Tru-Marine and Turbo Engineering link in Rotterdam

Turbo Engineering's balancing bay at its Rotterdam centre

Turbo Engineering, the authorised repairer in Rotterdam for MAN, Mitsubishi, Siemens and PBS Turbo, has joined forces with the rapidly expanding Singapore turbo repairer, Tru-Marine. This new alliance brings to eight the service stations now available throughout the world that operate in the Tru-Marine network.

As turbochargers have become ever more vital to the efficient operation of modern diesel engines, the need for high quality turbo repairers has increased rapidly. For several years, Turbo Engineering has maintained close links with many major turbocharger manufacturers and has kept its engineers up to date with the latest advances and technology through regular training courses, as well as investing in the latest skills, machinery and tools. This has kept it in the forefront of European specialists.

Dick van Duijn, the company's commercial manager, told *Marine Propulsion* that, "Our efficient logistics planning and worldwide network of contacts enable our service team to carry out repairs on ships within 24 hours – in Rotterdam or anywhere around the world. An example of our quick response occurred recently when we received a telephone call about a possible breakdown of a MAN NR17 turbocharger.

"As the situation was unclear, I decided to go there myself, accompanied by an engineer. After investigation, we discovered that it was only necessary to exchange the gas admission casing and gas outlet diffusor in order for the turbocharger to function properly. By the beginning of the afternoon the damaged turbocharger parts were replaced and the engine up and running again."

'Near failsafe' hybrid bearings are launched by Tru-Marine

In an exclusive collaboration with a German high-precision bearing manufacturer, Singapore based Turbo repairer Tru-Marine has introduced what it claims to be 'near failsafe' hybrid bearings for use in ABB's VTR 4-series turbochargers. These machines are currently in use in marine and offshore applications as well as in power stations and locomotives. The hybrid bearings are comprised of ceramic balls and rollers in combination with an X30 steel raceway, which the company says, possesses superior tribological properties that should provide improved reliability as well as lower operational costs.

The ball bearings are made of ceramic silicon nitrate (Si3 N4). This material has been found to be more reliable than the steel variant currently used in most turbochargers. For decades, ceramic silicon nitrate has been known for its hardness, light weight and hard wearing properties but its use has not previously been economically viable for marine and industrial applications. Up until now its sintering technology was plagued by porous problems as well as cracks and ball surface flaws.

It is only very recently that hot isostatic press techniques have overcome these problems and achieved material homogeneity. Now they have been perfected, these industrial high-tech ceramics are proving the perfect solution to increase the lifespan of highly loaded bearing surfaces, such as in turbochargers, which operate under extreme temperatures in a corrosive atmosphere.