

Centrifugal Turbocompressors

Barrel type design

Engineering the Future – since 1758.

MAN Diesel & Turbo



Centrifugal Turbocompressors

Barrel type design

Barrel type centrifugal turbocompressors are used for the most diverse applications in numerous industrial segments, such as oil and gas production, HPI/CPI and petrochemical processes, high-pressure gas transport, gas storage and oxygen compression. They are particularly applicable to high-pressure, hydrocarbon gas applications with discharge pressures up to 1,000 bar (14,000 psia).

Design characteristics

The MAN Diesel & Turbo RB barrel type compressor range is designed for inlet flow rates from 200 to 230,000 m³/h and discharge pressures up to 1,000 bar in various frame sizes, cost-effective design and highest quality standards. Barrel compressors are applicable to practically all types of process gases.

- **Casing:** forged, welded or cast designs
- **Impeller:** milled or eroded, welded or brazed, with state-of-the-art efficiency. Impellers are assembled on the shaft with a light shrink-fit and located by radial dowel pins
- **Shaft:** single piece without sleeves or keyways for enhanced rotational stability
- **Shaft seals:** dry gas, labyrinth or mechanical seals
- **Bearings:** magnetic or tilting pad
- **Inner casing:** cartridge design for ease of withdrawal and maintenance. The cartridge unit includes seals and bearings at both shaft ends, inner casing with diffusers, rotor and autoclave cover

- **Arrangement:** inline or back-to-back designs
- **Materials:** according to the specific application. Special materials for sour/wet gas applications (normally according to NACE)
- **Rotordynamics:** highly specialized tools to ensure rotor stability
- **Aerodynamics:** advanced aerodynamics for maximum efficiencies
- **Packaging:** modular packaging options

Operating range

MAN Diesel & Turbo RB type compressors are available in nine frame sizes:

- Inlet flow rates from 200 m³/h to 230,000 m³/h (115 to 135,000 acfm)
- Pressures up to 1,000 bar (14,000 psia)
- Extensive operating range by means of variable speed drive systems, throttling or inlet guide vanes
- Suitable for wide range of process gases

Advantages

- Up to three separate compression sections available within a single casing for side streams or intercooling
- Service-friendly cartridge design, no process pipe removal for inspection or maintenance
- Complete external cartridge assembly
- Also with magnetic instead of conventional oil lubricated bearings
- Design tailored to user specifications for optimized service economics

Train arrangements

- Referenced arrangements for high-thrust, high-pressure and high-power trains with all types of drivers
- Constant speed motor via gear or direct variable speed drive system
- Steam or gas turbine for direct drive or via gear
- Flexible “solid” coupling available for improved rotor dynamics
- Standardized packaging or tailored to customer’s requirements
- Single-lift packages for offshore applications
- Up to three casings in a single train
- Multi-casing arrangements with intermediate gearbox for optimized application selection
- Unit control systems for easy integration in overall station control systems

Main fields of application

Barrel type compressors are particularly suitable for the following applications:

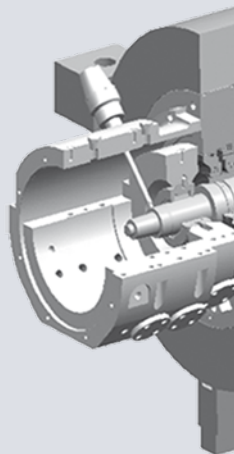
- H₂-recycle, N₂-injection, etc.
- gas lift/injection
- gas gathering
- gas export
- gas storage and withdrawal
- refinery gas compression

Full works test capabilities

Comprehensive in-house, state-of-the-art facilities for performance and mechanical testing in Oberhausen and Zurich.

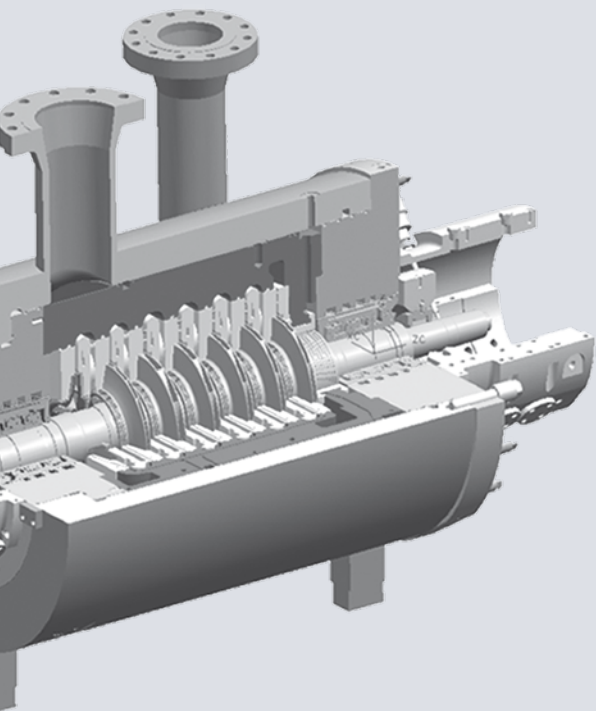
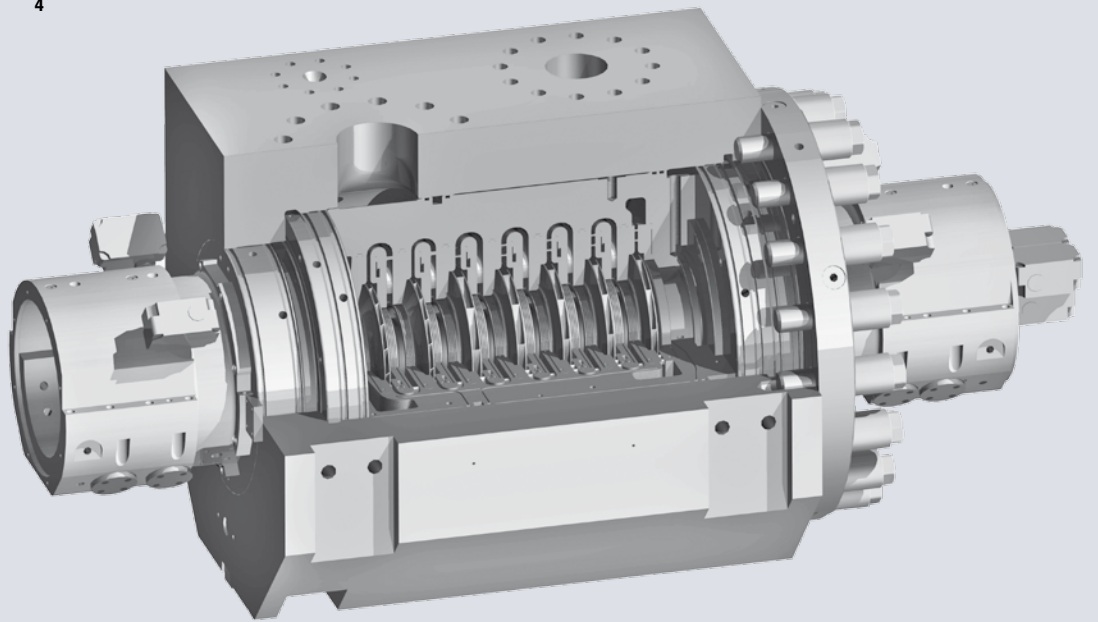


3

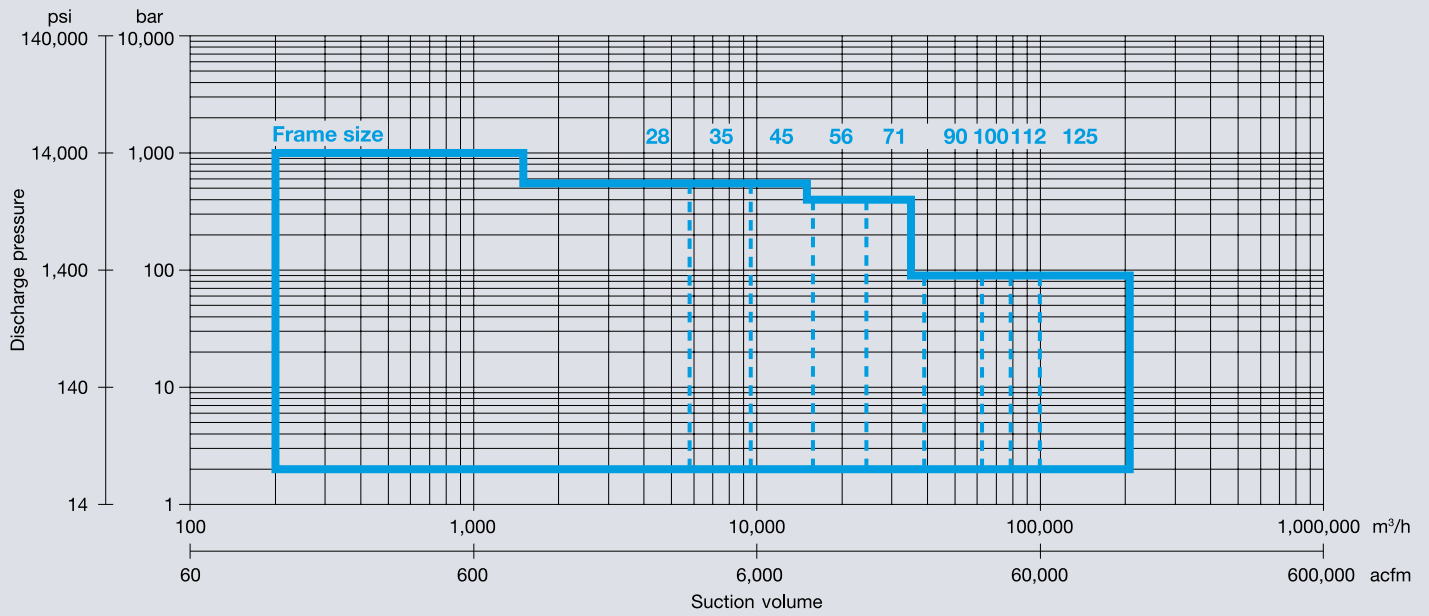


- 1 Minimum footprint packages for FPSO installations
- 2 Barrel compression systems for gas storage applications
- 3 Lower pressure, high-flow design with welded-on flanges
- 4 Medium- to high-pressure design with integrated flanges

4



Compressor range



MAN Diesel & Turbo compressor type RB on testbed



Double casing package for offshore installation

MAN Diesel & Turbo Schweiz AG

Hardstrasse 319

8005 Zürich, Switzerland

Phone +41. 44. 278-2211

Fax +41. 44. 278-2261

www.mandieselturbo.com

In the interests of technical progress,
subject to change without notice.

Turbo 27.53.10.40/EU