

General Description

POWER ASSISTED SYSTEM (POWER STEERING)

1. General Description

A: SPECIFICATION

Model			Non-turbo model	Turbo model
Whole system	Minimum turning radius	m (ft)	5.4 (17.7)	
	Steering angle (Inside — Outside)		35° 00' — 30° 54'	
	Steering wheel diameter	mm (in)	375 (14.8)	
	Maximum number of rotations		3.0	
Gearbox	Type		Integral Rack and Pinion	
	Backlash		0 (Automatic adjusting)	
	Valve (Power steering system)		Rotary valve	
Pump (Power steering system)	Type		Vane pump	
	Reservoir tank		Installed on body	
	Specific output	cm ³ (cu in)/rev.	7.2 (0.439)	
	Relief pressure	kPa (kg/cm ² , psi)	6,700 — 7,400 (68 — 75, 970 — 1,070)	7,650 — 8,340 (78 — 85, 1,110 — 1,210)
	Hydraulic fluid control		Engine speed sensitive	
	Adjusted flow	ℓ (US qt, Imp qt)/min.	1,000 rpm: 6.6 (7.0, 5.8) 3,000 rpm: 5.3 (5.6, 4.7)	1,000 rpm: 7 (7.4, 6.2) 3,000 rpm: 5 (5.3, 4.4)
	RPM range	rpm	670 — 9,869	595 — 8,925
	Direction of rotation		Clockwise (when observed from pulley side)	
	Description		SUBARU ATF or ATF DEXRON III	
Hydraulic oil (Power steering system)	Capacity ℓ (US qt, Imp qt)	Reservoir tank	0.3 (0.3, 0.3)	
		Whole system	0.7 (0.7, 0.6)	
Steering wheel	Free play	mm (in)	17 (0.67)	
Steering angle	Inner wheel		35°00'±1°30'	
	Outer wheel		30°54'±1°30'	
Steering shaft	Clearance between the steering wheel and column cover	mm (in)	3.0 (0.118)	
Steering gearbox (Power steering system)	Sliding resistance	N (kgf, lb)	400 (40.8, 89.9) or less	
	Rack shaft play in the radial direction	Right-turn steering	mm (in)	0.19 (0.0075) or less
		Left-turn steering	mm (in)	Horizontal free play: 0.15 (0.0059) or less Vertical free play: 0.3 (0.012) or less
	Input shaft play	In radial direction	mm (in)	0.18 (0.0071) or less
		In axial direction	mm (in)	0.5 (0.020) or less
	Rotation resistance	N (kgf, lb)	Maximum allowance: 9.33 (0.95, 2.10) or less Left and right Difference between right and left sliding resistance: 20% or less	

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Oil pump (Power steering system)	Pulley shaft	Free play in the radial direction mm (in)	0.4 (0.016) or less
		Free play in the axial direction mm (in)	0.9 (0.035) or less
	Pulley	Ditch deflection mm (in)	1.0 (0.039) or less
		Rotation resistance N (kgf, lb)	9.22 (0.94, 2.07) or less
Steering wheel effort (Power steering system)	Regular pressure	kPa (kg/cm ² , psi)	981 (10, 142) or less
	At standstill with engine idling on paved road	N (kgf, lb)	31.4 (3.2, 7.1) or less
	At standstill with engine stalled on paved road	N (kgf, lb)	294.2 (30, 66.2) or less

Recommended power steering fluid
SUBARU ATF or ATF DEXRON III

NOTE:

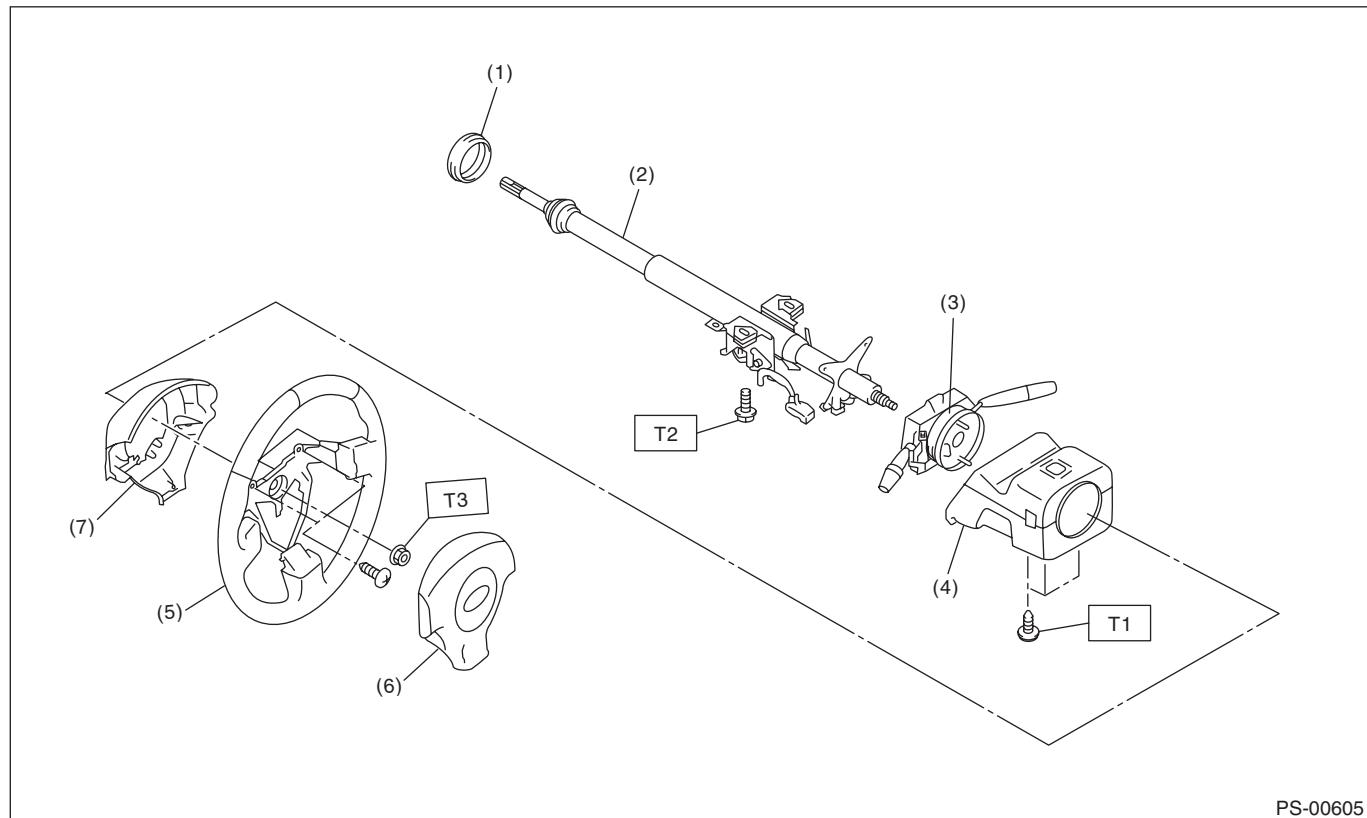
The table below lists various clearances that must be correctly adjusted to ensure the normal vehicle operation without interference noise, or any other faults. <Ref. to PS-56, INSPECTION OF CLEARANCE, INSPECTION, General Diagnostic Table.>

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B: COMPONENT

1. STEERING WHEEL AND COLUMN



PS-00605

- (1) Bushing
- (2) Steering shaft
- (3) Steering roll connector
- (4) Column cover

- (5) Steering wheel
- (6) Airbag module
- (7) Steering wheel lower cover

Tightening torque:N·m (kgf·m, ft·lb)

T1: 1.2 (0.12, 0.9)

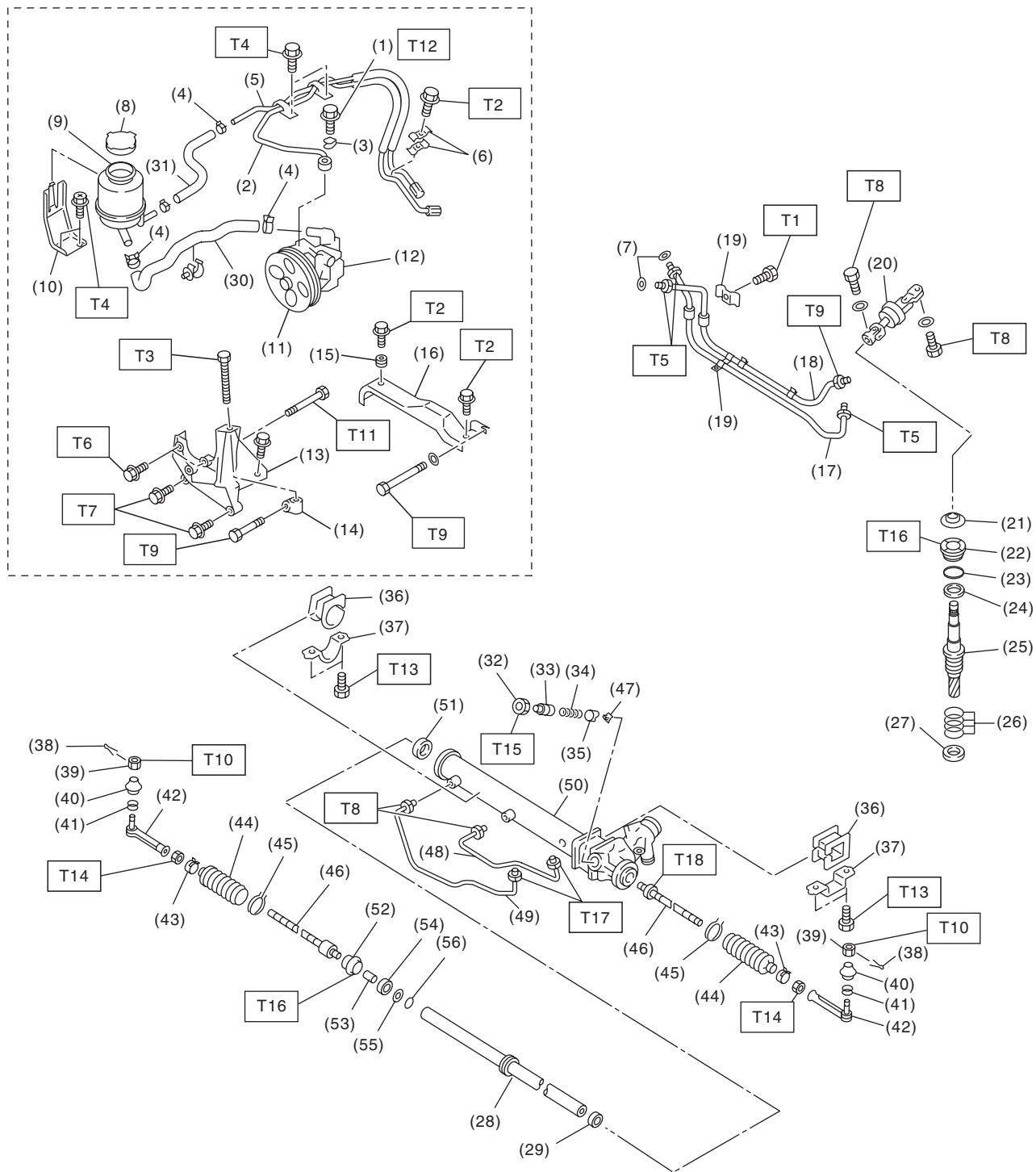
T2: 25 (2.5, 18.1)

T3: 45 (4.6, 33.2)

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2. POWER ASSISTED SYSTEM



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General Description

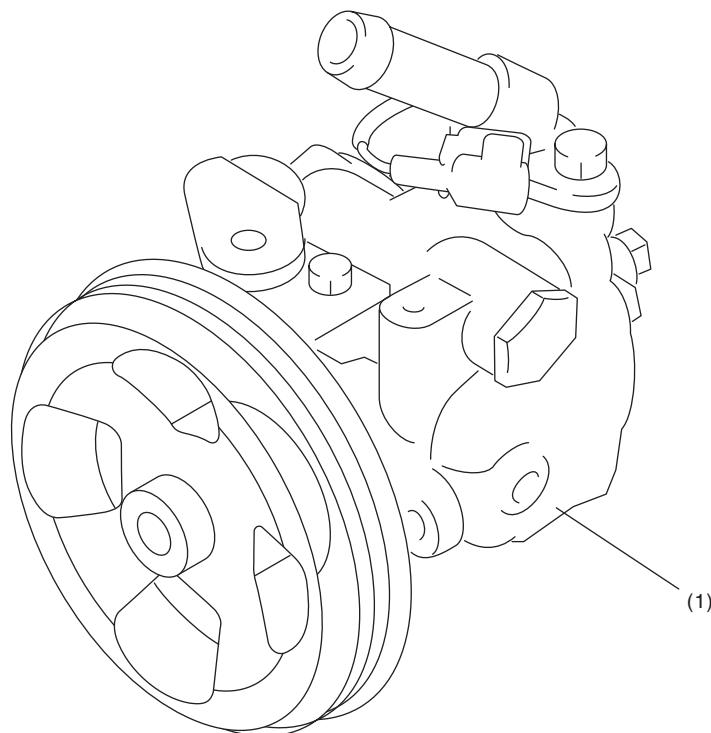
POWER ASSISTED SYSTEM (POWER STEERING)

(1) Eye bolt	(27) Oil seal	(52) Holder
(2) Pipe C	(28) Rack	(53) Bushing
(3) Gasket	(29) Back-up washer	(54) Oil seal
(4) Clip	(30) Suction hose	(55) Oil seal
(5) Pipe D	(31) Return hose	(56) O-ring
(6) Clamp E	(32) Lock nut	
(7) O-ring	(33) Adjusting screw	Tightening torque:N·m (kgf·m, ft·lb)
(8) Cap	(34) Spring	T1: 6 (0.6, 4.3)
(9) Reservoir tank	(35) Sleeve	T2: 7.4 (0.75, 5.4)
(10) Reservoir tank bracket	(36) Adapter	T3: 8 (0.8, 5.8)
(11) Pulley	(37) Clamp	T4: 13 (1.3, 9.4)
(12) Oil pump	(38) Cotter pin	T5: 15 (1.5, 10.8)
(13) Bracket	(39) Castle nut	T6: 15.7 (1.6, 11.6)
(14) Belt tension nut	(40) Dust cover	T7: 22 (2.2, 15.9)
(15) Bushing	(41) Clip	T8: 24 (2.4, 17.7)
(16) Belt cover	(42) Tie-rod end	T9: 25 (2.5, 18.1)
(17) Pipe E	(43) Clip	T10: 27 (2.75, 19.9)
(18) Pipe F	(44) Boot	T11: 37.3 (3.8, 27.5)
(19) Clamp plate	(45) Boot band	T12: 39 (4.0, 28.9)
(20) Universal joint	(46) Tie-rod	T13: 60 (6.1, 44.1)
(21) Dust cover	(47) Sheet pad	T14: 83 (8.5, 61.5)
(22) Plug	(48) Pipe B	T15: 39 (4.0, 28.9)
(23) O-ring	(49) Pipe A	T16: 64 (6.5, 47.0)
(24) Oil seal	(50) Steering body	T17: 20 (2.0, 14.5)
(25) Pinion and valve ASSY	(51) Oil seal	T18: 90 (9.0, 65.1)
(26) Seal ring		

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POWER ASSISTED SYSTEM (POWER STEERING)

3. OIL PUMP



PS-00024

(1) Power steering oil pump ASSY

C: CAUTION

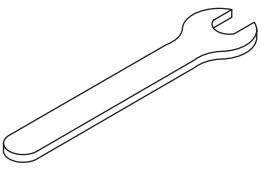
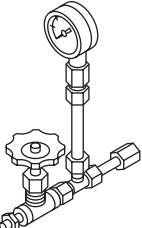
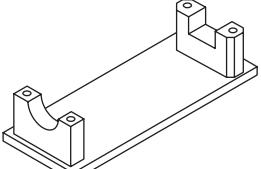
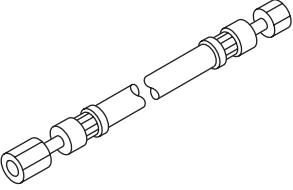
- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Be careful not to burn your hands, because each part on the vehicle is hot after running.
- Use SUBARU genuine power steering fluid, grease etc. or the equivalent. Do not mix fluid, grease etc. of different grades or manufacturers.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or rigid racks at the specified points.
- Apply power steering fluid onto sliding or revolving surfaces before installation.
- Before installing the O-ring or snap ring, apply a sufficient amount of gear oil to avoid damage and deformation.
- Before securing a part on a vise, place cushioning material such as wood blocks, aluminum plate, or shop cloth between the part and the vise.

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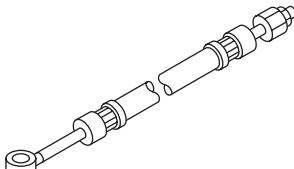
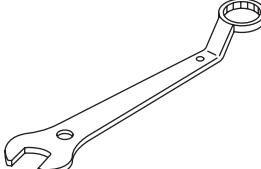
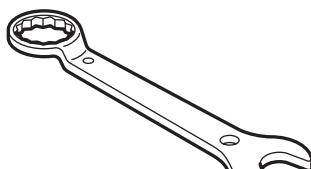
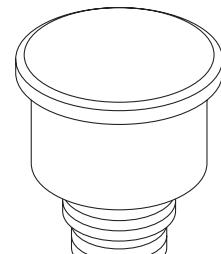
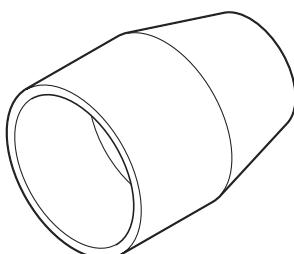
D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-925700000	925700000	WRENCH	<ul style="list-style-type: none">Used for removing and installing Tie-rod.Apply this tool to rack.
 ST-925711000	925711000	PRESSURE GAUGE	Used for measuring oil pressure.
 ST-926200000	926200000	STAND	Used when inspecting characteristics of the gearbox assembly and disassembly.
 ST34099AC010	34099AC010	ADAPTER HOSE A	Used together with PRESSURE GAUGE (925711000).

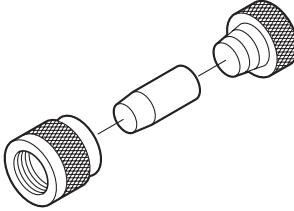
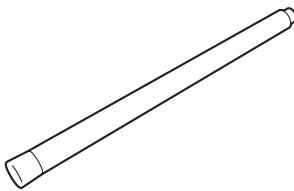
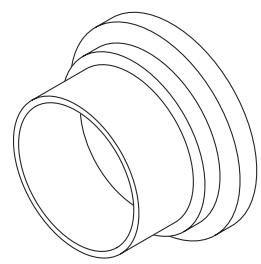
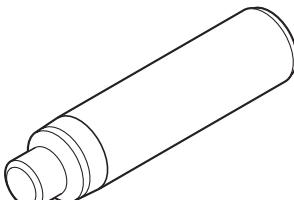
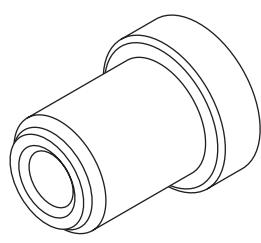
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST34099AC020	34099AC020	ADAPTER HOSE B	Used together with PRESSURE GAUGE (925711000).
 ST-926230000	926230000	SPANNER	For the lock nut when adjusting backlash of gearbox.
 ST34099PA100	34099PA100	SPANNER	Used when measuring the rotating resistance of gearbox assembly.
 ST34199AE040	34199AE040	OIL CHARGE GUIDE	Used for charging power steering fluid.
 ST-926250000	926250000	GUIDE	Used for installing the holder assembly into the rack housing.

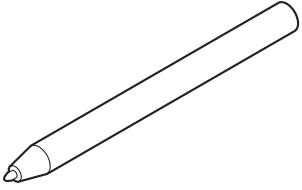
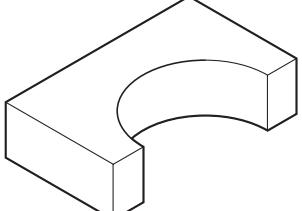
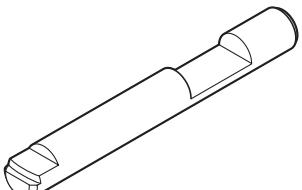
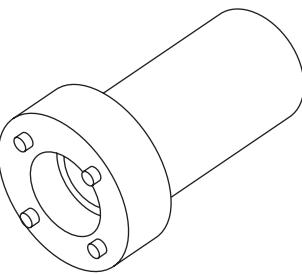
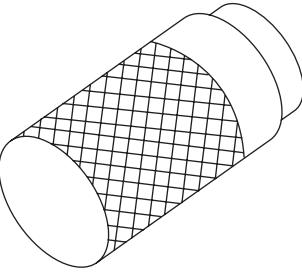
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
	927490000	INSTALLER A, B, C	Used for installing the oil seal to the rack assembly.
	927580000	REMOVER	Used for removing the back-up ring and oil seal.
	34199AE000	GUIDE	Used for installing the rack and seal into housing assembly.
	34199FE000	INSTALLER & REMOVER	Used for removing and installing the rack oil seal (outer & inner).
	34199AE010	INSTALLER	Used for installing the rack oil seal (outer).

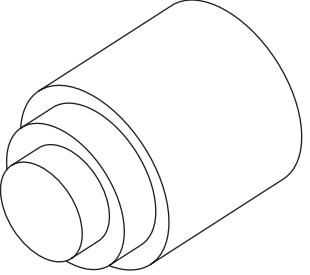
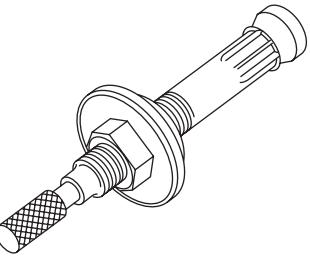
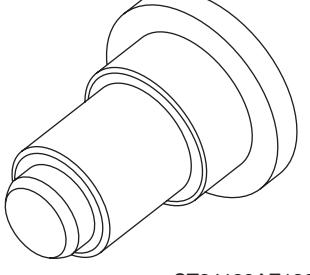
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST34099FA060	34099FA060	PUNCH HOLDER	Used for crimping.
 ST34099FA070	34099FA070	BASE	Used for the support housing assembly.
 ST34099FA080	34099FA080	PUNCH	Used for removing crimps.
 ST34199AE090	34199AE090	PLUG WRENCH	Used for removing the plug.
 ST34199AE100	34199AE100	OIL SEAL PLUG REMOVER	Used for removing the oil seal plug.

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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST34199AE110	34199AE110	OIL SEAL PLUG INSTALLER	Used for installing the oil seal plug.
 ST34199AE120	34199AE120	GEARBOX OIL SEAL REMOVER	Used for removing the gearbox oil seal.
 ST34199AE130	34199AE130	GEARBOX OIL SEAL INSTALLER	Used for installing the gearbox oil seal.

2. GENERAL TOOL

TOOL NAME	REMARKS
Spring scale	Used for measuring tightening torque.
Snap ring pliers	Used for removing and installing snap ring.
Dial gauge	Used for measuring the steering gearbox.
Hand clamp pliers	Used for crimping the boot band.
Steering wheel puller	Used for removing the steering wheel.