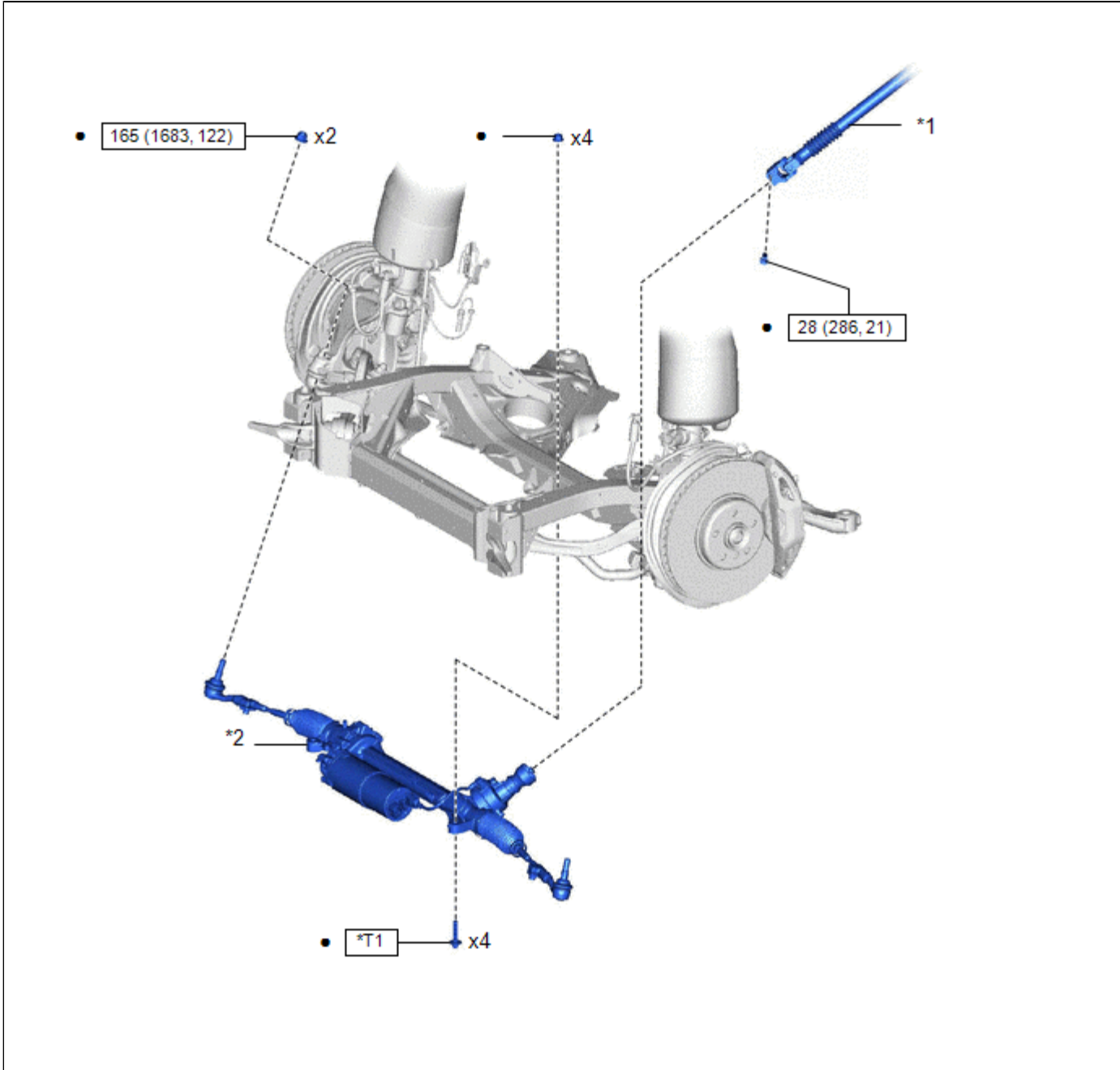


Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JDHJ
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: STEERING GEAR / LINKAGE: STEERING GEAR: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



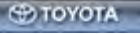
*1	STEERING INTERMEDIATE SHAFT ASSEMBLY	*2	STEERING LINK ASSEMBLY
	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part



Lubricating Grease FB-1

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Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JDHK
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: STEERING GEAR / LINKAGE: STEERING GEAR: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

HINT:

- In a warranty case, you must always provide a fault memory printout with the defective part, even if the fault memory does not contain an entry.
- Vehicle programming/coding must be performed after installation.

For additional information see:

Click here [INFO](#)

PROCEDURE

1. REMOVE FRONT WHEELS

Click here [INFO](#)

2. REMOVE FRONT SUSPENSION MEMBER LOWER PROTECTOR

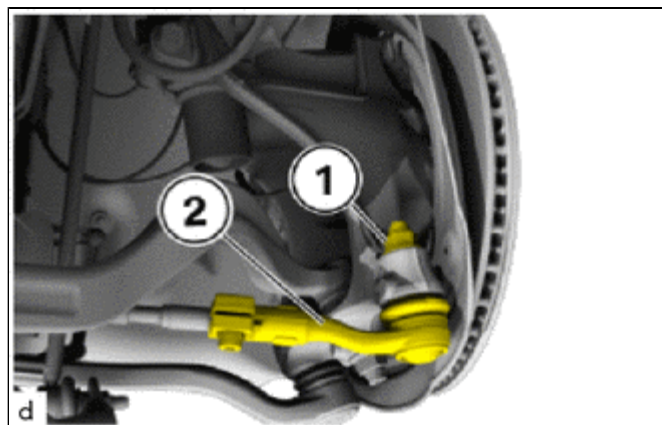
Click here [INFO](#)

3. DISCONNECT TIE ROD END SUB-ASSEMBLY LH

(a) Loosen the nut (1).

HINT:

If necessary, counter-hold the T40 "TORX" socket wrench.



(b) Pull the tie rod end sub-assembly LH (2) off the steering knuckle LH.

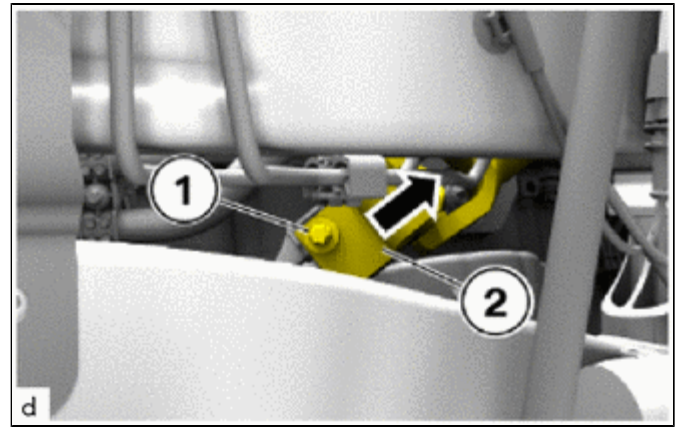
4. DISCONNECT TIE ROD END SUB-ASSEMBLY RH

HINT:

Perform the same procedure as for the LH side.

5. DISCONNECT STEERING INTERMEDIATE SHAFT ASSEMBLY

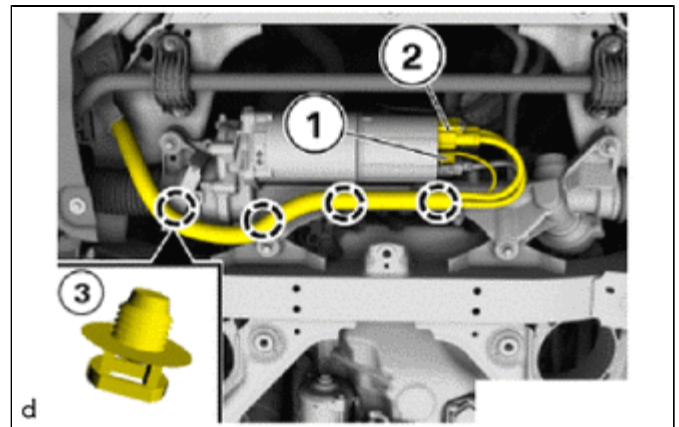
(a) Loosen E10 bolt (1).



(b) Detach the steering intermediate shaft assembly (2) from the steering gear assembly in the direction of the arrow.

6. REMOVE STEERING LINK ASSEMBLY

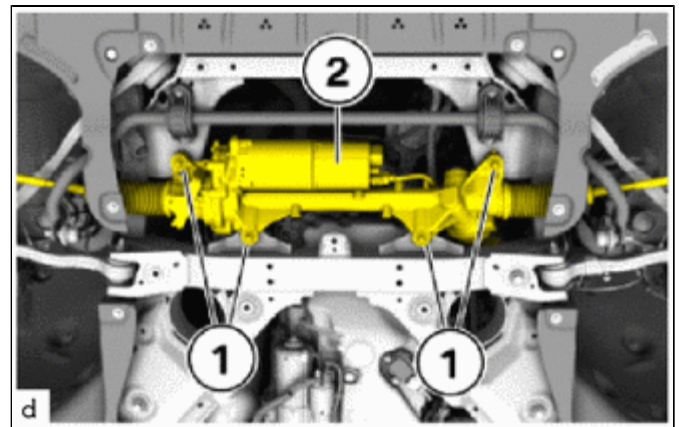
(a) Unlock and disconnect the plug connections (1) and (2).



(b) Loosen the wiring harness from the holder (3).

(c) Put the vehicle wiring harness to one side and secure it.

(d) Loosen E14 bolts (1). In this process, counter support at the 18 mm nuts.



(e) Remove the steering link assembly (2) towards the bottom.



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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: STEERING GEAR / LINKAGE: STEERING GEAR: DISASSEMBLY; 2020 MY Supra [03/2019 -]		

DISASSEMBLY

PROCEDURE

1. REMOVE TIE ROD END SUB-ASSEMBLY LH

Click here [INFO](#)

2. REMOVE TIE ROD END SUB-ASSEMBLY RH

HINT:

Perform the same procedure as for the LH side.

3. REMOVE NO. 2 STEERING RACK BOOT

Click here [INFO](#)

4. REMOVE NO. 1 STEERING RACK BOOT

HINT:

Perform the same procedure as for the No. 2 steering rack boot side.

5. REMOVE TIE ROD ASSEMBLY LH

Click here [INFO](#)

6. REMOVE TIE ROD ASSEMBLY RH

HINT:

Perform the same procedure as for the LH side.



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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: STEERING GEAR / LINKAGE: STEERING GEAR: INSPECTION; 2020 MY Supra [03/2019 -]		

INSPECTION

PROCEDURE

1. NOTES ON REPLACEMENT OF STEERING GEAR FOLLOWING ACCIDENT DAMAGE

- (a) In the event of accidents or driving conditions similar to accidents, shock-like loads can cause different types of damage to steering gear assembly. When a steering gear assembly is externally undamaged, it is sometimes only possible to identify damage with great difficulty and with great effort. However, damage of this nature poses an unacceptable risk to the vehicle because it can result in failure of the steering system. Because of the disproportionate amount of effort involved, it is generally not sensible to check thoroughly all the individual components of the steering gear assembly and as an alternative it is necessary to take into account other components which can be checked more easily.

2. PROCEDURE FOR STEERING GEAR

- (a) The steering gear assembly must be renewed if one or more of the following points apply.
- (1) Visible or noticeable damage to the steering gear assembly, the associated plug connections or the control unit
 - (2) Impermissible increase in torque and clamping when cranking the steering gear assembly from limit position to limit position (without electrical support)
 - (3) Fire damage
 - (4) Damage, permanent deformation or breakages on wheel rims
 - (5) Damage, permanent deformation or breakages on shock absorber assemblies, steering knuckles or axle hubs
 - (6) Damage, permanent deformation or breakages on suspension arms, rear floor panel brace or on the stabiliser
 - (7) Damage, permanent deformation or breakages on body side attachment points of wheel guide parts
 - (8) Damage, permanent deformation or breakages on front suspension crossmember sub-assembly
 - (9) Damage, permanent deformation or breakages on tie rod end sub-assemblies
 - (10) Damage, permanent deformation or breakages on steering gear mounting
 - (11) Damage, permanent deformation or breakages on steering column
- (b) A lopsided steering wheel, significant deviations of camber/track values and noises when cranking the steering can be additional indications for the damage/deformations listed here.

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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: STEERING GEAR / LINKAGE: STEERING GEAR: REASSEMBLY; 2020 MY Supra [03/2019 -]		

REASSEMBLY

PROCEDURE

1. INSTALL TIE ROD ASSEMBLY LH

Click here [INFO](#)

2. INSTALL TIE ROD ASSEMBLY RH

HINT:

Perform the same procedure as for the LH side.

3. INSTALL NO. 2 STEERING RACK BOOT

Click here [INFO](#)

4. INSTALL NO. 1 STEERING RACK BOOT

HINT:

Perform the same procedure as for the No. 2 steering rack boot side.

5. INSTALL TIE ROD END SUB-ASSEMBLY LH

Click here [INFO](#)

6. INSTALL TIE ROD END SUB-ASSEMBLY RH

HINT:

Perform the same procedure as for the LH side.



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JDHL
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: STEERING GEAR / LINKAGE: STEERING GEAR: INSTALLATION; 2020 MY Supra [03/2019 -]		

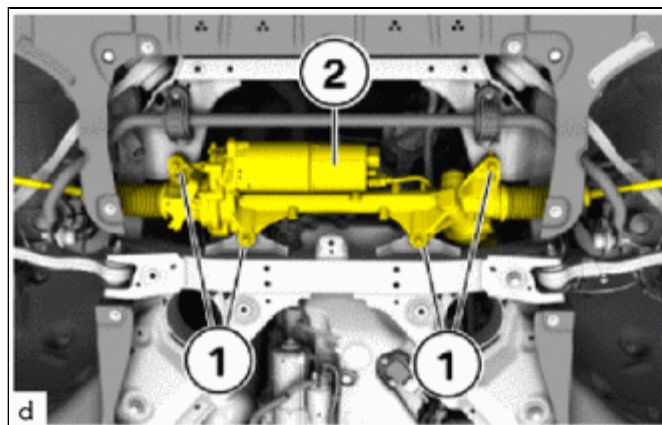
INSTALLATION

CAUTION / NOTICE / HINT

PROCEDURE

1. INSTALL STEERING LINK ASSEMBLY

(a) Install the steering link assembly (2).



(b) Replace the E14 bolts (1) and 18 mm nuts.

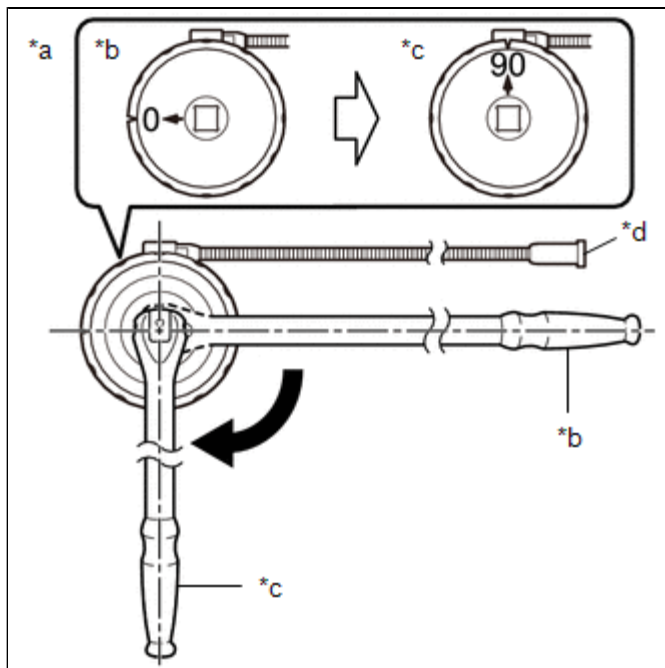
(c) Tighten the E14 bolts (1). In this process, counter support at the 18 mm nuts.

Torque:

100 N·m {1020 kgf·cm, 74 ft·lbf}

(d) Using SST, tighten the E14 bolts (1) an additional 90°.

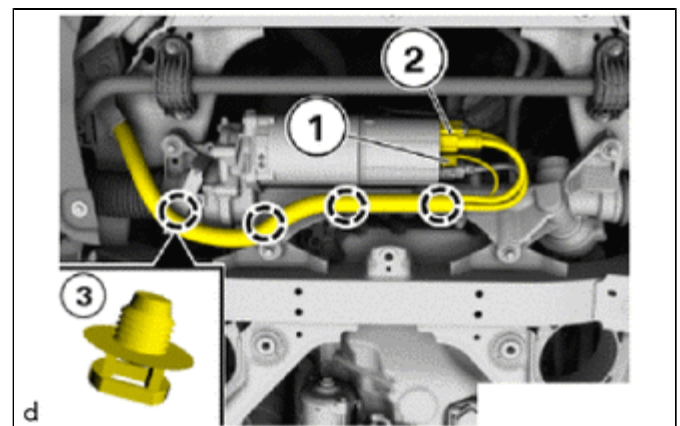
SST: 09900-WA010



*a	Example
*b	Before Tightening
*c	After Tightening
*d	Magnetic Portion

- The magnetic portion is used to secure the gauge to the vehicle.
- After first adjusting the needle of the gauge to 0°, tighten to the specified angle.
- Perform the work procedure carefully so that the gauge, etc. does not become tilted.

(e) Connect connectors (1) and (2) and lock.



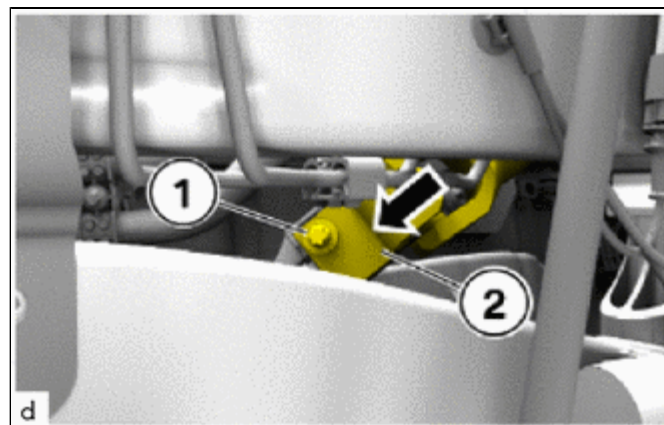
(f) Clip the wiring harness into the holder (3).

2. CONNECT STEERING INTERMEDIATE SHAFT ASSEMBLY

HINT:

- The steering intermediate shaft assembly can only be installed in one position.
- The steering intermediate shaft assembly is encoded for the steering column and the steering gear. The clamping bolt must be positioned in the groove of the steering gear or the steering column.

- (a) Slide the steering intermediate shaft assembly (2) in the direction of the arrow onto the steering gear assembly.



- (b) Replace the E10 bolt (1).
(c) Tighten down E10 bolt (1).

Torque:

28 N·m {286 kgf·cm, 21 ft·lbf}

3. CONNECT TIE ROD END SUB-ASSEMBLY LH

- (a) Install the tie rod end sub-assembly LH on the steering knuckle LH.
(b) Replace nut.
(c) Tighten the nut.

Torque:

165 N·m {1683 kgf·cm, 122 ft·lbf}

HINT:

If necessary, counter support the T40 "TORX" socket wrench.

4. CONNECT TIE ROD END SUB-ASSEMBLY RH

HINT:

Perform the same procedure as for the LH side.

5. INSTALL FRONT SUSPENSION MEMBER LOWER PROTECTOR

Click here [INFO](#)

6. INSTALL FRONT WHEELS

Click here [INFO](#)

7. INSPECT AIRBAG FOR FUNCTION

Click here [INFO](#)

8. START-UP OF ELECTROMECHANICAL STEERING

Click here [INFO](#)

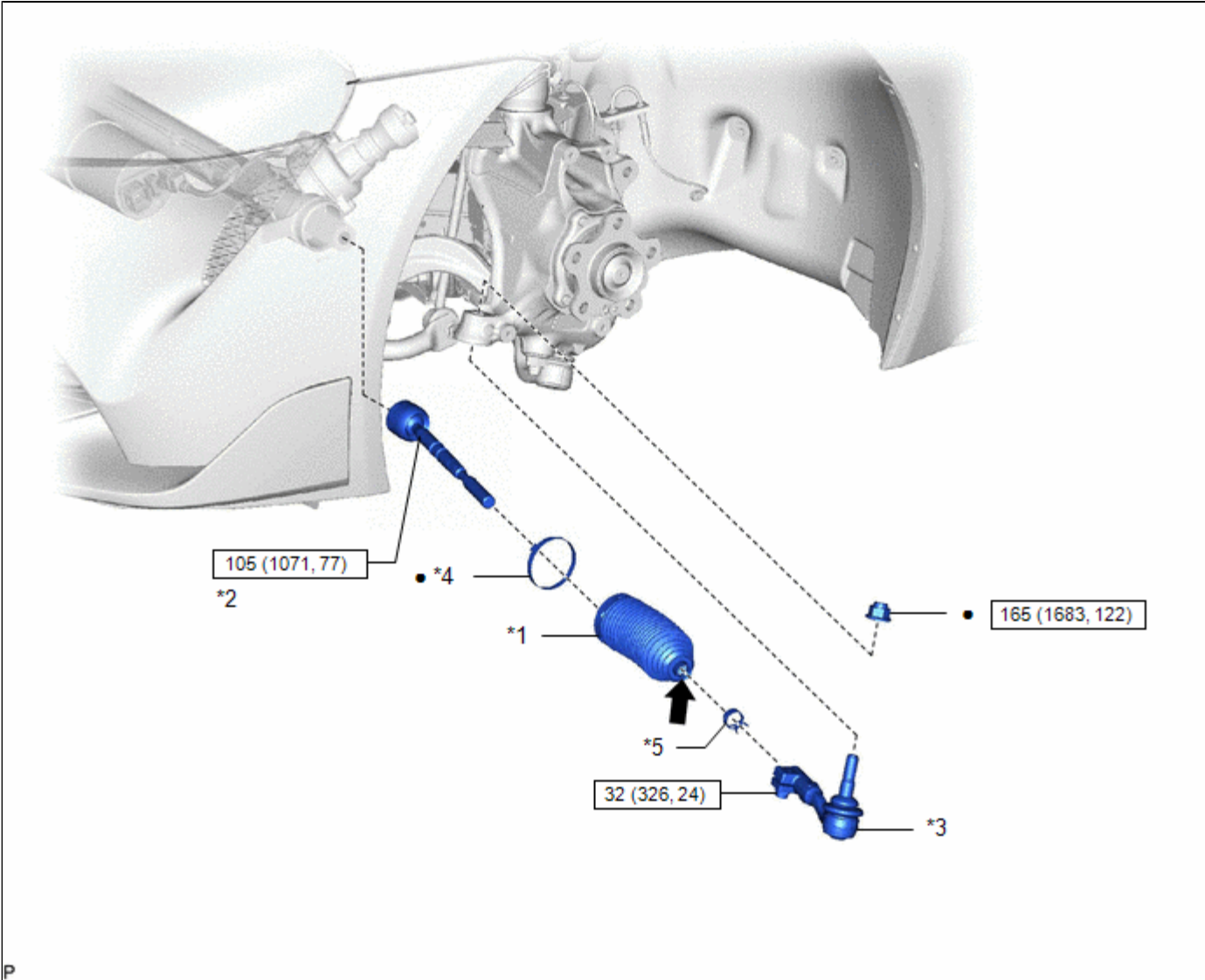
9. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT

Click here [INFO](#)

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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: STEERING GEAR / LINKAGE: TIE ROD: COMPONENTS; 2020 MY Supra [03/2019 -]		

COMPONENTS

ILLUSTRATION



*1	STEERING RACK BOOT	*2	TIE ROD ASSEMBLY
*3	TIE ROD END SUB-ASSEMBLY	*4	CLAMP
*5	CLIP	-	-
	N*m (kgf*cm, ft.*lbf): Specified torque	•	Non-reusable part
	Lubricating Grease FB-1	-	-



Last Modified: 09-05-2019	6.9:8.0.49	Doc ID: RM100000001JDHP
Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: STEERING GEAR / LINKAGE: TIE ROD: REMOVAL; 2020 MY Supra [03/2019 -]		

REMOVAL

CAUTION / NOTICE / HINT

HINT:

- Use the same procedure for the RH side and LH side.
- The following procedure is for the LH side.

PROCEDURE

1. REMOVE FRONT WHEEL

Click here [INFO](#)

2. REMOVE FRONT SUSPENSION MEMBER LOWER PROTECTOR

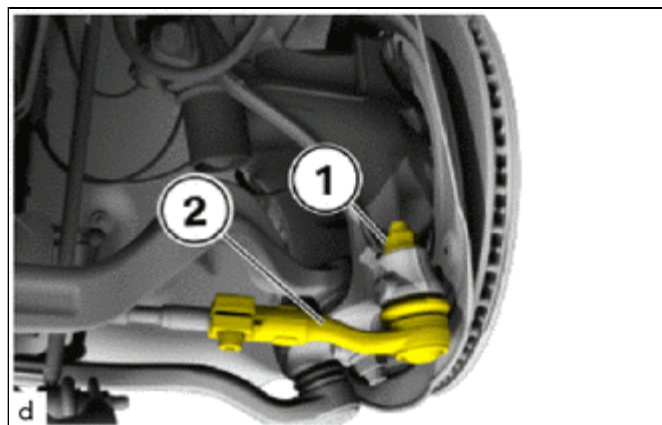
Click here [INFO](#)

3. REMOVE TIE ROD END SUB-ASSEMBLY

(a) Loosen the nut (1).

HINT:

If necessary, counter-hold the T40 "TORX" socket wrench.

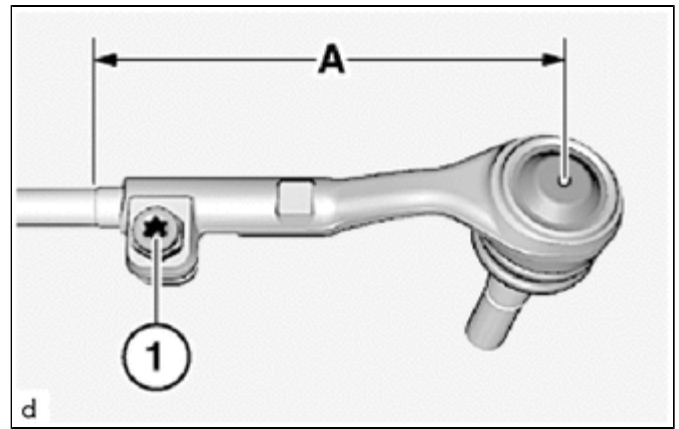


(b) Pull the tie rod end sub-assembly (2) off the steering knuckle LH.

(c) Determine and write down the dimension (A).

HINT:

The dimension (A) is needed to simplify the toe adjustment at the front axle.



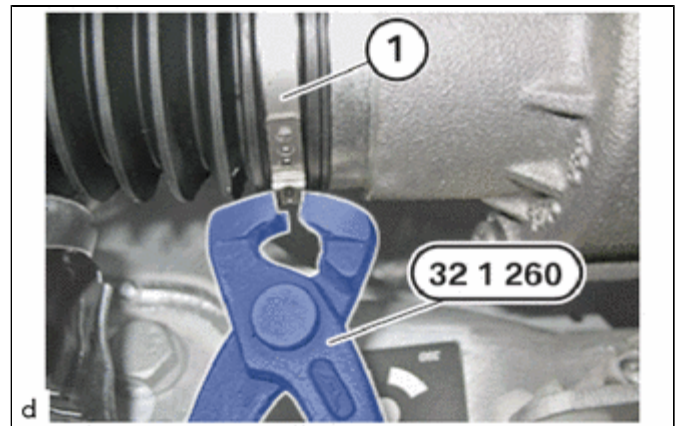
(d) Slacken T50 bolt (1).

(e) Unscrew tie rod end sub-assembly.

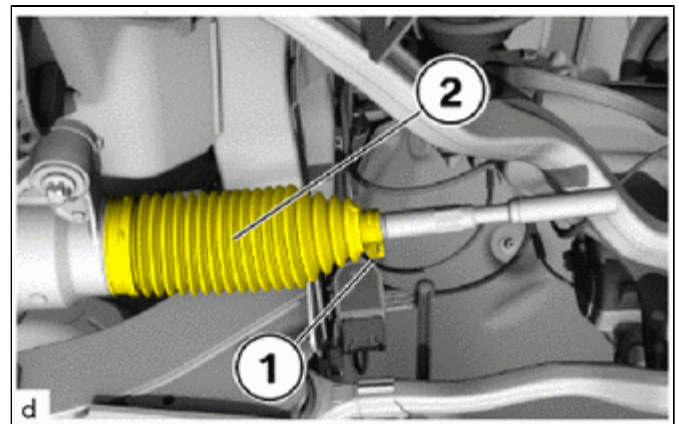
4. REMOVE STEERING RACK BOOT

(a) Cut diagonally across the clamp (1) using special tool 0 494 152 (32 1 260).

SST: 09200-WA590



(b) Remove the clip (1).



(c) Pull steering rack boot (2) off the steering gear assembly.

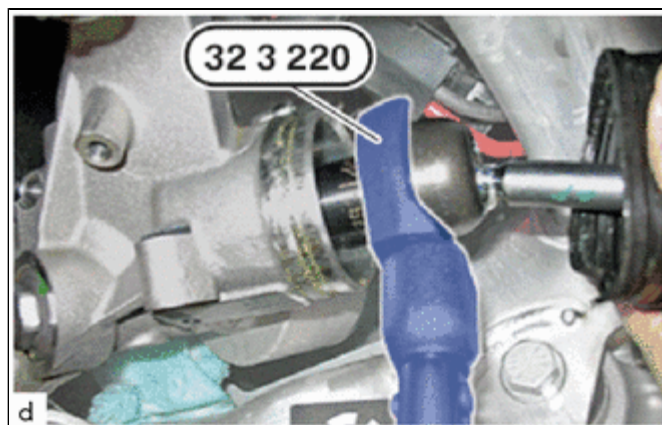
5. REMOVE TIE ROD ASSEMBLY

NOTICE:

In order to avoid damage of the steering shaft and its bearing, the steering shaft must be positioned in the steering gear assembly far as possible.

- (a) Release the tie rod assembly from the steering shaft of the steering gear assembly using special tool 0 496 483 (32 3 220).

SST: 09600-WA040



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Model Year Start: 2020	Model: Supra	Prod Date Range: [03/2019 -]
Title: STEERING GEAR / LINKAGE: TIE ROD: INSTALLATION; 2020 MY Supra [03/2019 -]		

INSTALLATION

CAUTION / NOTICE / HINT

HINT:

- Use the same procedure for the RH side and LH side.
- The following procedure is for the LH side.

PROCEDURE

1. INSTALL TIE ROD ASSEMBLY

NOTICE:

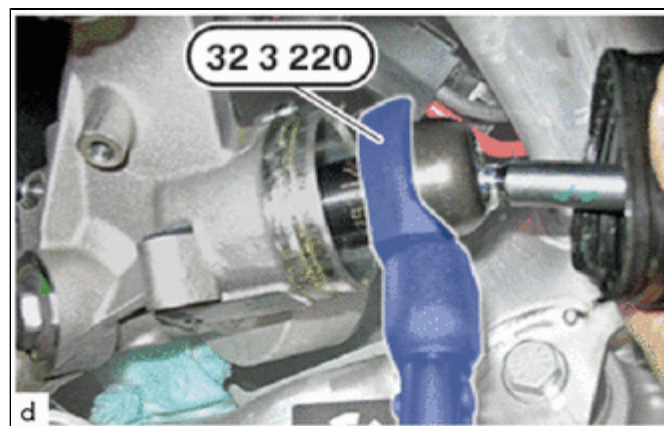
In order to avoid damage of the steering shaft and its bearing, the steering shaft must be positioned in the steering gear as far as possible.

- (a) Screw on and tighten the tie rod assembly to the steering shaft with the special tool 0 496 483 (32 3 220).

SST: 09600-WA040

Torque:

105 N·m {1071 kgf·cm, 77 ft·lbf}



2. INSTALL STEERING RACK BOOT

- (a) Coat the tie rod assembly at the taper with lubricating grease FB-1.

HINT:

This ensures that the steering rack boot is not rotated when the tie rod assembly is rotated.

- (b) Push on the steering rack boot.
(c) Attach the clip.

- (d) Replace clamp (1).



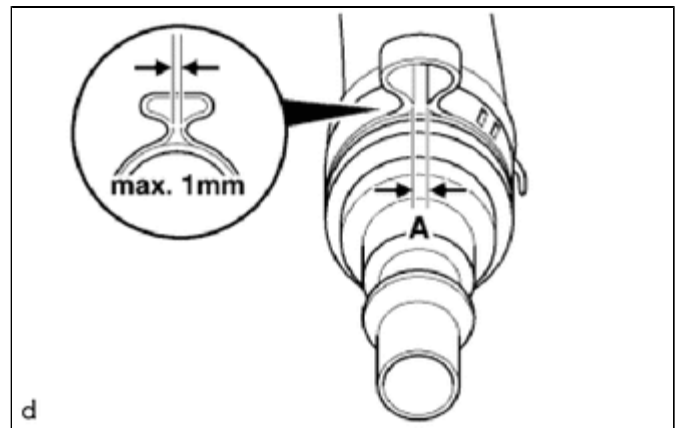
(e) Attach the hook lock and press together the clamp (1) using special tool 0 494 152 (32 1 260).

SST: 09200-WA590

(f) Check the clearance.

Standard Measurement:

AREA	MEASUREMENT
A	Max. 1 mm (0.0393 in.)

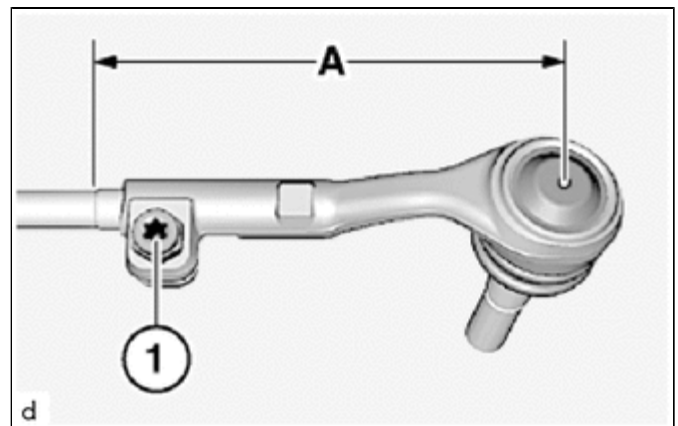


3. INSTALL TIE ROD END SUB-ASSEMBLY

(a) Screw the tie rod end sub-assembly onto the tie rod assembly until the dimension (A) is reached.

HINT:

- The dimension (A) was determined during the removal.
- If necessary, use an open-end spanner for counter support at the tie rod assembly.



(b) Tighten down T50 bolt (1).

Torque:

32 N·m {326 kgf·cm, 24 ft·lbf}

- (c) Install the tie rod end sub-assembly on the steering knuckle.
- (d) Replace nut.
- (e) Tighten the nut.

Torque:

165 N·m {1683 kgf·cm, 122 ft·lbf}

HINT:

If necessary, counter support the T40 "TORX" socket wrench.

4. INSTALL FRONT SUSPENSION MEMBER LOWER PROTECTOR

Click here [INFO](#)

5. INSTALL FRONT WHEEL

Click here [INFO](#)

6. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT

Click here [INFO](#)

