



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35.



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

DEPARTMENT OF AUTOMOBILE ENGINEERING

19AUB304 – VEHICLE MAINTENANCE AND RECONDITIONING

III YEAR /VI SEMESTER

Unit 2- Engine Maintenance – Repair and Overhauling

Topic : Special tools used for Engine maintenance overhauling



VALVE RING REFACER



- Before a valve is reused, its face should be reconditioned, commonly known as refacing, to leave a smooth and uniform surface shape. The only time that valves would not be ground prior to engine reassembly is if new replacement valves were to going to be used.





VALVE SEAT GRINDING



When preparing to grind a valve seat, the seat first needs to be wiped and any moisture removed. The seat surface should then be cleaned more thoroughly by lightly grinding it, using a portable valve grinding machine with a fine to medium paper, 120-180 grit.





VALVE GUIDE KNURLING TOOL



- The **tool** is designed to restore the **valve guides** by rolling the spiral groove on the inner surface of the sleeve





VALVE SPRING COMPRESSOR



- Valve spring compressor allows you to remove and install overhead valve springs on most cars without taking off the cylinder head.
- A valve spring compressor apparatus and method for compressing cylinder valve springs for the removal and installation of their locks or keepers and for replacement of valve stem seals or broken springs on an internal combustion engine, while the cylinder head is mounted on the engine or supported on a work bench.





CYLINDER LINER PULLER



- It is a special **pullers** made for removing dry-fit liners, essentially they use a carefully fitted plate on the bottom of the liner and an upside-down "U" at the top (or "H" puller on risers) to pull the liner out.
- A cylinder liner puller is a mechanical device used to pull or remove the cylinder liner from the engine block, so as to allow engine maintenance that has to do with replacing the liner when it is worn out.

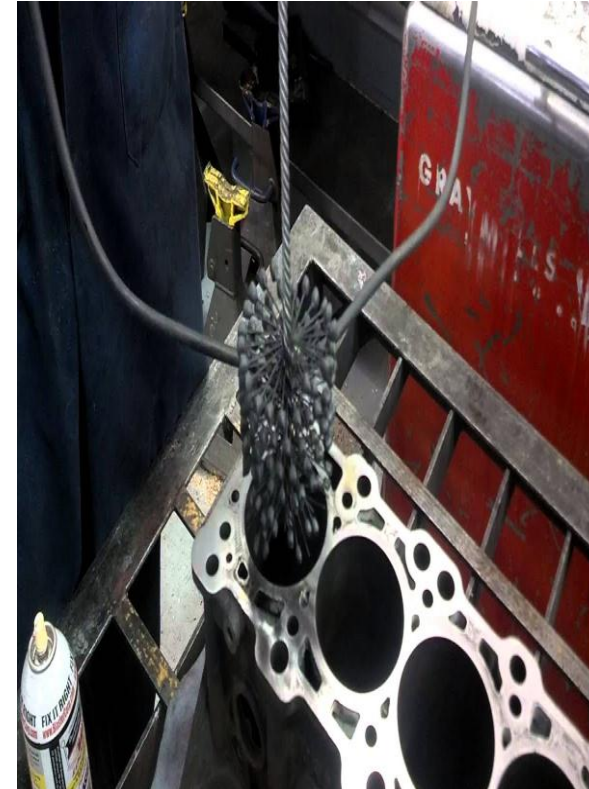




CYLINDER DEGLAZER



- This high-quality tool improves performance by ensuring engine cylinder walls hold oil as designed.
- Deglazing is a process by which the surface of an engine cylinder is roughened to create friction between the moving parts and allow engine oil to grip the sides of the cylinder. Over time, the constant rubbing of the rings against the cylinder wall can polish it to a very smooth finish. This creates problems in two ways. First, the lubricating oil in the engine will not adhere properly to the smooth surface, and in the absence of an oil film the resulting friction is increased. Secondly, while breaking in newly installed piston rings, a minute amount of wear must occur between rings and cylinder wall in order to seat the rings properly, and ensure a gas-tight seal





PISTON RING EXPANDER



- Piston ring expanders are the correct technical method of opening piston rings for mounting to the appropriate pistons.
- Hydraulic ring expanders are typically used to prepare piston rings for installation in an engine, where they must be precisely sized and shaped to provide a proper seal between the piston and cylinder wall.





PISTON RING COMPRESSOR



- The piston ring compressor is a special tool that is specifically designed for compressing the piston rings when a piston is re-installed.
- A piston ring compressor is a compressor that features pistons fit inside of a cylinder using compression rings that seal between the piston and cylinder wall.





TORQUE WRENCH



- A torque wrench is a tool used to apply a specific torque to a fastener such as a nut, bolt, or lag screw.
- A torque wrench is a tool used to tighten nuts and bolts to a predetermined torque value. This instrument allows fasteners to be tightened to the proper tension, helping avoid damage from over tightening or joints coming apart from under tightening





THANK YOU