

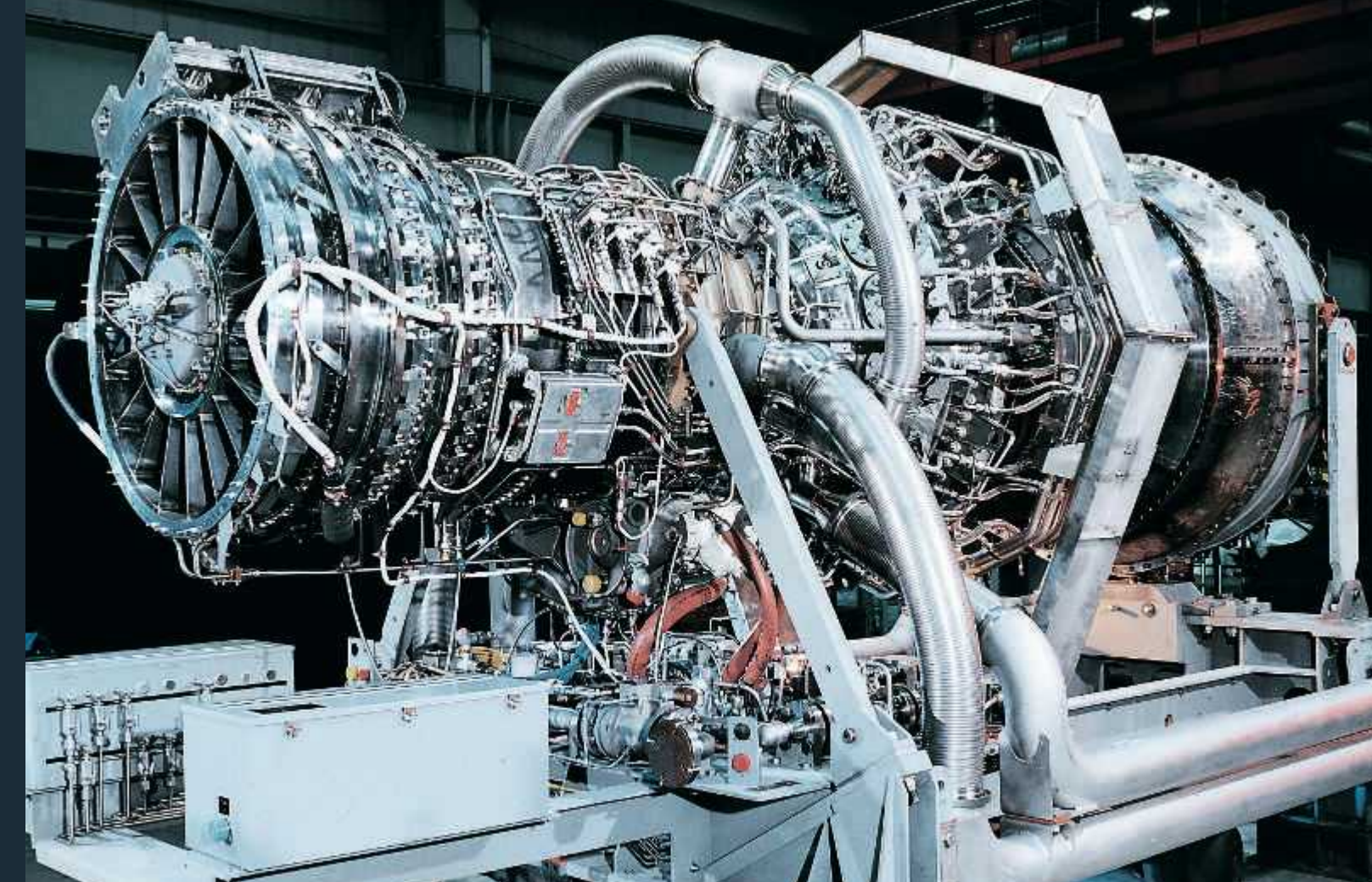
Technical data

Mechanical Drive		FT8 PowerPac	FT8 TwinPac	FT8 MechPac
Shaft power	kW	-	-	25,870
	HP	-	-	34,690
Thermal efficiency	%	-	-	38.6
Heat rate	kJ/kWh	-	-	9,330
	Btu/HPh	-	-	6,594
Generator Drive				
Power at generator terminals	kWe	25,570	51,140	-
Electrical efficiency	%	38.1	38.1	-
Heat rate	kJ/kWh	9,440	9,440	-
	Btu/kWh	8,950	8,950	-
Exhaust Gas Data				
Exhaust gas temperature	°C	458	458	457
	°F	856	856	855
Exhaust gas mass flow	kg/s	85.1	170.2	85.9
	lb/s	188	376	189
Gas Generator (LP/HP)				
Speed	rpm	7,100/11,520	7,100/11,520	7,100/11,520
Compressor stages		8/7	8/7	8/7
Turbine stages		2/1	2/1	2/1
Weight approx. (DLN)	kg	3,000 (3,950)	3,000 (3,950)	3,000 (3,950)
Power Turbine				
Speed	rpm	3,000*	3,000*	2,500-5,500
Stages		4	4	3
Weight approx.	kg	6,000	6,000	5,100

Above specifications valid under the following conditions:

15°C (59°F), sea level, no inlet/outlet losses, RH = 60%, natural gas, $\eta_{gen.} = 98\%$

* 3,600 rpm available on request



FT8 Gas Turbine

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FT8 Gas Turbine

Aeroderivative gas turbine for industrial applications

The FT8 gas turbine is based on the proven technology of the JT8D aircraft engine from Pratt & Whitney, which was adapted for industrial applications. The FT8 stands out through its compact and modular design. Time-tested in a variety of industrial applications, the FT8 has proven itself to be an exceptionally reliable, high-availability product.

Configurations

With the PowerPac and TwinPac, two versions for power generation purposes are available. The MechPac was developed for mechanical drive applications, such as driving compressors. MAN Turbo specifically designed the 5,500 rpm power turbine for this package.

PowerPac

The FT8 PowerPac includes the skid-mounted gas turbine directly coupled to the synchronous generator – mounted on a separate baseframe – as well as all ancillary equipment required to form a complete package for outdoor/indoor installation.

TwinPac

The FT8 TwinPac is comprised of two FT8 gas turbines. Each gas turbine is directly connected to a centrally located double-end synchronous generator. Together with the ancillary equipment, a completely self-contained package is formed, either for outdoor or indoor installation.

MechPac

The MechPac includes the skid-mounted gas turbine directly coupled to the equipment it drives (compressor) – mounted on a separate baseframe – including all ancillary equipment required to form a complete package for outdoor/indoor installation.

Combustion systems

Depending on the application, the FT8 gas turbine can be equipped with two different combustion systems.

Standard combustion system

The basic version permits the use of gaseous and liquid fuels of various specifications and mixes, thereby offering high fuel flexibility.

DryLowNO_x combustion system

A DLN (DryLowNO_x) combustion system for gaseous fuel operation is available as an option. The extremely robust DLN system allows quick load changes and is insensitive to changing gas compositions and ambient conditions.

Power turbine

Power turbines for driving generators

- Speed of 3,000 rpm, no gear unit, coupled directly to a generator for 50 Hz
- Speed of 3,600 rpm, no gear unit, coupled directly to a generator for 60 Hz
- Both power turbines are available for clockwise and counterclockwise rotation

Power turbine for mechanical drive applications

- Speed of 5,500 rpm, variable from 2,500 – 5,750 rpm, counterclockwise (in flow direction)

Package concept

The package concept for the FT8 offers high flexibility, as the FT8 arrives not completely preassembled at the site. It is therefore ideal for sites with space and access restrictions.

The FT8 gas turbine comes to the site without an enclosure, premounted and prewired on a base frame including the fuel plate and junction boxes. After the gas turbine has been placed onto the foundation, the enclosure consisting of prefabricated compact modules is quickly and easily assembled.

Applications

The FT8 is used in:

Mechanical drive applications

- Driving compressors

Generator drive applications

- Power stations
- Combined heat and power stations (CHP)

Features

Flexible package concept

Robust DLN combustion system

Fast start-up and loading capability

Miscellaneous power turbine designs available

Benefits

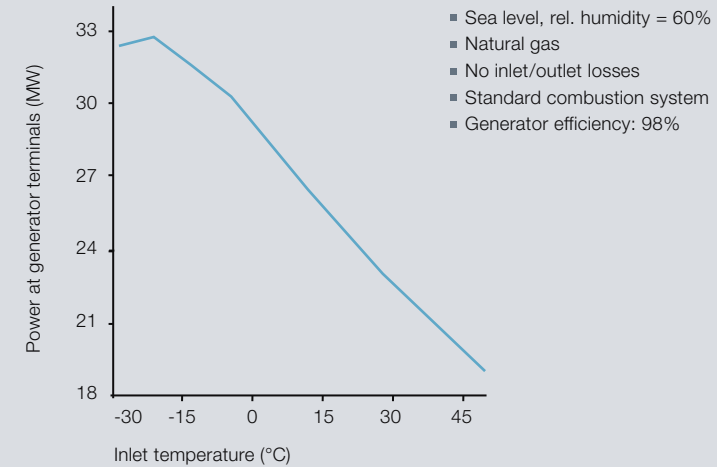
Ideally suited for indoor installations with restricted access

No need for adjusting the control system in case of changing operating/ambient conditions – especially for mechanical drive applications

Ideally suited for daily start and stop operation and/or peaking applications such as peak shaving and emergency power plants

For both power generation and mechanical drive applications, the driven equipment can be directly connected to the gas turbine – no load gear is required

Power versus temperature (PowerPac)



Modular FT8 concept for generator drive and mechanical drive applications

