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Folding Hatch Cover for General Cargo Ship  
 Side Rolling Hatch Cover for Bulk Carrier

**Innovative Partner**  
 Leading you into advanced cargo access systems



To find out more, visit [www.seohae-ms.com](http://www.seohae-ms.com)

## Trusted Partner in Hatch Cover System

Bulk trading market in recent years has been fairly in good shape as world economic situation improved. Seohae's hatch cover system is highly evaluated with our good performance and ceaselessly requested from all over the world.

Seohae folding type hatch cover is designed according to specific requirement of customers based on opening size, container arrangement and loading criteria. Hydraulic-driven hatch cover is opened or closed by easy and quick operation. Hydraulic equipment and steel fittings have a long life time.

Side rolling type hatch covers are mainly equipped on bulk and ore carriers. Seohae's side rolling hatch covers can be operated by either chain or rack/pinion with hydraulic motors. The panels can be arranged for stowing on one side or both sides. Cleating devices are of either manual quick acting type or auto hydraulic operating type. Electric-driven type is actively under being developing.

Seohae has provided complete turn-key solutions from initial design to delivery. This enables customers to eliminate the additional costs, liability issues and time delays which will inevitably occur when having multiple vendors for different parts of the project. Together with a uniform quality and a guarantee for concrete access we trust we are offering our clients the best value for money.

Our state of the art design and high quality products are delivered from our modern design office and factory in Korea. Through our world-wide service network we are able to deliver fast and reliable after sales and service for our systems.



## Folding Type Hatch Cover



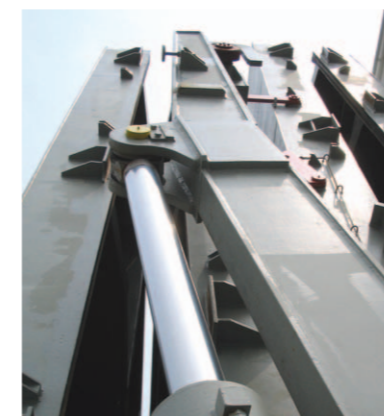
### Folding Type Hatch Cover

Seohae folding hatch cover is operated by hydraulic cylinder with faultless and safe movement. Operation of hatch cover is non-sequential/partial with the easy access of hydraulic systems. Manual or automatic cleating system secures the panels when closed. Weather-tightness of hatch cover is kept with sealing system.



### Multi-Folding Type Hatch Cover

Seohae designs multi-folding hatch cover to keep minimum stowage space and specific requirements. Leading pair is operated by hinged arms on the leading pair and then sequentially the trailing pair is operated by bell crank arm. Each pair is opened to its vertical position and drawn along the longitudinal hatch way. Sequential operating mechanism secures from malfunction of hatch cover operation.



### Hydraulic Cylinders

Seohae cylinder is made of high tensile carbon steel on the whole rod, or in way of the top seal and wiper ring on big cylinders. At rod end, cylinder is welded by stainless (SUS 316) sleeve with chrome coating to protect from corrosion. For additional protection of the piston rod surface, the space between the top seal and wiper ring is fitted with grease nipples.

## Side Rolling Type Hatch Cover



### Rack & Pinion Driven Hatch Cover

Side rolling hatch covers are operated with a rack and pinion drive on vessels where a rack is located transversely in the centre of the underside of each panel. Flangeless wheels are used on one side of the panels to ensure that the cover functions correctly in the event of distortion of the coaming. Pinion is positioned on the outside of the side coaming where it engaged in the rack. Two panels are fitted with each own rack and pinion drive system to allow independent operation.



### Chain Driven Hatch Cover

Chain-driven system is also applied to side rolling hatch cover system. The operating chains, which are guided along both of the transverse coamings are corrected cross-wise to the arms of both panels giving simultaneous operation of the panels. One-sided type and two-sided type are driven by a low speed hydraulic motor with a planetary gear and is mounted on the ships deck at one side between the stowing ramps. Cleating devices shall be of either manual quick acting type or auto hydraulic operating type.

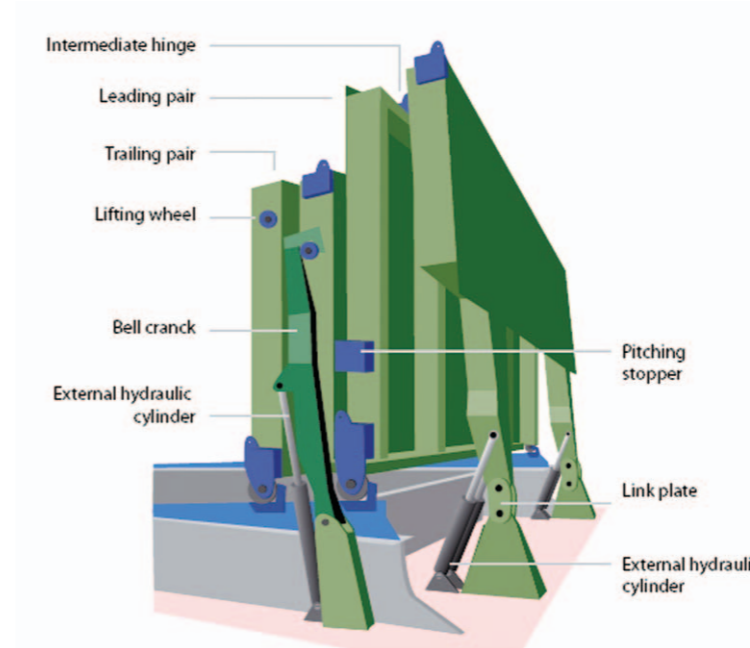


### Piggy Back Type Hatch Cover

Piggy back hatch covers are used on multi-purpose carrier when the available deck space is insufficient to accommodate folding, side-rolling covers. This system always comprises two panels, with one other to roll underneath and to support the lifted panel. Both panels can then be rolled back and forth. The covers open by nucleating and raising the lifting panel high and then raising the rolling panel to the wheel track level. Both lifts are achieved by hydraulic cylinders.

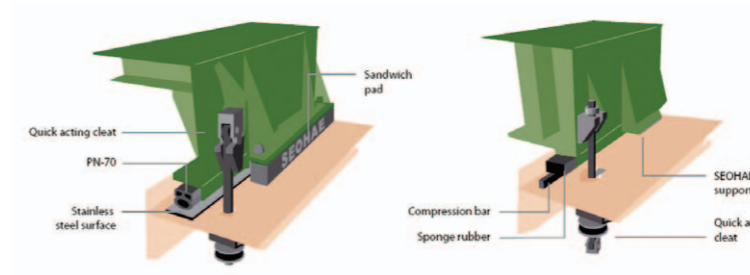


## Serving You Better with Easy Maintenance



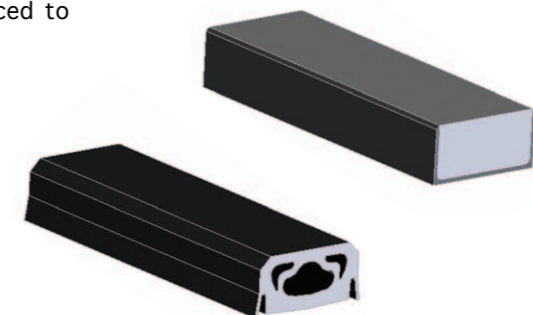
### Hydraulic Equipment

Hydraulic equipment is used in hatch cover opening and closing.



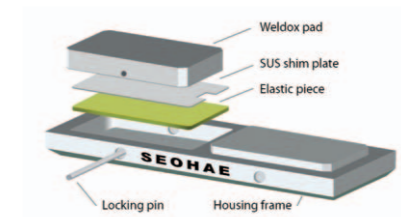
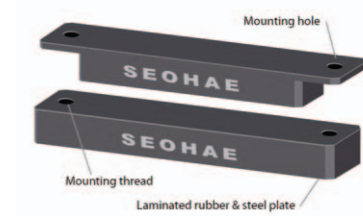
### Rubber Sealing

Sponge rubber is mostly used on side rolling and folding hatch covers. Standard compression is 12mm and is produced to guarantee long life time.



### Bearing Pad

Seohae sandwich pad and weldox-hardox pad has non-corrosive and sliding low-friction. These pads ensure a considerably longer time compared with steel-to-steel pad.



### Cleat

Cleating devices are of either manual quick acting type or auto hydraulic operating type.