SERVICE BULLETIN

GLOBAL AFTER SALES OFFICE, MITSUBISHI MOTORS CORPORATION

PURPOSE : CORRECTION	ISSUE NO. : MSB-13EXL11_13-501	DATE : 2013-10-10
SUBJECT : TORQUE SPECIFICATIONS OF A INJECTOR HOLDER BOLT		<Affected Destination/Model> (AS PER ATTACHED) <M/Y> 09-15
GROUP : ENGINE & FUEL(Gr:11/13)		PAJERO/MONTERO(V80/90)

1. Description :

Please refer to the attached document for the correction of the error in writing existing in the applicable service manual. (Installation point error in writing of the injector holder bolt)

2. Affected service manuals :

Please refer to the attached document (Attached sheet 1)

3. About the details :

Please refer to the attached document (Attached sheet 4-12)

4. Affected EO : EO QC2740

For overseas market

Destination	Applicable manual	Pub. No.	Applicable title (INFO ID)	Content
EU/RUSSIA/ INDIA/ KOREA	2009 PAJERO/ MONTERO WORKSHOP MANUAL	CBKE09E1-CD (ENGLISH) CBKS09E1-CD (SPANISH) CBKF09E1-CD (FRENCH) CBKG09E1-CD (GERMAN) RUSSIA:N/A INDIA/KOREA:DRAFT	TORQUE SPECIFICATIONS (M113-02-343-58000-01) ROCKER COVER AND INJECTOR REMOVAL AND INSTALLATION (M113-02-850-18500-01) FUEL INJECTOR AND COMMON REIL REMOVAL AND INSTALLATION (M133-01-210-16801-01)	Attached sheet 4 Attached sheet 5 Attached sheet 6
EU/RUSSIA	2009.5 PAJERO/ MONTERO WORKSHOP MANUAL	CBKE09E2-CD (ENGLISH) CBKS09E2-CD (SPANISH) CBKF09E2-CD (FRENCH) CBKG09E2-CD (GERMAN) CBKI09E2-CD (ITALIAN) RUSSIA:N/A	TORQUE SPECIFICATIONS (M113-02-344-05500-01) ROCKER COVER AND INJECTOR REMOVAL AND INSTALLATION (M113-02-850-22600-01) FUEL INJECTOR AND COMMON REIL REMOVAL REMOVAL AND INSTALLATION (M133-01-210-25401-01)	Attached sheet 4 Attached sheet 5 Attached sheet 7
EU/RUSSIA/ INDIA/ KOREA	2010 PAJERO/ MONTERO Workshop Manual CD-ROM	CBKE10E1-CD (ENGLISH) CBKS10E1-CD (SPANISH) CBKF10E1-CD (FRENCH) CBKG10E1-CD (GERMAN) CBKI10E1-CD (ITALIAN) RUSSIA:N/A INDIA/KOREA:DRAFT		
EU/RUSSIA/ KOREA	2011 PAJERO/ MONTERO Workshop Manual CD-ROM	CBKE11E1-CD (ENGLISH) CBKS11E1-CD (SPANISH) CBKF11E1-CD (FRENCH) CBKG11E1-CD (GERMAN) CBKI11E1-CD (ITALIAN) RUSSIA:N/A KOREA:DRAFT	TORQUE SPECIFICATIONS (M113-02-345-09200-01) ROCKER COVER AND INJECTOR REMOVAL AND INSTALLATION (M113-02-850-29301-01) FUEL INJECTOR AND COMMON REIL REMOVAL REMOVAL AND INSTALLATION (M133-01-210-37301-01)	Attached sheet 4 Attached sheet 8 Attached sheet 9
EU/RUSSIA/ INDIA/ KOREA	2012 PAJERO/ MONTERO Workshop Manual CD-ROM	CBKE12E1-CD (ENGLISH) CBKS12E1-CD (SPANISH) CBKF12E1-CD (FRENCH) CBKG12E1-CD (GERMAN) CBKI12E1-CD (ITALIAN) RUSSIA:N/A INDIA/KOREA: DRAFT	TORQUE SPECIFICATIONS (M113-02-345-19900-01) ROCKER COVER AND INJECTOR REMOVAL AND INSTALLATION (M113-02-850-29301-01)	Attached sheet 4 Attached sheet 8

	2013 PAJERO/ MONTERO Workshop Manual CD-ROM	CVWE13E1-CD (ENGLISH) CVWS13E1-CD (SPANISH) CVWF13E1-CD (FRENCH) CVWG13E1-CD (GERMAN) CVWI13E1-CD (ITALIAN)		
EU/RUSSIA	2014 PAJERO/ MONTERO Workshop Manual CD-ROM	CVWE14E1-CD (ENGLISH) CVWS14E1-CD (SPANISH) CVWF14E1-CD (FRENCH) CVWG14E1-CD (GERMAN) CVWI14E1-CD (ITALIAN) RUSSIA:N/A		
G.EXP/GCC/ BRAZIL/ S.AFRICA	2009 PAJERO/MONTERO Workshop Manual CD-ROM	PWJE0812R (ENGLISH) PWJS0813R (SPANISH) BRAZIL/S.AFRI CA:DRAFT	TORQUE SPECIFICATIONS (M113-02-343-47200-01) ROCKER COVER AND INJECTOR REMOVAL AND INSTALLATION (M113-02-850-16300-01) FUEL INJECTOR AND COMMON REIL REMOVAL REMOVAL AND INSTALLATION (M133-01-210-07201-01)	Attached sheet 4 Attached sheet 12 Attached sheet 10
	2010 PAJERO/MONTERO Workshop Manual CD-ROM	PWJE0908R (ENGLISH) PWJS0909R (SPANISH) BRAZIL/S.AFRI CA:DRAFT	TORQUE SPECIFICATIONS (M113-02-344-29300-01) ROCKER COVER AND INJECTOR REMOVAL AND INSTALLATION (M113-02-850-16300-01) FUEL INJECTOR AND COMMON REIL REMOVAL REMOVAL AND INSTALLATION (M133-01-210-07201-01)	Attached sheet 4 Attached sheet 12 Attached sheet 10
	2011 PAJERO/MONTERO Workshop Manual CD-ROM	PWJE1014R (ENGLISH) PWJS1015R (SPANISH) BRAZIL/S.AFRI CA:DRAFT		
	2012 PAJERO/MONTERO Workshop Manual CD-ROM	PWJE1101R (ENGLISH) PWJS1102R (SPANISH) BRAZIL/S.AFRI CA:DRAFT		
	2013 PAJERO/MONTERO Workshop Manual CD-ROM	PWJE1206R (ENGLISH) PWJS1206R (SPANISH) BRAZIL/S.AFRI CA:DRAFT		
MMAL/NZ	2009 PAJERO Workshop Manual CD-ROM	MMAL:MR936637 NZ: DRAFT	TORQUE SPECIFICATIONS (M113-02-343-63200-01) ROCKER COVER AND INJECTOR REMOVAL AND INSTALLATION (M113-02-850-19600-01) FUEL INJECTOR AND COMMON REIL REMOVAL REMOVAL AND INSTALLATION (M133-01-210-17901-01)	Attached sheet 4 Attached sheet 5 Attached sheet 11
	2010 PAJERO Workshop	MMAL:MR936976 NZ: DRAFT	TORQUE SPECIFICATIONS (M113-02-344-47500-01) ROCKER COVER AND INJECTOR REMOVAL AND	Attached sheet 4 Attached sheet 5

	Manual CD-ROM		INSTALLATION (M113-02-850-19600-01) FUEL INJECTOR AND COMMON REIL REMOVAL REMOVAL AND INSTALLATION (M133-01-210-17901-01)	Attached sheet 11
	2011 PAJERO Workshop Manual CD-ROM	MMAL:AU900053 NZ: DRAFT		
	2012 PAJERO Workshop Manual CD-ROM	MMAL:AU900214 NZ: DRAFT		
	2013 PAJERO Workshop Manual CD-ROM	MMAL:AU900300 NZ: DRAFT		
	2015 PAJERO Workshop Manual CD-ROM	MMAL:AU900422 NZ: DRAFT		

Attached sheet 4

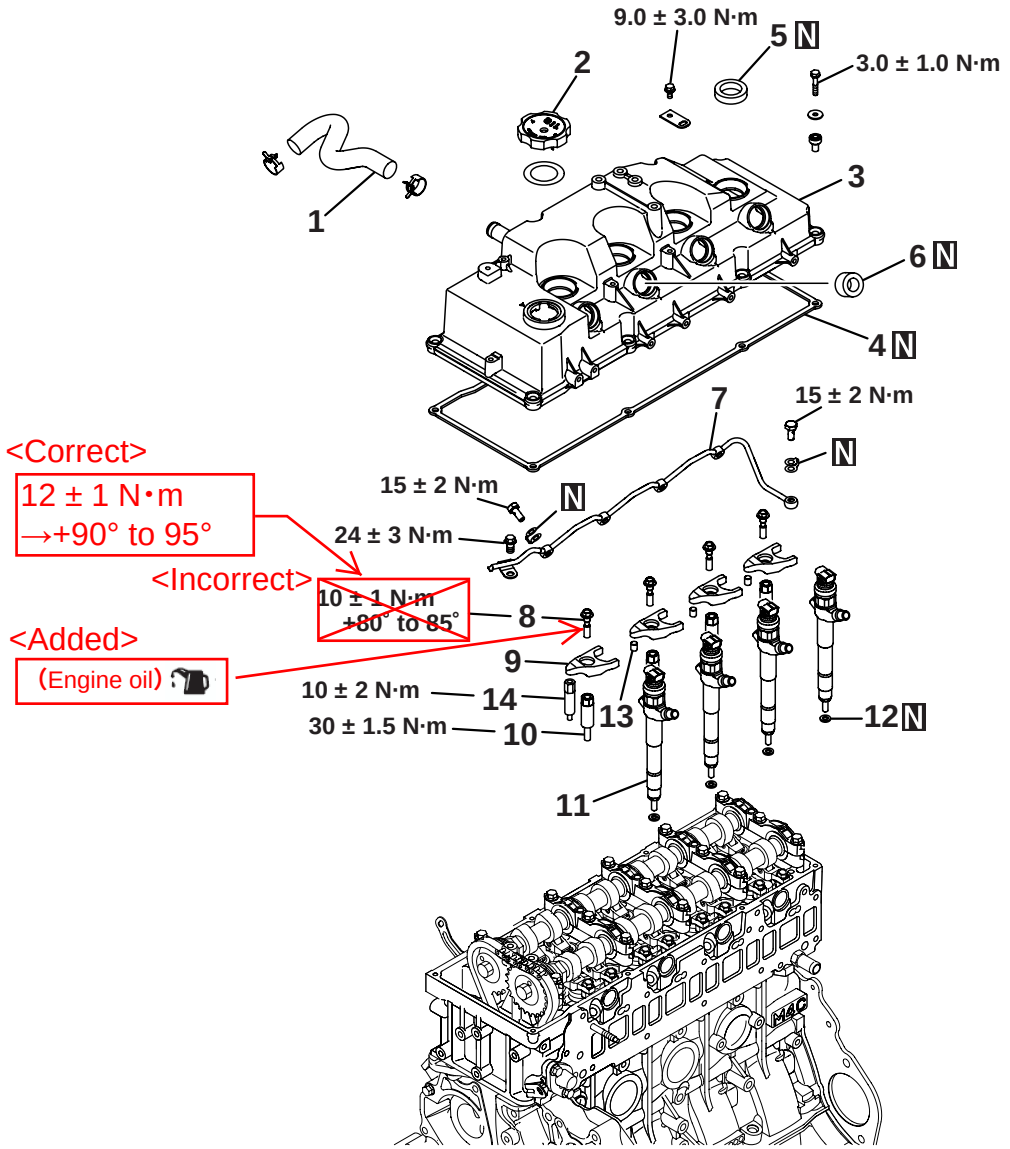
Item	Torque N·m
Engine hanger bolt	24 ± 3
Glow plug	9.0 ± 1.0 → +30° to 40°
Glow plug nut	1.8 ± 0.2
Rocker cover and injector	
Rocker cover bolt	3.0 ± 1.0
Fuel leakage pipe assembly bolt	24 ± 3
Fuel leakage pipe eye bolt	15 ± 2
Injector holder support bolt	10 ± 1 → +80° to 85°
Support bolt	30 ± 1.5
Pivot bar	10 ± 2
Harness bracket bolt	9.0 ± 3.0
Oil pan and oil strainer	
Stiffener RH bolt	24 ± 4
Stiffener LH bolt	24 ± 4
Oil drain plug	39 ± 5
Oil pan bolt	24 ± 4
Oil strainer bolt	24 ± 4
Oil filter	22 ± 2
Oil filter bracket bolt (M8)	24 ± 3
Oil filter bracket bolt (M10)	48 ± 6
Water drain plug	31 ± 2
Plug	44 ± 4
Oil cooler bolt (M8)	24 ± 3
Oil cooler bolt (M10)	44 ± 10
Oil cooler element nut	24 ± 3
Timing chain	
Harness bracket bolt	9.0 ± 3.0
Timing gear case stiffener bolt	24 ± 4
Crank angle sensor bolt	11 ± 1
Cam position sensor bolt	11 ± 1
Timing gear case bolt (M8)	24 ± 4
Timing gear case bolt (M10)	50 ± 5
Timing chain tensioner bolt	24 ± 4
Guide plate upper bolt	24 ± 4
Guide plate lower bolt	10 ± 2
Chain bracket bolt	50 ± 13
Oil jet bolt	24 ± 4
Idler washer bolt	44 ± 4
Tensioner lever assembly bolt	38 ± 2
Tensioner lever loose side bolt	33 ± 3

<Correct>
12 ± 1 →+90° to 95°
<Incorrect>

Attached sheet 5(1/2)

REMOVAL AND INSTALLATION

M1113028500185



AK800084AB

Removal steps

1. Breather hose
2. Oil filler cap
>>**D**<< 3. Rocker cover
4. Rocker cover gasket
>>**C**<< 5. Oil seal
>>**B**<< 6. Oil seal
>>**A**<< 7. Fuel leakage pipe assembly

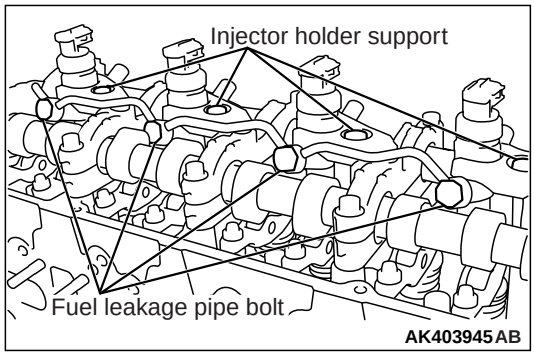
Removal steps (Continued)

>>**A**<< 8. Injector holder bolt
>>**A**<< 9. Injector support
10. Support bolt
>>**A**<< 11. Injector
12. Nozzle gasket
13. Pivot boss
14. Pivot bar

Attached sheet 5(2/2)

INSTALLATION SERVICE POINTS

>>A<< INJECTOR / INJECTOR SUPPORT / SUPPORT BOLT / INJECTOR HOLDER BOLT / FUEL LEAKAGE PIPE ASSEMBLY INSTALLATION



1. Apply engine oil to the threaded portion and seating face of the support bolt.
2. Tighten the support bolt to specified torque 30 ± 1.5 N·m.
3. Apply engine oil to the threaded portion and seating face of the injector holder bolt.
4. Temporarily tighten the injector holder bolt.
5. Temporarily tighten the fuel leakage pipe assembly at injector. Temporarily tighten the fuel leakage pipe assembly at cylinder head and camshaft cap.
6. Tighten the fuel leakage pipe assembly bolt to specified torque 15 ± 2 N·m at injector side.
7. Tighten the fuel leakage pipe assembly bolt to specified torque 15 ± 2 N·m at cylinder head side.
8. Tighten the fuel leakage pipe assembly bolt to specified torque 24 ± 3 N·m at camshaft cap side.
9. Tighten the injector holder bolt to specified torque ~~10 ± 1 N·m~~.

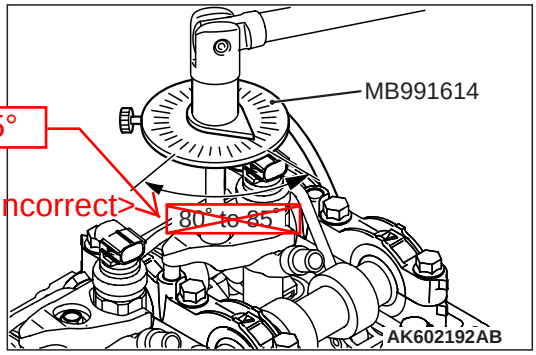
<Incorrect> <Correct> 12 ± 1 N·m

⚠ CAUTION

- **When the tightening angle is smaller than the specified tightening angle, the appropriate tightening capacity cannot be secured.**
- **When the tightening angle is larger than the specified tightening angle, remove the bolt to start from the beginning again according to the procedure.**

<Correct> 90° to 95°

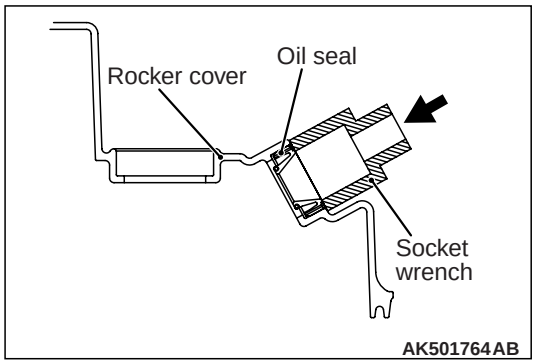
<Incorrect> ~~80° to 85°~~



10. Using the special tool Angle gauge (MB991614), tighten the bearing cap bolts in the illustrated sequence by a further ~~80° to 85°~~.

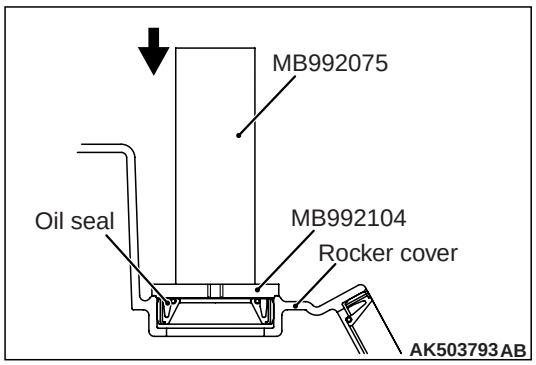
<Incorrect> <Correct> 90° to 95°

>>B<< OIL SEAL INSTALLATION



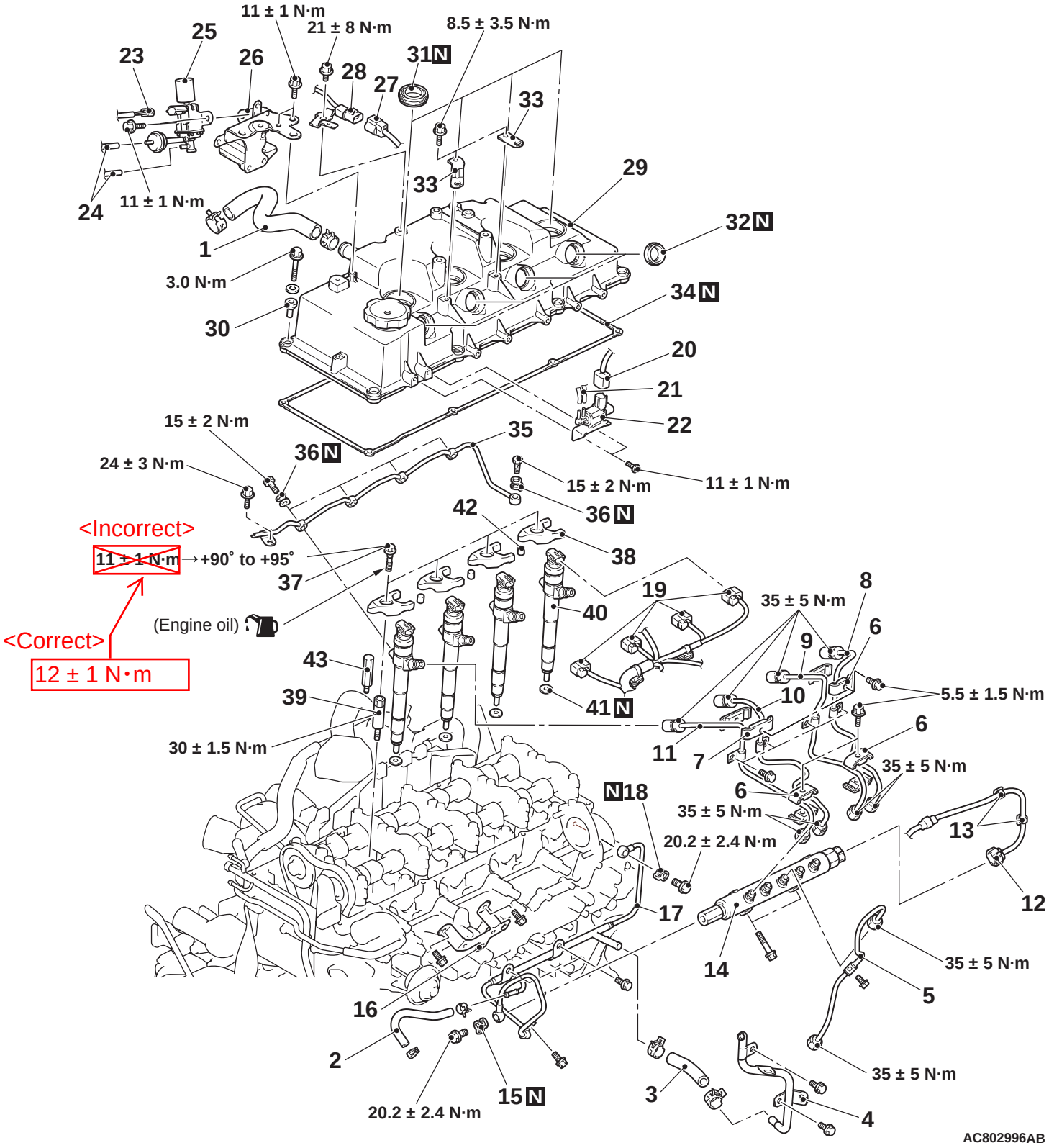
Using a proper socket wrench, the oil seal is pressed and fit into the rocker cover.

>>C<< OIL SEAL INSTALLATION



Using the special tool Oil seal installer (MB992104) and Handle (MB992075), the oil seal is pressed and fit into the rocker cover.

Attached sheet 6(1/2)



Removal steps

1. Breather hose
   - A/T fluid level gauge guide assembly <A/T> (Refer to GROUP 23C – Transmission Assembly).
   - Engine oil level gauge guide (Refer to GROUP 11C – Oil Pan and Oil Strainer).

Removal steps (Continued)

2. Fuel hose
3. Fuel return hose
4. Fuel return B pipe assembly

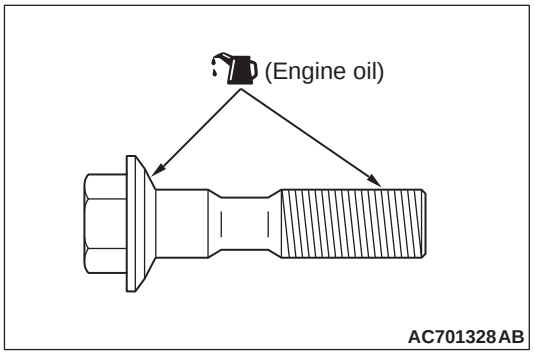
<<A>> >>D<< 5. Fuel supply pump pipe assembly
   - Air inlet pipe (Refer to GROUP 15 – Inlet Manifold).

>>D<< 6. Injection pipe clamp

INSTALLATION SERVICE POINTS

>>A<< INJECTOR ASSEMBLY/ SUPPORT BOLT/ INJECTOR SUPPORT/INJECTOR HOLDER BOLT/ GASKET/FUEL LEAKAGE PIPE ASSEMBLY INSTALLATION

1. Tighten the support bolts to the specified torque.
   Tightening torque: 30 ± 1.5 N·m
2. Install the gasket, injector assembly and pivot boss



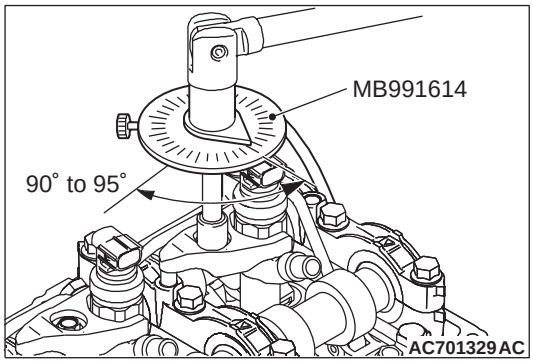
3. Apply the engine oil to the bearing surface and thread of injector holder bolts.
4. Temporarily fix the injector supporters.
5. Install the gaskets to the fuel leakage pipe assembly.
6. Tighten the eye bolts at the Injector assembly side to the specified torque.
   Tightening torque: 15 ± 2 N·m
7. Tighten the eye bolt at the cylinder head side to the specified torque.
   Tightening torque: 15 ± 2 N·m
8. Tighten the fuel leakage pipe assembly mounting bolt to the specified torque.
   Tightening torque: 24 ± 3 N·m
9. Tighten the injector holder bolts according to the following procedure.
   (1) Tighten the Injector holder bolts to ~~11 ± 1 N·m~~.

<Incorrect>

<Correct>
12 ± 1 N·m

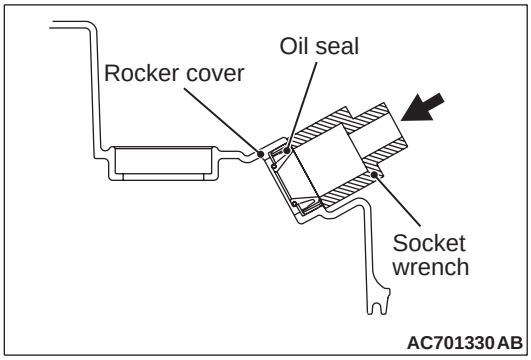
⚠ CAUTION

- **If the bolt is tightened less than the specified lower limit of 90 degree angle, the bolt may become loose. Be sure to tighten correctly.**
- **If the bolt is tightened in excess of the specified upper limit of 95 degree angle, loosen the bolt completely and repeat the entire procedures.**



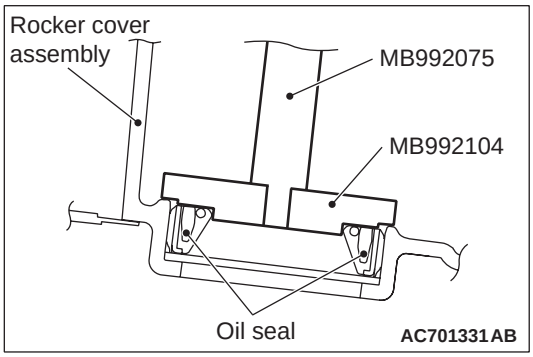
   (2) Using special tool angle gauge (MB991614), tighten the Injector holder bolts in the illustrated sequence by a further 90 to 95 degree angle.

>>B<< OIL SEAL INSTALLATION



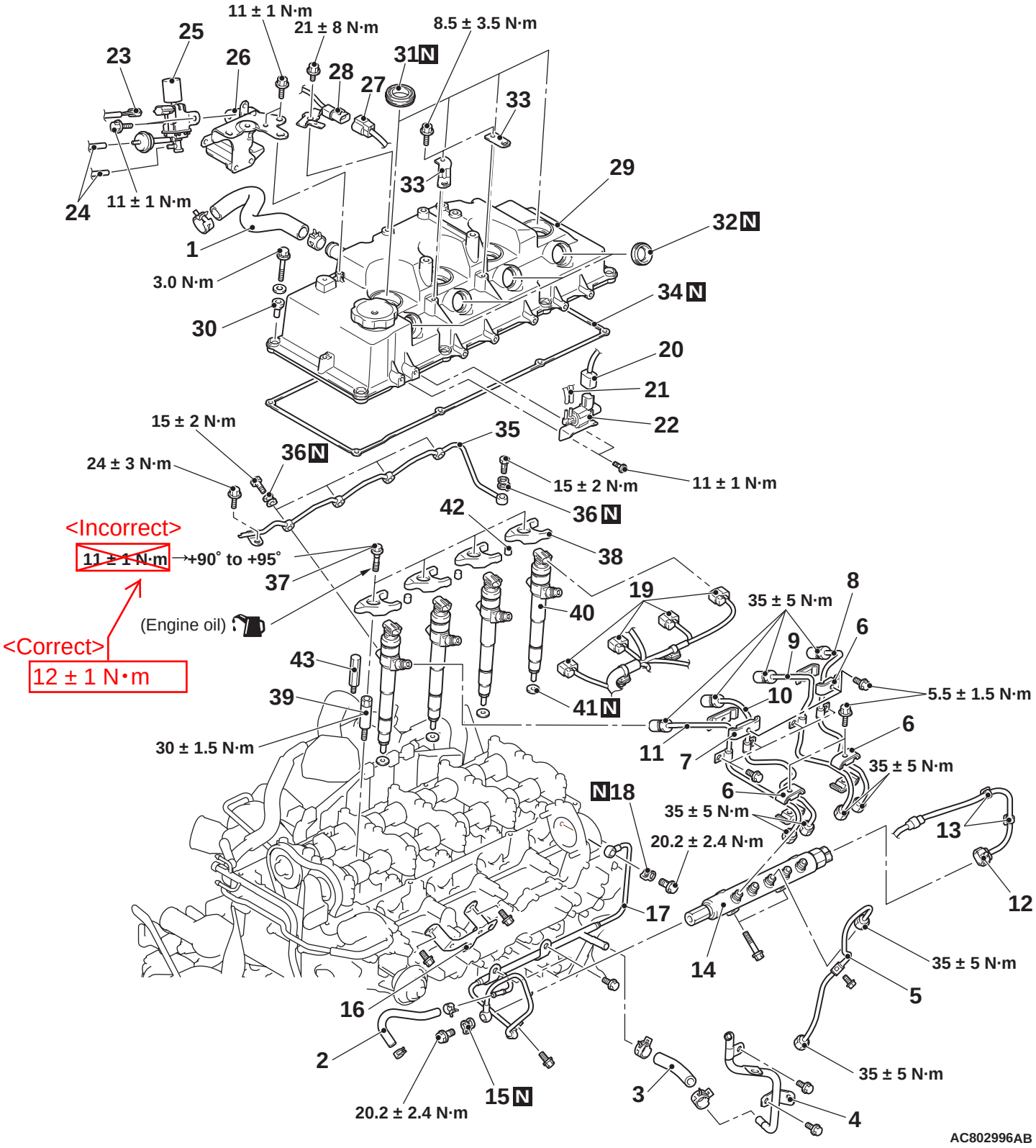
1. Using a proper socket wrench, the oil seal is pressed and fit into the rocker cover.

>>C<< OIL SEAL INSTALLATION



Use special tools oil seal installer (MB992104) and handle (MB992075) to press-fit the oil seal.

Attached sheet 7(1/3)



AC802996AB

Removal steps

1. Breather hose
   - A/T fluid level gauge guide assembly <A/T> (Refer to GROUP 23C – Transmission Assembly).
   - Engine oil level gauge guide (Refer to GROUP 11C – Oil Pan and Oil Strainer).

Removal steps (Continued)

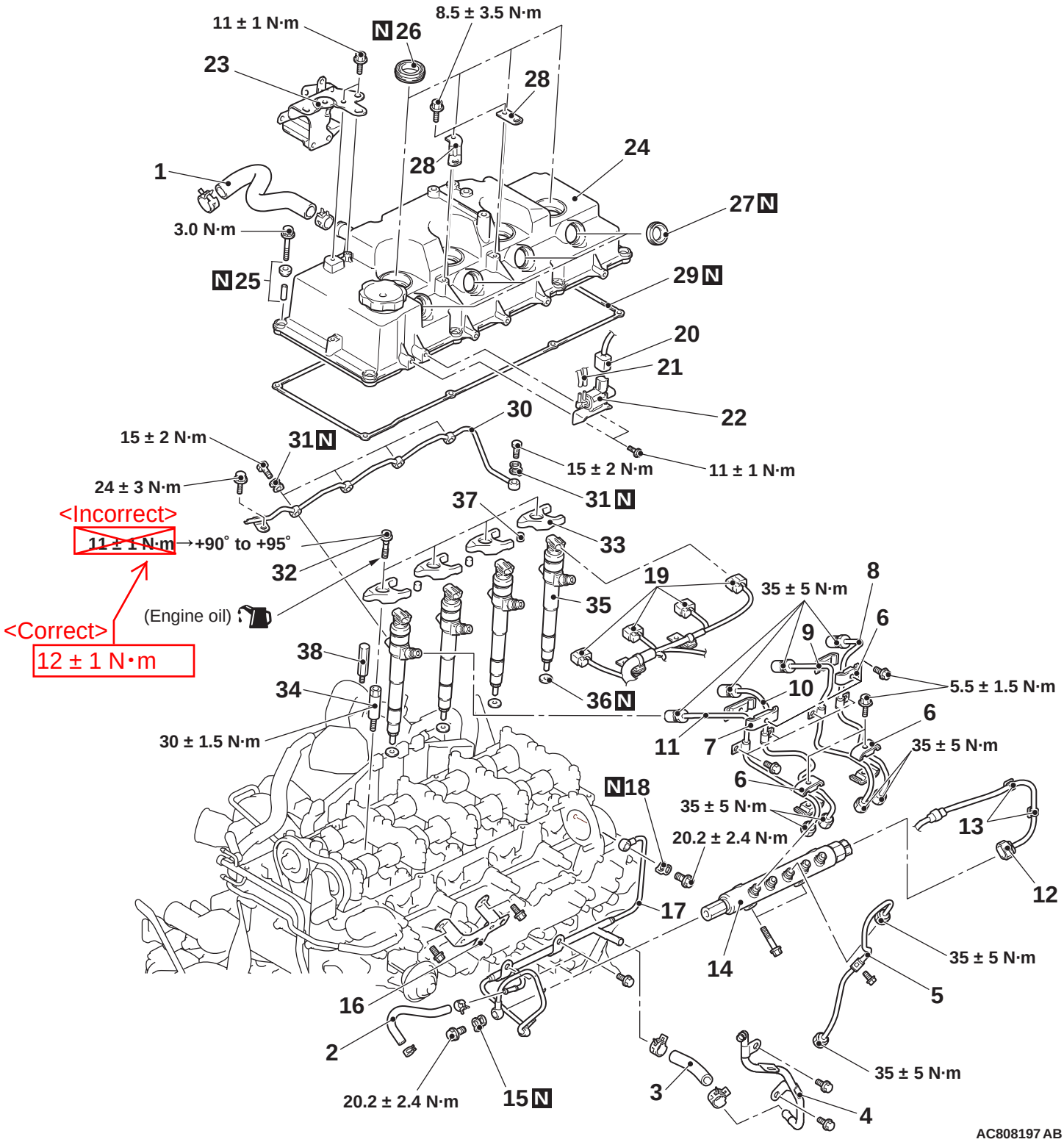
2. Fuel hose
3. Fuel return hose
4. Fuel return B pipe assembly

<<A>> >>D<< 5. Fuel supply pump pipe assembly
   - Air inlet pipe (Refer to GROUP 15 – Inlet Manifold).

>>D<< 6. Injection pipe clamp

Attached sheet 7(2/3)

<LOW POWER>



Removal steps

1. Breather hose
- Engine oil level gauge guide (Refer to GROUP 11C – Oil Pan and Oil Strainer).
2. Fuel hose
3. Fuel return hose

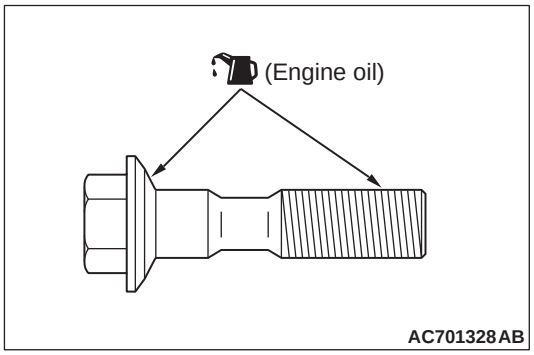
Removal steps (Continued)

4. Fuel return B pipe assembly

<<A>> >>D<< 5. Fuel supply pump pipe assembly
- Air inlet pipe (Refer to GROUP 15 – Inlet Manifold).

>>D<< 6. Injection pipe clamp

>>D<< 7. Injection pipe clamp



3. Apply the engine oil to the bearing surface and thread of injector holder bolts.
4. Temporarily fix the injector supporters.
5. Install the gaskets to the fuel leakage pipe assembly.
6. Tighten the eye bolts at the Injector assembly side to the specified torque.

   Tightening torque: 15 ± 2 N·m
7. Tighten the eye bolt at the cylinder head side to the specified torque.

   Tightening torque: 15 ± 2 N·m
8. Tighten the fuel leakage pipe assembly mounting bolt to the specified torque.

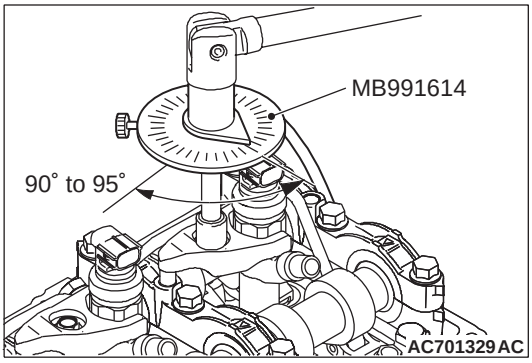
   Tightening torque: 24 ± 3 N·m
9. Tighten the injector holder bolts according to the following procedure.

   <Incorrect>

   (1) Tighten the Injector holder bolts to ~~11 ± 1 N·m~~.

⚠ CAUTION

- **If the bolt is tightened less than the specified lower limit of 90 degree angle, the bolt may become loose. Be sure to tighten correctly.**
- **If the bolt is tightened in excess of the specified upper limit of 95 degree angle, loosen the bolt completely and repeat the entire procedures.**

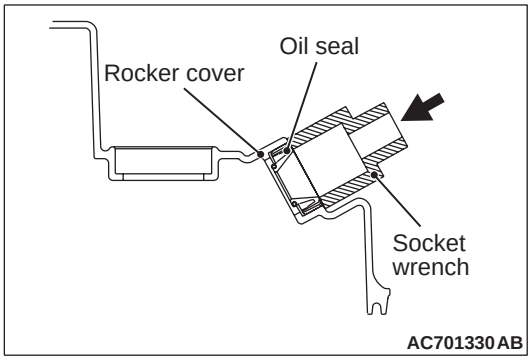


(2) Using special tool angle gauge (MB991614), tighten the Injector holder bolts in the illustrated sequence by a further 90 to 95 degree angle.

<Correct>

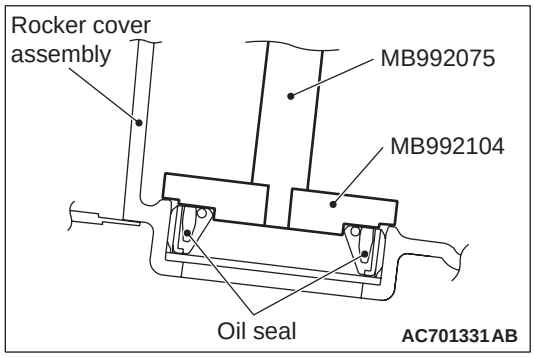
12 ± 1 N•m

>>B<< OIL SEAL INSTALLATION



1. Using a proper socket wrench, the oil seal is pressed and fit into the rocker cover.

>>C<< OIL SEAL INSTALLATION

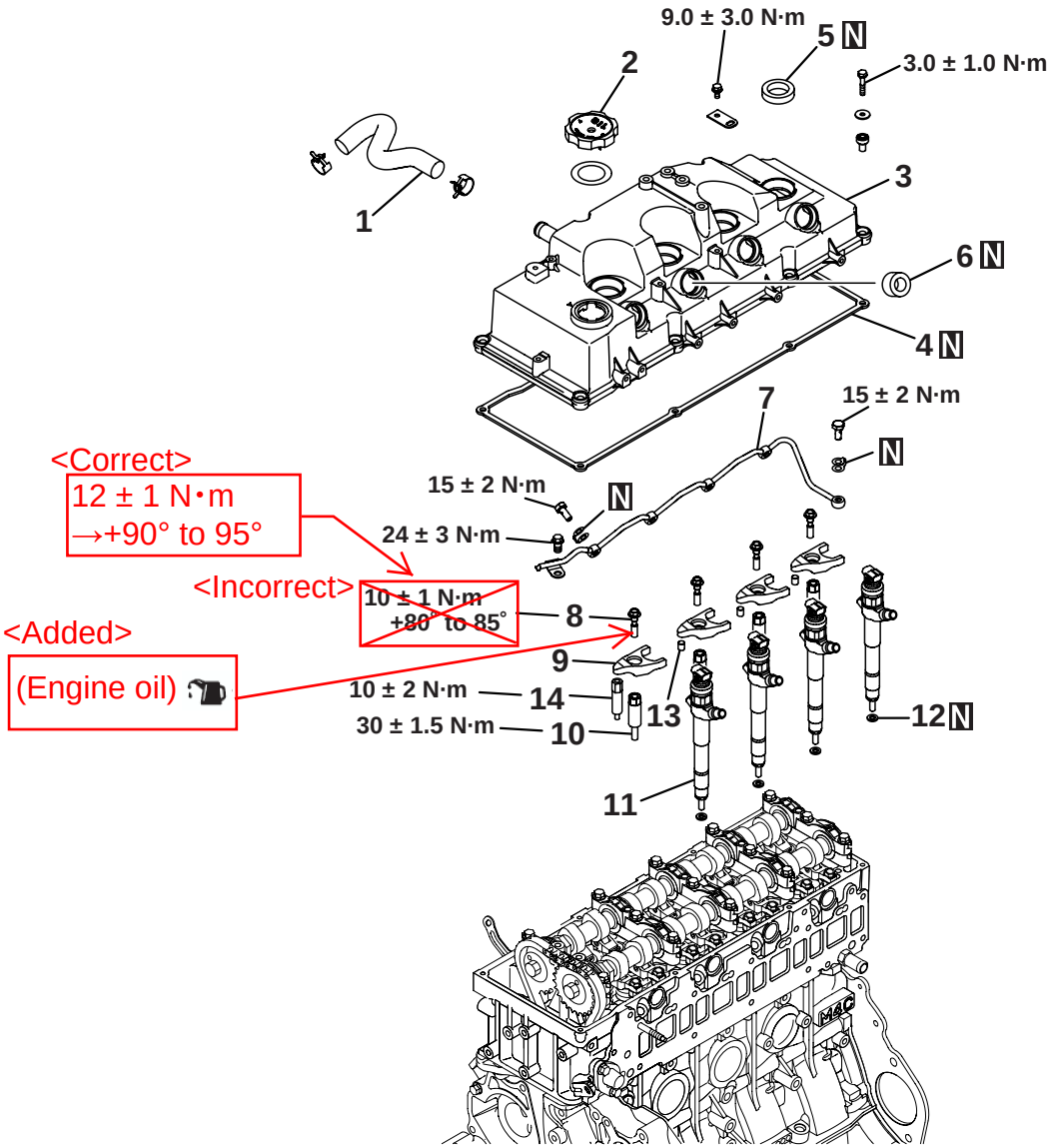


Use special tools oil seal installer (MB992104) and handle (MB992075) to press-fit the oil seal.

Attached sheet 8(1/2)

REMOVAL AND INSTALLATION

M1113028500293



AK800084AB

Removal steps

1. Breather hose
2. Oil filler cap

>>D<< 3. Rocker cover

4. Rocker cover gasket

>>C<< 5. Oil seal

>>B<< 6. Oil seal

>>A<< 7. Fuel leakage pipe assembly

>>A<< 8. Injector holder bolt

>>A<< 9. Injector support

10. Support bolt

>>A<< 11. Injector

12. Nozzle gasket

Removal steps (Continued)

13. Pivot boss
14. Pivot bar

INSTALLATION SERVICE POINTS

>>A<< INJECTOR / INJECTOR SUPPORT / SUPPORT BOLT / INJECTOR HOLDER BOLT / FUEL LEAKAGE PIPE ASSEMBLY INSTALLATION

1. Clean the fuel injector assembly (nozzle) and the cylinder head (fuel injector insertion hole) by following the procedure below.

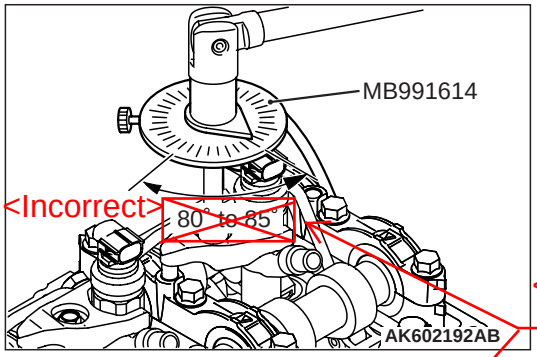
<Correct>
12 ± 1 N·m

11.Tighten the fuel leakage pipe assembly bolt to specified torque 24 ± 3 N·m at camshaft cap side.

12.Tighten the injector holder bolt to specified torque ~~10 ± 1 N·m~~. <Incorrect>

⚠ CAUTION

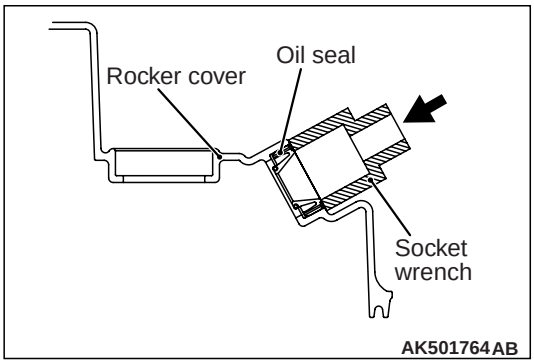
- **When the tightening angle is smaller than the specified tightening angle, the appropriate tightening capacity cannot be secured.**
- **When the tightening angle is larger than the specified tightening angle, remove the bolt to start from the beginning again according to the procedure.**



<Correct>
90° to 95°

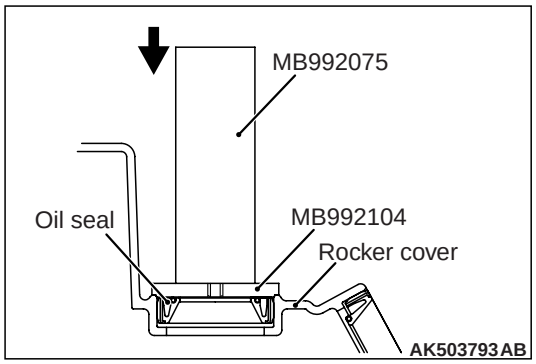
13.Using the special tool Angle gauge (MB991614), tighten the bearing cap bolts in the illustrated sequence by a further ~~80° to 85°~~ <Incorrect>

>>B<< OIL SEAL INSTALLATION



Using a proper socket wrench, the oil seal is pressed and fit into the rocker cover.

>>C<< OIL SEAL INSTALLATION

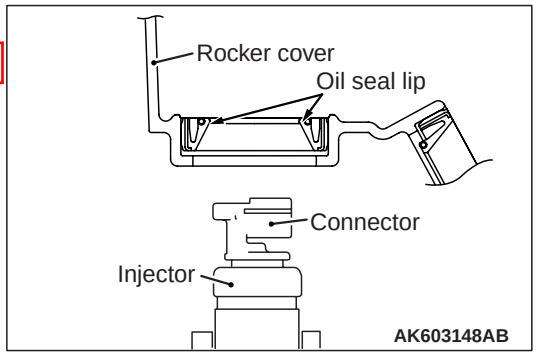


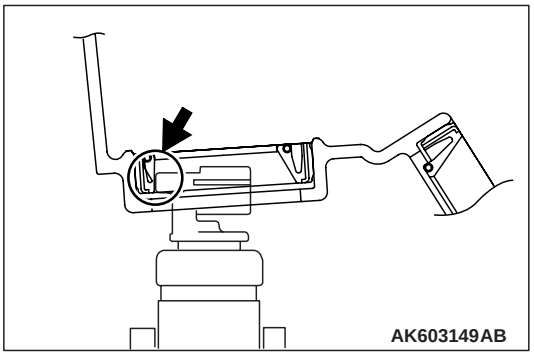
Using the special tool Oil seal installer (MB992104) and Handle (MB992075), the oil seal is pressed and fit into the rocker cover.

>>D<< ROCKER COVER INSTALLATION

⚠ CAUTION

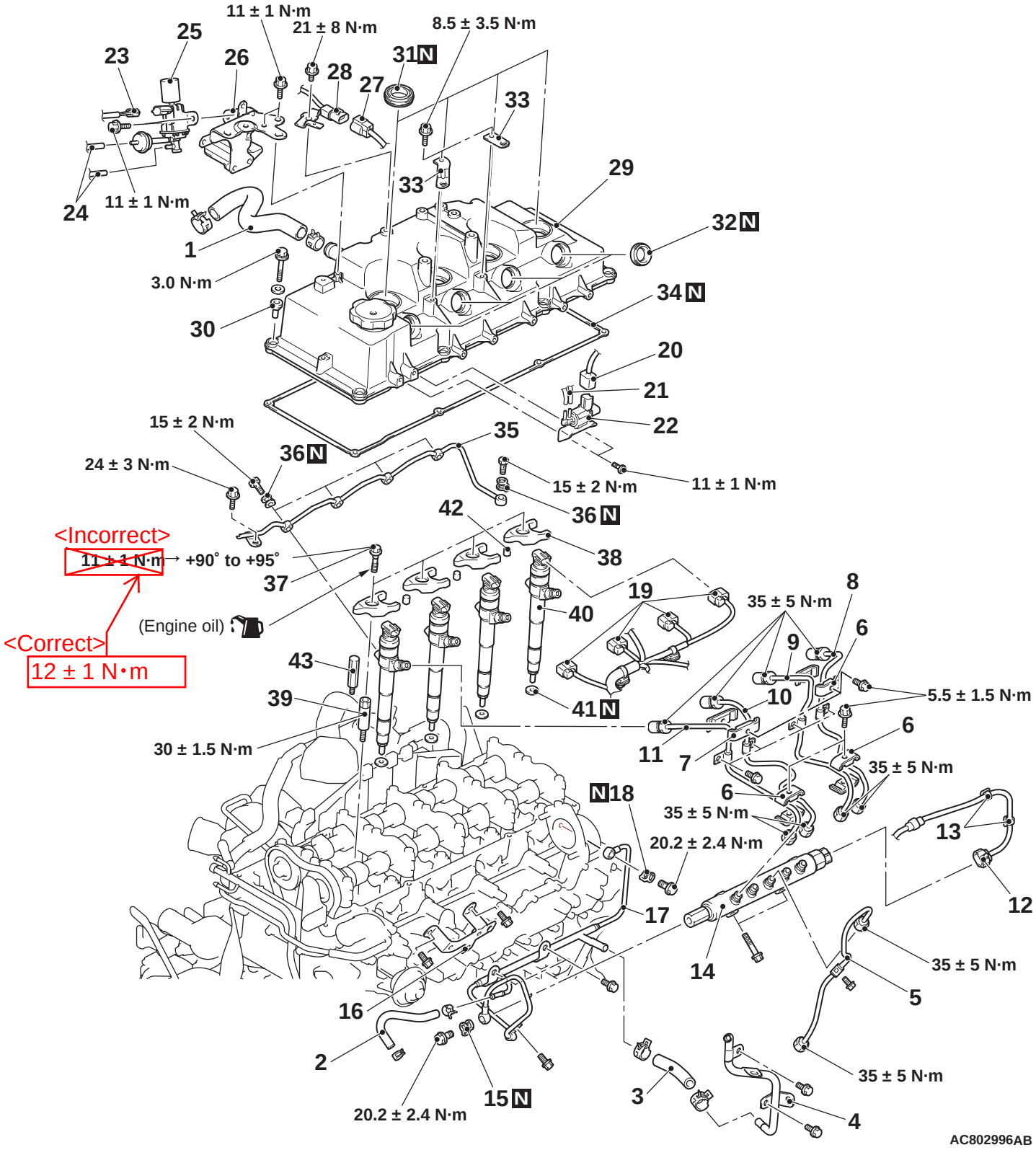
Pay attention that the connector does not damage the seal lip when inserting the rocker cover.





1. Slightly press the oil seal lip to the place in the opposite direction of the connector, shown in the illustration.
2. Leave enough clearance for the connector to avoid touching the seal lip.

Attached sheet 9(1/4)



Removal steps

1. Breather hose
- A/T fluid level gauge guide assembly <A/T> (Refer to GROUP 23C – Transmission Assembly).
- Engine oil level gauge guide (Refer to GROUP 11C – Oil Pan and Oil Strainer).

Removal steps (Continued)

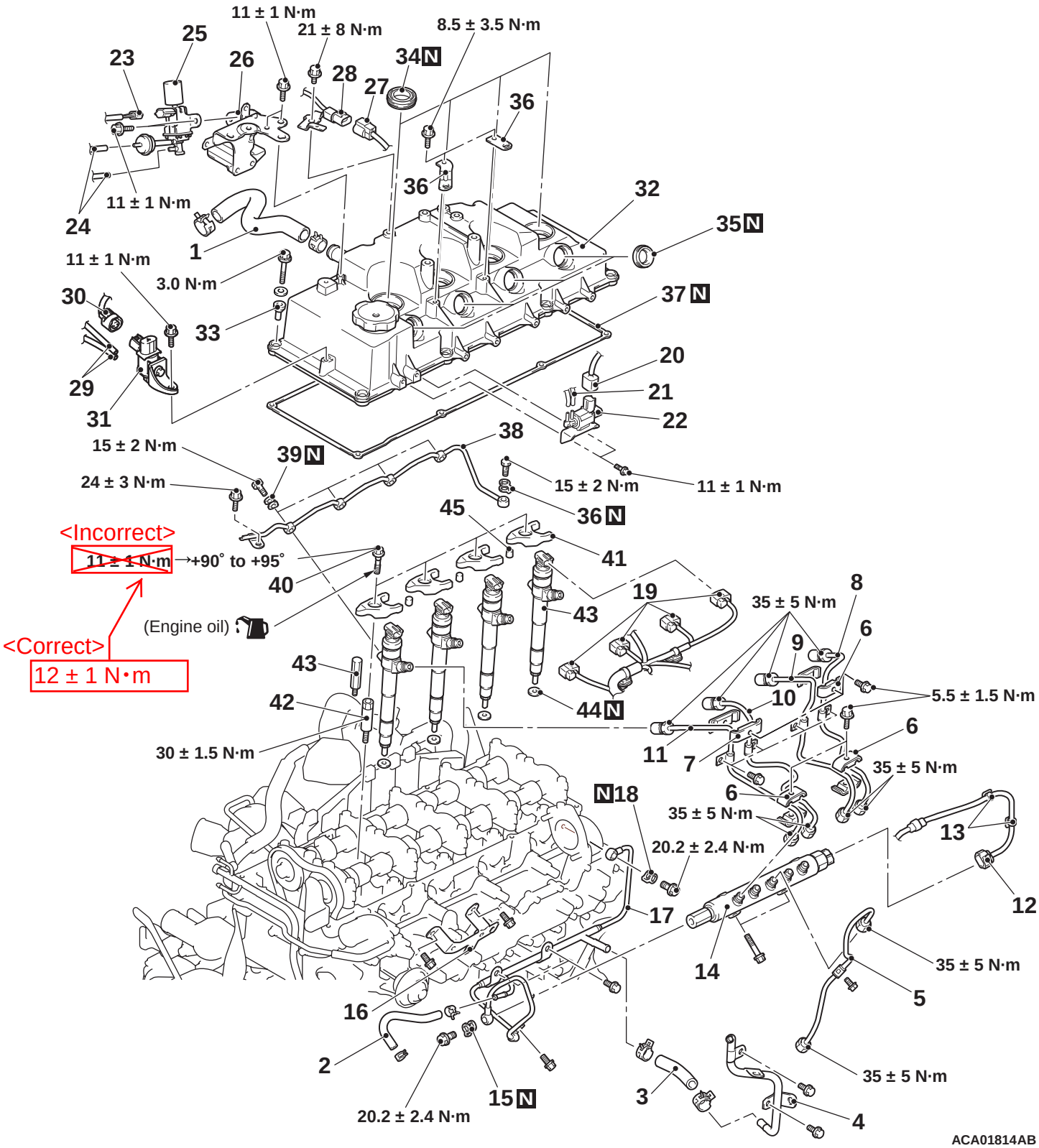
2. Fuel hose
3. Fuel return hose
4. Fuel return B pipe assembly

<<A>> >>D<< 5. Fuel supply pump pipe assembly
- Air inlet pipe (Refer to GROUP 15 – Inlet Manifold).

>>D<< 6. Injection pipe clamp

Attached sheet 9(2/4)

<HIGH POWER (Euro5)>



ACA01814AB

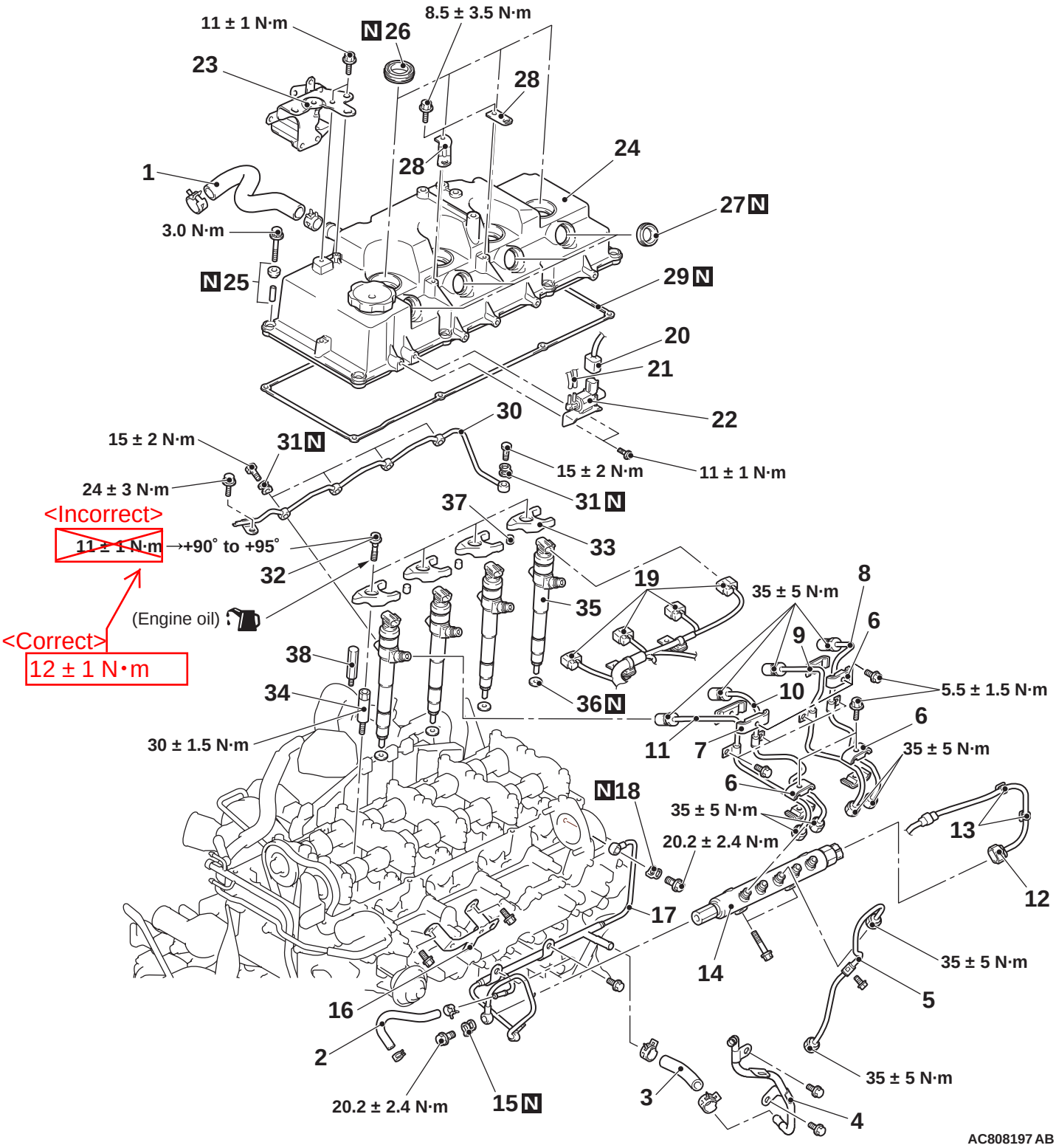
Removal steps

1. Breather hose
   - A/T fluid level gauge guide assembly <A/T> (Refer to GROUP 23C – Transmission Assembly).

Removal steps (Continued)

   - Engine oil level gauge guide (Refer to GROUP 11C – Oil Pan and Oil Strainer).
2. Fuel hose
3. Fuel return hose
4. Fuel return B pipe assembly

<Except for HIGH POWER>



Removal steps

1. Breather hose
   - Engine oil level gauge guide (Refer to GROUP 11C – Oil Pan and Oil Strainer).
2. Fuel hose
3. Fuel return hose

<<A>> >>D<<

Removal steps (Continued)

4. Fuel return B pipe assembly
5. Fuel supply pump pipe assembly
   - Air inlet pipe (Refer to GROUP 15 – Inlet Manifold).

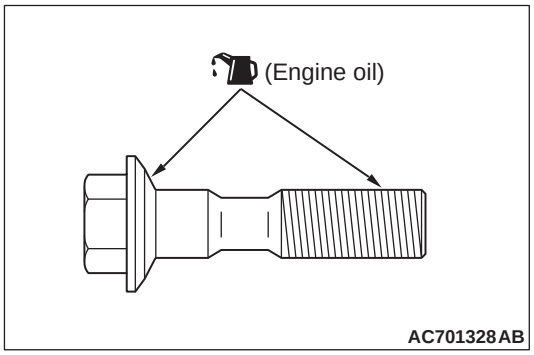
>>D<<

6. Injection pipe clamp

>>D<<

7. Injection pipe clamp

Attached sheet 9(4/4)



3. Apply the engine oil to the bearing surface and thread of injector holder bolts.
4. Temporarily fix the injector supporters.
5. Install the gaskets to the fuel leakage pipe assembly.
6. Tighten the eye bolts at the Injector assembly side to the specified torque.

   Tightening torque: 15 ± 2 N·m
7. Tighten the eye bolt at the cylinder head side to the specified torque.

   Tightening torque: 15 ± 2 N·m
8. Tighten the fuel leakage pipe assembly mounting bolt to the specified torque.

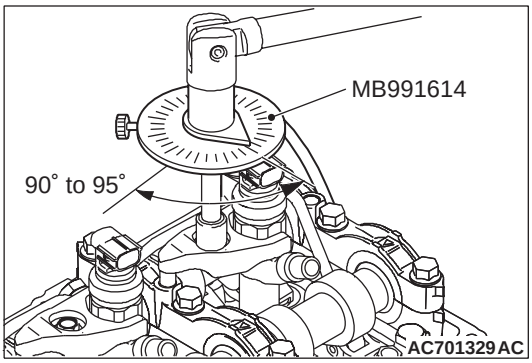
   Tightening torque: 24 ± 3 N·m
9. Tighten the injector holder bolts according to the following procedure.

   (1) Tighten the Injector holder bolts to ~~11 ± 1 N·m~~.

<Incorrect>

⚠ CAUTION

- **If the bolt is tightened less than the specified lower limit of 90 degree angle, the bolt may become loose. Be sure to tighten correctly.**
- **If the bolt is tightened in excess of the specified upper limit of 95 degree angle, loosen the bolt completely and repeat the entire procedures.**

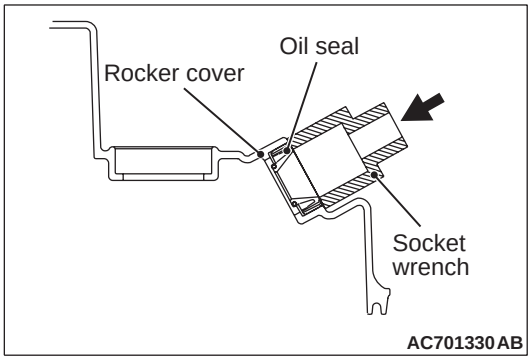


(2) Using special tool angle gauge (MB991614), tighten the Injector holder bolts in the illustrated sequence by a further 90 to 95 degree angle.

<Correct>

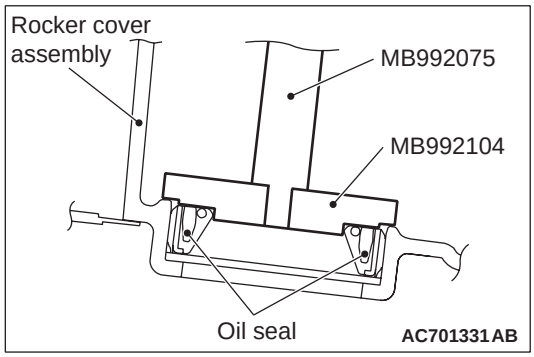
12 ± 1 N·m

>>B<< OIL SEAL INSTALLATION



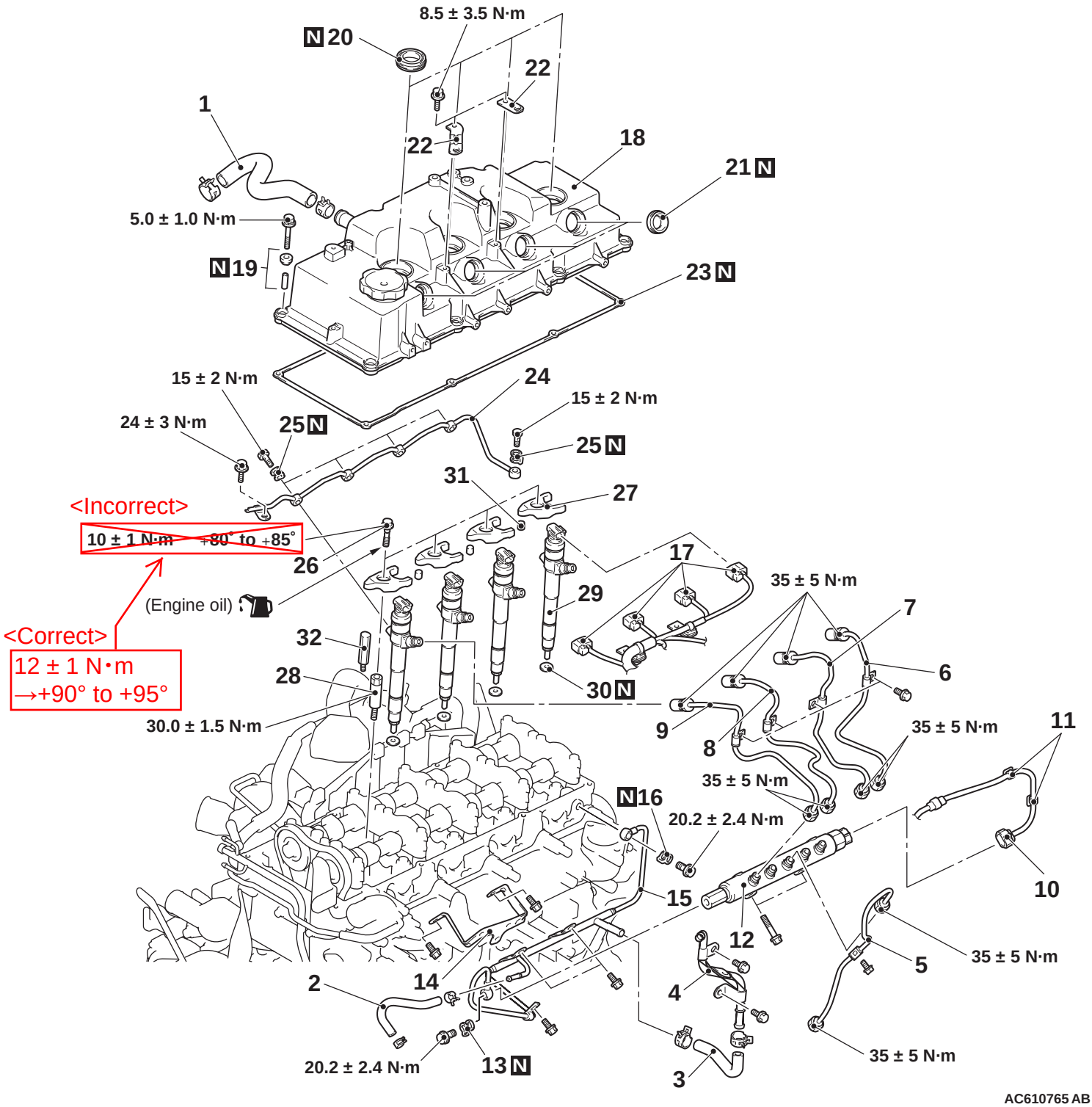
1. Using a proper socket wrench, the oil seal is pressed and fit into the rocker cover.

>>C<< OIL SEAL INSTALLATION



Use special tools oil seal installer (MB992104) and handle (MB992075) to press-fit the oil seal.

Attached sheet 10(1/2)



AC610765 AB

Removal steps

1. Breather hose
- A/T fluid level gauge and guide assembly (Refer to GROUP 23A – Transmission Assembly) <A/T>.
- Engine oil level gauge and guide assembly (Refer to GROUP 11G – Oil Pan and Oil Strainer).
2. Fuel hose
3. Fuel return hose

<<A>> >>D<<

<<B>> >>D<<
<<B>> >>D<<
<<B>> >>D<<
<<B>> >>D<<

Removal steps (Continued)

4. Fuel return B pipe assembly
5. Fuel supply pump pipe assembly
- Air inlet pipe <4M41> (Refer to GROUP 15 – Inlet Manifold).
6. Fuel injection No.4 pipe assembly
7. Fuel injection No.3 pipe assembly
8. Fuel injection No.2 pipe assembly
9. Fuel injection No.1 pipe assembly
10. Rail pressure sensor connector

Attached sheet 10(2/2)

8. Tighten the fuel leakage pipe assembly mounting bolt to the specified torque.

   Tightening torque: 24 ± 3 N·m

9. Tighten the injector holder bolts according to the following procedure.

   (1) Tighten the injector holder bolts to ~~10 ± 1 N·m~~ <Incorrect>

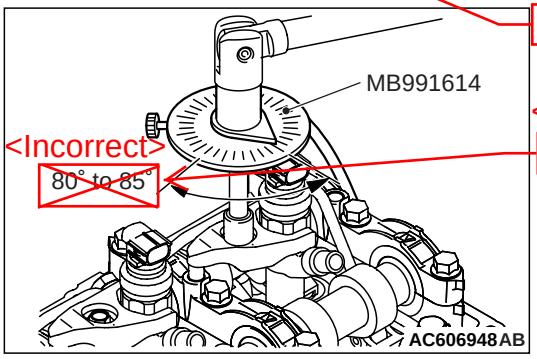
<Correct>
12 ± 1 N·m

⚠ CAUTION <Incorrect>

- **If the bolt is tightened less than the specified lower limit of ~~80~~ degree angle, the bolt may become loose. Be sure to tighten correctly.**
- **If the bolt is tightened in excess of the specified upper limit of ~~85~~ degree angle, loosen the bolt completely and repeat the entire procedures.** <Incorrect>

<Correct>
90

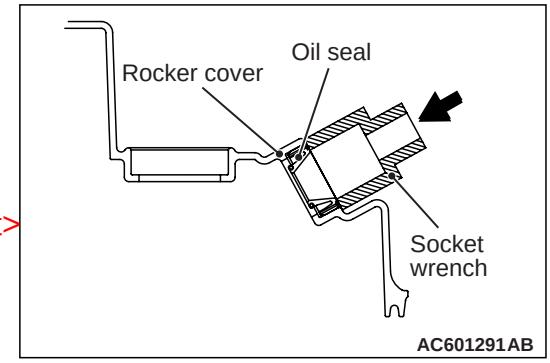
<Correct>
95



(2) Using special tool angle gauge (MB991614), tighten the injector holder bolts in the illustrated sequence by a further ~~80 to 85~~ <Incorrect> degree angle.

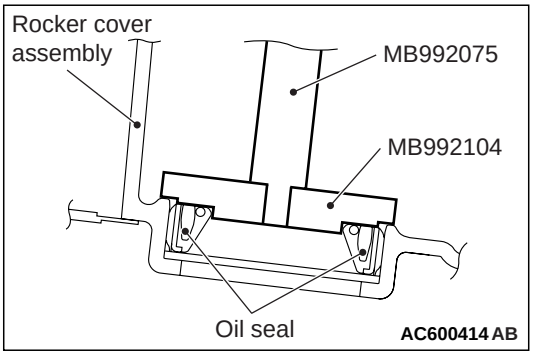
<Correct>
90 to 95

>>B<< OIL SEAL INSTALLATION



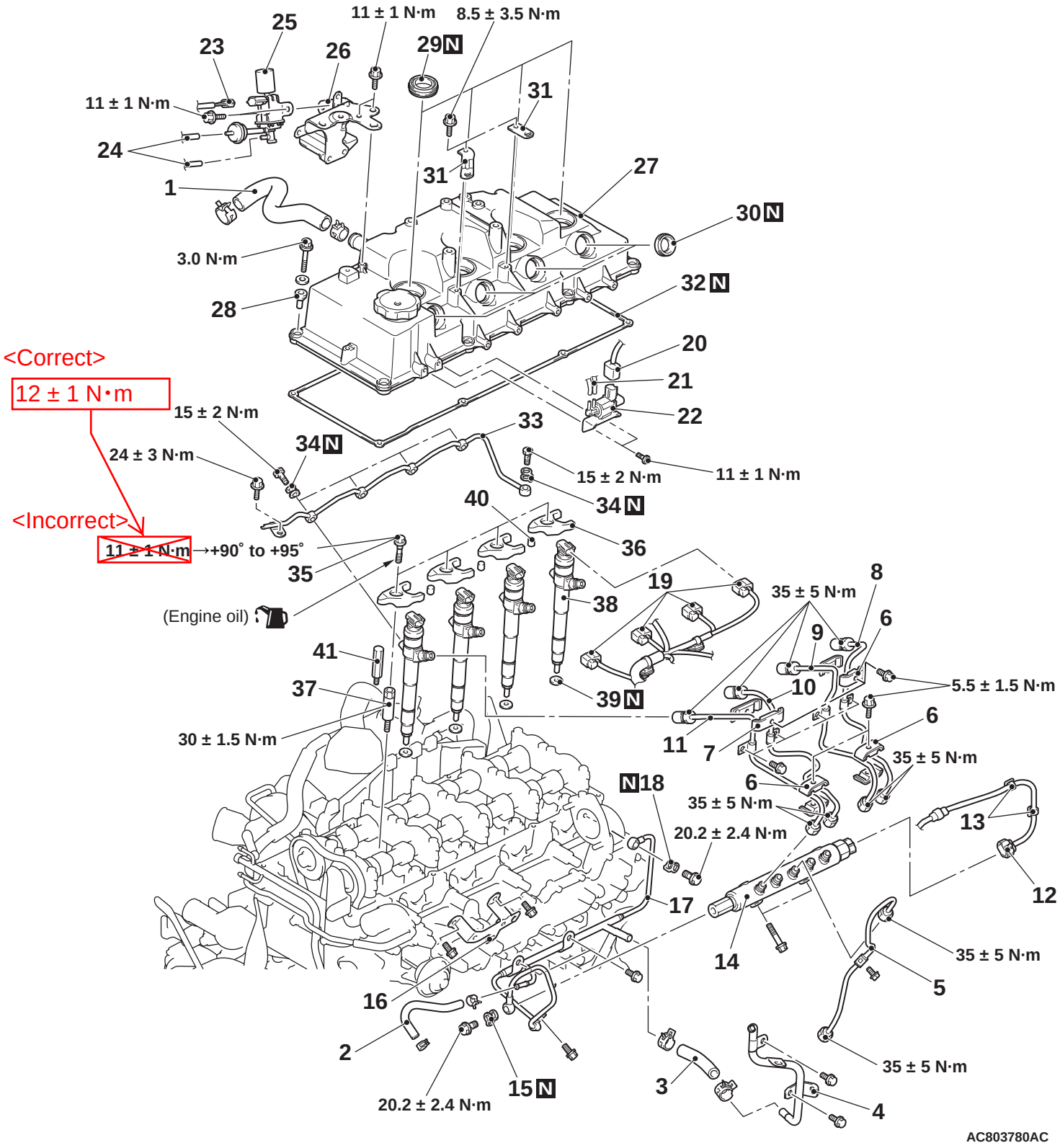
Using a proper socket wrench, the oil seal is pressed and fit into the rocker cover.

>>C<< OIL SEAL INSTALLATION



Use the following special tools to press-fit the oil seal.

- oil seal installer (MB992104)
- handle (MB992075)

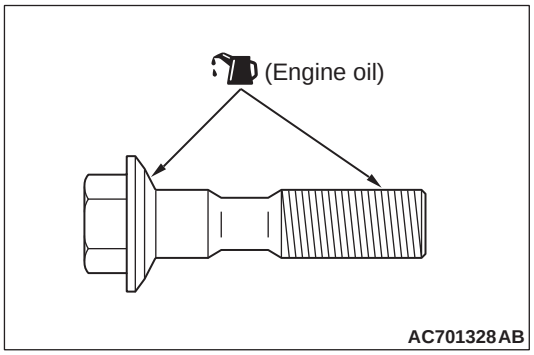


Removal steps

1. Breather hose
- A/T fluid level gauge guide assembly <A/T> (Refer to GROUP 23C – Transmission Assembly).

Removal steps (Continued)

- Engine oil level gauge guide (Refer to GROUP 11C – Oil Pan and Oil Strainer).
2. Fuel hose
3. Fuel return hose
4. Fuel return B pipe assembly
5. Fuel supply pump pipe assembly



3. Apply the engine oil to the bearing surface and thread of injector holder bolts.
4. Temporarily fix the injector supporters.
5. Install the gaskets to the fuel leakage pipe assembly.
6. Tighten the eye bolts at the Injector assembly side to the specified torque.

   Tightening torque: 15 ± 2 N·m
7. Tighten the eye bolt at the cylinder head side to the specified torque.

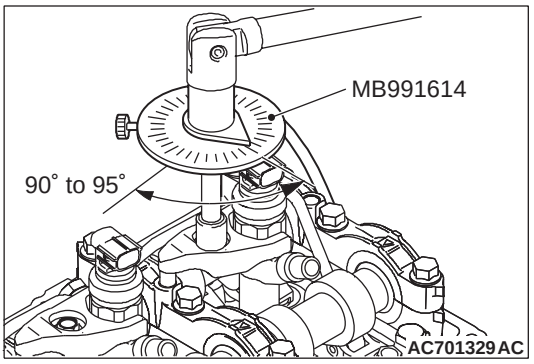
   Tightening torque: 15 ± 2 N·m
8. Tighten the fuel leakage pipe assembly mounting bolt to the specified torque.

   Tightening torque: 24 ± 3 N·m
9. Tighten the injector holder bolts according to the following procedure.

   (1) Tighten the Injector holder bolts to ~~11 ± 1 N·m~~. <Incorrect>

⚠ CAUTION

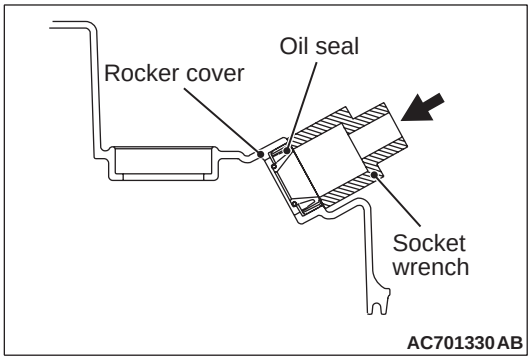
- **If the bolt is tightened less than the specified lower limit of 90 degree angle, the bolt may become loose. Be sure to tighten correctly.**
- **If the bolt is tightened in excess of the specified upper limit of 95 degree angle, loosen the bolt completely and repeat the entire procedures.**



(2) Using special tool angle gauge (MB991614), tighten the Injector holder bolts in the illustrated sequence by a further 90 to 95 degree angle.

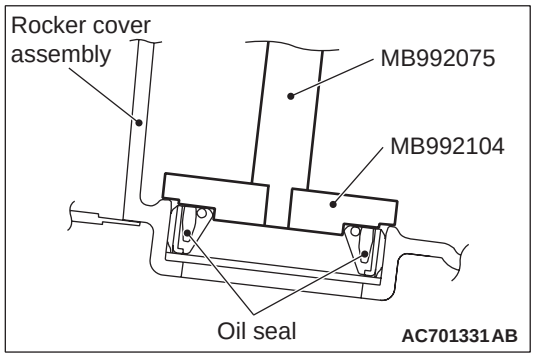
<Correct>
12 ± 1 N·m

>>B<< OIL SEAL INSTALLATION



1. Using a proper socket wrench, the oil seal is pressed and fit into the rocker cover.

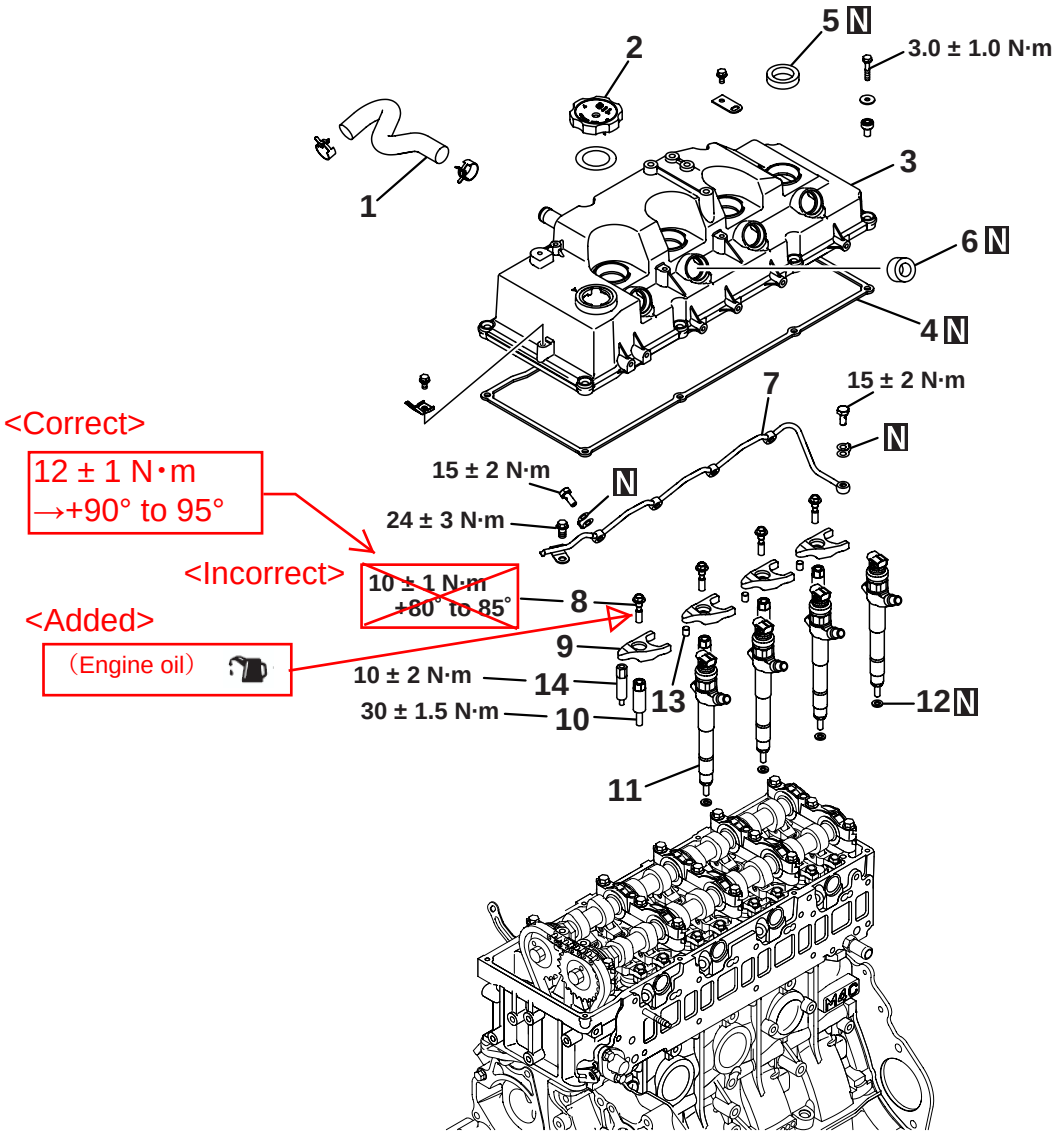
>>C<< OIL SEAL INSTALLATION



Use special tools oil seal installer (MB992104) and handle (MB992075) to press-fit the oil seal.

REMOVAL AND INSTALLATION

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AK602191AB

Removal steps

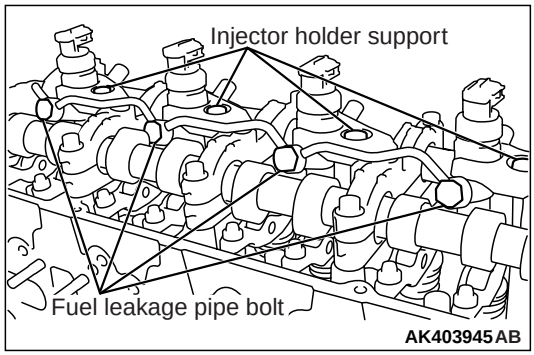
	1.	Breather hose
	2.	Oil filler cap
>>D<<	3.	Rocker cover
	4.	Rocker cover gasket
>>C<<	5.	Oil seal
>>B<<	6.	Oil seal
>>A<<	7.	Fuel leakage pipe assembly

Removal steps (Continued)

>>A<<	8.	Injector holder bolt
>>A<<	9.	Injector support
	10.	Support bolt
>>A<<	11.	Injector
	12.	Nozzle gasket
	13.	Pivot boss
	14.	Pivot bar

INSTALLATION SERVICE POINTS

>>A<< INJECTOR / INJECTOR SUPPORT / SUPPORT BOLT / INJECTOR HOLDER BOLT / FUEL LEAKAGE PIPE ASSEMBLY INSTALLATION



1. Apply engine oil to the threaded portion and seating face of the support bolt.
2. Tighten the support bolt to specified torque 30 ± 1.5 N·m.
3. Apply engine oil to the threaded portion and seating face of the injector holder bolt.
4. Temporarily tighten the injector holder bolt.
5. Temporarily tighten the fuel leakage pipe assembly at injector. Temporarily tighten the fuel leakage pipe assembly at cylinder head and camshaft cap.
6. Tighten the fuel leakage pipe assembly bolt to specified torque 15 ± 2 N·m at injector side.
7. Tighten the fuel leakage pipe assembly bolt to specified torque 15 ± 2 N·m at cylinder head side.
8. Tighten the fuel leakage pipe assembly bolt to specified torque 24 ± 3 N·m at camshaft cap side.
9. Tighten the injector holder bolt to specified torque ~~10 ± 1 N·m~~. <Incorrect>

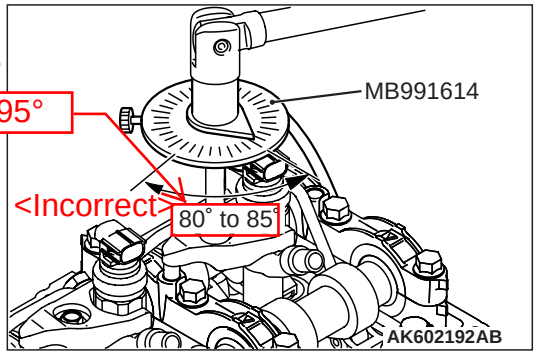
<Correct>
12 ± 1 N·m

⚠ CAUTION

- **When the tightening angle is smaller than the specified tightening angle, the appropriate tightening capacity cannot be secured.**
- **When the tightening angle is larger than the specified tightening angle, remove the bolt to start from the beginning again according to the procedure.**

<Correct>
90° to 95°

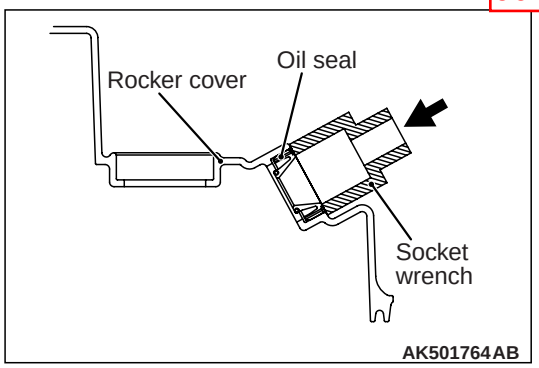
<Incorrect>
80° to 85°



10. Using the special tool Angle gauge (MB991614), tighten the bearing cap bolts in the illustrated sequence by a further 80° to 85°. <Incorrect>

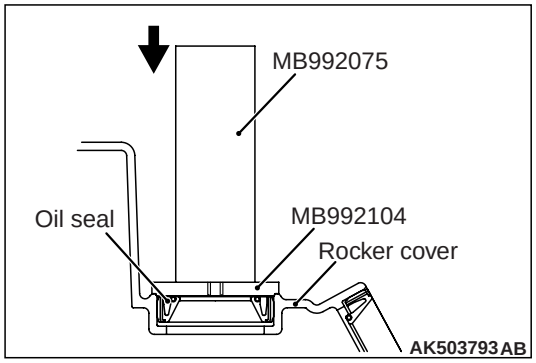
<Correct>
90° to 95°

>>B<< OIL SEAL INSTALLATION



Using a proper socket wrench, the oil seal is pressed and fit into the rocker cover.

>>C<< OIL SEAL INSTALLATION



Using the special tool Oil seal installer (MB992104) and Handle (MB992075), the oil seal is pressed and fit into the rocker cover.