

*Full-color
special issue in
commemoration
of JSMEA's
new chairman*

Motoyoshi Nakashima becomes JSMEA's first new chairman in six years

Message from new JSMEA leader upon assuming post May 16, 2013

I am glad to know that things are going well for member companies and other relevant parties. I am deeply grateful for your kindness and support toward our business operations.

Now that the shipbuilding boom that began in the early 2000s is over, the ship machinery and equipment industry is being faced with numerous issues both domestically and internationally, such as the intensification of global competition and the stagnation of ship prices. Knowing this, I have reaffirmed my determination to take great responsibility as the chairman of the Japan Ship Machinery and Equipment Association (JSMEA). I will devote all of my energy to this end with guidance and support from all of our member companies. Please continue to help us in the years to come.

In managing and operating the JSMEA, we will carry out various activities based on the following main policies.

First, we will further encourage interchanges and cooperation within the ship machinery and equipment industry as well as with other industries. It is important to promote exchanges with the shipping and shipbuilding industries, trading houses and other organizations, and have them join forces to address challenges to maintain and enhance the Japanese maritime cluster. We will also enhance our activities within the JSMEA, including industry sector meetings and those at the Council of Next-



Generation Management of Marine (Jisedai-kai).

Second, we will go global. To this end, we will establish partnerships with overseas shipowners, shipyards and ship machinery and equipment manufacturers. At the same time, we will advance research and development projects as well as examine rules and regulations to enhance the global competitiveness of the Japanese ship machinery and

equipment industry.

Third, it is necessary to make efforts to secure and develop human resources for the attractive ship machinery and equipment industry. We will appeal to the industry's great promise at exhibitions and seminars. We will stage campaigns to encourage young people to sense the promise of the industry and to show interest in it.

The ship machinery and equipment industry is in the most difficult situation of the last 10 years. At a time when the gap between supply and demand is becoming greater and greater, the industry needs to improve its global competitive edge by putting together areas of specialty from different ship machinery and equipment makers to reinforce the overall capability of the Japanese maritime industry.

I humbly ask member companies and other parties in the ship machinery and equipment industry to continue to guide and encourage the JSMEA.

JSMEA participates in OTC 2013

The Japan Ship Machinery and Equipment Association (JSMEA) and five member companies participated in the Offshore Technology Conference (OTC) 2013 with support from The Nippon Foundation. The OTC is the largest international exhibition in the world for offshore development projects that include oil drilling and production as well as marine resource exploration, and conservation of the sea environment. Launched in 1969, this year was the 45th time that the OTC had been held. Momentum has been growing in recent years among members of the Japanese maritime industry toward making inroads to offshore business. As such, the JSMEA cooperated with Nippon Kaiji Kyokai (ClassNK) for the first time to run a booth on May 6-9, 2013 at Reliant Park, a complex located some 10 kilometers southwest of downtown Houston, Texas.

The five member companies accompanying the JSMEA were Fuji Trading Co. Ltd., Takashina Life Preservers Co. Ltd., Hien Electric Industries Ltd., Teramoto Co. Ltd. and Chugoku Marine Paints Ltd.

The OTC 2013 was attended by 2,728 enterprises from approximately 40 countries, according to the Society of Petroleum Engineers, an organization sponsoring the event. Besides Japan, participants came from Brazil, China, Singapore, South Africa, South Korea and the United States, among others. The venue covered a total area of 652,185 square meters, which was larger than any of the previous OTC exhibition spaces. The 2013 trade fair attracted some 104,800 visitors—up from 89,000 a year earlier—making it the second-largest attendance in its 45-year history.

At their joint booth, the JSMEA and ClassNK both worked hard to promote offshore business-related technologies, products and services of the Japanese shipbuilding as well as ship machinery and equipment industries. Their efforts included display panels and models introducing Chikyū, a Japanese scientific drilling ship; floating production, storage and offloading (FPSO) facilities; anchor handling tug supply ships (AHTS) and oilrig support ships. A video was also shown highlighting ClassNK



JSMEA/ClassNK booth



Hamanaka Chain booth



Yokogawa Denshikiki booth

activities. A brochure was made available listing products manufactured by JSMEA members, along with pamphlets of ClassNK and JSMEA member companies.

In addition to the JSMEA and ClassNK team, Hamanaka Chain Mfg. Co. Ltd. and Yokogawa Denshikiki Co. Ltd. were also present at the OTC 2013 independently. The companies, both of which are affiliated with the JSMEA, carried out unique and elaborate activities.

Many major engineering companies of other nations also came to the OTC 2013, including Cameron Engineering & Associates LLC of the United States; FMC Technologies Inc., another local business; and Technip S.A. of France, all of which are globally renowned for their involvement in the development of energy resources and providing offshore services.

During the OTC 2013, staff members of the JSMEA visited many booths set up by ship machinery and

equipment associations, shipbuilding associations and enterprises of other countries.

As sideline activities, the JSMEA visited the Consulate-General of Japan in Houston and the Houston office of MODEC International Inc., which is the U.S. affiliate of MODEC Inc., a Tokyo-based general contractor. Members of the delegation exchanged views with local partners on up-to-date information in the offshore business in the United States as well as other offshore business leaders. They also discussed how the Japanese can enter the market.

On May 7, the JSMEA attended a reception held to coincide with the OTC 2013 by the World Energy Cities Partnership (WECP), a collaboration among several energy cities in the world. Again, JSMEA staff members held discussions with guests from other organizations.



At Houston office of MODEC International

CONTENTS

Motoyoshi Nakashima becomes JSMEA's first new chairman in six years1
 JSMEA participates in OTC 2013.....2-3
 JSMEA participates in Nor-Shipping 2013.....4-7
 Mitsubishi Heavy Industries, Ltd.8-9
 KAWASAKI HEAVY INDUSTRIES LTD..... 10
 NAKAKITA SEISAKUSHO CO., LTD.....11
 FUKUI SEISAKUSHO CO., LTD.12
 Hien Electric Industries, Ltd.....13
 NITTO CHEMICAL INDUSTRY CO. LTD.....14
 IMPA15
 JSMEA Action Plan 2013 16-20



JSMEA participates in Nor-Shipping 2013

The Japan Ship Machinery and Equipment Association (JSMEA) participated in an international maritime trade fair held in Lillestrom, Norway on June 4-7, 2013. Supported by The Nippon Foundation, the association was joined by 10 member companies.

Nor-Shipping attracts many shipowners from Norway and other countries in northern Europe.

In its 24th year, it has become one of the greatest international maritime exhibitions in the world.

Nor-Shipping 2013 hosted 1,037 exhibitors from 59 nations, 20 of which opened national pavilions, according to the organizer. Covering a total exhibition area of 22,500 square meters, the four-day trade fair welcomed 14,870 visitors.

(1) Japan pavilion

In preparation for attending Nor-Shipping 2013, the JSMEA had decided to run a pavilion in partnership with the Japan Ship Exporters' Association (JSEA). The partners had hoped to effectively and efficiently promote the high technological levels boasted and high-quality after-sales services provided by Japanese shipbuilders and ship machinery and equipment manufacturers, both of which play an important part of the Japanese maritime cluster. When the exhibition commenced on June 4, Mr. Motoyoshi Nakashima, chairman of the JSMEA, and Mr. Kazuaki Kama, president of the JSEA, were joined by Mr. Akio Shirota, the Japanese ambassador to Norway, in cutting the ribbon for the Japan pavilion.

The 10 JSMEA member companies attending Nor-Shipping 2013 installed a golf simulator at

the Japan pavilion to compete with other nations in attracting visitors. The simulator proved to be much more popular than expected, with many people drawn to the pavilion. At lunchtime on June 5, the second day of the event, the JSMEA held a party to treat visitors to Japanese dishes like sushi and tempura. The success of the party helped the pavilion fill to capacity. In kicking off the party, Mr. Nakashima expressed his gratitude to the visitors and encouraged them to have exchanges with Japanese ship machinery and equipment makers. Following the chairman's address, Mr. Hajime Ishizu, vice-minister for international affairs of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) of Japan, and Mr. Richard Nygaard Scarborough, international advisor to the Norwegian Shipowners' Association (NSA), both of which were guests of the Japan pavilion, congratulated the pavilion for its winning popularity.

June 4: (From left) Mr. Kama, Mr. Shirota and Mr. Nakashima cut ribbon for opening of JSMEA/JSEA Japan pavilion

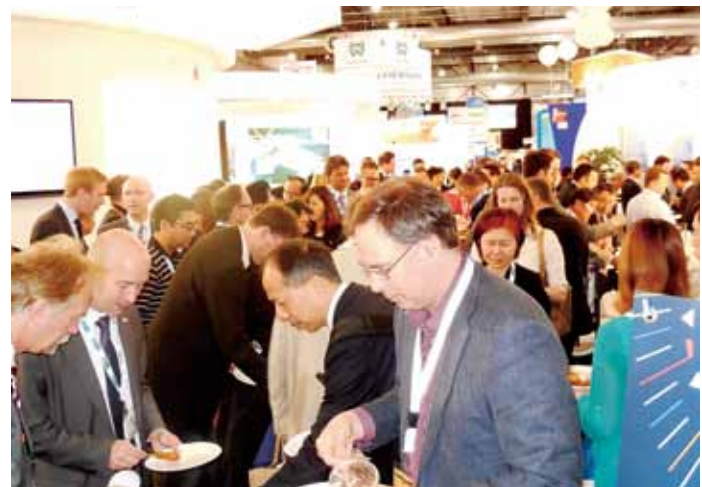


June 5: JSEA holds reception



Ms. Ida Skard, director-general of the Maritime Department, the Ministry of Trade and Industry of Norway

June 5: Mr. Nakashima, Mr. Ishizu, Mr. Tollef Schiander and Mr. Scarborough deliver speeches at party held to treat visitors to Japanese dishes



(2) Related programs

On the morning of June 6, a delegation made up of representatives of the 10 JSMEA members and the MLIT visited the NSA, where they met with Mr. Jorgen Vatne, deputy director general of the NSA and introduced the 10 companies to Mr. Harald Solberg, director of the shipowners' association, and Mr. Scarborough. The delegation then moved on to the Norwegian Maritime Exporters (NME). Meeting with Mr. Tor A. Svanes and Mr. Terje Lillienes, chairman and director general of the NME, respectively, the members exchanged opinions on future cooperation between Japanese and Norwegian ship machinery and equipment producers.

In the afternoon, the JSMEA held a Norway-

Japan Maritime Innovation Seminar jointly with the JSEA and the Shipbuilders' Association of Japan (SAJ). A total of 140 individuals attended the seminar on behalf of the Japanese and Norwegian maritime industries. Lectures were given on the current states of the industries, future developments and other subjects.

On June 7, the last day of the OTC 2013, the MLIT and Norway's Ministry of Trade and Industry (MTI) convened a round-table meeting that included both public organizations and private enterprises. Presentations were delivered on partnerships that Japan and Norway could develop in the future regarding marine activities in the Arctic Sea and other sectors of the maritime industry. Attendees exchanged views on these subjects as well.

June 6:

JSMEA/MLIT delegation visits NSA



Attendees of meeting between JSMEA/MLIT delegation and NSA

JSMEA/MLIT delegation moves on to NME



Mr. Svanes (sixth from left)

Mr. Svanes (left) and Mr. Nakashima (right)

Japan pavilion welcomes many visitors



Visitors have fun with golf simulator



(3) Other programs

With the opportunity to participate in Nor-Shipping 2013, on June 10, the JSMEA took five of its 10 travel companions to the Norwegian Maritime Competence Centre (NMCC). Located in Aalesund, a port town in the northwest of Oslo, the institute is engaged in educating its workers and doing other activities for the offshore business. The JSMEA mission also visited Kleven Verft AS, a shipbuilder specializing in constructing offshore support

vessels (OSVs), to promote the products made by the five members.

By participating in Nor-Shipping 2013 and other related events, the JSMEA successfully completed public relations and promotion activities for Japan-made ship machinery and equipment products extensively among local enterprises and other parties. Also, it gained much information on counterpart industries of Norway and other countries.

June 10: JSMEA takes five members to NMCC



June 10: JSMEA visits Klaven Velft



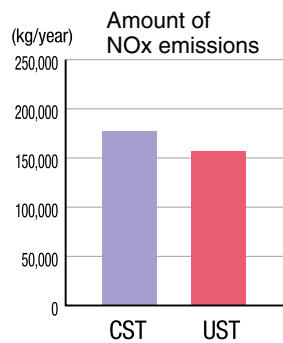
Ultra Steam Turbine (UST) for LNG Carrier

NOx emissions

Merit 1

Environmental friendliness

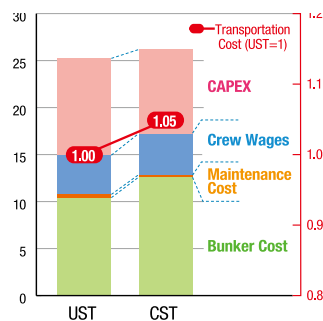
The UST meets the IMO's Tier II and III NOx as well as SOx rules and regulations. In addition, the system is applicable to various kinds of oil, such as low-sulfur fuel, gas oil and even low-quality oil.



Merit 2

Economic efficiency

As a propulsion system for LNG carrier, the UST is much more economical than CSTs in terms of life-cycle costs, which are calculated from initial investments as well as fuel and maintenance costs.



What is the UST?

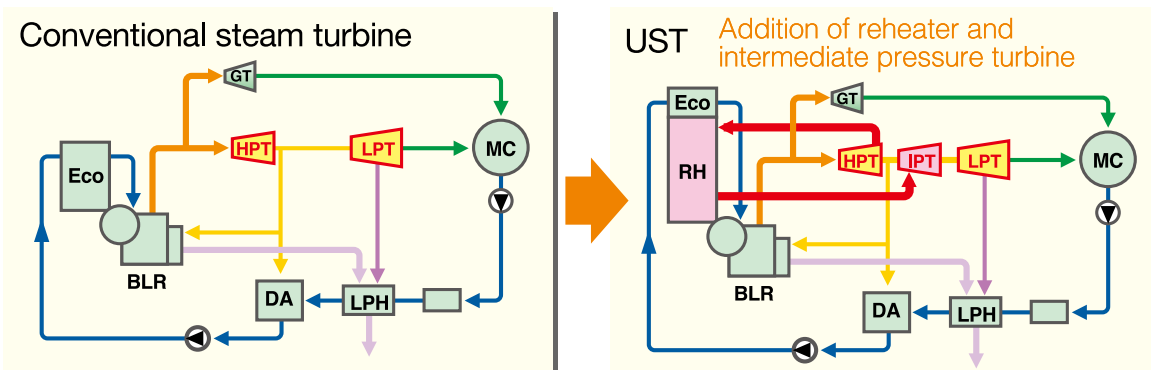
The UST takes over reliability, safety, low vibration/noise and low maintenance costs from conventional steam turbines (CSTs). However, a wide variety of new technologies enable the UST to realize an improvement of approximately 15% in fuel consumption.

Three major improvements from CSTs

- ① Rises in both temperature and pressure in steam conditions
- ② Application of reheat cycle
- ③ Adoption of higher-efficiency turbines

As of the end of 2012, contracts had been signed for installing the UST on six LNG carriers.

The UST's steam conditions are 10MPa in pressure and 550°C in temperature, both of which are higher than the CSTs' 6MPa and 510°C. The configuration of the UST is a reheat regenerative cycle adopted for its steam cycle, and a reheater and an intermediate pressure turbine are added. A three-dimensional nozzle is used for its steam turbine. Furthermore, many other cutting-edge technologies of MHI contribute to raising the efficiency of the UST.



Boilers and Turbines for FPSO, FLNG units and FSRUs

Specifications

- ① **Steam Conditions**
Pressure : 1.6MPa - 6.0MPa
Temperature : Saturated - 525°C
non-reheat cycle
- ② **Marine Boilers**
Rated Evaporation : Up to 220 tons/hour
- ③ **Steam Turbines**
Rated Power Output : Up to 45 MW

Applicable to higher pressures and temperatures.

Advantages of BTG Plants

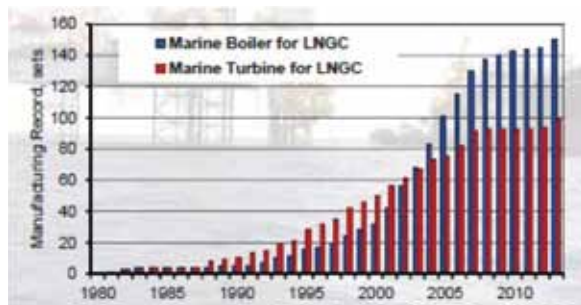
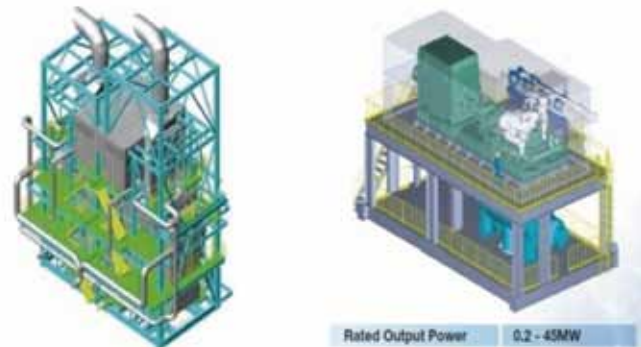
- ① **Fuel Flexibility**
Associated gas, VOC gas, HFO, MDO and crude oil can be used.
- ② **Low Maintenance Costs**
No hot parts overhaul is required for boilers or turbines.
- ③ **High Reliability and Availability**
Proven robust designs for long term operation without dry dock.

Boilers and Turbines for Offshore

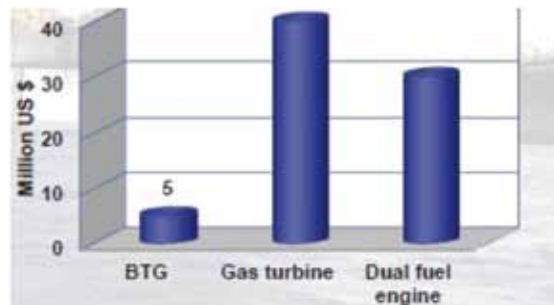
Types of Marine Boilers



Layouts of boiler and turbine modules



Delivery Record of Boiler / Turbine for LNGC



20 years Maintenance Cost (OPEX) 30MW class Power Generation

Manufacturing Records:
Marine Boilers:
over 5,500 sets
Marine Turbines:
over 2,400 sets

Mitsubishi Heavy Industries, Ltd.

3-1, Minatomirai 3-Chome, Nishi-ku, Yokohama 220-8401 JAPAN
http://www.mhi.co.jp/en/products/category/marine_machinery_and_engine.html
 meet-news@mhi.co.jp



Kawasaki a leading manufacturer of marine propulsion systems for oil & gas market

Kawasaki Heavy Industries Ltd. (KHI) develops and manufactures ship propulsion machines in Japan utilizing its comprehensive know-how. With high-level shipbuilding, hydraulics and other technologies acquired over the last century, KHI produces equipment and parts that include controllable pitch propellers, azimuth thrusters (Rexpeller) and side thrusters.

KHI's ship propulsion devices have been installed on a wide variety of commercial vessels in line with the recent growth worldwide in the oil and gas development businesses. The vessels include platform supply vessels (PSVs), anchor handling tug supply (AHTS) vessels and other small and medium offshore supply vessels (OSVs). Also, shuttle tankers, drill ships and other large vessels engaged in drilling and oil and gas transport activities are also operated with KHI machines. To date, KHI has won contracts to supply products for approximately 400 small and medium OSVs and 31 large ships—19 shuttle tankers and 12 drill ships.

An example of a KHI order is by Samsung Heavy Industries Co. Ltd. (SHI) of South Korea for propulsion machines for shuttle tankers to be deployed in an oil field development project in the Barents Sea. It is being advanced by Statoil ASA of Norway, one of the largest oil and natural gas companies in the world. For the two shuttle tankers, eight Rexpeller azimuth thrusters and two side thrusters will be delivered in December 2013 and January 2014.

The Rexpeller products ordered by SHI are fully azimuth-controllable thrusters, which can be used as a propulsor, a rudder and a side thruster. They can be retracted and hidden in the hull to allow the ship to run smoothly in shuttle services. Meanwhile, the side thrusters are a transversal propulsion device that improves the ship's maneuverability, making it easier to take dynamic positioning as well as to leave and arrive at berths. Setting both Rexpeller azimuth thrusters and side thrusters in coordinated motion with the main engine helps operators run shuttle tankers more effectively. Then, shuttle tankers, which need to abide by the same positioning for cargo loading and unloading activities, can do so even in severe hydrographic conditions, such as strong winds and currents.

KHI had also won a contract with Estaleiro Enseada do Paratuacu S.A. (EEP), a Brazilian shipyard, for 36 Rexpeller azimuth thrusters for six drill ships to be operated in a project to develop an oil field off the country's coast. It is being moved ahead by Petroleo Brasileiro S.A. (Petrobras), a local semi-public oil company. The Rexpeller thrusters can be mounted and dismantled underwater, allowing the vessel to avoid having to enter dock for maintenance even if when the thrusters have been installed on the hull's bottom.

KHI produces and delivers packages of controllable pitch propellers for shuttle tankers as well. KHI has already sold many of these packages.

As the two examples above show, KHI actively receives orders for propulsion machinery for commercial vessels operated for oil and gas development projects. KHI will continue to expand sales by developing new products and expanding its service network.

Inquiries about KHI products can be made at the following:

Kawasaki Heavy Industries Ltd.
Tokyo Head Office
Overseas Sales Section
Marine Machinery Sales Department
Machinery Division
Gas Turbine and Machinery Company
Tel.: +81-3-3435-2374
E-mail: marine-machinery-sales-e@khi.co.jp
URL: <http://www.khi.co.jp/english/machinery/product/ship/index.html>



KAWASAKI HEAVY INDUSTRIES LTD.

1-14-5, Kaigan, Minato-ku, Tokyo, 105-8315 Japan
Tel: +81-3-3435-2031 Fax: +81-3-3435-2022
<http://www.khi.co.jp>

Ships Supported by NAKAKITA Brand

Nakakita Brand has been supporting transportation by ship including small- and medium-sized ships, large tankers for crude oil, and LNG carriers transporting environmentally friendly natural gas. NAKAKITA products are extensively used in ships. In a wide range of ships including bulk carriers, tankers and LNG carriers, our products support

ballast control and cargo control by remotely controlling butterfly valves of cargo and ballast lines from the control console. Our products also bear such important roles as constantly regulating the temperature of fuel oil, cooling water, and lubricating oil for the main engine.

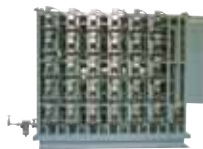
Cargo/Ballast Valve Remote Control Systems

Cargo Control Console



Conventional Type

Hydraulic Direction Change-over Valve

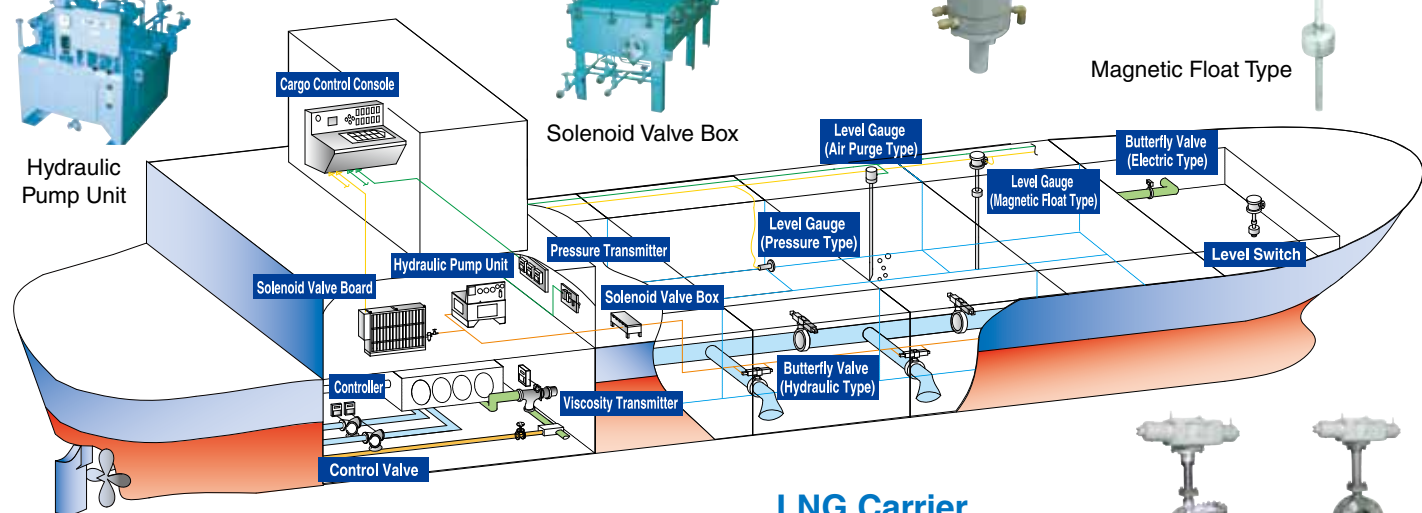


Solenoid Valve Board

Hydraulic Power Source



Hydraulic Pump Unit



Butterfly Valves



Hydraulic Type



Manual Type

Level Indicating Instruments



Air Purge Type



Magnetic Float Type

Automatic Control Equipment (Engine Room, Pump Room)



Rotary Control Valve (Pneumatic Type)

Control Valve (Diaphragm Operated)



Astern Guardian Valve



Cryogenic Control Valve



LNG Butterfly Valve



ESDS Control Panel

NAKAKITA SEISAKUSHO CO., LTD.



FUKUI Accelerates in Offshore

FUKUI is the leading safety valve supplier with 77 years of experience.
There are more than 300 LNG carriers using our products in service.
FUKUI strengthens its presence in the offshore market
with unrivaled product quality and line-up.
We provide tailor-made solutions for the task.



FUKUI SAFETY VALVE



- Recent Track Record
- *PETRONAS FLNG1, Topside & Cargo System
 - *PETROBRAS FPSO Cidade de Mangaratiba
 - *Apache FPSO Armada Claire
 - *PETROBRAS FPSO Cidade de Itaguai



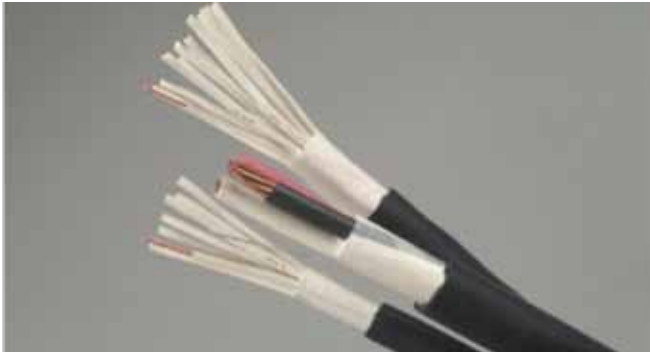
FUKUI SEISAKUSHO CO., LTD.

1-6 Shodai Tajika, Hirakata, Osaka, Japan 573-1003
Tel.: +81-72-857-4527 / e-mail: stm@fkis.co.jp
<http://www.fkis.co.jp/>



Halogen – free flame – retardant cables

Hien Electric Industries recommends the use of halogen-free and flame-retardant cables



ClassNK

**ISO 9001
ISO 14001**

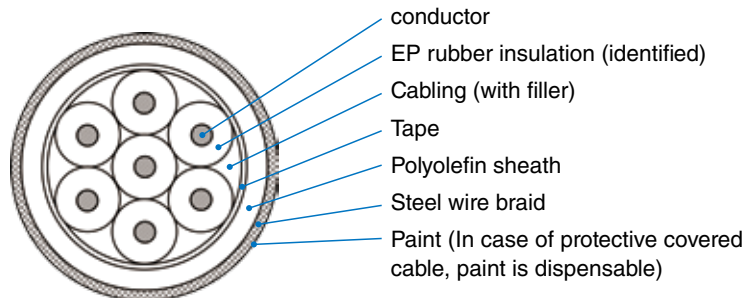
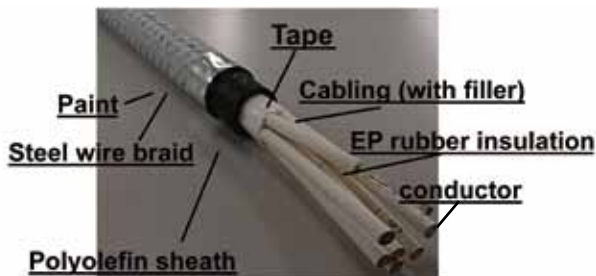
In compliance with the ISO9001 quality management system and the ISO14001 environmental management system

Features: high degree of toughness

- (1) Protection against external impact
- (2) Steel wire braid against sparks during welding
- (3) Plastic coating protected against steel wire corrosion

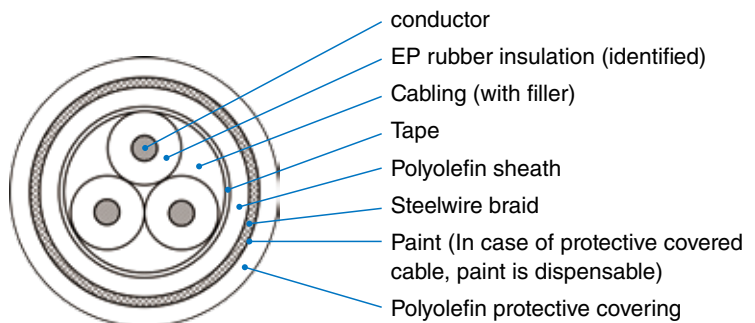
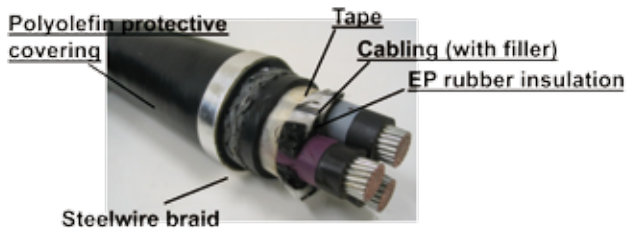
Product description

for Control & Instrumental Multicore Cable



150/250V FA-MPOC-7x1.0 (Multi core, EP rubber insulated, Polyolefin sheathed and steel wire braided cable)

for Power & Lighting cable



0.6/1kV FA-TPOCO-70 (Three core, EP rubber insulated, Polyolefin sheathed and steel wire braided cable with Polyolefin protective covering)



Hien Electric Industries, Ltd.

505, Shinshibakawa Bldg., 3-4-11, Dosho-machi, Chuo-ku, Osaka, 541-0045, JAPAN
Tel: +81-6-6226-1501 Fax: +81-6-6226-1507
http://http://www.hien.co.jp/e/e_index

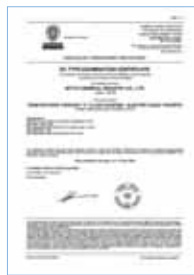
FIRE-TIGHT SEALING FOR CABLE TRANSIT

APPROVED IN ACCORDANCE WITH 2010 FTP CODE

Our company has embarked on gathering information and conducting standard fire tests of an A class cable transit, thereby developing the putty product “PLASEAL NF-23” for vessel use corresponding to an A-0/A-60 class of the 2010 FTP code.



1. It is easy to seal with PLASEAL NF-23. PLASEAL NF-23 is a component type of sealing compound. It is all you need to complete your fire-tight sealing job, making application easy.
2. PLASEAL NF-23 has a comparatively low specific gravity. Specific gravity of PLASEAL NF-23 is approximately 0.8, so with this product you can reduce ship body weight and save on energy costs.
3. PLASEAL NF-23 will shorten working hours. Cables can come in contact with other cables when using PLASEAL NF-23, which means that every cable can be arranged freely, so PLASEAL NF-23 reduces working hours.



Clean the surface where NF-23 will be applied, making sure it is free of water and dust.



Apply NF-23 so that none of the cables is touching the coaming.



Apply NF-23 so as not to leave any space, especially around any of the cables.



Outline of Company

Nitto Chemical Industry Co. Ltd. is a chemical maker, which produces sealing compound, epoxy adhesive and hot melt adhesive. Our original brands, NEOSEAL and PLASEAL, are highly favored among most of our Japanese customers. The branded putty is especially widely used in various places such as buildings, ships and train cars. We've been continuing to support the foundation of society with our products, and we also aspire to be accepted as a global standard.

Technical Purchasers Conference - MT5

Technical Purchasers' Conference to be held Wednesday, Sept. 11 in the Abbey Room at the QEII Conference Centre

The Technical Purchasers' Conference returns to IMPA London in 2013 following a highly successful debut in 2012.

The one-day program is aimed at superintendents, technical purchasing staff, engineers and anyone with an interest in developing their technical know-how.

Proceedings begin after the keynote address from Pellegrino Riccardi.

Session one is a Market Overview and Outlook, focusing on the newbuilding and demolition programs and the demand for each.

Peter Sand, the Chief Shipping Analyst at BIMCO, the organization sponsoring the Technical Purchasing Program, will be delivering this talk.

Session two is a panel discussion between major lube suppliers.

Representatives of the major players – Shell, Exxon Mobil, Castrol, Total Lubmarine and Chevron – will discuss the major topics in the industry and will field questions from delegates in what is likely to be a lively debate.

Former MT Editor Paul Ellis moderates the panel.

The lubes session is to be followed by an examination of the impending Ballast Water Management Systems regulations.

With IMO regulations now imminent, Michael Lund of BIMCO asks how your company will meet the regulations and whether your fleet is ready.

Rounding off the day will be a lively debate about the use of genuine and non-genuine spare parts.

We're delighted to announce that this session will feature two speakers from the Japanese Ship Machinery & Equipment Association (JSMEA).

Mr. Koichi Yoshimura, General Manager Global Customer Support Dept., Daihatsu Diesel; and Mr. Koji Sasaki, Senior Manager, Parts Sales and Planning Dept., Yanmar will lead the discussion.



The Technical Program closes at 5 p.m., after which delegates are free to attend the IMPA London Cocktail party.

If you'd like to attend the Technical Purchasers' Conference then please register at 2013.impalondon.com/register.

A delegate pass for this program is priced at BP295 + VAT, and includes lunch, tea and coffee, and admission to the cocktail party.

JSMEA Action Plan 2013

1. Encouraging interchanges and cooperation within the industry and with those outside of the industry

Facilitating interchanges and cooperation within the industry

- Activating industry sector meetings and other efforts

The Japan Ship Machinery and Equipment Association (JSMEA) is facilitating interchanges and cooperation within the ship machinery and equipment industry, and further activating industry sector meetings and other efforts.

To help member companies from different industry sectors tackle common challenges, carry out joint development projects and join forces on other important subjects, the JSMEA is enhancing partnerships among industry sector meetings, and considering holding conferences of industry sector meeting presidents.

- Council of Next-Generation Management of Marine

The JSMEA's Council of Next-Generation Management of Marine (Jisedai-kai) is promoting interchanges and friendship among young entrepreneurs of member companies, and encouraging them to openly exchange information from a global point of view.

- Promoting measures against non-genuine products

The JSMEA continues to gather information on non-genuine products from other countries, enhance cooperation within respective industry sectors and carry out activities to meet the needs of member companies.

The JSMEA is promoting measures against non-genuine products from a global standpoint. It is also considering holding a seminar and other events in

Taiwan in fiscal 2013 (April 2013-March 2014) for local shipowners and other parties concerned with maritime affairs.

- Coping with domestic and international rules and regulations as well as other challenges

-- The JSMEA is acting on behalf of the ship machinery and equipment industry to address challenges relating to domestic and international rules and regulations. For example, it is working on those arising from the mutual approval system for ship machinery and equipment as well as other products among the European Union (EU)'s classification societies; rules and regulations of the International Organization for Standardization (ISO), the International Maritime Organization (IMO) and other international organizations; and domestic rules and regulations.

- Recruiting new members

To further improve its business activities, the JSMEA is recruiting new member companies among relevant business operators.

- Encouraging cooperation with local ship machinery and equipment associations

a. The JSMEA is exchanging information closely with local ship machinery and equipment associations in Japan, and helping them when they hold national assemblies in the future.

Promoting Interchanges and cooperation with user industries and others

- Shipping Industry

The JSMEA's Consultation Group is having meetings with six oceangoing shipping service providers to exchange information and views on challenges facing both the ship machinery and equipment and shipping industries.

The JSMEA is considering holding meetings between its Consultation Group and shipping

companies engaged in providing domestic services.

- Shipbuilding industry

The JSMEA's Consultation Group is having meetings with the Planning Committee of the Shipbuilders' Association of Japan (SAJ) to exchange information and views on challenges facing both the ship machinery and equipment and shipbuilding industries.

The JSMEA's Consultation Group is having meetings with its counterpart of the Cooperative Association of Japan Shipbuilders (CAJS) to exchange information and views on challenges facing both the ship machinery and equipment and shipbuilding industries.

- Governmental and other organizations

The JSMEA is having technical meetings with the Japan Coast Guard (JCG) to exchange information on technical issues and challenges, such as improvements in the performance of machinery and equipment for patrol vessels.

The JSMEA is having meetings with Nippon Kaiji Kyokai (ClassNK) to exchange information and opinions on, among other subjects, domestic and international issues relating to the ship machinery and equipment industry as well as classification societies.

The JSMEA is having secretariat-level meetings with the Japan Railway Construction, Transport and Technology Agency (JRRT) to exchange information and carry out other activities to address technical issues relating to ships deployed in domestic services.

The JSMEA is having meetings with the Fishing Boat and System Engineering Association to exchange information and carry out other activities to address technical issues relating to the fishery industry.

The JSMEA is considering having meetings between members of its Consultation Group and representatives of trading companies.

- Developing an application platform for more efficient ship operations by making use of onboard local area networks (LANs) as well as conducting research and development projects for onboard tests (fiscal years 2013 and 2014)

The JSMEA is developing information infrastructure for telecommunication among ships and between ships and inland bases to allow

information to be consolidated among different kinds of devices. To make the infrastructure a standard, it is creating a system on a trial basis for integrating information transmitted among ships and between ships and inland bases. It is also testing the system aboard ships to determine the advantages of integrated information.

2. Promoting securement and development of human resources

Working hard to secure and develop human resources

- Certifying ship machinery and equipment meisters

The JSMEA certifies highly skilled employees of member companies who support the ship machinery and equipment industry as "meisters." In addition, it actively recommends those certified to the Japanese government's and other organizations' award programs.

- Securing human resources

The JSMEA is providing endowment for courses at Tokyo University of Marine Science and Technology and Kobe University. At these courses, industry insiders give lectures.

As part of its recruitment activities, the JSMEA is holding job fairs at Tokyo University of Marine Science and Technology and Kobe University to help students learn more about the ship machinery and equipment industry. It is also giving seminars at Tokai University and special lectures at Nagasaki Institute of Applied Science (NiAS), both of which are job fairs held on behalf of ship machinery and equipment manufacturers.

- Providing training and education for corporate employees

To help member companies train and educate young employees, the JSMEA is offering on-the-job programs onboard training vessels owned by colleges and other organizations.

The JSMEA is providing education and guidance in English by offering English-language courses to employees of member companies who need to use the language for their jobs.

The JSMEA is offering adult-education courses

to introduce shipping and shipbuilding to mid-career employees of member companies in order to better inform them of trends in, and the current situation and other aspects of the shipping and shipbuilding industries that are related to the ship machinery and equipment business.

- Discussing programs for securing and developing human resources

a. The JSMEA's Fostering Manpower Commission is holding discussions on effective programs that satisfy the needs of member companies.

3. Actively contributing to tackling safety and environmental issues

Enhancing efforts to cope with IMO and other rules and regulations

- Enhancing efforts to cope with IMO and other rules and regulations

The JSMEA is convening meetings to garner opinions from the ship machinery and equipment industry on safety and environmental rules and regulations implemented by the International Maritime Organization (IMO) and other entities. Other actions that it is taking vigorously on behalf of the industry include participating in the creation of the following international rules and regulations.

The IMO's rules and regulations on emission gas from ships

Rules and regulations on ship machinery and equipment implemented by the IMO, the ISO, the International Electrotechnical Commission (IEC) and other organizations.

Making vigorous efforts to address environmental issues

- Researching and studying the implementation of the IMO's Tier III rules and regulations on NOx emissions (fiscal years 2012 and 2013)

-In preparation for the implementation of the IMO's Tier III rules and regulations on nitrogen oxide (NOx) emission, the JSMEA completed research and development programs from fiscal 2007 to fiscal 2011. Financially supported by The Nippon Foundation, it worked on super-clean marine diesel engines, which it hoped would emit a much

smaller amount of NOx. The IMO is scheduled to spend two years (2012 and 2013) reviewing and reaching conclusions on various subjects relating to the new rules and regulations, including when to put them in force. To help the ship machinery and equipment industry deal appropriately with the reviewing efforts, the JSMEA is researching and studying the implementation of the Tier III rules and regulations. More specifically, it is handling a wide variety of subjects, including how well technologies have been developed to comply with the rules and regulations, how these technologies can be applied to ships and how reductant agents can be supplied.

- Saving energy

The JSMEA is formulating a voluntary action plan for ship machinery and equipment manufacturers, setting a target of improving energy consumption by 30 percent (over fiscal 1990) when producing diesel engines for ships to reduce carbon dioxide (CO2) emissions.

- Recycling ships

The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships was adopted in May 2009. The JSMEA continues to have the convention become better known and understood.

4. Stimulating technological development

Helping the development of new products

- Programs to help the development of new products

To stimulate the ship machinery and equipment industry's drive to develop new products, the JSMEA is advancing programs with financial support from The Nippon Foundation to help the following technological development activities.

Development of technologies for gas engines for ships that notably reduce the burden on the natural environment

Development of technologies for high-pressure, high-reliability rotary vane steering gears

Development of technologies for silencers that are moved with recovered waste heat

- (and conducting onboard tests)
- Development of technologies for high-sensitivity sensors for monitoring bearing wear
- Development of technologies for hybrid air conditioners with coolants whose cooling sources are liquefied natural gas (LNG) and seawater
- Development of technologies for high-efficient and small three-stage steam turbines that are driven with excess steam from ships

Creating environments for stimulating the development of new products

- Feasibility studies

The JSMEA is conducting feasibility studies for the development of the following four new products to make them subject to The Nippon Foundation's program to financially assist the development of new products.

- Researching and studying the computerization of cylinder liner honing machines
- Researching and studying the designing and development of a system under which ships are operated with new sources of energy
- Researching and studying rules and regulations for onboard noise
- Researching and studying the surface roughness of ships and measuring devices

- Study groups

The JSMEA is holding meetings of the following study groups. Inviting representatives of user industries and other parties, it is conducting research and study projects with the aim of developing next-generation systems.

- Smart Navigation System Project
- Study group for environmental energy (on the table)

- Forums on ship machinery and equipment

The JSMEA is holding forums on ship machinery and equipment to help those in the industry obtain better knowledge of shipbuilding and ship machinery and equipment technologies

in the hopes of finding new subjects to discuss and contributing to the formation of technological strategies.

- Discussing the stimulation of technological development

The JSMEA's Technological Development Strategy Review Board is discussing technological development, stimulation efforts and other subjects from a medium- and long-term point of view.

The JSMEA has set up the Review Committee of Life Cycle under its Technological Development Strategy Review Board to research and study methods for quantifying the life-cycle costs of ship machinery and equipment.

The JSMEA is drastically reviewing support for developing new products and other programs.

5. Promoting global development

Creating environments for promoting global development

- Encouraging international exchanges

The JSMEA continues to have international exchanges and cooperates with the following and other maritime affairs organizations. It is also promoting exchanges with the shipping, shipbuilding and other user industries of other nations.

- Korea Maritime Equipment Association (KOMEA)
- China Association of the National Shipbuilding Industry (CANSI)
- European Marine Equipment Council (EMEC)

The JSMEA is gathering information on maritime affairs in Asia, Europe and other regions by making use of the Ship Machinery Departments of the offices in Shanghai, Singapore and that it runs jointly with the Japan External Trade Organization (JETRO) with financial support from The Nippon Foundation. The offices are also conducting various research on local affairs. The offices also are responsible for the following special research projects.

- Shanghai: research on the reorganization of companies in China's ship machinery and equipment industry

Singapore: research on trends in marine development-related markets in Southeast Asia

London: research on the European maritime cluster and related organizations as well as future strategies

- Discussing medium- and long-term global development

The JSMEA's Global Strategic Plan Review Board is exchanging views on medium- and long-term global development strategies to help member companies globalize more effectively.

The JSMEA is finding challenges and other obstacles, and discussing measures to overcome them to encourage member companies to make inroads to the offshore business market.

Strengthening public relations activities in other countries

- Participating in international exhibitions and seminars as well as visiting shipowners and shipbuilders

The Overseas Exhibition Working Group (WG), which is located under the JSMEA's Global Strategic Plan Review Board, is discussing more effective ways to participate in international exhibitions to exhibit products.

The JSMEA is participating in the following international exhibition with financial support from The Nippon Foundation. In addition, it is holding seminars and receptions as well as visiting and inspecting local parties concerned with maritime affairs in accordance with the needs of member companies. The JSMEA ran Japan pavilions jointly with Nippon ClassNK at the Offshore Technology Conference (OTC) 2013 and with the Japan Ship Exporters' Association (JSEA) at Nor-Shipping 2013. The association is planning to partner with other organizations that will be present at the other

exhibitions listed below and holding seminars.

OTC 2013 in May in the United States

Nor-Shipping in June in Norway

Navalshore in August in Brazil

International Maritime Purchasing Association (IMPA) Exhibition and Conference in September in the United Kingdom

Marintec China in December

The JSMEA will alone attend Kormarine 2013 in October in South Korea.

The JSMEA is preparing to open a Japan pavilion and exhibiting products at Sea Japan 2014 in April 2014 in Tokyo.

With financial support from The Nippon Foundation, the JSMEA is preparing participate in Posidonia 2014 in June 2014 in Greece.

The JSMEA will open a corporate zone by itself for member companies.

The JSMEA will open a maritime cluster zone for the Japanese shipping, shipbuilding and ship machinery and equipment industries; universities and colleges; research institutes; and other relevant organizations.

With financial support from The Nippon Foundation, the JSMEA is holding seminars and other events in Myanmar and Indonesia to stimulate demand for ship machinery and equipment in markets in newly industrialized economies. Further, it is holding seminars in Russia and other nations without support.

With financial support from The Nippon Foundation, the JSMEA is publishing new editions of JSMEA News, the public relations magazine whose purpose is to introduce the Japanese ship machinery and equipment industry to overseas readers, subscribers and other parties.



Japan Ship Machinery and Equipment Association

JSMEA

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