

POWER ASSISTED SYSTEM (POWER STEERING)

PS

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General Description

POWER ASSISTED SYSTEM (POWER STEERING)

1. General Description

A: SPECIFICATION

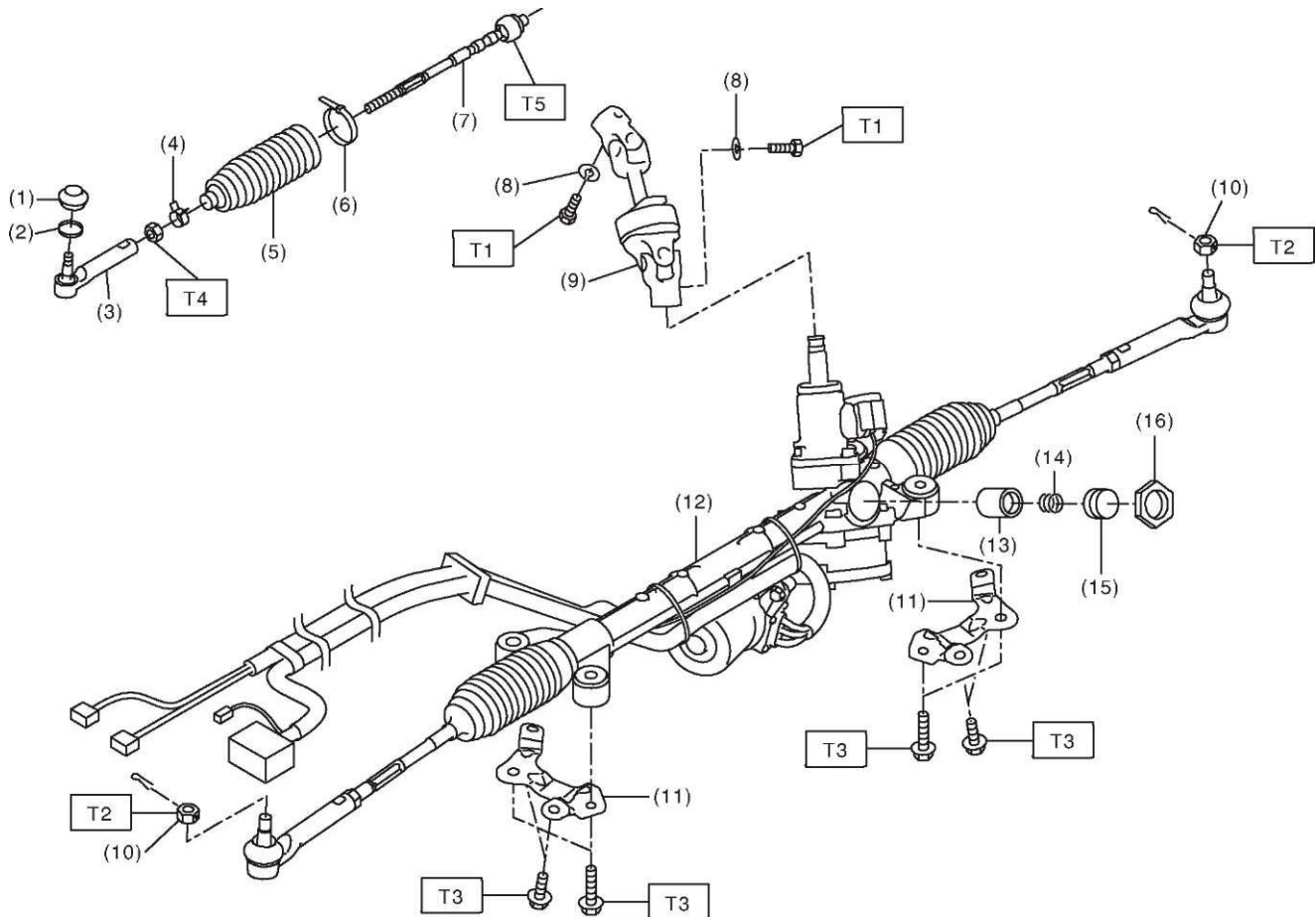
Model			Except for XV model	XV model
Whole system	Minimum turning radius m(ft)		5.3 (17.39)	
	Steering angle	Inner wheel	38.3°±1.5°	38.5°±1.5°
		Outer wheel	33.7°±1.5°	34.0°±1.5°
	Steering wheel diameter mm (in)		375 (14.76)	
	Lock-to-lock revolution number		3.2	3.1
Gearbox	Type		Rack & pinion type	
	Backlash		0 (Automatic adjusting)	
Motor (Temperature 20°C (68°F))	Rated voltage V		12	
	Rated torque N-m (kgf-m, ft-lb)		4.5 (0.46, 3.31)	
	Rated revolution speed rpm		1,140	
	Rated current A		85	
	Rated output W		561	

Model			Except for XV model	XV model
Steering wheel	Free play mm (in)		17 (0.67) or less	
Steering shaft	Clearance between the steering wheel and column cover mm (in)		4 —6 (0.16 — 0.24)	
Steering gearbox (Power steering system)	Sliding resistance N (kgf, lbf)		350 (36, 79) or less Difference between right and left sliding resistance: 20% or less	333 (34, 75) or less Difference between right and left sliding resistance: 20% or less
	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	
	Rotational resistance N (kgf, lbf)		Maximum allowable value: 18.3(1.9, 4.1) or less Difference between right and left sliding resistance: 20% or less	Maximum allowable value: 17.7(1.8, 4.0) or less Difference between right and left sliding resistance: 20% 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	

General Description

POWER ASSISTED SYSTEM (POWER STEERING)

2. STEERING GEARBOX



(8) Spring washer

- (1) Dust seal
- (2) Clip - boot tie-rod end B
- (3) Tie-rod end
- (4) Clip - boot tie-rod end A
- (5) Boot - steering gearbox
- (6) Band - boot
- (7) Tie-rod

- (9) Universal joint ASSY - steering
- (10) Castle nut
- (11) Stiffener
- (12) Steering gearbox ASSY
- (13) Pad - pressure
- (14) Spring - gearbox
- (15) Adjusting screw

Tightening torque: N

T1: 24(2.45, 17.7)

T2: 27(2.75, 19.9)

T3: 60(6.12, 44.3)

T4: 85(8.67, 62.7)

T5: 90(9.18, 66.4)

General Description

POWER ASSISTED SYSTEM (POWER STEERING)

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Electric Power Steering Gearbox

POWER ASSISTED SYSTEM (POWER STEERING)

3. RACK SHAFT PLAY IN THE RADIAL DIRECTION

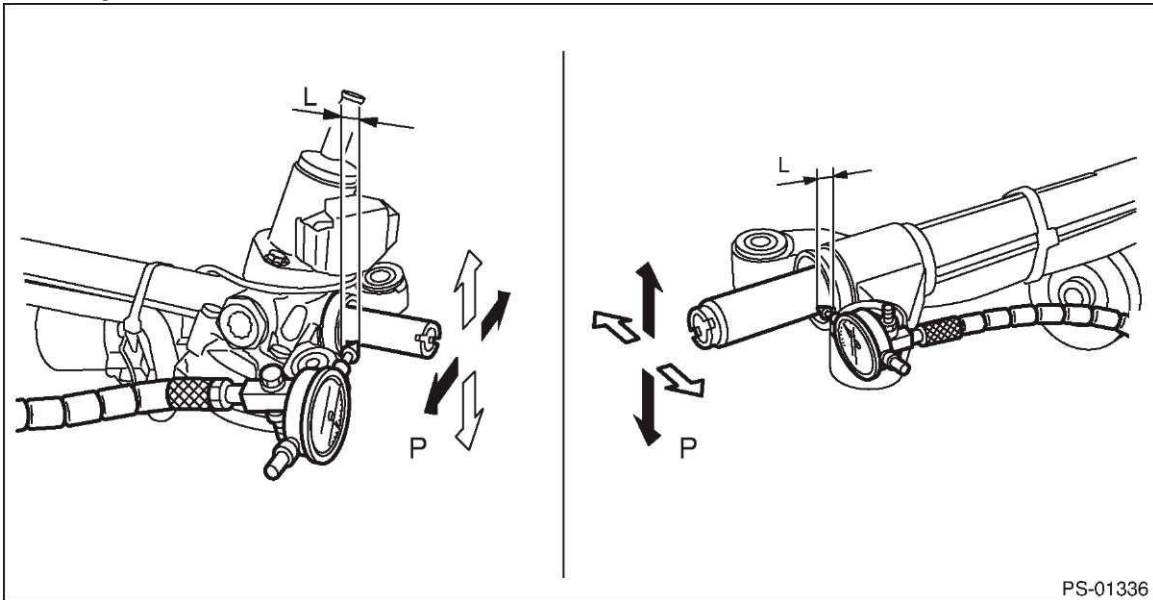
Right-turn steering: Service limit: Direction \wedge 0.4 mm (0.016 in) or less Direction $\triangleleft \triangleright$ 0.6 mm (0.024 in) or less

Left-turn steering: Service limit: Direction $\triangleleft \triangleright$ \wedge 0.4 mm (0.016 in) or less

Condition:

L: 5 mm (0.20 in)

P: 98 N (10 kgf, 22 lbf)



PS-01336

3. СТОЙКИ ВАЛА ЛЮФТ В РАДИАЛЬНОМ НАПРАВЛЕНИИ

Право поворот руля:

сервис предел:

направление гор. 0,4 мм (0,016 дюйма) или менее

направление верт. 0,6 мм (0,024 дюйма) или менее

Левый поворот руля:

сервис предел: направление гор. и верт. 0,4 мм (0,016 дюйма) или менее

Условие проверки:

L: 5 мм (0,20 дюйма)

P: 98 Н (10 кгс, 22 ИВФ)

Electric Power Steering Gearbox

POWER ASSISTED SYSTEM (POWER STEERING)

4. INPUT SHAFT PLAY

In radial direction:

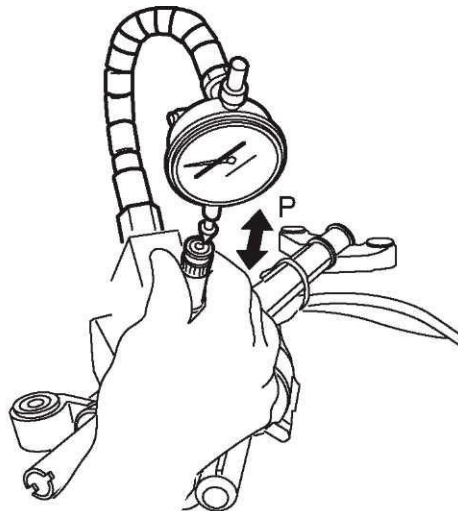
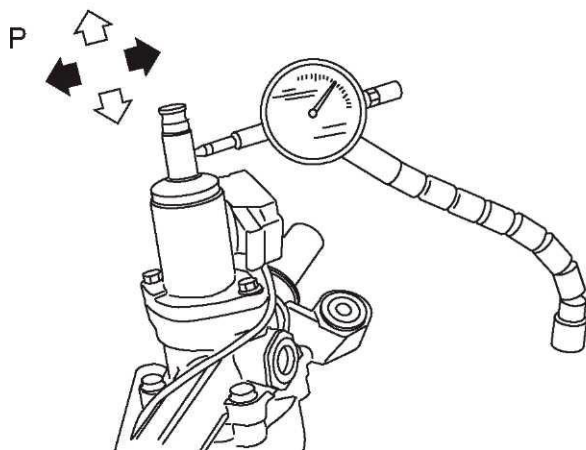
Wear limit: 0.18 mm (0.0071 in) or less

Condition: $P = 98\text{ N}$ (10 kgf, 22 lbf)

In axial direction:

Service limit: 0.27 mm (0.0106 in) or less

Condition: $P = 20 - 49\text{ N}$ (2 - 5 kgf, 4 - 11 lbf)



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4. . ВХОДНОЙ ВАЛ ЛЮФТ

В радиальном направлении:

Предел износа: 0,18 мм (0.0071) или меньше

Условие: $P = 98\text{ Н}$ (10 кгс, 22 ИВФ)

В осевом направлении:

Ограничение службы: 0.27 мм (0.0106) или меньше

Условие проверки: $P = 20 - 49\text{ Н}$ (2 -5 кгс, 4 -11 ИВФ)

Electric Power Steering Gearbox

POWER ASSISTED SYSTEM (POWER STEERING)

5. TURNING RESISTANCE OF GEARBOX

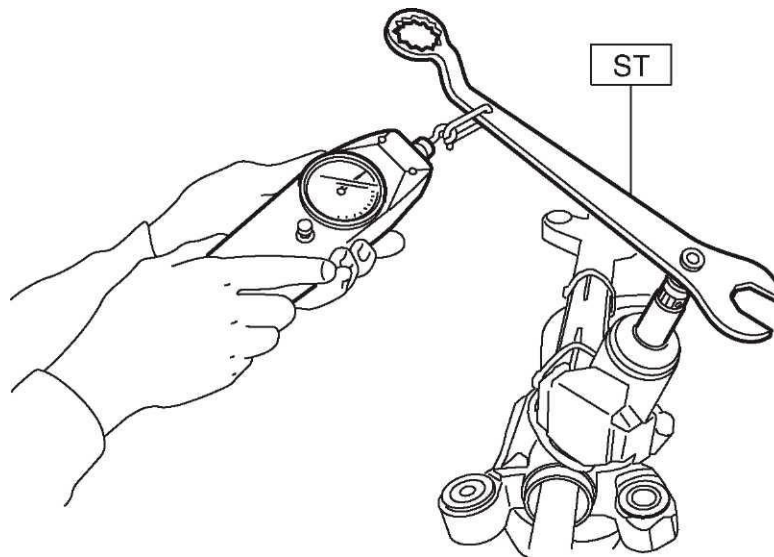
1) Using the ST, measure the rotational resistance of the steering gearbox assembly.

Preparation tool:

ST: SPANNER (34099PA100)

Service limit (Except for XV model): Maximum allowable resistance: 18.3 N (1.9 kgf, 4.1 lbf) or less Difference between right and left rotational resistance: 20% or less

Service limit (XV model): Maximum allowable resistance: 17.7N (1.8 kgf, 4.0 lbf) or less Difference between right and left rotational resistance: 20% or less



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Electric Power Steering Gearbox

POWER ASSISTED SYSTEM (POWER STEERING)

F: ADJUSTMENT

1. GEARBOXBACKLASH ADJUSTMENT

- 1) Remove the steering gearbox assembly. <Ref. to PS-26, REMOVAL, Electric Power Steering Gearbox.>
- 2) Loosen the lock nut and adjusting screw.
- 3) Apply a coat of grease to the sliding surface (B) of the pad - pressure (a) and seating surface (C) of spring - gearbox (b), and then insert the pad - pressure (a) into steering body.
- 4) Charge the adjusting screw (c) with grease (D), and then insert the spring - gearbox (b) into adjusting screw. Then install on the steering body.

Grease: MultempAC-

- 5) Apply liquid gasket to 1/3 or more (A) of entire perimeter of adjusting screw thread (c).

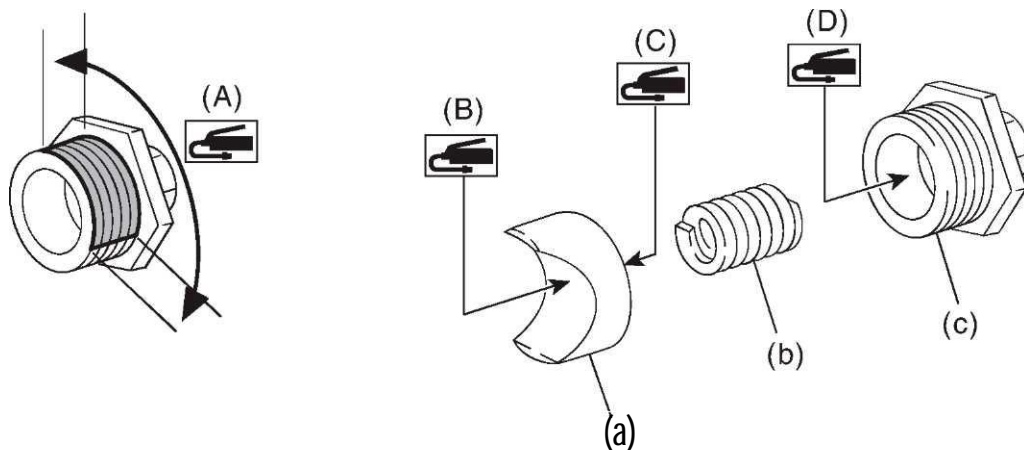
Liquid gasket:

THREE BOND TB-1111B

- 6) Tighten the adjusting screw to 9.8 N m (1.0 kgf-m, 7.2 ft-lb), then loosen it.
- 7) Tighten the adjusting screw to 6 N-m (0.6 kgf-m, 4.4 ft-lb).
- 8) Loosen the adjusting screw by 20°.

9) While fixing the adjusting screw, tighten the lock nuts.

Tightening torque:
49.4 N-m (5.04 kgf-m, 36.4 ft-lb)



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Ф: РЕГУЛИРОВКА

1. GEARBOXBACKLASH РЕГУЛИРОВКА

- 1) **снимите рулевой редуктор.** < Ссылка на PS-26, УДАЛЕНИЕ, Электроусилитель Руля Кпп >.
- 2) **Отвинтите гайку и регулировочного винта.**
- 3) **Нанесите слой смазки к скользящей поверхности (B) pad - давления (a) и сидения поверхности (C) Весна - коробки**

Electric Power Steering Gearbox

POWER ASSISTED SYSTEM (POWER STEERING)

**передач (b) и затем вставить *pad* -
давление (a) в Руководящий орган.**

- 4) **заряда регулировочный винт (c) с
жиром (D), а затем вставить
Весна - коробка передач (b) в
установочный винт. Затем
установите на руководящий
орган.**

Смазка: MultempAC-P

- 5) **применение жидкой прокладки к 1/3
или больше (A) по всему
периметру регулировки винта
резьбы (c).**

Жидкий прокладка:

ТРИ БОНД ТБ 1111B

- 6) **затяните регулировочный винт,
9,8 Нм (1,0 кгс м, 7.2 фут), затем
отпустите его.**
- 7) **затяните регулировочный винт 6
Н-м (0,6 кгс м, 4.4 фут).**
- 8) **Отвинтите регулировочный
винт на 20 °.**
- 9) **при фиксации регулировочного
винта, Затяните стопорные
гайки.**

**Момент затяжки: 49.4 N-m (5.04 кгс м, 36.4
фут)**

Electric Power Steering Gearbox

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2. FRONT WHEEL ALIGNMENT ADJUSTMENT

1) Adjust the front toe. <Ref. to FS-15, FRONT WHEEL TOE-IN, ADJUSTMENT, Wheel Alignments

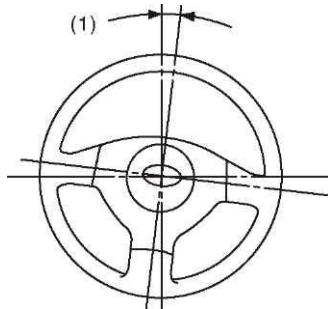
2) Check the steering angle of the wheels.

Standard of steering angle:

Model	Except for XV model	XV model
Inner wheel	$38.3^{\circ} \pm 1.5^{\circ}$	$38.5^{\circ} \pm 1.5^{\circ}$
Outer wheel	$33.7^{\circ} \pm 1.5^{\circ}$	$34.0^{\circ} \pm 1.5^{\circ}$

3) When the steering wheel is in the following condition, perform the steering wheel installation over again.

- When wheels are set in the straight ahead position, the steering wheel spokes are not horizontal.
- Error is more than 5° on the periphery of the steering wheel.



PS-00513

(1) 5° or less

4) If the steering wheel spokes are not horizontal with vehicle set in the straight ahead position after this adjustment, correct it by turning the right and left tie-rods in the opposite direction from each other by the same angle. Also check that there are no abnormal steering force, failure of the steering wheel to return or other faults.