



DESIGN ASSESSMENT CERTIFICATE
No. DIP097020CS

DESIGN ASSESSMENT CERTIFICATE

<i>Description</i>	Steering systems
<i>Type</i>	OPTIMUS EPS K1500CL
<i>Applicant</i>	DOMETIC CANADA 3831 No. 6 Road V6V1P6 Richmond (British Columbia) CANADA
<i>Manufacturer</i>	DOMETIC CANADA
<i>Place of manufacture</i>	3831 No. 6 Road V6V1P6 Richmond (British Columbia) CANADA
<i>Reference standards</i>	Rules for the Classification of Yachts designed for Commercial Use, Rules for the Classification of Pleasure Yachts

Issued in **VIAREGGIO** on **July 15, 2020**. This Certificate is valid until **July 14, 2023**

RINA Services S.p.A.
Andrea Venturelli

This certificate consists of this page and 1 enclosure



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OPTIMUS EPS K1500CL

Reference documents

Technical documents, schemes, operating and installation manual dispatched with letters

DIP/2020/01323/CRLVA

DIP/2020/01386/CLDVN

Fields of application

- Yachts designed for private and commercial use.
- Classification notations:

C + HULL • MACH Y

C + HULL • MACH YCH

Installation is limited to ships <500 Gt and 50m in length

Review has been carried out according to Part C, Ch 1, Sec 10 of the RINA Rules for Pleasure Yachts 2020 and Part C, Ch 1, Sec 10 of the RINA Rules for Yachts Designed for Commercial Use 2020 .

Technical characteristics

“Optimus EPSK1500CL” steering gear system is designed with a main and an auxiliary steering gear, which power and control circuits are independent.

The steering gear system includes mainly:

- One control board (PCM - Pump Control Module)
- Two electro-hydraulic pumps systems, powered and controlled by PCM
- Two hydraulic cylinders, one for each electro-hydraulic pump system, with integrated rudder angle sensors which signal is dedicated to the PCM
- One rudder angle indicator for each rudder which signal is dedicated to rudder angle visualization both at navigating bridge and at steering gear compartment
- One or more electronic helms
- One or more CANTrack displays (one for each electronic helm station)
- One auxiliary manual hydraulic helm station, meant to be the auxiliary steering gear power and control system.
- Auxiliary steering actuator valves (x4)

The system is so arranged to be supplied from two different 24VDC power supplies (to be connected to PCM).



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Application and Limitation:

The minimum system configuration is two independent port and starboard cylinders, each of them connected to an electro-hydraulic pump system, controlled by:

- Main steering gear: one PCM, and related rudders sensors for rudders angles visualization at bridge, one electronic helm station to be installed at navigating bridge with dedicated alarms/warnings/information display.
- Auxiliary steering gear: one manual hydraulic helm station with related hydraulic accessories and an indication of rudders angles to be installed at the steering gear compartment.

For Pleasure Yachts the PCM secondary power supply shall be branched off the emergency electric distribution or from a dedicated power supply having capacity of at least 5 minutes of continuous operation.

For Charter Yachts electro-hydraulic pumps systems electric motors shall be rated for intermittent power demand. The rating is to be determined on the basis of the steering gear characteristics of the yacht in question; the rating is always to be at least S6 - 25%.

Indication with alarms as required by the Rina Rules for Pleasure/Charter Yachts:

- Part C, Ch 1, Sec 10 Table 3
- Part C, Ch 1, Sec 10 [2.3.6]
- Part C, Ch 1, Sec 10 [2.5.1], [2.5.2] and [2.5.3]

Alarm for controllers' failures can either be arranged conventionally by indicators, lamps and pushbuttons or through the Display Panel(s).

After system installation and commissioning, no major software changes are to be performed. The software version of the commissioned system shall be communicated to the attending surveyor and recorded. Others minor software modifications made after the commissioning test, and as long as the system is in use onboard, are to be recorded as well. The records, together with the software version(s) in use are to be available for evaluation if requested.

We take note that the system is so arranged that any fault to the main steering gear that could lead to a total loss of the main steering gear, does not affect the auxiliary steering gear. And vice versa. No mechanical link is provided between port and starboard cylinders.

Acceptance conditions and Remarks.

For each installation on a RINA yacht the following documents shall be sent for approval:

1. Single line diagram of the system
2. Electrical drawings of power system
3. Electrical drawings of control system
4. Schematic Hydraulic Diagram

After installation on board the yacht, the steering gear is to be subjected to the tests detailed in Part C Ch. 1 Sec. 13, [3.8] of Rina Rules for Pleasure Yachts 2020 and Rina Rules for Yachts Designed for Commercial Use 2020.

The scantlings of the cylinders and mechanical components are to be in accordance with pertinent RINA rules. The hydraulic cylinders shall to be T.A. RINA.

Additional reinforcements and constructions details to attending RINA Surveyor satisfaction.

VIAREGGIO July 15, 2020

