

JOB ROLE – AUTOMOTIVE SERVICE TECHNICIAN

Sector: Automotive
(Qualification Pack Code : **ASC/Q01402**)



PSS Central Institute of Vocational Education
Shyamla Hills, Bhopal – 462013, Madhya Pradesh, India

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UNIT 4 : Suspension system

**Session 3: Replacement of strut/shock absorbers,
inspection of steering linkages**

Content

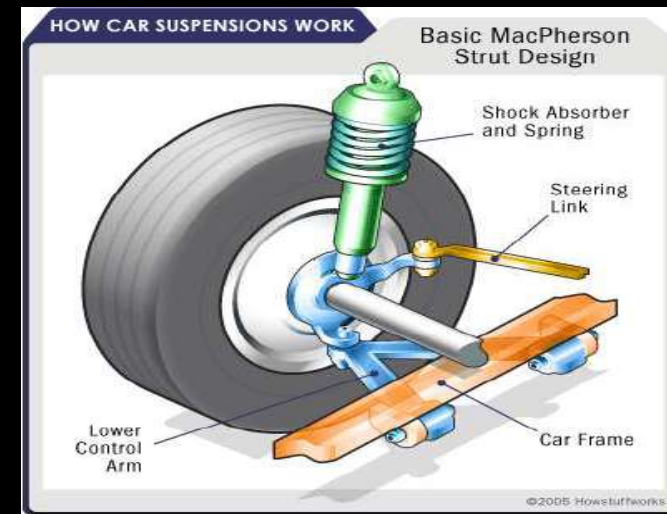
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Session Objectives

1. The student will be able to explain the role of shock absorber in a vehicle .
2. Able to understand the procedure for servicing, repair and replacement of shock absorber .
3. Able to use the tools and equipment used in servicing, repair and replacement of shock absorber .

Introduction

A shock absorber is a mechanical device designed to smooth out or damp shock and dissipate energy. In a vehicle, shock absorbers reduce the effect of traveling over rough ground, leading to improved ride quality and vehicle handling. Every shock up/suspension has its own life. Suspension system has damper with spring. This works as shock absorber/strut.



Life of shock absorber is affected due to following reasons

1. Overloading
2. Road conditions
3. Worn-out Linkage/bushes
4. Leakage of fluid/gas
5. Broken casing
6. Deterioration of Bump stopper
7. Rubber bellows
8. Improper handling in service

Testing of shock absorber on the vehicle

1. Keep the vehicle on the level ground,
2. Press the front portion of the car with gentle pressure,
3. Now feel resistance in the up and down movement of front portion,
4. If notice any jerking movement, indicates defect in shock absorber,
5. Release the pressure and experience, upward movement with same resistance,
6. If it feels hard, noisy and stucked /binding at any movement indicate faulty shock up.
7. Visually inspect the shockup for fluid leakage if found, replace it.

Testing of shock absorber off the vehicle

Tools and Equipment

Open end spanners, ring spanner, tubular spanner, locking clamps, screw drivers etc.

Material required

Oil, grease, metal tray, bolts waste, equivalent parts etc.

Sequence of operation

1. Keep the vehicle on level ground
2. Jack up the vehicle at the certain height to make the wheel free to rotate
3. Loosen the wheel nut and remove out the front wheel
4. Remove brake drum with bearing from stub axle by using hub puller
5. Remove the brakes pins/ bolts from strut bracket
6. Remove the strut bracket bolts
7. Remove support nuts by supporting the strut properly
Dismount the strut assembly from the vehicle
8. Use a spring compressor to remove the strut spring
9. Fix the spring compressor on the strut and compress the spring
10. To remove the spring support unit, loosen the nut slowly and release the spring compressor.

Testing of shock absorber/struts of the vehicle

1. Visually inspect strut for fluid leakage.
2. Inspect the piston rods/strut rod for bend, scratches etc.
3. Press the rod inside with pressure and release the same, it should move in and out with resistance.
4. If it does not work, replace the strut/shock absorber as it is not repairable.

Summary

In this session you have learnt about , A shock absorber is a mechanical device designed to smooth out or damp shock and dissipate energy. In a vehicle, shock absorbers reduce the effect of traveling over rough ground, leading to improved ride quality and vehicle handling. Life of shock absorber is affected due to following reasons:

Overloading

Road conditions

Worn-out Linkage/bushes

Leakage of fluid/gas

Broken casing

Deterioration of Bump stopper

Rubber bellows

Improper handling in service

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