

# SHACKLETON DIESEL & POWERTRAIN SERVICES PTY LTD

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PAGET QLD 4740  
ABN – 38 628 086 108



## **JOB REPORT**

**COMPONENT** - CAT C15 engine – 740 artic. Truck – s/n B1P02467

**COMPONENT SERIAL #** - LHX12189

**COMPONENT ARRANGEMENT/ PART #** - 2929285

**COMPONENT HOURS** - 7957

**DATE OF REPORT** – 30/09/2019

## **FAILURE OUTLINE –**

Engine had suffered a lack of lubrication oil event to the camshaft/ rocker gear and front timing gears.

## **INSPECTION –**

Engine was disassembled to find that most of the components above the cylinder had been heat affected, all of the camshaft bearings had seized onto the camshaft, then they had spun in the cam bearing bores in the cylinder head. The top idler gear and cluster gears in the front gear train had seized onto their respective stub shafts, and the cluster gear had actually separated from the extreme heat generated. The camshaft followers/ rockers and internal wiring harness had suffered some heat damage, and the engine brakes had been covered with contamination generated by the overheated oil.

When the cylinder head was removed, there was evidence of coolant leakage around all of the cylinder liners, particularly the back 3 liners, the spacer plate had been eroded from the coolant leakage, and all cylinder head bolt shanks were corroded. The cylinder head was also cracked on all cylinders between the inlet valve seats.

The cylinder liner/ piston body/ ring condition was typical for the hours operated, but the piston ring grooves had accelerated wear, and the coating on the pistons was starting to come off. The pistons were also the earlier skeletal body type that had the dam seals, they are now replaced with the full body design.

Main and con rod bearing condition was typical for the hours operated, the rear main bearing journal of the crankshaft displayed signs of coolant leakage stains, but were mostly removable.

The engine oil cooler and 2 x powertrain oil coolers had suffered severe rubber end sheet deterioration.

## **REPAIRS CARRIED OUT -**

Clean all parts, organize replacement parts and reclamation work, overhaul engine oil and water pumps, accessory drives, reassemble engine to CAT specifications, dyno test engine, remove flywheel to fit powertrain lubed rear accessory drive gears, refit flywheel, fit 3 x hydraulic pumps, clean and paint engine, refit original starter motor, alternator and a/c compressor.

Parts replaced – all bearings seals and gaskets, 6 x reman cylinder packs, reman cylinder head, camshaft and all rocker arms, spacer plate and all head bolts, 3 x engine brake actuators, internal and external wiring harnesses, 2 x idler and cluster gear stubshafts, gears and thrust plates, oil and water pump overhaul parts, thermostats, lube and oil filters,

Reclamation – repair 6 x water ferrule seats on top deck of block, machine and fit 3 x top deck inserts to block, machine top deck surface, crack test and measure crankshaft, polish journals.

Other – Overhaul turbocharger and 6 x fuel injectors.























