
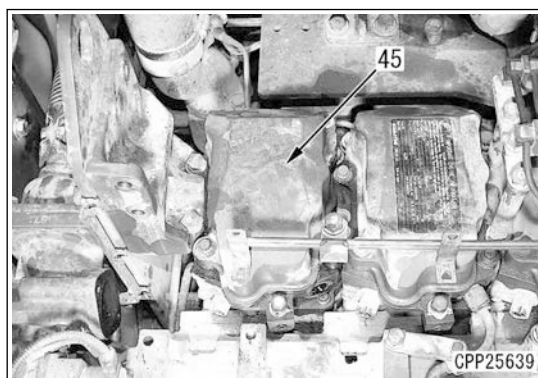


**Cylinder head cover**


13. Install the O-ring and install cylinder head cover (45).

**NOTICE****Installing the O-ring without a twist.**

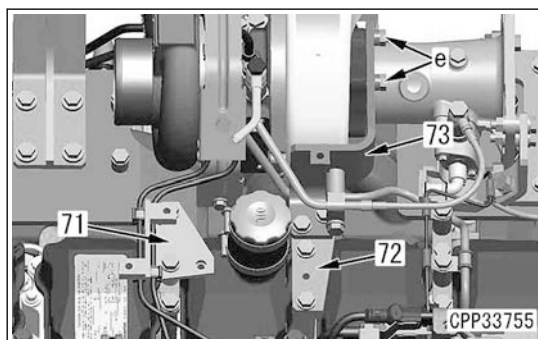
-  Mounting bolt of cylinder head cover (45):  
 $9.8 \pm 1 \text{ Nm}$  { $1.0 \pm 0.1 \text{ kgm}$ }



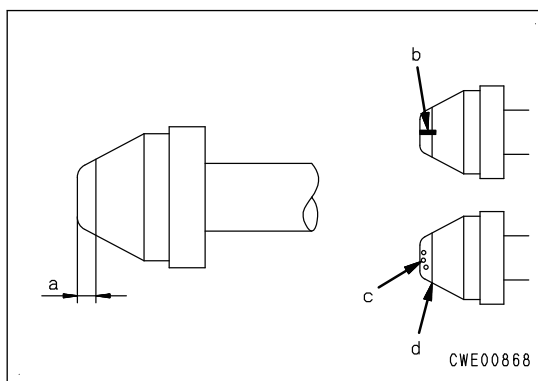
14. Install VGT anti-runout bracket (73).

-  Mounting bolt (e):  
 Seizure prevention compound (LC-G)

15. Install harness brackets (72) and (71) of VGT-REV and SVGT.

**Wiring harness, fuel piping****NOTICE****Observe the following about fuel high-pressure pipes.**

- KOMATSU recommends to use the Komatsu genuine fuel high-pressure pipe clamps and observe the tightening torque indicated.
- Do not bend the fuel high-pressure pipe to correct before installing.
- Check the following items before installing the fuel high-pressure pipe.




If the fuel high-pressure pipe has any defect, replace it with a new one since fuel may leak.

- Visually check that taper seal part (a) of the connection part (2 mm area from the tip-end) is free from longitudinal slits (b) or spotty dents (c).
  - Check that part (d) (2 mm from the tip-end) is free from steps (fatigue) which can be felt by your fingernail.
16. Finger-tighten the sleeve nuts of fuel high-pressure pipe (42).

**NOTICE****Loosen all the clamps of the high-pressure fuel pipe.**

17. Tighten the sleeve nut of high-pressure fuel pipe (42) to the specified torque.

-  Sleeve nuts (both sides) :  
 $39.2 \text{ to } 44.1 \text{ Nm}$  { $4.0 \text{ to } 4.5 \text{ kgm}$ }




18. Install fuel spray prevention caps (40) and (41) to each high-pressure fuel pipe.

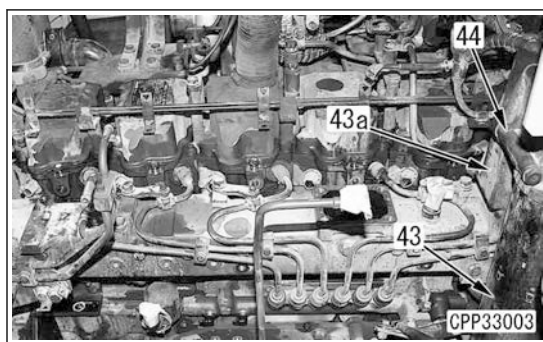
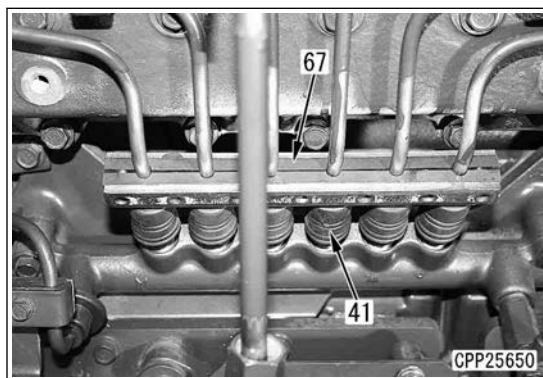
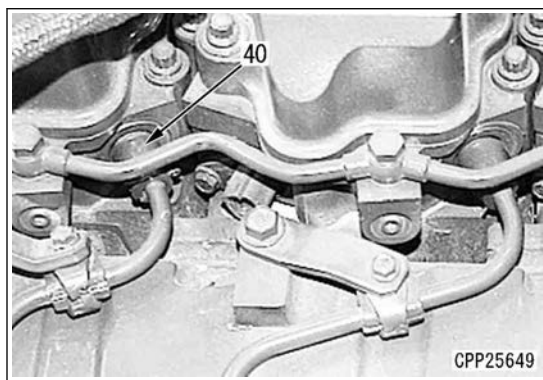
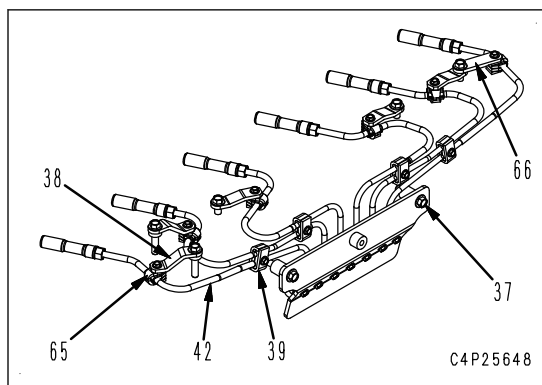
# NOTICE


Install the slit in the following direction.

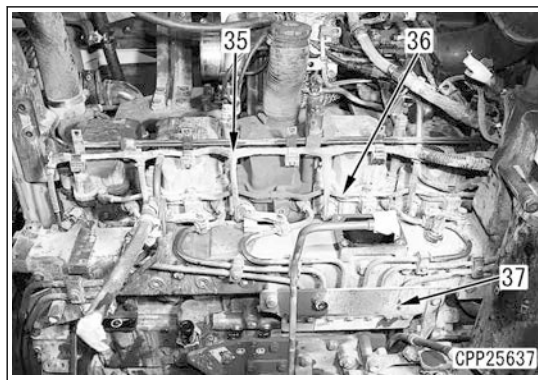
**Injector side: Downward**

**Common rail side: Cylinder block side**

19. Finger-tighten all the following clamps and brackets.  
Clamps (65) (6 pieces)  
Brackets (38) (5 pieces)  
Brackets (66) and (37)
20. Fasten clamp (65) to the specified torque.  
 Mounting bolt :  
11.8 to 14.7 Nm {1.2 to 1.5 kgm}
21. Tighten brackets (38) and (66) to the specified torque.
22. Finger-fasten clamps (39) (4 pieces).
23. Finger-fasten clamp (67) to bracket (37) and fasten it to the specified torque.  
 Mounting bolt :  
11.8 to 14.7 Nm {1.2 to 1.5 kgm}
24. Tighten bracket (37) to the specified torque.
25. Fasten clamp (39) to the specified torque.  
 Mounting bolt :  
11.8 to 14.7 Nm {1.2 to 1.5 kgm}
26. Install bracket (43a).
27. Install oil filter (43) together with head (44).




28. Install bracket (37) and clamp inside.
29. Install spill tube (36).
  -  Joint bolt of spill tube (36):  
9.8 to 12.7 Nm {1.0 to 1.3 kgm}
30. Connect wiring harness (35).

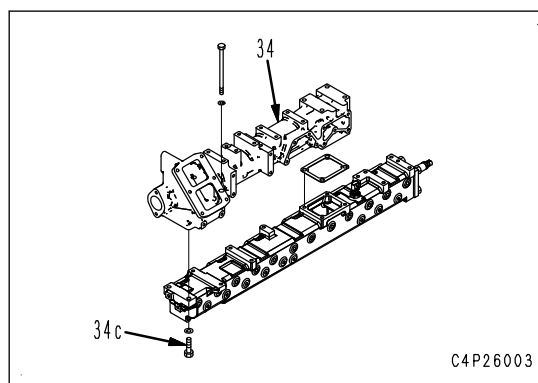


### Mixing connector

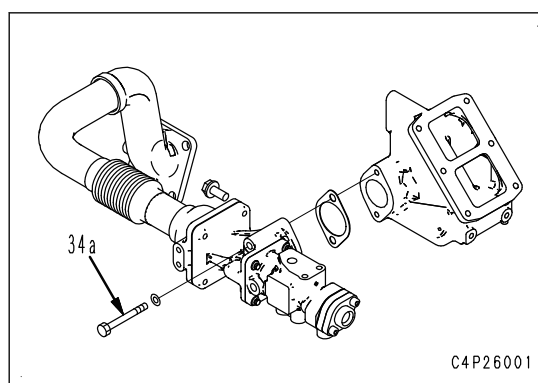
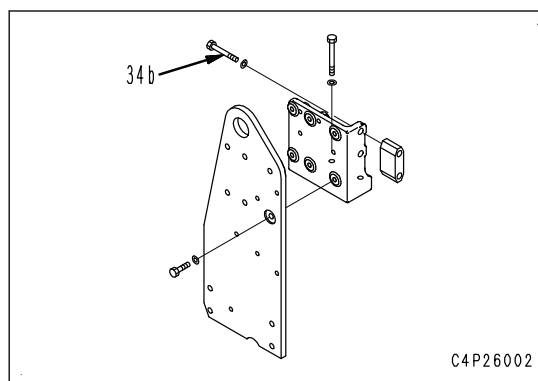
31. Sling mixing connector (34), install it, and hold it.

 Mixing connector (34) :  
35 kg

32. Install mounting bolts (34c).

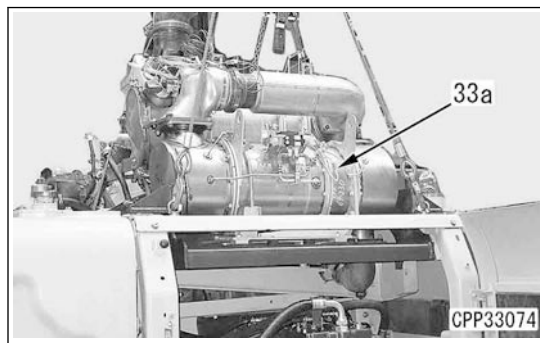


33. Install plate mounting bolt (34b), and install EGR valve mounting bolt (34a).









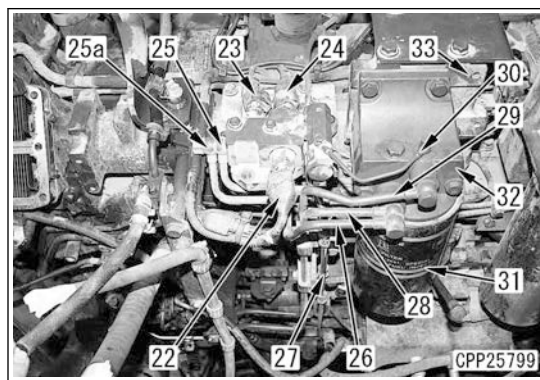
**KDPF and SCR assembly**

34. Install KDPF and SCR assembly (33a). For details, see "REMOVE AND INSTALL KDPF, SCR ASSEMBLY".


**Tube**

35. Install bracket (33).  
 36. Install fuel filter (31) together with head (32).  
 37. Install tube (25a), (25), (26), (27), (28), (29), and (30).

-  Joint bolts of tube (25), (26) and (28) :  
24.5 to 34.3 Nm {2.5 to 3.5 kgm}
-  Joint bolt of tube (29) (head side) :  
24.5 to 34.3 Nm {2.5 to 3.5 kgm}
-  Joint bolt of tube (29) (supply pump side) :  
14.8 to 19.6 Nm {1.5 to 2.0 kgm}
-  Joint bolt of tube (30) :  
7.8 to 9.8 Nm {0.8 to 1.0 kgm}
-  Joint bolt of tube (27) (SOV side) :  
9.8 to 12.7 Nm {1.0 to 1.3 kgm}
-  Joint bolt of tube (27) (supply pump side) (overflow valve side) :  
14.8 to 19.6 Nm {1.5 to 2.0 kgm}

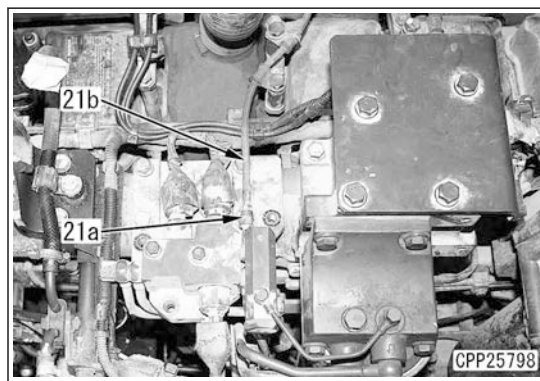


38. Connect connectors SOV2 (22), SOV1 (23), and PDOSER (24).  
 39. Install tube (21b), and install fuel spray prevention cap (21a).

-  Sleeve nut of tube (21b) :  
9.8 to 19.6 Nm {1.0 to 2.0 kgm}

**NOTICE**

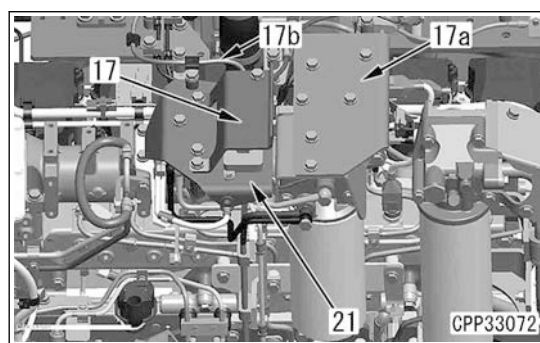
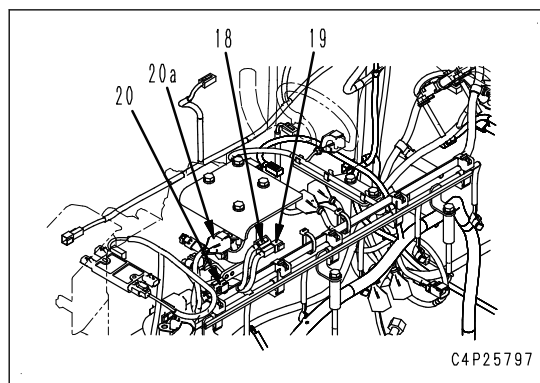
**Install the slit of fuel spray prevention cap (21a) so that it faces downward.**





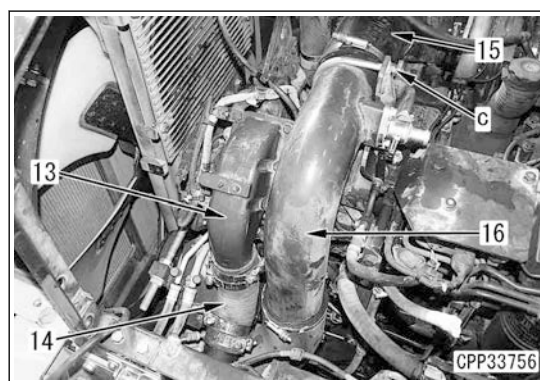


# REMOVE AND INSTALL INJECTOR ASSEMBLY

40. Connect connectors VGT-REV (18), SVGT (19), DOSER (20), and PAMB (20a).
41. Install plate (21).
42. Install NO<sub>x</sub> sensor (17b).
43. Install cover (17) and plate (17a).




44. Install hose (15) and tube (16).
  -  U-clamp nut (c) of hose (15) :  
14.7 to 44.1 Nm {1.5 to 4.5 kgm}
  -  Hose clamp of tube (16) :  
10.0 to 10.9 Nm {1.02 to 1.12 kgm}
45. Install hose (14) to air intake connector (13).




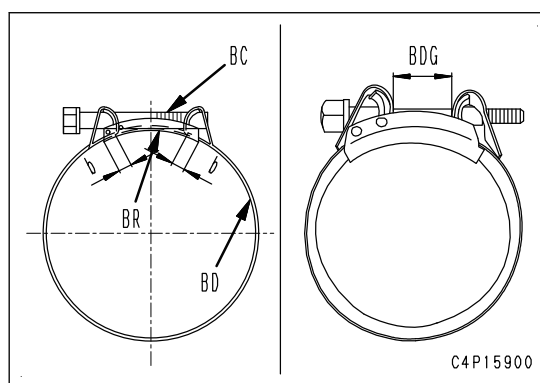
46. Fasten MIKALOR clamps at both ends of hose (14) according to the following procedure.

## NOTICE

- Be sure to use a brand new MIKALOR clamp.
- Do not use an impact wrench.
- Set bridge (BR) under clamp fastening bolt, and adjust overlap dimension (b) between bridge (BR) and band to the following.  
Dimension (b): Min. : 5 mm

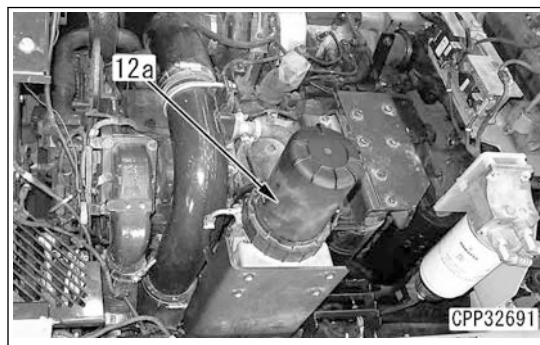
-  Threaded portion of clamp fastening bolt (BC):  
Lubricating oil (THREEBOND PANDO18B or equivalent)

- When reusing hose  
Align clamp position to the trace of clamp left on hose.
  -  Clamp fastening bolt :  
16 to 17 Nm {1.6 to 1.7 kgm}
- When hose is new  
Tighten so that dimension (BDG) is : 4 to 7 mm.



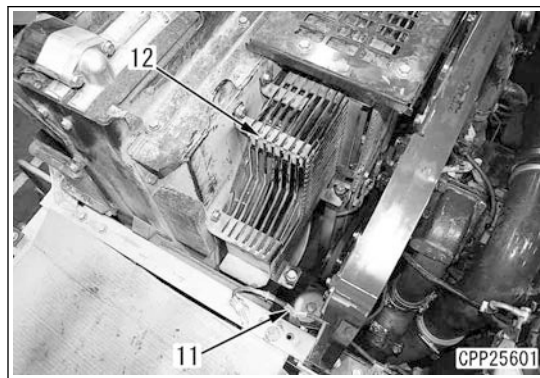
**KCCV assembly**

47. Install KCCV assembly (12a). For details, see "REMOVE AND INSTALL KCCV ASSEMBLY".

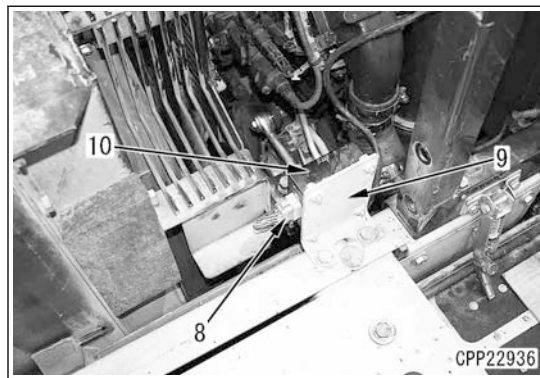


**Fan guard**

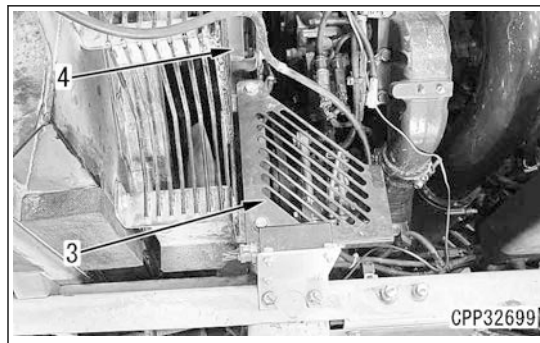
48. Install guard (12).  
49. Install the clamp of wiring harness (11).



50. Install fuel feed pump switch (10) together with bracket (9) as a unit.  
51. Connect connector S50 (8).

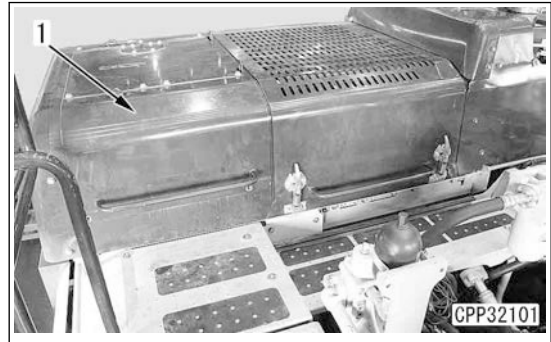


52. Install guards (3) and (4).



**Engine hood**

53. Install engine hood assembly (1). For details, see "REMOVE AND INSTALL ENGINE HOOD ASSEMBLY".

**Bleeding air**

54. Bleed air in the fuel system. For details, see TESTING AND ADJUSTING, "BLEEDING AIR FROM FUEL SYSTEM".

**Testing**

55. Check for fuel leakage. For details, see TESTING AND ADJUSTING, "TEST FUEL CIRCUIT FOR LEAKAGE".

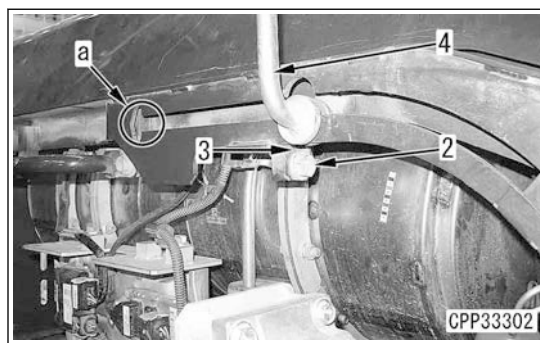
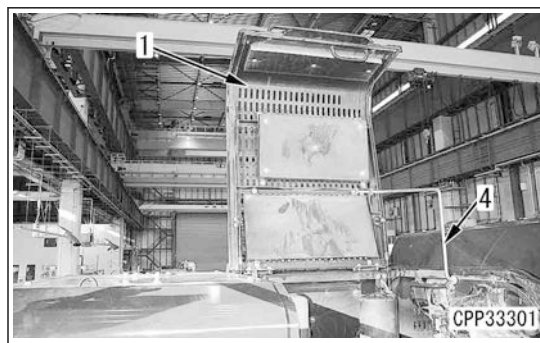
## REMOVE AND INSTALL FUEL DOSER ASSEMBLY

- ⚠ Place the machine on a level ground, lower the work equipment to the ground so that it is stable, and set the lock lever to LOCK position, and then stop the engine.
- ⚠ Stop the engine, turn the battery disconnect switch to OFF position, and remove the key. (For details, see "Testing and adjusting", "HANDLING BATTERY DISCONNECT SWITCH".)

## METHOD FOR INSTALLING FUEL DOSER ASSEMBLY

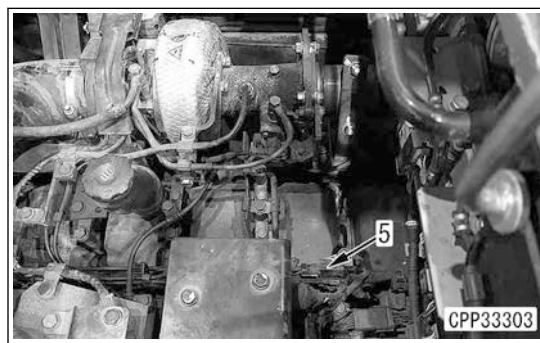
### Engine hood

1. Open engine hood (1) to the middle position.



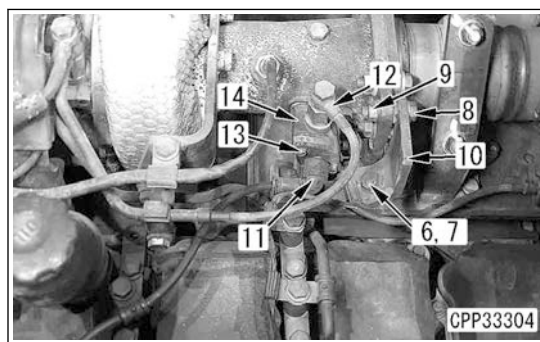
### Connector

2. Disconnect connector DOSER (5).



### Fuel doser

3. Remove bolt (6), and disconnect wiring harness clamp (7).
4. Remove bolt (8) and nut (9), and remove bracket (10).
5. Disconnect fuel hose (11).
6. Disconnect coolant hose (12) (2 pieces each on upper and lower sides).
7. Remove bolts (13) (2 pieces) (width across flats 8 mm), and remove fuel doser (14).






## METHOD FOR INSTALLING FUEL DOSER ASSEMBLY

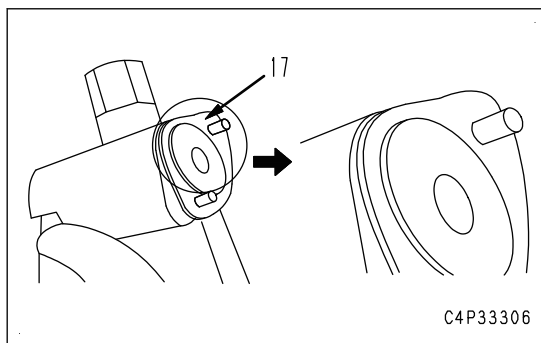
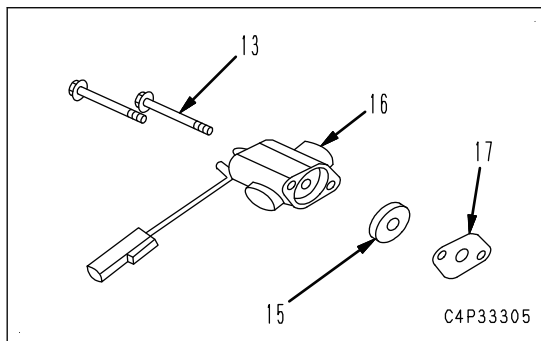
### Fuel doser

1. Install heat insulator (15) to fuel doser (16).
2. Install fuel doser assembly (14) with bolts (13) (2 pieces) (width across flats 8 mm).


 Fuel doser bolt:  
 $9.0 \pm 0.5 \text{ Nm}$   $\{0.9 \pm 0.05 \text{ kgm}\}$

### NOTICE


**After tightening the bolts to the specified torque, tighten them alternately to the specified torque again.**



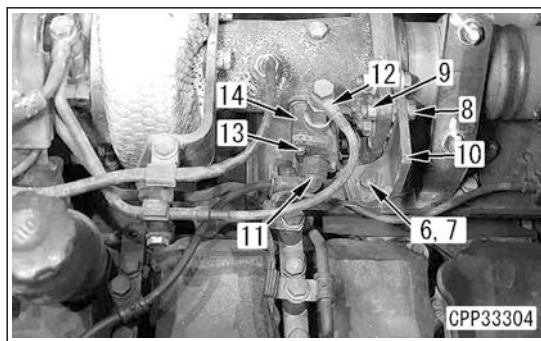
3. Install coolant hose (12) (2 pieces each on upper and lower sides).

 Coolant hose joint bolt :  
 $24.5 \text{ to } 34.3 \text{ Nm}$   $\{2.5 \text{ to } 3.5 \text{ kgm}\}$

4. Install fuel hose (11).

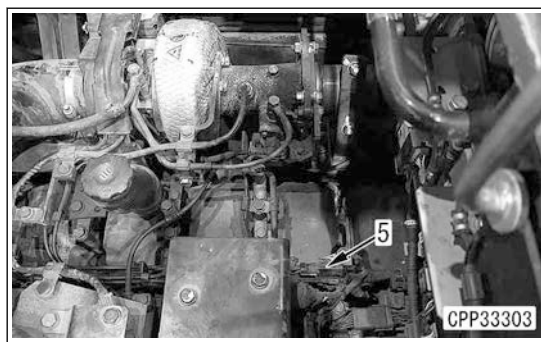
 Fuel hose sleeve nut :  
 $14.7 \pm 4.9 \text{ Nm}$   $\{1.5 \pm 0.5 \text{ kgm}\}$

5. Install bracket (10) with bolt (8) and nut (9).
6. Install wiring harness clamp (7) with bolt (6).



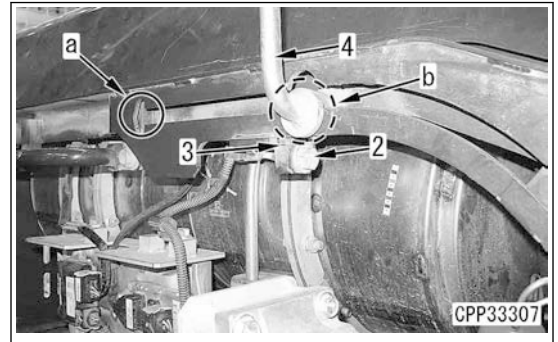
### Connector

7. Connect connector DOSER (5).
8. After installing the fuel doser, run the engine at low idle for approximately 3 minutes. Then stop the engine and check the fuel doser for water and fuel circuits for leakage.

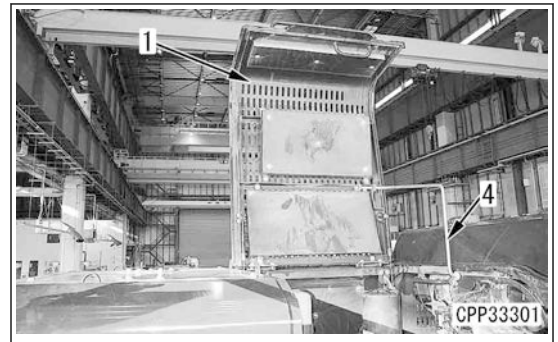


### Engine hood

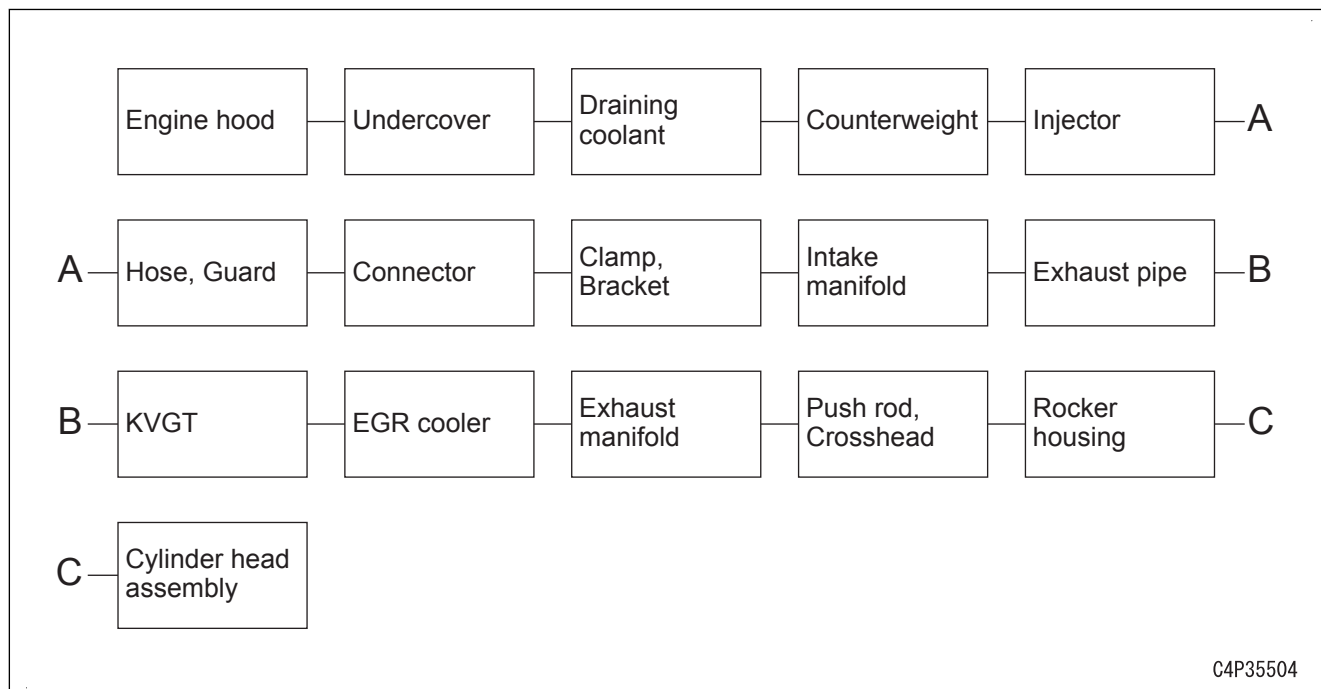
9. Open engine hood (1) to the last part, return lock bar (fixing rod) (4) from position (A) to (B), and lock stopper (3) with bolt (2).



10. Close engine hood (1).



## REMOVE AND INSTALL CYLINDER HEAD ASSEMBLY



## Tools for removal and installation of cylinder head assembly

Symbol	Part No.	Part name	Necessity	Q'ty	New/Redesign	Sketch	Remarks
A	-	Lifting tool	■	2			
B	790-331-1110	Wrench	●	1			

**⚠ Place the machine on a level ground, lower the work equipment to the ground so that it is stable, and set the lock lever to LOCK position, and then stop the engine.**

**⚠ Stop the engine, turn the battery disconnect switch to OFF position, and remove the key. (For details, see "Testing and adjusting", "HANDLING BATTERY DISCONNECT SWITCH".)**

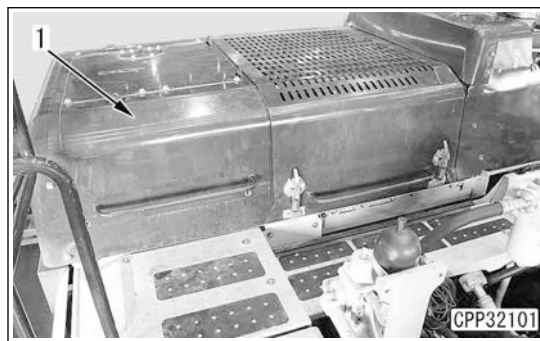
## NOTICE

- When removing and installing the fuel piping, be careful to prevent foreign matters from entering into the fuel piping. If dust, etc. sticks to any part, wash that part completely with clean fuel.
- Check the connector numbers and installed positions before disconnecting wiring and hoses, and write them down.

## METHOD FOR REMOVING CYLINDER HEAD ASSEMBLY

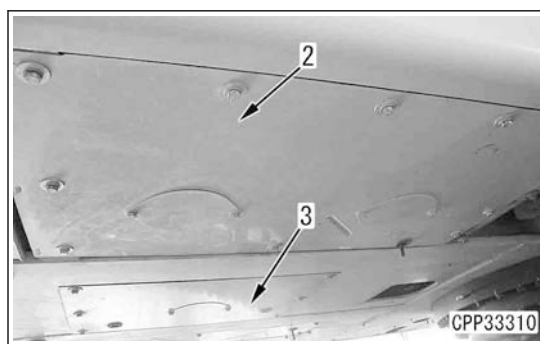
### Engine hood

1. Remove engine hood assembly (1). For details, see "REMOVE AND INSTALL ENGINE HOOD ASSEMBLY".



### Undercover

2. Remove undercovers (2) and (3).



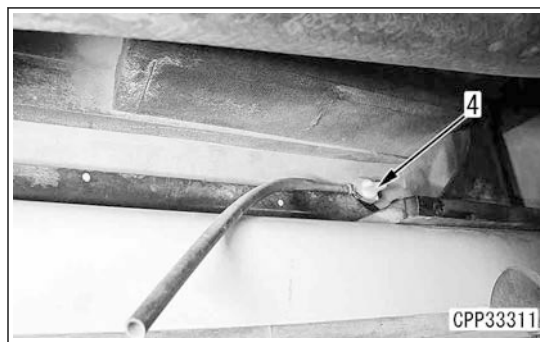
### Draining coolant

3. Loosen drain valve (4) at the bottom of the radiator, and drain the coolant.



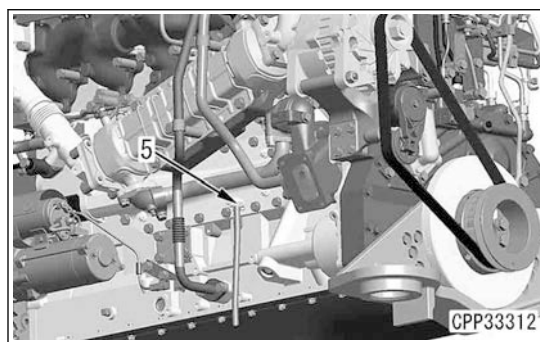
Radiator :

47 ℓ



### Counterweight

4. Remove counterweight assembly. For details, see "REMOVE AND INSTALL COUNTERWEIGHT ASSEMBLY".
5. Loosen right drain plug (5) of the engine block, and drain the coolant.



### Injector

6. Remove the injector assembly. For details, see "Removal and installation of injector assembly".