

Jsmea News

FURUNO's new AIS Receiver FA-30 has been launched



The Automatic Identification System (AIS) improves the safety level of navigation by exchanging information about the status of AIS-targets nearby. The system utilizes VHF broadcasts to handle information about the surrounding area, including other vessels and aid-to-navigation, such as buoys.

SOLAS amendment in 2000 required all passenger ships and cargo ships over 300 GT on international voyages, and coastal ships over 500 GT to install a transponder from the July 1, 2002. FURUNO responded to this with Class-A AIS FA-100, which has later been replaced by the FA-150. However, they are for large-sized ships, thus medium or small-size vessels without AIS onboard can-

not receive the AIS information. Taken this into our critical thinking, FURUNO has introduced the AIS Receiver FA-30, which enables navigators on medium or small-size vessels to obtain AIS information for safer vessel operation. The FA-30 receives the navigational data of other AIS-equipped ships and displays it on NavNet vx2 series, AIS-compatible radar, GPS plotter or a PC.

Although the FA-30 cannot transmit own ship's data, it helps the operators enhance situational awareness of the surrounding area by receiving the critical information of other ships around such as the ship's position, course/speed over ground, heading, and rate of turn.

Merits of having AIS onboard

- Assistance in collision avoidance and improvement for the level of safe vessel operation**
 By displaying the AIS information on the radar screen or a PC interfaced with the FA-30, it is possible to grasp the situation of the surrounding area. Overlaying the AIS targets on the radar display enables vessel operators to distinguish ships from other targets, such as islets. Moreover, AIS targets are constantly visible even when they are behind objects such as capes, whereas the radar cannot reach them.
- AIS viewer software for PC (Standard supply)**
 Thanks to the AIS viewer software, it is possible for the navigators, who do not have radar onboard, to utilize the AIS information on a PC. AIS targets will be shown on the chart and when a certain target is selected, the detailed data of the target will be displayed. This software application covers the worldwide chart.
- Output of the data via Ethernet**
 NavNet vx2 series or a PC can be interfaced with the FA-30 via LAN cable.
- VHF splitter (Optional)**
 Optional VHF splitter allows for sharing the existing VHF.
- Dual channel receiver design facilitates more constant information acquisition than a single channel receiver.**

- Receiving range is between 156.025 MHz and 162.025 MHz. The FA-30 can receive both the local channels and the international channels. The switching of the receiving frequency is performed automatically.

- Black box configuration allows for flexible installation.**

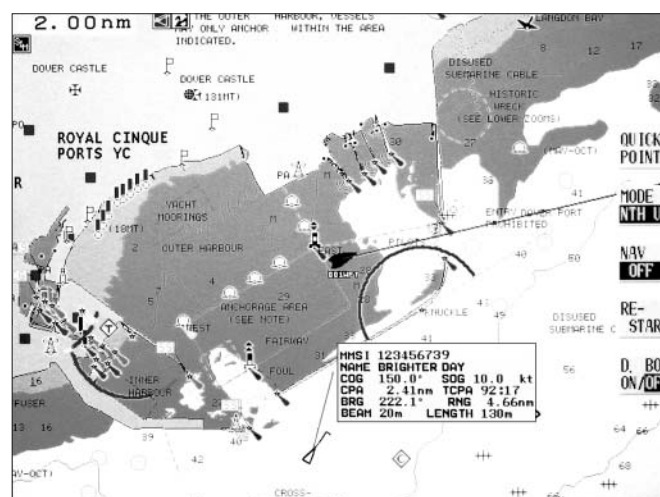
Information to be received

- Dynamic Data**
 - Ship's position
 - Coordinated universal time (UTC)
 - Course over ground (COG)
 - Speed over ground (SOG)
 - Rate of turn (ROT)
 - Heading
 - Navigation status*
- Static Data**
 - MMSI (Maritime Mobile Service Identity)
 - IMO number*
 - Ship's name
 - Call sign
 - Length and beam
 - Type of ship
 - Location of position-fixing antenna on the ship
- Voyage Related Data**
 - Ship's draft*
 - Hazardous cargo
 - Destination and ETA*
- Safety-related messages**

*Class-A only

Specification

- Receiving system : TDMA, Dual channel
- Frequency switching : Auto
- Channel spacing : 25 kHz/12.5 kHz
- Standards referred to : IEC 61993-2, IEC 62287-1, ITU-R M. 1371-1, IEC 60945 Ed. 4
- Frequency range : 156.025 MHz to 162.025 MHz
- Interface
 - COM : NMEA0183 (38.4 kbps) / IEC 61162-1 (4,800 bps)
 - Network : Ethernet 10/100BASE-T
- Size and weight : 215 (H) x 255 (W) x 90 (D) mm
1.5 kg
- Power supply : 12-24 VDC
- Power consumption : Less than 14.4 W



AIS information on NavNet vx2

Marine VHF Radiotelephone JHS-770S / JHS-780D

Outline

JHS-770S (Simplex Model) / JHS-780D (Duplex Model) Marine VHF Radiotelephones are designed to be one the VHF radio facilities that meet the carriage requirement for the Global Maritime Distress Safety System (GMDSS).

Features

- Fully Complies with GMDSS and International Standards
- Flexible Installation
- Built-in Class-A DSC and CH70 Watch-keeping Receiver
- Direct Calling Function by AIS Information
- Built-in ATIS Function for European Inland Waterways
- High Visibility with 3.8-inch High Brightness Display
- Easy Operation with JOG Dial

Specifications: Specification subject to change without notice

- Frequency range
 - 155.000-163.500MHz (Simplex/Semi-Duplex)
 - 156.000-157.450MHz (Duplex TX)
 - 160.600-162.050MHz (Duplex RX)
 - 156.525MHz (DSC CH70)
- Output power : 25W/1W
- Type of Modulation
 - F3E/G3E (Radiotelephone)
 - F2B/G2B (DSC/ATIS)
- Channel spacing : 25kHz
- Channel capacity
 - ITU/USA/CANADA/
 - Inland waterway channels : 57 max
 - Weather channel : 10
 - Memory channel : 10 max
 - Private channel : 200 max
- Input voltage : DC24V+30%, -10%
- Power consumption : 8.3A max (DC24V input)



Controller NCM-1770



Transceiver NTE-770S / NTE-780D

FURUNO

FURUNO Electric Co., Ltd. International Marketing Department
 Address: 9-52 Ashihara-cho, Nishinomiya, Hyogo 662-8580, Japan
 Tel: +81-798-63-1071 Fax: +81-798-65-4200
 URL: <http://www.furuno.co.jp>

JRC

Japan Radio Co., Ltd.
 Marine Electronics Business Department
 Address: Nittochi Nishi-Shinjuku bldg. 10-1, Nishi-Shinjuku 6-chome, Shinjuku-ku, Tokyo 160-8328, Japan
 Tel: +81-3-3348-4099 Fax: +81-3-3348-4139 URL: <http://www.jrc.co.jp>

Integrated Automation System OASIS



However, JRCS can provide a total system of both power management and automation system to avoid such inconveniences.

The OASIS (Operationally Advanced Super Integrated System) is designed to provide enhanced automation and further user-friendly functions.

The OASIS can provide a variety of interfaces for the purpose of linking together a number of on-board equipment.

We will offer the engineering of both power management and automation systems.

Our engineers can design both a power management plant as a heart of the system, and an automation plant as a nerve center at the same time. So, we will provide a simple integrated system just by connecting the communication lines between each interface. Obviously, this will reduce the workload in shipyards and for our customers.

Generally speaking, on a LNG ship with a large-scale system, there are many kinds of systems such as a power management system, automation system, among others. As the different systems have different makers, you may have difficulty contacting the makers to solve a problem.

Especially, if the problem cannot be located, we should carefully consider which maker to contact.



Key Objectives of the OASIS

1. System Compatibility with High Specification Vessels

- A full complement of monitoring functions
- Enhanced summary & history functions
- A wide variety of trend functions
- User-friendly operation
- Extensive control functions
- Interface Integration Platform (IIP) provides comprehensive single point control

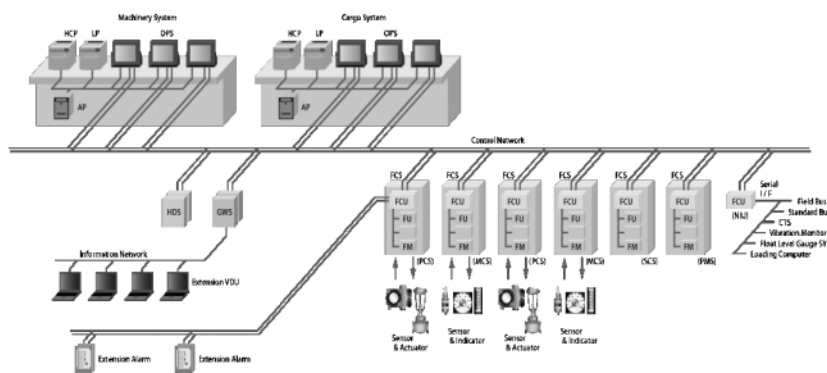
2. System with Open Concept, Adaptability, Zero-obsolescence

Design Infrastructure adaptable for future requirements
 System construction from high speed & high performance hardware
 Complete distribution & security enhancement
 Introduction of general-purpose products available for peripheral equipment

3. System Reliability with Assured Through Life Support & World wide Support

Excellent support system as experienced marine manufacturer
 Established product supply policy
 Solution Support

OASIS System Configuration



Hybrid Turbocharger with Integrated High-Speed Motor-Generator

Owing to the sharp rise in the cost of fuel oils and a strong demand for cutting CO2 emissions in recent years, attention is riveted on how to wrestle with reducing the fuel consumption of the diesel engine. The entire exhaust gas discharged out of a diesel engine is normally forwarded to turbochargers.

On the other hand, a new power generating system has already been put into practical use, in which for the sake of energy recovery a part of the exhaust gas is fed to a turbine to drive an electric generator instead of being fed to the turbocharger.

This system is called the turbo-compound system, where approximately 5 % of the engine power is diverted to a turbine generator and recovered as electric power.

The Hybrid Turbocharger, consisting of a turbocharger rotor connected to a motor-generator for directly converting part of the above-mentioned revolution energy into electric power, possesses the following features:

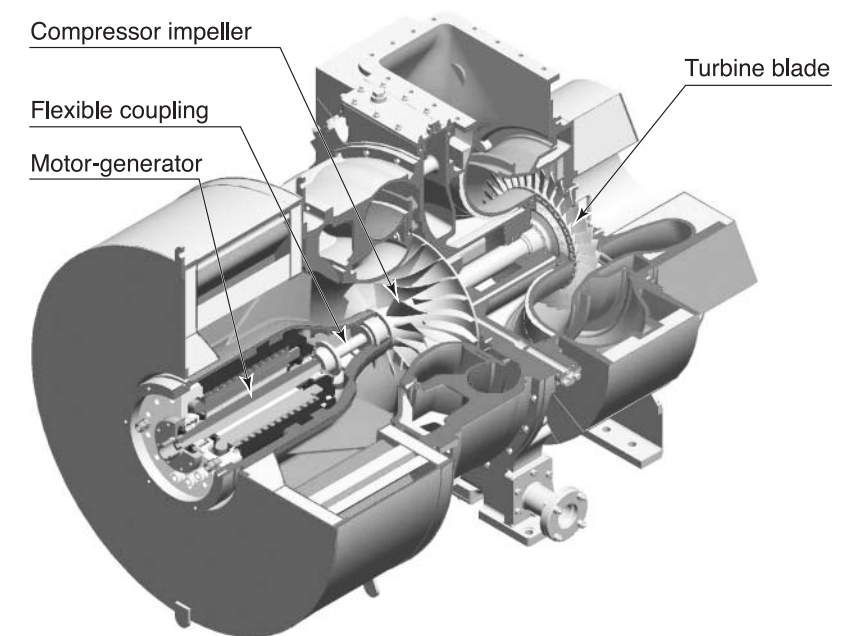
- (a) Neither additional power turbine and its accessory equipment nor any piping thereto is necessary, requiring almost no excess space.
- (b) Utilizing its function as an electric motor, the performance of the turbocharger system can be improved, especially at part load (with the two-cycle engine it can substitute for the auxiliary blower).
- (c) Owing to that there is no pressure loss in the exhaust gas line and that energy conversion is carried out in the turbine of the turbocharger, high turbine efficiency can be achieved.

The outline description of the Hybrid Turbocharger developed by Mitsubishi Heavy Industries Ltd. (MHI) is given hereunder:

The prototype of the hybrid turbocharger was developed on the basis of Model-MET42MA. This turbocharger was designed to be used on 5,000 kW-class diesel engines. The output of the generator is selected at 250 kW on the premise that 5 % of the engine output is recoverable.

While taking respective measurements of vibration of the rotor shafts and the temperature of bearings for the turbocharger and the generator, the subject equipment was confirmed to be operable without any problems up to the maximum permissible revolution of

Cross-sectional diagram of Hybrid Turbocharger



22,300 min-1, irrespective of the amount of generated power. In addition, it has been confirmed that by supplying electric power to the motor-generator of the hybrid turbocharger to make it function as an electric motor, the rotor of the turbocharger can be accelerated.

The hybrid turbocharger can be installed with almost no reconstruction to the existing diesel engine. Besides, we can recover not only electric power from the excess energy but also optimize the engine performance by changing the RPM at will through controlling the amount of the generated power. Furthermore, by using the generator-motor as an electric motor we can improve the turbocharger's performance, particularly liable to be short at the low-load range of the engine. We have scheduled tests on the quality of the electric power generated by the hybrid turbocharger, then upon obtaining a favorable result, to connect it to a commercial electric power system. In addition, the hybrid turbocharger can substitute for the auxiliary blower used in a low-speed 2-cycle diesel engine. With application to low-speed marine engines kept in mind, we are henceforth intending to put the hybrid turbocharger to practical use while proceeding to enlarge its applicable size and to optimize adaptability to the 2-cycle engine.



JRCS CORPORATION

Address: 1-2-14, Higashiyamato-machi, Shimonoseki, Yamaguchi 750-8515, Japan
 Tel: +81-832-61-0300 Fax: +81-832-61-0330
 E-mail: jracs@jracs.co.jp URL: www.jracs.co.jp



Industrial Energy Power Systems Department

Address: 16-5 Konan 2-chome, Minato-ku Tokyo 108-8215, Japan
 Tel: +81-3-6716-3390, Fax: +81-3-6716-5778
 E-mail: san-ene-catalog-senyo@mhi.co.jp
 URL: http://www.mhi.co.jp/power/e_power/index.html

Power Generation Plant for Emergency/At-Anchor Use

Mitsui Zosen Machinery & Service, Inc. in 1967 delivered the first unit (60 KVA) of its emergency power generation plant. The cumulative number of such plants the company delivered, including power plants for use while at anchor, has reached 6,600.

These generators, installed in both Japanese and foreign ships, have been very well accepted for their high reliability.

Performance

1) Power Generation Capacity

The product line-up covers a wide range of power generation capacity from 30 to 1000 KVA, out of which the right one for each customer's requirement can be selected.

2) Fuel

These generating plants can run on either light oil or grade A heavy oil.

3) Starter

The standard starter is an electric unit, but a pneumatic starter can be optionally provided. A manually actuated hydraulic starter can also be installed as a secondary unit.

4) Specification for Cold Region

An engine heater, which enables the starter to be readily and securely actuated even on routes to and from very cold regions of below 0 °C can be optionally provided.

Classification

The power plants are authorized by all classification society including JG and NK.

Features

1) Space-efficient compact structure proving long-accumulated experience

2) Easy installation

The engine and the generator of a direct body-to-body linked configuration are fitted to a common base with vibration-damping rubber. This arrangement enables the plant to be easily installed by leveling the common base.

Furthermore, engine vibration is thereby prevented from affecting the foundation for installation.



3) Easy operation and maintenance

The power plant can be controlled both directly and remotely, and when it is to be directly controlled, can be started with a key switch.

In a blackout, automatic starting enables loads to be turned on again in a few seconds.

Continuous operation for 18 hours or more is possible at an ambient temperature of 45 °C without requiring lubricating oil renewal.

A brushless generator is used with a view of easy maintenance and inspection.

Engine

For the 30 to 130 KVA capacity range, Deutz air-cooled diesel engines have been used for over 40 years.

For the 150 to 1000 KVA range, Cummins water-cooled engines are used.

Both are engines of established reputation for their sturdiness and reliability.

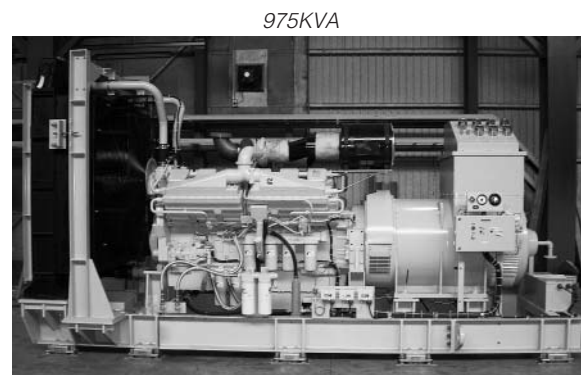
Generator

Generators available as standard components are the products of Taiyo Electric and of Newage.

If so required by the customer, a generator of some other make can be used as well.

Recent topic

In May 2006, a 975 KVA emergency power generation plant was delivered for installation aboard an LNG carrier. This product, belonging to the largest class of marine generation plant available from Mitsui Zosen Machinery & Service, was the first unit of this model. It went through a 50-hour test run in the shop under full load to check its reliability and durability, and was shipped to the customer after the test proved fully successful, posing no problem at all.



Pure Water Generator for Chemical Tankers

Miura Protec Co., Ltd. was spun out in April 2004 from Miura Co. Ltd., holding the biggest share in the Japanese market for small once-through boilers, to become an independent corporation within the Miura group.

Besides the production of marine equipment, Miura Protec is in the businesses of special machinery focusing on exhaust gas economizer boilers for co-generation use, food machinery to supply food processing equipment, and medical equipment centering on high-pressure steam sterilizers as well as servicing for these products.

The company's marine business sector, already experienced in marine auxiliary boilers, thermal oil heaters, shipboard incinerators and fresh water generators, recently developed and introduced to the market a pure water generator for use in the tank cleaning of chemical tankers.

Background of Development

Pure water is used for the tank cleaning of chemical tankers in some cases where the requirement to keep the quality of cargo is particularly stringent. In many such cases, refined pure water is loaded onboard at a port of call, but this is a time-consuming job, including the time taken by arranging for pure water.

In rare cases, pure water production plants were installed, but their installation involved much maintenance work including filter replacement. To reduce this workload, Miura Protec has developed the ion exchange resin type IP-15ET and the re-boiler distillation type HP-50.

Structure and Features of Pure Water Generator IP-15ET

IP-15ET type is a pure water generator using cation/anion exchange resin. It is made up of pre-filter to prevent impurities from coming in, ion exchange resin column and post-filter to prevent the resin from flowing out, all arranged in series.

Although the filters and resin need regular replacement, installing them in combination with fresh water generator serves to minimize the frequency of replacing.

- This device is designed as the model for active vessels. Required installation space and connection piping is a little. It is particularly suitable for use when pure water generator is temporarily required for short period use.

- The use of water from fresh water generator enables the resin replacement cycle to be set long, the labor and cost of replacement can be minimized.



Specifications of Pure Water Generator IP-15ET

- Type: Ion exchange resin type
- Capacity of distillate: 75 to 375 L/h
- Salinity of distillate water: 0.5 ppm or below (0.1 mS/m or below in electric conductivity) when water from fresh water generator is supplied.

Structure and Features of Pure Water Generator HP-50

HP-50 type is a fully automatic pure water generator using steam as the heat source, intended for installation in the engine room of newly built vessels. It is re-boiler distillation type needing no resin replacement.

- It generates pure water by the combination of installation aboard and Miura Protec's unique technology.
- As it is neither membrane type nor resin type, HP-50 requires no replacement of resin or membrane or maintenance of filters. The plant can be easily handled by anybody because it has fully automatic control.
- This plant can utilize excess steam, and its drain water is reusable as feed water for the boilers.

Specifications of Pure Water Generator HP-50

- Type: Re-boiler distillation type
- Capacity of distillate: 50 L/h
- Salinity of distillate water: 0.5 ppm or below (0.1 mS/m or below in electric conductivity) when water from fresh water generator is supplied.



Mitsui Zosen Machinery & Service, Inc.

Address: 7, Konya-cho, Kanda, Chiyoda-ku, Tokyo, 101-0035, Japan
Tel: +81-3-6806-1075 Fax: +81-3-5294-1121
E-mail: sales@mzm.co.jp URL: http://www.mzm.co.jp



Miura Protec Co., Ltd.

Address: 7 Horie-cho, Matsuyama, Ehime 799-2696, Japan
Tel: +81-89-979-7060 Fax: +81-89-979-7067
E-mail: hakuyo_eka@miuraz.co.jp URL: http://miuraprotec.co.jp

New Model of Radar Type Level Gauge "Level Echo" Introduced

Manufacturer's Wealth of Know-how Reflected

Musasino Co., Ltd. in January 2007 introduced to the market its new LEPC model of Level Echo radar-type level gauge with a built-in function to monitor the pressure in the tank.

The company has already delivered some 3,000 sets of Level Echo, commercialized in 1998 as the first Japanese-made, marine radar type level gauge of intrinsically safe structure; these sets have been installed onboard more than 150 vessels.

The activities to produce these gauges have enabled the manufacturer to experience all conceivable conditions of use relevant to outfitting in terms of the type of cargo chemical, the shape of tank and the plying limits of a vessel. The recently introduced new model embodies, in addition to the know-how on which it was built, unceasing improvement efforts to meet the users' satisfaction for the incorporation of the built-in function to monitor the tank gas pressure and a reduction in product weight.

Features of New Product

Aboard chemical tankers, the safety rule required a function to monitor the tank gas pressure besides the level gauging function, and this necessitated a pressure-monitoring device, which meant the need for an extra wiring line. The new Level Echo model, however, has solved this problem of duplication in instrumentation and wiring into which Musasino's wealth of experience is mobilized.

Other notable features of the new Level Echo model include:

- (1) A new packaging system resulting in a reduced size in spite of the addition of the tank gas pressure monitoring function.
- (2) A reduction in weight achieved through the use of thinner flanges made possible by the stud welding technique.
- (3) Long-term steady supply capability achieved through 100% in-house production of special components.
- (4) The built-in function for tank gas pressure monitoring making possible simplification of cable wiring for the Level Echo system and a corresponding dramatic savings in cost.

Always mindful of user convenience in installing and operating its products, Musasino intends to continue its efforts to supply even better equipment, which will include new products utilizing electric waves.

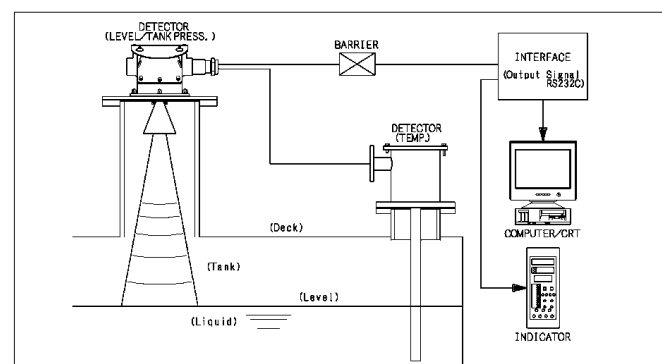


Level Echo LEPC (new model)

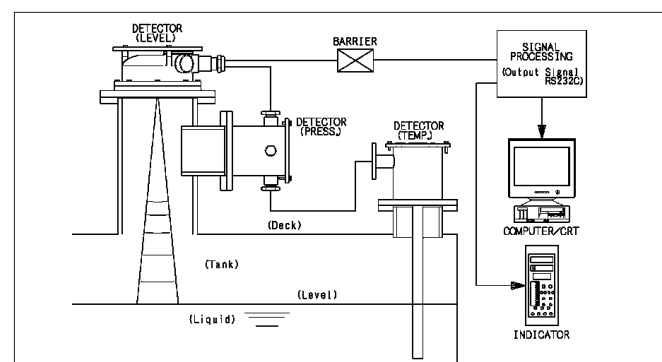
Particulars of Level Echo

- 1) Measurable ranges: 0.5 to 20 M for LEPC, 0.5 to 30 M for LE
- 2) Built-in sensor for in-tank pressure: LEPC
- 3) Providing with automatic liquid level tracking function
- 4) Providing with masking function for the structural members and outfitting in the tank.
- 5) Protecting electronic parts and enhanced reliability by charging inert gas in from insulation failure and corrosion.
- 6) Increased ease of outfitting and maintenance through size and weight reductions (about 25 kg)

Typical configuration of type LEPC (new model)



Typical configuration of type LE (earlier model)



New TOM Series of Lubricating Oil Pumps for Very Large Main Engines Developed

Naniwa Pump Manufacturing Co., Ltd. has developed a new TOM series of highly rigid and high-performance lubricating oil pumps for main engines to meet the ongoing trend for very large containerships. The new products are tank-mounted, deep-well centrifugal pumps, which are lubricating oil pumps for the world's biggest class of main engines covering the whole range of specifications required by existing types of marine propulsion plants. In developing the new series, Naniwa Pump combined its years of technical experience and the latest achievements in hydrodynamics through the use of computer technology, and achieved a level of performance unparalleled in the world.

In less than a year since the start of the R&D project, the company completed the new series through demonstration tests, and is already manufacturing the new pumps on a mass scale. For the production of the new series, a new dedicated high-tech plant has been built, whose output target for the initial year is 500 units or more.

Specifications

Maximum discharge: 1800 m³ / h x 0.55 MPa

High Performance

The standard speed has been raised from 1,200 min⁻¹ to 1,800 min⁻¹ with a view of reducing the frictional loss due to the viscosity of oil, and the pump efficiency has also been enhanced to an amazing level of 75% or above, on an oil basis.

Structure

Please see the structural section (Fig. 1).

- Scrupulous trial production and demonstration tests have been carried out through computerized analyses and model pumps, and high performance with excellent hydrodynamic aspects has been achieved.
- The suction cover is provided with anti-turn ribs to prevent air from being let in by the spiral vortex at the time of a low oil level in the tank, resulting in a structure which enables the pump to operate in its best conditions.
- A guide vane is used in the casing to control the pumped oil and ensure smooth flow in the axial direction.
- An amply dimensioned angular contact type ball bearing has been selected as the upper bearing to support the thrust load. Metal type units are also used as the middle and lower bearings.
- The shaft is lip-sealed as in the earlier products.

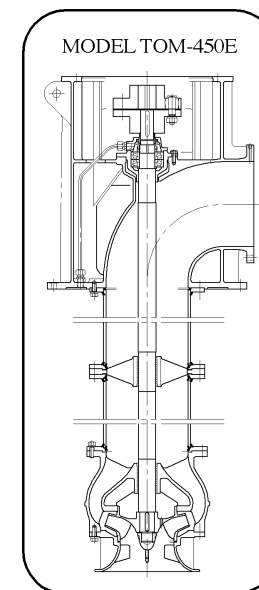
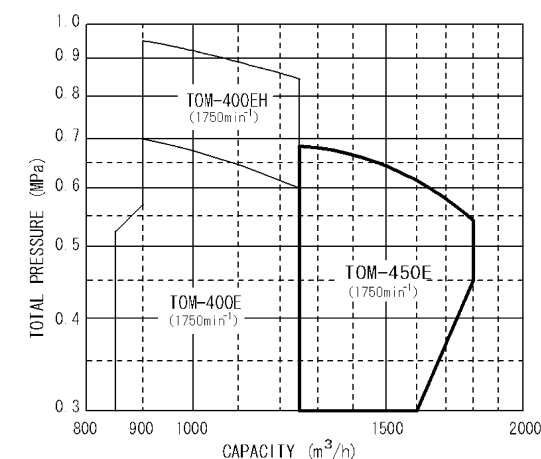


Fig. 1 Structural section

Fig. 2 Selection chart for large pumps



Plant No. 4 Starts Production

Naniwa Pump's dedicated pump plant began operation in November 2006.

Its state-of-the-art equipment permits an integrated sequence of manufacturing, testing, painting, packing and shipping to adequately meet the expected increase in demand. The testing equipment enables the pump to be tested under conditions similar to actual operation onboard and can put the product under a full-load of operation tests with real oil. An in-house power plant, also set up along with the factory, can meet operational needs at a high voltage of 6,600 V. Various performance data including discharge and pressure are automatically measured digitally, and performance curves are also provided.



MUSASINO CO., LTD.

Address: 1-2-15, Minami-yukigaya, Ohta-ku, Tokyo 145-0066, Japan
Tel: +81-3-3726-4412 Fax: +81-3-3726-1557
E-mail: sales@musasino.co.jp URL: http://www.musasino.co.jp/



Naniwa Pump Manufacturing Co., Ltd.

Address: 11-5, Shinmachi 3-chome, Nishi-ku, Osaka 550-0013, Japan
Tel: +81-6-6541-6231 Fax: +81-6-6541-7492
E-mail: info@naniwa-pump.co.jp URL: http://www.naniwa-pump.co.jp/

Contra-Rotating Hybrid Type Rudder Propeller

This next-generation deepsea round-haul net vessel, the third vessel to bear the name Nippon Maru, inheriting the tradition of the deepsea round-haul net research vessel, was completed in October 2006 at Miho Shipyard Co., Ltd. as a model product to embody the restructuring of the fishing fleet promoted by the Fisheries Agency.

The vessel is equipped with, in addition to a conventional main engine-driven controllable-pitch propeller, a propeller system with an electric motor-driven rudder to achieve a contra-rotating propeller effect.

According to the shipbuilder, the vessel has features such as high economy achieved through a reduction in underwater radiated noise and improvement in kinetic performance together with manpower savings, besides the approximately 15% energy savings of the total system over a conventional vessel of comparable size.



This article summarizes the contra-rotating hybrid type propulsion system which drives the fishing boat.

Main Particulars of the Vessel

- Overall length : 75.97 m
- Breadth molded : 13.4 m
- Designed draft : 4.93 m
- Gross tonnage : 742
- Service speed : 16.2 knots

Main Particulars of the Machinery

- Main engine: Niigata 6MG34HX type 1 set
-2647kW x 600mm⁻¹
- Generating set: Niigata 6L22HX type 4 sets
-956kW x 900mm⁻¹
- Electric motor for propulsion 1 set
1103 kW x 980min⁻¹

Main Particulars of the Propulsion System

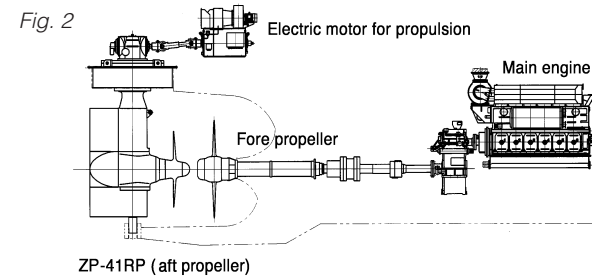
- Fore propeller: Controllable-pitch propeller (CPP) 1 set
 - No. of propeller blades : 4
 - Diameter of propeller : 3,600 mm
 - Revolution speed of propeller : 160 min⁻¹
 - Direction of propeller revolution : Clockwise
- Aft propeller: ZP-41RP type rudder propeller (FPP) 1 set
 - No. of propeller blades : 4
 - Diameter of propeller : 2,800 mm
 - Revolution speed of propeller : 184 min⁻¹
 - Direction of propeller revolution : Counterclockwise

The directions of propeller revolution are stated as viewed from the stern.

Outline of Contra-Rotating Hybrid Type Propulsion System

The hardware arrangement of the ZP-41RP type propulsion system is schematically shown in Fig. 2.

The vessel's arrangement for propulsion constitutes a so-called hybrid contra-rotating propulsion system, in which the

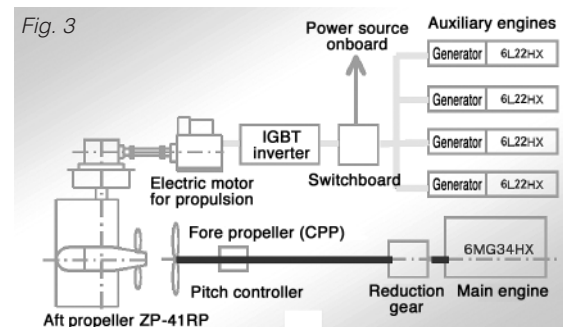


fore propeller and the rear propeller are arranged in tandem, resulting in significant improvement in propulsion efficiency. The fore propeller (controllable-pitch) is driven by the main diesel engine through a reduction gear, while the aft propeller (fixed pitch) is driven by the electric motor for propulsion.

The aft propeller has a rudder function, enabling the vessel to turn within a range of 35 degrees right and left while at sea and within a range of 90 degrees right and left when entering or leaving a port, or during fishing operations, and thereby contributing to the excellent maneuverability of the vessel.

Outline of the Propulsion System

The propulsion system of the vessel is outlined in Fig. 3.



Two or three generators are operated while at sea, allowing propulsion and operation of fishing equipment and freezers at the same time. Three or four are operated when entering or leaving a port, enabling a bow thruster and the aft propeller to work together to accomplish quick and responsive maneuvering.

Maneuvering Mode

One of the following maneuvering modes listed in the table below can be selected according to the situation of the vessel.

Propulsion Mode	Fore main propeller (CPP)	aft auxiliary propeller (FPP)	Steering	Rudder angle	Remarks
Interlocked mode (fore + aft propellers)	○	○	○	-35°~35°	For use while at sea
Single acting mode I (only fore propeller)	○	×	○	-35°~35°	For use in fishing (casting net)
Single acting mode II (only aft propeller)	×	○	○	-35°~35°	For use while sailing in port, etc.
Thruster mode	×	○	○	-90°~90°	For use while sailing in port, etc.

During sea trials, no abnormal vibration or other trouble was experienced even when the vessel was steered at a sharp angle, and no trace of cavitations or other abnormality was found in docking after the completion of a voyage.

The effects of the contra-rotating arrangement will continue to be assessed.

Inverter-controlled, electric-driven deck crane: CRANE-e

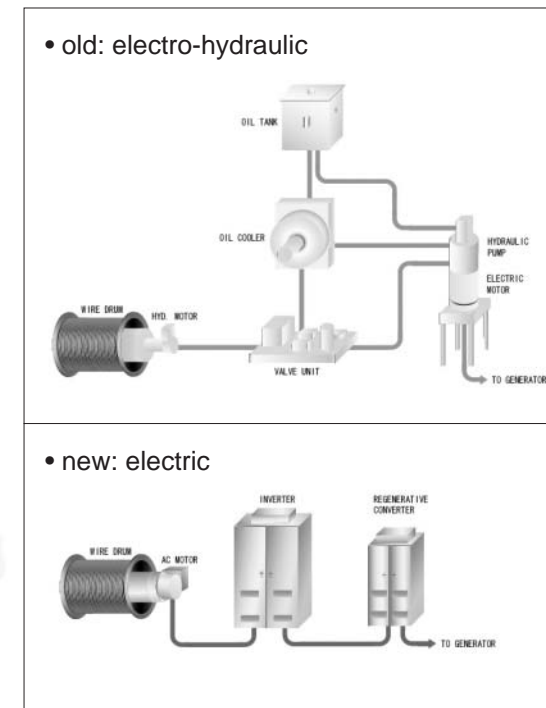
Based on decades of experience with electric gantry cranes and four-rope heavy-duty cranes, Tsuji Heavy Industries Co., Ltd. has developed an inverter-controlled, electric-driven standard 36-ton-lifting capacity deck crane. The CRANE-e greatly reduces energy consumption. Furthermore, by eliminating

hydraulics, the system of this simplified and robust new type of crane is almost completely maintenance free.

The need to address environmental issues related to the shipbuilding and shipping industry has become obvious, so less emission of harmful CO₂, NO_x and SO_x is a welcome plus to environmentally conscious shipowners and charterers.

Acceleration and deceleration is very smooth and precise. Other advantages are less noise pollution and vibration. The electric system is also preferable when working in extreme temperature environments.

Compared to traditional electro-hydraulic cranes, initial purchasing costs are higher, but reduced long time running costs make this technically superior electric crane definitely a viable investment.



main advantages as compared to same specification electro-hydraulic type

- 40% less energy consumption**
 - power consumption 20% less, energy efficiency 40% up
 - when crane is not used, idling stop is activated, thus reducing fuel consumption
 - when lowering, electric motor becomes a dynamo and converts energy back to the ships electric system (optional)

98% less maintenance costs

- no mechanical contact in drive system; zero need for parts replacement
- lower after-service and maintenance labor costs

20% total cost reduction in 10 years

- based on 1,500 running hours per year assumption, total cost reduction of 20% in 10 years (life cycle assessment investment versus running costs)

Particulars

MODEL		36 TON x 28 M/R ELECTRIC DECK CRANE	
		TYPE: e-HDSS3628	
		HOOK HANDLING	GRAB HANDLING
Hoisting load	(ton)	36 / 12	28 / 12
Hoisting speed	(m/min)	21 / 44	21 / 44
Lowering speed	(m/min)	34 / 44	
Luffing time	(sec)	abt. 65	
Slewing speed	(rpm)	ave. 0.6	
Working radius	(m)	28~4.5	
Slewing angle	(deg)	360° free	



Niigata Power Systems Co., Ltd.

Address: Ishiko Bldg., 9-7, Yaesu 2-chome, Chuo-ku, Tokyo 104-0028, Japan
Tel: +81-3-6214-2800 Fax: +81-3-6214-2809
E-mail: info1@niigata-power.com URL: http://www.niigata-power.com/



Tsuji Heavy Industries Co., Ltd. Sales Department

Address: 177-2, Hikari-machi, Sasebo, Nagasaki 858-8501, Japan
Tel: +81-956-47-3113 Fax: +81-956-47-5700
E-mail: main.office@tsuji-hi.com URL: http://www.tsuji-hi.com

JSMEA International Activities Scheduled for April 2007 - March 2008

- Participation in International Conference on Marine Technology

Technical experts on diesel engines will be sent to IMO, CIMAC and other meetings.

- Participation in International Maritime Exhibitions

To make the products and technologies of the Japanese ship machinery industry extensively known overseas, JSMEA has participated and will participate in the following prestigious international events:

- **NOR-SHIPING 2007**
12-15 June 2007

Norway Trade Fairs Exhibition Centre, Lillestrom, Norway

- **Marintec China 2007**
27-30 November 2007

Shanghai New International Expo Centre, Shanghai, PRC

- **Vietship 2008**
11-14 March 2008

National Convention Center, Hanoi, Vietnam

- Publication of Promotional Periodical in English

The association publishes this promotional periodical in English, highlighting the latest technologies and products from the Japanese ship machinery industry, in an effort to make them extensively known to foreign shipowners and shipbuilders. Two issues are scheduled from April 2007 to Spring 2008.

New Line-up of JSMEA's Top Management

The ordinary general meeting on May 17 decided on the following new members of JSMEA's top management:



Chairman	Mr. Zenshichi Akasaka (President, Akasaka Diesels Limited)
Vice Chairman	Mr. Tokunori Ishibashi (President, Daihatsu Diesel Mfg. Co., Ltd.)
Vice Chairman	Mr. Motoyoshi Nakashima (President, Nakashima Propeller Co., Ltd.)
Vice Chairman	Mr. Shinzo Yamada (President, Taiyo Electric Co., Ltd.)
Vice Chairman	Mr. Yukinobu Fujimoto (President, Fuji Trading Co., Ltd.)
Vice Chairman	Mr. Hiroshi Itazawa (President, Kamome Propeller Co., Ltd.)
Executive Managing Director	Mr. Gyo Yamashita
Managing Director	Mr. Takashi Kizawa
Managing Director	Mr. Ichiro Tsuji

JETRO New York Closes Down Ship Machinery Division

The Ship Machinery Division at JETRO New York was closed down at the end of March 2007 after 38 years and five months of important contribution to building Japan and U.S. relations since the division's inauguration in October 1968.

JETRO Singapore Opens Ship Machinery Division

The Ship Machinery Division was established at JETRO Singapore on April 1, 2007.

Mr. Junzo Kaneko was appointed the division's first director.

Personnel Changes

• **JETRO Shanghai, Ship Machinery Department**
Effective March 31, 2007, Mr. Sadao Akahoshi, director of JETRO Shanghai has been replaced by Mr. Yoshiharu Shigeiri.

• **Japan Ship Centre (JETRO London), Ship Machinery Department**
Effective June 3, 2007, Mr. Yuji Yamashita, director of the Japan Ship Centre (JETRO London) has been replaced by Mr. Shota Ohashi.

JSMEA

Japan Marine Equipment Association

Head Office: 6th Floor, Kaiyo Senpaku Building, 15-16, Toranomom 1-chome, Minato-ku, Tokyo 105-0001, Japan
Tel.: +81-3-3502-2041 Fax: +81-3-3591-2206 E-mail: info@jsmea.or.jp URL: http://www.jsmea.or.jp

Overseas Offices:

Japan Ship Centre (JETRO), Ship Machinery Department
2nd Floor, 6 Lloyd's Avenue, London EC3N 3AX, UK
Tel.: +44-207-680-9456 Fax: +44-207-680-9416

JETRO Shanghai, Ship Machinery Department
21st Floor, Shanghai International Trade Centre, 2201, Yan An Xi Road, Shanghai 200336, P.R.C.
Tel.: +86-21-6270-0489 Fax: +86-21-6270-0499

JETRO Singapore, Ship Machinery Department
Hong Leong Building, #38-01 to 05 #37-02A 16 Raffles Quay, SINGAPORE 048581
Tel.: +81-65-6221-8174 Fax: +81-65-6224-1169