

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)		36° 25' — 32° 00'	35° 00' — 30° 54'
	Steering wheel diameter mm (in)		375 (14.8)	
	Maximum number of rotations		3.1	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 RPM 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		700 — 9,000	
Hydraulic oil (Power steering system)	Description		ATF DEXRON III or equivalent	
	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		36°25'±1°30'	35°00'±1°30'
	Outer wheel		32°00'±1°30'	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	
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	
	Regular pressure kPa (kg/cm ² , psi)		981 (10, 142) or less	

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Steering wheel effort (Power steering system)	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	Manufacturer
ATF DEXRON III or equivalent	B.P.
	CALTEX
	CASTROL
	MOBIL
	SHELL
	TEXACO

NOTE:

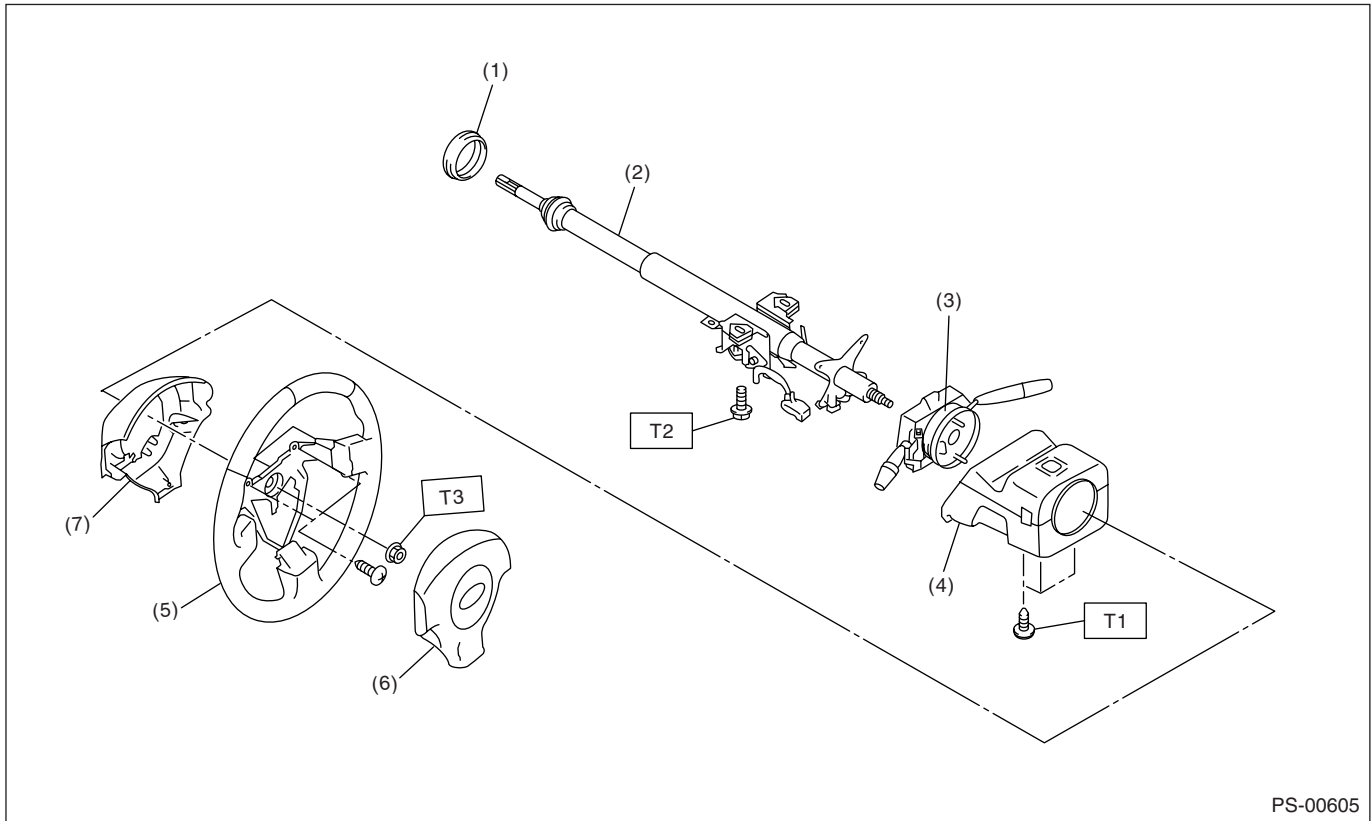
The table below lists various clearances that must be correctly adjusted to ensure the normal vehicle operation without interference noise, or any other faults. <Ref. to PS-53, INSPECTION OF CLEARANCE, INSPECTION, General Diagnostic Table.>

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B: COMPONENT

1. STEERING WHEEL AND COLUMN



- | | |
|-----------------------------|--------------------------------|
| (1) Bushing | (5) Steering wheel |
| (2) Steering shaft | (6) Airbag module |
| (3) Steering roll connector | (7) Steering wheel lower cover |
| (4) Column cover | |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 1.2 (0.12, 0.9)

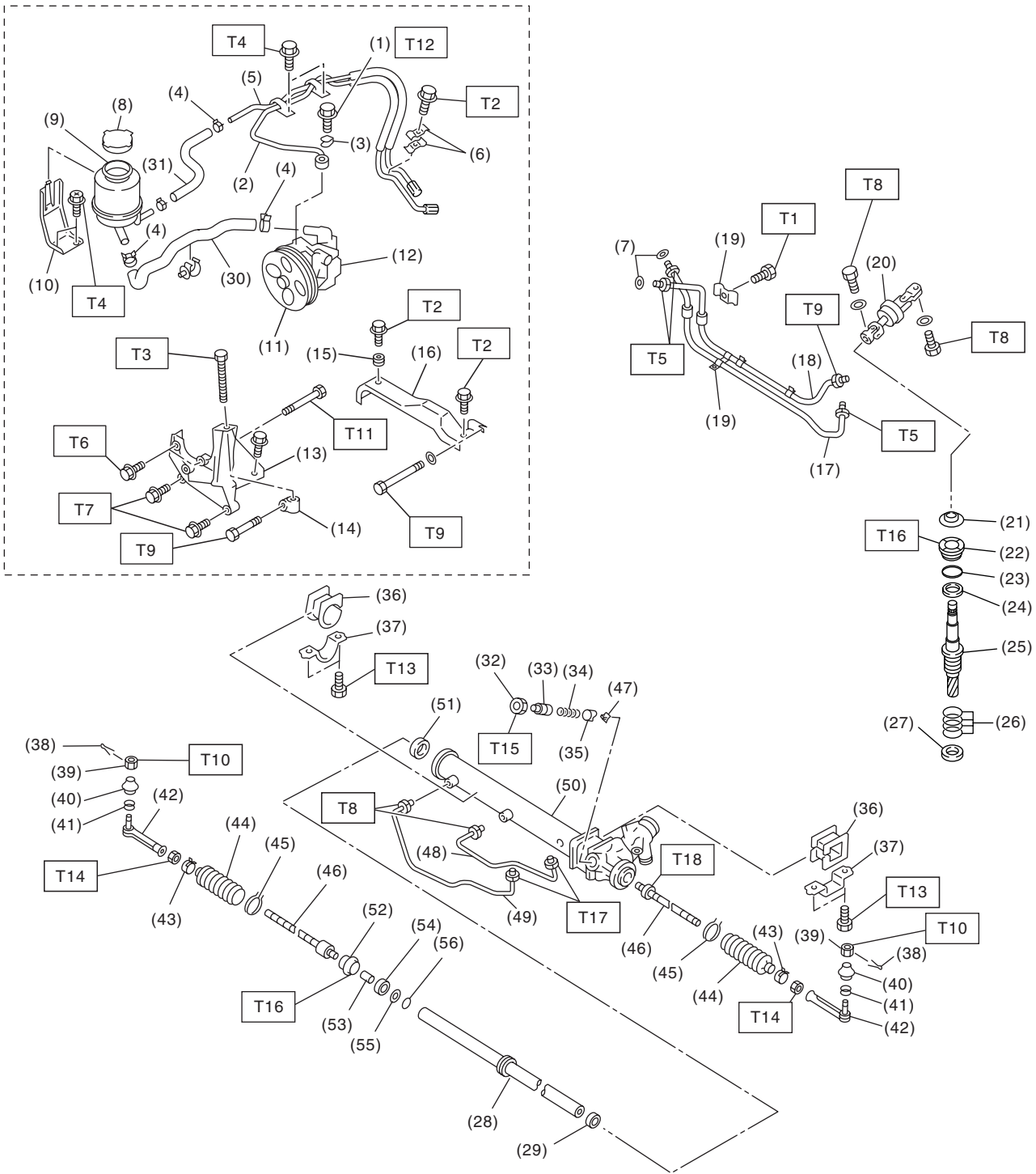
T2: 25 (2.5, 18.1)

T3: 45 (4.6, 33.2)

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2. POWER ASSISTED SYSTEM



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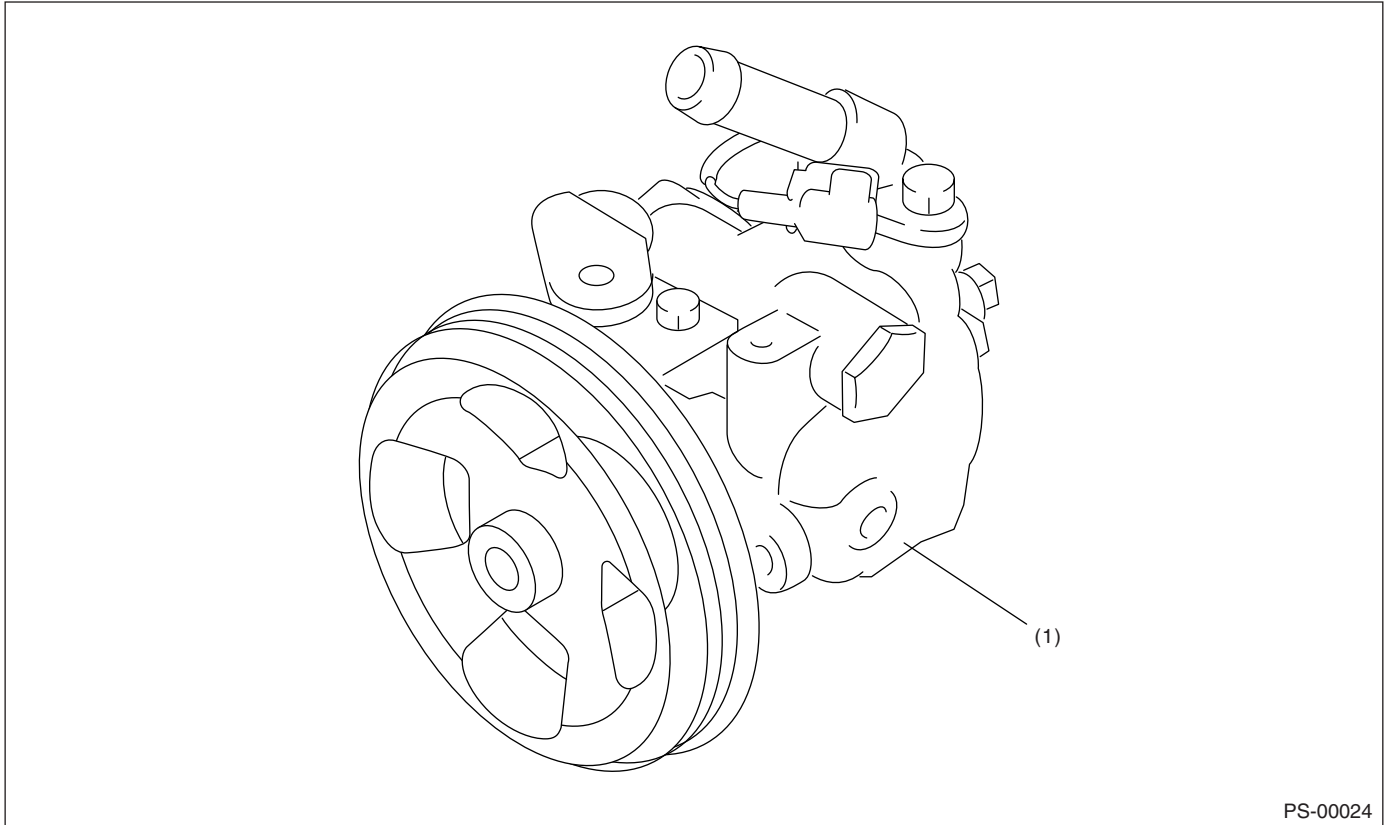
POWER ASSISTED SYSTEM (POWER STEERING)

(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	<i>Tightening torque: N·m (kgf-m, ft-lb)</i>
(8) Cap	(34) Spring	<i>T1: 6 (0.6, 4.3)</i>
(9) Reservoir tank	(35) Sleeve	<i>T2: 7.4 (0.75, 5.4)</i>
(10) Reservoir tank bracket	(36) Adapter	<i>T3: 8 (0.8, 5.8)</i>
(11) Pulley	(37) Clamp	<i>T4: 13 (1.3, 9.4)</i>
(12) Oil pump	(38) Cotter pin	<i>T5: 15 (1.5, 10.8)</i>
(13) Bracket	(39) Castle nut	<i>T6: 15.7 (1.6, 11.6)</i>
(14) Belt tension nut	(40) Dust cover	<i>T7: 22 (2.2, 15.9)</i>
(15) Bushing	(41) Clip	<i>T8: 24 (2.4, 17.4)</i>
(16) Belt Cover	(42) Tie-rod end	<i>T9: 25 (2.5, 18.1)</i>
(17) Pipe E	(43) Clip	<i>T10: 27 (2.75, 19.9)</i>
(18) Pipe F	(44) Boot	<i>T11: 37.3 (3.8, 27.5)</i>
(19) Clamp plate	(45) Boot band	<i>T12: 39 (4.0, 28.9)</i>
(20) Universal joint	(46) Tie-rod	<i>T13: 60 (6.1, 44.1)</i>
(21) Dust cover	(47) Sheet pad	<i>T14: 83 (8.5, 61.5)</i>
(22) Plug	(48) Pipe B	<i>T15: 39 (4.0, 28.9)</i>
(23) O-ring	(49) Pipe A	<i>T16: 64 (6.5, 47.0)</i>
(24) Oil seal	(50) Steering body	<i>T17: 20 (2.0, 14.5)</i>
(25) Pinion & valve ASSY	(51) Oil seal	<i>T18: 90 (9.0, 65.1)</i>
(26) Seal ring		

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3. OIL PUMP



PS-00024

(1) Power steering oil pump ASSY

C: CAUTION

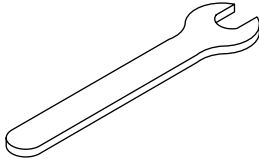
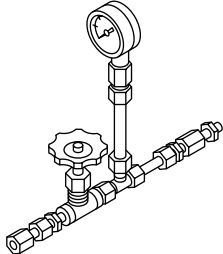
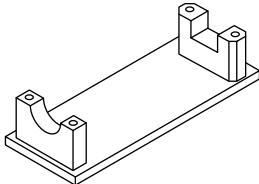
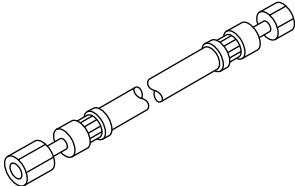
- Wear work clothing, including a cap, protective goggles and protective shoes during operation.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, installation 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. with that of another grade or from other 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 the sliding or the 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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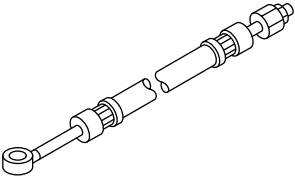
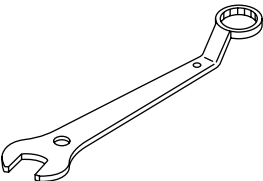
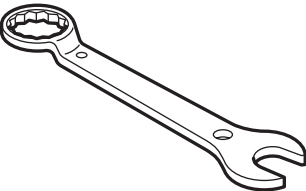
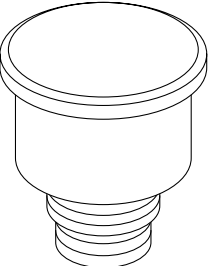
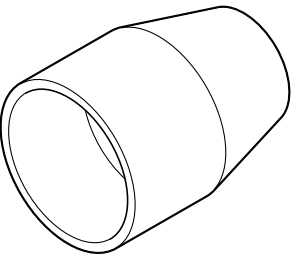
D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-925700000	925700000	WRENCH	- 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 with the PRESSURE GAUGE (925711000).

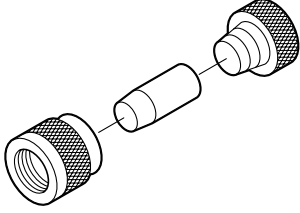
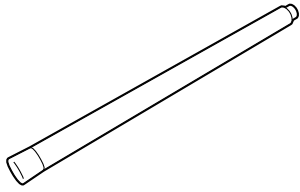
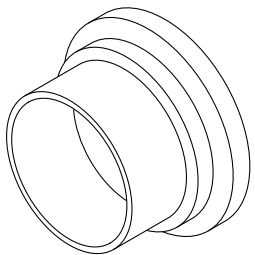
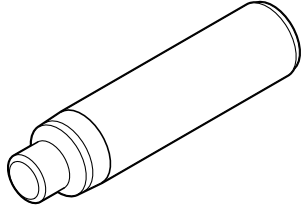
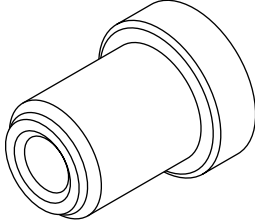
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST34099AC020	34099AC020	ADAPTER HOSE B	Used with the PRESSURE GAUGE (925711000).
 ST-926230000	926230000	WRENCH	For the lock nut when adjusting backlash of gearbox.
 ST34099PA100	34099PA100	WRENCH	Used 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.

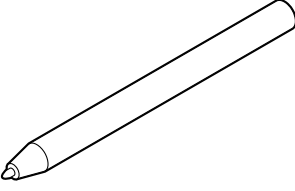
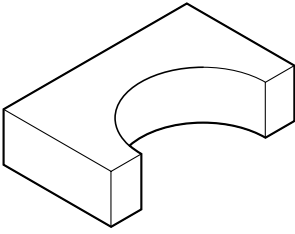
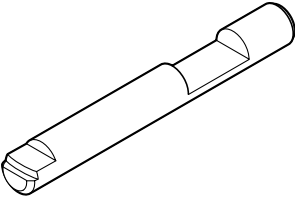
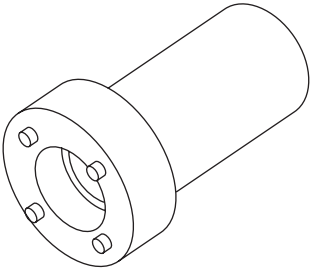
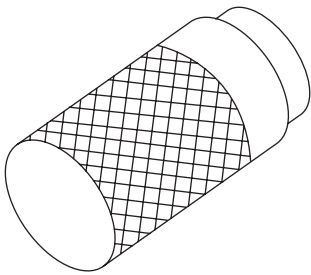
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-927490000	927490000	INSTALLER A, B, C	Used for installing the oil seal to the rack assembly.
 ST-927580000	927580000	REMOVER	Used for removing the back-up ring and oil seal.
 ST34199AE000	34199AE000	GUIDE	Used for installing the rack and seal into housing assembly.
 ST34199FE000	34199FE000	INSTALLER & REMOVER	Used for removing and installing the rack oil seal (outer & inner).
 ST34199AE010	34199AE010	INSTALLER	Used for installing the rack oil seal (outer).

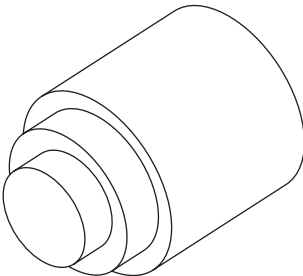
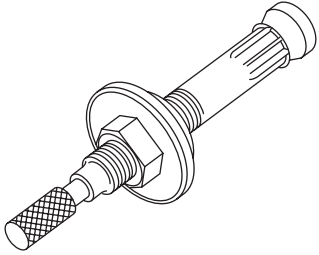
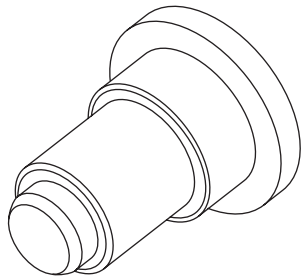
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST34099FA060	34099FA060	PUNCH HOLDER	Used for crimping.
 ST34099FA070	34099FA070	BASE	Used for the support housing assembly.
 ST34099FA080	34099FA080	PUNCH	Used for removing crimps.
 ST34199AE090	34199AE090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

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 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.