

# Steam Turbine Specifications

**MAN ENERGY SOLUTIONS SE, OBERHAUSEN GERMANY**

**MAN ENERGY SOLUTIONS SE, HAMBURG GERMANY**

| ELECTRIC POWER GENERATION |         |                     | ELECTRIC POWER GENERATION |                 |                |
|---------------------------|---------|---------------------|---------------------------|-----------------|----------------|
| ELECTRIC UTILITY MW RANGE |         | INDUSTRIAL MW Range | COMBINED CYCLE MW Range   | MARINE HP Range | OTHER HP Range |
| Fossil Fueled             | Nuclear |                     |                           |                 |                |
| 1-180                     | —       | 1-180               | 1,400-240,000             | —               | —              |

| TYPE   | POWER RANGE | MAX. STEAM INLET                      |
|--------|-------------|---------------------------------------|
| MST010 | 0.5-1.5 MW  | 45 bar (652 psi) / 450°C (842°F)      |
| MST020 | 1-5 MW      | 130 bar (1,885 psi) / 530°C (986°F)   |
| MST040 | 3-15 MW     | 140 bar (2,031 psi) / 540°C (1,004°F) |
| MST050 | 5-30 MW     | 140 bar (2,031 psi) / 540°C (1,004°F) |
| MST060 | 15-55 MW    | 140 bar (2,031 psi) / 540°C (1,004°F) |
| MST080 | 25-75 MW    | 140 bar (2,031 psi) / 540°C (1,004°F) |
| MST100 | 40-140 MW   | 140 bar (2,031 psi) / 540°C (1,004°F) |
| MST120 | 70-180 MW   | 140 bar (2,031 psi) / 540°C (1,004°F) |

Steam turbines as mechanical drive. Generator steam turbines. Multi-stage back-pressure steam turbines. Multi-stage condensing steam turbines. MAN Energy Solutions SE manufactured its first steam turbine in 1904. The rigid design of these machines ensures a long life and optimum service intervals. Various models and sizes are available: condensing turbines, back pressure turbines, extraction and admission turbines. A modular system guarantees the extensive flexibility of the design without sacrificing the persistent value of the standardized components. Steam turbines are delivered for mechanical driver applications, driving compressors, as well as for generator drive applications (including refineries, biomass, waste-to-energy, concentrated solar power, WHRS, pulp & paper, CHP and Combined Cycle) for industrial power generation.

**MITSUBISHI HEAVY INDUSTRIES, HIROSHIMA, JAPAN**

| MODEL | POWER RATING (MW) | SPEED RANGE (RPM) | RATED INLET PRESSURE (BAR A) | RATED INLET TEMPERATURE (°C) | INLET CONTROL TYPE     | CONTROLLED EXTRACTIONS (#) | EXHAUST       |
|-------|-------------------|-------------------|------------------------------|------------------------------|------------------------|----------------------------|---------------|
| 3     | Up to 5           | Up to 20,000      | 145                          | 575                          | Sliding/Fixed Pressure | —                          | Radial        |
| 4     | Up to 25          | Up to 15,500      | 145                          | 575                          | Sliding/Fixed Pressure | 0-1                        | Radial        |
| 5     | Up to 50          | Up to 14,000      | 145                          | 575                          | Sliding/Fixed Pressure | 0-1                        | Radial        |
| 7     | Up to 60          | Up to 8,500       | 145                          | 575                          | Sliding/Fixed Pressure | 0-2                        | Radial, Axial |
| 8     | Up to 80          | Up to 6,500       | 145                          | 575                          | Sliding/Fixed Pressure | 0-2                        | Radial, Axial |
| 9     | Up to 120         | Up to 4,500       | 145                          | 575                          | Sliding/Fixed Pressure | 0-2                        | Radial, Axial |