



BOSUNG
BOSUNG ENGINEERING



BOSUNG

BOSUNG ENGINEERING CO., LTD.

DIESEL ENGINE BUSINESS DIVISION

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Authorized and Genuine Part Sales Agency of DOOSAN Engine

BRIEF OF THE HISTORY

- 1982. 1 Establishment of company
- 1991. 3 Part sales & engine A/S agency of HANJUNG ENGINE(K.H.I.C)
- 1999. 11 Certified ISO 9002 Quality system by DNV
- 2000. 3 Part Sales agency of HSD (Ex. HANJUNG & SAMSUNG ENGINE) Engine Co., Ltd
- 2002. 11 Certified ISO 9001&14001 by DNV
- 2003. 3 Establishment of Jakarta Office
- 2005. 2 Establishment of Bosung Hamburg branch office.
- 2005. 4 Part sales agency of DOOSAN Engine Co., Ltd.
- 2007. 5 Establishment of Bosung Engineering Hellas Ltd.



Diesel engine manufacturer
Licensed by MAN, Wärtsilä, MAN Diesel SAS

ORGANIZATION



QUALITY POLICY



As a leading company in the marine field, we have pursued the satisfaction of customers by providing our clients with unique service, called "Best Speed, Best Quality, Best Price" through its well-organized worldwide network system & stock control system.



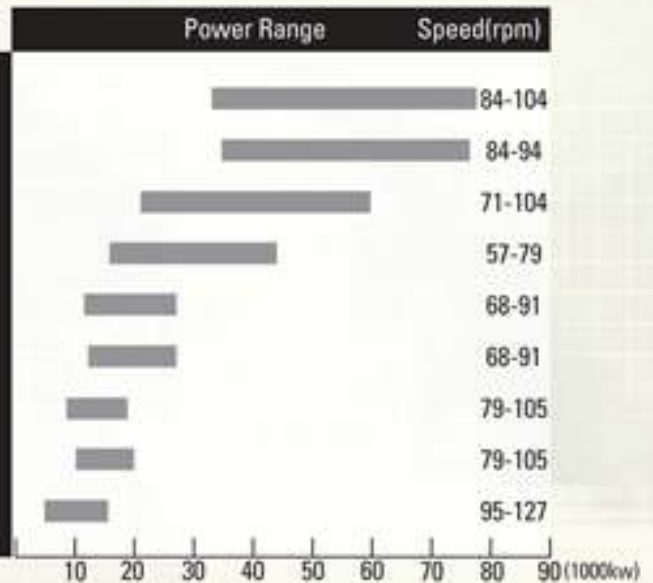
We acquired ISO9001 & ISO14001 Certificate from DNV to strengthen our organization and to give more advanced service to our customers.

PRODUCTION RANGE

◆ DOOSAN-MAN B&W (2-Stroke)



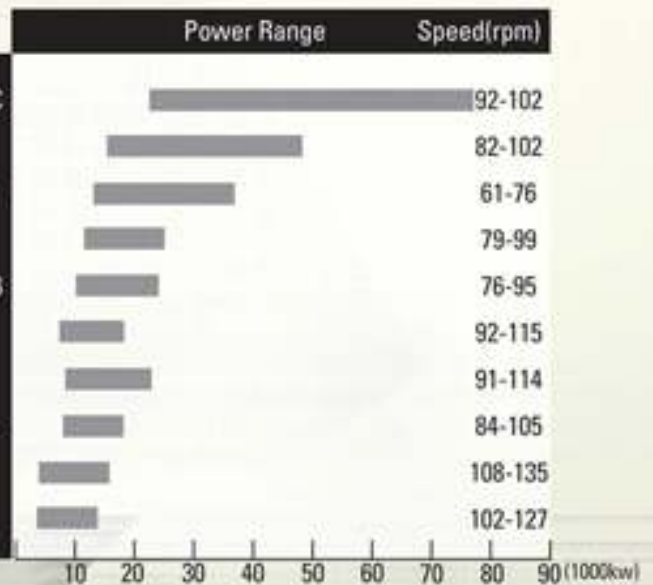
98MC / MC-C
 98ME-C
 90MC / MC-C
 80MC / MC-C
 70MC / MC-C
 70ME-C
 60MC / MC-C
 60ME-C
 50MC / MC-C



◆ DOOSAN-Wärtsilä (2-Stroke)



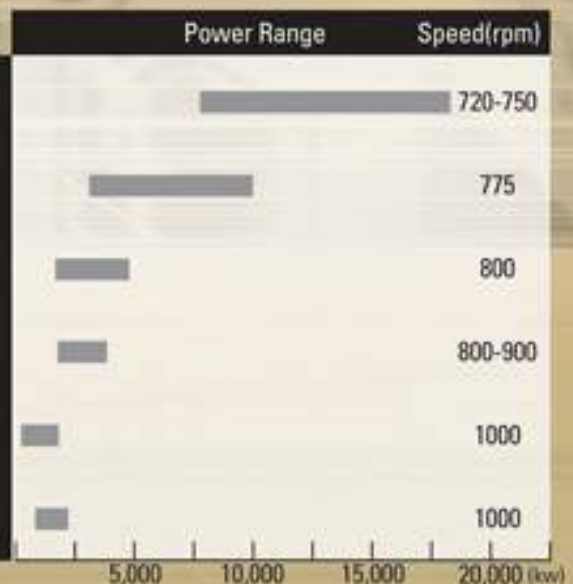
RT-flex96C/RTA96C
 RTA84C
 RT-flex84T-D/RTA84T-D
 RTA72U-B
 RT-flex68-B/TRA68-B
 RTA62U-B
 RT-flex60C
 RT-flex58T-B/RTA58T-B
 RTA52U
 RTA48T-B



◆ DOOSAN-MAN Diesel (4-Stroke)



32 / 40
 28 / 32
 27 / 38
 23 / 30
 21 / 31
 16 / 24



MAJOR SPARE PARTS



Fuel Injection valve



Fuel pump complete



Bearing



Piston Crown



Cylinder Cover



Piston Ring & Stuffing box



Cylinder Liner



Valve Spindle & Seat



Measutal



Plunger & Barrel complete
Nozzle tip & Delivery valve



Exh. Valve spindle & seat



Cylinder Head & Piston

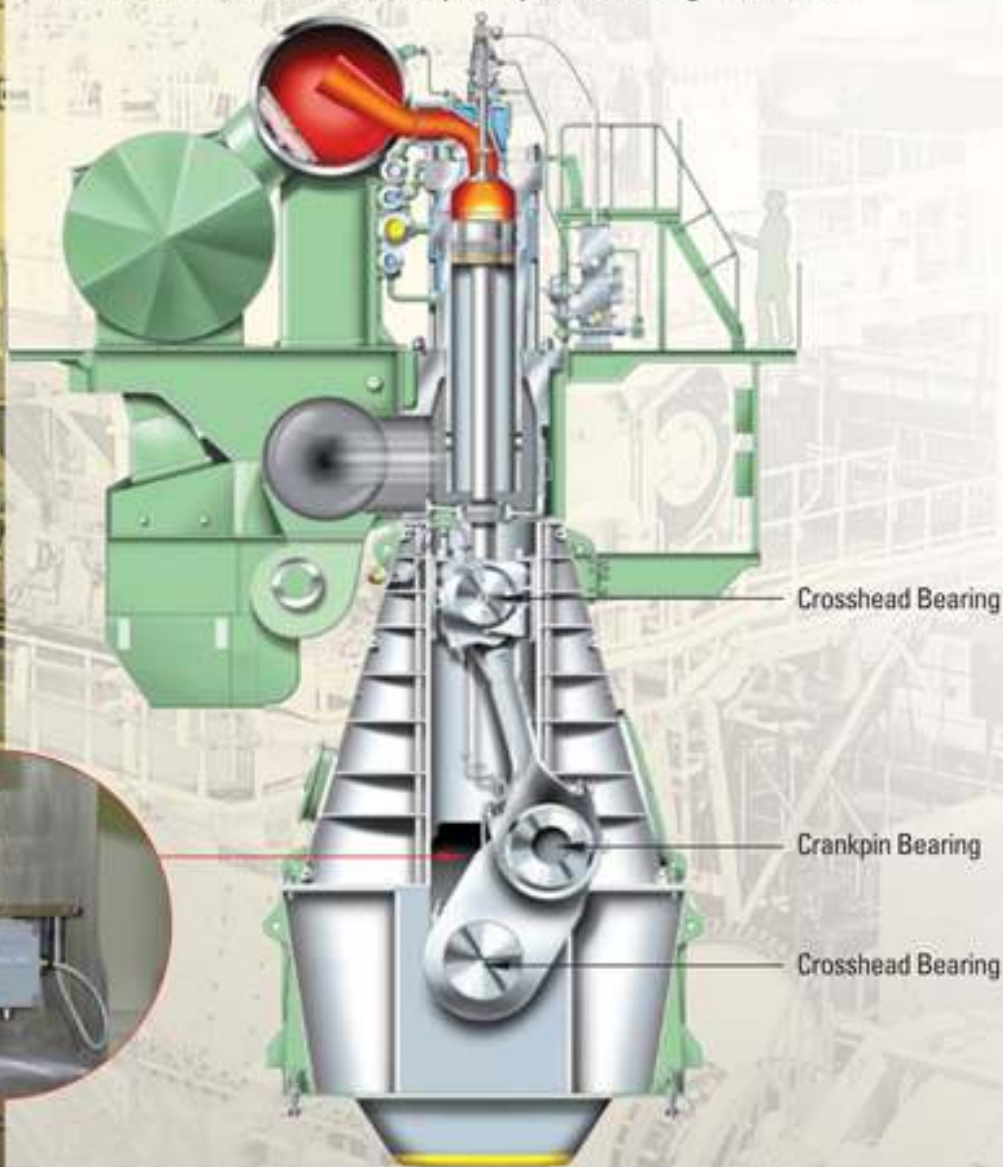


Cylinder Liner

B-WACS

BEARING WARNING AND CONTROL SYSTEM

B-WACS is the most accurate BWM(Bearing Wear Monitoring) System in the world, which is developed by Doosan Engine Co., Ltd.



B-WACS detects the failure of the three major bearings of a large two stroke diesel engine before engine suffers from relevant damages.

The principle of B-WACS is to measure the change of BDC(Bottom Dead Center) level to detect any abnormal bearing condition during operation.

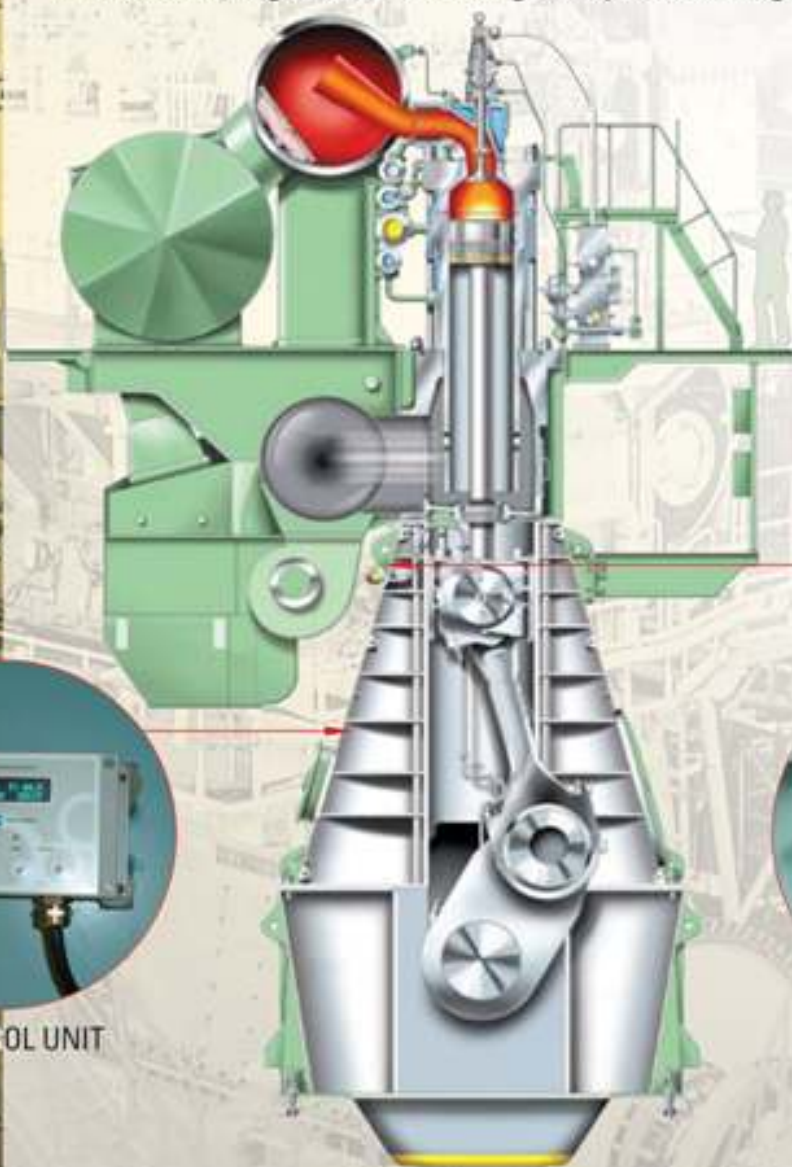
Key Features

- ◆ High accurate system of 10_{μm} degrees
- ◆ Simple and compact components
- ◆ User-friendly monitoring program

O-WACS

OIL WARNING AND CONTROL SYSTEM

O-WACS is a WIO(Water in Oil) system for monitoring water contents in the lubricating oil, which is designed by Doosan Engine Co., Ltd.



CONTROL UNIT



SENSOR UNIT

As O-WACS is specially developed for marine diesel engine, it is more accurate than any other WIO System. Doosan O-WACS is easy to install and maintain. O-WACS is fully integratable with B-WACS.

Key Features

- ◆ Measurement of Water Activity(a_w) and temperature at operation pressure within 10 bar
- ◆ Three relay for alarm output
- ◆ Built-in modbus protocol RS485-based
- ◆ Save log data [Max 30 years, over 260,000 times]

CHILLER UNIT FOR MGO

MARINE GAS OIL

Due to the new and tighter fuel sulphur content regulations in SECAs (Sulphur Emission Control Area), two-stroke diesel engines should be operated on distillate fuels, i.e. marine gas oil (MGO) in restricted areas.

AREA	EFFECTIVE DATE	FUEL OIL
EU PORTS	JANUARY 1, 2010	Marine Gas Oil (DMA)
CALIFORNIA (CARB)	JANUARY 1, 2012	at or below 0.1% Sulphur



In order to ensure a satisfactory hydrodynamic oil film between fuel pump plunger and barrel, thereby avoiding fuel pump seizures/sticking, it is recommended to keep a fuel oil viscosity at min. 2 cSt measured at the engine inlet.

The Chiller Unit is the solution to cool the fuel oil down to the specific oil temperature.

Key Features

- ◆ Compact size due to cooling the oil by refrigerant
- ◆ Dual tube to protect the mixing problem and easily can check the leakage from both side
- ◆ Stable and continuous compressor operation with minimum load
- ◆ The temperature increase or decrease rate is controlled less than 2°C/minute to protect the fuel equipment from thermal shock during change-over.

ALPHA LUBRICATOR SYSTEM

The Alpha Lubricator is electronic cylinder lubricating system for MAN B&W two-stroke engines.



Alpha Lubricator System has an algorithm controlling cylinder oil dosage proportional to engine power and is able to adjust the feed rate according to sulphur content in fuel oil.

The cylinder oil is injected to the piston ring with accurate timing and high pressure.

Many owners have adopted alpha system to achieve oil saving and advanced engine performance.

Key Features

- ◆ Considerable cost savings in Cylinder oil consumption
- ◆ Reduction of particle emissions
- ◆ Uniform and optimal cylinder liner wear rate
- ◆ Extended life time of piston ring and cylinder liner



Doosan Engine

