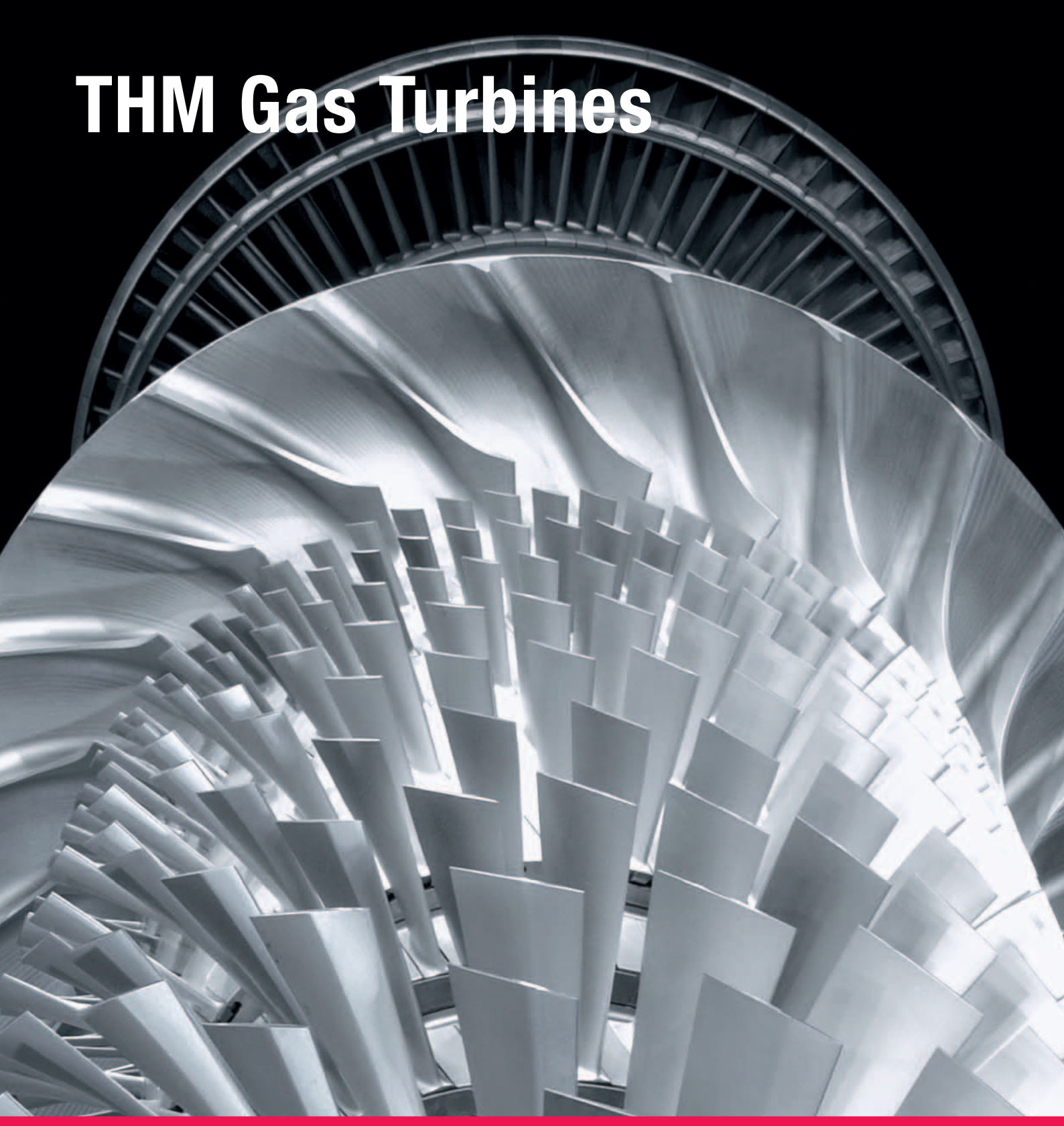
THM Gas Turbines



Engineering the Future – since 1758.

MAN Diesel & Turbo

THM Gas Turbines

Heavy duty gas turbines for industrial applications

Combined advantages

The THM 1304 heavy duty gas turbine family consists of two members with ISO power outputs of 10,500 kW and 12,500 kW. These machines are all self-contained, completely integrated industrial prime movers of a compact, axial-flow design. Due to their twin-shaft construction the gas generator and power turbine are mechanically independent of each other, which is crucial in respect of rapid installation and maintenance.

The design of the THM family combines the advantages of heavy duty machines with the convenience of low maintenance from today's aeorderivative turbines: The engines are of modular design and are easy to disassemble for service and handling. The aerodynamics, cooling technologies and materials are based upon recent aero engine know-how. Another prime characteristic of the THM family is their ability to operate at gas temperatures and stress levels which provides maximum assurance of long life of the major rotating and stationary components. The result is a combination of outstanding performance characteristics together with competitive operation and optimal service best suited for industrial use.

A major design objective is the ability of continuous retrofitting. Regular uprating and upgrading measures at MAN Diesel & Turbo make new technologies available for all customers. The modular design philosophy allows for the easy integration of these technologies into existing engines.

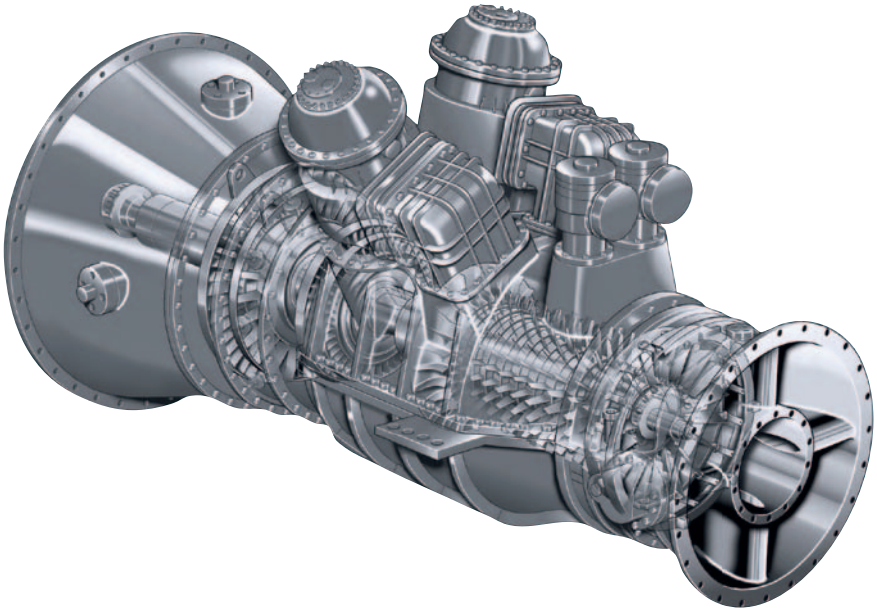
Meeting emission regulations

In addition to the standard diffusion type combustor, a lean premix combustor is available for the THM Gas Turbine family to meet stringent emission regulations.

The system limits and controls the maximum flame temperature by means of a patented air bypass system over a wide power range. The combustor thus reduces the formation of nitrogen oxides (NO_X) and carbon monoxide (CO) significantly. The external combustors allow easy access, maintenance and can be modified for use of other gaseous or liquid fuels such as: Diesel, Kerosene or Methanol.

Individual arrangement

With more than 20 million operating hours in different environmental conditions, the THM gas turbine family offers various layouts to meet your individual requirements, either as mechanical or generator drive.

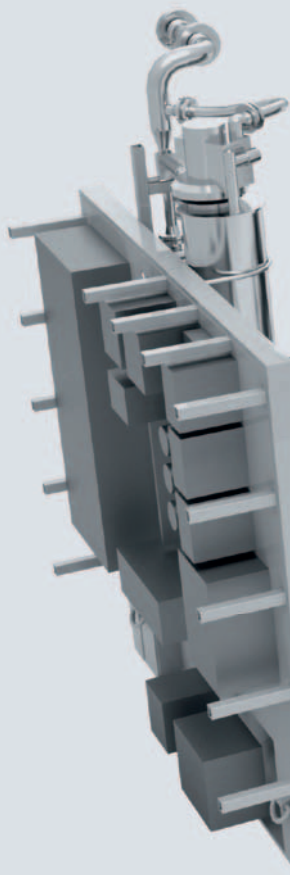


Features	Benefits
Twin shaft heavy duty modular design	Easy and rapid installation. High reliability and availability. Easy and rapid maintenance of modules. On-site maintenance. Long life resulting from a low turbine inlet temperature.
DLE Combustion System	Low NO_x and CO exhaust emissions levels over a wide load range.
Fuel flexibility	Gaseous fuels with wide range of calorific values. Various types of liquid fuel including Diesel, Kerosene, Methanol and light distillates.

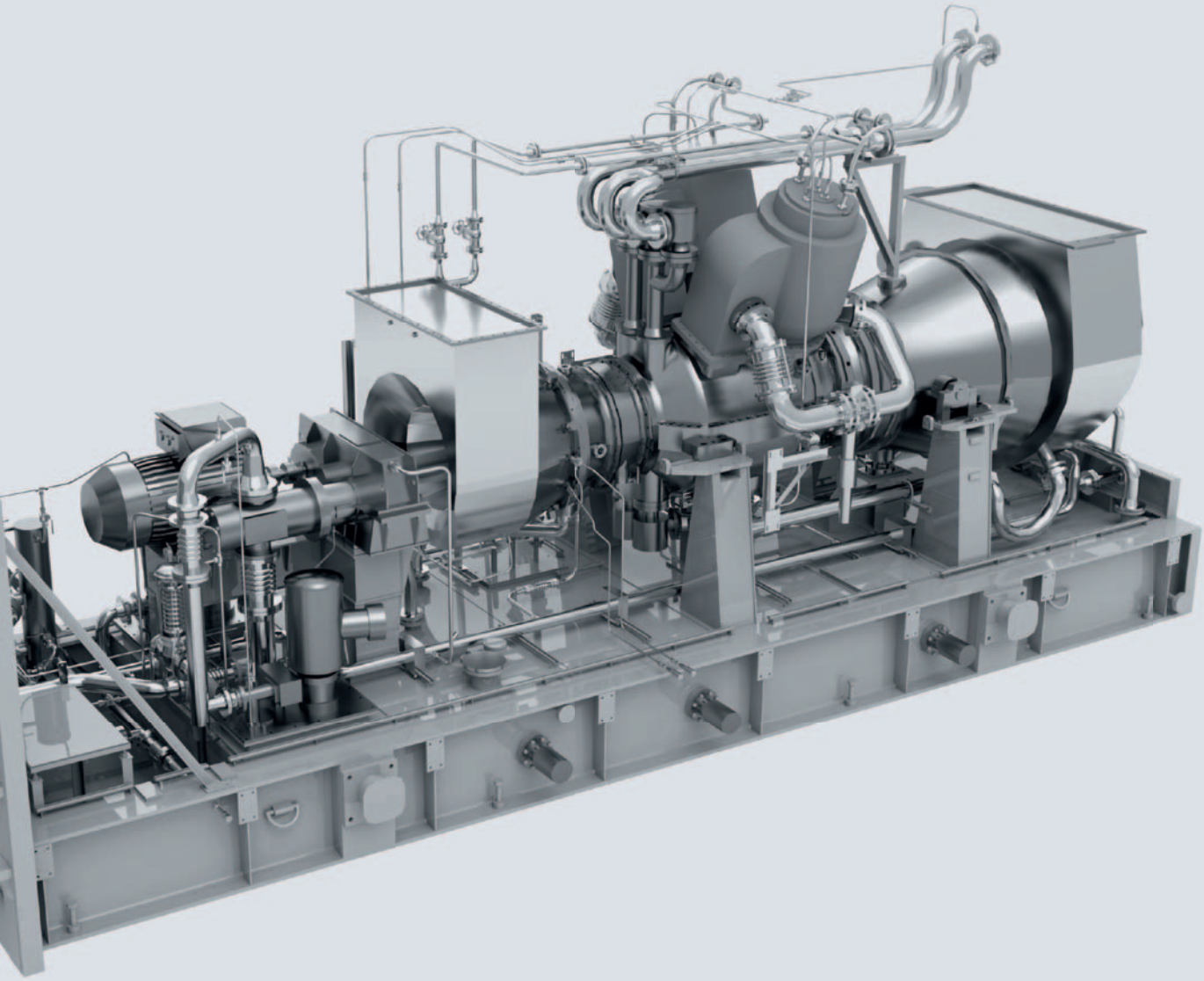
Applications

- Compressor drives for pipeline and process applications
- Pump drives for oil pipelines and water injection
- Power Generation
- Combined heat and power generation (cogeneration)

Modular THM concept for gener



ator drive and mechanical drive applications



Technical Data

		1304-10N	1304-12N
Mechanical drive (at coupling)			
Power output	kW	10,500	12,500
Efficiency	%	30.4	31.8
Heat rate	kJ/kWh	11,840	11,320
Power turbine speed	rpm	9,000	9,000
Generator drive (at generator terminals)			
Power output	kWe	10,080	12,000
Efficiency	%	29.2	30.5
Heat rate	kJ/kWh	12,380	11,790
Exhaust gas data			
Exhaust gas temperature	°C	490	515
Exhaust gas flow	kg/s	46.5	49.1

Above specifications valid under the following conditions:
15°C (59°F), sea level, no inlet/outlet losses, RH = 60%, natural gas, $\eta_{gen.}$ = 97,5%, η_{Gear} = 98,5%

MAN Diesel & Turbo
Steinbrinkstr. 1
46145 Oberhausen, Germany
Phone +49 208 692-01
Fax +49 208 669-021

www.mandieselturbo.com