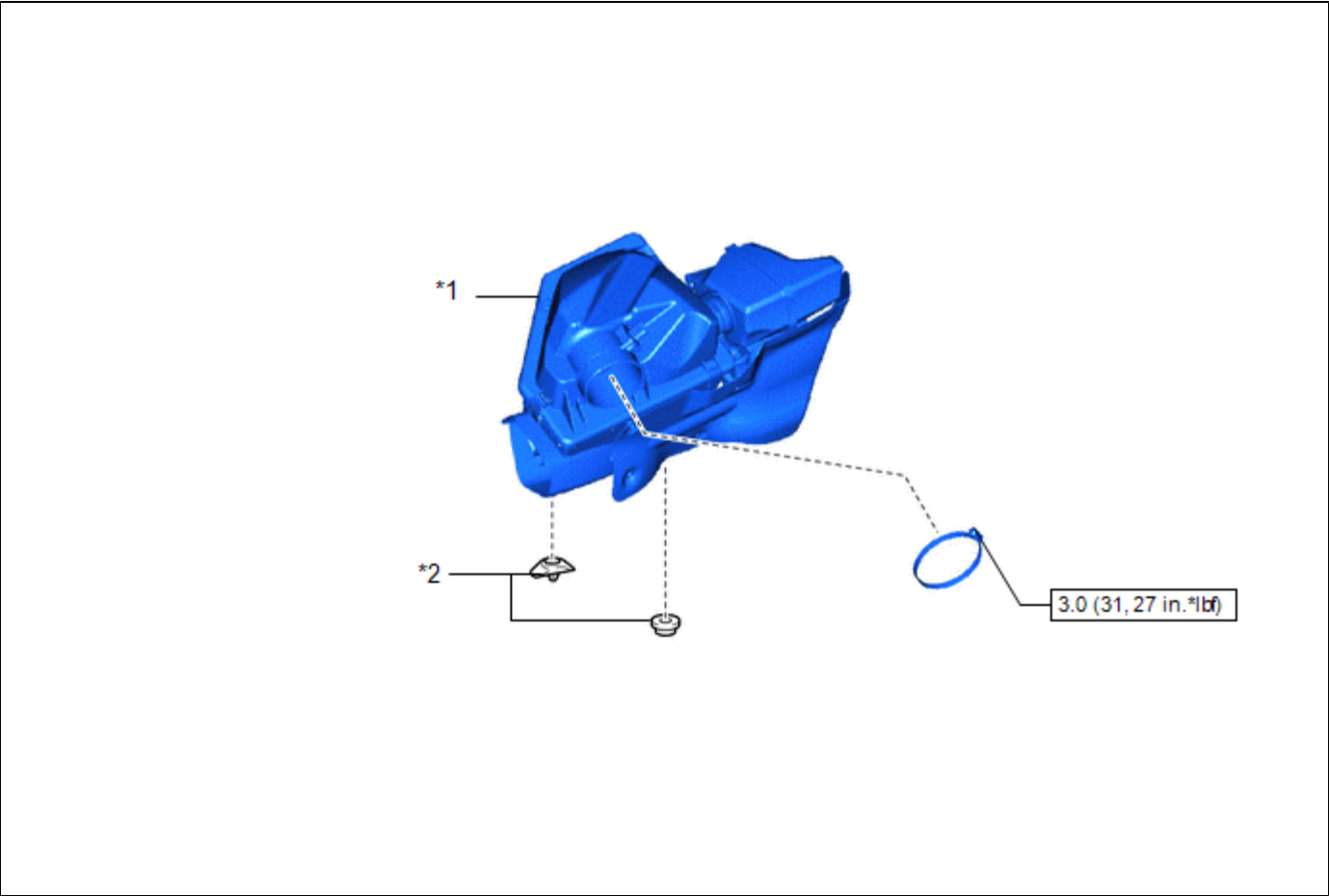


Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCQX
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): AIR CLEANER ASSEMBLY: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	AIR CLEANER ASSEMBLY	*2	AIR CLEANER SUPPORT
	N*m (kgf*cm, ft.*lbf): Specified torque	-	-

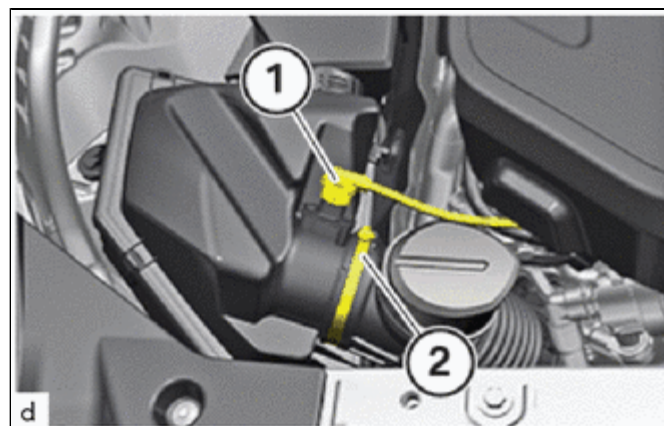
Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCQY
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): AIR CLEANER ASSEMBLY: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

PROCEDURE

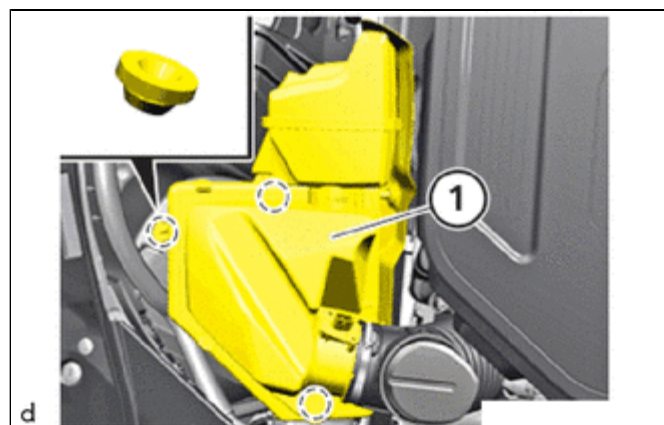
1. REMOVE AIR CLEANER ASSEMBLY

(a) Unlock plug connection (1) and disconnect.



(b) Unfasten clamp (2).

(c) Release the air cleaner assembly (1) towards the top from the air cleaner supports (marks) and remove.



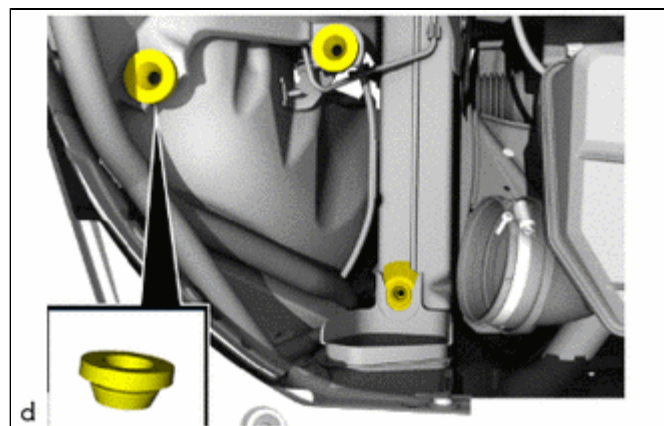
Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCQZ
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): AIR CLEANER ASSEMBLY: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

PROCEDURE

1. INSTALL AIR CLEANER ASSEMBLY

(a) Check the air cleaner support for correct fit.



(b) Feed the air cleaner assembly in and engage it in the air cleaner supports.

(c) Connect connectors and lock.

HINT:

- Note the installation position of the component. The component may be installed in various installation positions.
- The connector must engage audibly.

(d) Tighten clamp.

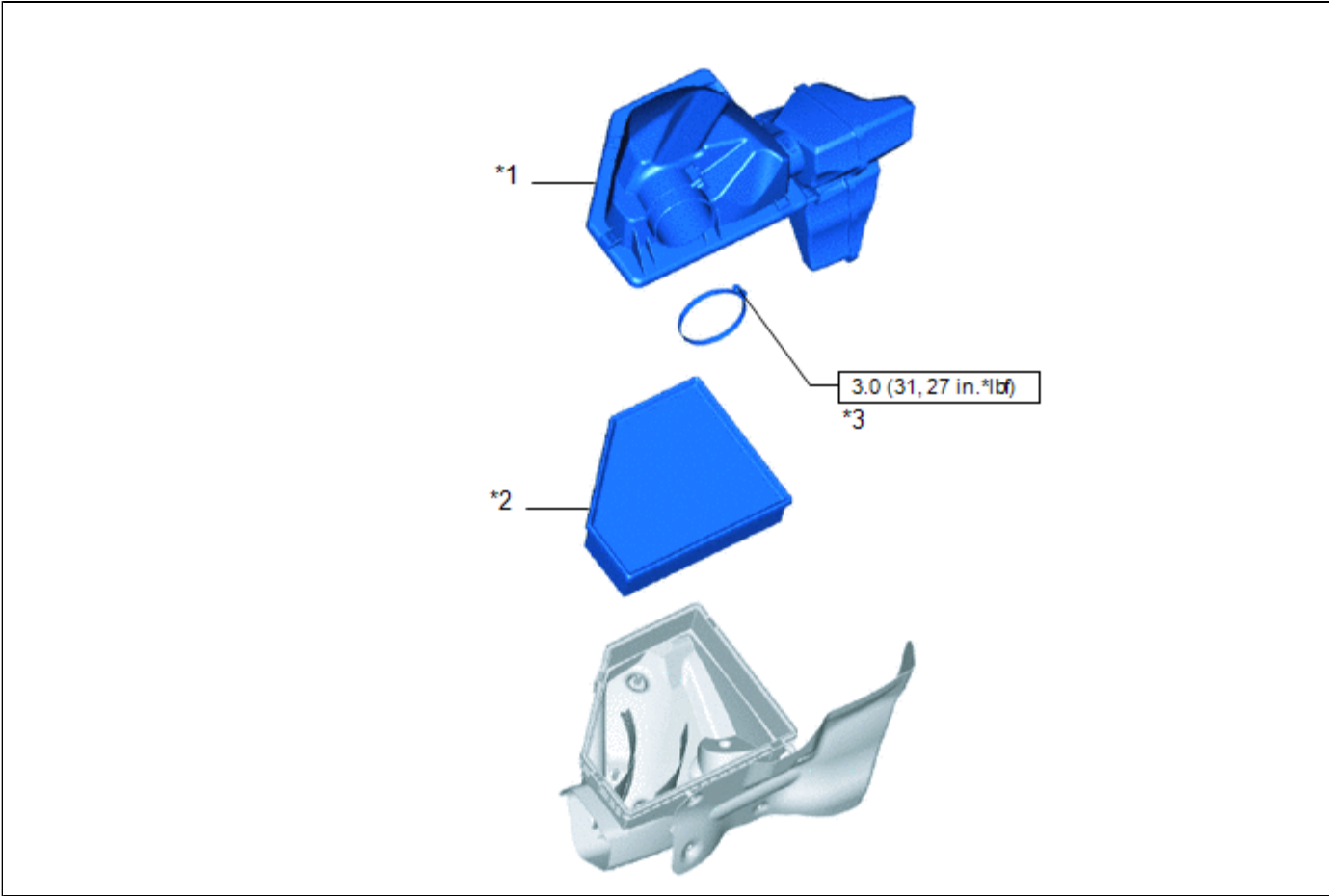
Torque:

3.0 N·m { 31 kgf·cm, 27 in·lbf }

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCQJ
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): AIR CLEANER FILTER ELEMENT: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	AIR CLEANER CAP SUB-ASSEMBLY	*2	AIR CLEANER FILTER ELEMENT SUB-ASSEMBLY
*3	CLAMP	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	-	-

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCQK
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): AIR CLEANER FILTER ELEMENT: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

Click here [INFO](#)



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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): AIR CLEANER FILTER ELEMENT: INSTALLATION; 2020 MY Supra [03/2019 -]		

[INSTALLATION](#)

[CAUTION / NOTICE / HINT](#)

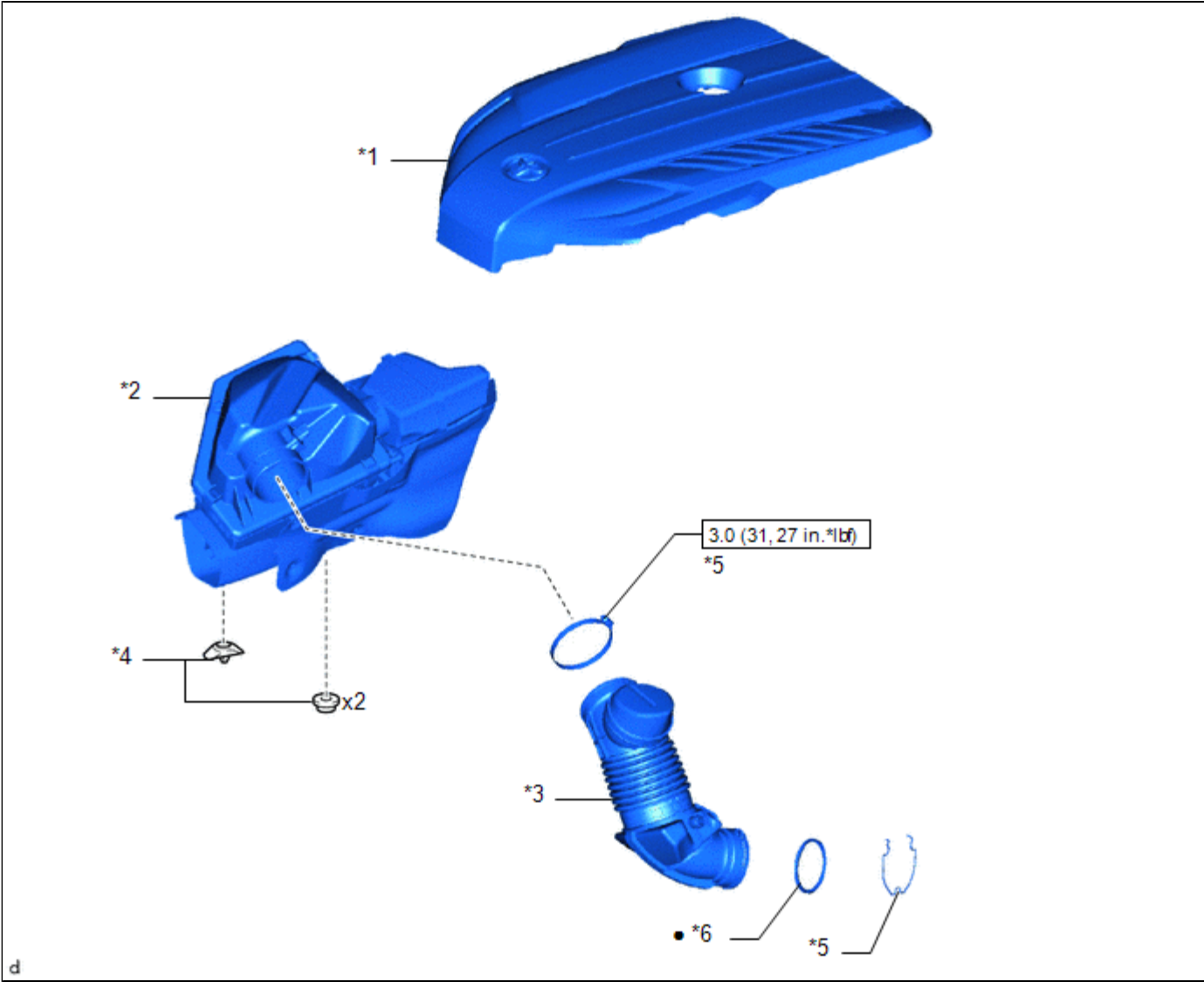
Click here [INFO](#)



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCR3
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): AIR CLEANER HOSE: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	NO. 1 ENGINE COVER SUB-ASSEMBLY	*2	AIR CLEANER ASSEMBLY
*3	AIR CLEANER HOSE ASSEMBLY	*4	AIR CLEANER SUPPORT
*5	CLAMP	*6	GASKET
	N*m (kgf*cm, ft.*lbf): Specified torque	●	Non-reusable part

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCR4
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): AIR CLEANER HOSE: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

CAUTION:

- Hot surfaces.
- Risk of burning!
- Perform all work only on components that have cooled down.

PROCEDURE

1. REMOVE NO. 1 ENGINE COVER SUB-ASSEMBLY

Click here [INFO](#)

2. REMOVE AIR CLEANER ASSEMBLY

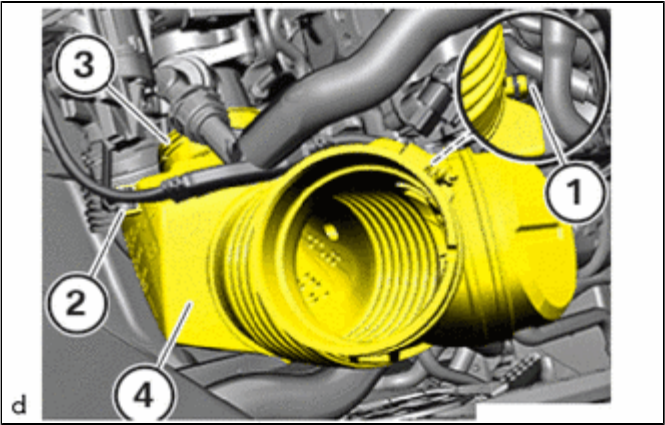
Click here [INFO](#)

3. REMOVE AIR CLEANER HOSE ASSEMBLY

CAUTION:

- Hot surfaces.
- Risk of burning!
- Perform all work only on components that have cooled down.

(a) Unlock the ventilation pipe sub-assembly (1) and release from the air cleaner hose assembly.



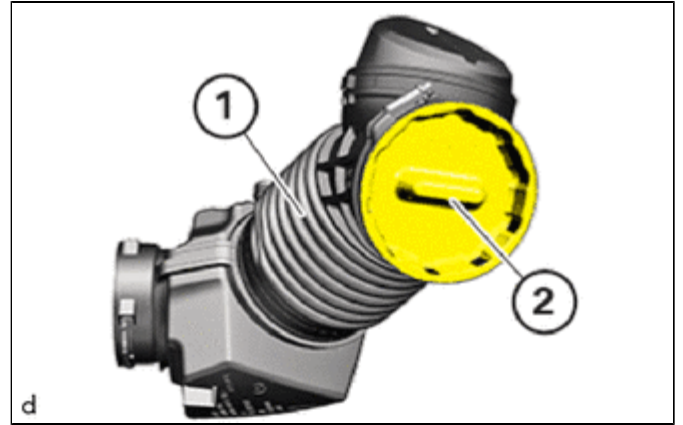
- (b) Loosen clamp (2).
- (c) Unlock and loosen clamp (3).
- (d) Feed out air cleaner hose assembly (4) and remove.

4. REMOVE COVER CAP

HINT:

Perform this procedure only when reused of the air cleaner hose assembly is necessary.

- (a) Remove the cover cap (2) of the air cleaner hose assembly (1) before installation.



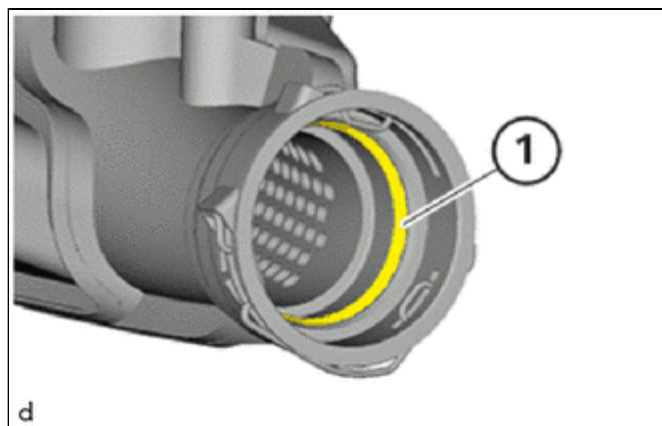
Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCR5
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): AIR CLEANER HOSE: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

PROCEDURE

1. INSTALL AIR CLEANER HOSE ASSEMBLY

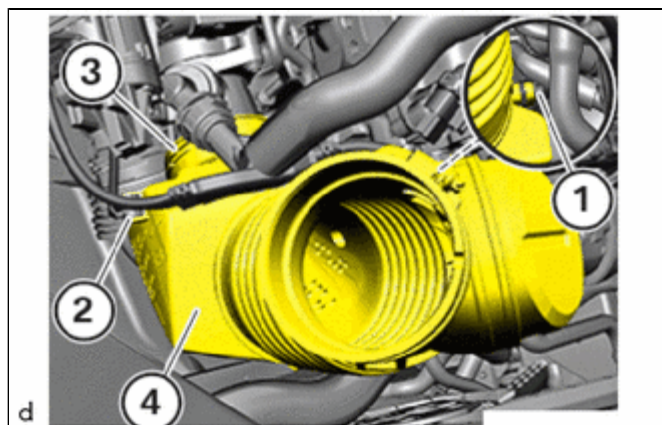
(a) Replace the gasket (1).



(b) Feed in air cleaner hose assembly (4) and install.

HINT:

The clamp must engage audibly.



(c) Secure clamps (2) and (3).

(d) Connect the ventilation pipe sub-assembly (1) on the air cleaner hose assembly and lock.

HINT:

The ventilation pipe sub-assembly (1) must engage audibly.

2. INSTALL AIR CLEANER ASSEMBLY

Click here [INFO](#)

3. INSTALL NO. 1 ENGINE COVER SUB-ASSEMBLY

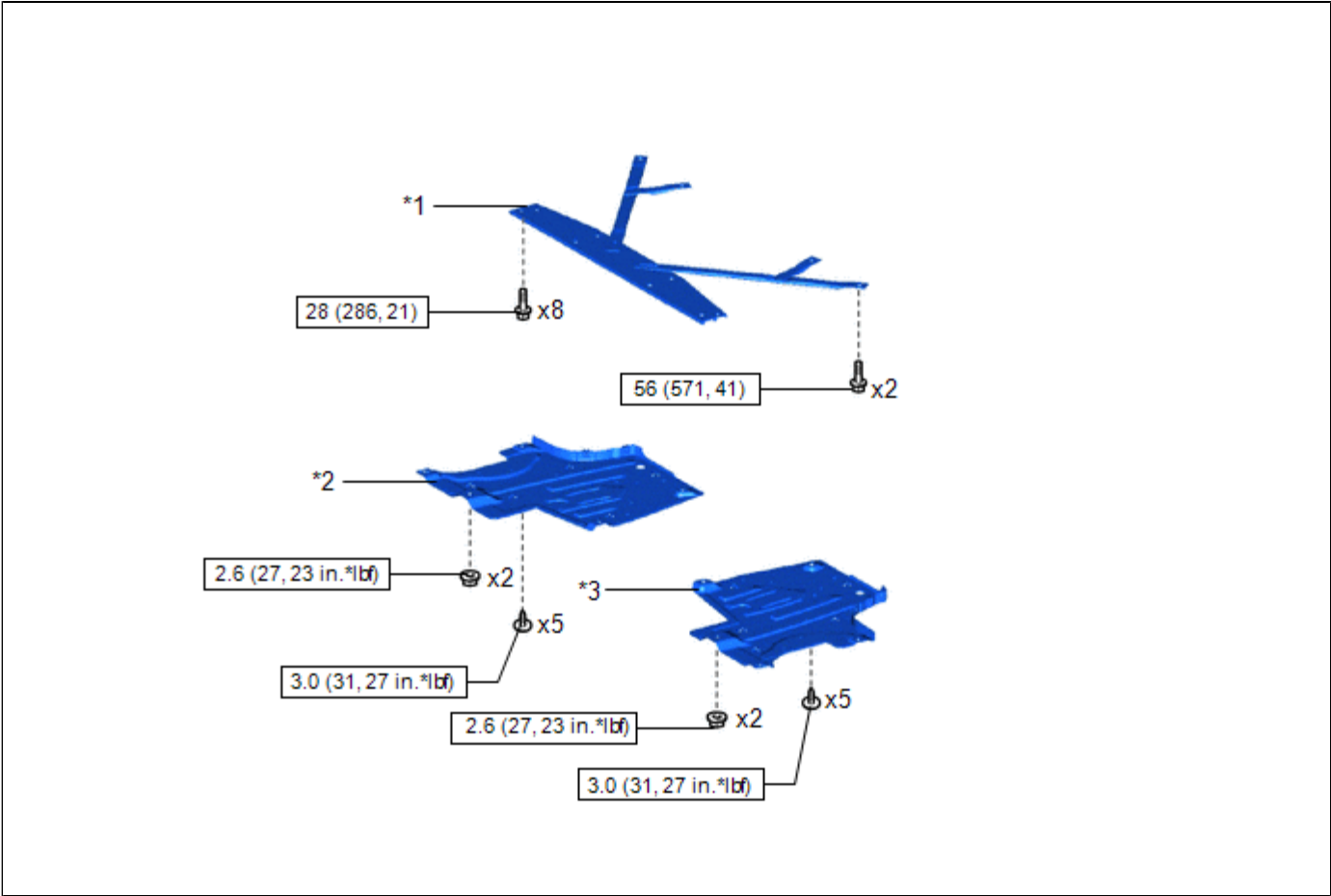
Click here [INFO](#)



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRR
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): CENTER EXHAUST PIPE: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

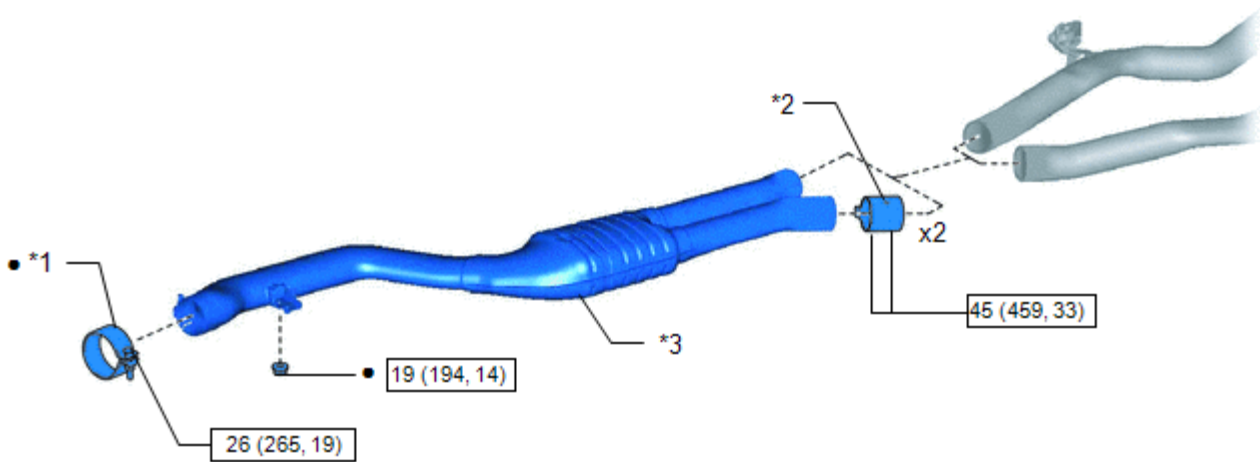
ILLUSTRATION



*1	REAR FLOOR PANEL BRACE	*2	REAR FLOOR SIDE MEMBER COVER LH
*3	REAR FLOOR SIDE MEMBER COVER RH	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	-	-

ILLUSTRATION

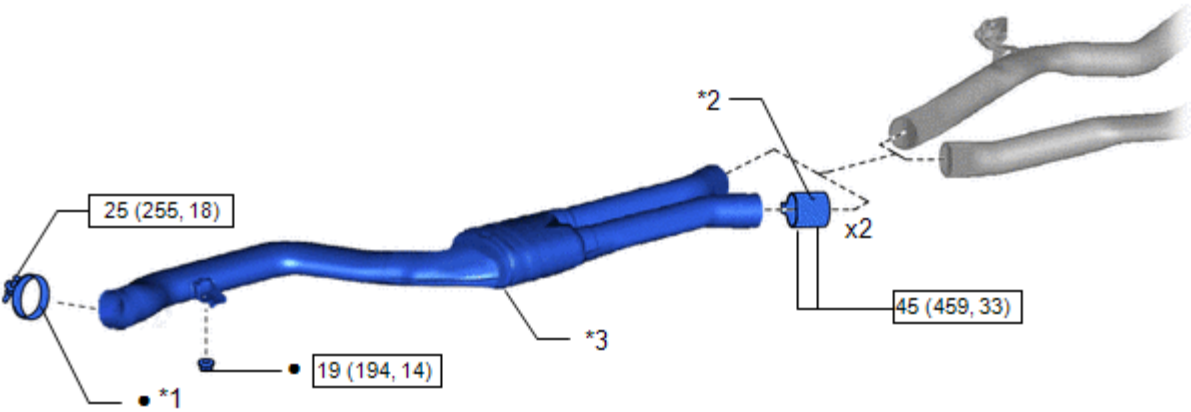
*A



*A	for Ribbon Clamp	-	-
*1	EXHAUST PIPE CLAMP	*2	FRONT NO. 1 EXHAUST PIPE CLAMP (for Rear)
*3	FRONT NO. 2 EXHAUST PIPE ASSEMBLY	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	●	Non-reusable part

ILLUSTRATION

*A



d

*A	for V-band Clamp	-	-
*1	EXHAUST PIPE CLAMP	*2	FRONT NO. 1 EXHAUST PIPE CLAMP (for Rear)
*3	FRONT NO. 2 EXHAUST PIPE ASSEMBLY	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	●	Non-reusable part

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRS
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): CENTER EXHAUST PIPE: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

CAUTION:

- Hot exhaust pipe assembly.

Risk of burning!

- Any work must exclusively be carried out with an exhaust pipe assembly that has cooled down.

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

- Component with heavy weight.

Danger of injury!

- Note component's center of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

- Swarf resulting from sawing or grinding components.

Danger of injury!

- Conduct all work in appropriate personal protective equipment only.
- Wear safety goggles and protective gloves.

PROCEDURE

1. REMOVE REAR FLOOR SIDE MEMBER COVER LH

Click here [INFO](#)

2. REMOVE REAR FLOOR SIDE MEMBER COVER RH

HINT:

Use the same procedure as for the LH side.

3. REMOVE REAR FLOOR PANEL BRACE

Click here [INFO](#)

4. REMOVE FRONT NO. 2 EXHAUST PIPE ASSEMBLY

CAUTION:

- Hot exhaust pipe assembly.

Risk of burning!

- Any work must exclusively be carried out with an exhaust pipe assembly that has cooled down.

- Heavy component.

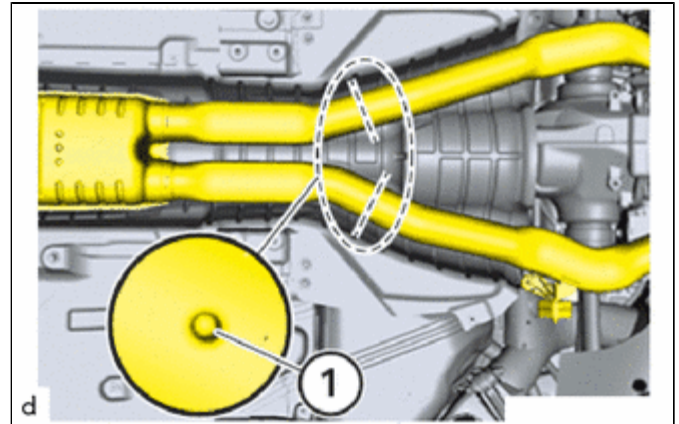
Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

HINT:

- If the separation point is not marked by a punch mark in the pipe, determine the separation point by means of the pipe length on the new component.
- Transfer the separation point to the faulty component and mark.
- Cut through the faulty component at the marked point with a suitable tool.
- Deburr the separation point and remove any swarf. There is a risk of remaining metal chips at the joint between the two pipes and/or swarf in the rear silencer.
- Check the exhaust pipe assembly for tightness after installation.

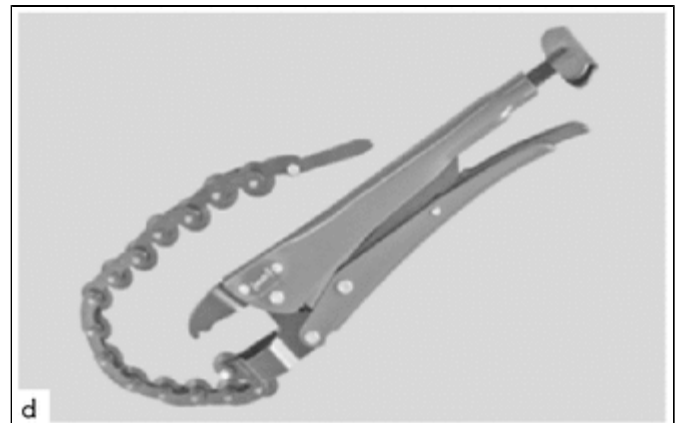
- (a) If the separation point (1) is not marked by a punch mark in the pipe, determine the separation point (1) by means of the pipe length on the new component.



- (b) Transfer the separation point (1) to the component to be replaced and mark.

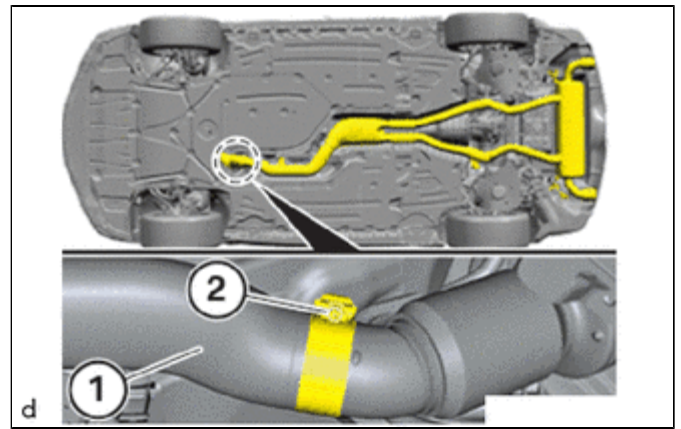
- (c) Detach the exhaust pipe with the special tool 0 496 469 (00 2 220) at the separation point.

SST: 09200-WA600

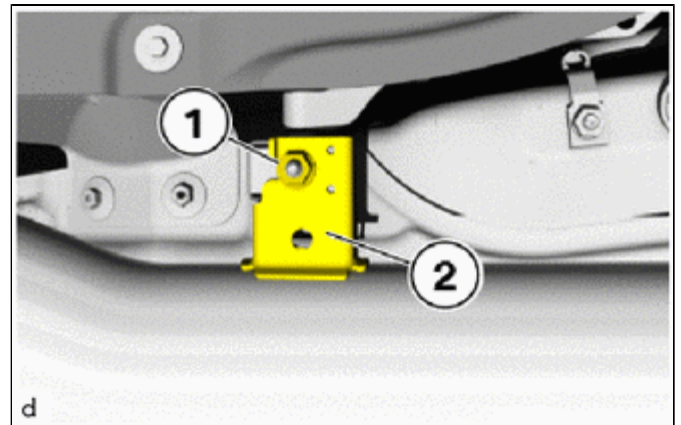


- (d) for Ribbon Clamp:

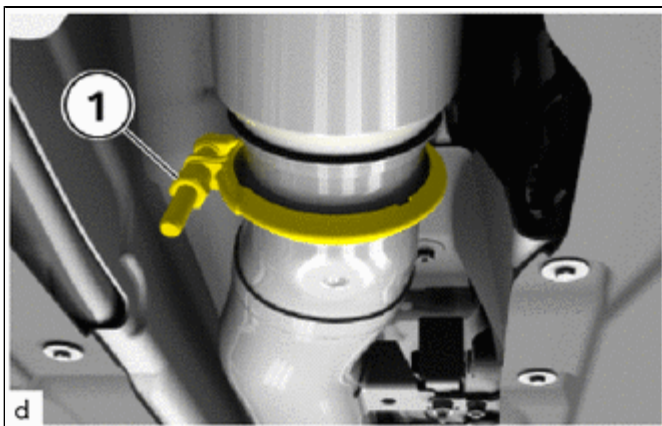
- (1) Unscrew nut (2) on the exhaust pipe assembly (1).



(2) Unscrew the nut (1) on the holder (2).

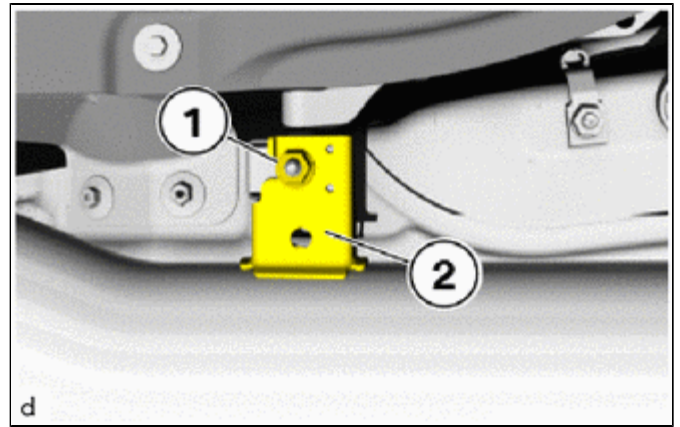


(e) for V-band Clamp:



(1) Using a 16 mm deep socket wrench, loosen exhaust pipe clamp (1).

(2) Unscrew the nut (1) on the holder (2).



(f) Have someone help you remove the catalytic converter with center silencer.

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Title: B58 (INTAKE / EXHAUST): CENTER EXHAUST PIPE: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

PROCEDURE

1. INSTALL FRONT NO. 2 EXHAUST PIPE ASSEMBLY

CAUTION:

- Hot exhaust system.

Risk of burning!

- Any work must exclusively be carried out with an exhaust system that has cooled down.

- Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

HINT:

- If the separation point is not marked by a punch mark in the pipe, determine the separation point by means of the pipe length on the new component.
- Transfer the separation point to the faulty component and mark.
- Cut through the faulty component at the marked point with a suitable tool.
- Deburr the separation point and remove any swarf. There is a risk of remaining metal chips at the joint between the two pipes and/or swarf in the rear silencer.
- Check the exhaust system for tightness after installation.

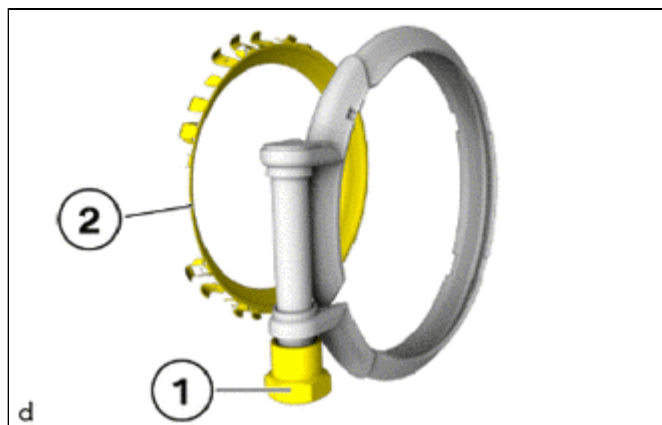
(a) for V-band Clamp:

- (1) Have someone help position the front No. 2 exhaust pipe assembly in the center.
- (2) Check the rubber mounts for damage and replace, if necessary.
- (3) Replace nut.
- (4) Tighten the nut on the holder.

Torque:

19 N·m {194 kgf·cm, 14 ft·lbf}

- (5) Release the nut (1) and remove the sealing ring (2).

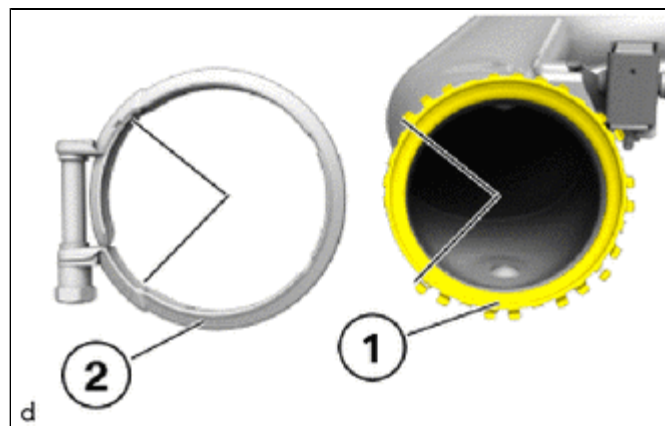


(6) Replace the exhaust pipe clamp.

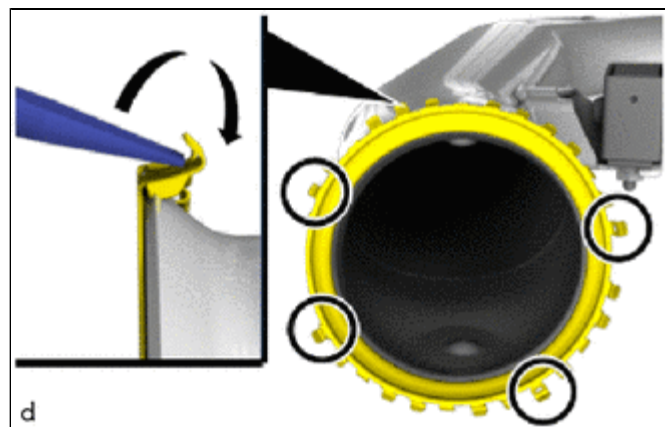
(7) Mount the sealing ring (1) on the exhaust pipe assembly.

NOTICE:

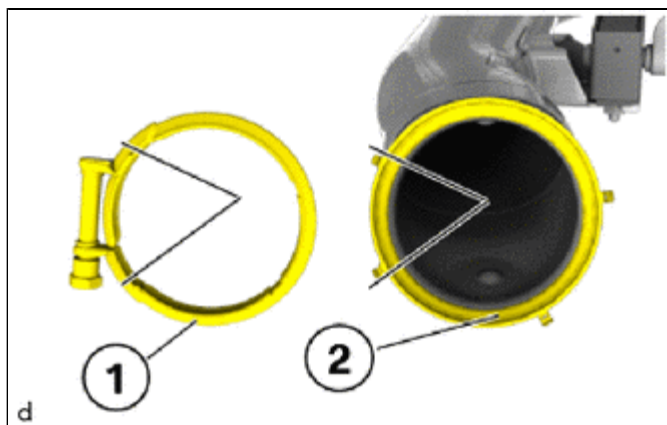
Ensure that the sealing ring (1) is correctly positioned for the exhaust pipe clamp (2).



(8) Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

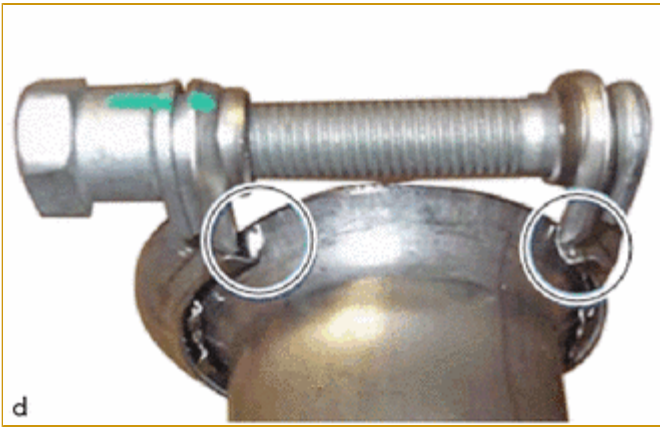


(9) Mount the exhaust pipe clamp (1) on the sealing ring (2).

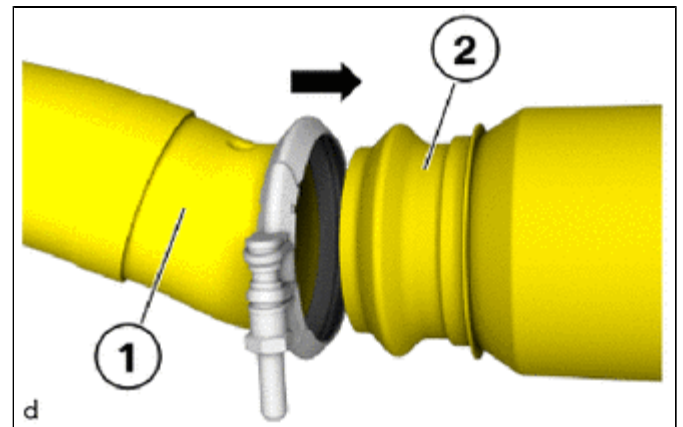


NOTICE:

- Make sure that the exhaust pipe clamp (1) is positioned correctly on the sealing ring (2).
- Make sure that the V-band clamprests against the sheet metal tabs after mounting (marks).



- (10) Connect the front No. 2 exhaust pipe assembly (1) with the exhaust manifold converter sub-assembly (2) and position correctly.



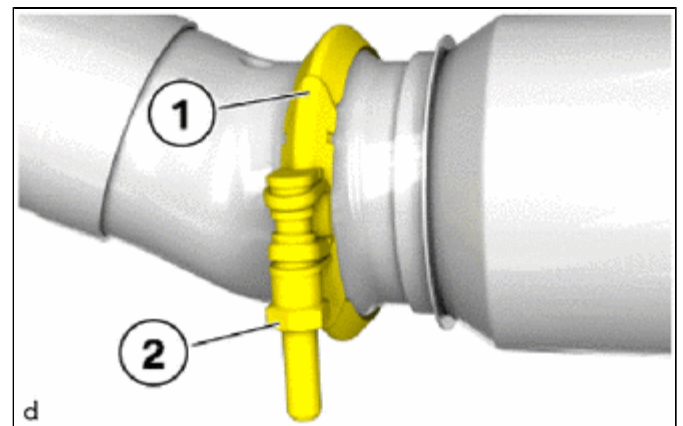
- (11) Using a 16 mm deep socket wrench, tighten down screw (2).

NOTICE:

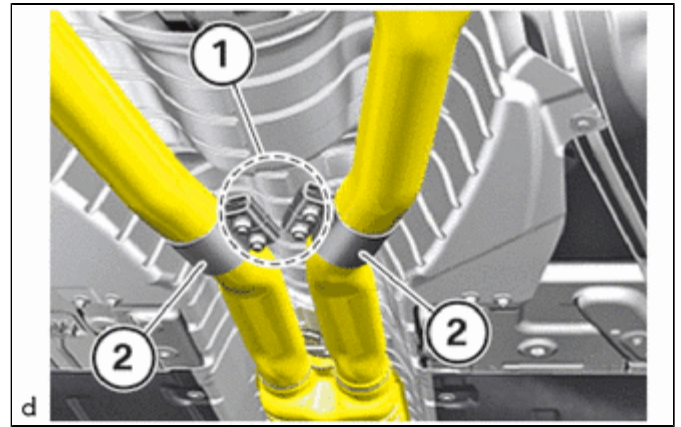
Make sure that exhaust pipe clamp (1) is fitted correctly.

Torque:

25 N·m {255 kgf·cm, 18 ft·lbf}



- (12) Connect the front No. 2 exhaust pipe assembly to the rear silencer with the front No. 1 exhaust pipe clamp (for Rear) (2).

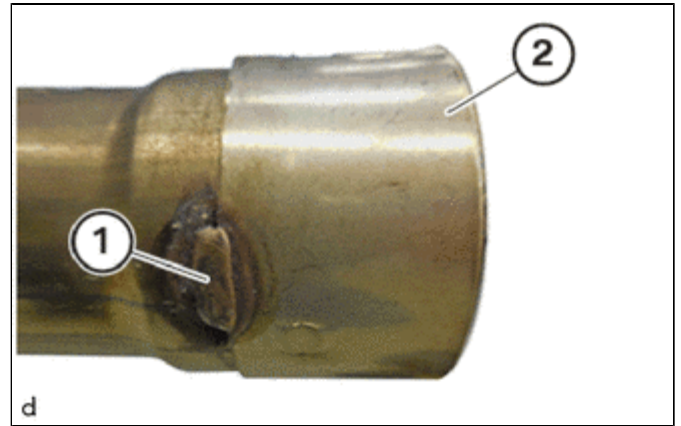


(13) Center the front No. 1 exhaust pipe clamp (for Rear) (2) and tighten the nuts (1).

Torque:

45 N·m {459 kgf·cm, 33 ft·lbf}

(b) for Ribbon Clamp:



(1) Open the weld seam (1) with a hacksaw.

(2) Remove the exhaust pipe clamp (2).

(3) Replace the exhaust pipe clamp.

(4) Have someone help insert the front No. 2 exhaust pipe assembly and position it at the front.

(5) Tighten the exhaust pipe clamp.

Torque:

26 N·m {265 kgf·cm, 19 ft·lbf}

(6) Have someone help position the front No. 2 exhaust pipe assembly in the center.

(7) Check the rubber mounts for damage and replace, if necessary.

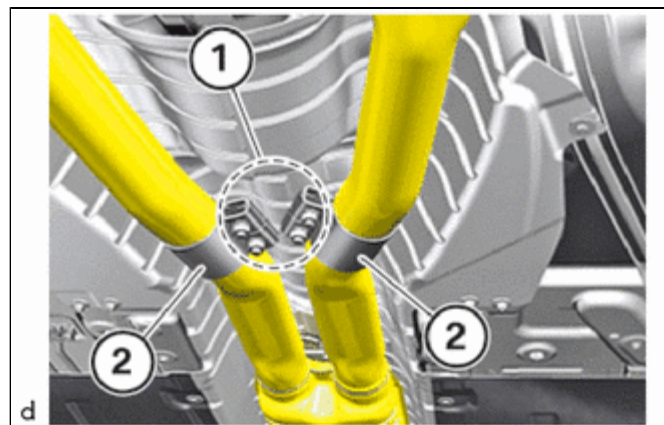
(8) Replace nut.

(9) Tighten the nut on the holder.

Torque:

19 N·m {194 kgf·cm, 14 ft·lbf}

(10) Connect the front No. 2 exhaust pipe assembly to the rear silencer with the front No. 1 exhaust pipe clamp (for Rear) (2).



(11) Engage the front No. 1 exhaust pipe clamp (for Rear) (2) and tighten the nuts (1).

Torque:

45 N·m {459 kgf·cm, 33 ft·lbf}

2. INSTALL REAR FLOOR PANEL BRACE

Click here [INFO](#)

3. INSTALL REAR FLOOR SIDE MEMBER COVER LH

Click here [INFO](#)

4. INSTALL REAR FLOOR SIDE MEMBER COVER RH

HINT:

Use the same procedure as for the LH side.

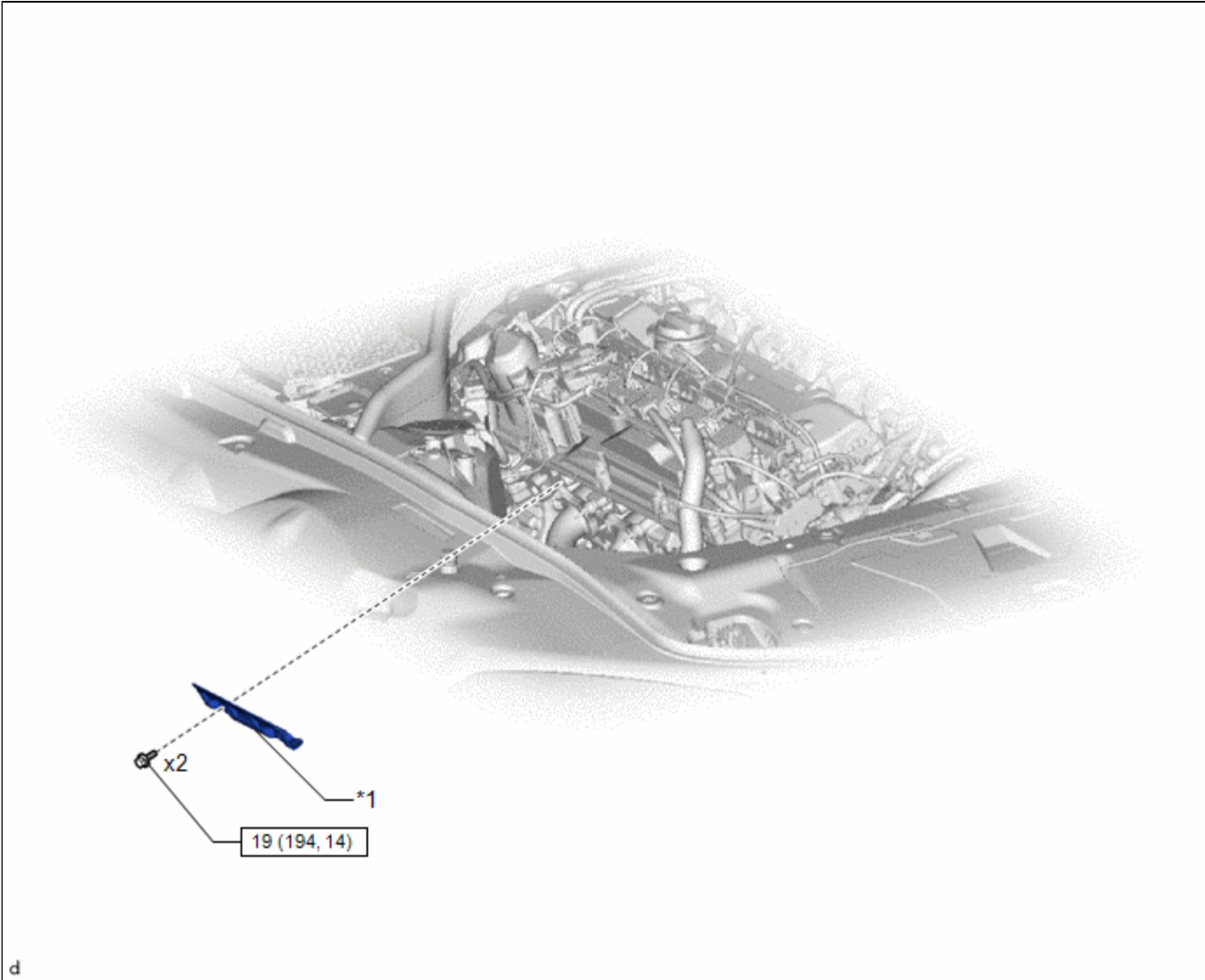
5. INSPECT FOR EXHAUST GAS LEAK

Click here [INFO](#)

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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): EXHAUST MANIFOLD HEAT INSULATOR: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	NO. 1 EXHAUST MANIFOLD HEAT INSULATOR	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	-	-

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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): EXHAUST MANIFOLD HEAT INSULATOR: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

PROCEDURE

1. REMOVE AIR CLEANER ASSEMBLY

Click here [INFO](#)

2. REMOVE NO. 1 EXHAUST MANIFOLD HEAT INSULATOR

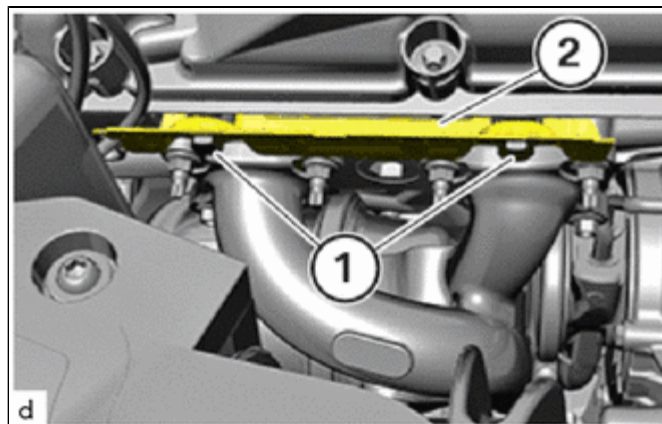
CAUTION:

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

(a) Loosen the bolts (1).



(b) Remove the No. 1 exhaust manifold heat Insulator (2).

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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): EXHAUST MANIFOLD HEAT INSULATOR: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

PROCEDURE

1. INSTALL NO. 1 EXHAUST MANIFOLD HEAT INSULATOR

- (a) Position the No. 1 exhaust manifold heat Insulator.
- (b) Tighten the bolts.

Torque:
19 N·m {194 kgf·cm, 14 ft·lbf}

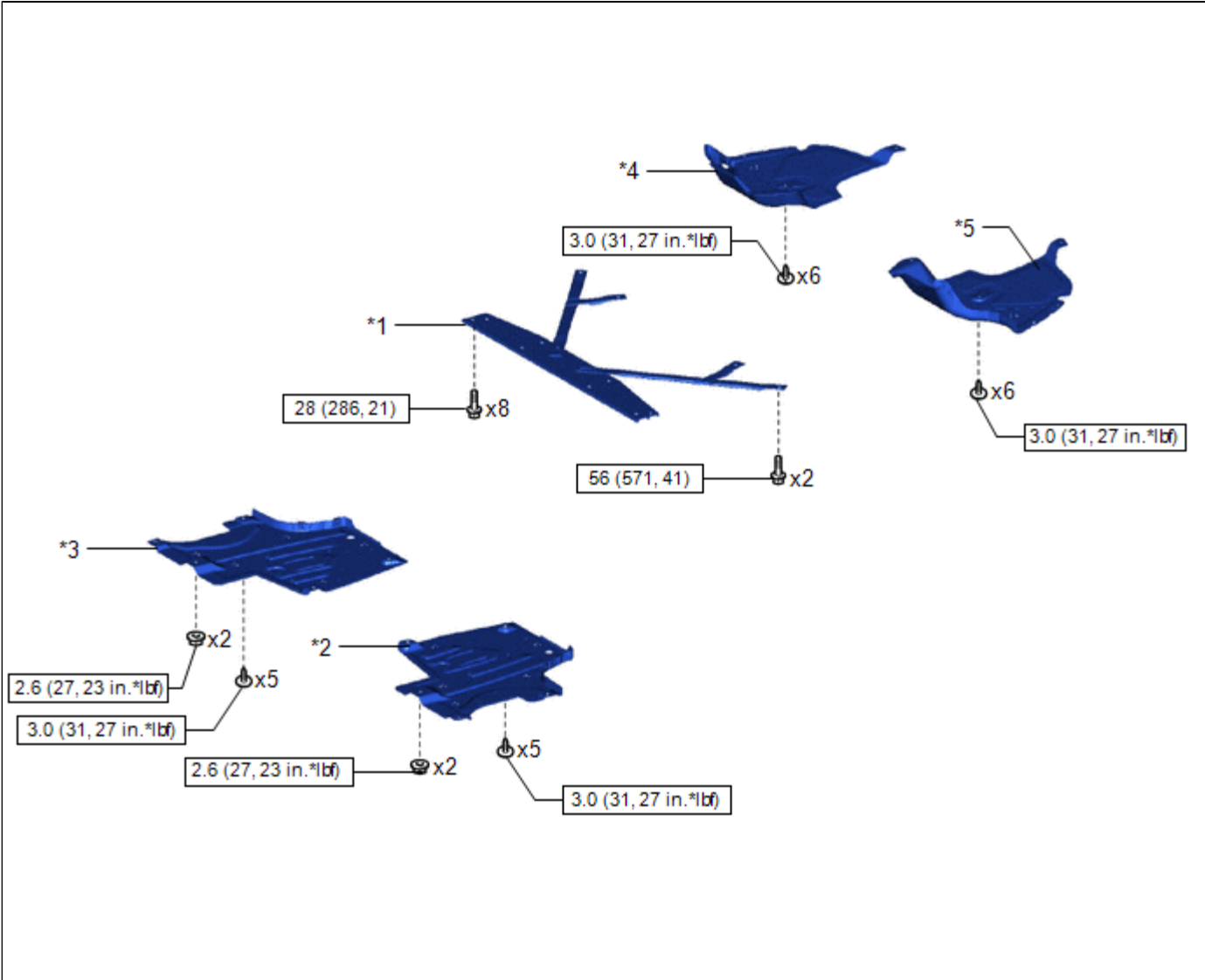
2. INSTALL AIR CLEANER ASSEMBLY

Click here [INFO](#)

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCQU
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): EXHAUST PIPE: COMPONENTS; 2020 MY Supra [03/2019 -]		

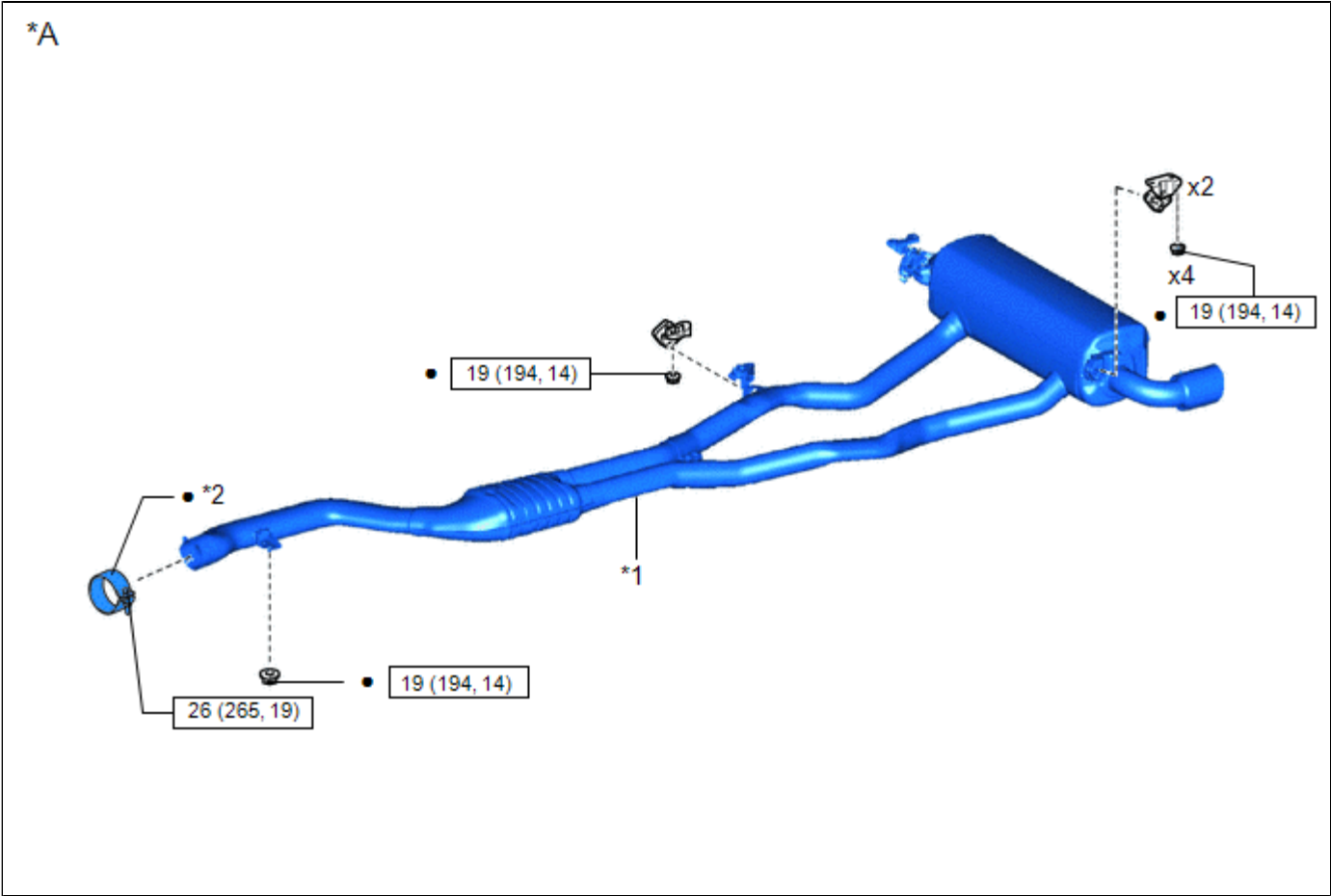
COMPONENTS

ILLUSTRATION



*1	REAR FLOOR PANEL BRACE	*2	REAR FLOOR SIDE MEMBER COVER LH
*3	REAR FLOOR SIDE MEMBER COVER RH	*4	REAR UNDERBODY PROTECTOR RH
*5	REAR UNDERBODY PROTECTOR LH	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	-	-

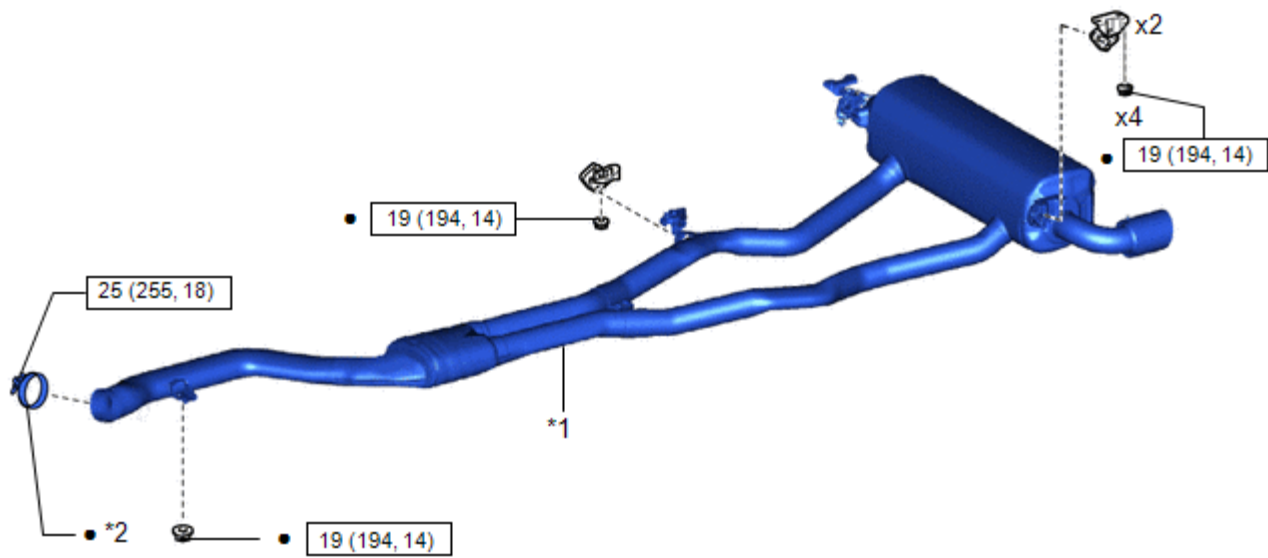
ILLUSTRATION



*A	for Ribbon Clamp	-	-
*1	EXHAUST PIPE ASSEMBLY	*2	EXHAUST PIPE CLAMP
	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part

ILLUSTRATION

*A



d

*A	for V-band Clamp	-	-
*1	EXHAUST PIPE ASSEMBLY	*2	EXHAUST PIPE CLAMP
	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part

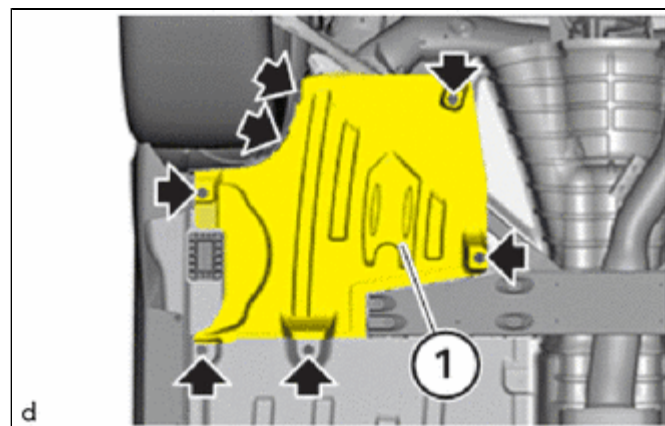
Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCQV
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): EXHAUST PIPE: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

PROCEDURE

1. REMOVE REAR FLOOR SIDE MEMBER COVER LH

(a) Remove screws and nuts (arrows).



(b) Guide the rear floor side member cover LH (1) out.

2. REMOVE REAR FLOOR SIDE MEMBER COVER RH

HINT:

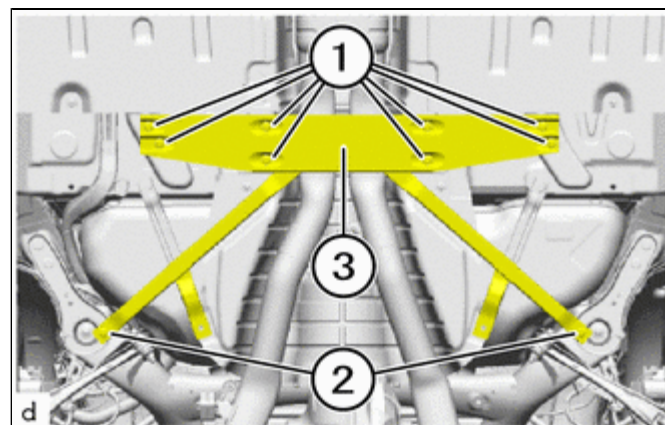
Use the same procedure as for the rear floor side member cover LH side.

3. REMOVE REAR FLOOR PANEL BRACE

CAUTION:

Driving without the rear floor panel brace or rear lower suspension member stopper is not permitted.

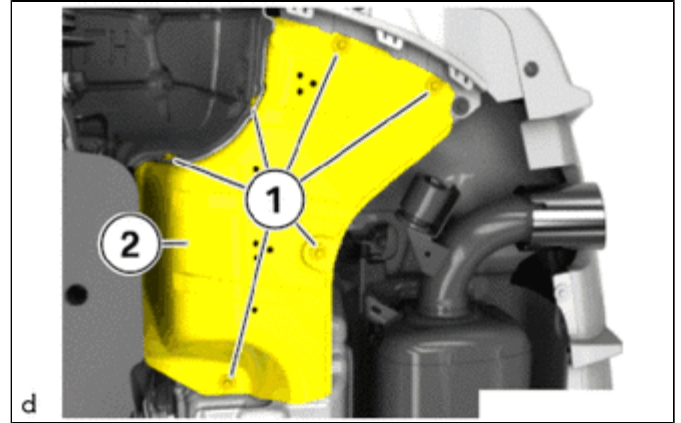
(a) Loosen the bolts (1).



(b) Unscrew the E14 bolts (2) on the rear lower suspension member stopper and remove the rear floor panel brace (3).

4. REMOVE REAR UNDERBODY PROTECTOR LH

(a) Loosen screws (1).



(b) Remove the rear underbody protector LH (2).

5. REMOVE REAR UNDERBODY PROTECTOR RH

HINT:

Use the same procedure as for the LH side.

6. REMOVE EXHAUST PIPE ASSEMBLY

CAUTION:

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

- Component with heavy weight.

Danger of injury!

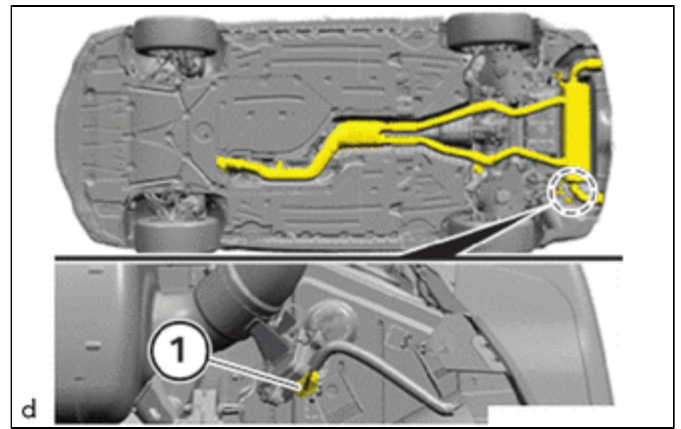
- Note component's center of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

- Heavy component.

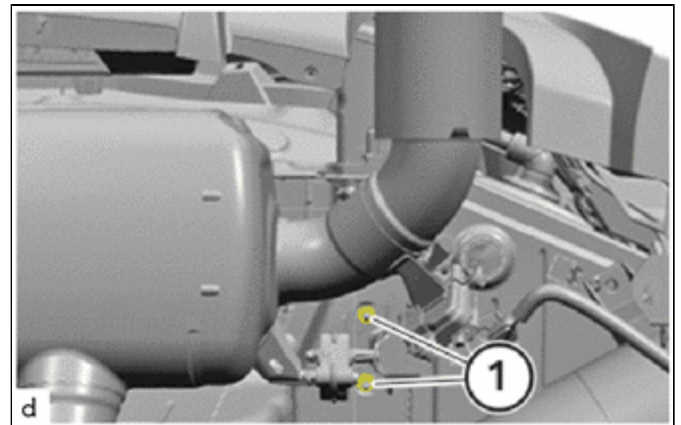
Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

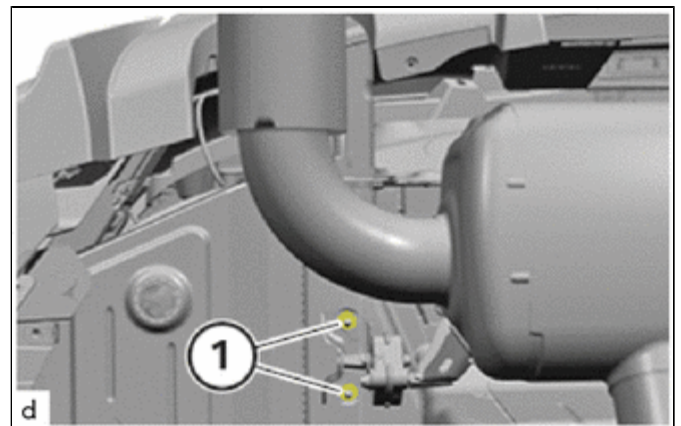
(a) Unlock plug connection (1) and disconnect.



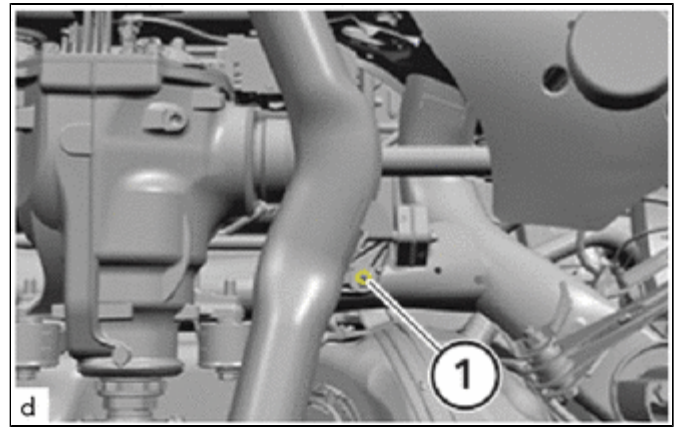
(b) Loosen nuts (1).



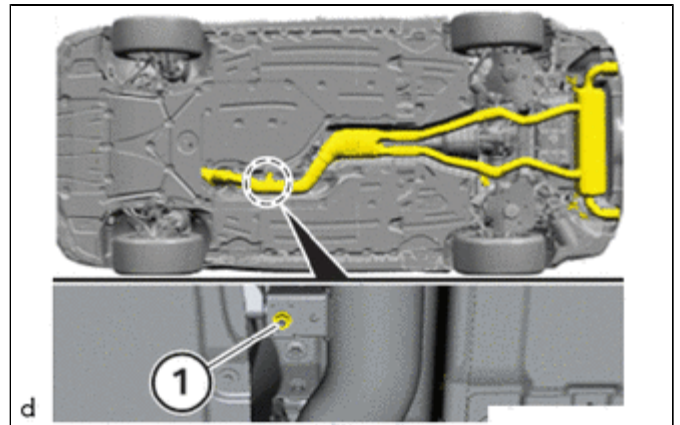
(c) Loosen nuts (1).



(d) Unfasten nut (1).

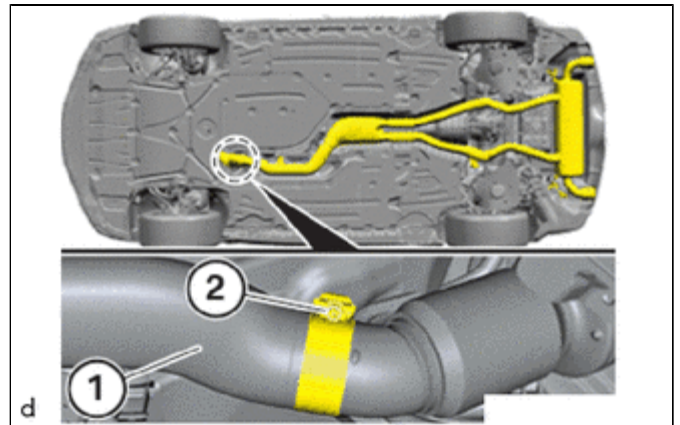


(e) Unfasten nut (1).



(f) for Ribbon Clamp:

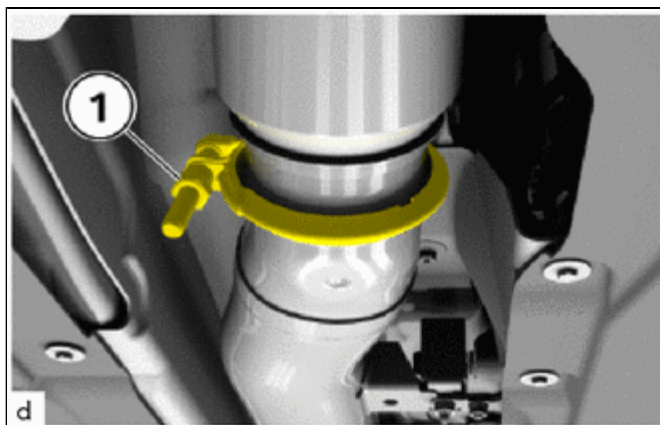
(1) Unscrew nut (2) on the exhaust pipe assembly (1).



(2) Lower the exhaust pipe assembly (1) with an auxiliary person, guide out and remove.

(g) for V-band Clamp:

- (1) Using a 16 mm deep socket wrench, loosen exhaust pipe clamp (1).
- (2) Lower the exhaust pipe assembly with an auxiliary person, guide out and remove.



TOYOTA

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCQW
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): EXHAUST PIPE: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

PROCEDURE

1. INSTALL EXHAUST PIPE ASSEMBLY

CAUTION:

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

- Component with heavy weight.

Danger of injury!

- Note component's center of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

- Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

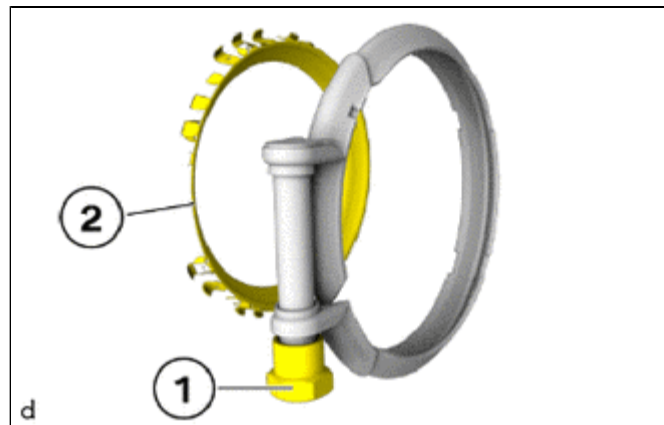
(a) for V-band Clamp:

- (1) Guide in the exhaust pipe assembly with the assistance of a second person and connect it to the catalytic converter.
- (2) Replace nut.
- (3) Tighten nut.

Torque:

19 N·m {194 kgf·cm, 14 ft·lbf}

- (4) Unscrew the nut (1) and remove the sealing ring (2).

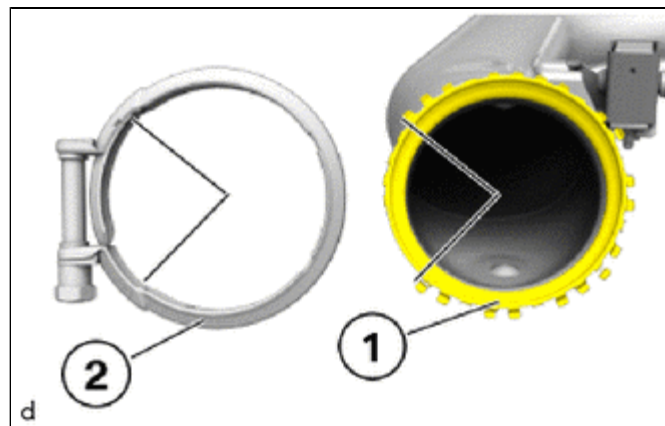


- (5) Replace the exhaust pipe clamp.

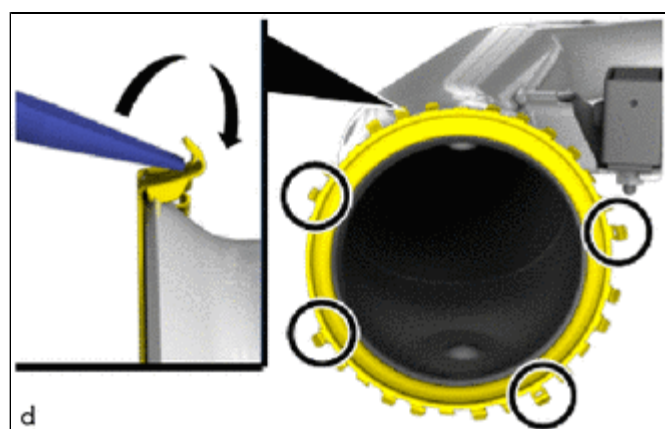
(6) Mount the sealing ring (1) on the exhaust pipe assembly.

NOTICE:

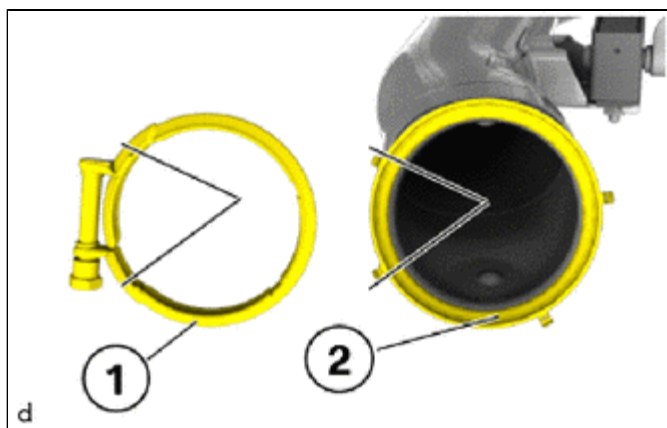
Make sure that the sealing ring (1) is correctly positioned for the exhaust pipe clamp (2).



(7) Bend all sheet metal tabs over with a suitable tool, except those in the marked areas.

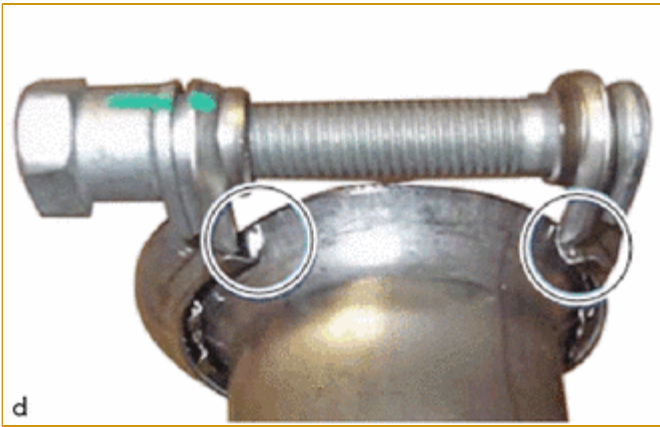


(8) Mount the exhaust pipe clamp (1) on the sealing ring (2).

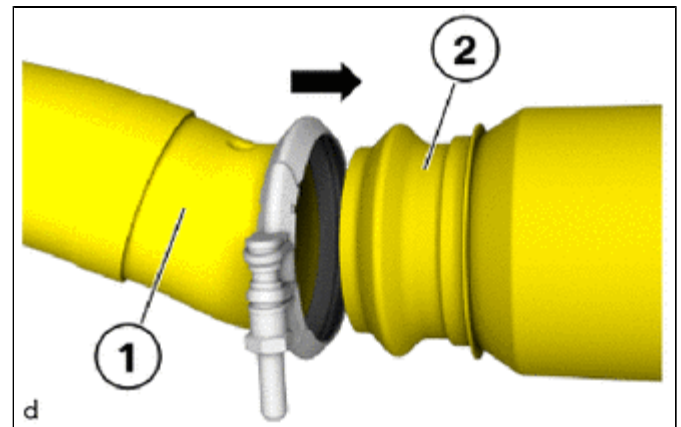


NOTICE:

- Make sure that the exhaust pipe clamp (1) is positioned correctly on the sealing ring (2).
- Make sure that the exhaust pipe clamp (1) rests against the sheet metal tabs after mounting (marks).



- (9) Connect the exhaust pipe assembly (1) with the exhaust manifold converter sub-assembly (2) and position correctly.



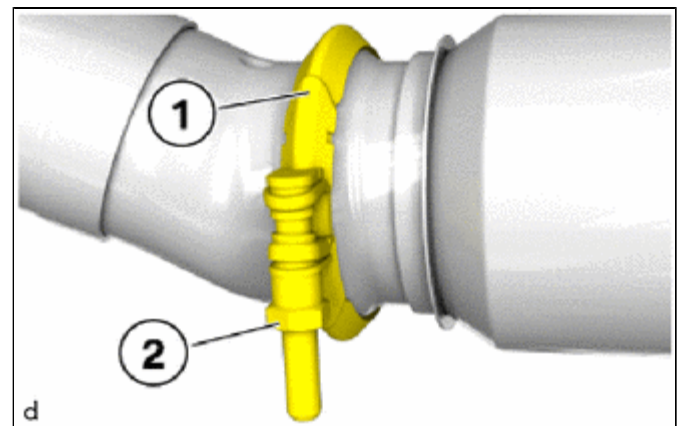
- (10) Using a 16 mm deep socket wrench, tighten down screw (2).

NOTICE:

Make sure that exhaust pipe clamp(1) is fitted correctly.

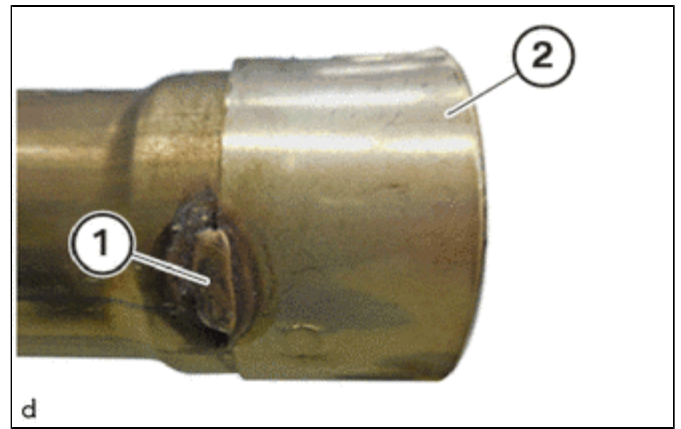
Torque:

25 N·m {255 kgf·cm, 18 ft·lbf}



(b) for Ribbon Clamp:

- (1) Open the weld seam (1) with a hacksaw.



(2) Remove the exhaust pipe clamp (2).

(3) Replace the exhaust pipe clamp.

(4) Guide in the exhaust pipe assembly with the assistance of a second person and connect it to the exhaust manifold converter sub-assembly.

(5) Tighten the exhaust pipe clamp.

Torque:

26 N·m {265 kgf·cm, 19 ft·lbf}

(6) Replace nut.

(7) Tighten nut.

Torque:

19 N·m {194 kgf·cm, 14 ft·lbf}

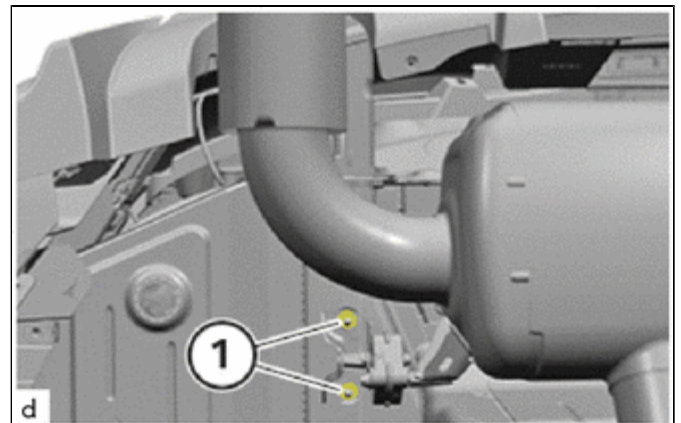
(c) Replace nut.

(d) Tighten nut.

Torque:

19 N·m {194 kgf·cm, 14 ft·lbf}

(e) Replace nuts.

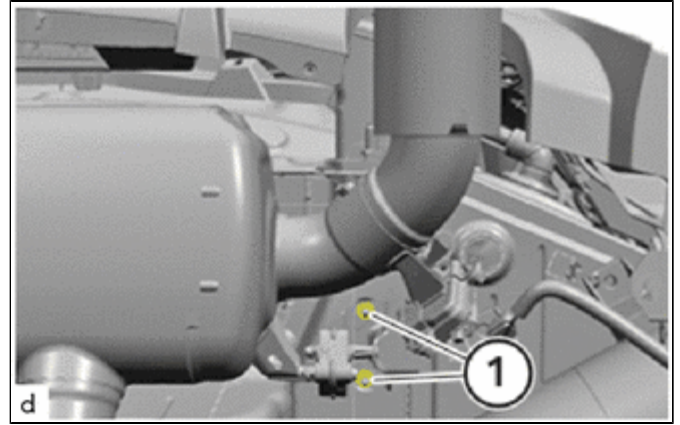


(f) Tighten nuts.

Torque:

19 N·m {194 kgf·cm, 14 ft·lbf}

(g) Replace nuts.



(h) Tighten nuts.

Torque:

19 N·m {194 kgf·cm, 14 ft·lbf}

(i) Connect connectors and lock.

2. INSTALL REAR UNDERBODY PROTECTOR LH

(a) Install the rear underbody protector LH.

(b) Tighten the screws.

Torque:

3.0 N·m {31 kgf·cm, 27 in·lbf}

3. INSTALL REAR UNDERBODY PROTECTOR RH

HINT:

Use the same procedure as for the LH side.

4. INSTALL REAR FLOOR PANEL BRACE

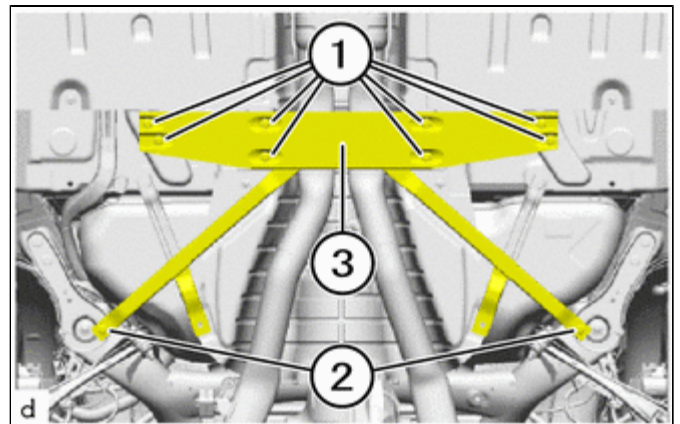
CAUTION:

Driving without the rear floor panel brace or rear lower suspension member stopper is not permitted.

(a) Position the rear floor panel brace (3) and tighten the E14 bolts (2) on the rear lower suspension member stopper.

Torque:

56 N·m {571 kgf·cm, 41 ft·lbf}



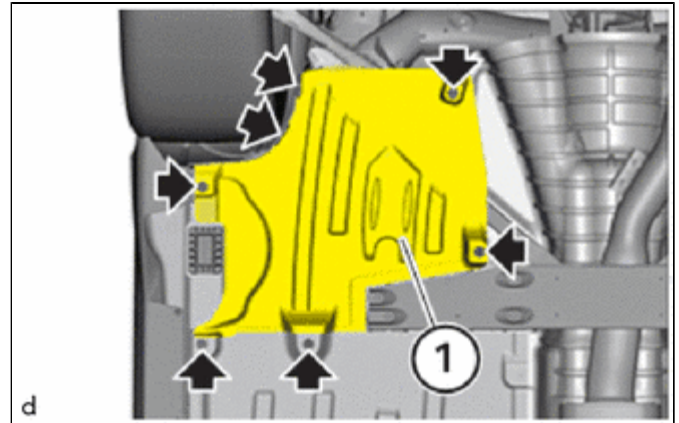
(b) Tighten the bolts (1).

Torque:

28 N·m {286 kgf·cm, 21 ft·lbf}

5. INSTALL REAR FLOOR SIDE MEMBER COVER LH

(a) Insert the rear floor side member cover LH.



(b) Tighten the nuts and screws.

Torque:

Screw :

3.0 N·m {31 kgf·cm, 27 in·lbf}

Nut :

2.6 N·m {27 kgf·cm, 23 in·lbf}

6. INSTALL REAR FLOOR SIDE MEMBER COVER RH

HINT:

Use the same procedure as for the rear floor side member cover LH side.

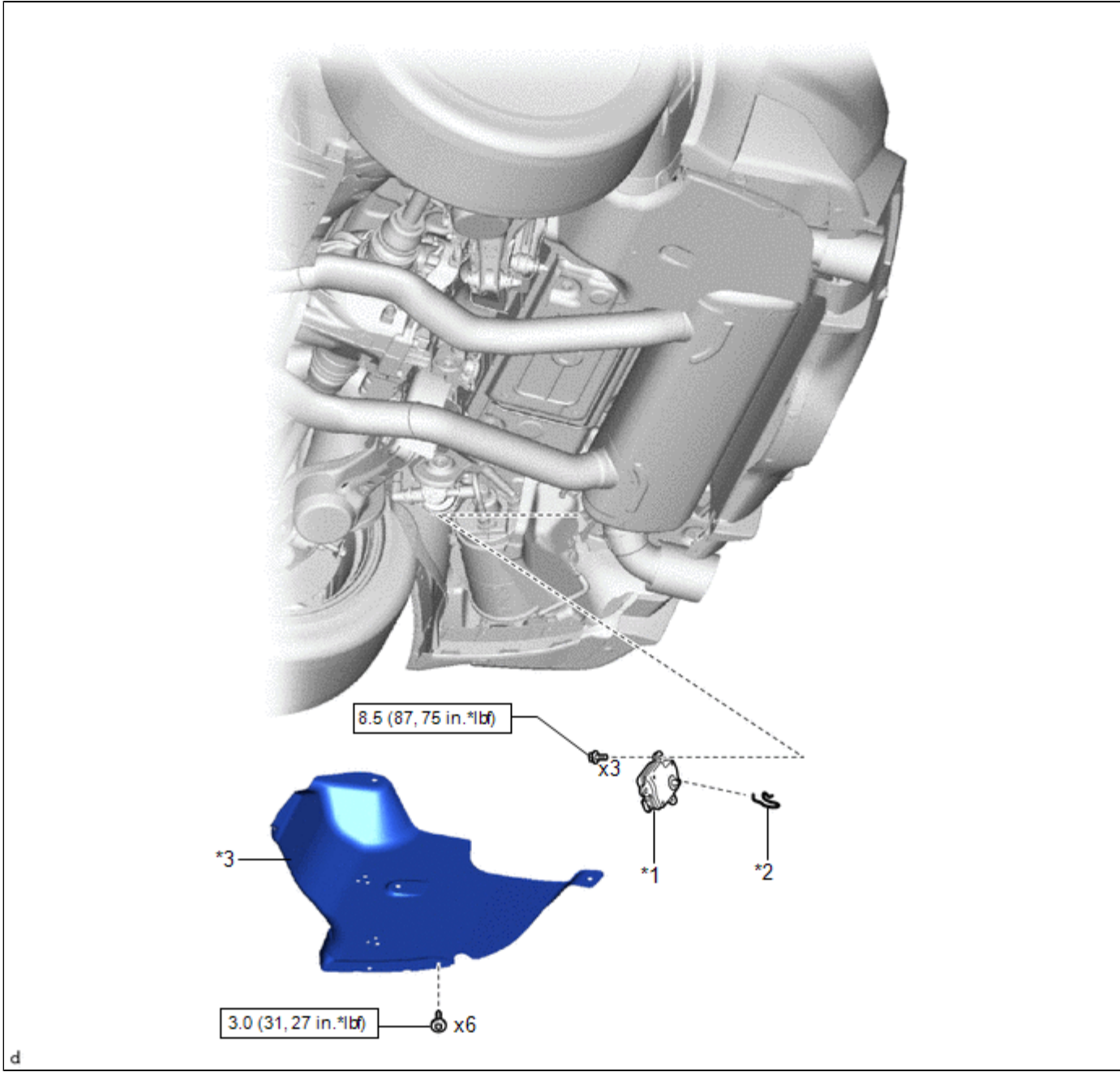
7. INSPECT FOR EXHAUST GAS LEAK

(a) If gas is leaking, tighten the areas necessary to stop the leak. Replace damaged parts as necessary.

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCS3
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): EXHAUST PIPE GAS CONTROL ACTUATOR SUB-ASSEMBLY: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	ACTUATOR WITH BRACKET ASSEMBLY	*2	WIRE SPRING CLIP
*3	REAR UNDERBODY PROTECTOR RH	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	-	-

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCS4
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): EXHAUST PIPE GAS CONTROL ACTUATOR SUB-ASSEMBLY: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

PROCEDURE

1. REMOVE REAR UNDERBODY PROTECTOR RH

Click here [INFO](#)

2. REMOVE ACTUATOR WITH BRACKET ASSEMBLY

CAUTION:

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

NOTICE:

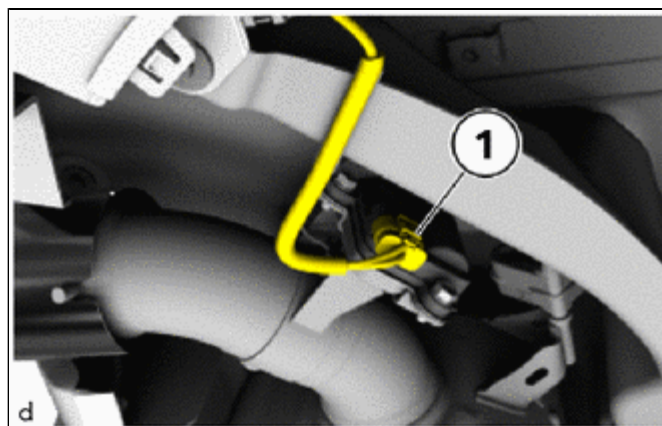
- Electrostatic discharge.

Damage to or destruction of electrical components.

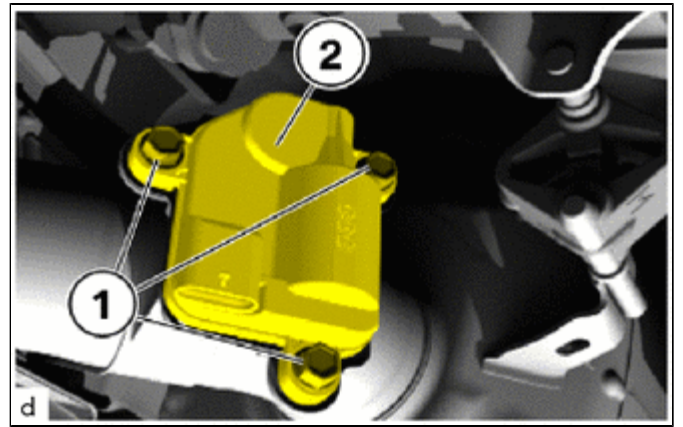
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- For additional information see:

Click here [INFO](#)

(a) Unlock plug connection (1) and disconnect.



(b) Loosen the bolts (1).



(c) Remove the actuator with bracket assembly (2).



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCS5
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): EXHAUST PIPE GAS CONTROL ACTUATOR SUB-ASSEMBLY: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

PROCEDURE

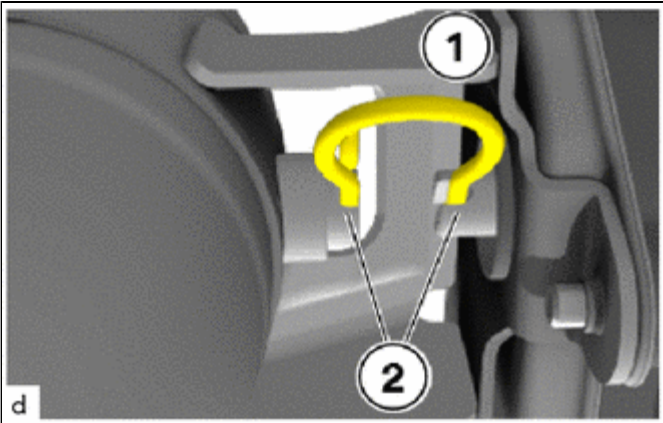
1. INSTALL ACTUATOR WITH BRACKET ASSEMBLY

- (a) Install the actuator with bracket assembly.
- (b) Tighten the bolts.

Torque:
 8.5 N·m {87 kgf·cm, 75 in·lbf}

- (c) Connect connectors and lock.

- (d) Make sure that the wire spring clip (1) is correctly positioned in the guides (2).



2. INSTALL REAR UNDERBODY PROTECTOR RH

Click here [INFO](#)

3. INSPECT FOR EXHAUST GAS LEAK

Click here [INFO](#)

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCS6
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): EXHAUST SYSTEM: INSPECTION; 2020 MY Supra [03/2019 -]		

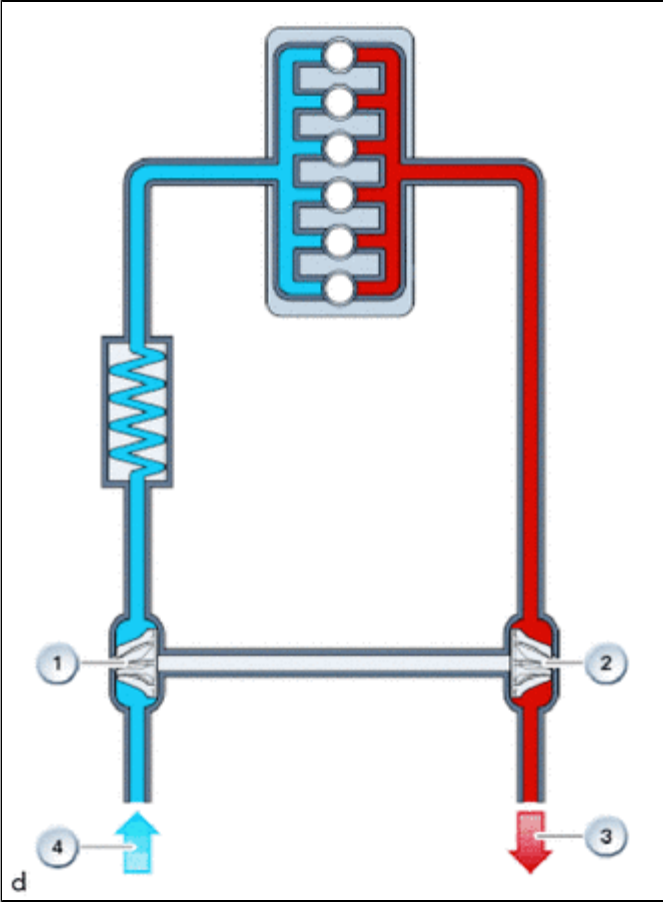
INSPECTION

PROCEDURE

1. TROUBLESHOOTING ON THE TURBOCHARGER SUB-ASSEMBLY

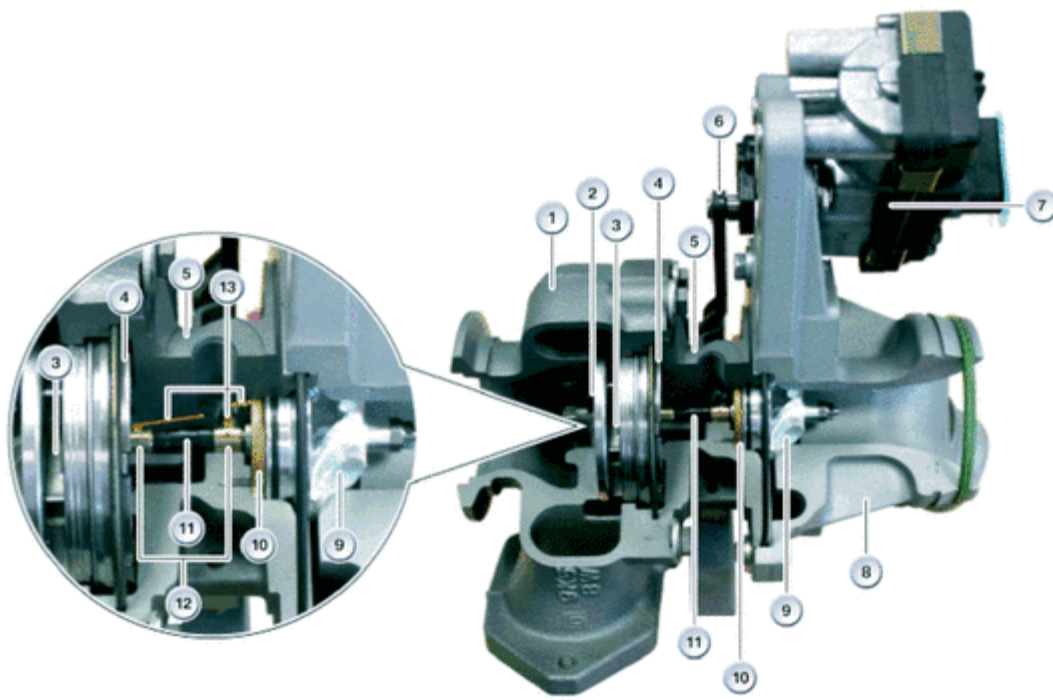
- (a) For charged engines, turbocharger sub-assemblies are of significant importance to the power development. The turbochargers deliver the charging pressure that is required by the engines. Depending on the system (one-phase or multi-phase), one or more turbochargers are installed. However, the function of the turbocharger sub-assembly greatly depends on the proper function of other components in the periphery.
- (b) This document describes the sources of fault on the actual turbocharger sub-assembly as well as the factors influencing and causing faults in the periphery.

(c) The following figures show examples of the schematic structure of one-stage or two-stage systems with the required actuators.



*1	Compressor
*2	Turbine
*3	Exhaust gas
*4	Fresh air

(d) Sectional view of turbocharger sub-assembly



d

*1	Turbine housing	*2	Turbine wheel
*3	Variable blades	*4	Adjusting ring
*5	Oil inlet journal	*6	Adjusting lever
*7	Turbocharger actuator and link assembly	*8	Compressor housing
*9	Compressor wheel	*10	Thrust bearing
*11	Shaft	*12	Radial bearing
*13	Oil supply	-	-

2. GENERAL NOTES ON TROUBLESHOOTING

(a) The following notes must be observed in order to find the root cause of faults when problems are reported, and to prevent the unauthorized, i.e. inappropriate, replacement of the turbocharger sub-assembly:

(1) Tracking down and verifying the complaint

If possible, any problem reported ('complaint') should be tracked down and verified on the vehicle. The parameters or marginal conditions prevailing at the time the problem was reported need to be noted down.

(2) Diagnosis

As a first procedural step, diagnosis must be performed using the diagnosis system.

Faults on sensors and actuators may be responsible for 'complaints', i.e. reported problems, which may also be associated with the turbocharger sub-assembly in some way. For this reason, faults on sensors and actuators must first be remedied if these are stored in the fault memory.

In addition, the engine ventilation is important for the oil supply to the turbocharger sub-assembly. If the pressure in the cylinder block sub-assembly is too high, the oil supply to the turbocharger sub-assembly is endangered, and oil leakage may occur at the turbocharger sub-assembly.

The stored charging pressure control faults must then be investigated or troubleshooting must take place on the turbocharger sub-assembly.

(3) Repair history

If possible, check to find out whether repairs have already been made on or near the turbocharger sub-assembly following similar reported problems.

(4) With any repeated complaint with different fault patterns, the problem could have arisen during the last repair.

Problems could have arisen in conjunction with installation, connections or the ingress of foreign bodies.

(5) In the event of identical complaints, it is highly probable that the actual cause of the fault has not been remedied.

3. NOTES ON THE INSTALLATION OF A TURBOCHARGER SUB-ASSEMBLY

(a) Before installation:

- (1) Prior to the installation of a turbocharger sub-assembly, fill engine oil in the oil inlet in the turbocharger sub-assembly. At the same time, rotate the shaft on the turbocharger sub-assembly.
- (2) Check the oil supply to the turbocharger sub-assembly and the oil return from the turbocharger sub-assembly for foreign bodies and oil sludging, clean if necessary.
- (3) Ensure that no dirt and no foreign bodies enter the openings.
- (4) Ensure that no dirt and no foreign bodies enter the openings.

Note: Do not leave any oil residue or foreign bodies in the charge air duct.

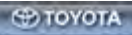
(5) Replace gaskets, and ensure that the gaskets are installed correctly.

(6) Observe tightening torques.

(b) After installation:

- (1) Start up engine and run it at idle speed for at least one minute to ensure that the turbocharger sub-assembly is receiving a proper oil supply. When the engine is cold and the ambient temperature is low, let the engine idle for approximately 2 minutes.
- (2) Check tightness of oil lines.
- (3) Stop engine, check oil level.

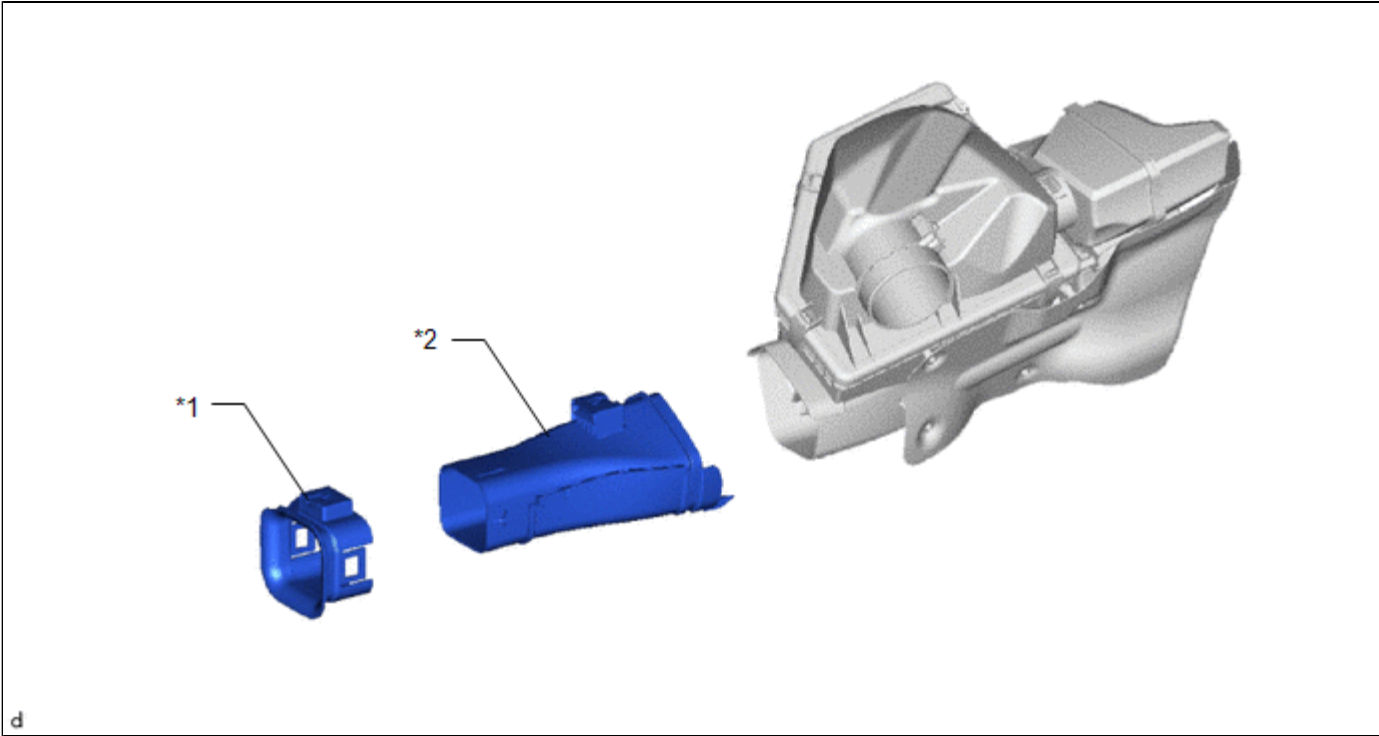
(c) We can assume no liability for printing errors or inaccuracies in this document and reserve the right to introduce technical modifications at any time.



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCR0
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INLET AIR DUCT: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	INLET NO. 1 AIR DUCT	*2	INLET NO. 2 AIR DUCT
----	----------------------	----	----------------------

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCR1
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INLET AIR DUCT: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

PROCEDURE

1. REMOVE AIR CLEANER ASSEMBLY

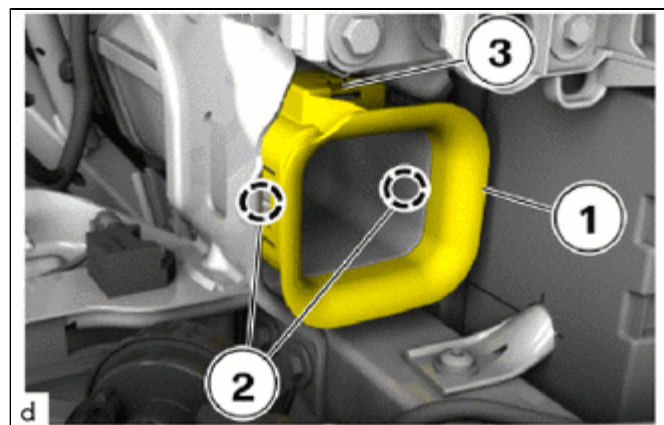
Click here [INFO](#)

2. REMOVE HEADLIGHT ASSEMBLY RH

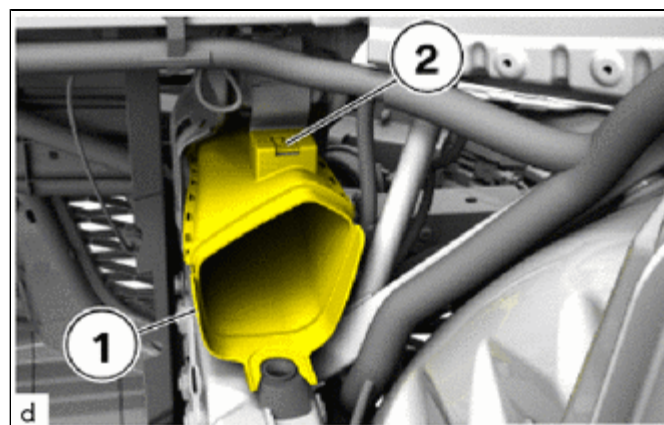
Click here [INFO](#)

3. REMOVE INLET NO. 2 AIR DUCT

- (a) Detach the front section of the inlet No. 1 air duct (1) at clips (2) and work out of the guides (3).



- (b) Work the rear section of the inlet No. 2 air duct (1) from the guide (2) and remove.



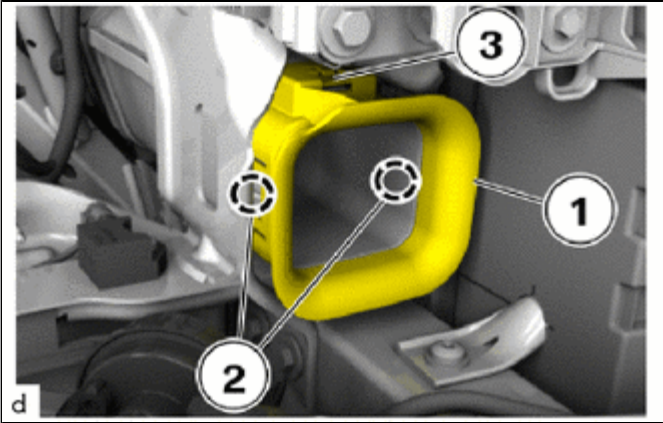
Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCR2
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INLET AIR DUCT: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

PROCEDURE

1. INSTALL INLET NO. 2 AIR DUCT

(a) Pull the rear section of the inlet No. 2 air duct into the guide.



(b) Pull the front section of the inlet No. 1 air duct (1) into the guide (3) and clip into the clips (2).

2. INSTALL HEADLIGHT ASSEMBLY RH

Click here [INFO](#)

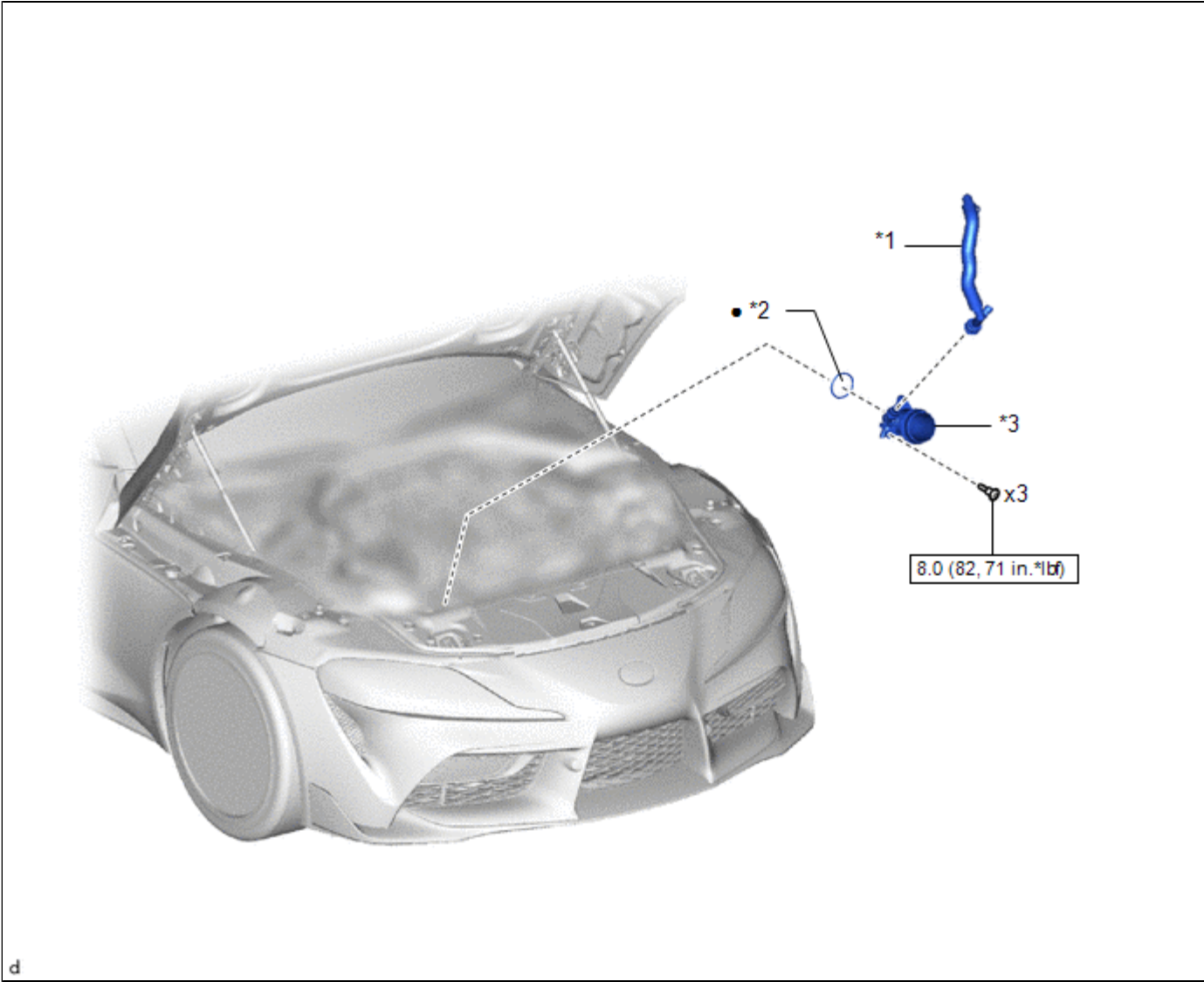
3. INSTALL AIR CLEANER ASSEMBLY

Click here [INFO](#)

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCR9
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INLET COMPRESSOR ELBOW: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	VENTILATION HOSE	*2	COMPRESSOR INLET GASKET
*3	INLET COMPRESSOR ELBOW	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRA
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INLET COMPRESSOR ELBOW: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

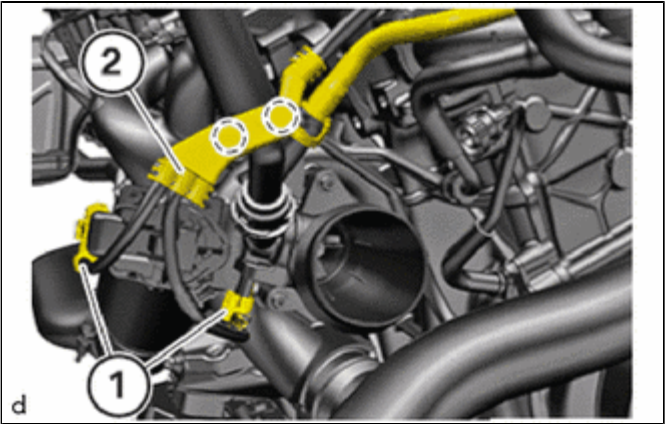
PROCEDURE

1. REMOVE AIR CLEANER HOSE ASSEMBLY

Click here [INFO](#)

2. REMOVE VENTILATION HOSE

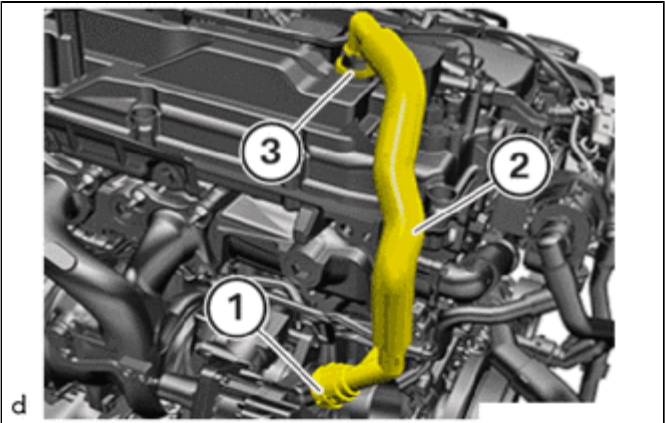
(a) Unlock and disconnect plug connections (1).



(b) Unclip the No. 2 engine wire (2) from the ventilation hose in the marked areas.

(c) Unlock the No. 2 ventilation hose and pull it off the ventilation hose.

(d) Unlock the lock (1) and disconnect the ventilation hose (2).



(e) Unlock the lock (3).

(f) Disconnect the ventilation hose (2) from the cylinder head cover sub-assembly and remove.

3. REMOVE INLET COMPRESSOR ELBOW

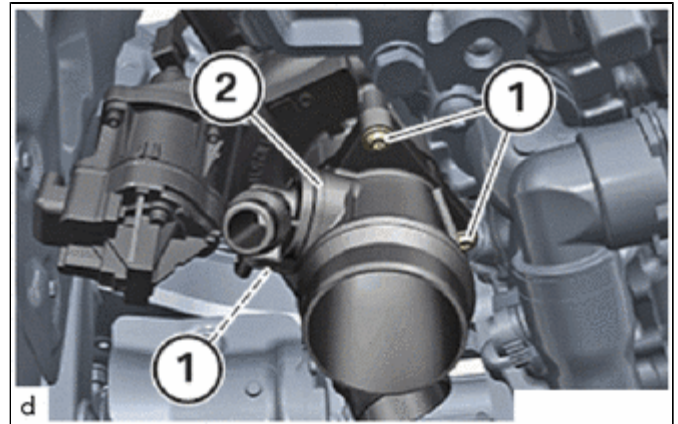
CAUTION:

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

(a) Loosen the T30 bolts (1).



(b) Guide out the inlet compressor elbow (2) on the turbocharger sub-assembly and remove.

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRB
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INLET COMPRESSOR ELBOW: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

PROCEDURE

1. INSTALL INLET COMPRESSOR ELBOW

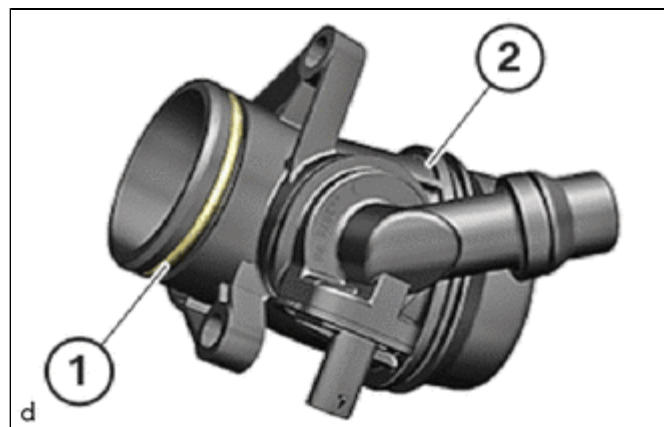
NOTICE:

- Damage to the turbocharger sub-assembly.

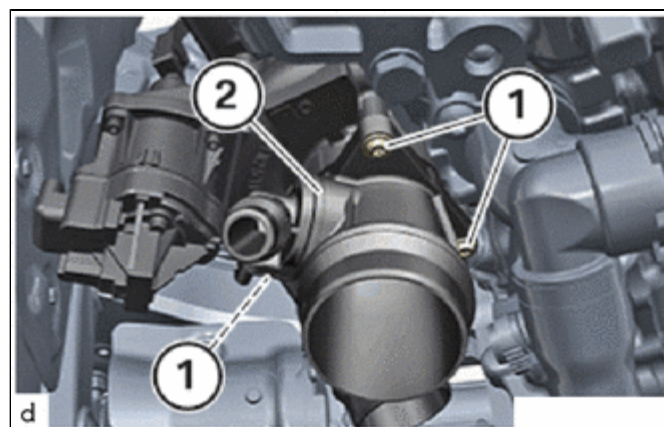
A leak at the pressure pipe can damage the turbocharger sub-assembly.

- Replace the compressor inlet gasket and compressor inlet elbow if necessary.

- (a) Replace compressor inlet gasket (1) on the inlet compressor elbow.



- (b) Install inlet compressor elbow (2) on turbocharger sub-assembly.



- (c) Tighten the T30 bolts.

Torque:

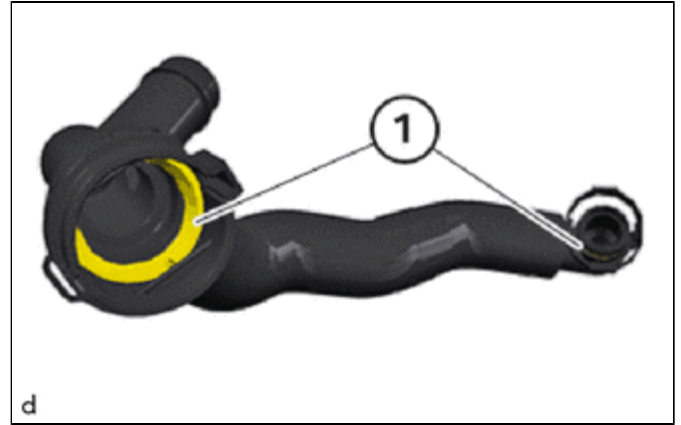
8.0 N·m {82 kgf·cm, 6 ft·lbf}

2. INSTALL VENTILATION HOSE

HINT:

Latch mechanisms, guides and mounting elements must not be damaged or missing.

- (a) Check the seals (1) for damage and replace the ventilation hose where required.



- (b) Connect the ventilation hose to the cylinder head cover sub-assembly and lock in place.

HINT:

The lock must audibly engage.

- (c) Connect ventilation hose at the compressor inlet elbow of the turbocharger sub-assembly and lock.

HINT:

The lock must audibly engage.

- (d) Connect the No. 2 ventilation hose on the bottom to the ventilation hose and lock.

HINT:

Lock must audibly engage.

- (e) Clip in the No. 2 engine wire where marked on the ventilation hose.

- (f) Connect connectors and lock.

HINT:

The locks must engage audibly.

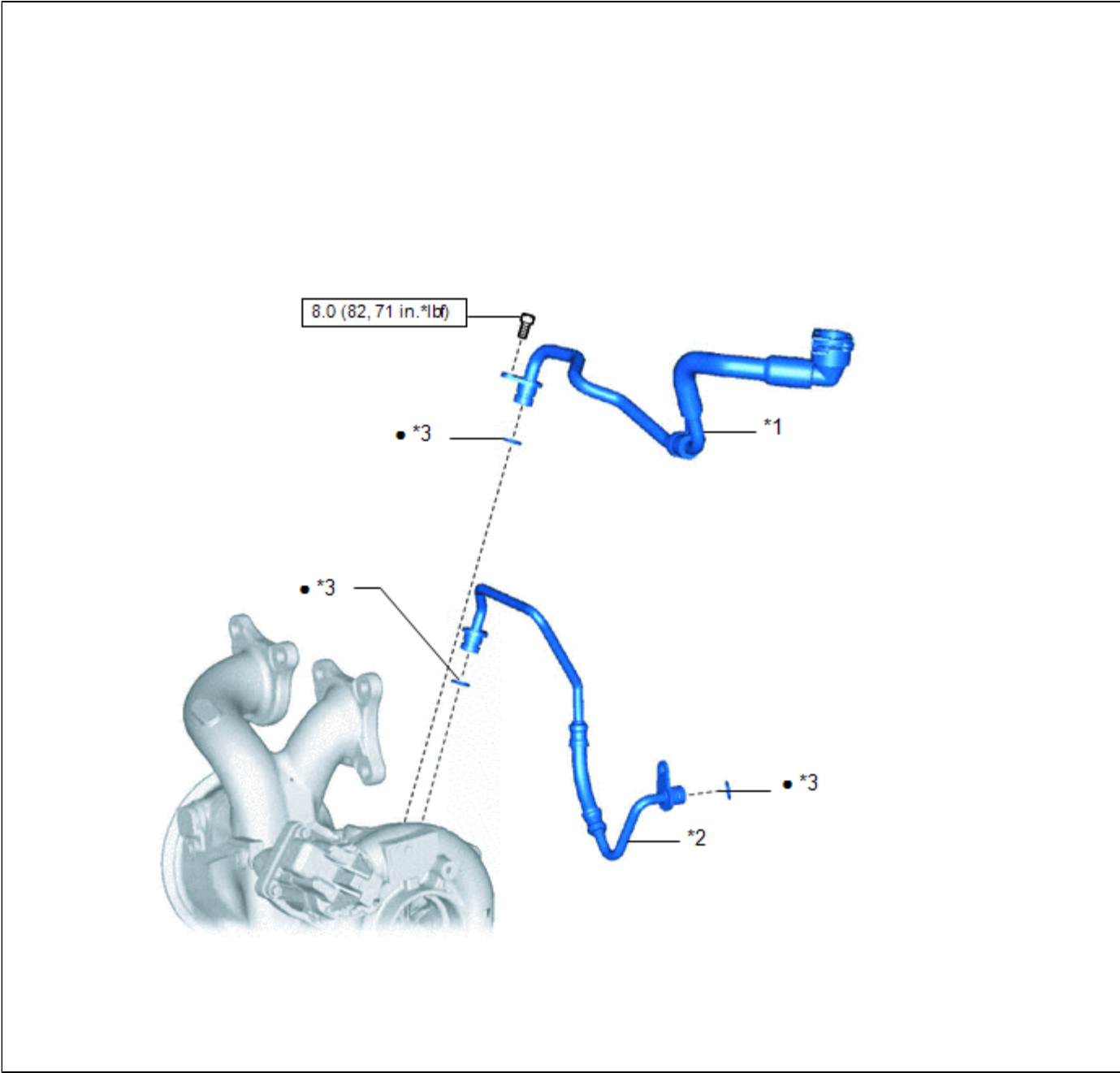
3. INSTALL AIR CLEANER HOSE ASSEMBLY

Click here [INFO](#)

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRC
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INLET TURBO OIL PIPE: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	NO. 2 TURBO WATER PIPE SUB-ASSEMBLY	*2	INLET TURBO OIL PIPE SUB-ASSEMBLY
*3	O-RING	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRD
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INLET TURBO OIL PIPE: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

CAUTION:

- Hot fluids.

Risk of scalding!

- Conduct all work in the vehicle wearing appropriate personal protective equipment only.

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

HINT:

Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.

PROCEDURE

1. REMOVE TURBOCHARGER SUB-ASSEMBLY

Click here [INFO](#)

2. REMOVE NO. 2 TURBO WATER PIPE SUB-ASSEMBLY

Click here [INFO](#)

3. REMOVE INLET TURBO OIL PIPE SUB-ASSEMBLY

CAUTION:

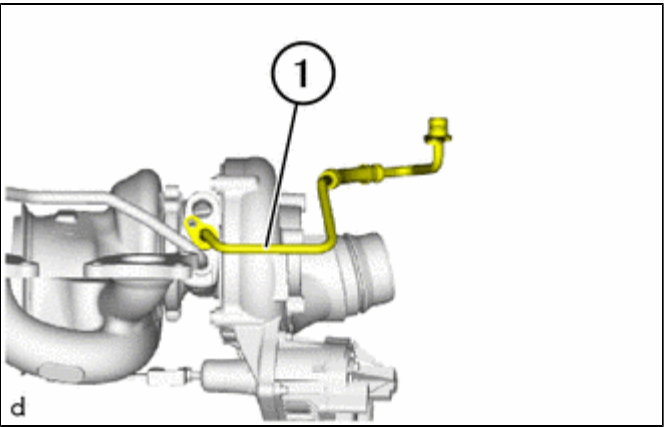
- Hot fluids.
- Risk of scalding!

- Conduct all work in the vehicle wearing appropriate personal protective equipment only.

HINT:

Have a rag ready and catch any engine oil that may emerge.

(a) Pull off the inlet turbo oil pipe sub-assembly (1).



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRE
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INLET TURBO OIL PIPE: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

PROCEDURE

1. INSTALL INLET TURBO OIL PIPE SUB-ASSEMBLY

(a) Fill turbocharger sub-assembly up to the top with engine oil using the inlet turbo oil pipe sub-assembly connection.

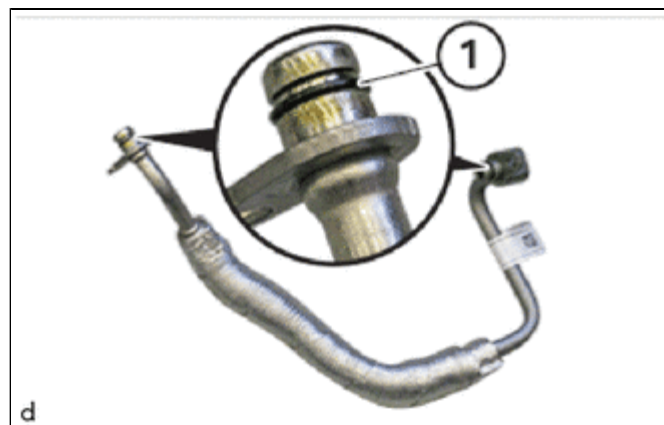
Engine oil:

Toyota Genuine Motor Oil SN 0W-20 C5 for GR Toyota Supra

HINT:

- Technically suitable engine oils for BMW Group engines
- Observe the sign in the engine compartment! Only pour in approved engine oil with the correct SAE viscosity classification.

(b) Replace O-rings (1).



(c) Position the inlet turbo oil pipe sub-assembly.

2. INSTALL NO. 2 TURBO WATER PIPE SUB-ASSEMBLY

Click here [INFO](#)

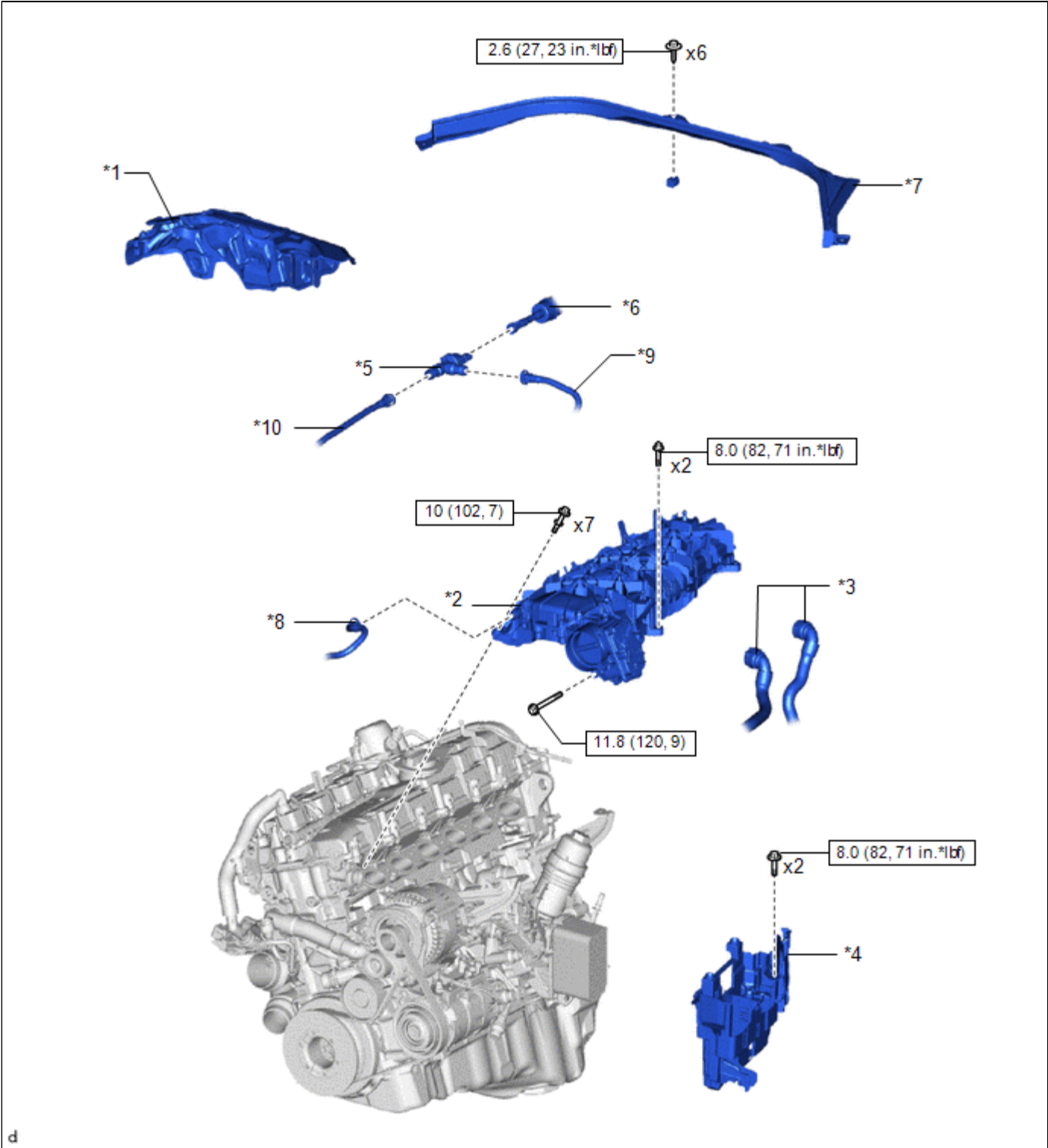
3. INSTALL TURBOCHARGER SUB-ASSEMBLY

Click here [INFO](#)

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCQM
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INTAKE MANIFOLD: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

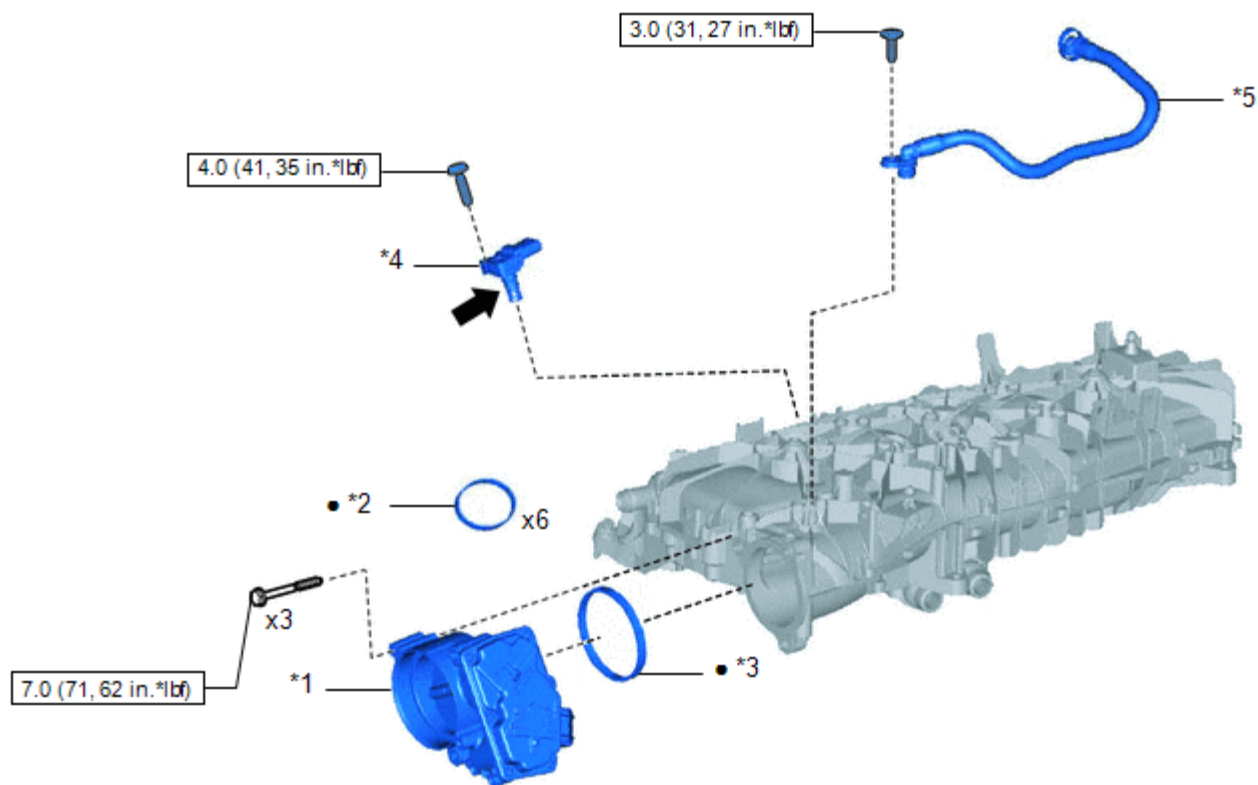
ILLUSTRATION



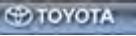
*1	NO. 1 ENGINE COVER	*2	INTAKE MANIFOLD
----	--------------------	----	-----------------

*3	WATER BY-PASS HOSE	*4	ENGINE ROOM ECU BOX
*5	NO. 1 CHECK VALVE	*6	NO. 2 FUEL VAPOR FEED HOSE
*7	COWL TOP VENTILATOR LOUVER PROTECTOR	*8	FUEL SUCTION TUBE SUB-ASSEMBLY
*9	NO. 3 FUEL VAPOR FEED HOSE	*10	NO. 1 FUEL VAPOR FEED HOSE
	N*m (kgf*cm, ft.*lbf): Specified torque	-	-

ILLUSTRATION



*1	THROTTLE BODY WITH MOTOR ASSEMBLY	*2	NO. 1 INTAKE MANIFOLD TO HEAD GASKET
*3	THROTTLE BODY GASKET	*4	VACUUM SENSOR
*5	NO. 3 FUEL VAPOR FEED HOSE	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part
	Syntheso glep 1 lubricating grease	-	-



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCQN
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INTAKE MANIFOLD: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

CAUTION:

- Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

- Detach battery earth lead from battery.

PROCEDURE

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

Click here [INFO](#)

2. REMOVE FRONT SUSPENSION MEMBER LOWER PROTECTOR

Click here [INFO](#)

3. REMOVE AIR CLEANER HOSE ASSEMBLY

Click here [INFO](#)

4. DRAIN ENGINE COOLANT (for Low Temperature)

Click here [INFO](#)

5. REMOVE NO. 2 AIR CLEANER HOSE

Click here [INFO](#)

6. REMOVE FRONT WIPER MOTOR AND LINK ASSEMBLY

Click here [INFO](#)

7. REMOVE COWL TOP VENTILATOR LOUVER PROTECTOR

Click here [INFO](#)

8. REMOVE NO. 1 ENGINE COVER

Click here [INFO](#)

9. REMOVE NO. 1 CHECK VALVE

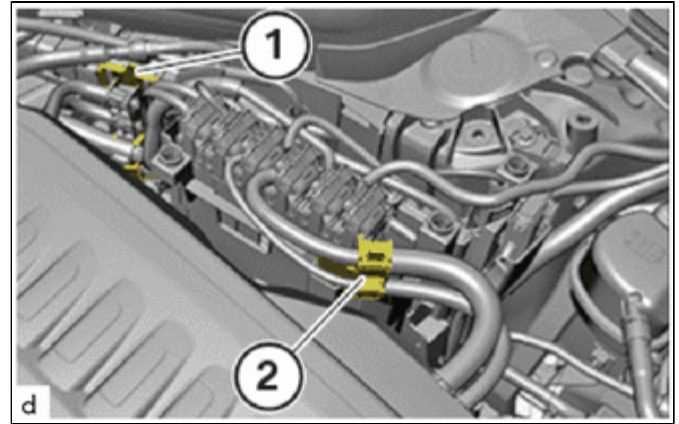
Click here [INFO](#)

10. REMOVE NO. 1 INTEGRATION RELAY

Click here [INFO](#)

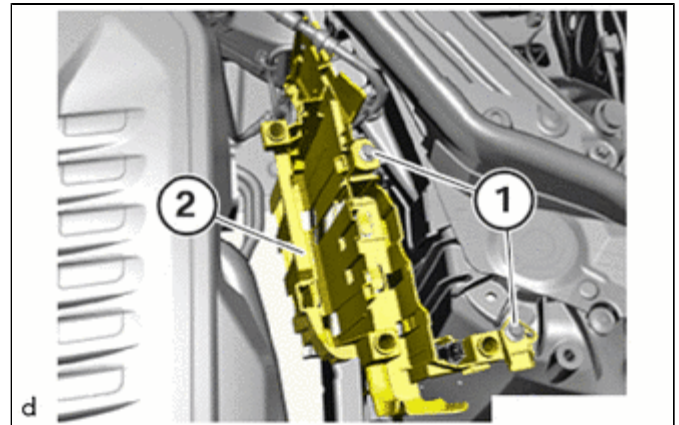
11. REMOVE ENGINE ROOM ECM BOX

(a) Unlock and loosen locks (1) and (2).



(b) Release the wiring harnesses from the engine room ECU box and set it aside.

(c) Loosen bolts (1).



(d) Guide out and remove the engine room ECU box (2).

12. REMOVE INTAKE MANIFOLD

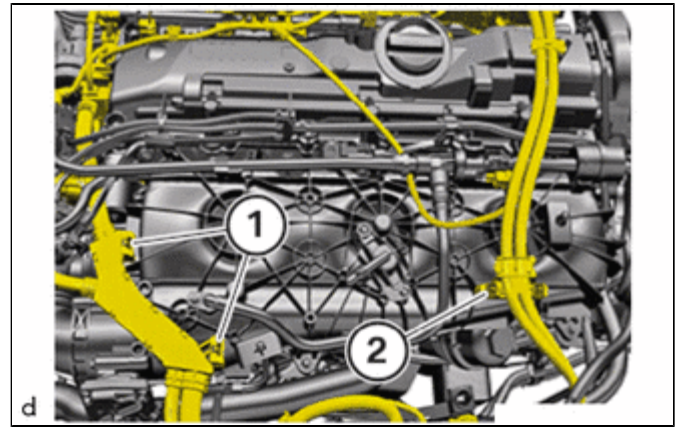
CAUTION:

- Hot fluids.

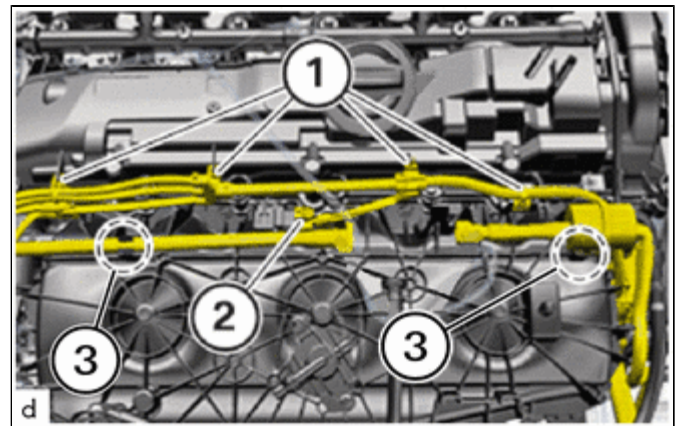
Risk of scalding!

- Conduct all work in the vehicle wearing appropriate personal protective equipment only.

(a) Unlock the locks (1) and set the wiring harness aside.



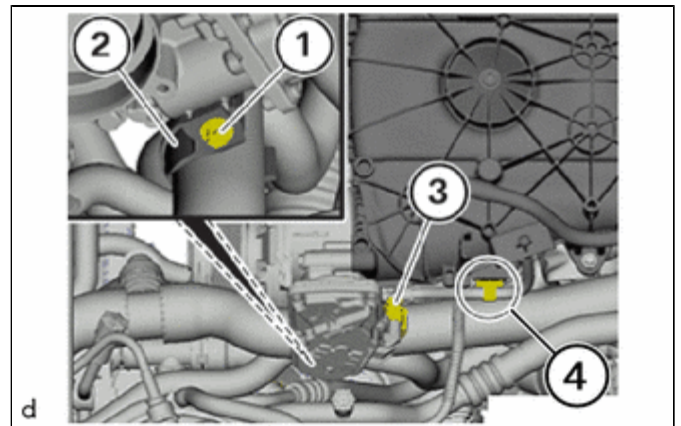
(b) Release wiring harness from holder (2) and lay to one side.



(c) Disconnect the wiring harness (1) from the cylinder head cover sub-assembly and set aside.

(d) Unlock and disconnect the connector (2) from the vacuum sensor.

(e) Disconnect the fuel tank breather tubes from the intake manifold where marked (3) and put to one side.



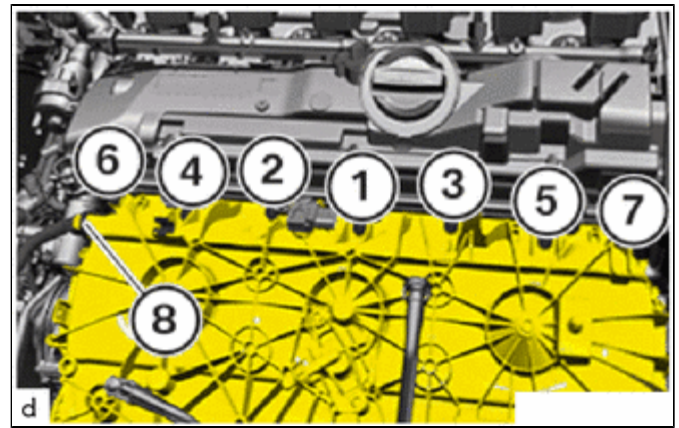
(f) Loosen the E10 bolt (1).

(g) Remove holder (2) from the throttle body with motor assembly and slide to the side.

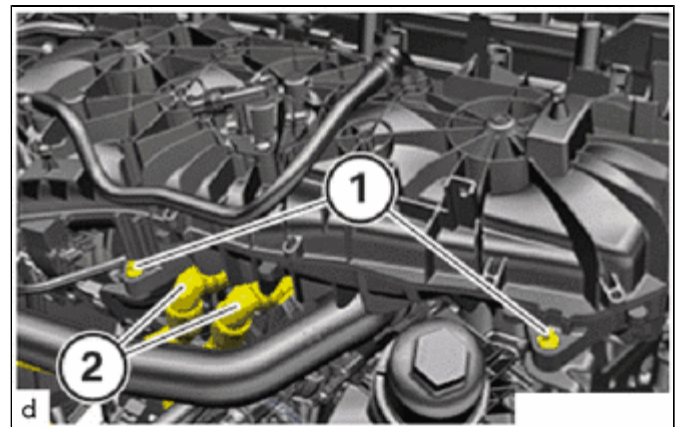
(h) Unlock plug connection (3) and disconnect.

(i) Detach the clip in the marked area (4).

(j) Unlock and pull off the fuel suction tube sub-assembly (8).



(k) Loosen the bolts in the order (7) to (1).



(l) Loosen the E10 bolts (1).

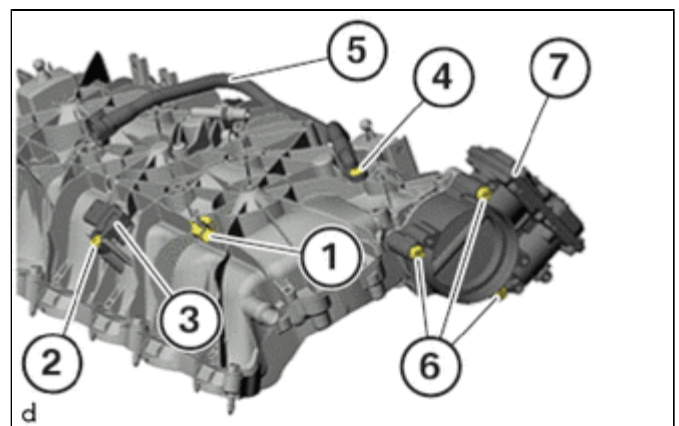
(m) Unlock the locks (2) of the coolant lines under the intake manifold and disconnect the water by-pass hoses.

HINT:

- Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.
- Slightly raise air intake header.

(n) Remove intake manifold.

(o) Remove clip (1).



- (p) Loosen the T25 bolt (2).
- (q) Remove the vacuum sensor (3).
- (r) Loosen the T20 bolt (4).
- (s) Remove the No. 3 fuel vapor feed hose (5).
- (t) Loosen the bolts (6).
- (u) Remove the throttle body with motor assembly (7).



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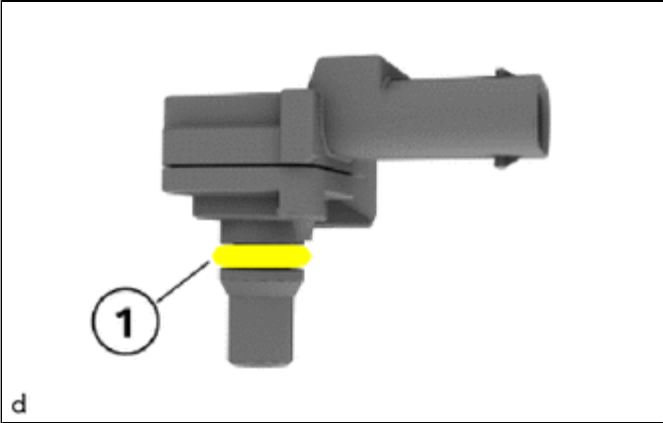
Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCQO
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INTAKE MANIFOLD: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

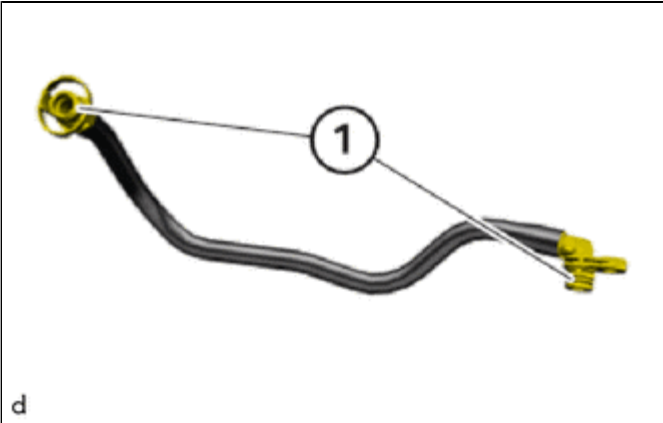
PROCEDURE

1. INSTALL INTAKE MANIFOLD

(a) Check the sealing ring for damage and replace where required.

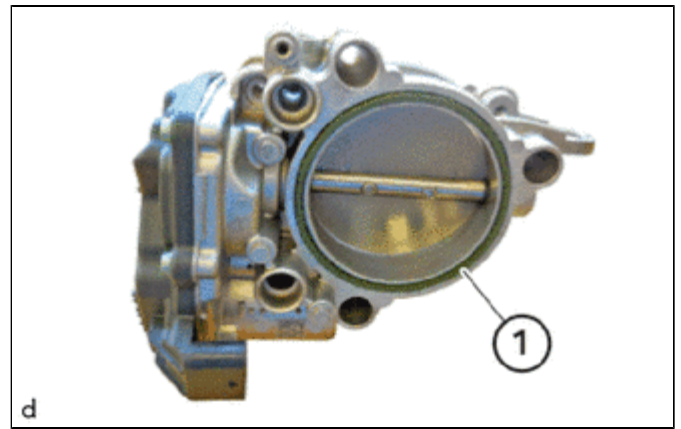


(b) Apply a thin coat of syntheso glep 1 lubricating grease to the O-ring (1).

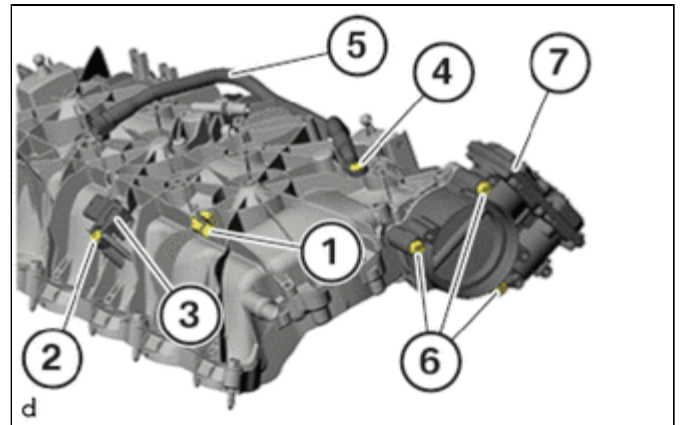


(c) Check sealing rings (1) and replace the No. 3 fuel vapor feed hose where required.

(d) Replace the throttle body gasket (1).



(e) Position the throttle body with motor assembly (7).



(f) Tighten down the bolts (6).

Torque:

7.0 N·m { 71 kgf·cm, 62 in·lbf }

(g) Position the No. 3 fuel vapor feed hose (5).

(h) Tighten down the T20 bolt (4).

Torque:

3.0 N·m { 31 kgf·cm, 27 in·lbf }

(i) Install the vacuum sensor (3).

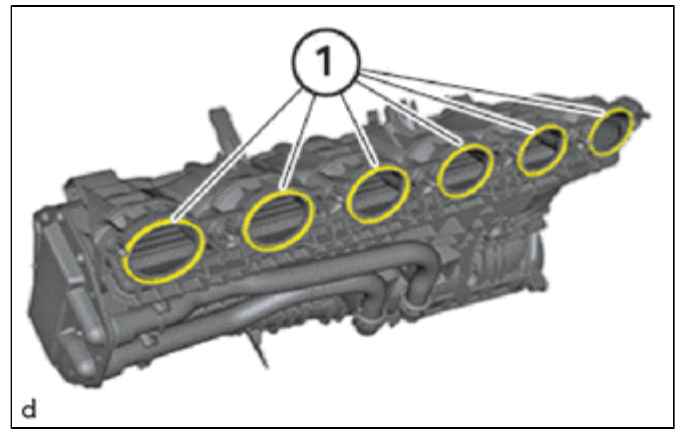
(j) Tighten down the T25 bolt.

Torque:

4.0 N·m { 41 kgf·cm, 35 in·lbf }

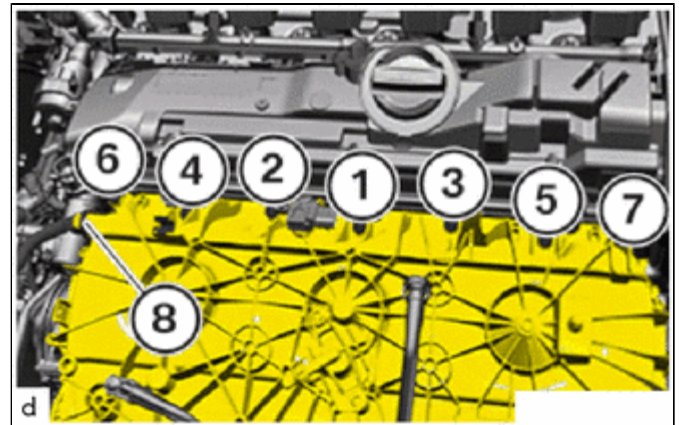
(k) Mount the clip.

(l) Replace No. 1 intake manifold to head gaskets (1).



(m) Position the intake manifold.

HINT:
Additional coolant can escape. Make sure that no coolant enters the intake port of the cylinder head sub-assembly.



(n) Tighten the bolts in the order to (1) to (7).

Torque:
10 N·m {102 kgf·cm, 7 ft·lbf}

(o) Connect the fuel suction tube sub-assembly (8) and lock.

HINT:

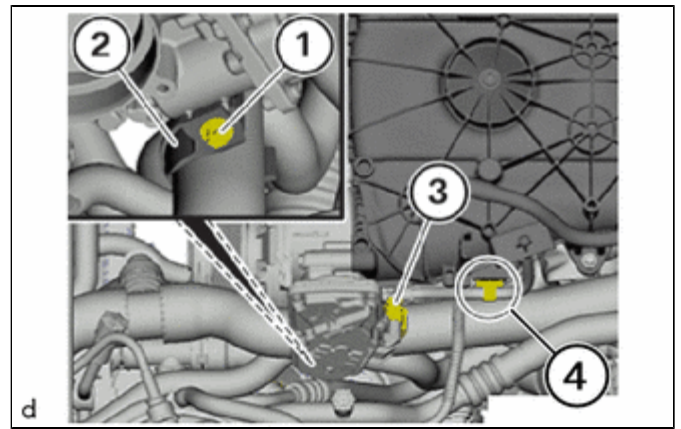
- Make sure that the connections are locked correctly. The locks must engage audibly.
- Lock must audibly engage.

(p) Lock the locks and connect the water by-pass hoses.

(q) Tighten the E10 bolts.

Torque:
8.0 N·m {82 kgf·cm, 71 in·lbf}

(r) Mount the clip in the marked area (4).



(s) Connect connectors (3) and lock.

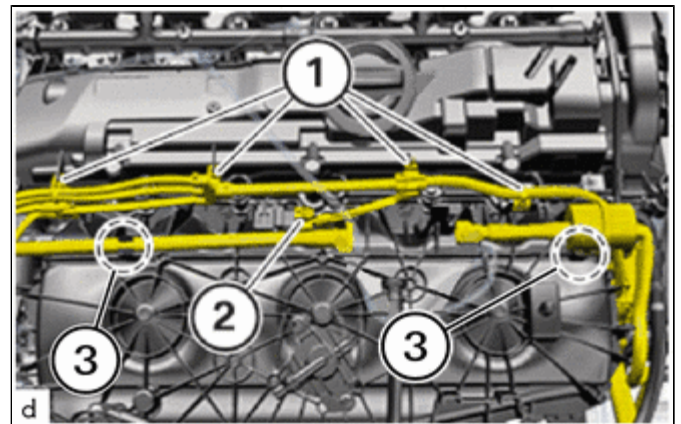
(t) Position holder (2).

(u) Tighten down the E10 bolt (1).

Torque:

11.8 N·m {120 kgf·cm, 9 ft·lbf}

(v) Secure wiring harness (1) on the cylinder head cover sub-assembly.



(w) Connect and lock the connector (2) on the vacuum sensor.

HINT:

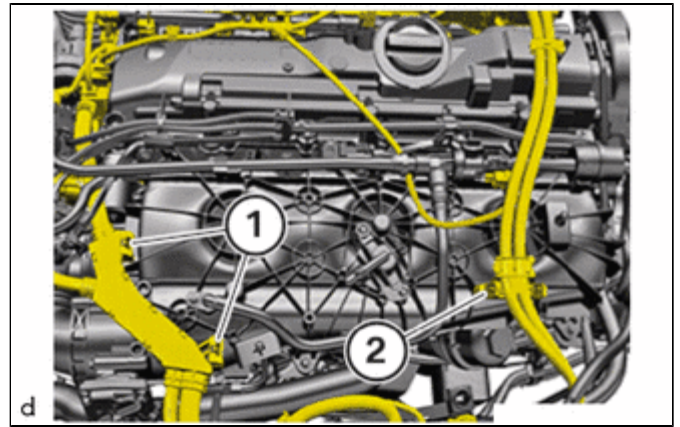
Lock must audibly engage.

(x) Secure fuel tank breather tubes on the intake manifold in the marked areas (3).

(y) Position wiring harness (1), (2) and fasten on the holders.

HINT:

The locks must engage audibly.



(z) Secure wiring harness (1), (2) in the holder and lock.

2. INSTALL ENGINE ROOM ECM BOX

NOTICE:

- Improper routing of cables and wiring harnesses.

Trapped, crushed or damaged cables may cause short circuits and malfunctions.

- Route all cables without abrasions, do not trap and crush.

(a) Feed the engine room ECU box into the guide and install.

(b) Tighten down the bolts.

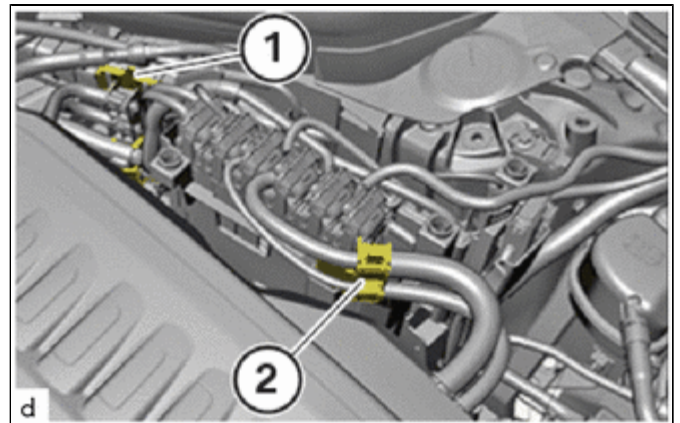
Torque:

8.0 N·m {82 kgf·cm, 71 in·lbf}

(c) Feed the wiring harnesses (1), (2) into the holder at the engine room ECU box.

HINT:

The locks must engage audibly.



3. INSTALL NO. 1 INTEGRATION RELAY

Click here [INFO](#)

4. INSTALL NO. 1 CHECK VALVE

Click here [INFO](#)

5. INSTALL NO. 1 ENGINE COVER

Click here [INFO](#)

6. INSTALL COWL TOP VENTILATOR LOUVER PROTECTOR

Click here [INFO](#)

7. INSTALL FRONT WIPER MOTOR AND LINK ASSEMBLY

Click here [INFO](#)

8. INSTALL NO. 2 AIR CLEANER HOSE

Click here [INFO](#)

9. INSTALL AIR CLEANER HOSE ASSEMBLY

Click here [INFO](#)

10. INSTALL FRONT SUSPENSION MEMBER LOWER PROTECTOR

Click here [INFO](#)

11. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

Click here [INFO](#)

12. ADD ENGINE COOLANT (for Low Temperature)

Click here [INFO](#)

13. INSPECT FOR COOLANT LEAK (for Low Temperature)

Click here [INFO](#)



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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): INTAKE SYSTEM: INSPECTION; 2020 MY Supra [03/2019 -]		

INSPECTION

CAUTION / NOTICE / HINT

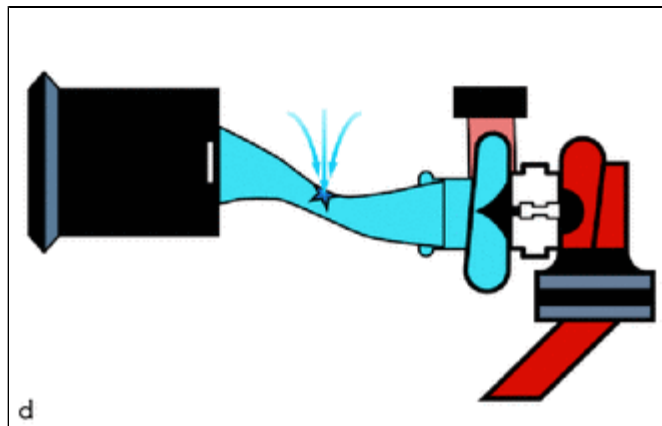
Typical turbocharger sub-assembly noise is particularly evident when powerful load reversals take place. If the noise occurs in other operating modes, it may be that the turbocharger sub-assembly is not the only cause of the noise.

PROCEDURE

1. AIR INTAKE DUCT LEAK

- (a) In the event of an air intake duct leak the sound of the operating turbocharger sub-assembly, which is normally dampened by the intake silencer, is easier to hear. The amount of noise that is generated depends on the size of the leak.

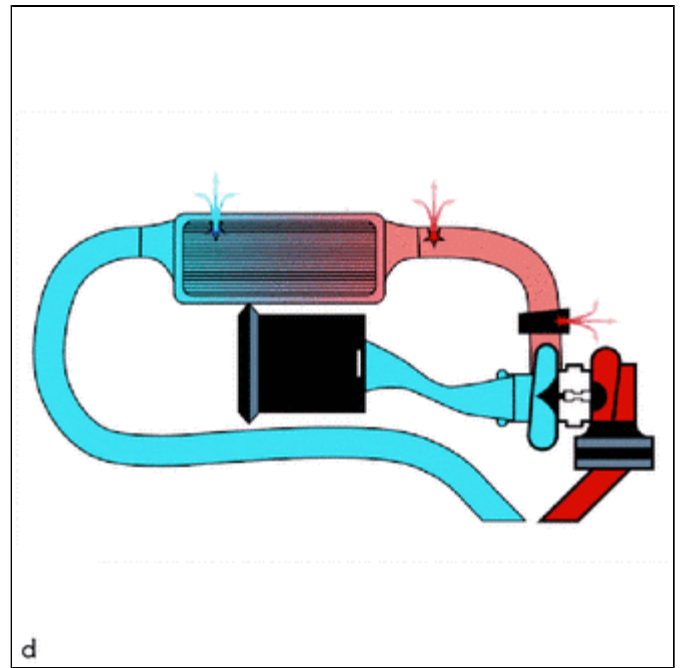
- (b) This defect can allow unfiltered air to enter the compressor and cause foreign body damage or vane erosion.



- (c) Air intake duct leak.

2. CHARGE AIR DUCT AND INTERCOOLER LEAK

- (a) A leak in the charge air duct generates a loud hissing noise or high-pitched whistling noise, which increases together with the turbocharger sub-assembly speed and charging pressure.



(b) Charge air duct leaks

3. EXHAUST LEAKAGE

(a) An exhaust leak at the exhaust manifold (e.g. because of a faulty gasket or distortion) almost always leads to a high-frequency whistling noise, which is often mistakenly thought to be turbocharger sub-assembly noise.

4. IMBALANCE CAUSED BY FOREIGN BODY DAMAGE

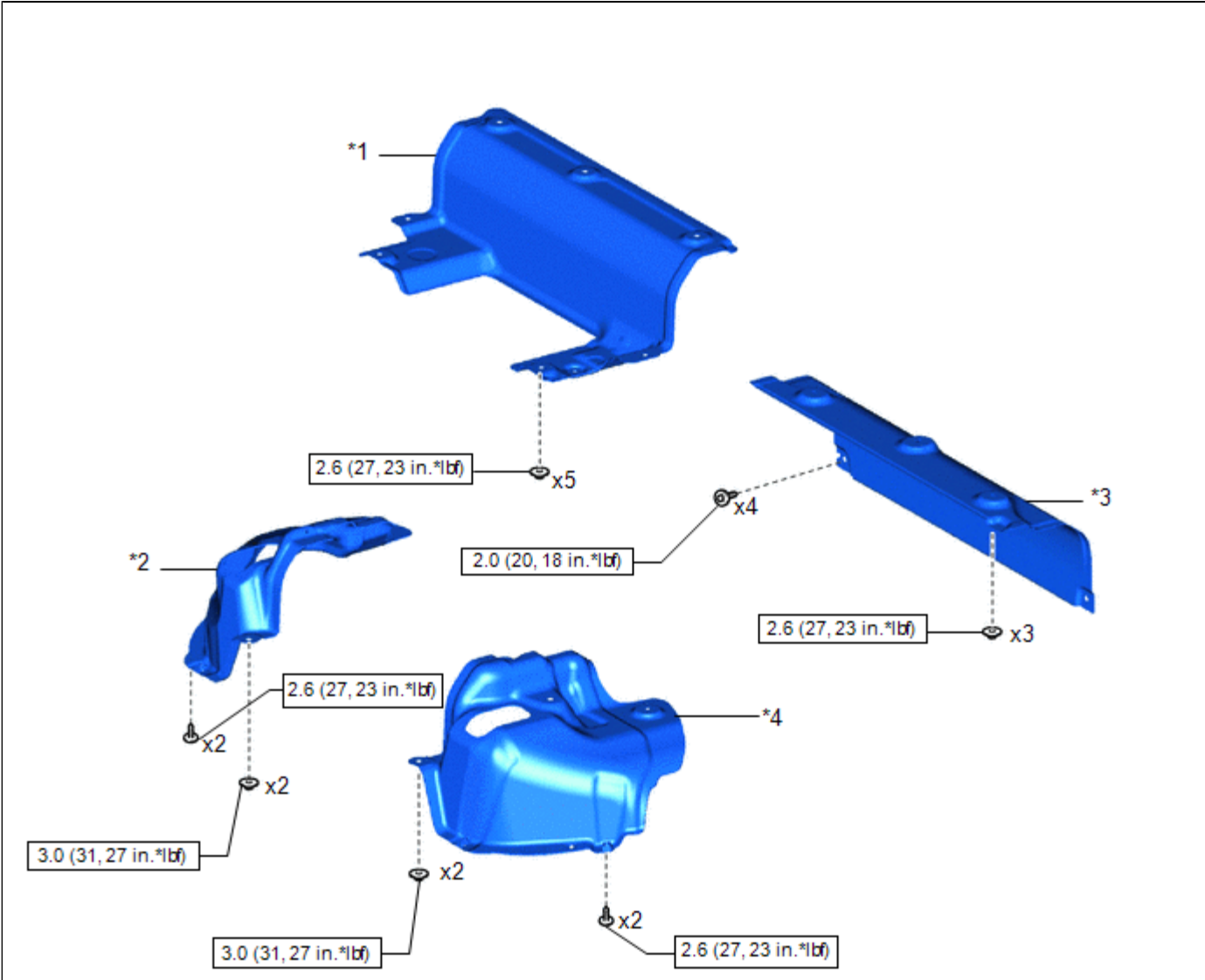
(a) Because of the fast turbocharger sub-assembly rotating speed, even small particles can damage the compressor or turbine wheel. The imbalance resulting from the damage leads to out-of-balance howling. Out-of-balance howling mostly occurs when the speed is quickly reduced after pressing on the accelerator.



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCS0
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): MAIN MUFFLER HEAT INSULATOR: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	MAIN MUFFLER HEAT INSULATOR	*2	MAIN MUFFLER HEAT INSULATOR RH
*3	REAR NO. 2 FLOOR HEAT INSULATOR SUB-ASSEMBLY	*4	MAIN MUFFLER HEAT INSULATOR LH
	N*m (kgf*cm, ft.*lbf): Specified torque	-	-

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCS1
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): MAIN MUFFLER HEAT INSULATOR: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

PROCEDURE

1. REMOVE EXHAUST PIPE ASSEMBLY

Click here [INFO](#)

2. REMOVE MAIN MUFFLER HEAT INSULATOR LH

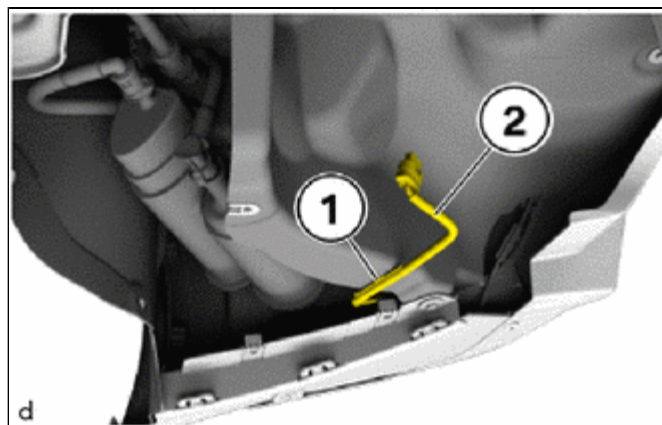
HINT:

Use the same procedure as for the RH side.

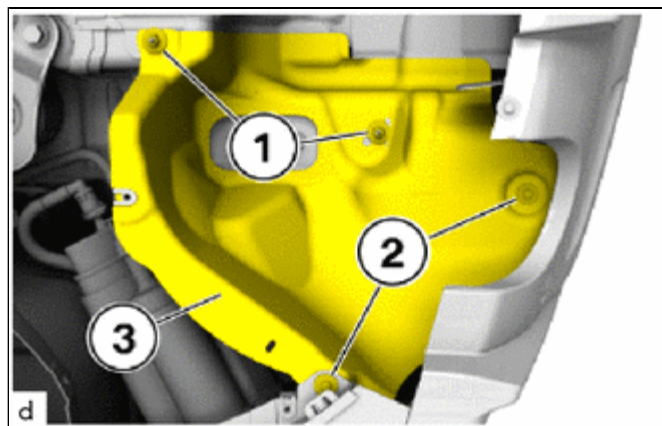
3. REMOVE MAIN MUFFLER HEAT INSULATOR RH

(a) for RH Side:

- (1) Unclip the holder (1).
- (2) Detach the cable (2) for the actuator with bracket assembly.



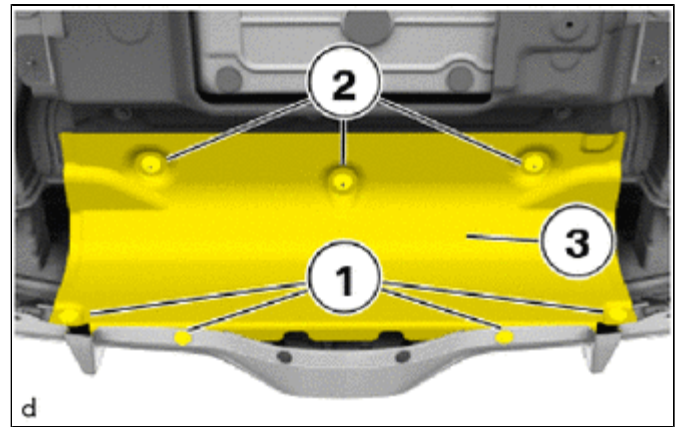
(b) Release nuts (1) and screws (2).



(c) Guide the main muffler heat Insulator RH (3).

4. REMOVE REAR NO. 2 FLOOR HEAT INSULATOR SUB-ASSEMBLY

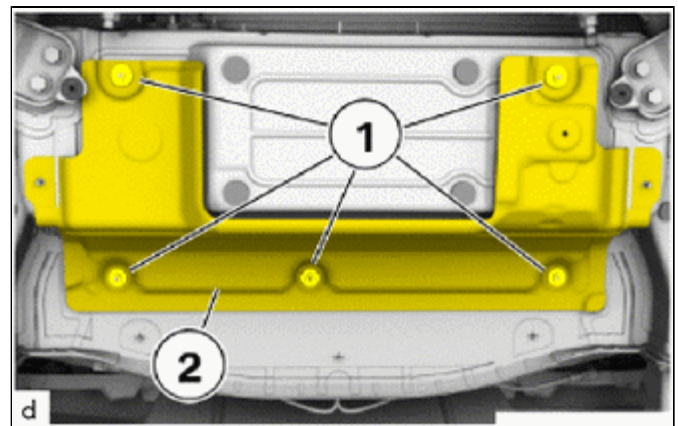
(a) Unscrew screws (1) and nuts (2).



(b) Remove the rear No. 2 floor heat Insulator sub-assembly (3).

5. REMOVE MAIN MUFFLER HEAT INSULATOR

(a) Loosen nuts (1).



(b) Remove the main muffler heat insulator (2).



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCS2
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): MAIN MUFFLER HEAT INSULATOR: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

PROCEDURE

1. INSTALL MAIN MUFFLER HEAT INSULATOR

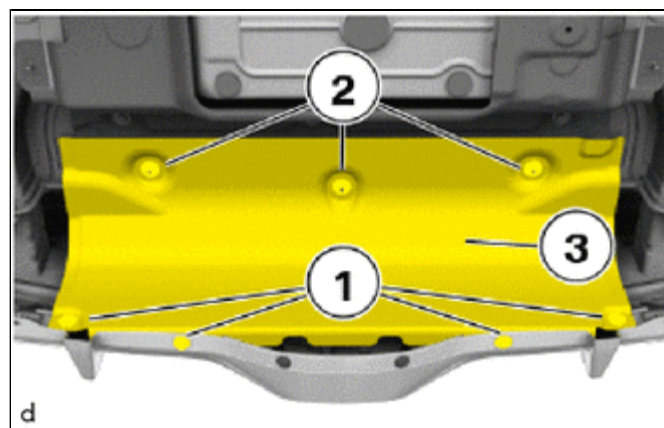
- (a) Position the main muffler heat insulator.
- (b) Tighten nuts.

Torque:

2.6 N·m {27 kgf·cm, 23 in·lbf}

2. INSTALL REAR NO. 2 FLOOR HEAT INSULATOR SUB-ASSEMBLY

- (a) Position the rear No. 2 floor heat Insulator sub-assembly.



- (b) Tighten screws (1) and nuts (2).

Torque:

Nut :

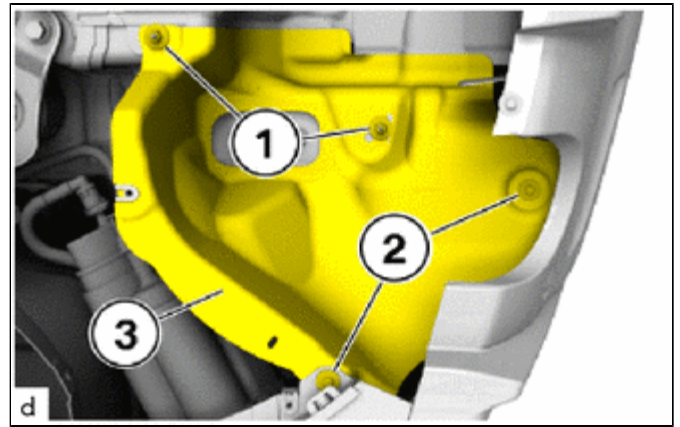
2.6 N·m {27 kgf·cm, 23 in·lbf}

Screw :

2.0 N·m {20 kgf·cm, 18 in·lbf}

3. INSTALL MAIN MUFFLER HEAT INSULATOR RH

- (a) Position the main muffler heat Insulator RH (3).



(b) Tighten nuts (1).

Torque:

3.0 N·m {31 kgf·cm, 27 in·lbf}

(c) Tighten down screws (2).

Torque:

2.6 N·m {27 kgf·cm, 23 in·lbf}

(d) for RH Side:

(1) Clip in the holder.

(2) Attach the actuator with bracket assembly.

4. INSTALL MAIN MUFFLER HEAT INSULATOR LH

HINT:

Use the same procedure as for the RH side.

5. INSTALL EXHAUST PIPE ASSEMBLY

Click here [INFO](#)

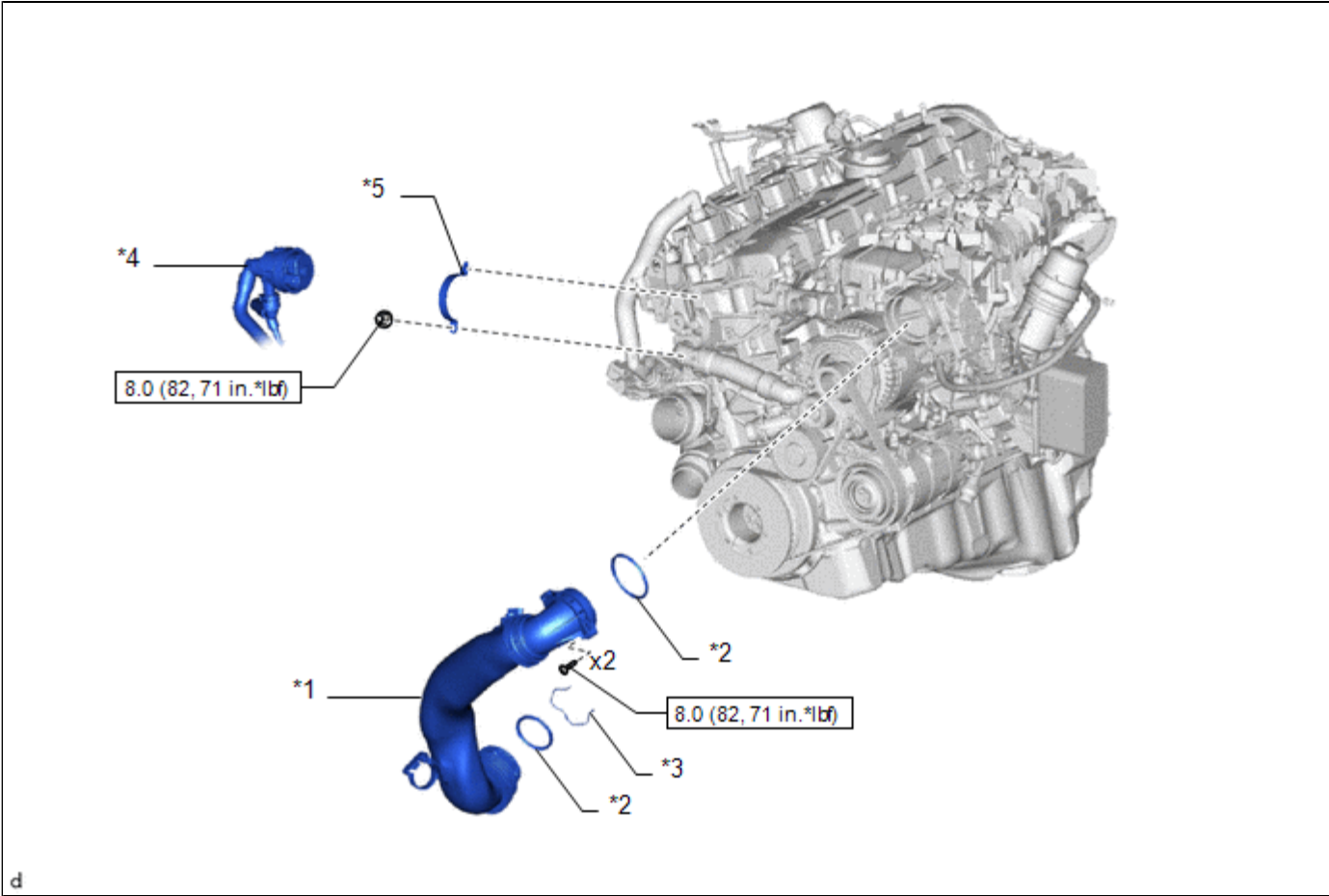


TOYOTA

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCR6
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): NO.2 AIR CLEANER HOSE: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	NO. 2 AIR CLEANER HOSE	*2	SEALING RING
*3	CLAMP	*4	ELECTRIC WATER PUMP ASSEMBLY
*5	NO. 2 WATER PUMP BRACKET SUB-ASSEMBLY	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	-	-

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCR7
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): NO.2 AIR CLEANER HOSE: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

CAUTION:

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

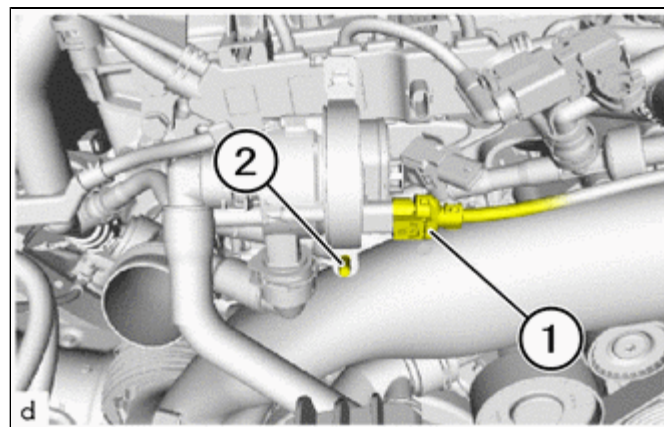
PROCEDURE

1. REMOVE AIR CLEANER HOSE ASSEMBLY

Click here [INFO](#)

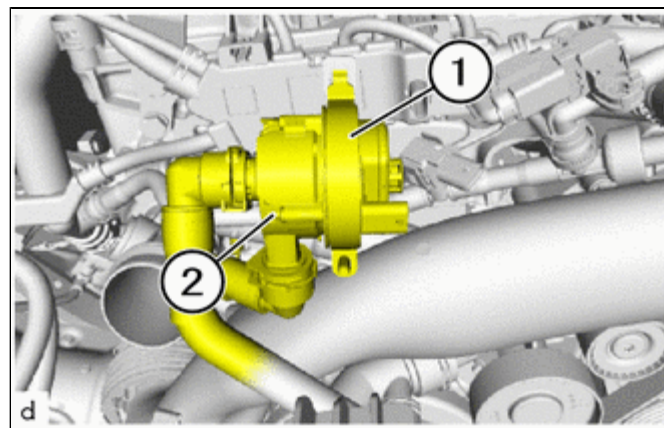
2. SEPARATE ELECTRIC WATER PUMP ASSEMBLY

(a) Unlock plug connection (1) and disconnect.



(b) Loosen nut (2).

(c) Guide the No. 2 water pump bracket sub-assembly (1) out and remove.



(d) Separate the electric water pump assembly (2).

3. REMOVE NO. 2 AIR CLEANER HOSE

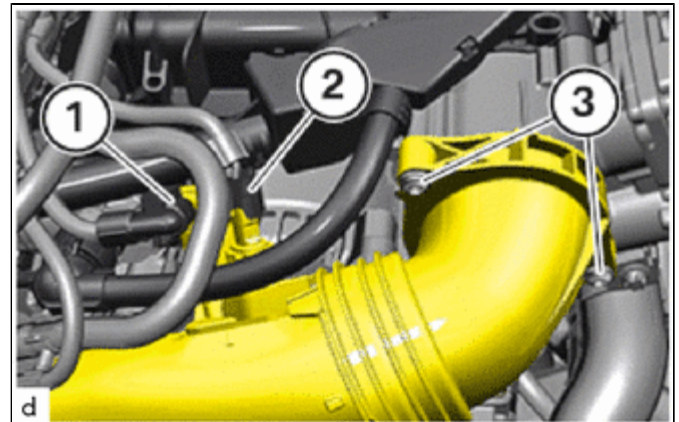
CAUTION:

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

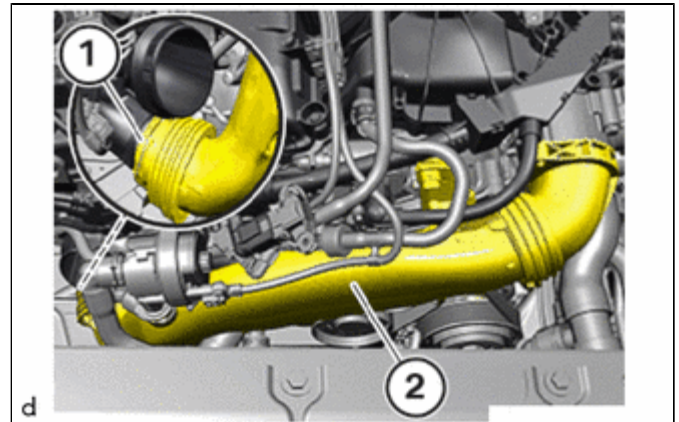
(a) Unlock plug connection (1) and disconnect.



(b) Unlock plug connection (2) and disconnect.

(c) Loosen the T30 bolts (3).

(d) Unlock and loosen clamp (1).

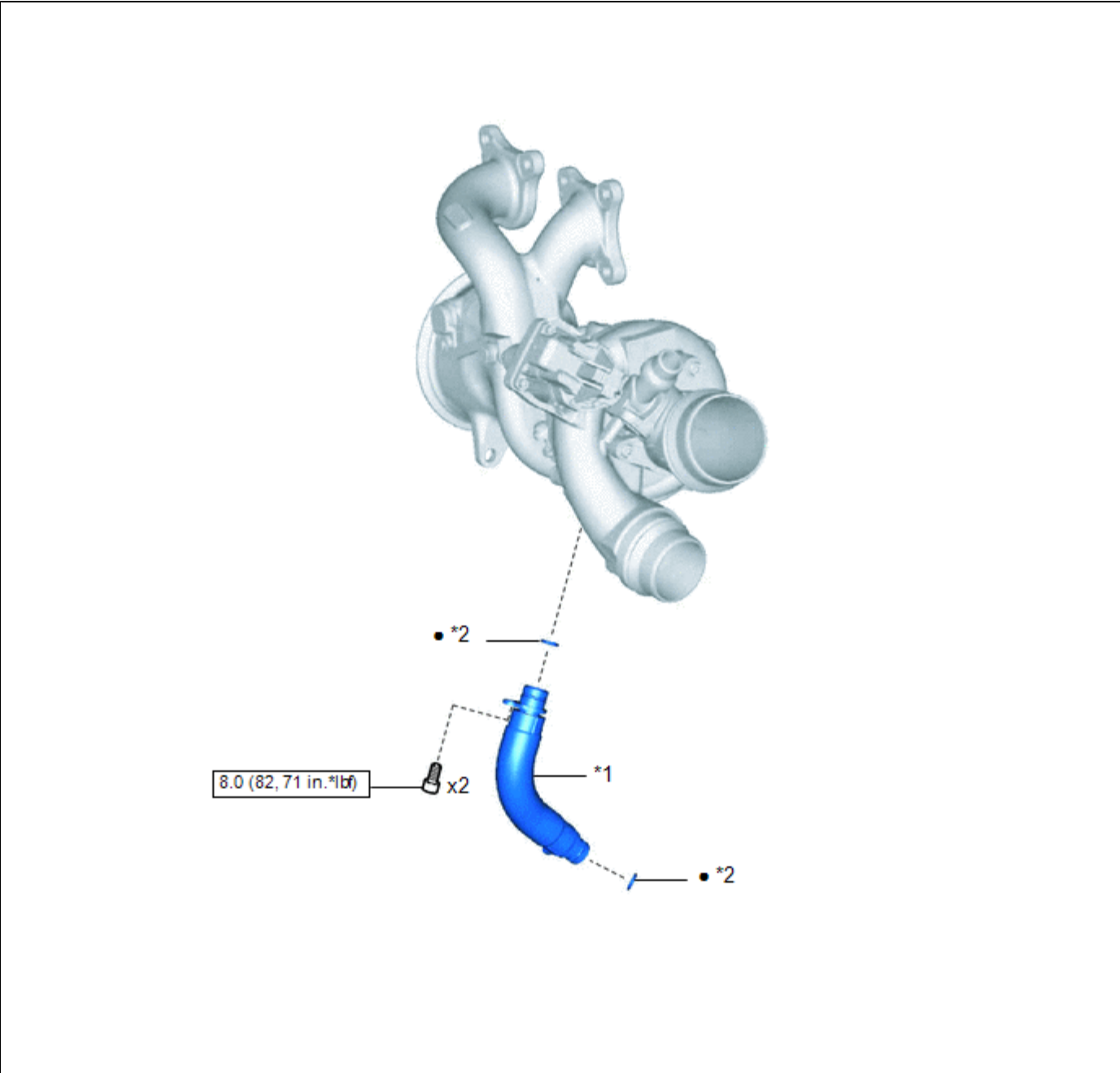


(e) Guide out and remove No. 2 air cleaner hose (2).

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRF
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): OUTLET TURBO OIL PIPE: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	OUTLET TURBO OIL PIPE	*2	O-RING
	N*m (kgf*cm, ft.*lbf): Specified torque		Non-reusable part

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRG
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): OUTLET TURBO OIL PIPE: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

CAUTION:

- Hot fluids.

Risk of scalding!

- Conduct all work in the vehicle wearing appropriate personal protective equipment only.

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

NOTICE:

- Damage to spiral cable sub-assembly.

The spiral cable sub-assembly or the coil spring cassette can be damaged by twisting the steering wheel if the universal joint is disconnected from the steering gear or the steering shaft below or when the steering shaft is disconnected from the steering column below.

- Secure steering wheel from twisting.

HINT:

Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.

PROCEDURE

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

Click here [INFO](#)

2. REMOVE STEERING LINK ASSEMBLY

Click here [INFO](#)

3. REMOVE OUTLET TURBO OIL PIPE

CAUTION:

- Hot fluids.

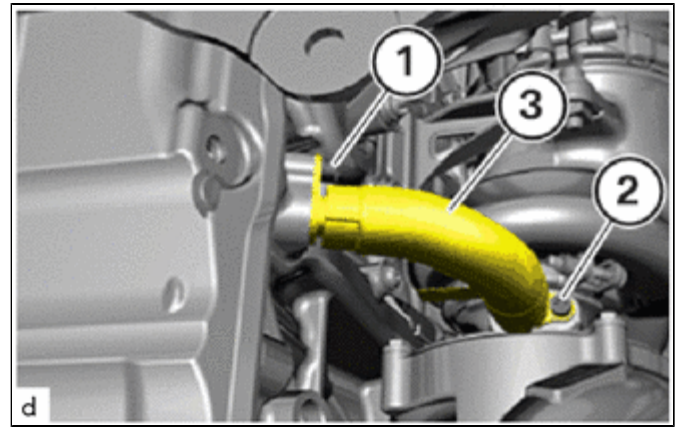
Risk of scalding!

- Conduct all work in the vehicle wearing appropriate personal protective equipment only.

(a) Loosen the T30 bolts (1) and (2).

HINT:

Collect and dispose of emerging fluids. Observe country specific waste disposal regulations.



(b) Remove the outlet turbo oil pipe (3).

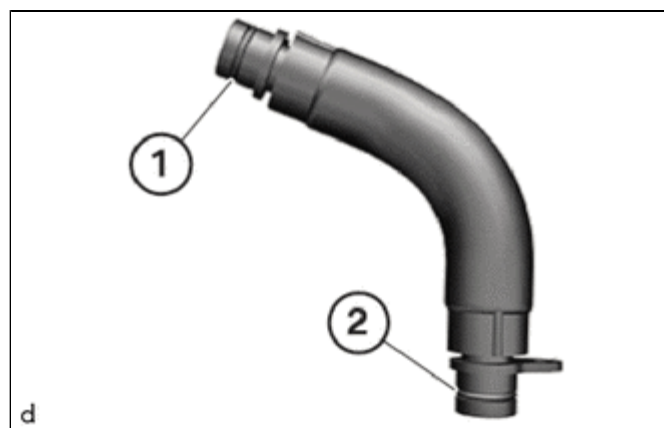
Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRH
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): OUTLET TURBO OIL PIPE: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

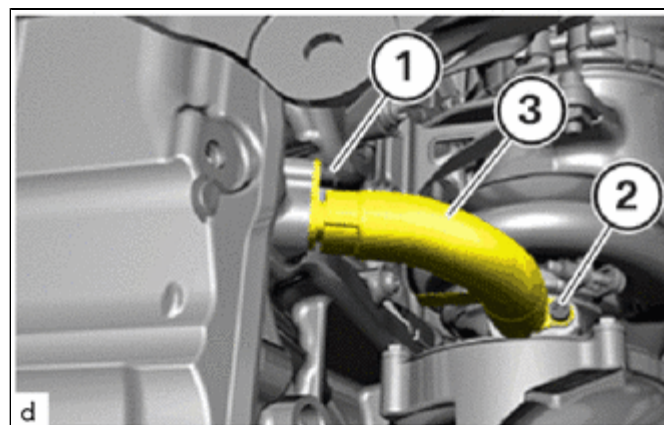
PROCEDURE

1. INSTALL OUTLET TURBO OIL PIPE

(a) Replace the O-rings (1) and (2).



(b) Position the outlet turbo oil pipe (3).



(c) Tighten down the T30 bolts (1) and (2).

Torque:

8.0 N·m { 82 kgf·cm, 71 in·lbf }

2. INSTALL STEERING LINK ASSEMBLY

Click here [INFO](#)

3. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

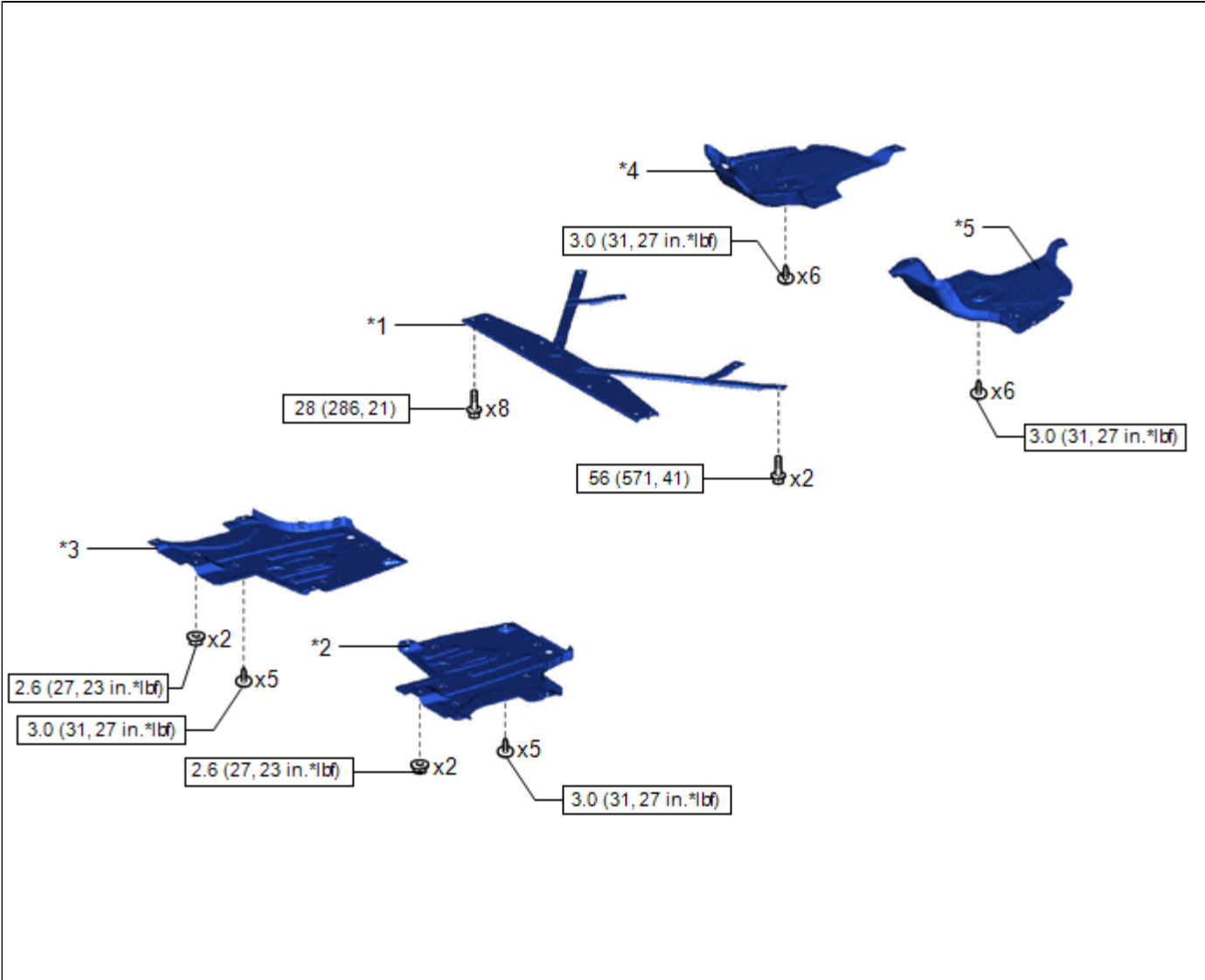
Click here [INFO](#)



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRU
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TAIL EXHAUST PIPE ASSEMBLY: COMPONENTS; 2020 MY Supra [03/2019 -]		

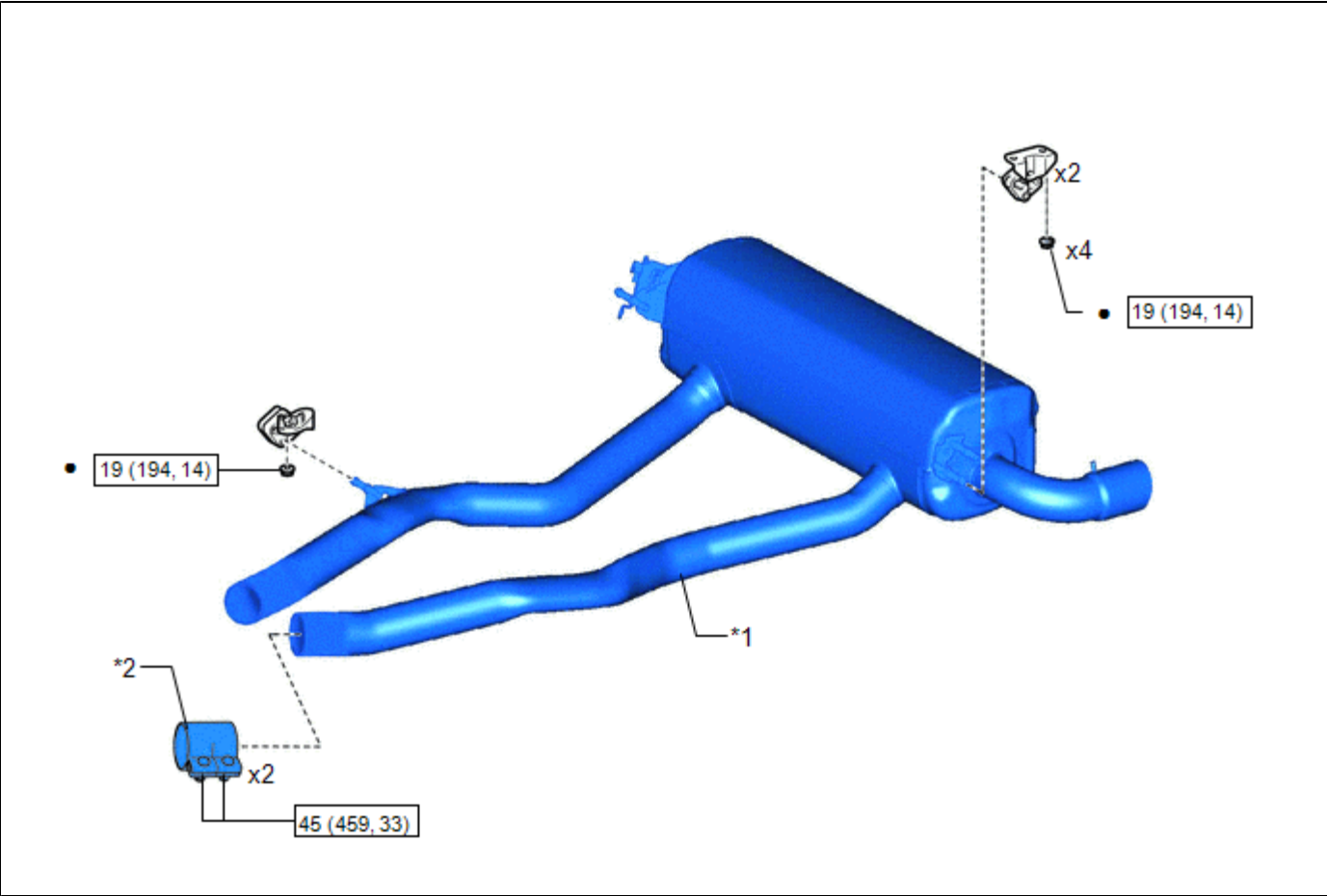
COMPONENTS

ILLUSTRATION



*1	REAR FLOOR PANEL BRACE	*2	REAR FLOOR SIDE MEMBER COVER LH
*3	REAR FLOOR SIDE MEMBER COVER RH	*4	REAR UNDERBODY PROTECTOR RH
*5	REAR UNDERBODY PROTECTOR LH	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	-	-

ILLUSTRATION



*1	EXHAUST TAIL PIPE ASSEMBLY	*2	REAR NO. 1 EXHAUST TAIL PIPE CLAMP
	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part

Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRV
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TAIL EXHAUST PIPE ASSEMBLY: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

CAUTION:

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

- Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Component with heavy weight.

Danger of injury!

- Note component's center of gravity.
- Support component using a jack.
- Secure component against falling off the jack.

- Swarf resulting from sawing or grinding components.

Danger of injury!

- Conduct all work in appropriate personal protective equipment only.
- Wear safety goggles and protective gloves.

PROCEDURE

1. REMOVE REAR FLOOR SIDE MEMBER COVER LH

Click here [INFO](#)

2. REMOVE REAR FLOOR SIDE MEMBER COVER RH

HINT:

Use the same procedure as for the LH side.

3. REMOVE REAR FLOOR PANEL BRACE

Click here [INFO](#)

4. REMOVE REAR UNDERBODY PROTECTOR LH

Click here [INFO](#)

5. REMOVE REAR UNDERBODY PROTECTOR RH

HINT:

Use the same procedure as for the LH side.

6. REMOVE EXHAUST TAIL PIPE ASSEMBLY

CAUTION:

- Hot surfaces.

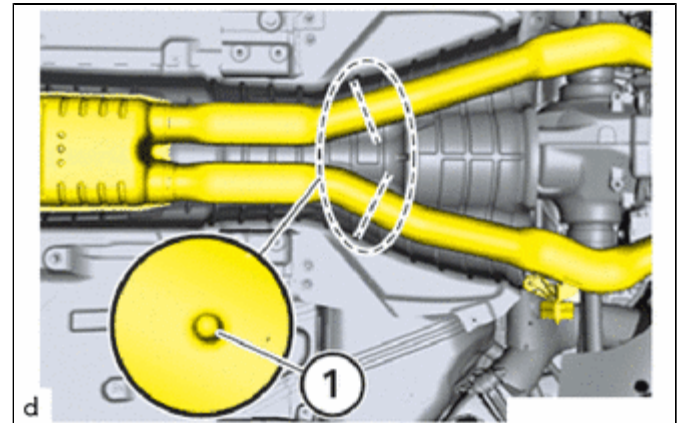
Risk of burning!

- Perform all work only on components that have cooled down.

HINT:

- If the separation point is not marked by a punch mark in the pipe, determine the separation point by means of the pipe length on the new component.
- Transfer the separation point to the faulty component and mark.
- Cut through the faulty component at the marked point with a suitable tool.
- Deburr the separation point and remove any swarf. There is a risk of remaining metal chips at the joint between the two pipes.
- Check the exhaust pipe assembly for tightness after installation.

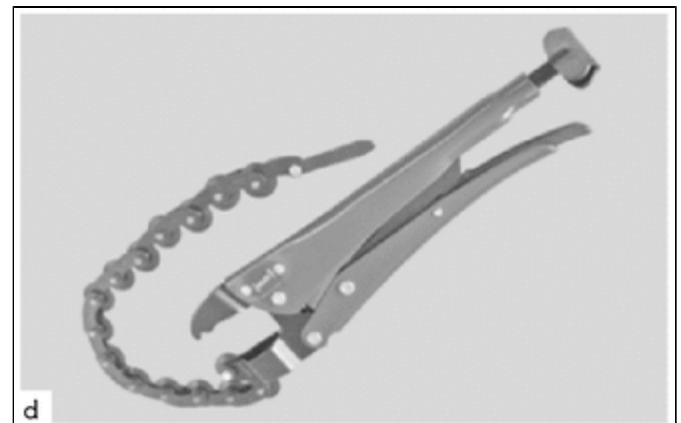
- (a) If the separation point (1) is not marked by a punch mark in the pipe, determine the separation point (1) by means of the pipe length on the new component.



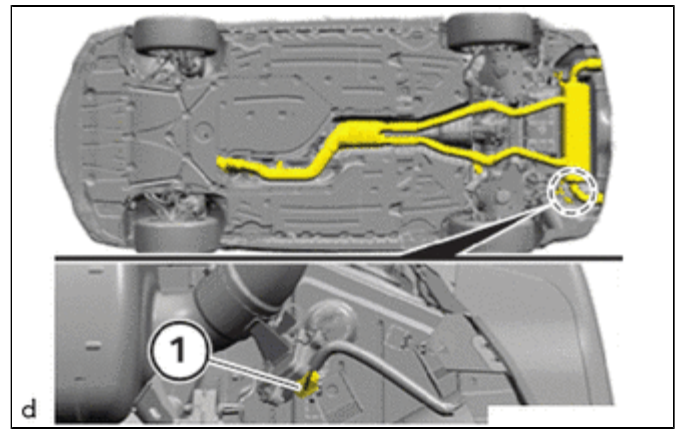
- (b) Transfer the separation point (1) to the component to be replaced and mark.

- (c) Cut through separation point at the marked point with the special tool 0 496 469 (00 2 220).

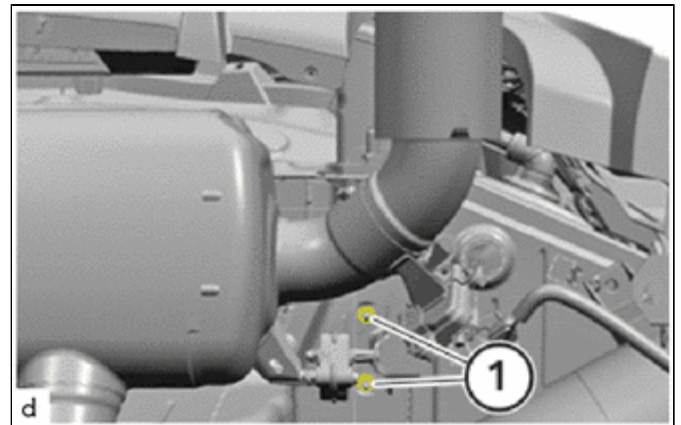
SST: 09200-WA600



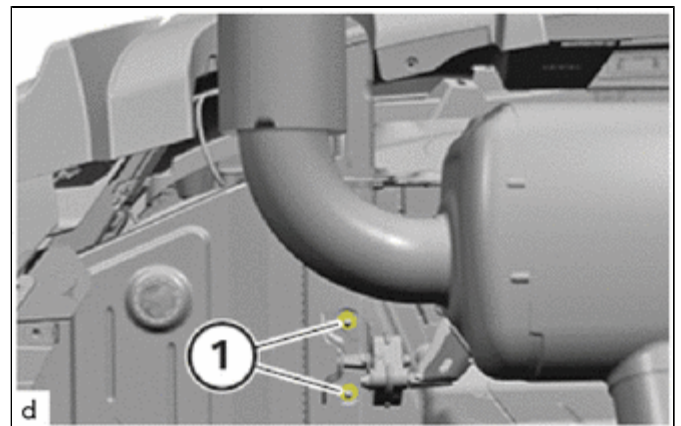
(d) Unlock plug connection (1) and disconnect.



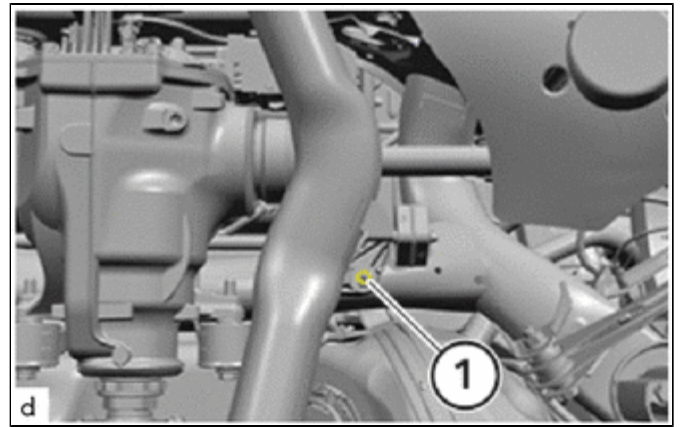
(e) Loosen nuts (1).



(f) Loosen nuts (1).



(g) Unfasten nut (1).



(h) Remove the exhaust tail pipe assembly.

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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TAIL EXHAUST PIPE ASSEMBLY: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

PROCEDURE

1. INSTALL EXHAUST TAIL PIPE ASSEMBLY

CAUTION:

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

HINT:

- If the separation point is not marked by a punch mark in the pipe, determine the separation point by means of the pipe length on the new component.
- Transfer the separation point to the faulty component and mark.
- Cut through the faulty component at the marked point with a suitable tool.
- Deburr the separation point and remove any swarf. There is a risk of remaining metal chips at the joint between the two pipes.
- Check the exhaust system for tightness after installation.

(a) Position the exhaust tail pipe assembly.

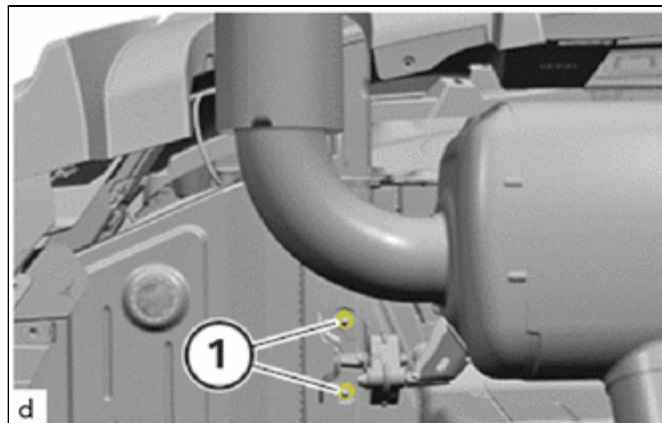
(b) Replace nut.

(c) Tighten nut.

Torque:

19 N·m {194 kgf·cm, 14 ft·lbf}

(d) Replace nuts.

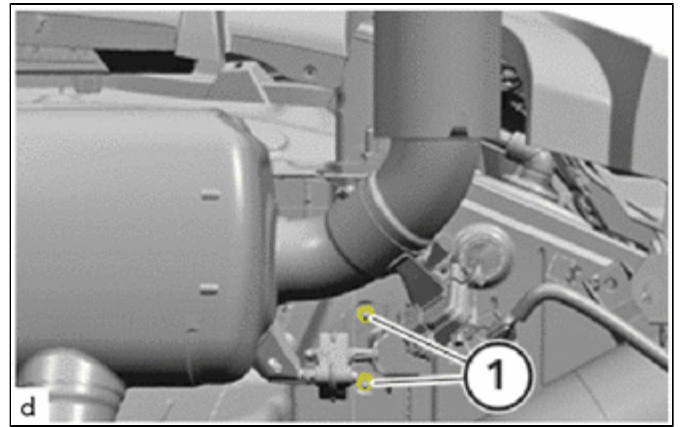


(e) Tighten nuts.

Torque:

19 N·m {194 kgf·cm, 14 ft·lbf}

(f) Replace nuts.



(g) Tighten nuts.

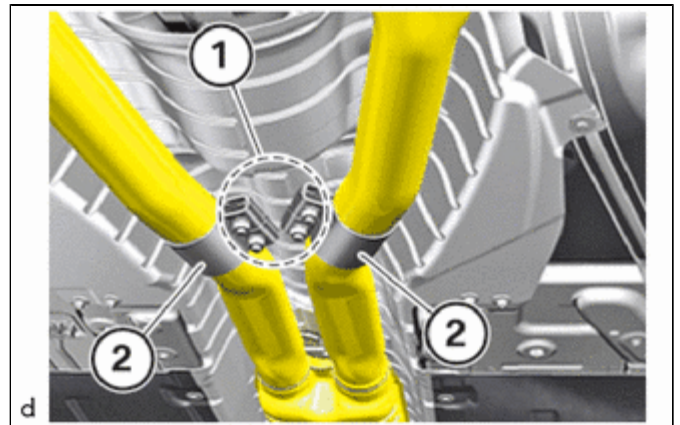
Torque:

19 N·m {194 kgf·cm, 14 ft·lbf}

(h) Tighten nuts in the area (1) at the rear No. 1 exhaust tail pipe clamps (2).

Torque:

45 N·m {459 kgf·cm, 33 ft·lbf}



(i) Connect connectors and lock.

2. INSTALL REAR UNDERBODY PROTECTOR LH

Click here [INFO](#)

3. INSTALL REAR UNDERBODY PROTECTOR RH

HINT:

Use the same procedure as for the LH side.

4. INSTALL REAR FLOOR PANEL BRACE

Click here [INFO](#)

5. INSTALL REAR FLOOR SIDE MEMBER COVER LH

Click here [INFO](#)

6. INSTALL REAR FLOOR SIDE MEMBER COVER RH

HINT:

Use the same procedure as for the LH side.

7. INSPECT FOR EXHAUST GAS LEAK

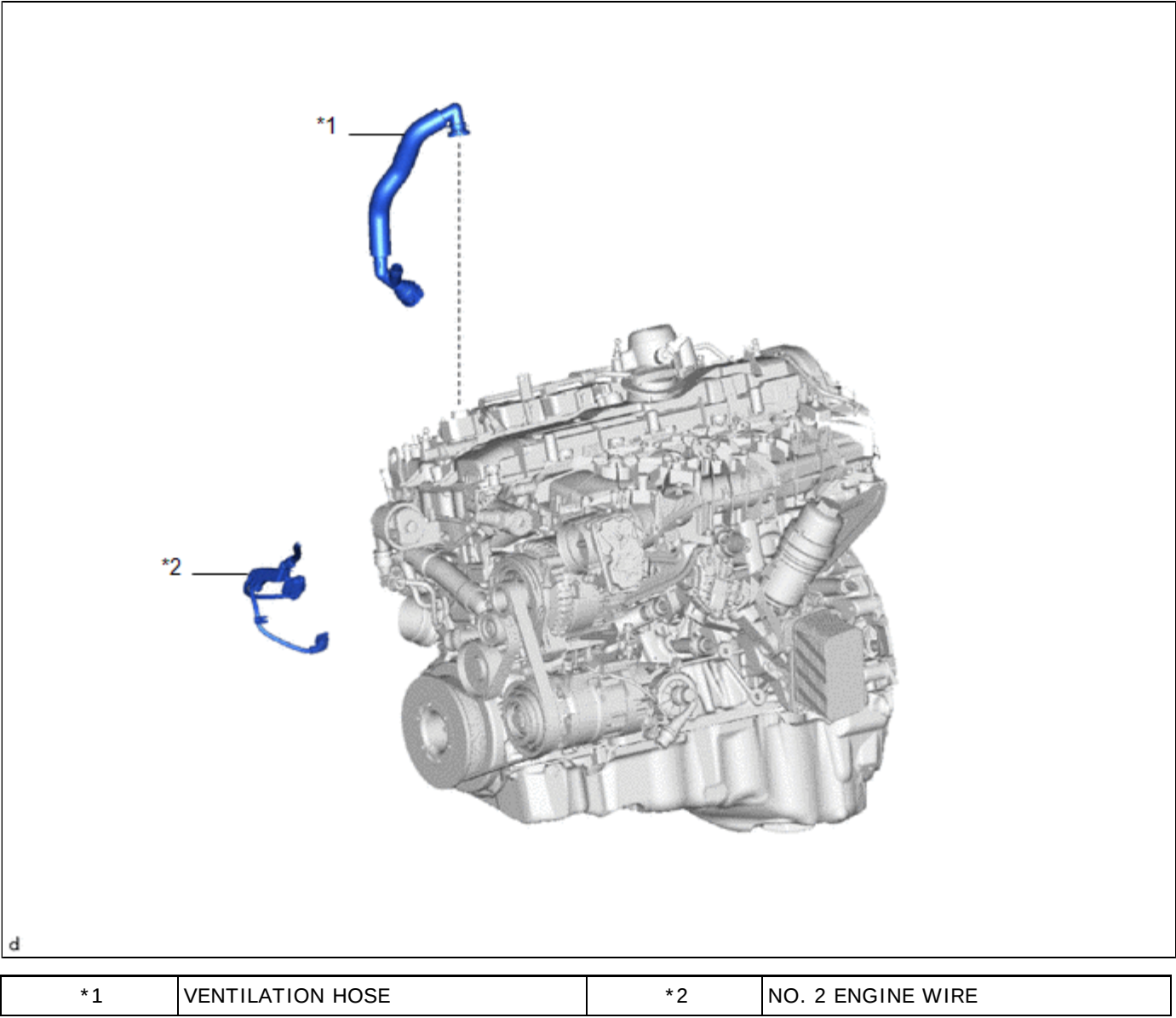
Click here [INFO](#)



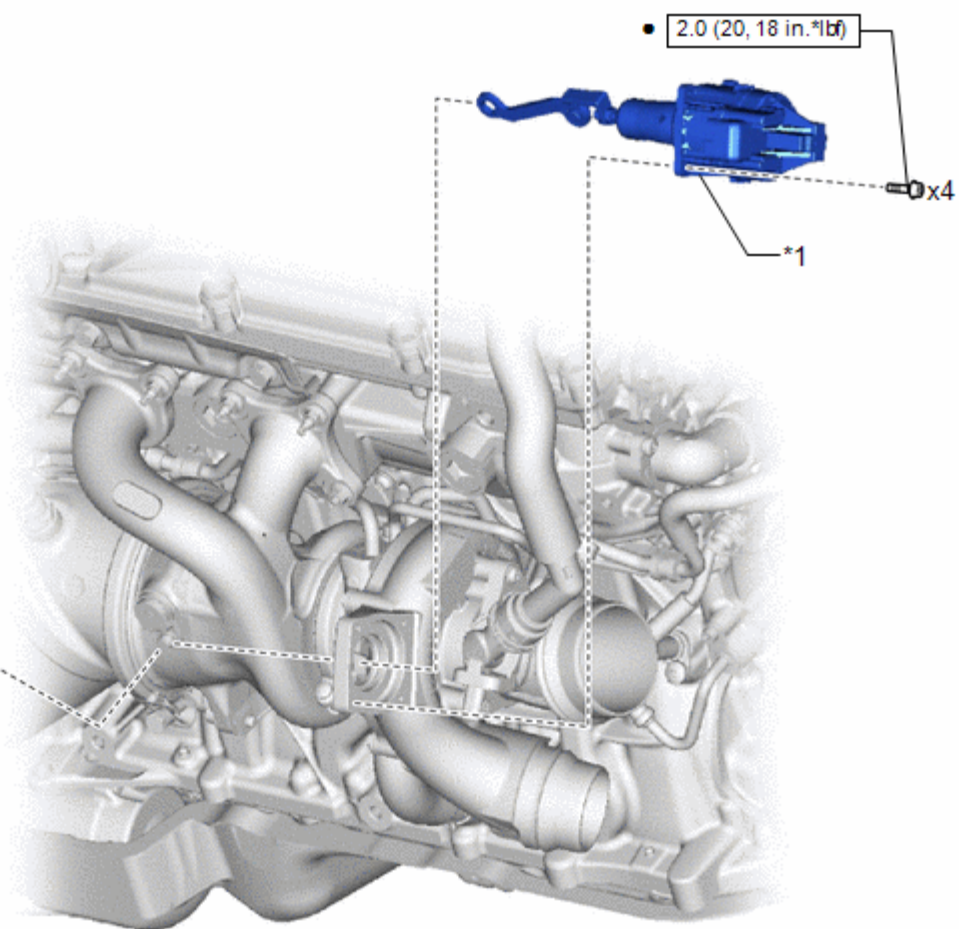
Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRO
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TURBO CHARGER ACTUATOR AND LINK: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



ILLUSTRATION



d

*1	TURBOCHARGER ACTUATOR AND LINK ASSEMBLY	*2	RETAINING CLIP
	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part



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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TURBO CHARGER ACTUATOR AND LINK: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

CAUTION:

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

PROCEDURE

1. REMOVE AIR CLEANER HOSE ASSEMBLY

Click here [INFO](#)

2. REMOVE VENTILATION HOSE

Click here [INFO](#)

3. REMOVE TURBOCHARGER ACTUATOR AND LINK ASSEMBLY

CAUTION:

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

NOTICE:

- Damage to the turbocharger actuator and link assembly and the mechanical connection.

Improper handling of the turbocharger actuator and link assembly can lead to malfunctions or failure of the turbocharger actuator and link assembly.

- Avoid exposure of lateral forces to the control rod of the turbocharger actuator and link assembly.

- Electrostatic discharge.

Damage to or destruction of electrical components.

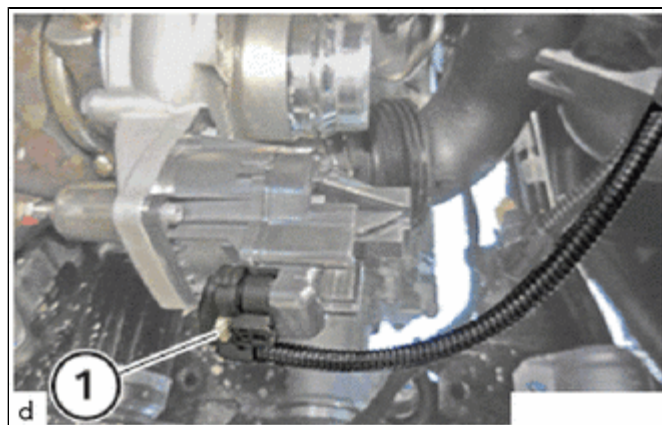
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- For additional information see:

Click here [INFO](#)

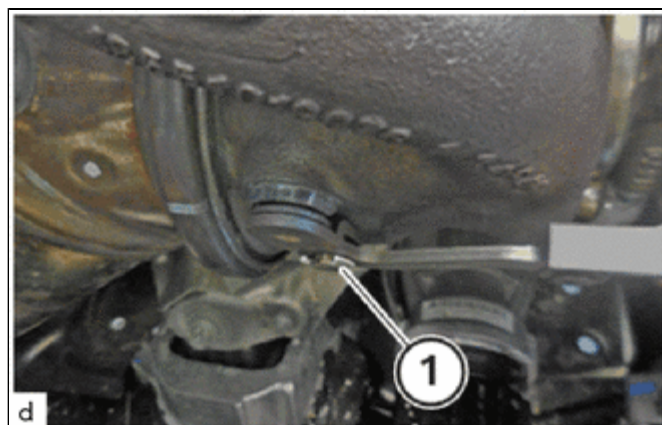
HINT:

It is not necessary to adjust the turbocharger actuator and link assembly after removing and installing or renewing.

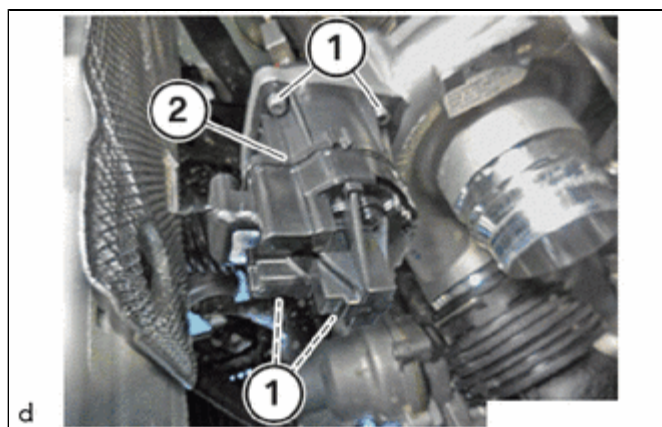
(a) Unlock and loosen connector (1).



(b) Unlock and detach retaining clip (1).



(c) Loosen the T25 bolts (1) on the turbocharger actuator and link assembly (2).



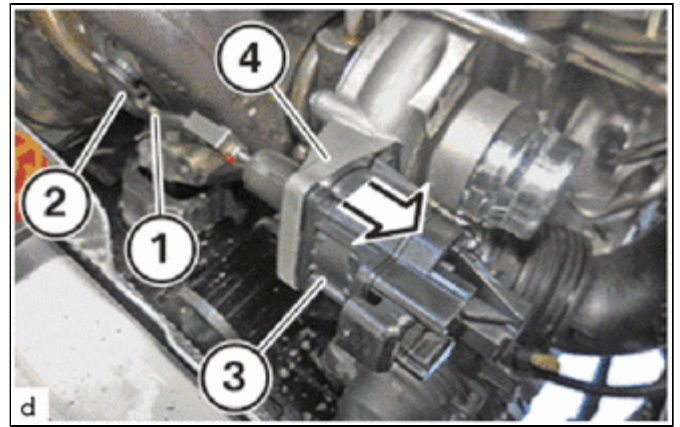
(d) Guide the turbocharger actuator and link assembly (3) out of the compressor housing bore hole (4) in the direction of arrow and remove it.

NOTICE:

- Carefully pull the control rod (1) of the turbocharger

actuator and link assembly (3) off the pin on the lever of the wastegate valve (2).

- Any effect of lateral force on the control rod (1) must be avoided.



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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TURBO CHARGER ACTUATOR AND LINK: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

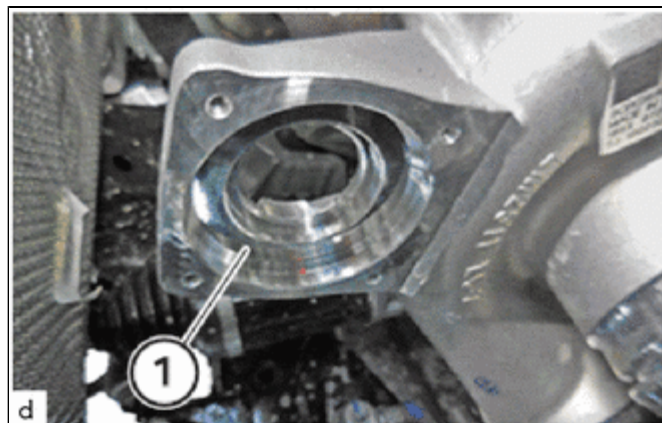
PROCEDURE

1. INSTALL TURBOCHARGER ACTUATOR AND LINK ASSEMBLY

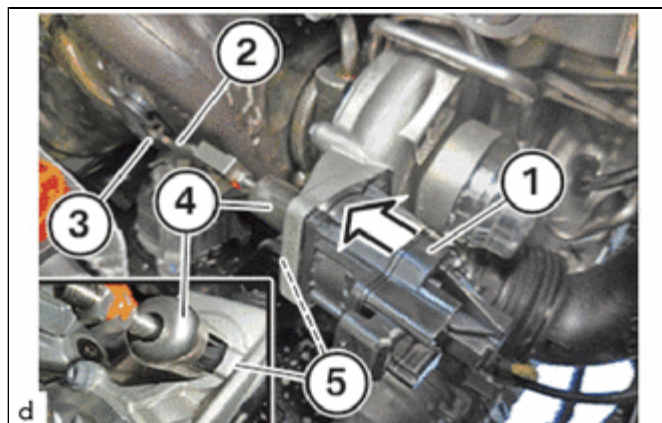
NOTICE:

- Damage to the turbocharger actuator and link assembly and the mechanical connection.
- Improper handling of the turbocharger actuator and link assembly can lead to malfunctions or failure of the turbocharger actuator and link assembly.
 - Avoid exposure of lateral forces to the control rod of the turbocharger actuator and link assembly.

- (a) Check contact surface (1) on turbocharger sub-assembly for contamination and clean if necessary.



- (b) Guide the turbocharger actuator and link assembly (1) into the bore hole of the compressor housing (5) in direction of arrow and position it.



- (c) Ensure that the heat shield (4) is positioned correctly on the compressor housing (5).
- (d) Carefully install the control rod (2) of the turbocharger actuator and link assembly (1) on the lever of the wastegate valve (3).

HINT:

Any effect of lateral force on the control rod (2) must be avoided.

(e) Replace the T25 bolts.

HINT:

The T25 bolts are included in the repair kit.

(f) Hand-tighten the bolts (1) on the turbocharger actuator and link assembly (2).

(g) Diagonally tighten the bolts (1) on the turbocharger actuator and link assembly (2).

Torque:

2.0 N·m {20 kgf·cm, 18 in·lbf}

(h) Replace the retaining clip.

HINT:

The retaining clip is included in the repair kit.

(i) Mount the retaining clip.

HINT:

Make sure the retaining clip engages audibly.

(j) Connect and lock the connector.

HINT:

Make sure the connector engages audibly.

2. ADJUST TURBOCHARGER ACTUATOR AND LINK ASSEMBLY

(a) Connect the diagnosis system.

3. INSTALL VENTILATION HOSE

Click here [INFO](#)

4. INSTALL AIR CLEANER HOSE ASSEMBLY

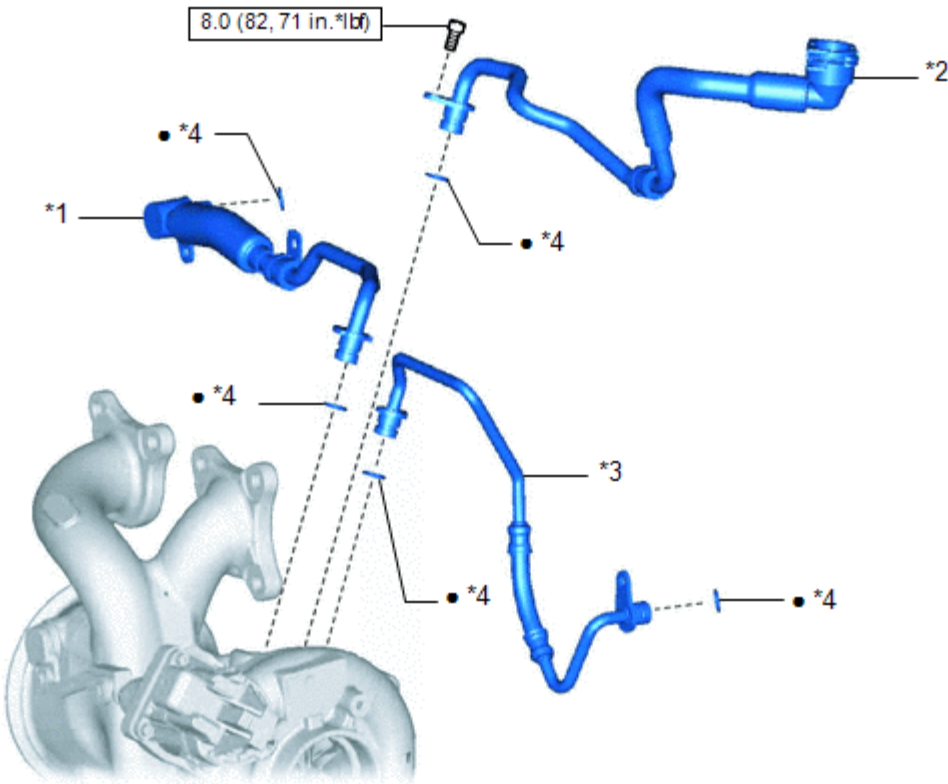
Click here [INFO](#)



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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TURBO WATER PIPE (for Inlet Side): COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	NO. 1 TURBO WATER PIPE SUB-ASSEMBLY	*2	NO. 2 TURBO WATER PIPE SUB-ASSEMBLY
*3	INLET TURBO OIL PIPE SUB-ASSEMBLY	*4	O-RING
	N*m (kgf*cm, ft.*lbf): Specified	●	Non-reusable part

	torque		
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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TURBO WATER PIPE (for Inlet Side): REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

PROCEDURE

1. REMOVE TURBOCHARGER SUB-ASSEMBLY

Click here [INFO](#)

2. REMOVE NO. 2 TURBO WATER PIPE SUB-ASSEMBLY

Click here [INFO](#)

3. REMOVE INLET TURBO OIL PIPE SUB-ASSEMBLY

Click here [INFO](#)

4. REMOVE NO. 1 TURBO WATER PIPE SUB-ASSEMBLY

CAUTION:

- Hot fluids.

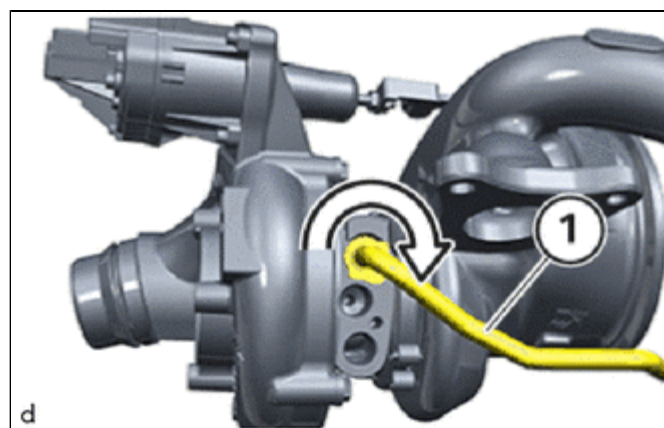
Risk of scalding!

- Conduct all work in the vehicle wearing appropriate personal protective equipment only.

HINT:

Collect and dispose of emerging fluids. Observe country specific waste disposal regulations.

- (a) Turn the No. 1 turbo water pipe sub-assembly (1) in direction of arrow and remove to the top.



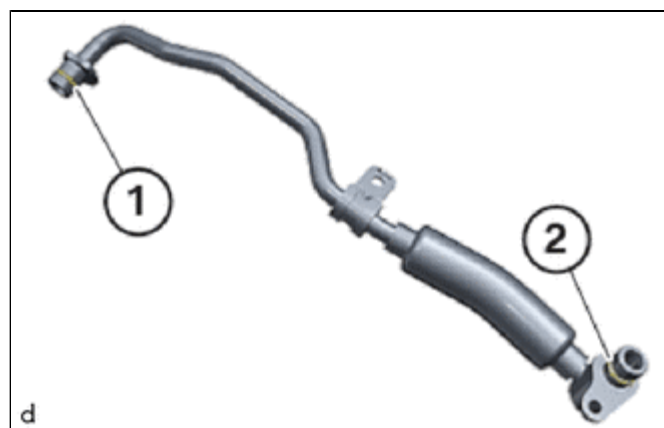
Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRK
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TURBO WATER PIPE (for Inlet Side): INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

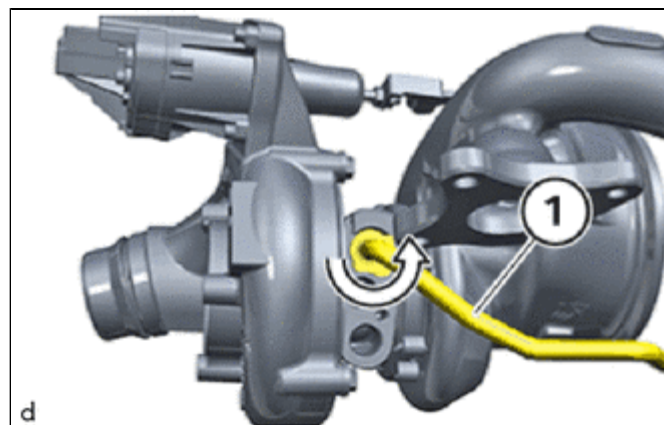
PROCEDURE

1. INSTALL NO. 1 TURBO WATER PIPE SUB-ASSEMBLY

(a) Replace O-rings (1) and (2).



(b) Insert the No. 1 turbo water pipe sub-assembly (1) into the turbocharger sub-assembly and turn it carefully in direction of arrow to the limit position.



2. INSTALL INLET TURBO OIL PIPE SUB-ASSEMBLY

Click here [INFO](#)

3. INSTALL NO. 2 TURBO WATER PIPE SUB-ASSEMBLY

Click here [INFO](#)

4. INSTALL TURBOCHARGER SUB-ASSEMBLY

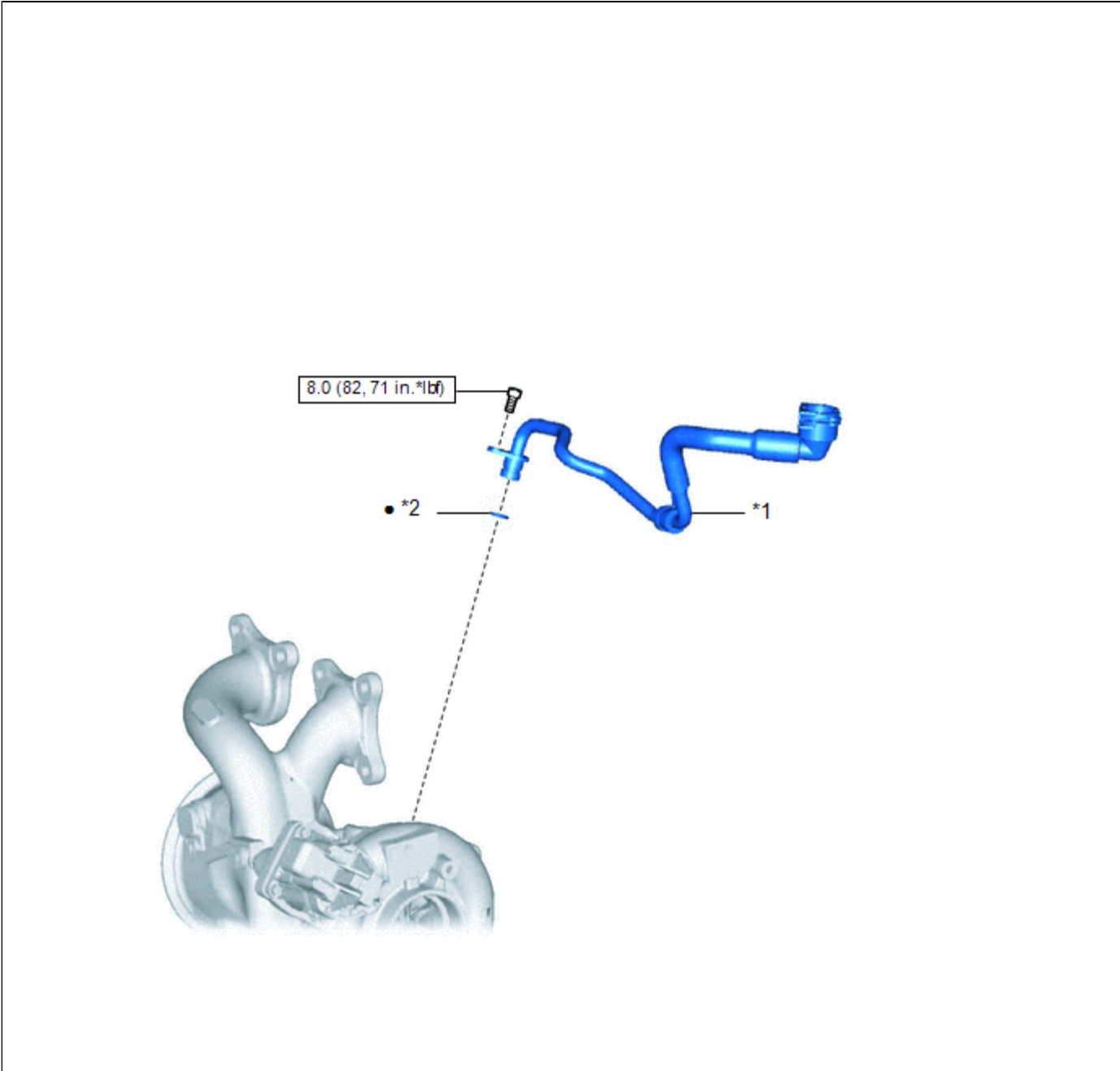
Click here [INFO](#)



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRL
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TURBO WATER PIPE (for Outlet Side): COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	NO. 2 TURBO WATER PIPE SUB-ASSEMBLY	*2	O-RING
	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRM
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TURBO WATER PIPE (for Outlet Side): REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

CAUTION:

- Hot fluids.
Risk of scalding!
 - Conduct all work in the vehicle wearing appropriate personal protective equipment only.
- Hot surfaces.
Risk of burning!
 - Perform all work only on components that have cooled down.

HINT:

Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.

PROCEDURE

1. REMOVE TURBOCHARGER SUB-ASSEMBLY

Click here [INFO](#)

2. REMOVE NO. 2 TURBO WATER PIPE SUB-ASSEMBLY

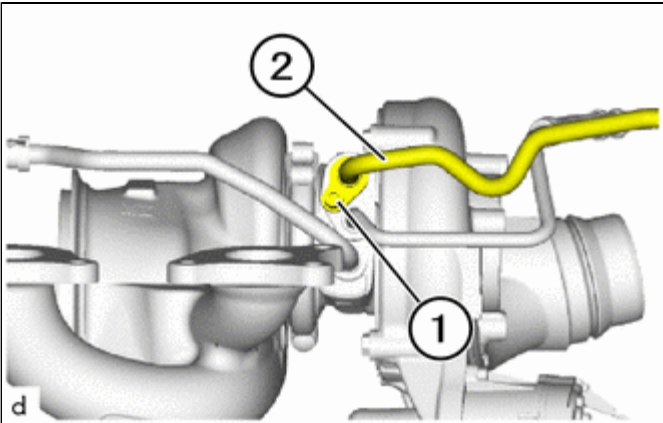
CAUTION:

- Hot fluids.
Risk of scalding!
 - Conduct all work in the vehicle wearing appropriate personal protective equipment only.

HINT:

Collect and dispose of emerging fluids. Observe country specific waste disposal regulations.

(a) Loosen the T30 bolt (1).



(b) Disconnect the No. 2 turbo water pipe sub-assembly (2).



TOYOTA

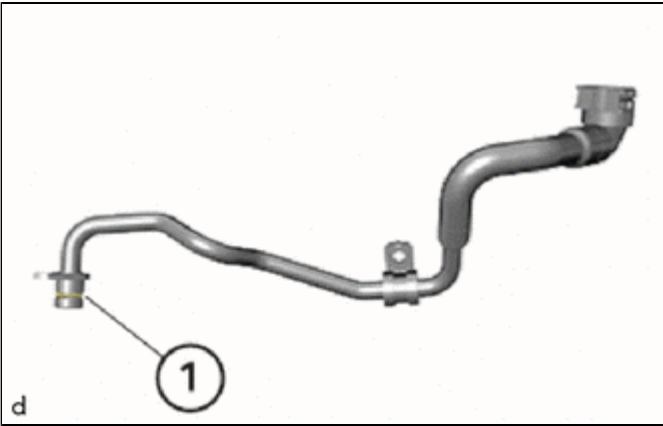
Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JCRN
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TURBO WATER PIPE (for Outlet Side): INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

PROCEDURE

1. INSTALL NO. 2 TURBO WATER PIPE SUB-ASSEMBLY

(a) Replace the O-ring (1).



(b) Position the No. 2 turbo water pipe sub-assembly.

(c) Tighten down the T30 bolt.

Torque:
8.0 N·m {82 kgf·cm, 71 in·lbf}

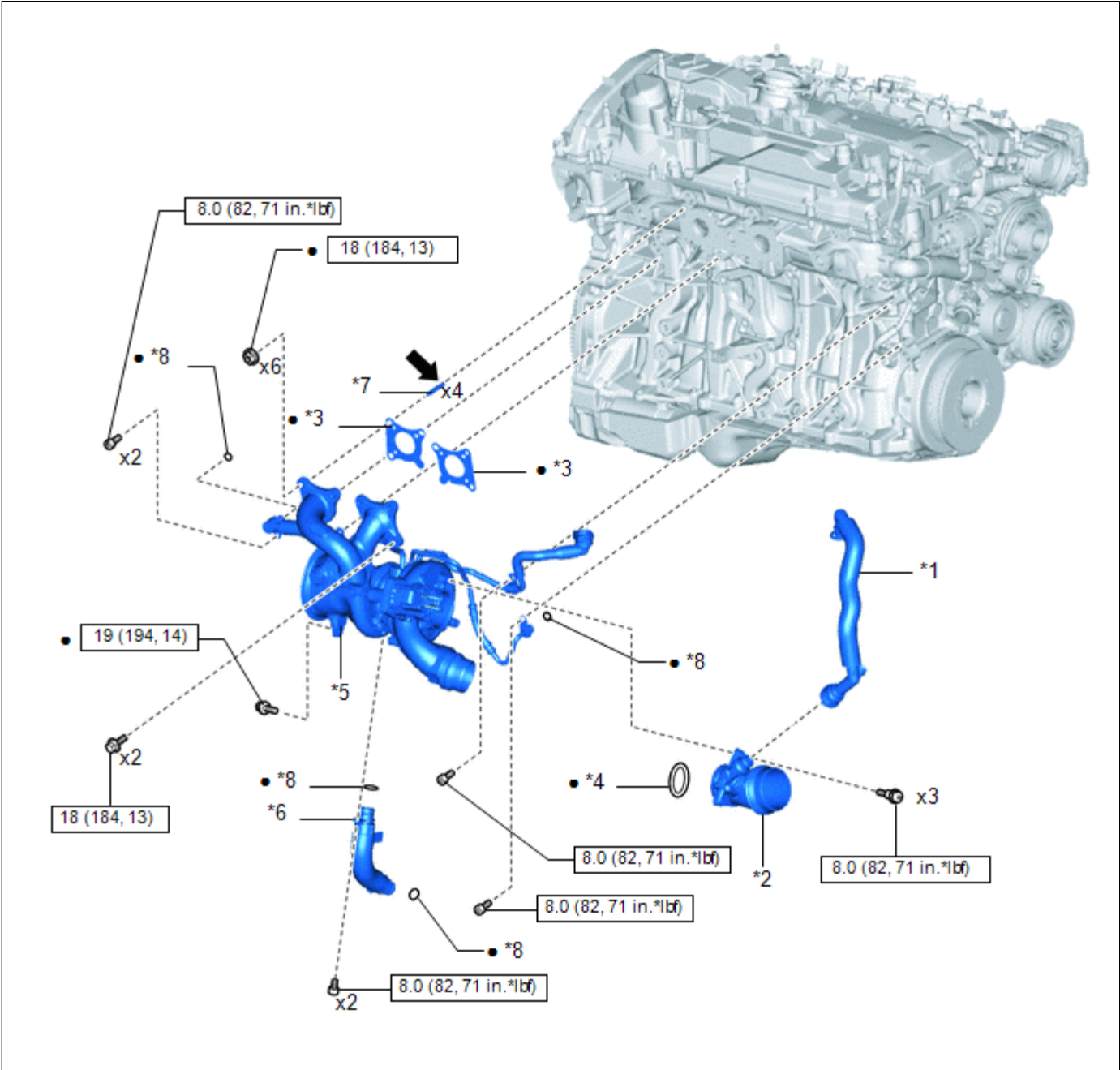
2. INSTALL TURBOCHARGER SUB-ASSEMBLY

Click here [INFO](#)

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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TURBOCHARGER: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

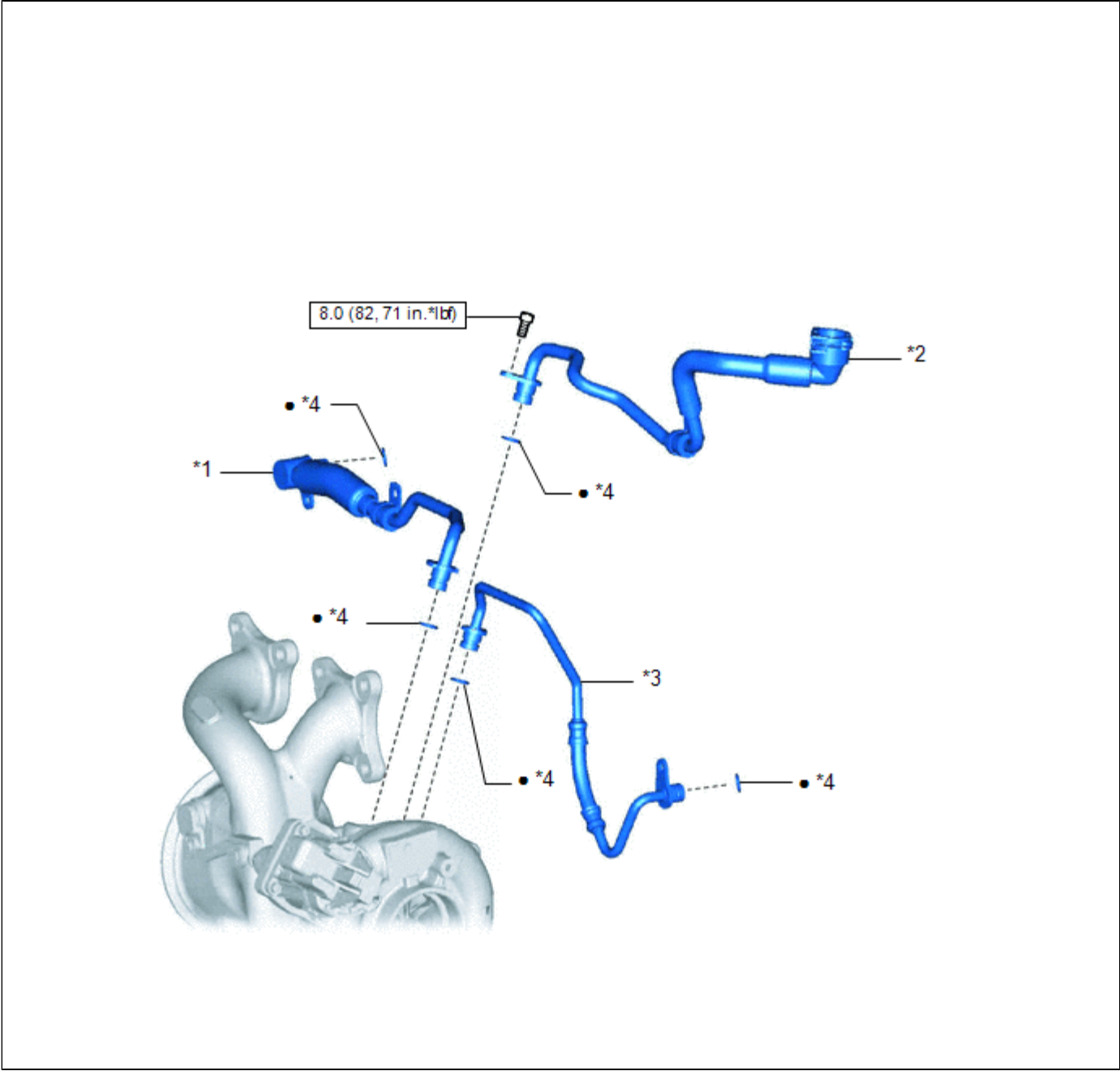
ILLUSTRATION



*1	VENTILATION HOSE	*2	INLET COMPRESSOR ELBOW
*3	EXHAUST MANIFOLD TO HEAD GASKET	*4	COMPRESSOR INLET GASKET
*5	TURBOCHARGER SUB-ASSEMBLY	*6	OUTLET TURBO OIL PIPE
*7	STUD BOLT	*8	O-RING

	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part
	Screw Lock Loctite 273, High Strength	-	-

ILLUSTRATION



*1	NO. 1 TURBO WATER PIPE SUB-ASSEMBLY	*2	NO. 2 TURBO WATER PIPE SUB-ASSEMBLY
*3	INLET TURBO OIL PIPE SUB-ASSEMBLY	*4	O-RING

	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part
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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: B58 (INTAKE / EXHAUST): TURBOCHARGER: ON-VEHICLE INSPECTION; 2020 MY Supra [03/2019 -]		

ON-VEHICLE INSPECTION

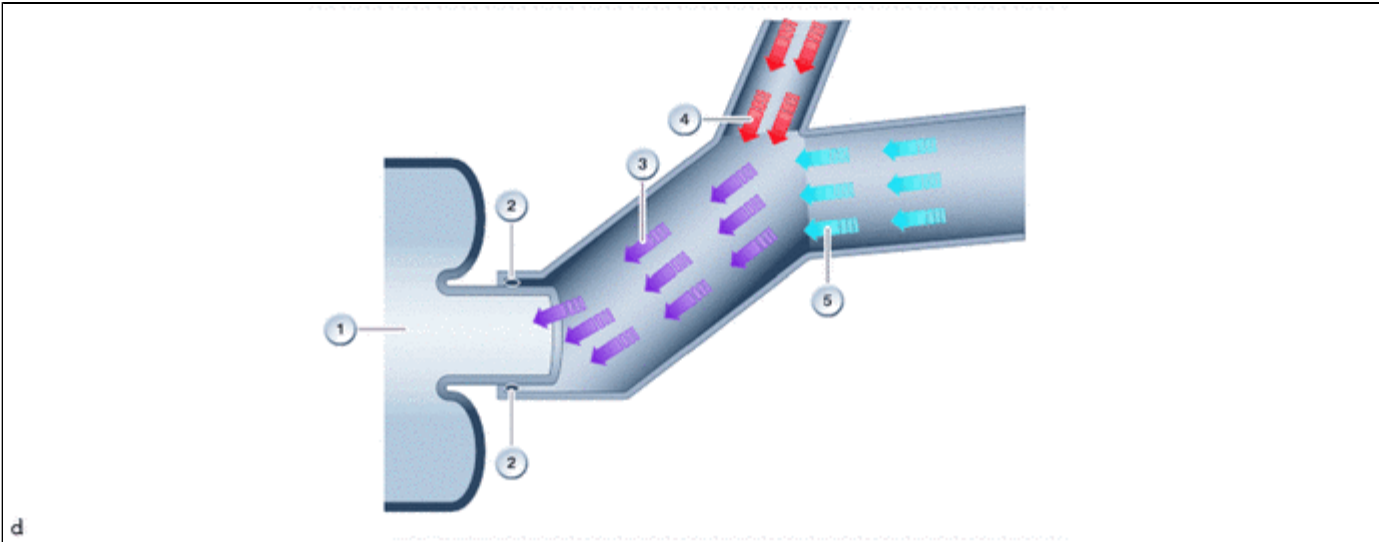
CAUTION / NOTICE / HINT

If there are signs of leakage, the cause should first be looked for in the vicinity of the turbocharger sub-assembly and eliminated if possible. The pressure in the turbine and compressor housing is greater than in the bearing housing, which means that an oil leak from the turbocharger sub-assembly in normal condition is physically impossible.

PROCEDURE

1. EXTERNAL OIL LEAK

- (a) Leakage on oil supply or oil return line:
 - (1) When leaks are detected at the oil supply or oil return, check the bolt connections for tightening torques and correctly installed gaskets.
- (b) Escaping blow-by oil



*1	Compressor housing	*2	Sealing ring
*3	Fresh air, enriched with blow-by oil	*4	Blow-by gas from ventilation hose
*5	Fresh air	-	-

- (c) Oil can penetrate into the air intake duct via the ventilation hose.
- (d) If the gaskets of the air intake duct or charge air duct leak, blow-by oil can emerge there.
- (e) Check the following when blow-by oil emerges:

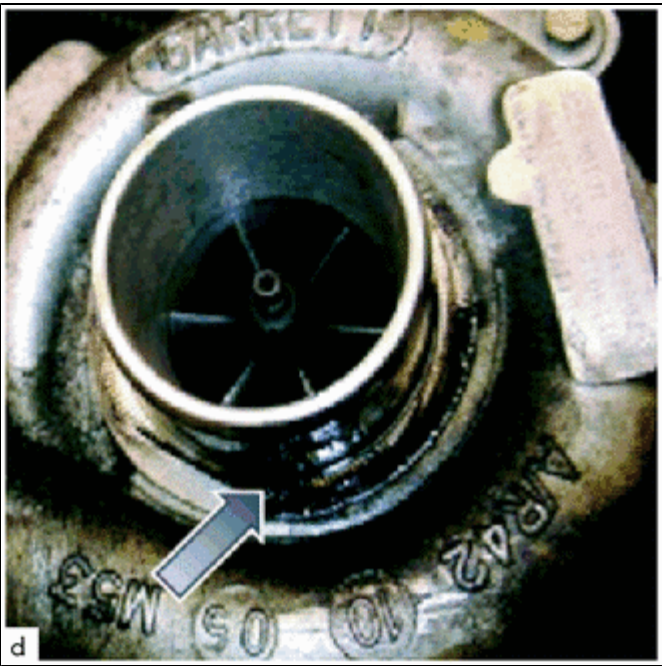
NOTICE:

When an excessive amount of blow-by oil is present in the air duct, the cause for that must be eliminated.

- (1) Ventilation hose (measure internal pressure of the engine!)
- (2) Gaskets of the air duct

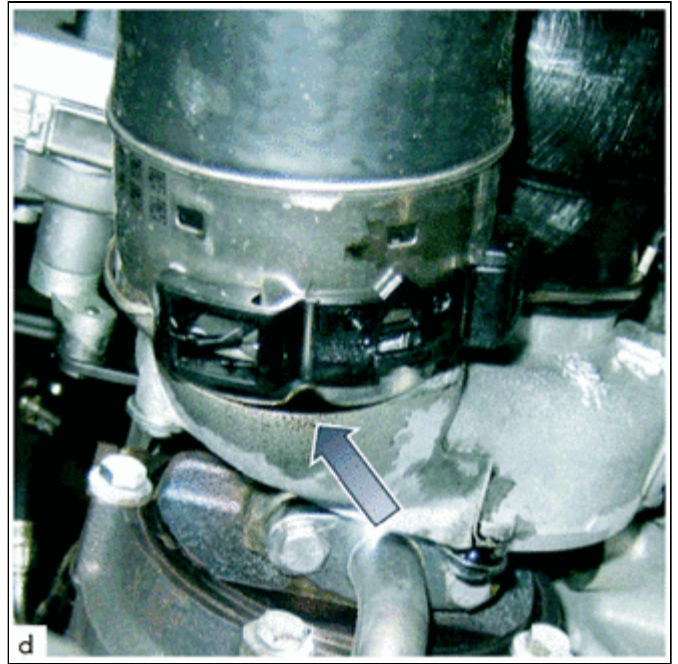


d



A close-up photograph of a mechanical component, likely a valve or pump assembly. The component is made of metal and features a central circular opening with a radial pattern. A blue arrow points to a small, dark, rectangular feature on the inner rim of the opening. The component is labeled "GARRETT" and "APR 42".





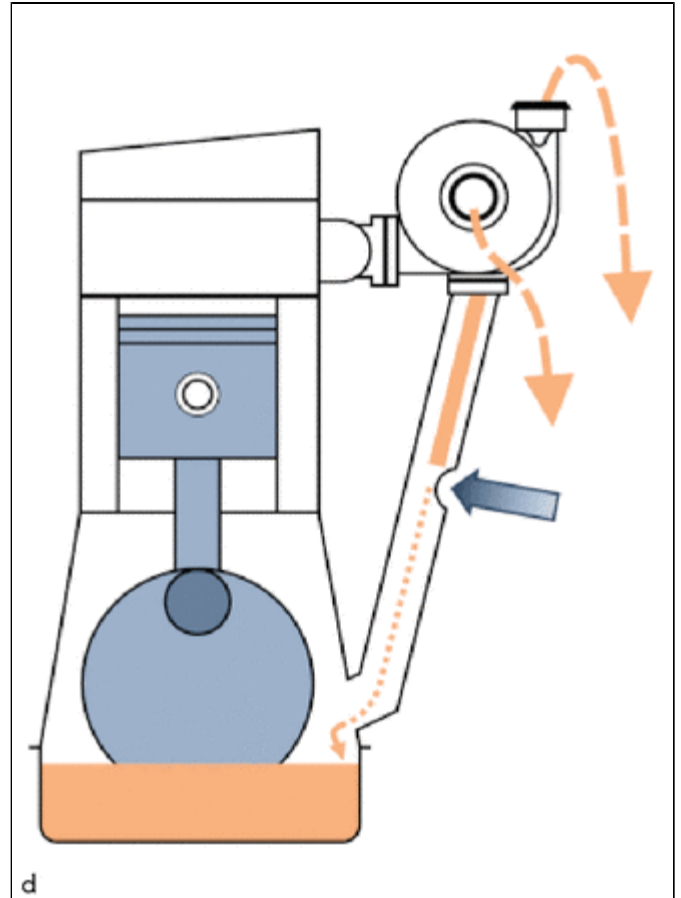
2. INTERNAL OIL LEAK

NOTICE:

The causes of the oil leaks described here are not caused by the turbocharger sub-assembly itself. If such oil leak occurs, the cause must be eliminated in the periphery!

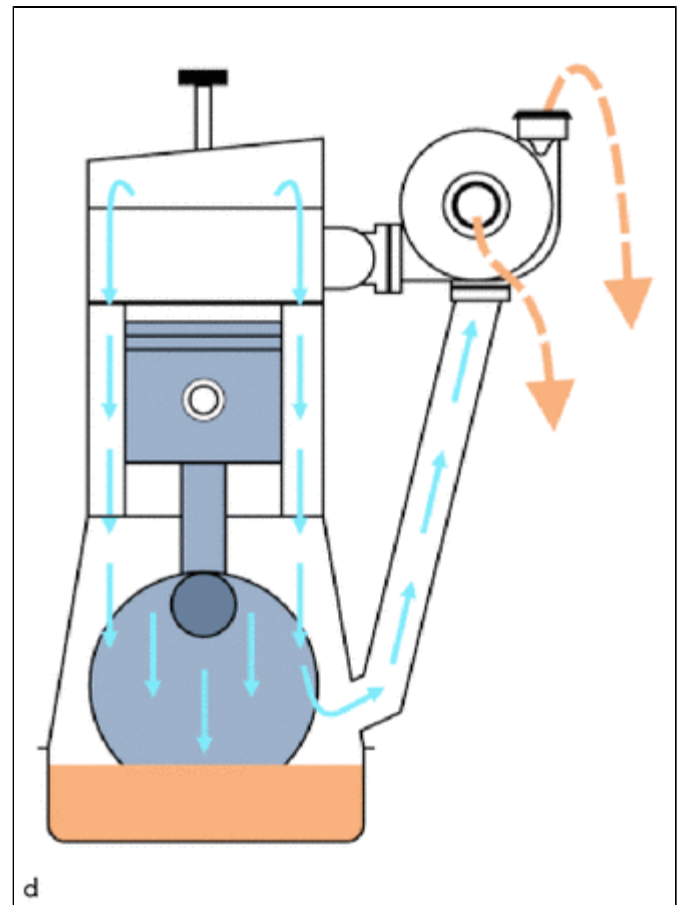
(a) Oil return restricted

- (1) If the oil return is restricted due to oil coking, the oil can no longer flow freely from the turbocharger sub-assembly bearing housing into the oil return. Excess pressure builds up in the bearing housing, and the oil is pressed out past the radial shaft seals and into the charge air duct and the turbine.



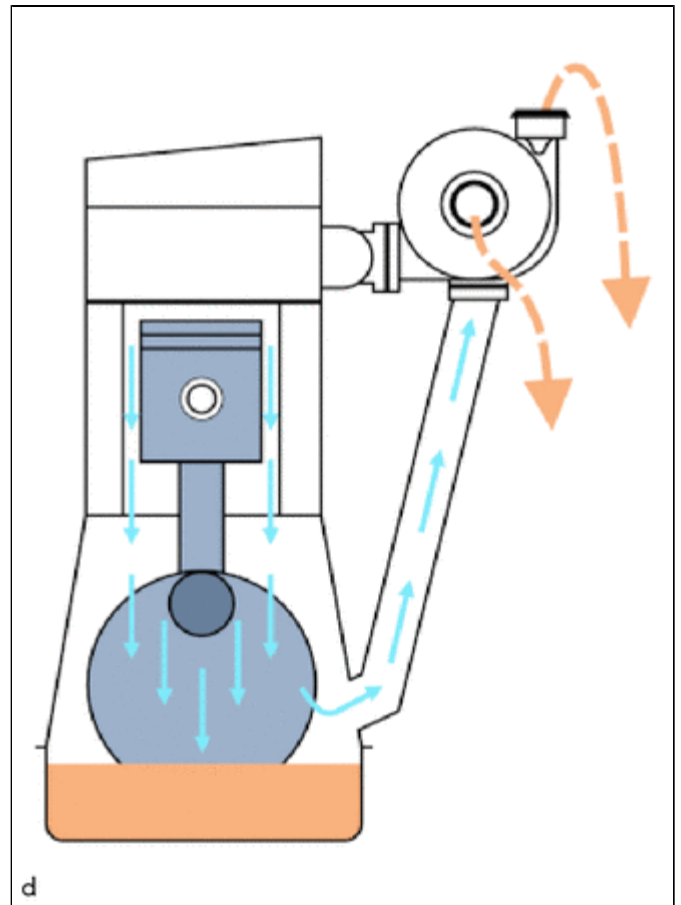
(b) Ventilation hose faulty

- (1) If the pressure inside the cylinder block sub-assembly is too high as a result of faulty ventilation hose, the oil can no longer flow freely from the turbocharger sub-assembly bearing housing into the oil return. Excess pressure builds up in the bearing housing, and the oil is pressed out past the radial shaft seals and into the charge air duct and the turbine.



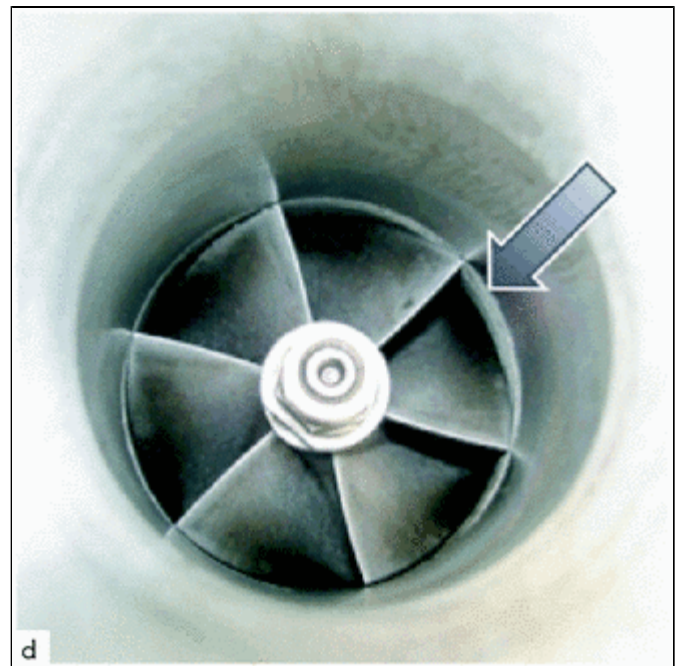
(c) Worn piston rings/increase in blow-by gas

- (1) If the pressure inside the cylinder block sub-assembly is too high as a result of faulty piston rings, the oil can no longer flow freely from the turbocharger sub-assembly bearing housing into the oil return. Excess pressure builds up in the bearing housing, and the oil is pressed out past the radial shaft seals and into the charge air duct and the turbine.



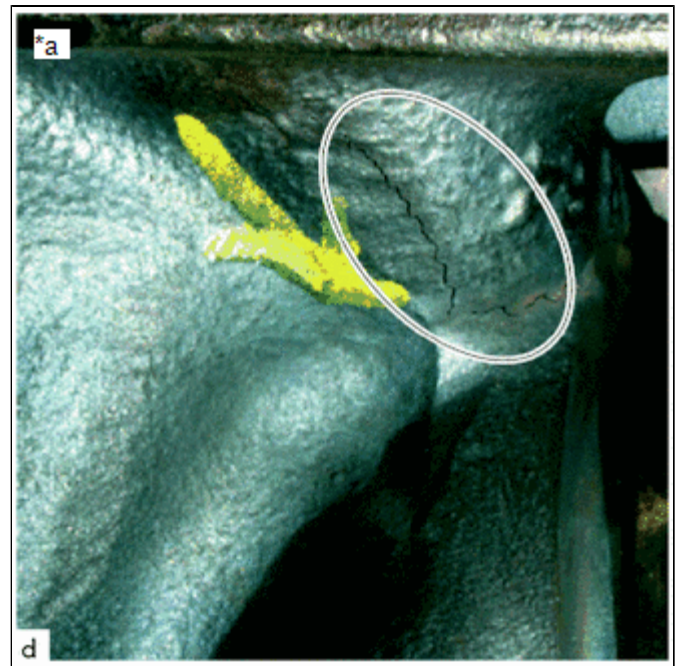
(d) Bearing damage, turbocharger sub-assembly

- (1) Impeller scraping against housing.
- (2) The turbocharger sub-assembly has a dynamic plain bearing which stabilizes itself in operation. This means that in rest state, play in the shaft is normal.
- (3) As long as the impeller does not scrape against the housing, play in the shaft bearing is OK and there is no bearing damage.
- (4) If the impeller scrapes against the housing, the shaft bearing of the turbocharger sub-assembly is damaged.
- (5) If the shaft bearing of the turbocharger sub-assembly is damaged, the radial shaft seals will no longer seal properly and oil flows from the bearing housing into the compressor and turbine.



3. CRACKS IN THE TURBINE HOUSING

- (a) In the event of tears in the turbine housing that have led to exhaust leaks (soot traces at surrounding components), the turbocharger sub-assembly must be replaced.



*a	External crack in turbine housing.
----	------------------------------------

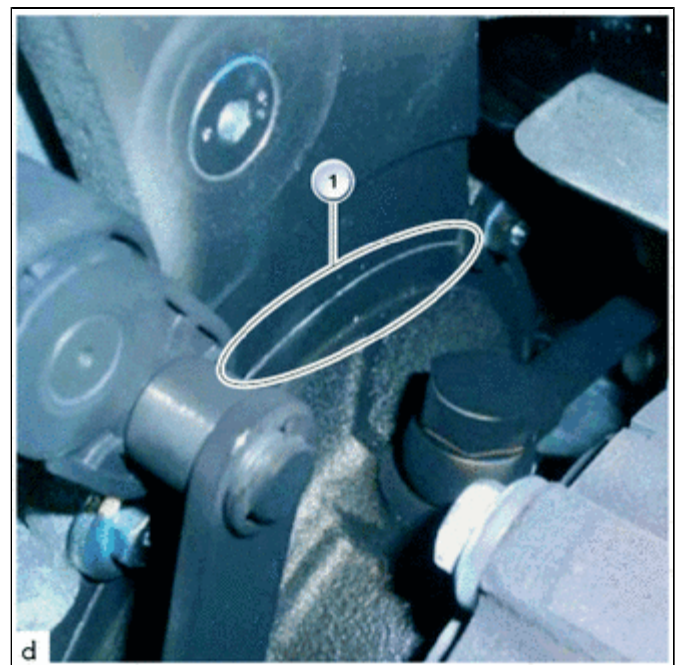
4. EXHAUST GAS LEAKS AT SCREW CONNECTIONS

- (a) Incorrect AZDs or tension can lead to leakage at the connection of the turbine housing to the exhaust manifold. The exhaust manifold must also be checked for leaks.

5. EXHAUST LEAKS BETWEEN TURBINE AND BEARING HOUSINGS

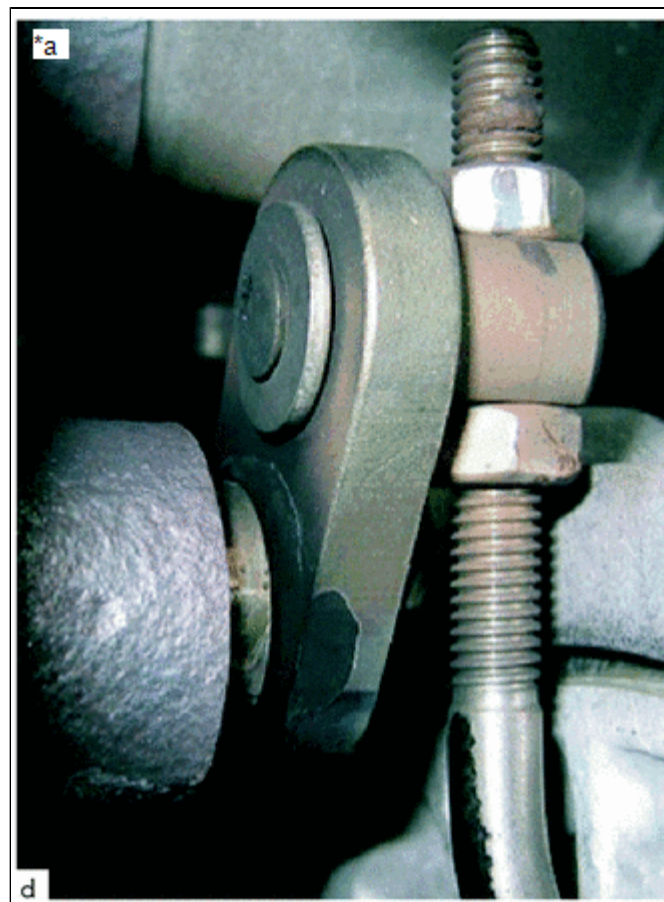
- (a) Leaks at the connection of turbine housing and bearing housing can lead to heavy soot accumulations on the surrounding components. In the event of such leaks the turbocharger sub-assembly must be replaced.

- (1) Exhaust leaks between turbine and bearing housings (1).



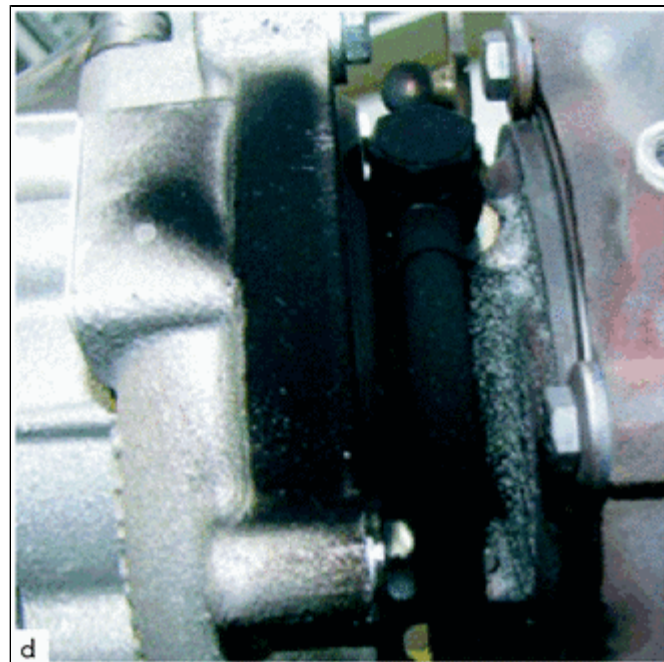
6. EXHAUST GAS ESCAPING AT THE ADJUSTING MECHANISM

(a) The adjusting mechanism is connected to the variable turbine geometry by the wall of the exhaust turbocharger housing. Limited leakage occurs at this point for design reasons. Such leaks may produce slight discoloration of the outer side of the turbocharger sub-assembly.



*a	Normal discoloration as a result of a leak.
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(b) Excessive deposits.



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Title: B58 (INTAKE / EXHAUST): TURBOCHARGER: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

CAUTION:

- Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.

NOTICE:

- Electrostatic discharge.

Damage to or destruction of electrical components.

- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- For additional information see:

Click here [INFO](#)

HINT:

- Prior to replacing the turbocharger sub-assembly: Observe the notes on troubleshooting on the turbocharger sub-assembly.

Click here [INFO](#)

- For turbocharger sub-assembly damage: Check the pressure pipes, intercooler and intake manifold for foreign matter, damage and correct functionality.
- If the outlet turbo oil pipe is exchanged, then the connecting pipe to the oil pan sub-assembly must always be cleaned, as the connecting pipe can coke.

PROCEDURE

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

Click here [INFO](#)

2. REMOVE STEERING LINK ASSEMBLY

Click here [INFO](#)

3. REMOVE EXHAUST PIPE ASSEMBLY

Click here [INFO](#)

4. REMOVE NO. 2 AIR CLEANER HOSE

Click here [INFO](#)

5. REMOVE VENTILATION HOSE

Click here [INFO](#)

6. REMOVE COMPRESSOR INLET ELBOW

Click here [INFO](#)

7. DRAIN ENGINE COOLANT (for High Temperature)

Click here [INFO](#)

8. REMOVE EXHAUST MANIFOLD CONVERTER SUB-ASSEMBLY

Click here [INFO](#)

9. REMOVE OUTLET TURBO OIL PIPE

Click here [INFO](#)

10. DISCONNECT NO. 2 TURBO WATER PIPE SUB-ASSEMBLY

CAUTION:

- Hot fluids.

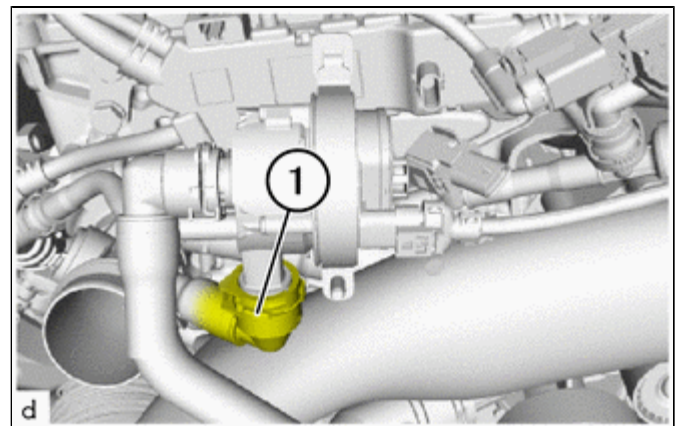
Risk of scalding!

- Conduct all work in the vehicle wearing appropriate personal protective equipment only.

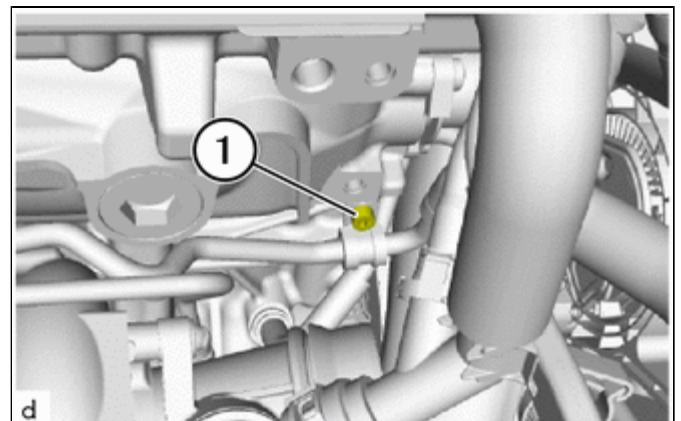
HINT:

Collect and dispose of emerging fluids. Observe country specific waste disposal regulations.

(a) Unlock and disconnect the coolant hose (1).



(b) Unscrew the T30 bolt (1) on the holder of the No. 2 turbo water pipe sub-assembly.



11. DISCONNECT INLET TURBO OIL PIPE SUB-ASSEMBLY

CAUTION:

- Hot fluids.

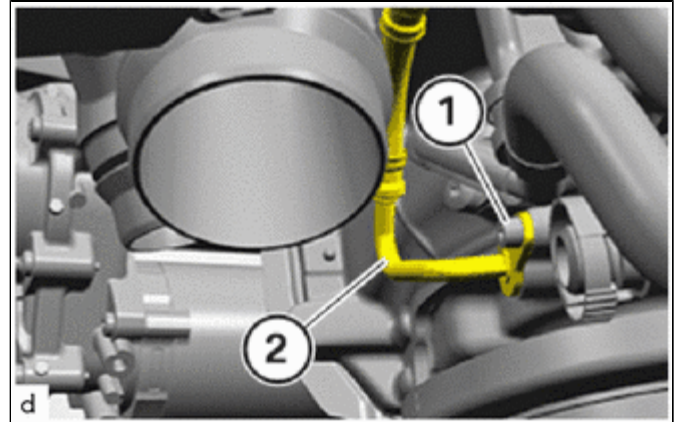
Risk of scalding!

- Conduct all work in the vehicle wearing appropriate personal protective equipment only.

HINT:

- Have a rag ready and catch any engine oil that may emerge.
- Make sure no engine oil runs onto fan and generator v belt.

(a) Loosen the T30 bolt (1).



(b) Remove the inlet turbo oil pipe sub-assembly (2).

12. REMOVE TURBOCHARGER SUB-ASSEMBLY

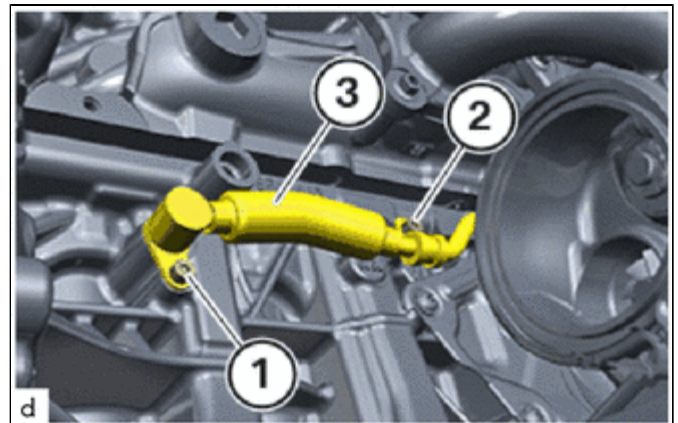
CAUTION:

- Hot surfaces.

Risk of burning!

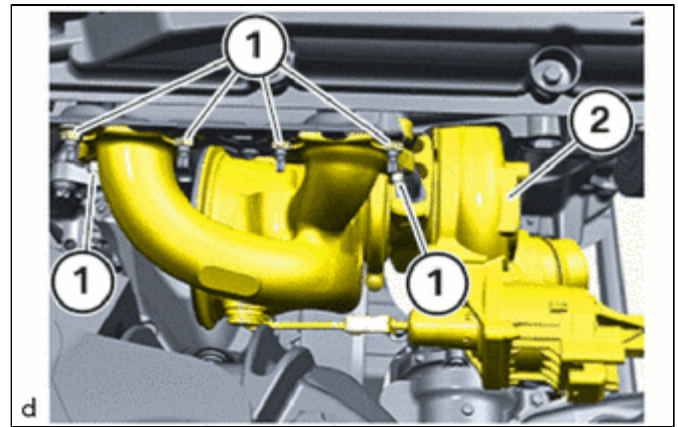
- Perform all work only on components that have cooled down.

(a) Loosen the T30 bolts (1) and (2).

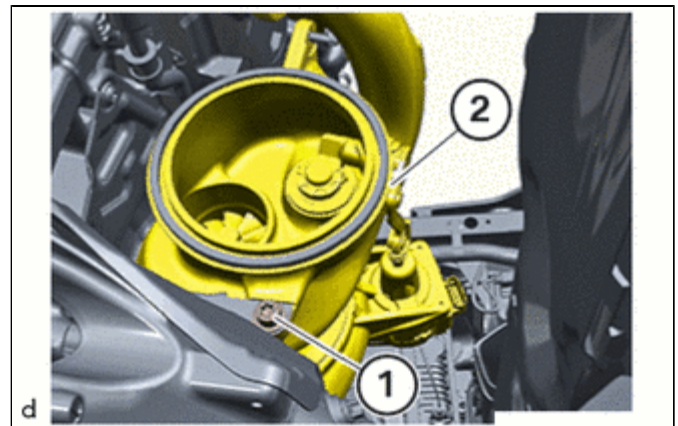


(b) Remove No. 1 turbo water pipe sub-assembly (3) from the cylinder block sub-assembly.

(c) Unscrew the nuts (1) from the turbocharger sub-assembly (2).



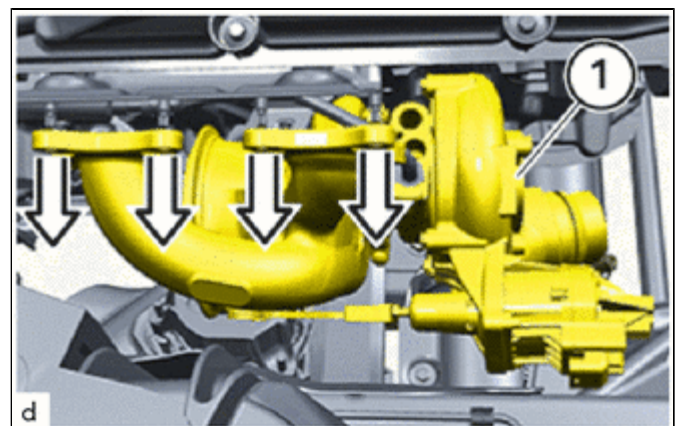
(d) Unscrew the T40 bolt (1) from the turbocharger sub-assembly (2).



(e) Remove the turbocharger sub-assembly (1) in the direction of the arrow.

CAUTION:

- Heavy component.
- Heavy components can lead to injury or damage.
 - Remove and install heavy components with the aid of another person/other persons.



13. REMOVE NO. 2 TURBO WATER PIPE SUB-ASSEMBLY

HINT:

Perform this procedure only when replacement of the turbocharger sub-assembly is necessary.

Click here [INFO](#)

14. REMOVE INLET TURBO OIL PIPE SUB-ASSEMBLY

HINT:

Perform this procedure only when replacement of the turbocharger sub-assembly is necessary.

Click here [INFO](#)

15. REMOVE NO. 1 TURBO WATER PIPE SUB-ASSEMBLY

HINT:

Perform this procedure only when replacement of the turbocharger sub-assembly is necessary.

Click here [INFO](#)



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Title: B58 (INTAKE / EXHAUST): TURBOCHARGER: INSPECTION; 2020 MY Supra [03/2019 -]		

INSPECTION

CAUTION / NOTICE / HINT

Complaints of a lack of power are usually connected with one or more fault entries in the engine control unit (charging pressure control deviation). These fault entries must be processed using the diagnosis system.

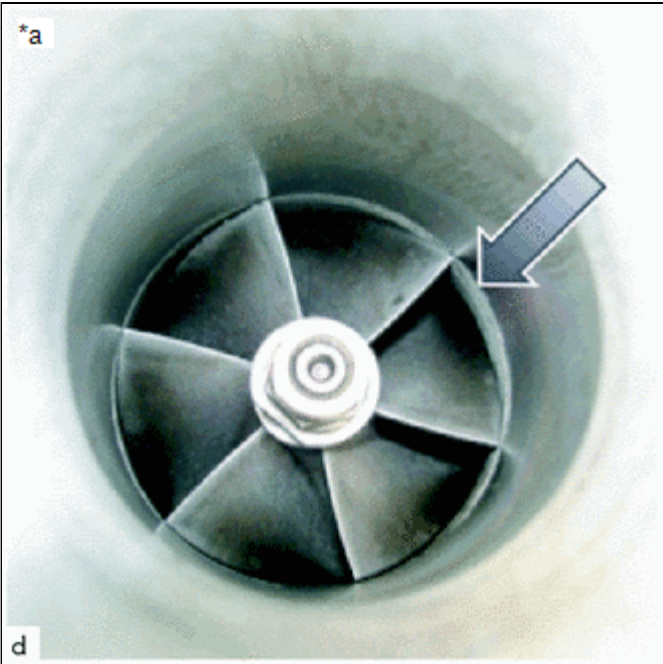
PROCEDURE

1. FAULT CAUSES ON THE TURBOCHARGER SUB-ASSEMBLY

(a) Back to main document

2. BEARING DAMAGE

(a) If the compressor or turbine wheel rub against the housing (see picture below), the turbocharger sub-assembly is faulty. This damage leads not only to a drop below the charging pressure but also noises.

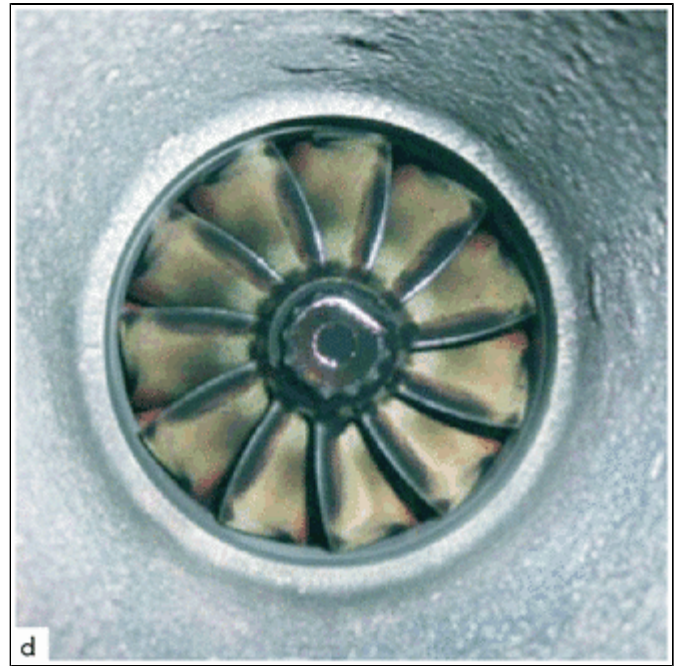


*a	Traces left by the impeller grinding against the housing.
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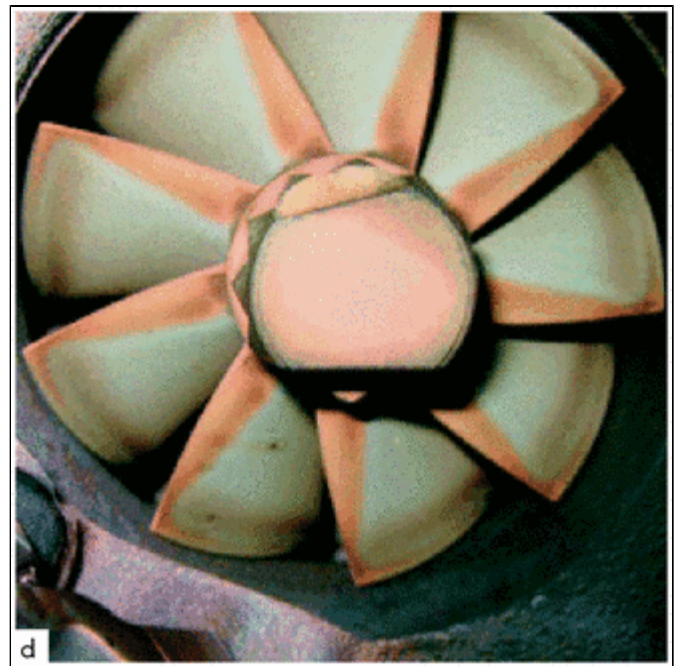
3. FOREIGN BODY ON THE TURBINE SIDE

- (a) If a foreign body damages the turbine wheel, the efficiency of the turbocharger sub-assembly is severely limited and the required charging pressure is no longer reached. Where a foreign body causes damage on the turbine side, the adjustment vanes are usually also damaged in addition to the turbine wheel, which often causes the adjusting mechanism to jam.
- (b) In the event of damage caused by a foreign body, it is imperative to establish how the foreign body penetrated the system and to remedy the cause, as otherwise the newly installed turbocharger sub-assembly may also be damaged.

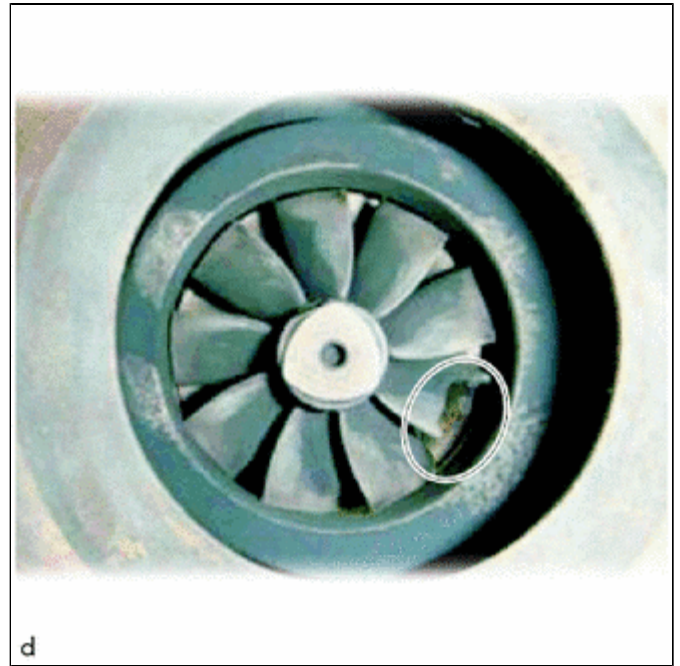
(c) Normal turbine wheel without damage.



(d) Normal turbine wheel without damage.



(e) Turbine vanes damaged by foreign bodies.



4. FOREIGN BODY ON THE COMPRESSOR SIDE

- (a) If a foreign body damages the impeller, the efficiency of the turbocharger sub-assembly is severely limited and the required charging pressure is no longer reached.
- (b) In the event of damage caused by a foreign body, it is imperative to establish how the foreign body penetrated the system and to remedy the cause, as otherwise the newly installed turbocharger sub-assembly may also be damaged.

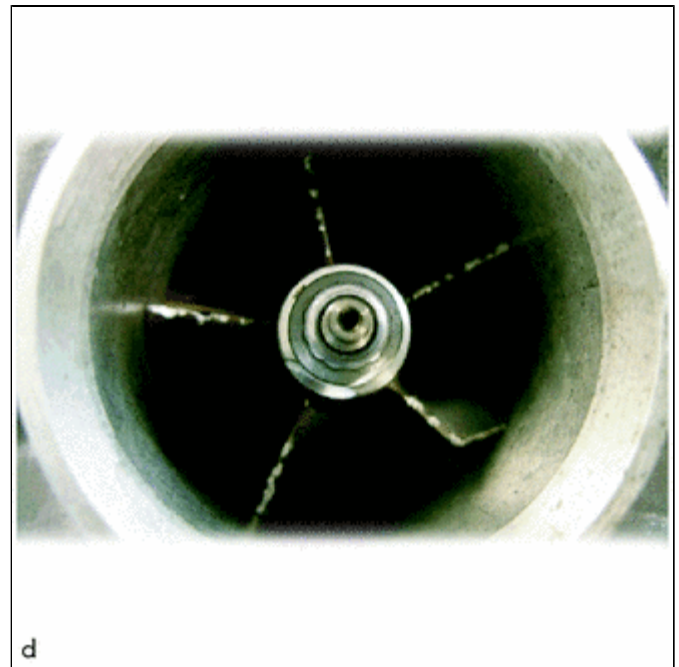
HINT:

Slight discoloration and shiny patches on the impeller arise normally during production and in operation, see the following image.

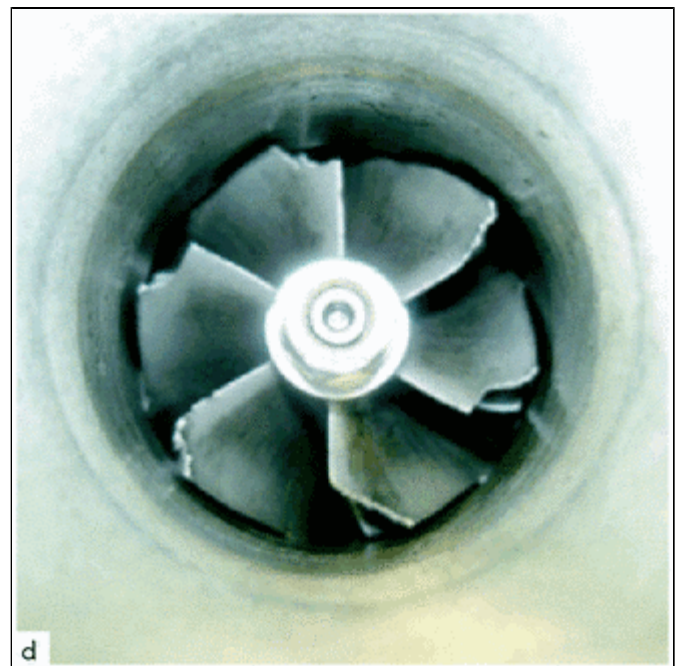
- (c) Normal impeller without damage.



(d) Impeller damaged by foreign bodies.



(e) Impeller damaged by foreign bodies.



5. COMPRESSOR PUMPING

- (a) The phenomenon referred to as compressor pumping can occur if the charging pressure becomes too high where there is low air mass flow. The air current at the compressor is severed abruptly and a pulsating current develops. This current can damage the compressor and cause disruptive noises.
- (b) Charger pumping may occur due to defects that obstruct the air mass flow in the charge air guide or cause excessive charging pressure.

6. EXTERNAL CORROSION

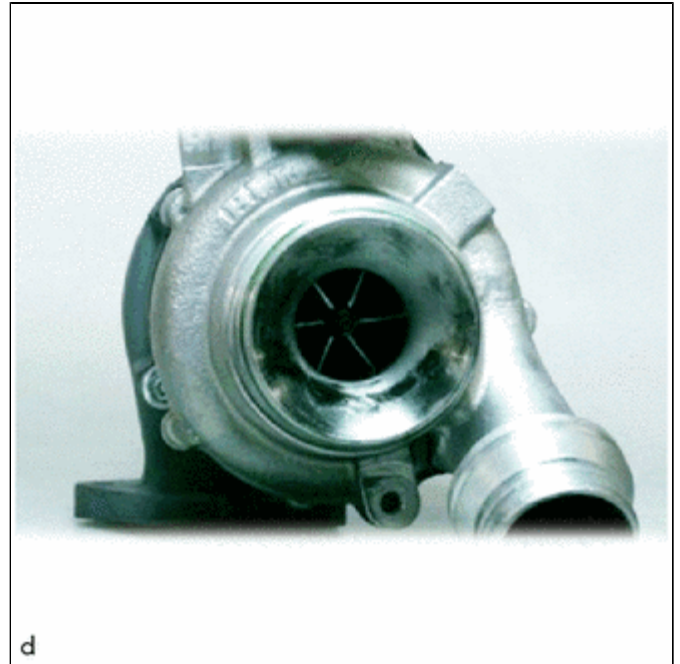
- (a) External corrosion on the turbine housing is not a cause for concern. External corrosion on the adjusting mechanism is also not a cause for concern as long as the function of the adjusting mechanism is OK. The function of the adjusting

mechanism must be checked through the diagnosis system.

7. OIL CRUSTING ON THE COMPRESSOR INTAKE

- (a) If the oil content in the blow-by gas is too high, heavy oil crusting may form on the compressor. In this case, the cause of the excessive oil content must be remedied.

- (b) Normal oil accumulations in the diffuser of the compressor.

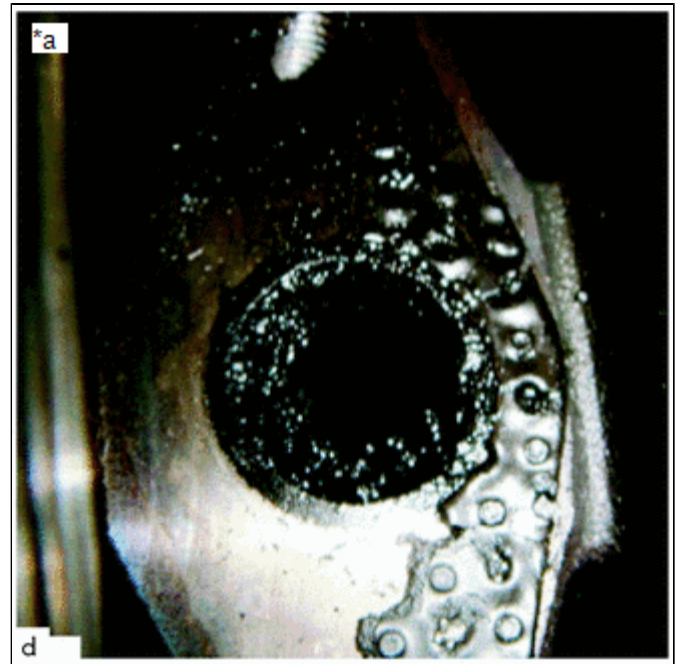


- (c) Heavy oil crusting in the diffuser of the compressor.



8. OIL GRADE

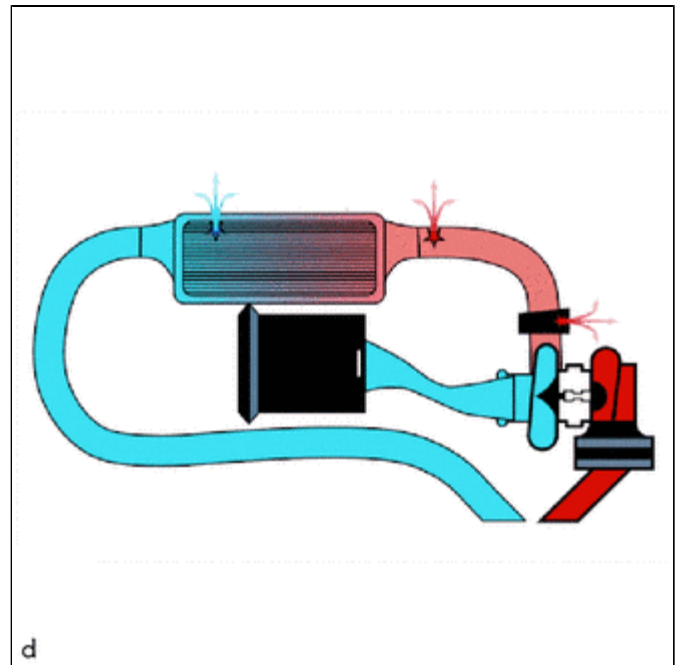
- (a) Oil of poor quality can break down and form deposits in the oil circuit. This can lead to insufficient lubrication of the turbocharger sub-assembly. Only BMW approved oil may be used.



*a	Oil deposits in the oil return
----	--------------------------------

9. CHARGE AIR ROUTING HAS A LEAK

- (a) In the event of leakage in the charge air routing, the charging pressure and thus the power of the engine falls. Noises may also arise.



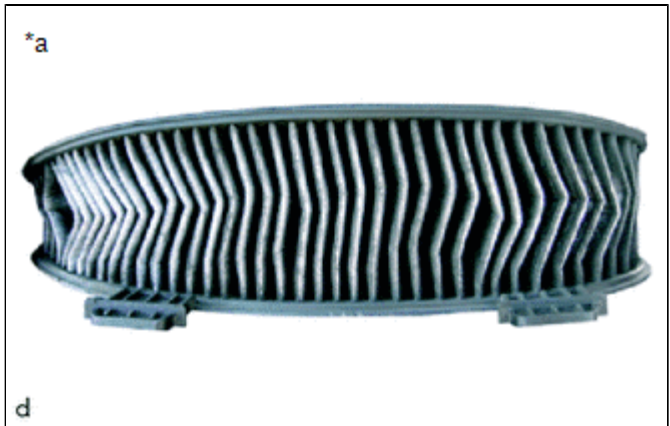


(b) Leaky charge air routing caused by a damaged hose.

10. AIR CLEANER CLOGGED / FAULTY OR SUCTION DUCT NARROWED

(a) If the air intake duct is blocked (for example the air cleaner is clogged/faulty or the air intake hose has collapsed etc.), this leads to a lack of air in the compressor. As a result, the compressor is not able to generate the charging pressure.

(b) This fault almost always results in serious overspeeding of the turbocharger sub-assembly.



*a	Example: Faulty air cleaner with damaged fins (air cleaner contracts under load and blocks the air intake duct).
----	--

11. WIRING OF THE TURBOCHARGER ACTUATOR AND LINK ASSEMBLY IS FAULTY

(a) If the wiring of the turbocharger actuator and link assembly is faulty, the engine control cannot activate the turbocharger actuator and link assembly properly. This can have various effects (excessively high charging pressure, excessively low charging pressure, poor response characteristics).

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INSTALLATION

PROCEDURE

1. INSTALL NO. 1 TURBO WATER PIPE SUB-ASSEMBLY

HINT:

Perform this procedure only when replacement of the turbocharger sub-assembly is necessary.

Click here [INFO](#)

2. INSTALL INLET TURBO OIL PIPE SUB-ASSEMBLY

HINT:

Perform this procedure only when replacement of the turbocharger sub-assembly is necessary.

Click here [INFO](#)

3. INSTALL NO. 2 TURBO WATER PIPE SUB-ASSEMBLY

HINT:

Perform this procedure only when replacement of the turbocharger sub-assembly is necessary.

Click here [INFO](#)

4. INSPECT THE COMPONENTS PRIOR TO INSTALLATION OF THE TURBOCHARGER SUB-ASSEMBLY

- (a) Check the outlet turbo oil pipe and inlet turbo oil pipe sub-assembly for contamination, obstruction and damage: clean or replace if necessary.

HINT:

If the outlet turbo oil pipe and/or inlet turbo oil pipe sub-assembly are heavily contaminated, we recommend changing the engine oil and the oil filter.³

- (b) Check the No. 1 turbo water pipe sub-assembly and No. 2 turbo water pipe sub-assembly for the turbocharger sub-assembly for contamination, obstruction and damage: clean or replace if necessary.
- (c) Check all bolt connections and cable connections for correct fit.
- (d) Check air cleaner for contamination and clean or replace as needed.
- (e) Check correct functioning of ventilation hose.

5. INSTALL TURBOCHARGER SUB-ASSEMBLY

- (a) Check screw-in depth (A) of the E6 stud bolts (1); if necessary, screw the stud bolts in further or unscrew.

NOTICE:

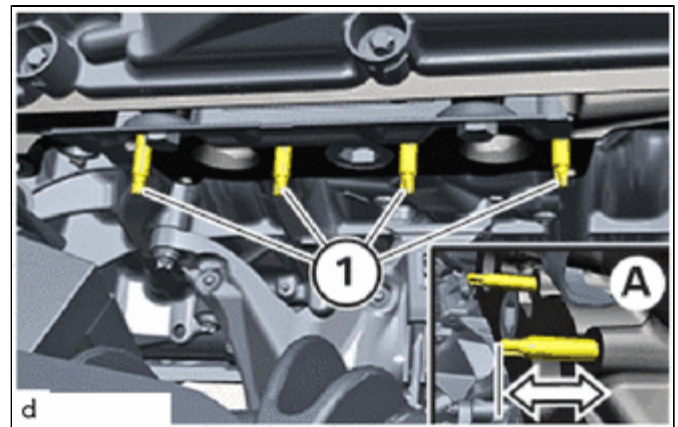
Secure the E6 stud bolts (1) with screw locking.

Adhesive:

Screw Lock Loctite 273, High Strength

Standard:

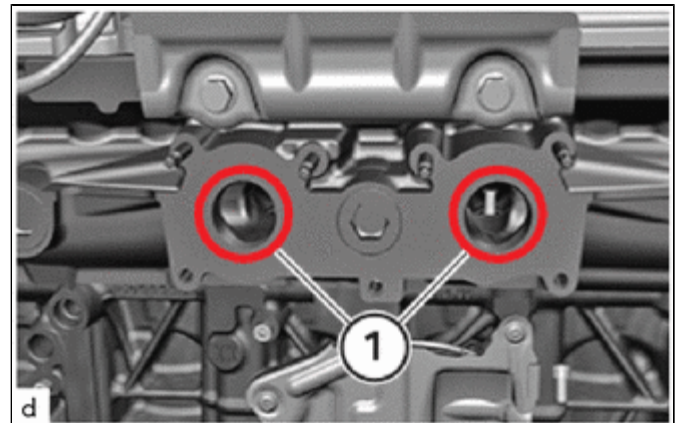
Dimension (A) = 30 mm (1.18 in.)



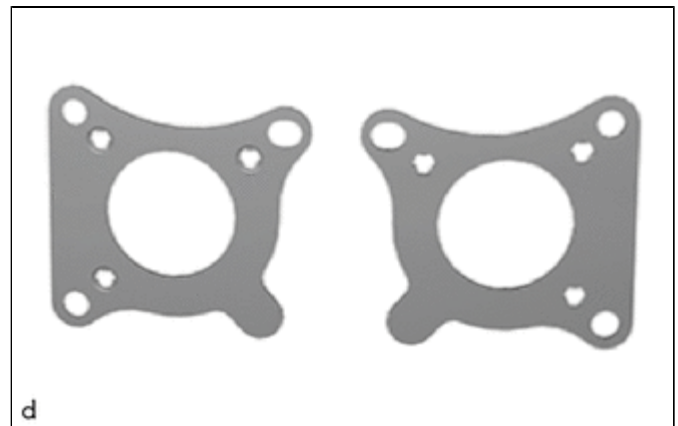
(b) Clean sealing surfaces (1) on the exhaust manifold and on the cylinder head sub-assembly.

NOTICE:

- Damage to the surface.
- The use of metal-cutting tools (e.g. emery cloth) to clean the surfaces can damage them and lead to leaks or engine damage.
 - Do not use any metal-cutting tools.



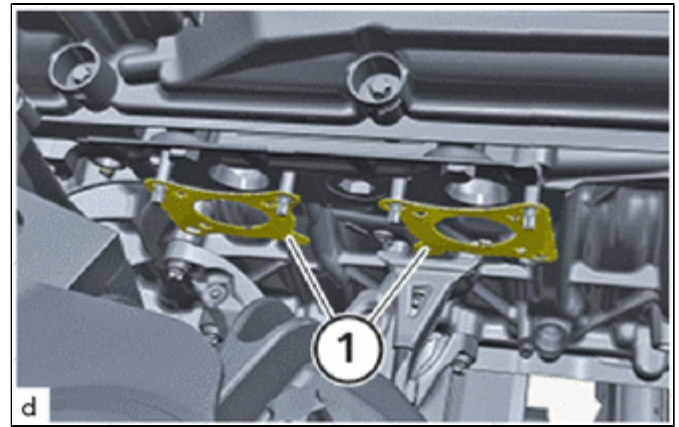
(c) Replace exhaust manifold to head gaskets.



(d) Position the exhaust manifold to head gaskets (1) on the cylinder head sub-assembly.

HINT:

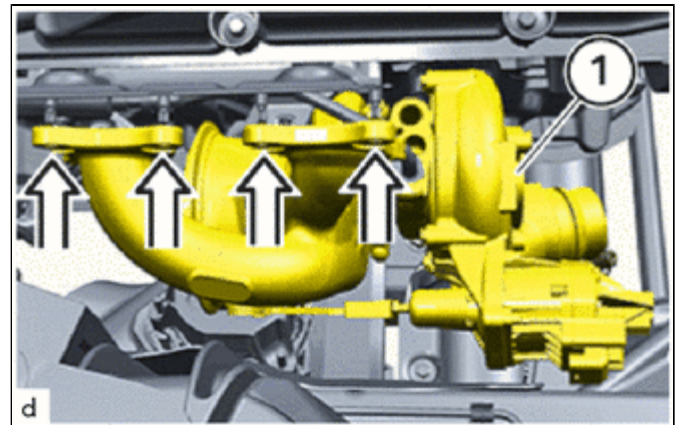
Make sure the exhaust manifold to head gaskets (1) are positioned correctly.



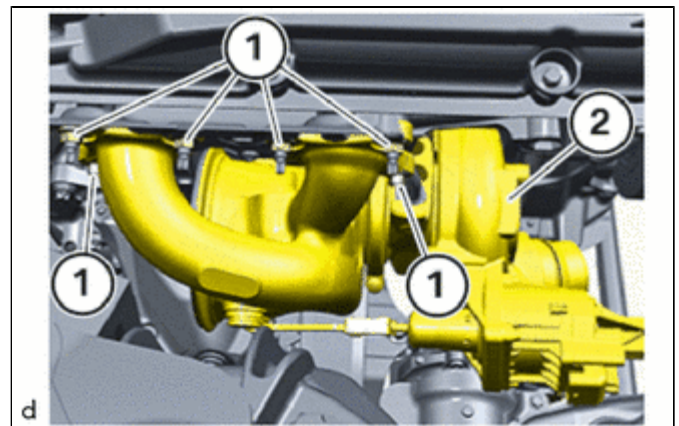
(e) Install turbocharger sub-assembly (1) in the direction of the arrow.

HINT:

Protect the turbocharger sub-assembly (1) from falling.



(f) Replace the nuts on the turbocharger sub-assembly.



(g) Tighten nuts.

Torque:

18 N·m {184 kgf·cm, 13 ft·lbf}

(h) Replace the T40 bolt.

(i) Tighten the T40 bolt on the turbocharger sub-assembly.

Torque:

19 N·m {194 kgf·cm, 14 ft·lbf}

(j) Install the No. 1 turbo water pipe sub-assembly in the cylinder block sub-assembly and tighten the T30 bolt.

Torque:

8.0 N·m {82 kgf·cm, 71 in·lbf}

(k) Tighten down the T30 bolt.

Torque:

8.0 N·m {82 kgf·cm, 71 in·lbf}

(l) Fill turbocharger sub-assembly up to the top with engine oil using the inlet turbo oil pipe sub-assembly connection.

Engine oil:

Toyota Genuine Motor Oil SN 0W-20 C5 for GR Toyota Supra

HINT:

- Technically suitable engine oils for BMW Group engines
- Observe the sign in the engine compartment! Only pour in approved engine oil with the correct SAE viscosity classification.

6. CONNECT INLET TURBO OIL PIPE SUB-ASSEMBLY

(a) Position turbo oil inlet pipe sub-assembly.

(b) Tighten down the T30 bolt.

Torque:

8.0 N·m {82 kgf·cm, 71 in·lbf}

7. CONNECT NO. 2 TURBO WATER PIPE SUB-ASSEMBLY

(a) Tighten the T30 bolt on the holder of the No. 2 turbo water pipe sub-assembly.

Torque:

8.0 N·m {82 kgf·cm, 71 in·lbf}

(b) Connect the coolant hose.

8. INSTALL OUTLET TURBO OIL PIPE

Click here [INFO](#)

9. INSTALL EXHAUST MANIFOLD CONVERTER SUB-ASSEMBLY

Click here [INFO](#)

10. INSTALL INLET COMPRESSOR ELBOW

Click here [INFO](#)

11. INSTALL VENTILATION HOSE

Click here [INFO](#)

12. INSTALL NO. 2 AIR CLEANER HOSE

Click here [INFO](#)

13. INSTALL EXHAUST PIPE ASSEMBLY

Click here [INFO](#)

14. INSTALL STEERING LINK ASSEMBLY

Click here [INFO](#)

15. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

Click here [INFO](#)

16. ADD ENGINE COOLANT (for High Temperature)

Click here [INFO](#)

17. INSPECT FOR COOLANT LEAK (for High Temperature)

Click here [INFO](#)

18. INSPECT FOR EXHAUST GAS LEAK

Click here [INFO](#)

