

Versatile self-unloading systems for cement carriers



MACGREGOR

Designed to perform with the sea

Decades in experience in dry bulk handling for cement carriers

The renowned MacGregor brand signifies advanced and well-proven cement handling systems to cargo owners and shipping companies throughout the world. Its reputation has been strengthened since 1947, when the first totally-enclosed selfloading/unloading cement carrier, with highly-automated cargo-handling gear, was delivered.

Over the past 60 years, MacGregor cement handling systems have been installed in over 100 cement carriers sized between 500 and 40,000 dwt; most of these are still in operation.

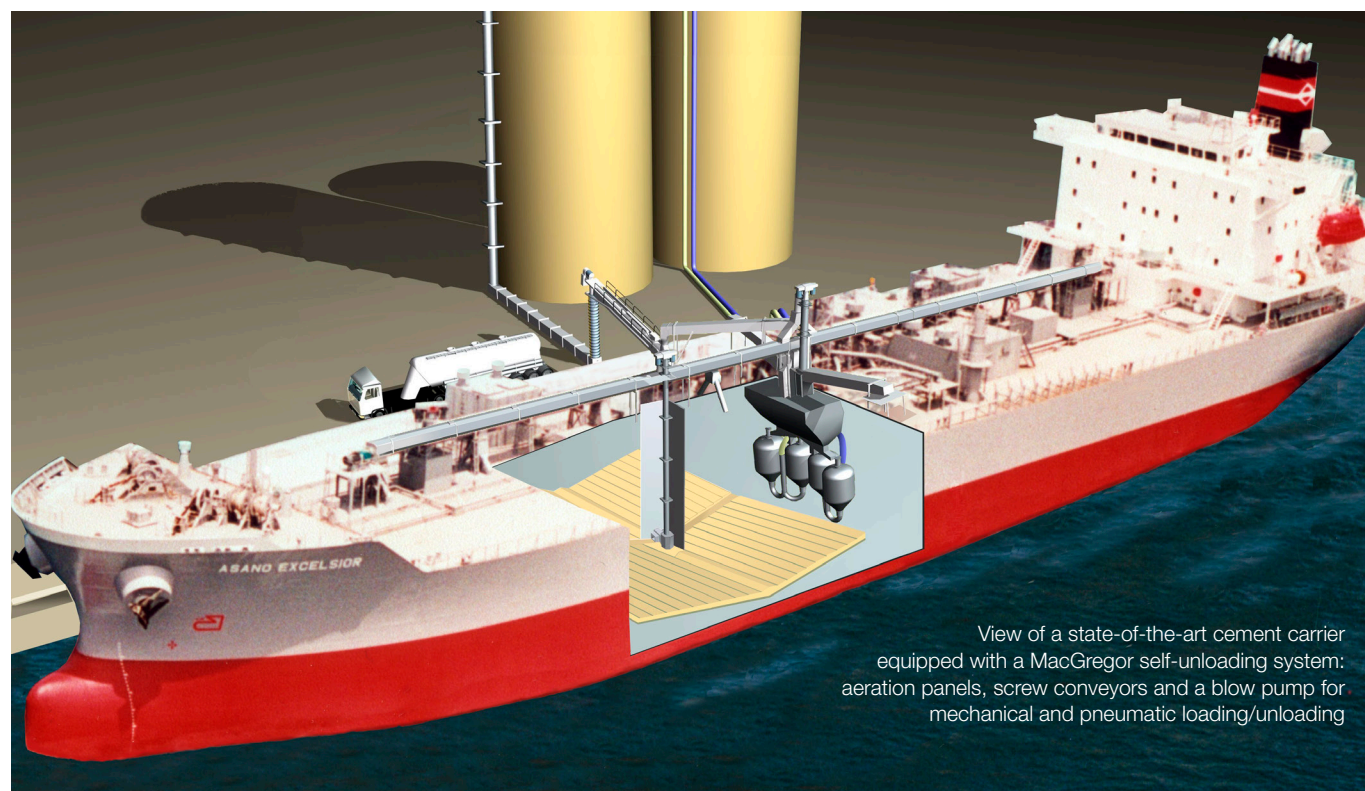
Applications

The well-proven MacGregor cement handling system comprises a range of conveyors, both mechanical and pneumatic, which can be combined to deliver the required function and cargo handling rates. Easily adaptable to any size and shape of vessel, the system is suitable for newbuildings as well as conversions. Overall, the system ensures the reliable and highly-efficient seaborne transportation of cement from producers to consumers all over the world. It is designed for use with

range of different receiving systems and is therefore able to load and unload in many different terminals. The continual development of MacGregor systems and sustained efforts to create new customised solutions, enable Cargotec to maintain its status as a world-leading supplier of cement handling systems for self-unloading ships

Dust-free material handling

MacGregor shipboard solutions for cement carriers are designed with a unique screw conveyor technology, which incorporates a totally-enclosed conveying line for environmentally friendly operation in all weather conditions.



View of a state-of-the-art cement carrier equipped with a MacGregor self-unloading system: aeration panels, screw conveyors and a blow pump for mechanical and pneumatic loading/unloading

Key benefits:

- well-proven technology
- high-handling capacities
- designed for newbuildings and conversions
- flexible system with future add-ons and upgrades available
- fully automatic loading and unloading operation
- low operational costs
- environmentally friendly
- system compliance with latest IMO rules
- ease of maintenance



Low power consumption

MacGregor screw-conveyor technology ensures the lowest possible power consumption, saving both money and reducing emissions due to a reduced need for power generation.

Screw conveyors

MacGregor vertical and horizontal screw conveyors are used to distribute cement to and from holds to discharge facilities on shore. This process is done at a high rate with the lowest possible energy consumption.

Fluidised bottoms

Fluidised bottoms are used for reclaiming cement in each hold. A special long-life aeration fabric ensures negligible residue in the holds after unloading is complete.

Blow pumps

Blow pumps are used for pneumatic conveying from ship to silo. MacGregor pneumatic systems are constantly being refined at our full-scale test plant. This is to ensure that they achieve the highest possible efficiency rates, which can be applied either for reducing power consumption, increasing capacity or for conveying over greater distances.

Bulk discharge boom

Bulk discharge booms are used for mechanical unloading from ship to shore. Screw conveyor technology enables a totally-enclosed operation with no dust emissions to the surrounding environment. The boom can also be adapted for loading directly to road tankers.

Electrical control system

Electrical control systems are used to maximise efficiency during the automatic control and supervision of loading/unloading operations. The loading/unloading operation is fully-controlled by one person in the control room.

Versatile in every aspect

When adopting a MacGregor concept, we can offer cement-handling systems with great flexibility. This prepares ship owners for the future, as vessels are able to perform at high capacity rates in virtually any existing port set-up and those not yet built. The system's modular concept allows for easy tailoring of cargo handling components to fulfil every specific demand that arises.

Newbuildings for the future

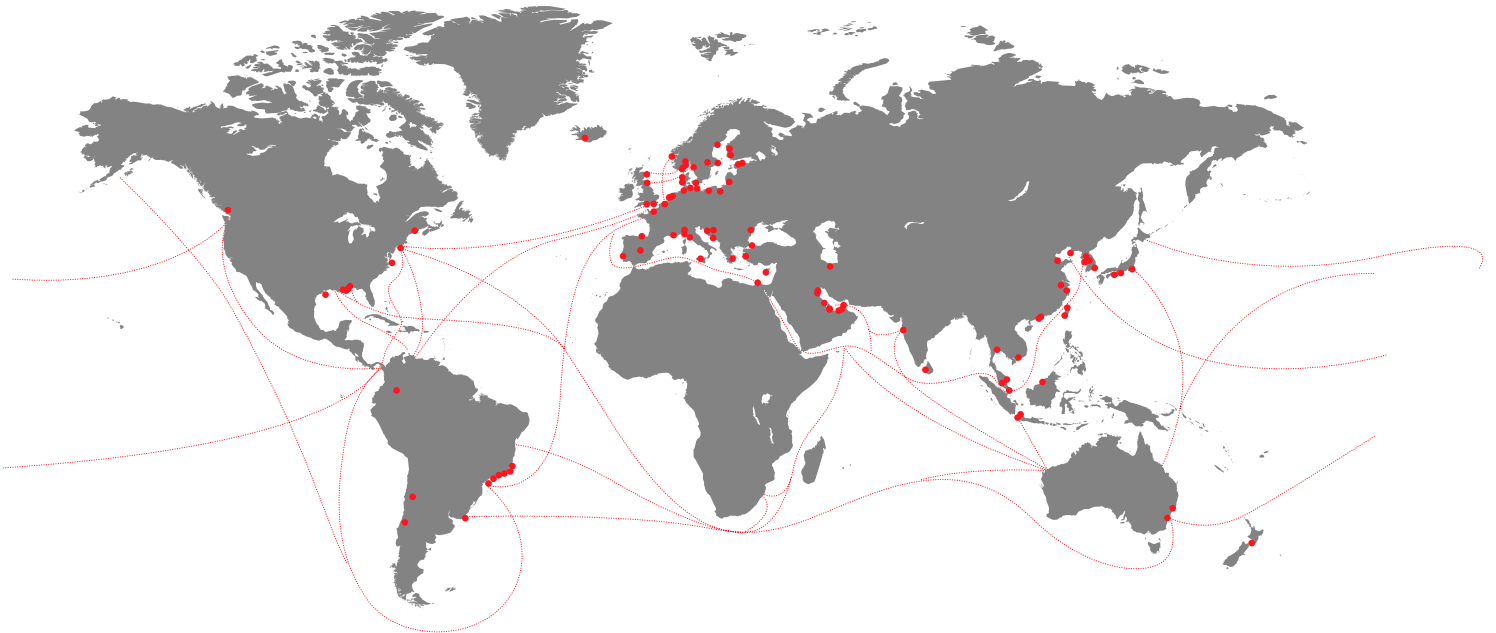
Designs allow for future system add-ons and upgrades to be undertaken without major modifications to the original solution. The benefits and cost savings are substantial if the system needs to be upgraded in the future.

Existing system upgrades and modifications

In many cases, existing cement carriers can be modified to perform with receiving systems other than those that it was originally designed for. Consequently, we offer upgrades and enhancements to owners of older cement carriers. Our expertise in cement handling can then be used by ship owners who have cement carriers that are already in operation, but in need of adjustments or upgrades.

Wherever needed, you can rely on our support.
We serve the following brands globally, and we also serve all others.

- Ankerlökken Marine
- Allset
- ASCA
- Becker
- BMH
- Conver-OSR
- Grampian Hydraulics
- Flintstone
- Greer Marine
- Hamworthy
- Hatlapa
- Hydramarine
- Hägglunds
- 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
- 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).

Published by MacGregor. Copyright © MacGregor October 2017 All rights reserved. No part of this publication may be reproduced, stored, photocopied, recorded or transmitted without permission of the copyright owner.