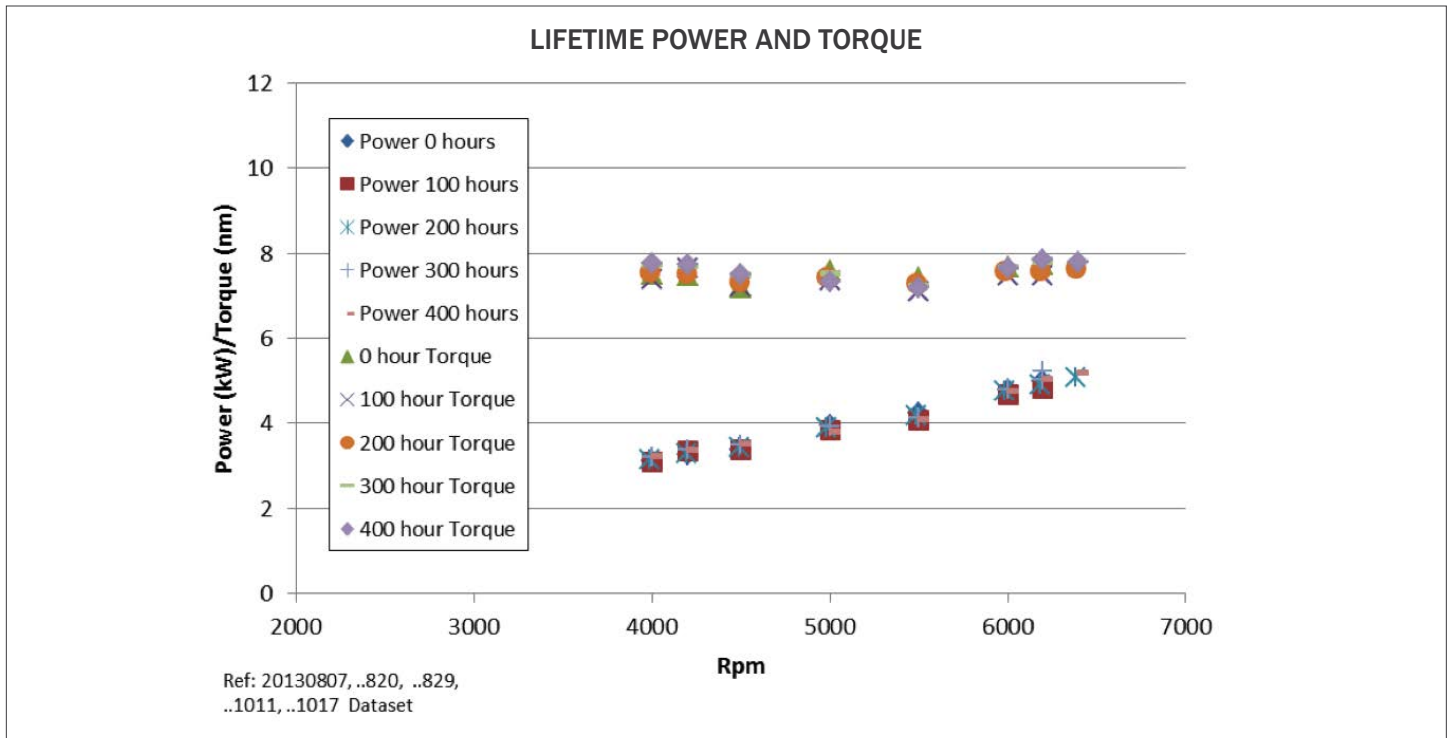


# DURABILITY

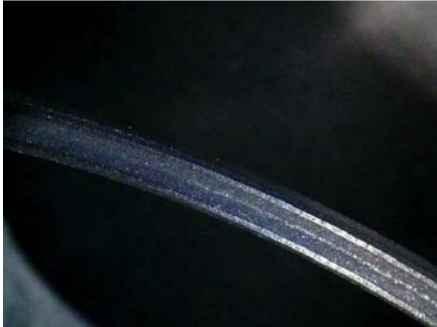
PASSED 400 HR FULL TORQUE/FULL POWER DURABILITY TEST



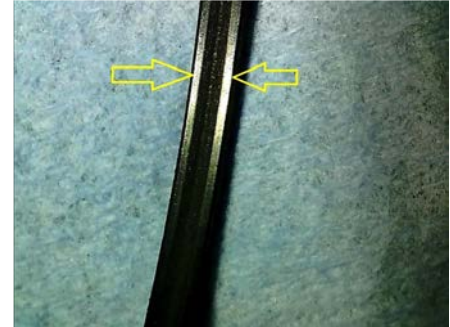
Stable Performance for 400 hours

Engine Speed (rpm)	0 hr Brake Power [kW]	400hr Brake Power [kW]	Difference [%]
4000	3.13	3.22	2.9
4200	3.27	3.37	3.1
4500	3.37	3.51	4.2
5000	3.95	3.82	-3.3
5500	4.24	4.10	-3.3
6000	4.80	4.76	-0.8
6200	4.99	5.05	1.2
			Average = 0.6

**NEW SEAL**



**AFTER 400 HOURS**



Shiny bands indicate seal to sleeve valve contact surfaces – arrows show contact surface

Exhaust Sleeve Seal – Minimal sliding surface wear

**NEW SLEEVE VALVE**

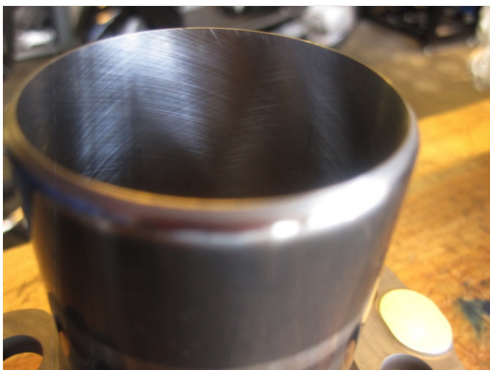


**AFTER 400 HOURS / 64,000,000 CYCLES**



Sleeve valve - Low OD wear. 0.025 mm lash change on exhaust, 0.01 mm on inlet

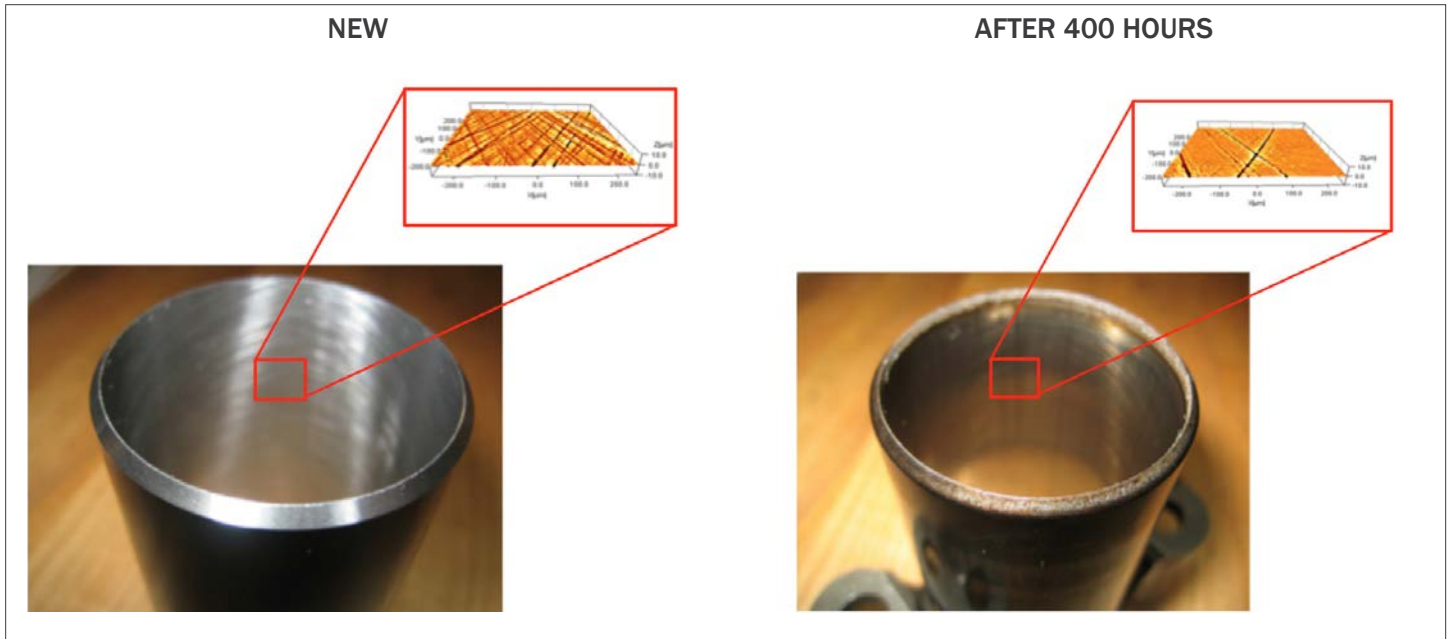
**NEW SLEEVE**



**AFTER 400 HOURS**



Sleeve Bore Comparison



Inset: Cylinder bore surface (laser scan) – minimal wear with substantial life remaining at 400hrs

Sleeve valve gas seal – no measurable wear, valve lash change <0.03mm over 400hrs