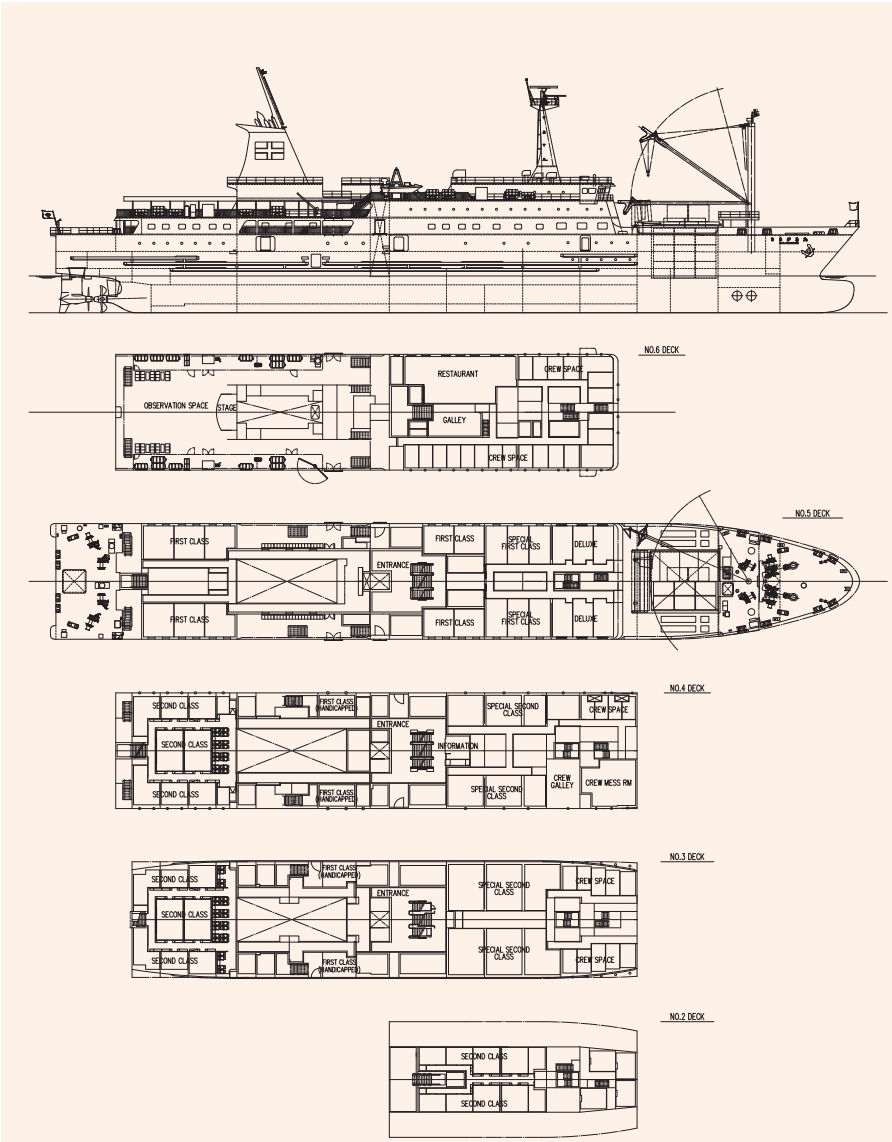
SALVIA MARU 1,050 DWT ROPAX Ferry 1

SALVIA MARU 1,050 DWT ROPAX Ferry 1

Salvia Maru is the successor to Salvia Maru(2nd), which is delivered in 1992, sails the same route (Tokyo ⇔ Oshima ⇔ Toshima ⇔ Niijima ⇔ Shikinejima ⇔ Kozushima). Also, she sails to Chichijima (Ogasawara Island) instead of Ogasawara Maru during her annual docking survey.
She is a SES (Super Eco Ship) similar to Tachibana maru, which is owned by Tokai Kisen, and has features such as reduced environmental load, improved maneuverability, and barrier-free cabin.
The exterior design of the ship was created by Asao Tokoro, the designer who designed the official emblem for the 2020 Tokyo Olympics. It is characterized by a geometrical pattern with a navy blue (Tokyo Island Blue) wave motif. "Connecting" is the design concept.
A CRP propulsion system is adopted in which a uniaxial CPP propeller directly connected to a diesel engine and an electric propulsion azimuth propeller are arranged facing each other, and they are rotated in opposite directions so that the rotational energy of the CPP propeller in front is absorbed by the azimuth propeller in rear. The ship is equipped with an integrated steering system (MICOS) that integrates the two propellers and controls them with high efficiency and safety.
It is equipped with two bow thrusters and an azimuth thruster, and has high berthing performance.
It is also equipped with the latest navigation support system, and the safety in the maneuvering is also improved.
There are six types of guest rooms from special class rooms to second class rooms, and both special class rooms and special first class rooms are equipped with toilet showers.
Up to 38 containers can be loaded, and it is equipped with a large Thomson type derrick crane.
During the summer season, the ship operates as a night cruise (Tokyo Wan Nouryousen) and sails Tokyo Bay for two hours. It is also equipped with a refrigerator for beer with a cooling device and a cooking and sales space for a simulated shop.
A stage is also installed at the stern of No.6 deck, and it is used for events during the operation as a night cruise (Tokyo wan Nouryousen).

PRINCIPAL PARTICULARS

Length (o.a.)	118.09 m
Breadth (mld.)	17.00 m
Depth (mld.)	6.50 m
Draft (mld.)	5.40 m
Gross tonnage	6,099
Deadweight	1,050 t
Main engine	Japan Engine 6UEC35LSE
Speed (service)	20.0 knots
Complement	1384
Classification	JG
Loading capacity (passenger)	1343
Builder	Mitsubishi Shipbuilding Co., Ltd.



HAMAYU 5,662 DWT ROPAX Ferry 2

HAMAYU 5,662 DWT ROPAX Ferry 2

HAMAYU is a ROPAX ferry built by Mitsubishi Shipbuilding Co., Ltd.

She was delivered to the owner Shin Nihonkai Ferry Co., Ltd. on 26th February 2021, and put into the regular service between Yokosuka and Shinmoji.

As a modal shift receiver in the Kanto-Kyushu region, the vessel contributes to reducing the environmental burden.

The interior is designed to provide it with comfortable space with a three-story atrium entrance, a see-through elevator, a spacious restaurant and a barbecue corner.

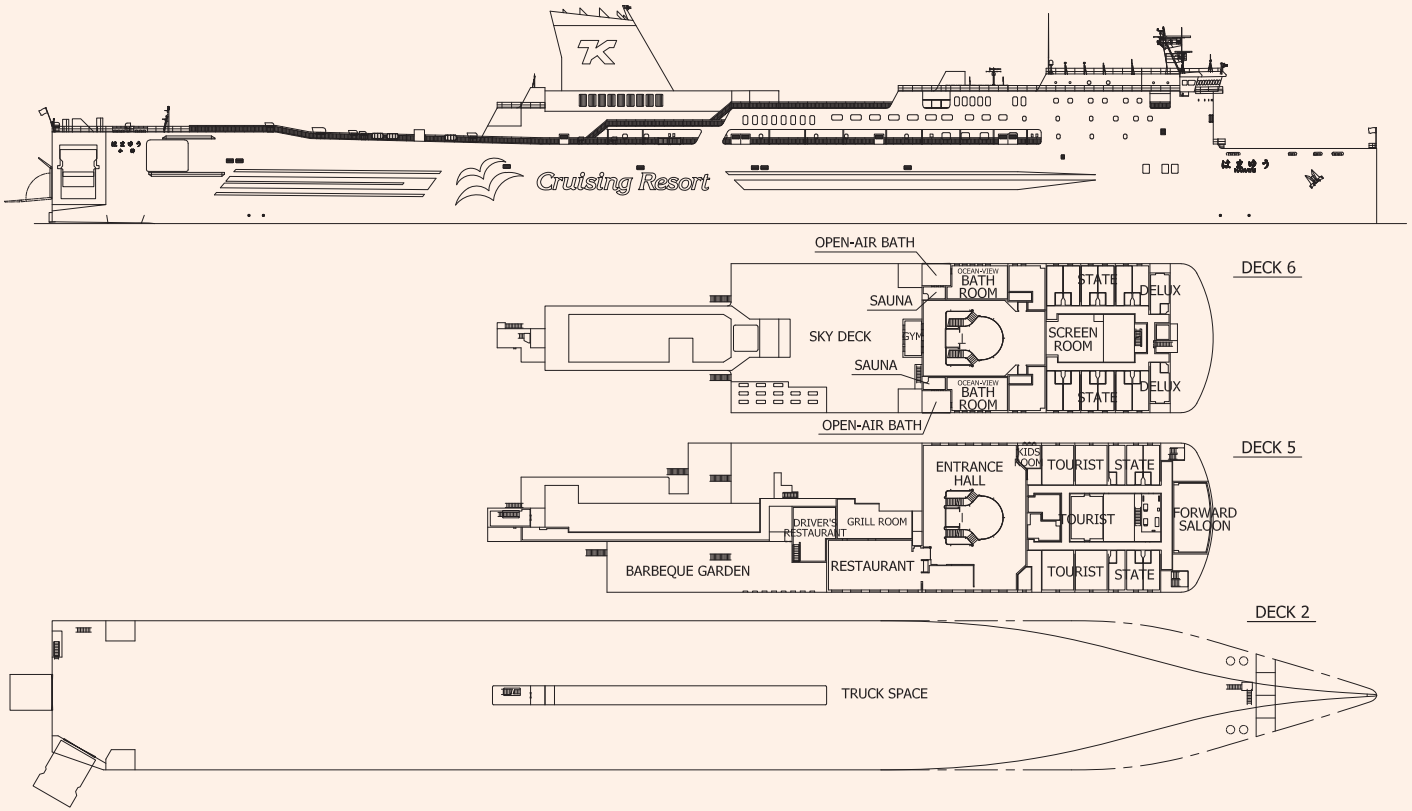
HAMAYU has adopted the 4- main engines and 2- shafts propulsion system in compliance with the environmental regulations and the system has been adopted for the first time amongst the coastal service large high-speed ferry.

To minimize the fuel consumption and environmental burden, sailing assistance system has been adopted and thus that has achieved the efficient navigation.

SOx Scrubbers are adopted for the main engines and generators to comply with environmental regulations regarding the concentration of sulfur contained in fuel oil.

PRINCIPAL PARTICULARS

Length (o.a.)	222.5 m	Speed (service)	28.3 knots
Breadth (mld.)	25.00 m	Complement	305
Depth (mld.)	20.40 m	Classification	JG
Draft (mld.)	7.20 m	Loading capacity (passenger)	268
Gross tonnage	15,515	(truck)	154
Deadweight	5,662 t	(car)	30
Main engine	Wartsila 14V31	Builder	Mitsubishi Shipbuilding Co, Ltd.



HIMAWARI No.9 6,138 DWT Ro/Ro Cargo Ship 103

Mitsubishi Shipbuilding Co., Ltd.

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HIMAWARI No.9 6,138 DWT Ro/Ro Cargo Ship 103

The “HIMAWARI No.9” was built at Shimonoseki Shipyard & Machinery Works of Mitsubishi Heavy Industries, Ltd. (MHI) and delivered to the Owner (NIPPON MARINE Co., Ltd., NIPPON SHIPPING Co., Ltd., and YAMAMOTO KISEN Co., Ltd.) on 28th November 2017.

She is playing a domestic route between Tokyo and Hokkaido together with the sister vessel “HIMAWARI No.8” which was delivered in August 2017.

The vessel is a homomorphous ship of the HIMAWARI No.7 built by Mitsubishi Heavy Industries in 2013 and incorporates three main changes from the previous ship.

An exposed RORO cargo space was added on upper deck in order to load the explosives cargo.

Aft space of No.2 deck was changed to the open RORO cargo space to load the specific dangerous cargoes which loading in the closed area are forbidden and the fixed ramp for access to upper deck was provided.

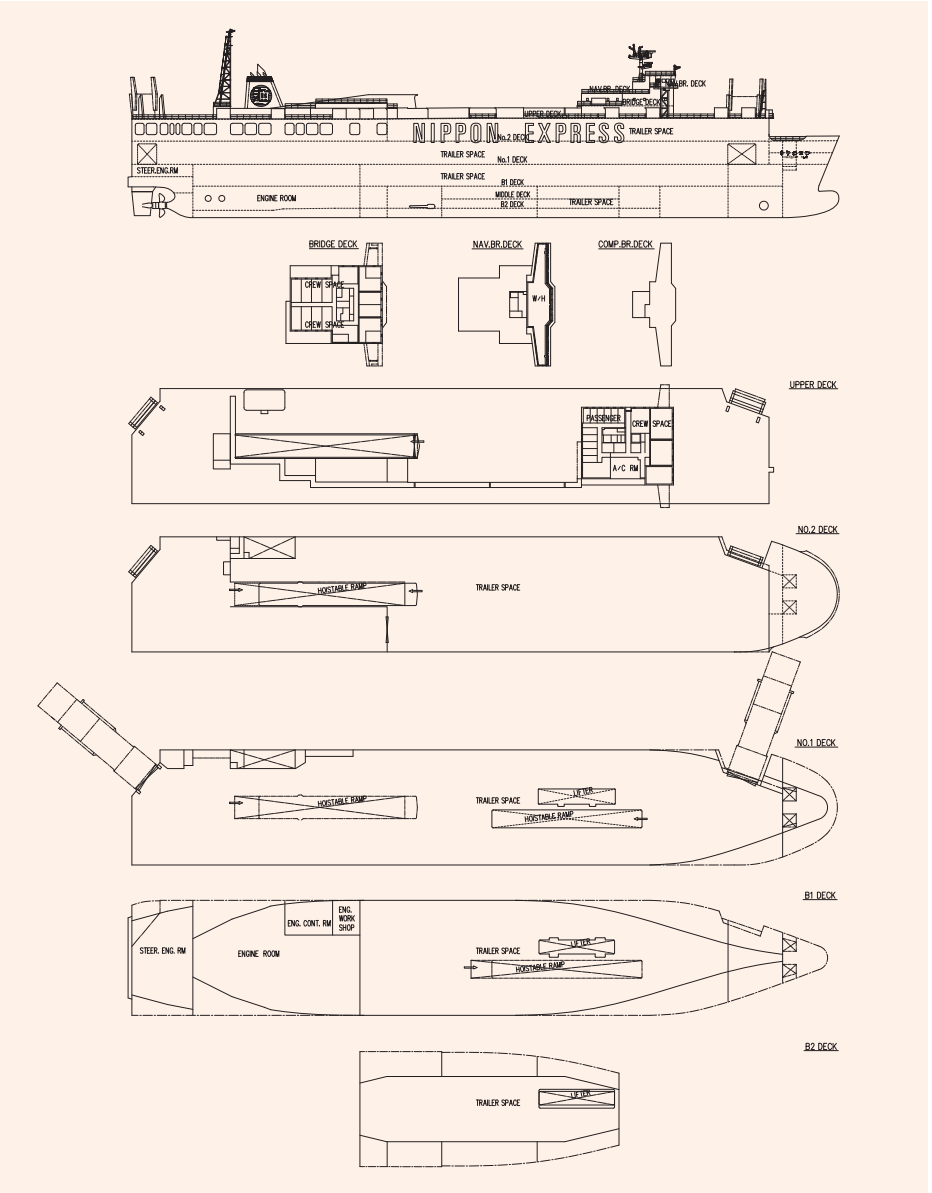
The lifter's operating range was extended to No.1 deck and the lifter cover was equipped on No.1 deck for more efficient cargo loading.

Trailer capacity was increased from 172 units to 177 units.

As well as the previous ship, energy-saving equipment, such as electronically-controlled main engine, reaction rudder with bulb, efficient controllable pitch propeller was equipped for reducing the fuel consumption, and the inverter type seawater cooling pump was added newly.

PRINCIPAL PARTICULARS

Length (o.a.)	166.9 m
Length (b.p.)	158.00 m
Breadth (mld.)	27.00 m
Depth (mld.)	23.27 m (Upper Deck)
Draft (mld.)	6.85 m
Gross tonnage	23,614
Deadweight	6,138 t
Main engine	MAN-B&W 9S50ME-C8.5
MCR (kw×rpm)	14,940 × 127.0
Speed (max. trial)	25.30 knots
(service)	23.0 knots
Complement	25 p
Classification	NK
Handling gear	2 × shore ramp door
	2 × hoistable internal ramp
	1 × lifter
	1 × lifter cover (No.1 deck)
	1 × fixed internal ramp
	1 × fixed internal ramp door
	1 × hold ramp door
Loading capacity (passenger)	11
(car)	95
(chassis)	177
Builder	Mitsubishi Shipbuilding Co., Ltd.



MARIMO 6,100 DWT Ro/Ro Cargo Ship 104

Mitsubishi Shipbuilding Co., Ltd.

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MARIMO 6,100 DWT Ro/Ro Cargo Ship 104

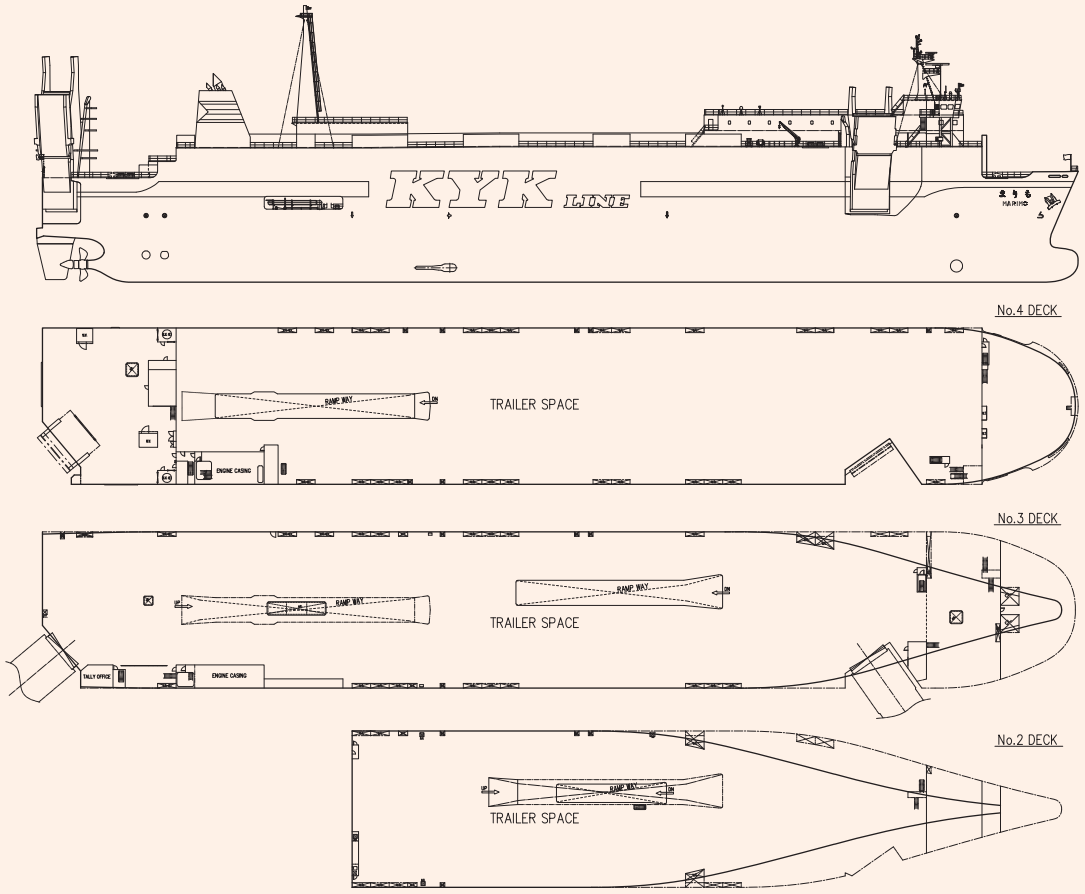
Mitsubishi Shipbuilding Co., Ltd. built MARIMO at their Shiomonoseki Shipyard, and delivered her to KYK Line Co., Ltd. on 12 January, 2018. The vessel goes into service between Hitachinaka and Tomakomai. The vessel is a homomorphous ship as HIDAKA built by Kanda Shipbuilding Co., Ltd. in 2015.

Special features are as follows.

1. The vessel has three layers of trailer chassis space and one layer of car space to keep the required loading capacity; 161 trailer chassis and 109 cars.
2. In order to achieve service speed 23.0 knots with less main engine power, the hull form was newly developed, and that energy saving equipment such as electronically-controlled main engine, efficient controllable pitch propeller, reaction rudder with bulb and low friction type paint are applied.
3. One set of fin stabilizer contributes to reduce rolling motion in the rough sea condition, one bow thruster and two stern thrusters with total 2,740 kW of the motor power contribute time saving at berthing and de-berthing.
4. All crew cabins have modular baths to create a better living environment.
5. Two escape routes from RORO cargo space and machinery spaces respectively are secured to fulfill the latest rule requirement.

PRINCIPAL PARTICULARS

Length (o.a.)	179.90 m
Length (b.p.)	171.00 m
Breadth (mld.)	27.00 m
Depth (mld.)	23.27 m (Upper Deck)
Draft (mld.)	6.80 m
Gross tonnage	11,229
Deadweight	6,100 t
Main engine	MITSUI-MAN B&W 9S50ME-C8.5
MCR (kw×min^{-1})	14,940 kW × 127 min^{-1}
NOR (kw×min^{-1})	12,700 kW × 120 min^{-1}
Speed (max. trial)	24.59 knots
(service)	23.0 knots
Complement	14 persons
Classification	NK
Handling gear	2 × shore ramp door
	2 × hoistable internal ramp
	1 × fixed internal ramp
Loading capacity (trailer chassis)	161
(cars)	109
Builder	Mitsubishi Shipbuilding Co., Ltd.



FUJIKI 7,250 DWT Ro/Ro Cargo Ship 105

FUJIKI 7,250 DWT Ro/Ro Cargo Ship 105

Mitsubishi Shipbuilding built FUJIKI at their Shiomonoseki Shipyard, and delivered her to Fujitrans Corporation on 29 June, 2018. The vessel goes into service between Nagoya and Hokkaido with Yosho-Maru, Seiwa-Maru and Atsu-ta-Maru.

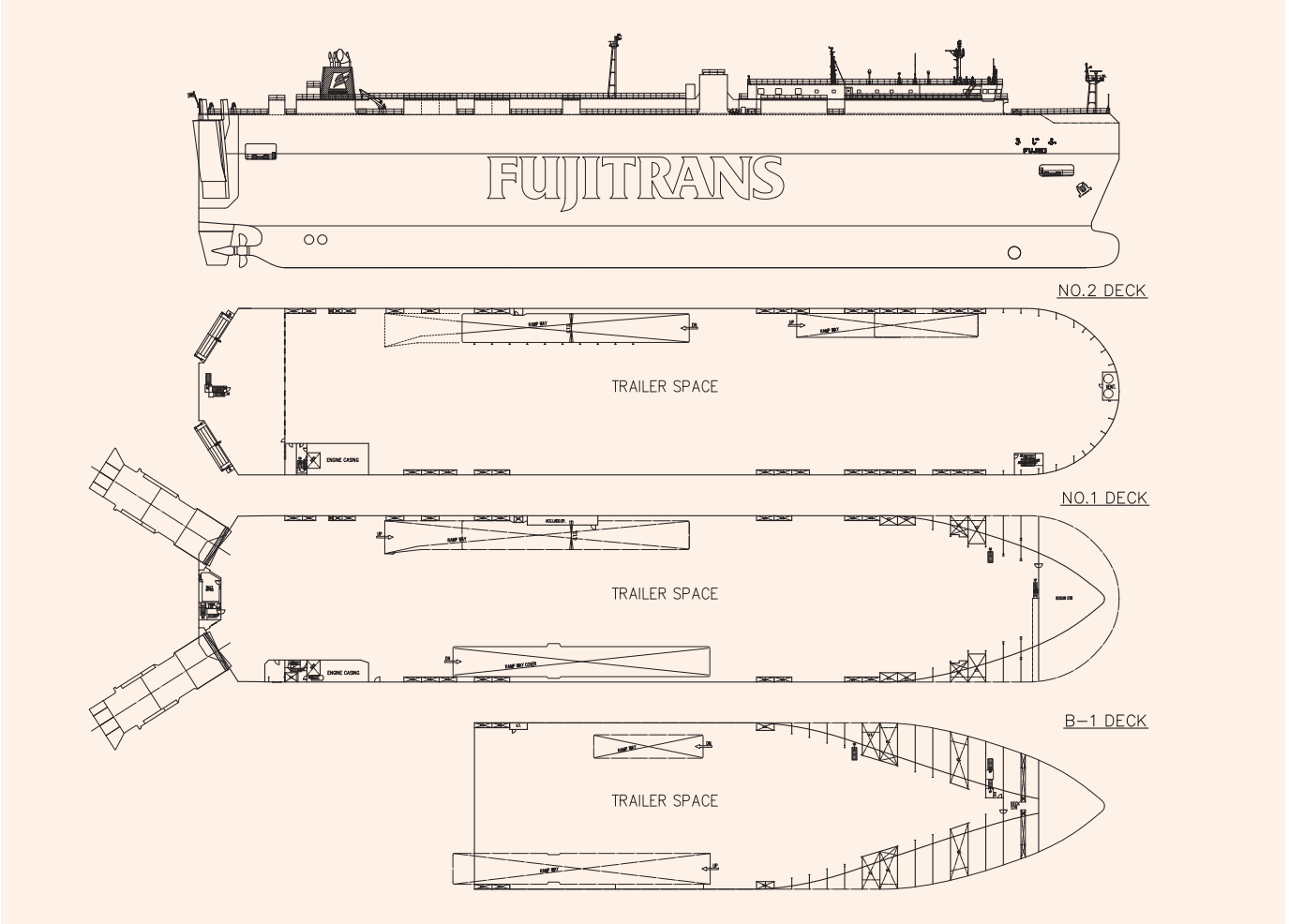
This vehicle carrier's size is almost same as the said three vessels, however, loading space and fixed ramp way layout were slightly modified in order to improve loading capacity and vehicle handling ability. Loading capacity is 135 trail-er chassis and 923 cars on the standard loading condition, 150 trailer chassis and 864 cars on the maximum trailer chassis loading condition.

Fuel consumption was 10% reduced from the previous ves-sels due to newly developed hull form and energy-saving equipment such as electronically-controlled main engine, reaction rudder with bulb, and efficient controllable pitch propeller. In addition to the above, low friction type AF paint and corner cut to the forward top end of the hull are applied.

One bow thruster and two stern thrusters with total 2,860 kW of motor power assist the vessel's daily berthing and de-berthing in the harbor. Passive controlled anti-rolling tank gives better sea worthiness on the rough sea condition.

PRINCIPAL PARTICULARS

Length (o.a.)	167.00 m
Length (b.p.)	158.00 m
Breadth (mld.)	30.20 m
Depth (mld.)	27.75 m (Upper Deck)
Draft (mld.)	6.70 m
Gross tonnage	15,986
Deadweight	7,250 t
Main engine	J-ENG 10UEC50LSE-Eco-B1
MCR (kw×rpm)	17,400 kW×124 rpm
NOR (kw×rpm)	15,660 kW×120 rpm
Speed (max. trial)	25.06 knots
(service)	23.0 knots
Complement	20 persons
Classification	NK
Handling gear	2×shore ramp door
	6×fixed internal ramp
	1×fixed internal ramp cover
Loading capacity (trailer chassis)	135
(cars)	923
Builder	Mitsubishi Shipbuilding Co., Ltd.



LNG Fuel Gas Supply System (LNG FGSS) 123

Unlike the conventional heavy fuel oil, LNG is not only SOx-free, but also capable of reducing roughly 20% of CO_2 emission when compared at same heating value.
Therefore, LNG is considered as one of most expected and practical alternative marine fuel. Recently, carbon neutral methane is recognized as zero-emission marine fuel.
LNG Fuel Gas Supply System (LNG FGSS) developed by Mitsubishi Shipbuilding Co., Ltd. enables all types of marine dual fuel diesel engines to burn LNG as fuel. Solution package offered to our customer shipyards include FGSS modules, which minimizes installation work, and LNG fuel tanks and gas engineering services. All these technologies and know-hows are based on the cryogenic liquefied-gas handling technologies cultivated through our long experiences of in-house building and designing LNG/LPG carriers.

DIA-SOx Scrubber System 124

DIA-SOx Scrubber System, designed and developed by Mitsubishi Shipbuilding Co., Ltd., is the exhaust gas cleaning system to comply with 2021 EGCS Guideline with conventional heavy fuel oil. Both hybrid and open loop system are available.

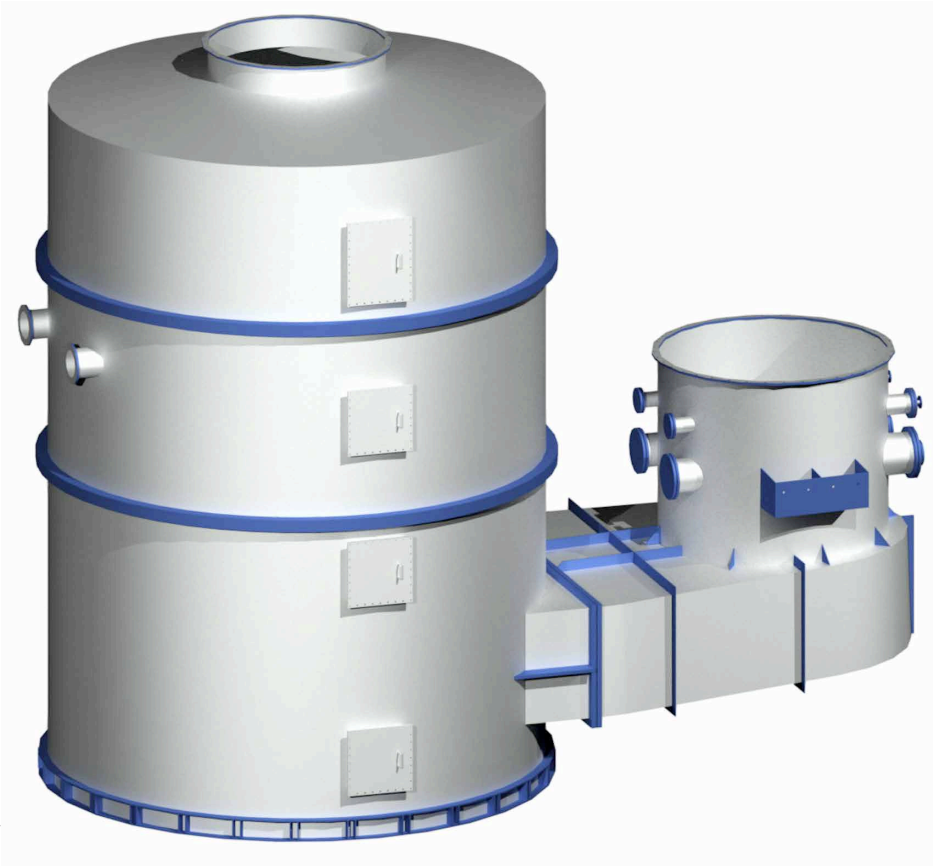
DIA-SOx C-Series

- Simple cylindrical scrubber tower
- Multi inlet type

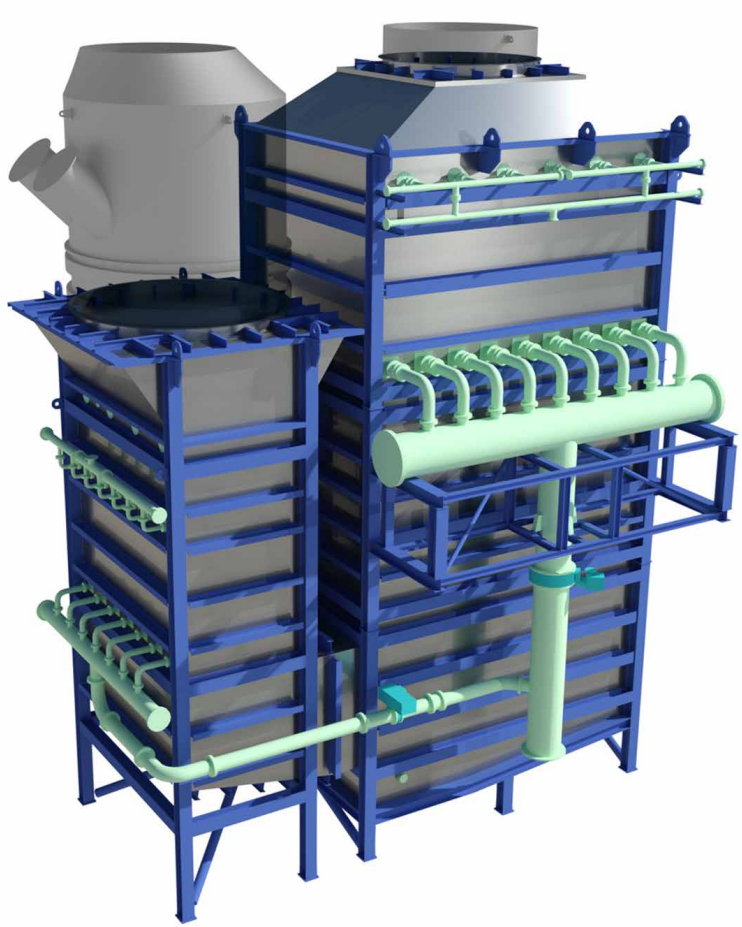
DIA-SOx R-Series

- Scrubber for high power engines
- Multi inlet type
- The unique rectangular tower maximizes the space efficiency, and especially in ultra large container ships it is possible to achieve "zero" cargo loss due to the installation of the scrubber.

The service experience has been accumulated since Container Packaged Hybrid SOx Scrubber System was firstly installed in 2016.



DIA-SOx C-Series



DIA-SOx R-Series