7) Time 15:30



YANMAR CO., LTD.

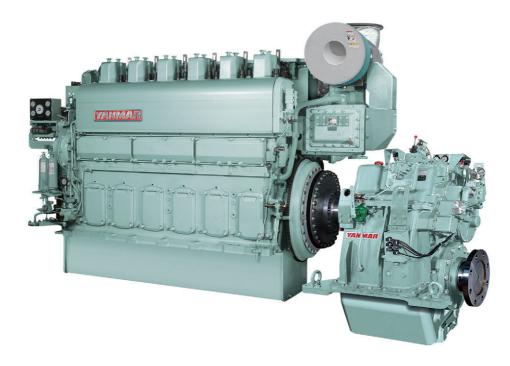


7) Time 15:45

Kamome Propeller Co., Ltd.

About YANMAR

EY series Diesel engines / SCR System / Marine Gas engines / 2 Stage Turbocharging System / After Service



Company introduction

With the brand statement "A SUSTAINABLE FUTURE", YANMAR is pursuing the effective utilization of energy resources on land, at sea, and in our cities. Harnessing innovative technical ability cultivated over our long history and years of experience, YANMAR marine engines deliver long-term reliability and durability to maximize the life-span of vessels. In this pursuit of improved "Life cycle value", our sales, development, and production divisions work in unison, allowing us to realize low operating costs for our customers.

By striving to develop more sophisticated environmentally conscious technology, as well as reducing emissions of air pollutants and the use of environmentally hazardous substances, our ultimate goal is to deliver technology that secures clean air and seas for future generations, and which contributes towards harmonious coexistence between a prosperous humankind and the Earth's environment.

Overseas Sales Division / Marine Products Sales and Marketing Division





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Manufacturing and sales of propeller, thruster, high lift flap rudder

CPP - KAMOME Controllable Pitch Propellers were created in 1961, featuring proprietary technology. For nearly half a century we have sustained a commitment to research and technical development so that we can satisfy customer needs. Propellers are installed in ships of a broad range of sizes upto 15,000kW ships and in all the types of ships and maritime development platforms. With cumulative delivery of more than 5,300 units, we have the world's leading manufacturing records and market share.

FPP - KAMOME Fixed Pitch Propellers were developed when the company was established and are now at the heart of KAMOME's line of products. We always advance our design and



production technologies according to current needs and based on continued analyses and accumulated data and upgrade technologies to satisfy the needs to modernize ships in search of greater economy. Side Thruster - With a proven track record of performance since first production in 1960, both CPP type and FPP type of thruster droved by an engine, electric motor or hydraulic motor have been continually upgraded to have high performance and high reliability to improve operability and save energy. K-7 Higher Lift Flap Rudder – K-7 flap rudder with simple streture produce high lift and strong turning force, excellent stability and easy maintainability

Company introduction

Kamome Propeller is committed to technical development and improvement in production technologies for offering environmentally friendly propulsion

Kamome Propeller's guiding corporate principle is to respond to customers' requests and trust. From our very earliest days, we have remained consistently committed to technological development and improvement in production technologies, in a constant effort to upgrade the performance, functionality, quality and reliability of our products. To respond to the full range of customer needs, we have also constantly sought to bolster our product lineup. In the future, we will continue to achieve technical innovation to earn the increased confidence of customers with diverse needs in the ship propulsion and control systems market.

Ryosuke IMAI / ASSISTANT TO GENERAL MANAGER BUSINESS OPERATION DEPT. / INTERNATIONAL OPERATION DEPT.





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7) Time 16:00





7) Time 16:15

NIIGATA Dual Fuel Engine and Z-Peller

NIIGATA has recently been expanding orders of its dual fuel engine 28AHX-DF series for direct drive application especially in tugboats. The number of orders becomes totally 15 units in 8 vessels through Asian and European customers. In these vessels, the 28AHX-DF dual fuel engines drive not only azimuth thruster NIIGATA Z-Peller with fixed or controllable pitch propellers but also other thrusters like Voith Schneider Propeller. NIIGATA has supported LNG-fuelled vessels' operation and construction based on its broad know-how and experiences in various vessel applications. Since 2015, Japan's first LNG-fuelled tug Sakigake has been in commercial operation powered by NIIGATA propulsion package of dual fuel engines and Z-Peller azimuth thrusters. This vessel is also World's first LNG-fuelled tug coupled with fixed pitch azimuth thrusters. This configuration is essential for tugboats, that is able to follow a frequent and sudden load fluctuation in gas mode, and also changeover between gas and diesel modes smoothly, even at any load condition. Recently built LNG-fuelled tugboats are KST Liberty and Maju Loyalty operated in Singapore, owned by Keppel Smit Towage/Maju Maritime, a joint venture of Keppel and Royal Boskalis Westminster. Each is equipped with two 6L28AHX-DF main engines each of 1,920kW, and two NIIGATA ZP-41 fixed pitch azimuth thrusters.





Company introduction

This year is the 100th year anniversary of NIIGATA diesel engines, and in addition, the 50th year anniversary of NIIGATA Z-Peller azimuth thrusters. 100 years ago, Japan's first marine diesel engine was developed by this brand. Its fuel oil consumption is approximately 70% of major hot-bulb engine at that time, and it became widely accepted. The first Z-Peller was delivered for a tugboat in 1969, and over 5,000 units have been shipped to the world nowadays. NIIGATA has released upgraded azimuth thruster ZP-41 with fixed pitch propellers of 2,700mm diameter to be guaranteed 85 ton bollard pull for vessels. It is achievable 90 ton bollard pull at 110% input power.

NIIGATA brand name of engines and Z-Peller is continuously used after renaming from Niigata Power Systems to IHI Power Systems in July, 2019 by acquisition of IHI Corporation's gas turbine power plant business, and 2- and 4-stroke engine manufacturer Diesel United.

Niigata Power Systems (Europe) B. V.





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Introduction of Nabtesco Corporation

At presentation, we Nabtesco would like to introduce our marine solutions as below.

- About Nabtesco (Company profile)
- Newbuilding (Marine products such as main engine remote control system, CPP control system, engine monitoring system and FIVA Valve etc., and
- After sales service (Global service network, Maintenance service menu, Training, Internal data base called PoCSSeidon and FIVA condition check
- Nabtesco Commitment (next generation of remote control system and contact point in Turkey)

We are very keen to support our customers by grasping what they need, through various marine products & service. We look forward to seeing you at our presentation.















Company introduction

We, Marine Control Systems Company in Nabtesco Corporation, support safe, secure and comfortable voyage with unique motion control technology. We have more than 50 years history in the marine industry and deliver excellent and reliable bridge maneuvering system as leading company with 40%

We also provide a range of product, including the hydraulic / pneumatic products and other key components certified by all major class and suitable to electrical controlled 2st and 4st main engine. We have a global service network of service engineers with excellent technical skills to support operation of vessels 24-hours, 365-day and bring more safety.

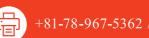
Nabtesco Corporation / Marketing & Sales department



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18 19

① Time 16:30

Product promotion





① Time 16:45

Title Title

Company introduction

Company introduction

Company introduction

Company introduction

Product promotion

The information desk









The information desk











① Time 17:00



MITSUBISHI HEAVY INDUSTRIES MARINE MACHINERY & EQUIPMENT

17:15

① Time

Mitsubishi Heavy Industries Marine Machinery & Equipment Co.,Ltd.

Title

Product promotion

Company introduction

Company introduction

New Turbochargers MET-MBII / MET-ER

MET-MBII Series, a new type of axial turbocharger for achieving a further increase in air flow volume while maintaining the reliability and ease of maintenance of the MET-MB turbocharger.

The MBII turbocharger provides 16% larger air flow volume than the MET-MB Series, which leads one or two models more compact compared to previous models.

MET-ER Series, a new type of radial turbocharger succeed the high reliability and maintainability of MET-SRC series. This new turbocharger has improved it's responsiveness and reduces the number of parts to achieve a more compact design and high maintainability.

MET-ER Series has been developed based on high pressure ratio requirements for turbochargers, in order to improve the performance of and reduce the NOx emissions of engines.





Company introduction

Mitsubishi Heavy Industries Marine Machinery & Equipment Co., Ltd. is the leading provider of advanced marine machinery around the world. Our expertise is based on Mitsubishi Heavy Industries, Ltd. (MHI)'s reputation as a trusted shipbuilder.

MHI offers a varied product line up made possible through proprietary design, cutting-edge technology and the fusion of the trust and track record nurtured over more than 135 years.

The marine products offered by MHI-MME are characterized by the reliability, high performance and superior maintainability that only MHI and its long history can provide.

They bring together MHI's advanced technology to turbochargers, boilers, turbines and Steering Gears.

These products are manufactured at Nagasaki, the cradle of Japanese marine machineries and are being actively used worldwide.

The information desk





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Isoda Metal Co., Ltd.

Company introduction of Isodametal

Advantages and applications of our products

A plain bearing is used to lubricate the rotating shaft in an engine and must be manufactured with high accuracy. A high-quality bearing minimizes damage inside the engine and reduces the risk of serious accidents. We provide bearings intended mainly for diesel engines for ships, power generators, etc., compressors, speed reducers, machine tools, and other devices.

Thin-walled plain bearings

A thin metal workpiece will easily deform if processed directly and hence is always processed with it fitted on a dedicated jig. It can be distorted from the residual stress caused by the heat generated during the casting process. Therefore, it is heat-treated to reduce the effect of residual stress as much as possible. In addition, other techniques, such as deformation correction, are also required to manufacture thin-walled plain bearings.



Company introduction

Isoda Metal Co., Ltd., is a plain bearing specialist manufacturer with a history of more than 110 years since its establishment. With technical expertise and rich manufacturing know-how accumulated over many years of manufacturing experience, we can manufacture bearings to best suit customer needs. This is only possible because we are a one-stop manufacturer with all processes under one roof from design through casting, processing, plating, and inspection to marketing.

Mr. Kazuya Ohara





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