

Automobile Scanning and Vehicle Testing

Subject overview:

Subject contains the functions and operations of service stations and garages, activities, depot and workshop layouts. Also, study of testing and measuring instruments used in service station, calibration, repair equipments, usage and testing procedures are the part of laboratory. Repairing processes and machines used for servicing and lubrication are learned. Study of workshop documents & records, like job cards, bill, satisfaction voucher, history sheet, manufacturer's service coupon book, warranty policy etc., are part of laboratory work.



Wheel Balancing:

Day-to-day tire treadwear causes changes in the distribution of weight around the tire and wheel assembly. Balancing of wheels minimizes potential vibration felt in the steering wheel, seat, or floorboard and aids in proper tire treadwear. Getting your wheels balanced can result in a smoother ride, reduced tire wear, and enhanced drive-train components.



Wheel Alignment:



Wheel Aligner is a precision measurement instrument designed to measure the wheel alignment parameters and compare them with the specifications provided by vehicle manufacturer. It also gives instructions to the user for performing corresponding adjustments so as to get the best steering performance and reduce tire wear.

Car Scanner:

The scan tool is connected to the vehicle's data link connector (DLC), which is fitted under steering column and, depending on the particular tool, may only read out diagnostic trouble codes (DTC) or may have more capabilities. Car scanner tools will display live data stream (inputs and outputs), have bi-directional controls (the ability to make the controllers do things outside of normal operations) and may even be able to calibrate/program modules within certain parameters.



Brake Cum Clutch Bleeder:



This instrument is used for the Bleeding the brake and clutch system. Brake bleeding is the procedure performed on hydraulic brake systems whereby the brake lines (the pipes and hoses containing the brake fluid) are purged of any air bubbles. This is necessary because, while the brake fluid is an incompressible liquid, air bubbles are compressible gas and their presence in the brake system greatly reduces the hydraulic pressure that can be developed within the system

Battery Charger:

This setup is made by Con-air, Pune to charge battery of vehicles. Different voltage and ampere can be set as per battery specifications. Voltage and ampere of the battery are also checked.



Fuel Injector Cleaner:



The use of auto fuel injectors is a sophisticated way to provide the right fuel and air mix to an engine for a vehicle. Over time, fuel injectors may need to be maintained or checked for proper functioning. They are vulnerable to specific kinds of wear and generally will not last forever. If you need to check fuel injectors to make sure they are working properly, here are some of the most common basic steps suggested by mechanics that have extensive knowledge of the fuel delivery system.

Spark Plug Tester:

Use this ignition spark tester to check the condition of the ignition system at each cylinder without going to expensive mechanics. The spark tester connects between the spark plug and spark plug wire in seconds to troubleshoot dirty spark plug connections, defective points and bad cables or connections. Spark plug tester is also having spark plug cleaner to clean the carbon particles from the spark plug with the help of sand blasting.



Grease pump:



Full range of manual and air-operated grease pumps are designed to empty standard 50 lubricating grease drums. It can be connected directly on the greasing points, also suitable for centralized lubricating grease systems. Grease pump has a maximum pressure of 50 and 42 MPa (7250 and 6090 psi) respectively.

Five Gas Analyser:

INDUS Model PEA205 is a class 1 gas analyser designed and manufactured for testing the emissions from automotive engines, which run on petrol as well as CNG and LPG. The instrument can measure carbon monoxide (CO), carbon dioxide (CO₂) and oxygen in percentage, and hydrocarbons [Hexane equivalent (HC)] and nitric oxide (NO_x) in ppm. It is generally supplied as a four gas analyser without the NO_x sensor. When NO_x sensor is added PEA205 becomes a 5 gas analyser.



Smoke Meter:

Automotive Exhaust Monitor OMS 103 is designed and manufactured by INDUS Scientific for measuring the opacity of the exhaust from diesel vehicles. The opacity is proportional to the attenuation of light between a light source and a detector. Smoke meter measures smoke density in Hartridge smoke units (HSU) & K. Range of this unit is 0 to 100% opacity in HSU, 0 to ∞ in K (m⁻¹).



Nozzle Tester:

Nozzle tester is specially designed to test nozzles of diesel engines. It is a ultimate tool for diagnosing a number of problems that affect diesel fuel injector nozzles. Nozzle tester enables you to check for leakage pop off pressure spray pattern and chatter.



Tire Changer:

A tire changer is a machine used to help tire technicians dismount and mount tires with automobile wheels. After the wheel and tire assembly are removed from the vehicle, the tire changer has all the components necessary to remove and replace the tire from the wheel. New tire and wheel technology has improved certain tire changers to be able to change a low profile tire or a run-flat tire.



Head Beam Aligner:

A headlamp beam tester is a means to check both the orientation and intensity of a vehicle headlamp to ensure that it meets a minimum standard for the country of use of the vehicle. A headlight tester comprises a fully adjustable single optical collimated light lens assembly which is rail mounted and designed to prevent any distortion of the optical lens supporting structure during general use, such as when aligning the lens to the vehicle or maneuvering the assembly along the rails.



4-Post Lift:

Four Post Lift, Which is designed for wheel Alignment, Tyre Changing, Checking and Adjustments of wheels. It can also be used for car maintenance jobs. This equipment comes with secondary lifting mechanism which enables the technicians to perform the job with very ease. It is featured with a unique design, well-selected materials, novel appearance and advanced workmanship.

