Electrically driven RoRo equipment

Innovative solutions for cleaner ships
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As a pioneer in the field, we have continuously developed and improved the RoRo cargo handling concept since we delivered the first MacGregor RoRo stern quarter ramp in the late 1960s. We work closely with shipyards and shipowners and look at each customer’s specific needs.

A few years ago our ship type experts identified the need in the market for environmentally-friendly solutions. MacGregor’s R&D experts focused on developing products that were environmentally-friendly, cargo safe, and more energy efficient.

Innovations for eco-friendlier, cleaner and more efficient ships

Our growing electric-drive RoRo reference portfolio includes electrically-operated stern quarter ramps as well as hoistable ramps, covers and car decks.

Energy savings

- Energy is saved because electric drives run only when manoeuvring equipment. Energy losses are also much smaller, because electrically-driven systems are not affected by pressure drops within the piping system.
- Electric drives are easy to monitor and service, enabling peak efficiency.
- Time, money and energy are saved while shipbuilding; it is easier to install electrical cables than hydraulic pipes and no pump units are needed.
- Lower power consumption enables a ship to be designed with reduced power generation needs.

Electrical versus hydraulic drive

Electric motors and gears replace the hydraulic motors, electric actuators replace the cleat cylinders, electric winches or actuators replace the operating cylinders, for car decks and ramps for example, electric actuators replace the operating cylinders, for ramp way doors and ramp covers.

Electric winches with power feedback system replace the hydraulic winches for the side and stern ramp.

Electric control system

The equipment is operated by control panels with a user-friendly interface. The operation sequences are easily controlled by PLC’s Programmable Logic Controllers) via push-buttons, joysticks or switches. Lamps indicate the status of cleats and whether they are locked or unlocked.

Electric drives are easy to service

Electric drives are energy efficient, maintenance friendly and easily monitored.

When using all electric components, onboard monitoring systems (OMS) make diagnostic fault-finding easy.

Advantages of electric drives compared with hydraulic drives

For the shipowner:

- No hydraulic oil pollution or damage to cargo
- Same operating time in cold weather conditions
- Reduced onboard maintenance
- Energy savings by no continuous running plus possibility for power feedback
- Reduced noise level
- Easy to monitor

For the shipbuilder:

- Time, money and energy saved while shipbuilding
- Cable wiring is easier than piping
- No need for high pressure hydraulic skills
- No flushing work

Recent references

The most recent references, delivered and secured orders to be delivered, include:

Newbuildings

- Shin-Kurushima Dockyard Two 7,000-unit PCTC’s for NYK: stern ramps, side ramps, movable ramps, ramp covers and hoistable panels
- Shin-Kurushima Toyohashi Two 6,400-unit PCTC’s for MOL: stern quarter ramp, side ramp and six movable ramps
- Shin-Kurushima Dockyard Two 11,400 dwt RoRo’s for a Japanese owner: stern quarter ramp/door and one movable ramp
- Shin-Kurushima Toyohashi Two 5,400-unit PCTC’s for Japanese owners: stern quarter ramp/door, side ramp and six movable ramps
- Daewoo Shipbuilding & Marine Engineering (DSME)
  - Eleven 8,000-unit LCTC’s for Wallenius: three hoistable car decks, seven movable ramps and one big flap
- Shin-Kurushima Dockyard One 4,900-unit PCC for MOL: stern quarter ramp/door, side ramp and two movable ramps
- Hyundai Heavy Industries (HHI)
  - Two 8,000-unit LCTC’s for Wilhelmsen: six movable ramps and one hoistable plywood car deck panel
  - Mitsubishi Heavy Industries (MHI)
  - Four 2,000-unit PCTC’s for Toyofuji: bulkhead door
- Kyokuyo Shipyard
  - Four 2,000-unit PCO’s for PD Gram & Co: ten hoistable car deck panels, one access ramp, four movable ramps and two ramp covers
- Jinling Shipyard
  - Six 10,500 dwt RoRo’s for Finlines: 2x2900 m² car decks, 44 electric panels and two access ramps
- Daewoo Shipbuilding & Marine Engineering (DSME)
  - Two 6,700-unit PCTC’s for Wallenius: four car deck panels, five to seven internal ramps and one big flap
- Uljanic Shipyard
  - Four rail ferries for MIR: stern doors
- Estaleiro Ilha SA (EISA) yard
  - Two 6,400-unit PCTC’s for Wallenius: stern ramps, side ramps, moveable ramps, 12 ramps and one big flap
- Mitsubishi Shipinco
  - One 3,900-unit PCTC for MOL: six hoistable car deck panels

Conversion projects

- Jinling shipyard
  - Two RoRo’s for Finlines: hoistable plywood car deck, 11 panels and 1 access ramp
- Mitsubishi Shipinco
  - One 3,900-unit PCTC for MOL: six hoistable car deck panels

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Wherever needed, you can rely on our support.
We serve our brands globally:

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- Allset
- ASCA
- Becker
- BMH
- Conver-OSR
- Grampian Hydraulics
- Flintstone
- Greer Marine
- Hamworthy
- Hatlapa
- Hydramarine
- Hägglunds
- Interschalt
- KGW
- KYB - ASCA
- KYB - Kayaba Industries / Navire Cargo Gear
- Luezhoe
- MacGregor
- MacGregor-Conver
- MacGregor-Hägglunds
- MacGregor-Kayaba
- MacGregor-Navire
- Navire Cargo Gear
- Nordströms
- Ozean Service & Reparatur
- Platform Crane Services (PCS)
- Plimsoll
- Pusnes
- Porsgrunn
- Rapp Marine
- Triplex
- Vestnorsk Hydraulikkservice (VNH)

MacGregor shapes the offshore and marine industries by offering world-leading engineering solutions and services with a strong portfolio of MacGregor, Hatlapa, Porsgrunn, Pusnes and Triplex brands. Shipbuilders, owners and operators are able to optimise the lifetime profitability, safety, reliability and environmental sustainability of their operations by working in close cooperation with MacGregor.

MacGregor solutions and services for handling marine cargoes, vessel operations, offshore loads, crude/LNG transfer and offshore mooring are all designed to perform with the sea.

MacGregor is part of Cargotec (Nasdaq Helsinki: CGCBV).

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