MODULE CONTENT

| Unit of Competency | **DIAGNOSE AND REPAIR BODY ELECTRICAL SYSTEM** |
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| Module Title | **DIAGNOSING AND REPAIRING BODY ELECTRICAL SYSTEM** |
| Module Descriptor | This unit covers the knowledge, skills and attitudes  required to diagnose and repair body electrical system  such as lighting, wiper, door locks, power window, horn,  accessories and other electrical system |
| Nominal Duration | **hours** |
| Summary of the Learning Outcomes: | |
| Upon completion of this module the student must be able to: | |
| LO1. Prepare to diagnose and repair body electrical system | |
| LO2. Diagnose body electrical system | |
| LO3. Repair body electrical system | |
| LO4. Complete work processes | |

**LEARNING EXPERIENCES**

**LEARNING OUTCOMES NO. 2**

**DIAGNOSE BODY ELECTRICAL SYSTEM**

| **Learning Activities** | **Special Instructions** |
| --- | --- |
| Read Information Sheet 3.1-1 Diagnose body electrical system | If you have some problem with the content of the information sheet don’t hesitate to approach your Trainer.  If you feel that you are now knowledgeable on the content of the information sheet, you can now answer the self-check provided in the module. |
| Answer Self-Check 3.1-1 on Diagnose body electrical system | Try to answer the Self-check without looking at the Answer Key  Compare your answer to Answer Key 3.1-1 |
| Observe Trainer’s demonstration on Task Sheet 3.1-1 on Diagnose body electrical system | Listen carefully and attentively so that you may be able to perform a task correctly  Ask questions if are in doubt for clarification |
| Perform the Task Sheet 3.1-1 on Diagnose body electrical system | Remember the step-by-step procedure of the Diagnose body electrical system |
| Evaluate the performance using the Performance Criteria Checklist 3.1-1 | Repeat the task in case fail to meet the criteria |

**INFORMATION SHEET 1.1-1**

**DIAGNOSE BODY ELECTRICAL SYSTEM**

**Learning Objectives:**

After reading this **Information Sheet**, you must be able to:

1. Checking of voltage and power supply
2. Continuity checking of bulb, relays, wiring, grounds

**BODY ELECTRICAL SYSTEM**

**Procedure**

**Replacing headlights**

STEP 1 Remove the headlight bezel-retaining screws. Remove the bezel. If necessary, disconnect the turn signal lamp wires.

STEP 2 Remove the retaining ring screws from one or both lights.

STEP 3 Remove the retaining rings.

STEP 4 Remove the light from the housing. Disconnect the wiring connector from the back of the light.

STEP 5 Push the wiring connector onto the prongs at the rear of the new light.

STEP 6 Place the new light in the headlight housing. Position it so the embossed number in the light lens is on the top.

STEP 7 Place the retaining ring over the light and install the retaining ring screws. Tighten them slightly.

STEP 8 Check the aim of the headlight and adjust it, if necessary.

STEP 9 Install the headlight bezel. Secure it with the retaining screws. Connect the turn signal lamp wiring (if it was disconnected).

**SHOP TALK**

*Some manufacturers recommend coating the prongs and base of a new sealed beam with dielectric grease for corrosion protection. Use an electrical lubricant approved by the manufacturer*

**Headlight Adjustments**

Headlights must be kept adjustment to obtain maximum illumination. Properly adjusted sealed beams cover the correct range and afford the driver the proper nighttime view. Headlights that are out of adjustments can cause other drivers discomfort and sometimes create hazardous conditions.

Before adjusting or aiming a vehicle’s headlights, however, make the following inspections to ensure that the vehicle is level. Anyone of the adverse conditions listed here can result in an incorrect setting/

If the vehicle is heavily coated with snow, ice, or mud, clean the underside with high-pressure steam of water. The additional weight can alter the riding height.

Ensure that the gas tank id half full. Half a tank of gas is the only load that the gas is the only load that should be present on the vehicle.

Check the condition of the springs or shock absorbers. Worn or broken suspension components affect the setting.

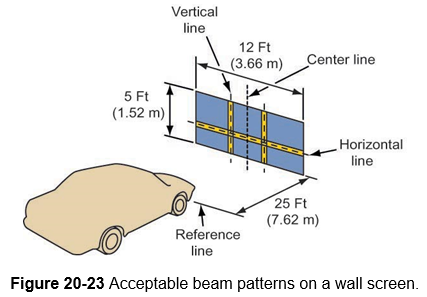
Inflate all tires to the recommended air pressure levels. Take into consideration cold or hot tire conditions.

Make sure the wheel alignment and rear axle tracking path are correct before adjusting the headlights.

After replacing the vehicle in position for the headlight test, bounce the vehicle to settle the suspension.

To properly adjust the headlight, headlight aim must be checked first. Various types of mechanical headlight aiming equipment are available commercially **(Figure 20-22).** These aimers use mirrors with split images, like split image-finders on some cameras, and spirit levels to determine the exact adjustment. When using any mechanical aiming equipment, follow the instructions provided by the equipment manufacturer. Where headlights aiming equipment is not available, headlight alignment can be checked by projecting the upper beam of each on a screen or chart at a distance of about 25 feet ahead of the headlight **(Figure 20-23).**  The vehicle must be exactly perpendicular to the chart.

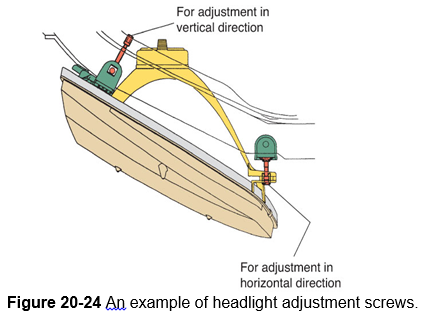




The chart should be marked in the following manner. First, measure the distance between the centers of the matching headlights. Use this measurement to draw two vertical lines on the screen with each line corresponding to the center of a headlight. Then, draw a vertical centerline halfway between the two vertical lines. Next, measure the distance from the floor to the centers of the headlights. Subtract 2 inches from this height and then draw a horizontal line in the screen at this new height.

With headlights on high beam, the hot spot of each projected beam pattern should be centered on the point of intersection of the vertical and horizontal on the chart. If necessary, adjust headlight vertically and laterally to obtain proper aim.

Headlight adjusting screw is provided to move the headlight within its shell assembly to obtain correct headlight within its shell assembly to obtain correct headlight aim. Lateral or side-to-side adjustment is accomplished by turning the adjusting screw at the side of the headlight **(Figure 20-24).** Vertical or up-and-down adjustment is accomplished by turning the screw at the top of the headlight. Adjustments can be made without removing headlight bezels.



Some vehicles are equipped with indicators to help in the adjustment process. One such setup is used in Hondas. The system uses horizontal indicator gear. **(Figure 20-25)**  at each headlamp assembly. Prior to making any adjustments to the headlights, Honda recommends that the horizontal indicator gear be at zero (0). A Philips screwdriver is used to bring the gear back to zero. After this has been done, the headlamps can be fine adjusted to specifications.