March 2022
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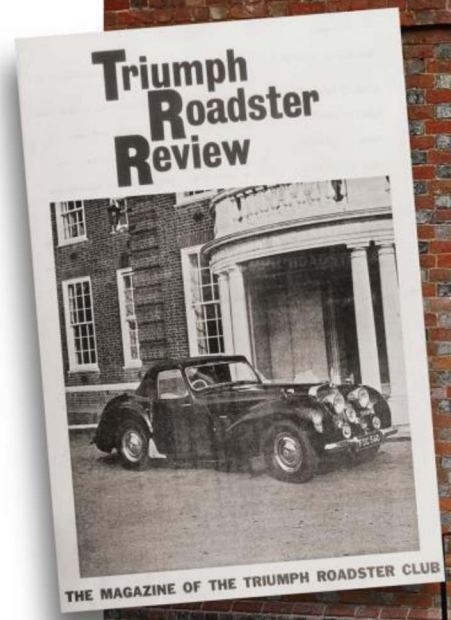
Triumph Roadster Review



THE NEWS MAGAZINE OF THE TRIUMPH ROADSTER CLUB LIMITED

From Hidden Horrors to 1800 Gem

Jon Atkin , J and E engineering Services

When John Rhodes Car, an 1800 developed engine trouble despite being overhauled a few years earlier he took things to the next level and ordered a complete strip down. Although not familiar with this particular early 1800cc engine J and E Engineering Services agreed to take a look.

The engine had apparently been rebuilt only a few years previous but was generally running rough with numerous leaks, rattles, smoke and poor oil pressure.

John had removed the cylinder head and found that one of the cylinder head studs had broken and been re-fitted with a piece of sheet steel jammed into the hole to hold the head stud in place. Unbelievable.

Strip Down

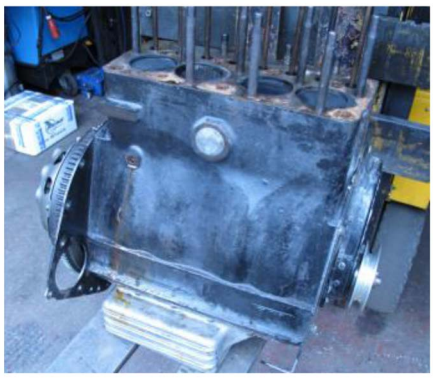
Stripping down the engine revealed some very interesting engine assembly techniques.



Above: Note small bolt lodged in between pushrod return spring and pushrod. We never found where the bolt could have come from?

State of the engine before stripping down











1 Inch core plugs must have been in short supply as two pence pieces were used instead. Behind the core plugs was a different story.

Thin wall cylinder liners had been poorly fitted. Two of them had dropped slightly because there was no step at the top or bottom. The cylinder bores were very badly distorted and the piston skirts and crowns were damaged.

We decided to use thick wall cylinder liners to strengthen the block and aid head gasket sealing. With this in mind the block was bored leaving a decent size step at the bottom to prevent liner slip. Flanged liners were not an option because the cylinders are too close together











The crankshaft had actually been ground to +.060" on the main bearings but the main bearing fitted were only +.040". Also note thrust washer fitted wrong way around.

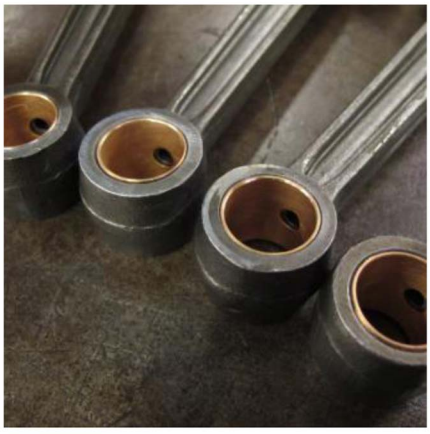


The overgrind on the crankshaft meant that another one had to be found. The replacement crankshaft was worn but we were able to re-grind it and micro polish the journals.

Phosphor bronze little end bearings had to be made for the connecting rods as these are no longer available.







Machining Repairs

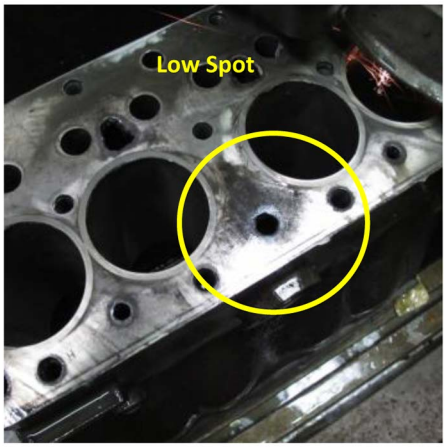


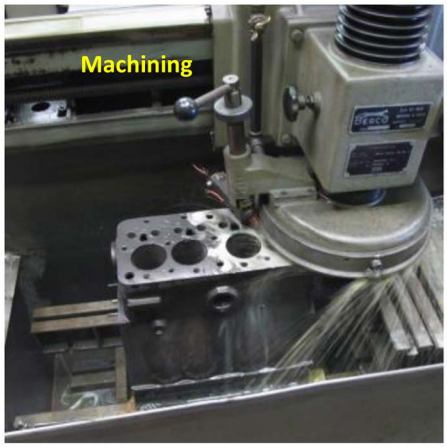


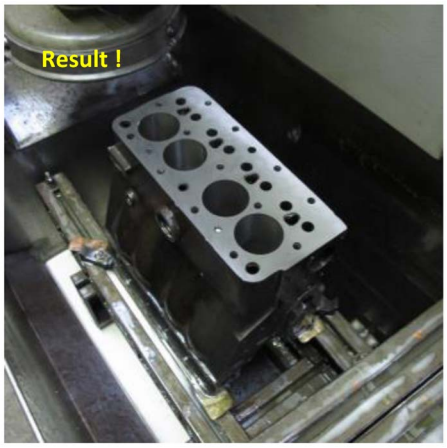
The new liners were then fitted hydraulically to the stop leaving a small portion proud of the deck face. This was then removed by surface grinding the block. Note the low spot (pic overleaf) on the deck face between the centre cylinders. Total removed from the deck was around .006"





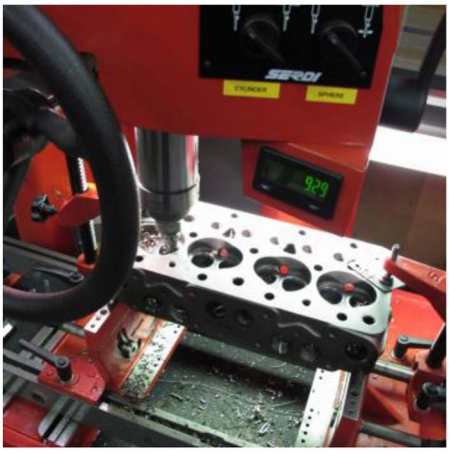






The cylinder head was quite routine. We made some valve guides which would accommodate a modern valve stem oil seal. Bronze K-line guide liners were fitted and both inlet & exhaust valve seats fitted. A 3-angle valve job and surface grind completed the unleaded fuel ready cylinder head.

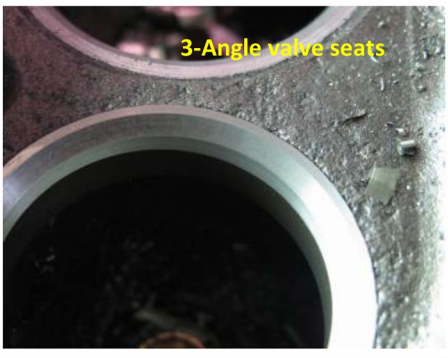








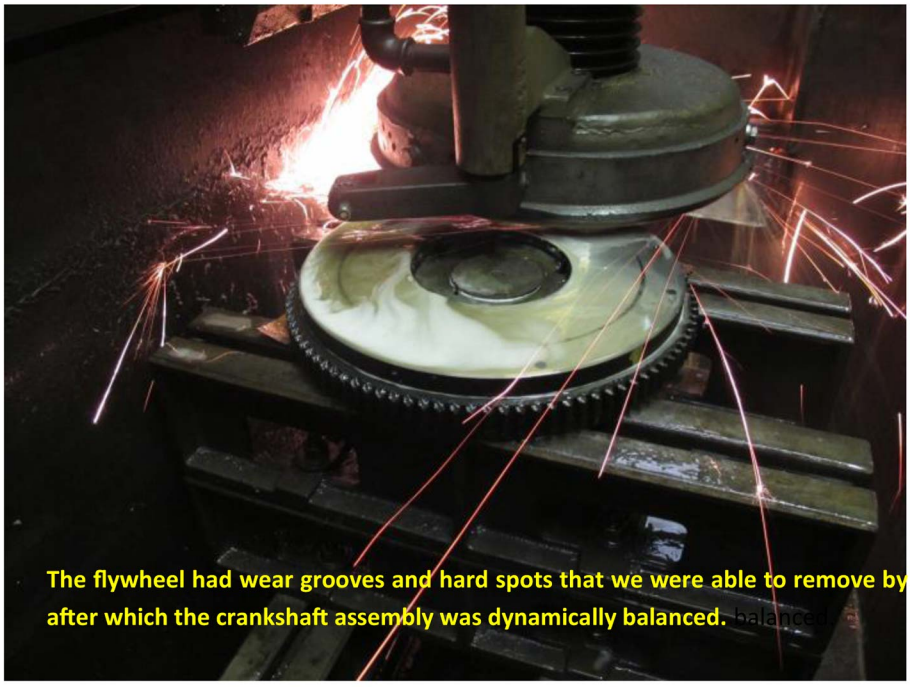








New camshaft bearing had to be made and press fit to the cylinder block. The oil pump was cause for concern as the gears were worn and replacements aren't available. We decided to modify the pump utilising a modern rotor set-up. This modification is more efficient giving an increase in pressure and volume of around a third. The pump is now a serviceable item if required.



The flywheel had wear grooves and hard spots that we were able to remove by surface grinding after which the crankshaft assembly was dynamically balanced.





The rocker arms were originally fitted with “wicks” to help lubricate the valve crowns without swamping the valve guide area with oil. Over the years these felt wicks had become felt oil blockers so we removed them. The use of the higher output oil pump and modified valve guides that use a stem oil seal meant that we could lubricate the valve train area properly without compromising other engine components.



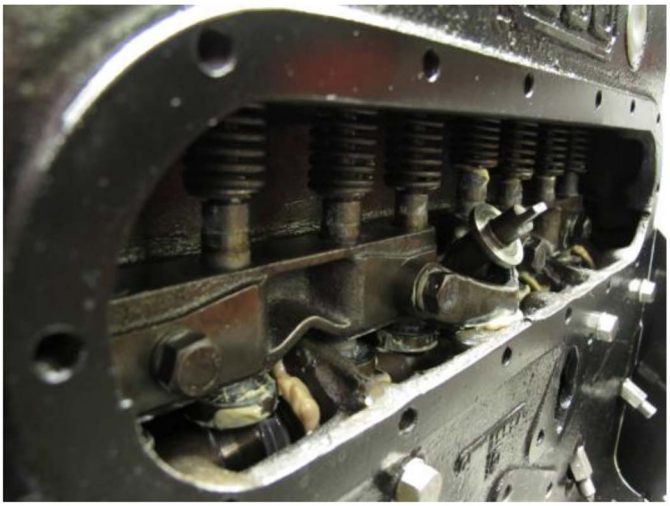








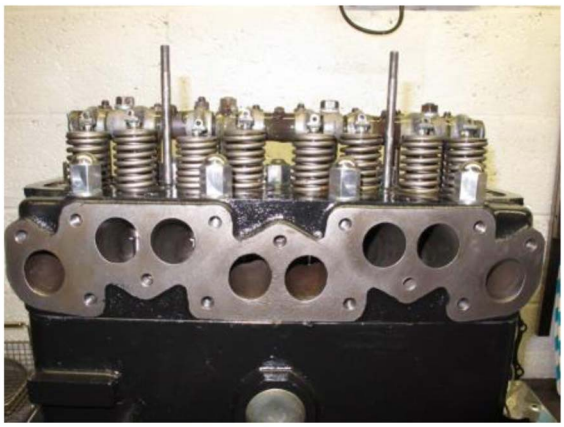
Head studs and nuts were one of the issues identified at the start and again new ones are unavailable. We made a new set from stainless steel with all the correct BSF threads. Much stronger and the domed nuts look really nice



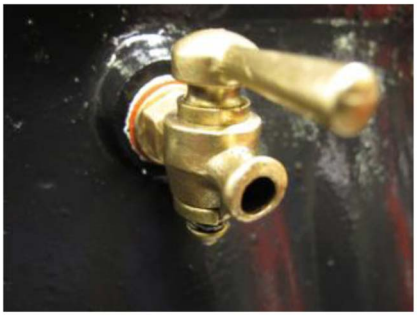














John took his engine to J and E Engineering Services.

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