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OIL INDUSTRY BOOMS



The recent upturn in the oil industry has led to Norbar receiving many enquiries and several orders for tooling from companies in the UK, USA and Russia. Some 'Special Requirement' applications have also been quoted for and orders have been received.

One of these 'Specials' was the requirement of SONSUB UK for a modified Handtorque unit that would achieve torque figures of 30,000 N.m and 80,000 N.m and be capable of reaching the higher torque figure at a speed of at least 1 rpm. The requirements pointed to us using one of our large Handtorque units which SONSUB would then power using a hydraulic motor, which is capable of having both speed and torque control.

The requirements led us to specify the gearbox normally used on one of our pneumatic tools, our Pneutorque 14, and removed from it the air motor assembly. This tool, which is capable of producing 100,000 N.m of torque when driven by our air motor, did however have an inherent problem caused by its velocity ratio. As the ratio is 25,128:1, the requirement to achieve 1 rpm at 80,000 N.m could not be reached when using the specified hydraulic motor. The solution, remove a gear stage from the gearbox! The gearbox then had a velocity ratio of 4,598:1 and could therefore achieve 1 rpm when driven at 5,000 rpm by the hydraulic motor and still achieve the required 80,000 N.m output.

Other 'Special' requirements of the tool meant us manufacturing a keyed shaft input drive to accommodate the drive shaft of the hydraulic motor. This is a requirement that we encounter regularly from the oil industry. Another requirement was the reduction of the outside diameter of the final stage annulus to allow the unit to fit into the final tool assembly. We also had to drill 24 counter bored holes into the final stage connecting plate to give SONSUB fastening points to allow them to connect the unit to the other part of their tool.

This special gearbox unit is incorporated into a tool which is used in a SONSUB Innovator ROB which is used to assist the Statoil Project to close Kvaerner Oilfield Products large 22" and 28" connector valves. The whole assembly, with the gearbox, is housed in an oil filled container that compensates for external sea pressure. Our gearboxes are regularly used like this and are generally supplied grease free, so as not to contaminate the oil in this container. After use the gearbox can be easily stripped and flushed and then coated with grease, if it is to be shelved for future use. This operation can be carried out in less than an hour, for even our largest gearboxes. We are currently assisting Under Control with a similar project in the Gulf of Mexico.