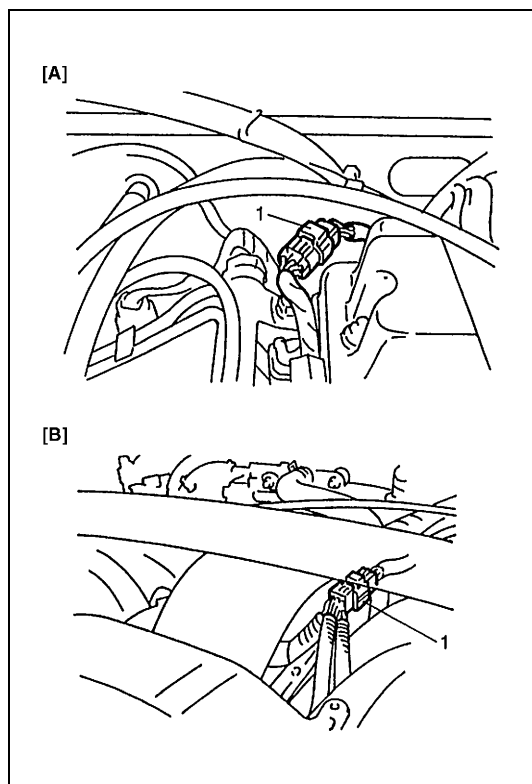


## On-Vehicle Service

### Ignition Spark Check

- 1) For H25 engine, remove surge tank cover.
- 2) Disconnect injector coupler (1).



#### WARNING:

**Without disconnection of injector coupler, combustible gas may come out from spark plug holes during this test and may get ignited in engine room.**

- 3) Remove spark plug and check it for condition and type, referring to "Spark Plug" in this section.
- 4) If OK, connect ignition coil coupler to ignition coil assembly and connect spark plug to ignition coil assembly. Ground spark plug.
- 5) Crank engine and check if each spark plug sparks. If no spark is emitted, inspect the related parts as described under "Diagnosis" earlier in this section.
- 6) After checking, install spark plug, referring to "Spark Plug" in this section.
- 7) Connect injector coupler (1).

[A]: J20 Engine

[B]: H25 Engine

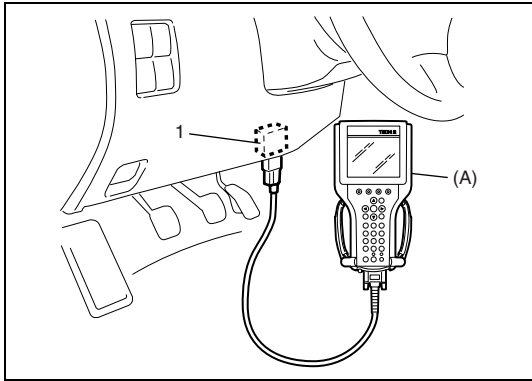
- 8) For H25 engine, install surge tank cover.

### Ignition Timing Check and Adjustment

#### NOTE:

**Before starting engine, place transmission gear shift lever in "Neutral" (shift selector lever to "P" range for A/T model), and set parking brake.**

- 1) Start engine and warm it up to normal operating temperature.
- 2) Make sure that all of electrical loads except ignition are switched off.
- 3) Check to be sure that idle speed is within specification. Refer to "Idle Speed/Idle Air Control Duty Inspection" in Section 6E1 or 6E2.

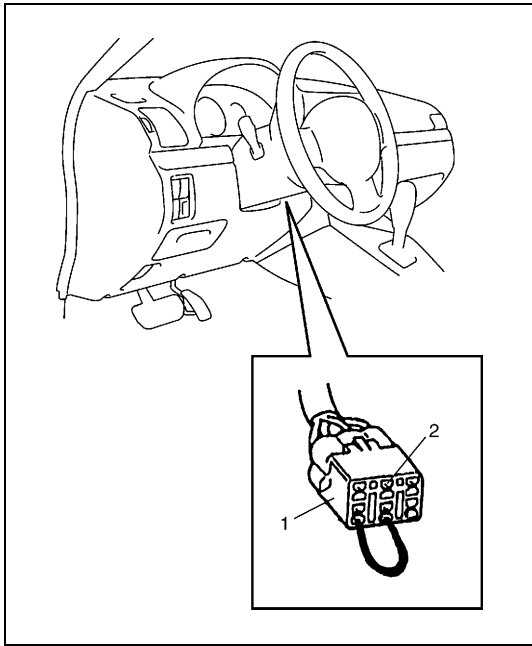


4) [Using SUZUKI scan tool]

Connect SUZUKI scan tool to DLC (1) with ignition switch OFF, restart engine and fix ignition timing by using fixed spark mode of SUZUKI scan tool.

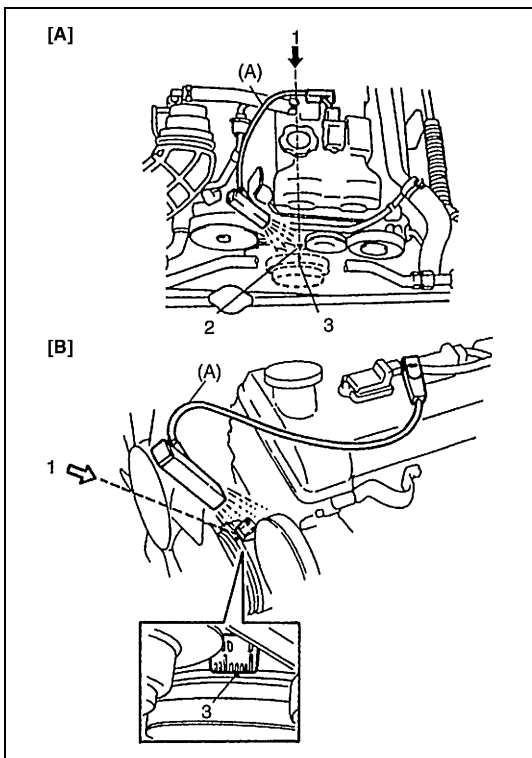
**Special tool**

**(A) : SUZUKI scan tool**



[Not using SUZUKI scan tool]

- Ground test switch terminal (2) in diagnosis coupler (1) by using service wire so that ignition timing is fixed on initial one.



5) Set timing light to ignition harness for No.1 cylinder.

6) Using timing light, check that timing observed from viewpoint (1) is within specification.

**Initial ignition timing of viewpoint**

**(when it is fixed by SUZUKI scan tool or service wire) :**

**5 ± 1° BTDC**

**Ignition order :**

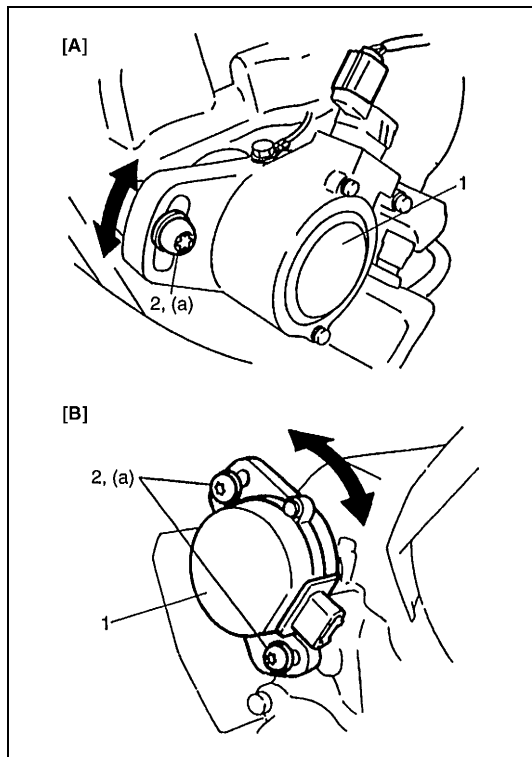
**1-3-4-2 (J20 engine)**

**1-6-5-4-3-2 (H25 engine)**

**Special tool**

**(A) : 09930-76420**

[A] : J20 Engine
[B] : H25 Engine
2. Timing mark on chain cover
3. Timing mark on crankshaft pulley

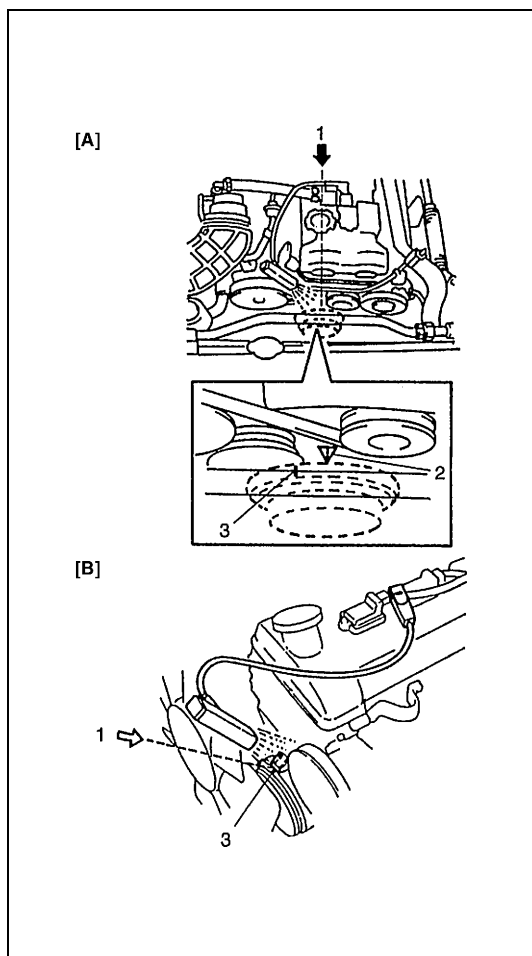


- 7) If ignition timing is out of specification, loosen flange bolt(s) (2), adjust timing by turning CMP sensor (1) while engine is running, and then tighten bolt(s) (2).

**Tightening torque**

**CMP sensor bolt (a) : 15 N·m (1.5 kg-m, 11.0 lb-ft)**

[A]: J20 Engine
[B]: H25 Engine



- 8) After tightening bolt(s), recheck that ignition timing is within specification.
- 9) After checking and/or adjusting, end fixed spark mode of SUZUKI scan tool or disconnect service wire from diagnosis connector.

**CAUTION:**

**Driving with test switch terminal grounded will cause damage to catalyst.**

**Be sure to disconnect service wire after adjustment.**

**NOTE:**

**In this state, ignition timing may vary more or less of initial ignition timing but it is nothing abnormal.**

- 10) With engine idling (closed throttle position and vehicle stopped), check that ignition timing is about BTDC 12° – 16° (J20 engine), 10° – 13° (H25 engine with diagnosis connector), 6° – 12° (H25 engine without diagnosis connector) (shown in the figure). Also, check that increasing engine speed advances ignition timing.

If above check results are not satisfactory, check input signals related to this system.

[A]: J20 Engine
[B]: H25 Engine
1. Viewpoint
2. Timing mark on chain cover
3. Timing mark on crankshaft pulley