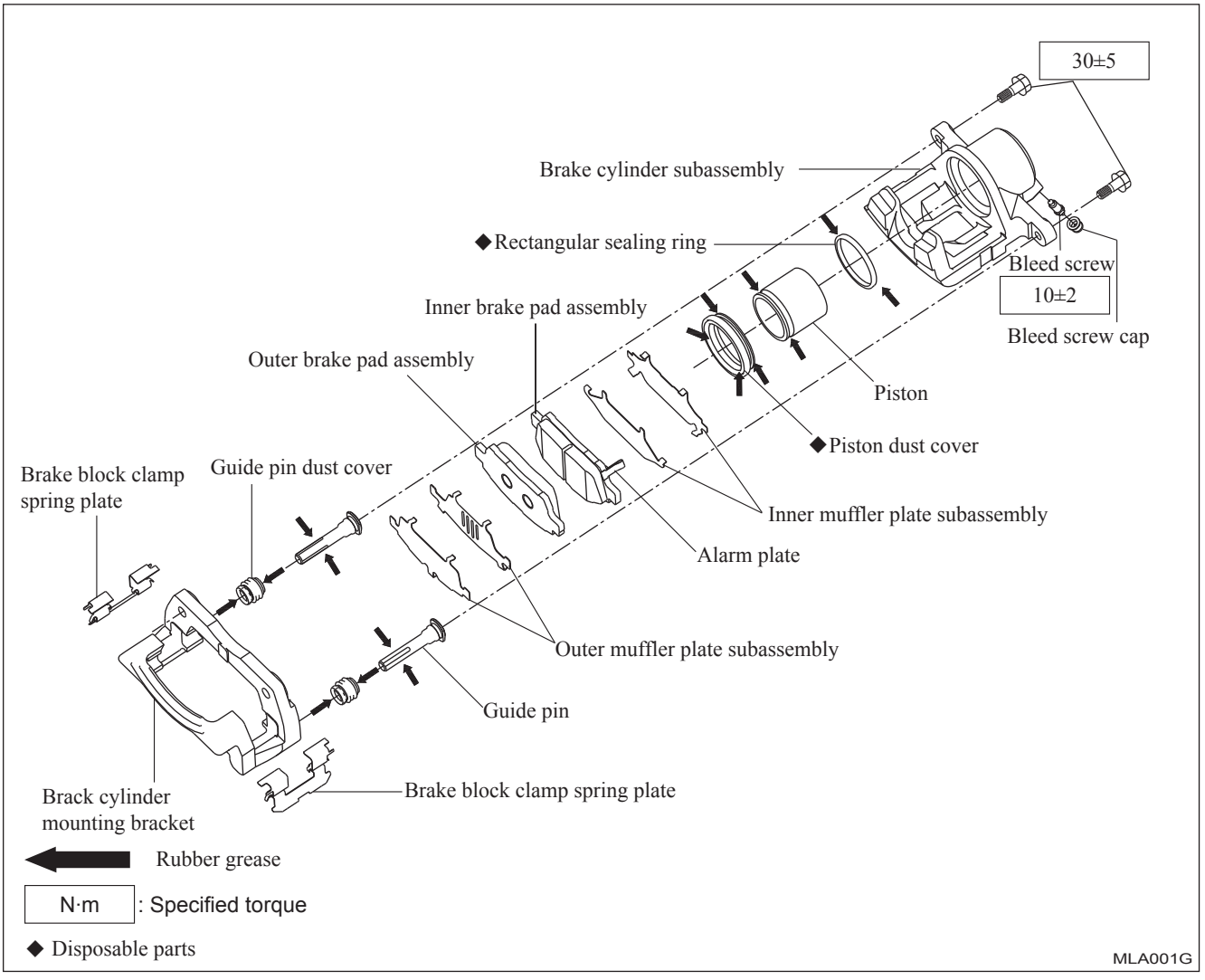
How to Use This Manual

1. Overview.
   (a) Maintenance operation includes 3 main steps:
      (1) Diagnosis.
      (2) Removal/installation, replacement, disassembly/reassembly, inspection, and adjustment.
      (3) Final inspection.
   (b) This manual describes "diagnosis" and "removal/installation, replacement, disassembly/reassembly, inspection, and adjustment." "Final inspection" is omitted.
   (c) This manual does not include the following basic operations. However, these operations must be performed in actual situations.
      (1) Operating with a jack or lift.
      (2) Clean the removed parts if necessary.
      (3) Visual inspection.
2. Preparations.
   Special service tools (SST) may be required according with the maintenance circumstances. If necessary, be sure to use SST and strictly follow the correct maintenance procedures.
3. Maintenance procedures.
   (a) Components schematics are provided under the related subject if necessary.
   (b) Disposable parts, grease application position, pre-coated parts, and tightening torques are specified in the component schematics.



(c) Driver side airbag assembly (with airbag)

(1) When removing the driver side airbag assembly or handling a new horn button, the top surface of the decorative cap should face upwards. Refer to the diagram below.
If the surface of the decorative cap faces downwards, serious accidents may occur once the airbag is deployed accidentally. Furthermore, do not place anything on the top of the horn button.

(2) Never measure the resistance of the airbag ignition tube. Otherwise, the airbag may be inflated and thus lead to serious injury.

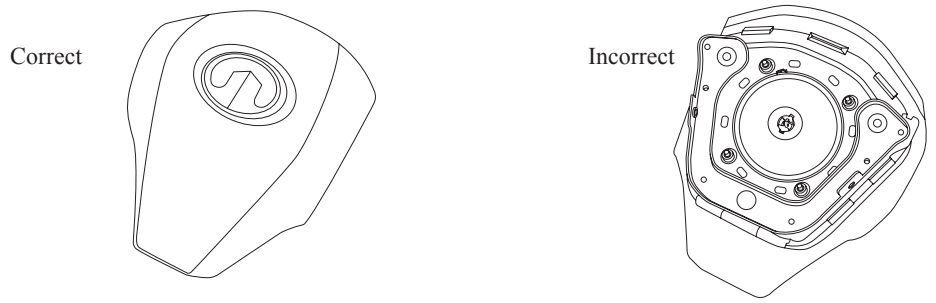
(3) It is strictly prohibited to apply any type of grease or detergent to the steering wheel decorative cap.

(4) Store the driver side airbag assembly in a place far from radio noise interference, where the ambient temperature is lower than 93°C and the humidity is not high.

(5) Before using electric welding in any part of the vehicle, disconnect the airbag ECU connectors.
These connectors contain short circuit springs. They can reduce the possibility that the airbag or preloaded seat belt is deployed due to the electric current flowing into the wire of the ignition tube.

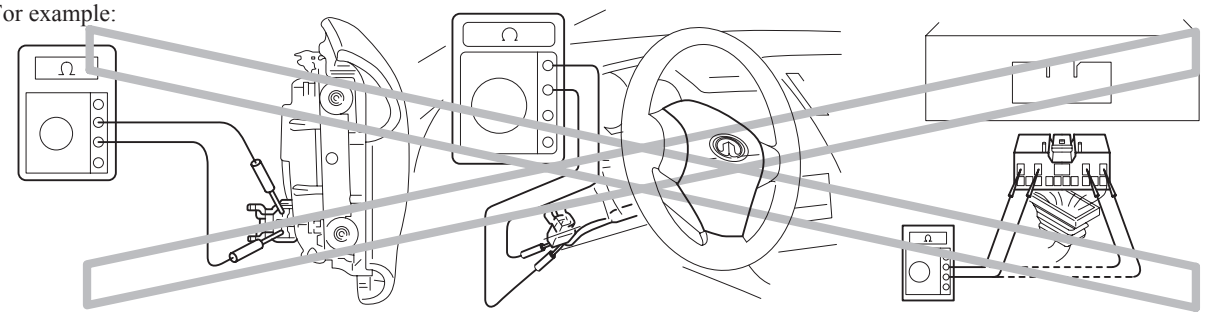
(6) Before discarding the vehicle or the driver side airbag assembly, inflate the airbag using the SST (See page 9-35). Please perform this operation in a safe place far from radio noise interference.

For example:



ALA017G

For example:



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(d) Front passenger side airbag assembly

(1) Make sure to place the detached or new front passenger side airbag assembly with the airbag deployment side facing upwards. If the airbag asseembly is placed with the airbag deployment side facing downwards, serious accidents may occur once the airbag is inflated.

(2) Never measure the resistance of the airbag ignition tube. Otherwise, the airbag may be deployed and thus lead to serious injury.

Maintenance and Inspection

General Exterior Maintenance

The owner is responsible for the maintenance and inspection of his/her own vehicle. The owner may maintain the vehicle by himself/herself or send the vehicle to an automotive maintenance center.

Carry out daily inspection on the following vehicle parts. In most cases, SST are not required.

The general maintenance procedure is as follows:

1. General areas of importance
   (a) The maintenance requirements vary from country to country.
   (b) Check the Maintenance Schedule in the Owner's Manual Supplement.
   (c) This Maintenance Schedule must be followed.
   (d) Determine the proper vehicle maintenance time according to the travelled distance or elapsed time (months), whichever is earlier.
   (e) Unless otherwise stated, try to carry out maintenance periodically.
   (f) Failure to check the vehicle parts may lead to poor engine performance and increased exhaust emission.
2. Tires
   (a) Check the tire pressure with an air pressure gauge. Make adjustments if necessary.
   (b) Check if the tire surface is cracked, damaged, or excessively worn.
3. Wheel nuts
   (a) Check if the nuts are loose or missing. Tighten the nuts if necessary.
4. Tire rotation
   (a) Check the Maintenance Schedule in the Owner's Manual Supplement.
5. Windshield wiper blades
   (a) If the blade is unable to clean the windshield, check if it is worn or broken. Replace it if necessary.
6. Fluid leakage
   (a) Check whether there fuel, oil, water or other liquids leaking from under the vehicle.
   (b) If there is a smell of gasoline or any leakage, find out the cause and make the necessary corrections.
7. Door and engine hood
   (a) All of the doors and the trunk door can be operated smoothly and all the locks can be latched securely.
   (b) When the main lock is released, check if the engine hood auxiliary lock can prevent the engine hood from being opened.

General Interior Maintenance

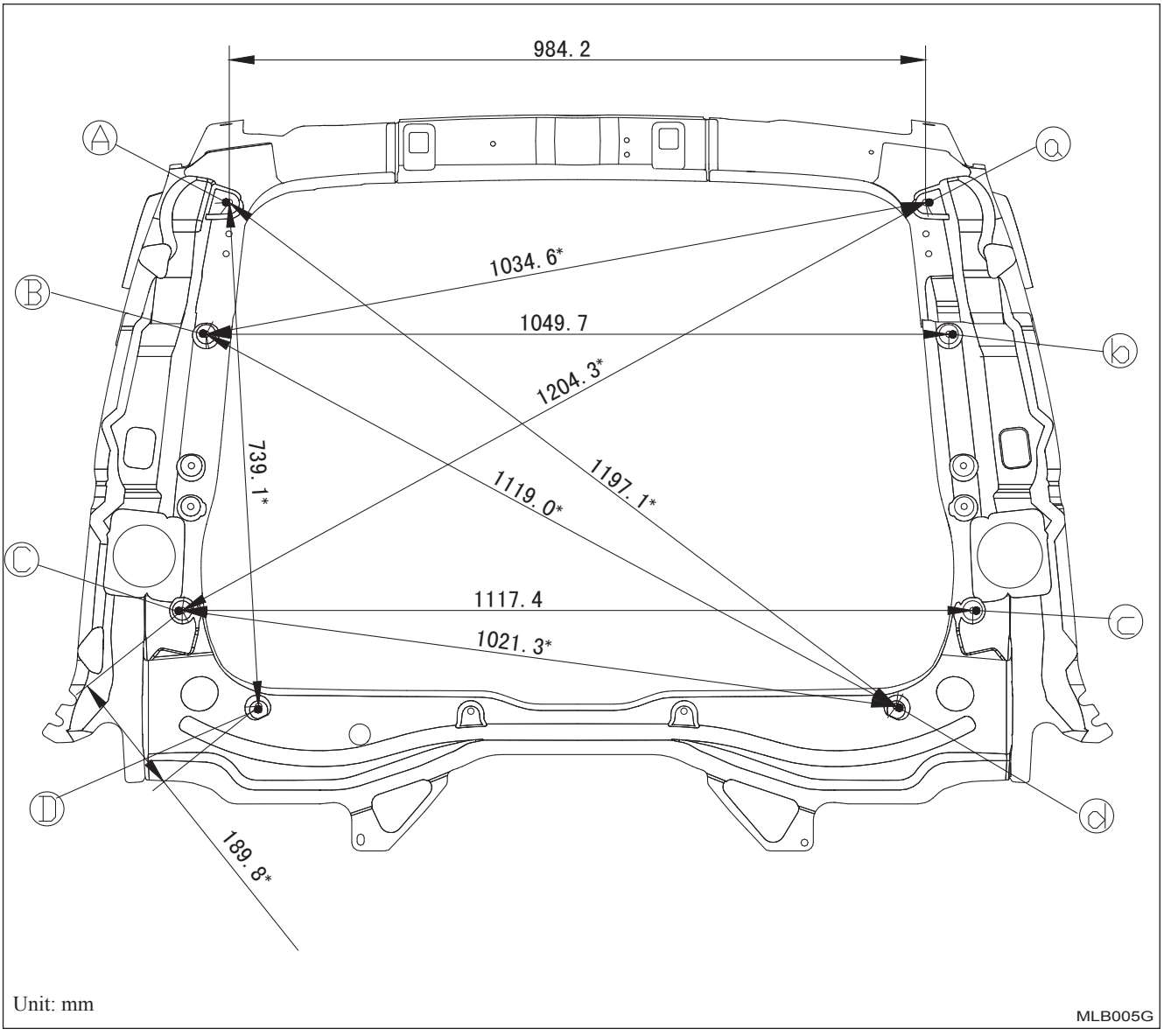
The owner is responsible for the maintenance and inspection of his/her own vehicle. The owner may maintain the vehicle by himself/herself or send the vehicle to an automotive maintenance center.

Carry out daily inspection on the following vehicle parts. In most cases, SST are not required.

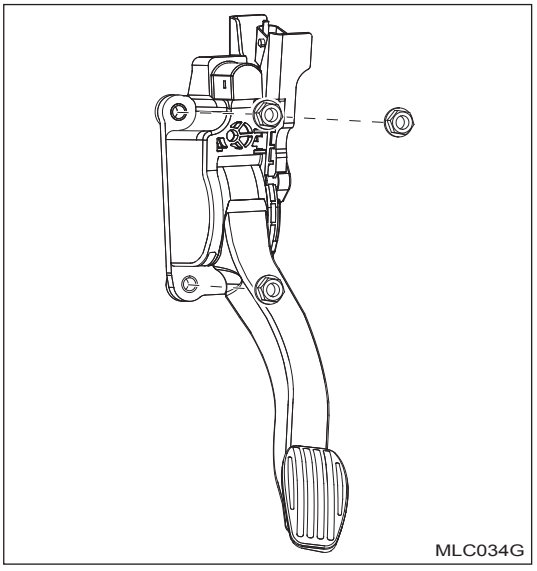
The general maintenance procedure is as follows:

1. General areas of importance
   (a) The maintenance requirements vary from country to country.
   (b) Check the Maintenance Schedule in the Owner's Manual Supplement.
   (c) This Maintenance Schedule must be followed.
   (d) Determine the proper vehicle maintenance time according to the travelled distance or elapsed time (months), whichever is earlier.
   (e) Unless otherwise stated, try to carry out maintenance periodically.
   (f) Failure to check the vehicle parts may lead to poor engine performance and increased exhaust emission.
2. Lamps

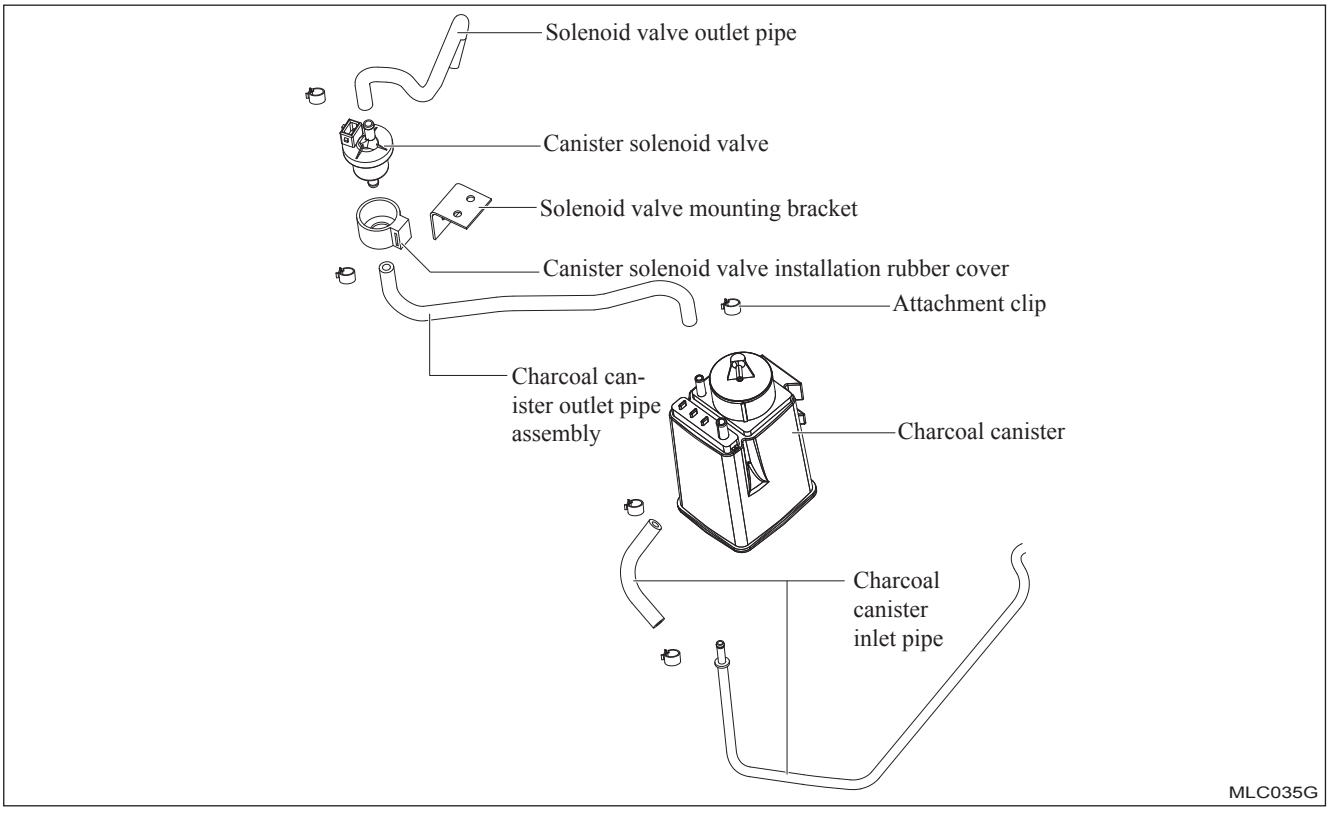
Trunk Door Frame



Mark	Axis (X, Y, Z)	Diameter (mm)	Mark	Axis (X, Y, Z)	Diameter (mm)
A	(2473.6, 492.1, 1094.2)	Φ9	C	(2589.0, 558.7, 517.4)	Φ9
B	(2511.5, 524.8, 907.9)	Φ9	D	(2666.5, 450.6, 382.0)	Φ9



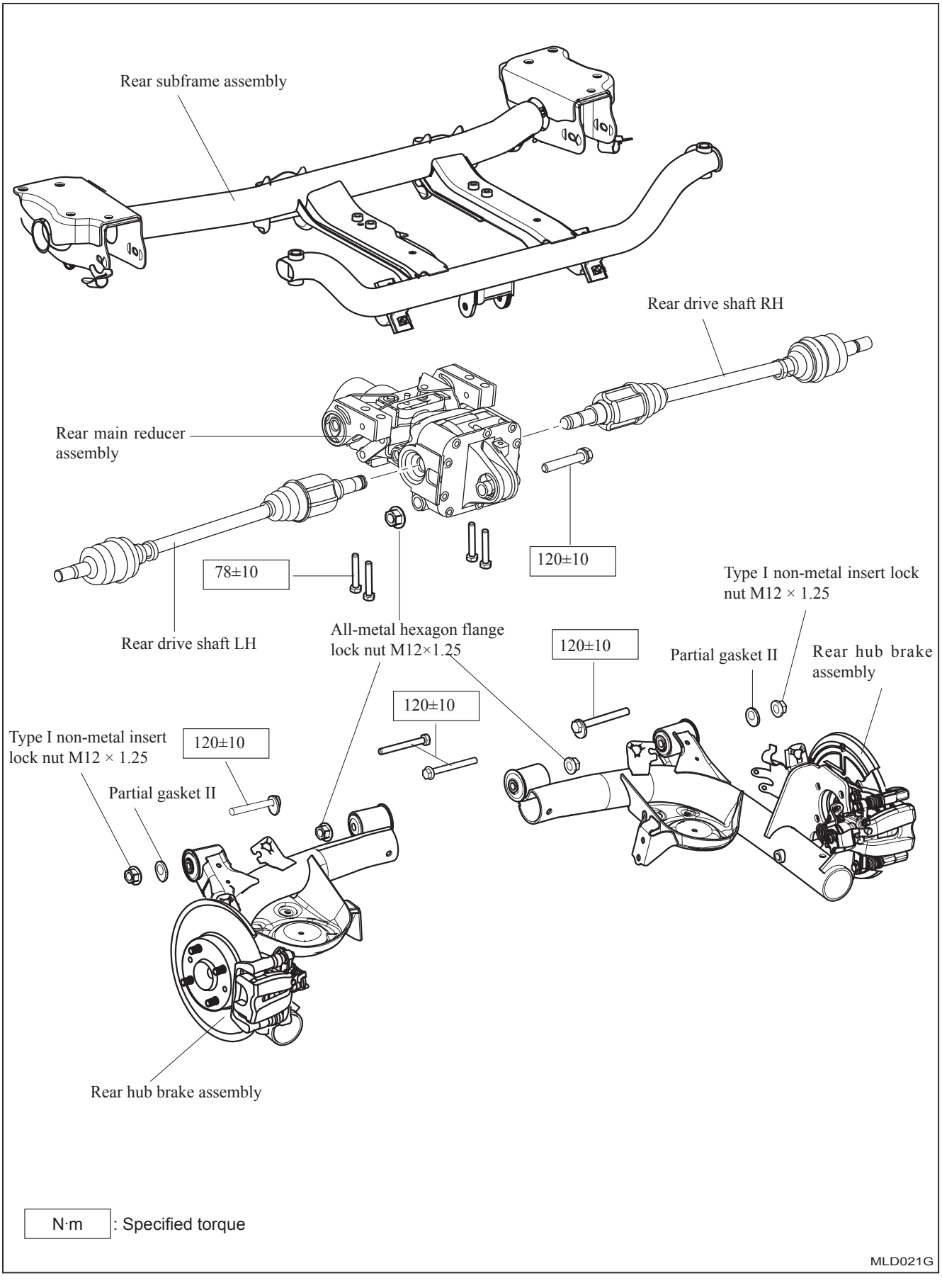
9. Electronic accelerator pedal removal.
   (a) Pull out the electronic wire harness connector.
   (b) Unscrew the three mounting nuts.

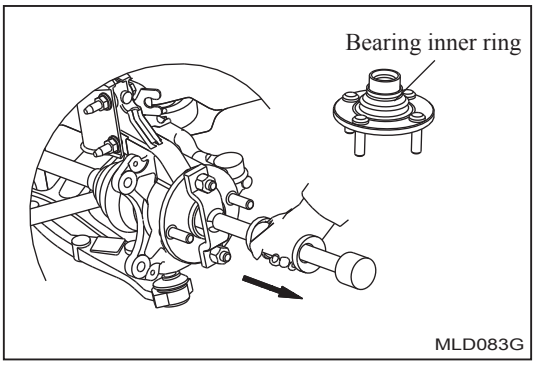


10. Fuel evaporation control system removal.
   (a) Remove the charcoal canister.
      (1) With pliers, remove the attachment clips connecting the two rubber pipes and pull out the charcoal canister outlet and inlet pipe.
      (2) Remove the charcoal canister from the dovetailed groove upward.
   (b) Remove the charcoal canister solenoid valve.
      (1) Detach the connector.
      (2) With pliers, remove the attachment clips connecting the charcoal canister solenoid valve and pull out the solenoid valve outlet and charcoal canister outlet pipe.
      (3) Take off the charcoal canister solenoid valve rubber cover from the bracket. Afterwards, remove the solenoid valve from its rubber sleeve.

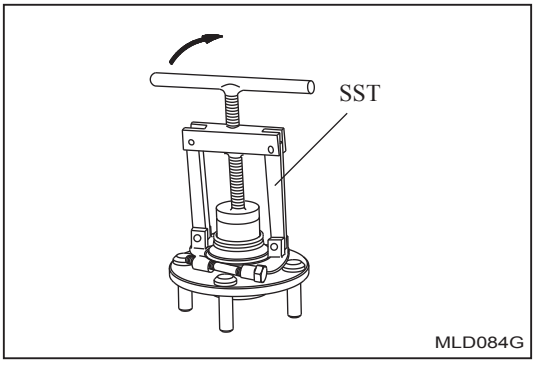
Rear Axle Assembly

Components

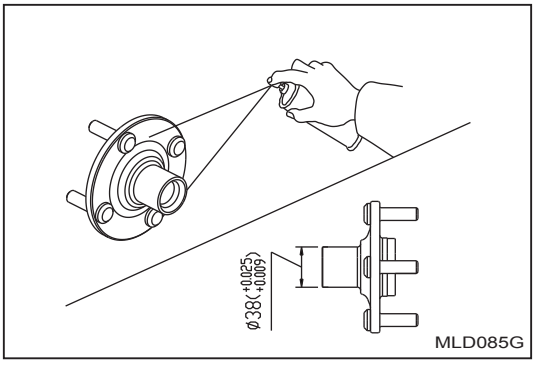




10. Remove and inspect the front hub flange assembly.
    (a) Use the SST like a hand-held travel hammer to repeatedly hammer off the front hub flange assembly from the steering knuckle and front hub bearing.

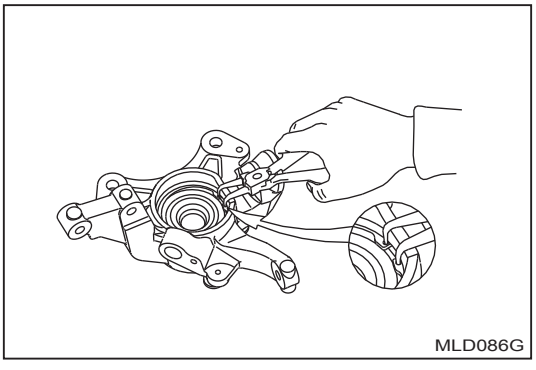


    (b) Remove the bearing inner ring on the front hub.

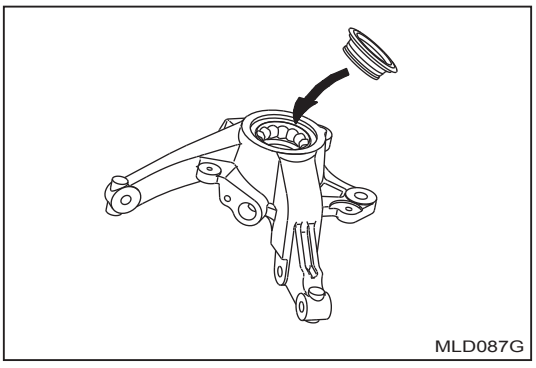


    Use the SST to remove the bearing inner ring.
    (c) Use dye penetrant to inspect the front hub flange for cracks, which should be replaced if found.
    (d) If one would like to continue using the front hub flange assembly, first inspect the dimensions for the mounting area of the bearing for inaccurate dimensions. If oversized, replace.

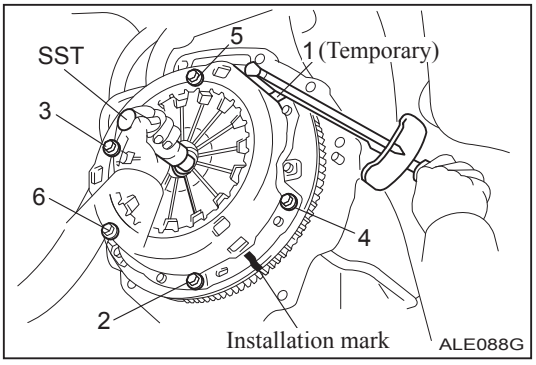
Dimensions: $\Phi 38\ ^{+0.025}_{+0.009}$ *mm*



11. Remove the steering knuckle's front hub bearing (Refer to the front mount assembly).
12. Remove the snap ring for hole 72.
    Use a bent nose retaining ring caliper for holes to remove the snap ring for hole 72.



13. Replace the removed bearing inner ring back to the bearing's original position.

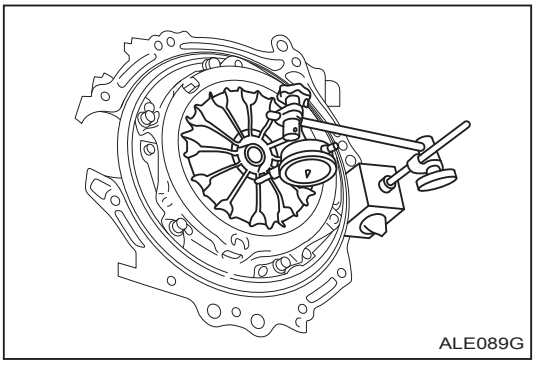


14. Install the clutch cover assembly.
    (a) Align the installation mark on the clutch cover assembly to the corresponding installation mark on the flywheel subassembly.
    (b) As shown in the figure, tighten the six bolts from the one near the top restrict pin.

    Torque: 19 N·m

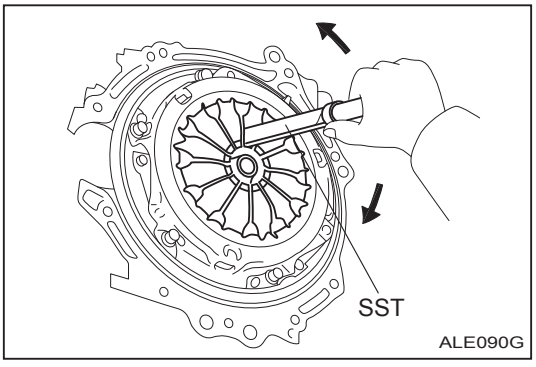
    Hint:

    Tighten the bolts gradually in the sequence shown in the figure. After examining and confirming that the driven disc is in the center, move the SST lightly to tighten the bolts.



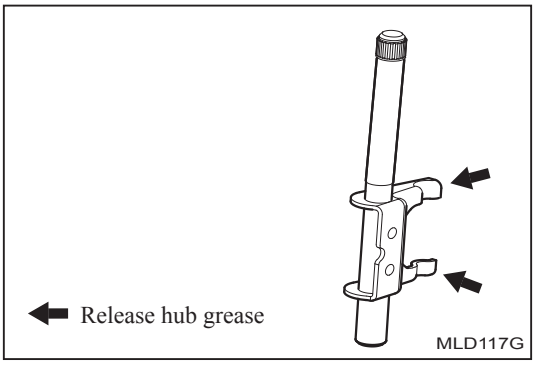
15. Check and adjust the clutch cover assembly.
    (a) Use a dial indicator with a roller to measure the top height gap of diaphragm spring.

    Maximum gap: 0.5 mm



    (b) If the gap is not in the specified range, adjust with the SST.
16. Install the release fork bracket.
    (a) Install the release fork bracket onto the propeller axle assembly.

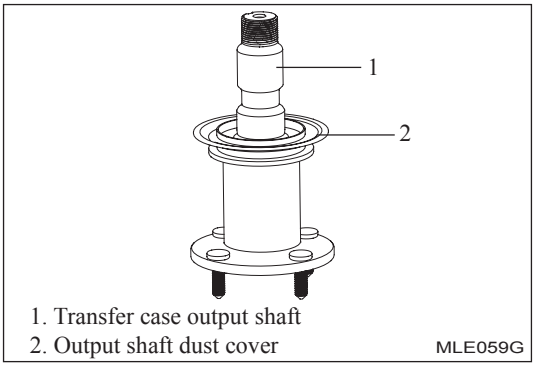
    Torque: 37 N·m
17. Install the clutch release fork dust cover.
18. Install the release bearing hub clamp spring.



19. Install the clutch release fork subassembly.
    (a) Coat release hub grease onto the contact surface of the release fork and release the bearing assembly, contact surface of release fork and push rod, and release fork point.
    (b) Install the release fork onto the release bearing assembly.
20. Install the clutch release bearing assembly.
    (a) Coat clutch spline grease onto the input shaft slpine.
    (b) Install the bearing on the release fork and then install them onto the propeller axle assembly.

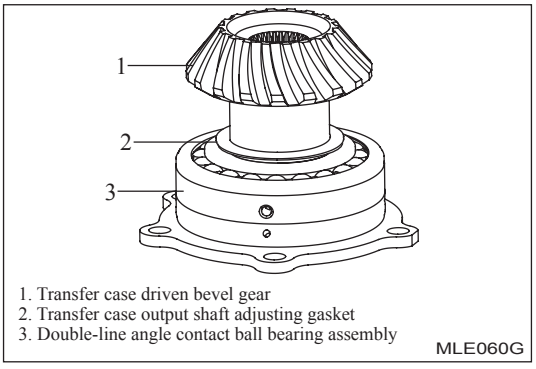
    Caution:

    After the installation, move the release fork back and forth to examine and confirm whether the clutch release bearing slides smoothly.
21. Install the propeller axle assembly.



1. Transfer case output shaft
2. Output shaft dust cover
MLE059G

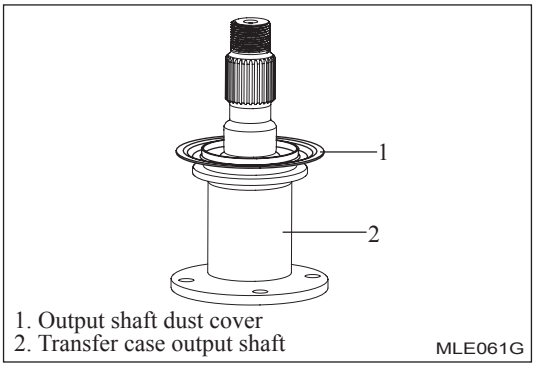
19. Remove the output shaft dust cover with SST.



1. Transfer case driven bevel gear
2. Transfer case output shaft adjusting gasket
3. Double-line angle contact ball bearing assembly
MLE060G

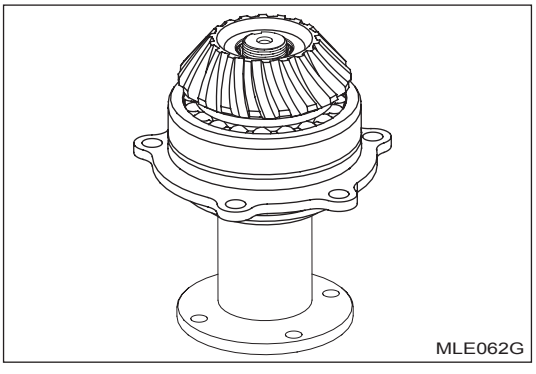
Transfer Case Installation

1. Install transfer case driven bevel gear.
   Put the selected transfer case output shaft adjusting gasket on the transfer case driven bevel gear, and then use the SST to press the top surface of transfer case driven bevel gear until it reaches the bottom.
   Caution: When pressing, apply force only to the inner ring of the double-line angle contact ball bearing assembly.

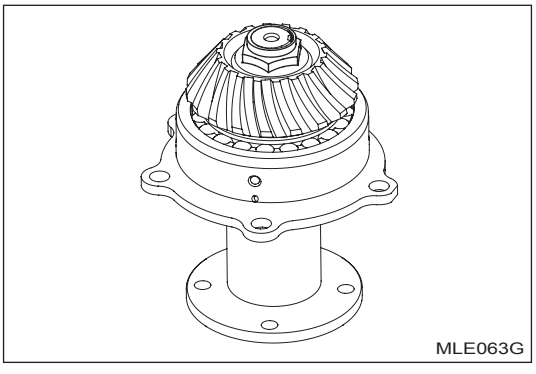


1. Output shaft dust cover
2. Transfer case output shaft
MLE061G

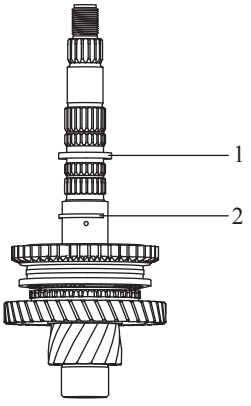
2. Output shaft dust cover.
   Place the transfer case output shaft on the work bench and then use the SST to press fit the output shaft dust cover until it reaches the bottom.


MLE062G

3. Press the installed driven bevel gear and double-line angle contact ball bearing assembly on the transfer case output shaft until it reaches the bottom.


MLE063G

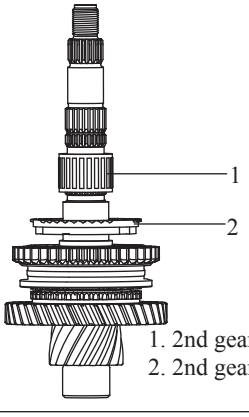
4. Tighten the output shaft lock nut.
   Insert two pins into the opposite holes below the output shaft and then attach to the vise and tighten output shaft lock nut with specified torque.
   Output shaft lock nut: 118±7.4 N·m



1. 2nd gear needle bearing gasket
2. 1st/2nd gear hub shaft retainer

MLE117G

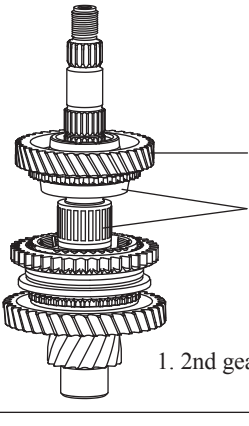
4. Use a clasp caliper to install the 1st/2nd gear hub shaft retainer and install the 2nd gear needle bearing spacer. The thickness of the shaft retainer has six specifications and the installation clearance should be smaller than 0.1 mm.



1. 2nd gear needle bearing
2. 2nd gear synchronizer ring

MLE118G

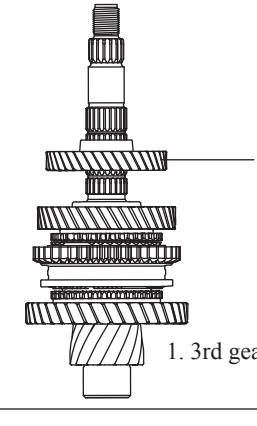
5. Install the 2nd gear synchronizer ring and 2nd gear needle bearing.



1. 2nd gear subassembly

MLE119G

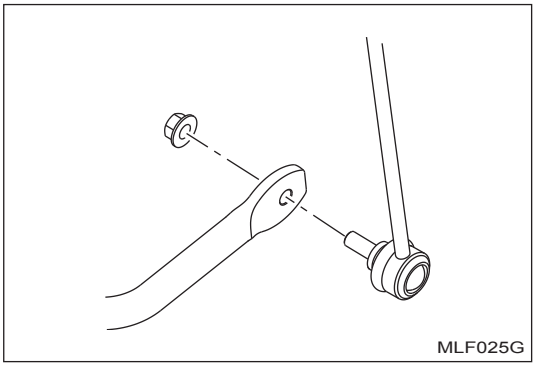
6. Install the 2nd gear subassembly. The slider should be blocked in the slot of the synchronizer ring.
Caution: Coat oil on the conical surface of gear and needle bearing before installing.



1. 3rd gear-driven gear

MLE120G

7. Use the SST to press fit the 3rd gear-driven gear.
Caution: Coat oil on the spline before installing.

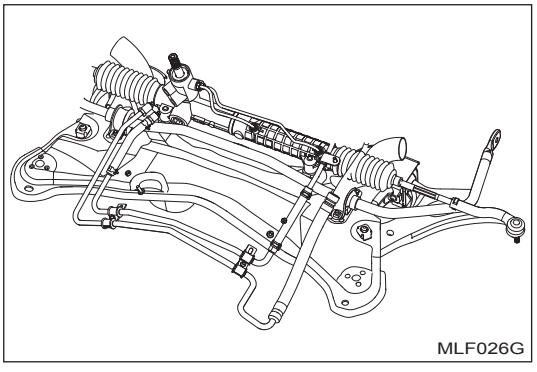


Subframe

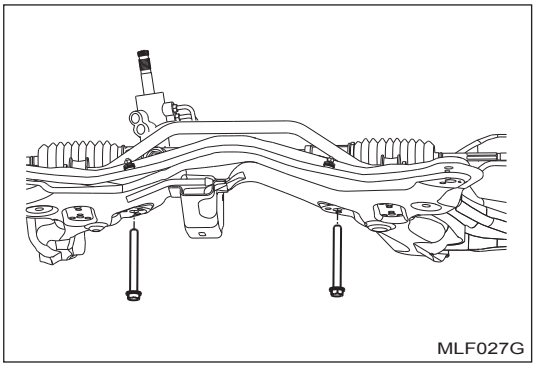
Removal

Hoist the vehicle with a jack, then remove the left and right front wheels.

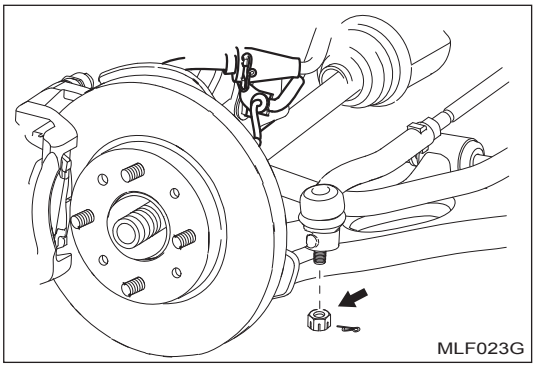
1. Remove the front stabilizer bar and connecting bar assembly.



2. Remove the steering pipeline.
   Firstly, remove the hexagon nut for flange face as shown in the figure with a No.10 wrench, then remove the conneting nut between the steering pipeline and the steering gear high and low pressure oil port with a No.17 wrench.



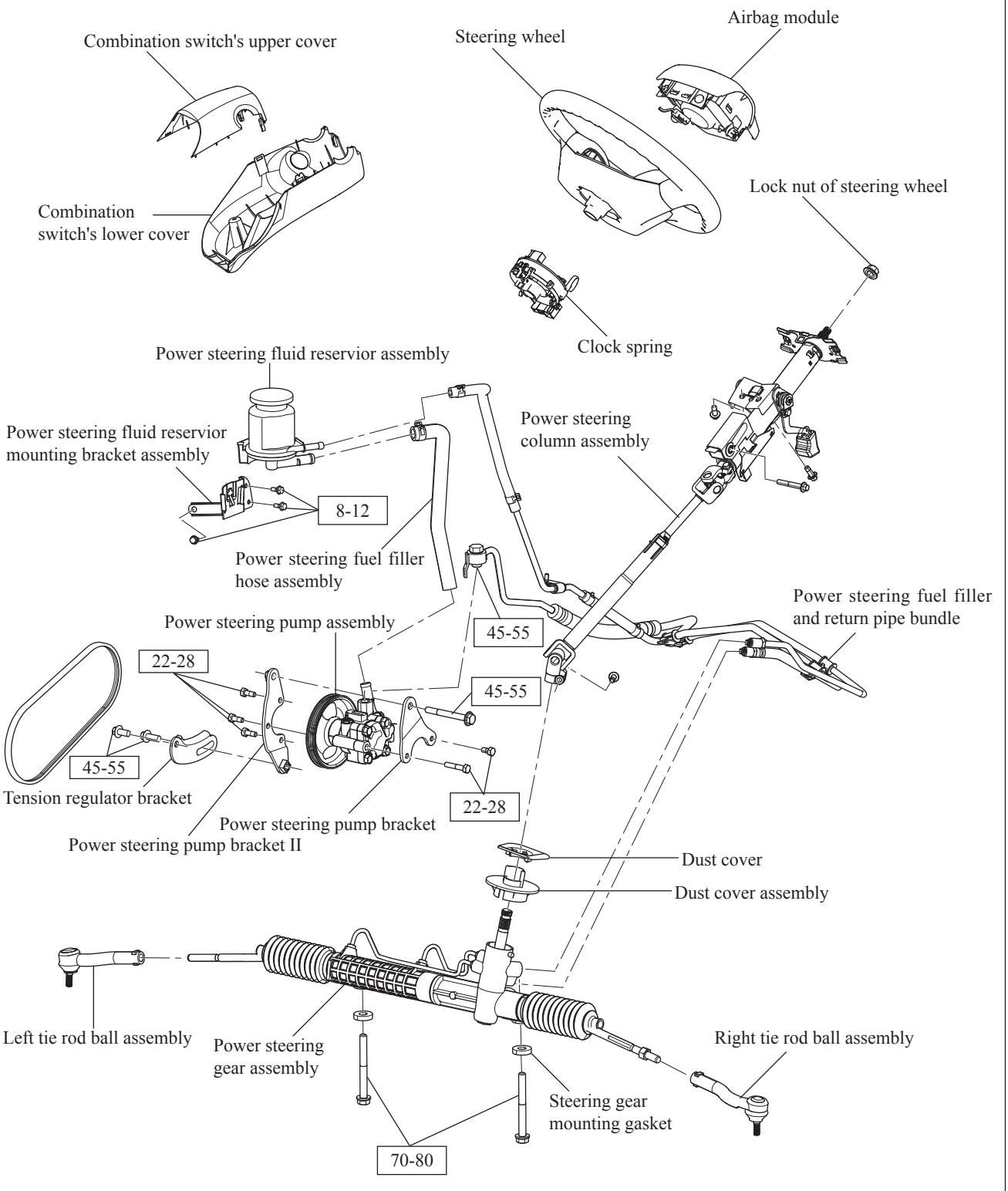
3. Remove the power steering gear assembly.
   Use the SST to remove the power steering gear.
4. Loosen the riveted areas of the drive shaft nut and remove the nut.
5. Remove the steering knuckle and hub brake assembly. Refer to removal and installation of the lower swing arm assembly.
6. Remove the mounting bolts at the engine's rear suspension. Refer to removal and installation of the engine's rear suspension.
   Caution: When removing the mounting bolts at the engine's rear suspension, support the transmission to avoid the engine from leaning back and pressing the vehicle body to damage some parts.



7. Remove the connecting nut between the steering ball stud and the steering knuckle.

Power Steering System

Components



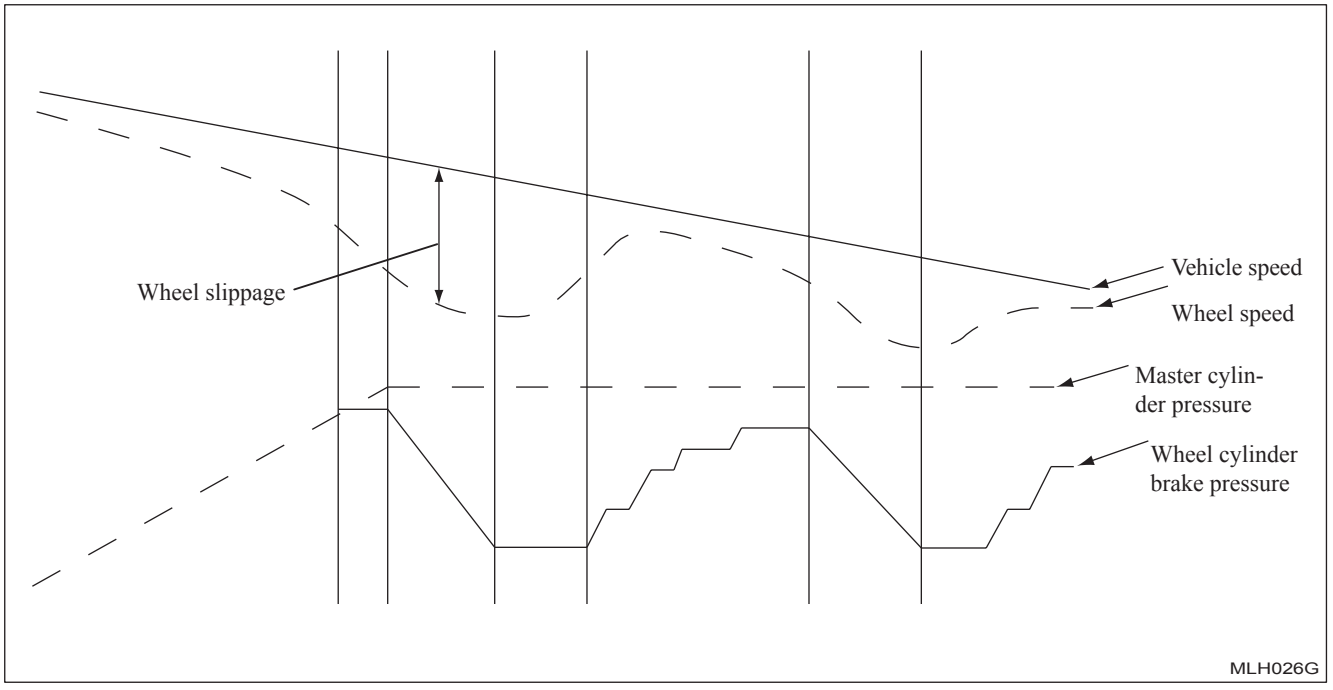
N·m : Specified torque

MLG002G

crease, the pressure maintaining phrase begins.

(e) Next cycle's pressure rising phase: When the wheels reach a certain speed, the ABS enters the pressure rising phase and starts the next cycle.

Note: The ABS's pressure adjusting frequency is generally 2 to 4 cycles per second.



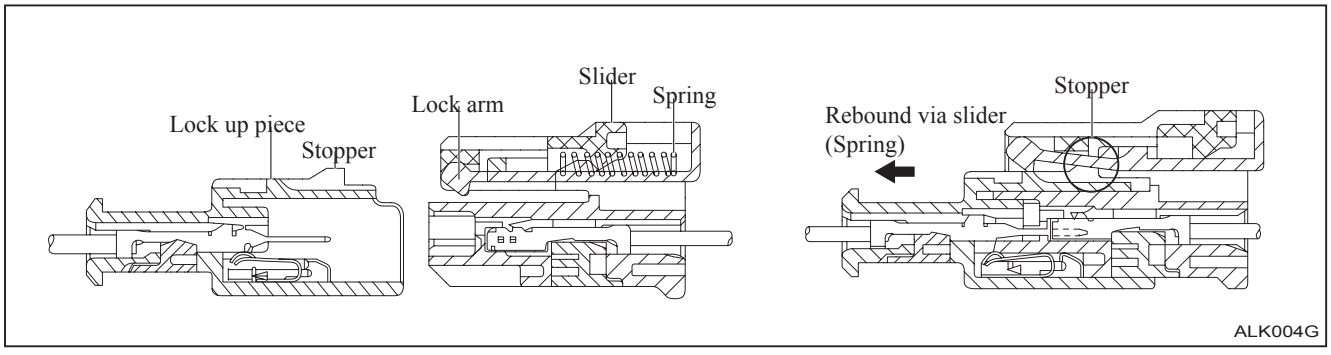
EBD Working Process

The EBD comes into effect when the wheel brakes are lightly applied. The wheel speed sensor detects the speed of the wheels, and the ECU calculates the speed. If the rear wheel's slip ratio increases, adjust the brake pressure to maintain or reduce the rear wheel's braking force. The EBD guarantees the rear wheel's lateral force and even brake force distribution. If the ABS fails to respond, the electronic brake distribution system can still adjust the rear wheel's braking force to guarantee the rear wheels do not lock before the front wheels, in order to ensure vehicle safety.

The EBD's working process for lifting and holding pressure is completely the same as that of the ABS working process. However, the process for lowering the pressure is quite different. When the rear wheel has a tendency to lock up, the normally open valve of the rear wheel closes, the normally closed valve opens, and the rear wheel pressure reduces. The difference with the ABS is that the hydraulic pump does not operate at this time, and the brake fluid released during depressurization is temporarily stored in the low pressure accumulator. After braking, the brake pedal is loosened, and the brake pressure inside the pump drops to zero. Open the normally closed valve one more time at this point. The brake fluid inside the low pressure accumulator returns to the pump by passing through the normally closed valve and normally open valve. Empty the low pressure accumulator to prepare for the next braking event.

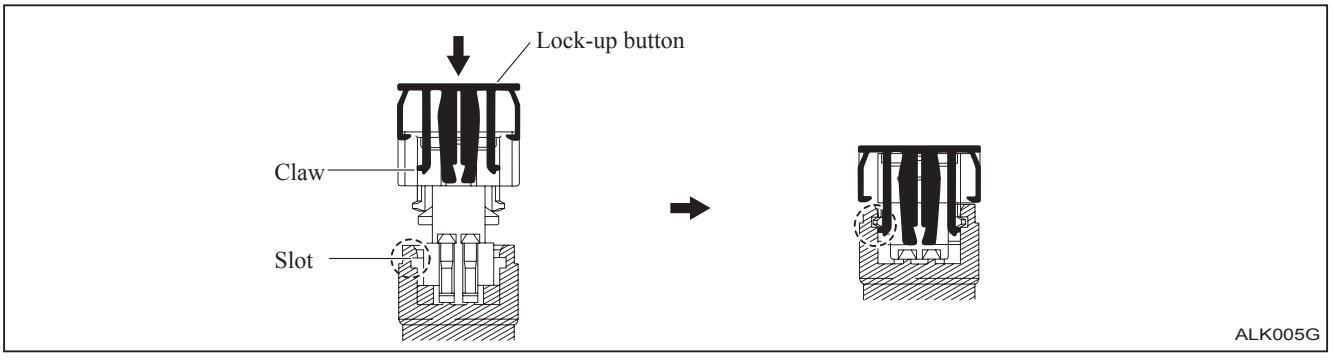
(c) Half connection prevention mechanism

If the connector is not fully connected, it will be disconnected due to the retractibility of the spring so the conduction is broken.



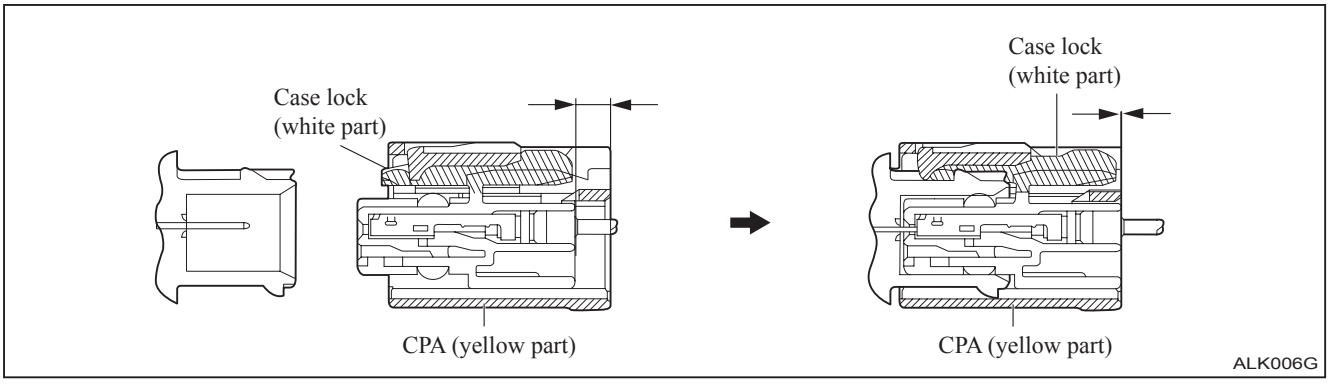
(d) Connector lock-up mechanism

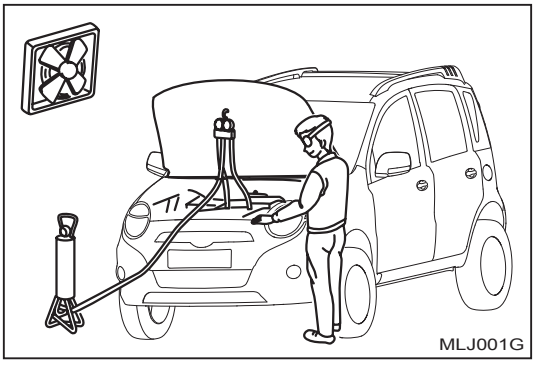
Lock the connector's lock-up button to firmly attach to the connector.



(e) Connector position determination mechanism:

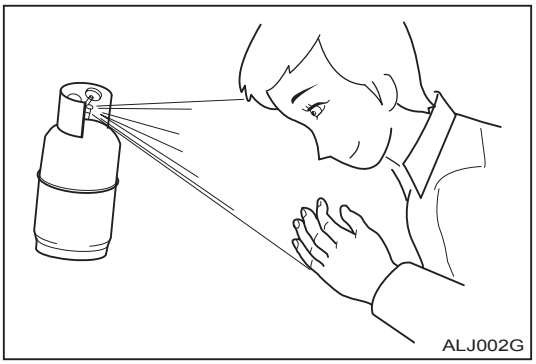
The CAP (yellow part) will slide only when the case lock (white part) is fully jointed, so as to complete the joint of the connector.





Areas of Importance

1. Do not handle the refrigerant in an enclosed area or close to an exposed flame.
2. Make sure to wear goggles.

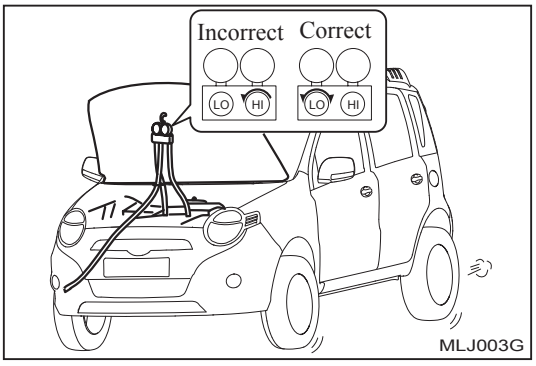


3. Pay close attention not to get liquid refrigerant in the eyes or on the skin.
   (a) If the liquid refrigerant splashed into the eyes or on the skin, rinse the eyes or skin immediately with large amounts of cool water.

   Caution:

   Do not rub the eyes or skin.

   (b) Apply petroleum jelly to the skin.
   (c) Go to the hospital to recive professional treatment immediately.
4. Never heat the refrigerant tank or keep close to an open flame.
5. The refrigerant tank must not be dropped and must be handled with care.



6. Do not operate the compressor in the event that there is not enough refrigerant in the refrigeration system.
   If there is not enough refrigerant in the refrigeration system, the engine oil may lack sufficient lubrication and the compressor may burn out. Please pay special attention so that this does not occur.
7. Never open the high pressure manifold valve during the operation of the compressor.
   If the high pressure valve is opened, the refrigerant will flow in the opposite direction and might break the charging cylinder. Therefore, only the low pressure valve is allowed to be opened and closed.
8. Make sure not to put too much refrigerant into the system.
   If filling with too much refrigerant, then insufficient cooling, poor fuel economy, and overheating of the engine might occur.