TOYOTA SERVICE BULLETIN
Group: 07 No.: 03 Date: Mar, 13

Prado 120

Corrections to Repair Manual RM990E

Please ensure these pages are distributed to all relevant staff for their information; and a copy made available for future reference, with the above repair manual.

Section	Title	Paragraph
PREPARATION	POWER STEERING	SST
POWER STEERING	POWER STEERING LINK ASSY	COMPONENTS
		OVERHAUL

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

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

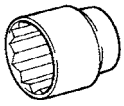
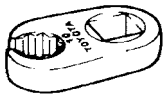
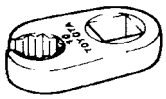
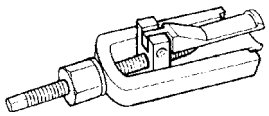
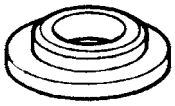
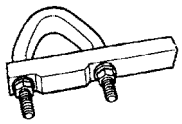
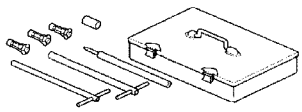
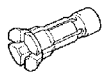
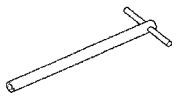
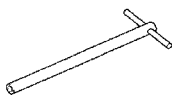
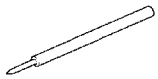
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POWER STEERING

PREPARATION

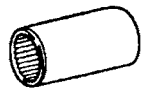
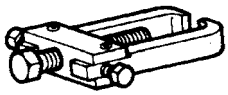
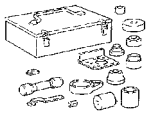
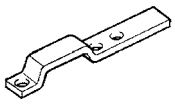
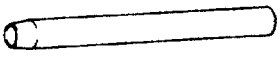
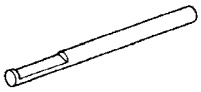
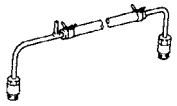
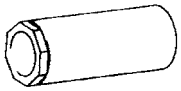
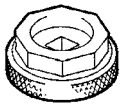
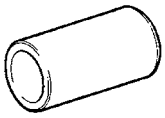
0220J–01

SST

	09011–12271	Socket Wrench for 27 mm	POWER STEERING LINK ASSY VANE PUMP ASSY(1KD–FTV/1KZ–TE) VANE PUMP ASSY(3RZ–FE)
	09023–12700	Union Nut Wrench 17mm	POWER STEERING LINK ASSY
	09023–38200	Union Nut Wrench 12mm	POWER STEERING LINK ASSY
	09319–60020	Output Shaft Needle Roller Bearing Remover	VANE PUMP ASSY(1KD–FTV/1KZ–TE)
	09506–35010	Differential Drive Pinion Rear Bearing Replacer	VANE PUMP ASSY(1KD–FTV/1KZ–TE)
	09612–00012	Rack & Pinion Steering Rack Housing Stand	POWER STEERING LINK ASSY
	09612–70100	Power Steering Oil Seal Remover Set	POWER STEERING LINK ASSY
	(09612–07130)	Collet No.3	POWER STEERING LINK ASSY
	(09612–07210)	Collet Setting Pipe No.1	POWER STEERING LINK ASSY
	(09612–07220)	Collet Setting Pipe No.2	POWER STEERING LINK ASSY
	(09612–07230)	Shaft	POWER STEERING LINK ASSY
	(09612–07240)	Collar	POWER STEERING LINK ASSY

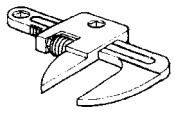
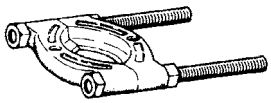
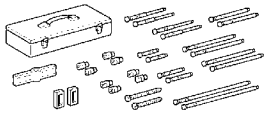
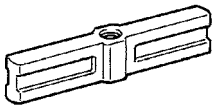
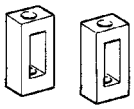
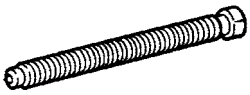
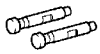
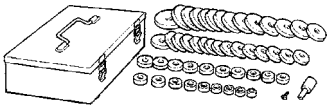
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	09616–00011	Steering Worm Bearing Adjusting Socket	POWER STEERING LINK ASSY
	09628–62011	Boll Joint Puller	POWER STEERING LINK ASSY
	09630–00014	Power Steering Gear Housing Overhaul Tool Set	POWER STEERING LINK ASSY VANE PUMP ASSY(1KD–FTV/1KZ–TE) VANE PUMP ASSY(3RZ–FE)
	(09631–00132)	Vane Pump Bracket	VANE PUMP ASSY(1KD–FTV/1KZ–TE) VANE PUMP ASSY(3RZ–FE)
	09631–00210	Rack Seal Guide No.3	POWER STEERING LINK ASSY
	09631–00350	Steering Rack Cover 35	POWER STEERING LINK ASSY
	09631–10030	Oil Seal Remover	VANE PUMP ASSY(3RZ–FE)
	09631–12071	Steering Rack Oil Seal Test Tool	POWER STEERING LINK ASSY
	(09633–00010)	Packing	POWER STEERING LINK ASSY
	09631–20060	Bearing Guide Nut Wrench	POWER STEERING LINK ASSY
	09631–20081	Seal Ring Tool	POWER STEERING LINK ASSY
	09631–20120	Cylinder End Stopper Nut Wrench	POWER STEERING LINK ASSY
	09632–36010	Steering Vane Pump Bearing Replacer	VANE PUMP ASSY(3RZ–FE)

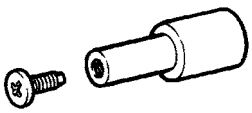
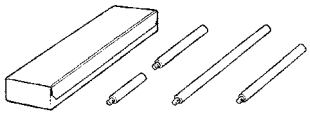
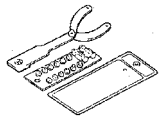
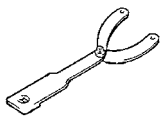
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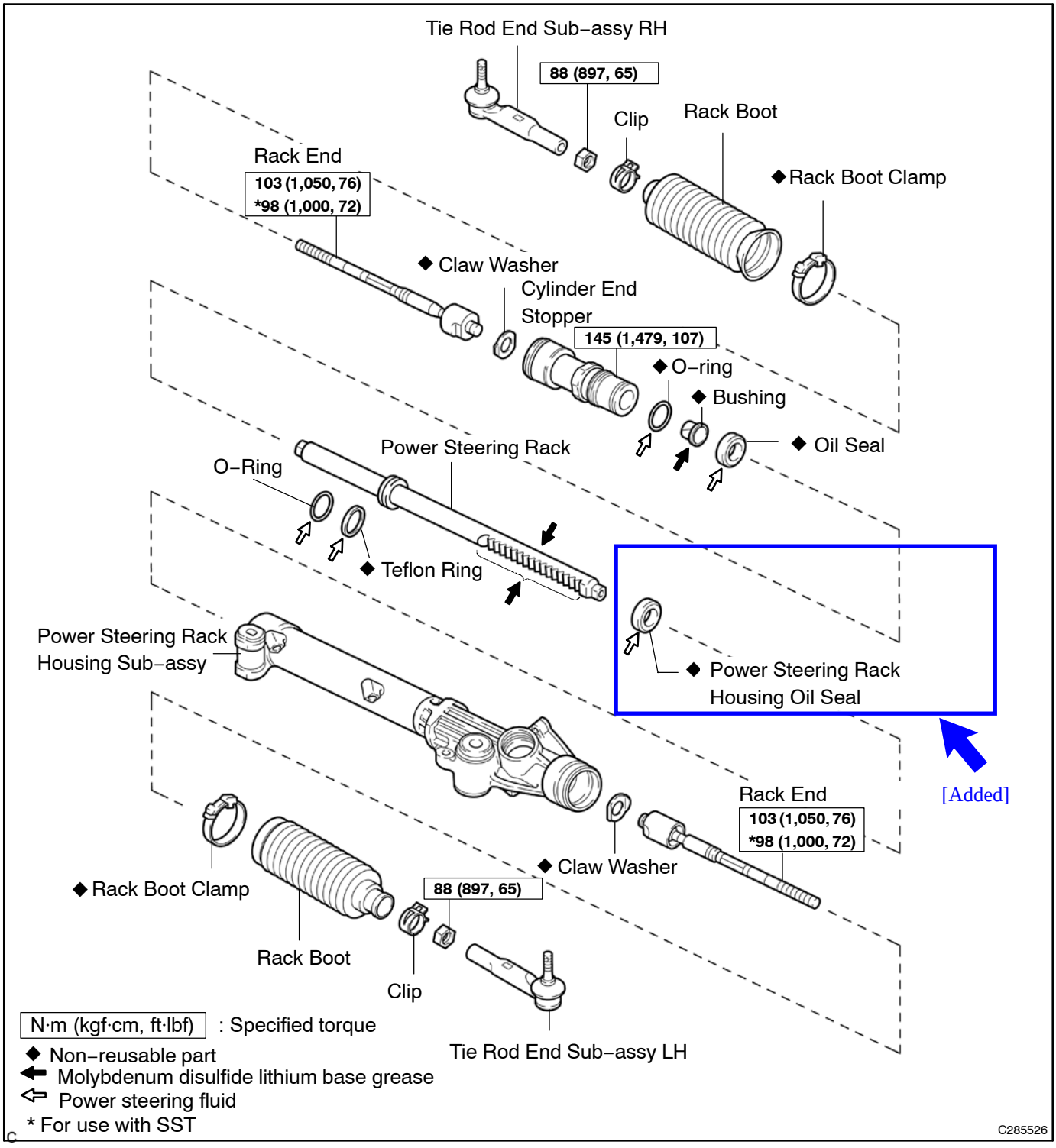
	09922–10010	Variable Open Wrench	POWER STEERING LINK ASSY
	09950–00020	Bearing Remover	VANE PUMP ASSY(1KD–FTV/1KZ–TE)
	09950–50013	Puller C Set	POWER STEERING LINK ASSY
	(09951–05010)	Hanger 150	POWER STEERING LINK ASSY
	(09952–05010)	Slide Arm	POWER STEERING LINK ASSY
	(09953–05020)	Center Bolt 150	POWER STEERING LINK ASSY
	(09954–05021)	Claw No.2	POWER STEERING LINK ASSY
	09950–60010	Replacer Set	POWER STEERING LINK ASSY VANE PUMP ASSY(1KD–FTV/1KZ–TE) VANE PUMP ASSY(3RZ–FE) VANE PUMP ASSY(5L–E)
	(09951–00180)	Replacer 18	POWER STEERING LINK ASSY
	(09951–00250)	Replacer 25	POWER STEERING LINK ASSY
	(09951–00280)	Replacer 28	POWER STEERING LINK ASSY
	(09951–00300)	Replacer 30	POWER STEERING LINK ASSY
	(09951–00320)	Replacer 32	POWER STEERING LINK ASSY VANE PUMP ASSY(3RZ–FE)

[Added]

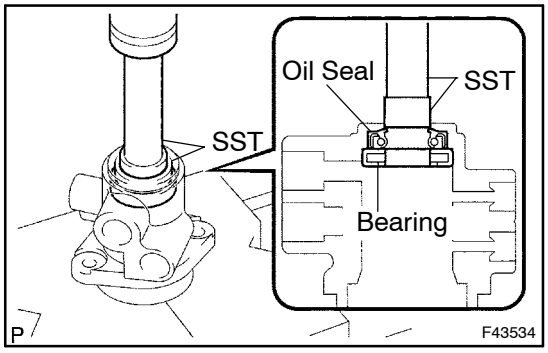
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	(09951–00340)	Replacer 34	POWER STEERING LINK ASSY
	(09951–00390)	Replacer 39	POWER STEERING LINK ASSY
	(09951–00400)	Replacer 40	VANE PUMP ASSY(1KD–FTV/1KZ–TE) VANE PUMP ASSY(5L–E)
	(09951–00420)	Replacer 42	POWER STEERING LINK ASSY VANE PUMP ASSY(1KD–FTV/1KZ–TE)
	(09951–00460)	Replacer 46	POWER STEERING LINK ASSY
	(09952–06010)	Adapter	POWER STEERING LINK ASSY [Added]
	09950–70010	Handle Set	POWER STEERING LINK ASSY VANE PUMP ASSY(1KD–FTV/1KZ–TE) VANE PUMP ASSY(3RZ–FE) VANE PUMP ASSY(5L–E)
	(09951–07100)	Handle 100	POWER STEERING LINK ASSY VANE PUMP ASSY(5L–E)
	(09951–07150)	Handle 150	POWER STEERING LINK ASSY VANE PUMP ASSY(1KD–FTV/1KZ–TE) VANE PUMP ASSY(3RZ–FE)
	(09951–07200)	Handle 200	POWER STEERING LINK ASSY
	(09951–07360)	Handle 360	POWER STEERING LINK ASSY
	09960–10010	Variable Pin Wrench Set	VANE PUMP ASSY(3RZ–FE) VANE PUMP ASSY(5L–E) [Added]
	(09962–01000)	Variable Pin Wrench Arm Assy	VANE PUMP ASSY(3RZ–FE) VANE PUMP ASSY(5L–E)

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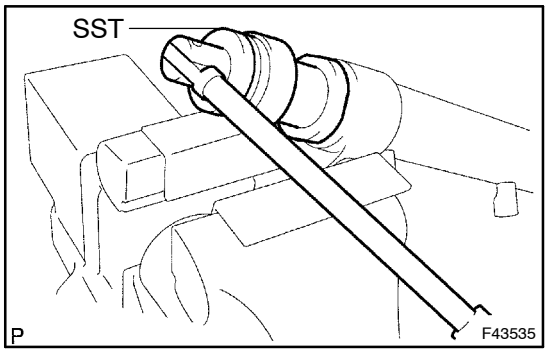


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31. REMOVE POWER STEERING CONTROL VALVE UPPER OIL SEAL

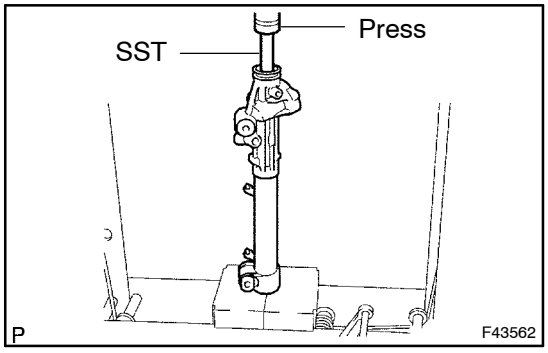
(a) Using SST, press out the bearing and oil seal from the control valve housing.
SST 09950–70010 (09951–07150), 09950–60010 (09951–00250)



32. REMOVE CYLINDER END STOPPER

(a) Using SST, remove the stopper.
SST 09631–20120

(b) Remove the O–ring from the stopper.



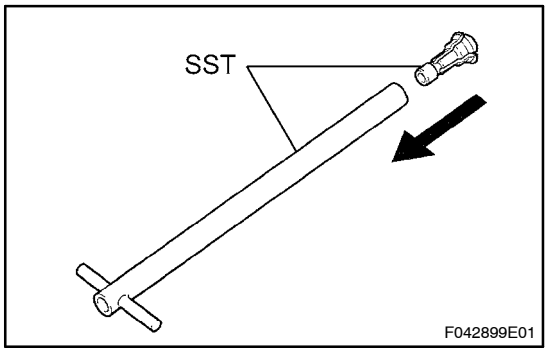
33. REMOVE STEERING RACK AND OIL SEAL

(a) Using SST, press out the steering rack and oil seal.
SST 09950–70010 (09951–07200)

NOTICE:

Take care not to drop the steering rack.

(b) Remove the oil seal from the steering rack.

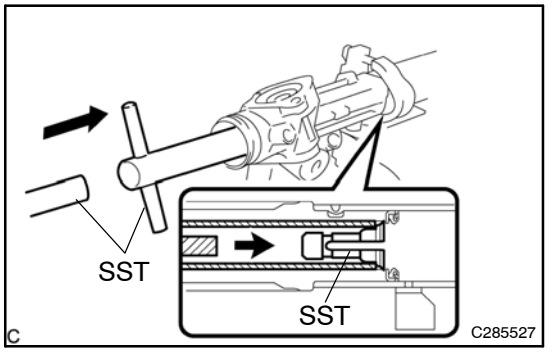


34. REMOVE POWER STEERING CYLINDER TUBE OIL SEAL

(a) Install SST (09612–07130) on SST (09612–07210).
SST 09612–70100 (09612–07130, 09612–07210)

NOTICE:

- **Before using SSTs, apply a small dab of grease to the inside wall of SSTs (09612–07210, 09612–07130).**
- **To prevent the inside of the housing from being damaged, securely install SSTs together.**



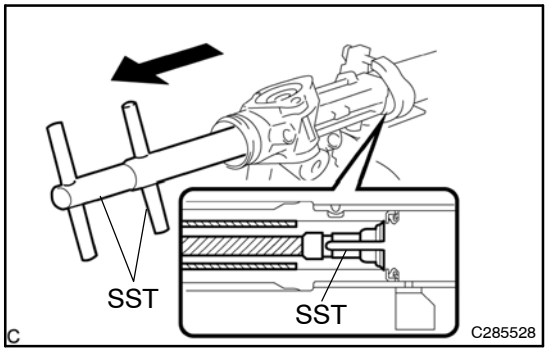
(b) Diagonally insert SST (09612–07210) into the housing until it contacts with the oil seal, and then further insert SST (09612–07210) until the tip of SST (09612–07220) contacts with SST (09612–07130).

NOTICE:

Do not damage the inside of the housing.

[Added]

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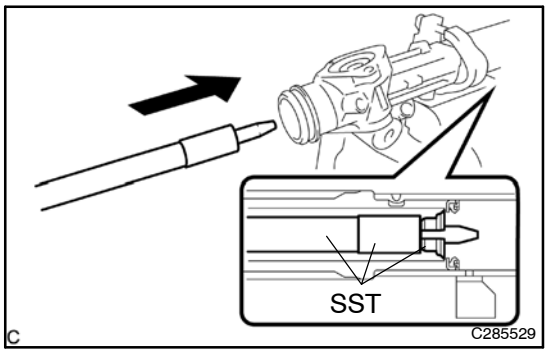


(c) Secure SST (09612–07220), and pull SST (09612–07210) to place SST (09612–07130) in the housing.

HINT:

Place SST on the chamfering position between the oil seal and rack housing.

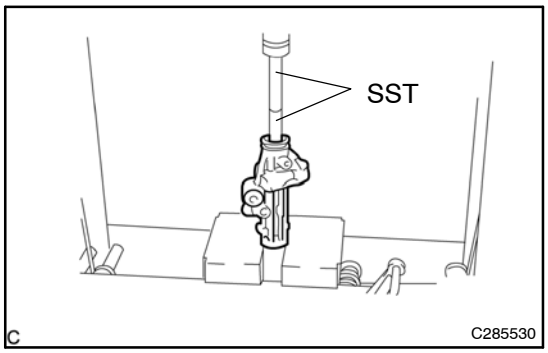
(d) Remove SST (09612–07210, 09612–07220).



(e) After installing SST (09612–07240) on SST (09612–07230), insert the tip of SST (09612–07230) in the service hole of SST (09612–07130).

NOTICE:

- **Before using SSTs, apply a small dab of grease to the tip of SSTs (09612–07230).**
- **To prevent SST (09612–07130) from being damaged, be sure to install SST (09612–07240).**
- **Do not damage the inside of the rack housing.**



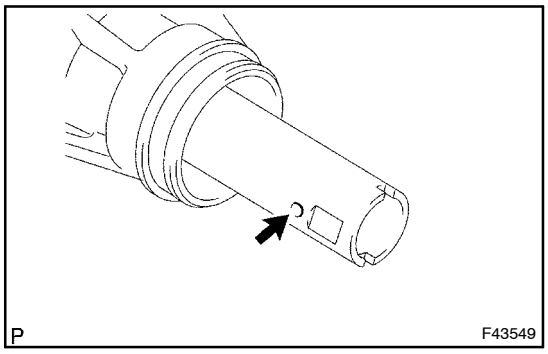
(f) Install SST (09951–07100) on SST (09612–07230) and remove the oil seal using a press.

NOTICE:

Do not damage the rack housing.

HINT:

Replace SST (09951–07100) with SST that is different in length in the set, if necessary.

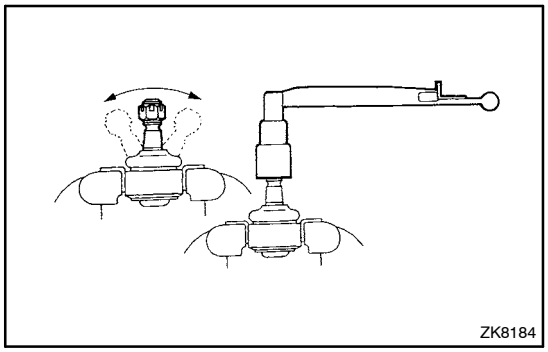


35. INSPECT POWER STEERING RACK

(a) Insert a wire into the vent hole of the steering rack by 30 mm (1.18 in.), and ensure that the vent hole is not clogged with grease. [Added]

HINT:

If the hole is clogged, the pressure inside the boot will change after it is assembled and the steering wheel is turned.



36. INSPECT TIE ROD END SUB–ASSY LH

(a) Flip the ball joint stud back and forth 5 times as shown in the figure, before installing the nut.

(b) Using a torque wrench, turn the nut continuously at a rate of 2 – 4 seconds per 1 turn and take the torque reading on the5th turn.

Torque(Turning):

0.29 – 1.96 N·m (2.9 – 20.0 kgf·cm, 2.57 – 17.35 in.·lbf)

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37. INSPECT TIE ROD END SUB–ASSY RH

HINT:

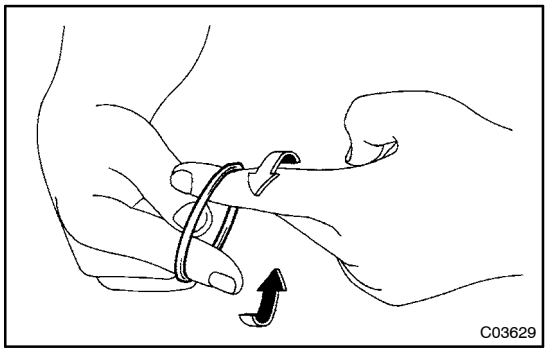
Inspect the RH side by the same procedures with LH side.

38. REMOVE STEERING RACK PISTON RING

(a) Using a screwdriver, remove the teflon ring and O–ring from the steering rack.

NOTICE:

Be careful not to damage the groove for the ring.



39. INSTALL STEERING RACK PISTON RING

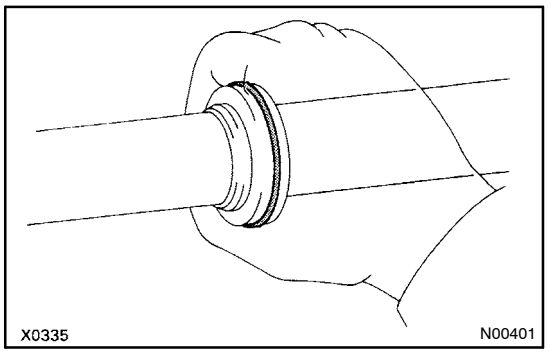
(a) Coat a new O–ring with power steering fluid and install it on steering rack.

(b) Expand a new teflon ring with your fingers.

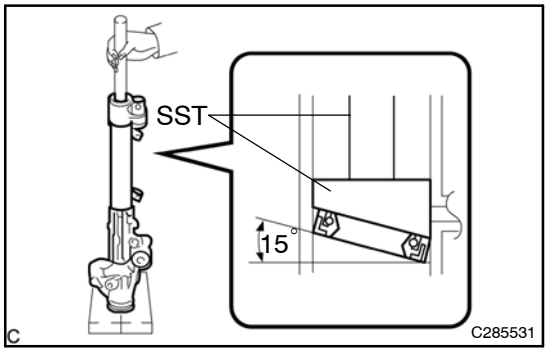
NOTICE:

Be careful no to overexpand the teflon ring.

(c) Coat the teflon ring with power steering fluid.



(d) Install the teflon ring to the steering rack, and settle it down with your fingers.



40. INSTALL POWER STEERING RACK HOUSING OIL SEAL

(a) Apply power steering fluid to a new oil seal, and install the oil seal on the rack housing at an angle.

NOTICE:

Install the oil seal in the correct direction.

HINT:

Install the oil seal so that the port faces downward approximately. 15 degrees.

(b) Using SST, push in the oil seal by hand until it passes through the 2 ports.

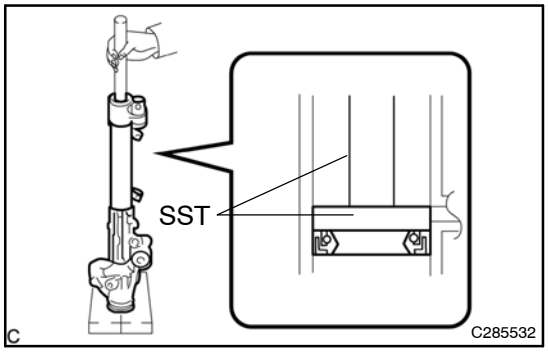
SST 09631–00210, 09950–70010 (09951–07360)

NOTICE:

Do not turn SST when inserting the oil seal.

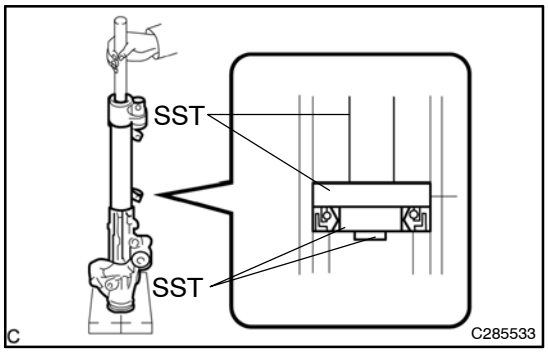
[Added]

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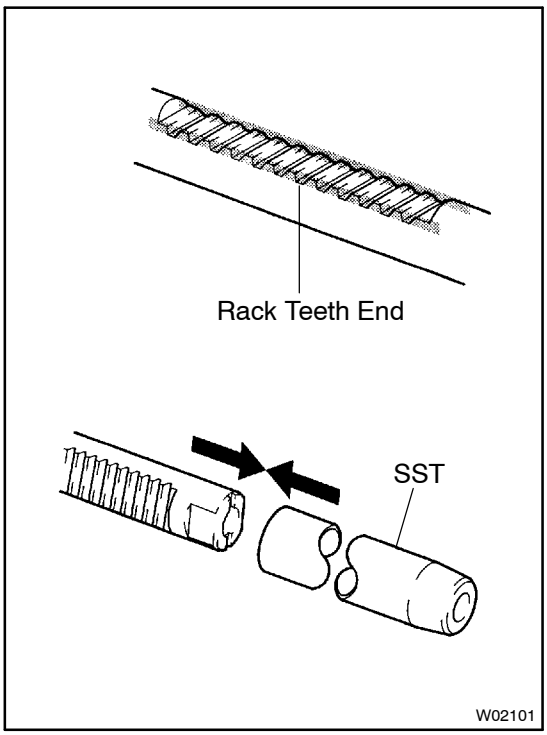


(c) Using SST, push in the oil seal by hand until it becomes level.
SST 09950–60010 (09951–00460), 09950–70010 (09951–07360)

NOTICE:
When SST is set, do not damage the inside surface of the rack housing.



(d) Using SST and a press, install the oil seal.
SST 09950–60010 (09951–00280, 09951–00460, 09952–06010), 09950–70010 (09951–07360)



41. INSTALL POWER STEERING RACK

[Added]

(a) Coat SST with power steering fluid.
(b) Install SST to the rack.
SST 09631–00350

HINT:
Is necessary, scrape the burrs off the rack teeth end and burnish.

(c) Install the rack into the rack housing.

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