



19 Remove one conrod cap at a time (10mm bi-hexagonal nuts), store in position fitted. Knock the piston through the top of the block using the wooden handle of a hammer. Make sure each liner isn't removed – if this happens, they must be refitted in the same position. Store pistons and caps in exact order fitted.

dowels into the timing belt. Peening the dowels can help prevent this.

Exhaust studs can strip the thread in the aluminium head on removal. Damage to the thread in the head can sometimes be rescued by extracting the stud, cleaning with an M10 tap and refitting the stud using the longer thread into the head.

Oil leaks on the VVC are often down to the VVC housing to block seal, which are retained by four patch-lock bolts that can work loose. The camshaft seals can leak. The base of the engine oil dipstick tube can also leak, usually



20 With all of the pistons removed, the crankshaft can be lifted out. Collect thrust washers from number three, engine block side.

caused by engine vibration. This can be rectified with a new gasket or by re-tightening the bolts.

Modifications for the VVC are restricted to air filters, exhausts, valves and head porting (see Modifications).

Specialist tools required when stripping a VVC include a camshaft locking tool, available from Franklin Tools (see Parts and Prices). The largest socket you'll need is 22mm (front crankshaft pulley bolt).

There are twenty steps in this Engine Clinic, showing how to dismantle the VVC engine. We've not shown you how to dismantle the VVC head because this is an article in itself and requires some specialist tools. If you want to completely stripdown an engine, you may find the piston liners will fall out. It is important that the liners are replaced in exactly the same position as fitted. Marking

VVC Modifications from Mike Satur

Air filter – expect another 5bhp from the likes of ITG, K&N and Pipercross. Air induction kits promise more results. Prices start at £99.88.

Exhaust – budget around the £300 mark for a few more horses and a different note.

Head porting – three stages of tune for the VVC head are available. Larger valves can be fitted. Prices for head work range between £528 and £1,292.

Throttle body – larger diameter 52mm alloy throttle body at £129 can replace standard 48mm plastic for better power delivery.

Programmable ECU – to be used in conjunction with other modifications. Contact Mike Satur for more details.

them with paint as a precaution is advisable. However, we show you how to retain the liners if you don't want to extract the pistons and crankshaft.

Before proceeding to strip a VVC, slacken the 22mm front crankshaft pulley bolt by locking the flywheel, drain the engine of oil and coolant and remove the spark plugs.

Useful Contacts

Mike Satur – 01709 890555

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Franklin Tools – call 0114 272 1429 to find out your nearest stockist, or visit the website at www.franklin-tools.co.uk