



# ENGINE TUNE UP



An engine tune-up refers to a series of maintenance procedures performed on a vehicle's engine to ensure optimal performance, fuel efficiency, and longevity. While the specifics may vary depending on the vehicle make and model. An engine tune-up is the process of inspecting and replacing components of the engine that are essential to ignition and engine operation.

## **Replacing Spark Plugs:**

Spark plugs ignite the air-fuel mixture in the engine cylinders. Over time, spark plugs can become worn out or fouled, leading to poor engine performance and fuel economy. Replacing spark plugs at recommended intervals can help maintain proper combustion.

## **Replacing Spark Plug Wires (if applicable):**

In vehicles with spark plug wires, it's important to inspect and replace them if they are damaged or worn out. Faulty wires can cause misfires and poor engine performance.

## **Inspecting and Replacing Air Filter:**

The air filter prevents dust, dirt, and debris from entering the engine's intake system. A clogged air filter restricts airflow, reducing engine performance and fuel efficiency. Regularly inspecting and replacing the air filter as needed can help maintain optimal engine performance.

## **Inspecting and Replacing Fuel Filter (if applicable):**

The fuel filter removes contaminants from the fuel before it reaches the engine. A clogged fuel filter can restrict fuel flow and lead to engine hesitation or stalling. If your vehicle has a replaceable fuel filter, it's important to inspect and replace it according to the manufacturer's recommendations.

## **Checking and Topping Off Fluids:**

This includes engine oil, coolant, brake fluid, power steering fluid, and transmission fluid. Maintaining proper fluid levels and replacing old or contaminated fluids can help prevent engine damage and ensure smooth operation of vehicle systems.

## **Inspecting Belts and Hoses:**

Belts and hoses play crucial roles in the engine's operation, powering accessories such as the alternator, water pump, and air conditioning compressor. Inspecting belts and hoses for signs of wear, cracks, or fraying and replacing them as needed can prevent unexpected breakdowns.

## **Performing Fuel System Cleaning (if necessary):**

Over time, deposits can accumulate in the fuel system, including the fuel injectors and intake valves, affecting engine performance and fuel efficiency. Fuel system cleaning services may involve adding fuel system cleaners to the fuel tank or using specialized equipment to remove deposits.

## **Checking Ignition Timing and Idle Speed (if applicable):**



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Ensuring proper ignition timing and idle speed settings can optimize engine performance and fuel efficiency. Adjustments may be necessary if the engine is idling rough or experiencing timing-related issues.

## GASOLINE ENGINE TUNE UP

### BATTERY

- ✚ Clean the battery terminals
- ✚ Check the loose connections.
- ✚ Check the battery for fixing in box or cradle.
- ✚ Check-up electrolyte level in the battery.
- ✚ Check up the capacity of battery.

### CHARGING SYSTEM

- ✚ Visually inspect the dynamo for any wear
- ✚ Check up for any loose connections
- ✚ Check the belt from which dynamo gets power
- ✚ Check the charging rate.

### STARTING SYSTEM

- ✚ Visually inspect the self-starter, cable and switch
- ✚ Check the working switch for any loose connections
- ✚ Check the consumption of current by starter motor.

### IGNITION SYSTEM

- ✚ Check the cable connections from distributor to spark plugs
- ✚ Check the distributor shaft bushes for any looseness
- ✚ Check the contact breaker point
- ✚ Check the wear on distributor cam.
- ✚ Check the wear in distributor cap
- ✚ Check the ignition system with oscilloscope

### FUEL SYSTEM

- ✚ Visually inspect for any leak



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- + Clean the air cleaner
- + Check the functioning of choke
- + Check the fuel pump pressure
- + Check the plunger assembly

## **CARBURETTOR**

- + Check the fuel line from fuel pump to float chamber
- + Check the butterfly of the carburetor
- + Adjust the height of the float
- + Adjust the jet needle and needle jet
- + After assembling, adjust the idle and high-speed adjustments

## **LUBRICATION SYSTEM**

- + Check the level of lubrication oil in the crankcase
- + Check the lubrication oil filter, if clogged replace it with new one
- + If the oil is bad, remove the oil and introduce new oil of the correct grade

## **COOLING SYSTEM**

- + Check the radiator for any damage and blocks
- + Check the hoses that connect radiator and engine
- + Check for any leakage
- + Check the fan belt
- + Use clean water in the radiation

## **TRANSMISSION LINE**

- + Visually inspect the transmission line for damages, cracks etc.
- + Check the propeller shaft
- + Check the differential assembly
- + Check the state of lubrication oil in the differential assembly

## **DIESEL ENGINE TUNE UP**

### **FUEL INJECTION PUMP**

- + Visually inspect the flow lines from tank to pump and to injector



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- ✚ Check the injection pressure
- ✚ Check for any wear and tear in the fuel injection pump
- ✚ Check the entire components of the fuel pump

## **FUEL INJECTOR**

- ✚ Check the injector nozzle for any block and clean it thoroughly
- ✚ Check the pressure at which the nozzle sprays the fuel droplets
- ✚ Adjust the screw for correct pressure

## **HEATER PLUG**

- ✚ Check the heater plug by connecting it with battery terminal
- ✚ Check the heater plug for any dirt deposition
- ✚ Replace it after cleaning it thoroughly

Also check the air induction system, fuel feed system and other important components have to be checked for performing the tune up operations.