



Vehicle servicing and repairing

NTQF Level II

Learning Guide #30

Unit of Competence: Maintain and Repair Under Chassis Systems

Module Title: Maintaining and Repairing Under Chassis Systems

LG Code: EIS VSR2 M08 0919 LO1-LG 30
TTLM Code: EIS VSR2 TTLM 0919V1

LO4: Prepare vehicle for use or storage

Instruction Sheet	Learning Guide #30
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This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Complete repair schedule documentation
- Make final inspection in place safety features
- Make final inspection in workplace
- Clean vehicle/equipment
- Processes Job card

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 –**

- ❖ Repair schedule documentation is completed
- ❖ Final inspection is made to ensure protective guards, safety features and cowlings are in place
- ❖ Final inspection is made to ensure work is to workplace expectations
- ❖ Vehicle/equipment is cleaned for use or storage to workplace expectations
- ❖ Job card is processed in accordance with workplace procedures

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 6.
3. Read the information written in the “Information Sheets 1 Information Sheets 2 Information Sheets 3 Information Sheets 4 and Information Sheets5”. 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 Self-check 2, Self-check 3, Self-check 4 and Self-check” in page 4,6,8,13 and 15 respectively
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.

Complete repair schedule documentation

Documentation is a set of documents provided on paper, or online, or on digital or analog media, such as audio tape or CDs. Examples are user guides, white papers, on-line help, quick-reference guides.

It is becoming less common to see paper (hard-copy) documentation. Documentation is distributed via websites, software products, and other on-line applications.

Procedures and techniques

The procedures of documentation vary from one sector, or one type, to another. In general, these may involve document drafting, formatting, submitting, reviewing, approving, distributing, reposting and tracking, etc., and are convened by associated

Documentation should be easy to read and understand. If it's too long and too wordy, it may be misunderstood or ignored. Clear, Short, Familiar words should be used to a maximum of 15 words to a sentence.

Documentation should be prepared by qualified specialists. The key to good documentation is to correctly identify the problem to be solved, and hence to specify an appropriate solution.

Most documents contain lists (known as schedules) of components such as windows or floor finishes.

For conservation work, schedules of repairs are commonly prepared for each room or other element. Schedules are an effective way to summaries the works to be done.

Poorly documented repair works could result in the work making matters worse rather than better.

The Need to Document

Documenting maintenance and renewal information enables repair and maintenance work to be conducted efficiently and effectively.

It also provides key information to the owners, supervisors and depreciation report providers.

These documents are also important in order to provide proper maintenance to ensure warranty insurance coverage.

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.

Self-Check -1	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is the need of document?(10 point)

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions

Information Sheet-02	Make final inspection in place safety features
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Final inspection:

- Assure that the brake fluid is completely filled out.
- Assure that the adjustment is complete.
- Assure that all servicing procedures have been satisfied.
- Assure that all parts are correct, per drawing.
- Assure that all parts show no sign of damage.
- Affix service history documentation to the customer.

Self-Check -2	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List the final inspection of safety

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions

Information Sheet-03	Make final inspection in workplace
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Make final inspection in workplace

- ✓ Cleaning is not just a measure of respect for the workspace, it also removes hazards.
- ✓ Plan to easily and regularly remove trash and debris. Enforce a strict cleanup policy throughout the workspace.
- ✓ Keep work areas tidy as well by minimizing the number of wires running around. Extension cords quickly become tripping hazards, and power strips also cause trouble on the ground or as they tumble erratically on a desktop. We suggest you provide access to grounded outlets all along the perimeter of the room and/or dropped from the ceiling for each workbench.

Self-Check -3	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is inspection?

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions

To clean your car, Before you begin cleaning the exterior, make sure the body of your car is cool and in the shade. Use specially formulated cleaners to clean the body and wheels of your car. To clean the interior, remove the floor mats and throw away trash. Vacuum the interior and use a foam cleanser to clean the carpet and upholstery. Finish cleaning your car by using a window cleaner to clean the inside and outside of your windows.

a. Preparing to Wash Your Car

1. **Park your car in a shaded area.** If the body of your car is hot from sitting in the sun or from driving, wait for your car to cool down before cleaning it. This may take 20 to 30 minutes.

Since heat can speed the drying time of soap and water, you want to wait for your car to cool down to avoid soap and water stains

2. **Gather your supplies.** Place two buckets, a car cleanser, a soft natural sponge or a lambswool wash mitt, a cloth/rag, tire cleaner, soft terry towels, and car wax next to your car. These materials are needed to clean your car's exterior.

Gather your supplies to clean the interior as well. These supplies may include a vacuum, trash bag, glass cleaner, upholstery foam cleanser, carpet cleaner, Q-tips, paper towels, and rags.

3. **Fill two buckets with water.** One bucket will be used for soaking your cloth while the other will be used for rinsing your cloth. Fill one of the buckets with the specially formulated car cleanser per the instructions.^[2]

Do not use dishwashing detergent or hand soap to clean your car. These harsh household cleaners may strip off your car's wax.

b. Washing the Body

1. **Rinse the car with a hose.** Rinse the entire surface of the car thoroughly before applying soap. Make sure to remove loose dirt and debris to avoid scratching your car. Remove leaves, twigs, and other debris with your hands.^[3]

Set the hose on a high-pressure setting to rinse hard-to-remove dirt, debris, and grime.

However, make sure the pressure isn't too high so as not to remove your car's wax or paint.

2. **Clean from the top of your car down to the bottom.** And work on one section at a time. Make sure to completely rinse each section with water after you finish cleaning it with soap. This will prevent the soap from drying onto your car
3. **Lather the soap with your sponge or lambswool mitt.** Then scrub your car in a straight up and down motion. Do not clean the car in a circular motion. Scrubbing in a circular motion can cause swirl marks

4. **Rinse your sponge often.** Rinse it in the second bucket that contains water after each use. If your sponge falls onto the ground, make sure to rinse it in the water. If not, the debris on the sponge may scratch your car
5. **Do not let your car air dry.** This can cause watermarks and streaking. Instead, use a soft-terry towel or a chamois (synthetic or natural) to dry it. Try blotting the water instead of wiping it to dry your car

c. Cleaning the Wheels

1. **Fill two buckets with water.** Mix a cleaner into one of the buckets. Make sure to use a cleaner that is safe for all wheel surfaces. Avoid caustic cleaners that contain acid, as well as dishwashing detergents. These cleaners can ruin the finish on your wheels.^[8]

One bucket will be used for cleaning and the other will be used for rinsing your sponge.

2. **Soak a soft sponge in the cleaning solution.** Once the sponge has soaked for a few minutes, begin cleaning one wheel at a time from the top down. To clean small crevices, use a soft-bristled toothbrush.^[9]

If your wheels are very dirty, you may need to apply a de-greaser before cleaning them

3. **Rinse and dry the wheel.** Once your wheel is clean, rinse it thoroughly with water until all dirt and debris are removed. Then dry the wheel with a soft cloth.^[10]

- Repeat steps one through three for each wheel.

d. Waxing Your Car

1. **Cut a clay bar into three or four equal sections.** Flatten one of the pieces so that three of your fingers can hold it in place. Spray a fair amount of clay lube onto a small section of the car (24" by 24"). Then, gently glide the clay over the lubricated section in a back and forth motion (not a circular motion).^[11]

- Once the clay begins to glide smoothly over the section and you do not hear or feel a roughness in the finish, move onto the next section.

- Make sure to use the clean parts of the clay on the new sections as you work.
- Clay bars are used to remove microscopic dirt from your car's body to prevent

scratching during the waxing process

2. **Squeeze a quarter-sized amount of polish onto your pad.** Apply the wax in a straight up and down motion onto the body of your car. Do not apply it in a circular motion, and do not wax your windows or the trim. Use gentle pressure when applying the wax to get a smooth, even coat.^[12]

- Make sure to apply thin layers of wax as opposed to thick layers. As a rule of thumb, it is better to apply multiple thin layers than to apply one thick layer.

3. **Use a microfiber-buffing towel to buff the wax.** Move the towel in a straight up and down motion as opposed to a circular motion. Use a high quality towel to prevent scratching.^[13]

- Before buffing the wax, you may need to let the wax dry. It depends on which formula you are using. To be safe, follow the product's instructions

e. Cleaning the Interior

1. Remove the floor mats. Shake them out to remove dust, dirt, and debris. Place them on the ground for vacuuming at a later time. However, you can vacuum them right away if you want. It is your preference

2, Remove large pieces of trash. Pick up large pieces of trash like paper, coins, pens, and other objects from your floorboard using your hands. Place these items in a trash bag. Wear latex gloves to protect your hands from getting dirty.^[15]

- Use a BBQ skewer to remove dirt and pieces of trash from small crevices like in between seats.
- Make sure to remove trash from cup holders as well

3, Spray a glass cleaner into the cup holders. Let the glass cleaner set for 5 to 10 minutes. Then use a paper towel to clean out the dirt and grime. Use the BBQ skewer to pick out grime and dirt from any small crevices.^[16]

- Alternatively, place an old sock on the bottom of a mug or travel cup. Then place the mug in the cup holder and twist to remove dirt and grime

4, Vacuum from the top down. Start at the top of the seats, dashboard, and console before moving to the floor. Use the upholstery nozzle to vacuum the seats, upholstered areas, and the headliner. Use the brush attachment to vacuum the components that contain hard vinyl, plastic, and metal such as the dashboard and console. To clean small crevices and tight areas, use the crevice attachment.^[17]

- Adjust the seats backwards and forwards to clean hard to reach spots under the seats

5, Use a carpet cleaner to clean carpet stains. Spray the cleaner onto the stain and use a stiff bristle brush to rub it into the carpet. Be careful not to spray too much cleaner onto the carpet as this can cause mildew if it is not dried thoroughly.^[18]

- Use a clean, dry towel to blot the stains and dry the area

6, Spray a foam cleanser onto fabric stains. Rub the cleanser into the stain with a soft brush. Let the cleanser dry. Then use a vacuum to remove it per the instructions. If the stain remains, then spray more cleanser onto the affected area and clean again until it is gone.^[19]

- If your seats are leather, then make sure to use a leather cleanser or saddle soap to clean your seats, as well as other components of the car that contain leather.

7, Use car wipes to sanitize the dashboard and console. Make sure to use specially formulated car wipes. You can find these at your local auto shop. Use Q-tips or cotton swabs to clean small areas like radio buttons, air vents, and panel seams.^[20]

- If you do not have car wipes, then an all-purpose household cleaner that is ammonia-free will do

8, Clean the windows with a glass cleaner. Any household glass cleaner will do. Instead of spraying the cleaner directly onto the window, spray it onto a clean, microfiber towel. Then wipe both the inside and outside of your windows in a straight up and down motion.^[21]

- Roll down your windows to thoroughly clean the top section of the window.

9, Re-vacuum the car. This will remove any dirt and grime that was knocked out during the cleaning process. Then shake and vacuum the floor mats thoroughly if you have not already done so. Place them inside your car.^[22]

- Use an odor-removal spray, like Febreze, to remove any remaining smells from your car.

Cleaning procedures

- ✓ Clean up every time whenever you leave an area, including sweeping the floor.
- ✓ Clean and return all tools to where you got them.
- ✓ Use compressed air sparingly; never aim it at another person or use it to clean hair or clothes.
- ✓ Shut off and unplug machines when cleaning, repairing, or oiling.
- ✓ Never use a rag near moving machinery.
- ✓ Use a brush, hook, or a special tool to remove chips, shavings, etc. From the work area. Never use the hands.
- ✓ Keep fingers clear of the point of operation of machines by using special tools or devices, such as, push sticks, hooks, pliers, etc.
- ✓ Keep the floor around machines clean, dry, and free from trip hazards. Do not allow chips to accumulate.
- ✓ Mop up spills immediately and put a chair or cone over them if they are wet enough to cause someone to slip.

Self-Check -1	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Why need to clean vehicle?

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions

Information Sheet-05	Processes Job card
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Processes Job card

The job card is a vital part of the workshop system in a motor vehicle company. Many companies now dispense with the 'paper' altogether and use computer systems. These allow very fast, easy and accurate communication. Whether hand-written job cards or IT systems are used, the principle is the same and consists of a number of important stages. This is often described as the four-part job card system:

- **Reception** – Customers' details and requirements are entered on the job card or computer screen.
- **Workshop control** – Jobs are allocated to the appropriate technician using a loading sheet or again via the computer.
- **Parts department** – Parts used are added to the computer or job card.
- **Accounts** – Invoices are prepared from the information on the job card. Computerized systems may automatically produce the invoice when the job is completed

Self-Check -5	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are the four job card process?

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____

Short Answer Questions

Operation Sheet 1	Preparing to Wash Your Car
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Techniques for Identify Preparing to Wash Your Car

Step 1- Park your car in a shaded area

Step 2- Gather your supplies

Step 3- Fill two buckets with water

Operation Sheet 2	Washing the Body
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Techniques for Identify Washing the Body

Step 1- Rinse the car with a hose

Step 2- Clean from the top of your car down to the bottom

Step 3- Lather the soap with your sponge or lambswool mitt.

Step 4- Rinse your sponge often.

Step 5- Do not let your car air dry

Operation Sheet 3	Cleaning the Interior
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Techniques for Identify Cleaning the Interior

Step 1- Remove the floor mats.

Step 2- Remove large pieces of trash

Step 3- Spray a glass cleaner into the cup holders.

Step 4- Vacuum from the top down

Step 5- Use a carpet cleaner to clean carpet stains

Step 6- Spray a foam cleanser onto fabric stains

Step 7- Use car wipes to sanitize the dashboard and console.

Step 8- Clean the windows with a glass cleaner.

Step 9- Re-vacuum the car

Operation Sheet 4	Cleaning procedures
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Techniques for Identify cleaning procedures

Step 1- Clean up every time whenever you leave an area, including sweeping the floor.

Step 2- Clean and return all tools to where you got them.

Step 3- Use compressed air sparingly; never aim it at another person or use it to clean hair or clothes.

Step 4- Shut off and unplug machines when cleaning, repairing, or oiling.

Step 5- Never use a rag near moving machinery.

Step 6- Use a brush, hook, or a special tool to remove chips, shavings, etc. From the work area. Never use the hands.

Step 7- Keep fingers clear of the point of operation of machines by using special tools or devices, such as, push sticks, hooks, pliers, etc.

Step 8- Keep the floor around machines clean, dry, and free from trip hazards. Do not allow chips to accumulate.

Step 9-Mop up spills immediately and put a chair or cone over them if they are wet enough to cause someone to slip.

LAP Test	Practical Demonstration
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Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 2 hour.

Task 1. Clean the external part of the vehicle

Task 2. Clean interior vehicle parts

Task 4. Clean equipment.

List of Reference Materials

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8. **Automobile mechanical and electrical systems, Tom Denton**