

Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2023 Nissan Titan Service and Repair Manual

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DANGER:

Since hybrid vehicles and electric vehicles contain a high voltage battery, there is the risk of electric shock, electric leakage, or similar accidents resulting in death or severe injury, if high voltage components and vehicle are mishandled. When performing an inspection or maintenance, be sure to comply with the instructions below to perform correct work procedures.

WARNING:

- Be sure to remove the service plug in order to disconnect the high voltage circuits before performing inspection or maintenance of high voltage system harnesses and parts.
- The removed service plug must always be carried in a pocket of the responsible worker or placed in the tool box during the procedure to prevent the plug from being connected by mistake.
- Be sure to wear insulated protective equipment before beginning work on the high voltage system.
- Never allow workers other than the responsible person to touch the vehicle containing high voltage parts. To keep others from touching the high voltage parts, these parts must be covered with an insulating sheet except when using them.

CAUTION:

- Be sure to install the high voltage harness clips to the original positions to prevent damage to high voltage harness. If the clips are damaged, replace them with new ones before installing the high voltage harness.
- To prevent damage to parts, never allow coolant to splash on the high voltage harness connector. If coolant splashes on the high voltage harness connector, immediately remove moisture from the high voltage harness connector by using an air blow gun.
- Never bring the vehicle into the READY status with the service plug removed unless otherwise instructed in the Service Manual. A malfunction may occur if this is not observed.

POINT TO BE CHECKED BEFORE STARTING MAINTENANCE WORK

The high voltage system may start automatically. It is required to check that the charge cable (including EVSE) is not connected to charge port before starting maintenance work.

**NOTE:**

If the timer air conditioner or timer charge is set when the EVSE is connected, the high voltage system starts automatically even when the power switch is in OFF state.

HIGH VOLTAGE HARNESS AND EQUIPMENT IDENTIFICATION

All the high voltage harnesses and connectors are orange. The Li-ion battery and other high voltage devices include an orange high voltage label. Never touch these harnesses and high voltage parts.

HANDLING OF HIGH VOLTAGE HARNESS AND TERMINALS

Immediately insulate disconnected high voltage connectors and terminals with insulating tape.

GUIDELINES ON WORKERS WITH MEDICAL ELECTRONICS

WARNING:

The vehicle contains parts that contain powerful magnets. If a person who is wearing a heart pacemaker or other medical device is close to these parts, the medical device may be affected by the magnets. Such persons must not perform work on

the vehicle.

PROHIBITED ITEMS TO CARRY DURING THE WORK

Hybrid vehicles and electric vehicles contain parts with high voltage and intense magnetic force. Never carry metal products and magnetic recording media (e.g. credit card, debit card) to repair/inspect high voltage parts. If this is not observed, the metal products may create a risk of short circuit and the magnetic recording media may lose their magnetic recording.

POST A SIGN OF “DANGER! HIGH VOLTAGE AREA. KEEP OUT”

Call the attention of other workers and indicate "High voltage work in progress." Do not touch vehicles where work is being performed on high voltage systems.

Sample

Person in charge: _____

**DANGER:
HIGH VOLTAGE
REPAIR IN PROGRESS.
DO NOT TOUCH!**

**DANGER:
HIGH VOLTAGE
REPAIR IN PROGRESS.
DO NOT TOUCH!**

Person in charge: _____

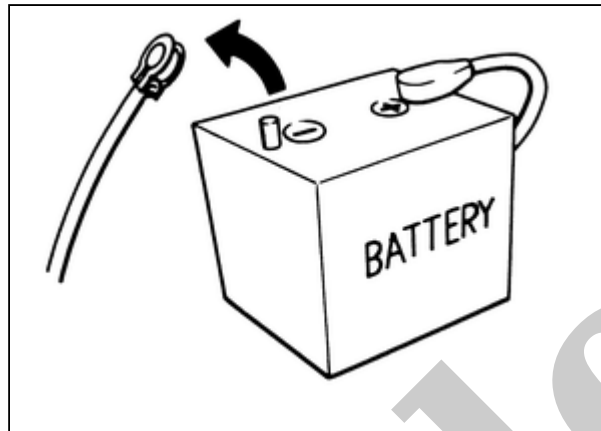
Copy this page and put it after folding on the roof of the vehicle in service.

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Precautions for removing battery terminal

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- With the adoption of Auto ACC function, ACC power is automatically supplied by operating the Intelligent Key or remote keyless entry or by opening/closing the driver side door. In addition, ACC power is supplied even after the ignition switch is turned to the OFF position, i.e. ACC power is supplied for a certain fixed time.
- When disconnecting the 12V battery terminal, turn off the ACC power before disconnecting the 12V battery terminal, observing “How to disconnect 12V battery terminal” described below.



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NOTE:

ECU may be active for several minutes after the power switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- Disconnect 12V battery terminal according to the following steps. Even when the power switch is OFF, the 12V battery automatic charge control may automatically start.

CAUTION:

Do not remove the battery during the update as the software update cannot be completed normally if the battery is removed during the software update.

WORK PROCEDURE

1. Open the hood (LHD models) or the back door (RHD models).
2. Check that charge cable (including EVSE) is not connected to the charge port.



NOTE:

If charge cable (including EVSE) is connected, the air conditioning system may be automatically activated by the timer A/C function.

3. Turn the power switch OFF → ON → press the power switch for at least 2 seconds to turn the high voltage system OFF, and then check that the charging status indicator is not illuminated.



NOTE:

When the high voltage system is turned ON, the charging status indicator blinks green with a frequency of 1 second.

4. Get out of the vehicle. Close all doors {except the hood (LHD models) or the back door (RHD models)}.
5. Check that the combination meter turns OFF and wait for 5 minutes or more.

CAUTION:

While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.



NOTE:

If the battery is removed within 5 minutes after the power switch is turned OFF, plural DTCs may be detected.

6. Check that the followings are not illuminated.

- Charging status indicator
- Electric parking brake warning lamp

7. Remove 12V battery terminal within 60 minutes after the power switch is turned OFF at Step 3.

CAUTION:

- **After all doors (including hood and back door) are closed, if a door (including hood and back door) is opened before battery terminals are disconnected, start over from Step 3.**
- **After turning the power switch OFF, if “Remote A/C” is activated by user operation, stop the air conditioner and start over from Step 3.**



NOTE:

Once the power switch is turned ON → OFF, the 12V battery automatic charge control does not start for approximately 1 hour.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the power switch.



NOTE:

If the power switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.



NOTE:

The removal of 12V battery may cause a DTC detection error.

GENERAL REFRIGERANT PRECAUTION

WARNING:

- Never breathe A/C refrigerant and lubricant vapor or mist. Exposure may irritate eyes, nose and throat. Remove HFO-1234yf (R-1234yf) from the A/C system, using certified service equipment meeting requirements of SAE J-2843 [HFO-1234yf (R-1234yf) Recovery/Recycling/Recharging Equipment for Flammable Refrigerants for Mobile Air Conditioning Systems] Ventilate work area before resuming service if accidental system discharge occurs. Additional health and safety information may be obtained from refrigerant and lubricant manufacturers.
- Never release refrigerant into the air. Use approved recovery/recycling recharging equipment to capture the refrigerant each time an air conditioning system is discharged.
- Wear always eye and hand protection (goggles and gloves) when working with any refrigerant or air conditioning system.
- Never place the refrigerant containers and recovery/recycling equipment in a place where the temperature exceeds 40°C (104°F).
- Never heat a refrigerant container with an open flame; Place the bottom of the container in a warm pail of water if container warming is required.
- Never intentionally drop, puncture, or incinerate refrigerant containers.
- Keep refrigerant away from open flames: poisonous gas is produced if refrigerant burns.
- Refrigerant displaces oxygen, therefore be certain to work in well ventilated areas to prevent suffocation.
- Never pressure test or leakage test HFO-1234yf (R-1234yf) service equipment and/or vehicle air conditioning systems with compressed air during repair. Some mixtures of air and HFO-1234yf (R-1234yf) have been shown to be combustible at elevated pressures. These mixtures, if ignited, may cause injury or property damage. Additional health and safety information may be obtained from refrigerant manufacturers.

WORKING WITH HFO-1234yf (R-1234yf)

CAUTION:

- CFC-12 (R-12) or HFC-134a (R-134a) refrigerant and HFO-1234yf (R-1234yf) refrigerant are not compatible. Compressor malfunction is likely to occur if the refrigerants are mixed, refer to “CONTAMINATED REFRIGERANT” below. To determine the purity of HFO-1234yf (R-1234yf) in the vehicle and recovery tank, use Refrigerant recovery/recycling recharging equipment and Refrigerant Identifier.
- Use only specified lubricant for the HFO-1234yf (R-1234yf) A/C system and HFO-1234yf (R-1234yf) components. If a compressor oil that does not meet the specifications is used, it will be worn and damaged due to poor lubrication, and the cooling and dehumidifying functions will be significantly reduced.
- The specified HFO-1234yf (R-1234yf) lubricant rapidly absorbs moisture from the atmosphere. The following handling precautions must be observed:
 1. Cap (seal) immediately the component to minimize the entry of moisture from the atmosphere when removing refrigerant components from a vehicle.
 2. Never remove the caps (unseal) until just before connecting the components when installing refrigerant components to a vehicle. Connect all refrigerant loop components as quickly as possible to minimize the entry of moisture into system.
 3. Use only the specified lubricant from a sealed container. Reseal immediately containers of lubricant. Lubricant becomes moisture saturated and should not be used without proper sealing.
 4. Never allow lubricant to come in contact with styrene foam parts. Damage may result.

CONTAMINATED REFRIGERANT

Take appropriate steps shown below if a refrigerant other than pure HFO-1234yf (R-1234yf) is identified in a vehicle:

- Explain to the customer that environmental regulations prohibit the release of contaminated refrigerant into the atmosphere.
- Explain that recovery of the contaminated refrigerant could damage service equipment and refrigerant supply.
- Suggest the customer return the vehicle to the location of previous service where the contamination may have occurred.
- In case of repairing, recover the refrigerant using only **dedicated equipment and containers. Never recover contaminated refrigerant into the existing service equipment.** Contact a local refrigerant product retailer for available service if the facility does not have dedicated recovery equipment. This refrigerant must be disposed of in accordance with all federal and local regulations. In addition, replacement of all refrigerant system components on the vehicle is recommended.
- The air conditioner warranty is void if the vehicle is within the warranty period. Please contact Nissan Customer Affairs for further assistance.

REFRIGERANT CONNECTION

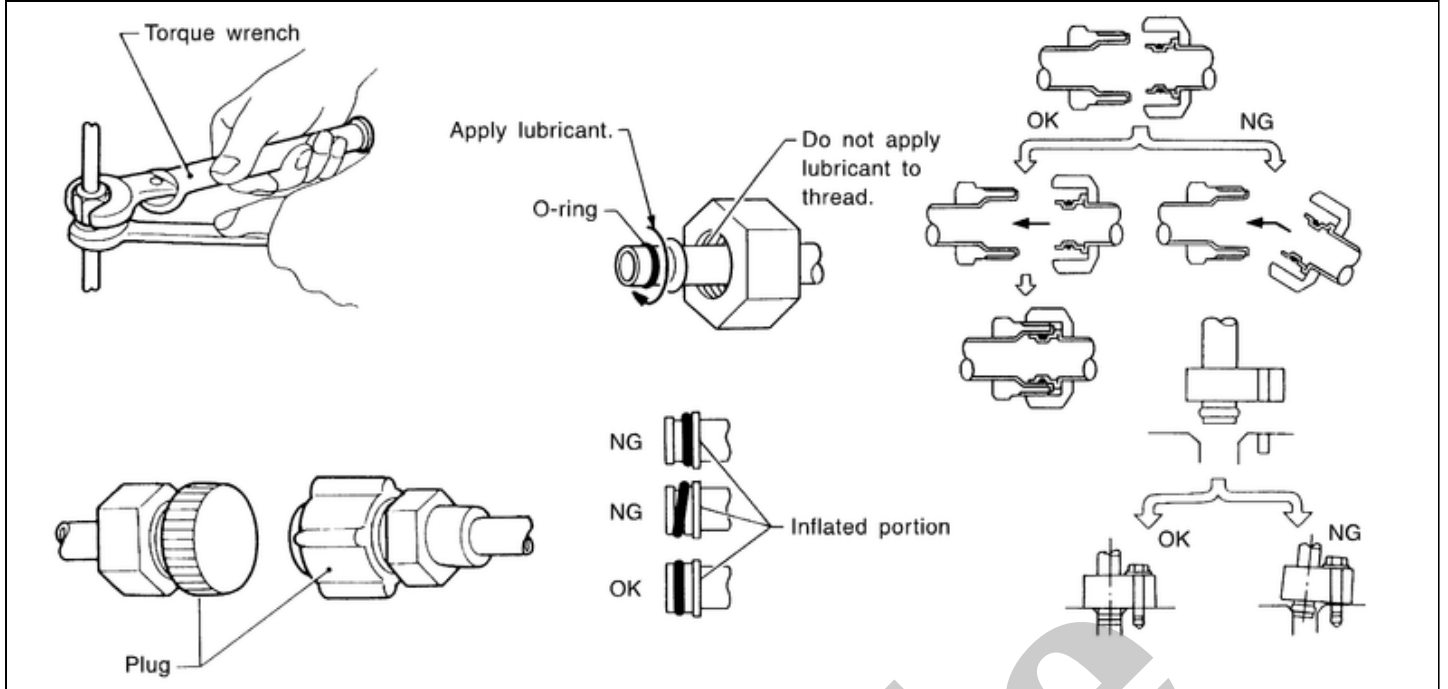
WARNING:

Check that all refrigerant is discharged into the recycling equipment and the pressure in the system is less than atmospheric pressure. Then gradually loosen the discharge side hose fitting and remove it.

CAUTION:

Observe the following when replacing or cleaning refrigerant cycle components.

- Store it in the same way at it is when mounted on the car when the compressor is removed. Failure to do so will cause lubricant to enter the low-pressure chamber.
- Use always a torque wrench and a back-up wrench when connecting tubes.
- Plug immediately all openings to prevent entry of dust and moisture after disconnecting tubes.
- Connect the pipes at the final stage of the operation when installing an air conditioner in the vehicle. Never remove the seal caps of pipes and other components until just before required for connection.
- Allow components stored in cool areas to warm to working area temperature before removing seal caps. This prevents condensation from forming inside A/C components.
- Remove thoroughly moisture from the refrigeration system before charging the refrigerant.
- Replace always used O-rings.
- Apply lubricant to circle of the O-rings shown in illustration when connecting tube. Be careful not to apply lubricant to threaded portion.
- O-ring must be closely attached to the groove portion of tube.
- Be careful not to damage O-ring and tube when replacing the O-ring.
- Connect tube until a click can be heard. Then tighten the nut or bolt by hand. Check that the O-ring is installed to tube correctly.
- Perform leakage test and make sure that there is no leakage from connections after connecting line. Disconnect that line and replace the O-ring when the refrigerant leaking point is found. Then tighten connections of seal seat to the specified torque.



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ELECTRIC COMPRESSOR

CAUTION:

- Plug all openings to prevent moisture and foreign matter from entering.
- When the electric compressor is removed, store it in the same position as it is when mounted on the car.
- Follow “MAINTENANCE OF LUBRICANT LEVEL” exactly when replacing or repairing compressor. Refer to [Description](#).
- After the electric compressor is installed, turn ignition switch (READY) and operate the electric compressor for more than two minutes.

REFRIGERANT LEAKAGE DETECTING FLOURESCENT INDICATOR

CAUTION:

- Never use fluorescent indicators as these may reduce the insulation resistance.
- If a fluorescent indicator enters the refrigerant cycle, either wash the refrigerant cycle parts or replace the parts.

A/C IDENTIFICATION LABEL

Vehicles with factory installed A/C systems have this identification label on the underside of hood.

RECOVERY/RECYCLING RECHARGING EQUIPMENT

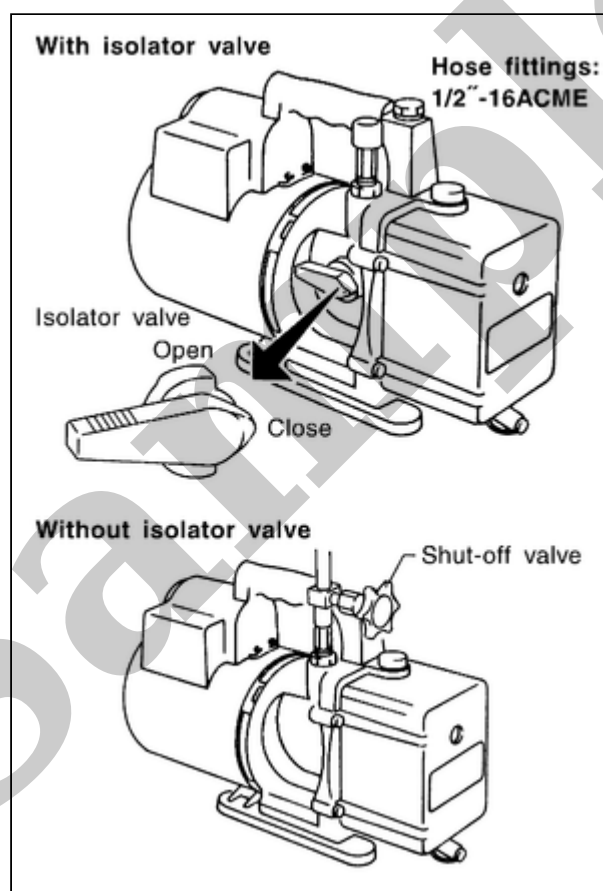
Be certain to follow the manufacturer's instructions for machine operation and machine maintenance. Never introduce any refrigerant other than that specified into the machine.

ELECTRICAL LEAK DETECTOR

Be certain to follow the manufacturer's instructions for tester operation and tester maintenance.

VACUUM PUMP

The lubricant contained inside the vacuum pump is not compatible with the specified lubricant for HFO-1234yf (R-1234yf) A/C systems. The vent side of the vacuum pump is exposed to atmospheric pressure. So the vacuum pump lubricant may migrate out of the pump into the service hose. This is possible when the pump is switched OFF after evacuation (vacuuming) and hose is connected to it.



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To prevent this migration, use a manual valve placed near the hose-to-pump connection, as per the following.

- Vacuum pumps usually have a manual isolator valve as part of the pump. Close this valve to isolate the service hose from the pump.
- Use a hose equipped with a manual shut-off valve near the pump end for pumps without an isolator. Close the valve to isolate the hose from the pump.
- Disconnect the hose from the pump if the hose has an automatic shut-off valve. As long as the hose is connected, the valve is open and lubricating oil may migrate.

Some one-way valves open when vacuum is applied and close under no vacuum condition. Such valves may restrict the pump's ability to pull a deep vacuum and are not recommended.

MANIFOLD GAUGE SET
