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Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [03/2023 -]
Title: BRAKE CONTROL / DYNAMIC CONTROL SYSTEMS: BRAKE ACTUATOR: INSTALLATION; 2023 - 2024 MY Prius Prius Prime [03/2023 -]		

INSTALLATION

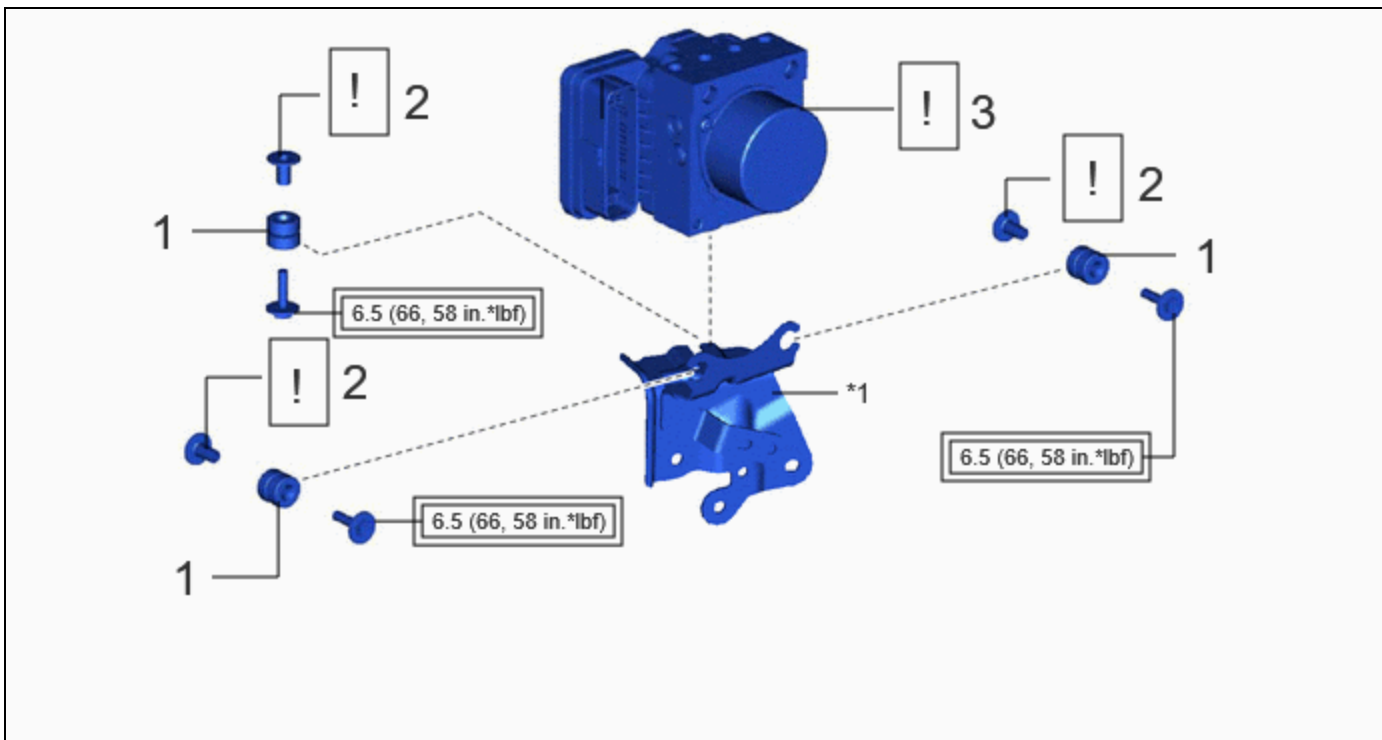
CAUTION / NOTICE / HINT

NOTICE:

- After replacing the brake actuator assembly, make sure to perform update ECU security key.
- After performing the update ECU security key procedure, make sure to perform the initialization procedure for when the cable has been disconnected and reconnected to the negative (-) auxiliary battery terminal.


CAUTION / NOTICE / HINT

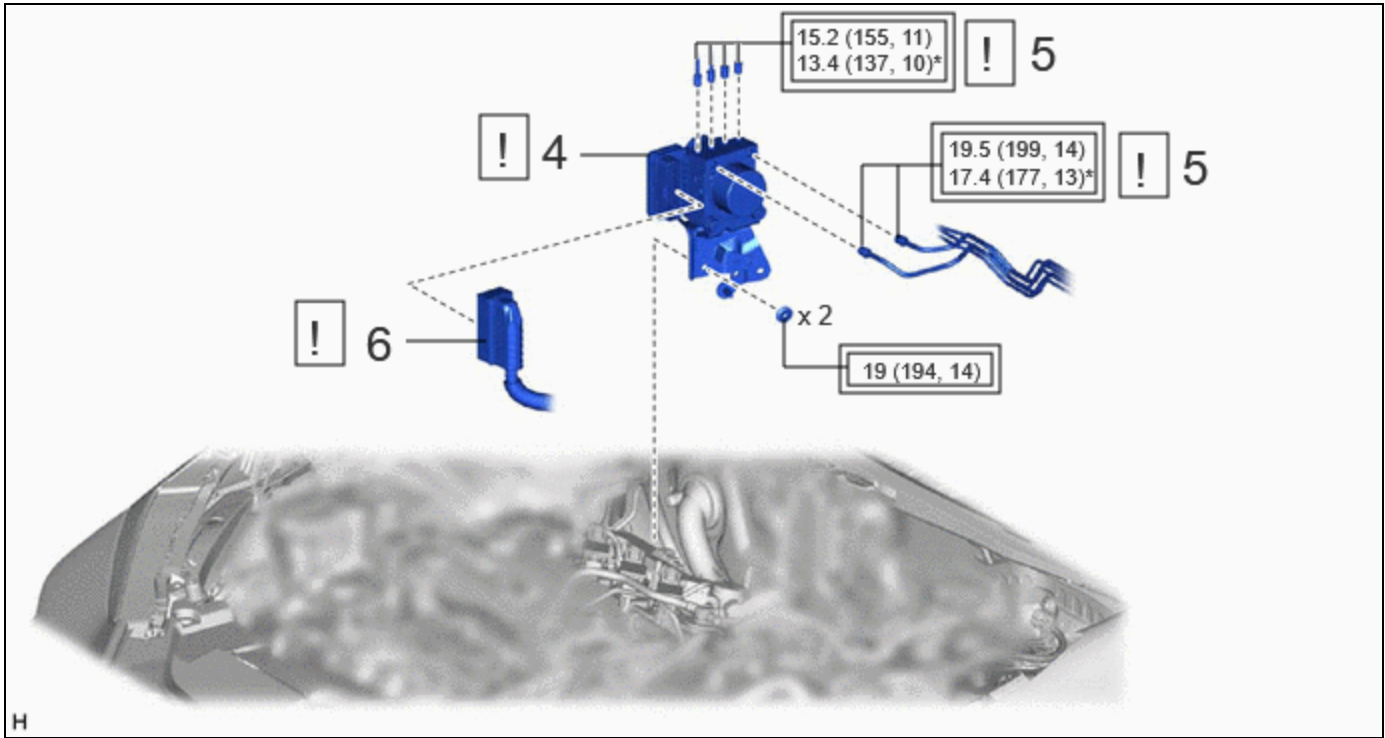
COMPONENTS (INSTALLATION)










	PROCEDURE	PART NAME CODE	!	📄	⚙️
1	BRAKE ACTUATOR BOLT CUSHION	44546A	-	-	-
2	NO. 1 BRAKE ACTUATOR CASE COLLAR	44521A	INFO	-	-
3	BRAKE ACTUATOR ASSEMBLY	44510	INFO	-	-

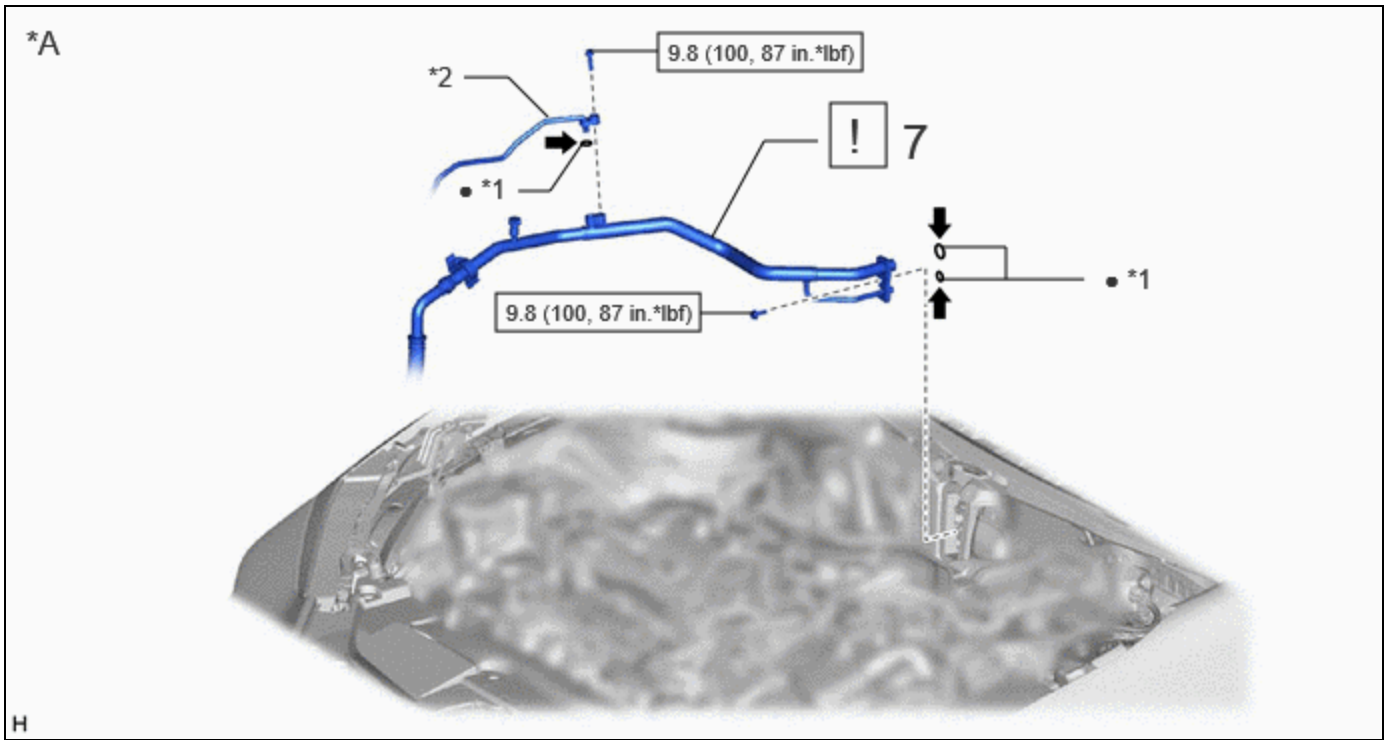
*1	BRAKE ACTUATOR BRACKET ASSEMBLY	-	-
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	Tightening torque for "Major areas involving basic vehicle performance such as moving/turning/stopping" : N*m (kgf*cm, ft.*lbf)	-	-
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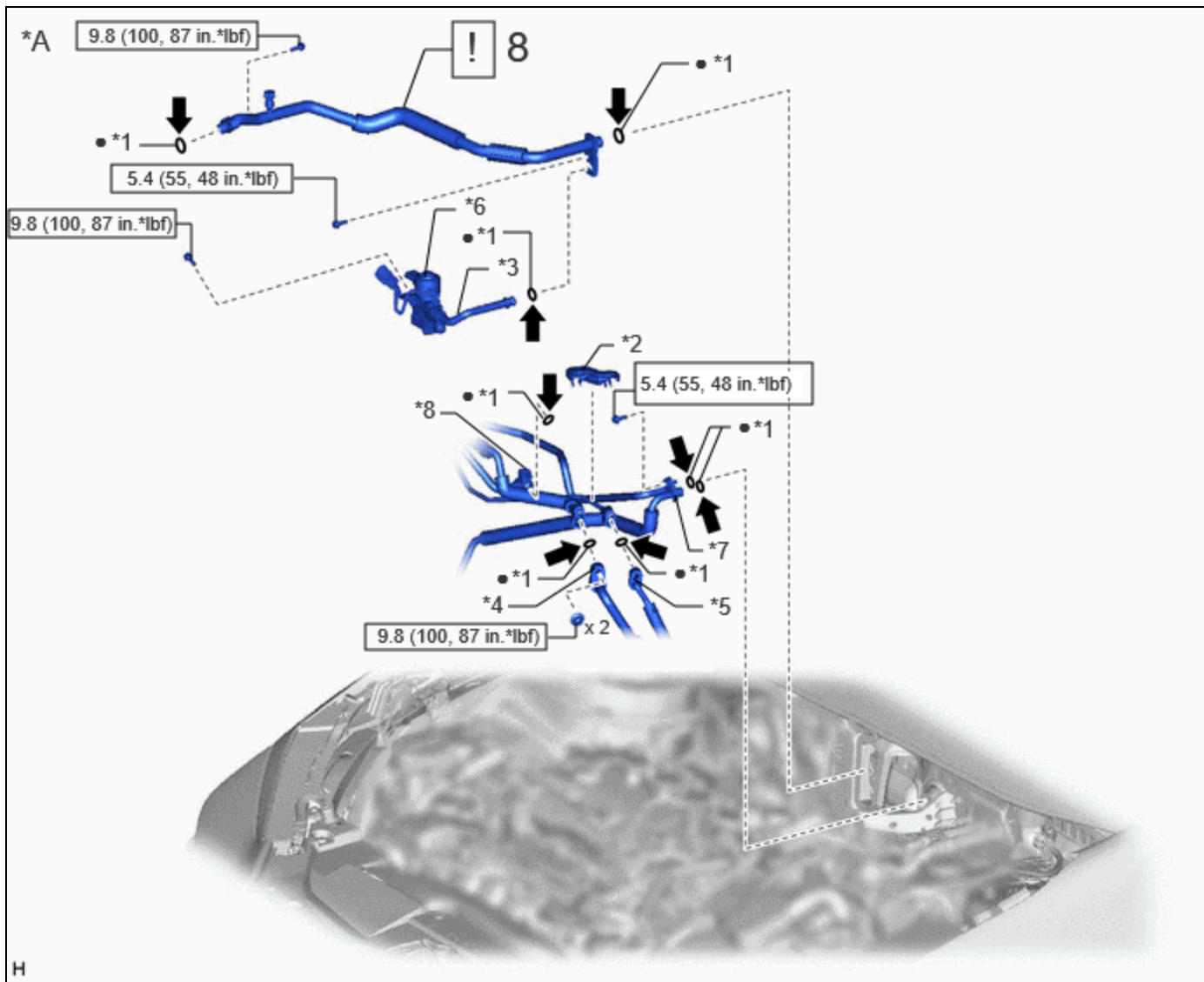
	PROCEDURE	PART NAME CODE			
4	BRAKE ACTUATOR WITH BRACKET	-		-	-
5	BRAKE LINE	-		-	-
6	ENGINE ROOM MAIN WIRE	82111		-	-

	Tightening torque for "Major areas involving basic vehicle performance such as moving/turning/stopping" : N*m (kgf*cm, ft.*lbf)	*	For use with a union nut wrench
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	PROCEDURE	PART NAME CODE			
7	SUCTION PIPE SUB-ASSEMBLY	88707	INFO	-	-

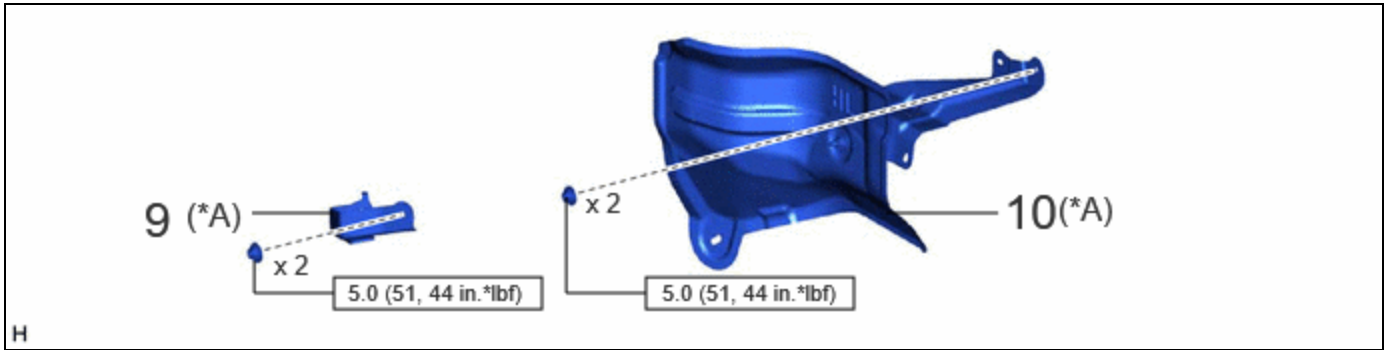
*A	except PHEV Model	-	-
*1	O-RING	*2	AIR CONDITIONING TUBE AND ACCESSORY ASSEMBLY
	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part
	Compressor oil ND-OIL 11 or equivalent	-	-







PROCEDURE	PART NAME CODE			
8 NO. 1 SUCTION TUBE	88717U	INFO	-	-

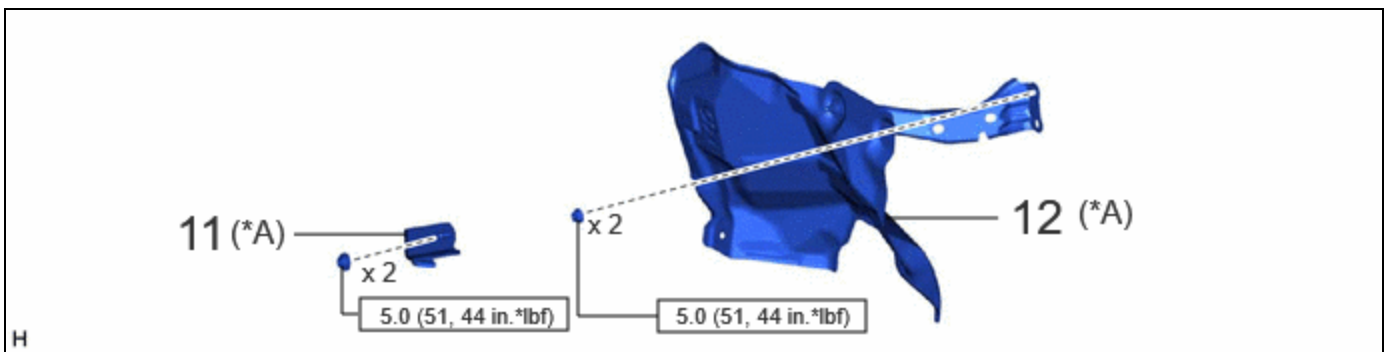
*A	for PHEV Model	-	-
*1	O-RING	*2	PIPING CLAMP
*3	NO. 7 DISCHARGE TUBE	*4	NO. 1 DISCHARGE TUBE
*5	LIQUID TUBE SUB-ASSEMBLY B	*6	COOLER EXPANSION VALVE
*7	DISCHARGE TUBE SUB-ASSEMBLY	*8	NO. 8 DISCHARGE TUBE
	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part




	Compressor oil ND-OIL 11 or equivalent	-	-
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
PROCEDURE		PART NAME CODE			
9	NO. 5 DASH PANEL INSULATOR PLATE	55228	-	-	-
10	DASH PANEL HEAT INSULATOR	55225C	-	-	-

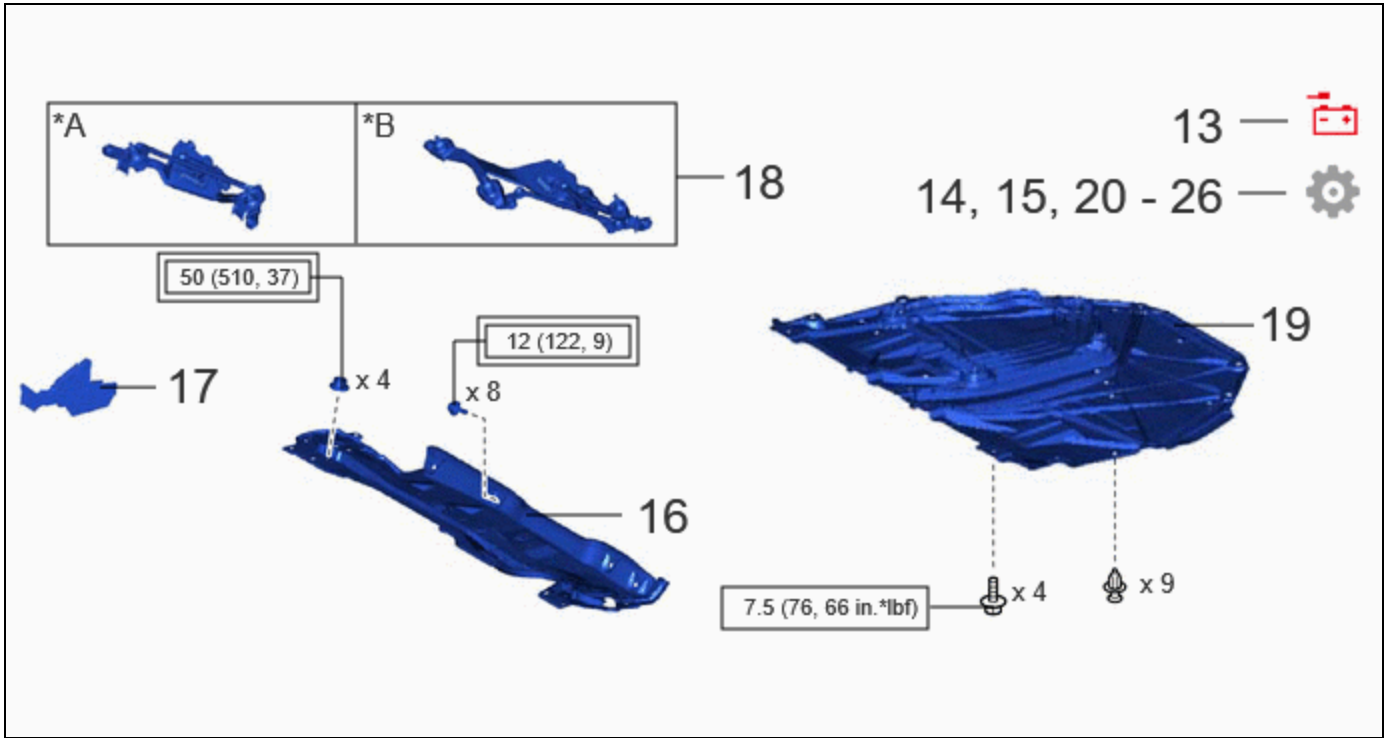
*A	for M20A-FXS except PHEV Model	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	-	-







PROCEDURE		PART NAME CODE			
11	NO. 5 DASH PANEL INSULATOR PLATE	55228	-	-	-
12	DASH PANEL HEAT INSULATOR	55225C	-	-	-



*A	for PHEV Model	-	-
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	N*m (kgf*cm, ft.*lbf): Specified torque	-	-
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	PROCEDURE	PART NAME CODE	!	📄	⚙️
13	CABLE TO NEGATIVE AUXILIARY BATTERY TERMINAL	-	INFO	-	-
14	UPDATE ECU SECURITY KEY	-	-	-	INFO
15	BLEED BRAKE SYSTEM	-	-	-	INFO
16	OUTER COWL TOP PANEL SUB-ASSEMBLY	55701J	-	-	-
17	WATER GUARD PLATE	55734D	-	-	-
18	WINDSHIELD WIPER MOTOR AND LINK	-	-	-	-
19	NO. 1 ENGINE UNDER COVER ASSEMBLY	51410	-	-	-
20	BRAKE SYSTEM CALIBRATION	-	-	-	INFO
21	AIR CONDITIONING SYSTEM WITH REFRIGERANT	-	-	-	INFO
22	WARM UP COMPRESSOR	-	-	-	INFO
23	INSPECT FOR REFRIGERANT LEAK	-	-	-	INFO
24	PERFORM INITIALIZATION	-	-	-	INFO
25	INITIALIZATION AFTER RECONNECTING AUXILIARY BATTERY TERMINAL	-	-	-	INFO

PROCEDURE		PART NAME CODE			
26	CHECK AND CLEAR DTC	-	-	-	

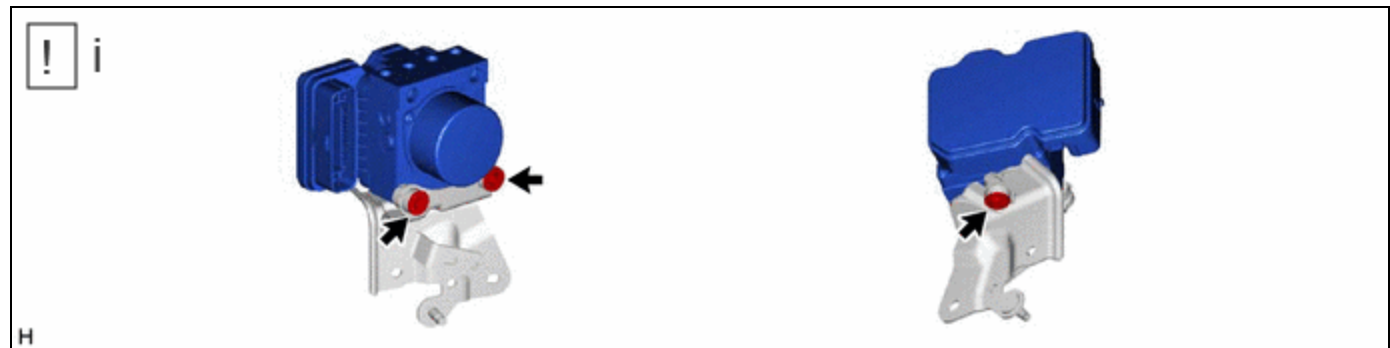
*A	for 2ZR-FXE	*B	for M20A-FXS
	Tightening torque for "Major areas involving basic vehicle performance such as moving/turning/stopping" : N*m (kgf*cm, ft.*lbf)		N*m (kgf*cm, ft.*lbf): Specified torque

PROCEDURE

1. INSTALL BRAKE ACTUATOR BOLT CUSHION
2. INSTALL NO. 1 BRAKE ACTUATOR CASE COLLAR

	<p>NOTICE:</p> <p>Make sure that the No. 1 brake actuator case collar is in full contact with the brake actuator bolt cushion.</p>
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3. INSTALL BRAKE ACTUATOR ASSEMBLY



(1) While contacting the 3 connecting portions of the brake actuator assembly and the brake actuator bracket assembly, install the brake actuator assembly to the brake actuator bracket assembly with the 3 bolts.


Torque:

6.5 N·m {66 kgf·cm, 58 in·lbf}

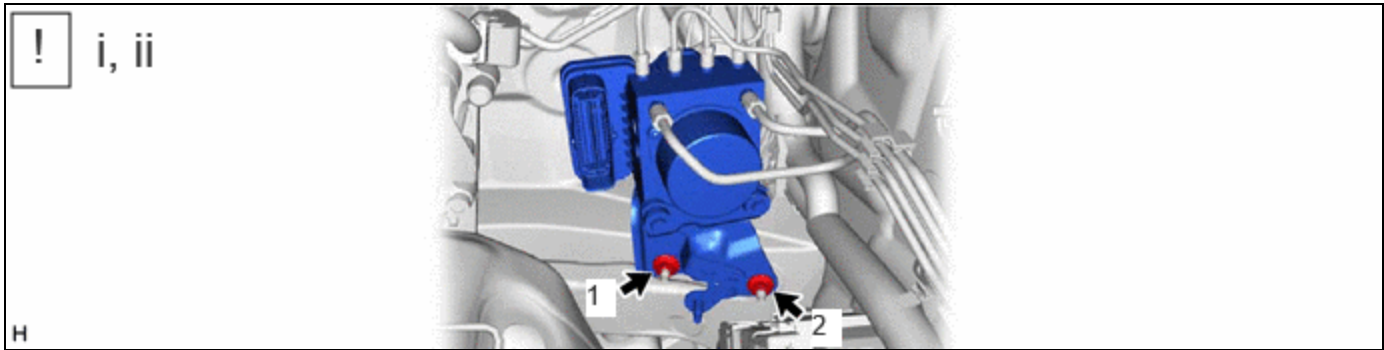
NOTICE:

- Do not remove the hole plugs of a new brake actuator assembly before connecting the brake lines because the brake actuator assembly is filled with brake fluid.
- Do not hold the brake actuator assembly by the connector.
- Do not drop the brake actuator assembly when carrying it.

4. INSTALL BRAKE ACTUATOR WITH BRACKET

	<p>NOTICE:</p> <ul style="list-style-type: none"> • Do not kink or damage the brake lines. • Do not allow any foreign matter such as dirt or dust to enter the brake lines from the connecting parts.
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- Be careful not to allow any brake fluid to enter the connector.
- Do not hold the brake actuator with bracket by the connector.
- Do not drop the brake actuator with bracket when carrying it.



(1) Temporarily install the brake actuator with bracket to the vehicle body with the 2 nuts.

NOTICE:

- Do not kink or damage the brake lines.
- Do not allow any foreign matter such as dirt or dust to enter the brake lines from the connecting parts.
- Be careful not to allow any brake fluid to enter the connector.
- Do not hold the brake actuator assembly by the connector.
- Do not drop the brake actuator with bracket when carrying it.

HINT:

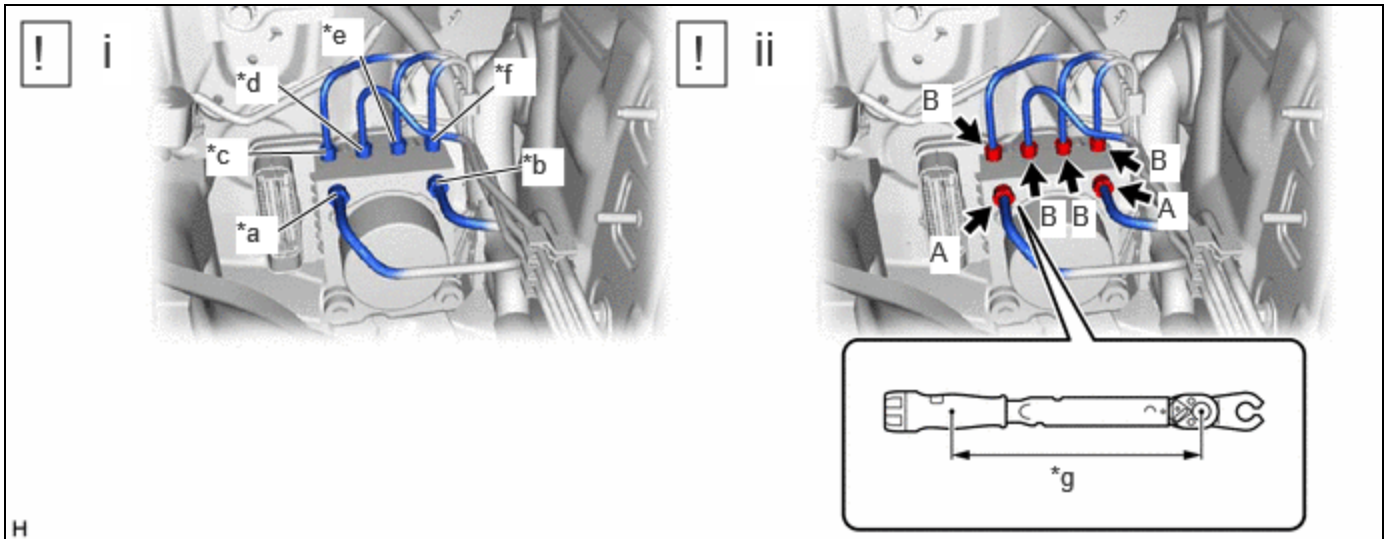
Install the brake actuator with bracket while avoiding the brake lines.

(2) Fully tighten the 2 nuts in the order shown in the illustration.

Torque:

19 N·m {194 kgf·cm, 14 ft·lbf}

5. CONNECT BRAKE LINE



*a	From 1st Chamber of Brake Master Cylinder Assembly	*b	From 2nd Chamber of Brake Master Cylinder Assembly
*c	To Front Disc Brake Cylinder Assembly RH	*d	To Front Disc Brake Cylinder Assembly LH
*e	To Rear Disc Brake Cylinder Assembly RH	*f	To Rear Disc Brake Cylinder Assembly LH

*g	Torque Wrench Fulcrum Length	-	-
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(1) Temporarily tighten the 6 brake lines to the correct position on the brake actuator assembly as shown in the illustration.

NOTICE:

- Do not kink or damage the brake lines.
- Do not allow any foreign matter such as dirt or dust to enter the brake lines from the connecting parts.

(2) Using a union nut wrench, fully tighten the 6 brake lines.

Torque:

Specified tightening torque (A) :

19.5 N·m {199 kgf·cm, 14 ft·lbf}

Specified tightening torque (B) :

15.2 N·m {155 kgf·cm, 11 ft·lbf}

NOTICE:

Do not kink or damage the brake lines.

HINT:

- Calculate the torque wrench reading when changing the fulcrum length of the torque wrench.

Click here [INFO](#)

- for Specified Tightening Torque (A):

When using a union nut wrench (fulcrum length of 20 mm (0.787 in.)) + torque wrench (fulcrum length of 162 mm (6.38 in.)):

17.4 N*m (177 kgf*cm, 13 ft.*lbf)

- for Specified Tightening Torque (B):

When using a union nut wrench (fulcrum length of 22 mm (0.866 in.)) + torque wrench (fulcrum length of 162 mm (6.38 in.)):

13.4 N*m (137 kgf*cm, 10 ft.*lbf)

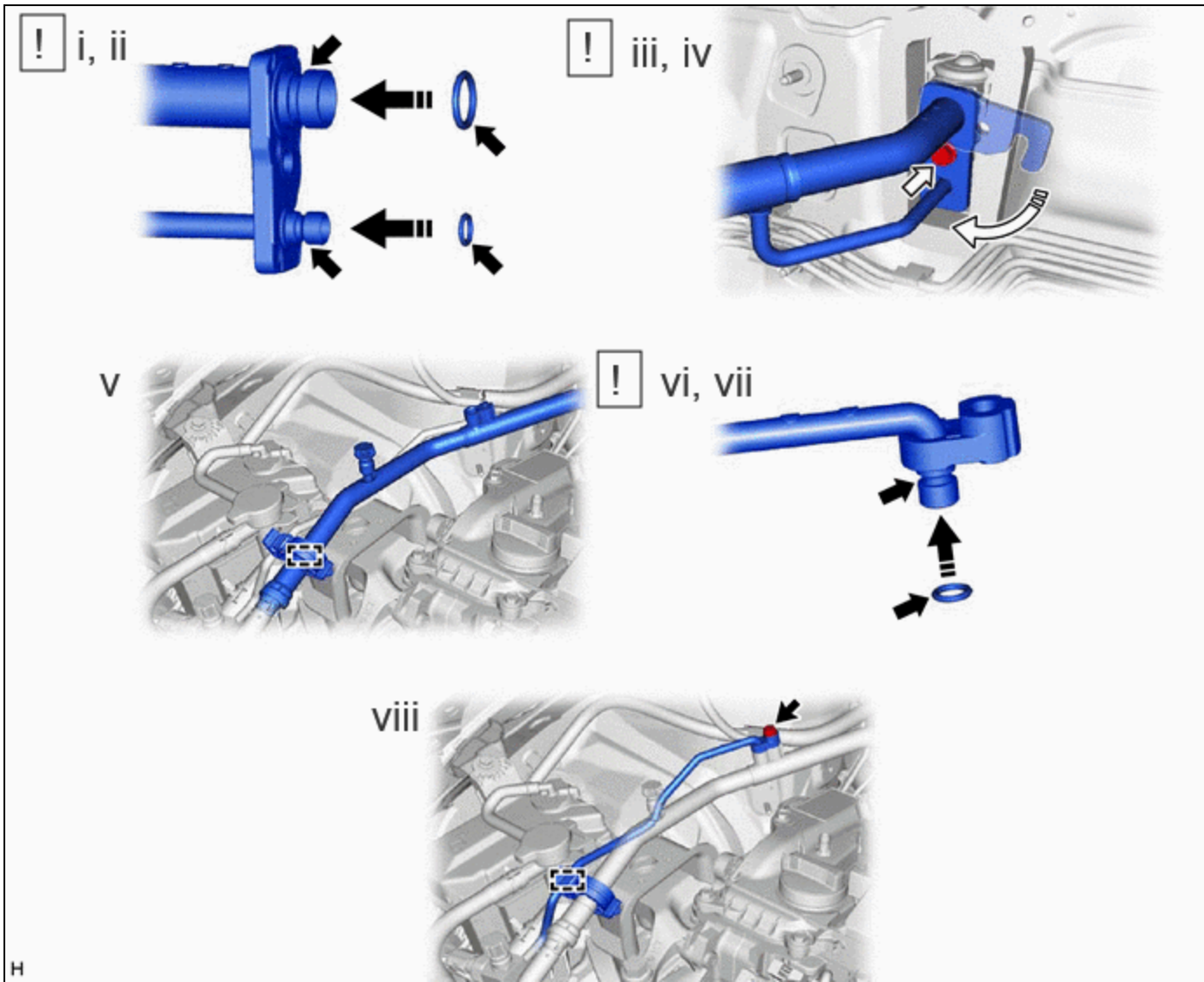
6. CONNECT ENGINE ROOM MAIN WIRE



NOTICE:

- Make sure that the connector is locked securely.
- Make sure that the connector can be connected smoothly.
- Do not allow water, oil or dirt to enter the connector.

7. CONNECT SUCTION PIPE SUB-ASSEMBLY (except PHEV Model)



	Compressor oil ND-OIL 11 or equivalent		Install in this Direction
	Rotate in this Direction	-	-

(1) Remove the vinyl tape from the suction pipe sub-assembly, sufficiently apply compressor oil to 2 new O-rings and the fitting surface of the suction pipe sub-assembly.

Compressor Oil:
ND-OIL 11 or equivalent

(2) Install the 2 O-rings to the suction pipe sub-assembly.

NOTICE:

Keep the O-ring and O-ring fitting surface free of foreign matter.

(3) Connect the suction pipe sub-assembly and rotate the hook connector as shown in the illustration.

(4) Insert the tube joint into the fitting hole securely and install the bolt.

Torque:

9.8 N·m {100 kgf·cm, 87 in·lbf}

- (5) Engage the clamp.
- (6) Remove the vinyl tape from the air conditioning tube and accessory assembly, sufficiently apply compressor oil to a new O-ring and the fitting surface of the air conditioning tube and accessory assembly.

Compressor Oil:

ND-OIL 11 or equivalent

- (7) Install the O-ring to the air conditioning tube and accessory assembly.

NOTICE:

Keep the O-ring and O-ring fitting surface free of foreign matter.

- (8) Connect the air conditioning tube and accessory assembly with the clamp and bolt.

Torque:

9.8 N·m {100 kgf·cm, 87 in·lbf}

8. CONNECT NO. 1 SUCTION TUBE (for PHEV Model)



	Compressor oil ND-OIL 11 or equivalent		Install in this Direction
	Rotate in this Direction	-	-

- (1) Remove the vinyl tape from the discharge tube sub-assembly, sufficiently apply compressor oil to 2 new O-rings and the fitting surface of the discharge tube sub-assembly.

Compressor Oil:

ND-OIL 11 or equivalent

- (2) Install the 2 O-rings to the discharge tube sub-assembly.

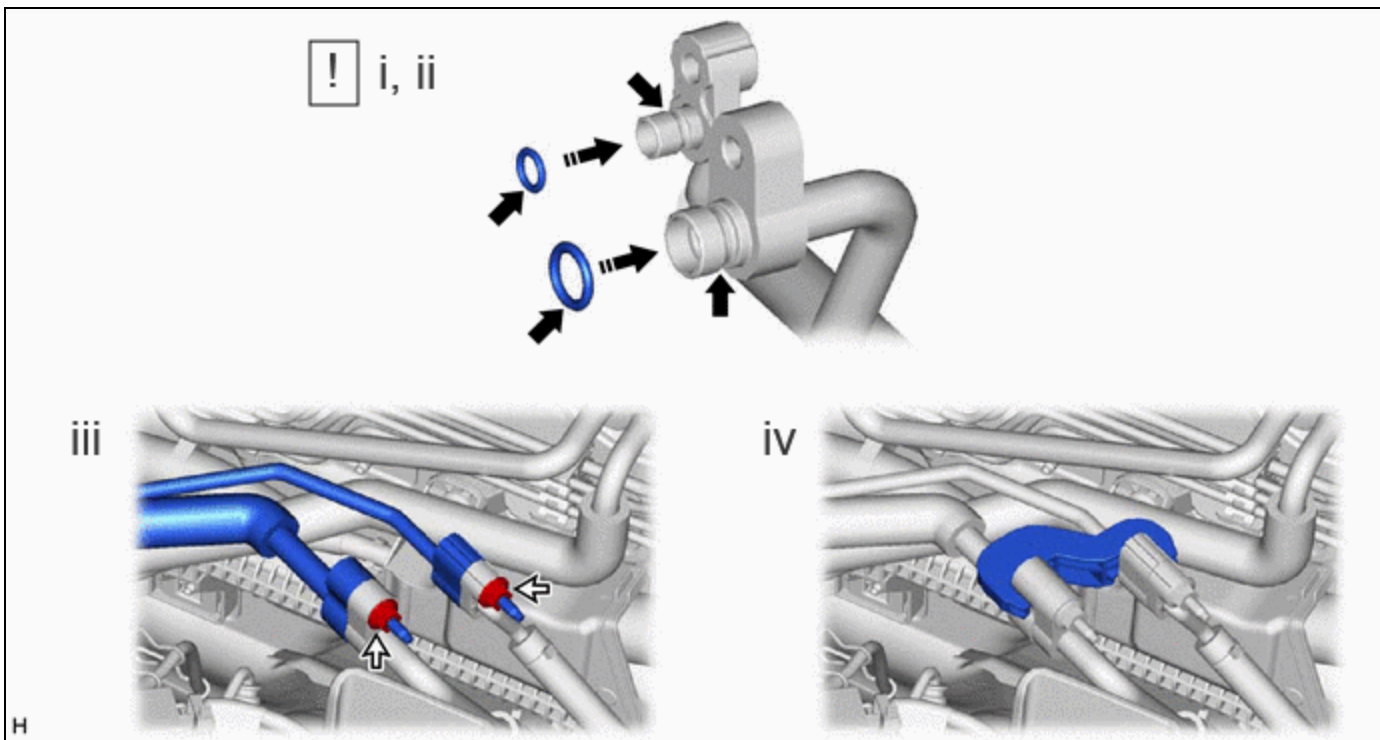
NOTICE:



Keep the O-ring and O-ring fitting surface free of foreign matter.

- (3) Connect the discharge tube sub-assembly and rotate the hook connector as shown in the illustration.

Torque:

5.4 N·m {55 kgf·cm, 48 in·lbf}



	Compressor oil ND-OIL 11 or equivalent		Install in this Direction
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- (1) Remove the vinyl tape from the No. 1 discharge tube and liquid tube sub-assembly B, sufficiently apply compressor oil to 2 new O-rings and the fitting surface of the No. 1 discharge tube and liquid tube sub-assembly B.

Compressor Oil:
ND-OIL 11 or equivalent

- (2) Install the 2 O-rings to the No. 1 discharge tube and liquid tube sub-assembly B.

NOTICE:

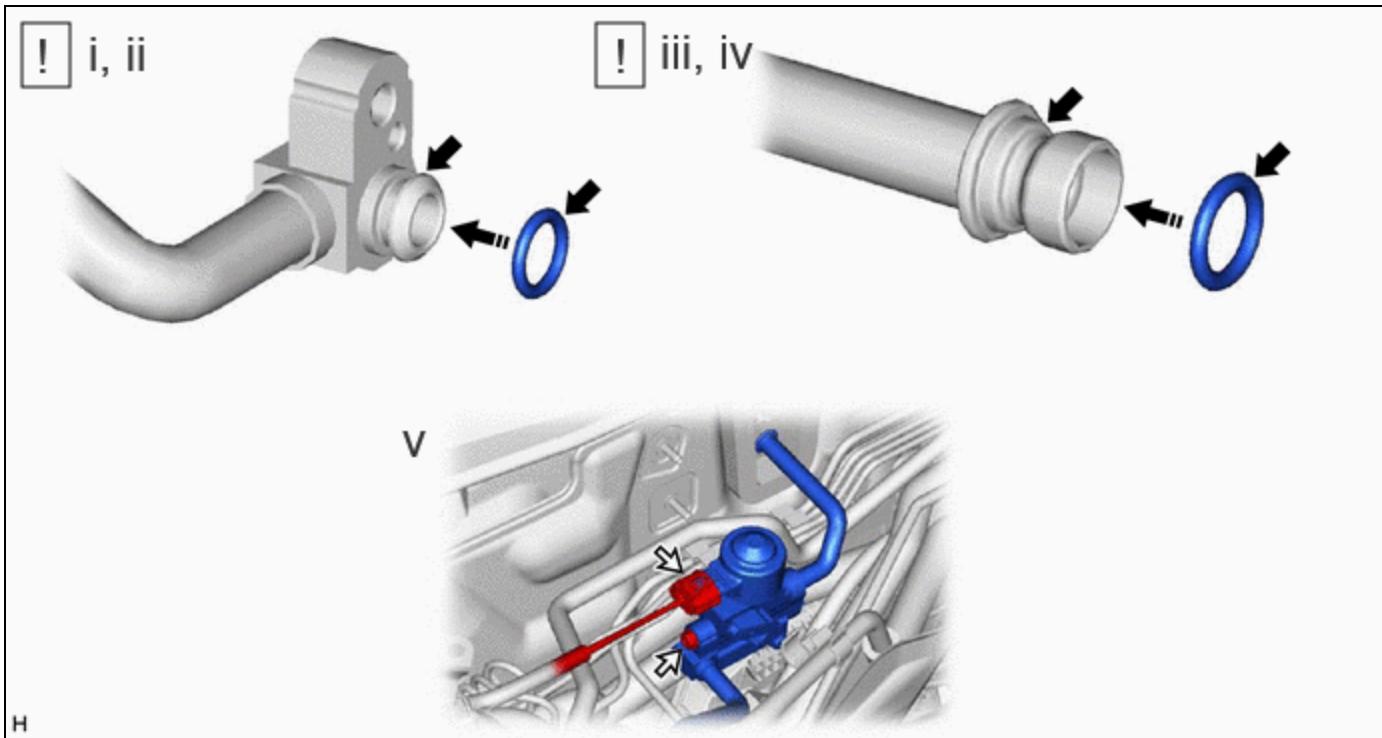
Keep the O-ring and O-ring fitting surface free of foreign matter.



- (3) Install the 2 nuts to connect the No. 1 discharge tube and liquid tube sub-assembly B.

Torque:

9.8 N·m {100 kgf·cm, 87 in·lbf}

- (4) Install the piping clamp to the No. 1 discharge tube and liquid tube sub-assembly B.



	Compressor oil ND-OIL 11 or equivalent		Install in this Direction
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- (1) Remove the vinyl tape from the No. 8 discharge tube, sufficiently apply compressor oil to a new O-ring and the fitting surface of the No. 8 discharge tube.

Compressor Oil:
ND-OIL 11 or equivalent

- (2) Install the O-ring to the No. 8 discharge tube.

NOTICE:

Keep the O-ring and O-ring fitting surface free of foreign matter.

- (3) Remove the vinyl tape from the No. 7 discharge tube, sufficiently apply compressor oil to a new O-ring and the fitting surface of the No. 7 discharge tube.

Compressor Oil:
ND-OIL 11 or equivalent

- (4) Install the O-ring to the No. 7 discharge tube.

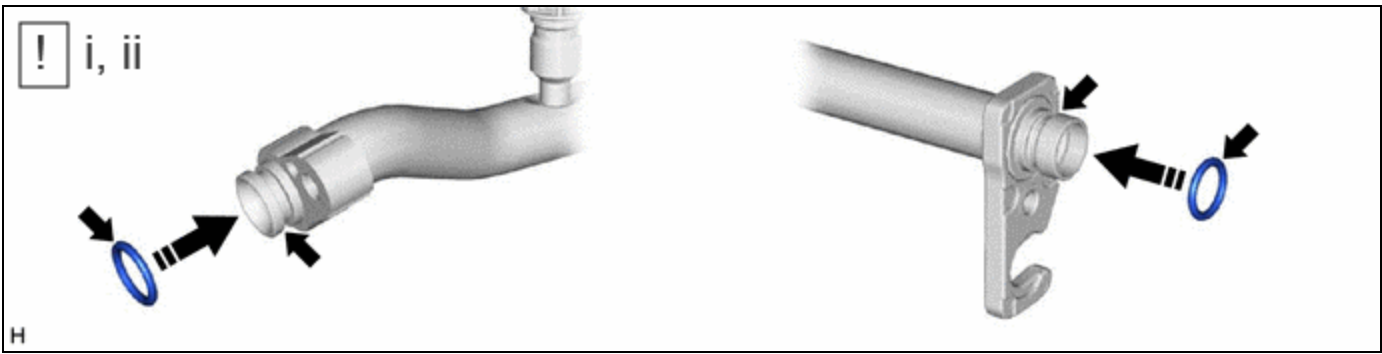
NOTICE:

Keep the O-ring and O-ring fitting surface free of foreign matter.

- (5) Connect the connector and install the No. 7 discharge tube with the bolt.

Torque:

9.8 N·m {100 kgf·cm, 87 in·lbf}



	Compressor oil ND-OIL 11 or equivalent		Install in this Direction
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(1) Remove the vinyl tape from the No. 1 suction tube, sufficiently apply compressor oil to 2 new O-rings and the fitting surface of the No. 1 suction tube.

Compressor Oil:
ND-OIL 11 or equivalent

(2) Install the 2 O-rings to the No. 1 suction tube.

NOTICE:

Keep the O-ring and O-ring fitting surface free of foreign matter.



	Rotate in this Direction	-	-
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(1) Connect the No. 1 suction tube and rotate the hook connector as shown in the illustration.

(2) Insert the tube joint into the fitting hole securely and install the bolt.

Torque:

5.4 N·m {55 kgf·cm, 48 in·lbf}

(3) Install the connector to the No. 1 suction tube and connect the connector.

(4) Connect the No. 1 suction tube with the 3 clamps and bolt.

Torque:

9.8 N·m {100 kgf·cm, 87 in·lbf}

9. INSTALL NO. 5 DASH PANEL INSULATOR PLATE (for M20A-FXS except PHEV Model)

Torque:

5.0 N·m {51 kgf·cm, 44 in·lbf}

10. INSTALL DASH PANEL HEAT INSULATOR (for M20A-FXS except PHEV Model)**Torque:****5.0 N·m {51 kgf·cm, 44 in·lbf}****11. INSTALL NO. 5 DASH PANEL INSULATOR PLATE (for PHEV Model)****Torque:****5.0 N·m {51 kgf·cm, 44 in·lbf}****12. INSTALL DASH PANEL HEAT INSULATOR (for PHEV Model)****Torque:****5.0 N·m {51 kgf·cm, 44 in·lbf}****13. CONNECT CABLE TO NEGATIVE AUXILIARY BATTERY TERMINAL**for M20A-FXS: Click here [INFO](#)for 2ZR-FXE: Click here [INFO](#)**14. UPDATE ECU SECURITY KEY****HINT:**

Perform this procedure only when replacement of the brake actuator assembly is necessary.

Click here [INFO](#)**15. BLEED BRAKE SYSTEM**Click here [INFO](#)**16. INSTALL OUTER COWL TOP PANEL SUB-ASSEMBLY**Click here [INFO](#)**17. INSTALL WATER GUARD PLATE**Click here [INFO](#)**18. INSTALL WINDSHIELD WIPER MOTOR AND LINK**Click here [INFO](#)**19. INSTALL NO. 1 ENGINE UNDER COVER ASSEMBLY**for M20A-FXS: Click here [INFO](#)for 2ZR-FXE: Click here [INFO](#)**20. PERFORM BRAKE SYSTEM CALIBRATION****HINT:**

Perform this procedure only when replacement of the brake actuator assembly is necessary.

Click here [INFO](#)**21. CHARGE AIR CONDITIONING SYSTEM WITH REFRIGERANT**for HFC-134a(R134a): Click here [INFO](#)for HFO-1234yf(R1234yf): Click here [INFO](#)

22. WARM UP COMPRESSOR

for HFC-134a(R134a): Click here [INFO](#)

for HFO-1234yf(R1234yf): Click here [INFO](#)

23. INSPECT FOR REFRIGERANT LEAK

for HFC-134a(R134a): Click here [INFO](#)

for HFO-1234yf(R1234yf): Click here [INFO](#)

24. PERFORM INITIALIZATION

HINT:

The parking brake indicator light blinks (red) when the ignition switch is turned to ON after replacing the brake actuator assembly. Operate the electric parking brake switch assembly to turn off the parking brake indicator light.

Click here [INFO](#)

25. INITIALIZATION AFTER RECONNECTING AUXILIARY BATTERY TERMINAL

HINT:

When disconnecting and reconnecting the auxiliary battery, there is an automatic learning function that completes learning when the respective system are used.

Click here [INFO](#)

26. CHECK AND CLEAR DTC

Click here [INFO](#)

