

General Description

POWER ASSISTED SYSTEM (POWER STEERING)

1. General Description

A: SPECIFICATION

Model			H4 non-turbo model	H6, turbo model		
Whole system	Minimum turning radius		m (ft)			
	Steering angle	Inner wheel	5.6 (18.4) 225/50R17 tire: 37.4°±1.5° 225/45R18 tire: 37.4°±1.5° 215/50R17 tire: 37.6°±1.5° 205/60R16 tire: 37.6°±1.5° 225/60R17 tire: 38.4°±1.5° 215/70R16 tire: 38.4°±1.5°			
		Outer wheel	225/50R17 tire: 33.0°±1.5° 225/45R18 tire: 33.0°±1.5° 215/50R17 tire: 33.3°±1.5° 205/60R16 tire: 33.3°±1.5° 225/60R17 tire: 34.1°±1.5° 215/70R16 tire: 34.1°±1.5°			
	Steering wheel diameter		mm (in)			
	Lock-to-lock revolution number		OUTBACK: 3.2 Except for OUTBACK: 2.8			
	Type	Rack and Pinion, Integral				
	Backlash	0 (Automatic adjusting)				
	Valve (Power steering system)		Rotary valve			
Pump (Power steering system)	Type	Vane pump				
	Oil tank	Installed on body				
	Specific output	cm ³ (cu in)/rev.	8.5 (0.519)	8.5 (0.519)		
	Relief pressure	kPa (kgf/cm ² , psi)	8,300 — 9,000 (85 — 92, 1,203 — 1,305)	8,900 — 9,600 (91 — 98, 1,290 — 1,392)		
	Hydraulic fluid control		Engine speed sensitive			
	Hydraulic fluid	ℓ (US qt, Imp qt)	1,000 rpm: 6.5 (6.9, 5.7) 3,000 rpm: 5.4 (5.7, 4.8)	1,000 rpm: 6.8 (7.2, 6) 3,000 rpm: 6.1 (6.4, 5.4)		
	RPM range	rpm	500 — 9,600	650 — 9,600		
Direction of rotation		Clockwise				
Hydraulic oil (Power steering system)	Capacity ℓ (US qt, Imp qt)	Oil tank	0.2 (0.2, 0.2)			
		Whole system	0.7 (0.7, 0.6)			

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Steering wheel	Free play	mm (in)	17 (0.67)
Steering shaft	Clearance between the steering wheel and column cover	mm (in)	2 — 4 (0.08 — 0.16)
Steering gearbox (Power steering system)	Sliding resistance	N (kgf, lbf)	314 (32, 71) or less Difference between right and left sliding resistance: 20%
	Rack shaft play in the radial direction	Right-turn steering mm (in)	Horizontal play: 0.6 (0.024) or less Vertical play: 0.4 (0.016) or less
		Left-turn steering mm (in)	0.4 (0.016) or less
	Input shaft play	In radial direction mm (in)	0.18 (0.0071) or less
		In axial direction mm (in)	0.27 (0.0106) or less
	Rotation resistance	N (kgf, lbf)	Maximum allowable value: 13 (1.3, 2.9) or less Difference between right and left sliding resistance: 20%
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, lbf)	9.22 (0.94, 2.07) or less
Steering wheel effort (Power steering system)	Regular pressure (Unloaded)	kPa (kgf/cm ² , psi)	981 (10, 142) or less
	At standstill with engine idling on paved road	N (kgf, lbf)	29.4 (3.0, 6.6) or less
	At standstill with engine stalled on paved road	N (kgf, lbf)	294.2 (30, 66.2) or less

Recommended power steering fluid

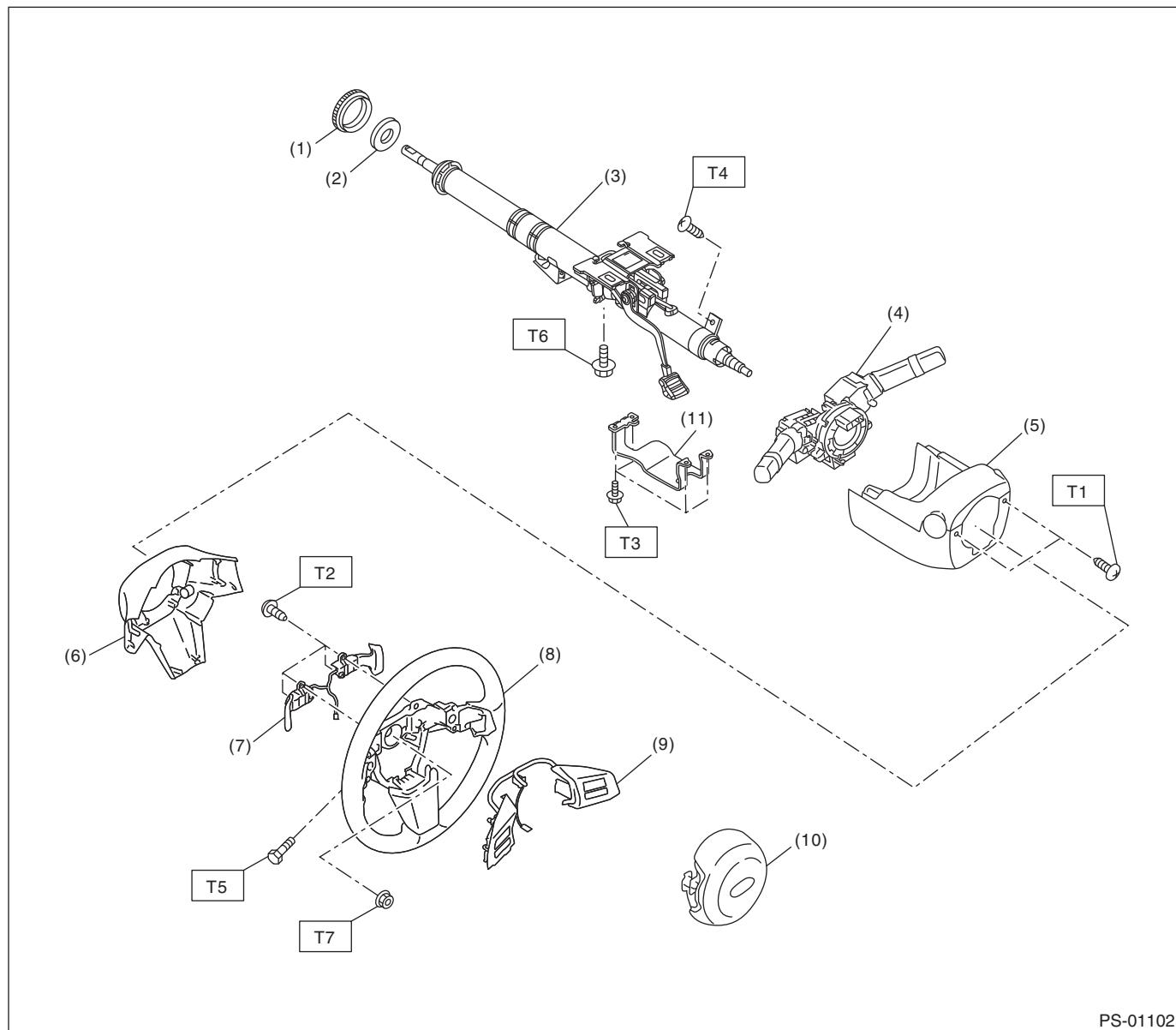
SUBARU ATF or DEXRON III

General Description

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B: COMPONENT

1. STEERING WHEEL AND COLUMN



(1) Bushing	(7) Paddle shift
(2) Insulator (CVT model)	(8) Steering wheel
(3) Steering shaft	(9) Switch
(4) Steering roll connector	(10) AIRBAG MODULE
(5) Column cover	(11) Knee protector
(6) Steering wheel lower cover	

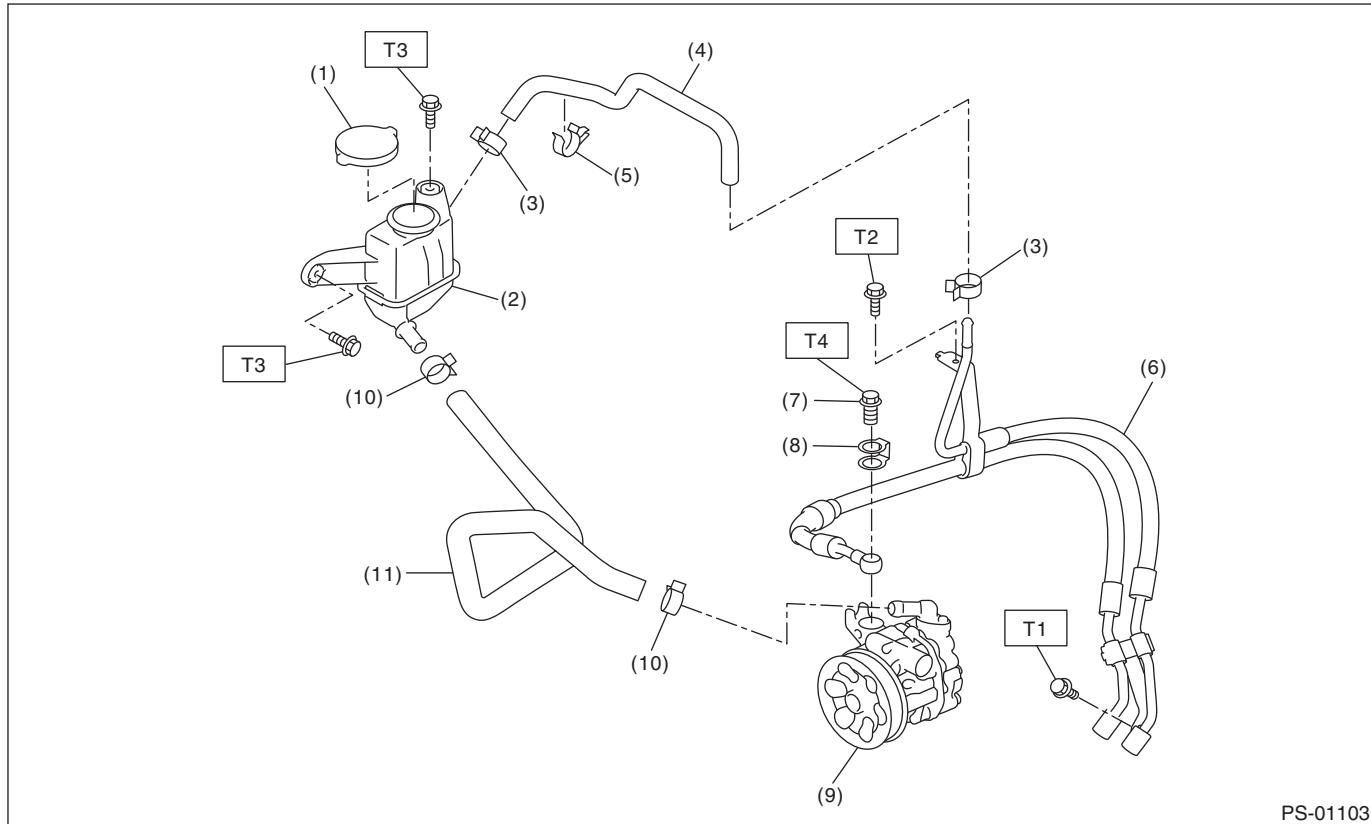
Tightening torque: N·m (kgf·m, ft-lb)

T1: 1.2 (0.12, 0.9)
T2: 1.7 (0.2, 1.3)
T3: 3.4 (0.3, 2.5)
T4: 3.5 (0.4, 2.6)
T5: 10 (1.0, 7.4)
T6: 20 (2.0, 14.8)
T7: 39 (4.0, 28.8)

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2. HOSE AND TANK



- (1) Cap
- (2) Reservoir tank
- (3) Clip
- (4) Return hose
- (5) Clip
- (6) Hose ASSY

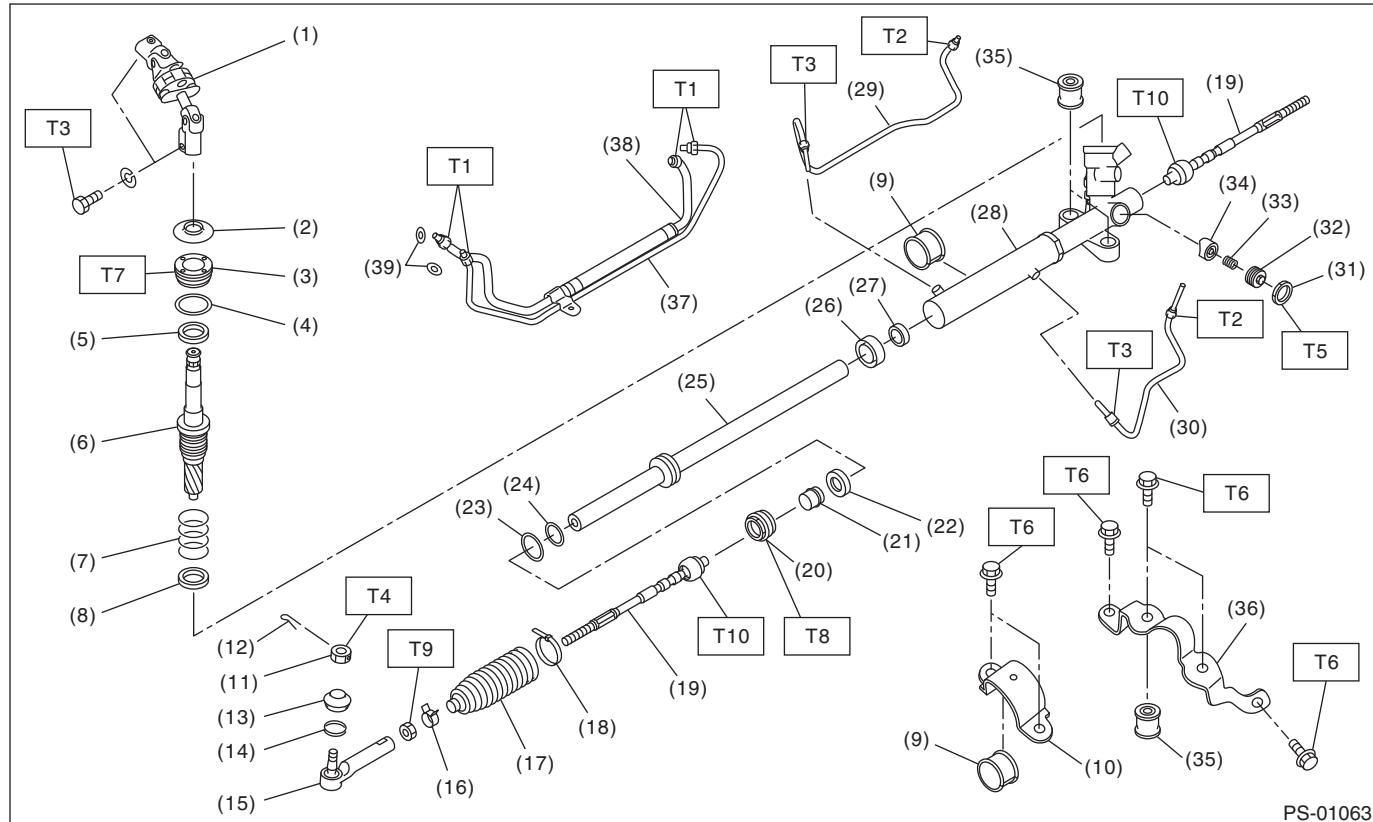
- (7) Eye bolt
- (8) Eye bolt gasket
- (9) Oil pump
- (10) Clip
- (11) Suction hose

Tightening torque:N·m (kgf·m, ft·lb)
T1: 7.5 (0.76, 5.5)
T2: 10 (1.0, 7.4)
T3: 13 (1.3, 9.6)
T4: 40 (4.1, 29.5)

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3. STEERING GEARBOX



(1) Universal joint	(19) Tie-rod
(2) Dust cover	(20) HOLDER
(3) PLUG	(21) Bushing
(4) O-ring	(22) Oil seal
(5) Oil seal	(23) Seal ring
(6) Control valve	(24) O-ring
(7) Seal ring	(25) Rack
(8) Oil seal	(26) Oil seal
(9) Adapter	(27) Back-up washer
(10) Clamp	(28) Steering body
(11) Castle nut	(29) Pipe A
(12) Cotter pin	(30) Pipe B
(13) Dust seal	(31) Lock nut
(14) Clip	(32) Adjusting screw
(15) Tie-rod end	(33) Spring
(16) Clip	(34) Sleeve
(17) Boot	(35) Bushing
(18) Band	(36) Stiffener

(37) Feed pipe
(38) Return pipe
(39) O-ring

Tightening torque:N·m (kgf·m, ft·lb)

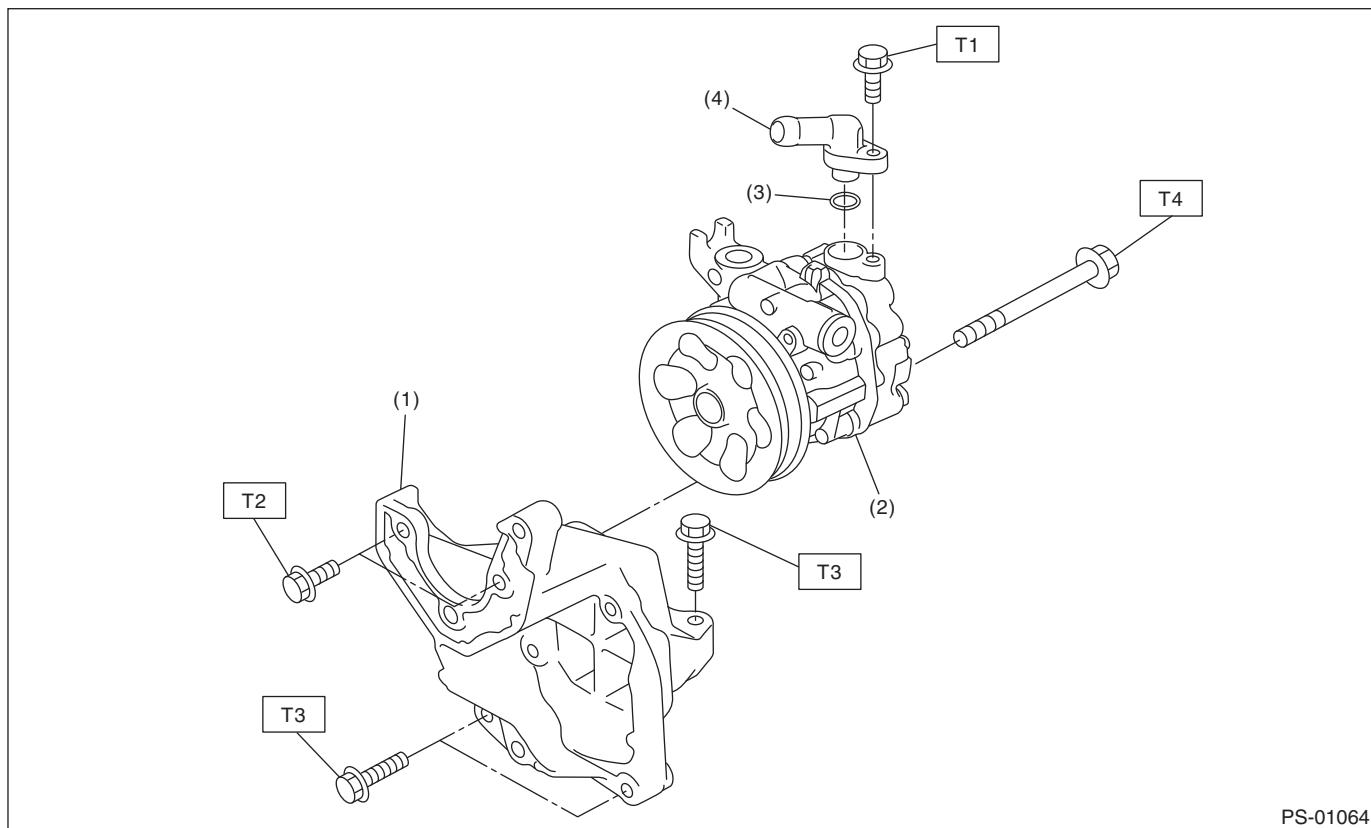
T1: 15 (1.5, 11.1)
T2: 20 (2.0, 14.8)
T3: 24 (2.4, 17.7)
T4: 27 (2.8, 19.9)
T5: 39 (4.0, 28.8)
T6: 60 (6.1, 44.3)
T7: 64 (6.5, 47.2)
T8: 75 (7.6, 55.3)
T9: 85 (8.7, 62.7)
T10: 90 (9.2, 66.4)

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4. OIL PUMP

- H4 non-turbo model



- (1) Bracket
- (2) Oil pump
- (3) O-ring
- (4) Joint

Tightening torque:N·m (kgf·m, ft-lb)

T1: 10 (1.0, 7.4)

T2: 16 (1.6, 11.8)

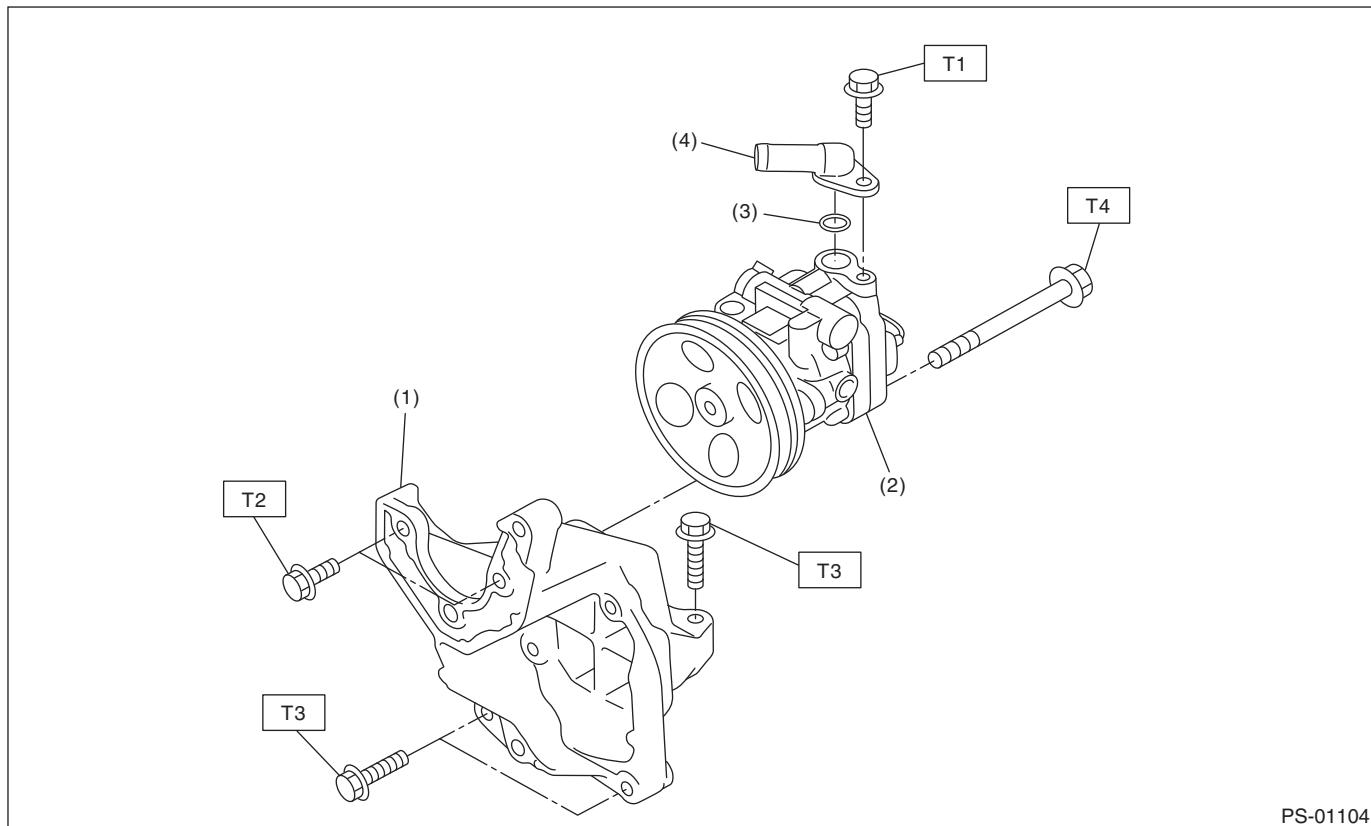
T3: 22 (2.2, 16.2)

T4: 36 (3.7, 26.6)

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- H4 turbo model



(1) Bracket
(2) Oil pump
(3) O-ring
(4) Joint

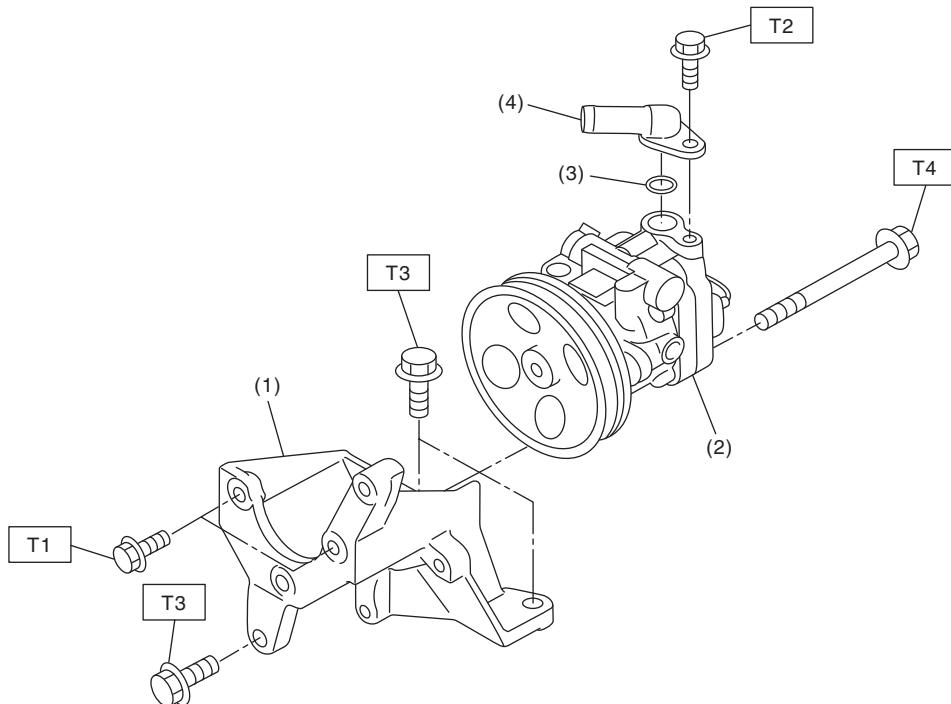
Tightening torque: N·m (kgf-m, ft-lb)

T1: 10 (1.0, 7.4)
T2: 16 (1.6, 11.8)
T3: 22 (2.2, 15.9)
T4: 36 (3.7, 26.6)

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- H6 model



PS-01065

- (1) Bracket
- (2) Oil pump
- (3) O-ring
- (4) Joint

Tightening torque:N·m (kgf·m, ft-lb)

T1: 16 (1.6, 11.8)

T2: 20 (2.0, 14.8)

T3: 33 (3.4, 24.3)

T4: 36 (3.7, 26.6)

C: CAUTION

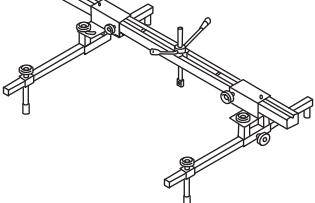
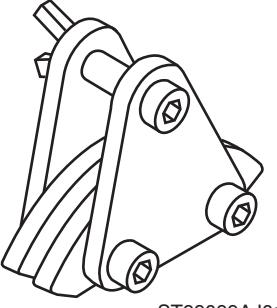
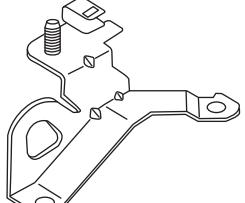
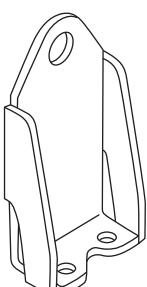
- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Vehicle components are extremely hot after driving. Be wary of receiving burns from heated parts.
- Use grease and oil of Subaru genuine or the equivalent products. Do not mix them 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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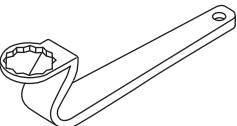
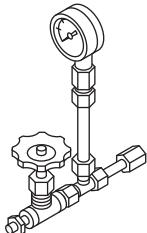
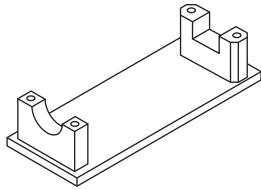
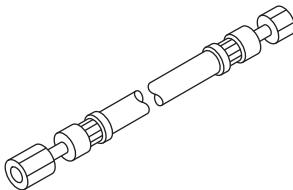
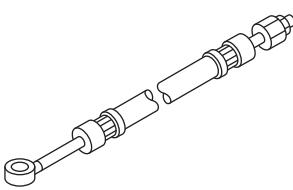
D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
	99099AJ000 (Newly adopted tool) ST99099AJ000	ENGINE HANGER	<ul style="list-style-type: none">Used for hanging power unit.Used together with CHAIN BALANCER (99099AJ010).
	99099AJ010 (Newly adopted tool) ST99099AJ010	CHAIN BALANCER	<ul style="list-style-type: none">Used for hanging power unit.Used together with ENGINE HANGER (99099AJ000).
	10004AA180 (SUBARU genuine part) ST10004AA180	HANGER CP ENGINE RR	<ul style="list-style-type: none">Used for hanging power unit.For H4 non-turbo model.SUBARU genuine part
	18360AA020 (Newly adopted tool) ST18360AA020	HANGER	<ul style="list-style-type: none">Used for hanging power unit.For H6 model.

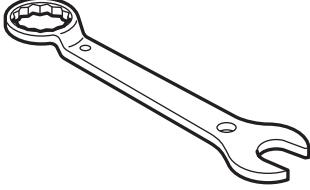
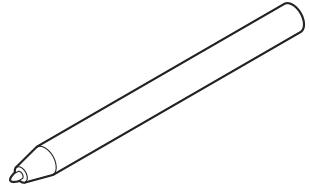
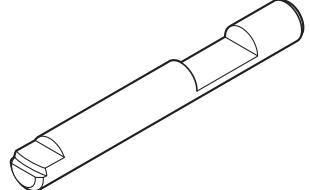
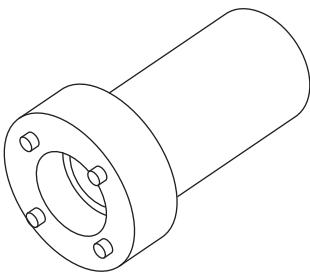
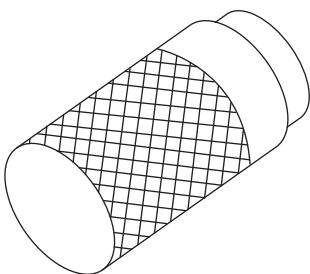
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
	34199AJ000 (Newly adopted tool)	Special tool CPS LHD	Used for adjusting the backlash of gearbox. (lock nut side)
ST34199AJ000			
	925711000	PRESSURE GAUGE	Used for measuring oil pressure.
ST-925711000			
	926200000	STAND	<ul style="list-style-type: none"> Used when inspecting characteristic of gearbox assembly and disassembling it. Used together with BOSS D (34199AG000).
ST-926200000			
	34099AC010	ADAPTER HOSE A	Used together with PRESSURE GAUGE (925711000).
ST34099AC010			
	34099AC020	ADAPTER HOSE B	Used together with PRESSURE GAUGE (925711000).
ST34099AC020			

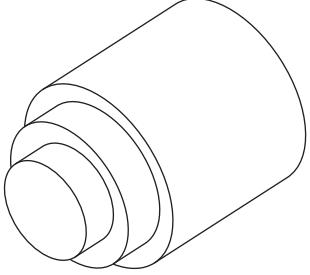
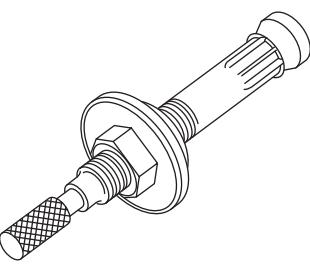
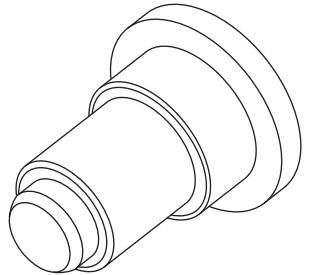
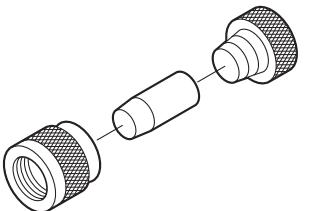
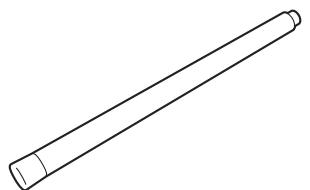
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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST34099PA100	34099PA100	SPANNER	Used when measuring the rotating resistance of gearbox assembly.
 ST34099FA060	34099FA060	PUNCH HOLDER	Used for crimping.
 ST34099FA080	34099FA080	PUNCH	Used for removing crimps.
 ST34199AE090	34199AE090	PLUG WRENCH	Used for removing the plug.
 ST34199AE100	34199AE100	OIL SEAL PLUG REMOVER	Used for removing the oil seal plug.

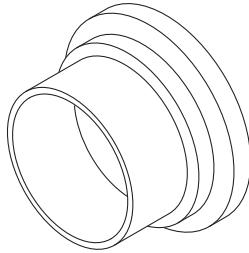
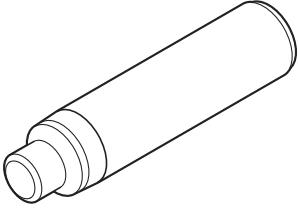
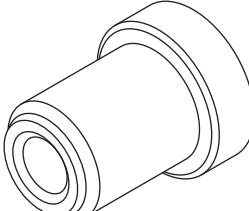
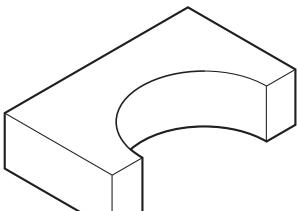
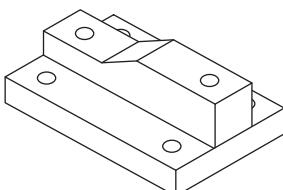
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 ST34199AE110	34199AE110	OIL SEAL PLUG INSTALLER	Used for installing the oil seal plug.
 ST34199AE120	34199AE120	GEARBOX OIL SEAL REMOVER	Used for removing the gearbox oil seal.
 ST34199AE130	34199AE130	GEARBOX OIL SEAL INSTALLER	Used for installing the gearbox oil seal.
 ST34199FE040	34199FE040	INSTALLER A, B, C	<ul style="list-style-type: none"> Used for installing the oil seal to the rack assembly. • INSTALLER A: 34199FE070 • INSTALLER B: 34199FE080 • INSTALLER C: 34199FE090
 ST34199FE010	34199FE010	REMOVER	Used for removing the back-up ring and oil seal.

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	34199FE050	GUIDE	Used for installing the rack and seal into housing assembly.
	34199FE000	INSTALLER & REMOVER	Used for removing and installing the rack oil seal (outer and inner).
	34199FE060	INSTALLER	Used for installing the rack oil seal (outer).
	34199FE020	BASE	Used for crimping.
	34199AG000	BOSS D	<ul style="list-style-type: none"> Used when inspecting characteristic of gearbox assembly and disassembling it. Used together with STAND (926200000).

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2. GENERAL TOOL

TOOL NAME	REMARKS
Chain sling	<ul style="list-style-type: none">Used for hanging power unit.Diameter: 6 mm (0.24 in) or 6.3 mm (0.25 in)Length: 0.8 — 1 m (2.6 — 3.3 ft)Chain inner width: 8.5 mm (0.33 in) or moreChain external width: 23.5 mm (0.93 in) or lessLoad capacity: 1.2 t (2646 lb) or more
Shackle	<ul style="list-style-type: none">Two units used for hanging power unit.Attached to both end of chain sling and connected to engine hook.Load capacity: 250 kg (551 lb) or more
Sling belt	<ul style="list-style-type: none">Used to remove and install the cradle.Width: 35 — 40 mm (1.38 — 1.57 in)Length: 2 m (6.6 ft)Load capacity: 1 t (2205 lb) or more
Shackle	<ul style="list-style-type: none">Used to remove and install the cradle.Load capacity: 500 kg (1103 lb) or more
Steering wheel puller	Used for removing the steering wheel.