

Offshore ROV hangar doors

Reliable solutions for operations in extreme environments

High sea states demand special design considerations and MacGregor equipment has been specifically developed to fulfil rigorous operational requirements to support the offshore sector. We supply doors for ROV, OSV, multi-purpose, dive support and construction vessels.

Innovative tailor-made offshore solutions

Drawing on the expertise of designing numerous watertight bow, side, stern and bulkhead doors for the marine industry, we have developed technology to support the offshore sector. We supply weathertight access doors for remotely operated vehicles (ROVs) and offshore service vessels (OSV).

ROV hangar doors must be able to operate in high sea-states and cope with the effects of wind and wave slamming. Door design is therefore absolutely critical to ensure sustained functionality.

MacGregor door design is reliable, safe and secure and of well-proven structural integrity, particularly in respect to high sea loads. They retain weathertightness when closed and secured, and a combination of operating systems are available using hydraulic cylinders or hydraulic motors.

Doors can be partially opened, to provide operator protection, or fully opened depending upon the end users operational requirements. We ensure that your door will meet your needs in terms of quality, efficiency, security and overall economy. Yet it will be standardised in all major functions.

You will be supplied with well-proven, reliable equipment which is easy to repair in the event of an accident and easy to



maintain for long-term trouble-free operation. We believe in high quality in every respect.

Door type and size

In order to establish the type and size of door, we require information about the purpose of the door and drawings of the ship, surrounding the door area. Doors typically are side hinging, hydraulically or electrically operated, secured and designed according to Classification Society rules and regulations.

Three measurements are vital for the planning: the height between the decks, the depth of the shell girders and the door clear opening (fig. 1).

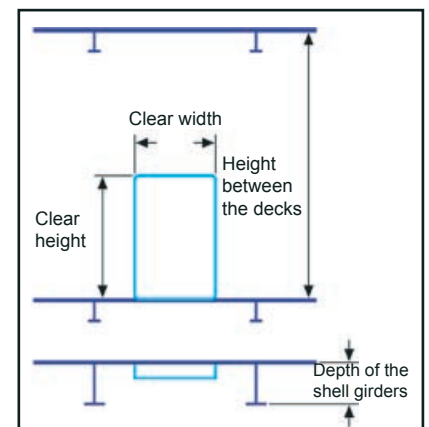


Fig. 1

Designs may cater to various Launch-and-recovery systems (LARS) operational requirements, for example providing a completely unrestricted hangar opening or, with the lower section in place, forming a partially protective bulwark.

Complete packages with integrated LARS system

MacGregor can supply Launch-and-recovery systems (LARS) for ROV/TS coupled with weathertight access doors as an integrated system with main and remotely-operated controls that operate both the opening/closing of the doors and the moving in/out of the LARS. We offer a full range of oversee, moonpool-based or telescopic launch-and-recovery systems.

Steel structure quality

The MacGregor equipment is designed as a flat top plate and open web construction to meet the demands for torsional strength due to the movements of the hull or heel of the ship. High tensile steel is used as standard.

Quality of fittings

Shafts and pins exposed to the weather are of stainless steel. Main hinges and cylinders are fitted with spherical bearings.

Sealing and securing quality

MacGregor's engineers have spared no effort in developing an efficient and secure watertight seal. The result is a simple but high-performance design.

A rubber packing is placed in and around the perimeter of the opening of the hull and is pressed against compression bars made of stainless steel. These have a very smooth surface to guard against any penetration of water.

There are two types of seal design as standard (fig. 2 and 3). When the equipment requires sealing without a sill, a sliding packing design is chosen. This allows relatively large racking deflection of the opening. In all other cases a conventional design is used.

The equipment is secured in the closed watertight position by hydraulically or electrically operated securing devices of well-proven reliable design (fig. 4).

Safety quality

Being the market leader, MacGregor is invited by national authorities and classification societies to use its expertise, gained from numerous installations, to develop and evaluate new rules and regulations.

Your MacGregor equipment will incorporate a number of items of safety equipment regulated by classification societies and authorities. Indication lamps on the operating and bridge panels energise to confirm the equipment is closed and secured.

Custom designed load control valves are normally fitted directly on the cylinders. This will prevent the door from any uncontrolled movement in the event of hydraulic or electrical failure.

Only high quality components of marine design from recognised suppliers are used in our equipment.



Doors are designed according to Classification Society rules and regulations

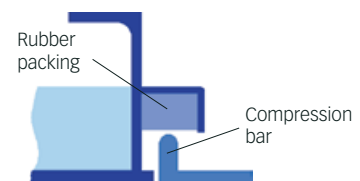


Fig. 2: Conventional door seal design

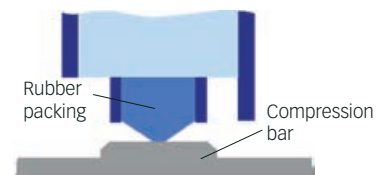


Fig. 3: Sliding door seal design



Fig. 4: Bolt cleat for top-hinged doors



Lloyd's Register Quality Assurance certifies that the Quality Management System for MacGregor is ISO 9001:2008 compliant.

MacGregor is the world's leading brand of engineering solutions and services for handling marine cargoes and offshore loads. MacGregor products serve the maritime transportation, offshore and naval logistics markets, in ports and terminals as well as on board ships. Our cargo flow solutions integrate cargo access, stowage, care and handling functions to suit a particular ship's cargo profile. This benefits its productivity, environmental impact and profitable service lifetime.

MacGregor is part of Cargotec. Cargotec's class B shares are quoted on NASDAQ OMX Helsinki.

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