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# How to Check & Replace a **SPARK PLUG**



## ***This workshop procedure guide contains:***

Step-by-step instructions on how to check and change a spark plug.

## ***Personal safety:***

Whenever you perform a task you must use personal protective clothing and equipment that is appropriate for the task. Among other items, this may include:

- Work clothing, such as overalls and steel-capped footwear.
- Eye protection, such as safety glasses and face masks.
- Ear protection, such as earmuffs and earplugs.
- Hand protection, such as rubber gloves and barrier cream.
- Respiratory equipment, such as face masks and valved respirators.

## ***TIPS ON CHANGING SPARK PLUG***

### ***Safety check:***

- Never try to check or change a spark plug while the engine is running.
- Make sure the bonnet stay rod is secure.
- Always make sure that you wear the appropriate personal protective equipment before starting the job. It is very easy to hurt yourself even when the most exhaustive protection measures are taken.
- Always ensure that your work area/environment is as safe as you can make it. Do not use damaged, broken or worn out equipment.

## Points to note:

- The leads which come from the distributor (or from the high tension coils in the case of a “wasted spark” type system) must be removed from the spark plug in such a way that you can identify which cylinder they belong to. If the leads are replaced on the wrong spark plug, the engine may misfire or not run at all. Some technicians make a habit of only removing one spark plug at a time, cleaning or repairing it and then replacing the plug and reconnecting the lead before servicing the next plug.
- Some systems do not have spark plug leads; each cylinder may have its own coil fitted directly onto the top of each plug. In all cases, be very careful when removing the leads/coil connectors to ensure that there’s no damage to the cable or connection.
- Disconnect the high-tension lead by pulling on the boot where it connects to the plug; if you pull on the wire itself, you can easily damage the wiring.
- Spark plug bodies are made of a ceramic material that is brittle and fragile. Always use a proper spark plug socket to remove them. This will reduce the risk of damaging the plug.
- What to look for when changing spark plugs:
  - Light brown or gray deposits: Clean, adjust, and REFIT OLD PLUG
  - Severely worn electrodes: FIT NEW PLUG.
  - Burnt material, melted electrodes, blistering: FIT NEW PLUG.
  - Carbon-fouled plug, sooty black deposits: may require for diagnosis of other engine problem or for a possible CHANGE to alternate plug type.
  - Oily deposits: may require for diagnosis of cause of oil leak.



# Checking & Changing a Spark Plug

## 1. Remove the spark plug lead/coil assembly



Before removing the spark plug, disconnect the spark plug high tension lead...



...by grasping the boot where it connects to the plug, twist it and pull it firmly straight out.

## 2. Clean loose dirt away

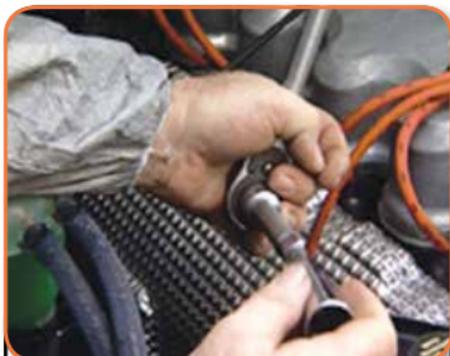


If possible, use a small paint brush to clean away any loose dirt or dust...



...gathered round the base of the plug, which may fall into the cylinder, when the plug has been removed.

## 3. Select correct spark plug tool



The correct tool to use is a spark plug socket with a 1/2" ratchet wrench with an extender.



This usually has a rubber insert to protect the plug while it is being removed.

## 4. Remove the spark plug



Spark plugs can sometimes be difficult to remove, so you may need to extend the wrench handle for additional leverage.



Turn the plug counter-clockwise to loosen it, and then turn the socket by hand until you can remove it.

## 5. Clean the plug and check condition



Remove the spark plug from the socket and clean it...



...brushing away any light deposits with a wire brush.



Check the condition of the plug. If the insulator is cracked, or the electrodes are burned or heavily corroded, or the thread is stripped, then the plug will need to be replaced.



If the plug is dirty or oily, this may indicate a problem elsewhere.

## 6. Check and adjust the gap



Check the plug specifications for the correct gap, and measure this with a wire gauge of the correct diameter.



If the gap between the electrodes is too wide or too narrow, adjust it by bending the ground electrode with a gap-adjusting tool.

## 7. Obtain replacement plug



There are hundreds of different spark plugs, so make sure that any replacement you install...

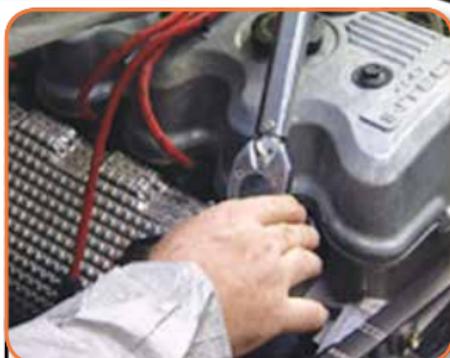


...has the correct code number for the type of vehicle you are servicing, you can confirm the specs with the sales person or manufacturers book..

## 8. Refit the spark plug and torque to specifications



Replace the spark plug in its seat, carefully screwing it in by hand to avoid stripping the thread.



When the plug is finger tight, use a torque wrench to tighten the plug to the correct specification. Do not over tighten as this can damage the plug.

## 9. Refit the spark plug lead/coil assembly



Apply some silicon lubricant to the inside of the boot at the end of the coil lead...



...and push it firmly into place over the exposed spark plug terminal.

## 10. Start the engine



Start the engine to confirm that the plugs and leads are functioning correctly and that the engine is not misfiring.





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