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 2 : Fasteners

Session-5: Removal of Damaged Fasteners and Replacement

Content

Session Objectives

1. The student will be able to remove screw with spoiled head with the use of hand tools .
2. Able to remove screw without head/unheaded with the use of hand tools.
3. Able to remove unheaded screw broken in the assembly with the use of hand tools
4. Able to remove spoiled headed nut/bolts with the use of hand tools

Introduction

In automobile, due to jerk, vibration and corrosion screws get broken. It ultimate it leads to dislocate the assembly. It is necessary that it should be removed and replaced. Similarly, improper uses of screw drivers with its snap head, screw head get spoiled. It becomes difficult to tight, loosen and removal of screw from the assembly. The broken and spoiled screws .

Broken and spoiled screw

Method of removal of damaged screw

Case 1: Removal of spoiled headed screw

If the screw driver slips, due to widening of groove/screw way

- Use hacksaw blade and dress the groove
- Now use screw driver of thick snap and turn anticlockwise
- This removes the screw, if it is not responded
- Take a prick punch and hammer. Give light blow in anti clock wise direction. This loosen the screw
- If it does not work then use drill machine of drill bit smaller than size of screw
- Now drill it at the centre of screw, now 100% screw will be removed

Case 2: Removal of unheaded screw

- If the screw is broken at the top of the assembly
- Remove the other screw and separate the assembly
- Hold the jaws of the cripper on broken screw
- Lock the cripper and turn anti clock wise
- Screw may come out

Case 3: Removal of unheaded screw broken in the assembly

- Use drill machine of drill bit smaller than size of screw
- Now drill it at the centre of screw, now 100% screw will be removed
- Now dress the threads before fixing new screw

Unheaded screw

Broken nut/bolts

In automobile, due to jerk movement and vibration, nuts and bolt get loosened and may causes spoiling of internal/external threads in nut and bolt respectively. This slackens the assembly unit and changes the alignment with other unit. Improper use of spanners/socket may leads to spoiling of edges of nut/bolt. It is necessary that it should be removed and replaced. It becomes difficult to tight, loosen and removal of nut/bolt from the assembly.

Broken bolt

Method of removal of spoiled headed nut/bolts

Case 1: Removal of nut/bolts

- Use spanner of smaller size, fix it on the nut/bolt and turn anticlock wise
- It will come out
- If it does not come out, use prick punch.
- Take a prick punch and hammer at the face of nut/bolt. Give light blow in anti clock wise direction. This loosen the nut/bolt.
- If it does not work then use drill machine of drill bit smaller than size of nut/bolt
- Now drill it at the centre of nut/bolt an remove the edges of nut, in case of bolt remove the bolt head by using cripper, remove the remaining part of the bolt from the assembly.

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Case 2: Dress the internal threads of the bolts by using tap of appropriate size

- In case of nut, use die to rethread stud threaded portion and use new nut

Broken thread

Broken / spoiled threaded studs

A stud is stronger than a bolt, with correct stud installation; the stud is screwed into the threaded hole without applying pressure to the threads and without galling the threads. After stud installation, the parts are slipped over the stud, then install the correct washer, and then tighten the nut.

Removal of thread

Method of removal of Broken/ spoiled threaded studs

Case 1: Removal of spoiled threaded studs

- To remove spoiled threaded stud, give gentle pressure on assembly by using screw driver, this will lift the spoiled portion of the stud threads upward.
- Turn the nut in anticlockwise, turn the stud assembly and gentle press the screw driver inside so that stud will come out
- In case, if the nut threads internal threads of the nut/external threads of the studs are spoiled, then give welding spot to nut and stud. Now turn assembly anti clockwise. Now stud will come out

Method of removal of Broken/ spoiled threaded studs

Case 2: Removal of broken studs above the casing

- If the stud is broken above the assembly unit,
- Separate the assembly by removing other nuts
- Fix stud extractor on the broken stud and lock it
- Now turn stud extractor slowly, the stud will be driven out

Case 3: Removal of broken studs inside the casing

- Take a prick punch and hammer at the face of broken stud. Give light blow in anti clock wise direction. This will loosen the remaining portion of the stud.
- If it does not work then use drill machine of drill bit smaller than size of stud
- Now drill it at the centre of stud, Remove the burr from the casing
- Use appropriate tap and redress the internal thread
- Fix the new stud by using stud extractor

Use of anti rust solution

Anti rust solution are used for dissolving the dust, rust from the fastener area. Use of this solution will make fasteners comfortable during removal/changing process. Now days Indian as well as imported antirust solution/spray are available in the market.

Antirust solution or spray can

Summary

In this session you have learnt about, In automobile, due to jerk, vibration and corrosion screws get broken. It ultimate it leads to dislocate the assembly. It is necessary that it should be removed and replaced. In automobile, due to jerk movement and vibration, nuts and bolt get loosened and may causes spoiling of internal/external threads in nut and bolt respectively. A stud is stronger than a bolt, with correct stud installation; the stud is screwed into the threaded hole without applying pressure to the threads and without galling the threads.

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