

## FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2]

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### Warning

- Fuel is highly flammable and dangerous. Fuel line spills and leakage can cause serious injury or death, and damage to equipment. If fuel comes into contact with the skin and eyes it will cause irritation. To prevent this, always perform the “Fuel Line Safety Procedure” referring to the “BEFORE REPAIR PROCEDURE”.
- A person charged with static electricity could cause a fire or explosion, resulting in death or serious injury. Before servicing the fuel system, make sure to discharge static electricity by touching a vehicle.

### Caution

- If parts are exposed to the fuel, their function may be decreased or a fire may occur. Spread a rag to absorb any leaked fuel.
- Do not let foreign matter get into the injection pipe to prevent clogging. In addition, always install the injection pipe to the specified tightening torque.

### Note

- If the fuel injector is replaced, perform the fuel injector data reset procedure.

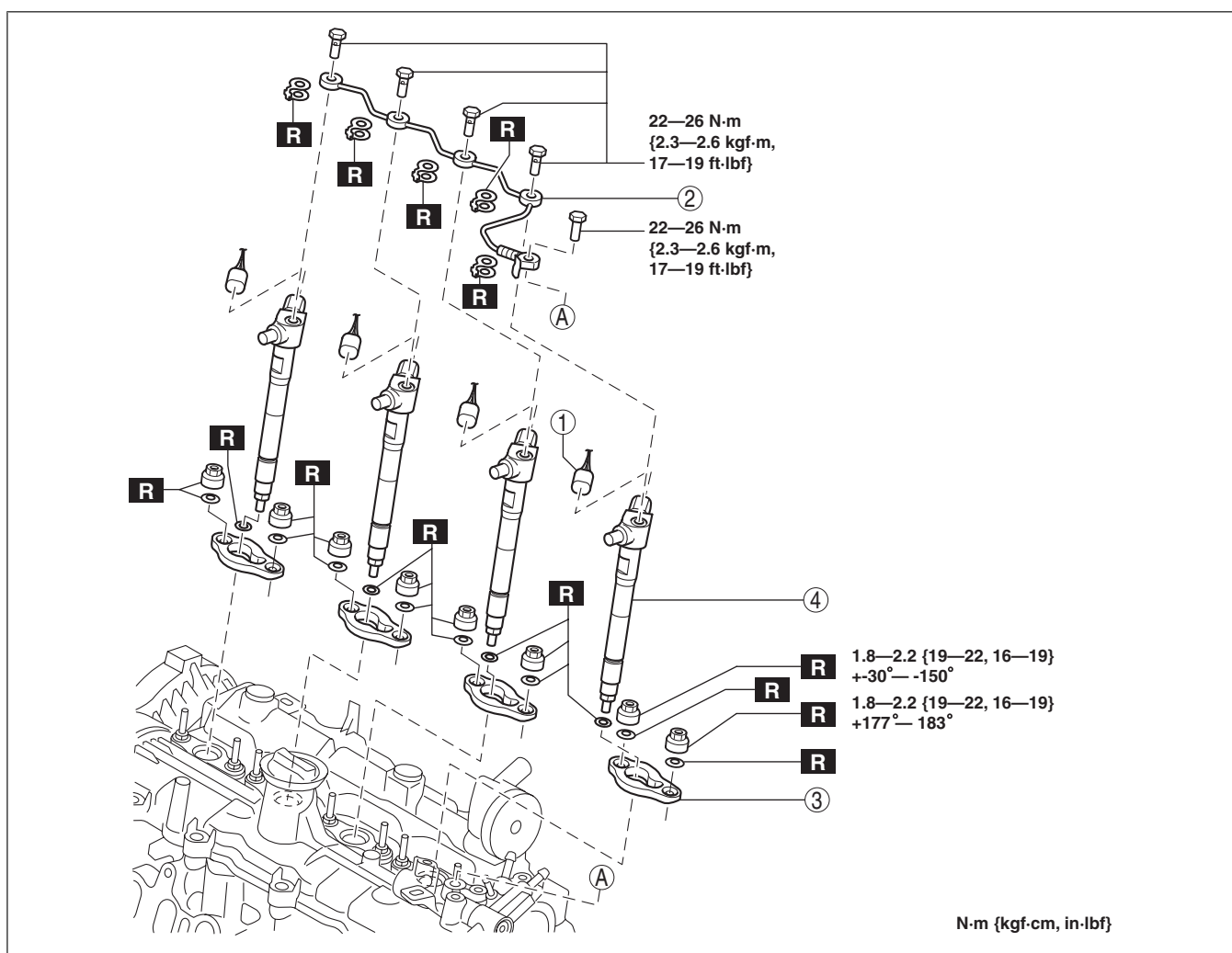
### Operation After Replacing Fuel Injector

1. If the fuel injector is replaced, perform the following procedure.

STEP	ACTION	PAGE/CONDITION
1	Perform fuel injector code programming.	(See FUEL INJECTOR CODE PROGRAM [SKYACTIV-D 2.2].)
2	Switch the ignition off.	—
3	Perform fuel injector data reset procedure.	(See FUEL INJECTOR DATA RESET [SKYACTIV-D 2.2].)
4	Switch the ignition off.	—
5	Clear the DTCs.	(See OBD READ/CLEAR DIAGNOSTIC TEST RESULTS [SKYACTIV-D 2.2].)
6	Switch the ignition off.	—
7	Wait for 20 s.	—
8	Switch the ignition ON (engine off).	—
9	Perform KOEO self-test procedure.	(See KOEO/KOER SELF TEST [SKYACTIV-D 2.2].)
10	Start the engine.	—
11	Verify that the check engine light does not illuminate.	—
12	Perform KOER self-test procedure.	(See KOEO/KOER SELF TEST [SKYACTIV-D 2.2].)
13	Perform fuel injector injection amount correction.	(See FUEL INJECTOR INJECTION AMOUNT CORRECTION [SKYACTIV-D 2.2].)
14	Switch the ignition off.	—
15	Clear the DTCs.	(See OBD READ/CLEAR DIAGNOSTIC TEST RESULTS [SKYACTIV-D 2.2].)
16	Switch the ignition off.	—

### Fuel injector Removal/Installation

1. Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)
2. Perform the “Fuel Line Safety Procedure” referring to the “BEFORE SERVICE PRECAUTION”. (See BEFORE SERVICE PRECAUTION [SKYACTIV-D 2.2].)
3. Remove the engine cover. (See ENGINE COVER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
4. Disconnect the CMP sensor connector.
5. Remove the injection pipe (fuel injector side). (See INJECTION PIPE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
6. Remove in the order shown in the figure.
7. Install in the reverse order of removal.
8. Refer to the “AFTER SERVICE PRECAUTION” and perform the fuel hose installation procedure and fuel line air bleeding. (See AFTER SERVICE PRECAUTION [SKYACTIV-D 2.2].)



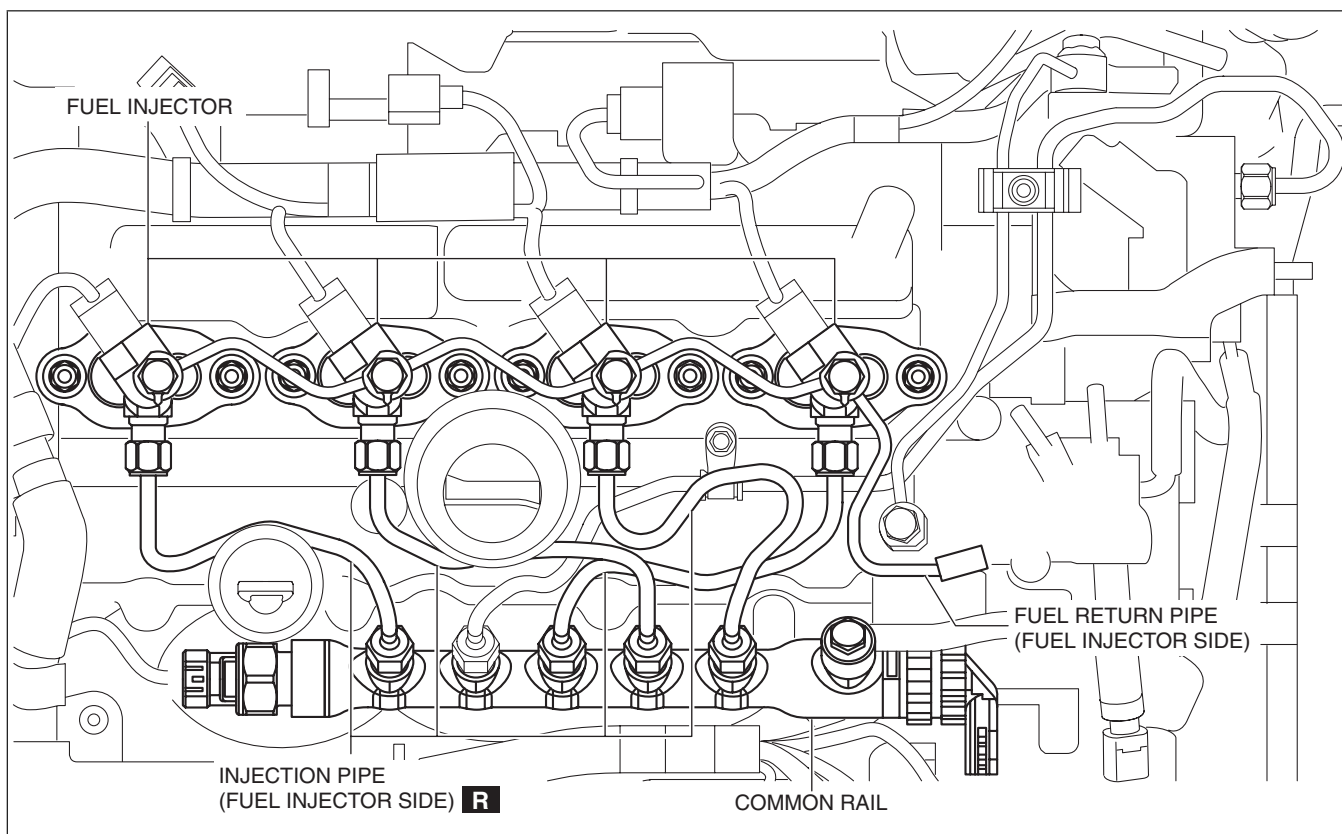
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1	Fuel injector connector
2	Fuel return pipe (fuel injector side)
3	Fuel injector bracket

4	Fuel injector (See Fuel injector installation note.) (See Operation After Replacing Fuel Injector.)
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### Fuel injector installation note

1. Temporarily install the fuel injector and the fuel injector bracket.



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2. Loosen the common rail.
3. Temporarily tighten the new injection pipe (fuel injector side).

**Caution**

- Do not tighten the nut on the opposite side when processing the step 4 and 5.

4. Tighten the new nut shown in the figure (1).

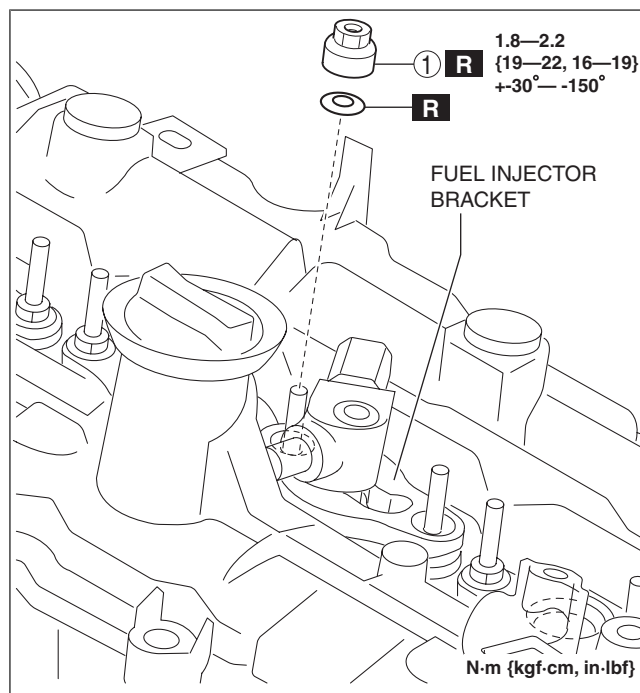
**Fuel injector bracket installation nut tightening torque**

1.8—2.2 N·m {19—22 kgf·cm, 16—19 in·lbf}

5. Loosen the nut shown in the figure (1).

**Angle of loosening the nut for installing the fuel injector bracket**

-30°— -150°



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6. Tighten the new nut shown in the figure (2).

**Fuel injector bracket installation nut tightening torque**

**First time: 1.8—2.2 N·m {19—22 kgf·cm, 16—19 in·lbf}**

**Second time: 177°—183°**

7. Tighten the injection pipes (fuel injector side) on the common rail side.

**Tightening torque for injection pipe (fuel injector side)**

**32—42 N·m {3.3—4.2 kgf·m, 24—30 ft·lbf}**

8. Tighten the injection pipes (fuel injector side) on the fuel injector side.

**Tightening torque for injection pipe (fuel injector side)**

**32—42 N·m {3.3—4.2 kgf·m, 24—30 ft·lbf}**

9. Tighten the common rail.

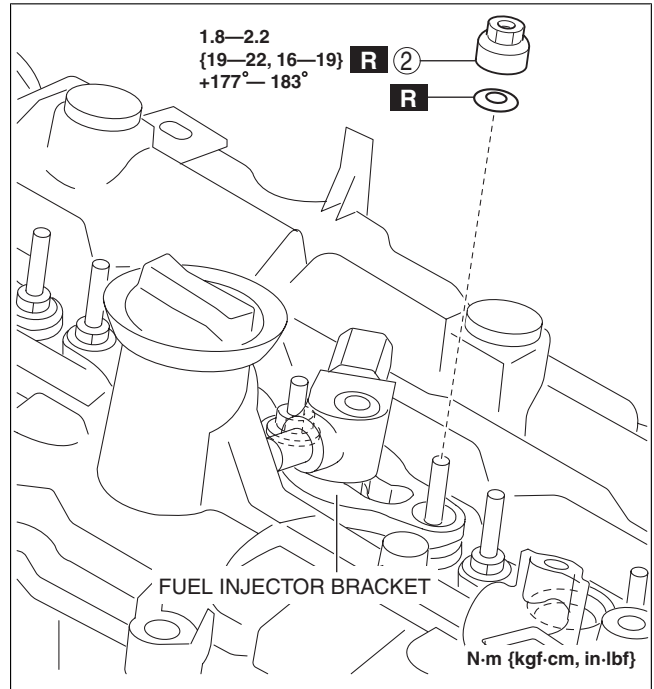
**Common rail tightening torque**

**20—26 N·m {2.1—2.6 kgf·m, 15—19 ft·lbf}**

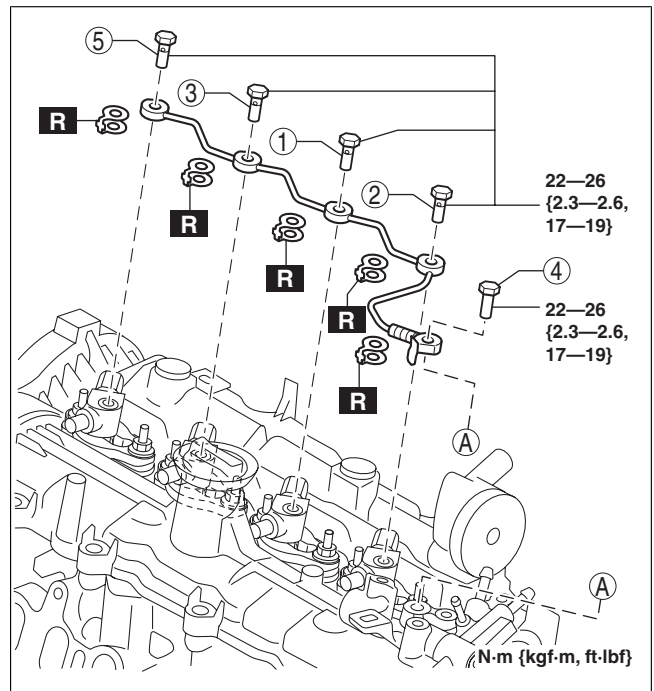
10. Tighten the fuel return pipe (fuel injector side) in the order shown in the figure.

**Fuel return pipe (fuel injector side) tightening torque**

**22—26 N·m {2.3—2.6 kgf·m, 17—19 ft·lbf}**



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