SERVICE TRAINING AND PUBLICATION BULLETIN

No.: OB- 9715
010
Date : 2019/10/30

TRAINING	
PUBLICATION	■
INFORMATION	
ADVANCE ORDER	
OTHERS	

APPLICABLE COUNTRIES:

	ALL COUNTRIES		N. AMERICA	■	GENERAL COUNTRIES, EUROPE
	Other				

To: Service Manager

CORRECTION TO
- [x] REPAIR MANUAL
- [ ] ELECTRICAL WIRING DIAGRAM
- [ ] NEW CAR FEATURES
- [ ] BODY REPAIR MANUAL
- [ ] SERVICE DATA SHEET

The following manual has revised service information:

Pub. No.: **RM26T9E** Pub. Name: **TOYOTA HIACE Repair Manual**

Section	Title	Paragraph
Please see the attached list.		

The revised pages listed above are attached.
(The corrected parts are indicated by arrows.)

Please attach the accompanying revised pages to the applicable pages in the manual above.

This Bulletin does not cause the Flat Rate Manual to be changed.

This bulletin is also available on the OASIS Global Service Information Center.
Inquiries : BM_correction_information@mta.mx.toyota.co.jp

KEEP IN BINDER TOGETHER WITH SERVICE PUBLICATIONS GUIDE

TOYOTA QUALITY SERVICE

TOYOTA MOTOR CORPORATION
VEHICLE ENGINEERING DEPARTMENT
TECHNICAL SERVICE DIVISION
CUSTOMER FIRST PROMOTION GROUP

OB-9715 (RM26T9E)

Section	Title	Paragraph
1GD-FTV ENGINE MECHANICAL	ENGINE ASSEMBLY	INSTALLATION (201701-201712)
	ENGINE UNIT	COMPONENTS (201701-201712)
		REMOVAL (201701-201908)
		DISASSEMBLY (201701-201908)
		REASSEMBLY (201701-201908)
		INSTALLATION (201701-201712)
	ENGINE ASSEMBLY	INSTALLATION (201712-201908)
	ENGINE UNIT	COMPONENTS (201712-201908)
		INSTALLATION (201712-201908)

44. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

45. ADD ENGINE OIL (See page)

46. ADD ENGINE COOLANT (See page)

47. BLEED AIR FROM FUEL SYSTEM (See page)

48. CHARGE REFRIGERANT (See page)

49. ADD AUTOMATIC TRANSMISSION FLUID

50. PERFORM REGISTRATION

(a) Perform registration of injector compensation codes (See page). See*1

(b) Perform registration of pilot quantity learning (See page). See*2

51. INSPECT FOR FUEL LEAK (See page)

52. INSPECT FOR OIL LEAK (See page) [Added]

53. INSPECT FOR COOLANT LEAK (See page)

54. INSPECT ENGINE OIL LEVEL (See page)

55. INSPECT AUTOMATIC TRANSMISSION FLUID LEVEL (See page)

56. INSPECT SHIFT LEVER POSITION (See page)

57. ADJUST SHIFT LEVER POSITION (See page)

58. INSPECT FOR EXHAUST GAS LEAK (See page)

59. INSPECT FOR REFRIGERANT LEAK (See page)

60. INSTALL TRANSMISSION SERVICE HOLE COVER SUB-ASSEMBLY

(a) Install the transmission service hole cover sub-assembly to the body with the 4 bolts.
Torque: 7.0 N*m (71 kgf*cm, 62 in.*lbf)

(b) Return the carpet to its original position and attach the clips.

(c) Connect the front center seat belt assembly RH and front center seat lap type belt assembly with the 2 bolts.
Torque: 42 N*m (428 kgf*cm, 31 ft.*lbf)

(d) Install the 2 seat belt anchor covers.

61. INSTALL ENGINE SERVICE HOLE SUB COVER SUB-ASSEMBLY

(a) Install the engine service hole sub cover sub-assembly with the 5 bolts.
Torque: 13 N*m (133 kgf*cm, 10 ft.*lbf)

(b) Return the floor carpet to its original position.

62. INSTALL FRONT DOOR SCUFF PLATE RH

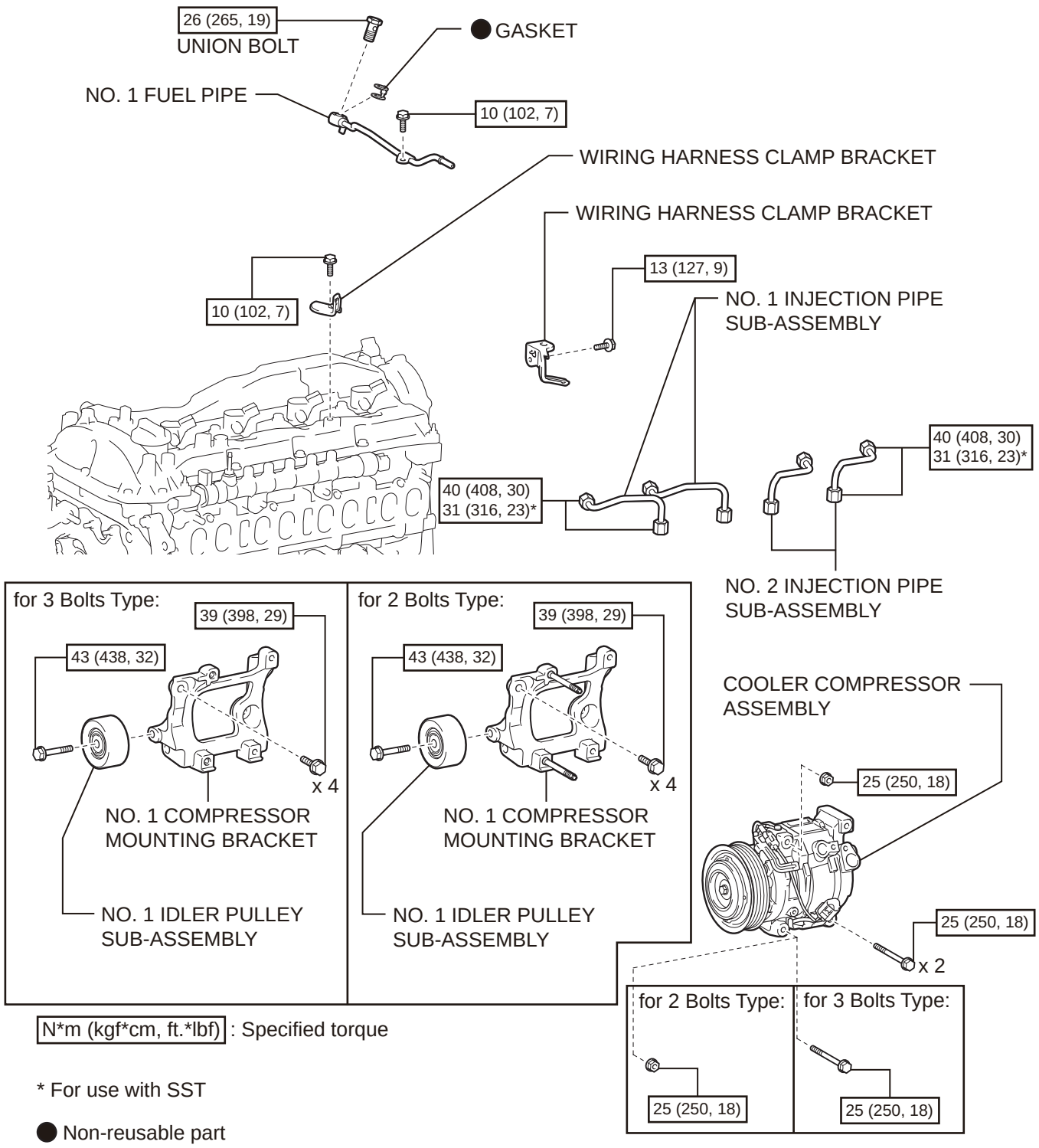
63. INSTALL FRONT SEAT ASSEMBLY RH (See page)

64. INSTALL SEAT TRACK COVER LH (See page)

65. INSPECT ENGINE IDLE SPEED (See page)

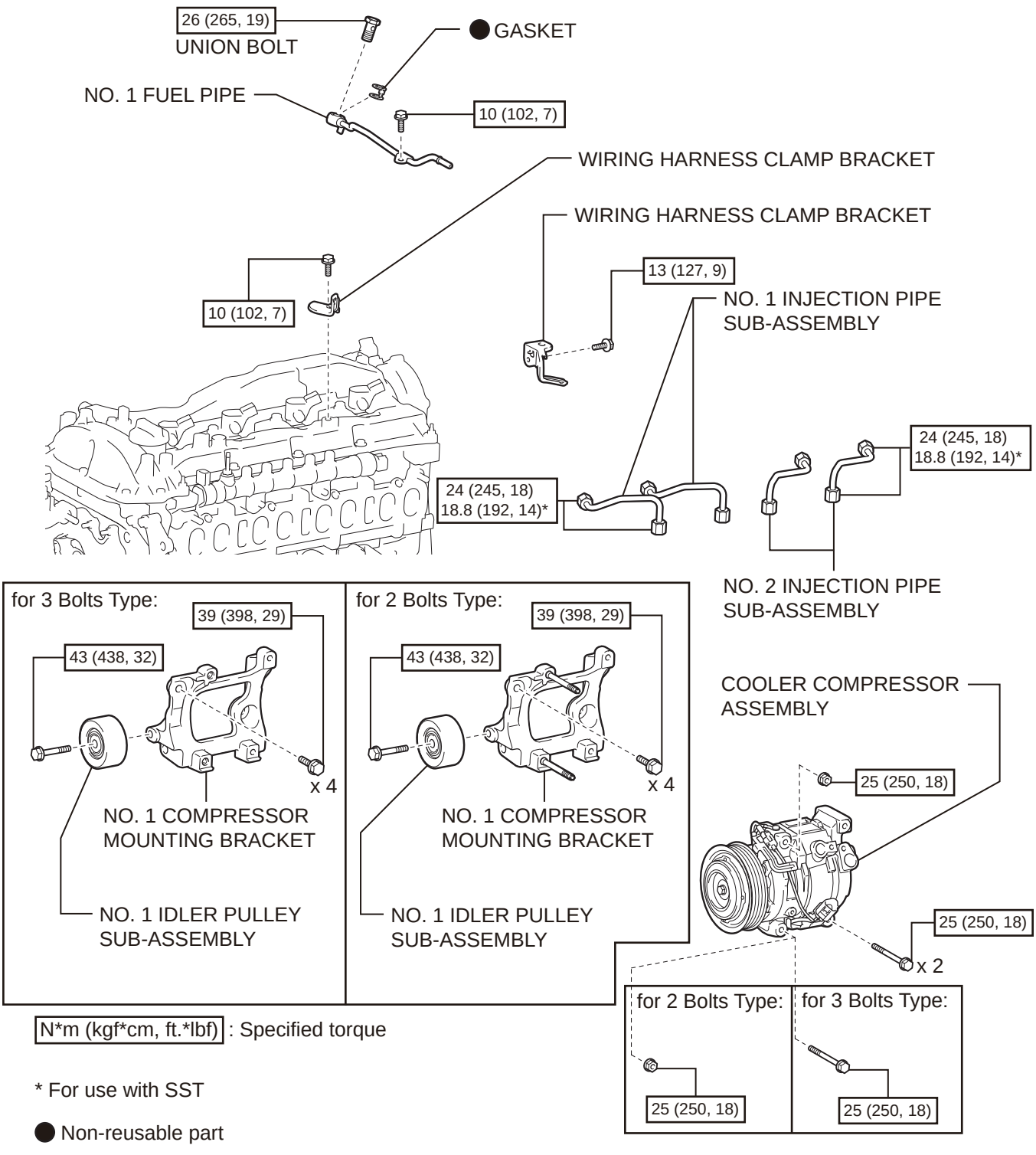
See*1: 1GD-FTV ENGINE CONTROL SYSTEM - ECD SYSTEM - REGISTRATION (2017/01-2019/08)
See*2: 1GD-FTV ENGINE CONTROL SYSTEM - ECD SYSTEM - REGISTRATION (2017/01-2019/08)

EM



[Corrected]

With Common Rail Side Number Mark (24N):



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

* For use with SST

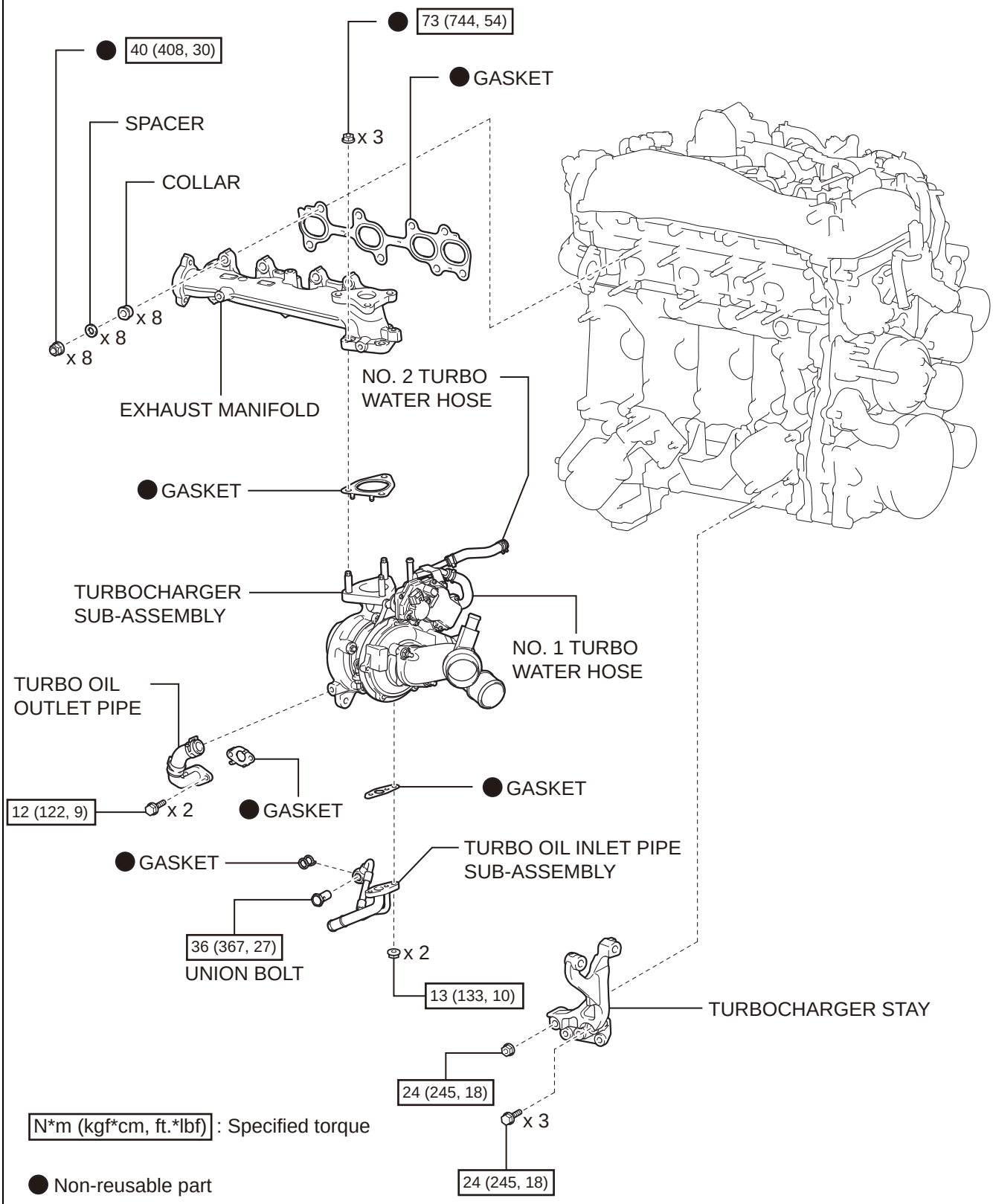
● Non-reusable part

O

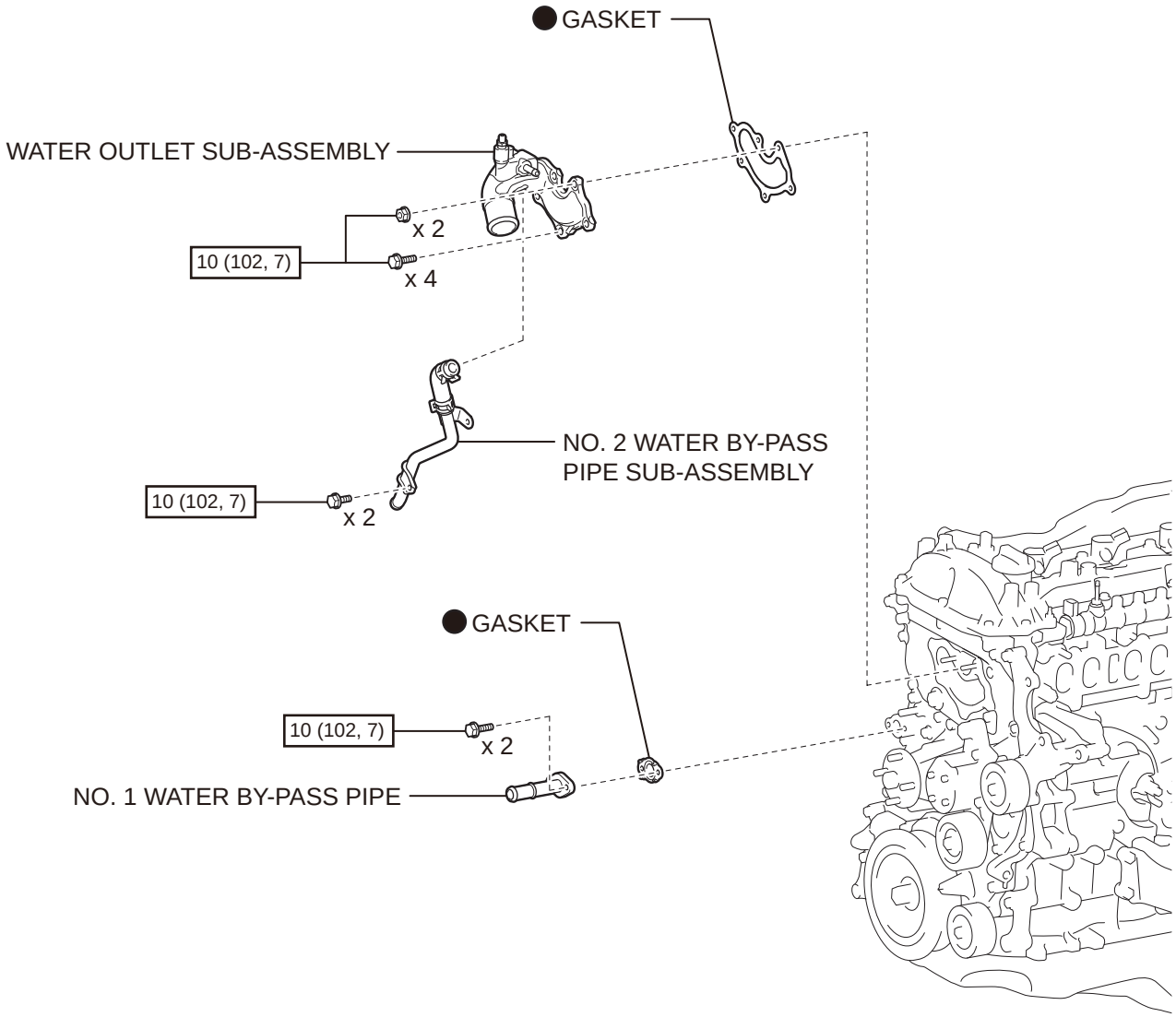
A456460E02

[Corrected]

EM



[Corrected]



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

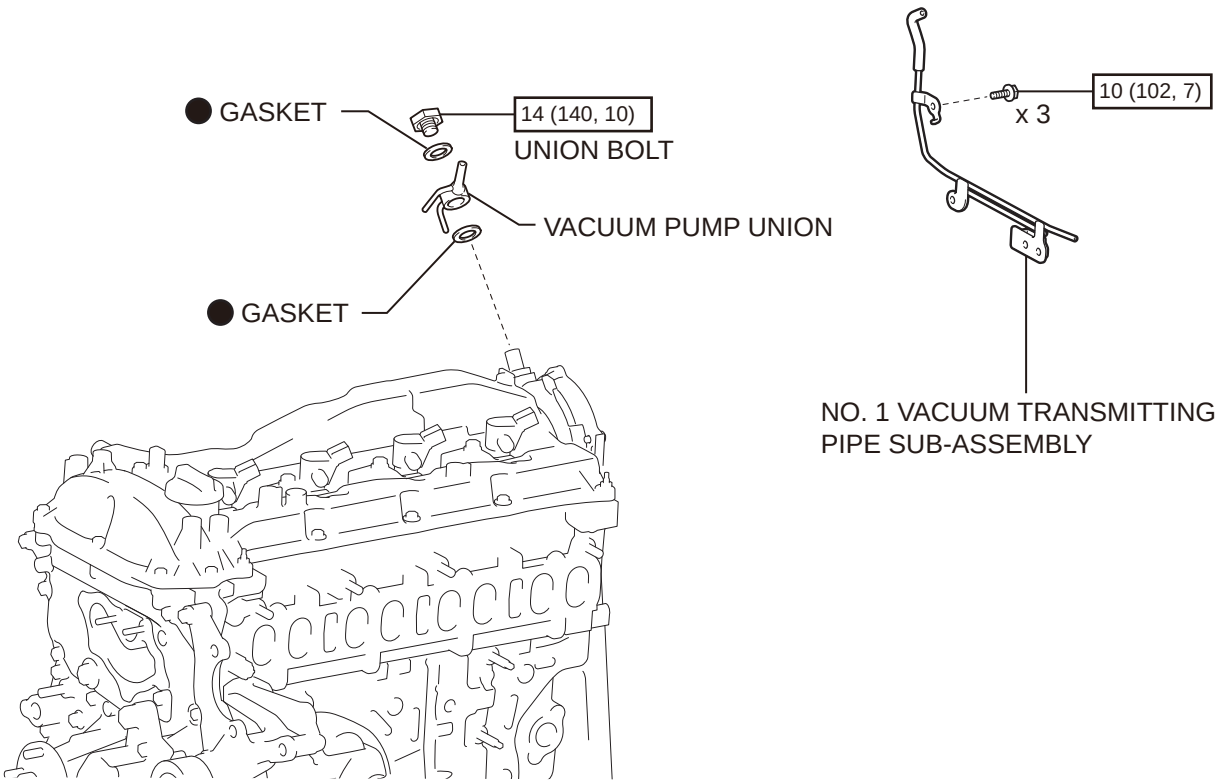
● Non-reusable part

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A456462E01

[Corrected]

EM



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

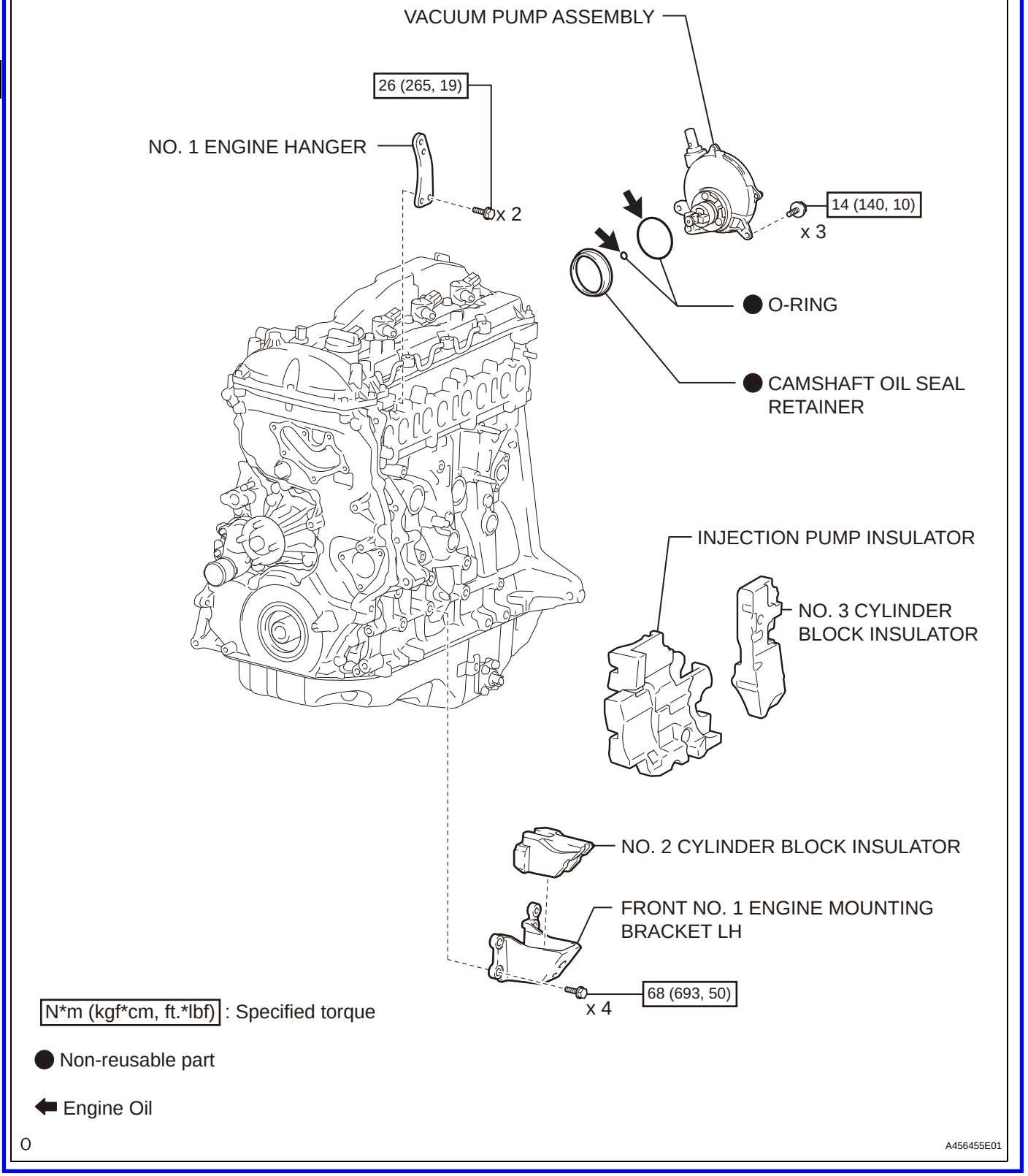
● Non-reusable part

O

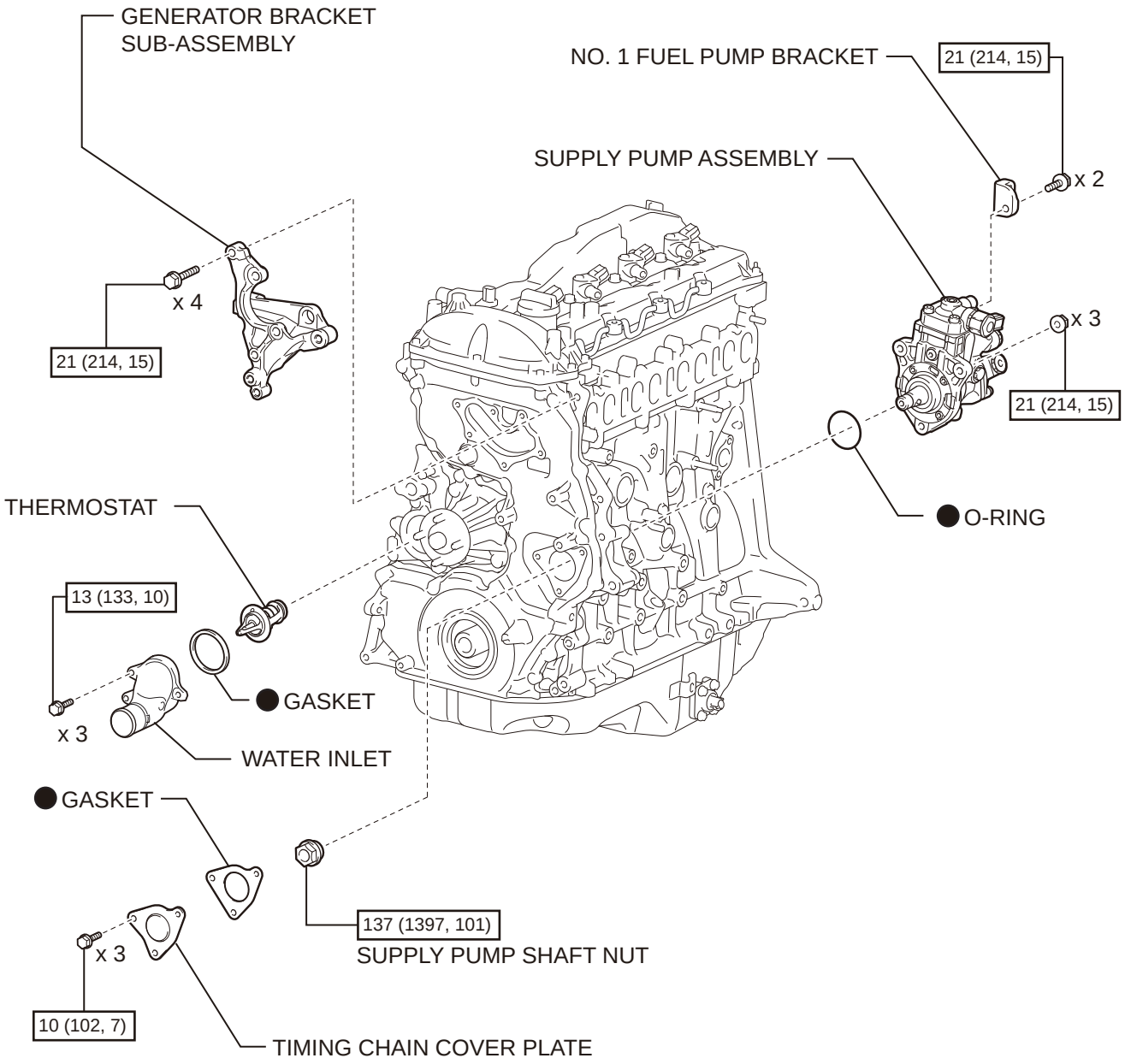
A456463E01

[Corrected]

EM



[Corrected]



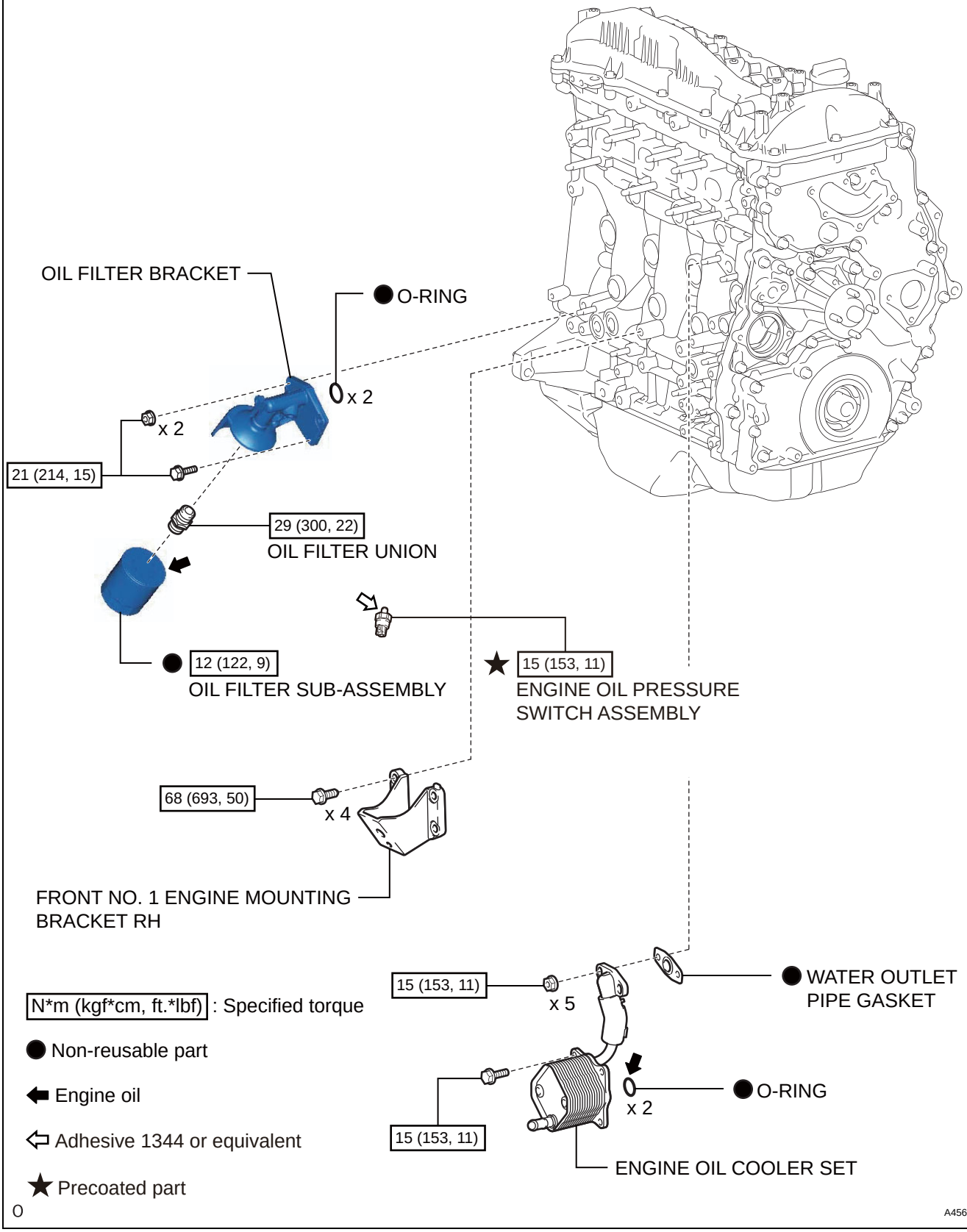
N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

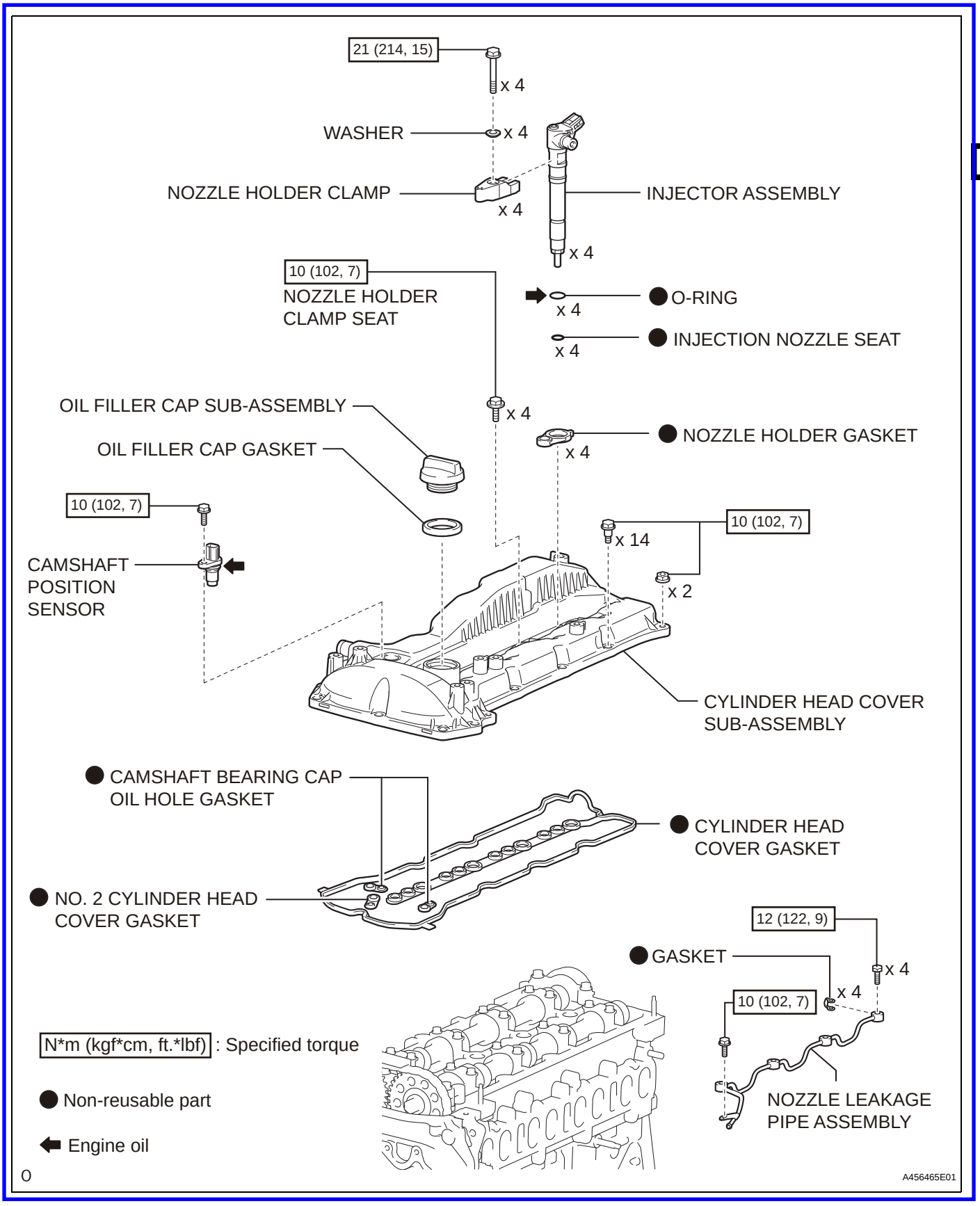
A456456E01

[Corrected]

EM



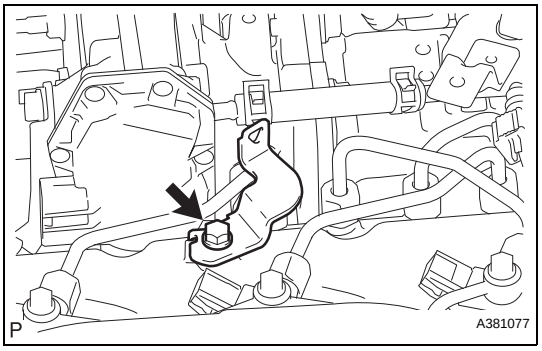
[Corrected]


21 (214, 15)
x 4
WASHER
x 4
NOZZLE HOLDER CLAMP
x 4
INJECTOR ASSEMBLY
x 4
10 (102, 7)
NOZZLE HOLDER CLAMP SEAT
x 4
O-RING
x 4
INJECTION NOZZLE SEAT
OIL FILLER CAP SUB-ASSEMBLY
OIL FILLER CAP GASKET
x 4
NOZZLE HOLDER GASKET
x 4
10 (102, 7)
CAMSHAFT POSITION SENSOR
10 (102, 7)
x 14
x 2
CYLINDER HEAD COVER SUB-ASSEMBLY
CAMSHAFT BEARING CAP OIL HOLE GASKET
CYLINDER HEAD COVER GASKET
NO. 2 CYLINDER HEAD COVER GASKET
12 (122, 9)
GASKET
x 4
x 4
10 (102, 7)
NOZZLE LEAKAGE PIPE ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part
Engine oil
A456465E01

[Corrected]

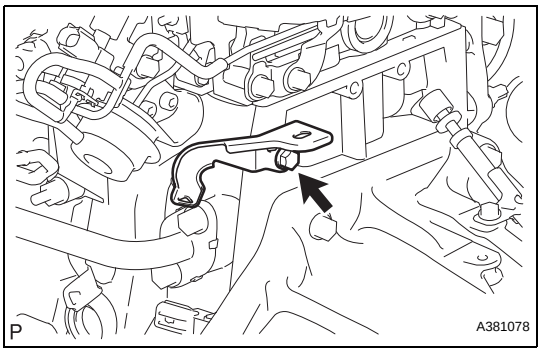
EM

37. REMOVE NOZZLE LEAKAGE PIPE ASSEMBLY (See page)



38. REMOVE WIRING HARNESS CLAMP BRACKET

(a) for Upper Side:
Remove the bolt and wiring harness clamp bracket from the cylinder head cover sub-assembly. [Deleted]



(b) for Rear Side:
Remove the bolt and wiring harness clamp bracket from the cylinder block sub-assembly.

39. REMOVE NO. 1 AND NO. 2 INJECTION PIPE SUB-ASSEMBLY (See page)

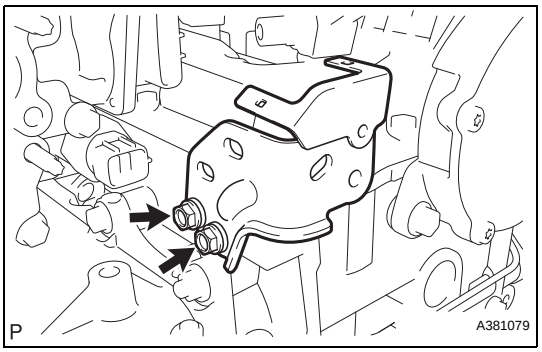
40. REMOVE COMMON RAIL ASSEMBLY (See page)

41. REMOVE NO. 1 GLOW PLUG CONNECTOR (See page)

42. REMOVE GLOW PLUG ASSEMBLY (See page)

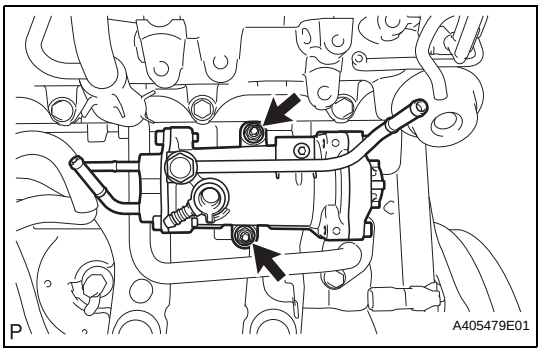
43. REMOVE BRACKET

(a) Remove the 2 bolts and bracket from the cylinder head sub-assembly.



44. REMOVE FUEL FILTER (for Cylinder Block Side)

(a) Remove the 2 nuts and diesel fuel filter assembly from the cylinder block sub-assembly.



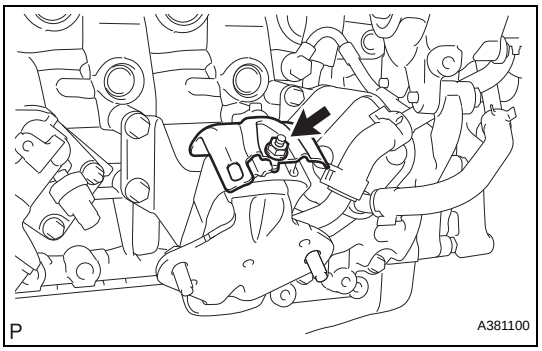
EM

57. **REMOVE NO. 1 TURBO INSULATOR (See page)**

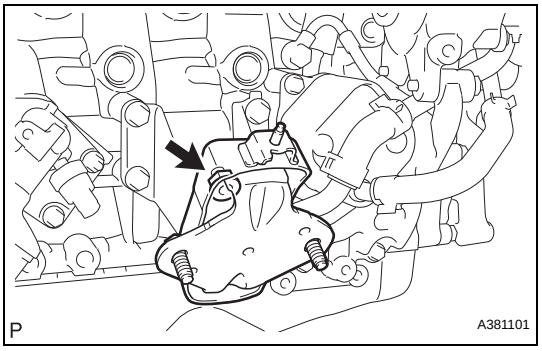
58. **REMOVE NO. 2 EXHAUST PIPE SUPPORT STAY (See page)**

59. **REMOVE EXHAUST PIPE SUPPORT STAY (See page)**

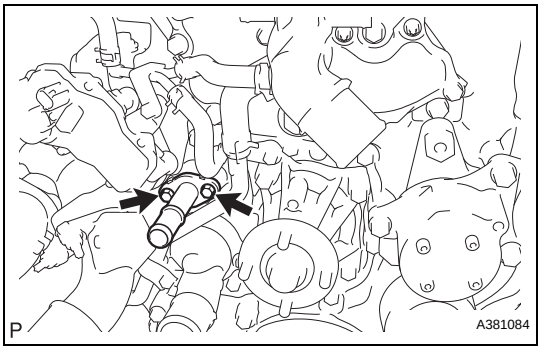
60. **REMOVE EXHAUST MANIFOLD CONVERTER SUB-ASSEMBLY (See page)**



61. **REMOVE FRONT ENGINE MOUNTING INSULATOR RH**
    (a) Remove the nut and front engine mounting insulator RH from the engine mounting stabilizer.



62. **REMOVE FRONT ENGINE MOUNTING INSULATOR**
    (a) Remove the nut, front engine mounting insulator RH and engine mounting stabilizer from the front No. 1 engine mounting bracket RH.



63. **REMOVE NO. 1 WATER BY-PASS PIPE**
    (a) Remove the 2 bolts, No. 1 water by-pass pipe and gasket from the timing chain cover sub-assembly.

64. **DISCONNECT NO. 1 AND NO. 2 TURBO WATER HOSE (See page)**

65. **REMOVE TURBOCHARGER STAY (See page)**

66. **REMOVE TURBO OIL OUTLET PIPE (See page)**

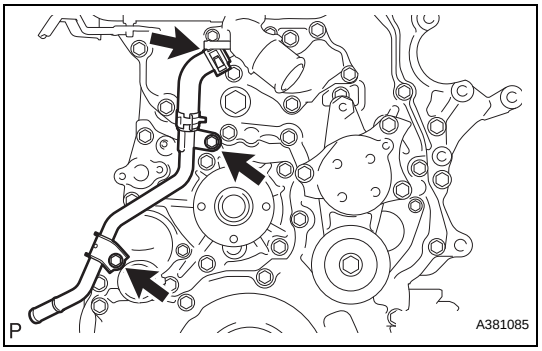
67. **REMOVE TURBO OIL INLET PIPE SUB-ASSEMBLY (See page)**

68. **REMOVE TURBOCHARGER SUB-ASSEMBLY (See page)**

69. **REMOVE EXHAUST MANIFOLD (See page)**

70. **REMOVE ENGINE OIL PRESSURE SWITCH ASSEMBLY (See page)**

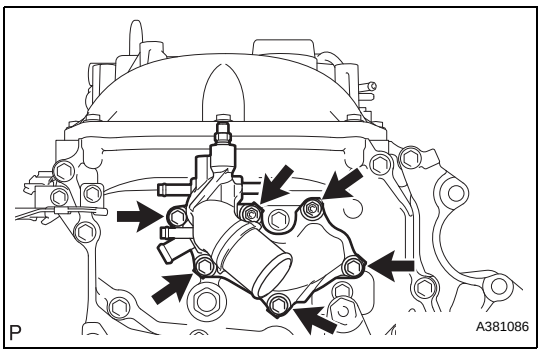
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71. REMOVE NO. 2 WATER BY-PASS PIPE SUB-ASSEMBLY

(a) Slide the clamp and disconnect the No. 3 water by-pass hose from the water outlet sub-assembly.

(b) Remove the 2 bolts and No. 2 water by-pass pipe sub-assembly from the engine water pump assembly and water inlet.



72. REMOVE WATER OUTLET SUB-ASSEMBLY

(a) Remove the 4 bolts, 2 nuts and water outlet sub-assembly from the timing chain cover sub-assembly.

(b) Remove the gasket from the timing chain cover sub-assembly.

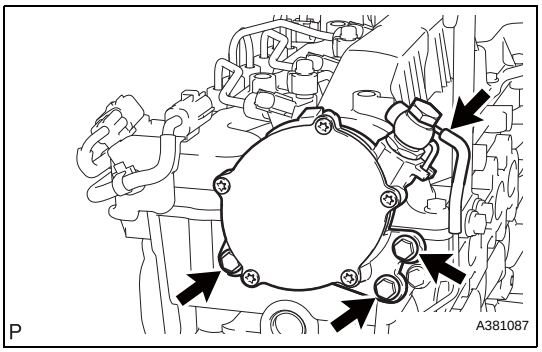
73. REMOVE WATER INLET (See page)

74. REMOVE THERMOSTAT (See page)

75. REMOVE NO. 1 IDLER PULLEY SUB-ASSEMBLY (See page)

76. REMOVE V-RIBBED BELT TENSIONER ASSEMBLY (See page)

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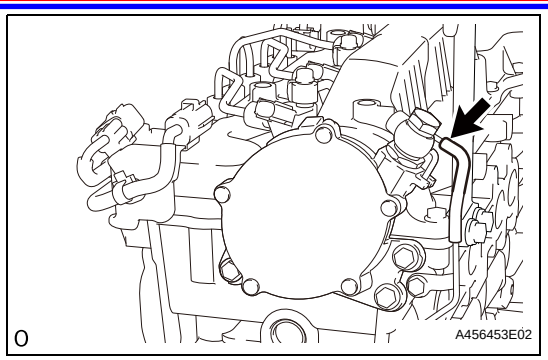


77. REMOVE VACUUM PUMP ASSEMBLY

(a) Disconnect the No. 1 vacuum transmitting hose sub-assembly from the vacuum pump assembly.

(b) Remove the 3 bolts and vacuum pump assembly from the cylinder head sub-assembly.

(c) Remove the 2 O-rings from the vacuum pump assembly.



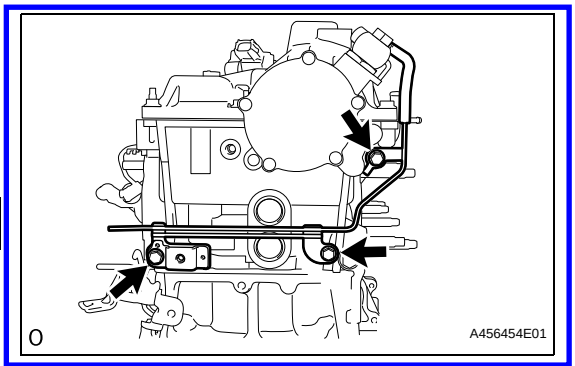
78. REMOVE NO. 1 VACUUM TRANSMITTING PIPE SUB-ASSEMBLY

(a) Disconnect the No. 1 vacuum transmitting hose sub-assembly from the vacuum pump assembly.

[Deleted]

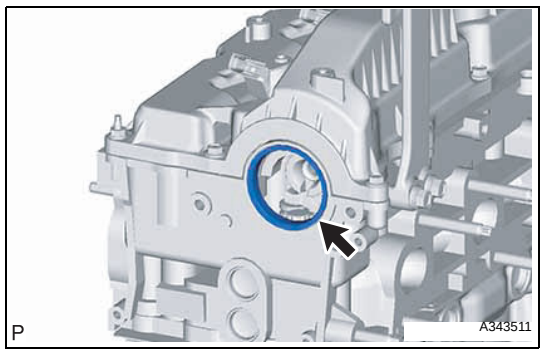
[Added]

EM



(b) Remove the 3 bolts and No. 1 vacuum transmitting pipe sub-assembly from the cylinder head sub-assembly.

[Corrected]



[Deleted]

79. REMOVE CAMSHAFT OIL SEAL RETAINER

(a) Remove the camshaft oil seal retainer from the No. 3 camshaft bearing cap and cylinder head sub-assembly.

80. REMOVE VACUUM PUMP UNION

(a) Remove the union bolt, vacuum pump union and 2 gaskets from the vacuum pump assembly.

81. REMOVE CRANKSHAFT PULLEY COVER (See page)

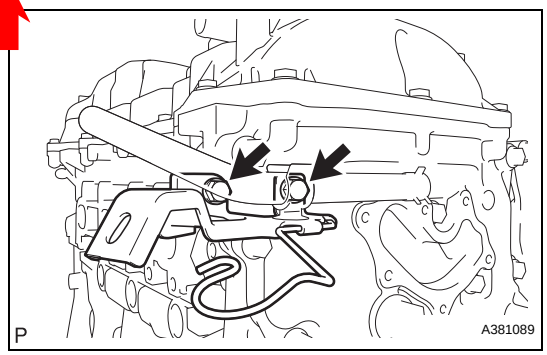
[Added]

82. REMOVE CRANKSHAFT PULLEY (See page)

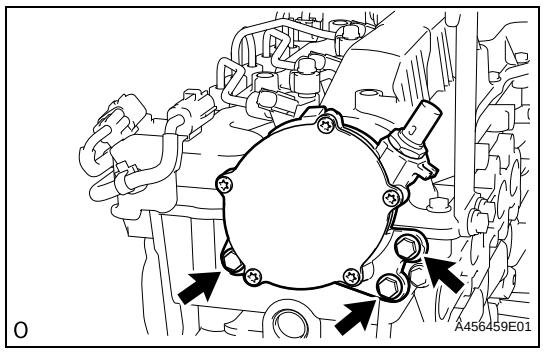
83. REMOVE PCV HOSE CLAMP

(a) Remove the 2 bolts and PCV hose clamp from the timing chain case assembly and timing chain cover sub-assembly.

84. REMOVE FAN PULLEY (See page)



DISASSEMBLY [201701-201908]

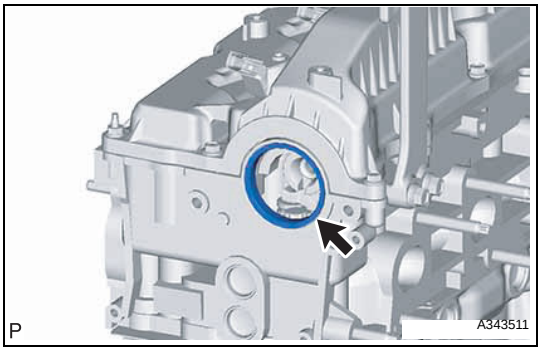


1. REMOVE VACUUM PUMP ASSEMBLY

(a) Remove the 3 bolts and vacuum pump assembly from the cylinder head sub-assembly.

(b) Remove the 2 O-rings from the vacuum pump assembly.

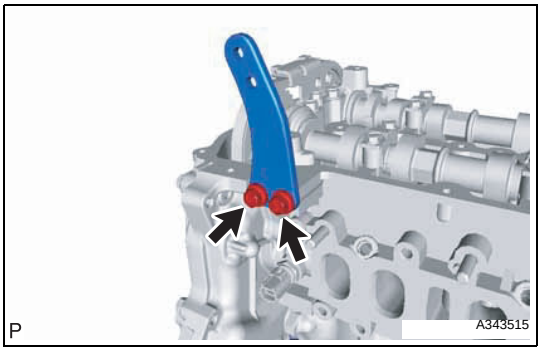
[Added]



2. REMOVE CAMSHAFT OIL SEAL RETAINER

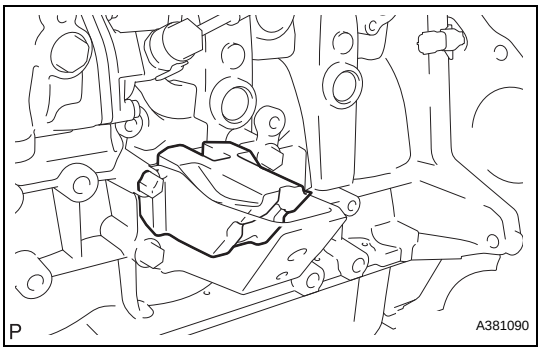
(a) Remove the camshaft oil seal retainer from the No. 3 camshaft bearing cap and cylinder head sub-assembly.

[Added]



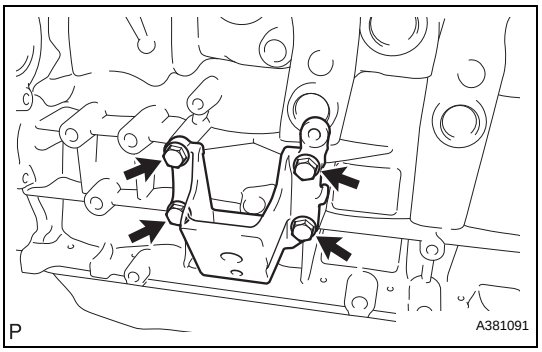
3. REMOVE NO. 1 ENGINE HANGER

(a) Remove the 2 bolts and No. 1 engine hanger from the cylinder head sub-assembly.



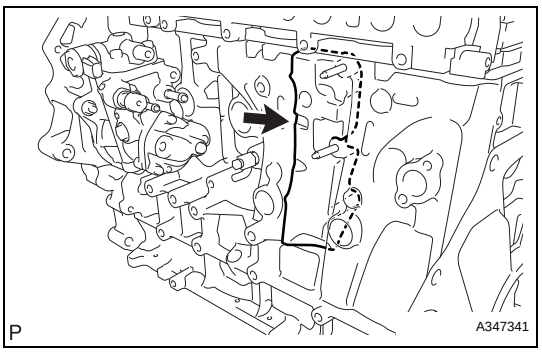
4. REMOVE NO. 2 CYLINDER BLOCK INSULATOR

(a) Remove the No. 2 cylinder block insulator from the front No. 1 engine mounting bracket LH.



5. REMOVE FRONT NO. 1 ENGINE MOUNTING BRACKET LH

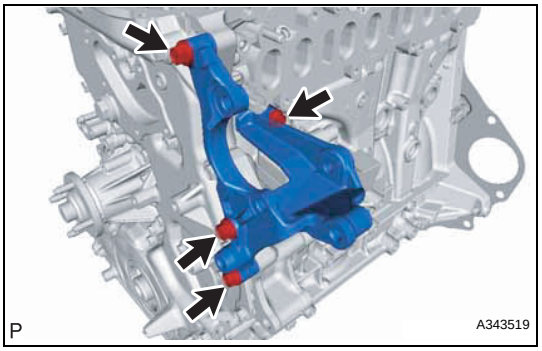
(a) Remove the 4 bolts and front No. 1 engine mounting bracket LH from the cylinder block sub-assembly.



6. REMOVE NO. 3 CYLINDER BLOCK INSULATOR

(a) Remove the No. 3 cylinder block insulator from the cylinder block sub-assembly.

EM



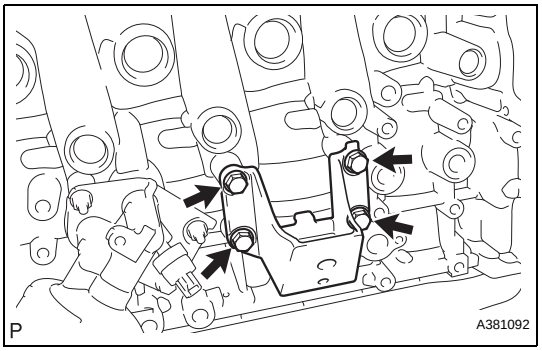
7. REMOVE GENERATOR BRACKET SUB-ASSEMBLY

(a) Remove the 4 bolts and generator bracket sub-assembly from the cylinder head sub-assembly and timing chain case assembly.

8. REMOVE WATER INLET
(See page) See*1

9. REMOVE THERMOSTAT
(See page) See*2

[Added]



10. REMOVE FRONT NO. 1 ENGINE MOUNTING BRACKET RH

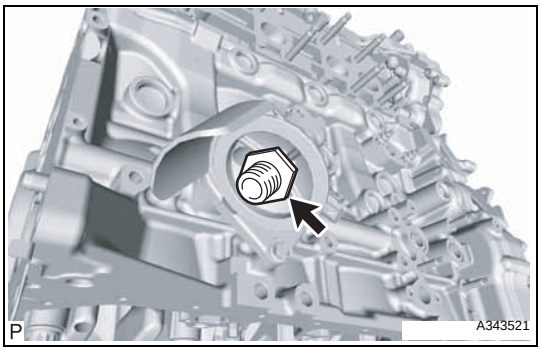
(a) Remove the 4 bolts and front No. 1 engine mounting bracket RH from the cylinder block sub-assembly.

11. REMOVE ENGINE OIL PRESSURE SWITCH ASSEMBLY
(See page) See*3

[Added]

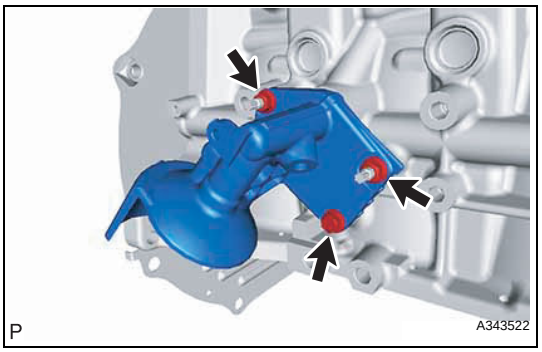
12. REMOVE ENGINE OIL COOLER SET (See page)

13. REMOVE OIL FILTER SUB-ASSEMBLY (See page)



14. REMOVE OIL FILTER UNION

(a) Using a 27 mm deep socket wrench, remove the oil filter union from the oil filter bracket.



15. REMOVE OIL FILTER BRACKET

(a) Remove the bolt, 2 nuts and oil filter bracket from the cylinder block sub-assembly.

(b) Remove the 2 O-rings from the cylinder block sub-assembly.

16. REMOVE NOZZLE LEAKAGE PIPE ASSEMBLY
(See page) See*4

[Added]

17. REMOVE INJECTOR ASSEMBLY (See page)

18. REMOVE NOZZLE HOLDER GASKET (See page)

19. REMOVE CAMSHAFT POSITION SENSOR (See page)

20. REMOVE OIL FILLER CAP SUB-ASSEMBLY

(a) Remove the oil filler cap sub-assembly from the cylinder head cover sub-assembly.

21. REMOVE OIL FILLER CAP GASKET

(a) Remove the oil filler cap gasket from the oil filler cap sub-assembly.

See*1: 1GD-FTV COOLING - THERMOSTAT - REMOVAL (2017/01-2019/08)
See*2: 1GD-FTV COOLING - THERMOSTAT - REMOVAL (2017/01-2019/08)
See*3: 1GD-FTV LUBRICATION - OIL PRESSURE SWITCH - REMOVAL (2017/01-2019/08)
See*4: 1GD-FTV FUEL - FUEL INJECTOR - REMOVAL (2017/01-2019/08)

EM

46. INSTALL CYLINDER HEAD COVER SUB-ASSEMBLY (See page)

47. INSTALL OIL FILLER CAP GASKET

(a) Install the oil filler cap gasket to the oil filler cap sub-assembly.

48. INSTALL OIL FILLER CAP SUB-ASSEMBLY

(a) Install the oil filler cap sub-assembly to the cylinder head cover sub-assembly.

49. INSTALL NOZZLE HOLDER GASKET (See page)

50. TEMPORARILY INSTALL INJECTOR ASSEMBLY (See page)

51. INSTALL NOZZLE LEAKAGE PIPE ASSEMBLY
(See page) See*1

[Added]

52. INSTALL OIL FILTER BRACKET

(a) Install 2 new O-rings to the cylinder block sub-assembly.

(b) Install the oil filter bracket to the cylinder block sub-assembly with the 2 nuts and bolt.
Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)

53. INSTALL OIL FILTER UNION

(a) Using a 27 mm deep socket wrench, install the oil filter union to the oil filter bracket.
Torque: 29 N*m (300 kgf*cm, 22 ft.*lbf)

54. INSTALL OIL FILTER SUB-ASSEMBLY (See page)

55. INSTALL ENGINE OIL COOLER SET (See page)

56. INSTALL ENGINE OIL PRESSURE SWITCH ASSEMBLY
(See page) See*2

[Added]

57. INSTALL FRONT NO. 1 ENGINE MOUNTING BRACKET RH

(a) Install the front No. 1 engine mounting bracket RH to the cylinder block sub-assembly with the 4 bolts.
Torque: 68 N*m (693 kgf*cm, 50 ft.*lbf)

58. INSTALL THERMOSTAT
(See page) See*3

59. INSTALL WATER INLET
(See page) See*4

[Added]

60. INSTALL GENERATOR BRACKET SUB-ASSEMBLY

(a) Install the generator bracket sub-assembly to the cylinder head sub-assembly and timing chain case assembly with the 4 bolts.
Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)

61. INSTALL NO. 3 CYLINDER BLOCK INSULATOR

(a) Install the No. 3 cylinder block insulator to the cylinder block sub-assembly.

See*1: 1GD-FTV FUEL - FUEL INJECTOR - INSALLATION (2017/01-2019/08)
See*2: 1GD-FTV LUBRICATION - OIL PRESSURE SWITCH - INSALLATION (2017/01-2019/08)
See*3: 1GD-FTV COOLING - THERMOSTAT - INSALLATION (2017/01-2019/08)
See*4: 1GD-FTV COOLING - THERMOSTAT - INSALLATION (2017/01-2019/08)

62. INSTALL SUPPLY PUMP INSULATOR

(a) Install the supply pump insulator to the cylinder block sub-assembly.

63. INSTALL FRONT NO. 1 ENGINE MOUNTING BRACKET LH

(a) Install the front No. 1 engine mounting bracket LH to the cylinder block sub-assembly with the 4 bolts.
Torque: 68 N*m (693 kgf*cm, 50 ft.*lbf)

64. INSTALL NO. 2 CYLINDER BLOCK INSULATOR

(a) Install the No. 2 cylinder block insulator to the front No. 1 engine mounting bracket LH.

65. INSTALL NO. 1 ENGINE HANGER

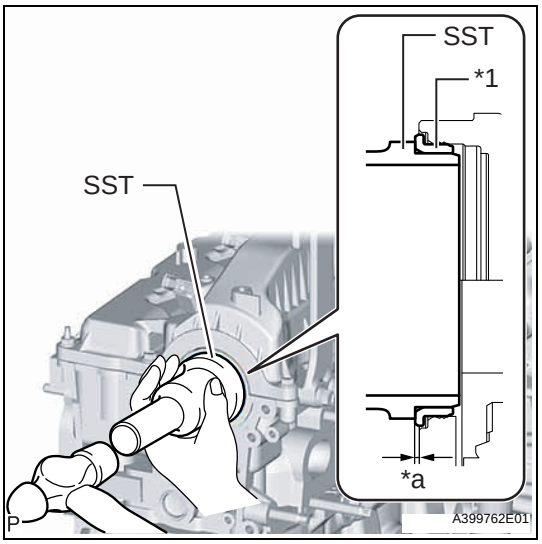
(a) Install the No. 1 engine hanger to the cylinder head sub-assembly with the 2 bolts.
Torque: 26 N*m (265 kgf*cm, 19 ft.*lbf)

66. INSTALL CAMSHAFT OIL SEAL RETAINER

NOTICE:
If the camshaft oil seal retainer is dropped, replace it with a new one.

(a) Before installing a new camshaft oil seal retainer, clean the installation surface of the No. 3 camshaft bearing cap and cylinder head sub-assembly and remove any foreign matter.

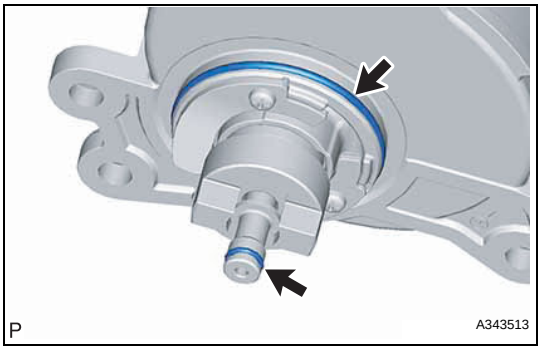
(b) Using SST and a hammer, tap in a new camshaft oil seal retainer to the No. 3 camshaft bearing cap and cylinder head sub-assembly as shown in the illustration.
SST 09223-22010
Standard depth:
-0.5 to 0.8 mm (-0.0197 to 0.0315 in.)
Text in Illustration



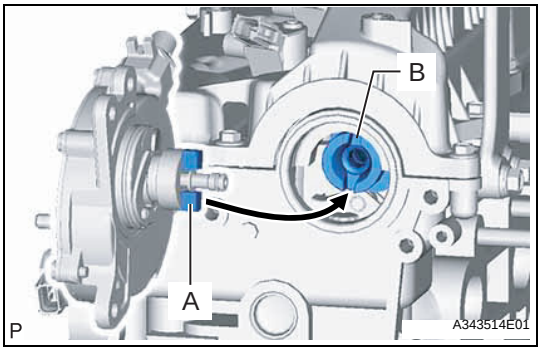
*1	Camshaft Oil Seal Retainer
*a	Depth

67. INSTALL VACUUM PUMP ASSEMBLY

(a) Coat 2 new O-rings with engine oil, and install them to the vacuum pump assembly.



[Added]



(b) Install the vacuum pump assembly so that the coupling teeth of the vacuum pump assembly labeled A and the groove of the No. 2 camshaft labeled B can engage.

(c) Install the vacuum pump assembly to the cylinder head sub-assembly with the 3 bolts.
Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)

EM

INSTALLATION

[Added]

NOTICE:

- **When replacing the parts in the following chart (A), replace the No. 1 injection pipe sub-assembly, No. 2 injection pipe sub-assembly and/or fuel inlet pipe sub-assembly with new ones.**

Replaced Parts (A)	Pipes Requiring New Replacement
Injector assembly (including shuffling the injector assemblies between the cylinders)	• No. 1 injection pipe sub-assembly • No. 2 injection pipe sub-assembly
Supply pump assembly	Fuel inlet pipe sub-assembly
• Common rail assembly • Cylinder block sub-assembly • Cylinder head sub-assembly • Cylinder head gasket • Timing chain case assembly	• No. 1 injection pipe sub-assembly • No. 2 injection pipe sub-assembly • Fuel inlet pipe sub-assembly

- **After removing the No. 1 injection pipe sub-assembly, No. 2 injection pipe sub-assembly and/or fuel inlet pipe sub-assembly, clean them with a brush and compressed air.**
- **The injector assembly is a precision instrument. Do not use the injector assembly if it is struck or dropped.**
- **The supply pump assembly is a precision instrument. Do not use the supply pump assembly if it is struck or dropped.**
- **The common rail assembly is a precision instrument. Do not use the common rail assembly if it is struck or dropped.**
- **Hold the supply pump assembly itself during removal and installation. Do not hold the pre-stroke control valve or fuel pipe, etc.**
- **Hold the common rail assembly itself during removal and installation. Do not hold the pressure discharge valve or fuel pressure sensor, etc.**
- **Make sure foreign matter does not enter the fuel path.**

1. TEMPORARILY INSTALL FAN PULLEY (See page)

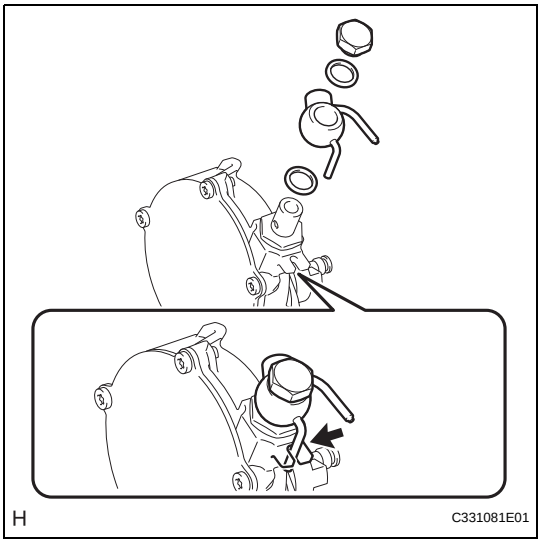
2. TIGHTEN FAN PULLEY (See page)

3. INSTALL PCV HOSE CLAMP

(a) Install the PCV hose clamp to the timing chain case assembly and timing chain cover sub-assembly with the 2 bolts.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

4. INSTALL CRANKSHAFT PULLEY (See page)

5. INSTALL CRANKSHAFT PULLEY COVER (See page)



6. INSTALL VACUUM PUMP UNION

(a) Install the 2 new gaskets and the vacuum pump union with the union bolt.
Torque: 14 N*m (140 kgf*cm, 10 ft.*lbf)
HINT:
Check that the stopper of the vacuum pump union with union is securely held on the vacuum pump assembly.

[Added]

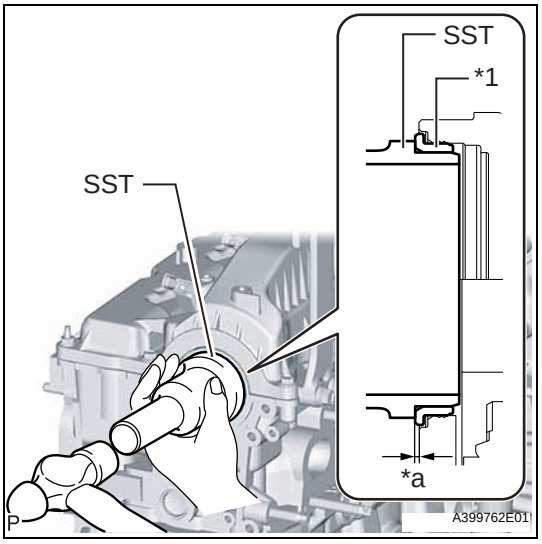
EM

7. INSTALL CAMSHAFT OIL SEAL RETAINER

NOTICE:
If the camshaft oil seal retainer is dropped, replace it with a new one.

(a) Before installing a new camshaft oil seal retainer, clean the installation surface of the No. 3 camshaft bearing cap and cylinder head sub-assembly and remove any foreign matter.

(b) Using SST and a hammer, tap in a new camshaft oil seal retainer to the No. 3 camshaft bearing cap and cylinder head sub-assembly as shown in the illustration.
SST 09223-22010
Standard depth:
-0.5 to 0.8 mm (-0.0197 to 0.0315 in.)
Text in Illustration



*1	Camshaft Oil Seal Retainer
*a	Depth

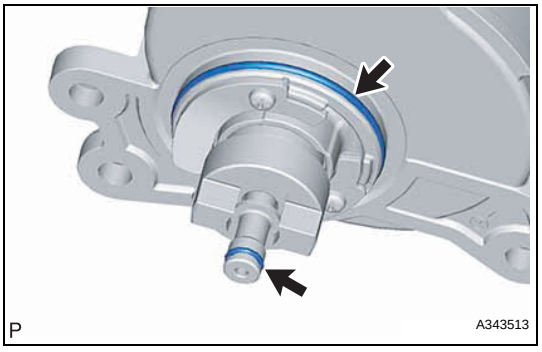
[Deleted]

8. INSTALL NO. 1 VACUUM TRANSMITTING PIPE SUB-ASSEMBLY

(a) Install the No. 1 vacuum transmitting pipe sub-assembly to the cylinder head sub-assembly and cylinder block sub-assembly with the 3 bolts.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

(b) Connect the No. 1 vacuum transmitting hose sub-assembly to the vacuum pump assembly.

[Added]

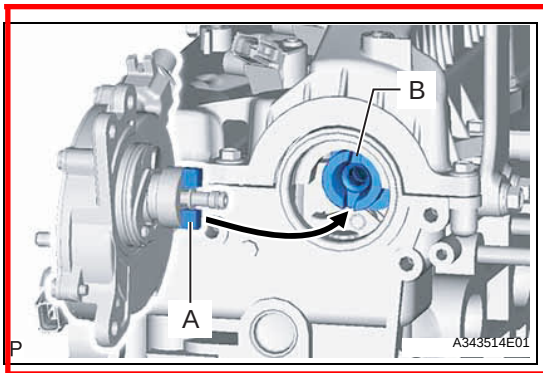


9. INSTALL VACUUM PUMP ASSEMBLY

(a) Coat 2 new O-rings with engine oil, and install them to the vacuum pump assembly.

[Deleted]

EM



(b) Install the vacuum pump assembly so that the coupling teeth of the vacuum pump assembly labeled A and the groove of the No. 2 camshaft labeled B can engage.

(c) Install the vacuum pump assembly to the cylinder head sub-assembly with the 3 bolts.
Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)

(d) Connect the No. 1 vacuum transmitting hose sub-assembly to the vacuum pump assembly.

10. INSTALL V-RIBBED BELT TENSIONER ASSEMBLY (See page)

11. INSTALL NO. 1 IDLER PULLEY SUB-ASSEMBLY (See page)

12. INSTALL THERMOSTAT (See page)

13. INSTALL WATER INLET (See page)

14. INSTALL WATER OUTLET SUB-ASSEMBLY

(a) Install a new gasket and the water outlet sub-assembly to the timing chain cover sub-assembly with the 4 bolts and 2 nuts.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

[Deleted]

15. INSTALL NO. 2 WATER BY-PASS PIPE SUB-ASSEMBLY

(a) Install the No. 2 water by-pass pipe sub-assembly to the engine water pump assembly and water inlet with the 2 bolts.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

(b) Connect the No. 3 water by-pass hose to the water outlet sub-assembly, and slide the clamp to secure the hose.

16. INSTALL ENGINE OIL PRESSURE SWITCH ASSEMBLY (See page)

[Deleted]

17. TEMPORARILY INSTALL TURBO OIL INLET PIPE SUB-ASSEMBLY (See page)

18. TEMPORARILY INSTALL EXHAUST MANIFOLD WITH TURBOCHARGER SUB-ASSEMBLY (See page)

19. INSTALL TURBO OIL OUTLET PIPE (See page)

20. TEMPORARILY INSTALL TURBOCHARGER STAY (See page)

21. TIGHTEN EXHAUST MANIFOLD WITH TURBOCHARGER SUB-ASSEMBLY (See page)

22. TIGHTEN TURBOCHARGER STAY (See page)

23. CONNECT NO. 1 AND NO. 2 TURBO WATER HOSE (See page)

24. INSTALL NO. 1 WATER BY-PASS PIPE

(a) Install a new gasket and the No. 1 water by-pass pipe to the timing chain cover sub-assembly with the 2 bolts.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

[Deleted]

42. INSTALL FUEL FILTER(for Cylinder Block Side)

(a) Install the diesel fuel filter assembly with the 2 nuts to the cylinder block sub-assembly.
Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)

43. INSTALL BRACKET

(a) Install the bracket to the cylinder head sub-assembly with the 2 bolts.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

44. INSTALL GLOW PLUG ASSEMBLY (See page)

45. INSTALL NO. 1 GLOW PLUG CONNECTOR (See page)

46. INSTALL COMMON RAIL ASSEMBLY (See page)

47. TEMPORARILY INSTALL NO. 1 AND NO. 2 INJECTION PIPE SUB-ASSEMBLY (See page)

48. TIGHTEN INJECTOR ASSEMBLY (See page)

49. TIGHTEN NO. 1 AND NO. 2 INJECTION PIPE SUB-ASSEMBLY (See page)

50. INSTALL WIRING HARNESS CLAMP BRACKET

(a) for Upper Side:
Install the wiring harness clamp bracket to the cylinder head cover sub-assembly with the bolt.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

(b) for Rear Side:
Install the wiring harness clamp bracket to the cylinder head cover sub-assembly with the bolt.
Torque: 13 N*m (127 kgf*cm, 9 ft.*lbf)

51. INSTALL NOZZLE LEAKAGE PIPE ASSEMBLY (See page)

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52. INSTALL NO. 1 FUEL PIPE (See page)

53. INSTALL WIRING HARNESS CLAMP BRACKET (See page)

54. INSTALL INTAKE MANIFOLD (See page)

55. INSTALL NO. 2 NOZZLE LEAKAGE PIPE ASSEMBLY (See page)

56. INSTALL FUEL INLET PIPE SUB-ASSEMBLY (See page)

57. INSTALL NO. 1 FUEL HOSE (See page)

58. INSTALL NO. 2 FUEL HOSE (See page)

59. INSTALL NO. 3 FUEL PIPE
(See page)

60. INSTALL NO. 4 FUEL PIPE SUB-ASSEMBLY (See page)

61. INSTALL FUEL PUMP MOTOR WIRE (See page)

62. INSTALL FUEL INJECTION PUMP COVER SUB-ASSEMBLY (See page)

45. ADD ENGINE COOLANT (See page)

46. BLEED AIR FROM FUEL SYSTEM (See page)

47. CHARGE REFRIGERANT (See page)

48. ADD AUTOMATIC TRANSMISSION FLUID

49. PERFORM REGISTRATION

(a) Perform registration of injector compensation codes (See page). See*1

(b) Perform registration of pilot quantity learning (See page). See*2

EM

50. INSPECT FOR FUEL LEAK (See page)

51. INSPECT FOR OIL LEAK (See page)

[Added]

52. INSPECT FOR COOLANT LEAK (See page)

53. INSPECT ENGINE OIL LEVEL (See page)

54. INSPECT AUTOMATIC TRANSMISSION FLUID LEVEL (See page)

55. INSPECT SHIFT LEVER POSITION (See page)

56. ADJUST SHIFT LEVER POSITION (See page)

57. INSPECT FOR EXHAUST GAS LEAK (See page)

58. INSPECT FOR REFRIGERANT LEAK (See page)

59. INSTALL TRANSMISSION SERVICE HOLE COVER SUB-ASSEMBLY

(a) Install the transmission service hole cover sub-assembly to the body with the 4 bolts.
Torque: 7.0 N*m (71 kgf*cm, 62 in.*lbf)

(b) Return the carpet to its original position and attach the clips.

(c) Connect the front center seat belt assembly RH and front center seat lap type belt assembly with the 2 bolts.
Torque: 42 N*m (428 kgf*cm, 31 ft.*lbf)

(d) Install the 2 seat belt anchor covers.

60. INSTALL ENGINE SERVICE HOLE SUB COVER SUB-ASSEMBLY

(a) Install the engine service hole sub cover sub-assembly with the 5 bolts.
Torque: 13 N*m (133 kgf*cm, 10 ft.*lbf)

(b) Return the floor carpet to its original position.

61. INSTALL FRONT DOOR SCUFF PLATE RH

62. INSTALL FRONT SEAT ASSEMBLY RH (See page)

63. INSTALL SEAT TRACK COVER LH (See page)

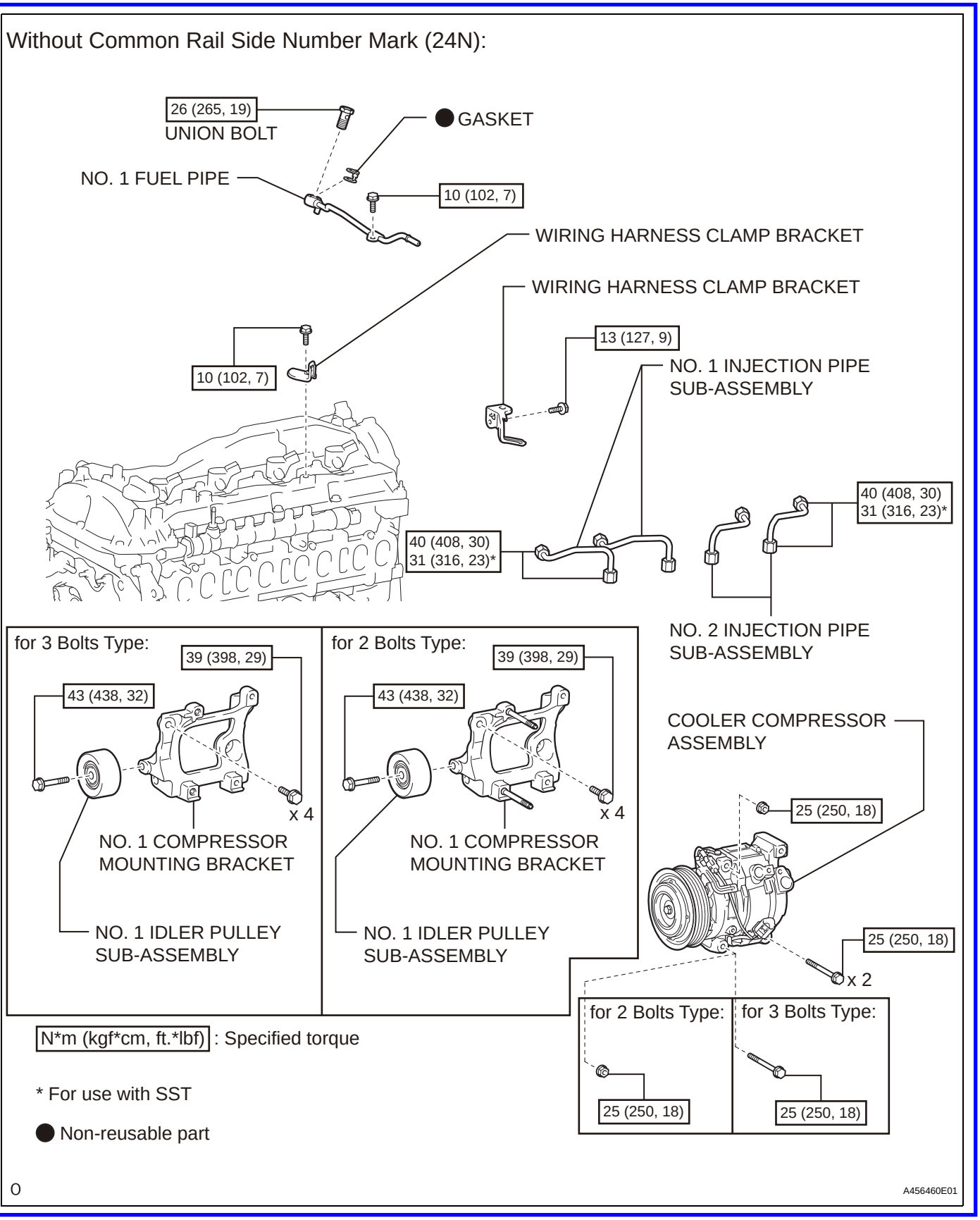
64. INSPECT ENGINE IDLE SPEED (See page)

65. INSPECT MAXIMUM SPEED (See page)

66. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT (See page)

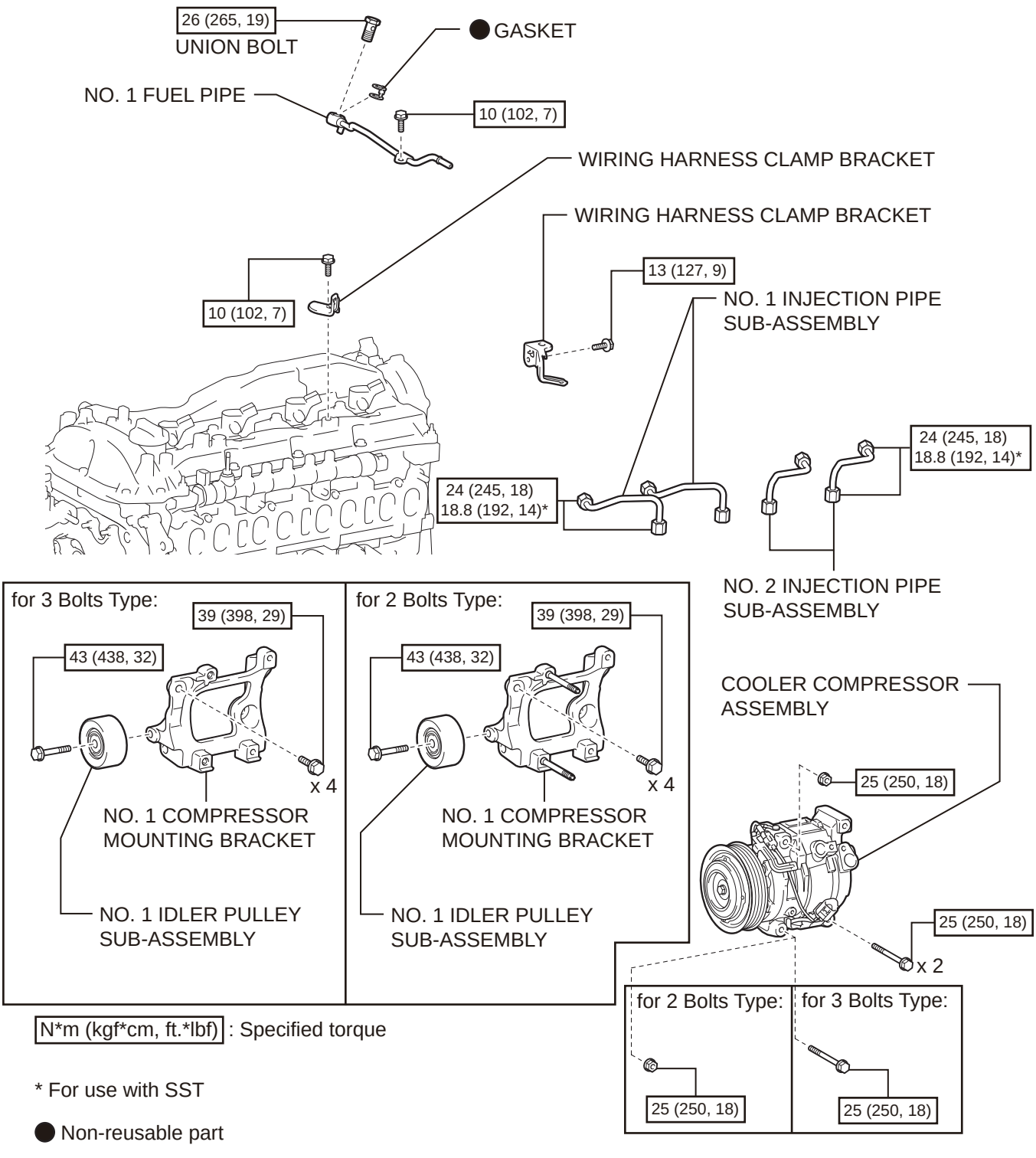
See*1: 1GD-FTV ENGINE CONTROL SYSTEM - ECD SYSTEM - REGISTRATION (2017/01-2019/08)
See*2: 1GD-FTV ENGINE CONTROL SYSTEM - ECD SYSTEM - REGISTRATION (2017/01-2019/08)

EM



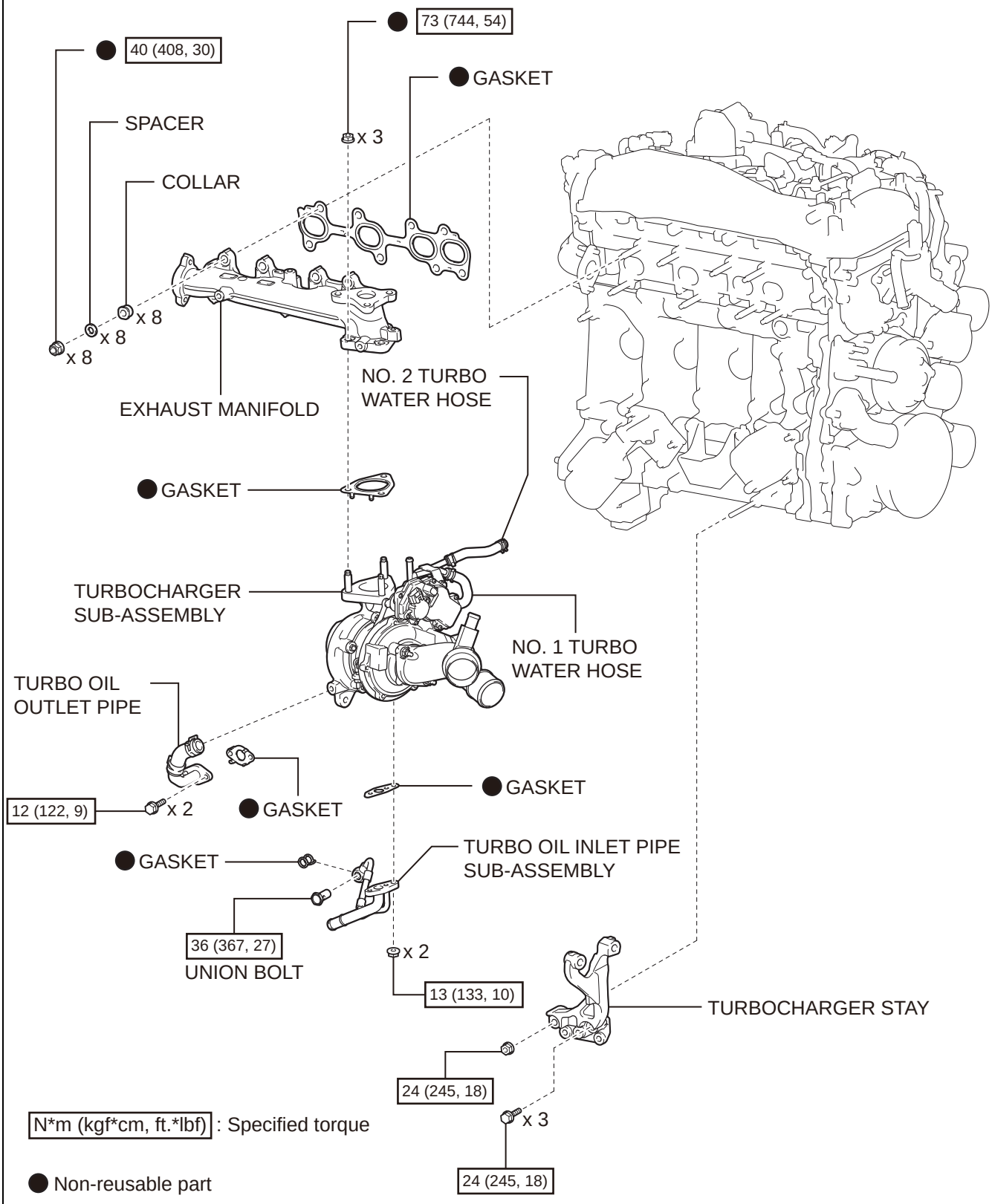
[Corrected]

With Common Rail Side Number Mark (24N):

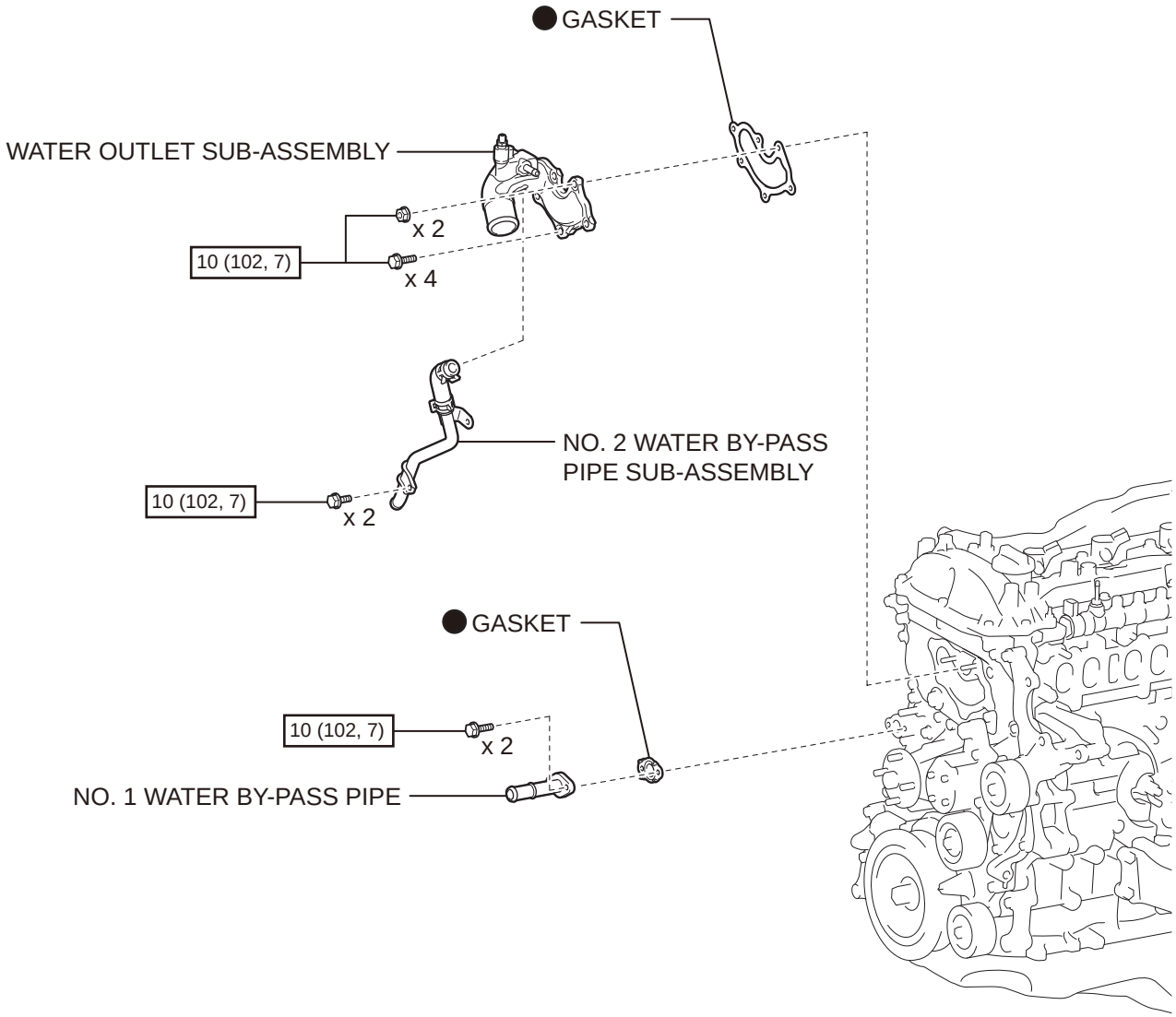


[Corrected]

EM



[Corrected]



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

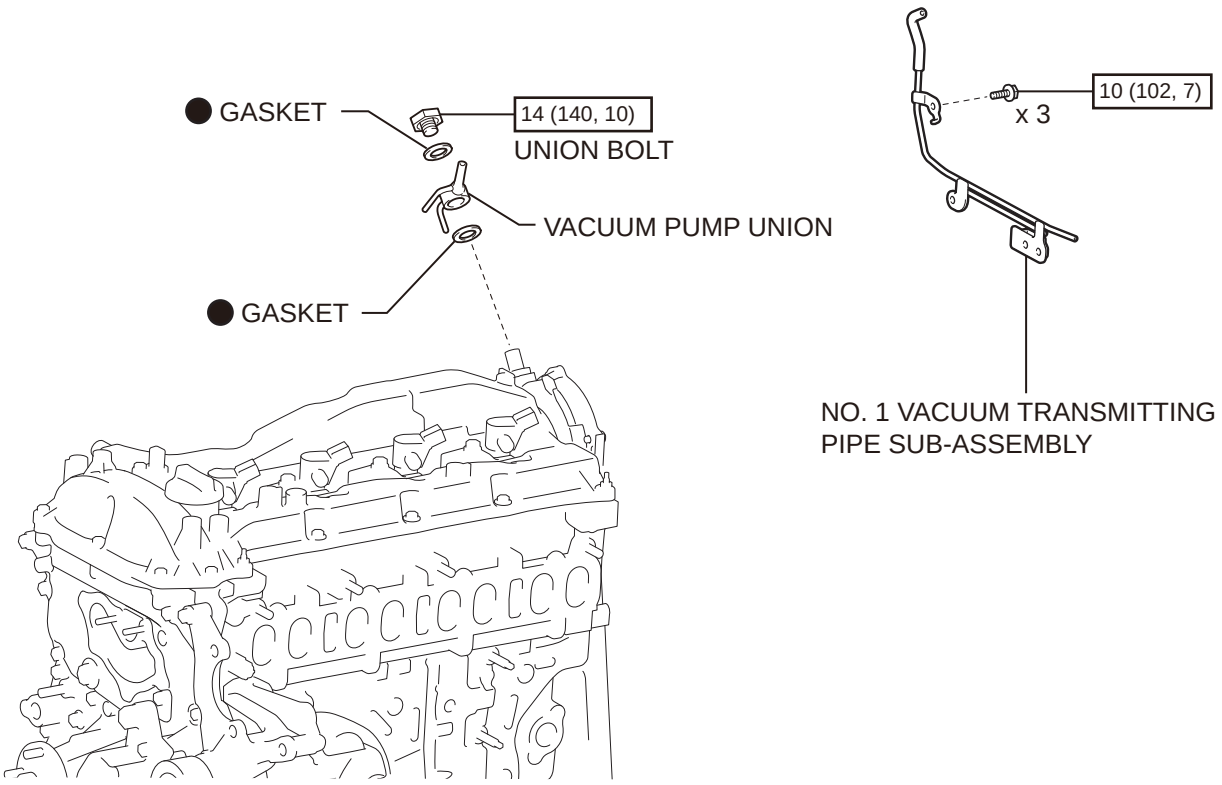
● Non-reusable part

O

A456462E01

[Corrected]

EM



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

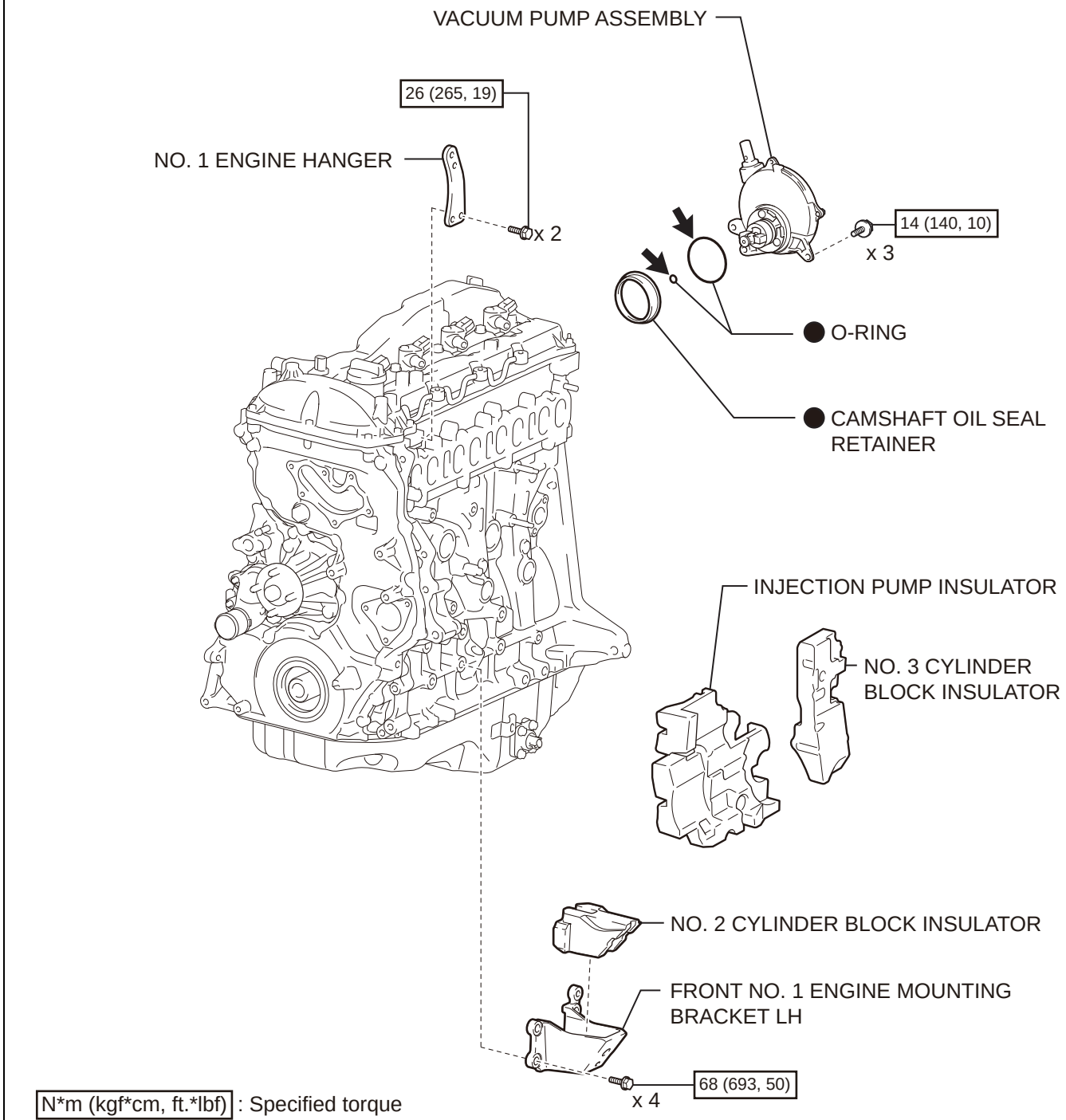
● Non-reusable part

O

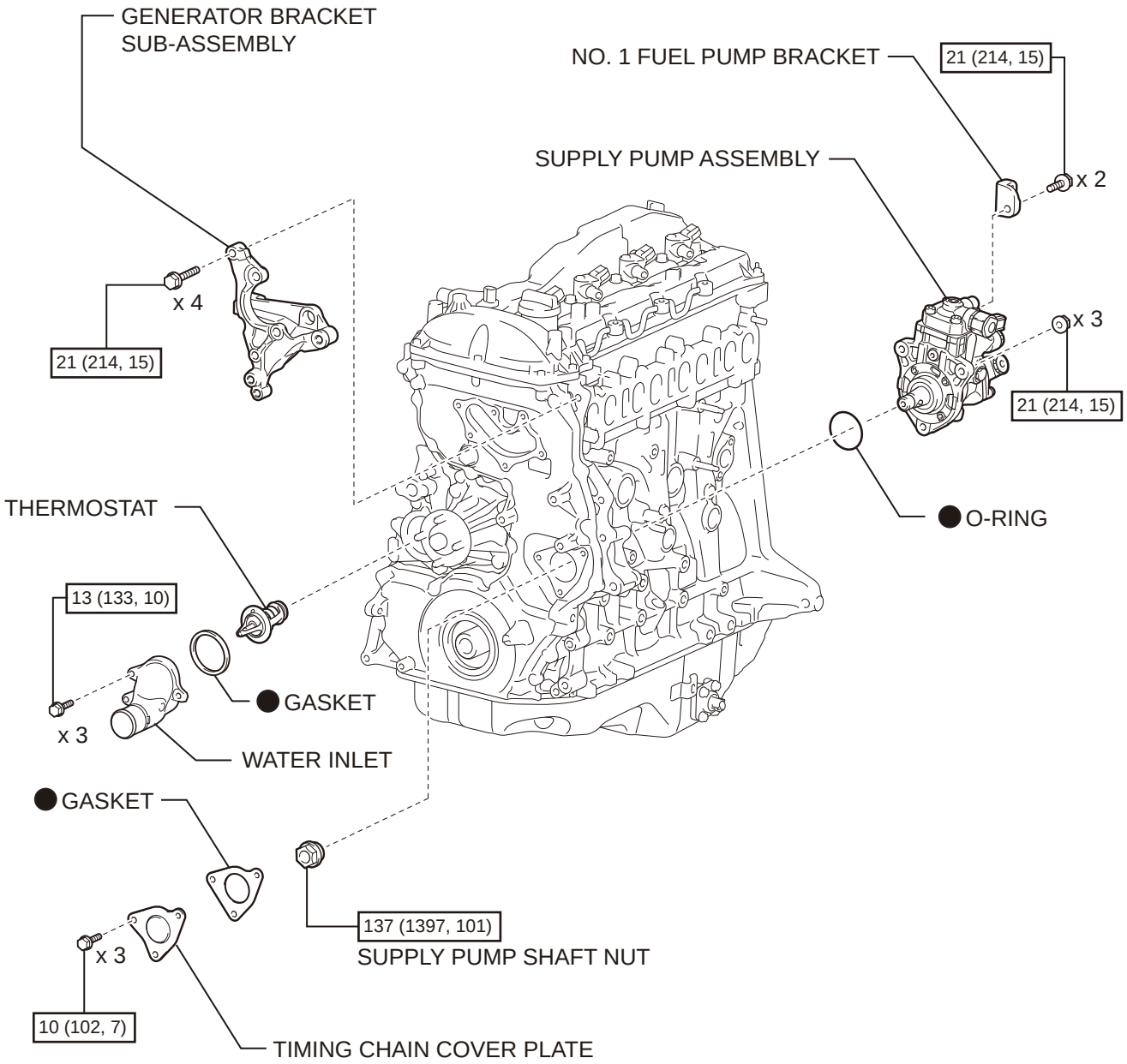
A456463E01

[Corrected]

EM



[Corrected]



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

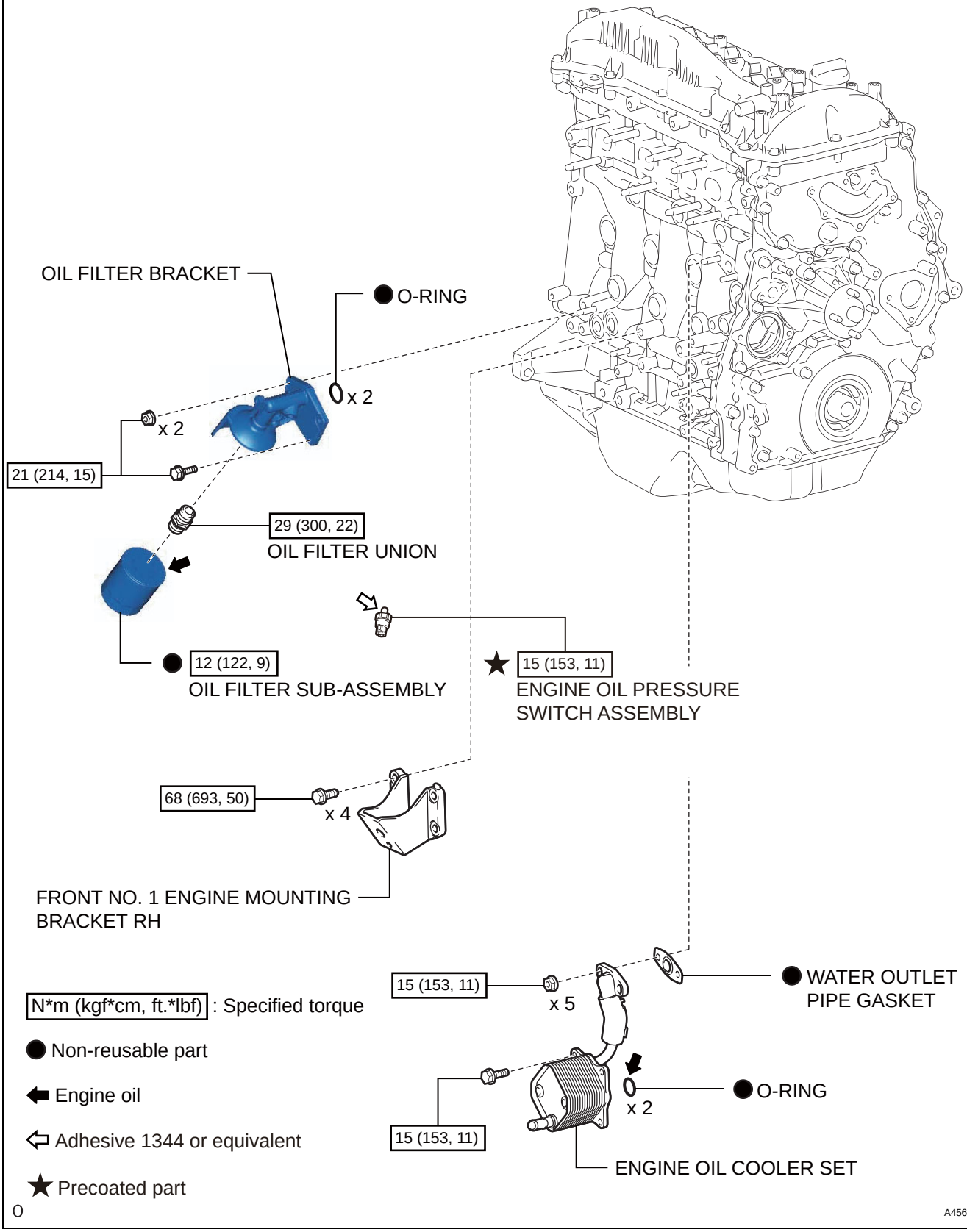
● Non-reusable part

O

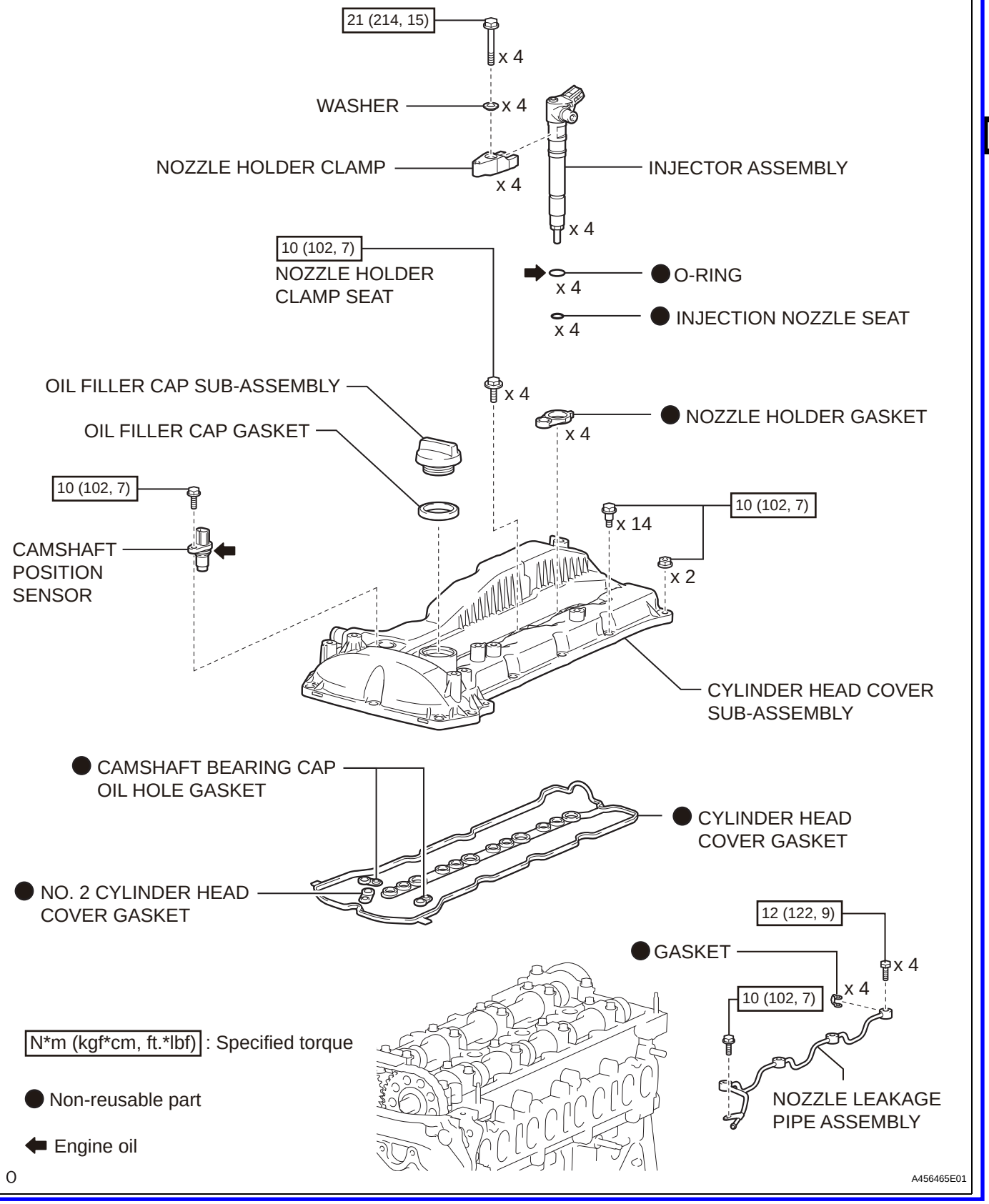
A456456E01

[Corrected]

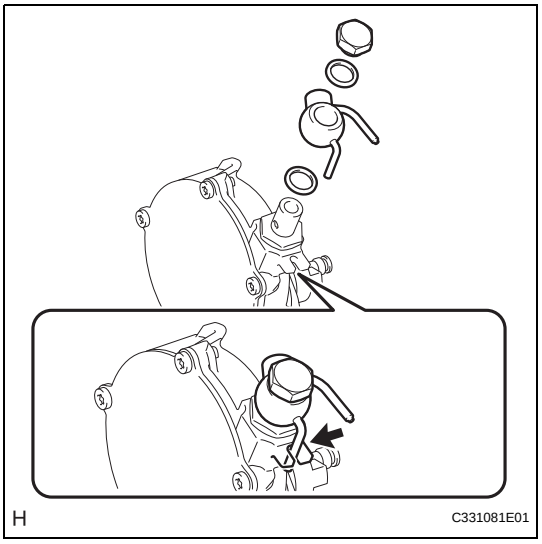
EM



[Corrected]


21 (214, 15)
x 4
WASHER
x 4
NOZZLE HOLDER CLAMP
x 4
INJECTOR ASSEMBLY
x 4
10 (102, 7)
NOZZLE HOLDER CLAMP SEAT
O-RING
x 4
INJECTION NOZZLE SEAT
x 4
OIL FILLER CAP SUB-ASSEMBLY
OIL FILLER CAP GASKET
x 4
NOZZLE HOLDER GASKET
x 4
10 (102, 7)
CAMSHAFT POSITION SENSOR
10 (102, 7)
x 14
x 2
CYLINDER HEAD COVER SUB-ASSEMBLY
CAMSHAFT BEARING CAP OIL HOLE GASKET
CYLINDER HEAD COVER GASKET
NO. 2 CYLINDER HEAD COVER GASKET
12 (122, 9)
GASKET
x 4
x 4
10 (102, 7)
NOZZLE LEAKAGE PIPE ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part
Engine oil
A456465E01

[Corrected]



6. INSTALL VACUUM PUMP UNION

(a) Install the 2 new gaskets and the vacuum pump union with the union bolt.
Torque: 14 N*m (140 kgf*cm, 10 ft.*lbf)
HINT:
Check that the stopper of the vacuum pump union with union is securely held on the vacuum pump assembly.

[Added]

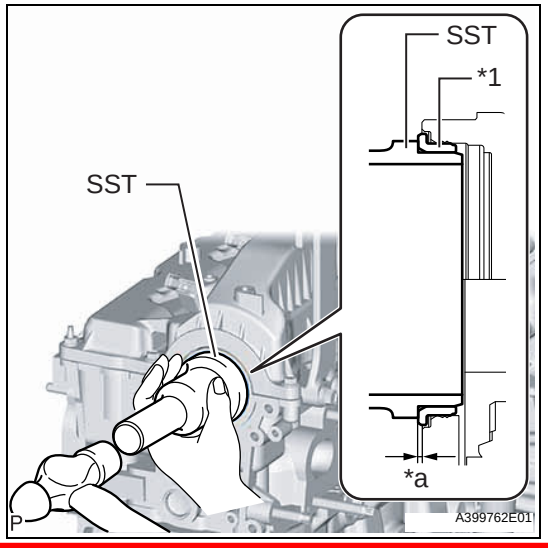
EM

7. INSTALL CAMSHAFT OIL SEAL RETAINER

NOTICE:
If the camshaft oil seal retainer is dropped, replace it with a new one.

(a) Before installing a new camshaft oil seal retainer, clean the installation surface of the No. 3 camshaft bearing cap and cylinder head sub-assembly and remove any foreign matter.

(b) Using SST and a hammer, tap in a new camshaft oil seal retainer to the No. 3 camshaft bearing cap and cylinder head sub-assembly as shown in the illustration.
SST 09223-22010
Standard depth:
-0.5 to 0.8 mm (-0.0197 to 0.0315 in.)
Text in Illustration



*1	Camshaft Oil Seal Retainer
*a	Depth

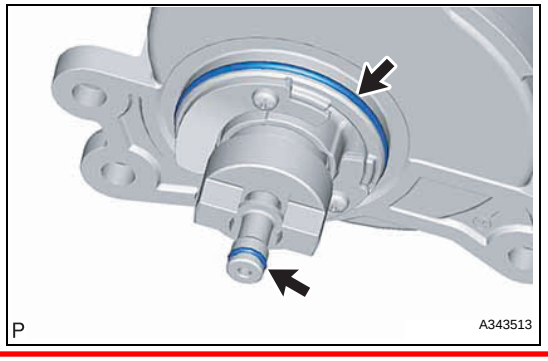
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8. INSTALL NO. 1 VACUUM TRANSMITTING PIPE SUB-ASSEMBLY

(a) Install the No. 1 vacuum transmitting pipe sub-assembly to the cylinder head sub-assembly and cylinder block sub-assembly with the 3 bolts.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

(b) Connect the No. 1 vacuum transmitting hose sub-assembly to the vacuum pump assembly.

[Added]

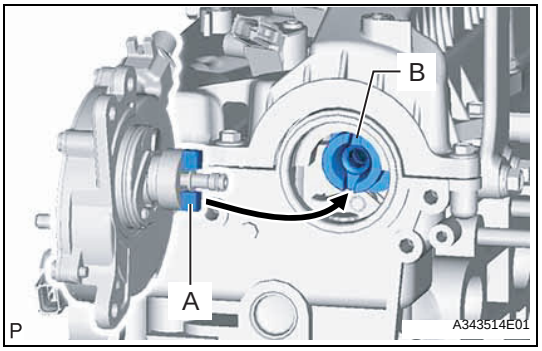


9. INSTALL VACUUM PUMP ASSEMBLY

(a) Coat 2 new O-rings with engine oil, and install them to the vacuum pump assembly.

[Deleted]

EM



(b) Install the vacuum pump assembly so that the coupling teeth of the vacuum pump assembly labeled A and the groove of the No. 2 camshaft labeled B can engage.

(c) Install the vacuum pump assembly to the cylinder head sub-assembly with the 3 bolts.
Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)

(d) Connect the No. 1 vacuum transmitting hose sub-assembly to the vacuum pump assembly.

10. INSTALL V-RIBBED BELT TENSIONER ASSEMBLY (See page)

11. INSTALL NO. 1 IDLER PULLEY SUB-ASSEMBLY (See page)

12. INSTALL THERMOSTAT (See page)

13. INSTALL WATER INLET (See page)

14. INSTALL WATER OUTLET SUB-ASSEMBLY

(a) Install a new gasket and the water outlet sub-assembly to the timing chain cover sub-assembly with the 4 bolts and 2 nuts.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

[Deleted]

15. INSTALL NO. 2 WATER BY-PASS PIPE SUB-ASSEMBLY

(a) Install the No. 2 water by-pass pipe sub-assembly to the engine water pump assembly and water inlet with the 2 bolts.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

(b) Connect the No. 3 water by-pass hose to the water outlet sub-assembly, and slide the clamp to secure the hose.

16. INSTALL ENGINE OIL PRESSURE SWITCH ASSEMBLY (See page)

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17. TEMPORARILY INSTALL TURBO OIL INLET PIPE SUB-ASSEMBLY (See page)

18. TEMPORARILY INSTALL EXHAUST MANIFOLD WITH TURBOCHARGER SUB-ASSEMBLY (See page)

19. INSTALL TURBO OIL OUTLET PIPE (See page)

20. TEMPORARILY INSTALL TURBOCHARGER STAY (See page)

21. TIGHTEN EXHAUST MANIFOLD WITH TURBOCHARGER SUB-ASSEMBLY (See page)

22. TIGHTEN TURBOCHARGER STAY (See page)

23. CONNECT NO. 1 AND NO. 2 TURBO WATER HOSE (See page)

24. INSTALL NO. 1 WATER BY-PASS PIPE

(a) Install a new gasket and the No. 1 water by-pass pipe to the timing chain cover sub-assembly with the 2 bolts.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

42. **INSTALL FUEL FILTER(for Cylinder Block Side)**
    (a) Install the diesel fuel filter assembly with the 2 nuts to the cylinder block sub-assembly.
    Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)

43. **INSTALL BRACKET**
    (a) Install the bracket to the cylinder head sub-assembly with the 2 bolts.
    Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

44. **INSTALL GLOW PLUG ASSEMBLY (See page)**

45. **INSTALL NO. 1 GLOW PLUG CONNECTOR (See page)**

46. **INSTALL COMMON RAIL ASSEMBLY (See page)**

47. **TEMPORARILY INSTALL NO. 1 AND NO. 2 INJECTION PIPE SUB-ASSEMBLY (See page)**

48. **TIGHTEN INJECTOR ASSEMBLY (See page)**

49. **TIGHTEN NO. 1 AND NO. 2 INJECTION PIPE SUB-ASSEMBLY (See page)**

50. **INSTALL WIRING HARNESS CLAMP BRACKET**
    (a) for Upper Side:
    Install the wiring harness clamp bracket to the cylinder head cover sub-assembly with the bolt.
    Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)
    (b) for Rear Side:
    Install the wiring harness clamp bracket to the cylinder head cover sub-assembly with the bolt.
    Torque: 13 N*m (127 kgf*cm, 9 ft.*lbf)

51. **INSTALL NOZZLE LEAKAGE PIPE ASSEMBLY (See page)**

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52. **INSTALL NO. 1 FUEL PIPE (See page)**

53. **INSTALL WIRING HARNESS CLAMP BRACKET (See page)**

54. **INSTALL INTAKE MANIFOLD (See page)**

55. **INSTALL NO. 2 NOZZLE LEAKAGE PIPE ASSEMBLY (See page)**

56. **INSTALL FUEL INLET PIPE SUB-ASSEMBLY (See page)**

57. **INSTALL NO. 1 FUEL HOSE (See page)**

58. **INSTALL NO. 2 FUEL HOSE (See page)**

59. **INSTALL NO. 3 FUEL PIPE**
    (See page)

60. **INSTALL NO. 4 FUEL PIPE SUB-ASSEMBLY (See page)**

61. **INSTALL FUEL PUMP MOTOR WIRE (See page)**

62. **INSTALL FUEL INJECTION PUMP COVER SUB-ASSEMBLY (See page)**