

General Description

POWER ASSISTED SYSTEM (POWER STEERING)

1. General Description

A: SPECIFICATION

Whole system	Minimum turning radius	m (ft)	5.7 (18.7)
	Steering angle	Inner wheel	37.0°±1.5°
		Outer wheel	32.0°±1.5
	Steering wheel diameter	mm (in)	375 (14.76)
Gearbox	Lock to lock turn		3.44
	Type	Rack and Pinion, Integral	
	Backlash	0 (Automatic adjusting)	
Pump (Power steering system)	Valve (Power steering system)	Rotary valve	
	Type	Vane pump	
	Oil tank	Installed on body	
	Specific output	cm ³ (cu in)/rev.	9.6 (0.586)
	Relief pressure	kPa (kg/cm ² , psi)	8,800 — 9,400 (90 — 96, 1,276 — 1,363)
	Hydraulic fluid control		Engine RPM sensitive
	Hydraulic fluid	ℓ (US qt, Imp qt)	1,000 rpm: 7.0 (7.4, 6.2) 3,000 rpm: 6.0 (6.3, 5.3)
	RPM Range	rpm	500 — 8,600
Hydraulic oil (Power steering system)	Direction of rotation		Clockwise
	Description	ATF DEXRON III or equivalent	
	Capacity	Oil tank	0.2 (0.2, 0.2)
	ℓ (US qt, Imp qt)	Whole system	0.9 (1.0, 0.8)

Steering wheel	Free play	mm (in)	17 (0.67)
Steering shaft	Clearance between the steering wheel and column cover	mm (in)	3.0 (0.12)
Steering gearbox (Power steering system)	Sliding resistance	N (kgf, lb)	400 (41, 90) or less Difference between right and left sliding resistance: Less than 20%
	Rack shaft play in the radial direction	Right-turn steering	0.19 (0.0075) or less
		Left-turn steering	Horizontal movement: 0.6 (0.024) or less Vertical movement: 0.4 (0.016) or less
	Input shaft play	In radial direction	0.18 (0.0071) or less
		In axial direction	0.27 (0.0106) or less
	Rotation resistance		Maximum allowable value: 10.5 (1.07, 2.36) or less Difference between right and left sliding resistance: Less than 20%
	Pulley shaft	Radial play	0.2 (0.008) or less
		Axial play	0.6 (0.024) or less
Oil Pump (Power steering system)	Pulley	Ditch deflection	1.0 (0.039) or less
		Rotation resistance	9.22 (0.94, 2.07) or less
	Regular pressure (Unloaded)	kPa (kg/cm ² , psi)	981 (10, 142) or less
Steering wheel effort (Power steering system)	At standstill with engine idling on paved road	N (kgf, lb)	29.4 (3.0, 6.6) or less
	At standstill with engine stalled on paved road	N (kgf, lb)	294.2 (30, 66.2) or less

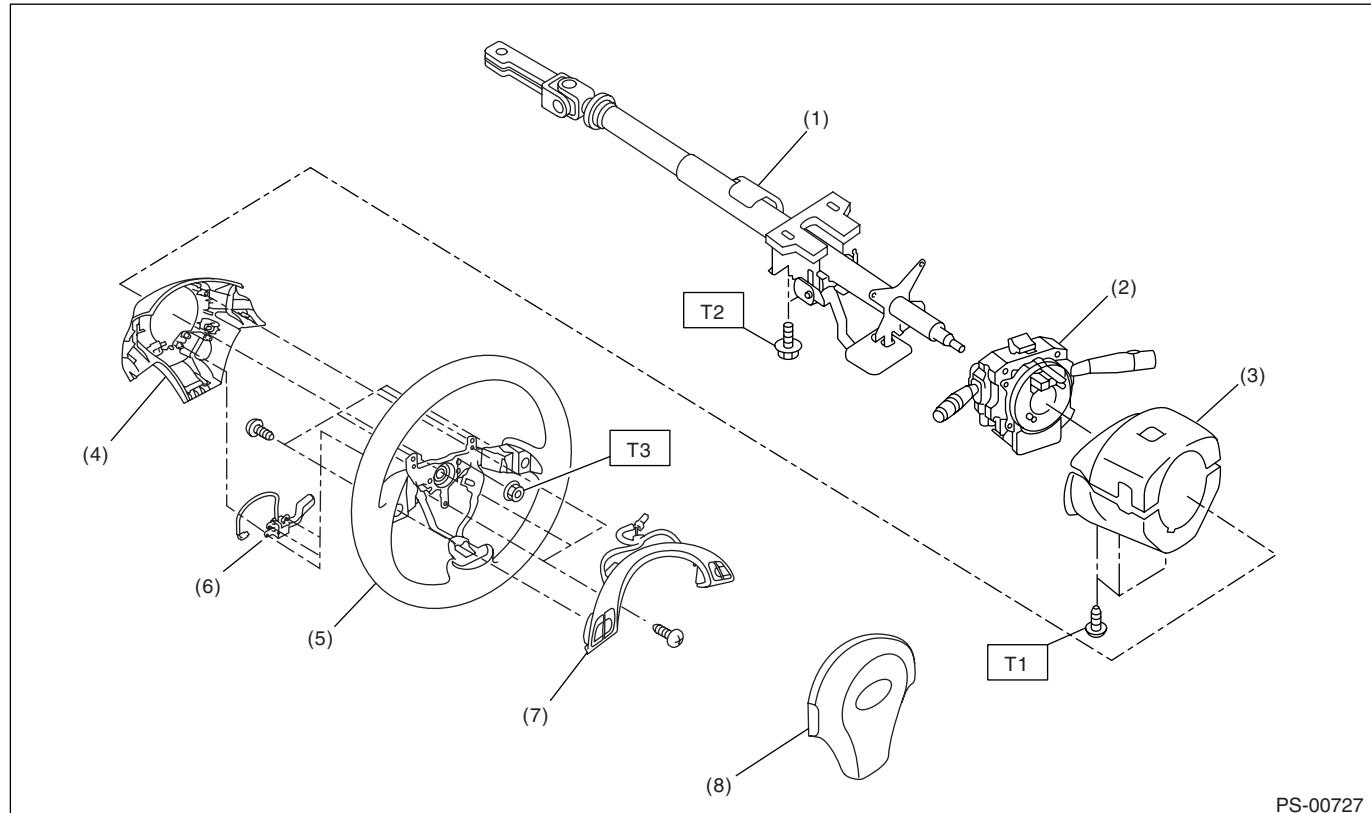
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Recommended power steering fluid	Manufacturer
ATF DEXRON III or equivalent	B.P.
	CALTEX
	CASTROL
	MOBIL
	SHELL
	TEXACO

B: COMPONENT

1. STEERING WHEEL AND COLUMN



(1) Steering shaft	(5) Steering wheel
(2) Steering roll connector	(6) Satellite switch
(3) Column cover	(7) Cruise control switch
(4) Steering wheel lower cover	(8) Airbag module

Tightening torque: N·m (kgf·m, ft·lb)

T1: 1.2 (0.12, 0.9)

T2: 25 (2.5, 18.1)

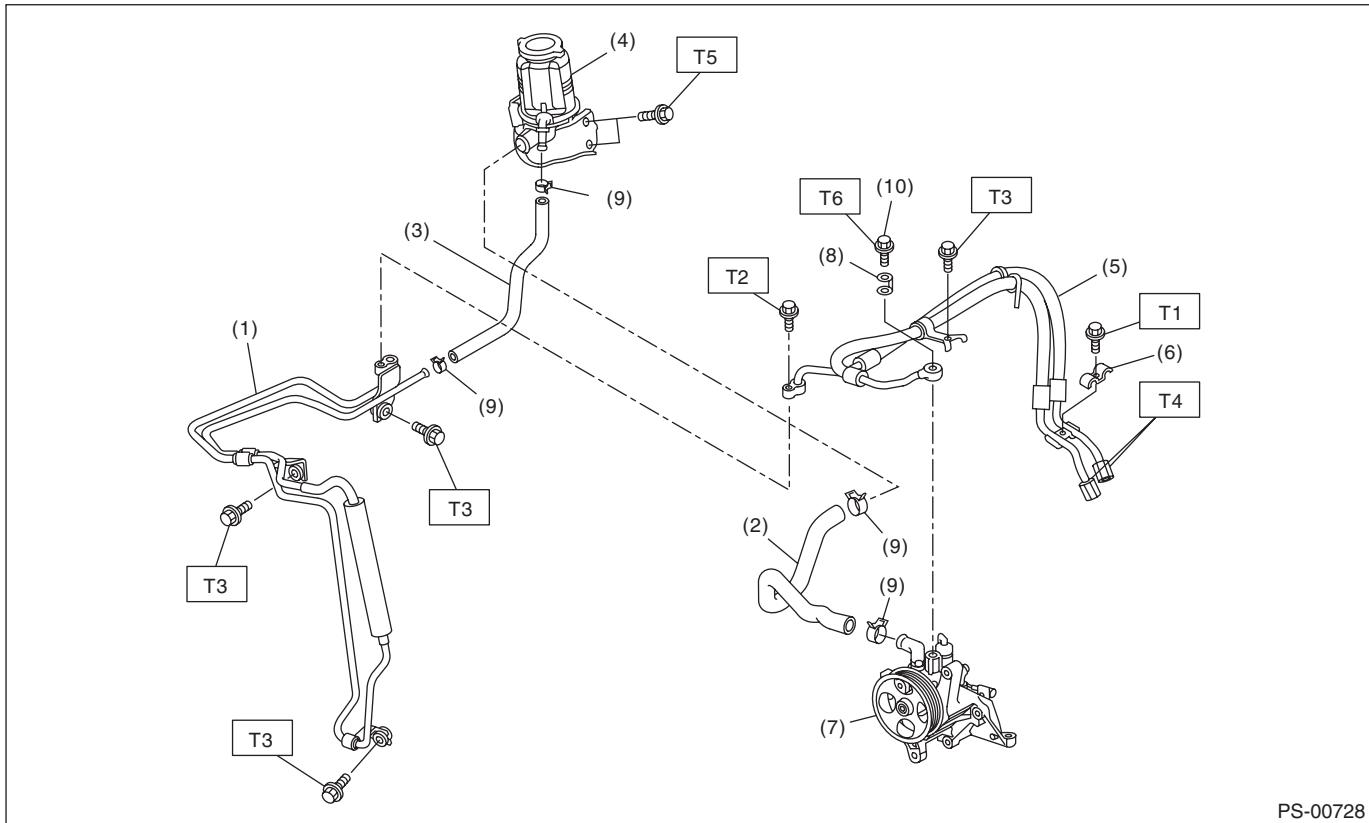
T3: 45 (4.6, 33.2)

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2. POWER ASSISTED SYSTEM

- Hose and tank



(1)	Oil cooler pipe
(2)	Suction hose
(3)	Return hose
(4)	Reservoir tank
(5)	Hose
(6)	Clamp E
(7)	Oil pump

(8)	Eye bolt gasket
(9)	Clip
(10)	Eye bolt

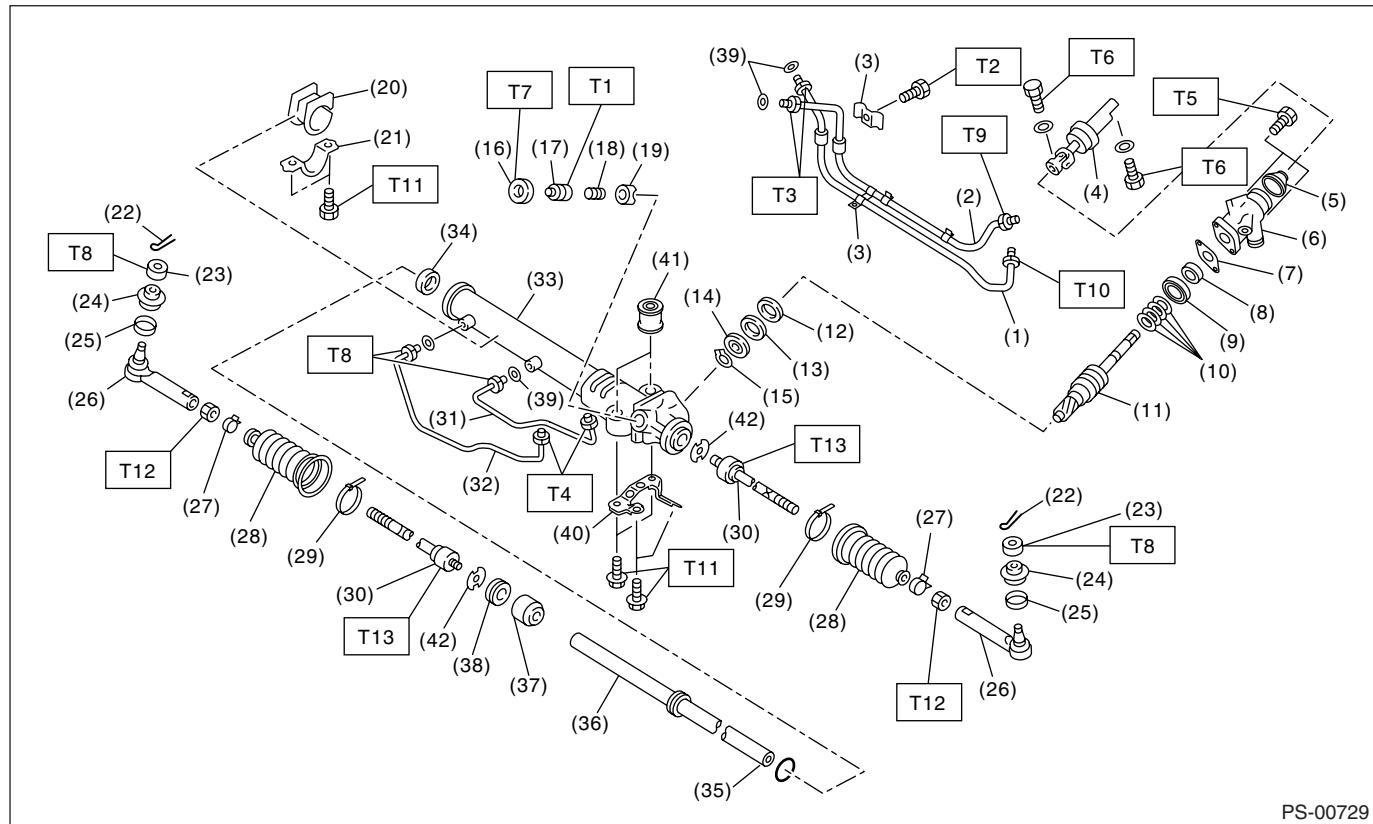
Tightening torque: N·m (kgf·m, ft·lb)

T1:	8 (0.82, 5.9)
T2:	10 (1.02, 7.4)
T3:	13 (1.32, 9.6)
T4:	15 (1.5, 10.8)
T5:	33 (3.37, 24.3)
T6:	40 (4.08, 29.5)

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- Gearbox



PS-00729

(1) Pipe C	(20) Adapter	(39) O-ring
(2) Pipe D	(21) Clamp	(40) Bracket
(3) Clamp plate	(22) Cotter pin	(41) Bushing
(4) Universal joint	(23) Castle nut	(42) Lock washer
(5) Dust seal	(24) Dust cover	
(6) Valve housing	(25) Clip	
(7) Gasket	(26) Tie-rod end	
(8) Oil seal	(27) Clip	
(9) Bushing	(28) Boot	
(10) Seal ring	(29) Band	
(11) Pinion & valve ASSY	(30) Tie-rod	
(12) Oil seal	(31) Pipe B	
(13) Back-up washer	(32) Pipe A	
(14) Ball bearing	(33) Steering body	
(15) Snap ring	(34) Oil seal	
(16) Lock nut	(35) Piston ring	
(17) Adjusting screw	(36) Rack	
(18) Spring	(37) Rack bushing	
(19) Sleeve	(38) Holder	

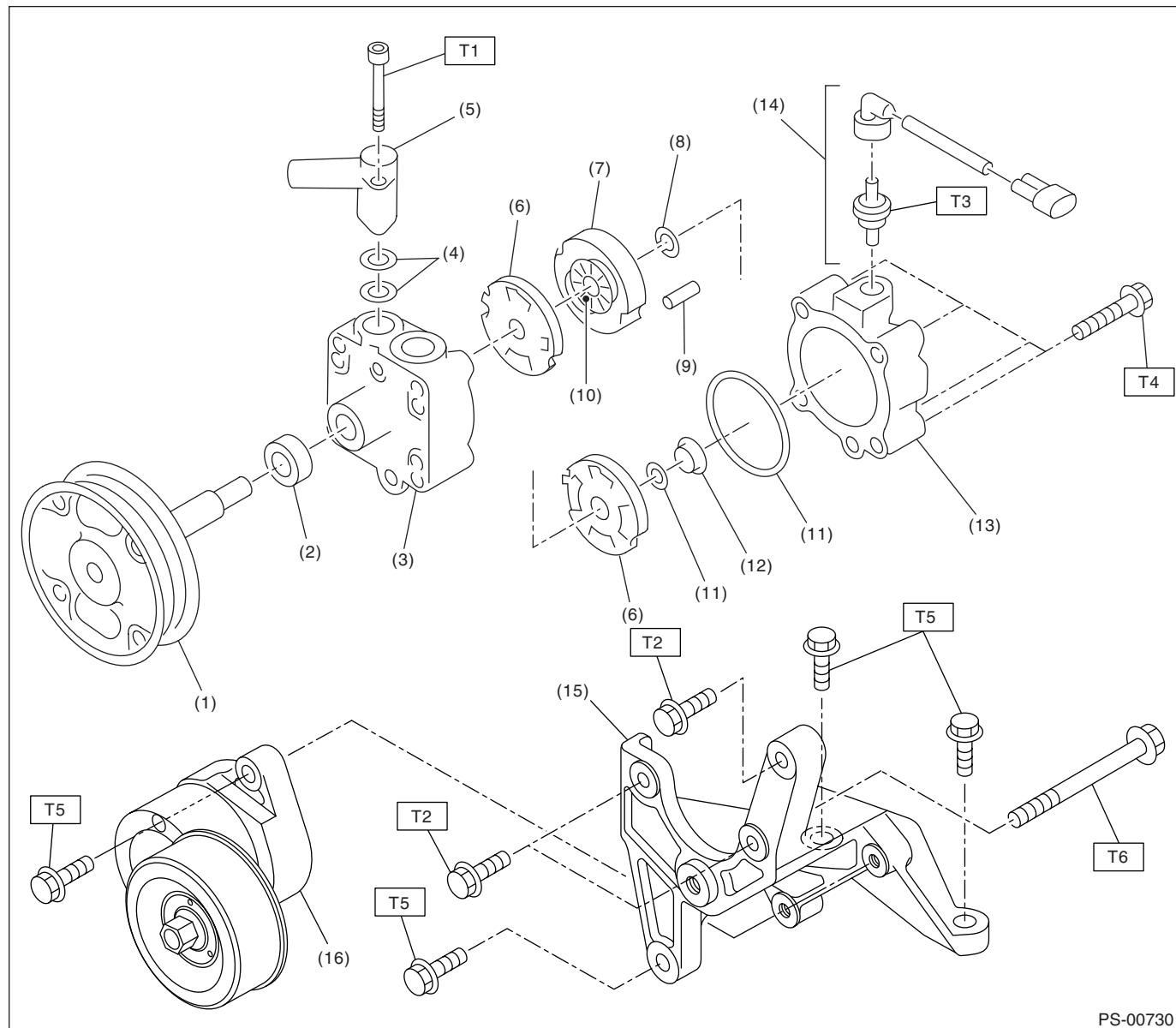
Tightening torque: N·m (kgf-m, ft-lb)

T1: 3.9 (0.4, 2.9)
T2: 10 (1.02, 7.4)
T3: 15 (1.5, 10.8)
T4: 17 (1.7, 12.5)
T5: 20 (2.0, 14.8)
T6: 24 (2.4, 17.4)
T7: 25 (2.5, 18.1)
T8: 27 (2.75, 19.9)
T9: 29 (3.0, 21.4)
T10: 37 (3.8, 27.3)
T11: 60 (6.1, 44.1)
T12: 85 (8.7, 62.7)
T13: 130 (13.3, 95.9)

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3. OIL PUMP



(1) Pulley	(9) Straight pin
(2) Oil seal	(10) Rotor
(3) Front casing	(11) O-ring
(4) O-ring	(12) Seal ring
(5) Socket	(13) Rear body
(6) Pressure plate	(14) Connector
(7) Cam ring	(15) Bracket
(8) Snap ring	(16) Belt tensioner

Tightening torque: N·m (kgf·m, ft·lb)

T1: 3.73 (0.38, 2.75)

T2: 15.7 (1.6, 11.6)

T3: 19.6 (2.0, 14.5)

T4: 27.5 (2.8, 20.3)

T5: 33 (3.37, 24.3)

T6: 36.8 (3.75, 27.1)

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C: CAUTION

Please clearly understand and adhere to the following general precautions. They must be strictly followed to avoid any injury to the person doing the work or people in the area.

1. OPERATION

- Wear work clothing, including a cap, protective goggles and protective shoes during operation.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Be careful not to burn yourself, 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.
- Before securing a part on a vise, place cushioning material such as wooden blocks, aluminum plate or cloth between the part and the vise.

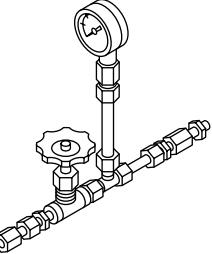
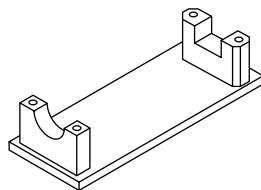
2. OIL

When handling oil, follow the rules below to prevent unexpected accidents.

- Prepare container and waste cloths when performing work which oil could possibly spill. If oil spills, wipe it off immediately to prevent from penetrating into floor or flowing outside, for environmental protection.
- Follow all government and local regulations concerning waste disposal.

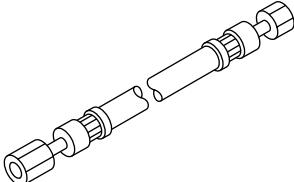
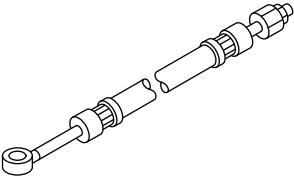
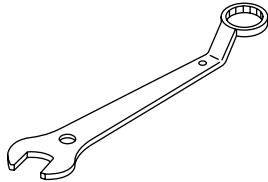
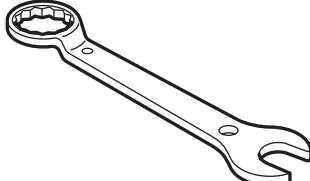
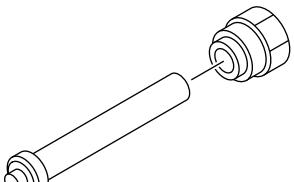
D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-925711000	925711000	PRESSURE GAUGE	Used for measuring oil pressure.
 ST-926200000	926200000	STAND	<ul style="list-style-type: none">• Used when inspecting characteristic of gearbox assembly and disassembling it.• Used with BOSS D (34199AG000).

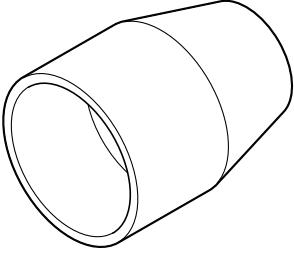
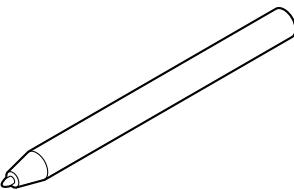
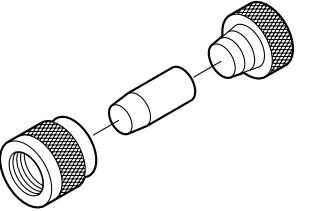
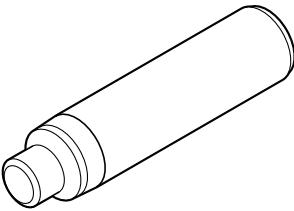
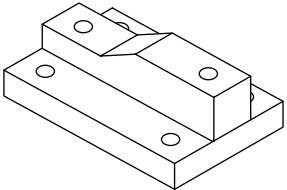
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST34099AC010	34099AC010	ADAPTER HOSE A	Used with PRESSURE GAUGE (925711000).
 ST34099AC020	34099AC020	ADAPTER HOSE B	Used with PRESSURE GAUGE (925711000).
 ST-926230000	926230000	SPANNER	For the lock nut when adjusting backlash of gearbox.
 ST34099PA100	34099PA100	SPANNER	Used when measuring the rotating resistance of gearbox assembly.
 ST-926420000	926420000	PLUG	When fluid leaks from pinion side of gearbox assembly, remove pipe B from valve housing, attach this tool and check fluid leaking points.

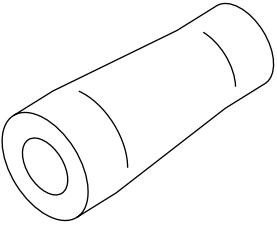
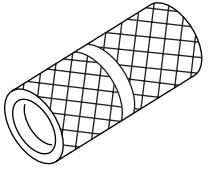
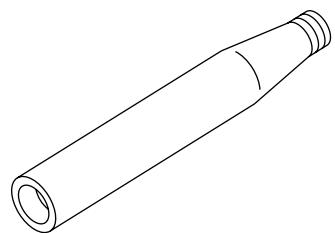
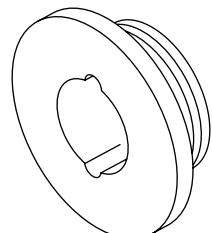
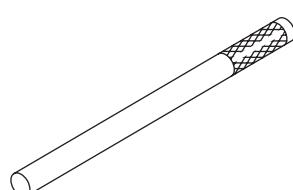
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-926250000	926250000	GUIDE	Used for installing the holder assembly into the rack housing.
 ST34099FA060	34099FA060	PUNCH HOLDER	Used for crimping.
 ST-927490000	927490000	INSTALLER A, B, C	Used for installing the oil seal to the rack assembly.
 ST34199XA030	34199XA030	INSTALLER & REMOVER 44	Used for removing and installing the rack oil seal (outer & inner).
 ST34199AG000	34199AG000	BOSS D	<ul style="list-style-type: none"> Used when inspecting characteristic of gearbox assembly and disassembling it. Used with STAND (926200000).

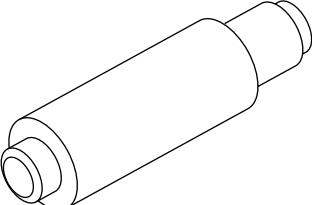
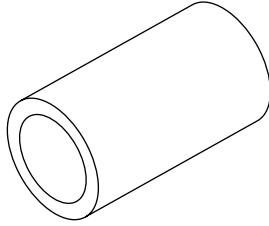
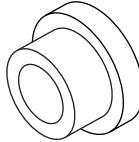
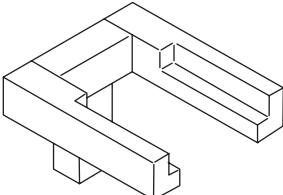
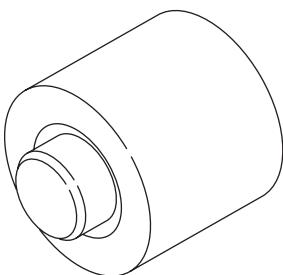
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST34199XA010	34199XA010	Guide 44	Used for installing seal ring of rack.
 ST34199AG070	34199AG070	FORMER	Used for forming seal ring of pinion.
 ST34199AG020	34199AG020	GUIDE	Used for installing seal ring of pinion.
 ST34199AG060	34199AG060	GUIDE G (26)	<ul style="list-style-type: none"> • Used for forming seal ring of rack. • Used with FORMER PISTON (34199XA020).
 ST34199AE050	34199AE050	OIL SEAL REMOVER	Used for removing oil seal.

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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
	34199AG090	INSTALLER & REMOVER	<ul style="list-style-type: none"> Used for installing oil seal of valve housing. Used for installing ball bearing of valve housing. Used for removing oil seal and ball bearing from valve housing.
	34199XA020	FORMER PISTON 44	<ul style="list-style-type: none"> Used for forming seal ring of rack. Used with Guide G (26)(34199AG060).
	34199XA000	INSTALLER 44	Used for pressing-fit oil seal of gearbox cylinder.
	34199AE020	MOUNT	Used to remove the oil pump.
	34199AE030	INSTALLER	Used for installing the oil seal to the oil pump.