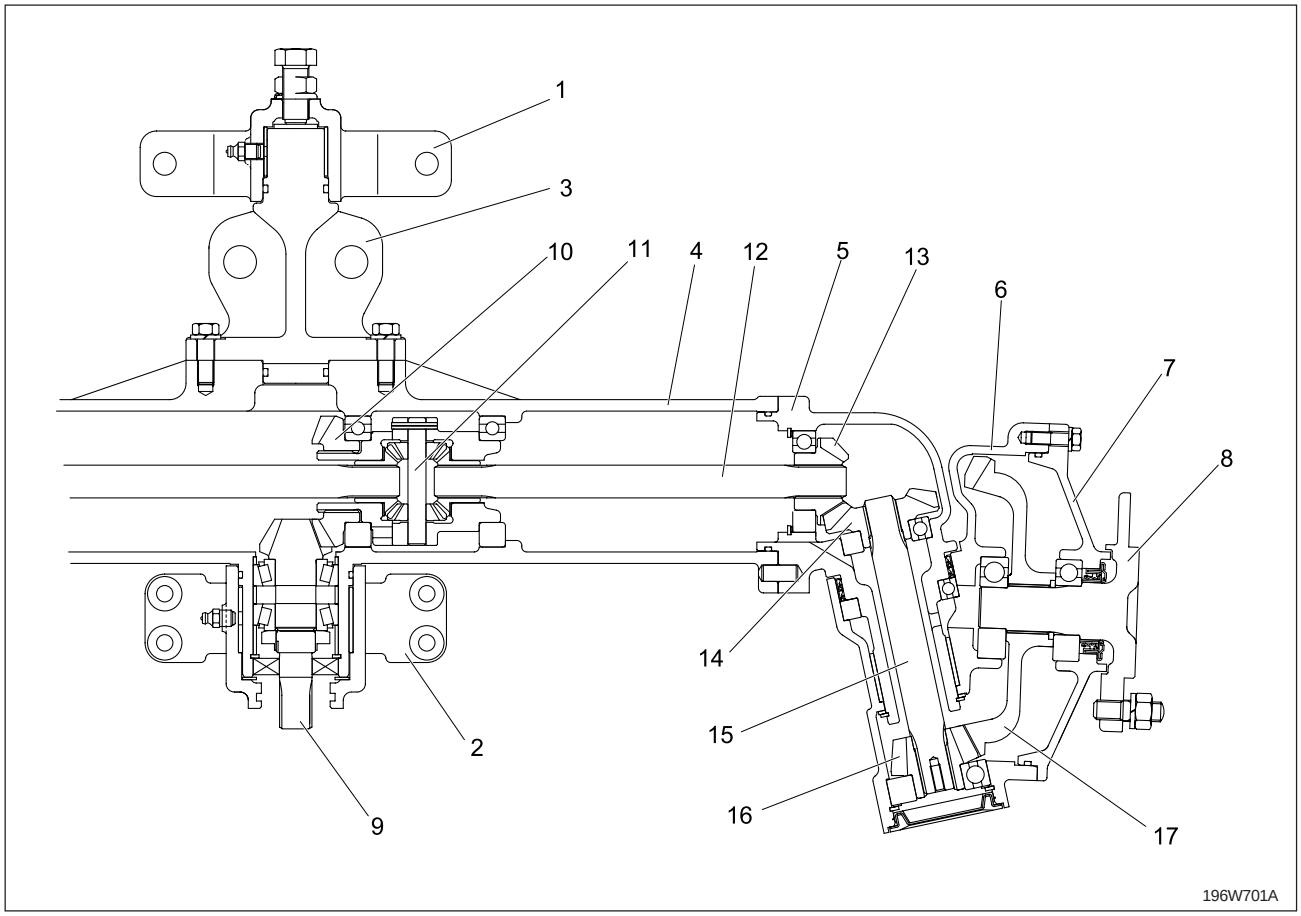
CHAPTER 7

FRONT AXLE

1. STRUCTURE

1.1 FRONT AXLE STRUCTURE



(1) Front Bracket
(2) Rear Bracket
(3) Center Pin
(4) Front Axle Support
(5) Bevel Gear Case
(6) Front Differential Case
(7) Front Differential Cover
(8) Front Axle
(9) Spiral Bevel Pinion Shaft
(10) Spiral Bevel Gear
(11) Pinion Shaft
(12) Differential Gear Shaft
(13) Bevel Gear
(14) Bevel Gear
(15) Bevel Gear Shaft
(16) Bevel Gear
(17) Bevel Gear

The front axle is constructed as shown above. Power is transmitted from the transmission through the propeller shaft and to the spiral bevel pinion shaft (9), then to the spiral bevel gear (10) after that to the differential gear. The power through the differential is transmitted to the differential gear shaft (12), and to the bevel gear shaft (15) in the bevel gear case (5).

The revolution is greatly reduced by the bevel gear (16), (17), and then the power is transmitted to the front axle (8).

The differential system allows each wheel to rotate at a different speed to make turning easier.

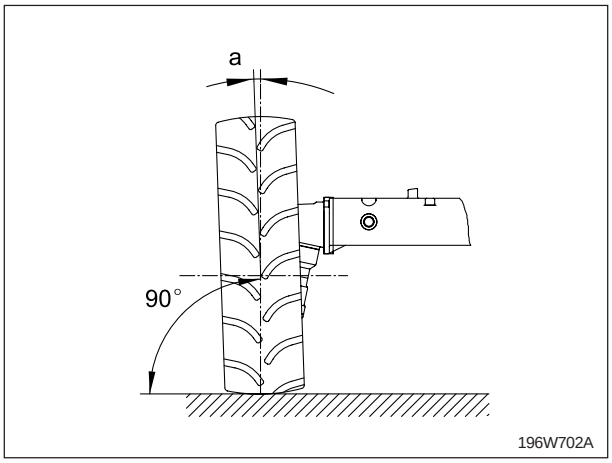
1.2 WHEEL ALIGNMENT

To improve control and safety running, front wheel is applied with adequate inclination in the direction of left, right and forward.

1. Camber reduces bending or twisting of the front axle caused by vertical load or running resistance, and also maintains the stability in running.

   Camber angle

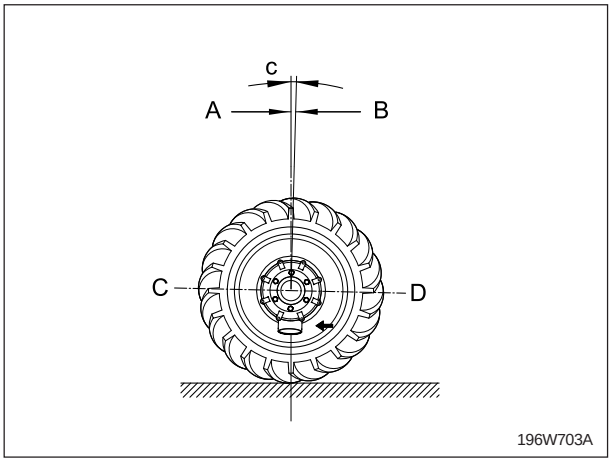
   Camber angle (a) = 2°



2. Caster helps provide steering stability.

   Caster angle

   Caster angle (c) = 0°

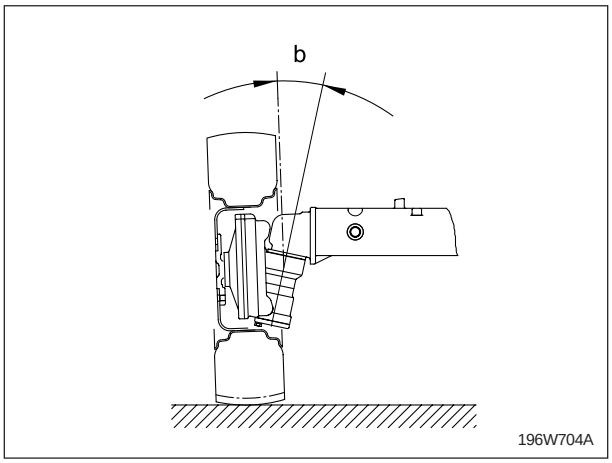


(A) Perpendicular (C) Front
(B) Kingpin Center Line (D) Rear

3. Kingpin angle reduces rolling resistance of the wheels, and prevents any shimmy motion of the steering.

   King pin angle

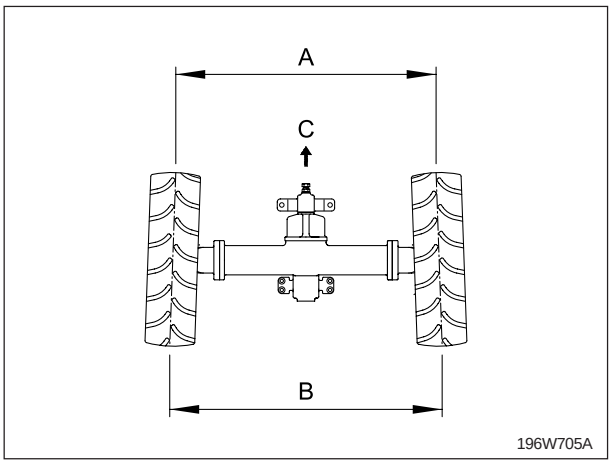
   King pin angle (b) = 12°



4. The front wheels tend to roll outward due to the camber, but toe-in offsets it and ensures parallel rolling of the front wheels. Another purpose of toe-in is to prevent excessive and uneven wear of tires.

   Tow-in

   Tow-in (B-A) = 2 ~ 8 mm



(C) Front

2. SERVICING

2.1 TROUBLESHOOTING

Symptom	Provable Causes	Solution
Front wheels wander to right or left	• Tire pressure uneven	Adjust
	• Improper toe-in adjustment (improper alignment)	Adjust
	• Clearance between front axle case boss and front axle bracket (front, rear) bushing excessive.	Replace
	• Front axle rocking force too small	Adjust
	• Front wheel sway excessive	Replace
	• Tie-rod end loose	Tighten
	• Air sucked in power steering circuit	Bleed
Front wheel can not be driven	• Propeller shaft broken	Replace
	• Front wheel drive gears in transmission broken	Replace
	• Front differential gear broken	Replace
	• Shift fork broken	Replace
	• Coupling displaced	Reassemble
Noise	• Gear backlash excessive	Adjust or replace
	• Oil insufficient	Replenish
	• Bearings damaged or broken	Replace
	• Gears damaged or broken	Replace
	• Spiral bevel pinion shaft turning force improper	Adjust

2.2 SPECIFICATIONS

Item		Factory Specification	Allowable Limit
Front wheel alignment	Toe-in	2 ~ 8 mm 0.08 ~ 0.31 in.	-
Front wheel	Axial sway	Less than 5 mm 0.20 in.	-
Front axle	Rocking force	49.0 ~ 117.7 N 5.0 ~ 12.0 kgf 11.0 ~ 26.5 lbs	-
Front axle case boss (front) to bracket bushing	Clearance	0.000 ~ 0.110 mm 0.0000 ~ 0.0040 in.	0.35 mm 0.0138 in.
Front axle case boss (front)	O.D.	34.075 ~ 35.000 mm 1.34154 ~ 1.37795 in.	-
Busing	I.D.	35.000 ~ 35.085 mm 1.37795 ~ 1.38130 in.	-
Front axle case boss (rear) to bracket bushing	Clearance	0.060 ~ 0.220 mm 0.00236 ~ 0.00866 in.	0.35 mm 0.0138 in.
Front axle case boss (rear)	O.D.	64.070 ~ 65.000 mm 2.52244 ~ 2.55906 in.	-
Busing	I.D.	65.060 ~ 65.190 mm 2.56142 ~ 2.56654 in.	-
Differential case, 19 bevel gear to differential side gear	Clearance	0.040 ~ 0.074 mm 0.00157 ~ 0.00291 in.	0.35 mm 0.0138 in.
Differential case	I.D.	26.020 ~ 26.041 mm 1.02441 ~ 1.02524 in.	-
Differential case cover bore	I.D.	26.020 ~ 26.041 mm 1.02441 ~ 1.02524 in.	-
Differential side gear	O.D.	25.067 ~ 25.080 mm 0.98689 ~ 0.98740 in.	-
Pinion shaft to differential pinion	Clearance	0.016 ~ 0.052 mm 0.00063 ~ 0.00204 in.	0.25 mm 0.0096 in.
Pinion shaft	O.D.	10.966 ~ 10.984 mm 0.43173 ~ 0.43244 in.	-
Differential pinion	I.D.	11.000 ~ 11.018 mm 0.43307 ~ 0.43378 in.	-
Differential pinion to differential side gear	Backlash	0.1 ~ 0.3 mm 0.004 ~ 0.012 in.	-
Shim	Thickness	0.1 mm 0.0039 in.	-
		0.2 mm 0.0078 in.	-
		0.4 mm 0.0157 in.	-
		1.6 mm 0.0630 in.	-

Item		Factory Specification	Allowable Limit
Spiral bevel pinion shaft (Pinion shaft only)	Turning force	98.1 ~ 117.7 N 10 ~ 12 kgf 22.0 ~ 26.5 lbs	-
Spiral bevel pinion shaft to spiral bevel gear	Backlash	0.2 ~ 0.3 mm 0.0078 ~ 0.0118 in.	-
11T bevel gear to 16T bevel gear	Backlash	0.15 ~ 0.35 mm 0.0059 ~ 0.0138 in.	- -
Shim	Thickness	0.1 mm 0.0039 in. 0.2 mm 0.0078 in. 0.4 mm 0.0157 in. 0.8 mm 0.03149 in. 0.1 mm 0.0393 in.	- - - - -
9T bevel gear to 40T bevel gear	Backlash	0.15 ~ 0.35 mm 0.0059 ~ 0.0138 in.	-
Shim	Thickness	0.1 mm 0.0039 in. 0.2 mm 0.0078 in. 0.4 mm 0.0157 in. 0.8 mm 0.03149 in. 1.0 mm 0.0393 in. 1.2 mm 0.0472 in.	- - - - - -

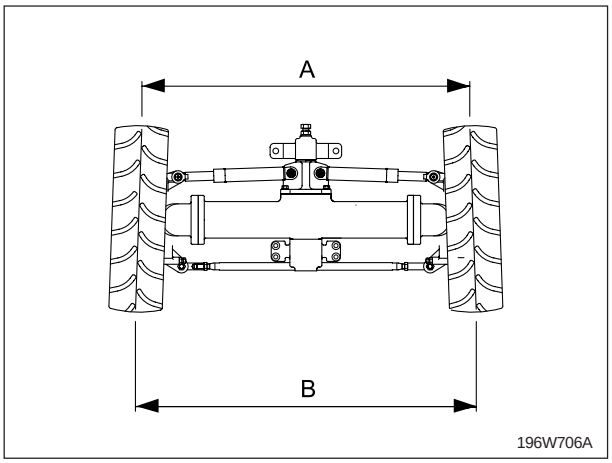
2.3 CHECKING, DISASSEMBLING AND SERVICING

A. CHECKING AND ADJUSTING

a. Toe-in

1. Apply air pressure as specified to tires.
2. Measure the front width (A) and the rear width (b) between the front wheels while straightened to obtain the difference (toe-in).
3. For other than specified, loosen the tightening nut on the ball joint for adjustment while turning the screw on the ball joint. Be sure to make the exposure of left and right rods in the steering cylinder equal this time.

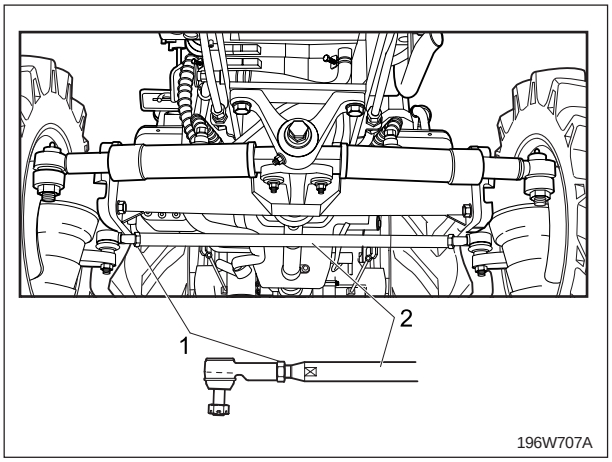
Item	Factory spec.
Toe-in (B-A)	2 ~ 8 mm 0.08 ~ 0.31 in.



(A) Front Width (B) Rear Width

b. Toe-in Adjusting

1. Loosen the lock nuts (1).
2. Turn the tie-rod (2) until to be factory specification.
3. Tighten the lock nuts (1).

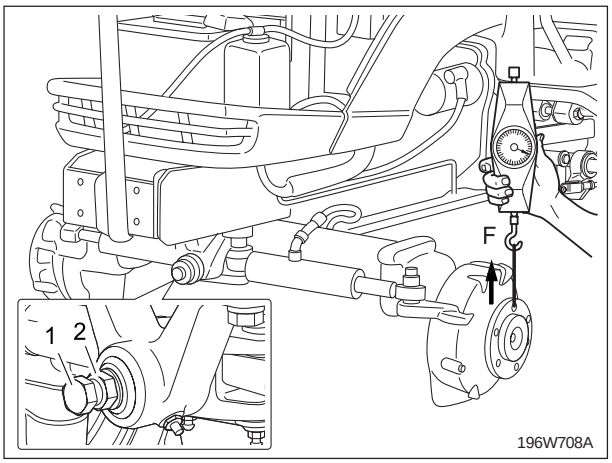


(1) Lock Nut (2) Tie-Rod

c. Rocking Force of Front Axle

1. Jack up the front side of tractor and remove the front wheel.
2. Set a spring balance to the front gear case cover.
3. Measure the front axle rocking force.
4. If the measurement is not within the factory specifications, adjust with the adjusting screw (1).
5. Tighten the lock nut (2) firmly.

Item	Factory spec.
Front axle rocking force	49.0 ~ 117.7 N 5.0 ~ 12.0 kgf 11.0 ~ 26.5 lbs

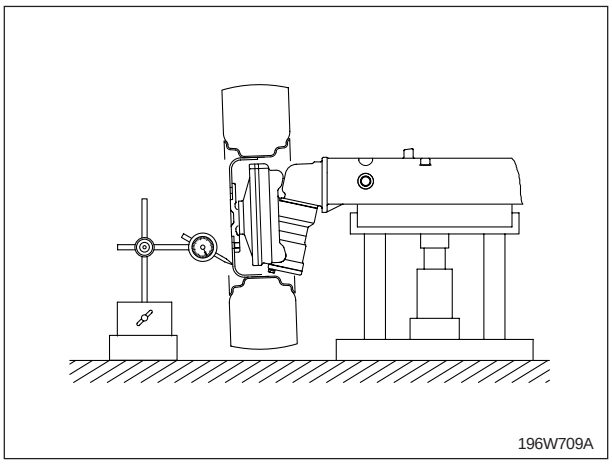


(1) Adjusting Screw (2) Lock Nut

d. Axial Sway of Front Wheel

1. Jack up the front side of tractor.
2. Set a dial gauge on the outside of rim.
3. Turn the wheel slowly and read the runout of rim.
4. If the runout exceeds the factory specifications, check the bearing, rim, and front wheel hub.

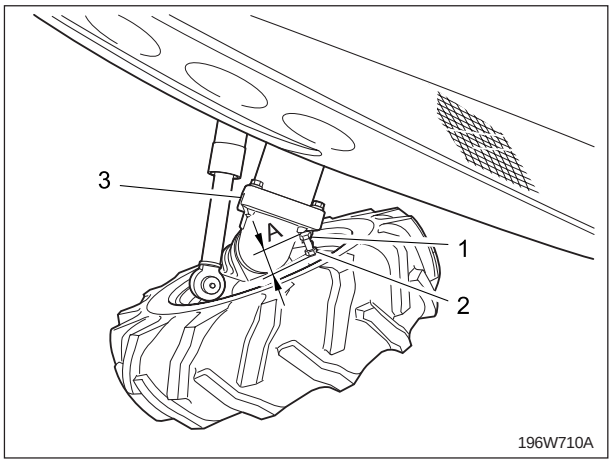
Item	Factory spec.
Axial sway of front wheel	Less than 5.0 mm 0.20 in.



e. Front Wheel Steering Angle

1. Inflate the tires to the specified pressure.
2. Loosen the lock nut and shorten the length of stopper bolt LH (1).
3. Steer the wheels to the extreme left.
4. Lengthen the length of stopper bolt (1) until the stopper bolt contacts with the bevel gear case (3).
5. Return the steering wheel to straight ahead and lengthen the stopper bolt half turn from above position further.
6. Lock the stopper bolt by lock nut (2).
7. For adjusting the right steering angle, perform the same procedure as mentioned in left steering angle.

Item	Factory spec.
Length of adjusting bolt (A)	32 mm 1.259 in.
Steering angle	51 ~ 53° 0.89 ~ 0.92 rad



(1) Stopper Bolt (3) Bevel Gear Case
(2) Lock Nut

B. DISASSEMBLING AND ASSEMBLING

a. Draining Front Axle Case Oil

1. Place oil pans underneath the front axle case.
2. Remove the drain plug (3) both sides and filling port plug (2) to drain the oil.
3. After draining, reinstall the drain plugs (3) and filling port plug (2).

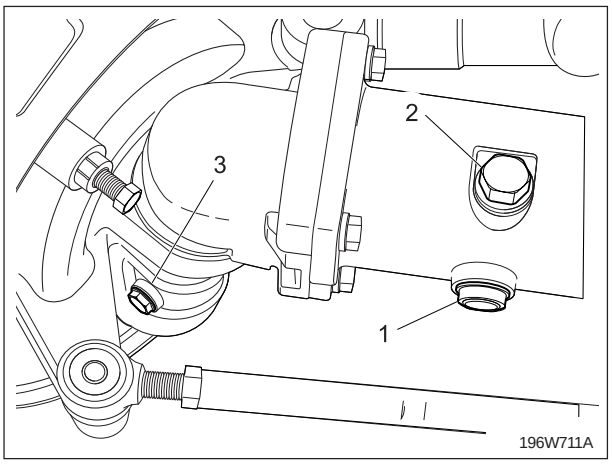
(When refilling)

- Remove the filling port plug (2) and check gauge (1).
- Fill with the new oil up to the check plug port.
- After filling, reinstall the check gauge (1) and filling port plug (2).

Item	Factory spec.
Front axle case oil	3.1 ℓ 0.82 U.S.gal.

IMPORTANT

- ***Use SAE 80, 90 gear oil. Refer to "LUBRICANTS, FUEL AND COOLING WATER".***



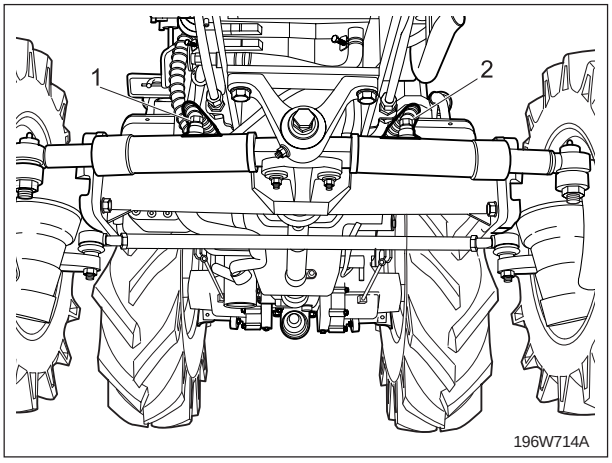
(1) Check Plug (2) Filling Port Plug
(3) Drain Plug

b. Disconnecting Hydraulic Hoses

1. Remove the steering hoses.

(When reassembling)

Item	Tightening torque
Steering hoses	24.5 ~ 29.4 N·m 2.5 ~ 3.0 Kgf·m 18.1 ~ 21.7 lbs·ft



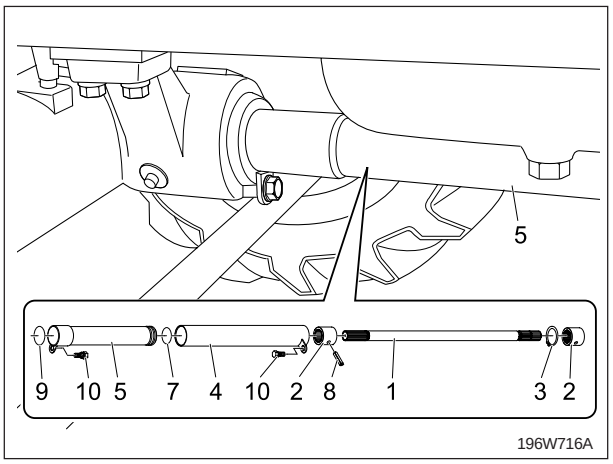
(1) Steering Hose (L) (2) Steering Hose (R)

c. Disconnecting Propeller Shaft

1. Slide the propeller shaft cover (5), (4) after removing the bolts (10).
2. Tap out the spring pin (8), and then slide the coupling (2) to the rear.

(When reassembling)

- Apply grease to the splines of the propeller shaft.



(1) Propeller Shaft
(2) Coupling
(3) Cir-Clip
(4) Propeller Shaft Cover 1
(5) Propeller Shaft Cover 2
(6) O-Ring
(7) O-Ring
(8) Spring Pin
(9) O-Ring
(10) Bolt

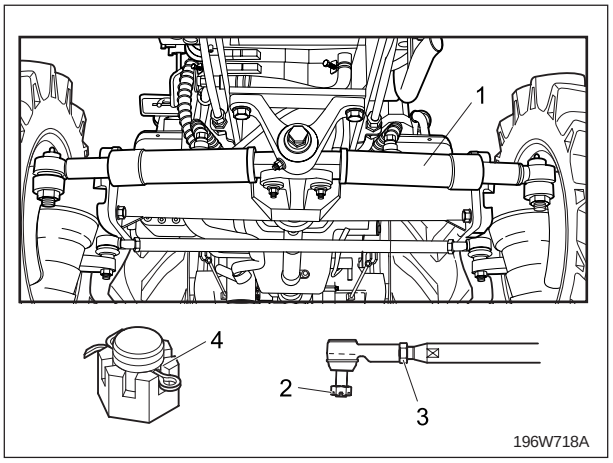
d. Disconnecting Tire-rod

1. Remove the tie-rod.

   In this case, take special care not to damage the tie-rod (1) and slotted nuts (2).

(When reassembling)

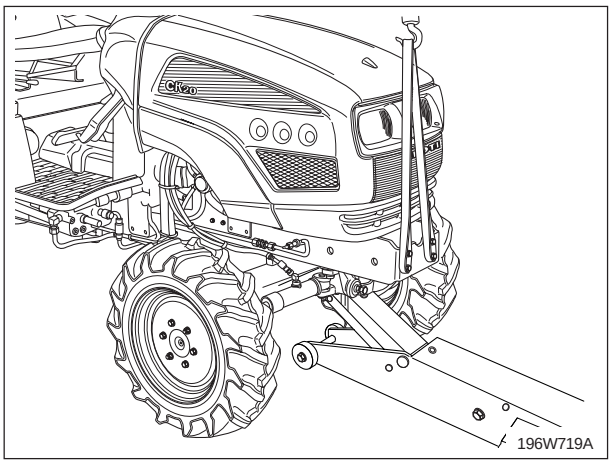
Item	Tightening torque
Slotted nut	39.3 ~ 49.1 N·m 4.0 ~ 5.0 Kgf·m 29.0 ~ 36.1 lbs·ft
Tie-rod lock nut	166.8 ~ 191.3 N·m 17.0 ~ 19.5 Kgf·m 122.9 ~ 141.0 lbs·ft



(1) Tie-Rod
(2) Slotted Nut
(3) Tie-Rod Lock Nut
(4) Slotted Nut

e. Disassembling Front Axle

1. Place the jacks under the front axle, and hang up the bumper by the hoist to support it.
2. Remove the shaft bracket 1 mounting screws and shaft bracket 2 mounting screws.
3. Separate the front axle from the front support.
4. Remove the front wheels.



Item	Tightening torque
Front bracket bolts	123.6 ~ 147.1 N·m 12.6 ~ 15.0 Kgf·m 91.1 ~ 108.5 lbs·ft
Rear bracket bolts	123.6 ~ 147.1 N·m 12.6 ~ 15.0 Kgf·m 91.1 ~ 108.5 lbs·ft
Front wheel mounting nuts	62.8 ~ 72.5 N·m 6.4 ~ 7.4 Kgf·m 46.3 ~ 53.5 lbs·ft
Front wheel mounting bolts	77.5 ~ 90.2 N·m 7.9 ~ 9.2 Kgf·m 57.2 ~ 66.5 lbs·ft
Front wheel mounting stud	29.5 ~ 49.0 N·m 3.0 ~ 5.0 Kgf·m 21.7 ~ 36.1 lbs·ft

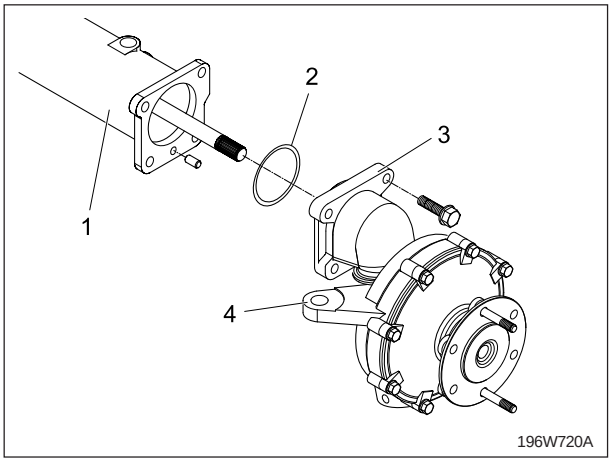
f. Dissembling Bevel Gear Case and Front Gear Case

1. Remove the bevel gear case mounting bolts.
2. Remove the bevel gear case (3) and front gear case (4) as a unit from the front axle case (1).

(When reassembling)

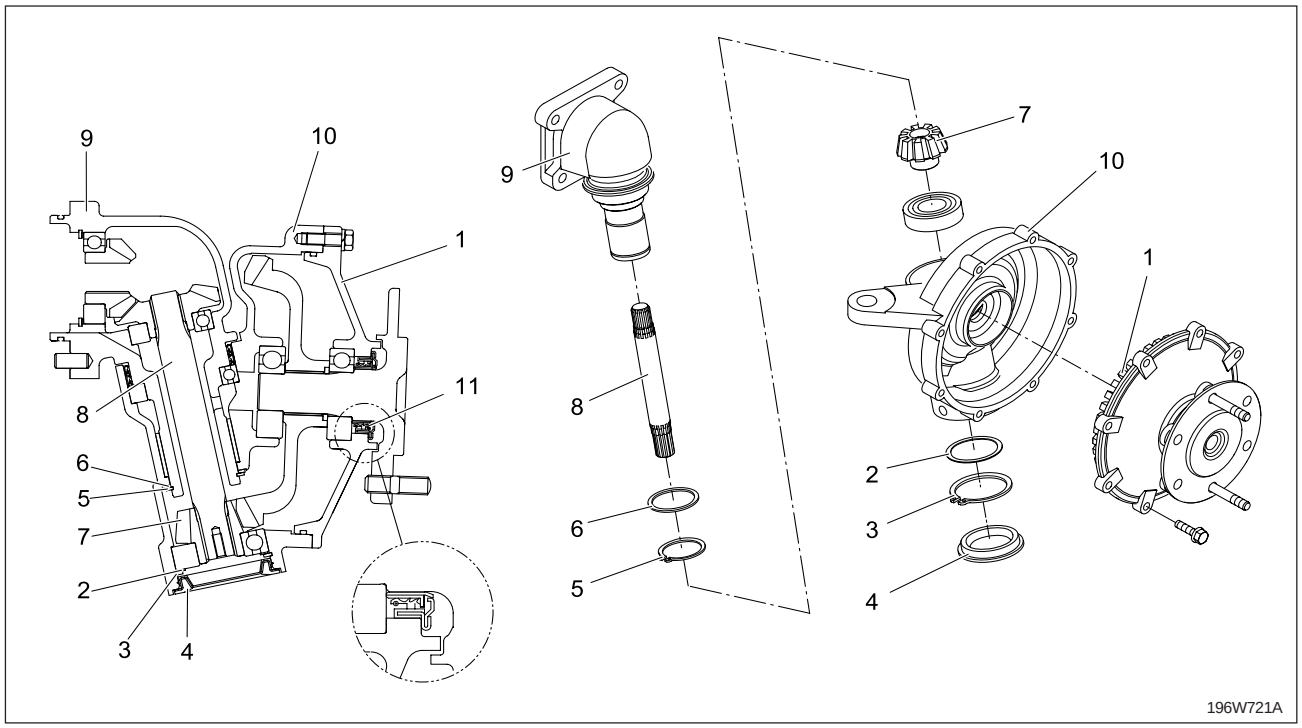
- Apply grease to the O-ring (2) and take care not to damage it.
- Do not interchange right and left bevel gear case assemblies and front gear case assemblies.

Item	Tightening torque
Bevel gear case mounting screw	123.5 ~ 147.0 N·m 12.6 ~ 15.0 Kgf·m 91.2 ~ 108.4 lbs·ft



(1) Front Axle Case (2) O-Ring
(3) Bevel Gear Case (4) Front Gear Case

g. Disassembling Bevel Gear Case, Front Differential Case and 40 Bevel Gear



(1) 40T Bevel Gear
(2) Shim
(3) Snap Ring
(4) Plug
(5) Snap Ring
(6) Shim
(7) 9T Bevel Gear
(8) Bevel Gear Shaft
(9) Bevel Gear Case
(10) Front Differential Case
(11) Oil Seal

1. Remove the plug (4).
2. Remove the internal snap ring (3) and shim (2).
3. Remove the 40T bevel gear (1).
4. Tap out the bevel gear (7) and ball bearing.
5. Draw out the bevel gear shaft (8).
6. Remove the external snap ring (5).
7. Tap the bevel gear case (9), and separate it from the front differential case (10).

(When reassembling)

- Apply grease to the O-ring of 40T bevel gear (1).
- Tighten the axle flange mounting bolts and nuts diagonally in several steps.
- Install the oil seal (11) of bevel gear case, noting its direction as shown in the upper figure.

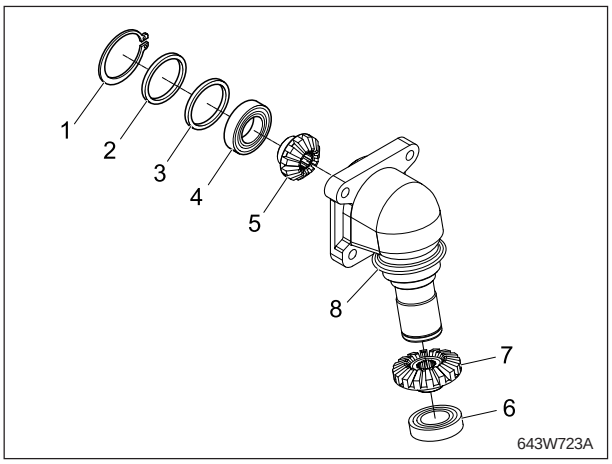
Item	Tightening torque
Axle flange mounting stud bolt	11.8 ~ 15.7 N·m 1.2 ~ 1.6 Kgf·m 8.7 ~ 11.5 lbs·ft
Axle flange mounting screws and nuts	23.6 ~ 27.4 N·m 2.4 ~ 2.8 Kgf·m 17.4 ~ 20.2 lbs·ft

h. Disassembling Bevel Gear Case Gears

1. Remove the internal snap ring (1).
2. Take out the bevel gears (5), (7) with ball bearings (4), (6), collar (2) and shims (3).

(When reassembling)

- Install the same shims (3) before they are removed.



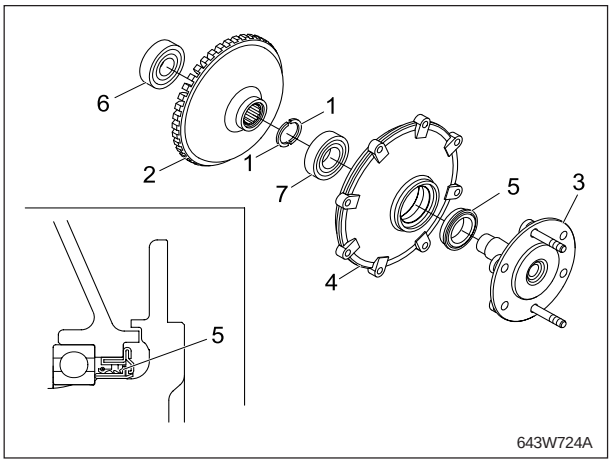
(1) Snap Ring
(2) Shim
(3) Shim
(4) Ball Bearing
(5) 11 Bevel Gear
(6) Ball Bearing
(7) 16 Bevel Gear
(8) Bevel Gear Case

i. Disassembling Axle

1. Remove the bearing wit a special use puller set.
2. Take out the 40T bevel gear (2).
3. Take out the collar (1).
4. Tap out the front axle (3).

(When reassembling)

- Install the oil seal (5) of the front differential cover (4), noting its direction as shown in the left figure.



(1) Snap Pin
(2) 40T Bevel Gear
(3) Front Axle
(4) Front Differential Cover
(5) Oil Seal
(6) Bearing
(7) Bearing

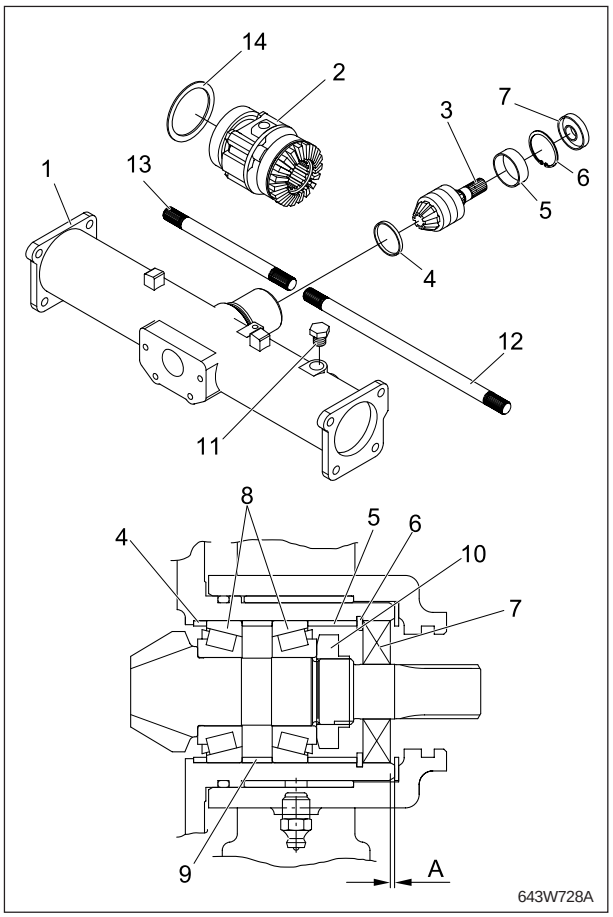
j. Disassembling Spiral Bevel Pinion Shaft and Differential Gear Assembly

1. Take out the differential yoke shaft (12), (13) both sides.
2. Remove the oil seal (7) and internal snap ring (6).
3. Remove the plug (11), and then tap out the spiral bevel pinion shaft (3) by the brass rod and hammer.
4. Take out the differential gear assembly (2), ball bearing and shim (14) from right side of front axle case (1).
5. Remove the stake of lock nut (10), and then remove the lock nut (10).
6. Remove the taper roller bearings (8).

(When reassembling)

- Replace the lock nut (10), oil seal (7) and plug (11) with new ones.
- Apply grease to the oil seal (6).
- Install the same shims and collars before they are removed.
- Install the taper roller bearings correctly, noting their direction, and apply gear oil to them.
- When press-fitting a oil seat (6), observe the dimension “A” described in the figure.
- Stake the lock nut (10) firmly.
- Tighten up the lock nut (10) until the turning force of the spiral bevel pinion shaft reaches the factory specifications. (See page 7-19)

Item	Factory spec.
Spiral bevel pinion shaft turning torque	0.98 ~ 1.18 N·m 0.1 ~ 0.12 Kgf·m 0.72 ~ 0.89 lbs·ft



(A) 1 mm (0.039 in.)

(1) Front Axle Case
(2) Differential Gear Assemly
(3) Spiral Bevel Pinion Shaft
(4) Adjusting Collar
(5) Collar
(6) Snap Ring
(7) Oil Seal
(8) Taper Roller Bearings
(9) Collar
(10) Lock Nut
(11) Plug
(12) Differential Yoke Shaft RH
(13) Differential Yoke Shaft LH
(14) Shim

k. Disassembling Differential Gear

1. Remove the differential case cover mounting bolts (9) and then take out the differential case cover (5), ball bearing (6) and spiral bevel gear (7) as a unit.
2. Remove the external snap ring (8), and then remove the ball bearing (6) and spiral bevel gear (7) as a unit with a puller.
3. Remove the straight pin (13).
4. Pull out the pinion shaft (10) and take out the differential pinions (4) and differential side gears (12).

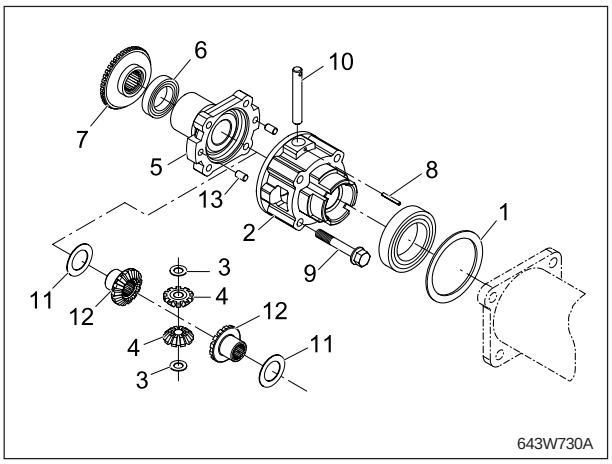
NOTE:

- *Arrange the parts to know their original position.*

(when reassembling)

- Apply molybdenum disulfide (Three bond 1901 or equivalent) to the inner circumferential surface of the differential side gears (12) and differential pinions (4).
- Install the pinion shaft (10) so that the hole on it may align with the hole on differential case (2), and install the straight pin (13).

Item	Tightening torque
Differential case cover mounting bolts	48.1 ~ 55.9 N·m 4.9 ~ 5.7 Kgf·m 35.4 ~ 41.2 lbs·ft

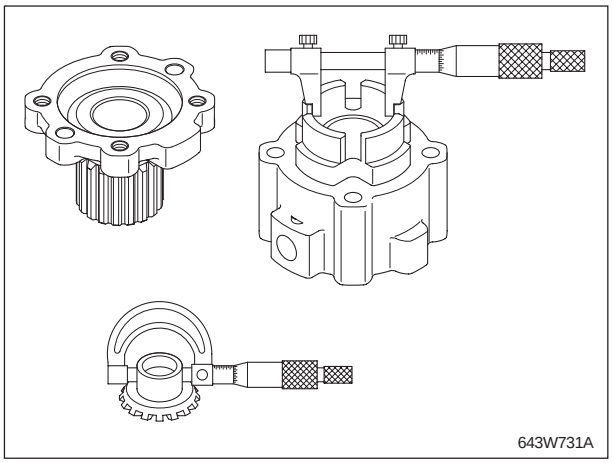


(1) Shim
(2) Differential Case
(3) Thrust Collar
(4) Differential Pinion
(5) Differential Case Cover
(6) Ball Bearing
(7) Spiral Bevel Gear
(8) Snap Ring
(9) Screws
(10) Pinion Shaft
(11) Shim
(12) Differential Side Gear
(13) Straight Pin

2.4 SERVICING

A. CLEARANCE BETWEEN DIFFERENTIAL CASE AND DIFFERENTIAL SIDE GEAR

1. Measure the differential side gear boss O.D.
2. Measure the differential case bore I.D. and calculate the clearance.
3. Measure the differential case cover bore I.D. and calculate the clearance.
4. If the clearance exceeds the allowable limit, replace faulty parts.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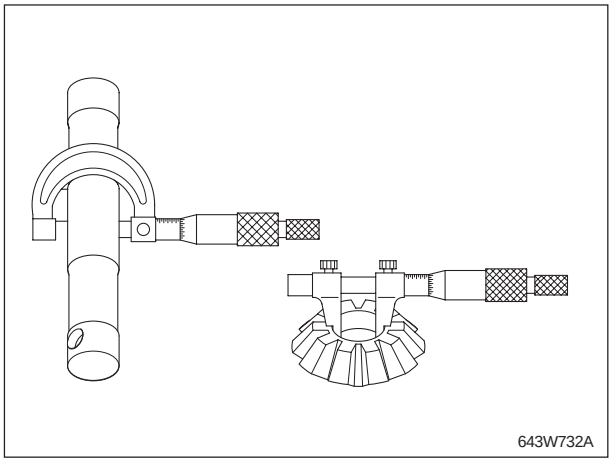
Item	Factory spec.	Allowable limit
Clearance between differential case (Differential case cover) and differential side gear	0.040 ~ 0.074 mm 0.00167 ~ 0.00291 in.	0.35 mm 0.0138 in.

Item	Factory spec.	Allowable limit
Differential case bore I.D.	26.020 ~ 26.041 mm 1.02441 ~ 1.02524 in.	-
Differential case cover bore I.D.	26.020 ~ 26.041 mm 1.02441 ~ 1.02524 in.	-
Differential side gear O.D.	25.067 ~ 25.080 mm 0.98689 ~ 0.98740 in.	-

B. CLEARANCE BETWEEN PINION SHAFT AND DIFFERENTIAL PINION

1. Measure the pinion shaft O.D.
2. Measure the differential pinion I.D. and calculate the clearance.
3. If the clearance exceeds the allowable limit, replace faulty parts.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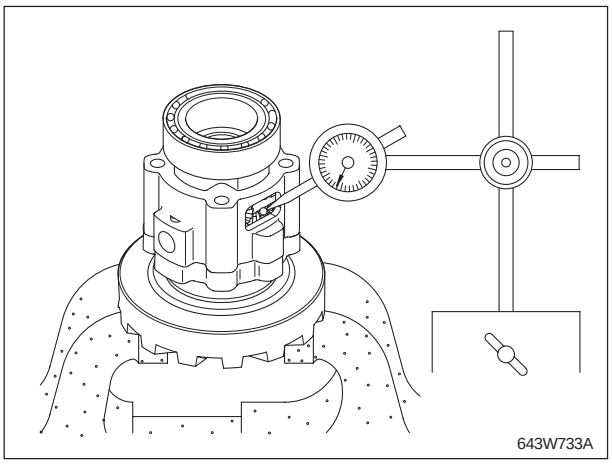
Item	Factory spec.	Allowable limit
Clearance between pinion shaft and differential pinion	0.016 ~ 0.052 mm 0.00063 ~ 0.00204 in.	0.25 mm 0.0098 in.

Item	Factory spec.	Allowable limit
Pinion shaft O.D.	10.966 ~ 10.984 mm 0.43173 ~ 0.43244 in.	-
Differential pinion I.D.	11.000 ~ 11.018 mm 0.43307 ~ 0.43378 in.	-

C. BACKLASH BETWEEN DIFFERENTIAL PINION AND DIFFERENTIAL SIDE GEAR



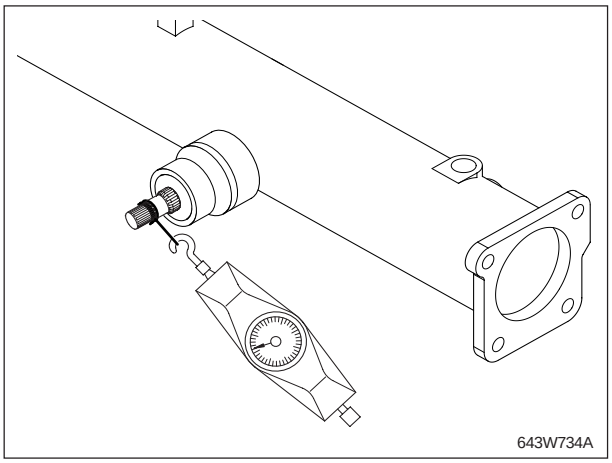
1. Set a dial gauge (lever type) on a tooth of the differential pinion.
2. Fix the differential side gear and move the differential pinion to measure the backlash.
3. If the measurement exceeds the factory specifications, adjust with the differential side gears shims.

Item	Factory spec.	Allowable limit
Backlash between differential pinion and differential side gear	0.1 ~ 0.3 mm 0.004 ~ 0.012 in.	-

(Reference)

- Thickness of adjusting shims:
  0.4 mm (0.016 in.) 0.6 mm (0.024 in.)
  0.8 mm (0.031 in.) 1.0 mm (0.039 in.)
  1.2 mm (0.047 in.)
- Tooth contact : More than 35 %
- Center of tooth contact:
  1/3 to 1/2 of the entire width from the small end.

D. TURNING FORCE OF SPIRAL BEVEL PINION SHAFT (PINION SHAFT ONLY)



1. Install the spiral bevel pinion shaft assembly to the front axle case.
2. Wind a string around the spiral bevel pinion shaft and attach spring balance to the tip of the string.
3. Slowly pull the spring balance in a direction at right angle to the spiral bevel pinion shaft to measure the turning force.
4. If the turning force is not within the factory specifications, adjust with the lock nut.

Item	Factory spec.
Turning force	98.1 ~ 117.7 N 10 ~ 12 kgf 22.0 ~ 26.5 lbs

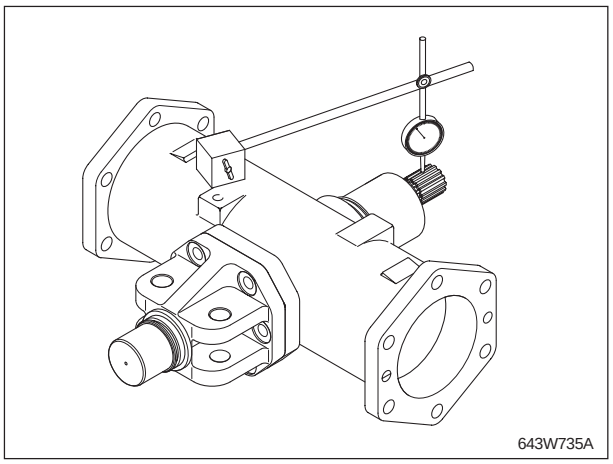
NOTE:

- *The turning torque is figured by multiplying the radius (distance form the center of the spiral bevel pinion shaft to a point on the circumference from which the string is pulled) by the reading on the spring balance.*
- *After turning torque adjustment, be sure to stake the lock nut.*

E. BACKLASH BETWEEN SPIRAL BEVEL PINION SHAFT AND SPIRAL BEVEL GEAR

1. Set a dial gauge (lever type) with its finger on the spline of spiral bevel pinion shaft.
2. Measure the backlash by moving the spiral bevel pinion shaft by hand lightly.
3. If the backlash is not within the factory specifications, change the adjusting collars (3), (4). Change the adjusting collar (4) to 0.1 mm (0.004 in.) smaller size, and change the adjusting collar (3) to 0.1 mm (0.004 in.) larger size.
4. Adjust the backlash properly by repeating the above procedures.

Item	Factory spec.
Backlash between spiral bevel pinion shaft and spiral bevel gear	0.1 ~ 0.3 mm 0.004 ~ 0.012 in.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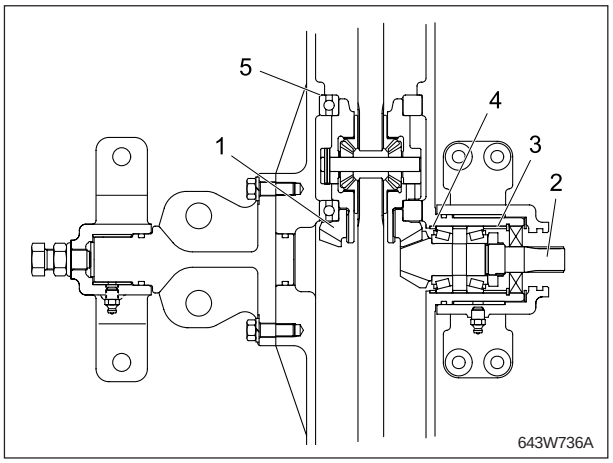

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(1) Spiral Bevel Gear
(2) Spiral Bevel Pinion Shaft
(3) Adjusting Collar
(4) Adjusting Collar
(5) Shim

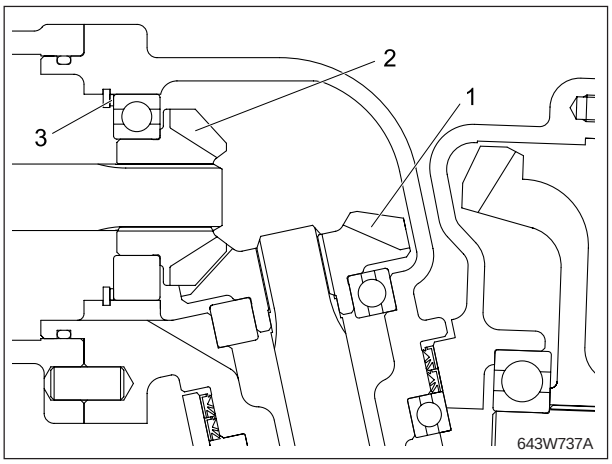
F. BACKLASH BETWEEN 11T BEVEL GEAR AND 16T BEVEL GEAR

1. Stick a strip of fuse to three spots on the 16T bevel gear (1) with grease.
2. Fix the front axle case, bevel gear case and front gear case.
3. Turn the axle.
4. Remove the bevel gear case from front axle case and measure the thickness of the fuses with an outside micrometer.
5. If the backlash is not within the factory specifications, adjust with shim (3).

Item	Factory spec.
Backlash between 11T bevel gear and 16T bevel gear	0.15 ~ 0.35 mm 0.0059 ~ 0.0138 in.

(Reference)

- Thickness of adjusting shims (3):
  0.8 mm (0.031 in.) 1.2 mm (0.047 in.)
  1.0 mm (0.039 in.)
- Tooth contact: More than 35%



(1) 16T Bevel Gear (3) Shim
(2) 11T Bevel Gear

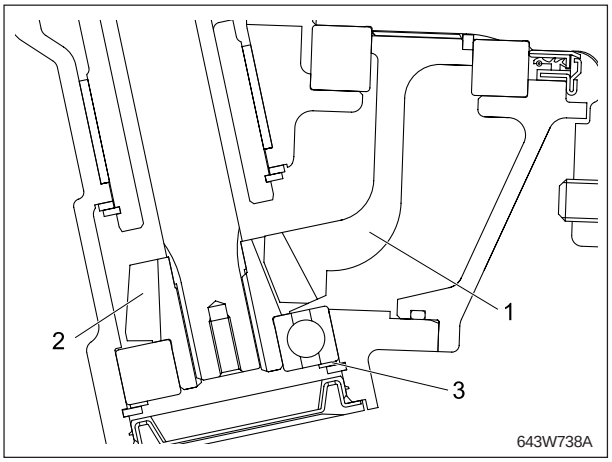
G. BACKLASH BETWEEN 9T BEVEL GEAR AND 40T BEVEL GEAR

1. Stick a strip of fuse to three spots on the 40T bevel gear (1) with grease.
2. Fix the axle flange and front gear case.
3. Turn the axle.
4. Remove the axle flange from front gear case and measure the thickness of the fuse with an outside micrometer.
5. If the backlash is not within the factory specifications, adjust with shim (3).

Item	Factory spec.
Backlash between 9T bevel gear and 40T bevel gear	0.15 ~ 0.35 mm 0.0059 ~ 0.0138 in.

(Reference)

- Thickness of adjusting shims (3):
  1.0 mm (0.039 in.) 1.8 mm (0.071 in.)
  1.2 mm (0.047 in.) 2.0 mm (0.079 in.)
  1.4 mm (0.055 in.) 2.2 mm (0.087 in.)
  1.6 mm (0.063 in.)
- Tooth contact : More than 35 %



(1) 40T Bevel Gear (3) Shim
(2) 9T Bevel Gear

H. CLEARANCE BETWEEN FRONT AXLE CASE BOSSES AND BRACKET BUSHINGS

1. Measure the front axle case bosses O.D. with an outside micrometer.
2. Measure the bracket bushing I.D. with an inside micrometer and calculate the clearance.
3. If the clearance exceeds the allowable limit, replace the bracket bushing.
4. If the clearance still exceeds the allowable limit, replace the front axle case.

Item	Factory spec.	Allowable limit
Clearance between front axle case boss (front) and bracket bushing (front)	0.000 ~ 0.110 mm 0.0000 ~ 0.0040 in.	0.35 mm 0.0138 in.

Item	Factory spec.	Allowable limit
Front axle case boss (front) O.D.	34.075 ~ 35.000 mm 1.34154 ~ 1.37795 in.	-
Bracket bushing (front) I.D.	35.000 ~ 35.085 mm 1.37795 ~ 1.38130 in.	-

Item	Factory spec.	Allowable limit
Clearance between front axle case boss (rear) and bracket bushing (rear)	0.060 ~ 0.220 mm 0.00236 ~ 0.00866 in.	0.35 mm 0.0138 in.

Item	Factory spec.	Allowable limit
Front axle case boss (rear) O.D.	64.070 ~ 65.000 mm 2.52244 ~ 2.55906 in.	-
Bracket bushing (rear) I.D.	65.060 ~ 65.190 mm 2.56142 ~ 2.56654 in.	-

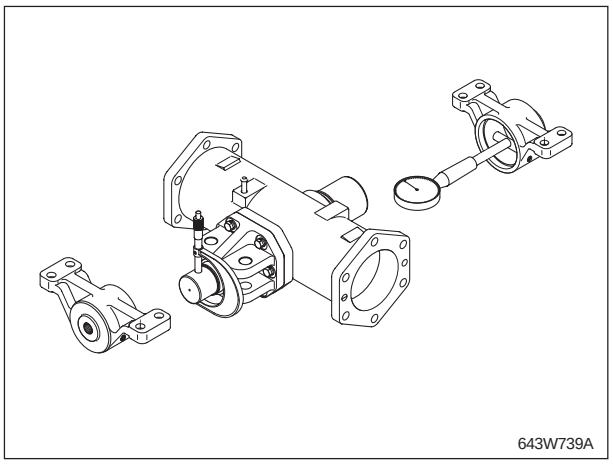
a. Press-fitting Bushing

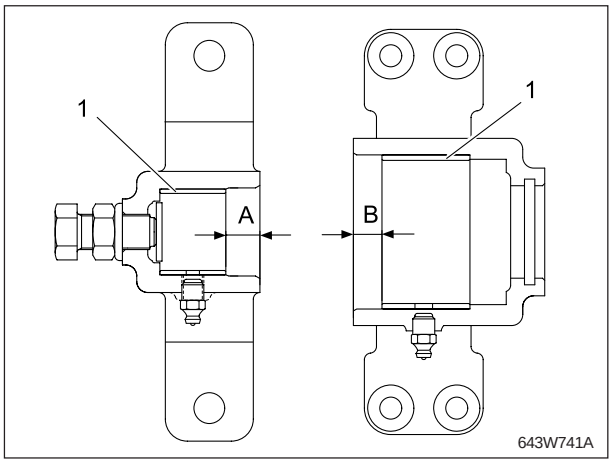
- When press-fitting a new bushing, observe the dimension described in the figure.

Item	Factory spec.	Allowable limit
Press-fit depth of bushing (A)	15.5 mm 0.61 in.	-
Press-fit depth of bushing (B)	13 mm 0.51 in.	-

NOTE:

- *After replacing the bushing, be sure to adjust the front axle rocking force. (see page 7-9)*





(1) Bushing