



Naval Line

speich





Cruise ships, cargo ships, military vessels, research vessels, tankers, tug and patrol boats have to operate in a wide range of extreme conditions.

The **robustness** and the **reliability** of windscreen wipers becomes fundamental for a correct visibility of the vessel.

Furthermore there is often the need to **coordinate** the operation of a considerable number of wiper motor units with the windscreen **washing** and **glass heating** system.



SPEICH wipers Naval line allows you to meet those needs being designed for maximum reliability, robustness and ease of control





The Products Choice



How to choose the right product?


There is no a unique correct choice for a marine windscreen wiper

A naval line windscreen wiper system is **custom made** for each application and windscreen plan. The system design and production are made under strictly **quality criteria** in order to respect the Supply Management Plan and deliverables requirements compliance.

The choice depends on many factors:

- **WINDSCREEN FORM AND SIZE**
- **SWEPT AREA REQUIREMENTS**
- **CUSTOMER REQUIREMENTS**

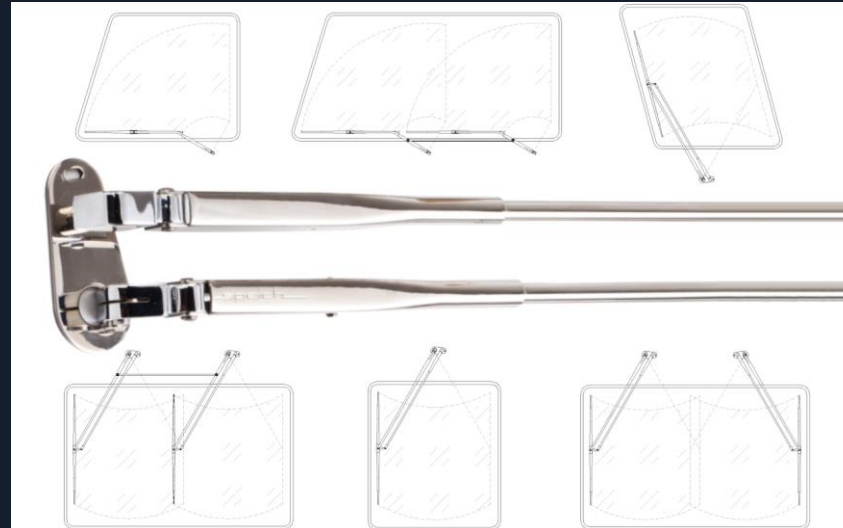
Our team of design engineers will supply the best advice and assistance in order to achieve considerable savings in installation costs, greatly improved window clearing efficiency and the best reliable product.



Our systems are designed to meet all customer requirements

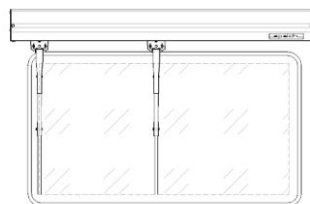
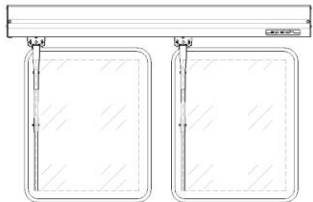
Straight line wiper systems

They are used for both flat and curved windows usually with wide base length when the highest cleaned area is a requirement. For wide windows, wipers with double arms are available.



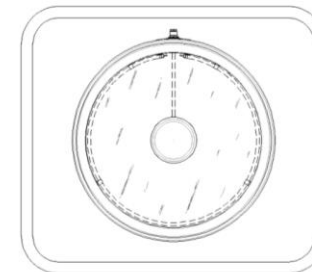
Clearview screen

They are used on a wide variety of boats, from merchant ships to military vessels, where windows have a small square flat shape.



Pantograph and pendulum wiper systems

They are used for both flat and curved windows usually with greater height than the base when installation space is limited. For wide windows, wipers with double arms or crossed areas are available.



Straight line wiper systems

- Perfect visibility even under the worst weather conditions because of a **high cleaned area** (up to 85%)
- Several **adjustment** to be made while installing in order to fit also to irregular windows
- **Reliability** to operate in extreme marine conditions
- **Large choice of systems configurations:** a complete offer of motor varying by tensions, torque and installation position (internal and external), as well as of different models and lengths of arms and blades, are available
- Wipers and auxiliaries operate as **single units** or as **groups** and from different points (e.g. central and wing decks)
- On request, all systems can be fitted with **spray nozzles** or with **heated frame** for special requirements

Pantograph and pendulum wiper systems

- **High strength and corrosion resistance** for extreme marine conditions
- **Compact design** of the motor assembly for an easy installation
- **Large choice of systems configurations:** a complete offer of motor varying by tensions, torque and installation position (internal and external), as well as of different models and lengths of arms and blades, are available
- **Great flexibility** during installation
- On request, all systems can be fitted with **spray nozzles** or with **heated frame** and **double arm** for special requirements
- Complete solutions of windscreen **washer systems**
- Wipers and auxiliaries operate as **single units** or as **groups** and from different points (e.g. central and wing decks)

Clearview screen

- **Traditional product** made with great attention to detail
- A **long life product**
- **The largest possible sight field**
- It's used on a wide variety of boats when a **specific point of view** is required
- It must be installed on **flat glasses**
- The rotating glass is **hardened** and all metal parts are made of brass (chrome plated on request)
- Possibility of **heating** by electric resistance to avoid condensation and ice formation
- It's available in **three diameters** of net view: 300, 350, 380 mm



CONTROL SYSTEMS

In order to manage windscreen wiper systems and their auxiliaries, such as washer systems and heated windows, SPEICH offers several customizable control systems: from CAN bus based **Distributed Control Systems (DCS)**, an advanced window wiper controller which allow to obtain a perfect synchronization of the strokes, to **centralized control systems (UC, PWS, LMS control systems)**.

SPEICH control panels are compact and curly finished as to be easily installed in the wheelhouse. Personalized panels can be also available, as well as dedicated control units, in order to satisfy all specific needs.

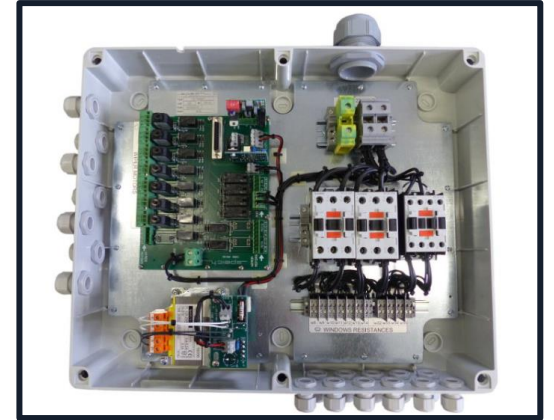


Wiper system power distribution units

For a large number of wiper motors and heated glasses there is a considerable consumption of electrical power. This raises the need of an efficient wiring and a correct balance of power phases. We design and manufacture dedicated **Power Distribution Units (PDU)** to suite these needs, both plastic and metallic made, involving the following components:

- Circuit breakers
- Remote control switches
- Terminal blocks for wiring
- Speich DCS controllers of auxiliaries
- Speich gateway
- Glands

Our PDU are designed to be integrated with our wiper control units.



INTEGRATED LOGISTIC SUPPORT

SPEICH has its own internal process for product management oriented to **Integrated Logistic Support (ILS)** with the goals of creating reliable systems that last longer and require less support thereby reducing operational life cycle costs. This process ensure that the requirements for each of the elements are properly planned, resourced, and implemented and allow to achieve a complete scope of supply management and optimal solutions with customer satisfactions goals.

Typical non-exhaustive list of deliverables and ILS activities:

- **Functional specifications:** performance, materials, dimensions, weight, power consumption, spare parts support included spare recommendation spreadsheet ecc..
- **Operational specifications:** mission profile and RAMS&LCC specifications, maintenance planning included criteria for repair, tools, tests, maintenance tasks ecc...
- **Engineering specifications:** technical data publications included technical manuals, component and illustrated lists, datasheets, drawings, preventive and corrective maintenance instructions, troubleshooting, hazardous material documentation, configuration and change plans ecc...
- **Industrial specifications:** installation, commissioning and training support, personnel specifications, packaging, handling, storage and transportation specifications ecc..

Production and testing

- Full quality control
- Flexible production
- Short lead-time
- Long term spare parts availability
- Low obsolescence risk

The **in-house production** of most components is part of SPEICH policy which provides several advantages:

- Full quality control manufacturing and control plans
- Very flexible production
- Short lead-time
- Long term spare parts availability
- Low obsolescence risk

Each product project is validated after dedicated testing, in our test room or a third-party laboratory, and first article inspection.

Typical testing and compliance we achieve for our wiper systems are:

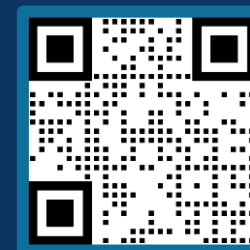
- EMC, Environmental conditions and Vibration to EN60945
- ISO17899 compliance for flagship products
- IP Degree of Protection
- Salt spray testing
- Endurance and performance testing
- Distance from the magnetic compass





International Sales Network

A complete list of our global service and distribution network is available on our web site:



www.speich.com

SPEICH