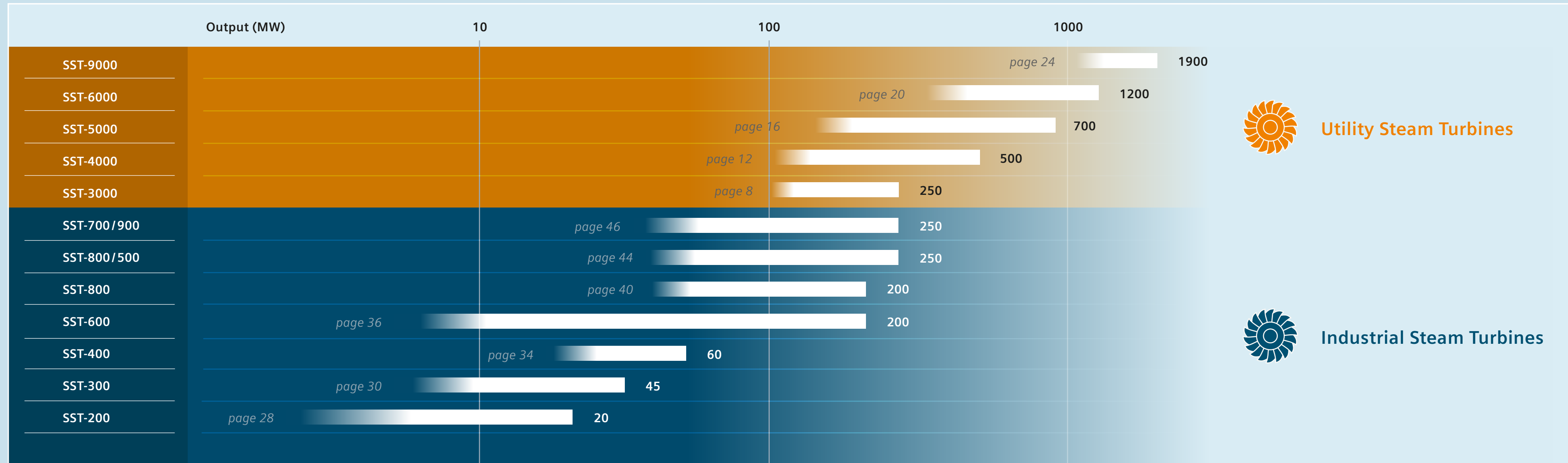
With over a century of experience and continuous development in steam turbine technology, Siemens has stayed at the forefront of development and is a prime partner for your business. With a fleet of more than 60,000 steam turbines world wide, Siemens is a reliable and experienced partner.

Siemens Steam Turbines are an essential piece of turbo-machinery to many power plants worldwide. They are applied either as a generator drive or a mechanical drive for pumps and compressors. The modular design concept of all steam turbines ensures high flexibility, availability and a reduction of time-to-market.














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# Steam turbines overview



# Steam turbines overview

| Output (kW)           | 100  | 1,000 | 5,000          | 10,000                |
|-----------------------|--|-------|----------------|-----------------------|
| D-R RLA/RLVA          |    | 745   | <i>page 52</i> |                       |
| D-R RLH               |    | 1,865 | <i>page 54</i> |                       |
| D-R SST 350           |    | 750   | <i>page 50</i> |                       |
| D-R SST 500           |    | 2,600 | <i>page 50</i> |                       |
| D-R SST 700           |    | 3,000 | <i>page 50</i> |                       |
| D-R 2TA               |    |       | 3,750          | <i>page 56</i>        |
| D-R AVTTW/GTW         |    |       | 4,500          | <i>page 58</i>        |
| D-R C                 |    |       | 3,600          | <i>page 59</i>        |
| D-R GAF               |  |       | 4,000          | <i>page 60</i>        |
| D-R K                 |  |       | 4,850          | <i>page 65</i>        |
| D-R R/RS              |  |       |                | <i>page 64</i> 25,000 |
| D-R B                 |  |       |                | <i>page 62</i> 11,000 |
| D-R Tandem (B-B, B-C) |  |       |                | <i>page 63</i> 12,500 |



Dresser-Rand  
Steam Turbines

# Dresser-Rand — A Siemens Business

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With the D-R steam turbine portfolio Siemens has the most comprehensive range of API turbines available on the market, including:

- Standard single stage turbines for pump, fan & small compressor drives according to API 611 General Purpose (GP) standard
- Standard and engineered single stage turbines as generator drives for waste heat recovery applications
- Engineered single stage turbines for applications according to API 611 (General Purpose—GP) or API 612 (Special Purpose—SP) standards
- Standard multistage turbines for larger pumps, fans & compressors to API 611 or API 612 standards, or for power generation
- Turbines for geothermal plants
- Turbines for expansion of ORC and process fluids

As required either bare ST drivers to OEMs, or complete packages including gears, lube oil systems and controls are supplied

#### Benefits:

- Highest levels of quality & reliability for the most critical services in the business
- All units factory tested in accordance with API and customer requirements
- Units with modular designs, but engineered to order, according to customer project specifications & standards and local environmental requirements



# D-R SST 350/500/700

## Standard single stage steam turbine

### Typical applications

- Refineries
- Petrochemical plants
- Palm oil plants
- Food processing
- Steel industry
- Pulp & Paper
- Institutional
- Process waste heat recovery
- Replacement of steam pressure reduction valve
- Feed water pumps
- Process pump drives
- Cooling water pumps
- Fans
- Compressors
- Generators

- Rugged, versatile design
- Woodward TG Oil Relay NEMA Class A constant speed governor or electronic governor
- Horizontally split casing with centerline support
- Overspeed mechanical trip valve, separated from governor valve
- Carbon ring or labyrinth sealing glands
- Built-in, removable steam strainer
- API style blanket lagging / insulation (API applications)
- Oil ring lubricated with forced pressure lubrication or circulating oil cooling options
- Rolling element or Tiltpad thrust bearings
- Broad range of controls and accessories available
- WORTHINGTON heritage



### Technical Data

| D-R SST 350/500/700     |                         |
|-------------------------|-------------------------|
| Power output            | 2,460kW / 3,500 HP      |
| Turbine speed           | ≤ 12,000 rpm            |
| Inlet steam temperature | ≤ 482°C / 900°F         |
| Inlet Steam pressure    | ≤ 63 bar(a) / 914 psi   |
| Back-pressure           | 21 bar(a) / 315 psi     |
| Type of wheel / blades  | Curtis / Impulse        |
| API 611 and API 612     | Yes                     |
| Bearings                | Sleeve, Ball or Tiltpad |



# D-R RLA / D-R RLVA

## Standard single stage steam turbine

### Typical applications

- Refineries
- Petrochemical and chemical plants
- Food processing
- Institutional
- Process pump drives
- Process waste heat recovery
- Replacement of steam pressure reduction valve
- Lube oil pumps

### RLA

- Rugged, versatile design
- Radially split casing with centerline support
- Woodward TG Oil Relay NEMA Class A constant speed governor
- API 611 compliant, positive seating, mechanical overspeed trip valve
- Separate double seated governor valve
- Built-in removable steam strainer
- Removable carbon ring sealing glands
- API style blanket lagging / insulation (API applications)
- Oil ring lubricated
- Broad range of controls and accessories available
- COPPUS heritage



D-R RLA



D-R RLVA

### RLVA

- Rugged, versatile design
- Radially split casing
- Vertical shaft design with NEMA motor mounting flange & various ball thrust bearing configurations
- Woodward TG Oil Relay NEMA Class A constant speed governor
- API 611 compliant, positive seating, mechanical overspeed trip valve
- Separate double seated governor valve
- Built-in removable steam strainer
- Removable carbon ring sealing glands
- API style blanket lagging / insulation (API applications)
- Grease lubricated with circulating oil options
- Broad range of controls and accessories available
- COPPUS heritage



D-R RLVA

### Technical Data

| D-R RLA/RLVA            |                               |
|-------------------------|-------------------------------|
| Power output            | 745 kW / 1,000 HP             |
| Turbine speed           | up to 6,000 rpm               |
| Inlet steam temperature | ≤ 440 °C / 825 °F             |
| Inlet steam pressure    | ≤ 47 bar(a) / 682 psi         |
| Back-pressure           | ≤ 12 bar(a) / 179 psi         |
| Type of wheel / blades  | Curtis / Impulse              |
| API 611 compliant       | Yes                           |
| Bearings                | Ball bearing journal & thrust |

### Typical applications

- Refineries
- Petrochemical and chemical plants
- Institutional
- Process pump drives
- Lube oil pump drives
- Fan drives



# D-R RLH

## Standard single stage steam turbine

### Typical applications

- Refineries
- Petrochemical plants
- Food processing
- Institutional
- Process waste heat recovery
- Replacement of steam pressure reduction valve
- Process pump drives
- Feed water pumps
- Lube oil pumps

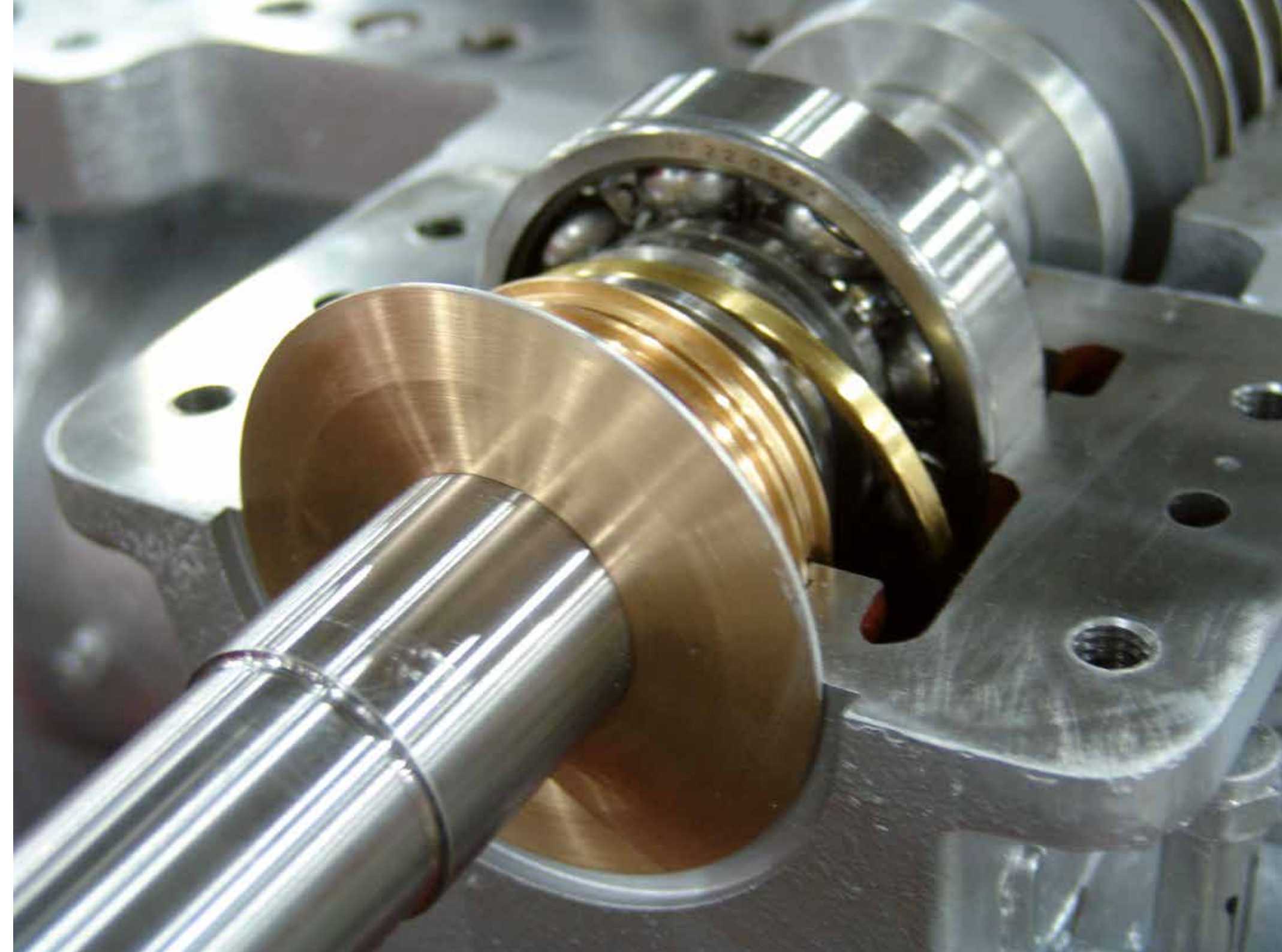
### D-R RLH

- Rugged, versatile design
- Woodward TG Oil Relay NEMA Class A constant speed governor or electronic governor
- Horizontally split casing with centerline support
- API 611 compliant, positive seating, mechanical overspeed trip valve
- Separate double seated governor valve
- Built-in removable steam strainer
- Carbon ring sealing glands
- API style blanket lagging / insulation (API applications)
- Carbon ring sealing glands
- Oil ring lubricated with forced pressure lubrication or circulating oil cooling options
- Broad range of controls and accessories available
- COPPUS heritage



### Technical Data

| D-R RLH                 |                                 |
|-------------------------|---------------------------------|
| Power output            | 1,865 kW / 2,500 HP             |
| Turbine speed           | 6,000 rpm                       |
| Inlet steam temperature | ≤ 482°C / 900°F                 |
| Inlet steam pressure    | ≤ 97 bar(a) / 1,414 psi         |
| Back-pressure           | ≤ 22 bar(a) / 314 psi           |
| Type of wheel / blades  | Curtis / Impulse                |
| API 611 compliant       | Yes                             |
| Bearings                | Ball and sleeve bearing designs |







# D-R 2TA

## Single stage steam turbine

### Typical applications

- Pumps and fans drives
- Compressors drives

- Horizontally split casings
- Between bearing design
- Multi-Valve or Single Valve Inlet
- Solid or built-up rotor
- Carbon ring or labyrinth glands
- Electronic governor

- Electronic overspeed trip
- Separate mechanical or hydraulic trip and throttle valves (option w/o exerciser)
- Auto / quick start capability
- Terry heritage



### Technical Data

| D-R 2TA                 |                            |
|-------------------------|----------------------------|
| Power output            | 3,640 kW / 4,880 HP        |
| Turbine speed           | ≤ 12,500 rpm               |
| Inlet steam temperature | ≤ 530 °C / ≤ 986 °F        |
| Inlet Steam pressure    | ≤ 104 bar(a) / ≤ 1,515 psi |
| Back-pressure [bar(a)]  | ≤ 33 bar(a) / ≤ 480 psi    |
| Type of wheel / blades  | Curtis / Rateau impulse    |
| API 611 & 612 compliant | Yes                        |
| Bearings                | Tiltpad / Sleeve           |





# D-R AVTTW / GTW

## Single stage steam turbine

### Typical applications

- Pump and fan drives
- Compressor drives

- Integrally geared or direct drive overhung turbine design
- Available in horizontal or vertical configuration (AVTTW)
- Axially split casing
- Multivalve or single valve inlet
- Derivative GTW frame used for compressor drives
- GTW overhung turbine design, direct drive
- Electronic governor
- Electronic overspeed trip



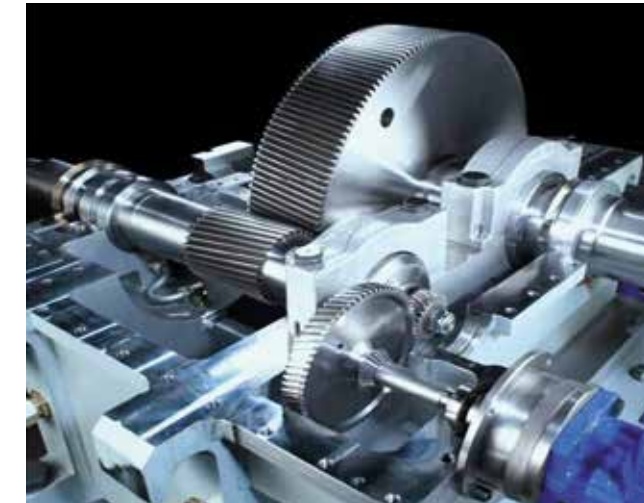
### Technical Data

| D-R AVTTW / GTW         |                            |
|-------------------------|----------------------------|
| Power output            | 4,500 kW / 6,000 HP        |
| Turbine speed           | ≤ 14,500 rpm               |
| Inlet steam temperature | ≤ 550 °C / ≤ 1,022 °F      |
| Inlet Steam pressure    | ≤ 125 bar(a) / ≤ 1,813 psi |
| Back-pressure [bar(a)]  | ≤ 40 bar(a) / ≤ 508 psi    |
|                         |                            |
| Type of wheel / blades  | Curtis / Rateau Impulse    |
| API 611 compliant       | Yes (with comments)        |
| Bearings                | Tiltpad / Sleeve           |

# D-R C

## Single stage steam turbine

- Radially split casings
- Direct drive or Integral Gear operation
- Overhung rotor design
- Multi-Valve or Single Valve Inlet
- Marine Classification approval
- Auto / Quick start ability
- Carbon ring or labyrinth glands
- Nadrowski heritage



### Technical Data

| D-R C                    |                          |
|--------------------------|--------------------------|
| Power output             | 2,500 kW / 3,250 HP      |
| Turbine speed            | ≤ 8,500 rpm              |
| Inlet steam temperature  | ≤ 520°C / 986 °F         |
| Inlet steam pressure     | ≤ 120 bar(a) / 1,740 psi |
| Back-pressure            | 21 bar(a) / 315 psi      |
| Condensing pressure      | vacuum                   |
|                          |                          |
| Type of wheel / blades   | Curtis / Rateau Impulse  |
| API 611 & 612 compliance | with exception           |
| Bearings                 | Tiltpad / Sleeve         |

### Typical applications

- Waste to Energy
- Biomass Plants
- Marine Applications
- Chemical Industries
- Paper / Sugar Mills
- ORC
- Waste heat recovery



# D-R GAF

## Standard multi-stage steam turbine

### Typical applications

- API mechanical drive (e.g. pump fans)
- Turbogenerator sets

### D-R GAF

- Condensing or back pressure steam turbine
- Horizontal casing split
- Between bearings rotor design
- Max. 6 stages
- Single valve inlet
- API 611 or 612 design
- Terry heritage



### Technical Data

|                          | D-R GAF               |
|--------------------------|-----------------------|
| Power output             | 3,500 kW / 4,690 HP   |
| Turbine speed            | ≤ 6,000 rpm           |
| Inlet steam temperature  | ≤ 440 °C / 825 °F     |
| Inlet steam pressure     | ≤ 49 bar(a) / 715 psi |
| Back-pressure            | ≤ 6 bar(a) / ≤ 87 psi |
| Condensing pressure      | vacuum                |
| Type of Blading          | Impulse               |
| API 611 & 612 compliance | Yes                   |
| Bearings                 | Tiltpad / Sleeve      |



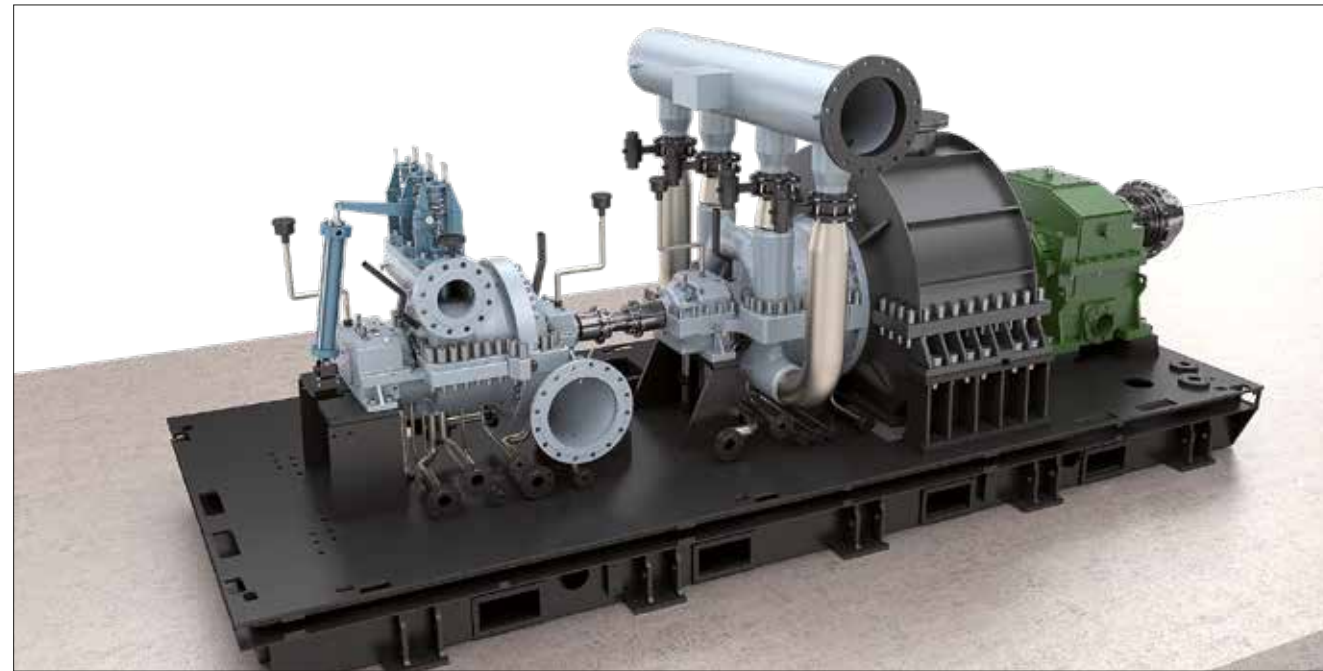


# D-R B

## Standard multi-stage steam turbine

### D-R B

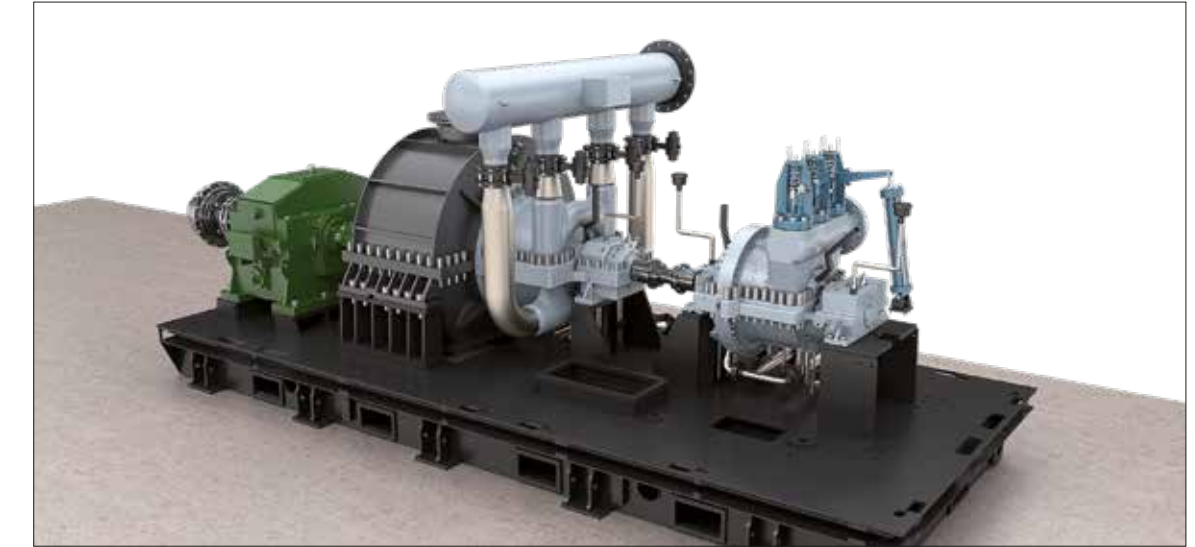
- Low cost design for high efficiency
- Multivalve inlets
- Multiple uncontrolled bleeds
- External controlled induction
- Double shaft end
- Available as single casing or multiple (tandem) casing machine
- Compact integral package designs
- Multiple externally controlled bleeds



B5-B7 Tandem

### Typical applications

- Turbogenerator sets
- Mechanical drives
- Sugar mills
- Pulp and paper mills
- Metall & Steel
- Waste to energy plants
- Marine applications
- Waste heat recovery



### D-R B Tandem

- Multivalve inlets
- Multiple uncontrolled bleeds
- Single automatic controlled extraction/induction
- Extraction pressure up to 40 bar
- Nadrowski heritage

### Technical Data

|                         | D-R B                 | D-R Tandem               |
|-------------------------|-----------------------|--------------------------|
| max. Power output       | 11 MW                 | 12,5 MW                  |
| Turbine speed           | ≤ 9,500 rpm           | 8,500                    |
| Inlet steam temperature | ≤ 500°C / 932°F       | ≤ 530°C / 986°F          |
| Inlet Steam pressure    | ≤ 65 bar(a) / 942 psi | ≤ 121 bar(a) / 1,750 psi |
| Back-pressure           | 13 bar(a) / 189 psi   | ≤ 13 bar(a) / 188 psi    |
| Condensing pressure     | vacuum                | vacuum                   |
| Type of wheel / blades  | Impulse               | Impulse                  |
| API 611 & 612 compliant | No                    | No                       |
| Bleedings / Extractions | Multiple / one        | Multiple / 1             |
| Bearings                | Tiltpad or Sleeve     | Tiltpad or Sleeve        |



# D-R R/RS

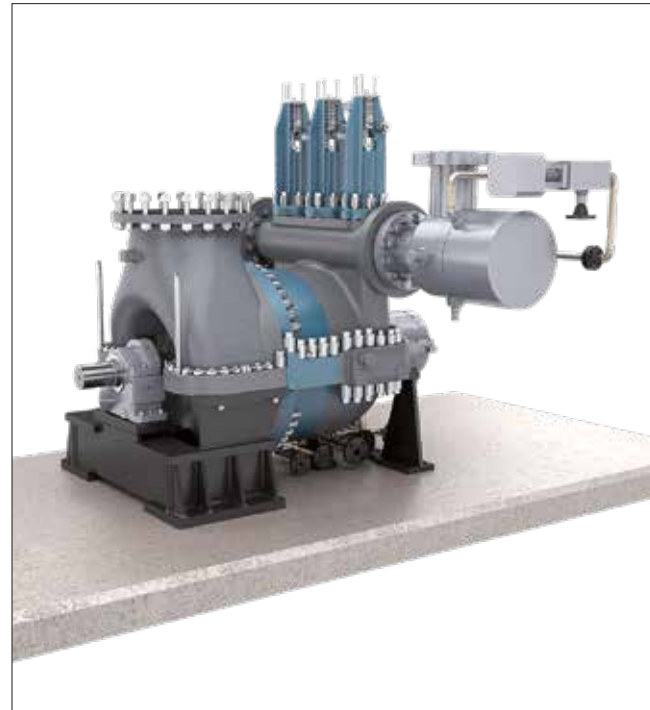
## Standard multi-stage steam turbines

### Typical applications

- API 611/612 compressor, fan and pump drives
- Turbogenerator sets, oil & gas and industrial
- Oil & gas, refineries
- Chemical plants
- Food and beverage
- Sugar mills
- Pulp & paper mills
- Waste to energy plants
- Biomass/palm oil plants
- Waste heat recovery

- Single valve or multivalve inlets
- Multiple uncontrolled bleeds
- Single automatic controlled extraction/induction
- Dual-acting, hydrodynamic, Tiltpad thrust-bearing
- Spherically seated or Tiltpad-type journal bearings

- Interchangeable parts
- Standard assemblies and components
- API and non-API options
- Condensing or back pressure
- Up to 15 stages
- Murray heritage



### Technical Data

| D-R R/RS                 |                         |
|--------------------------|-------------------------|
| Power output             | 25,000 kW / 33,500 HP   |
| Turbine speed            | ≤ 15,000 rpm            |
| Inlet steam temperature  | ≤ 510 °C / ≤ 950 °F     |
| Inlet steam pressure     | ≤ 67 bar(a) / ≤ 972 psi |
| Back-pressure            | ≤ 19 bar(a) / ≤ 415 psi |
| Condensing pressure      | vacuum                  |
| Type of Blading          | Impulse                 |
| API 611 & 612 compliance | Yes                     |
| Bearings                 | Tiltpad or sleeve       |
| Bleeds                   | Multiple / one          |

Pressure capability increases above 950 psig at reduced temperature.

# D-R K

## Standard multi-stage steam turbine

- Condensing or back pressure
- Low cost applications
- Single valve inlet
- For wide range of speeds throughout continuous operation
- Up to 12 stages
- Murray heritage



### Technical Data

| D-R K                    |                           |
|--------------------------|---------------------------|
| Power output             | 4,850 kW / 6,500 HP       |
| Turbine speed            | ≤ 10,000 rpm              |
| Inlet steam temperature  | ≤ 389 °C / ≤ 750 °F       |
| Inlet steam pressure     | ≤ 28,5 bar(a) / ≤ 415 psi |
| Back-pressure            | ≤ 6 bar(a) / ≤ 90 psi     |
| Condensing pressure      | vacuum                    |
| Type of Blading          | Impulse                   |
| API 611 & 612 compliance | No                        |
| Bearings                 | Tiltpad, Sleeve           |

### Typical applications – K

- Non-API mechanical drive (e.g. pump fans)
- Air conditioning chiller / compressor drives
- Small, low pressure turbogenerator sets

# Performance data overview

| Steam turbine type  | Power output kW       | Inlet Pressure bar/psi | Inlet Temperature °C/°F | Rotational Speed rpm | Uncontrolled extraction bar/psi | Exhaust Pressure (back) bar/psi | Exhaust Pressure (cond.) bar/psi | Bearings                        | Type of wheel/blades | API compliant       |
|---------------------|-----------------------|------------------------|-------------------------|----------------------|---------------------------------|---------------------------------|----------------------------------|---------------------------------|----------------------|---------------------|
| D-R RLA/RLVA        | 745<br>1,000 (HP)     | 47/682                 | 440/824                 | 4,300–6,000          |                                 | 22/300                          |                                  | Ball bearing journal & thrust   | Impulse              | 611                 |
| D-R RLH             | 1,865<br>2,500 (HP)   | 97/1,414               | 482/900                 | 6,000                |                                 | 21/300                          |                                  | Ball and sleeve bearing designs | Impulse              | 611                 |
| D-R SST 350/500/700 | 750<br>1,000 (HP)     | 63/914                 | 482/900                 | 12,000               |                                 | 21/315                          |                                  | Tiltpad / Ball / Sleeve         | Impulse              | 611/612             |
| D-R 2TA             | 3,640<br>4,880 (HP)   | 104/1,515              | 530/986                 | 12,500               |                                 | 33/480                          |                                  | Tiltpad / Sleeve                | Impulse              | 611/612             |
| D-R AVTTW/GTW       | 4,500<br>6,000 (HP)   | 125/1,813              | 550/1,022               | 14,500               |                                 | 40/508                          |                                  | Tiltpad / Sleeve                | Impulse              | 611/612             |
| D-R C               | 2,500<br>3,250 (HP)   | 121/1,785              | 520/986                 | 8,500                |                                 | 21/315                          | vacuum                           | Tiltpad / Sleeve                | Impulse              | 611 with exceptions |
| D-R GAF             | 3,500<br>4,690 (HP)   | 49/715                 | 440/825                 | 6,000                |                                 | 6/87                            | vacuum                           | Tiltpad / Sleeve                | Impulse              | 611/612             |
| D-R R/RS            | 25,000<br>33,500 (HP) | 67/972                 | 510/950                 | 15,000               | 1 or multiple                   | 19/415                          | vacuum                           | Tiltpad / Sleeve                | Impulse              | 611/612             |
| D-R K               | 4,850<br>6,500 (HP)   | 28.5/415               | 389/750                 | 10,000               |                                 | 6/90                            | vacuum                           | Tiltpad / Sleeve                | Impulse              | no                  |
| D-R B               | 11,000<br>14,750 (HP) | 65/942                 | 500/932                 | 9,500                | 1 or multiple                   | 13/189                          | vacuum                           | Tiltpad / Sleeve                | Impulse              | no                  |
| D-R B Tandem        | 12,500<br>16,750 (HP) | 121/1,750              | 530/986                 | 8,500                | 1 or multiple                   | 13/188                          | vacuum                           | Tiltpad / Sleeve                | Impulse              | no                  |



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