

# General Description

## POWER ASSISTED SYSTEM (POWER STEERING)

### 1. General Description

#### A: SPECIFICATION

Model			OUTBACK except for 3.0 R	OUTBACK 3.0 R
Whole system	Minimum turning radius		m (ft)	
	Steering angle	Inner wheel	Excluding 2.5 GT spec. B: 5.4 (17.8) 2.5 GT spec. B: 5.8 (19)	
		Outer wheel	Excluding 2.5 GT spec. B: 37.6°±1.5° 2.5 GT spec. B: 33.8°±1.5°	
	Steering wheel diameter		mm (in)	
Lock to lock turn			375 (14.76)	
Gearbox	Type		Excluding 2.5 GT: 3.2, 2.5 GT: 2.8	
	Backlash		Rack and Pinion, Integral	
	Valve (Power steering system)		0 (Automatic adjusting)	
Pump (Power steering system)	Type		Rotary valve	
	Oil tank		Vane pump	
	Specific output		Installed on body	
	Relief pressure	kPa (kg/cm <sup>2</sup> , psi)	8.5 (0.519)	9.6 (0.586)
	(75 — 82, 1,067 — 1,167)		7,350 — 8,050 (85 — 92, 1,204 — 1,305)	
	Hydraulic fluid control		Engine speed sensitive	
	Hydraulic fluid	ℓ (USqt, Imp qt)	1,000 rpm: 6.15 (6.5, 5.4) 3,000 rpm: 5.5 (5.8, 4.8)	1,000 rpm: 6.5 (6.9, 5.7) 3,000 rpm: 5.5 (5.8, 4.8)
Hydraulic oil (Power steering system)	RPM range		680 — 9,600	
	Direction of rotation		Clockwise	
	Description		ATF DEXRON III or equivalent	
	Capacity	Oil tank	0.2 (0.2, 0.2)	
		Whole system	0.7 (0.7, 0.6)	

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)	Rack shaft play in the radial direction	Right-turn steering		mm (in)	0.12 (0.005) or less
	Input shaft play	In radial direction	mm (in)	0.26 (0.01) or less	
		In axial direction	mm (in)	Without play	
	Rotation resistance			N (kgf, lb)	Maximum allowable value: 11.3 (1.15, 2.54) or less Difference between right and left sliding resistance: 24% or less
Oil pump (Power steering system)	Pulley shaft	Radial play	mm (in)	0.4 (0.016) or less	
		Axial play	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 (Unloaded)			kPa (kg/cm <sup>2</sup> , psi)	981(10, 142) or less
	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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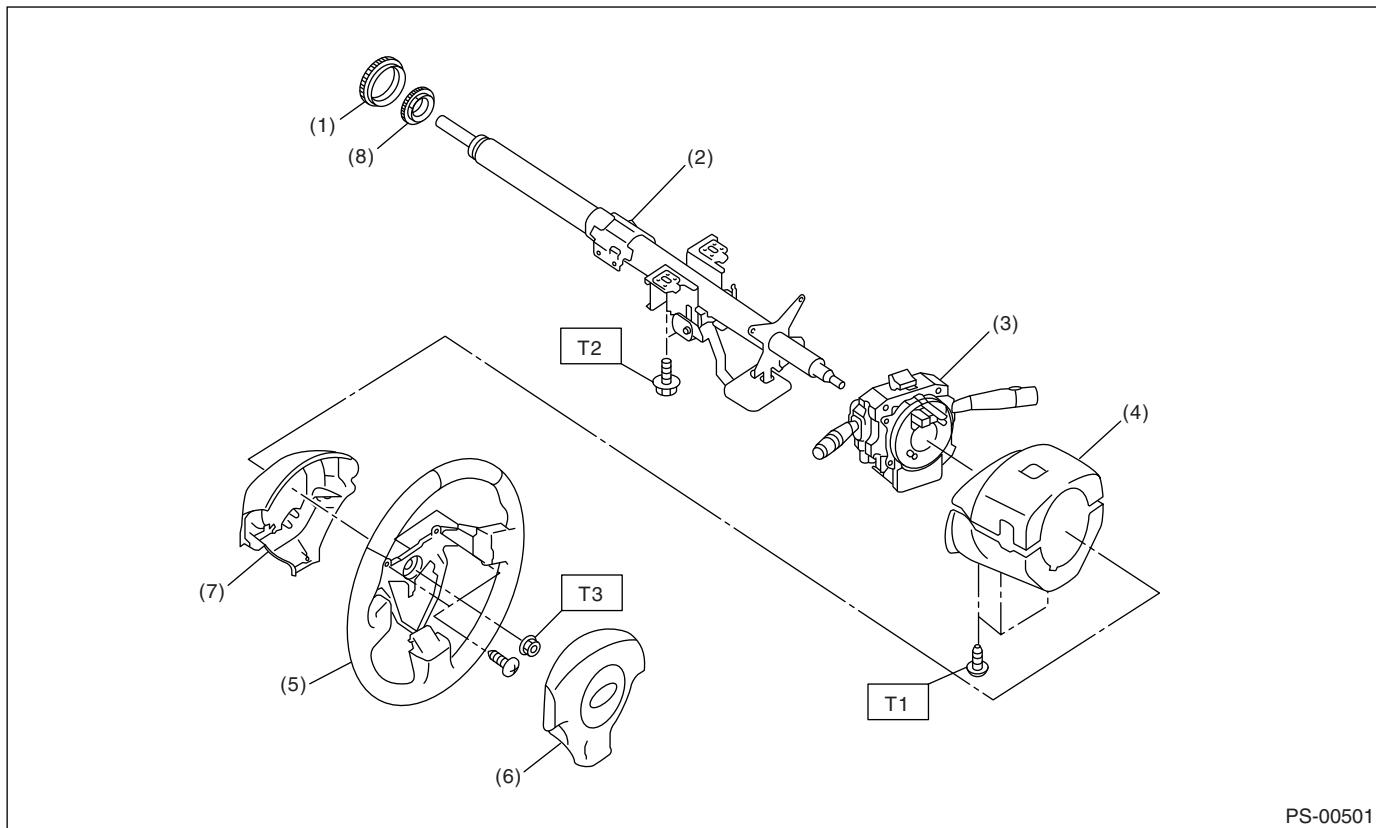
Recommended power steering fluid	Manufacturer
ATF DEXRON III or equivalent	B.P.
	CALTEX
	CASTROL
	MOBIL
	SHELL
	TEXACO

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### B: COMPONENT

#### 1. STEERING WHEEL AND COLUMN



PS-00501

(1) Bushing	(5) Steering wheel
(2) Steering shaft	(6) Airbag module
(3) Steering roll connector	(7) Steering wheel lower cover
(4) Column cover	(8) Insulator

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

***T1: 1.2 (0.12, 0.9)***

***T2: 25 (2.5, 18.1)***

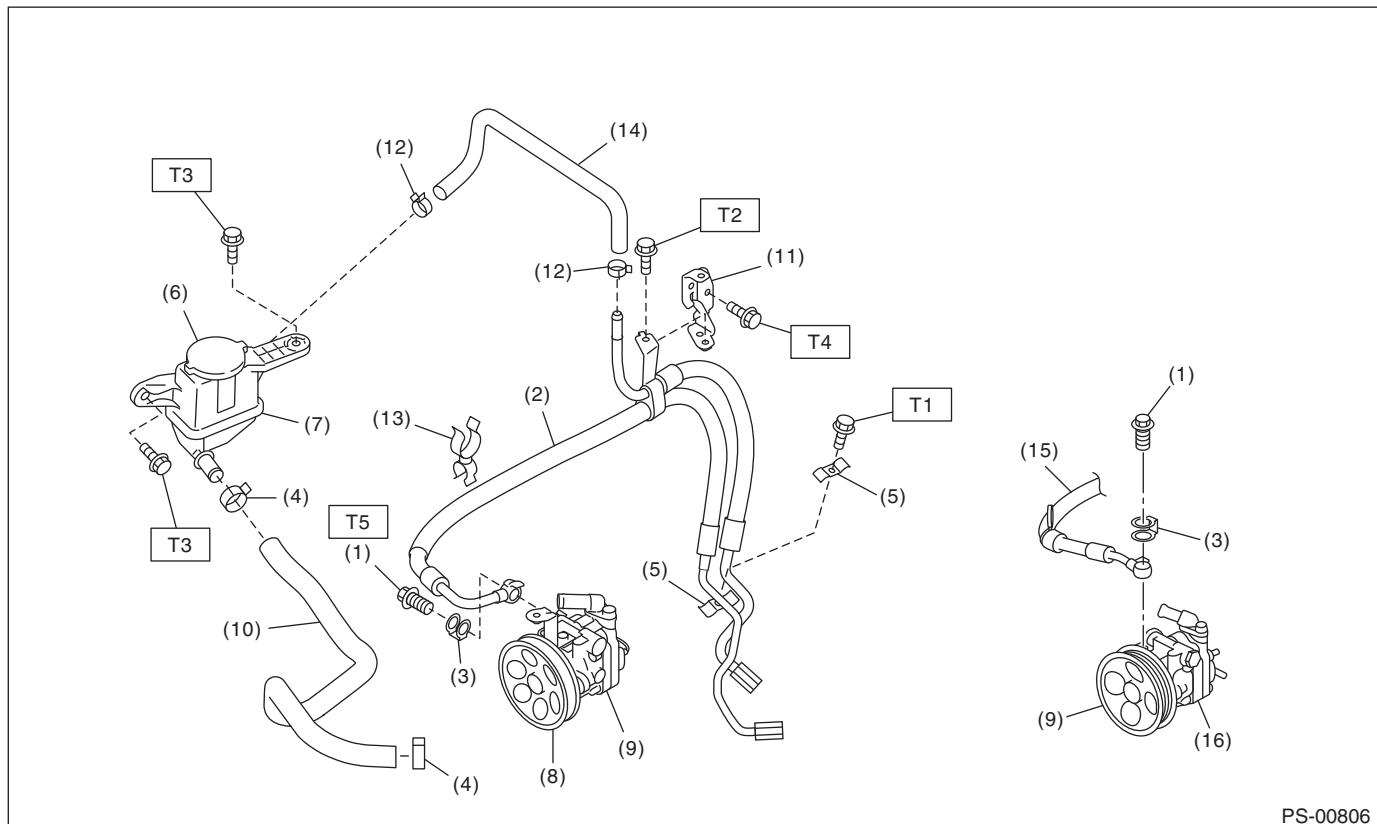
***T3: 45 (4.6, 33.2)***

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### 2. POWER ASSISTED SYSTEM

- Hose and tank



(1) Eye bolt	(9) Oil pump (H4 model)
(2) Hose (H4 model)	(10) Suction hose
(3) Eye bolt gasket	(11) Hose bracket
(4) Clip	(12) Clip
(5) Clamp E	(13) Clip
(6) Cap	(14) Return hose
(7) Reservoir tank	(15) Hose (H6 model)
(8) Pulley	(16) Oil pump (H6 model)

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

***T1: 7.5 (0.76, 5.53)***

***T2: 10 (1.02, 7.4)***

***T3: 13 (1.32, 9.6)***

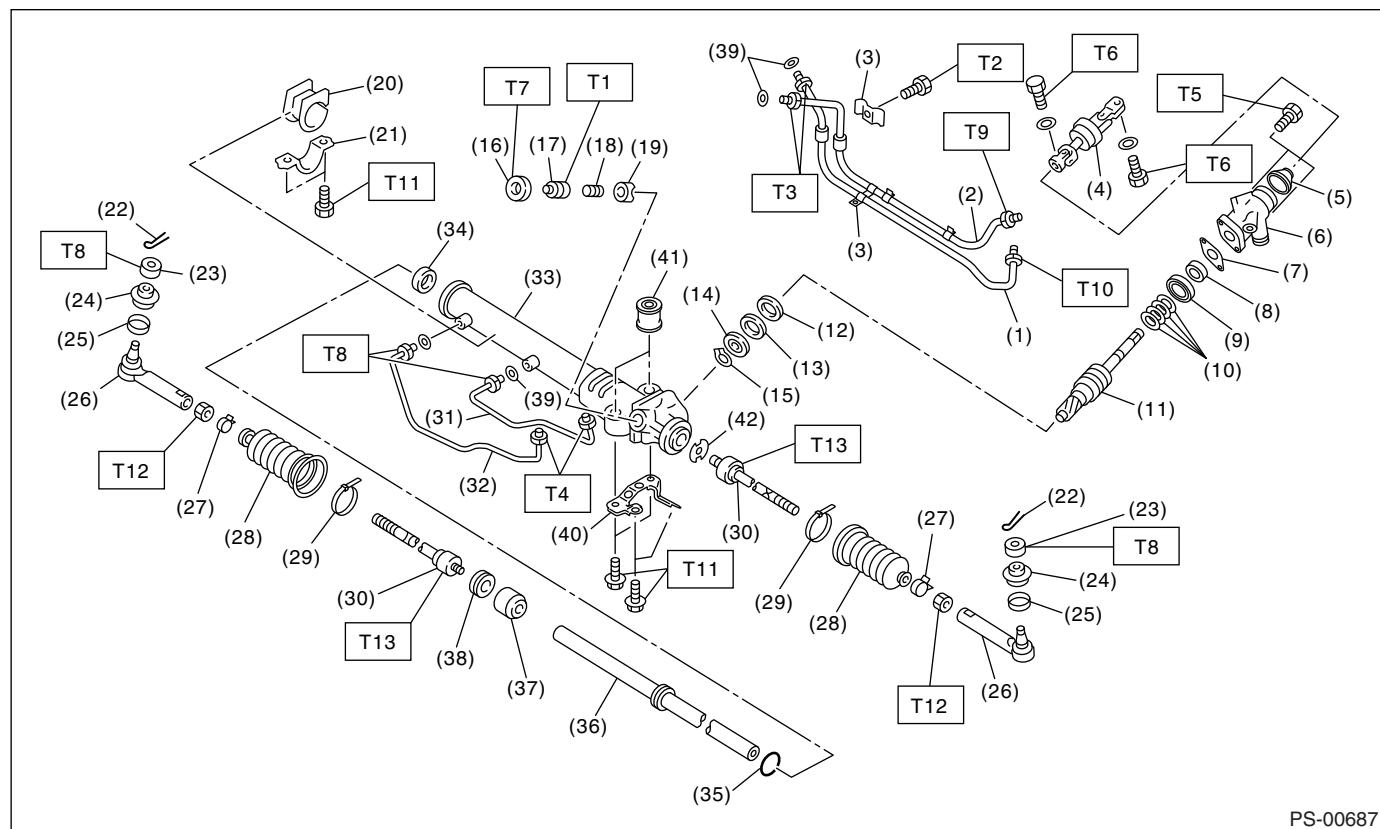
***T4: 18 (1.84, 13.3)***

***T5: 40 (4.1, 29.5)***

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## POWER ASSISTED SYSTEM (POWER STEERING)

- Gearbox



(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)

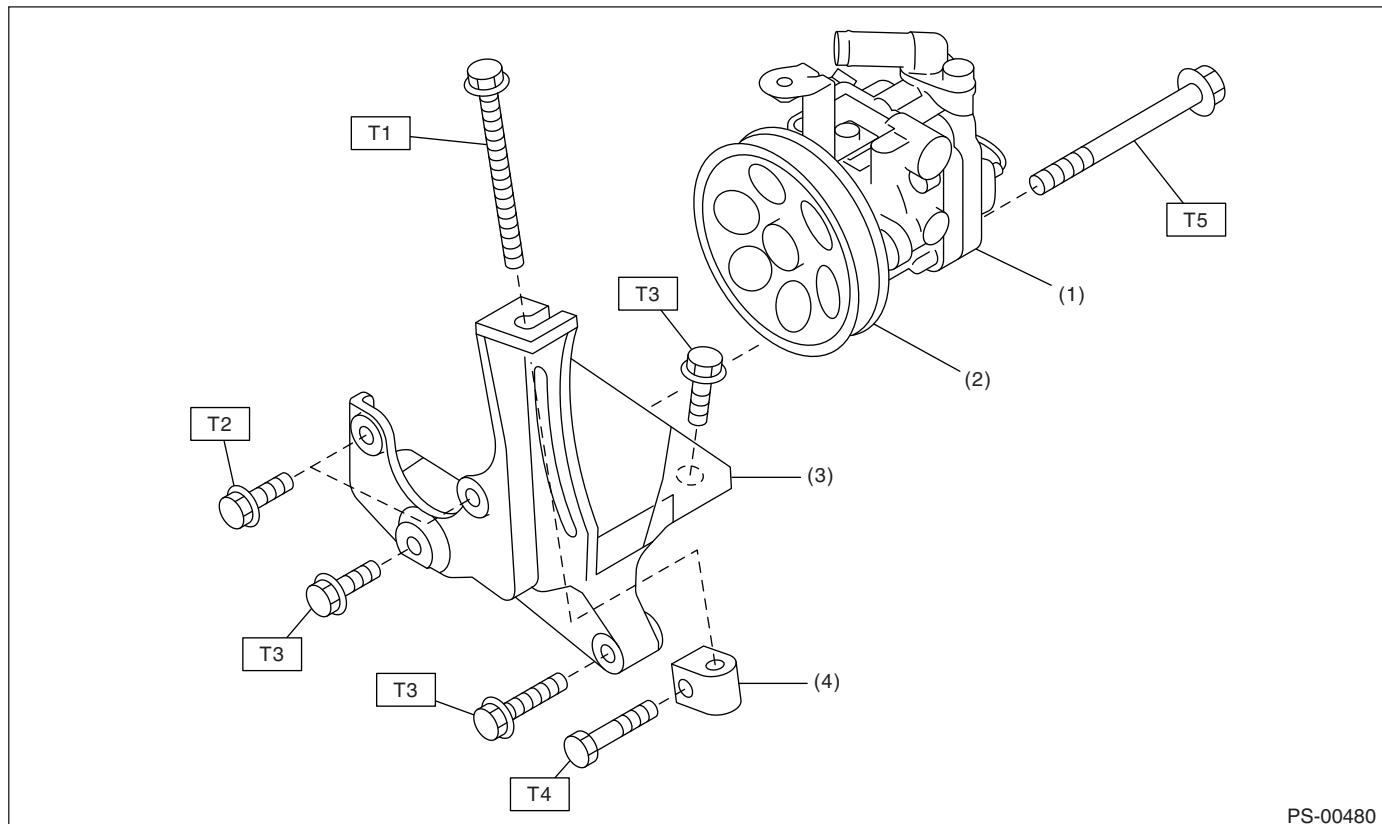
<b>T1:</b> 3.9 (0.4, 2.9)
<b>T2:</b> 10 (1.02, 7.4)
<b>T3:</b> 15 (1.5, 10.8)
<b>T4:</b> 17 (1.7, 12.5)
<b>T5:</b> 20 (2.0, 14.8)
<b>T6:</b> 24 (2.4, 17.4)
<b>T7:</b> 25 (2.5, 18.1)
<b>T8:</b> 27 (2.75, 19.9)
<b>T9:</b> 29 (3.0, 21.4)
<b>T10:</b> 37 (3.8, 27.3)
<b>T11:</b> 60 (6.1, 44.1)
<b>T12:</b> 85 (8.7, 62.7)
<b>T13:</b> 90 (9.1, 65.8)

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### 3. OIL PUMP

- H4 model



- (1) Oil pump
- (2) Pulley
- (3) Bracket
- (4) Belt tension nut

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

***T1: 8 (0.8, 5.8)***

***T2: 15.7 (1.6, 11.6)***

***T3: 22 (2.2, 15.9)***

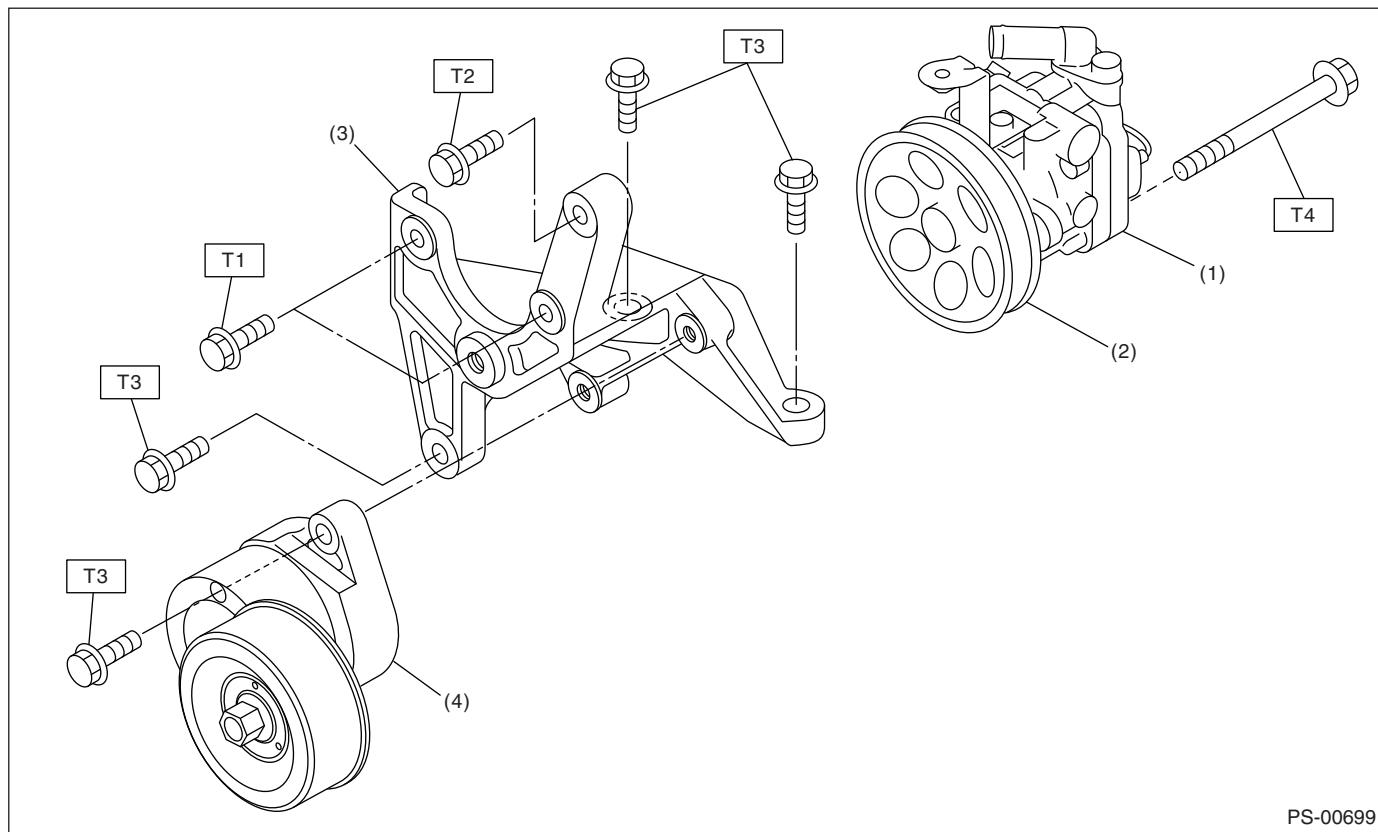
***T4: 25 (2.5, 18.1)***

***T5: 37.3 (3.8, 27.5)***

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- H6 model



PS-00699

- (1) Oil pump
- (2) Pulley
- (3) Bracket
- (4) Belt tensioner

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

***T1: 15.7 (1.6, 11.6)***

***T2: 25 (2.5, 18.4)***

***T3: 33 (3.4, 24.3)***

***T4: 37.3 (3.8, 27.5)***

## **C: CAUTION**

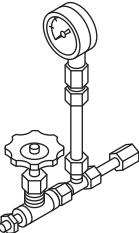
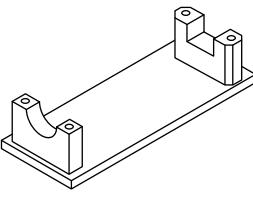
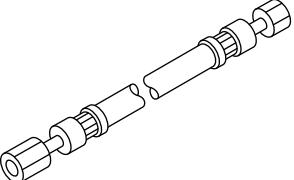
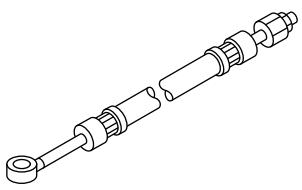
- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Vehicle components are extremely hot after driving. Be wary of receiving burns from heated parts.
- 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.
- Before securing a part on a vise, place cushioning material such as wooden blocks, aluminum plate or cloth between the part and the vise.

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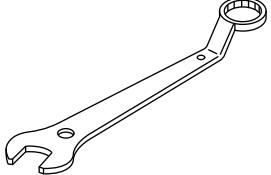
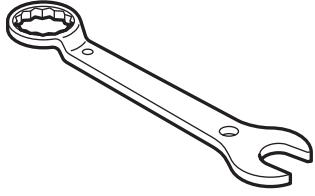
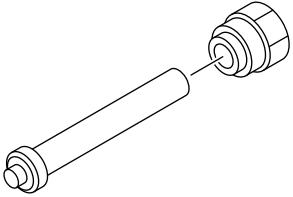
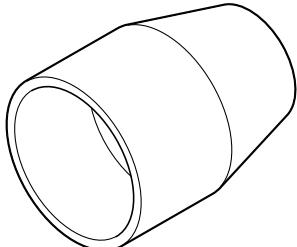
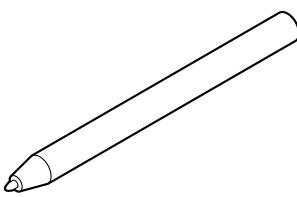
## D: PREPARATION TOOL

### 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"><li>Used when inspecting characteristic of gearbox assembly and disassembling it.</li><li>Used together with BOSS D (34199AG000).</li></ul>
 ST34099AC010	34099AC010	ADAPTER HOSE A	Used together with PRESSURE GAUGE (925711000).
 ST34099AC020	34099AC020	ADAPTER HOSE B	Used together with PRESSURE GAUGE (925711000).

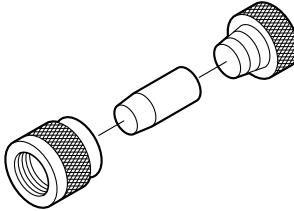
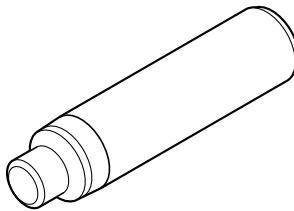
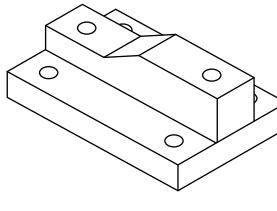
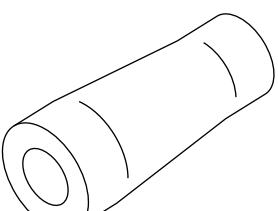
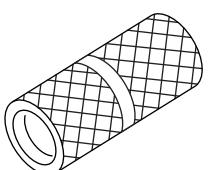
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
	926230000	SPANNER	For the lock nut when adjusting backlash of gearbox.
	34099PA100	SPANNER	Used when measuring the rotating resistance of gearbox assembly.
	926420000	PLUG	When fluid leaks from pinion side of gearbox assembly, remove pipe B from valve housing, attach this tool and check fluid leaking points.
	926250000	GUIDE	Used for installing the holder assembly into the rack housing.
	34099FA060	PUNCH HOLDER	Used for crimping.

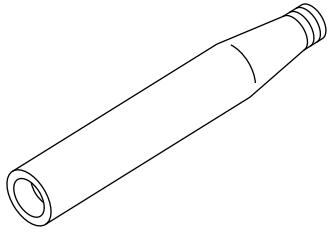
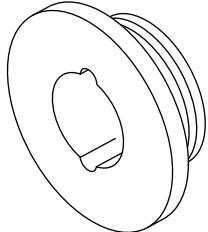
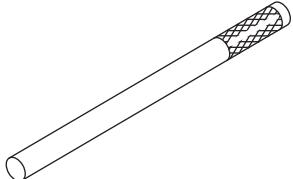
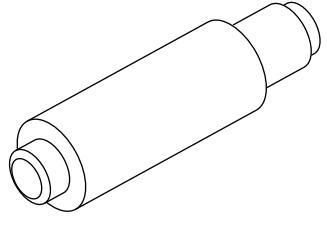
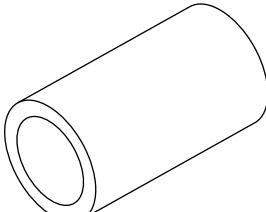
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-927490000	927490000	INSTALLER A, B, C	Used for installing the oil seal to the rack assembly.
 ST34099FA030	34099FA030	INSTALLER & REMOVER	Used for removing and installing the rack oil seal (outer & inner).
 ST34199AG000	34199AG000	BOSS D	<ul style="list-style-type: none"> <li>Used when inspecting characteristic of gearbox assembly and disassembling it.</li> <li>Used together with STAND (926200000).</li> </ul>
 ST34199AG030	34199AG030	GUIDE	Used for installing seal ring of rack.
 ST34199AG070	34199AG070	FORMER	Used for forming seal ring of pinion.

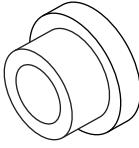
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	34199AG020	GUIDE	Used for installing seal ring of pinion.
	34199AG050	GUIDE G (24)	<ul style="list-style-type: none"> <li>Used for forming seal ring of rack.</li> <li>Used together with the FORMER PISTON (34199AG080).</li> </ul>
	34199AE050	OIL SEAL REMOVER	Used for removing oil seal.
	34199AG090	INSTALLER & REMOVER	<ul style="list-style-type: none"> <li>Used for installing oil seal of valve housing.</li> <li>Used together with the SEAL INSTALLER. (34099FA130)</li> <li>Used for installing ball bearing of valve housing.</li> <li>Used for removing oil seal and ball bearing from valve housing.</li> </ul>
	34199AG080	FORMER PISTON	<ul style="list-style-type: none"> <li>Used for forming seal ring of rack.</li> <li>Used together with the GUIDE G (24) (34199AG050).</li> </ul>

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 ST34199AG010	34199AG010	INSTALLER	Used for pressing-fit oil seal of gearbox cylinder.