



THE NEW WINNERS SYSTEM FOR VALVES REMOTE CONTROL



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An exceptional capacity to diversify the products, adapting them promptly to the ever-changing demands of the market, has made Navim Group a unique company, leader in the design and production of sophisticated and cutting-edge equipment, consistently present in all the segments of the naval sectors.

With **250 employees, 3 production units, 9 world branch offices, more than 160 engineers** and highly qualified technicians of all disciplines, Navim Group is one of the major engineering force dedicated to the design of naval systems.



Our design centers, supported by 60 3D/Autocad workstations with the most sophisticated software packages, allow the **full control of any project**, from the system design to the commissioning, and provide advanced solutions for any projects.



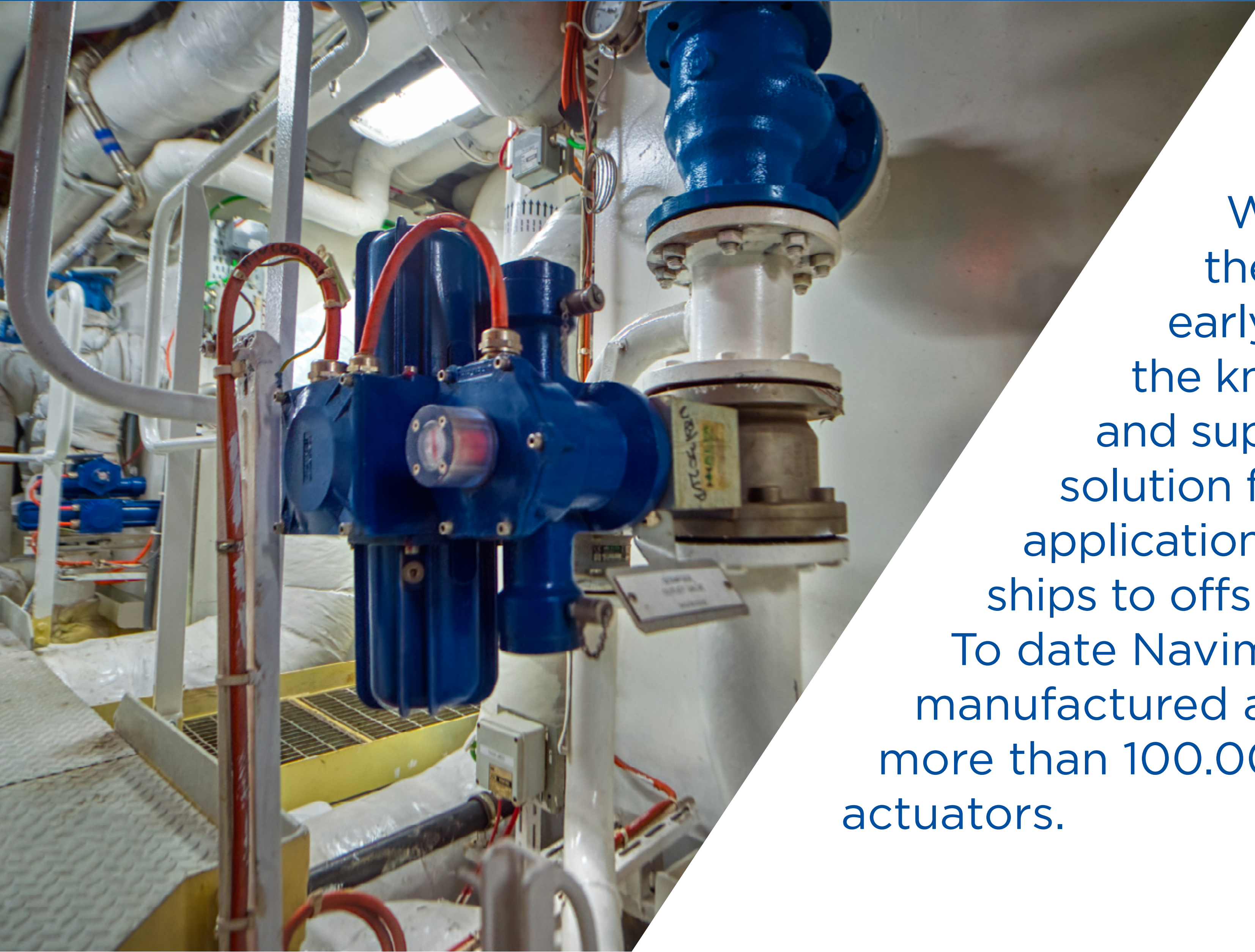


Valve remote control systems

by Navim Group

The remote control of the valves is a key feature in the automation of complex projects such as cruise ships.

Valves operation is the way to control most of the processes vital to the ships operation onboard. Navim Group can supply a full range of hydraulic or electro-hydraulic actuators able to operate any valve, from the smallest to the largest ones.



With a specific experience in the field dating back from early '80, Navim Group has the know-how to design and supply the best suited solution for any marine application, from passengers ships to offshore oil rigs. To date Navim Group has manufactured and installed more than 100.000 valves actuators.

The WINners system is a distributed intelligence VRCS developed by Navim Group since 1995.

The micro-power pack, directly installed on rotating and linear hydraulic actuators, is the intelligent element of each E-TorkLT and E-Ram electro-hydraulic actuators assemblies.



Each electro-hydraulic actuator is controlled by an electronic card located in dedicated cabinets distributed in the whole ship.

Each card is connected to a single actuator via a multicore marine approved cable (signal plus power).

One single WCC can collect and drive up to 45 neighbor E-TorkLT and E-Ram with full local control capability for maintenance.

The most important features of the WINners system are:

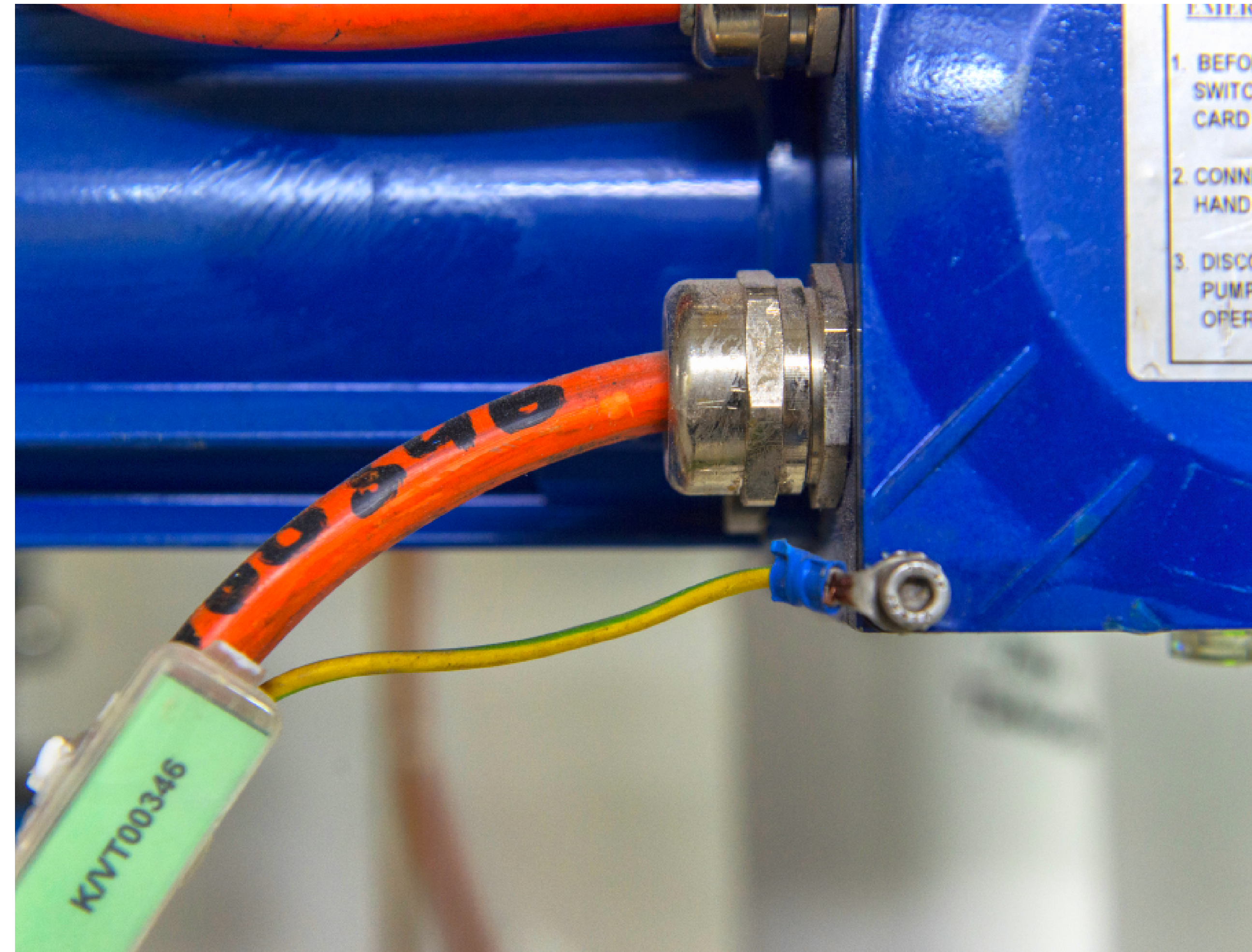
- The serial data link provides for each single actuator a “status information” to IMCS
- Last called valve position or safety action is maintained / performed also in case of IMCS shut down
- The hierarchy control assures, in any circumstances, the following operation modes:
 - from the IMCS supervisor or control room desk
 - from a mimic diagram or secondary station overriding the supervisor
 - from the local WCC cabinet
 - local operation by means of the portable or fixed hydraulic hand pump



For each valve it is provided the electrical overriding action (Local/Remote operation) also in case of failure of the electronic section.

The strengths of Navim Group WINners system are the following:

- Actuators are connected only by electrical cables: no oil leakage, no flushing and commissioning of hydraulic lines
- Cables can run on existing cable-trays, no separate routes are necessary
- No dedicated space is wasted for hydraulic power pack and solenoid valve units



- No sources of noise, no water hammer noise on hydraulic lines: the MHPP units are very silent and can be installed very close to accommodation and passenger cabins
- The splitting of the micro-hydraulic power pack allows the actuators to operate the valves in submerged tanks or not easily reachable places



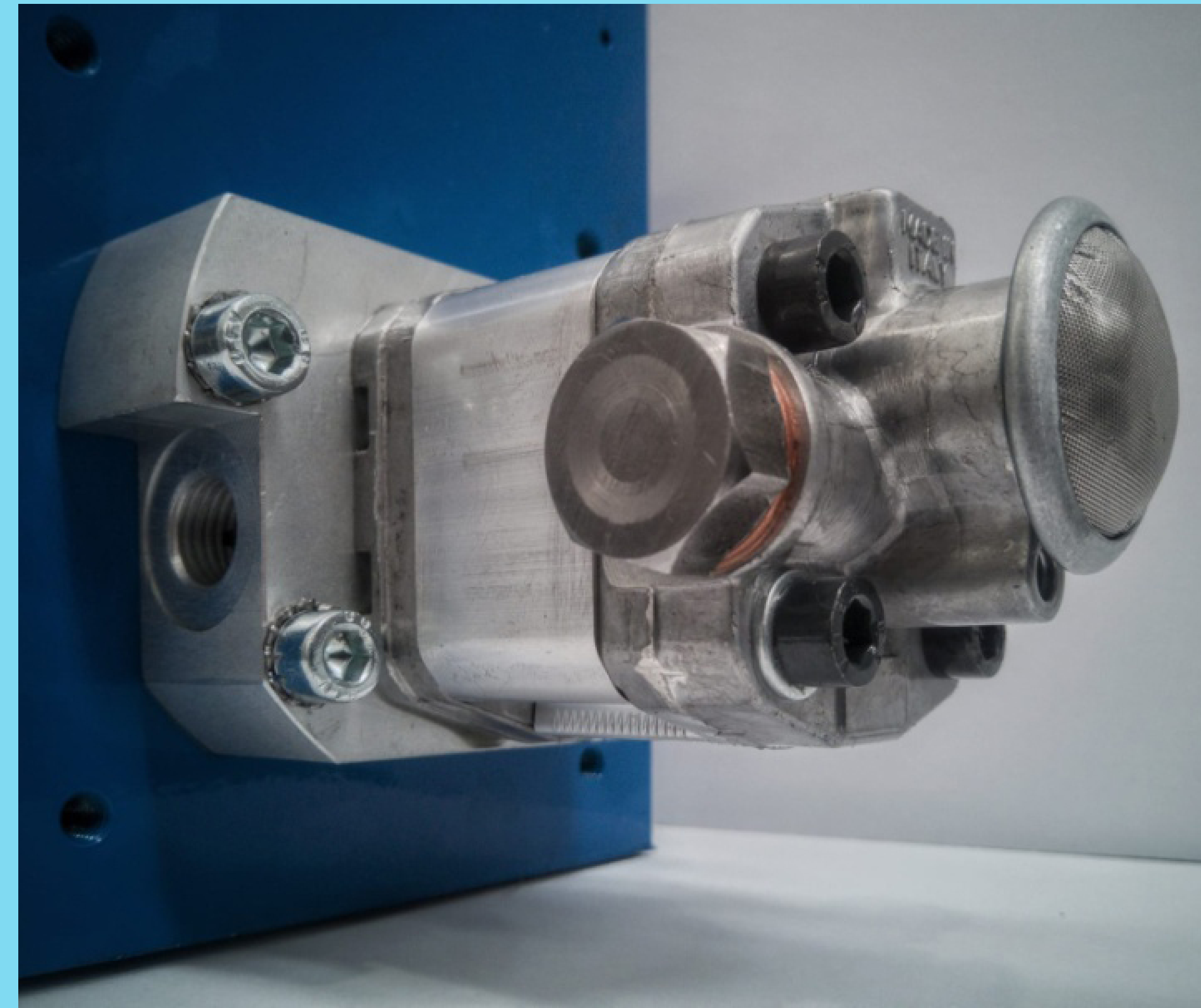
Experience coming from our service teams and ships operators along the years have suggested a **number of improvements that have been incorporated in the current WINners NG System.**

Through changes in hardware, firmware and software, we can now offer an enhanced reliability and serviceability of the whole system in terms of communication speed, upgrade of electronic components, new design specific mechanical parts.



MINI HYDRAULIC POWER PACK (MHPP)

- The mini hydraulic power pack has been renewed with a new design of its internal components.
- The hydraulic pump adopts new gears with an optimized profile and a new anodizing treatment as already proven successfully in highly demanding applications.
- Each single unit is fully tested before being transferred to the production line.



NITROGEN ACCUMULATOR

- A new nitrogen accumulator unit for single-acting actuators series Tork-LT 30, 40 and 50 has been designed to improve the reliability over much extended life time.
- The new accumulator, besides a reduced footprint, has been conceived to perform not less than 200.000 meters of linear operations (in practical terms it means up to 40 years of valves operation) without any need of refill and maintenance.



COMMUNICATION GATEWAY

- A new up to date gateway has been designed allowing much faster communication between WINners System and third party ship's automation.
- In the new configuration, the speed of the interface with the automation system guarantees an overall data exchange for a full system (typically 600 controlled points) in less than 1 sec.



ELECTRONIC PRINTED BOARDS COMPONENTS

- Each single components (resistors, transistors, capacitors, etc.) of WINners electronic boards has been reviewed with the newest ones available on the market.
- A new automated procedure has been introduced to test each single electronic board before delivery.





1000 PSI (68.9 MPa)
1500 PSI (103.4 MPa)
2000 PSI (137.9 MPa)
2500 PSI (172.4 MPa)
3000 PSI (206.8 MPa)
3500 PSI (241.3 MPa)
4000 PSI (275.8 MPa)
4500 PSI (310.3 MPa)
5000 PSI (344.8 MPa)
5500 PSI (379.3 MPa)
6000 PSI (413.8 MPa)
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7000 PSI (482.8 MPa)
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9000 PSI (620.8 MPa)
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99500 PSI (6865.3 MPa)
100000 PSI (6899.8 MPa)

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