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 3 : Transmission System

Session 1: Overhauling of clutch

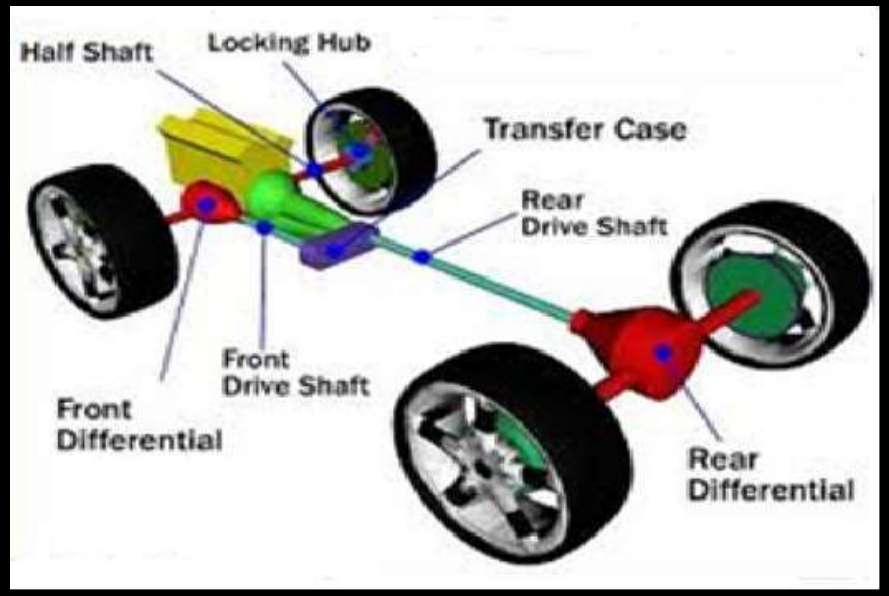
Content

Session Objectives

1. The student will be able to understand and explain the procedure for overhauling of diaphragm clutch
2. Able to check the friction surfaces of clutch, pressure plate and flywheel for oil leakage

Introduction

The oldest variant of the transmission system in India is the manual transmission that has undergone various modifications and alterations to form the present day automatic transmission. Transmission system in a vehicle helps to transmit mechanical power from the engine to the wheels. It is an interconnected system which consist of clutch, gear box, propeller shaft/ drive shafts (in front wheel and 4X4 wheel drive vehicles).



Overhauling of clutch

we have discussed about maintenance and regular adjustments in clutch for efficient power transmission. When clutch runs nosily and clutch slips, do not engage and disengage properly, gives jerking movement in engagement and as well as disengagement. Then it is necessary to overhaul the clutch assembly. Mostly different types of clutches are used in today's automobile like diaphragm clutch, multi plate clutch and centrifugal clutch.

Diaphragm Clutch

In this type of clutch, diaphragm spring is used in place of coil spring. This type of clutch is called as diaphragm clutch. Diaphragm clutch is small in size as compare to spring clutch and it transmits more torque as diaphragm exerts more pressure as compare to springs. It is more compact means of storing energy, thus compact design results in smaller clutch housing. It is less affected by centrifugal force and it can withstand higher rotational speeds.

Procedure for removing clutch assembly from the engine

1. Place the vehicle on the level ground.
2. Raise the vehicle at a specific height.
3. Remove the clutch linkage connection from the bell housing.
4. Remove propeller shaft from companion flange of the gear box.
5. Loose and remove nut/bolt of clutch housing and gearbox housing.
6. Mark the position of cover on the flywheel.
7. Remove all the bolts of pressure assembly from the fly wheel.
8. Remove the clutch plate, pressure plate, release bearing and keep it on the work bench for inspection.

Pressure plate

1. The frictional surface of the pressure plate has circular lines/scratches.
2. If the pressure plate is distorted then do the skimming process.
3. In case, the thickness of friction lining is increased then maintain the clearance between clutch plate and pressure plate.

Diaphragm spring

1. The frictional surface of the pressure plate has circular lines/scratches.
2. If the pressure plate is distorted then do the skimming process.
3. In case, the thickness of friction lining is increased then maintain the clearance between clutch plate and pressure plate.

Clutch slip

If power transmission is not transmitted to gear box after releasing the clutch plate. This indicates that there is clutch slip.

CAUSES	REMEDIES
Improper clutch pedal free play	Adjust the setting of the clutch pedal
Oil on the clutch plate lining	Replace the lining/ replace the clutch plate
Weakened diaphragm spring	Replace it
Wrapped disc, pressure plate, flywheel surface	Replace
Noisy clutch	Replace worn out clutch release bearing or replace crack clutch disc/hub.

Clutch Judder

When clutch pedal is released for the engagement of the clutch, vehicle starts moving with jerks. This phenomena is known as Clutch judder.

Cause	Remedy
Weakened diaphragm	Replace
Spoiled input/clutch shaft spline	Replace
Rusted clutch plate	Replace cable
Broken clutch disc	Replace clutch disc
Glazed clutch facing	Replace disc

Summary

In this session you have learnt about, diaphragm clutch. In this type of clutch, diaphragm spring is used in place of coil spring. This type of clutch is called as diaphragm clutch. Diaphragm clutch is small in size as compare to spring clutch and it transmits more torque as diaphragm exerts more pressure as compare to springs.

Pressure plate

1. The frictional surface of the pressure plate has circular lines/scratches.
2. If the pressure plate is distorted then do the skimming process.
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Project Coordinator : Dr. Saurabh Prakash, Professor,
Department of Engineering and Technology

Assistance

Er. Kuber Singh , Consultant

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

E-mail: jdpsscive@gmail.com
Tel. +91 755 2660691, 2704100, 2660391, 2660564
Fax +91 755 2660481
Website: www.psscive.ac.in