VEHICLE SERVICING AND REPAIRING

NTQF Level II

Learning Guide 43

Unit of Competence: Identify Basic Automotive Faults Using Troubleshooting Processes

Module Title: Identifying Basic Automotive Faults Using Troubleshooting Processes

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LO3: Cleanup work area and finalize work processes

Instruction Sheet	Cleanup work area and finalize work processes

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Final inspection
- Check and store Tools and equipment
- Workplace documentation

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Make final inspection to ensure work to workplace expectations
- Check and store tools and equipment according to workplace expectations
- Complete workplace documentation according to workplace procedures

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 7.
3. Read the information written in the “Information Sheets 1”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
4. Accomplish the “Self-check 1” in page 7**.**
5. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 1).
6. If you earned a satisfactory evaluation proceed to “Information Sheet 2”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #1.
7. Submit your accomplished Self-check. This will form part of your training portfolio.

Final Inspection

Consumers' expectations are that they will receive their vehicle back in a serviceable condition and in a better operational condition than when it was delivered to the workshop.

This expectation requires two (2) critical components:

- A final inspection must be completed by the service technician to ensure that all of the protective features for the braking system have been refitted is replaced to the required specifications; and
- A final inspection must be completed by the service technician to ensure that all of the work that was commenced on the system was completed to workplace, customer and manufacturers expectations

Inspections that you are made after completing the work should be include

- Proper installation of component parts
- Quality work
- Arrange and organize the work area
- Check any defect/ damage
- Proper installation of wiring harness
- Performed test and repair are according to workplace expectation.
- Diagnosing all trouble shooting process related to system problem.

Checking and storing tools and equipment

Keeping of Equipment and Tools

a) Equip the workshop with all necessary equipment and facilities required for the workshop's services and always keep them in safe working condition.

b) Equipment and tools should be stored in clearly designated places.

c) Properly plan the placement of hand tools. To avoid hazard, all sharp edges and tips should face down or put into protective sleeves.

d) Lifting appliances, pneumatic tools and devices should be properly stored, maintained and inspected regularly by those competent.

e) All equipment for analysis and testing instruments should be maintained and calibrated in accordance with the manufacturer's instructions

Store the tools

The equipment and facilities listed below are for general guidance and are not meant to be exhaustive. The workshop-in-charge shall provide all necessary equipment and facilities in accordance with relevant legislations and guidelines. The tool lists are organized into three basic categories*:*

i. Hand Tools,

ii. General Lab/Shop Equipment

iii. Specialty Tools and Equipment.

When referring to the tools and equipment list, please note the following:

A. The organization of the tool list is not intended to dictate how a program organizes its tool crib or student tool sets (i.e., which tools should be in a student set, if utilized, and which should be in the tool crib or shop area).

B. Quantities for each tool or piece of equipment are determined by the program needs; however, sufficient quantities to provide quality instruction should be on hand.

C. For *Specialty Tools and Equipment by Area*, the program need only have those tools for the areas being accredited.

D. Programs may meet the equipment requirements by borrowing special equipment or providing for off-site instruction (e.g., in a dealership or independent repair shop). Use of borrowed or off-site equipment *must* be appropriately documented.

E. No specific brand names for tools and equipment are specified or required.

F. Although the Program Standards recommend that programs encourage students to begin to build their own tool sets, this is not a requirement. However, many employers require an entry-level technician to provide his/her own basic hand tool set.

Workplace documentation

Documentation refers to a narrative, or some description of the way the process works. The most precise way to document instruction is to create a Running Record, or virtual transcript, noting what was observed every two minutes.

Direct observation of behaviors is important for many reasons. It is a means of generating hypotheses and new ideas or a means of answering specific questions. Observations also enable us to answer questions about what happens during repairing.

For the purpose of these observations, time sampling is used to record engine parts repairing.

An observer should attend to all contextual details on the parts of engine repair. Observers do not make any assumptions at any time. They do not assume that any event is instructionally relevant or irrelevant. Observers should avoid biases based on personal preferences or practice. That is, when assigned to observe a particular instructional program, observers do not judge the engine parts or specific activities during repairing.

Observers must record what kind of an engine part is repaired without making ongoing judgments about the quality of engine part repairing or the effective use of a particular technique. The observer's job is to capture what happened, not his or her opinion of what happened. After noting and documenting the observation during the repair every technician should complete work shop practice schedule documentation.

Follow these three general principles to develop records and documents:

1. Keep it short and simple. Use bullet points and flow diagrams instead of long sentences and lengthy paragraphs.
2. Clarity is important. Step-by-step instructions are easily understood.
3. Use a standardized, consistent format. Although different programs may need different documents and records, using a similar approach will help staff learn quickly.

Completing and delivering report to appropriate person

Delivery is the process of transporting something/ like reports/ from a source location to a predefined destination after the work is done. The technician should be preparing a report and deliver to appropriate person. The reporting procedures are as follows

- Record the work to be done
- Inspect/test the repaired engine accordance with manufacturer procedure
- Record/ capture the problem with the necessary information
- Order the recorded problems /work done in accordance with their damaging area
- Preparing reports have no error/discrepancy
- Deliver reports to appropriate person.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List final inspection expectation requirements.
2. Describe final inspection that you made.
3. How do you check and store tools and equipment's?
4. Describe workplace documentation.

Note: Satisfactory rating – 3 points **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Operation Sheet - 1	Post Repair Inspections

Method of final inspection

Step by Step Guide to Post Repair Inspections:

1) Vehicle is evaluated to determine whether a post repair inspection is needed.
2) Obtain a copy of insurance estimate and/or collision shop estimate to compare estimate with actual work performed.
3) Visually check all the repair gaps to see if the car lines up.
4) Check all paint surfaces using a paint thickness meter to ensure an even finish and to mark any problem areas for correction later.
5) Pull back any rugs and unclip panels to inspect for hidden incorrect repairs. Elements such as covered over unrepaired structural panels, open welds which were not properly protected against corrosion, bare metal, missing spot welds, misaligned structural panels and damaged parts that should have been changed are often hidden by rugs and panels. These repair shortcuts can cause vehicle breakdown and jeopardize driver safety.
6) If the initial inspection uncovers cause for concern, we recommend that the customer allow us to do a full post repair inspection.
7) Not every car will require a full post repair inspection, but when one is necessary, we contact the insurance company and provide them the necessary information in order to have them pay for the work that needs to be done in order for the vehicle to be properly repaired.
8) There is no cost to the customer for post repair inspection or repairs resulting from the inspection. The costs of those repairs are borne by the insurance company who has a contractual obligation with the insured to pay for vehicle repairs that are a result of a car accident.

Operation Sheet - 2	Cleaning workplace

Floor Mopping Procedure

1) Prep the area to be mopped.
   a) Place "wet floor" sign to alert coworkers.
   b) Move any equipment or furniture to a safe area where they will not be in the way and can be easily put back in place.
   c) Use your putty knife to remove any stuff like tar or gum stuck to the floor.
2) Sweep the area.
3) Mop the area.
   a) Use a solution of 8 to 10 parts water to one part Oil Eater.
   b) Dip you mop in the solution & wring it out so it is damp. The biggest problem when cleaning is over wetting the surface. A damp mop will allow the oil & dirt to cling to the mop, versus just spreading in around.
   c) Start in the corner the farthest away from where you will finish.
   d) Mop in an "S" motion working back from where you started. Redip your mop in the solution & wring it out frequently.
   e) Change the solution after mopping each bay.
4) Clean up.
   a) Empty and rinse the mop bucket so it will be ready for the next shaft.
   b) Rinse mop completely and hang.
   c) Remove wet floor signs.
   d) Put equipment and furniture back in place.

If you are following "Clean as You Go" at your facility, floor mopping should only need to be done once or twice a day, usually at the end of each shift.

LAP Test	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 1:30 hour.

Task 1: Perform Post Repair Inspections

Task 2: Cleaning workplace

List of Reference Materials

1- http://www.autobahncollision.com/repair-process/final-inspection-and-vehicle-delivery.htm

2- https://www.vehicleservicepros.com/in-the-bay/tools-equipment/article/10717421/shop-floor-maintenance-101-clean-as-you-go

3- https://macsworldwide.wordpress.com/2012/09/06/keeping-the-service-shop-clean/

4- https://www.automotivemanagementnetwork.com/documents/

5- https://www.barrysautobody.com/what-is-a-post-repair-inspection-and-why-it-is-necessary/