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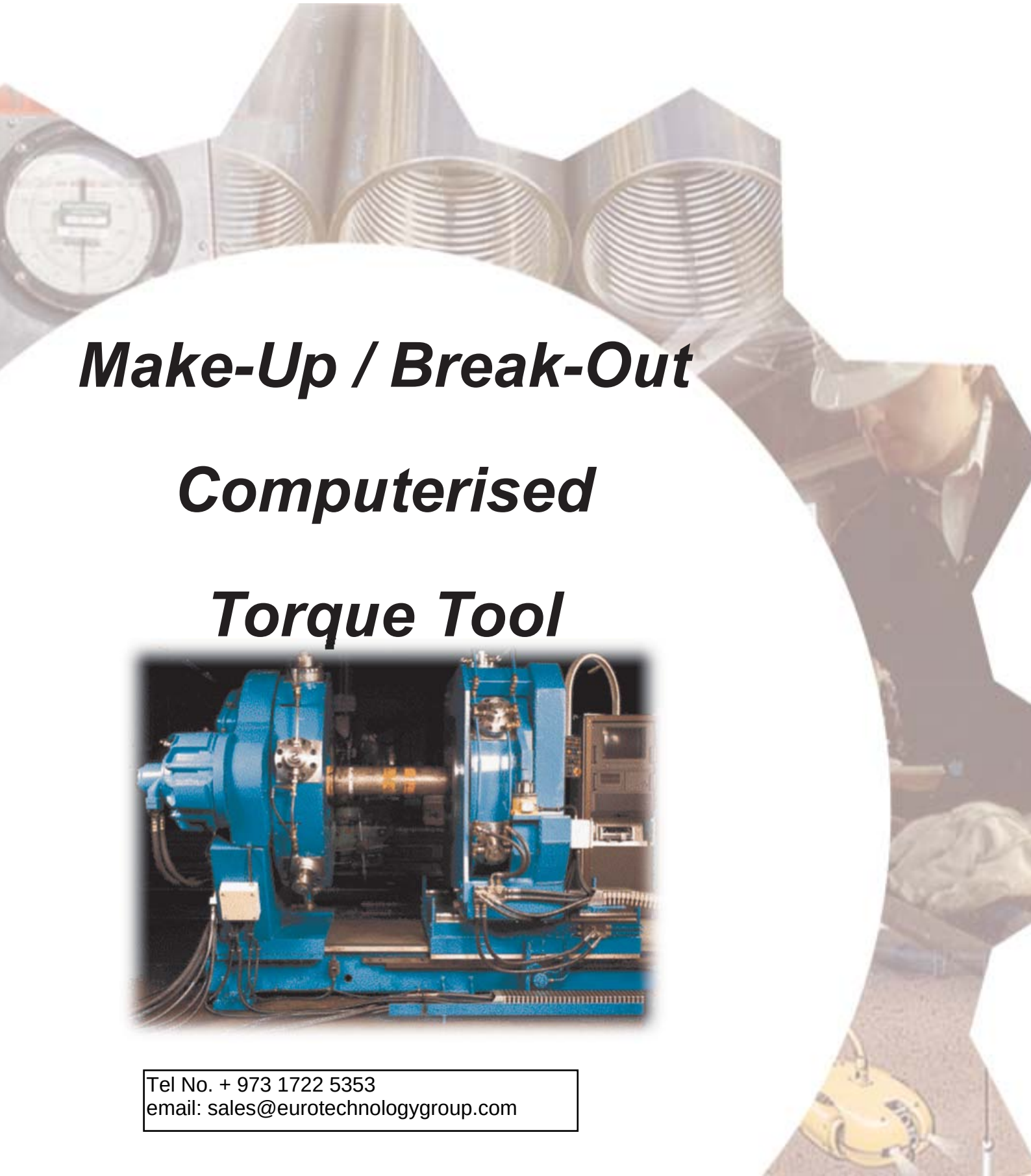
TORQUE TOOL



Make-Up / Break-Out

Computerised

Torque Tool

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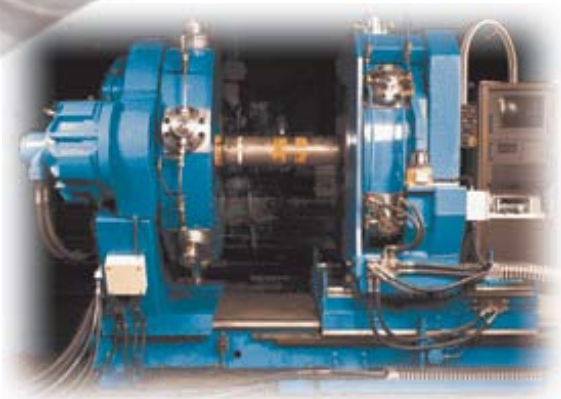
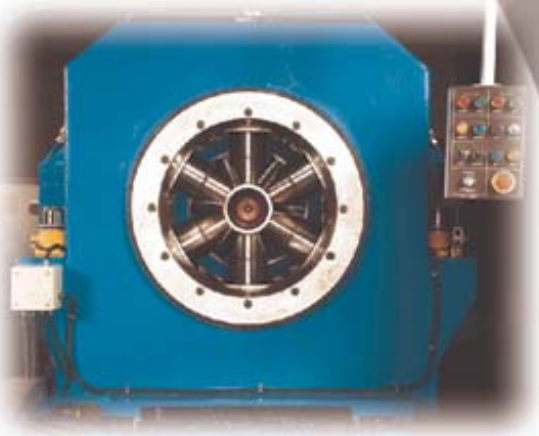


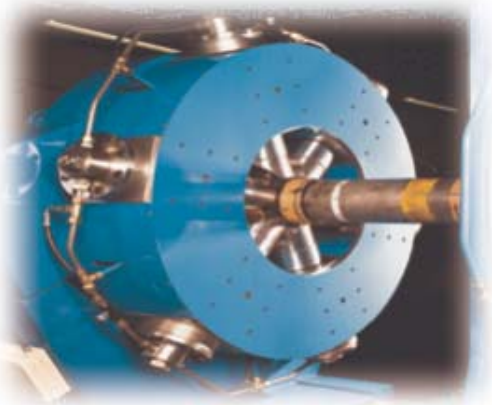
Technical Description

The machine is primarily designed for make-up and break-out of tubular couplings. The basic configuration comprises of one fixed rotational head and one sliding reaction head mounted on a fabricated steel base. The modular construction of both heads is designed to provide fast replacement of cylinder and bearing assemblies, should the need arise.

Reaction Head

The reaction head has a two tier slide: the lower slide interfacing the steel base bedway, used for length setup and the upper slide mounted on angled linear bearings giving low resistance movement during makeup. The lower slide is power driven along the bedway for primary positioning.





Rotary Head

The rotary head is driven by two hydraulic motors directly geared to the main ring gear drive. A proximity counter is mounted adjacent to the main ring gear to record head R.P.M. The head is fitted with plain bearings of low friction material capable of

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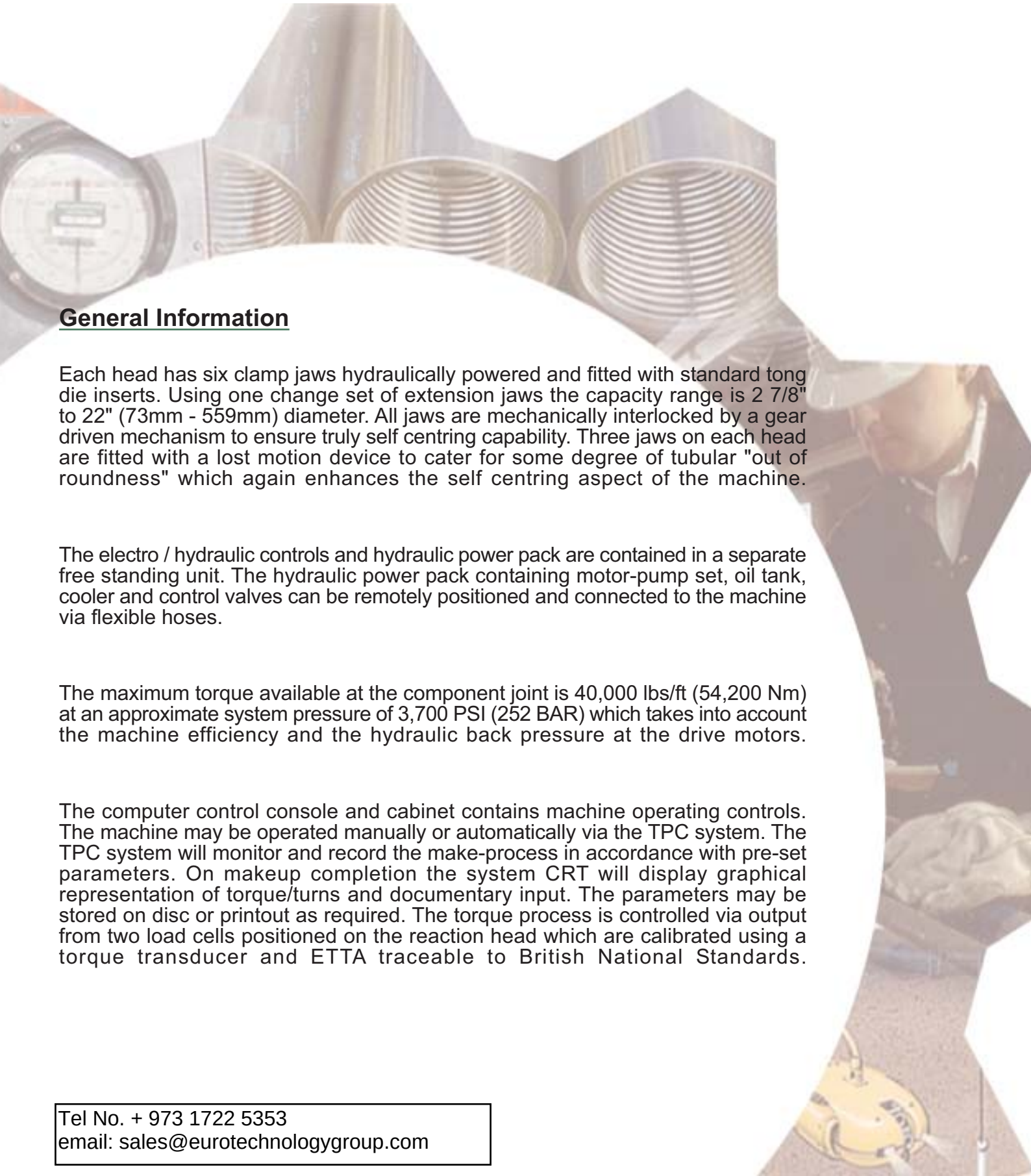

General Information

Each head has six clamp jaws hydraulically powered and fitted with standard tong die inserts. Using one change set of extension jaws the capacity range is 2 7/8" to 22" (73mm - 559mm) diameter. All jaws are mechanically interlocked by a gear driven mechanism to ensure truly self centring capability. Three jaws on each head are fitted with a lost motion device to cater for some degree of tubular "out of roundness" which again enhances the self centring aspect of the machine.

The electro / hydraulic controls and hydraulic power pack are contained in a separate free standing unit. The hydraulic power pack containing motor-pump set, oil tank, cooler and control valves can be remotely positioned and connected to the machine via flexible hoses.

The maximum torque available at the component joint is 40,000 lbs/ft (54,200 Nm) at an approximate system pressure of 3,700 PSI (252 BAR) which takes into account the machine efficiency and the hydraulic back pressure at the drive motors.

The computer control console and cabinet contains machine operating controls. The machine may be operated manually or automatically via the TPC system. The TPC system will monitor and record the make-process in accordance with pre-set parameters. On makeup completion the system CRT will display graphical representation of torque/turns and documentary input. The parameters may be stored on disc or printout as required. The torque process is controlled via output from two load cells positioned on the reaction head which are calibrated using a torque transducer and ETTA traceable to British National Standards.

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