



ENGINE REMOVING AND DISMANTLING

- Disassembly is a reversal process in which a product is separated into its components and/or subassemblies by nondestructive or semi-destructive operations which only damage the connectors/fasteners. If the product separation process is not reversible, this process is called dismantling or dismounting.

Removal of Engine from the vehicle

- A general procedure for removing the engine from the vehicle can be summed up as follows:
- Drain oil from the sump
- Drain water from radiator and jackets, opening all taps in the cooling system.
- Remove engine bonnet and where filled vertical side members.
- Remove radiator
- Disconnect cable from battery
- Disconnect fuel fed supply line
- Remove L.T. cables from ignition system and disconnect wiring to horn.
- Disconnect radiator hose from the engine side
- Disconnect oil pipe to instrument pressure gage and thermometer pipe
- Remove electric horn if liable to obstruct engine removal
- Take off cable connections to dynamo and starting meter (It is better to remove both starting motor (It is better to remove both starting motor and dynamic if readily accessible, as this allows better access to engine mounting nuts)
- Remove exhaust pipe flange nuts
- Take off accelerator and air choke controls
- Take out all foot boards as far back as rear of gear box
- Disconnect clutch pedal operating rod and pull of spring.
- Disconnect foot brake pedal and hand brake, if anchored to engine unit
- As the engine, clutch, and gear box are built as integral unit an most medium vehicles, it is more convenient to remove the complete unit than gear box; these operations can be performed better on the bench than on the chassis and much time save thereby

At this stage it is advisable to stop and look around the engine unit to make sure that all connections with the chassis frame, dash board, and body work have been released. The final operation will then connecting the front universal joint (just behind the gear box) and the earthing cable or strip between the engine unit and chassis frame, finally removing the nuts of the holding- down studs or bolts of the engine unit mounting. Usually there are two rubber mountings at the front end of the engine and a single large rear mounting on the gear box.



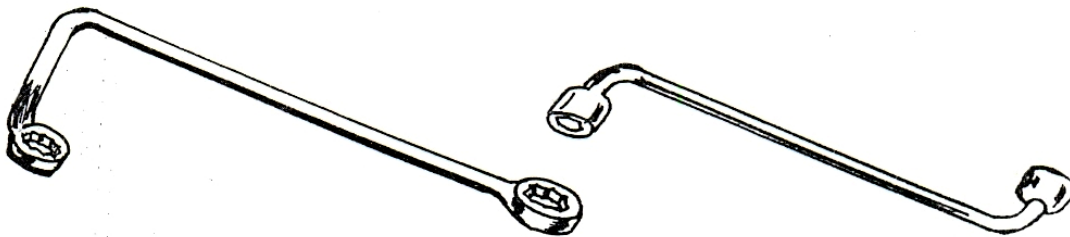
ROAD SAFETY RULES AND REGULATIONS



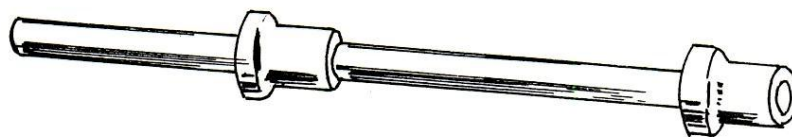
Once the engine is freed from the chassis a single or double rope or chain sling should be adjusted carefully round it making sure that the sling comes under the strongest part of the unit and does not foul any of the more vulnerable components like, the ignition unit, oil filter or carburettor. Now locate the chain on the lifting hook of the crane, so that when the engine is raised the front will be on a slightly higher level than the rear. Finally, lift the engine slowly and at the same time push the chassis rearwards so that the clutch housing will clear the cab opening.

It is convenient to mount the engine on a suitable engine stand, which will have the following features.

- (i) It should take a range of engine sizes
- (ii) Convenient means for securing the engine
- (iii) It should be portable.
- (iv) The frame must be capable of rotation about a horizontal axis.
- (v) Design of the frame should allow ready access to all engine parts in any position.



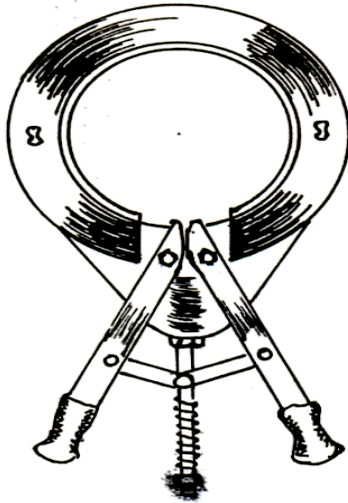
CYLINDER HEAD BOLT WRENCH



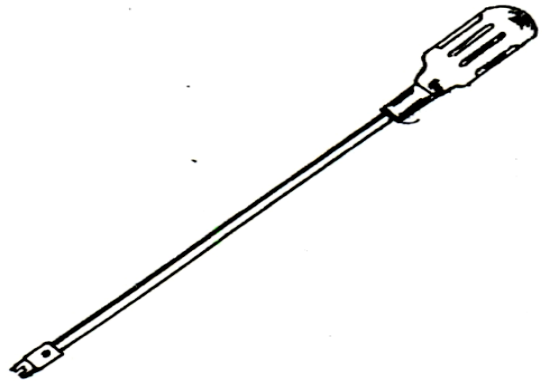
CAMSHAFT BEARING TOOL



ROAD SAFETY RULES AND REGULATIONS



PISTON RING TOOL



OIL SLIMP SCREW DRIVER