

News Release

1993137

AUTOMOTIVE HIGH PERFORMANCE TRANSMISSIONS SPECIALIST ADOPTS VACU-BLAST AEROSPACE SHOT PEENING TECHNIQUE

World-leading designers and manufacturers of high performance automotive transmission systems - Xtrac Ltd, Wokingham, Berkshire - have installed a state-of-the-art shot peening system from Vacu-Blast, Slough, part of BTR Industries.

Employing techniques developed and proven in the aerospace industry, the programmable plant is used to improve the resistance to fatigue and extend the life of gearboxes, driveshafts and high performance gears used in Formula 1 rally cars. Xtrac customers include over 75% of Formula 1 racing teams as well as leading Japanese and European international rally teams such as Toyota, Mazda, Opel, Nissan and Peugeot.

Xtrac previously sub-contracted the operation, but decided that quality control would be much improved and costs saved in the longer term by bringing the system in-house. They are also now able to respond to customers needs more quickly.

The Vacu-Blast machine provides the flexibility to shotpeen components ranging in size from 50mm diameter to 300mm in diameter and 750mm long. It is totally automatic in operation, using pre-selectable programmes according to the type of component being processed, to ensure consistent repeatability of the peening effect.

The machine's enclosure measures 1250mm x 1000mm x 1350mm high and components are retained in special jigs on a powered turntable. Peening is carried out by two blast nozzles attached to a two-axis roof mounted manipulator. The programmable functions are nozzle path/direction and speed of travel, blast pressure and duration, and turntable rotation speed. A Telemechanique TSX17 PLC acts as the command source for the entire plant and all control functions are entered via a keyboard and video display unit, providing the 'store and teach' capability.

Two sizes of steel shot (S110 and S230) can be selected for use and the machine includes continuous in-cycle shot regrading and recycling, to maintain a consistent high quality result.

Results have proved the effectiveness of the process - no failures have been reported on peened gears

since installation of the Vacu-Blast plant; this includes a gearbox installed in the winning Mitsubishi in the punishing 9000km Paris to Dakar Rally.

"Shot peening is not always considered relevant to performance gearbox components which are subjected to a highly stressed, relatively short life," commented Xtrac's Chief Metallurgist, Robin Bailey, "but our experience shows that it provides significant benefits."

For more information, please contact:

Roger Brickwood
Vacu-Blast Ltd.
Ajax Avenue
Slough, Berkshire SL1 4DJ England
Tel: 0753-526511 • Fax: 0753-538093



New Product Release

From TEC Residual Stress Analysis Product Division

Residual Stress and Retained Austenite Analysis Using Windows Software

TEC's X-Ray Diffraction Residual Stress and Retained Austenite Analyzer now comes with a 486DX50 personal computer (PC), Super VGA monitor and software operating under Microsoft Windows 3.1. Still using the same proven analytical technique, Windows operation allows manipulation of data and transfer of results to other software packages for trending and graphic presentation. Results are obtained more quickly because several applications can run simultaneously. A laboratory model and a mobile factory unit are available. Those who already own a TEC system can have theirs upgraded.

TEC will be exhibiting this new platform for the first time in August at the 1993 Denver X-Ray Conference.

For more information about a PC Stress Analyzer or an upgrade, please contact:

TEC
10737 Lexington Drive
Knoxville, Tennessee 37932 USA
Tel: (615) 966-5856 • Fax: (615) 675-1241



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