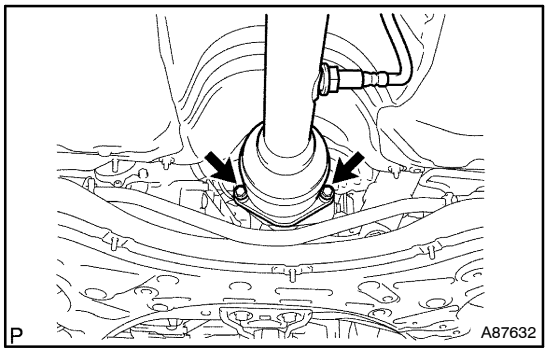
141OC–01

REPLACEMENT

1. DISCHARGE FUEL SYSTEM PRESSURE (See page 11–3)
2. PRECAUTION (See page 01–29)
3. REMOVE REAR FLOOR BOARD NO.2 (See page 21–120)
4. REMOVE DECK FLOOR BOX REAR (See page 21–120)
5. REMOVE REAR FLOOR BOARD NO.3 (See page 21–120)
6. DISCONNECT BATTERY NEGATIVE TERMINAL (See page 21–120)
7. REMOVE SERVICE PLUG GRIP (See page 21–120)

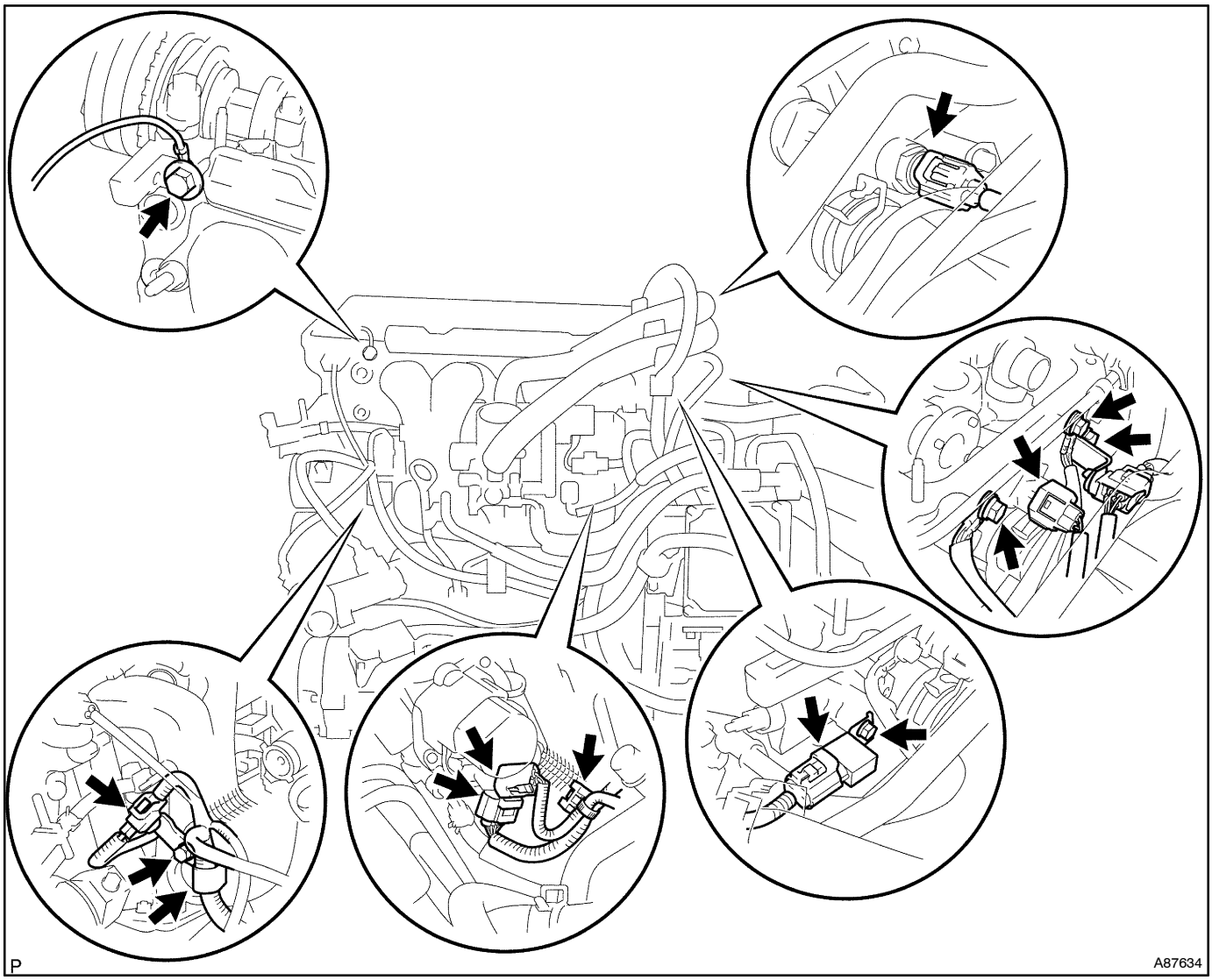


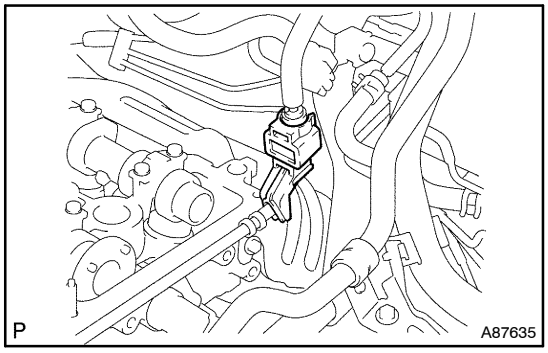
8. SEPARATE EXHAUST PIPE ASSY FRONT
   (a) Remove the 2 bolts and 2 compression rings, then disconnect the exhaust pipe assembly front from the exhaust manifold.

9. REMOVE W/CONVERTER INVERTER ASSY (See page 21–25)
10. REMOVE CHAIN SUB–ASSY (See page 14–89)

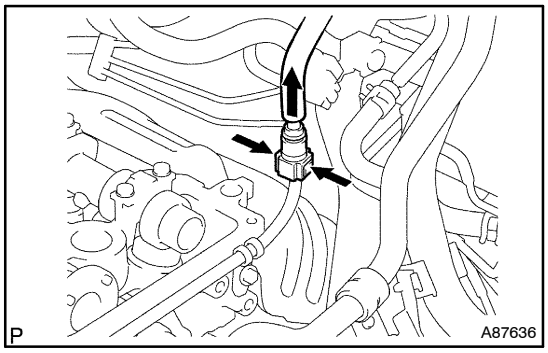
11. REMOVE CYLINDER HEAD SUB–ASSY

(a) Disconnect the connectors and wiring harnesses shown in the illustration.





(b) Remove the fuel pipe clamp.

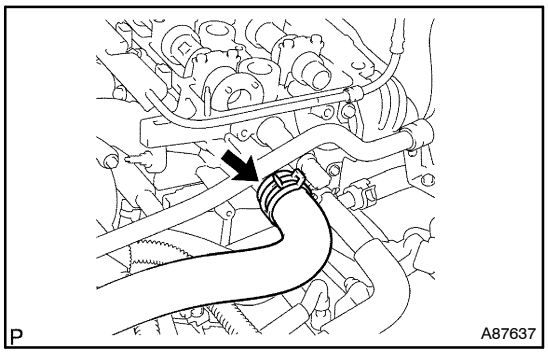


(c) Disconnect the fuel tube from the fuel delivery pipe.

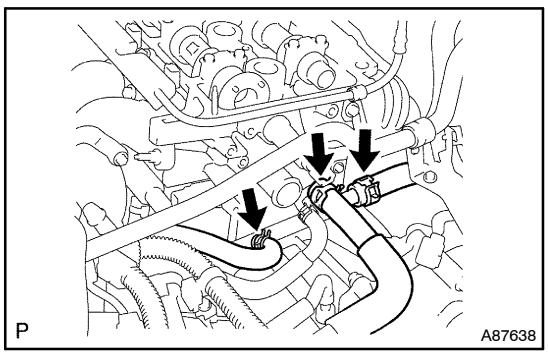
NOTICE:

Even if the fuel tube is stuck and cannot be disconnected, do not use any tools. Push and pull the parts with the quick connecter pinched to disconnect.

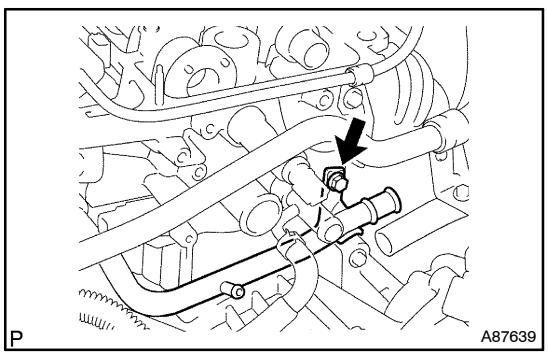
(d) Cover the disconnected fuel tube and fuel delivery pipe with a vinyl bag in order to prevent foreign objects from being introduced.



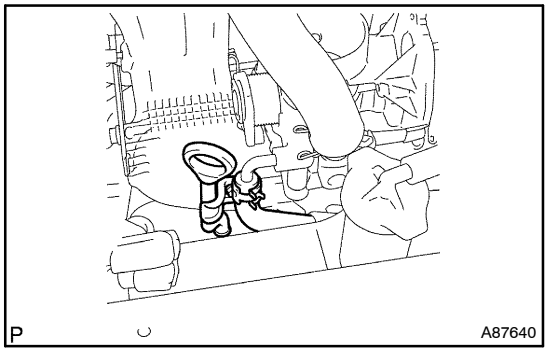
(e) Disconnect the radiator inlet hose.



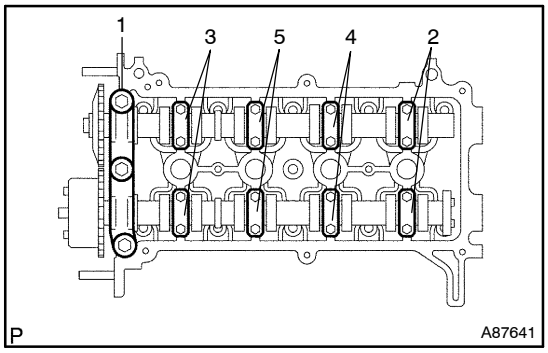
(f) Disconnect the hoses shown in the illustration.



(g) Remove the bolt, then disconnect the water by–pass pipe.

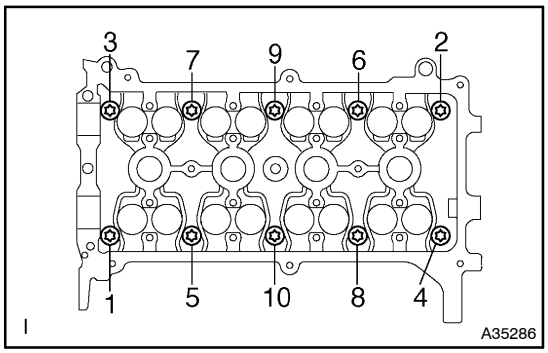


(h) Disconnect the hoses shown in the illustration.
(i) Remove the bolt, then disconnect the oil level gage guide.



(j) Remove the camshaft bearing caps No. 1 and No. 2 in the sequence shown in the illustration, then remove the camshaft and camshaft No. 2.

NOTICE:
Uniformly loosen the bolts keeping the camshaft level.

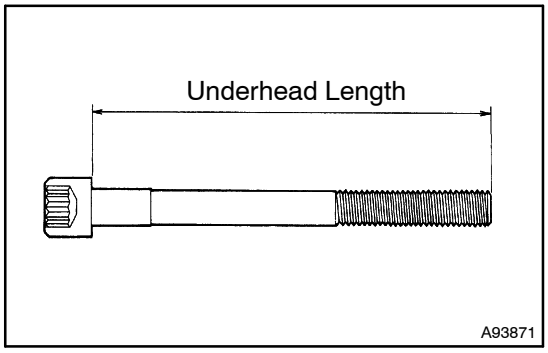


(k) Using 8 mm bi–hexagon wrench, loosen the cylinder head bolt in several steps in the sequence shown in the illustration. Then remove the cylinder head bolt and washer.

NOTICE:
- **when removing the bolt, do not drop the washer into the engine.**
- **Removing the cylinder head bolts in a wrong order may cause damage to the cylinder head.**

(l) Remove the cylinder head.

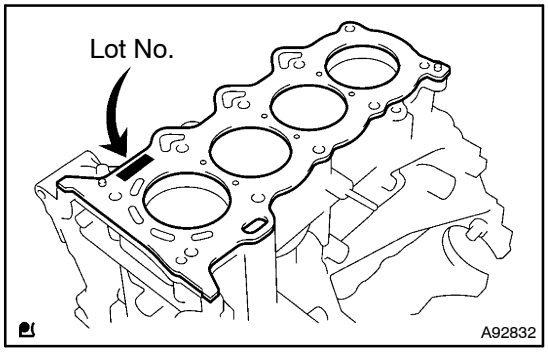
12. REMOVE CYLINDER HEAD GASKET



13. INSPECT CYLINDER HEAD SET BOLT

(a) Using vernier calipers, measure the underhead length of the head bolt from the seating to the end.
Standard bolt length:
142.8 to 144.2 mm (5.622 to 5.677 in.)
Maximum bolt length: 147.1 mm (5.791 in.)

If the underhead length is greater than maximum, replace the head bolt.



14. INSTALL CYLINDER HEAD GASKET

(a) Place a new head gasket on the cylinder block with the Lot No. facing upward.

NOTICE:

- **Remove any oil from the contact surface.**
- **Be careful of the installation direction.**
- **Do not damage the cylinder head gasket when installing.**

15. INSTALL CYLINDER HEAD SUB–ASSY

HINT:

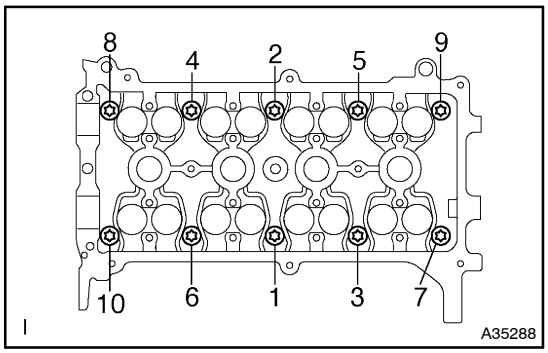
The cylinder head bolts are tightened in 2 successive steps.

(a) Install the cylinder head to the cylinder block.

NOTICE:

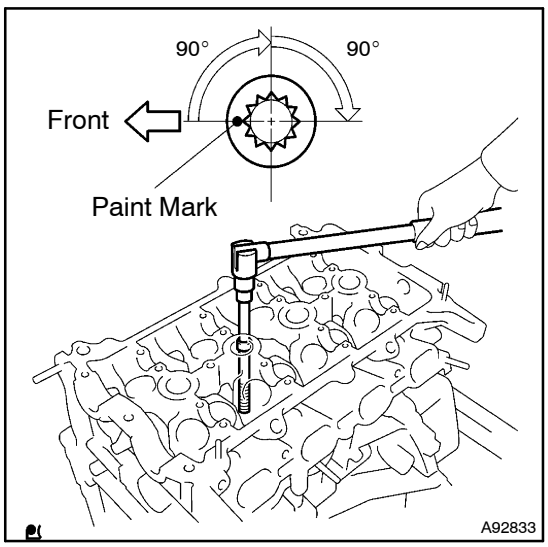
Do not damage the cylinder head gasket at the bottom of the cylinder head.

(b) Apply a light coat of engine oil to the threads and seating of the cylinder head bolts.



(c) Using several steps, temporarily install the cylinder head bolts with an 8 mm bi–hexagon wrench in the sequence shown in the illustration, then tighten the bolts with the specified torque.

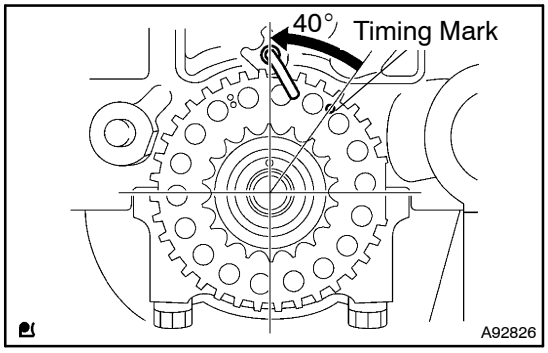
Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)



(d) Mark the front of the cylinder head bolts with paint.

(e) Retighten the bolts by additional 90° in the same sequence as step (c), then retighten them by one more additional 90°.

(f) Check that each paint mark is now at the 180° angle to the front.

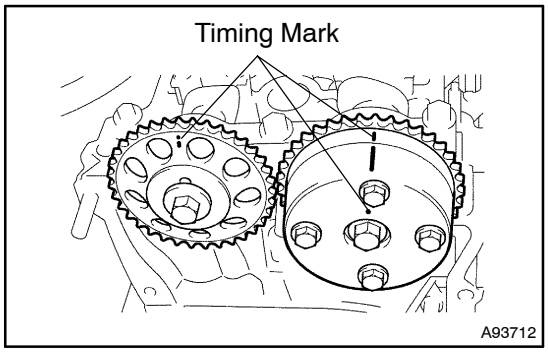


(g) Install the camshaft.

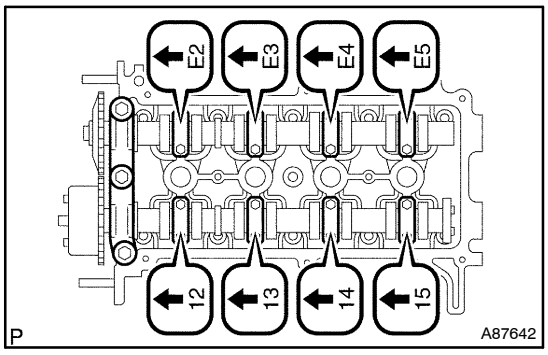
NOTICE:

If turning the camshaft with the chain removed, turn the crankshaft counterclockwise by 40° from the TDC/compression.

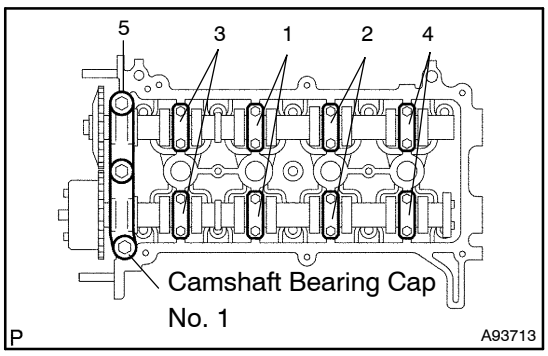
(1) Apply engine oil to the cam and cylinder head journal.



(2) Place the camshaft and camshaft No. 2 on the cylinder head with the timing mark on the camshaft timing gear facing upward.



(3) Check the front marks and numbers on the camshaft bearing caps No. 1 and No. 2, then temporarily install them.



(4) Uniformly tighten the camshaft bearing caps No. 2 in several steps in the sequence shown in the illustration.

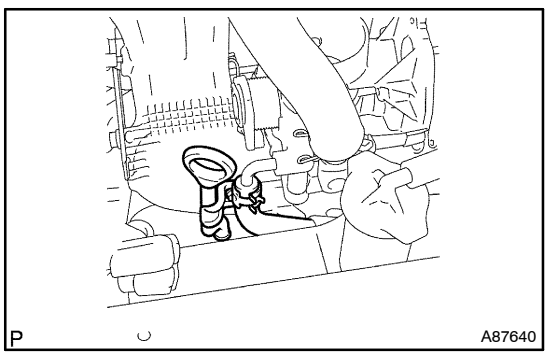
Torque: 13 N·m (130 kgf·cm, 9.6 ft·lbf)

NOTICE:

Uniformly loosen the bolts keeping the camshaft level.

(5) Install the camshaft bearing cap No. 1.

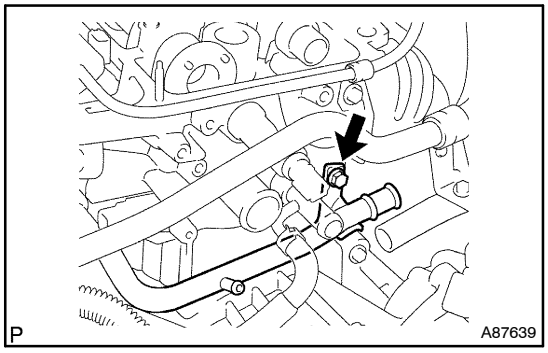
Torque: 23 N·m (235 kgf·cm, 17 ft·lbf)



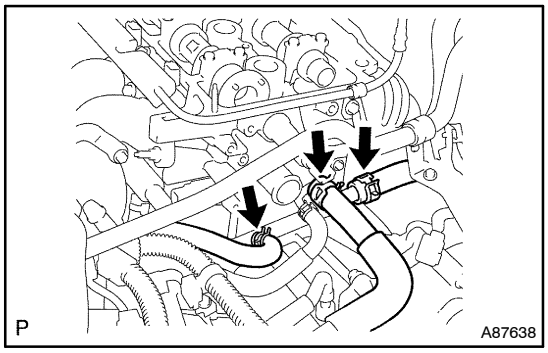
(h) Install the oil level gage guide with the bolt.

Torque: 8.0 N·m (82 kgf·cm, 71 in.·lbf)

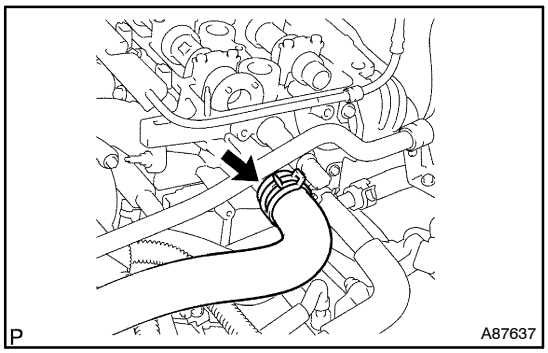
(i) Connect the hose.



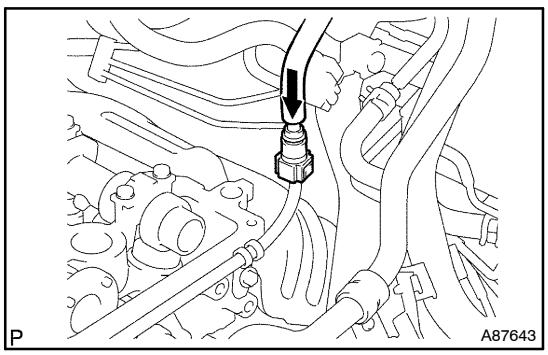
(j) Connect the water by–pass pipe with the bolt.
Torque: 9.0 N·m (92kgf·cm,80in.·lbf)



(k) Connect the hose shown in the illustration.



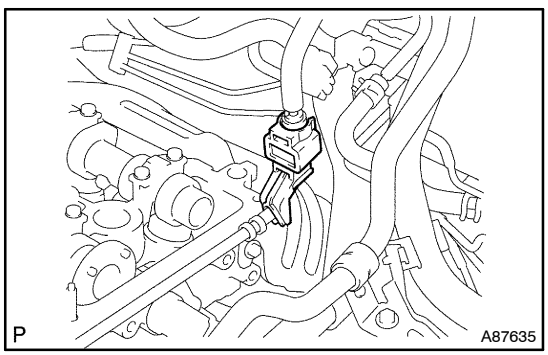
(l) Connect the radiator inlet hose.



(m) Push the fuel tube into the fuel delivery pipe until it makes a ”click” sound.

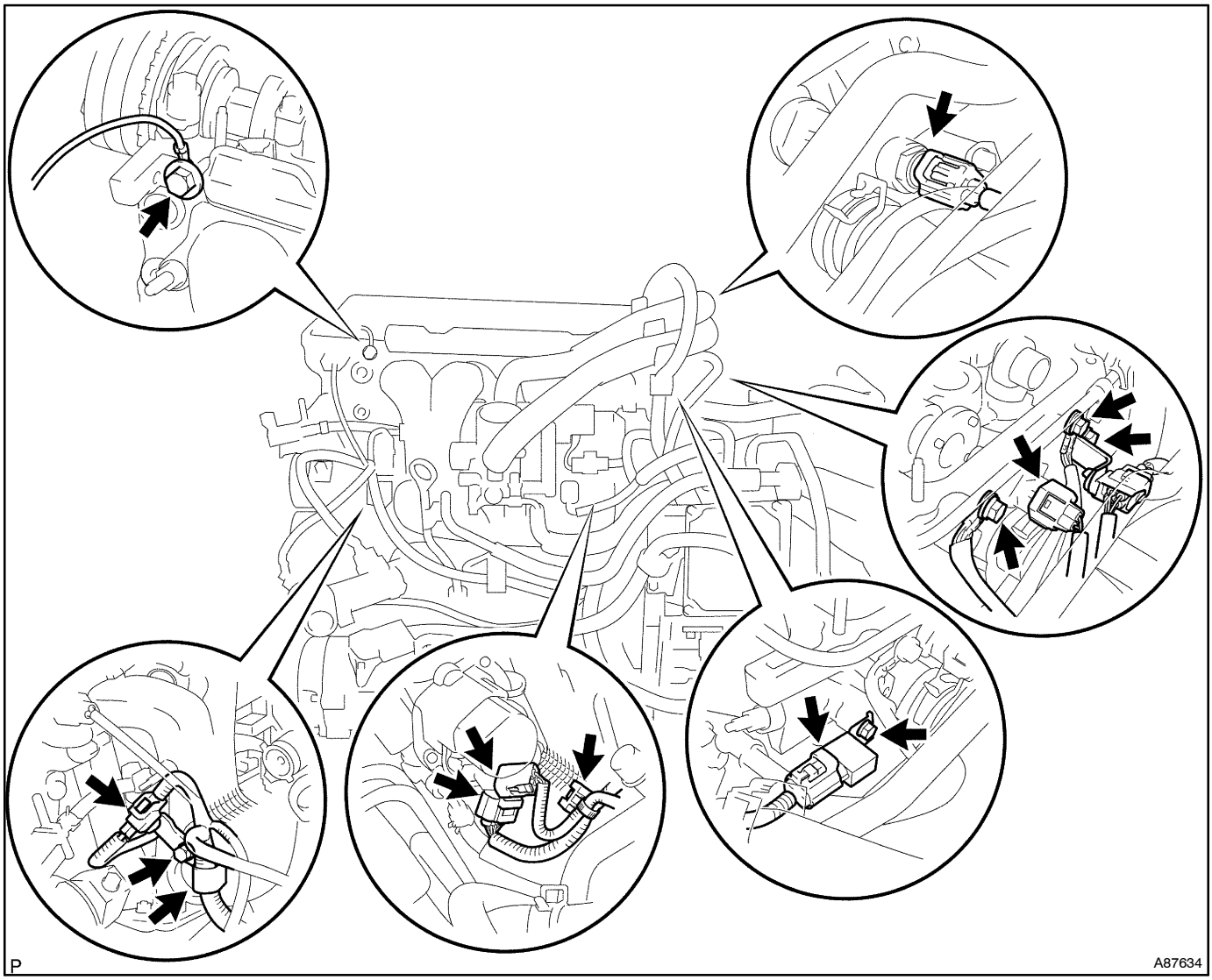
HINT:

- If the fuel tube is connected too tightly, apply a light coat of engine oil to the tip of the fuel delivery pipe.
- After connecting, check that the fuel tube is securely connected by pulling it.



(n) Install the fuel pipe clamp.

(o) Connect the connectors and wiring harnesses shown in the illustration.



16. INSTALL CHAIN SUB–ASSY (See page 14–89)
17. INSTALL W/CONVERTER INVERTER ASSY (See page 21–25)
18. CONNECT EXHAUST PIPE ASSY FRONT (See page 11–36)
19. INSTALL SERVICE PLUG GRIP (See page 21–120)
20. CONNECT BATTERY NEGATIVE TERMINAL
    Torque: 6.0 N·m (61 kgf·cm, 53 in.·lbf)
21. INSTALL REAR FLOOR BOARD NO.3
22. INSTALL DECK FLOOR BOX REAR
23. INSTALL REAR FLOOR BOARD NO.2
24. CHECK FOR FUEL LEAKS
25. POWER WINDOW CONTROL SYSTEM INITIALIZE (See page 01–29)