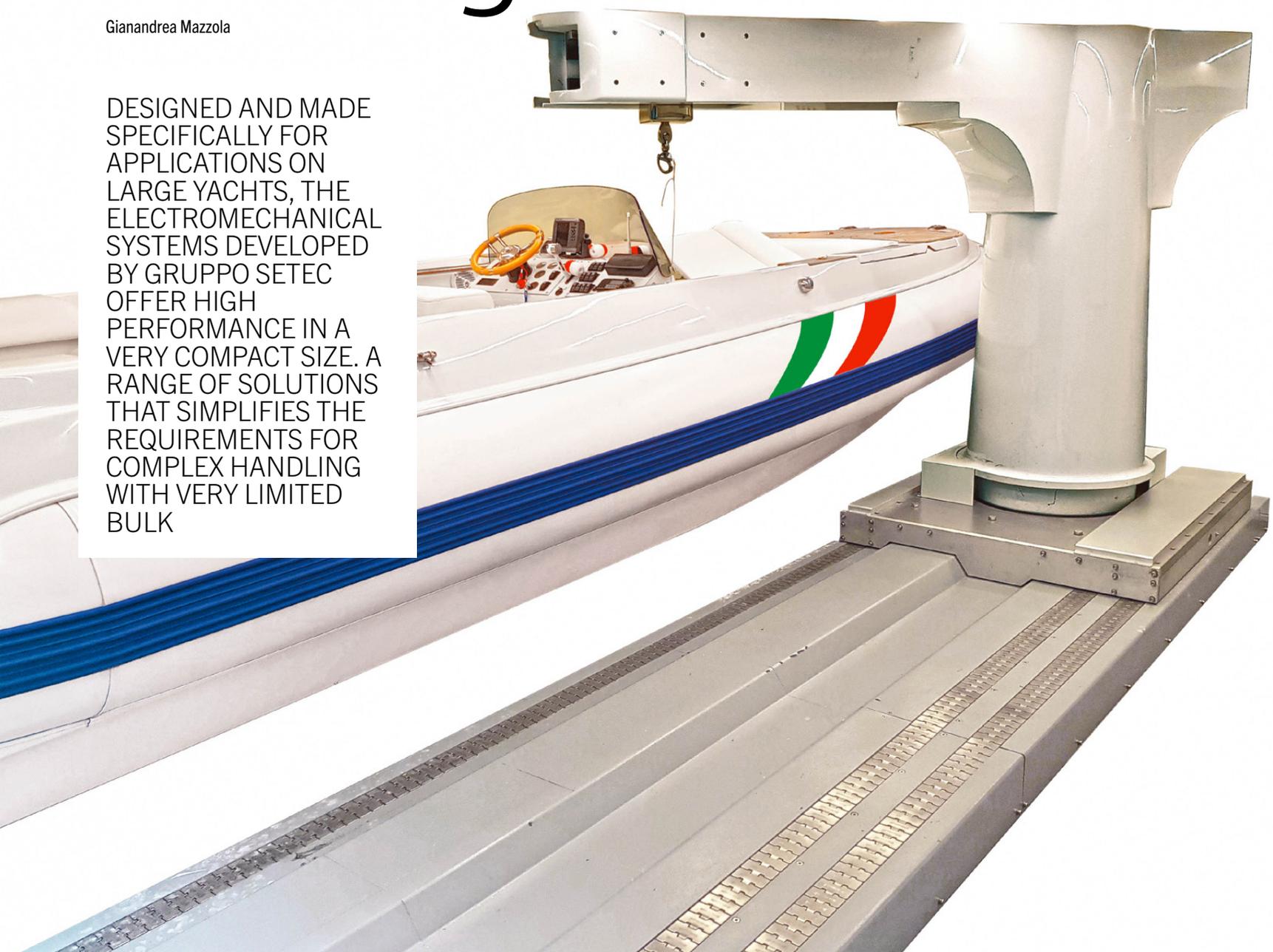


HANDLING TENDERS & C: linear, compact, efficient and quiet running

Gianandrea Mazzola

DESIGNED AND MADE SPECIFICALLY FOR APPLICATIONS ON LARGE YACHTS, THE ELECTROMECHANICAL SYSTEMS DEVELOPED BY GRUPPO SETEC OFFER HIGH PERFORMANCE IN A VERY COMPACT SIZE. A RANGE OF SOLUTIONS THAT SIMPLIFIES THE REQUIREMENTS FOR COMPLEX HANDLING WITH VERY LIMITED BULK



As part of its systems for naval applications the Setec group designs and produces several handling solutions, prominent among which are the Electromast series linear telescopic cylinders (purely electromechanical electrocylinders designed and made to hoist nav lights at the bow for ships of more than 50 m) and the Searc actuators (also purely electromechanical electrocylinders created for the linear activation of opening/closing systems for hatches, platforms, tender hoists, rudders and so on). A diversified range which is further enriched by the launch on the market of self-supporting linear handling systems called Electrotraslo, undoubtedly an interesting innovation in the sector since, like the Electromast and Searc actuators mentioned earlier, they are completely electromechanical. This integration of the range goes hand-in-hand with the increasing adoption on board yachts of electromechanical/electronic technologies instead of pneumatic and hydraulic systems. “This change,” says director-general and managing director of the Setec group Fabio Seminatore, “makes it possible to obtain undisputed advantages and benefits, for example in ecological terms, as well as simplifying systems. Adopting electromechanical technologies also makes it possible to avoid at source any spillage of oil that may end up in lockers or even in the sea and, since there are no pipes or compressors, valuable space is freed up for other uses.”

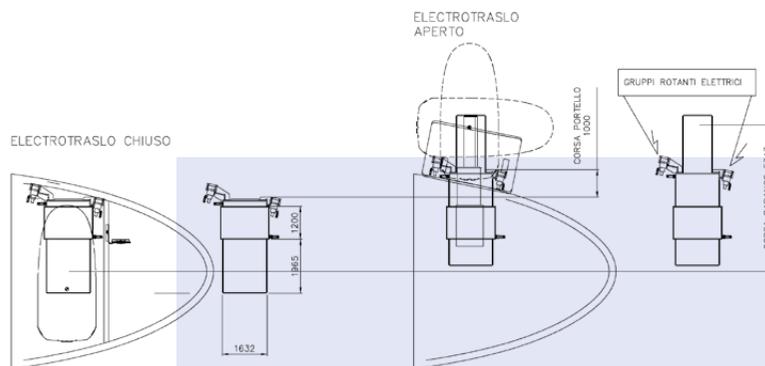
Efficient handling aloft with little bulk

The Electrotraslo range has been designed by Setec mainly for applications on large yachts (more than 35 m overall), where typical handling concerns tenders, water scooters and the like, launching them and hauling them out from the garages where they are stowed, whatever their position. According to requirements the system can be mounted on the ceiling, the floor or on a bulkhead. In the first case we are speaking of the Electrotraslo Aerostraslo family, in the second of the Groundtraslo and in the third of the Walltraslo. “The most complete solution,” says Seminatore, “is normally configured with two telescopic arms and an integrated support, it slides and rotates the door the garage and slides the tender hoists in a perfectly synchronised way. The linear movements are effected with a rack and pinion, precision gears and brushless servomotor gears, while rotary movement is achieved with self-supporting devices called Torquers, which can be controlled in an angular position.”

Each arm consists of an element fixed to the structure of the vessel, with inside an initial transmission system with a servomotor gear



Fabio Seminatore, director-general and managing director of the Setec group



Extending, rotating, sliding rapidly and efficiently

Setec has provided several yachting applications with its Electrotraslo product family. They include the one developed using the operational flexibility of the Aerostraslo system, which makes it possible to optimise and simplify the handling of the forward hatch with openings to port and starboard and of the tender. And integrated electromechanical solution that required the use of an arm for each side of the hatch to solve the problems of the long track required as the garage was cited in the tapered part of the bow. Setec staff, starting from a standard Aerostraslo fixed to the hatch (weighing about 500 kg) were able, respecting the maximum space available (435 mm) to provide a system for fully handling movement: opening and handling of the tender (weighing about 600 kg) at a distance of 5 m, the distance required to launch and haul it out safely. This configuration, complete with electronics, solve the problem of significant flexing, considering the overall weights involved and the distances to cover to reach them, as well as eliminating interference with movement. The key element here was the possibility of fixing two “torquers” at the end of the first telescopic arm, orienting them so as to avoid inclining the forward hatch. The first arm covers the first 2.5 m, then leaving the handling of the tender to the second. This electromechanical technological solution replace the existing one which saw the hatch hinged to the hull with a vertical movement and rotation of 90° using two hydraulic cylinders, coupled with a hydraulic hoist with a telescopic arm to handle the tender.

Application example of the Aerostraslo system, which makes it possible to optimise and simplify the handling of the forward hatch with openings to port and starboard and of the tender

and pinion that meshes with a rack fixed to the first telescopic arm. In the case of two telescopic arms, there will be a similar transmission system. In both cases, each arm is led through guides with precision ballbearings. On the interior track runs the tackle, the actual lifting system, which is also electric and controlled by a servomotor gear connected to the drum.

“The particular feature of the Aerostraslo system,” says Seminatore, “is that it is particularly compact in height, which makes it

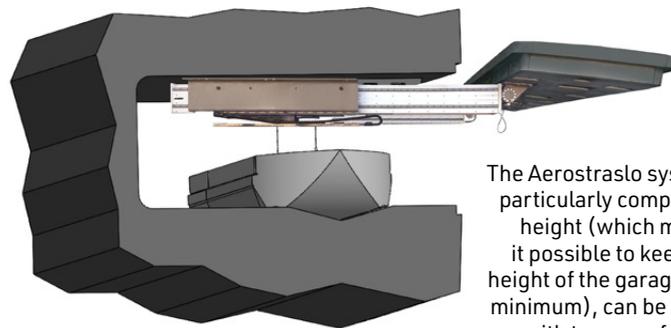
The company in brief

Setec Group has three offices strategically sited in Italy and three warehouses, and also has an express direct withdrawal service in the headquarters. The headquarters is in Borgaro Torinese (TO) and houses management, engineering, production, central warehouses, general administrative offices and sales service, with subsidiaries in Milan and Bologna. Thanks to broad experience built up in the control of movement applied to various industrial sectors, and with an internal mechatronic application centre, the group can offer product and service quality with high added value. Guaranteeing this are about 50 highly qualified staff, backed by state-of-the-art production and process technology systems.

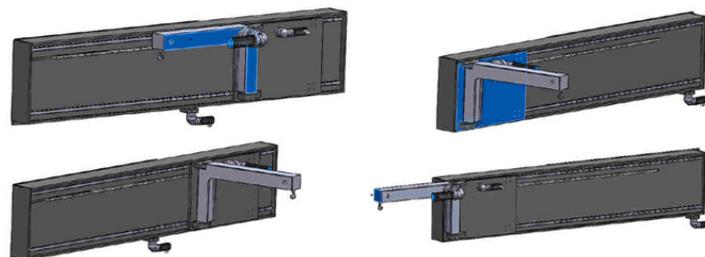
possible to keep the height needed for the garage to a minimum. This means not increasing the gross tonnage of the vessel with all the benefits that brings. Another distinctive feature is an option that makes it possible to rotate the garage door with torquers stop this is an added value that can significantly simplify the system is needed to carry out all the movements normally handled with hydraulic technologies.” The Torquer also incorporates a safety device to prevent undesired movements that can often be dangerous during operations or because of wear. Versatile and flexible, Aerostraslo is supplied complete with all command and control electronics (which prove very simple to use for synchronising several arms) and is available in four standard sizes with heights of 320, 400, 435 and 500 mm, and widths between 1,250 mm e 1,900 mm (with two telescopic arms). The system can handle, with a single arm with two extensions in the standard version, up to 4 tonnes on tracts that can reach as much as 4 m. In the most complete configurations it can use five servomotors.

The added value of floor or wall movement

Groundtraslo, the floor version of Electrotraslo, was designed by Setec staff in a conceptually different way: it is a linear model on which a large slider moves with a hoist arm mounted on it. So there are not several arms but a fixed part mounted on the pavement with the height of no more than 250 mm that can be stepped on in every point. The third family of Setec’s Electrotraslo, which is patented, is a hybrid between the solutions described above and is called Walltraslo. This is a hybrid device mounted on the wall, with a slider with a hinged hoist on it, again made by Setec, which is completely electric. “This is a version,” says Seminatore, “that does not take up room vertically, since normally the section height is no greater than that of the tender, but only a small space on the wall, not more than 250 – 300 mm thick, and with a single attachment point in the single hoist arm. This makes Walltraslo particularly suitable and competitive when the loads to handle are relatively small, between two and 3 tonnes, which means the tender or water scooter that is up to 5-6 m long. It can also be very interesting aesthetically, since it can be masked up



The Aerostraslo system, particularly compact in height (which makes it possible to keep the height of the garage to a minimum), can be fitted with torquers for the rotation of the hatch



The Setec Electrotraslo Walltraslo system, protected by patent, is a hybrid wall-mounted system with a slider with a Setec hinged hoist mounted on it, also completely electric

to a certain height by teak cladding.” In this case too movement is on tracks with ballbearings on the wall, a concept similar to that of the Groundtraslo version with movement using a rack and pinion and servomotors.

The strong points of an electromechanical architecture

The Setec Electrotraslo family has a number of distinguishing features. First of all, these are fully electromechanical systems, something in line with trends in yachting where this technology is increasingly widespread on board yachts. Equally distinguishing is the possibility, particularly evident with the Aerostraslo series and its more complex combinations, of carrying out several operations, considerably simplifying the architecture of handling within the garage. “The possibility of replacing hydraulics with electro-mechanics,” says Seminatore, “simplifies not just the initial wiring but also maintenance, faultfinding and the elimination of risks due to the presence of oil under pressure on board.” All Electrotraslo systems can be made by the Setec in a standard version, as special designs or designed and developed ad hoc to specific individual requirements. This is a strong point that comes from the transverse know-how built up by the company, which has an internal advanced mechatronic centre where highly qualified engineers can develop state-of-the-art technologies keeping up with innovation.

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