unrivalled benefits

GEARBOX UPGRADE

Throughout the life of a gearbox unit operating requirements and conditions can change significantly. Allen Gears Services is skilled in assessing the suitability of a unit within a current project and suggesting improvements and upgrades to offer increased reliability, ease of maintenance or increased power through a plant

Whether there is an existing unit in a package which requires a change in duty, or a unit which has continual failures, Allen Gears will visit the site, technically assess the unit and fit new components as required; if necessary to fit into existing gear cases or space envelopes.

Allen Gears Services can also provide upgrades for a change in operation of a unit. For example, being taken out of an old generator drive and utilised in a test cell environment - we can assess the suitability of the unit and evaluate the best solution to maximise efficiency and performance.

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recent experience case study

GEARBOX UPGRADE

Offshore North Sea - Talisman Buchan Platform

Upgrade output speed to 14,150 rpm to fit into existing cradle gear case

Buchan A is a platform in operation in the North Sea operated by Talisman. 1 x main three stage gas lift compressor was fitted with a Rademaker parallel shaft speed increasing unit.

The unit was installed in the early 1980's and is driven by a TB5000 gas turbine operating at 5400 BHP.

The gearbox output speed was 13500 rpm, but the operator felt that it wasn't achieving the full potential from the Compressor, so wanted to increase the gearbox output speed to 14150 rpm.

In order to complete this, the gearbox internals needed to be completely re-designed.

The challenge

The customer wanted to upgrade the package without altering the skid layout as it was already in-situ in close surroundings. Therefore they only wanted new internals which would fit into the existing gearcase cradle, which resulted in limited space constraints.

Cradle positioning needed to be exactly as previous to correctly align to the gas turbine and compressor.

The solution

Allen Gears engineers went to the platform to carry out a 'site inspection' of the rig and, in particular, record the space around the gearbox. The unit was contained inside an acoustic enclosure which further limited space.

The unit was then removed by Allen Gears engineers, and returned to our main refurbishment facility in Pershore. Parts were dismantled and re-engineering was carried out.

New parts were manufactured and re-built into the gearcase which had been returned to Allen Gears. The whole unit was then tested at Allen Gears before returning to site, with an engineer who re-fitted the whole unit.

The package is now operating much more efficiently resulting in additional flow from the compressor, increasing our customer's direct revenue.

Technical Data

Requirement:	Upgrade output speed to 14,150 rpm to fit into existing cradle gear case
Plant:	Buchan A Platform, Offshore, North Sea
Operator:	Talisman Energy
Application	Main gas lift compressor
Application Type:	Gas turbine driven centrifugal compressor
Gearbox Type:	Rademaker parallel shaft cradle gear
Power:	4,027 kW
Speeds:	**Input:** 7,697 rpm, **Output:** 13,500 rpm

Before

After Upgrade

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