HOW TO USE THIS MANUAL

IN00U–22

GENERAL INFORMATION

1. INDEX

An INDEX is provided on the first page of each section to guide you to the item to be repaired. To assist you in finding your way through the manual, the Section Title and major heading are given at the top of every page.

2. GENERAL DESCRIPTION

At the beginning of each section, a General Description is given that pertains to all repair operations contained in that section.
Read these precautions before starting any repair task.

3. TROUBLESHOOTING

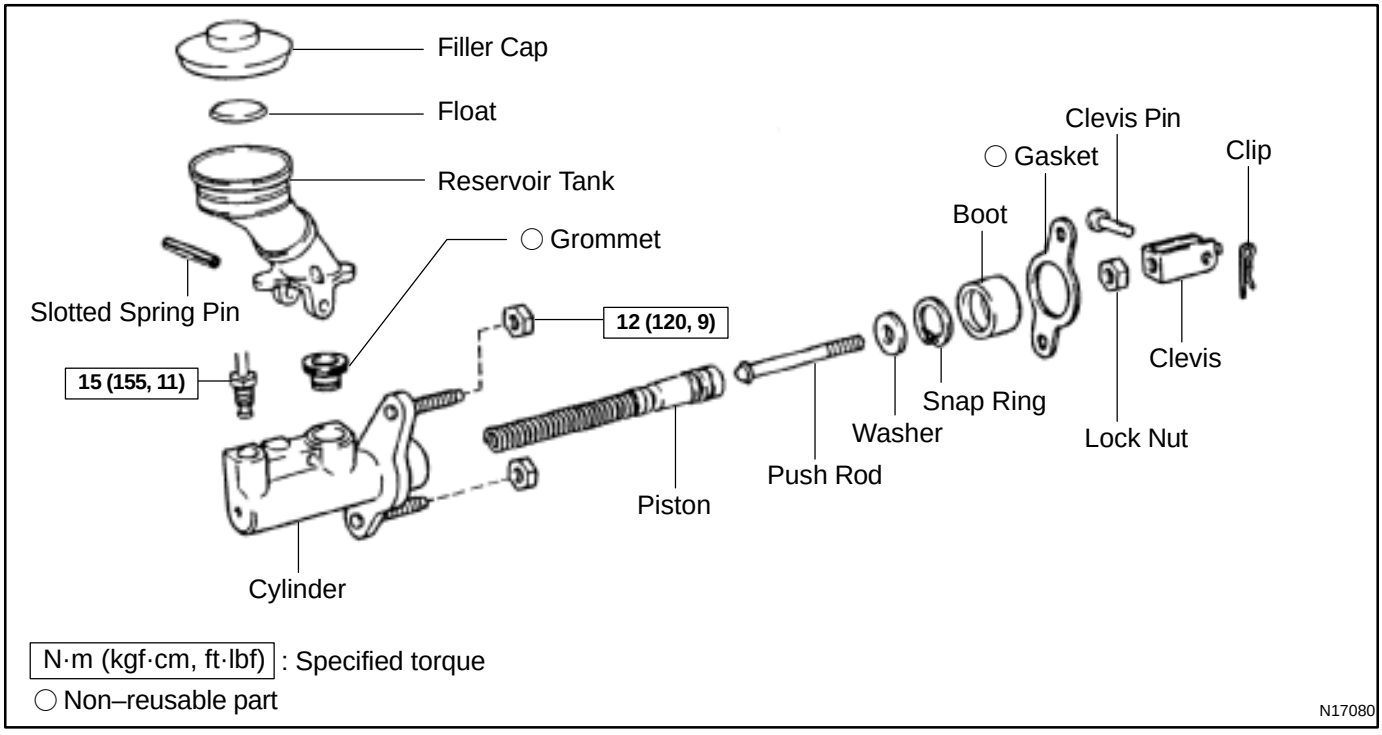
TROUBLESHOOTING tables are included for each system to help you diagnose the problem and find the cause. The fundamentals of how to proceed with troubleshooting are described on page IN–21.
Be sure to read this before performing troubleshooting.

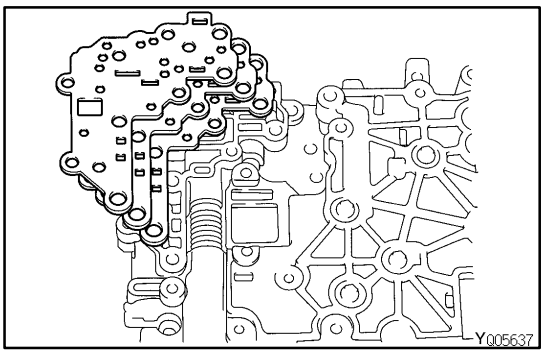
4. PREPARATION

Preparation lists the SST (Special Service Tools), recommended tools, equipment, lubricant and SSM (Special Service Materials) which should be prepared before beginning the operation and explains the purpose of each one.

5. REPAIR PROCEDURES

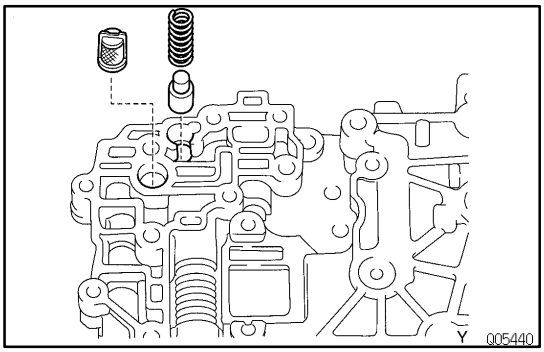
Most repair operations begin with an overview illustration. It identifies the components and shows how the parts fit together.
Example:



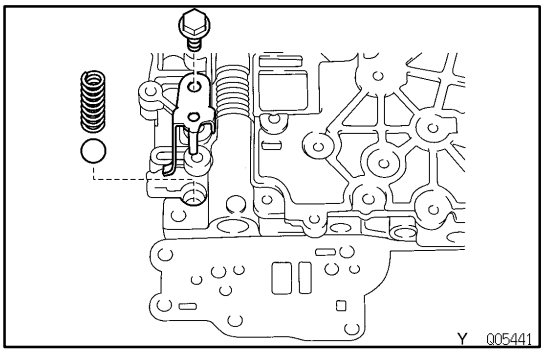


7. REMOVE OIL STRAINER, NO.1 LOWER VALVE BODY COVER GASKETS AND CHECK VALVE

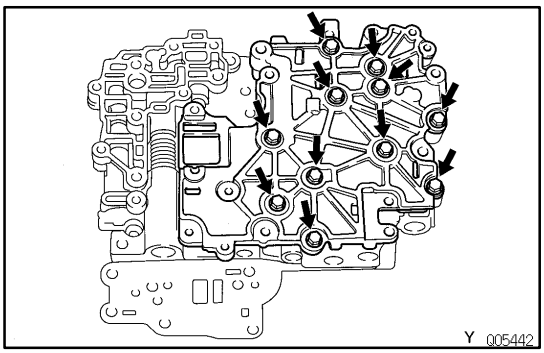
(a) Remove the 2 gaskets and plate from the lower valve body.



(b) Remove the oil strainer, check valve and spring.

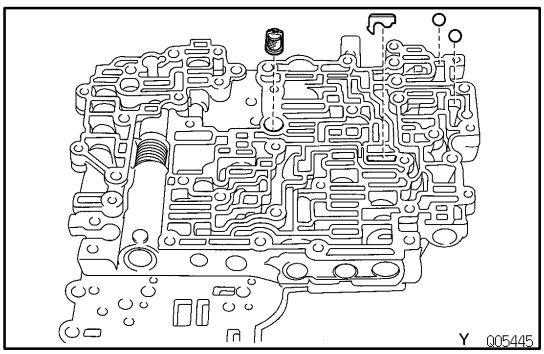


8. REMOVE PRESSURE RELIEF VALVE



9. REMOVE NO.2 LOWER VALVE BODY COVER, OIL STRAINER, CHECK BALLS AND VIBRATING STOPPER

Remove the 11 bolts and lower valve body cover.



(b) Remove the 2 check balls, oil strainer and vibrating stopper.

BO0N3–01

REASSEMBLY

1. Vertical Seat Adjuster:

INSTALL FRONT SEAT OUTER ADJUSTER

Install front seat outer adjuster to front seat inner adjuster with E ring, nuts and bolts.

2. w/o Vertical Seat Adjuster:

INSTALL FRONT SEAT OUTER AND INNER ADJUSTER

Install the adjusters to the seat cushion frame.

3. INSTALL SEAT TRACK ADJUSTING HANDLE

Install the seat track adjusting handle.

4. Vertical Seat Adjuster:

INSTALL SEAT CUSHION COVER

(a) Install the seat cushion cover to seat cushion pad.

(b) Install the seat cushion cover with pad to the seat cushion frame.

5. INSTALL SEAT CUSHION ASSEMBLY

Install the seat cushion assembly with 4 bolts to the seat adjuster.

HINT:

Tighten the 4 bolts temporarily, then from the bolts on the rear side tighten completely.

Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)

6. w/ Side Airbag Assembly:

INSTALL SIDE AIRBAG ASSEMBLY

Install the side airbag assembly with new 2 nuts to the seatback frame.

Torque: 6.0 N·m (61 kgf·cm, 53 in.·lbf)

NOTICE:

- **Make sure that the side airbag assembly is installed to the specified torque.**
- **If the side airbag assembly has been dropped, or there are cracks, dents or other defects in the case or connector, replace the side airbag assembly with a new one.**
- **When installing the side airbag assembly, take care is not pinched between other parts.**

7. INSTALL SEATBACK COVER

(a) Install the seatback cover to the seatback pad.

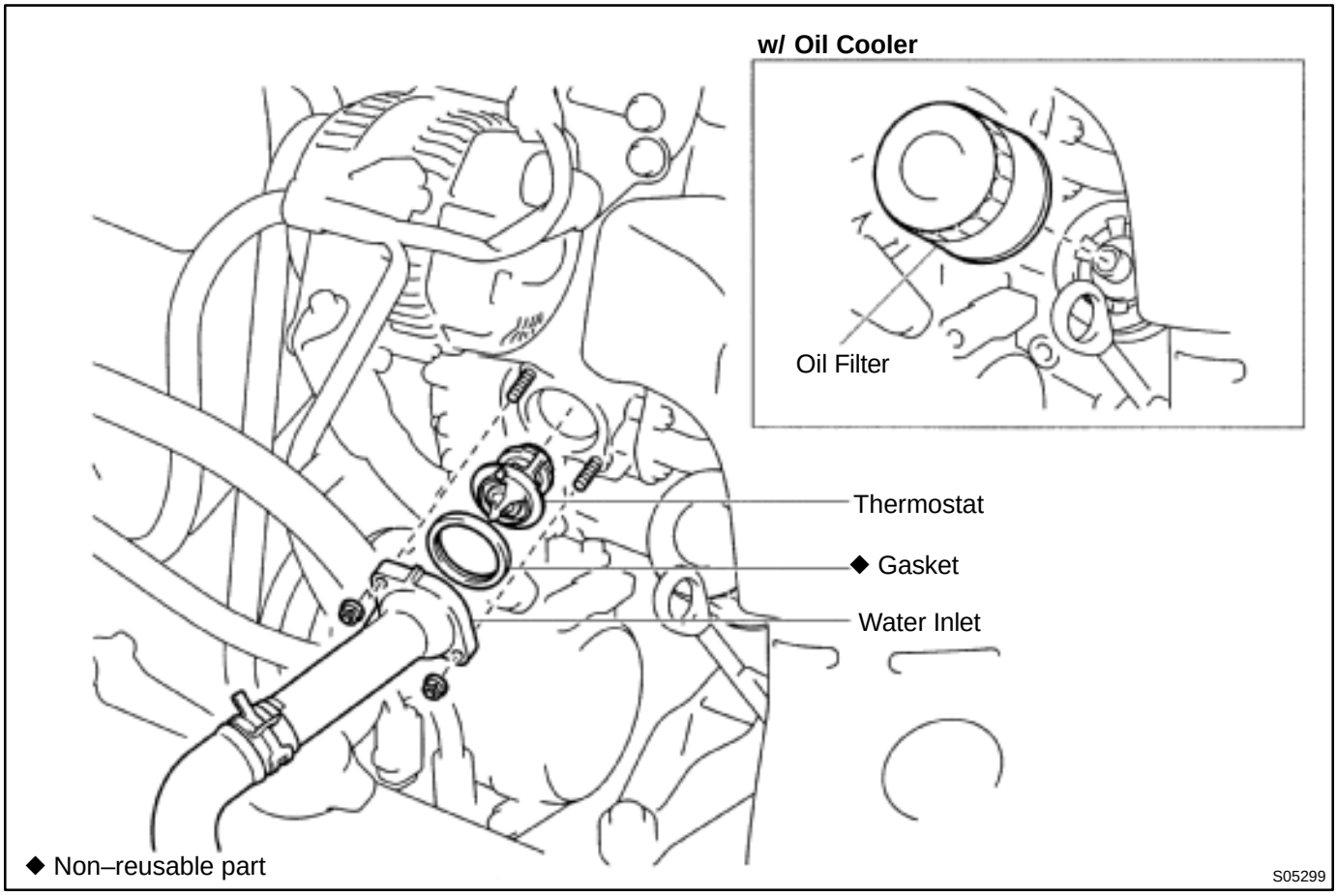
(b) Install the seatback cover with pad to the seatback frame.

(c) Install the headrest supports.

THERMOSTAT

COMPONENTS

CO06C–03



DI011–07

DTC	P0300	Random/Multiple Cylinder Misfire Detected

DTC	P0301	Cylinder 1 Misfire Detected

DTC	P0302	Cylinder 2 Misfire Detected

DTC	P0303	Cylinder 3 Misfire Detected

DTC	P0304	Cylinder 4 Misfire Detected

CIRCUIT DESCRIPTION

Misfire: The ECM uses the crankshaft position sensor and camshaft position sensor to monitor changes in the crankshaft rotation for each cylinder.

The ECM counts the number of times the engine speed change rate indicates that misfire has occurred. And when the misfire rate equals or exceeds the count indicating that the engine condition has deteriorated, the MIL lights up.

If the misfire rate is high enough and the driving conditions will cause catalyst overheating, the MIL blinks when misfiring occurs.

DTC No.	DTC Detecting Condition	Trouble Area
P0300 P0301 P0302 P0303 P0304	Misfiring of random cylinders is detected during any particular 200 or 1,000 revolutions For any particular 200 revolutions for engine, misfiring is detected which can cause catalyst overheating (This causes MIL to blink)	●Ignition system ●Injector ●Fuel line pressure ●EGR ●Compression pressure ●Valve clearance not to specification ●Valve timing ●Manifold absolute pressure sensor ●Engine coolant temp. sensor ●Open or short in engine wire ●Connector connection ●ECM

HINT:

When the 2 or more codes for a misfiring cylinder are recorded repeatedly but no random misfire code is recorded, it indicates that the misfires were detected and recorded at different times.

3	Check voltage between terminals VC and E2 of ECM connector (See page DI–311, step 9).

NG → Check and replace ECM (See page IN–31).

OK

4	Check voltage between terminals PTNK and E2 of ECM connectors (See page DI–311, step 10).

OK → Go to step 6.

NG

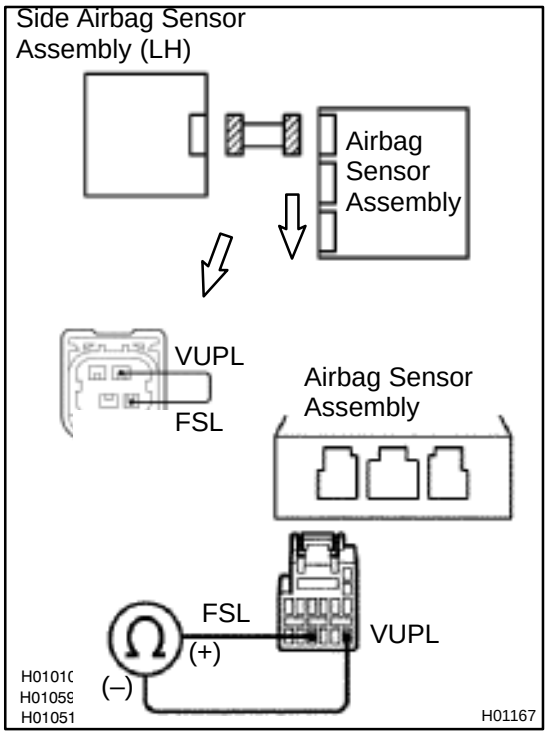
5	Check for open and short in harness and connector between vapor pressure sensor and ECM (See page IN–31).

NG → Repair or replace harness or connector.

OK

Replace vapor pressure sensor.

5	**Check wire harness.**



PREPARATION:

Using a service wire, connect VUPL and FSL of the connector (on the side airbag sensor assembly side) between the side airbag sensor assembly (LH) and the airbag sensor assembly.

CHECK:

For the connector (on the airbag sensor assembly side) between the side airbag sensor assembly (LH) and the airbag sensor assembly, measure the resistance between VUPL and FSL.

OK:

Resistance: Below 1 Ω

NG → **Repair or replace harness or connector between side airbag sensor assembly (LH) and airbag sensor assembly.**

OK

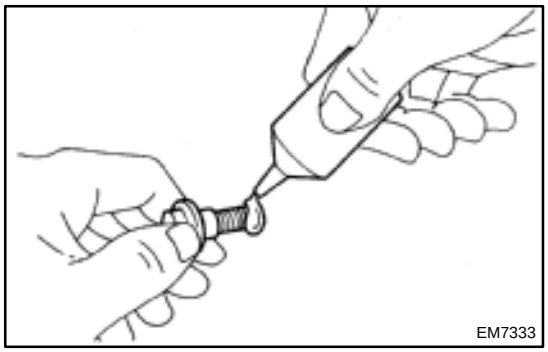
EM08G–04

INSTALLATION

1. INSTALL NO.1 REAR END PLATE

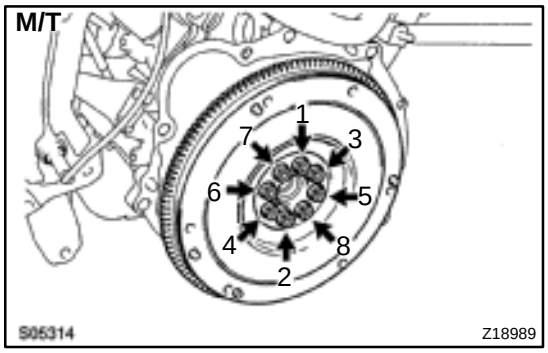
Install the end plate with the bolt.

Torque: 9.3 N·m (95 kgf·cm, 82 in.·lbf)



2. M/T:
INSTALL FLYWHEEL

(a) Apply adhesive to 2 or 3 threads of the bolt end.
Adhesive:
Part No. 08833–00070, THREE BOND 1324 or equivalent

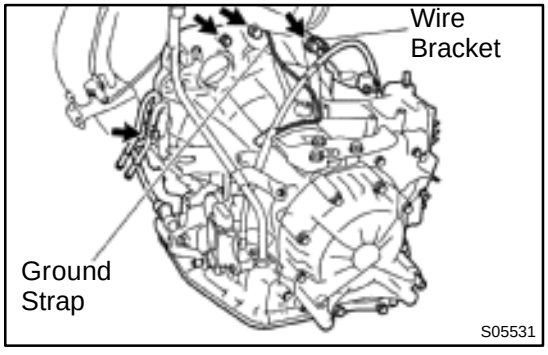


(b) Install the flywheel on the crankshaft.
(c) Install and uniformly tighten the 8 bolts in several passes, in the sequence shown.
Torque: 88 N·m (900 kgf·cm, 65 ft·lbf)

3. A/T:
INSTALL DRIVE PLATE (See step 2)
Torque: 83 N·m (850 kgf·cm, 61 ft·lbf)

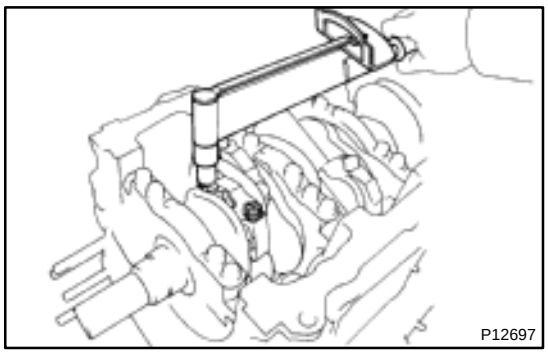
4. M/T:
INSTALL CLUTCH DISC AND COVER

5. A/T:
CHECK TORQUE CONVERTER CLUTCH INSTALLATION (A140E: See page AX–25)



6. INSTALL TRANSAXLE TO ENGINE

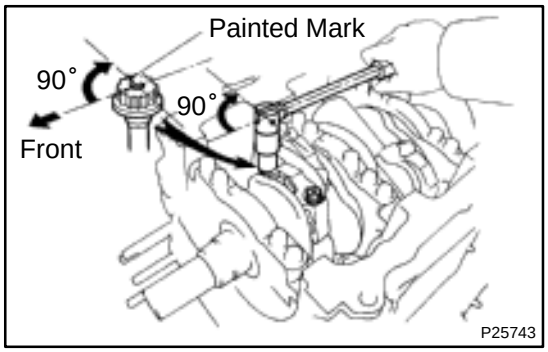
(a) Attach the transaxle to the engine.
(b) Install the ground strap, wire bracket and 4 bolts.
Torque:
46 N·m (470 kgf·cm, 34 ft·lbf) for 14 mm head
64 N·m (650 kgf·cm, 47 ft·lbf) for 17 mm head



(a) Apply a light coat of engine oil on the threads and under the heads of the connecting rod cap bolts.
(b) Install and alternately tighten the 2 connecting rod cap bolts in several passes.

Torque: 24.5 N·m (250 kgf·cm, 18 ft·lbf)

If any of the connecting rod cap bolts does not meet the torque specification, replace the connecting rod cap bolts.



(c) Mark the front of the connecting cap bolts with paint.
(d) Retighten the cap bolts by 90° as shown.
(e) Check that the painted mark is now at a 90° angle to the front.
(f) Check that the crankshaft turns smoothly.

14. CHECK CONNECTING ROD THRUST CLEARANCE (See page EM–83)

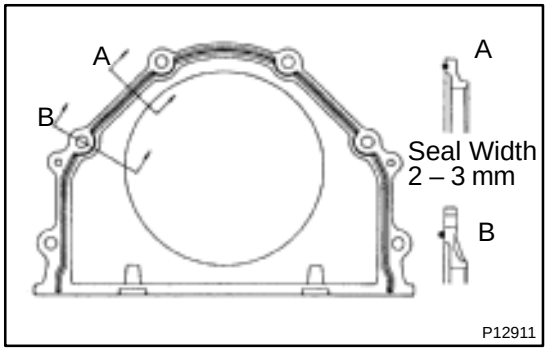
15. INSTALL REAR OIL SEAL RETAINER

(a) Remove any old packing (FIPG) material and be careful not to drop any oil on the contact surfaces of the oil seal retainer and cylinder block.

Using a razor blade and gasket scraper, remove all the oil packing (FIPG) material from the gasket surfaces and sealing grooves.

Thoroughly clean all components to remove all the loose material.

Using a non–residue solvent, clean both sealing surfaces.



(b) Apply seal packing to the oil seal retainer as shown in the illustration.

Seal packing: Part No. 08826–00080 or equivalent

Install a nozzle that has been cut to a 2 – 3 mm (0.08 – 0.12 in.) opening.

Parts must be assembled within 3 minutes of application. Otherwise the material must be removed and reapplied.

Immediately remove nozzle from the tube and reinstall cap.

(c) Install the oil seal retainer with the 6 bolts Uniformly tighten the bolt in several passes, in the sequence shown.

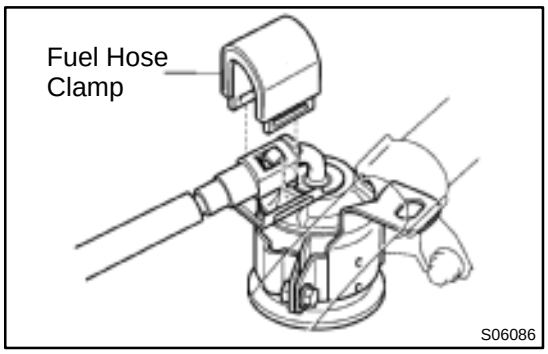
Torque: 8 N·m (80 kgf·cm, 69 in.·lbf)

16. INSTALL EGR COOLER

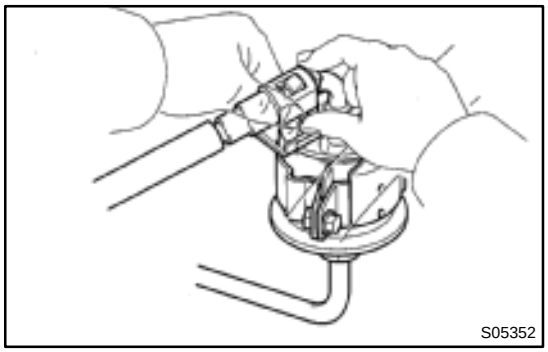
Install a new gasket and the EGR cooler with the 3 bolts and 2 nuts.

Torque: 9 N·m (90 kgf·cm, 78 in.·lbf)

No.2 RH engine mounting stay x No.2 Generator bracket	64	650	47
RH engine mounting stay x Water outlet	32	320	23
RH engine mounting stay x Engine moving control rod	32	320	23
RH engine mounting stay x No.2 RH engine mounting bracket	32	320	23
Front engine mounting insulator x Front frame			
TMC made	80	820	59
TMMK made Silver color bolt	44	450	32
Green color bolt	66	670	48
Engine mounting absorber x Front frame	48	490	35
Engine mounting absorber x Transaxle	48	490	35
Rear engine mounting insulator x Front frame	66	670	48
LH engine mounting insulator x Transaxle	64	650	47
PS pump x PS pump bracket	43	440	31
A/C compressor x Housing bracket	25	250	18
A/C compressor x No.1 oil pan	25	250	18
Generator adjusting bar x Drive belt adjusting bar bracket	18	185	13
Main bearing cap x Cylinder block 12 pointed head bolt 1st	22	225	16
2nd	Turn 90°	Turn 90°	Turn 90°
6 pointed head bolt	27	275	20
Connecting rod cap x Connecting rod 1st	24.5	250	18
2nd	Turn 90°	Turn 90°	Turn 90°
Rear oil seal retainer x Cylinder block	8	80	69 in.·lbf
EGR cooler x Cylinder block	9	90	78 in.·lbf
Engine coolant drain union x Cylinder block	39	400	29
Water seal plate x Cylinder block	18	180	13
Oil filter union x Cylinder block	30	310	22
Water inlet housing x Cylinder block	8	80	69 in.·lbf
Knock sensor x Cylinder block	39	400	29
No.2 idler pulley bracket x Cylinder block	28	290	21
A/C compressor housing bracket x Cylinder block	25	250	18
Generator bracket x Cylinder block	43	440	32
Drive plate x Crankshaft	83	850	61
Flywheel x Crankshaft	83	850	61
Front exhaust pipe support bracket x No.1 oil pan	21	210	15
Front exhaust pipe x Exhaust manifold	62	630	46
Front exhaust pipe x Center exhaust pipe	56	570	41
Center exhaust pipe x Tailpipe	56	570	41
Front exhaust pipe bracket x Sub frame	33	330	24
Front exhaust pipe support bracket x Front exhaust pipe stay	33	330	24
Heated oxygen sensor x Center exhaust pipe	44	450	33



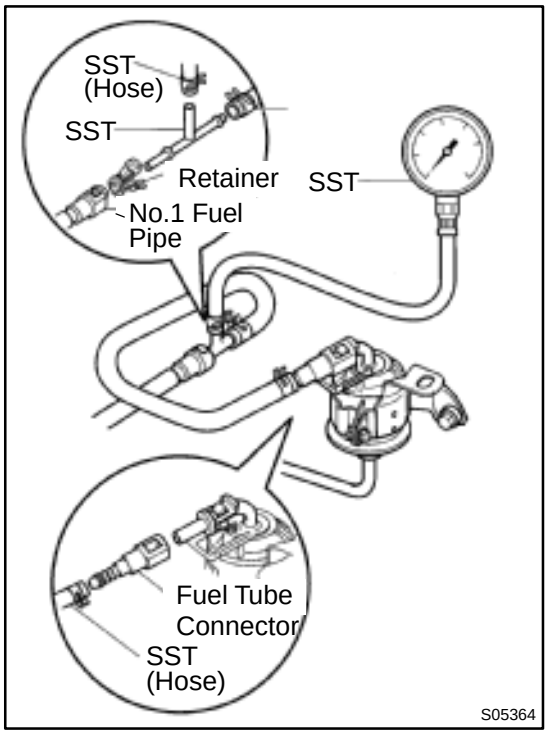
(d) Remove the fuel hose clamp.



(e) Disconnect the No.1 fuel pipe (fuel tube connector) from the fuel filter outlet.

CAUTION:

- **Perform disconnecting operations of the fuel tube connector (quick type) after observing the precautions. (See page SF–1)**
- **As there is retained pressure in the fuel pipe line, prevent it from splashing inside the engine compartment.**



(f) Install SST (pressure gauge) as shown in the illustration by using SST and fuel tube connector.
SST 09268–41047, 09268–41250, 09268–45012

(g) Wipe off any splattered gasoline.

(h) Reconnect the negative (–) terminal cable to the battery.

(i) Connect the TOYOTA hand held tester to the DLC3.
(See step 1. check fuel pump operation (a) to (e))

(j) Measure the fuel pressure.
Fuel pressure:
301 – 347 kPa (3.1 – 3.5 kgf/cm^2, 44 – 50 psi)

If pressure is high, replace the fuel pressure regulator.
If pressure is low, check these parts:
Fuel hoses and connections
Fuel pump
Fuel filter
Fuel pressure regulator

(k) Disconnect the TOYOTA hand–held tester from the DLC3.

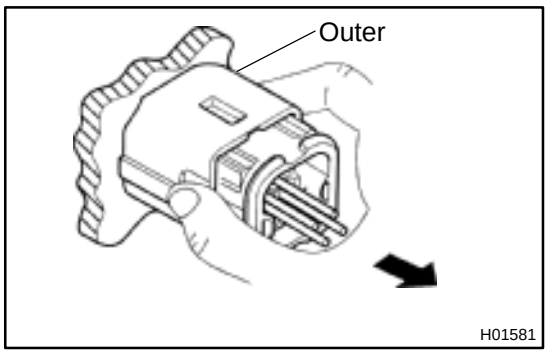
(l) Start the engine.

(m) Measure the fuel pressure at idle.
Fuel pressure:
301 – 347 kPa (3.1 – 3.5 kgf/cm^2, 44 – 50 psi)

(n) Stop the engine.

(o) Check that the fuel pressure remains as specified for 5 minutes after the engine has stopped.
Fuel pressure:
147 kPa (1.5 kgf/cm^2, 21 psi) or more

If pressure is not as specified, check the fuel pump, pressure regulator and/or injectors.



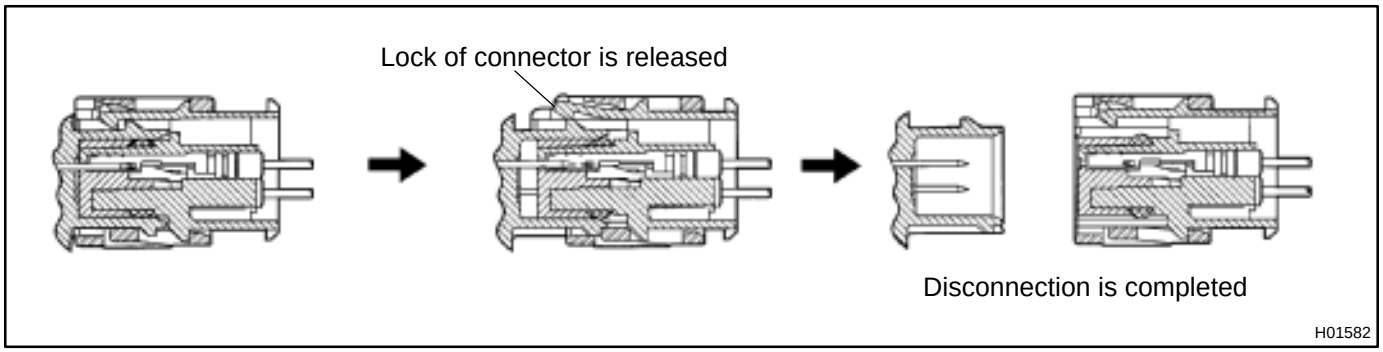
12. DISCONNECTION OF FRONT AIRBAG SENSOR AND SIDE AIRBAG SENSOR CONNECTOR

(a) While holding both flank sides of the outer, slide the outer to the direction shown by an arrow.

(b) Lock of the connectors is released, then disconnect the connectors.

HINT:

Make sure to hold both flank sides of the outer. If holding the top and bottom sides, it will obstruct disconnection.



13. CONNECTION OF FRONT AIRBAG SENSOR AND SIDE AIRBAG SENSOR CONNECTOR

(a) Align the male connector (of the side of sensor) and female connector in the same direction as shown in the illustration and fit in them without rubbing.

(b) As they are fitted in, the outer slides rearward. Press it until the outer returns to its original position again.

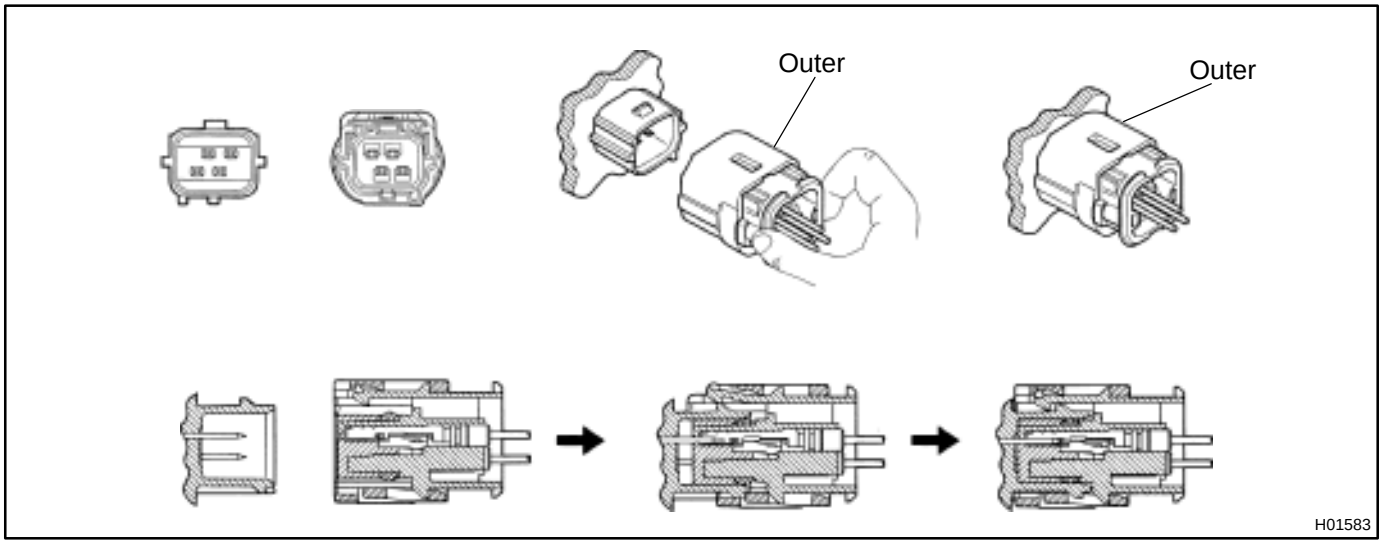
If fitting stops half way, connectors will separate.

(c) Make sure to insert until they are locked. After fitting in, pull them slightly to check that they are locked. (When locked, make sure that the outer returns to its original position and sound at the time of fitting in can be heard.)

HINT:

Do not fit in while holding the outer.

When fitting in, the outer slides. Do not touch it.

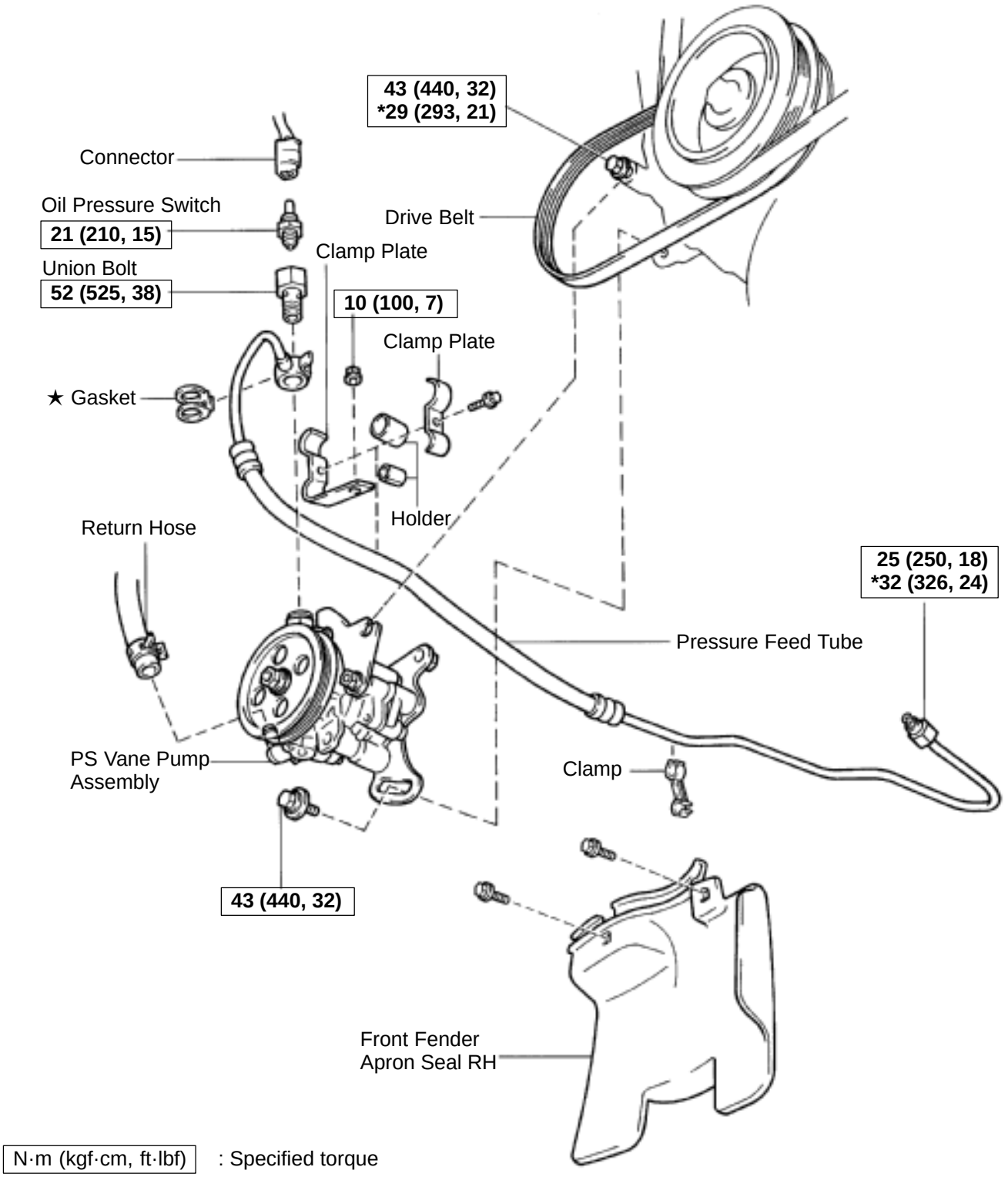


POWER STEERING VANE PUMP

COMPONENTS

SR06N–03

5S–FE Engine :

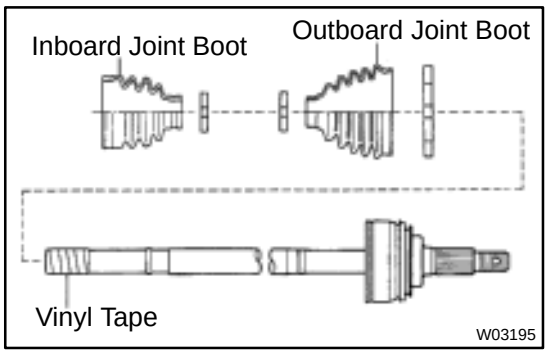


N·m (kgf·cm, ft·lbf) : Specified torque

★ Non–reusable part

* For use with SST

W03364



4. TEMPORARILY INSTALL OUTBOARD AND INBOARD JOINT BOOTS AND NEW BOOT CLAMPS

HINT:

- Before installing the boots, wrap the spline of the drive shaft in vinyl tape to prevent the boots from being damaged.
- Before installing the boots, place 3 new clamps to the small boot ends and large end (wheel side) and then install boots to drive shaft.

5. INSTALL INBOARD JOINT SHAFT TO OUTBOARD JOINT SHAFT

Align the matchmarks placed at removal, and using a snap ring expander, put in the inboard joint shaft expanding the snap ring.

6. INSTALL BOOT TO OUTBOARD JOINT

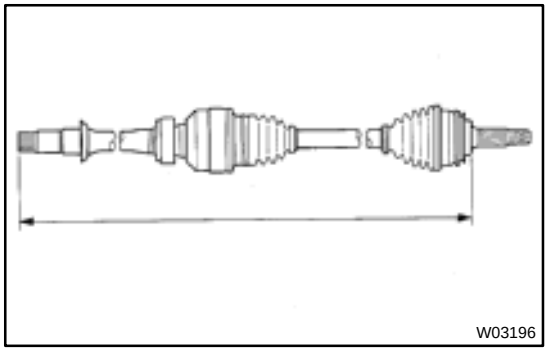
Before assembling the boot, pack the outboard joint and boot with grease in the boot kit.

Grease capacity: (Color = Black)
105 – 125 g (3.7 – 4.4 oz.)

7. INSTALL BOOT TO INBOARD JOINT SHAFT

(a) Pack the inboard joint and boot with grease in the boot kit.
Grease capacity: (Color = Gray)
Joint side: 142.5 – 157.5 g (5.0 – 5.6 oz.)
Boot side: 52.5 – 57.5 g (2.1 – 2.3 oz.)

(b) Install the boot to the inboard joint shaft.

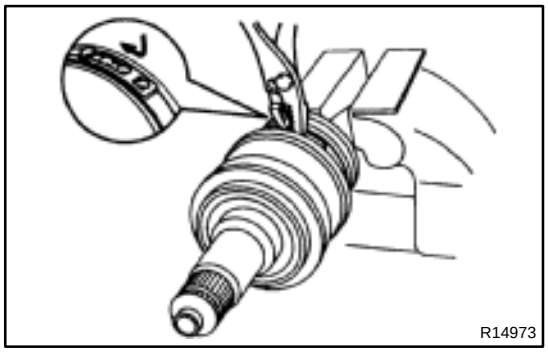


8. ASSEMBLE BOOT CLAMPS TO BOTH BOOTS

(a) Make sure that the 2 boots are on the shaft groove.

(b) Make sure that the 2 boots are not stretched or contracted when the drive shaft is at standard length.
Drive shaft standard length:

M/T LH	601.5 ± 2.0 mm (23.681 ± 0.079 in.)
RH	871.6 ± 2.0 mm (34.315 ± 0.079 in.)
A/T LH	586.0 ± 2.0 mm (23.071 ± 0.079 in.)
RH	881.6 ± 2.0 mm (34.709 ± 0.079 in.)



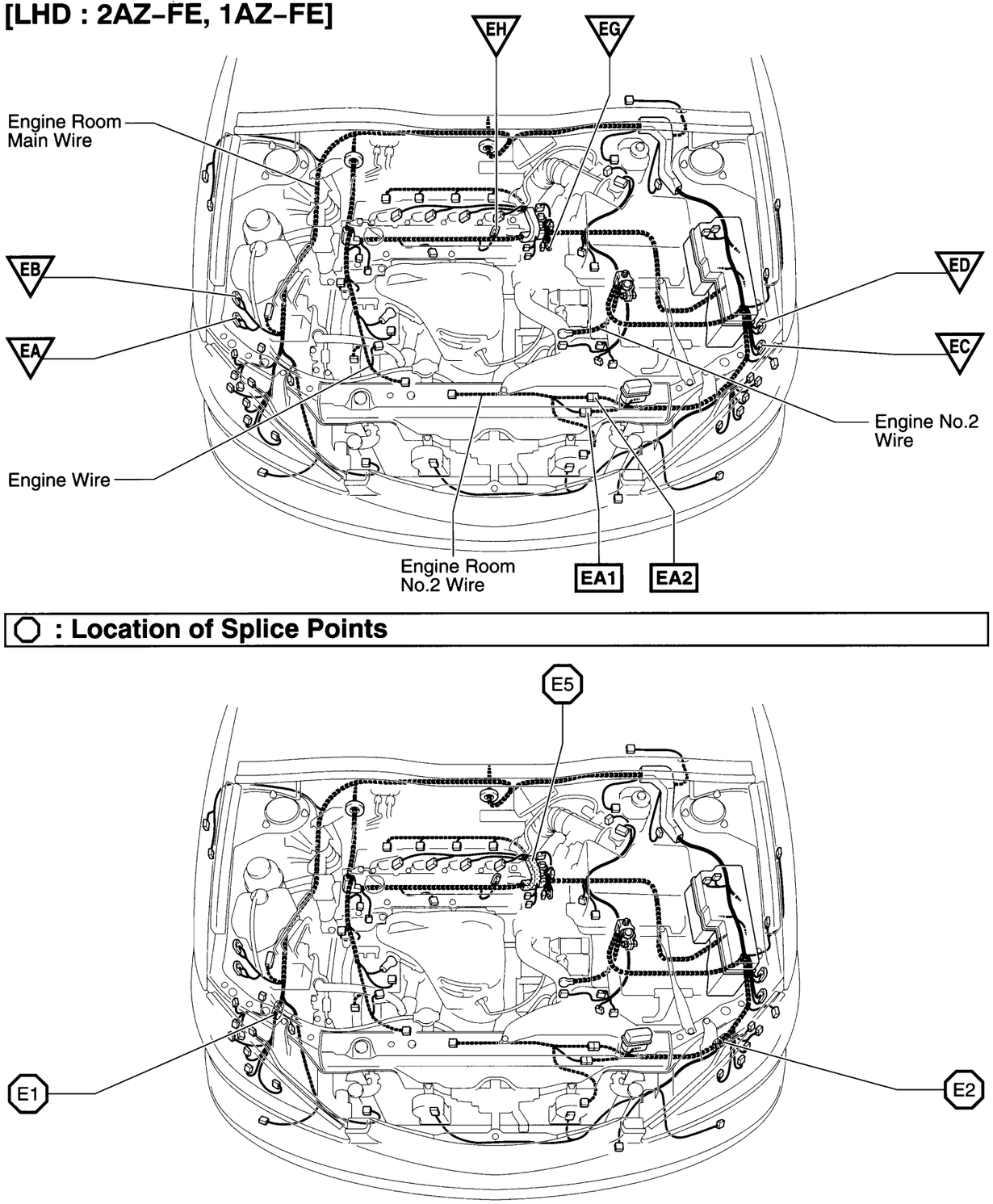
(c) Holding the clamp near the closing hooks, using pliers, position the holes in the clamp's free end over the closing hooks.

(d) Secure clamp by drawing the closing hooks together.

▭ : Location of Connector Joining Wire Harness and Wire Harness

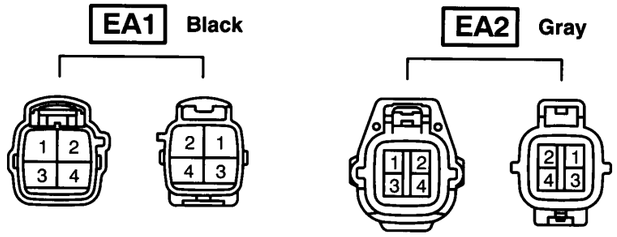
▽ : Location of Ground Points

[LHD : 2AZ-FE, 1AZ-FE]



○ : Location of Splice Points

Connector Joining Wire Harness and Wire Harness



Code	Joining Wire Harness and Wire Harness (Connector Location)
EA1	Engine Room Main Wire and Engine Room No.2 Wire (Radiator Side Support LH)
EA2	