

# B10 IGNITION SYSTEM

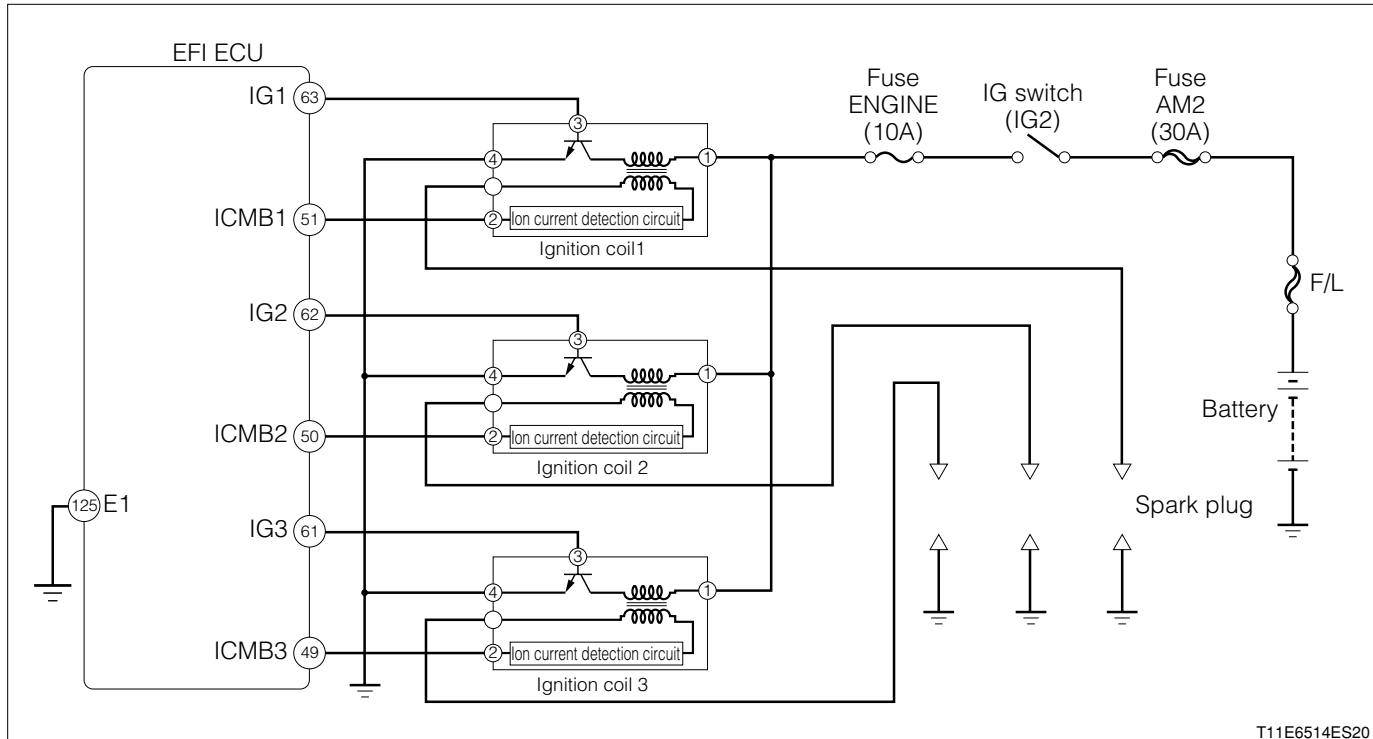
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# B10-1

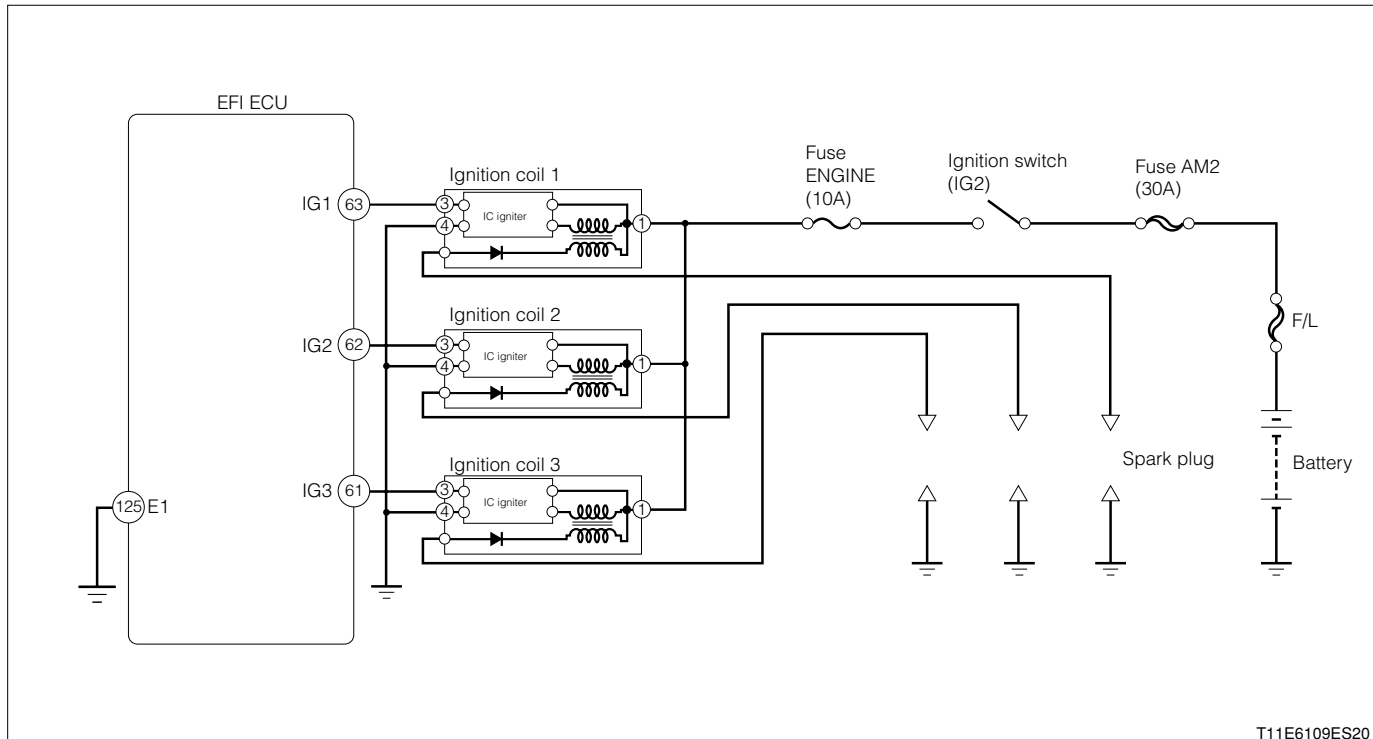
## 1KR 1 IGNITION SYSTEM

### 1-1 SYSTEM DIAGRAM

EU SPEC



GENEAL SPC

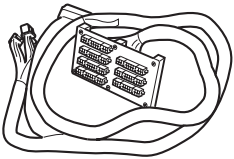


## 2 SPARK PLUG

### 2-1 REMOVAL AND INSTALLATION

#### 2-1-1 ARTICLES TO BE PREPARED

SST

Shape	Part No.	Part name
	09842-97209-000	Sub-harness,EFI computer check

Instrument

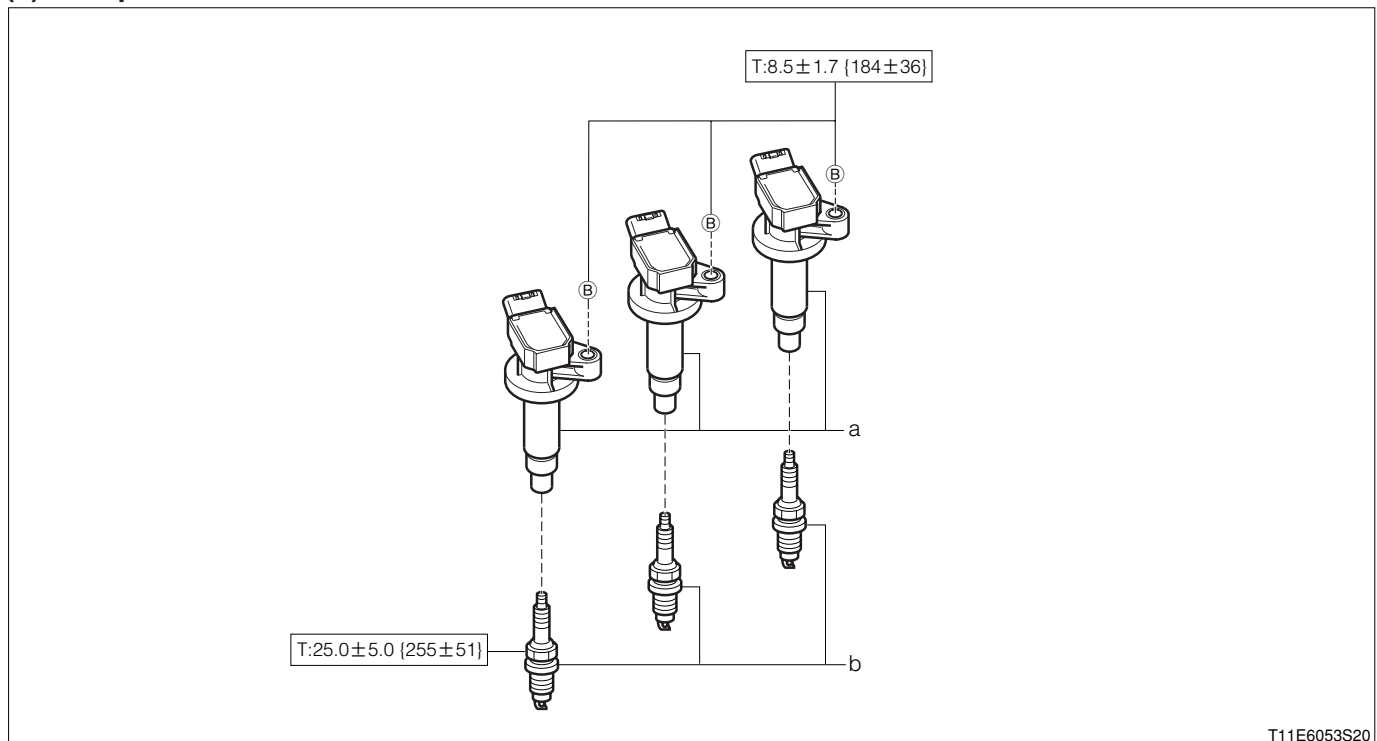
Torque wrench
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#### 2-1-2 OPERATION BEFORE REMOVAL

1. Remove the hose S/A, air cleaner.  
Refer to Page B3-1.

#### 2-1-3 REMOVAL AND INSTALLATION PROCEDURES

##### (1) Components



T11E6053S20

Unit:N·m(kgf·cm)

##### (2) Removal and installation procedures

- 1 a Coil Ay, W/igniter
- 2 b Plug, spark

# B10-3

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## 2-1-4 INSPECTION

### (1) Coil Ay, W/igniter

1. Spark check

#### **WARNING**

- Sparks will take place. Care must be exercised to the surrounding combustible objects.

- (1) Warm up the engine.
- (2) Turn the IG switch to LOCK.
- (3) Remove the fuel pump relay.
- (4) Let the engine idle and wait until it stops by itself.
- (5) Turn the IG switch to LOCK.
- (6) Remove the connector of the injector.

#### **CAUTION**

- Stop the fuel injection through the above operation and prevent damaging the catalyst by the unburned gas.

- (7) Remove the spark plug and install it to the ignition coil to earth the plug.
- (8) Check the state of the spark plug during cranking..

**SPECIFIED VALUE: An ignition spark is generated.**

2. Diagnosis check

- (1) Check the diagnosis.

**Refer to Page B8-33.**

3. Ion current combustion detection circuit check (Vehicle equipped with the ion current combustion control system)

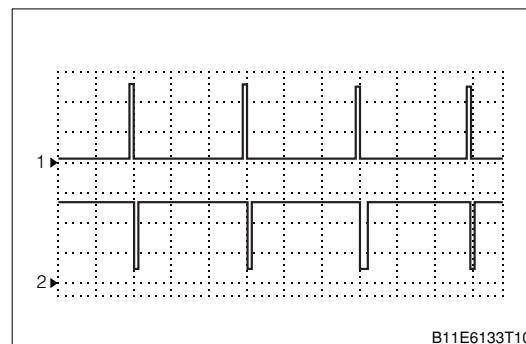
- (1) Connect the SST.

**SST: 09842-97209-000**

- (2) Completely warm up the engine.

(3) While idling (With the air conditioner turned ON with electric load), check each cylinder for output waveforms of the ignition signal (1 ▶) and ion current combustion control signal (2 ▶), using an oscilloscope.

	Channel	+ side measuring terminal	- side measuring terminal
Cylinder No.1	1 ▶	63(IG1)	125(E1)
	2 ▶	51(ICMB1)	125(E1)
Cylinder No.2	1 ▶	62(IG2)	125(E1)
	2 ▶	50(ICMB2)	125(E1)
Cylinder No.3	1 ▶	61(IG3)	125(E1)
	2 ▶	49(ICMB3)	125(E1)



Time axis	50ms / DIV
Voltage axis	2V / DIV
Measuring condition	Air conditioner is ON; Electric load exists; during idling

Air conditioner is ON: Condition where all of the air conditioner switch (ACSW), blower switch (BLW) and magnet clutch (MGC) are ON.

Electric load exists: Conditions where the headlight (H/L) and defogger (DEF) are both ON.

**SPECIFIED VALUE:** Check that waveforms like those in the figure (Example) are produced (Ion current combustion control signal must output 0↔5V waveforms).

4.If 0↔5V waveform output is not detected in the ion current detection circuit check in Step 3 above, inspect the following points.

- (1) Check for an open or short circuit in the harness between the ignition coil - EFI ECU of the ion current combustion control signal system. (Repair fault if any.)
- (2) Check that no engine misfire has occurred and that idle state is stable, and then repeat the ion current detection circuit check in Step 3 above.

5.Using an oscilloscope, check the output waveform of the ion current combustion control signal for each cylinder, when the engine speed is increased slowly from an idle state to 4000rpm, and then the throttle is suddenly closed (At the fuel cut).

**SPECIFIED VALUE:** The output level must be constant at approx. 5V (0↔5V waveform must not be outputted).

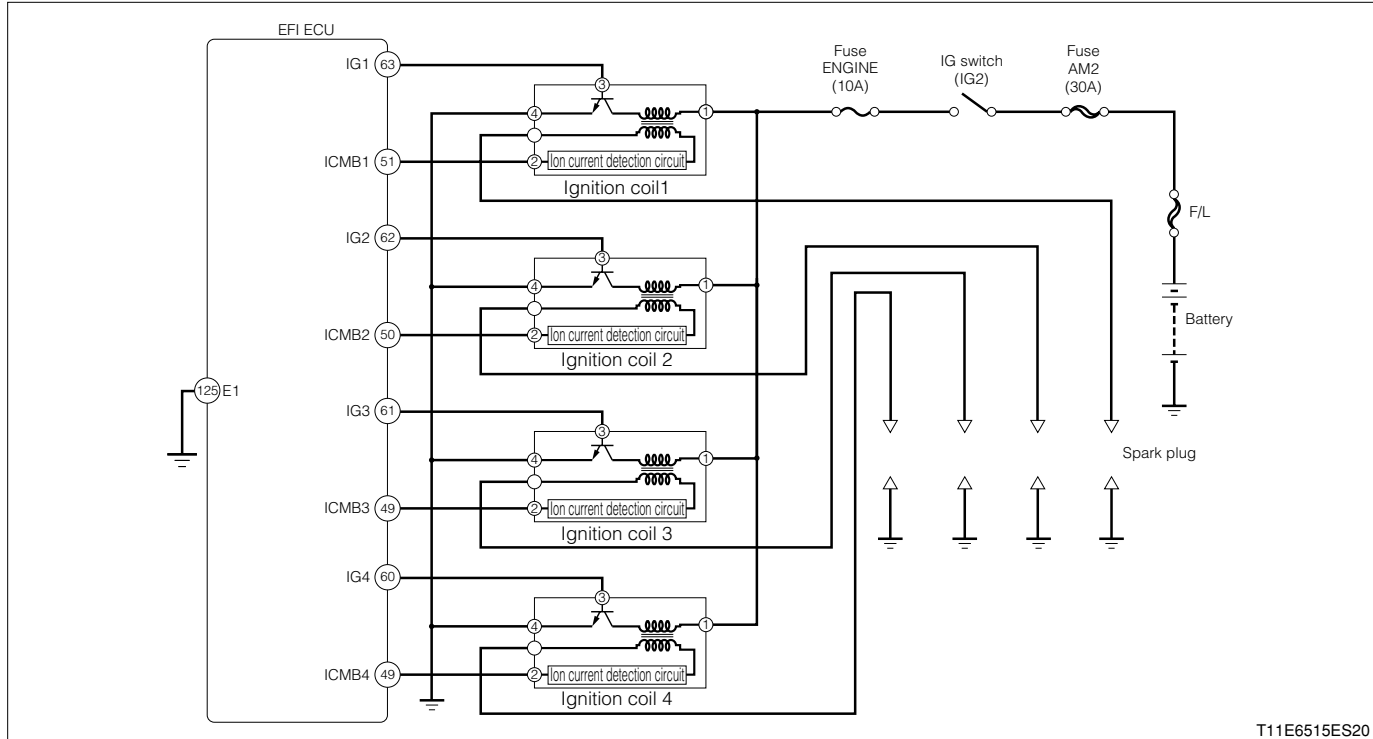
## (2) Plug, spark

- 1.Perform the plug check.  
Refer to Page B8-222.

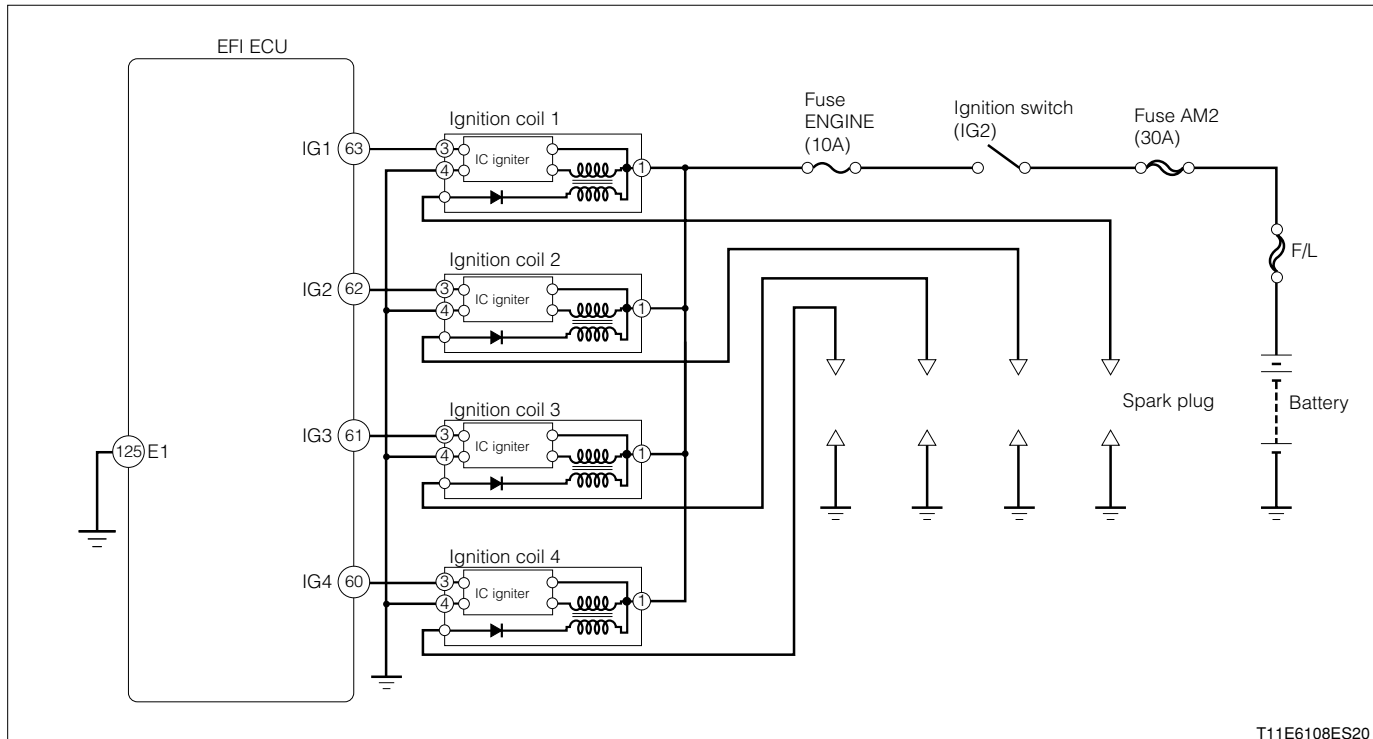
## 2-1-5 OPERATION AFTER INSTALLATION

- 1.Install air cleaner cap S/A.  
Refer to Page B3-1.

## ■ K3 1 IGNITION SYSTEM 1-1 SYSTEM DIAGRAM EU SPEC



## GENEAL SPC

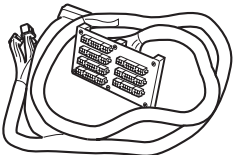


## 2 SPARK PLUG

### 2-1 REMOVAL AND INSTALLATION

#### 2-1-1 ARTICLES TO BE PREPARED

SST

Shape	Part No.	Part name
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Instrument

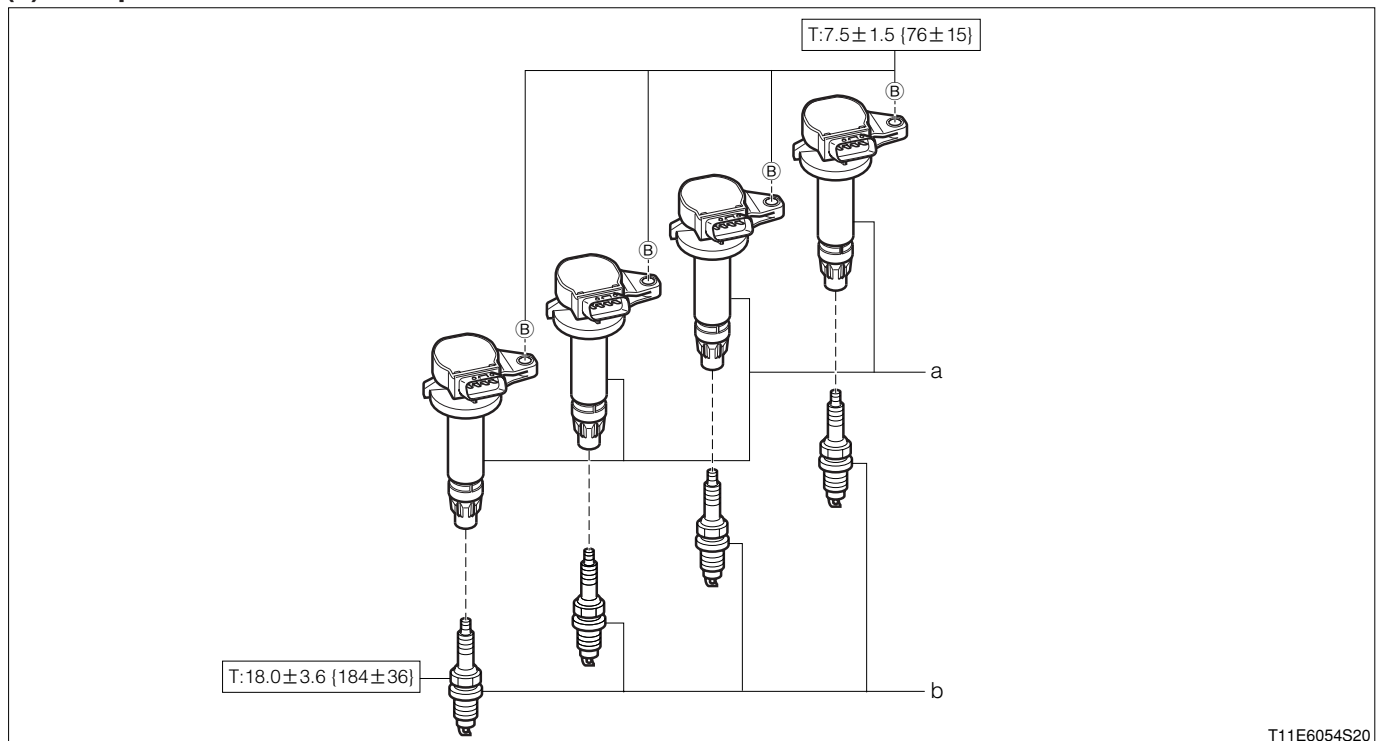
Torque wrench
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#### 2-1-2 OPERATION BEFORE REMOVAL

1. Remove the cleaner Ay, air W/ element.  
Refer to Page B3-9.

#### 2-1-3 REMOVAL AND INSTALLATION PROCEDURES

##### (1) Components



Unit: N·m {kgf·cm}

##### (2) Removal and installation procedures

- 1 a Coil Ay, w/igniter
- 2 b Plug, spark

# B10-7

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## 2-1-4 INSPECTION

### (1) Coil Ay, W/igniter

#### 1. Spark check

##### **WARNING**

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- (1) Warm up the engine.
- (2) Turn the IG switch to LOCK.
- (3) Remove the fuel pump relay.
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##### **CAUTION**

- Stop the fuel injection through the above operation and prevent damaging the catalyst by the unburned gas.

- (7) Remove the spark plug and install it to the ignition coil to earth the plug.
- (8) Check the state of the spark plug during cranking.

**SPECIFIED VALUE:** An ignition spark is generated.

#### 2. Diagnosis check

- (1) Check the diagnosis.

Refer to Page B8-33.

#### 3. Ion current detection circuit check (Vehicle equipped with the ion current combustion control system)

- (1) Connect the SST.

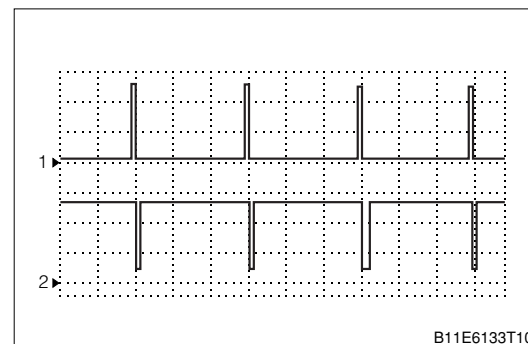
SST: 09842-97209-000

- (2) Completely warm up the engine.



- (3) While idling (With the air conditioner turned ON with electric load), check each cylinder for output waveforms of the ignition signal (1▶) and ion current combustion control signal (2▶), using an oscilloscope.

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Cylinder No.3	1▶	61(IG3)	125(E1)
	2▶	49(ICMB3)	125(E1)
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	2▶	48(ICMB4)	125(E1)



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- 5.Using an oscilloscope, check the output waveform of the ion current combustion control signal for each cylinder, when the engine speed is increased slowly from an idle state to 4000rpm, and then the throttle is suddenly closed (At the fuel cut).

**SPECIFIED VALUE:** The output level must be constant at approx. 5V (0↔5V waveform must not be outputted).

## (2) Plug, spark

- 1.Perform the plug check.

Refer to Page B8-471.

## 2-1-5 OPERATION AFTER INSTALLATION

- 1.Remove the cleaner Ay, air W/ element.

Refer to Page B3-9.