

Even greater benefits for auxiliary winches

Moving to 64 bar hydraulic motor technology achieves even greater installation cost and weight savings from auxiliary winches – capstans, tugger winches and windlasses. Taking a typical winch outfit on the popular UT755 platform supply vessel, for example, a comparison of the older low pressure hydraulic system and electric drive shows a similar total weight. If the 64 bar hydraulic system is chosen for the whole outfit, however, the weight is reduced by about 27 per cent and installation costs are calculated to be 43 per cent lower. The weight reduction results from a lighter system with less oil in circulation and smaller diameter pipework.

With tugger winches, the BRH64 system gives very sensitive control. Since the motor can switch from using just one to two or three chambers, depending on the load, a strong pull is developed by a compact winch but at the same time a high free line speed is available. Under practical working conditions this means that a deckhand can take the free end of the wire along the deck at a brisk walking pace.

The increase in working pressure, combined with the reduced volume of oil consumed by the motor per revolution, adjustments to minimum diameter and other revisions to the tugger winch design, allow the size of the hydraulic pipes to be reduced dramatically from 90mm to 42mm. Pre-cleaned piping of this diameter can be readily bent and joined by standard fittings, thus eliminating welding of pipes and greatly simplifying installation, allowing the shipyard to improve its productivity and realise substantial cost reductions.

Such a hydraulic drive is clearly attractive but Rolls-Royce also offers well-proven alternative electric and hydraulic winch drives to suit customer preferences and specific applications.

Self-contained and direct-drive options strengthen winch programme

Further development of Rauma Brattvaag hydraulic winches for anchoring and mooring duties on merchant ships has created new options in the shape of self-contained and direct-driven designs.

Both types have already made breakthroughs in newbuilding projects commissioned by leading owners at major yards.

Self-contained winches - although not a new concept - mark a departure for Rauma Brattvaag in the merchant shipping sector. The 'plug-and-play' packages embrace the electro-hydraulic winch and its associated low pressure hydraulic power system, supplied ready for the yard to mount on deck or foundation and connect the cables. A reduced amount of piping also benefits the shipowner.

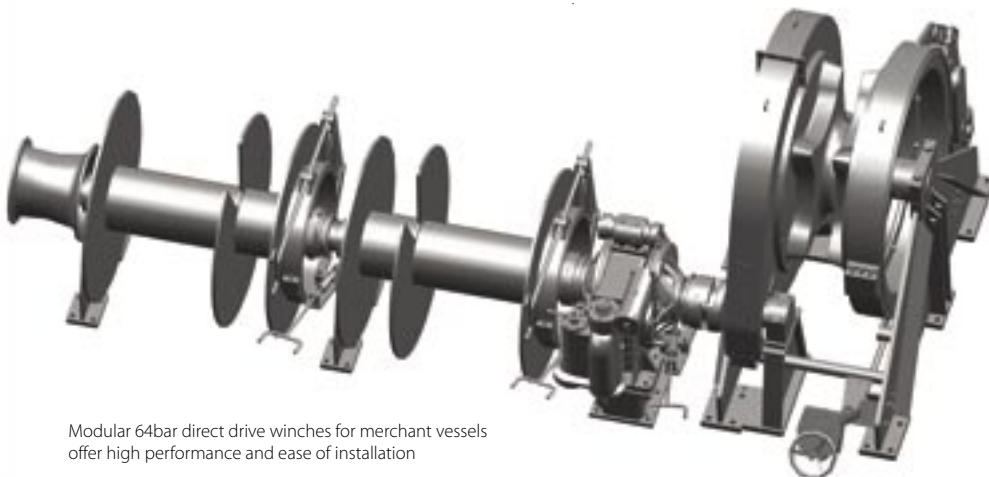
Proven hydraulic and mechanical components are exploited and established system features, such as dynamic braking for high speed anchoring as standard.

Among the first ships to benefit from Rauma Brattvaag self-contained winches will be seven 150,000m³ LNG carriers booked from Hyundai Heavy Industries by the Greek owners Dynacom Tankers (three ships) and Tsakos Shipping (one), and NYK

Line of Japan (three). Each shipset will be based on 30 ton-pull mooring winches and 102mm K3 chain-equipped windlasses.

Direct-drive winches have been delivered by Rauma Brattvaag for many years but designs have now been modularised and arranged to fully exploit the new 64 bar low pressure hydraulic power system. Mooring winches can be supplied currently with ratings up to 20 tons but capacities up to 30 tons will be offered in the future. The elimination of a gearbox eases installation, and operators further benefit from reduced maintenance and very high anchoring speed through the built-in dynamic braking.

Direct-driven mooring and anchoring winches of the new modular-configured design are specified for five 53,000 dwt bulk carriers commissioned by Graig China from Chengxi Shipyard, the outfits featuring 15 ton capacity mooring winches and 78mm-diameter K3 chain-equipped windlasses.



Modular 64bar direct drive winches for merchant vessels offer high performance and ease of installation