

Turbine Dynamics

Down Hole Power and EM Telemetry



Down Hole Power & Drilling Instrumentation.

“Performance beyond Expectation”



The World's first 100 Watt closed loop mud alternator.

Turbine Dynamics is proud to announce the successful development of the World's first 100 Watt closed loop turbine generator for demanding MWD/LWD applications delivered in an unbelievably small 55mm OD. Designed to withstand 20,000psi and 150°C, our turbine represents a quantum leap in alternator technology and is the World's first 'plug n play' programmable instrument which requires no on site adjustment or calibration. The flow envelope in any collar ID from 2-13/16" up is 150 & 600GPM. Our closed loop technology guarantees automatic and continuous optimum performance across widely varying down hole conditions including flow rate, mud density, temperature and load. For further information please call to discuss your application or visit our web site to down load our technical data.

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Turbine Dynamics Ltd is registered in the U.K. No 6244507.

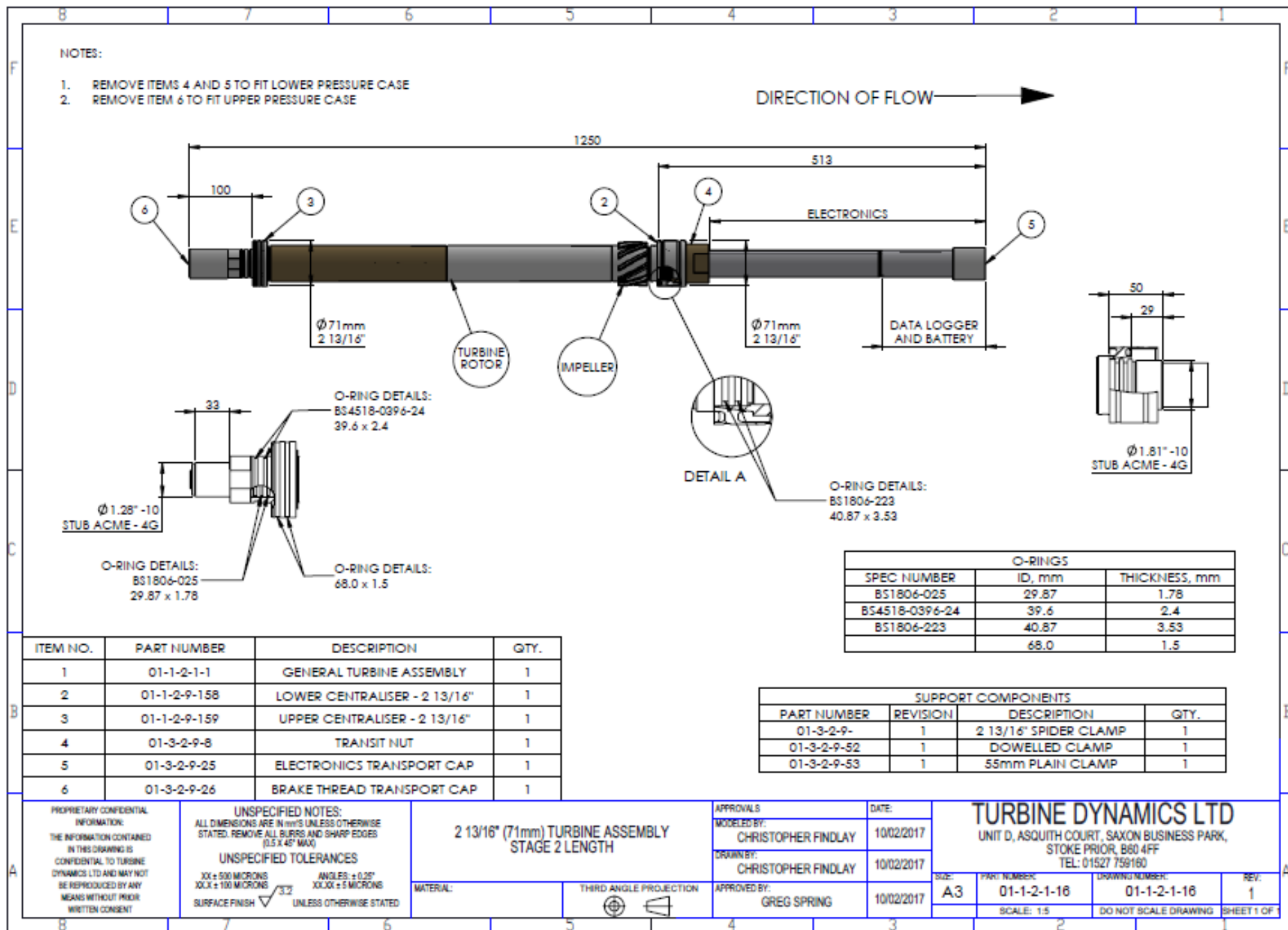


Fig 1: Closed Loop Turbine Outline Drawing.

A 55mm OD Turbine fitted with top & bottom centraliser, impeller and electronic regulator.

STABILISED VOLTAGE AND POWER FLOW LOOP TEST DATA FOR 2-13/16" ID COLLAR.
(ALTERNATIVE COLLAR OPTIONS AVAILABLE BY REQUEST)

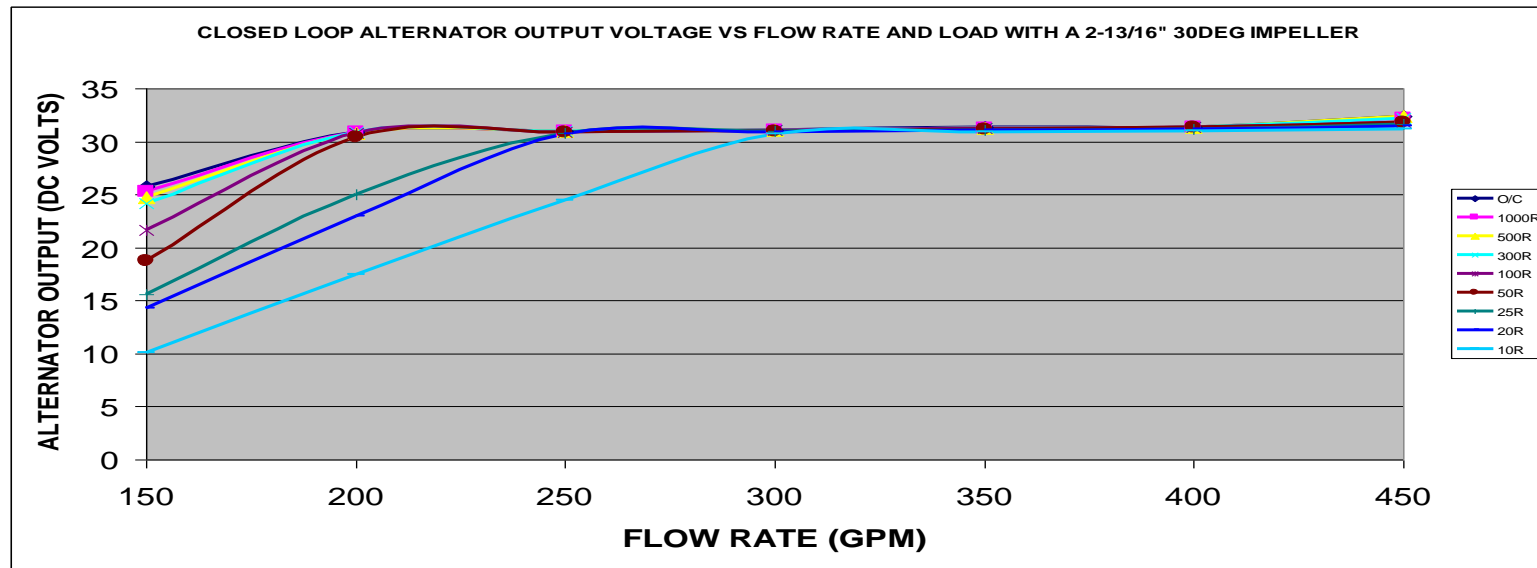


Fig 2: A typical stabilised Voltage plot proportional to changing load and flow conditions.

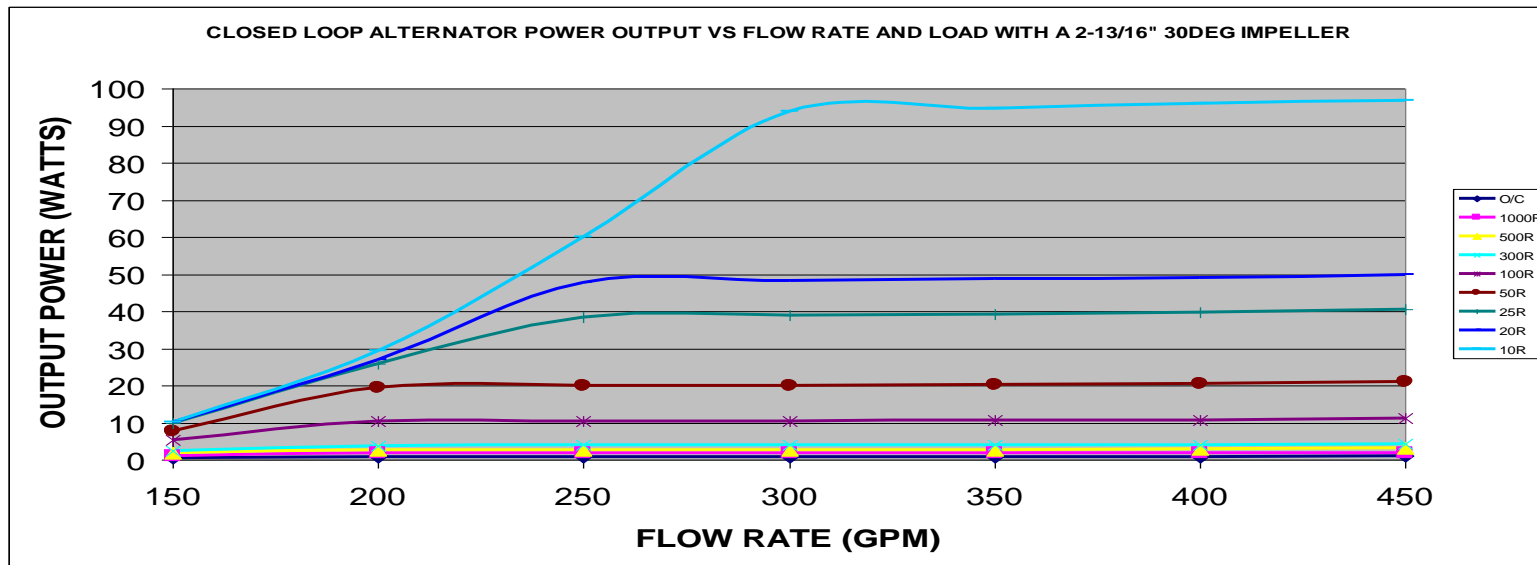


Fig 3: Power delivery proportional to changing load and flow conditions.

Log Plots from turbine T3 run in Canada for ten days on an EM job, April 2011. Flow was between 200 & 250 GPM and the plots show the turbine generated a constant 27V5 across all varying flow conditions to power a standard MWD directional drilling instrumentation string fitted with an EM telemetry transmitter and single stage battery back up. Maximum depth was 2300 feet. Maximum temperature was 68°C. Total down hole run time was 10.7 days. Flow was circulated approximately 40 hours after tripping in hole and there were an estimated 240 pumps up/down transitions as identified by the log. The turbine responded immediately to every change in flow and load, automatically switching itself in and out of battery back up when flow was present or interrupted. The rotor speed data in Fig 2 confirmed that during this run, the closed loop properties of our turbine maintained a regulated output voltage during the entire job.

