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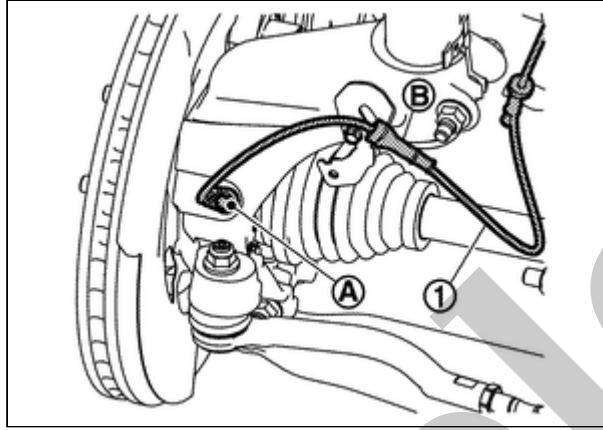
FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2003 NISSAN Almera Tino OEM Service and Repair Workshop Manual

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REMOVAL

- 1 Remove tires. Refer to [Removal and Installation](#).
- 2 Remove fender protector (front). Refer to [Removal and Installation](#).
- 3 Remove front wheel sensor harness connector.
- 4 Remove front wheel sensor mounting bolt (A) and grommet (B), and then remove front wheel sensor (1) from steering knuckle.

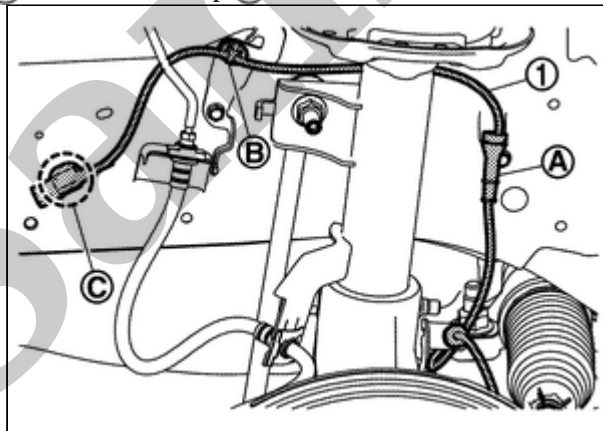


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CAUTION:

Never rotate and pull front wheel sensor as much as possible, when taking it out.

- 5 Remove grommet (A), harness clip (B) and connector clip (C), and then remove front wheel sensor (1) from vehicle.



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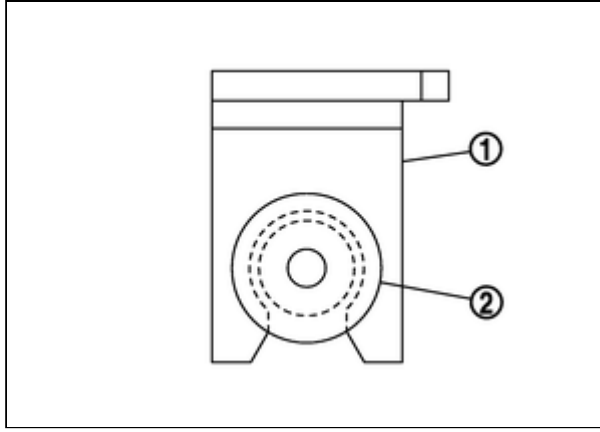
CAUTION:

Never twist or pull front wheel sensor harness, when removing.

INSTALLATION

Note the following, and install in the reverse order of removal.

- Check inner surface of front wheel sensor mounting hole and sensor rotor for foreign material like iron powder or damage. Install after cleaning, if there are foreign material like iron powder, or replace, if there is a malfunction.
- When front wheel sensor is installed by securely pushing its grommet (2) into bracket (1), but never twist front wheel sensor harness. Check that grommet is fully inserted to bracket . Check front wheel sensor harness for twisting after installation.



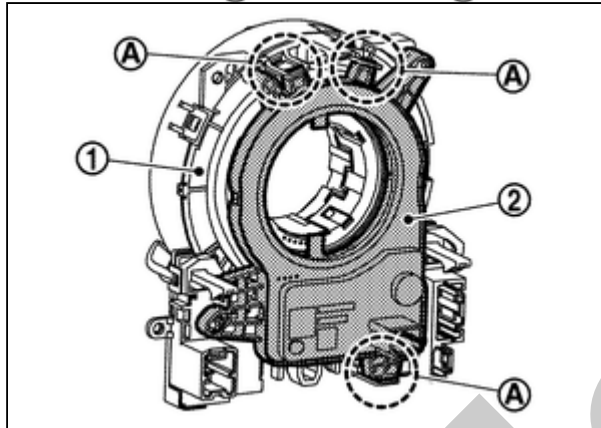
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Sample

REMOVAL

1 Remove spiral cable assembly. Refer to [Removal & Installation](#).

2 Unlock claws **A** and then remove steering angle sensor **2** from spiral cable **1**.



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INSTALLATION

Note the following, and install in the reverse order of removal.

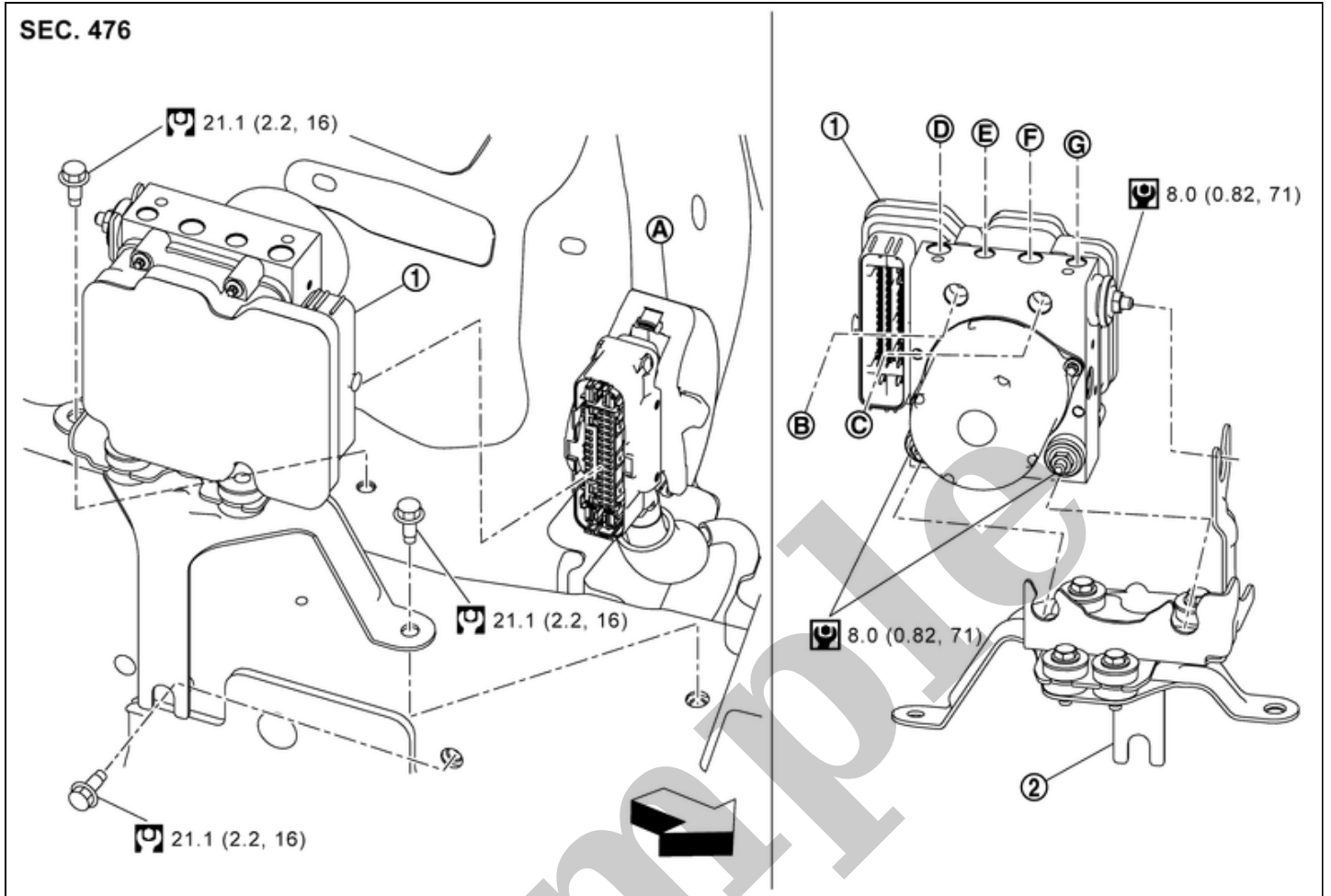
CAUTION:

- Perform additional service when replacing, removing or installing steering angle sensor. Refer to [Work Procedure](#).
- Perform steering angle sensor neutral position adjustment when steering angle sensor is removed and installed, or replaced. Refer to [Work Procedure](#).

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) : Exploded View

RDE-001824924

SEC. 476

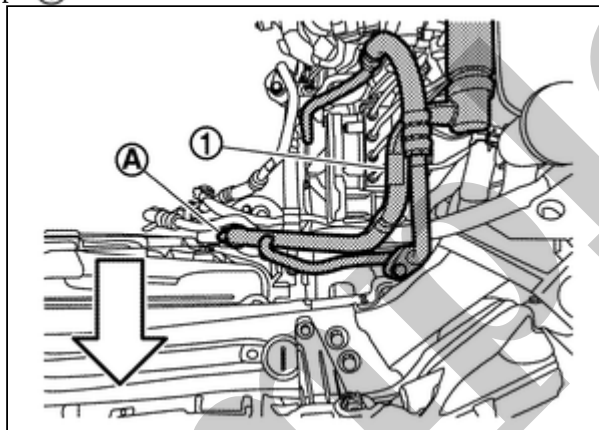


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①	ABS actuator and electric unit (control unit)	②	Bracket		
Ⓐ	ABS actuator and electric unit (control unit) harness connector	Ⓑ	To master cylinder secondary side. Refer to Exploded View .	Ⓒ	To master cylinder primary side. Refer to Exploded View .
Ⓓ	To rear RH caliper. Refer to Exploded View .	Ⓔ	To front LH caliper. Refer to Exploded View .	Ⓕ	To front RH caliper. Refer to Exploded View .
Ⓖ	To rear LH caliper. Refer to Exploded View .				
←	: Vehicle front				
Ⓞ	: N·m (kg-m, ft-lb)				
Ⓟ	: N·m (kg-m, in-lb)				

REMOVAL

- 1 Disconnect 12V battery negative terminal. Refer to [Removal and Installation](#).
- 2 Drain brake fluid. Refer to [Draining](#).
- 3 Discharge A/C refrigerant gas. Refer to [Refrigerant](#).
- 4 Drain coolant for high voltage system. Refer to [Draining](#)
- 5 Remove high voltage supply unit assembly.
- 6 Remove reservoir tank for sub radiator. Refer to [Removal and Installation](#).
- 7 Remove mounting bolt (A) of A/C pipe (1).

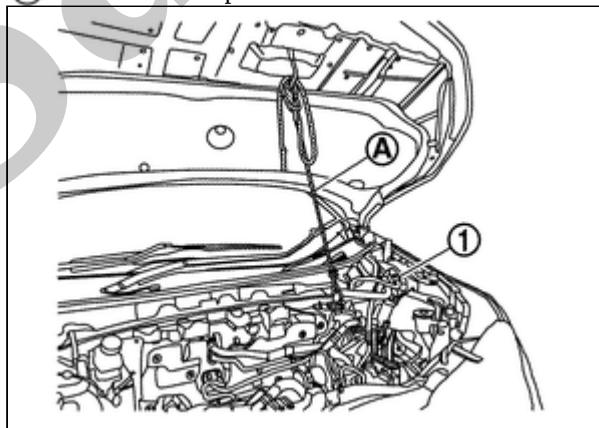


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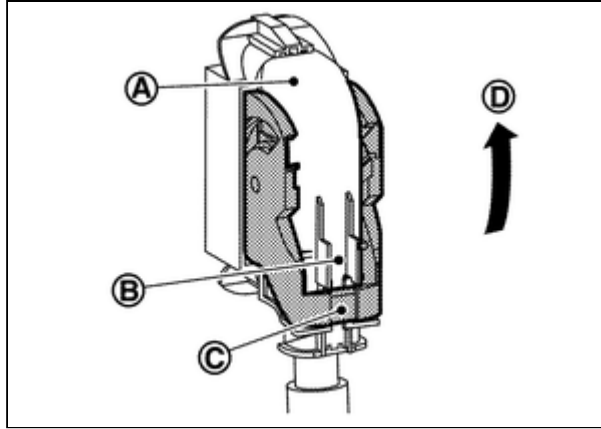
: Vehicle front

- 8 Hold A/C pipe (1) with suitable rope (A) to secure work space.



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- 9 Remove ABS actuator and electric unit (control unit) harness connector (A) according to the following procedure.



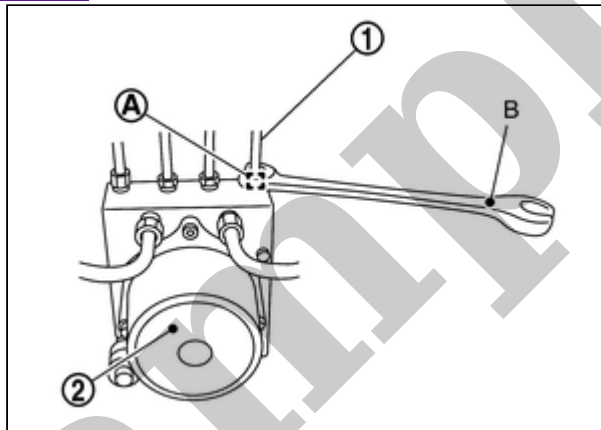
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a Push claw **(B)**.

b Move lever **(C)** in the **(D)** direction until locked.

c Disconnect ABS actuator and electric unit (control unit) harness connector.

10 Loosen flare nut **(A)** of brake tube **(1)** using a flare nut wrench (B) and then remove brake tube from ABS actuator and electric unit (control unit) **(2)**. Refer to [Exploded View](#).



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11 Remove ABS actuator and electric unit (control unit) and bracket.

CAUTION:

- Never remove and never install ABS actuator and electric unit (control unit) by holding harness connector.
- Be careful not to drop ABS actuator and electric unit (control unit) and apply excessive impact to it.

12 Remove bracket and grommet from ABS actuator and electric unit (control unit).

INSTALLATION

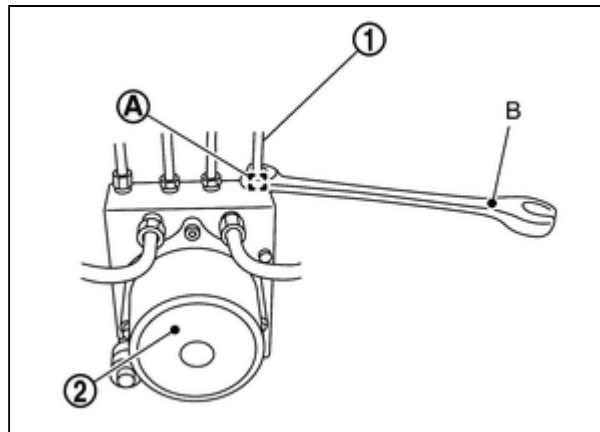
CAUTION:

- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it off immediately and wash with water if it gets on a painted surface. For brake component parts, never wash them with water.
- Never depress brake pedal during removal and installation of brake hose because brake fluid may scatter.

Note the following, and install in the reverse order of removal.

- When replacing with a new ABS actuator and electric unit (control unit), do not remove protector of the brake tube inlet hole until just before installing brake tube.
- Never deform brake tube when installing ABS actuator and electric unit (control unit).

- Temporarily tighten flare nut (A) of brake tube (1) by hand, and then using a flare nut wrench (B) tighten flare nut to the specified torque without damaging brake tube and flare nut. Refer to [Exploded View](#).

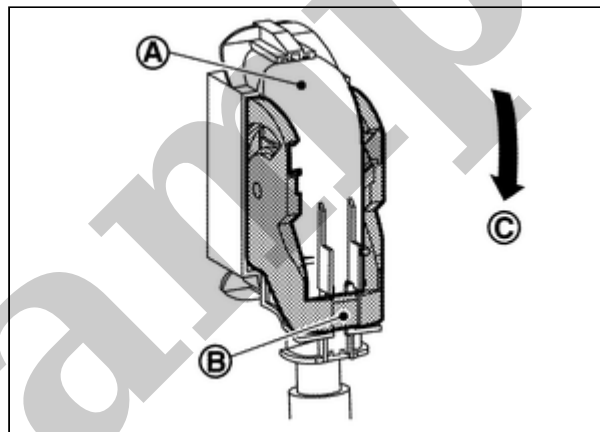


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②

: ABS actuator and electric unit (control unit)

- Never remove and install actuator by holding actuator harness.
- Never apply excessive impact to actuator, such as by dropping it.
- After installing ABS actuator and electric unit (control unit) harness connector (A), move lever (B) in the direction (C) and securely lock.



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CAUTION:

When replacing ABS actuator and electric unit (control unit), connect 12V battery negative terminal just before performing configuration.

- Make adjustments after installation. Refer to [Adjustment](#).

ADJUSTMENT AFTER INSTALLATION

- When ABS actuator and electric unit (control unit) are replaced, perform the following procedure.
 - Procedure of ABS actuator and electric unit (control unit): Refer to [Work Procedure](#).
 - Brake piping air bleeding: Refer to [Air Bleeding](#).
- When ABS actuator and electric unit (control unit) are removed and installed, perform the following procedure.
 - G sensor calibration: Refer to [Work Procedure](#).
 - Brake piping air bleeding: Refer to [Air Bleeding](#).

Sample

DTC	Display item	VDC warning lamp	ABS warning lamp	Brake warning lamp	Brake system warning lamp	Refer to
C1040-63	Emergency brake	OFF	OFF	OFF	OFF	DTC Description
C1040-64	Emergency brake	OFF	OFF	OFF	OFF	DTC Description
C1040-92	Emergency brake	OFF	OFF	OFF	OFF	DTC Description
C1041-55	Configuration	OFF	ON	OFF	OFF	DTC Description
C1042-04	Cut valve 1	ON	ON	ON	ON	DTC Description
C1043-04	Cut valve 2	ON	ON	ON	ON	DTC Description
C1046-04	Suction valve 1	ON	ON	ON	ON	DTC Description
C1047-04	Suction valve 2	ON	ON	ON	ON	DTC Description
C1048-04	Valve relay	ON	ON	ON	ON	DTC Description
C1048-11	Valve relay	ON	ON	ON	ON	DTC Description
C1048-92	Valve relay	ON	ON	ON	ON	DTC Description
C1049-04	Front left ABS IN valve	ON	ON	ON	ON	DTC Description
C104A-04	Front left ABS OUT valve	ON	ON	ON	ON	DTC Description
C104B-04	Front right ABS IN valve	ON	ON	ON	ON	DTC Description
C104C-04	Front right ABS OUT valve	ON	ON	ON	ON	DTC Description
C104D-04	Rear left ABS IN valve	ON	ON	ON	ON	DTC Description
C104E-04	Rear left ABS OUT valve	ON	ON	ON	ON	DTC Description
C104F-04	Rear right ABS IN valve	ON	ON	ON	ON	DTC Description
C1050-04	Rear right ABS OUT valve	ON	ON	ON	ON	DTC Description
C1051-04	Pump motor	ON	ON	ON	OFF	DTC Description
C1051-13	Pump motor	ON	ON	ON	ON	DTC Description
C1051-1C	Pump motor	ON	ON	ON	ON	DTC Description
C1055-49	CAN system	ON	ON	OFF	ON	DTC Description