

MT30 marine gas turbine

36MW up to 26°C with 100/150mm installation losses

**Specific fuel consumption
0.207 kg/kWh**

Market leading power-to-weight ratio

>40% thermal efficiency

Simplified maintenance - modular design

Maintenance 'On Condition'

Maximum commonality with aero Trent 800 for high reliability with low ownership costs

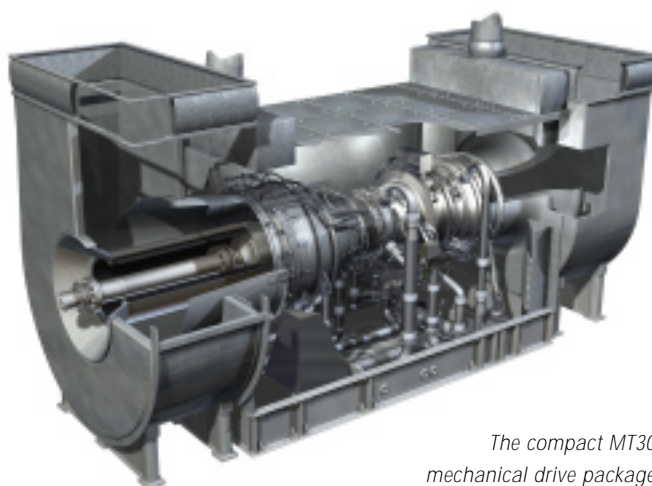
No post shut-down restart restrictions

The Rolls-Royce MT30 harnesses the latest aero Trent engine materials and technology to reliably deliver a broad band of powers for commercial marine and naval applications in an exceptionally lightweight package. Designed with 50% to 60% fewer parts than other aero-derivative gas turbines in its class, the MT30 maintains its competitive efficiency down to 25MW. Derived from the reliable Trent 800, the most successful engine for the Boeing 777 aircraft, with more than 500 engines sold or on order, the MT30 is also designed to burn commercially available distillate fuels, giving a high degree of operational flexibility and associated through-life cost benefits.

Advanced design

The MT30 benefits from advanced technology features common to the Trent aero engine family such as the 3-D design of blades and vanes in the compression system for increased efficiency. It is a twin-spool, high-pressure ratio gas generator with an eight stage variable geometry Intermediate Pressure Compressor (IPC) and a six stage High Pressure Compressor (HPC). The four-stage free power turbine is derived from the Trent 800, which is supported on a new robust bearing structure, for optimum reliability. Proven components, incorporating the latest blade cooling technologies are used throughout. Key parts are protectively coated for service in the marine environment to reduce maintenance and deliver

Perfected in the air...to excel at sea



The compact MT30 mechanical drive package

long service life. The annular combustor is similar to the aero parent and ensures the MT30 meets all current and anticipated legislation on emissions and smoke.

A packaged module

A self contained, fully packaged module, the MT30 can be supplied for direct drive or power generation - complete with alternator, and its own acoustic enclosure. The design incorporates all engine auxiliaries onto the package, leaving the shipbuilder to provide the starter energy (hydraulic or electric), a location for a control console, alternator lube oil module (if specified) plus the usual fuel, water and electrical interconnections. The package is modular, permitting a single lift or an ultra low weight multiple lift option, as well as a variety of intake and exhaust configurations to suit ship design requirements. The enclosure is also the fire boundary and is fitted with an automated fire suppression system.

Lightweight

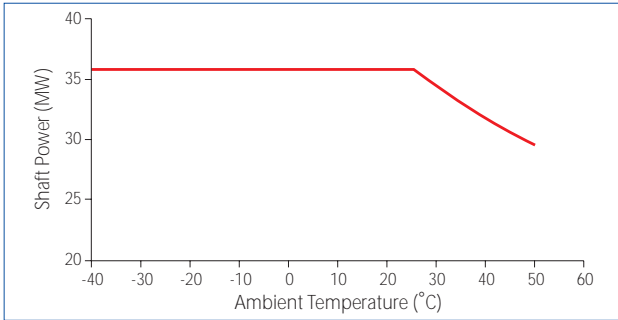
The gas turbine change unit (GTCU) includes the power turbine and weighs 6,200kg (dry). The total package weight is 22,000kg - depending on options. The MT30 offers the best power-to-weight ratio in its class. When packaged as a skid mounted generator set (includes 2 pole AC Generator) with common baseplate suitable for multi-point mounting, the complete unit weighs 77,000kg.

Reduced maintenance

Like all Rolls-Royce gas turbines the MT30 delivers high availability and is designed for unmanned engine rooms. Condition Based Maintenance (CBM) is a feature of the engine design and routine maintenance is limited to checking fluid levels and visual examinations. Internal condition sensors enable the unit to be serviced on an 'on condition' basis. Modular construction speeds major maintenance when it becomes necessary and means customers benefit from quicker turnaround times for repair with reduced maintenance costs and spares holding.

Fact Sheet

MT30 Mechanical drive rating chart (for up to 100mm WG inlet / 150mm WG exhaust loss)



Performance (at ISO conditions - no loss)

Power	(MW)	36 @ 26°C
	(MW)	34.1 @ 32°C (mech drive)
	(MW)	30.7 @ 45°C (mech drive)
Specific fuel consumption	(kg/kWhr)	0.207
Exhaust mass flow	(kg/s)	113
Exhaust temperature	(°C)	466

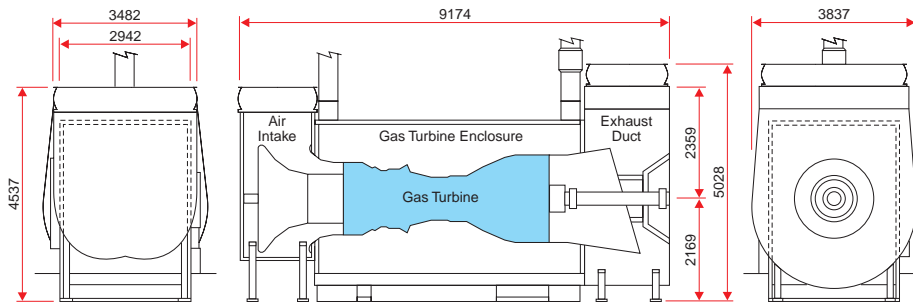
Engine specifications

Compressor stages	IPC	8
	HPC	6
Turbine stages	HPT	1
	IPT	1
Power turbine stages	PT	4
PT nominal speed	(rpm)	3,600 (alternator drive)
	(rpm)	3,300 (mechanical drive)

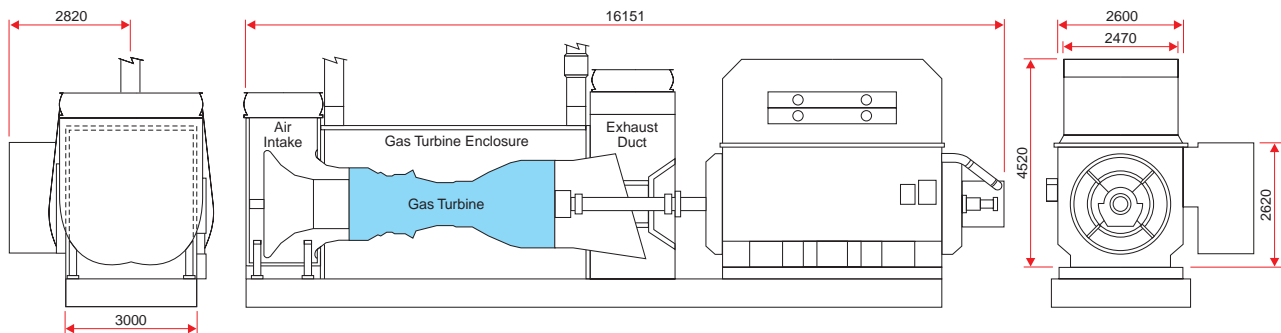
Weights

GTCU (inc power turbine)	(kg)	6,200 (dry weight)
Packaged module (direct drive)	(kg)	22,000*
Packaged module (inc baseplate and alternator)	(kg)	77,000*
		* dependent on options

MT30 Mechanical drive package (dimensions in mm)



MT30 Alternator package (dimensions in mm)



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