



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35.

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DEPARTMENT OF AUTOMOBILE ENGINEERING

**COURSE NAME : 23AUT101 – ELEMENTS OF
AUTOMOTIVE SYSTEM**

I YEAR /II SEMESTER

Unit 4 – Shock Absorber



Shock Absorber



- Shock absorbers, also known as dampers, are crucial components of a vehicle's suspension system. They help control the impact and rebound movement of the vehicle's springs and suspension.
- This ensures smooth ride quality, better handling, and stability by dampening the oscillations caused by road irregularities.
- There are several types of shock absorbers, each with unique characteristics and applications.



Suspension System



Shock absorbers

- Limits spring compression-extension movements to smooth the vehicle's ride.
- Without shock absorbers, the vehicle would continue to bounce up and down long after striking dip or hump in the road.



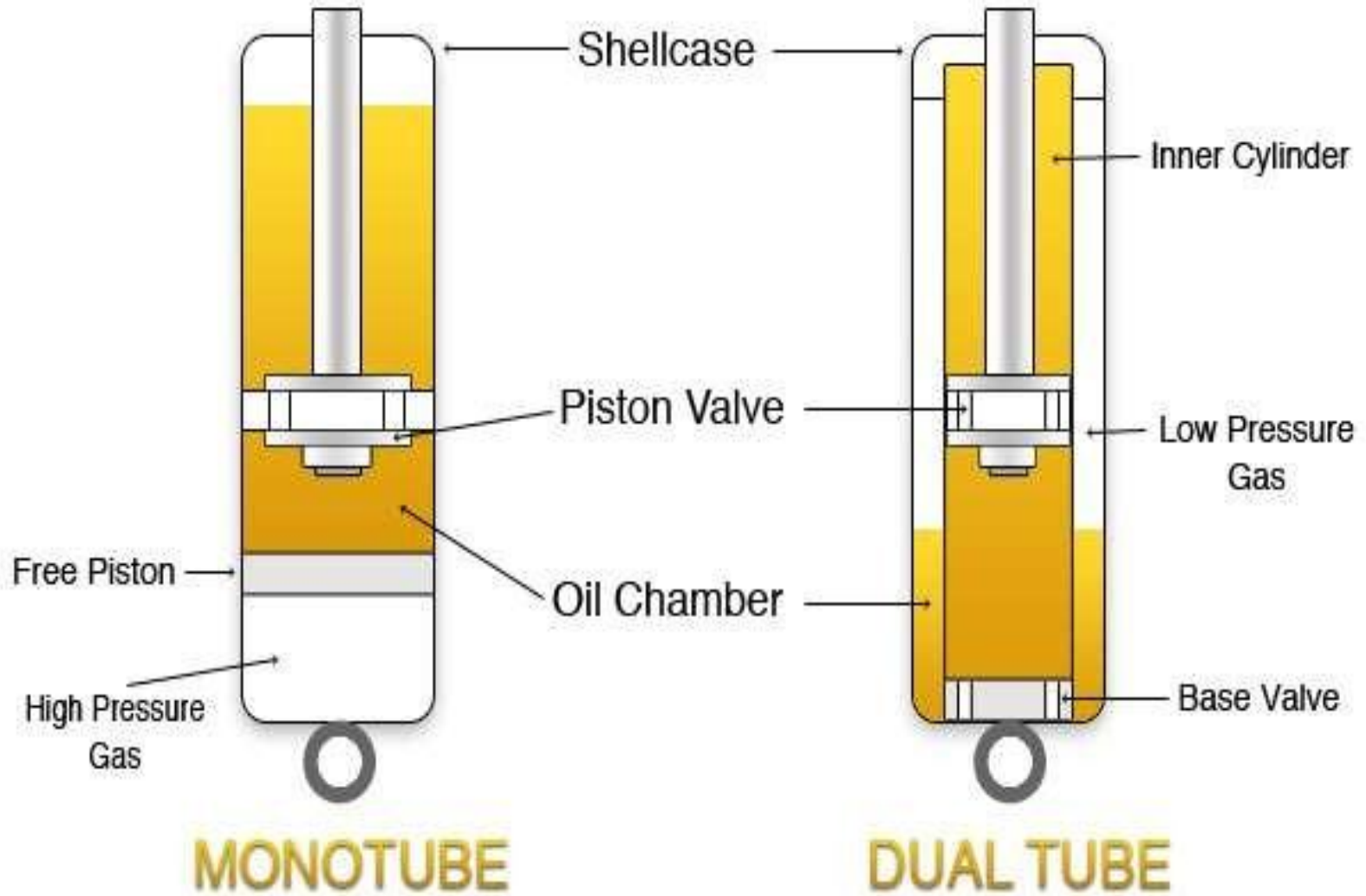


Shock Absorber Types



1. Standard telescopic shocks

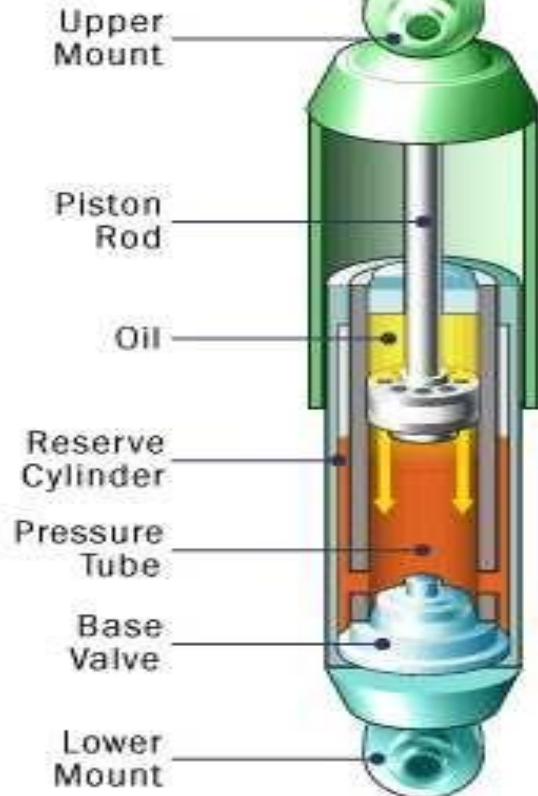
A simple type of shock absorber, telescopic shocks are commonly used in motorcycles for the front suspension.. They can be compressed and extended and are subdivided into bi-tube and mono-tube dampers. Some of the advantages are that they are available in various sizes, require little maintenance, and are relatively inexpensive.



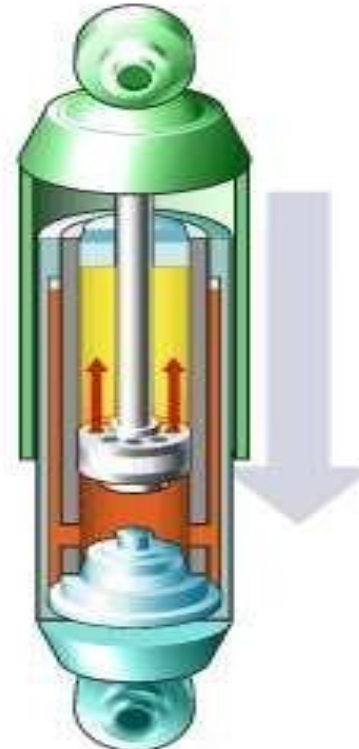


HOW CAR SUSPENSIONS WORK

Twin-tube Shock Absorber



**EXTENSION
CYCLE**



**COMPRESSION
CYCLE**



2. Struts

- Struts are not shocks and shocks are not strut – therefore they are not interchangeable. While they perform the same function, they are a different system, and vehicle is designed to either accommodate struts or shocks, never both.
- Struts are built to form part of car's suspension system and plays a role in steering and alignment. Sealed units are meant to be fully replaced rather than repaired, while McPherson struts can be fitted with replacement cartridges.

3. Spring seat

- Like struts, a spring seat shock is both a suspension unit and damping device all in one unit. However, unlike struts, they are not capable of sustaining heavy loads, and being a sealed unit, would also need to be fully replaced once damaged.