

General Description

POWER ASSISTED SYSTEM (POWER STEERING)

1. General Description

A: SPECIFICATION

Whole system	Minimum turning radius		m (ft)	5.3 (17.4)
	Steering angle	Inner wheel		OUTBACK: 37.9°±1.5° Except for OUTBACK: 37.8°±1.5°
		Outer wheel		OUTBACK: 33.5°±1.5° Except for OUTBACK: 33.4°±1.5°
	Steering wheel diameter		mm (in)	375 (14.76)
	Whole gear ratio (Turn, from lock to lock. Gearbox)			2.8
Gearbox	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.	7.2 (0.439)
	Relief pressure		kPa (kgf/cm ² , psi)	7,350 — 8,050 (75 — 82, 1,066 — 1,167)
	Hydraulic fluid control			Engine speed sensitive
	Hydraulic fluid		ℓ (US qt, Imp qt)	1,000 rpm: 6.3 (6.7, 5.5) 3,000 rpm: 5.9 (6.2, 5.2)
	RPM range		rpm	680 — 9,800
	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)

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)	Rack shaft play in the radial direction	Right-turn steering	mm (in)	0.12 (0.005) or less
		Left-turn steering	mm (in)	0.3 (0.012) 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, lbf) Maximum allowable value: 11.3 (1.15, 2.54) or less Difference between right and left sliding resistance: 24%
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
	Regular pressure (Unloaded)		kPa (kgf/cm ² , psi)	981 (10, 142) or less
Steering wheel effort (Power steering system)	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

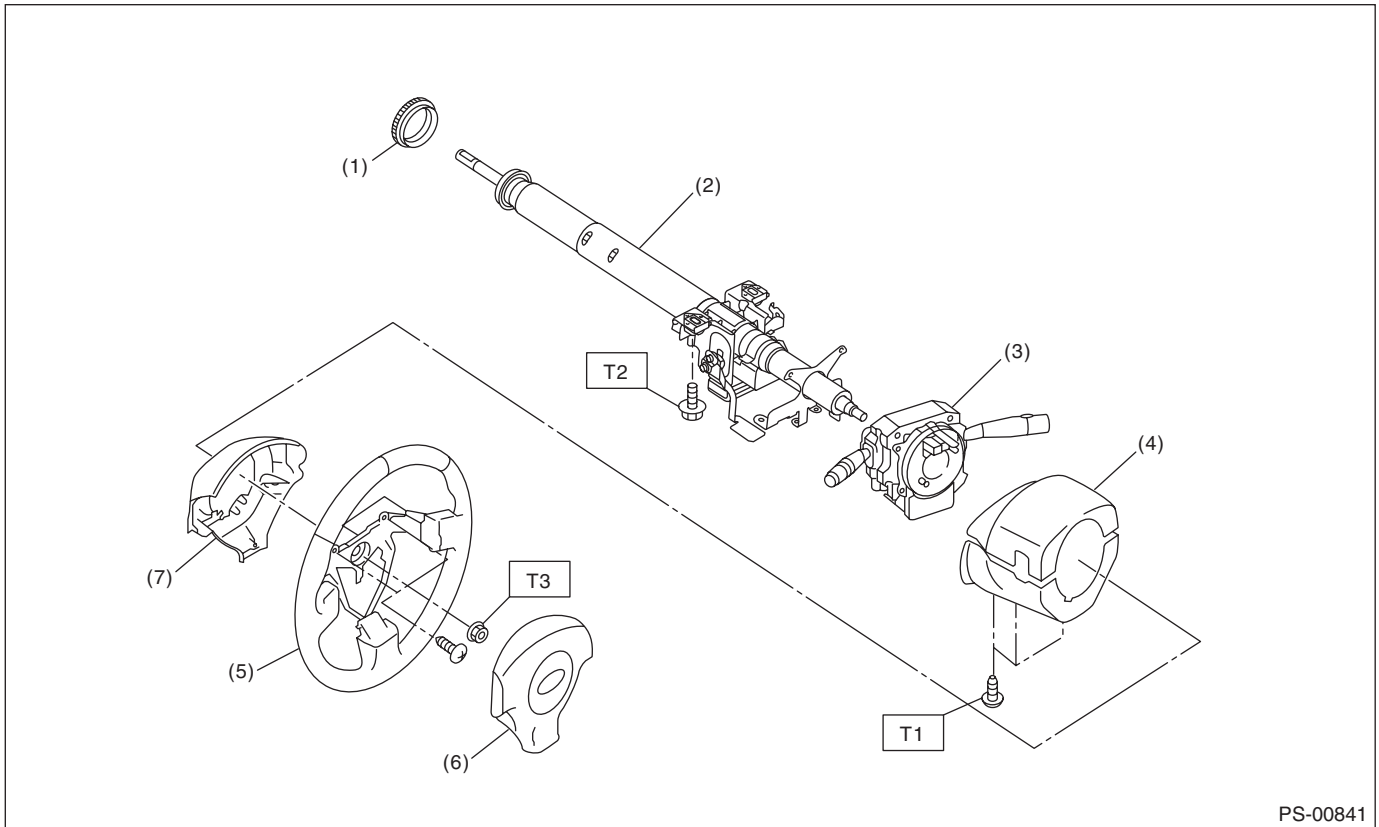
Recommended power steering fluid
SUBARU genuine power steering fluid or ATF DEXRON III

General Description

POWER ASSISTED SYSTEM (POWER STEERING)

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: 20 (2.0, 14.8)

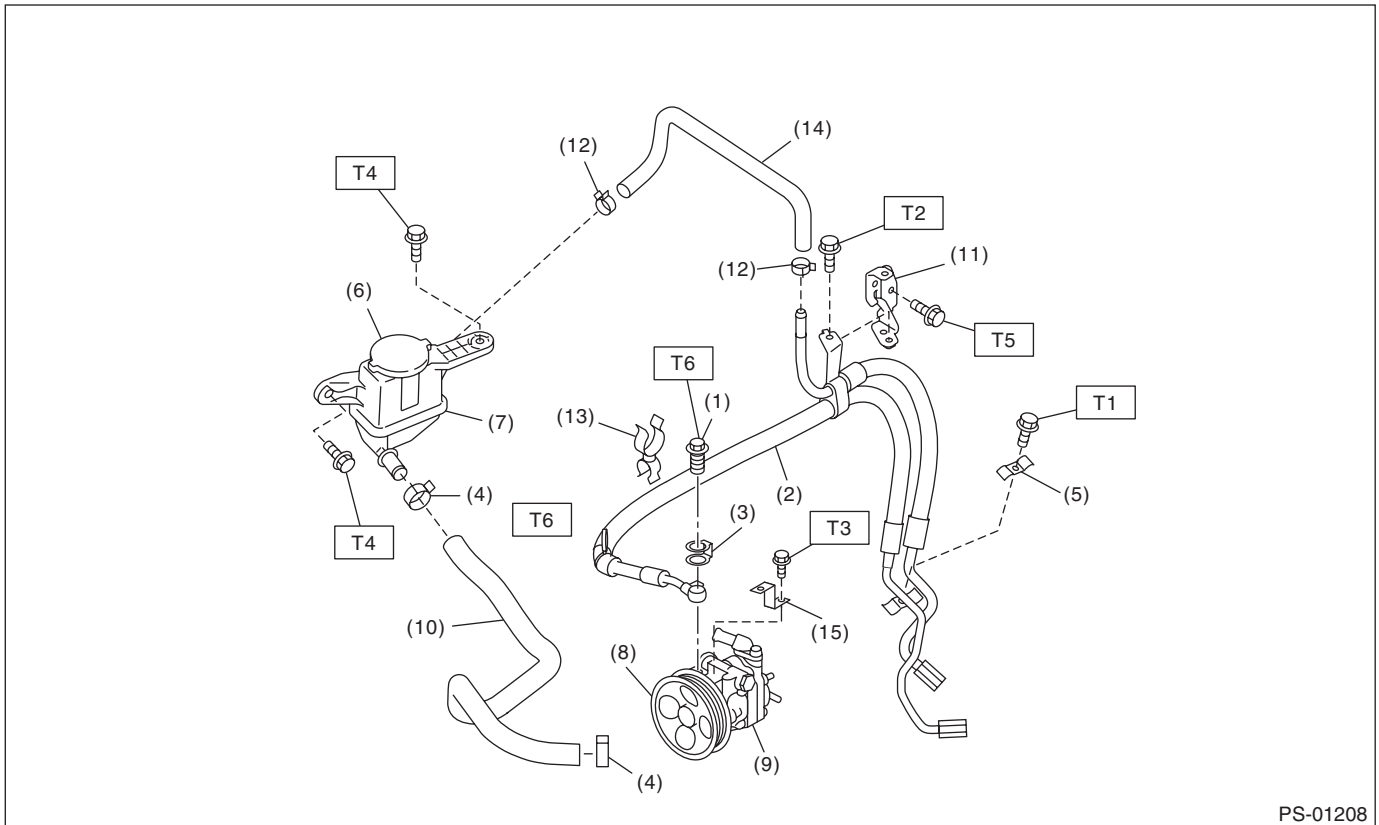
T3: 39 (4.0, 28.8)

General Description

POWER ASSISTED SYSTEM (POWER STEERING)

2. POWER ASSISTED SYSTEM

- Hose and tank



PS-01208

- | | |
|---------------------|-------------------------|
| (1) Eye bolt | (9) Oil pump |
| (2) Hose | (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) Belt cover bracket |
| (8) Pulley | |

Tightening torque:N·m (kgf-m, ft-lb)

T1: 7.5 (0.76, 5.5)

T2: 10 (1.0, 7.4)

T3: 11 (1.1, 8.1)

T4: 13 (1.3, 9.6)

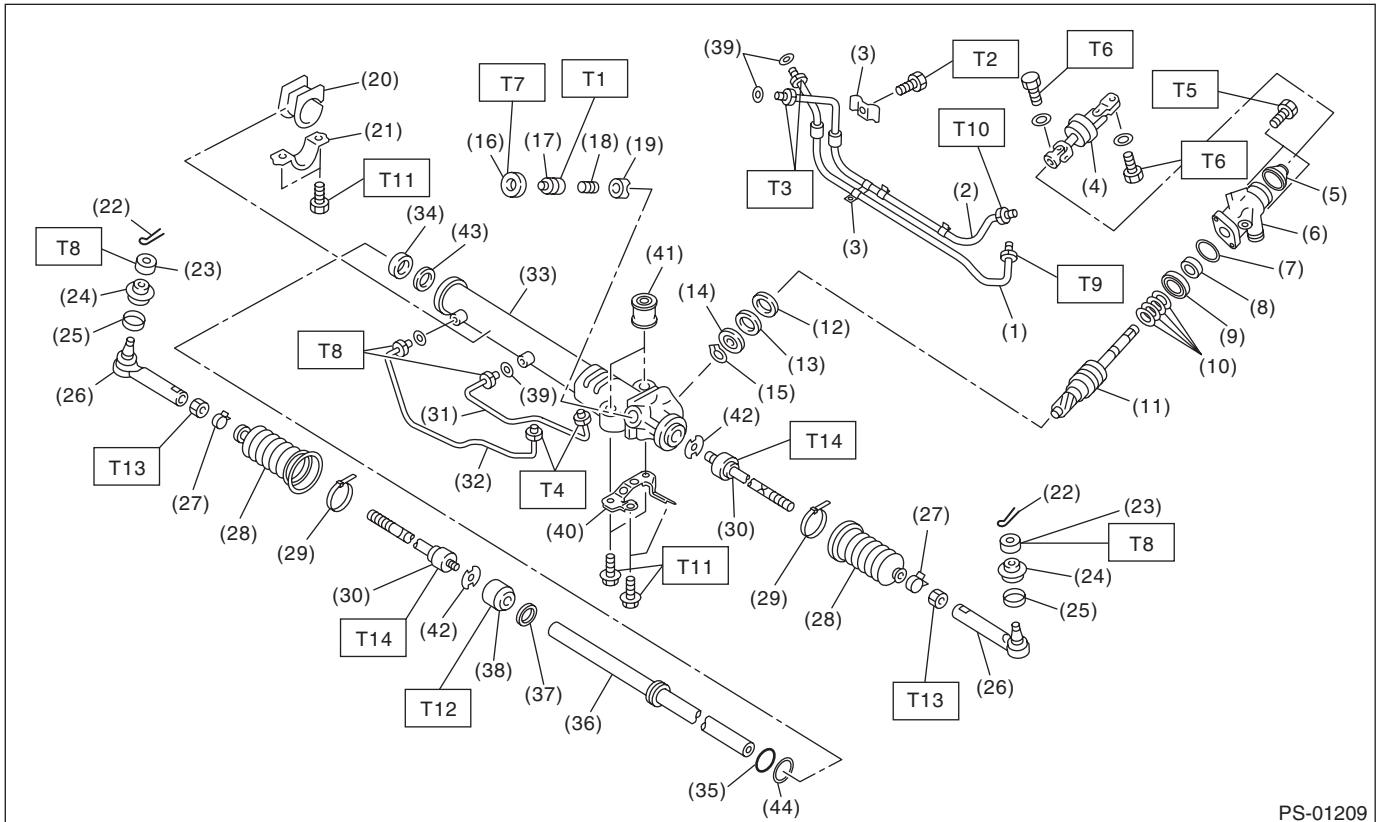
T5: 18 (1.8, 13.3)

T6: 40 (4.1, 29.5)

General Description

POWER ASSISTED SYSTEM (POWER STEERING)

• Gearbox



PS-01209

(1) Feed pipe	(21) Clamp	(41) Bushing
(2) Return pipe	(22) Cotter pin	(42) Lock washer
(3) Clamp plate	(23) Castle nut	(43) Back-up washer
(4) Universal joint	(24) Dust cover	(44) O-ring
(5) Dust seal	(25) Clip	
(6) Valve housing	(26) Tie-rod end	
(7) O-ring	(27) Clip	
(8) Oil seal	(28) Boot	
(9) Bushing	(29) Band	
(10) Seal ring	(30) Tie-rod	
(11) Pinion & valve ASSY	(31) Pipe B	
(12) Oil seal	(32) Pipe A	
(13) Back-up washer	(33) Steering body	
(14) Ball bearing	(34) Oil seal	
(15) Snap ring	(35) Piston ring	
(16) Lock nut	(36) Rack	
(17) Adjusting screw	(37) Oil seal	
(18) Spring	(38) Holder	
(19) Sleeve	(39) O-ring	
(20) Adapter	(40) Stiffener	

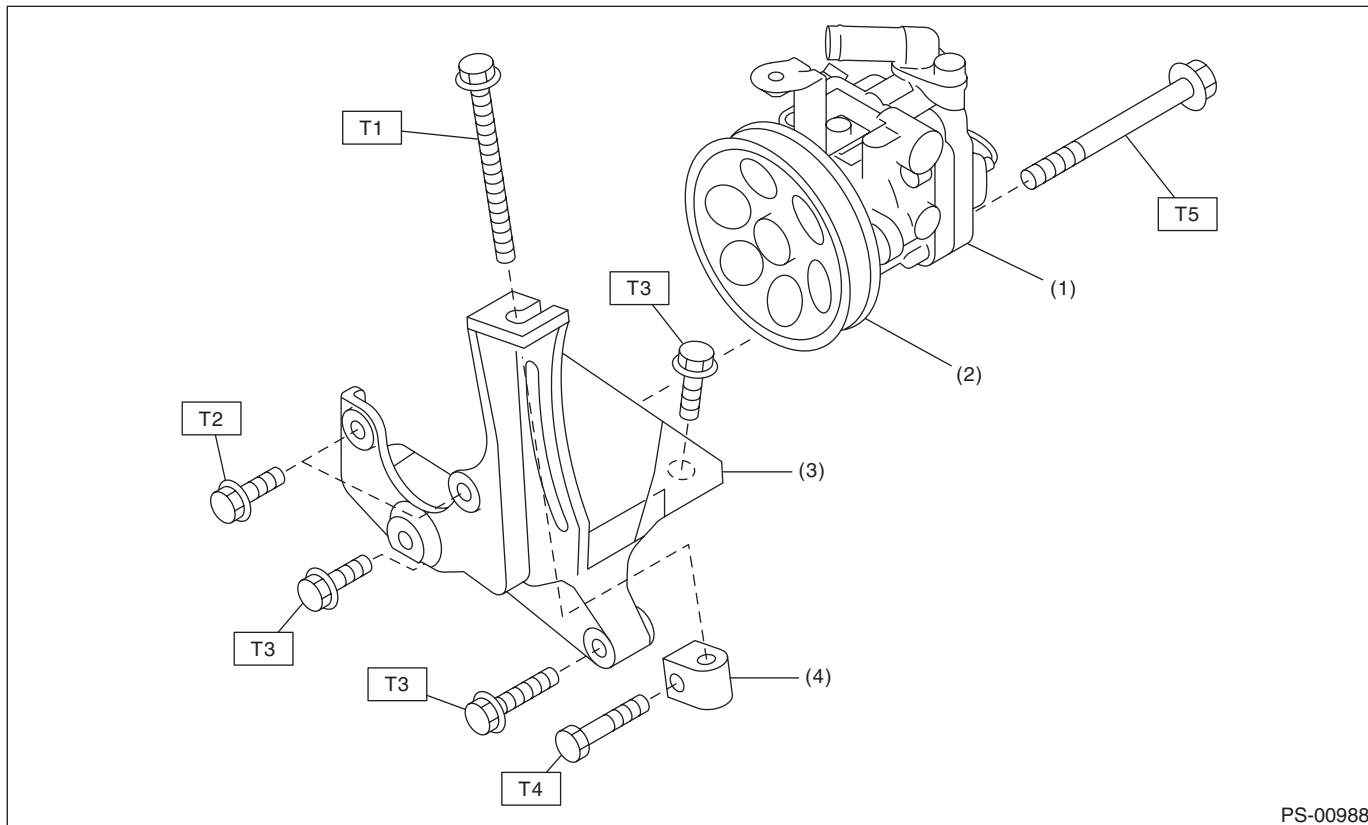
Tightening torque:N-m (kgf-m, ft-lb)

T1:	3.9 (0.4, 2.9)
T2:	10 (1.0, 7.4)
T3:	15 (1.5, 11.1)
T4:	17 (1.7, 12.5)
T5:	20 (2.0, 14.8)
T6:	24 (2.4, 17.7)
T7:	25 (2.5, 18.4)
T8:	27 (2.8, 19.9)
T9:	37 (3.8, 27.3)
T10:	29 (3.0, 21.4)
T11:	60 (6.1, 44.3)
T12:	70 (7.1, 51.6)
T13:	85 (8.7, 62.7)
T14:	90 (9.2, 66.4)

General Description

POWER ASSISTED SYSTEM (POWER STEERING)

3. OIL PUMP



PS-00988

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

Tightening torque: N·m (kgf-m, ft-lb)

- T1: 8 (0.8, 5.9)***
- T2: 16 (1.6, 11.8)***
- T3: 22 (2.2, 16.2)***
- T4: 25 (2.5, 18.4)***
- T5: 36 (3.7, 26.6)***

General Description

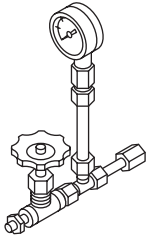
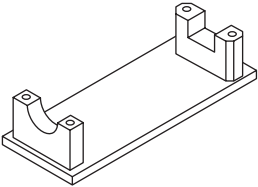
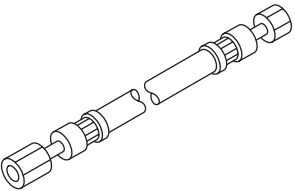
POWER ASSISTED SYSTEM (POWER STEERING)

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 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.

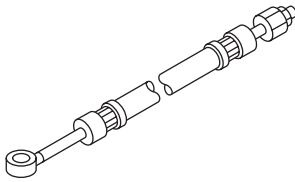
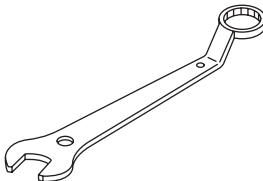
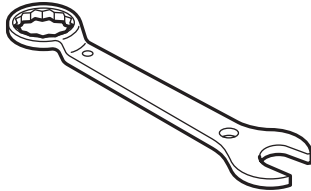
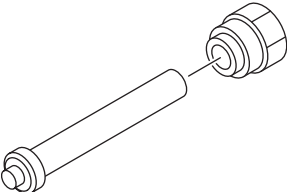
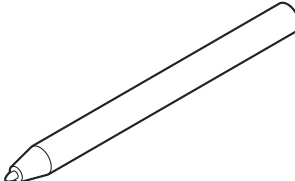
D: PREPARATION TOOL

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 gear-box assembly and disassembling it.• Used together with BOSS D (34199AG000).
 ST34099AC010	34099AC010	ADAPTER HOSE A	Used together with PRESSURE GAUGE (925711000).

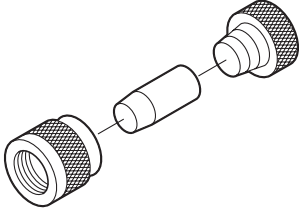
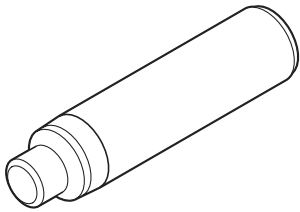
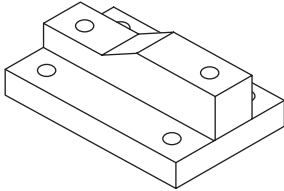
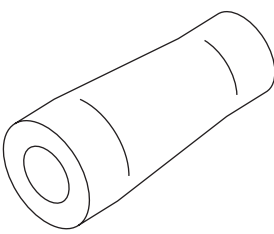
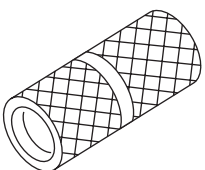
General Description

POWER ASSISTED SYSTEM (POWER STEERING)

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">ST34099AC020</p>	34099AC020	ADAPTER HOSE B	Used together with PRESSURE GAUGE (925711000).
 <p style="text-align: center;">ST-926230000</p>	926230000	SPANNER	For the lock nut when adjusting backlash of gearbox.
 <p style="text-align: center;">ST34099PA100</p>	34099PA100	SPANNER	Used when measuring the rotating resistance of gearbox assembly.
 <p style="text-align: center;">ST-926420000</p>	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.
 <p style="text-align: center;">ST34099FA060</p>	34099FA060	PUNCH HOLDER	Used for crimping.

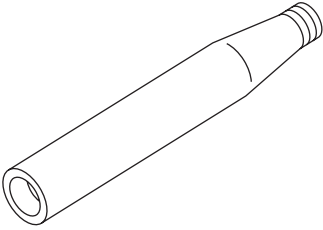
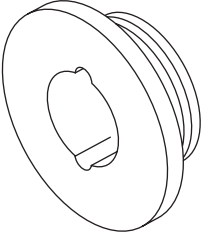
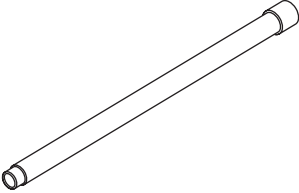
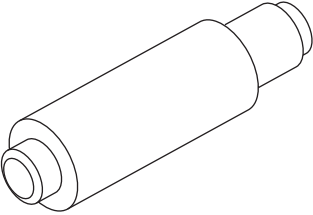
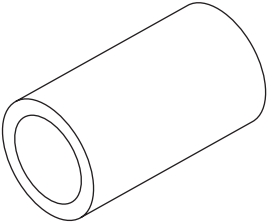
General Description

POWER ASSISTED SYSTEM (POWER STEERING)

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST34199FE040</p>	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
 <p>ST34199FE000</p>	34199FE000	INSTALLER & REMOVER	Used for removing and installing the rack oil seal (outer and inner).
 <p>ST34199AG000</p>	34199AG000	BOSS D	<ul style="list-style-type: none"> Used when inspecting characteristic of gear-box assembly and disassembling it. Used together with STAND (926200000).
 <p>ST34199AG040</p>	34199AG040	GUIDE	Used for installing seal ring of rack.
 <p>ST34199AG070</p>	34199AG070	FORMER	Used for forming seal ring of pinion.

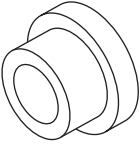
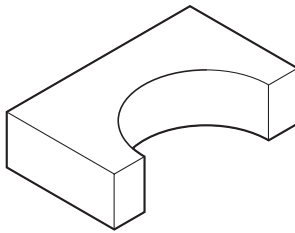
General Description

POWER ASSISTED SYSTEM (POWER STEERING)

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 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 together with FORMER PISTON (34199AG080).
 ST34099PA010	34099PA010	OIL SEAL REMOVER	Used for removing oil seal.
 ST34199AG090	34199AG090	INSTALLER & REMOVER	<ul style="list-style-type: none"> • Used for installing oil seal of valve housing. • Used together with SEAL INSTALLER (34099FA130). • Used for installing ball bearing of valve housing. • Used for removing oil seal and ball bearing from valve housing.
 ST34199AG080	34199AG080	FORMER PISTON	<ul style="list-style-type: none"> • Used for forming seal ring of rack. • Used together with GUIDE G (26) (34199AG060).

General Description

POWER ASSISTED SYSTEM (POWER STEERING)

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST34199AG010</p>	34199AG010	INSTALLER	Used for pressing-fit oil seal of gearbox cylinder.
 <p>ST34199FE020</p>	34199FE020	BASE	Used for crimping.