

ALL OVER THE WORLD: THE SCHOENROCK NETWORK

WORLDWIDE AGENT NETWORK

- | | | | |
|-------------------|------------|-----------------------|-------------|
| ➤ Germany | ➤ Portugal | ➤ Dubai / Middle East | ➤ Singapore |
| ➤ Finland | ➤ Italy | ➤ India | ➤ Australia |
| ➤ The Netherlands | ➤ Greece | ➤ Korea | ➤ Canada |
| ➤ Great Britain | ➤ Cyprus | ➤ China | ➤ USA |
| ➤ France | ➤ Turkey | ➤ Japan | ➤ Brazil |
| ➤ Spain | ➤ Russia | ➤ Malaysia | |



ACCESS IN MOTION

- Watertight Bulkhead Doors
- Ventilation Duct Closing Systems
- Hydraulic Marine Systems For Special Applications
- Shell Doors
- Watertight Building Doors



➤ **SCHOENROCK**
Hydraulik Marine Systems GmbH
Lise-Meitner-Allee 11 · 25436 Tornesch · Germany
Tel.: +49 4120 799110 0 · Fax: +49 4120 799100 0
Mail: info@schoenrock-hydraulik.com

➤ www.schoenrock-hydraulik.com

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SCHOENROCK

ACCESS IN MOTION

► OUR BUSINESS PHILOSOPHY

Design and production of hydraulic, electric and mechanical watertight equipment and systems for the marine industry as well as flood protection for buildings.

► OUR ACCOMPLISHMENT

More than 6.000 doors in different sizes and executions.

► OUR REFERENCES

Schoenrock equipment can be found on ferries, cruise vessels and mega yachts, research vessels, naval ships, drilling platforms and tankers as well as installed at buildings.

SCHOENROCK HYDRAULIC SYSTEMS WITH HISTORY

In the beginning of the 1950s, German engineer Johann Schoenrock started his steel construction shop, "Joh. Schoenrock oHG", in Hamburg. Soon after formation of his company, he began to design and build hydraulic operating devices for engine room skylights and spindle davits to lower lifeboats.

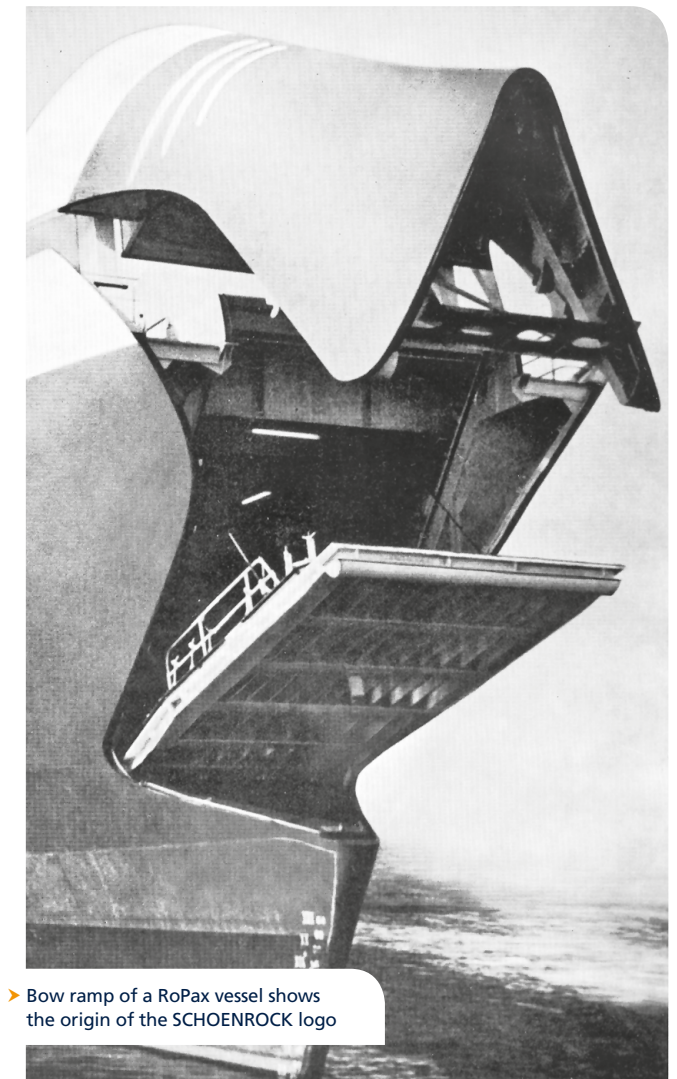
A milestone in Schoenrock history was the start of production of watertight doors for buildings in 2011.

We always strive to let our customers enjoy latest state of-the-art technology as well as to provide the best possible service. Schoenrock is specialized in designing, developing and manufacturing tailor-made solutions.

It is our constant aim to be one of the market leaders. Therefore, Schoenrock owns well equipped and modern production facilities in order to obtain highest quality standards.

We are proud to employ highly skilled and motivated staff, for whom "Around-The-Clock" service still has a significance.

Dr. Volker Behrens
Managing Director



► Bow ramp of a RoPax vessel shows the origin of the SCHOENROCK logo

► Ships equipped with SCHOENROCK technology



“ KNOCKING ON OUR DOOR IS KNOCKING ON THE RIGHT ONE

With respect to our standard hydraulically operated watertight sliding door, **SCHOENROCK Hydraulik Marine Systems** offers the following main advantages to you:

- The lowest possible weight
- Tailormade installation sizes
- Maximum water resistance up to 60 m
- Various sill solutions
- Easy installation and serviceability
- Easy accessibility of all components for service
- Fire-proof A-0 up to A-60 with approval certificate
- Flexible operation concepts such as: Electric drive and electro-hydraulic drive

ELECTRIC WATERTIGHT SLIDING DOOR SHIPTIGHT (E)



TECHNICAL DATA

- Variable door sizes acc. to customer requirement
- Available for 0-15 m wc
- Premounted, tested compact unit
- Variable sill versions
- No need for additional reinforcement
- Shortest possible installation time
- Also available as fire-proof watertight sliding door, fire class A-0 to A-60, with certificate

ADVANTAGES

Further development of our reliable Hydraulic Watertight Sliding Door has been made:

- T-section seal made for optimal equalisation of mounting tolerance
- Increased door frame stiffness
- Guide unit made of rust-proof stainless steel and brass
- Less force needed to close the door
- Easier installation, as new model requires no cylinder or guide rail fastening to bulkhead
- Sealing surface is rust-proofed
- Electrical drive system with low noise emission for comfortable operation
- New designed emergency generator for operation with low mechanical forces



➤ RELATED EQUIPMENT

➤ FLEXIMOD

Fleximod is the modular operation panel for our electrical watertight sliding doors. It contains the junction box, hand generator and necessary acoustic devices. The placement of the module takes place flexible close to the door in niches behind designer wall elements or equal coverage. Dimensions are tailor made acc. to available space. An optional position of hand generator with angle installation can be delivered.



HYDRAULIC WATERTIGHT SLIDING DOOR SHIPTIGHT (H)



TECHNICAL DATA

- Variable door sizes acc. to customer requirement
- Available for 0-15 m wc
- Premounted, tested compact unit
- Variable sill versions
- No need for additional reinforcement
- Shortest possible installation time
- Also available as fire-proof watertight sliding door, fire class A-0 to A-60, with certificate

ADVANTAGES

Further development of our reliable Hydraulic Watertight Sliding Door has been made:

- T-section seal made for optimal equalisation of mounting tolerance when welding in place
- Increased door frame stiffness
- Guide unit made of rust-proof stainless steel and brass
- Less force needed to close the door
- Easier installation, as new model requires no cylinder or guide rail fastening to bulkhead
- Last proved seam surface
- Power Pack with air cooled electrical motor



- Ships equipped with SCHOENROCK technology



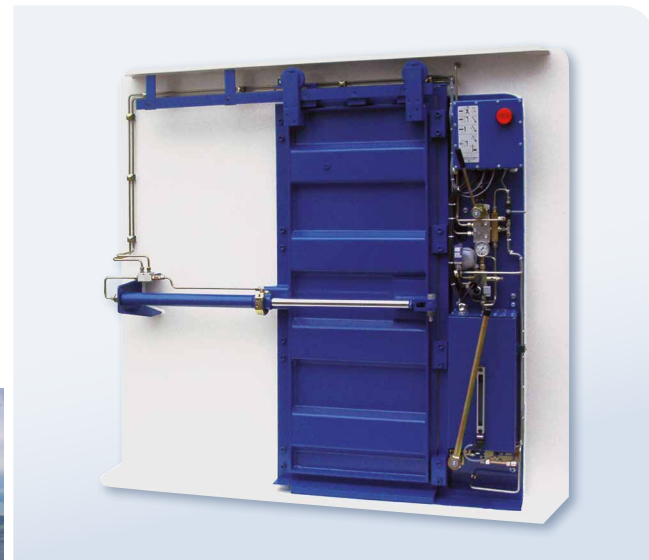
“WE DON'T NEED TO BE THE BIGGEST.
WE WANT TO BE THE BEST!”

HYDRAULIC WATERTIGHT SLIDING DOOR (HIGH PRESSURE)

PRESSURETIGHT
by SCHOENROCK

PRODUCT DETAILS

- Variable door sizes acc. to customer requirement
- Available for 0-60m wc
- Premounted, tested compact unit
- Variable sill versions
- No need for additional reinforcement
- Short installation time
- Also available as fire-proof watertight sliding door, fire class A-0 to A-60, with certificate



WATERTIGHT NAVY DOOR

SHOCKTIGHT
by SCHOENROCK

PRODUCT DETAILS

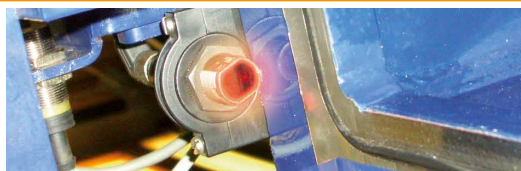
- Shock tested acc. German Navy specification BV230 (fulfilling test limits acc. Stanag 4141 and MILS-901D (Navy))
- Vibration tested acc. German Navy specification BV240
- Gastight sealing concept
- Compact space saving design due to innovative drive concept
- Variable door sizes acc. to customer requirement
- Low maintenance requirements
- Premounted unit for shortest installation time
- No need for additional reinforcement
- Optional available with transport ramp system



RELATED EQUIPMENT

LASER SAFETY STRIP

In order to avoid accidents when closing the doors, a laser beam can be installed in the door opening. This option can be installed on existing door systems, on new hydraulic doors and new electric doors.



HYDRAULIC WATERTIGHT SHELL DOOR

SHELLTIGHT
by SCHOENROCK

PRODUCT DETAILS

- Variable door sizes acc. to customer requirement
- Coverage of hull openings to give access to ship's inside for embarkation, refueling, pilot access etc.
- Tightness level 0-3 m wc (0-0,3 bar) from outside available
- Gastight due to rubber sealing concept
- One or two leaf solutions available
- Premounted unit with short installation time
- Fully tested before delivery
- Low maintenance requirements

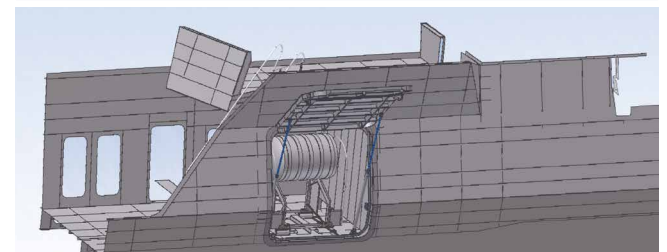
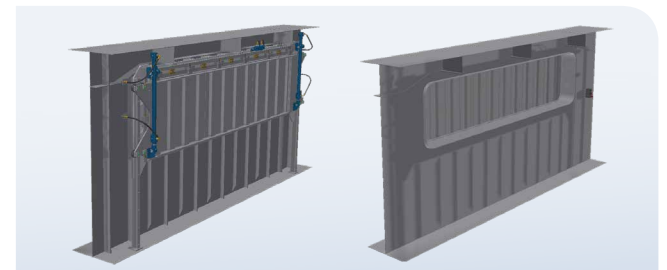


HYDRAULIC WATERTIGHT NAVY SHELL DOOR

HULLTIGHT
by SCHOENROCK

PRODUCT DETAILS

- Coverage of niches in hull and superstructures to maintain stealth capability and /or
- Providing ship access for people or supply goods
- Shock tested acc. German Navy specification BV230 (fulfilling test limits acc. Stanag 4141 and MILS-901D (Navy))
- Gastight sealing concept
- Compact, space saving design due to innovative drive concept
- Variable door sizes acc. to customer requirement
- Low maintenance requirements
- Available in watertight and non watertight design
- Premounted unit for shortest installation time



- Ships from our reference list – equipped with SCHOENROCK components



“ STATE-OF-THE-ART TECHNOLOGY AND BEST POSSIBLE SERVICE

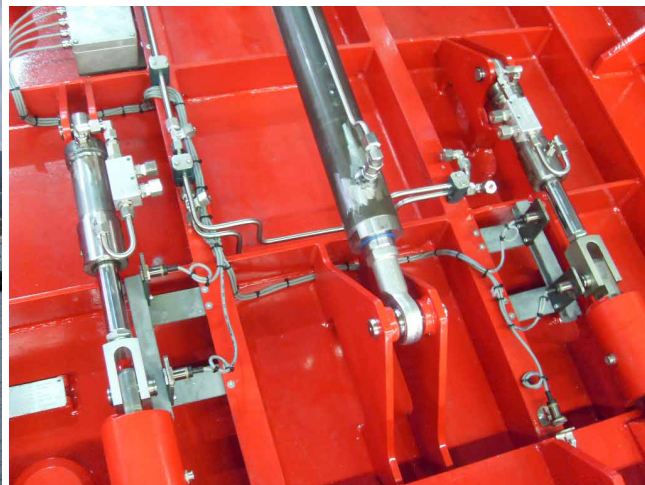
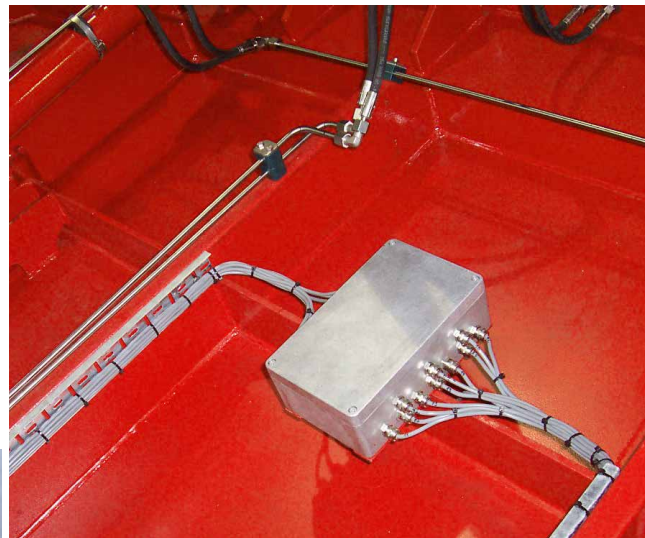
HYDRAULIC HATCH

TECHNICAL DATA

- Nominal pressure: 2610 psi (180 bar)
- Controlled by SPS unit. Remote operation panel, or a flexible panel, connected to the main control cabinet
- Power: General ship power source
- Steel: Gauge according to surface load from top. Use of standard shipbuilding steel (stainless steel upon request). A-60 insulation to meet customer's specifications.
- Degree of opening: At least 90°, generally 100° or 110°
- Executions: Flush or coaming, sizes according to design type

ADVANTAGES

- Custom-made design of hydraulic hatches
- Available for nearly all type of ships
- Premounted, tested, compact unit
- Shortest possible installation time
- Hydraulic operated drive concept



VENTILATION DAMPER SYSTEM

PRODUCT DETAILS

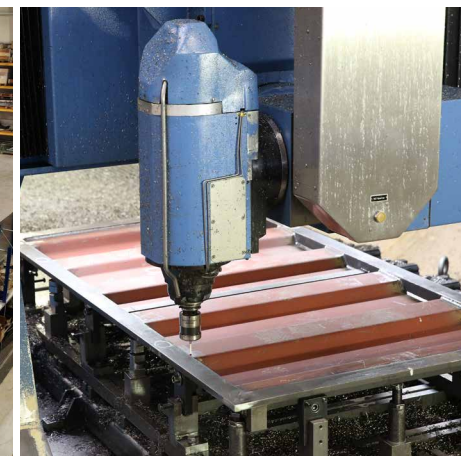
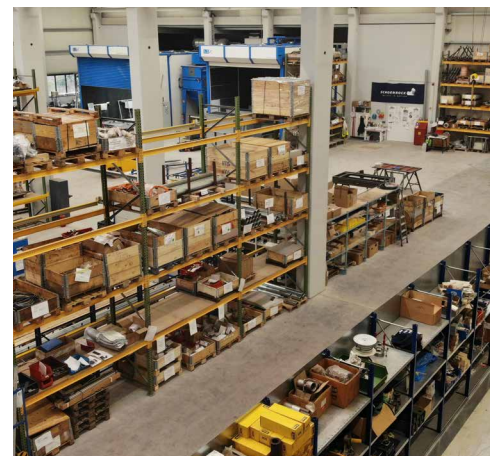
Our ventilation duct covers are designed to shut down the ventilation system in case of fire. Each cover consists of a flap, which can open 30° to 60° upwards, and a frame. Opening and closing is done by means of a hydraulic cylinder. The system is operated and controlled by means of operating stations, which are usually located on the weather deck.

Each operating station consists of an oil tank, a hand pump, a manual valve, a pressure limitation valve, a manometer and an electric-position indicator.

- Hydraulic operated ventilation damper systems for cargo spaces
- Variable door sizes acc. to customer requirement
- Optional hand or automatic operation
- Optional with ventilation jalousies acc. DIN 83410
- Shortest possible installation time
- Powered by hand hydraulic or hydraulic powerpack
- Available with automatic closing from bridge panel with indication "OPEN/CLOSED"
- Available with automatic closing via interface to other systems with feedback signals "OPEN/CLOSED"



➤ Impressions from our production facilities



“ ALSO BY SCHOENROCK: THE PERFECT FLOOD PROTECTION

With FLOODTIGHT Sliding Doors SCHOENROCK has successfully transferred its shipbuilding know-how to technology for all buildings in flood risk areas. This results in many additional application options, for e.g.:

- Development, construction and installation of protective racks
- Implementation of watertightness solutions requiring the highest standards
- Development, construction and installation of offshore components



FLOODTIGHT SLIDING DOOR

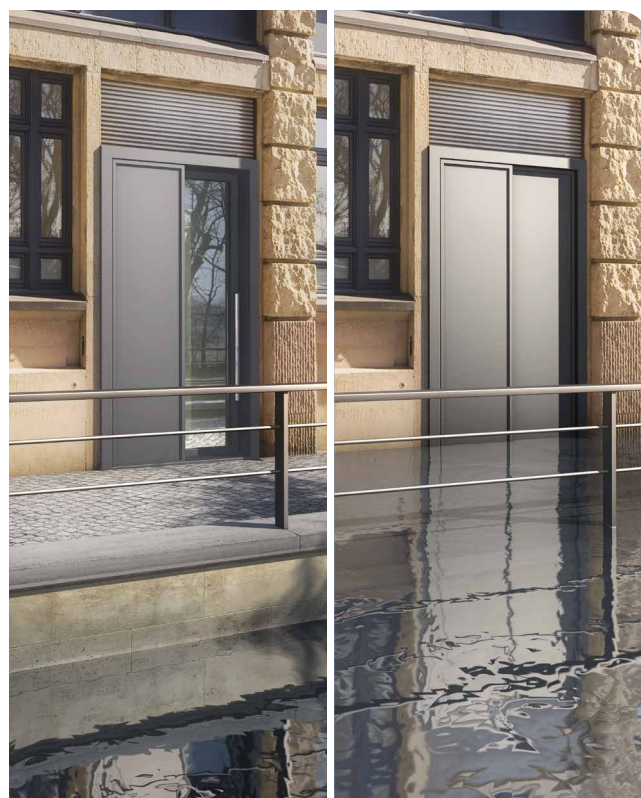
FLOODTIGHT
by SCHOENROCK

TECHNICAL DATA

- Simple manual actuation with crank handle (option: electric drive)
- Variable door sizes acc. to customer requirement
- Available for a water pressure of 0 -10 m water column
- Leak rate practically 0 l per minute and meter of seal
- Available in double-wing design
- Supplied as a preassembled, tested unit

ADVANTAGES

- Easy operation
- Integration into new buildings
- Retrofitting in existing buildings
- Integration into digital building management systems
- Visual adaptation to the building architecture possible



“ SCHOENROCK DESIGNED – FOR YOUR MILLING WORK

UNIVERSAL PORTAL MACHINING CENTRE

TECHNICAL DATA

Our CNC manufacturing center guarantees lowest tolerances and highest quality.

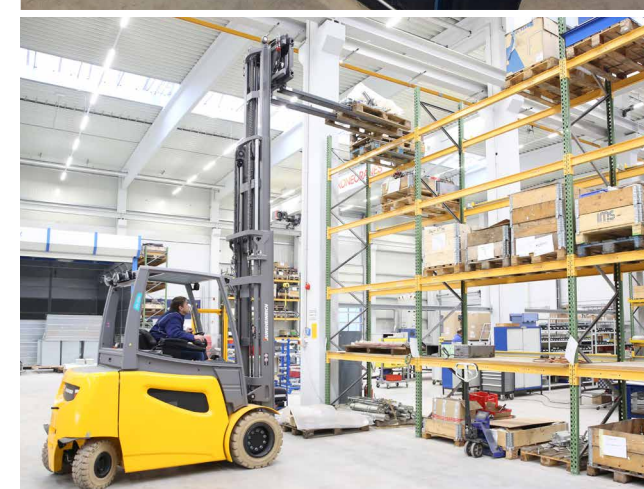
- **Maximum component size in mm:**
L: 5.000 x B: 2.500 x H: 650
- **Maximum component weight:** ca. 10.000 kg
- **Maximum worktable load:** ca. 1.000 kg/m²
- **Positioning accuracy on 1000 mm:**
per axis in mm: + – 0.018
- **Repeating accuracy:** per axis in mm: + – 0.0075
- **Number of available tools:** 22

ADVANTAGES

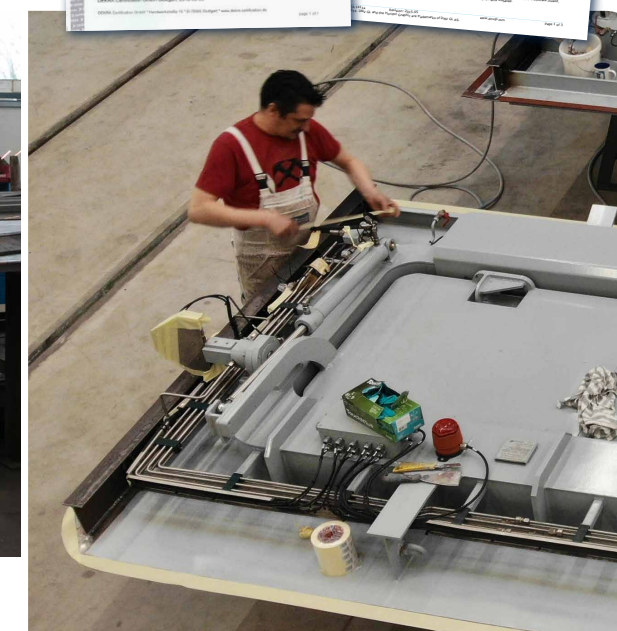
- **WE CAN DO YOUR MILLING FOR YOU**
Our ultra-modern AXA Universal Portal Machining Centre is fitted with a 2-axis swivel head. This allows your workpieces to be machined vertically and horizontally – from all four sides and even at an angle. Quickly and accurately. The special arrangement of the swivel head means that the entire Z-path is available in both the vertical and horizontal spindle position. We can use your control files – or program the work according to your specifications or drawings.
- **OR YOU CAN DO IT YOURSELF USING OUR CENTRE**
On request, we can also make our new Machining Centre available for use by customer's staff. Careful instruction is included. You can decide yourself when, for how long and with how many staff you want to use the Centre. On request, you can operate a three-shift system and work on Sundays and public holidays.
- **SERVICE INCLUSIVE**
Our Machining Centre is designed to handle even the heaviest pieces – our indoor crane can transport with a unit weight of up to 10-20 t max. Workpieces can be delivered quickly and easily by truck right into our engineering hall, protected against weather influences. Seaworthy packing, shipping, customs clearance? Let us take care of that, too! On request, our Machining Centre is there for you round the clock.



Our CNC manufacturing center guarantees lowest tolerance and highest quality



SCHOENROCK has a quality management system (DIN EN ISO 9001:2015), and is classified by all classification societies.



Assembling facility for power packs

AFTERSALES

- **SPARE PARTS AND SERVICE**
The SCHOENROCK Group is able to provide adequate spare parts, conversion, repair and maintenance services worldwide.

TECHNOLOGY

- **OUR PRODUCTION MADE IN GERMANY**
The SCHOENROCK group owns well equipped production facilities to ensure their own high-quality standards. We manufacture our own hydraulics and power packs. We can carry out all required pressure tests in our company workshop, located near the city of Hamburg.
- **RESEARCH DEVELOPMENT AND INFORMATION TECHNOLOGY**
Regarding technological development, SCHOENROCK Hydraulik Marine Systems GmbH collaborates closely with technical universities, classification societies and shipyards. We find it very rewarding to cooperate on such creative and innovative levels, which enable us to come up with unique solutions. Our company can also perform design service from conceptual outlines to manufacturing drawings, FE-analysis and calculations. Designs can be arranged in 2D or 3D. Our hardware as well as our software are state-of-the-art.



Production line for steel made door frames and blades

