

# Jsmea News

## Report on Findings by Mission to Brazil



JSMEA Vice-Chairman Yukinobu Fujimoto (left) welcomes Transpetro President Sergio Machad (right) at the JSMEA booth at Navalshore 2010.

JSMEA sent a mission to the Federative Republic of Brazil, which is now attracting interest for its government policy to promote shipbuilding, among other factors. The mission's aim was to make the Japanese marine equipment industry extensively known to the nation's maritime community on the occasion of the international maritime exhibition NAVALSHORE 2010 held in Rio de Janeiro on August 11-13, 2010. The mission, headed by Yukinobu Fujimoto, vice-chairman of the board and chairman of JSMEA global strategy committee as well as chairman of Fuji Trading Co. Ltd., successfully accomplished the following tasks.



Navalshore 2010

## 1. Participation in NAVALSHORE 2010

**Title of the event:** NAVALSHORE 2010

**Duration:** Three days from Wednesday, August 11, to Friday, August 13, 2010

**Open:** 14:00–21:00

**Venue:** Sul América (South America) Convention Center Rio de Janeiro, Federative Republic of Brazil  
Exhibition space Stand Nos. 129 to 135 on the first floor

**Organizers:** United Business Media (UBM) BRAZIL and Portos e Navios

**Number of exhibitors:** 320

**Number of visitors:** 13,054

**Total area of the venue:** 6,767 m<sup>2</sup>

**Floor space of JSMEA's booth:** 72 m<sup>2</sup>

**Number of exhibitors from JSMEA:** 16 companies and one non-commercial organization exhibiting panels and product catalogs

Eagle Industry Co. Ltd., Kanagawa Kiki Kogyo Co. Ltd., Kawasaki Heavy Industries Ltd., Kawasaki Precision Machinery Co. Ltd., Shinko Ind. Ltd., Taiko Kikai Industries Co. Ltd., Daihatsu Diesel Mfg. Co. Ltd., Taiyo Electric Mfg. Co. Ltd., Teikoku Machinery Works Ltd., Takashina Life Preservers Co. Ltd., Nakashima Propeller Co. Ltd., Nippon Hakuyo Electronics Ltd., Fuji Trading Co. Ltd., Manabe Zoki Co. Ltd., Musasino Co. Ltd., Yanmar Co. Ltd., and Nippon Kaiji Kyokai (Class NK)

**Distinguished visitors to JSMEA's booth:**

Mr. Sergio Machado, president;

Mr. Agenor Cesar Junqueira Leite, shipping director;

and Mr. Arnaldo S. Aracdiar, executive manager of Petrobras Transporte S.A. / Transpetro.

*\* Transpetro is the sponsor of this exhibition.*

## 2. Japan Night (reception inviting senior executives of shipping and shipbuilding companies, among others)

**Time:** Wednesday, August 11, 19:00-21:00

**Venue:** Second floor of Sul América Convention Center (Rooms 3 and 4)

**Buffet**

**Welcome addresses by:**

Yukinobu Fujimoto, vice chairman of JSMEA, and Noboru Ueda, chairman and president of Class NK

**Toast proposed by:**

Mr. Sergio Leal, executive secretary, SINAVAL / Brazilian Association of Shipbuilding, Shiprepair and Offshore Industries

**Participants:** About 90 persons

## 3. Seminar to introduce JSMEA members' products

**Time:** Thursday, August 12, 2010; 14:30–19:00

**Venue:** Second floor of Sul América Convention Center (Rooms 1 and 2)

**Language used:** English (partly Portuguese)

**Method of presentation:** Visual projector:

**Welcome addresses by:**

Yukinobu Fujimoto, vice chairman of JSMEA; Noboru Ueda, chairman and president of Class NK; and Tasuku Hirahara, safety technology officer,

Maritime Bureau, Ministry of Land, Infrastructure, Transport and Tourism (MLIT)

**Lectures by:** representatives from 12 companies and one non-commercial organization

Eagle Industry Co. Ltd., Kanagawa Kiki Kogyo Co. Ltd., Kawasaki Precision Machinery Co. Ltd., Sunflame Co. Ltd., Shinko Ind. Ltd., Taiko Kikai Industries Co. Ltd., Daihatsu Diesel Mfg. Co. Ltd., Nakashima Propeller Co. Ltd., Nippon Hakuyo Electronics Ltd., Manabe Zoki Co. Ltd., Musasino Co. Ltd., Yanmar Co. Ltd., and Nippon Kaiji Kyokai (Class NK)

**Distinguished members of audience:**

Mr. Nilton Goncalves, general technical manager; and Mr. Fernando Guimsraes Lima, Engenheiro-Eltricidade eAutomacao, consultant senior

**Participants:** About 100 persons

**Supplementary remark:** The seminar was followed by cocktails, during which the speakers built a rapport with members of the audience.



## 4. Visits to shipowners and shipbuilders

### 1) Visit to Transpetro's office

**Time:** Wednesday, August 11, 2010; 10:00–12:00

**Received by:**

Mr. Sergio Machado, CEO; Mr. Agenor Cesar Junqueira Leite, shipping director; Mr. Arnaldo S. Aracdiar, executive manager, PROMEF (Transpetro Fleet Modernization and Expansion Program); Ms. Ana Paula Costa, CEO technical Advisor, Naval Architect-Marine Engineer, Master of Science, MPM

**Participants:** 21 persons

### 2) Visit to EISA Shipyard (Estaleiro Ilha S.A.)

**Time:** Thursday, August 12, 2010; 9:00–11:00

**Received by:**

Mr. Milton Branquinho Monteiro, director; Mr. Luiz Felipe Pimentel M. de Araujo, Engenheiro Naval; Mr. Ronald Carelli, Mech. Engineer-Procurement; and Mr. Jose Carlos B. Schittine, Mech. Engineer-Procurement

**Participants:** 25 persons

### 3) Visit to MAUA Shipyard (Estaleiro MAUA)

**Time:** Friday, August 13, 2010; 9:00 – 11:00

**Received by:**

Mr. Paulo Sergio de Carvalho Couto, commercial manager; and Mr. Milena Barcelos Soares, marketing commercial

**Participants:** 26 persons

## Participation in Posidonia 2010

JSMEA participated in the international maritime exhibition Posidonia 2010 held at the Hellinikon Exhibition Center in the outskirts of the Greek capital of Athens on June 7-11, 2010 with a grant from The Nippon Foundation.

Posidonia is known for the large number of shipowners it attracts from many countries including Greece. This time again, JSMEA set up the Japanese booth jointly with Japan Ship Exporters' Association (JSEA) near the main entrance of the exhibition hall, where eight member companies exhibited to actively promote Japan's marine equipment industry to maritime experts from Greece and the rest of the world.

From 17:30 on the first day of the exhibition, an opening ceremony for the Japanese booth was held as Japanese Ambassador Takanori Kitamura in Greece; Mr. Masamoto Tazaki, president of the JSEA; and Mr. Yukinobu Fujimoto, vice-chairman of JSMEA, cut the ribbon, after which the Ambassador along with other Japanese celebrities inspected the booth. Following that, the organizer of Posidonia 2010 magnificently held the opening ceremony of the whole exhibition and, after the ribbon-cutting and declaration of the opening by Ms. Louka Katseli, the Greek Minister of Economy and Shipping, the organizer's guests inspected the entire exhibition. When they came to JSMEA's booth, Ms. Katselli raised a cup of sake to toast together with Ambassador Kitamura and JSMEA Vice-Chairman Fujimoto, adding to the occasion a graceful touch, which the international exhibition truly deserved. Just before the end of the first day of the show, Greek Prime Minister George A. Papandreou honored the Japan booth with his visit, suggesting the importance of the exhibition to the host country.



Japan Pavilion Opening Ceremony

The diversity of visitors endorsed the prosperity of Posidonia. Exhibitors from JSMEA actively promoted their presence, not just introducing their respective products but also accentuating the excellence and reliability of the Japanese marine equipment industry as a whole, bringing their part in the exhibition to a successful finale.

### [Number of exhibitors and visitors]

**Number of exhibitors:** 1,858 companies and noncommercial organizations (from 87 countries and regions)

**Number of visitors:** 17,385 persons

**Floor space of JSMEA's booth:** 148 m<sup>2</sup>

**Number of exhibitors from JSMEA:** 8

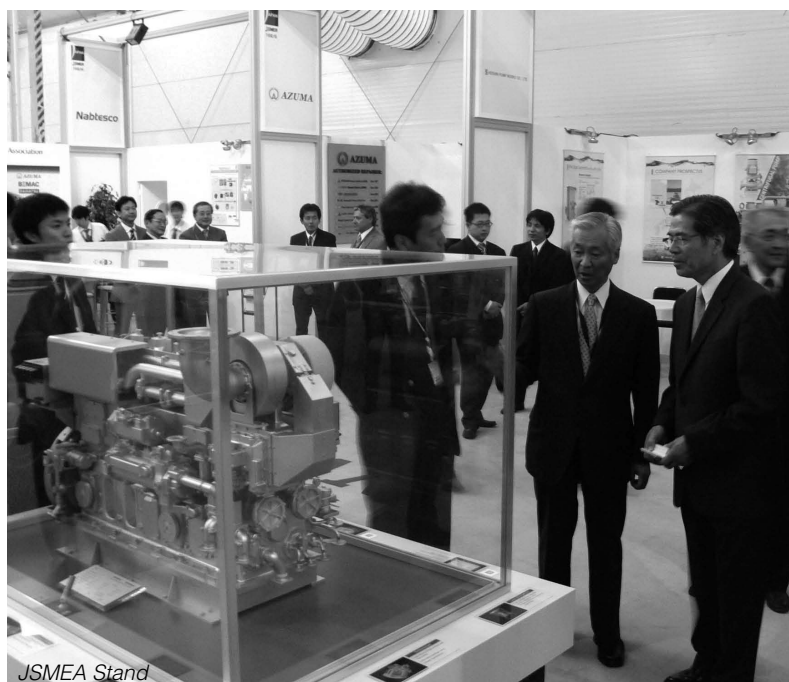
(occupying exhibition floor spaces)

Azuma Kako Co. Ltd., Uzushio Electric Co. Ltd., Taiko Kikai Industries Co. Ltd.; Daihatsu Diesel Mfg. Co. Ltd., Fuji Trading Co. Ltd., HSN-Kikai Kogyo Co. Ltd., and Yanmar Co. Ltd.

(Exhibiting panels)

Nabtesco Corp.

(All the figures are based on information released by the organizer.)



JSMEA Stand

## Report on Participation in SMM Hamburg 2010



SMM 2010 JSMEA Stand

JSMEA participated in the SMM Hamburg 2010 international maritime exhibition held on September 7-10, 2010 in Hamburg Messe in Hamburg, Federal Republic of Germany, together with 19 of its member companies with a grant from The Nippon Foundation.

It is one of the largest international maritime exhibitions in the world having a history of over 40 years. SMM Hamburg 2010 was as vibrant as its immediate predecessor.

JSMEA's booth also attracted many visitors. On the opening day, Deputy Consul Tomio Sakamoto and other officials from Japanese Consulate General in Hamburg visited Japanese booth, and listened enthusiastically to presentations by the representatives of exhibiting companies.

Many events and international conferences linked to the exhibition were also held, and the organizer's opening ceremony taking place in an international conference hall annexed to the exhibition hall further enhanced the excitement of the show.

This exhibition is known for the large number of maritime experts it attracts from many countries not only in Europe but also in the rest of the world. Exhibitors from JSMEA were also engaged in positive and successful promotional activities, introducing their respective products and emphasizing the excellence and reliability of the Japanese marine equipment industry.

### [Number of exhibitors and visitors]

**Number of exhibitors:** More than 2,000 companies (from 58 countries and regions)

**Number of visitors:** More than 50,000 persons (both according to the organizer's tentative estimate)

**Floor space of JSMEA's booth:** 375 m<sup>2</sup>

**Number of exhibitors from JSMEA:** 19 (occupying exhibition floor spaces)

Kawasaki Heavy Industries Ltd., Kawasaki Precision Machinery Co. Ltd., Shoyo Engineering Co. Ltd., Daikin MR Engineering Co. Ltd., Daihatsu Diesel Mfg. Co. Ltd., Taiyo Electric Mfg. Co. Ltd., Tanabe Pneumatic Machinery Co. Ltd., Nakashima Propeller Co. Ltd., Naniwa Pump Mfg. Co. Ltd., Nabtesco Corp., Niigata Power Systems Co. Ltd., Harada Corp., Fuji Trading Co. Ltd., HSN-Kikai Kogyo Co. Ltd., Mitsubishi Kakoki Kaisha Ltd., and Yanmar Co. Ltd.

(Exhibiting panels)

Uzushio Electric Co. Ltd, JFE Engineering Corp., and Nishishiba Electric Co. Ltd.



Hamburg Messe

# Save Energy and Reduce GHG for Next Generation WHRS & New Cargo Oil Pump Turbine

Since its founding in 1938, SHINKO has been an extremely successful specialist in the field of pump and turbine manufacturing for marine use.

## Generator turbine for WHRS

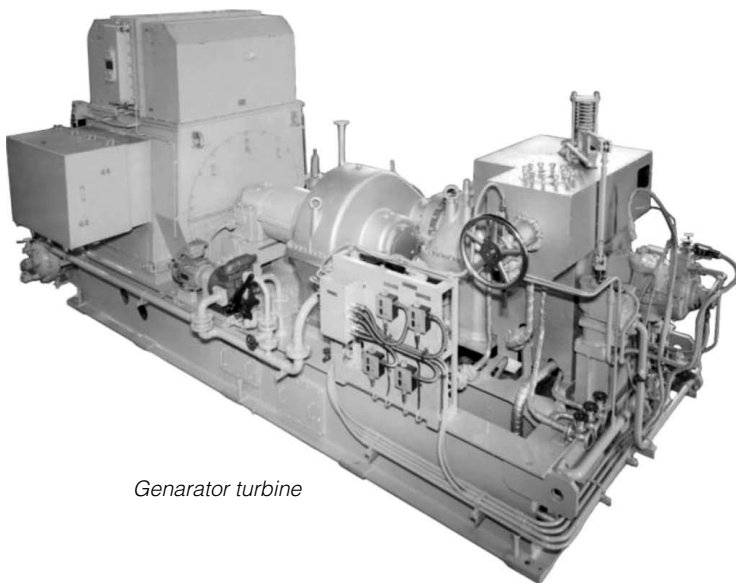
Nowadays, the reduction of GHG (greenhouse gases) is one of the most important challenges in the world.

In 1986, SHINKO developed a generator turbine for the Waste Heat Recovery System (WHRs) for single-motor vessels, and has up to now supplied 251 sets.

### SHINKO RG60 Generator Turbine

#### Features

1. High thermal and mechanical efficiency
2. Rigid construction
3. Compact design
4. Easy operation & maintenance
5. Less maintenance cost



Generator turbine

As the WHRS recovers the energy of high temperature exhaust gas from the main engine, no additional fuel is required for the operation of the generator turbine during navigation.

This system contributes to reducing fuel and maintenance costs by cutting down on the use of the diesel generator.

## Cargo Oil Pump Turbine

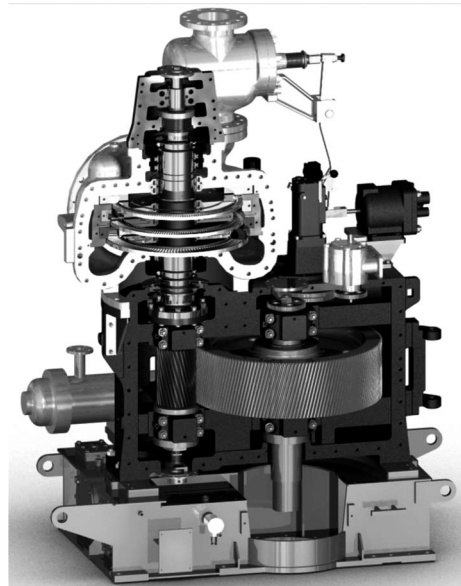
To keep up with the market demand, SHINKO developed the Rateau 3-stage cargo oil pump turbine Model RVR-1 for the 75,000-ton, 100,000-ton and 150,000-ton crude oil tanker.

Although the Curtis single-stage turbine has been more prevalent until now, SHINKO created RVR-1 to reduce fuel and exhaust emissions.

It can help prevent atmospheric pollution by saving more than 13% on fuel use.

### Principal Particulars

	RVR-1
Type	Rateau 3-stage
Maximum output	2,000 kW
Inlet steam pressure	1.85 MPaG
Inlet steam temp.	280 °C
Exhaust steam press.	-80 kPaG ~ 0.03 MPaG
Weight	5,500 kg



Cargo oil pump turbine

Furthermore, to fit into the narrow space of the engine room, we have newly developed the downsized cargo oil pump turbine Model RVR2-2 for VLCCs.

The particulars are the same as the RVR-2 except for its revolution, weight and dimension.

The RVR2-2 will be released from the beginning of 2011.

# New Medium Speed Marine Diesel Engine 6EY22 Developed

## 1. Introduction

Yanmar Co., Ltd. has developed the new 6EY22 type medium speed marine diesel engine suitable for generators of the 660 to 1300 kW capacity class, which satisfies the Tier II Standard of the International Maritime Organization (IMO) regarding NOx emission.

## 2. Concepts underlying the development

### • Enhancement of life cycle value

The new product, an auxiliary engine that constitutes the “heart” of the ship it is installed in, is intended to enable, by maintaining reliability and durability for as many years as the ship itself, its users to feel secure for a long period, realize how much its operating cost is reduced and how high its life cycle value is.

### • Harmony with global environment

When the deterioration of the environment by atmospheric pollution and the adverse effects of global warming on the ecosystem are posing serious problems which deserve priority in the endeavors for solution, the engine builder has addressed the need for reducing such atmospheric pollutants as NOx, SOx and CO<sup>2</sup> emitted from the engine.

## 3. Particulars of the engine

Table 1 shows the main particulars of the engine and Table 2, a list of generator capacities to which the engine is applicable. The significantly expanded output range makes the new model applicable to high capacity auxiliaries-equipped bulk carriers, tankers, most other liquid cargo carriers, and small containerships.

Engine model		6EY22LW	6EY22ALW
Use		Marine auxiliary	
Rated output	kW	660 to 1080	880 to 1370
Rated speed	min <sup>-1</sup>	720	900
No. of cylinders		6	
Cylinder bore	mm	220	
Piston stroke	mm	320	
Applicable generator capacity	kWe	600 to 1020	800 to 1300

Table 1. Main particulars of 6EY22(A)LW type diesel

Generator capacity (kWe)		600	700	800	900	1000	1100	1200	1300	
Applicable range	Conventional models	←			→					
	6EY22 type	←			→					
Ship type	Bulk	█		█						
	PC	█		█						
	Tanker	█		█		█		█		
	Container	█		█		█		█		█

Table 2. List of generator capacities compatible with 6EY22(A)LW type

Toward the front end of the engine, a turbocharger, an charge air cooler, a cooling water pump and a lubricating oil pump are arranged, and toward the non-operating side of the engine, a lubricating system and an air starter are arranged.

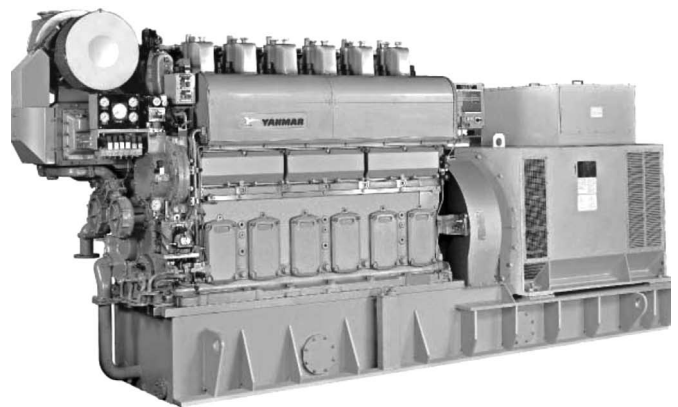


Fig. 1. External view of 6EY22(A)LW type diesel

## 4. Features of the engine (L.C.V. enhanced)

With an eye to extending the useful lives of components and the intervals of engine maintenance, the engine builder took note of the fouling of the combustion chamber inside when running on low grade fuel, and incorporated anti-fouling functions into the engine design, supplemented with the use of fouling-resistant applications.

By optimizing the combustion chamber shape, the area around cylinder liners and the cylinder head cooling structure, the inner wall temperature of the combustion chamber is kept sufficiently low, and the generation and accumulation of combustion residues is thereby restrained.

Low sac and high opening pressure type fuel injection nozzles are used to enhance the fineness of fuel mist and improve injection cut-off, and at the same

time to suppress the quantity of dripping after fuel injection. The pistons are made of thin wall nodular cast iron, and the top ring grooves are laser-alloyed to strength their resistance to wear.

With an eye to maintenance ease inboard, main bolts are hydraulically tightened, and a fully obstacle-free maintenance space is provided by appropriately arranging various equipment units, resulting in a structure easy to disassemble and reassemble.

Piping connections to the hull side concentrated in the front end of the engine and the use of a mixing cooling system as standard equipment can together serve to reduce the man-hours spent in piping work inboard and to simplify inboard piping. The compact design of the engine has increased the freedom of engine room layout by reducing the mass of the engine by about 10% and the space required for engine installation by about 17% compared with a conventional engine of the comparable class.

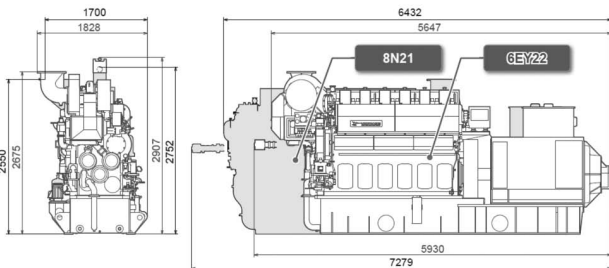


Fig. 2. External engine appearances compared

### 5. Features of the new engine (harmony with global environment)

This engine uses a high pressure Miller cycle system combining a Miller type cam and a high pressure ratio turbocharger in addition to Yanmar's unique combustion system combining deep-pan combustion chamber pistons and fuel nozzles with staggered layout holes, resulting in satisfaction of the IMO's Tier II Standard requirements regarding NOx.

By early ending the suction stroke, the sucked air is inflated to lower the compression end temperature before combustion and thereby reduce the NOx emission. However, as this invites a decrease in the quantity of air filling the cylinder if no compensatory measure is taken, the air intake pressure increased by a turbo-charger compatible with a high pressure ratio is fed into the cylinder to secure a sufficient air quantity during the short suction stroke.

Fuel consumption of 6EY22 is compared with that of a comparable conventional engine in the diagram. Both the NOx emission and the fuel consumption are successfully reduced at the same time, manifesting a performance matching that achieves minimization of fuel consumption in the practical load range as a marine auxiliary engine.

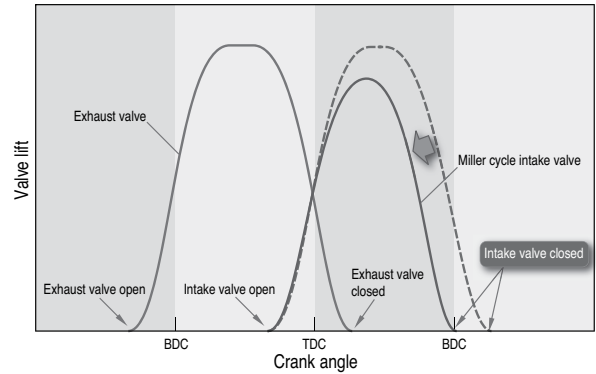


Fig. 3. Lift lines of intake and exhaust valves

To adapt the engine to the use of low-sulfur fuel (to reduce SOx emission), the fuel injection pump has a structure in which the pump proper and the drive system are separated from each other. A cover plate at the top of the roller tappet causes the fuel leaking through the clearance between the plunger and the barrel to be discharged outward without fail and can thereby prevent the fuel from infiltrating into the cylinder.

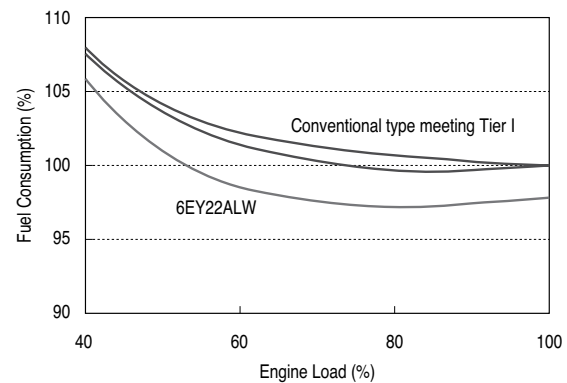


Fig. 4. Comparison of fuel consumption with conventional diesel

In addition, by modifying the clearance between the plunger and the barrel and applying a special carbon coat to the plunger, the oil leakage is reduced and the anti-seizure performance is improved.

Other notable features include the use of lead-free metal and a mercury-free exhaust thermometer, which embody attempts to reduce the use of substances constituting environmental loads.

### 6. Closing remark

In developing this new product, Yanmar received valuable advices and guidance from many customers including shipowners and shipbuilders from the early planning stage, and the design concepts were materialized on the basis of these opinions into this new type engine. In order to continue to provide new values to its customers and other people in the world, the engine builder intends to endeavor for further enhancement of the product's life cycle value and harmony with the environment.

## JSMEA Produces, Starts Distributing JSMEA Genuine Product Labels



Label on metallic part



Label on plastic wrapping



Label on plastic component

Japan Marine Equipment Association (JSMEA) produced JSMEA genuine product labels in accordance with the resolution adopted on March 24 by its Anti-counterfeit conference, and began distributing the labels to its members last July.

This label has a mesh cut-out design that makes replication extremely difficult. Carrying the logo of JSMEA, the label symbolizes the genuineness of the product bearing it, and thereby serves to drive away imitations. It is expected to prove effective in deterring imitation makers and sellers from doing illegitimate business.

It is also expected that the attaching of such labels by member companies using them to the components themselves, their wrapping materials, certificates, cardboard boxes and so forth would facilitate recognition of genuine products by their users.

In starting the actual use of the labels, JSMEA will make them extensively known to the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), ship inspecting bodies and other interested quarters and seek their cooperation.



Stereoscopic label of metallic style

# JSMEA

Japan Marine Equipment Association

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