

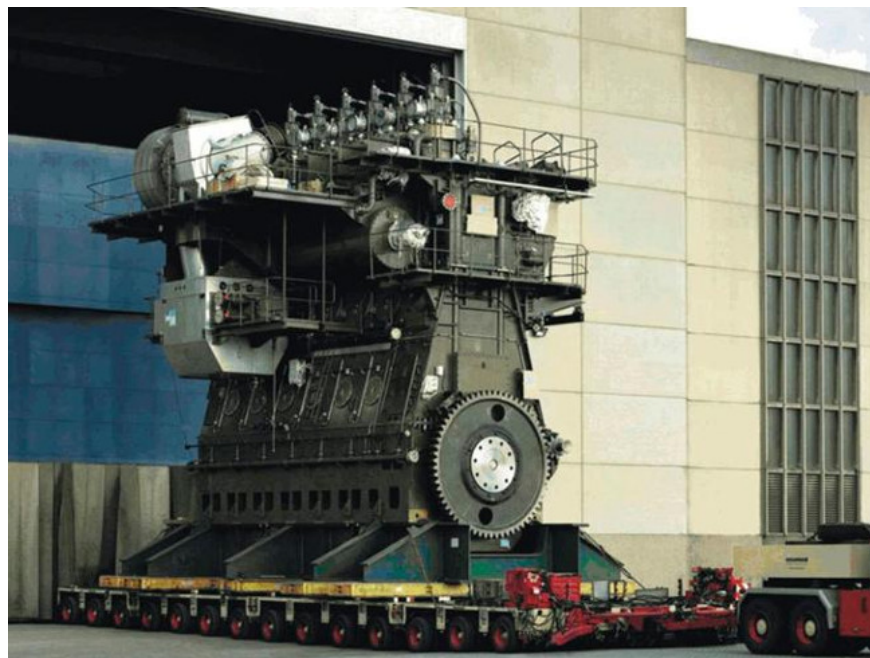
Amazing engine in the world, 9 times stronger than the Titanic engine

This engine has 14 cylinders, as high as 13.5m, with 4-storey building, 26.59m long and 2,300 tons heavier, has a capacity of 80,080 kilowatts (107,390 horsepower).

Wärtsilä a Finnish manufacturer designed a slow-loading two-stroke diesel engine to operate heavy liquid fuel-powered container ships called **Wärtsilä RT-flex96C**. The largest version has 14 cylinders, as high as 13.5m, with a 4-storey building, 26.59m long and 2,300 tons heavier, has a capacity of 80,080 kilowatts (107,390 horsepower). And this is the world's largest piston engine.

Structure of RT-flex96C

In September 2006, this version was commissioned on the **Emma Mærsk** ship with the most advanced technology at the time. By using bracing technology instead of using traditional camshafts, chains, fuel pumps and hydraulic drives make the engine operate at maximum number of rounds per minute, helping to save fuel and reduce air emissions. toxic.



The world's largest piston engine.

Since the engine has a cross-ball bearing, the piston arm is always upright, creating an enclosed chamber, so each different part uses its own lubricant.

The cylinder is lubricated by a lubricant delivery system that can cyclically protect the cylinder from wear and neutralize the acids produced by the combustion of sulfur-rich fuel. The cross-shaped design reduces the lateral pressure on the piston, keeping the level of wear on the cylinder lining within 0.03mm / 1000 hours of operation.

Engine exhaust air through waste valves is operated by electronic system, hydraulic bracing - eliminates camshaft.



14 cylinder version

The plunger piston is used to compress the gas for the adjacent cylinders, in addition to the piston cushion function before reaching the bottom die to reduce the pressure on the bearing. The engine discharges linearly through exhaust valves controlled by electronic systems and hydraulic rail systems - instead of using camshafts.

Thiết kế	Động cơ diesel nạp tua bin 2 thì, 6-14 xylanh
Xylanh	960 mm
Hành trình	2.500 mm
Dung tích	1.820 lit mỗi xylanh
Tốc độ động cơ	22–102 RPM
Áp suất hiệu dụng trung bình	1.96 MPa @ full load, 1.37 MPa @ hiệu suất tối đa (85% load)
Tốc độ pít-tôn trung bình	8,5m/s
Lượng nhiên liệu tiêu thụ	171 g/(kW·h)
Công suất	Tối đa 5.720 kW mỗi xylanh, tổng công suất 34.320–80.080 kW (46.680–108.920 mã lực)

Mômen xoắn	Tối đa 7.603.850 newton met (5,608,310 lbf-ft) @ 102 rpm
Công suất phân bổ	29,6 to 34,8 kW mỗi tấn, (phiên bản 14 xy lanh nặng 2.300 tấn)
Nhiên liệu tiêu thụ mỗi xy lanh trong 1 chu kì	160 g @ full load(Toàn bộ mô-tơ sử dụng tới 250 tấn nhiên liệu mỗi ngày.)
Trọng lượng trục quay	300 tấn
Trọng lượng pít-tôn	5,5 tấn
Chiều cao pít-tôn	6 mét



In 2006, more than 300 RT-flex96C engines and old RTA96C engines were put into production

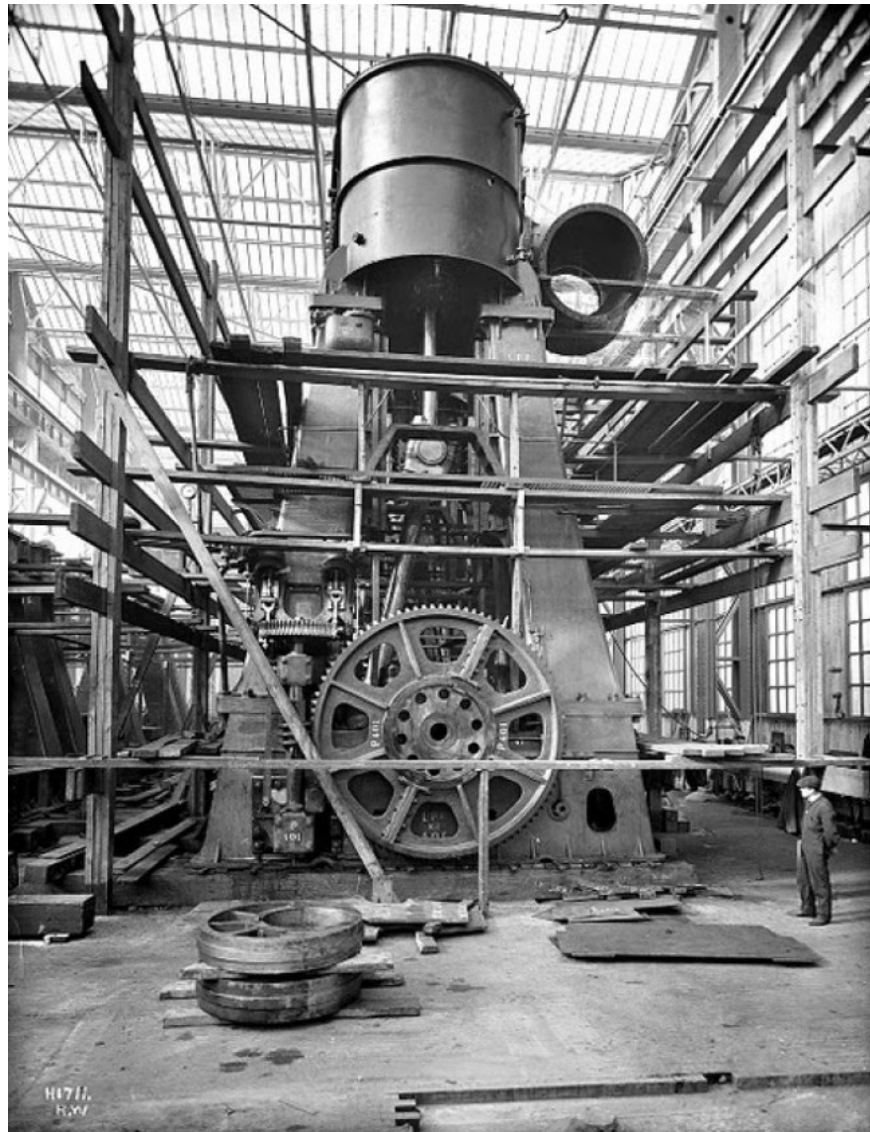
Manufacturing process of RT-flex96C engine

Titanic engine

The Titanic was equipped with the most advanced engines of the time by the manufacturer in the hope of achieving higher capacity without additional steam.

Parson's low-pressure turbine turbine with steam engines run at 75 revolutions per minute and generate 30,000 horsepower.

The turbine engine runs at a speed of 165 revolutions per minute and generates 16,000 horsepower to operate the Titanic's central propeller. AC motors operate propellers on both sides of the ship. These propellers have a radius of 7.1 meters and a central presser with a radius of 4.8 meters. The maximum speed of the ship is 23-24 knots.



Each port and right side of the ship has a **3-wing 3-** inch propeller driven by an AC motor. A central propeller radius of 4.8 meters operated by a turbine engine is placed on a midline directly below the rudder. The AC motors are designed to operate with a capacity of 15,000 horsepower at a speed of 75 revolutions per minute. The turbine is designed to produce 16,000 cylindrical horsepower (SHP) at a speed of 165 revolutions per minute. Under these conditions, it is estimated that the ship is 21 nautical miles per hour.

In theory, the Titanic's propulsion has a capacity of 50,000 horsepower. When the rotation speed is about 78 rounds per minute, the train can run at speeds of more than 22.5 knots. When running an AC engine at 83 revolutions per minute, the total power can be up to 59,000 horsepower with 18,000 horsepower for the turbine. In this mode the ship can run up to 24 knots.

You finished reading the article "**Amazing engine in the world, 9 times stronger than the Titanic engine**" edited by the [TipsMake](#) team. We hope this article has provided you with many useful tech tips and tricks. You can search for similar articles on tips and guides. Thank you for reading and for following us regularly.