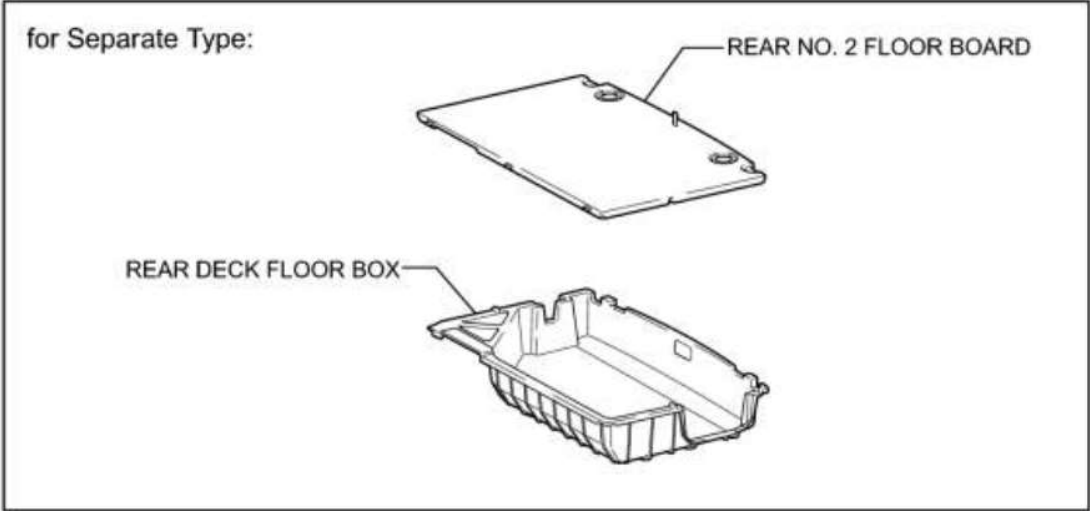
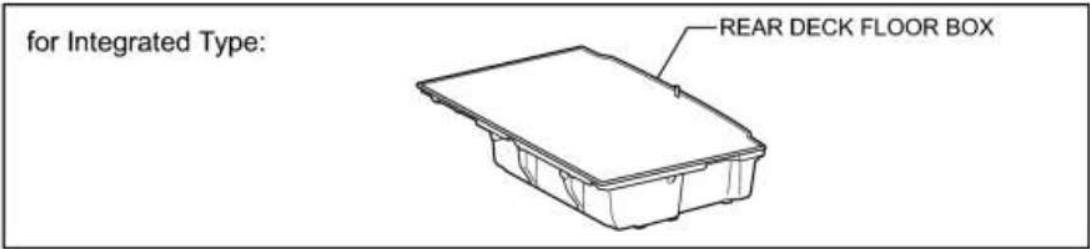


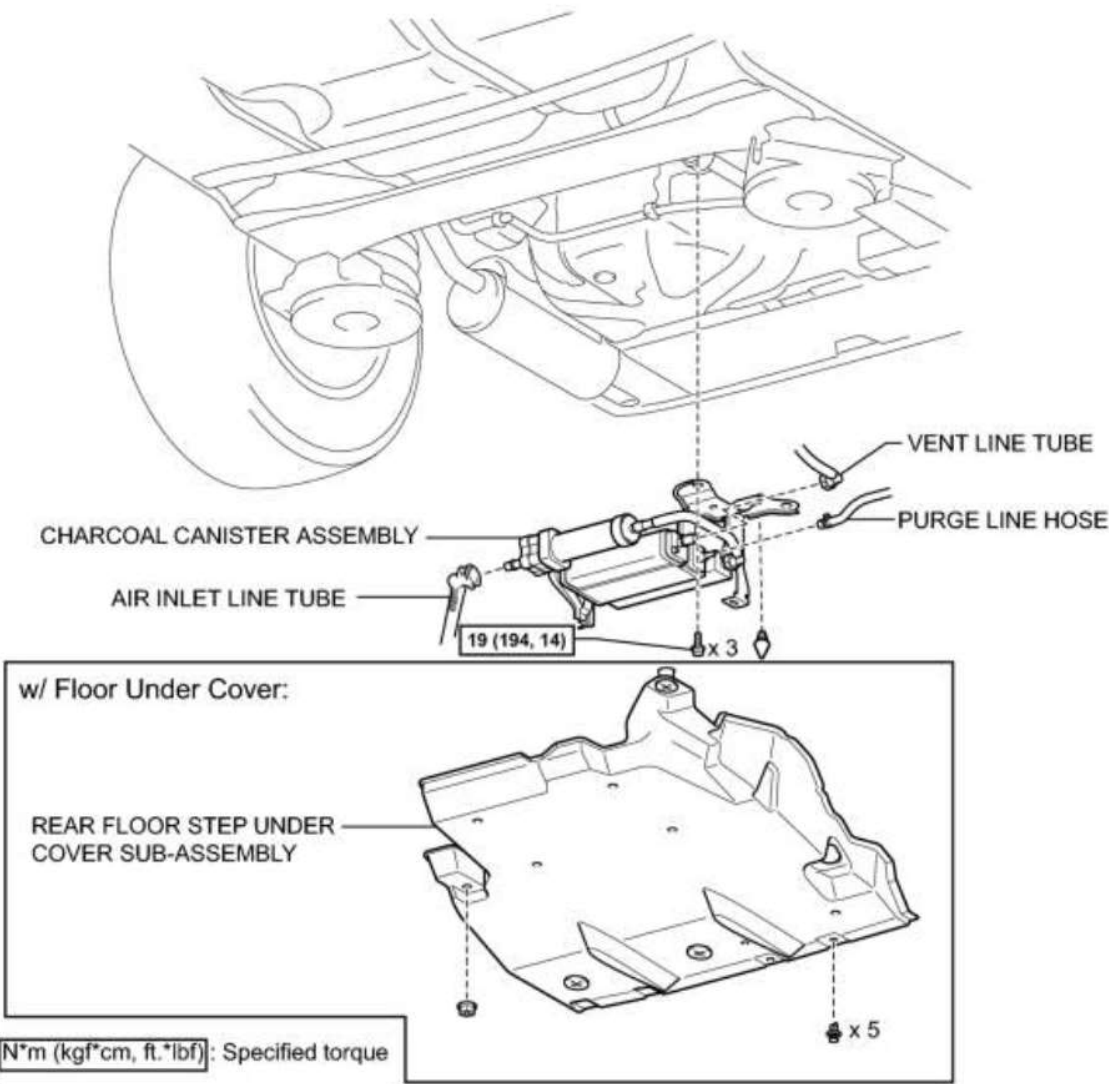
COMPONENTS

ILLUSTRATION



P

ILLUSTRATION



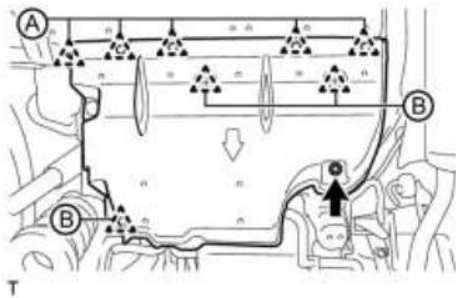
REMOVAL

1. REMOVE REAR NO. 2 FLOOR BOARD (for Separate Type) INFO
2. REMOVE REAR DECK FLOOR BOX INFO
3. REMOVE REAR NO. 3 FLOOR BOARD INFO
4. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO.

5. REMOVE REAR FLOOR STEP UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)



(a) Remove the 5 clips (A) and nut.

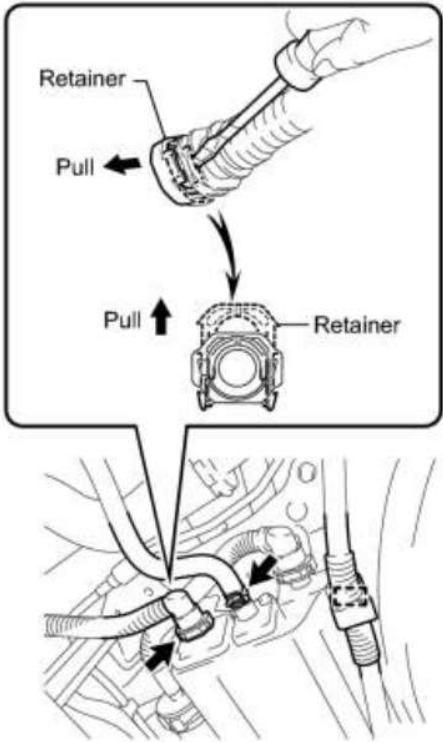
(b) Disconnect the 3 clips (B) and remove the rear floor step under cover sub-assembly.

6. REMOVE CHARCOAL CANISTER ASSEMBLY

(a) Using a screwdriver, pry up the retainer.

HINT:

Do not remove the retainer.

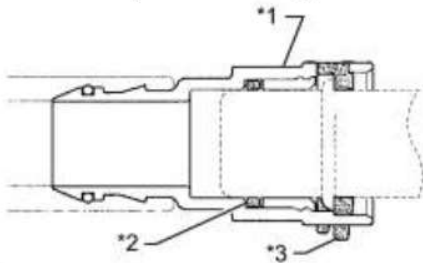


P

(b) Disconnect the tube clamp, purge line hose and vent line tube.

NOTICE:

- Remove any dirt or foreign matter on the vent line tube connector before performing this work.

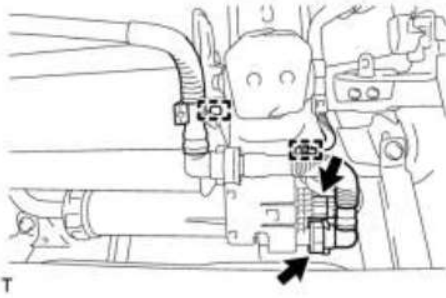


P

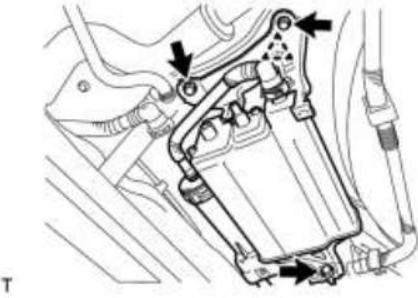
Text in Illustration

*1	Vent Line Tube Connector
*2	O-ring
*3	Retainer

- Do not allow any scratches or foreign matter on the parts when disconnecting them as the vent line tube connector has an O-ring that seals the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.
- Protect the disconnected part by covering it with a plastic bag after disconnecting the vent line tube.
- If the vent line tube connector and pipe are stuck, push and pull to release them.



(c) Disconnect the tube clamp, wire harness clamp and connector air inlet line tube.

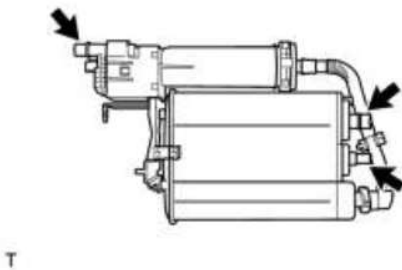


(d) Remove the 3 bolts, clip and charcoal canister assembly.

INSPECTION

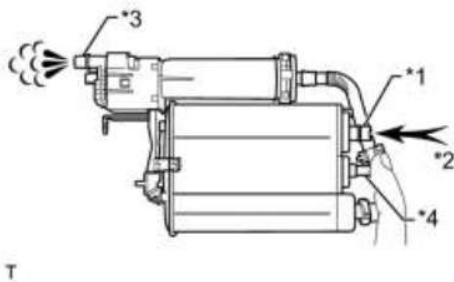
1. INSPECT CHARCOAL CANISTER ASSEMBLY

(a) Visually check the charcoal canister assembly.



(1) Visually check the charcoal canister for cracks or damage.
If cracks or damage are found, replace the charcoal canister assembly.

(b) Check canister operation.



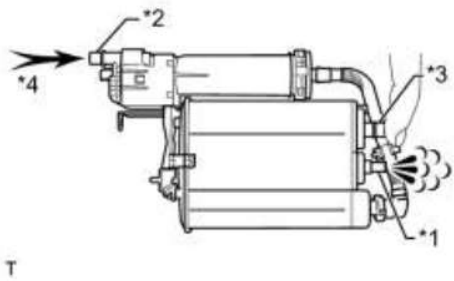
(1) With the purge port closed, blow 5 kPa (0.1 kgf/cm2, 0.7 psi) of air into the vent port, and check that air flows from the air inlet port.

Text in Illustration

*1	Vent Port
*2	Air
*3	Air Inlet Port
*4	Purge Port

If the result is not as specified, replace the charcoal canister assembly.

(2) With the vent port closed, blow 5 kPa (0.1 kgf/cm2, 0.7 psi) of air into the air inlet port, and check that air flows from the purge port.

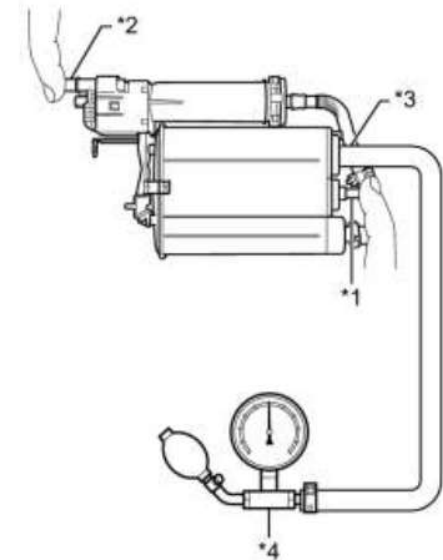


Text in Illustration

*1	Purge Port
*2	Air Inlet Port
*3	Vent Port
*4	Air

If the result is not as specified, replace the charcoal canister assembly.

(c) Check for air leaks.



(1) Connect a pressure gauge to the vent port of the charcoal canister.

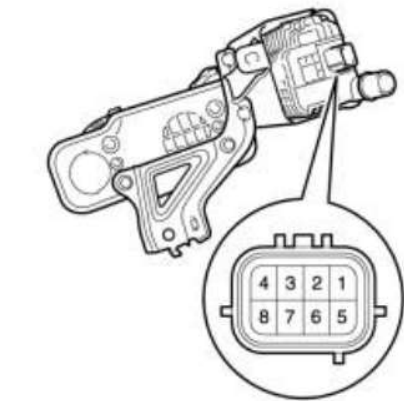
Text in Illustration

*1	Purge Port
*2	Air Inlet Port
*3	Vent Port
*4	Pressure Gauge

(2) With the purge port and the air inlet port closed, apply 20 kPa (150 mmHg, 5.91 in.Hg) of pressurized air into the vent port, then confirm that pressure is retained for 1 minute.

If the result is not as specified, replace the charcoal canister assembly.

(d) Check the leak detection pump.



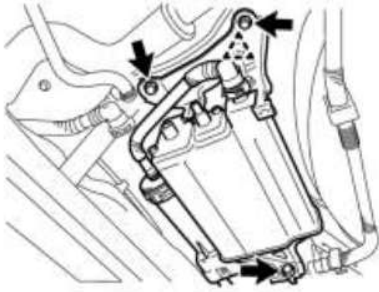
(1) Connect a positive (+) lead of the battery to terminal 5 and a negative (-) lead to terminal 1.

(2) Check that a clicking sound is heard from the leak detection pump.

If the result is not as specified, replace the charcoal canister assembly.

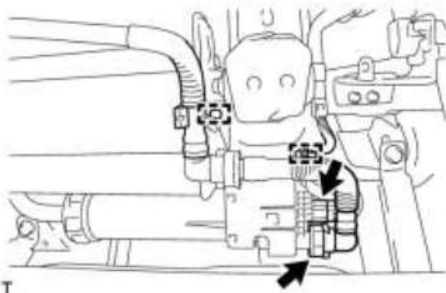
INSTALLATION

1. INSTALL CHARCOAL CANISTER ASSEMBLY

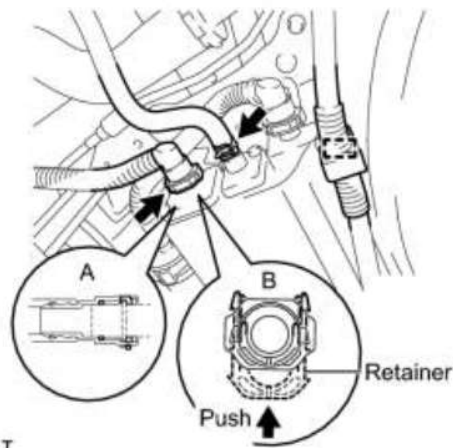


(a) Install the charcoal canister assembly with the 3 bolts and clip.

Torque: **19 N·m (194 kgf·cm, 14ft·lbf)**



(b) Connect the air inlet line tube, connector, tube clamp and wire harness clamp.



(c) Connect the vent line tube.

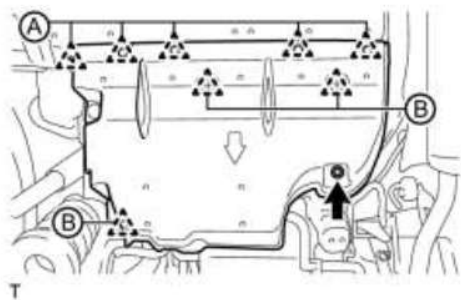
(1) Connect the pipe to the fuel tube connector, as shown in A in the illustration. Then push up the retainer to lock the claws, as shown in B in the illustration.

- Check that there are no scratches or foreign matter around the connected parts of the vent line tube connector and pipe before performing this work.
- After connecting the vent line tube, check that the vent line tube is securely connected by pulling the vent line tube connector and pipe.

(d) Connect the purge line hose and tube clamp.

2. INSTALL REAR FLOOR STEP UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

(a) Connect the 3 clips (B).



(b) Install the rear floor step under cover sub-assembly with the nut and 5 clips (A).

3. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO.

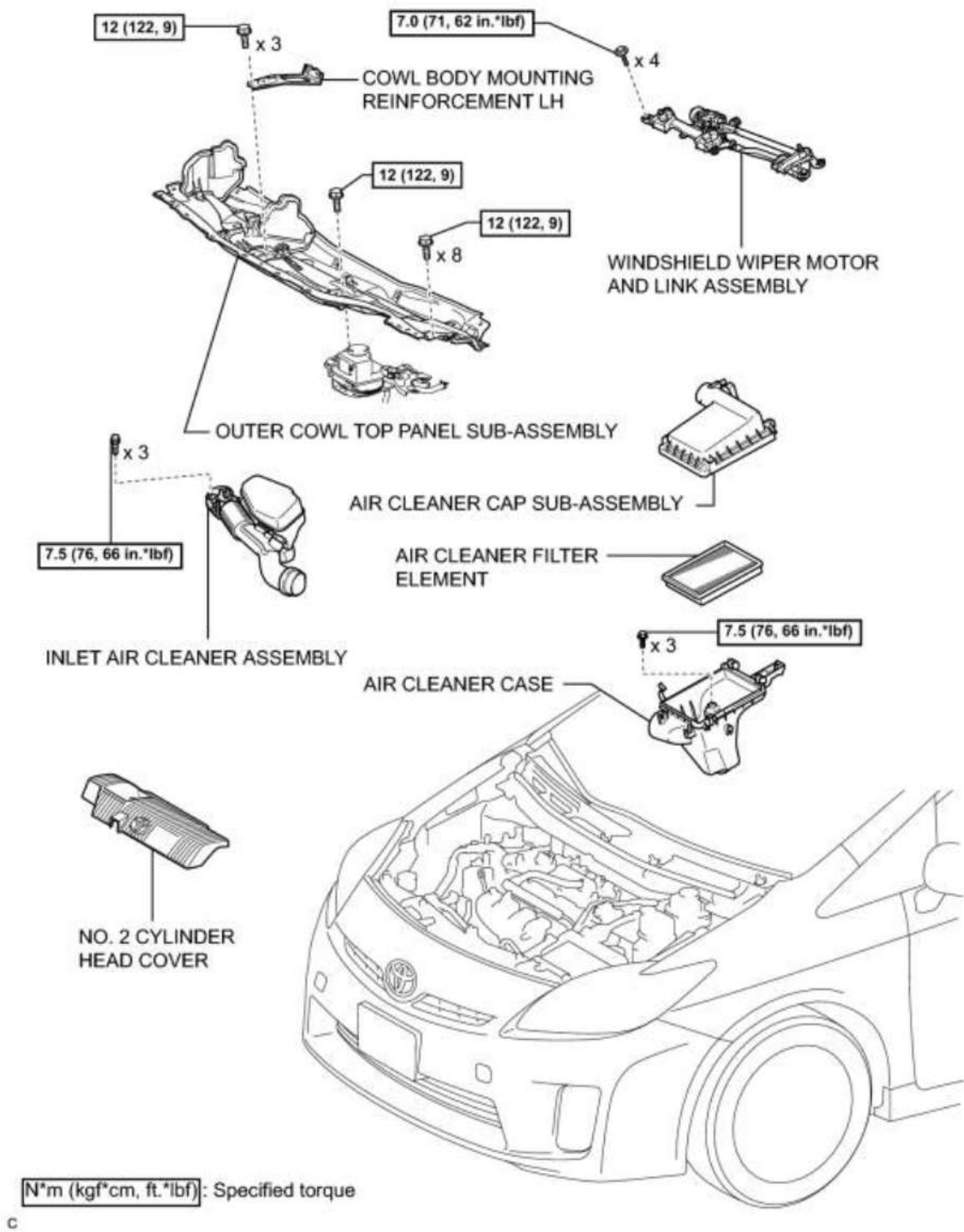
4. INSTALL REAR NO. 3 FLOOR BOARD INFO

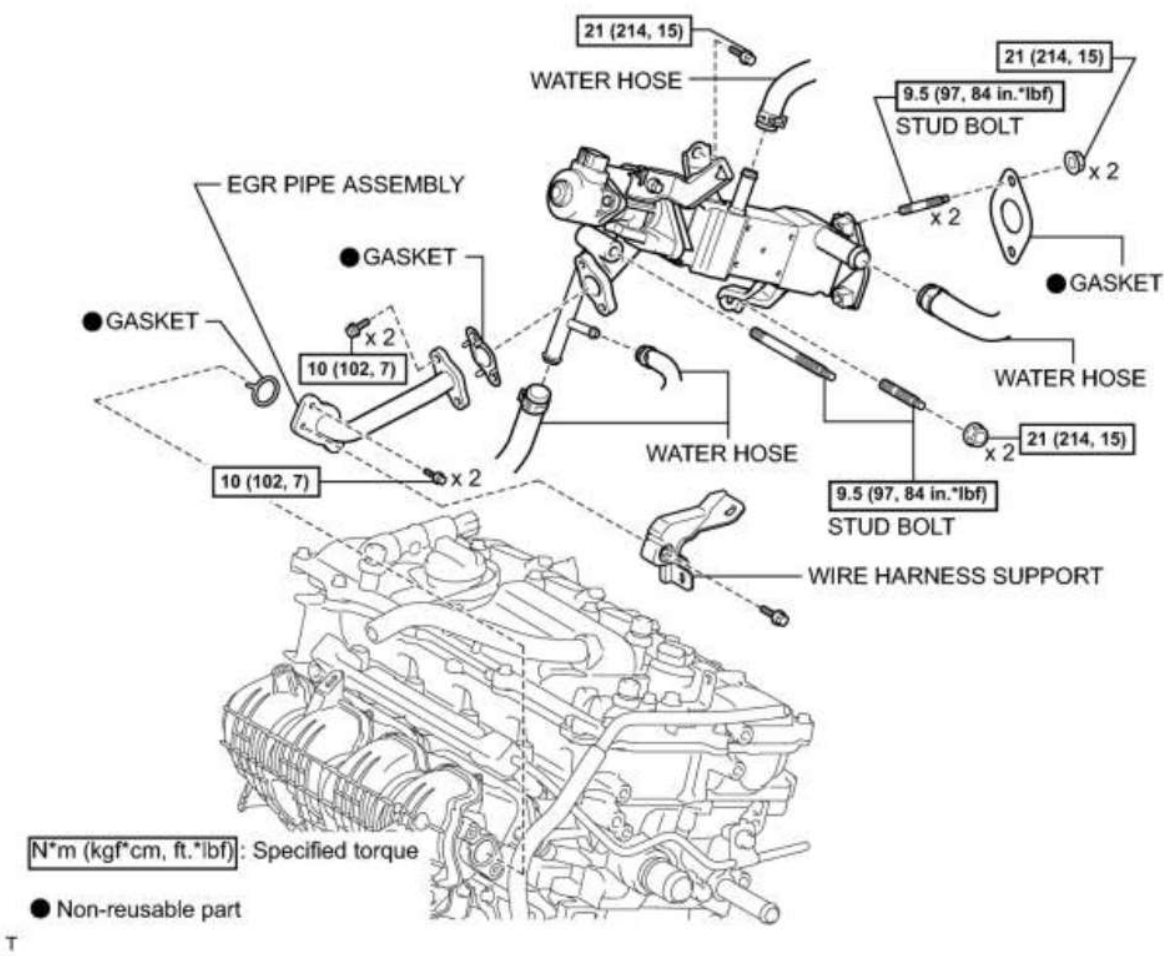
5. INSTALL REAR DECK FLOOR BOX INFO

6. INSTALL REAR NO. 2 FLOOR BOARD (for Separate Type) INFO

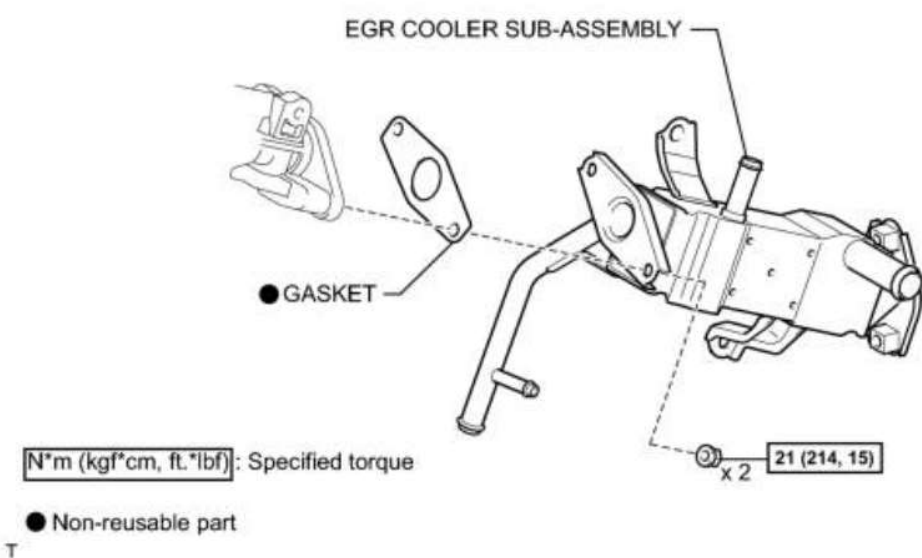
COMPONENTS

ILLUSTRATION





ILLUSTRATION



REMOVAL

1. REMOVE WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY

(a) Remove the windshield wiper motor and link assembly INFO.

2. REMOVE COWL BODY MOUNTING REINFORCEMENT LH INFO

3. REMOVE OUTER COWL TOP PANEL SUB-ASSEMBLY INFO

4. DRAIN COOLANT (for Engine) INFO

5. REMOVE NO. 2 CYLINDER HEAD COVER INFO

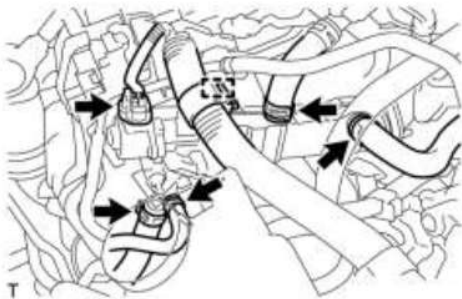
6. REMOVE AIR CLEANER CAP SUB-ASSEMBLY INFO

7. REMOVE INLET AIR CLEANER ASSEMBLY INFO

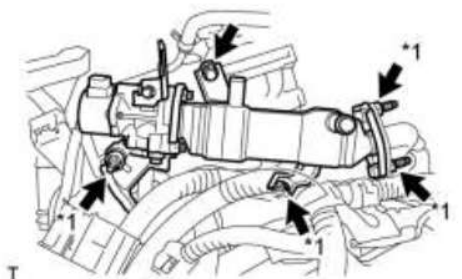
8. REMOVE AIR CLEANER CASE INFO

9. REMOVE EGR PIPE ASSEMBLY INFO

10. REMOVE EGR COOLER SUB-ASSEMBLY



(a) Disconnect the connector, wire harness clamp and 4 water hoses.



(b) Remove the 4 nuts and bolt.

Text in Illustration

*1 Stud Bolt and Nut

(c) Using an E8 "TORX" wrench, remove the 4 stud bolts and EGR valve with cooler assembly.

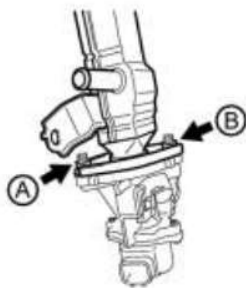
(d) Remove the gasket.



(e) Remove the 2 nuts, EGR cooler sub-assembly and gasket.

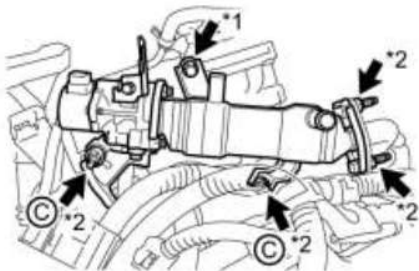
INSTALLATION

1. INSTALL EGR COOLER SUB-ASSEMBLY



(a) Temporarily install the EGR cooler sub-assembly with the 2 nuts (A and B).

Text in Illustration



*1	Bolt
*2	Stud Bolt and Nut

(b) Set a new gasket and EGR valve with cooler assembly.

(c) Using an E8 "TORX" wrench, install the 4 stud bolts.

Torque: **9.5 N·m (97 kgf·cm, 84in·lbf)**

(d) Temporarily install the 2 nuts (C) and bolt.

(e) Tighten the nut (A).

Torque: **21 N·m (214 kgf·cm, 15ft·lbf)**

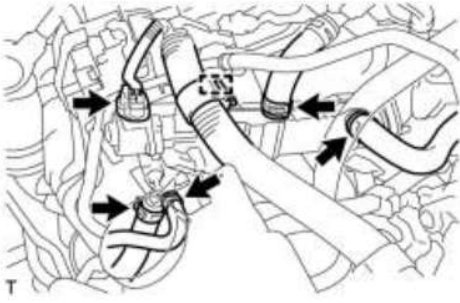
(f) Tighten the 3 nuts (B and C) and bolt.

Torque: **21 N·m (214 kgf·cm, 15ft·lbf)**

NOTICE:

Make sure that all installation surfaces of the EGR valve with cooler assembly are in even contact when tightening the bolts and nuts.

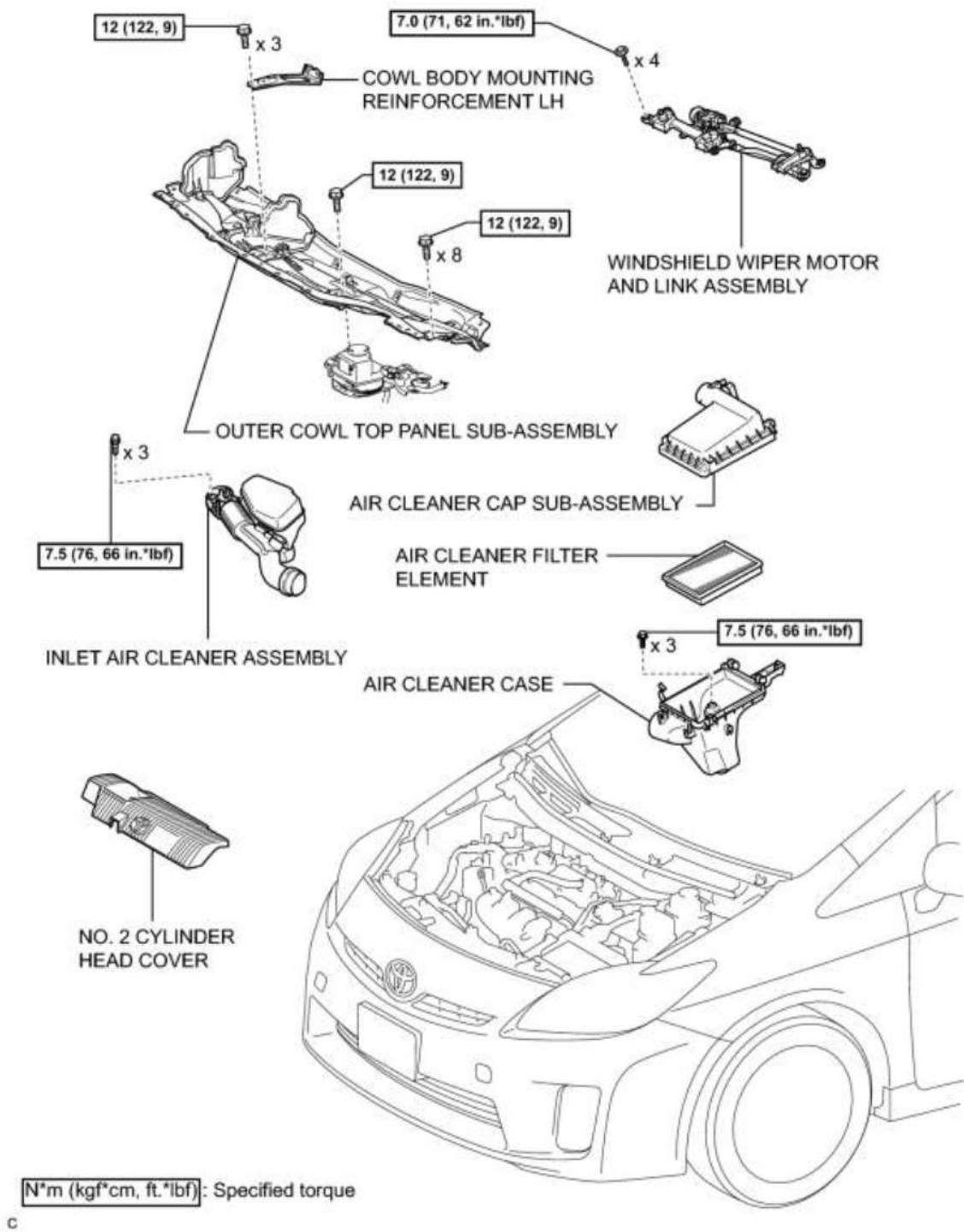
(g) Connect the connector, wire harness clamp and 4 water hoses.



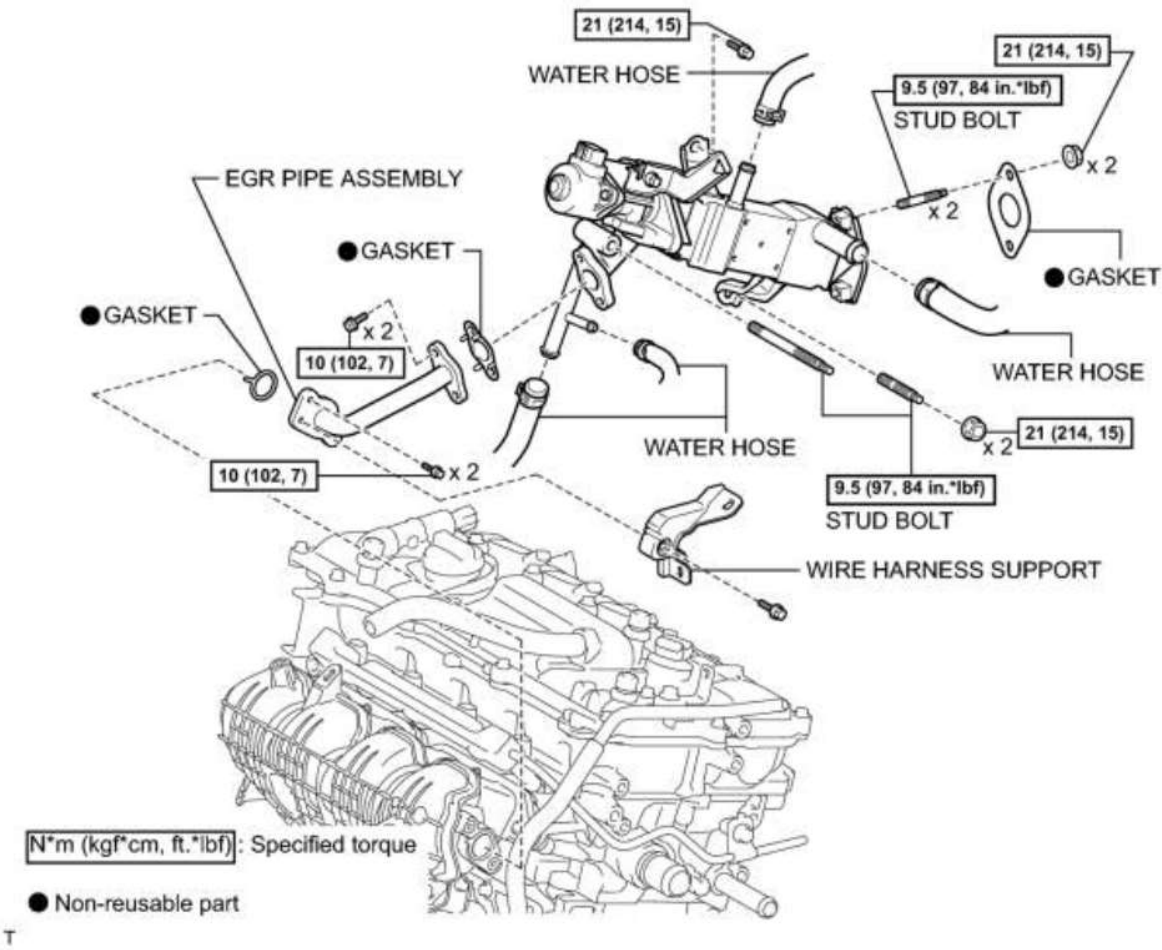
2. INSTALL EGR PIPE ASSEMBLY_ [INFO](#)
3. INSTALL AIR CLEANER CASE_ [INFO](#)
4. INSTALL INLET AIR CLEANER ASSEMBLY_ [INFO](#)
5. INSTALL AIR CLEANER CAP SUB-ASSEMBLY_ [INFO](#)
6. INSTALL NO. 2 CYLINDER HEAD COVER_ [INFO](#)
7. ADD COOLANT (for Engine)_ [INFO](#)
8. INSPECT FOR COOLANT LEAK (for Engine)_ [INFO](#)
9. INSTALL OUTER COWL TOP PANEL SUB-ASSEMBLY_ [INFO](#)
10. INSTALL COWL BODY MOUNTING REINFORCEMENT LH_ [INFO](#)
11. INSTALL WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY
 - (a) Install the windshield wiper motor and link assembly [INFO](#).

COMPONENTS

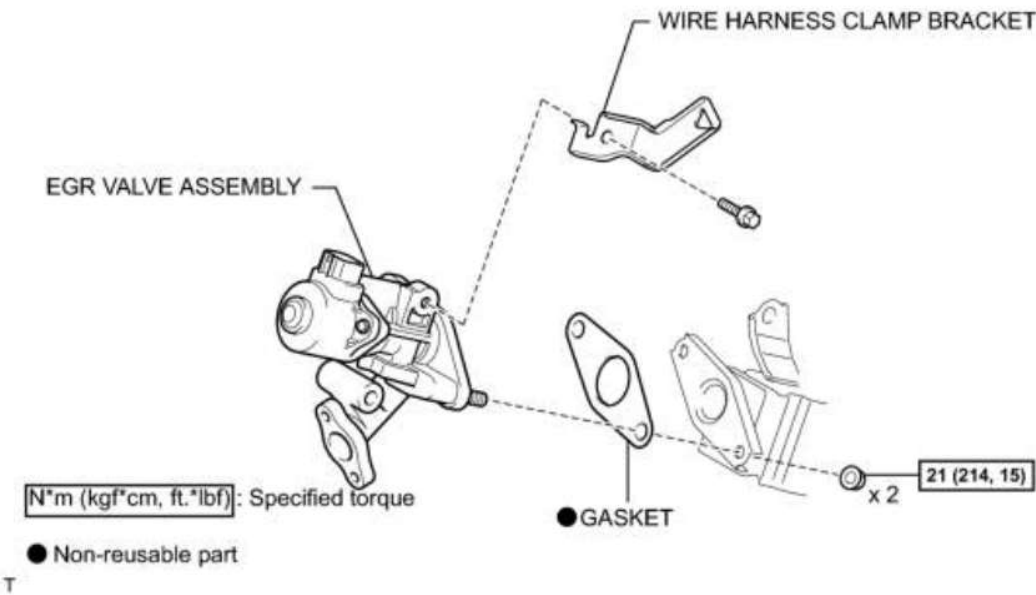
ILLUSTRATION



ILLUSTRATION



ILLUSTRATION



REMOVAL

1. REMOVE WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY

(a) Remove the windshield wiper motor and link assembly INFO.

2. REMOVE COWL BODY MOUNTING REINFORCEMENT LH INFO

3. REMOVE OUTER COWL TOP PANEL SUB-ASSEMBLY INFO

4. DRAIN COOLANT (for Engine) INFO

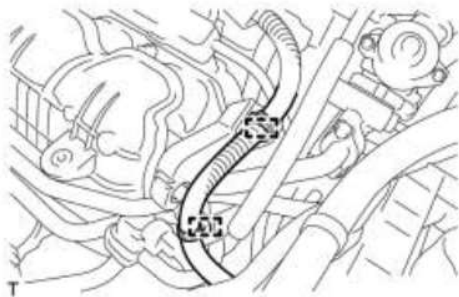
5. REMOVE NO. 2 CYLINDER HEAD COVER INFO

6. REMOVE AIR CLEANER CAP SUB-ASSEMBLY INFO

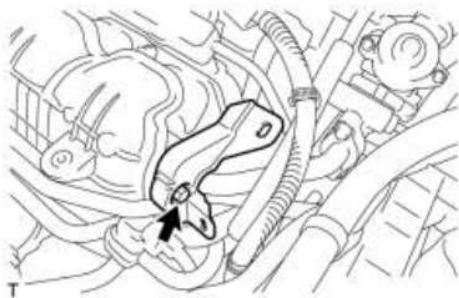
7. REMOVE INLET AIR CLEANER ASSEMBLY INFO

8. REMOVE AIR CLEANER CASE INFO

9. REMOVE EGR PIPE ASSEMBLY

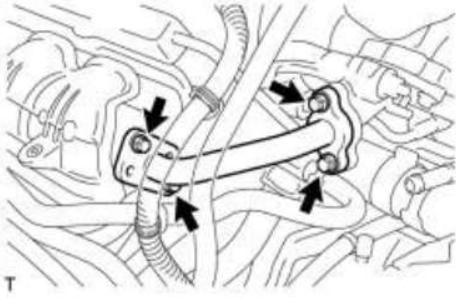


(a) Disconnect the 2 wire harness clamps.

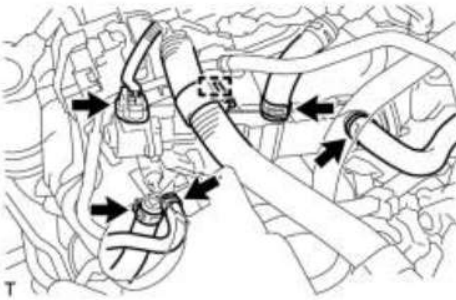


(b) Remove the bolt and wire harness support.

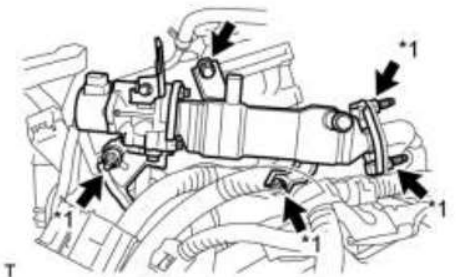
(c) Remove the 4 bolts, EGR pipe assembly and 2 gaskets.



10. REMOVE EGR VALVE ASSEMBLY



(a) Disconnect the connector, wire harness clamp and 4 water hoses.



(b) Remove the 4 nuts and bolt.

Text in Illustration

*1 Stud Bolt and Nut

(c) Using an E8 "TORX" wrench, remove the 4 stud bolts and EGR valve with cooler assembly.

(d) Remove the gasket.



(e) Remove the 2 nuts, EGR valve assembly and gasket.

11. REMOVE WIRE HARNESS CLAMP BRACKET



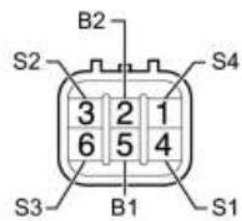
T

(a) Remove the bolt and wiring harness clamp bracket.

INSPECTION

1. INSPECT EGR VALVE ASSEMBLY

(a) Measure the resistance according to the value(s) in the table below.



Standard Resistance

Tester Connection	Condition	Specified Condition
5 (B1) - 4 (S1)	20°C (68°F)	18 to 22 Ω
5 (B1) - 6 (S3)	20°C (68°F)	18 to 22 Ω
2 (B2) - 1 (S4)	20°C (68°F)	18 to 22 Ω
2 (B2) - 3 (S2)	20°C (68°F)	18 to 22 Ω

If the result is not as specified, replace the EGR valve assembly.

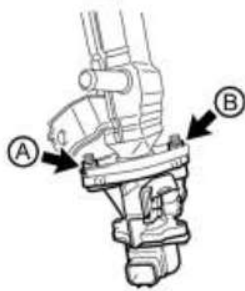
INSTALLATION

1. INSTALL WIRE HARNESS CLAMP BRACKET



(a) Install the wiring harness clamp bracket with the bolt.

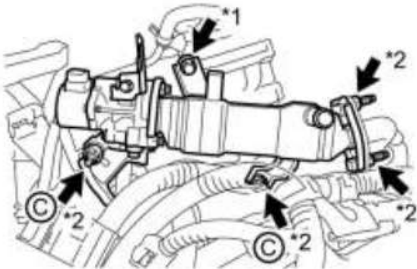
2. INSTALL EGR VALVE ASSEMBLY



(a) Temporarily install the EGR valve assembly with the 2 nuts (A and B).

Text in Illustration

*1	Bolt
*2	Stud Bolt and Nut



(b) Set a new gasket and EGR valve with cooler assembly.

(c) Using an E8 "TORX" wrench, install the 4 stud bolts.

Torque: **9.5 N·m (97 kgf·cm, 84in·lbf)**

(d) Temporarily install the 2 nuts (C) and bolt.

(e) Tighten the nut (A).

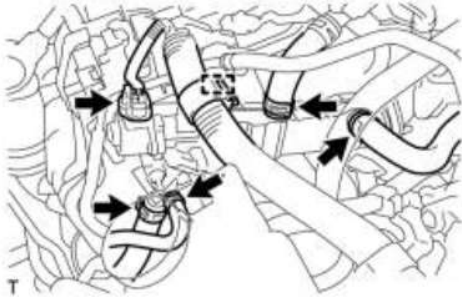
Torque: **21 N·m (214 kgf·cm, 15ft·lbf)**

(f) Tighten the 3 nuts (B and C) and bolt.

Torque: **21 N·m (214 kgf·cm, 15ft·lbf)**

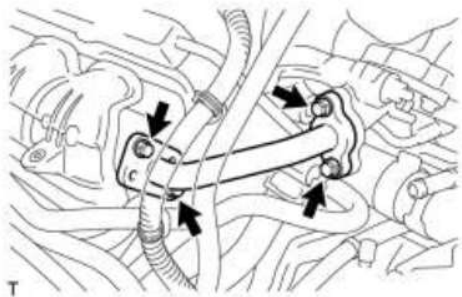
NOTICE:

Make sure that all installation surfaces of the EGR valve with cooler assembly are in even contact when tightening the bolts and nuts.



(g) Connect the connector, wire harness clamp and 4 water hoses.

3. INSTALL EGR PIPE ASSEMBLY

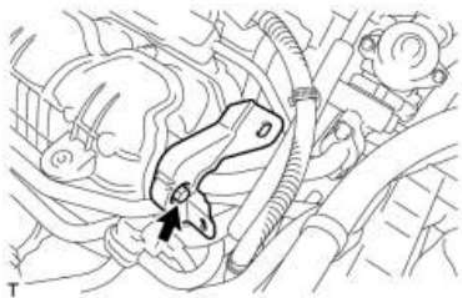


(a) Install 2 new gaskets and EGR pipe assembly with the 4 bolts.

Torque: **10 N·m (102 kgf·cm, 7ft·lbf)**

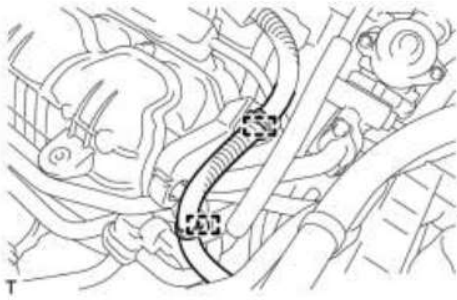
NOTICE:

Make sure to tighten the 4 bolts evenly until the flanges of the EGR pipe assembly contact with the installation surfaces.



(b) Install the wire harness support with the bolt.

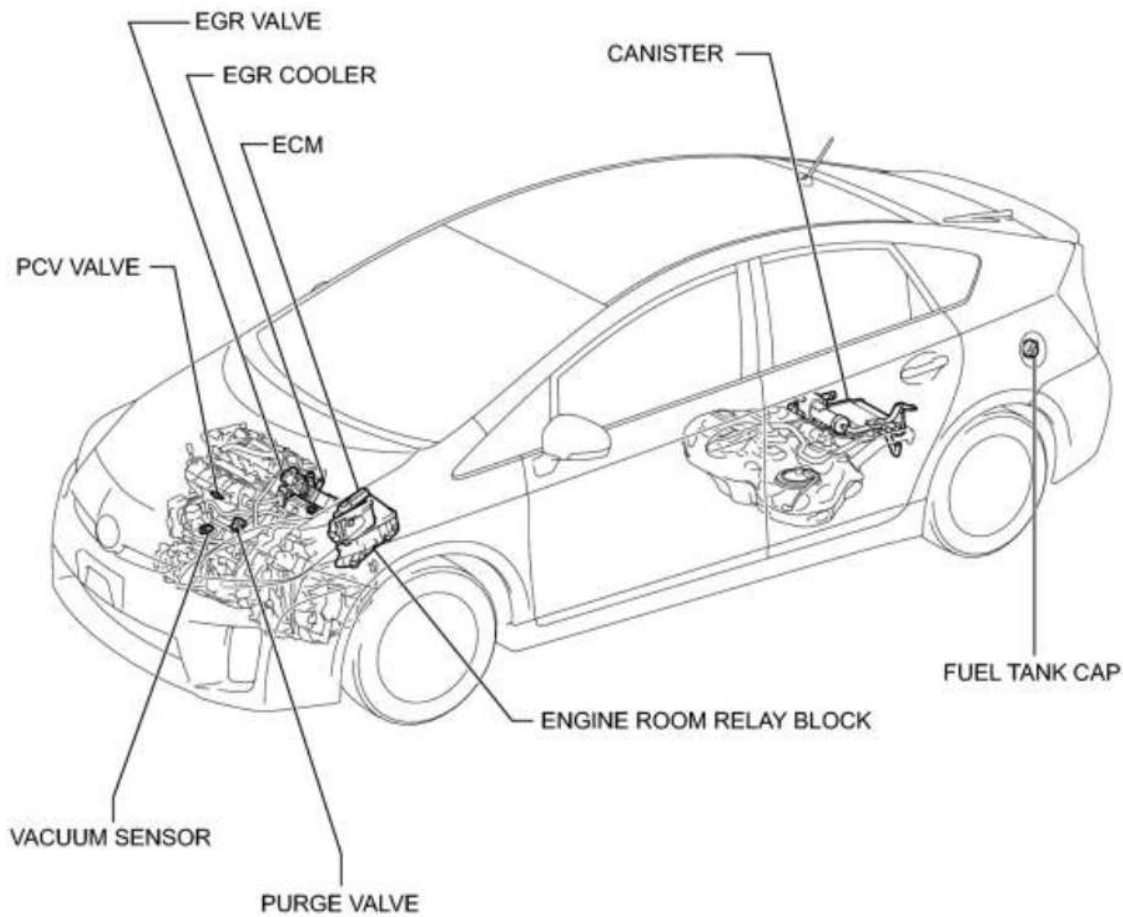
(c) Connect the 2 wire harness clamps.



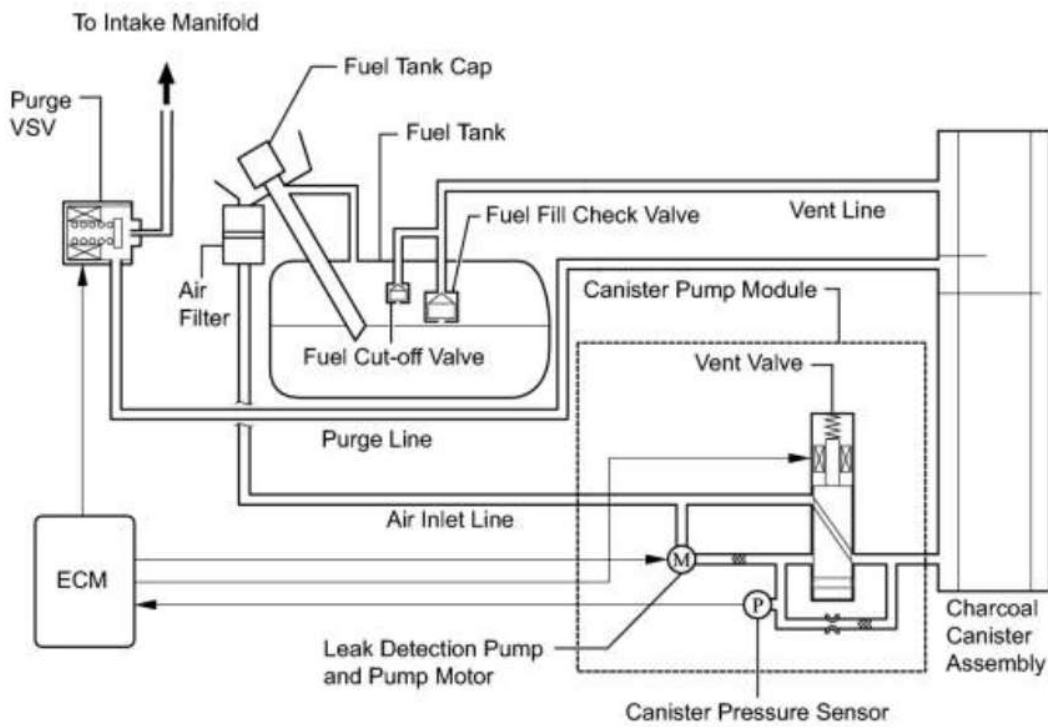
4. INSTALL AIR CLEANER CASE_ [INFO](#)
5. INSTALL INLET AIR CLEANER ASSEMBLY_ [INFO](#)
6. INSTALL AIR CLEANER CAP SUB-ASSEMBLY_ [INFO](#)
7. INSTALL NO. 2 CYLINDER HEAD COVER_ [INFO](#)
8. ADD COOLANT (for Engine)_ [INFO](#)
9. INSPECT FOR COOLANT LEAK (for Engine)_ [INFO](#)
10. INSTALL OUTER COWL TOP PANEL SUB-ASSEMBLY_ [INFO](#)
11. INSTALL COWL BODY MOUNTING REINFORCEMENT LH_ [INFO](#)
12. INSTALL WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY
- (a) Install the windshield wiper motor and link assembly [INFO](#).

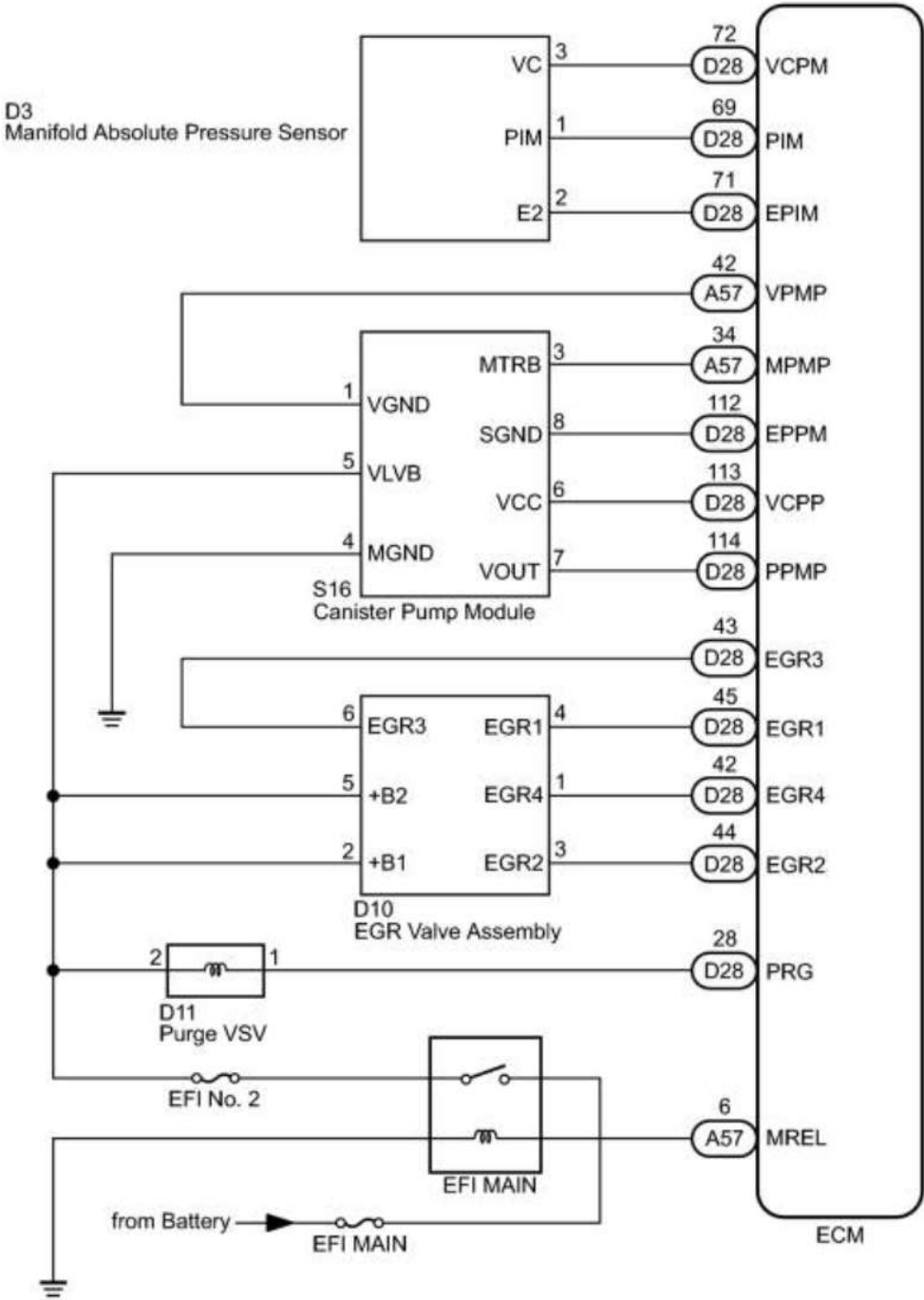
PARTS LOCATION

ILLUSTRATION



SYSTEM DIAGRAM



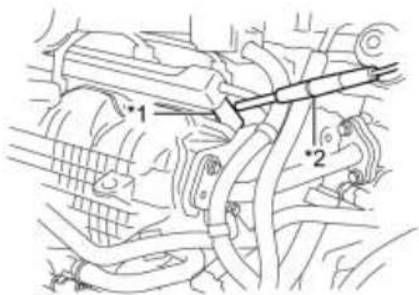


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ON-VEHICLE INSPECTION

1. CHECK FUEL CUT RPM

- (a) Put the engine in inspection mode INFO.
- (b) Start and warm up the engine.
- (c) Increase the engine speed to at least 2500 rpm.



- (d) Use a sound scope to check for injector operating sounds.

Text in Illustration

*1	Injector
*2	Sound Scope

- (e) When the accelerator pedal is released, check that injector operating sounds stop momentarily (at 2500 rpm or higher) and then resume (at 1200 rpm).

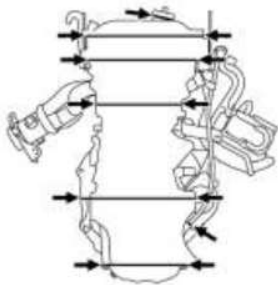
Standard:

Item	Specified Condition
Fuel cut off rpm	2500 rpm
Fuel injection restart rpm	1200 rpm

If the result is not as specified, check the injectors, wiring and ECM.

2. VISUALLY INSPECT HOSES, CONNECTIONS AND GASKETS

- (a) Visually check that the hoses, connections and gaskets have no cracks, leaks or damage.

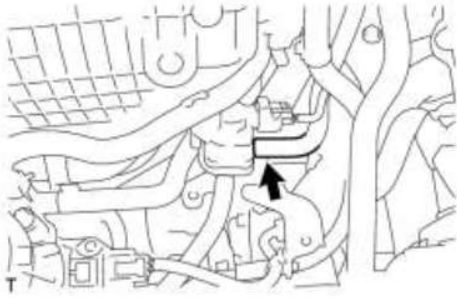


- Detachment or other problems with the engine oil dipstick, filler cap, ventilation hose and other components may cause the engine to run improperly.
- Air suction caused by disconnections, looseness or cracks in any part of the air induction system between the throttle body and cylinder head will cause an engine failure or engine malfunction.

If any defects are found, replace parts as necessary.

3. INSPECT EVAPORATIVE EMISSION CONTROL SYSTEM

- (a) Connect the Techstream to the DLC3.



(b) Disconnect the fuel vapor feed hose from the purge valve shown in the illustration.

(c) Put the engine in inspection mode INFO.

(d) Start the engine.

(e) Enter the following menus: Powertrain / Engine and ECT / Active Test / Activate the VSV for Evap Control.

(f) Check that vacuum occurs at the purge valve port.

(g) If vacuum does not occur, check the following items.

HINT:

- VSV (for canister purge)
- Clogging in the fuel vapor feed hose connecting the intake air surge tank and VSV
- Voltage from the ECM PRG terminal

(h) Exit Active Test mode and reconnect the fuel vapor feed hose.

(i) Enter the following menus: Powertrain / Engine and ECT / Data List / EVAP Purge VSV.

(j) Warm up the engine and drive the vehicle.

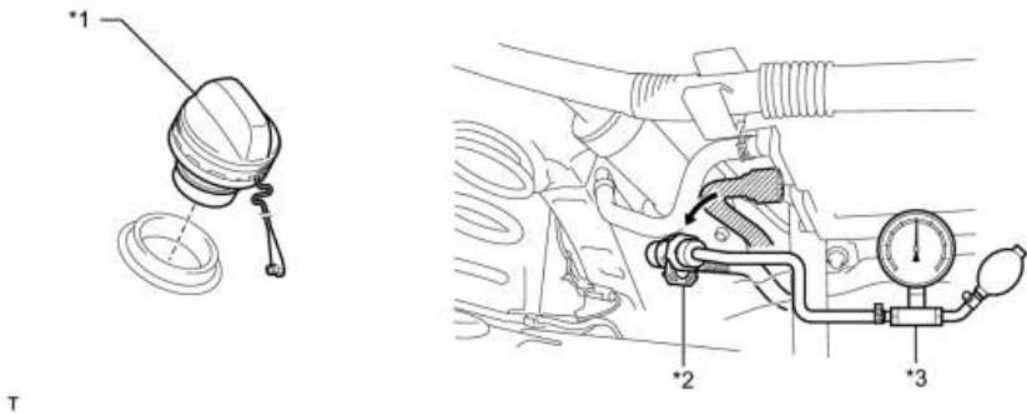
(k) Confirm that the purge valve opens.

If the result is not as specified, replace the purge valve, wire harness or ECM.

4. CHECK FUEL TANK AND VENT LINE

(a) Disconnect the vent line hose from the canister.

(b) Connect the pressure gauge to the vent line hose.



Text in Illustration

*1	Fuel Tank Cap	*2	Vent Line Hose
*3	Pressure Gauge	-	-

(c) Apply 4 kPa (0.04 kgf/cm², 0.6 psi) of pressure to the vent line of the fuel tank.

HINT:

Perform this inspection with the fuel tank less than 90% full. When the fuel tank is full, the fuel fill check valve closes and the pressure is released through the 2 mm orifice. As a result, when the fuel tank cap is removed, the pressure does not decrease smoothly.

(d) Check that the fuel tank pressure is maintained for some time, and does not decrease immediately.

HINT:

If the pressure decreases immediately, one of the following may apply:

- The fuel tank cap is not completely tightened.
- The fuel tank cap is damaged.
- Air is leaking from the vent line.
- The fuel tank is damaged.

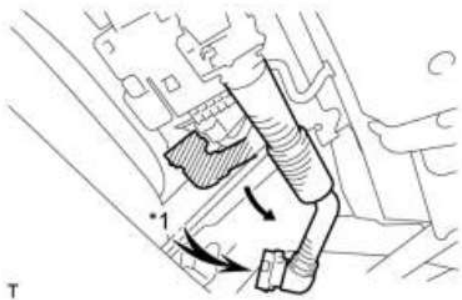
(e) When the fuel tank cap is removed, check that the pressure is released smoothly.

HINT:

If the pressure does not drop, replace the fuel tank assembly.

(f) Reconnect the vent line hose to the canister.

5. INSPECT AIR INLET LINE



(a) Disconnect the air inlet line hose from the charcoal canister.

Text in Illustration

*1	Air
----	-----

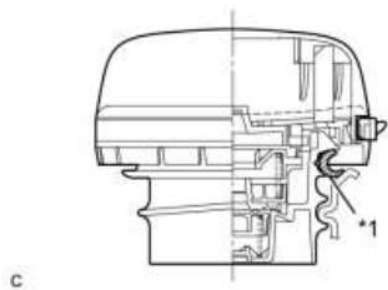
(b) Check that air flows freely into the air inlet line.

If air does not flow freely into the air inlet line, repair or replace the air inlet line hose.

(c) Reconnect the air inlet line hose to the charcoal canister.

INSPECTION

1. INSPECT FUEL TANK CAP ASSEMBLY



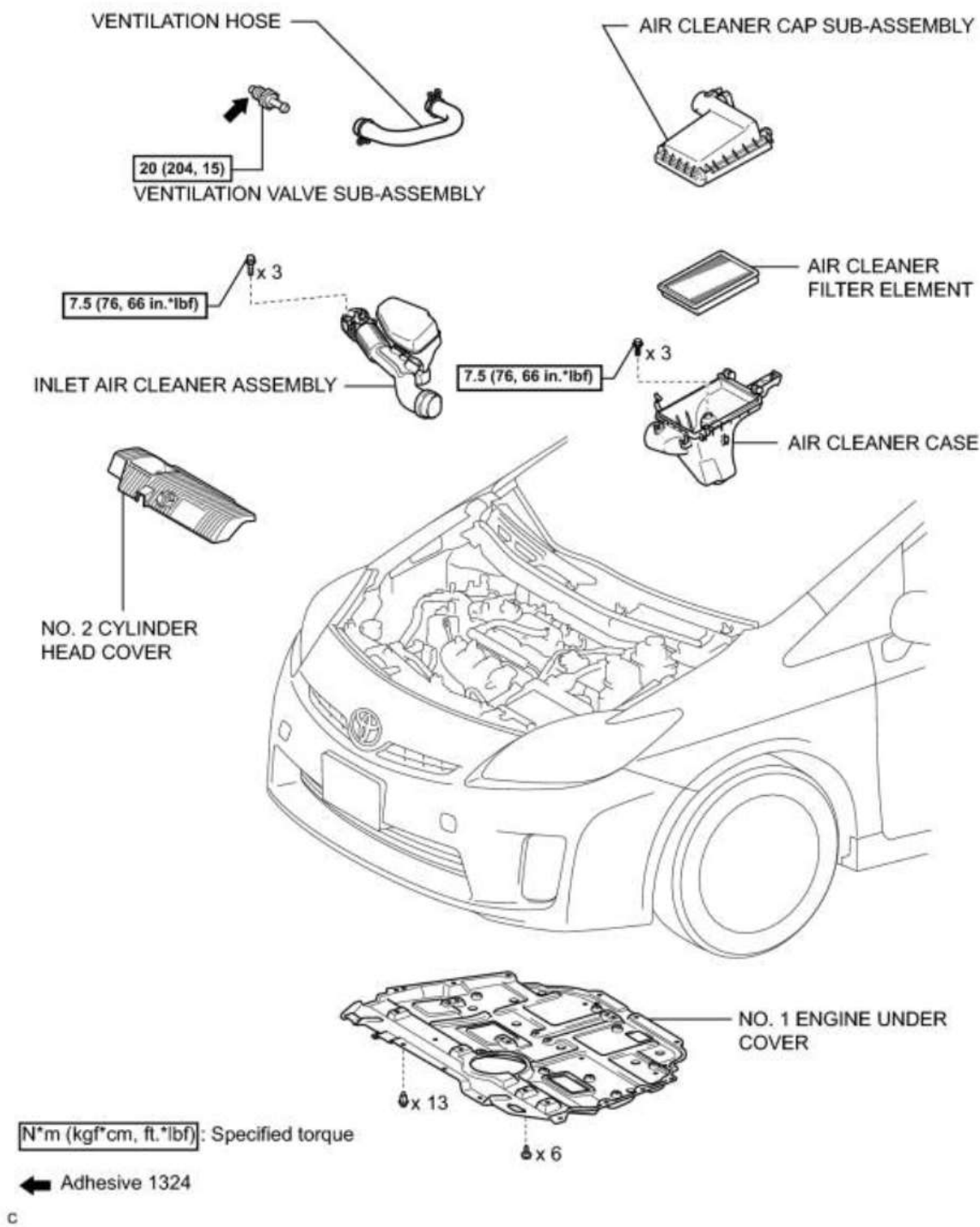
- (a) Visually check that the cap and gasket are not deformed or damaged.
- If the result is not as specified, replace the fuel tank cap assembly.

Text in Illustration

*1	Gasket
----	--------

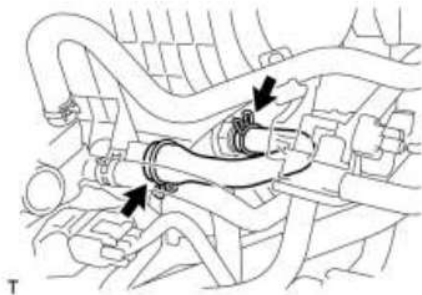
COMPONENTS

ILLUSTRATION



REMOVAL

1. REMOVE NO. 2 CYLINDER HEAD COVER_ INFO
2. REMOVE AIR CLEANER CAP SUB-ASSEMBLY_ INFO
3. REMOVE INLET AIR CLEANER ASSEMBLY_ INFO
4. REMOVE AIR CLEANER CASE_ INFO
5. REMOVE NO. 1 ENGINE UNDER COVER
6. REMOVE VENTILATION VALVE SUB-ASSEMBLY



(a) Remove the ventilation hose from the ventilation valve sub-assembly.



(b) Using a ball joint lock nut wrench (22 mm), remove the ventilation valve sub-assembly.

Text in Illustration

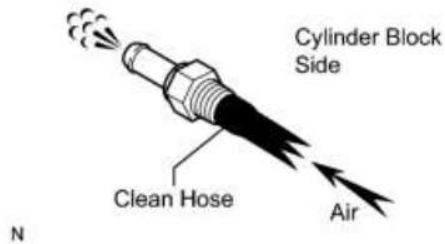
*1	Ball Joint Lock Nut Wrench (22 mm)
----	------------------------------------

INSPECTION

1. INSPECT VENTILATION VALVE SUB-ASSEMBLY

- (a) Install a clean hose to the ventilation valve sub-assembly.
- (b) Check the ventilation valve sub-assembly operation.

- (1) Blow air into the cylinder block side, and check that air passes through easily.



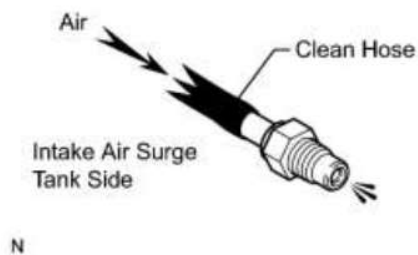
CAUTION:

Do not suck air through the valve.

Petroleum substances inside the valve are hazardous to your health.

If the result is not as specified, replace the ventilation valve sub-assembly.

- (2) Blow air into the intake air surge tank side, and check that air passes through with difficulty.



CAUTION:

Do not suck air through the valve.

Petroleum substances inside the valve are hazardous to your health.

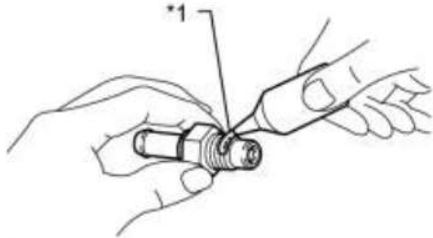
If the result is not as specified, replace the ventilation valve sub-assembly.

- (c) Remove the clean hose from the ventilation valve sub-assembly.

INSTALLATION

1. INSTALL VENTILATION VALVE SUB-ASSEMBLY

(a) Apply adhesive to 2 or 3 threads of the ventilation valve sub-assembly.



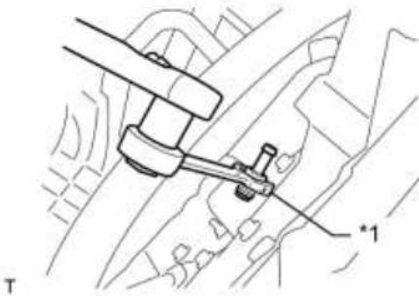
Text in Illustration

*1	Adhesive 1324
----	---------------

Adhesive:

Toyota genuine adhesive 1324, three bond 1324 or equivalent

(b) Using a ball joint lock nut wrench (22 mm), install the ventilation valve sub-assembly.



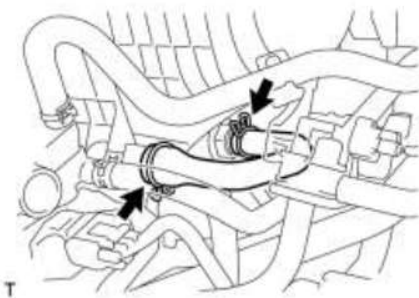
Text in Illustration

*1	Ball Joint Lock Nut Wrench (22 mm)
----	------------------------------------

Torque: **20 N·m (204 kgf·cm, 15ft·lbf)**

NOTICE:

Use the formula to calculate special torque values for situations where a ball joint lock nut wrench is combined with a torque wrench [INFO](#).



(c) Install the ventilation hose to the ventilation valve sub-assembly.

2. INSTALL NO. 1 ENGINE UNDER COVER

3. INSTALL AIR CLEANER CASE_ [INFO](#)

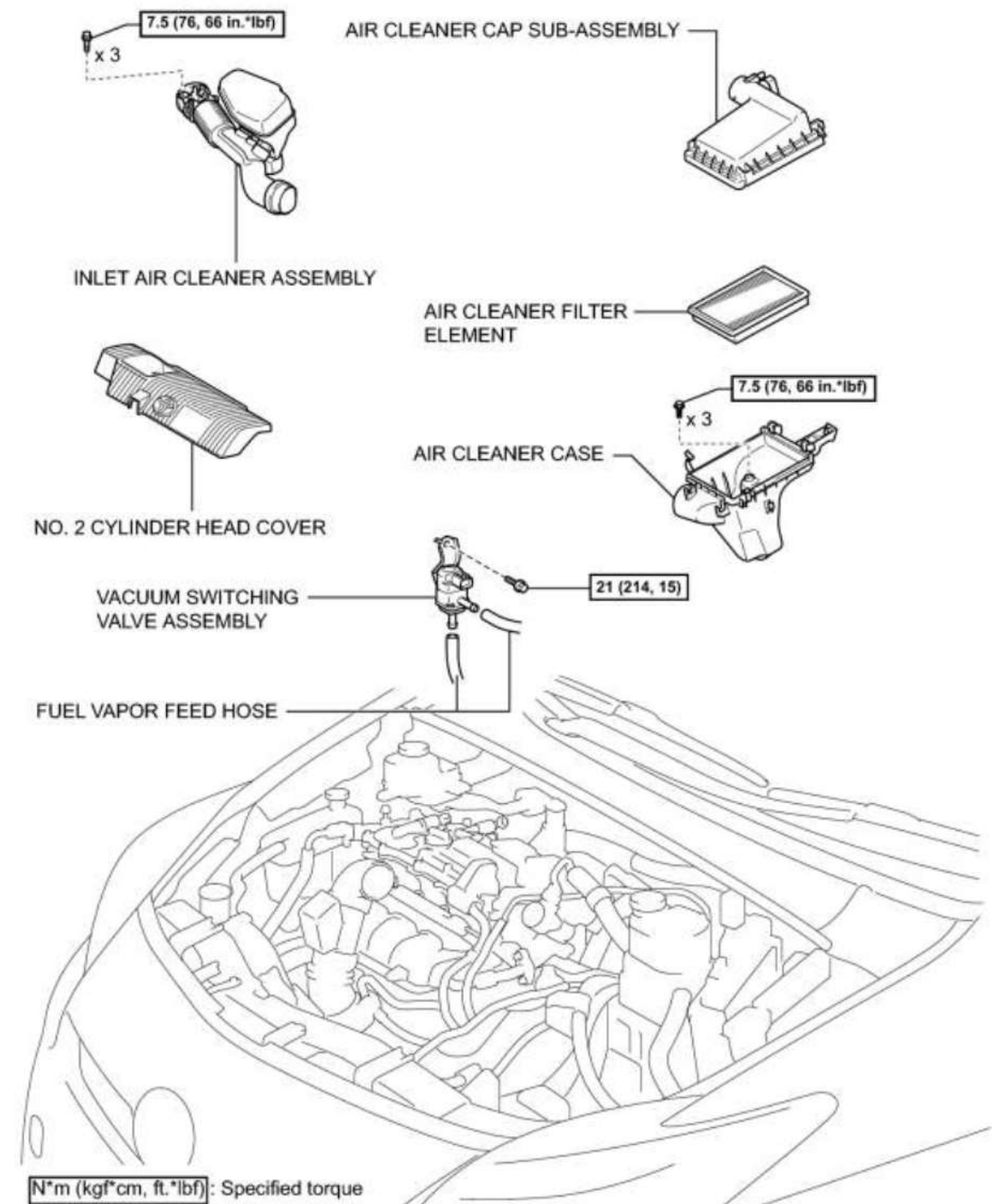
4. INSTALL INLET AIR CLEANER ASSEMBLY_ [INFO](#)

5. INSTALL AIR CLEANER CAP SUB-ASSEMBLY_ [INFO](#)

6. INSTALL NO. 2 CYLINDER HEAD COVER_ [INFO](#)

COMPONENTS

ILLUSTRATION

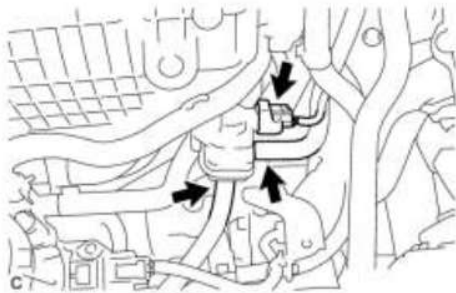


c

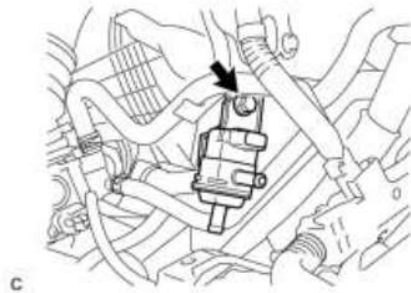
cardiagn.com

REMOVAL

1. REMOVE NO. 2 CYLINDER HEAD COVER_ INFO
2. REMOVE AIR CLEANER CAP SUB-ASSEMBLY_ INFO
3. REMOVE INLET AIR CLEANER ASSEMBLY_ INFO
4. REMOVE AIR CLEANER CASE_ INFO
5. REMOVE VACUUM SWITCHING VALVE ASSEMBLY



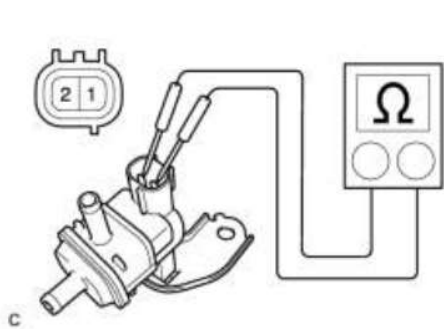
(a) Disconnect the connector and 2 fuel vapor feed hoses.



(b) Remove the bolt and vacuum switching valve assembly.

INSPECTION

1. INSPECT VACUUM SWITCHING VALVE ASSEMBLY



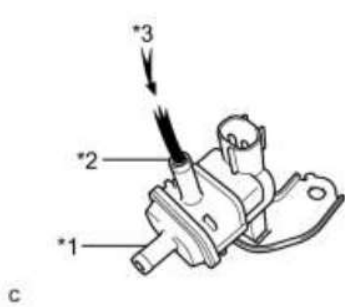
(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
1 - 2	20°C (68°F)	23 to 26 Ω

If the result is not as specified, replace the vacuum switching valve assembly.

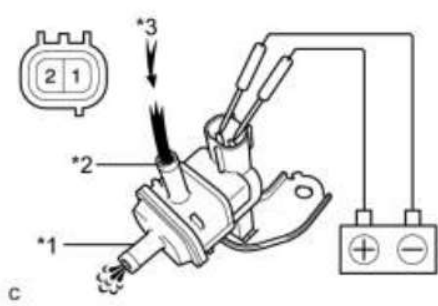
(b) Check operation of the vacuum switching valve assembly.



(1) Blow air into port E. Check that air does not come out of port F.

Text in Illustration

*1	Port F
*2	Port E
*3	Air Blow



(2) Apply battery voltage across the terminals.

Text in Illustration

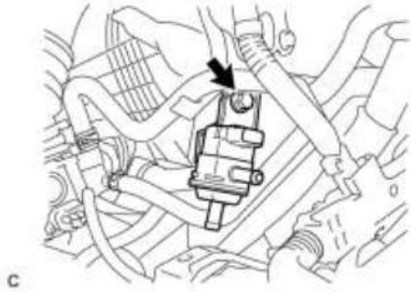
*1	Port F
*2	Port E
*3	Air Blow

(3) Blow air into port E. Check that air comes out from port F.

If the result is not as specified, replace the vacuum switching valve assembly.

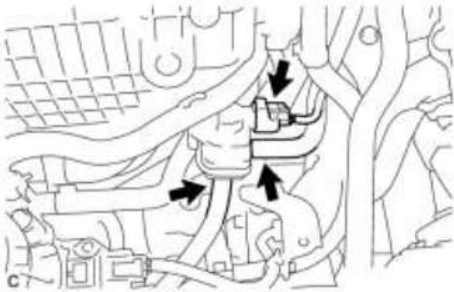
INSTALLATION

1. INSTALL VACUUM SWITCHING VALVE ASSEMBLY



(a) Install the vacuum switching valve assembly with the bolt.

Torque: **21 N·m (214 kgf·cm, 15ft·lbf)**



(b) Connect the 2 fuel vapor feed hoses and connector to the vacuum switching valve assembly.

(c) Connect the No. 1 vacuum switching valve connector.

2. INSTALL AIR CLEANER CASE_ INFO

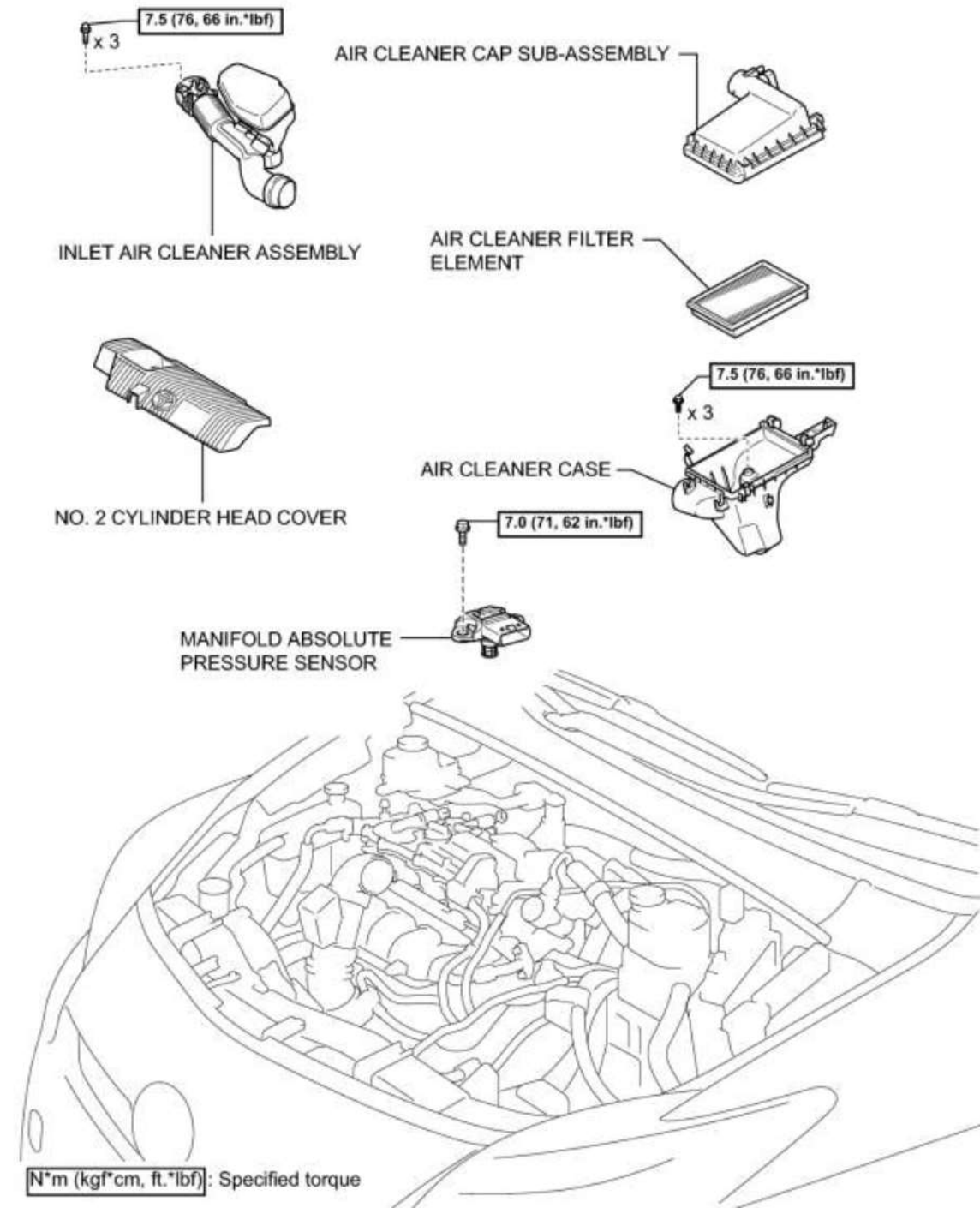
3. INSTALL INLET AIR CLEANER ASSEMBLY_ INFO

4. INSTALL AIR CLEANER CAP SUB-ASSEMBLY_ INFO

5. INSTALL NO. 2 CYLINDER HEAD COVER_ INFO

COMPONENTS

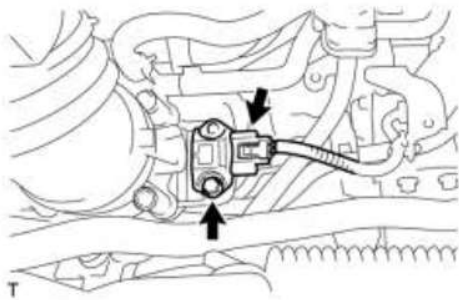
ILLUSTRATION



c

REMOVAL

1. REMOVE NO. 2 CYLINDER HEAD COVER_ INFO
2. REMOVE AIR CLEANER CAP SUB-ASSEMBLY_ INFO
3. REMOVE INLET AIR CLEANER ASSEMBLY_ INFO
4. REMOVE AIR CLEANER CASE_ INFO
5. REMOVE MANIFOLD ABSOLUTE PRESSURE SENSOR

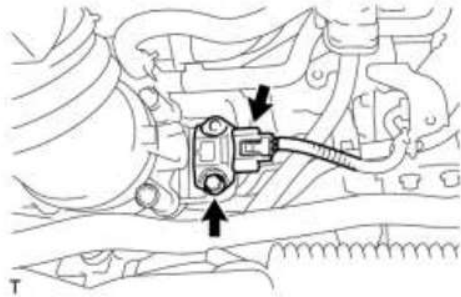


(a) Disconnect the connector.

(b) Remove the bolt and manifold absolute pressure sensor.

INSTALLATION

1. INSTALL MANIFOLD ABSOLUTE PRESSURE SENSOR



(a) Install the manifold absolute pressure sensor with the bolt.

Torque: 7.0 N·m (71 kgf·cm, 62in·lbf)

(b) Connect the connector.

2. INSTALL AIR CLEANER CASE_ [INFO](#)

3. INSTALL INLET AIR CLEANER ASSEMBLY_ [INFO](#)

4. INSTALL AIR CLEANER CAP SUB-ASSEMBLY_ [INFO](#)

5. INSTALL NO. 2 CYLINDER HEAD COVER_ [INFO](#)