

Specific stream workshop

Session 2

Instructors John

Engine Ford Fiesta 1.25 Zetec

Aims of the session

Striping the valve train and rebuilding it. Also rebuild the bottom end.

Health and safety

Ppe

Rubber gloves

Dust coats

Equipment

Valve compressor

Magnetic rod

Socket set

Piston compressor

Torque wrench

Stepped profile task

Disassembling and rebuilding the valve train

The camshafts were removed last session then for the tappets were visual. We used a magnetic rod to remove the tappets. Once able to see the rest of the valve train components, we used a valve compressor which compresses the valve spring allowing us to remove the two collets with a magnetic rod.

Once the collets the valve spring is decompressed allowing us to remove the entire valve spring assembly. This process can allow people change valve stem seals if the engine is burning oil or even for performance polish and ports the valves allowing the engine to flow better.

To rebuild valve spring assembly

Repeat the steps backwards of the disassembly. The hardest part of assembly was fitting each collet correctly to the valve stem.

Rebuilding the block

Carrying on from session 1. After we disassembled all the engine components and took measurements for all the pistons, bearings and crank journals etc with a digital vernier gauge then calculated the engines cubic capacity. In this session we rebuilt the bottom end. We started with the pistons, we had to fit the correct piston to each cylinder to do so we had to use a piston compressor. First we

Figure 1

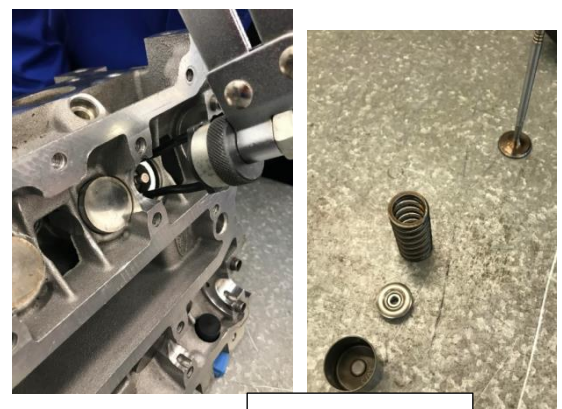
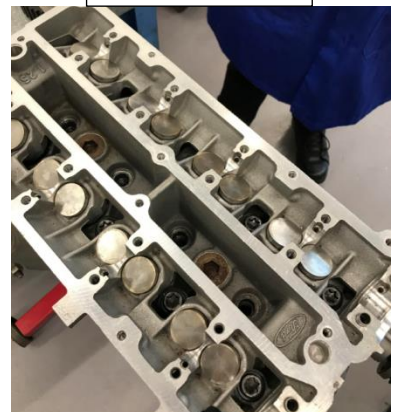


Figure 2 and 3

had to place the piston into the compressor and compress the tool uses the knobs on the side. Place the piston in the right cylinder and give it one tap with a rubber mallet and the piston would be in place to then attach to the rest of the components. Once fitted all the pistons we would then place the bearing into the big end journals and then carefully place the crankshaft in place. We had to fit the rest of the bearings and attach the big ends to the crank journals. Using the specific guide to tighten the bolts up to the right tension a torque wrench was used. Once all that was done we fitted the oil pick up pipe and splash guard. To finish the bottom end rebuild we fitted the sump.



End of session

Put all the tools back in place. And label everything that came off the engine in the trollies for next session.