#### Disassembly and Assembly D4B TRACTOR AND 935B TRACK-TYPE LOADER POWER TRAIN

Media Number -SENR3547-00 Publicat

Publication Date -01/03/1987

Date Updated -15/02/2017

SENR35470007

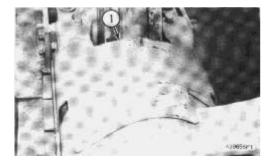
# **Front Idlers**

SMCS - 4159-010; 4159-015; 4159-016

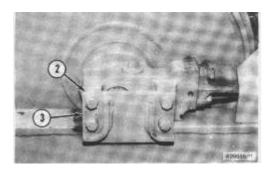
# **Remove And Install Front Idlers**

Start By:

a. separation of tracks

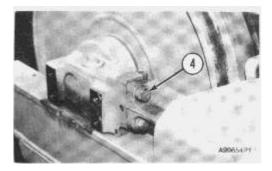


**1.** Remove cover (1) from the track roller frame.

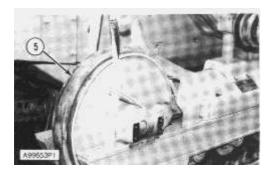


**NOTE:** Put identification on shims for correct installation.

**2.** Remove plates (3) and shims (2) from each side of the idler.



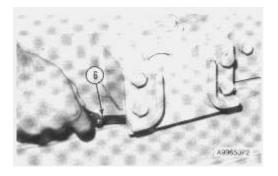
**3.** Remove four bolts (4) that hold the idler to the yoke assembly.



**4.** Fasten two nylon straps as shown to the idler. Fasten a hoist and slide idler (5) forward and remove idler (5) from the track roller frame. The weight is 81 kg (180 lb.).

NOTE: The following steps are for installation of the front idlers.

- 5. Fasten two nylon straps and a hoist to idler (5). Put the idler in position on the track roller frame.
- 6. Install four bolts (4) that hold the idler to the yoke assembly.
- 7. Install original shims (2) and plates (3) on each side of the idler.



**8.** Use feeler gauge (6) to check the clearance between plate (3) and the track roller frame. Remove or add shims (2) as needed to get a clearance of 1.5 mm (.06 in.) between the plates and track roller frame.

9. Install cover.

End By:

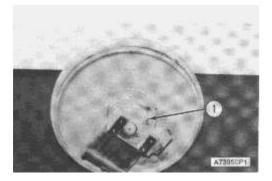
a. connection of tracks

# **Disassemble Front Idlers**

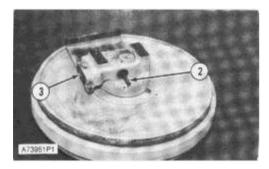
Tools Needed		
FT1316	Adapter Assembly	1

Start By:

**a.** remove front idler



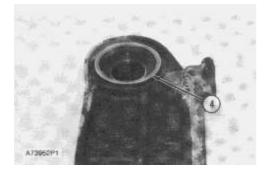
**1.** Remove plug and drain oil from idler. Install plug. Remove bolt and washer (1).



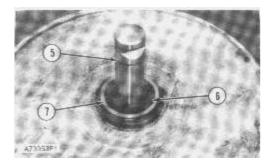
**2.** Install a 3/8 " - 16 NC forcing screw (2) in the pin. Push the pin from the bearing with a hammer.

**3.** Remove bearing (3) from the front idler.

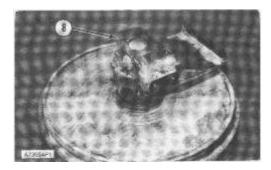
**NOTE:** Keep Duo-Cone seal group together for correct assembly.



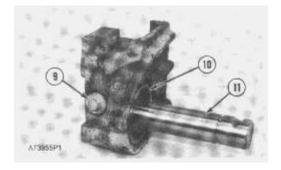
4. Remove outer half of Duo-Cone seal (4) from the bearing.



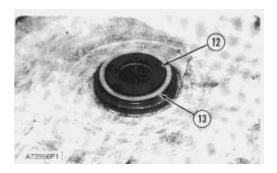
- 5. Remove O-ring seal (5) from the shaft.
- 6. Remove washer (6). Remove inner half of Duo-Cone seal (7) from the idler.



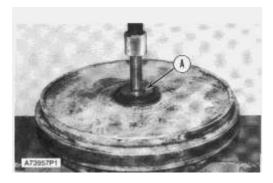
7. Turn the idler as shown and remove bearing (8) and the shaft.



- 8. Remove bolt and washer (9). Do Step 2 to remove the pin.
- 9. Remove shaft (11) from the bearing. Remove the O-ring seal from the shaft.
- 10. Remove outer half of Duo-Cone seal (10) from the bearing.



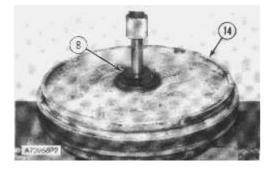
11. Remove washer (12). Remove inner half of Duo-Cone seal (13).



**12.** Remove the bushings from the idler with tooling (A) and a press.

# **Assemble Front Idlers**

Tools Needed		В	С
1P510	Driver Group	1	
5M2160	Duo-Cone Seal Installer		1



- 1. Check all parts for damage. If damaged, use new parts for replacement.
- 2. Make sure all parts are clean and free of dirt and foreign material.
- **3.** Install the bushings in idler (14) with tooling (B) and a press.



**NOTE:** The rubber seals and all surfaces that make contact with the seals must be clean and dry with no damage to the surface. After installation of the seals, put oil on the contact surfaces of the Duo-Cone seals.

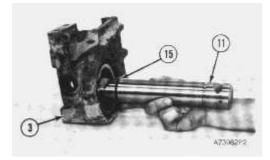
4. Install the inner half of the Duo-Cone seal with tool (C) in the idler.



5. Install washer (12) with groove toward the idler.



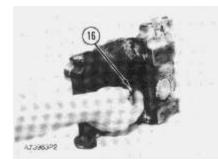
6. Install the outer half of the Duo-Cone seal with tool (C) in the bearing.



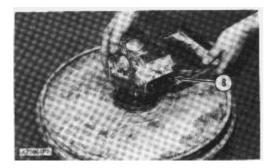
7. Install O-ring seal (15) on shaft (11).

**NOTE:** Install shaft as shown to prevent damage to O-ring seal. Make an alignment of pin hole in bearing and the notch in the shaft.

**8.** Install the shaft in bearing (3).



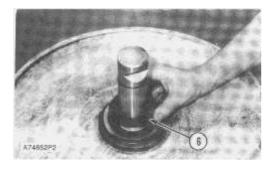
9. Install pin (16) in the bearing. Install the bolt and washer that hold the pin in position.



**10.** Install bearing assembly (8) in the idler.



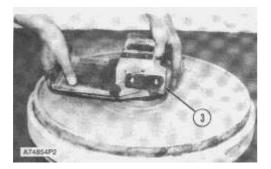
- **11.** Turn the idler as shown and install O-ring seal (5) on the shaft.
- **12.** Install the inner half of the Duo-Cone seal with tool (C) in the idler.



**13.** Install washer (6) with the groove toward the idler.

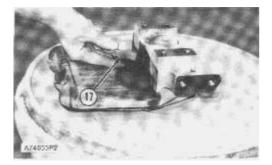


14. Install the outer half of the Duo-Cone seal in other bearing (3) with tool (C).

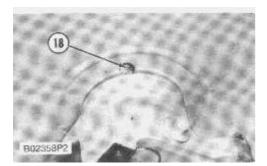


**15.** Put bearing (3) in position over the shaft.

**NOTE:** The pin hole in the bearing must be in alignment with the notch in the shaft.



16. Install pin (17) in the bearing. Install the washer and bolt that hold the pin in position in the bearing. Tighten the bolt to a torque of 54 N·m (40 lb.ft.). Hit pin (17) with a hammer and tighten the bolt again to a torque of  $70 \pm 14$  N·m ( $50 \pm 10$  lb.ft.).



17. Remove plug (18) and put 570 cc (1.2 pint) of clean SAE 30 oil in the idler. Install plug (12).

End By:

a. install front idlers

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SENR35470008

# Hydraulic Track Adjuster Seals

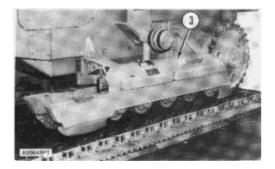
SMCS - 4157-010

# **Remove And Install Hydraulic Track Adjuster Seals**

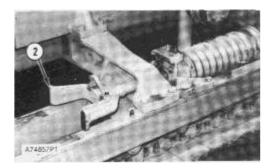
		Tools Needed	 A
1P510	Driver Group		1

Start By:

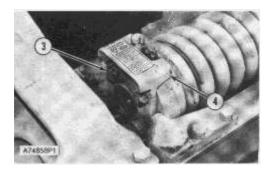
a. remove front idlers



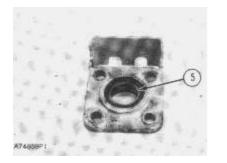
**1.** Remove track roller frame guards (1).



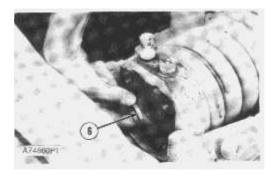
2. Remove yoke assembly (2).



3. Remove four bolts and lockwashers (3). Remove head assembly (4).



**4.** Remove seal (5) from the head.



**5.** Remove ring (6) and the seal from the cylinder assembly.

**NOTE:** The following steps are for installation of hydraulic track adjuster seals.

- 6. Install the seal with the lip toward the inside of the spring.
- 7. Install ring (6).
- 8. Install seal (5) in the head with tooling (A). The lip of the seal must be toward the front idler.

**NOTE:** Put a small amount of the lubricant to be sealed on lips of seals before and after installation.

9. Put head (4) in position and install the four lockwashers and bolts that hold it in position.

**10.** Install yoke assembly (2).

**11.** Install the track roller frame guards.

End By:

#### **a.** install front idlers

### Disassembly and Assembly D4B TRACTOR AND 935B TRACK-TYPE LOADER POWER TRAIN

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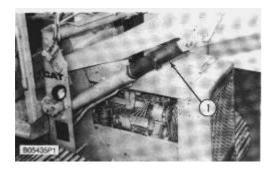
SENR35470009

# **Recoil Springs**

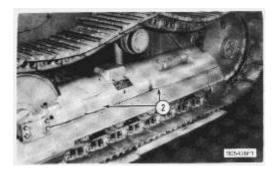
SMCS - 4158-010

# **Remove And Install Recoil Springs**

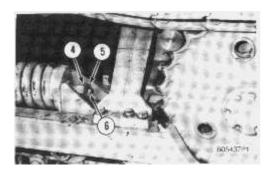
NOTE: This operation was done on the 935B.



**1.** Lift the bucket and install support bracket (1). See the topic, Install And Remove Support Bracket (935B).



2. Remove recoil mechanism guards (2).



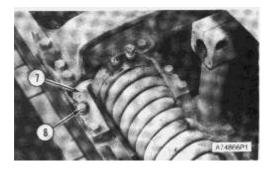
3. Put the recoil spring under compression as follows:

**a.** Put a metal slug (3) that is 76.2 mm (3 in.) in diameter and 63.5 mm (2.5 in.) long in the sprocket segment as shown. Start the machine and move it to the rear slowly. Make sure when the slug makes contact with the track, that it also makes contact with a bushing as shown.

**b.** As the machine is moved to the rear with the slug in position, the recoil spring will be put under compression.

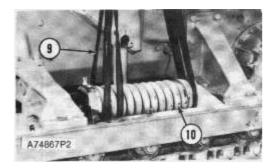
**c.** Move the machine until the front pilot of the recoil spring assembly is approximately 3.2 mm (.125 in.) away from the stops that are fastened to the track roller frame.

**d.** Remove bolt (6) and washer (5). Tighten nut (4) by hand to hold the recoil spring in a shorter position. Move the machine forward slowly and remove the slug (3) from the sprocket.



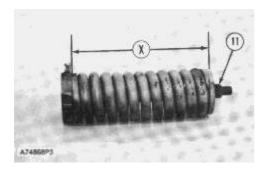
4. Remove the hydraulic track adjuster seals. See the topic, Remove Track Adjuster Seals.

5. Remove four bolts and lockwashers (8). Remove two stops (7).



**6.** Fasten two nylon straps (9) and a hoist to the recoil spring. Remove recoil spring (10). Weight is 45 kg (100 lb.).

**NOTE:** The following steps are for installation of recoil springs.



# 🔒 WARNING

To prevent personal injury, make sure the press is equipped with guards to hold the spring assembly in position while it is under compression.

7. If a replacement of recoil spring is to be made, put the new spring in position and put the spring under compression until the distance (X) is 47.6 cm (18.75 in.). Tighten nut (11) to hold the spring and retainers.

8. Fasten two nylon straps (9) and a hoist to recoil spring (10). Weight is 45 kg (100 lb.).

9. Put the recoil spring in position in the track roller frame. Remove the hoist and the straps.

**10.** Put two stops (7) in position and install the four lockwashers and bolts that hold the stops in position.

11. Install the hydraulic track adjuster seals. See the topic, Install Track Adjuster Seals.

NOTE: Do not make adjustment to the track at this time.

**12.** Put a metal slug (3), that is 76.2 mm (3 in.) in diameter and 63.5 mm (2.5 in.) long, in the sprocket segment as shown. Start the machine and move it to the rear slowly. Make sure the slug makes contact with a bushing as shown.

13. Move the track backward until the pressure on nut (4) is released.

14. Loosen nut (4) until it is 1.5 mm (.06 in.) beyond end of the stud.

- **15.** Install washer (5) and bolt (6).
- 16. Move the track forward and remove the slug.
- 17. Make an adjustment to the track. See the topic, Track Adjustment.
- **18.** Install recoil mechanism guards (2).
- 19. Remove the support bracket. See the topic Install And Remove Support Bracket (935B).

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SENR35470010

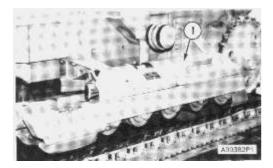
### **Track Roller Frames**

**SMCS -** 4151-010

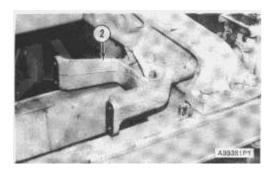
# **Remove And Install Track Roller Frames**

Start By:

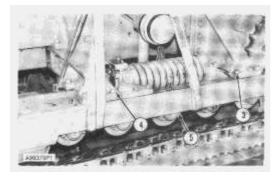
a. remove front idlers



**1.** Remove recoil spring guard (1) from the track roller frame.



**2.** Remove yoke assembly (2) from the track roller frame.



**3.** Fasten two straps and a hoist to the track roller frame.

**4.** Remove ten bolts (3) and (4) that hold the track roller frame in place. Remove track roller frame (5). The weight is 320 kg (700 lb.).

**NOTE:** The following steps are for the installation of track roller frames.

**5.** Fasten two straps and a hoist to track roller frame (5). Put the track roller frame in position on the machine.

**6.** Install ten bolts (3) and (4) that hold the track roller frame in position. Tighten the bolts to a torque of  $360 \pm 47$  N·m ( $265 \pm 35$  lb.ft.).

7. Install yoke assembly (2).

**8.** Install recoil spring guard (1) on the track roller frame.

End By:

**a.** install front idlers

#### **Disassembly and Assembly** D4B TRACTOR AND 935B TRACK-TYPE LOADER POWER TRAIN

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SENR35470011

# **Sprockets**

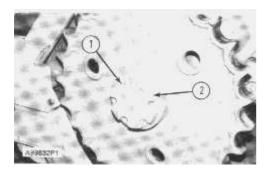
**SMCS -** 4164-012; 4164-011

### **Remove Sprockets**

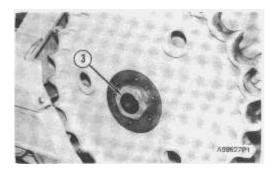
Tools Needed		A	В	
5P3100	Pump Group (or electric)	1	t	
9\$8900	Cylinder Group	1		
6F8343	Adapter	1		
3P2248	Adapter	1		
5F9882	Adapter	1	$\square$	
5F9888	Adapter	1		
5F9892	Pin	2		
5F9306	Arm	3		
5H9909	Pin	3		
6H1625	Adapter	3		
8F6220	Nut	3		
2B1730	Sccket		1	

Start By:

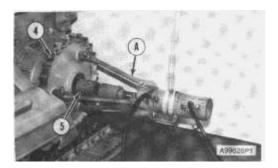
a. separation of tracks



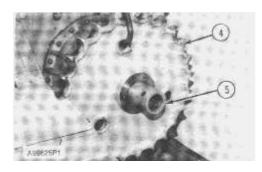
- 1. Remove the oil from the final drive housing.
- **2.** Remove bolts (1) and locknut (2).



**3.** Use tool (B) to remove nut (3) from the sprocket shaft.



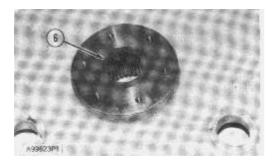
**4.** Install tooling (A) as shown. Make sure there is 6.35 mm (.250 in.) clearance between 6F8343 Adapter (5) and sprocket (4). Fasten a hoist to tooling (A). Loosen sprocket (4) from the sprocket shaft.



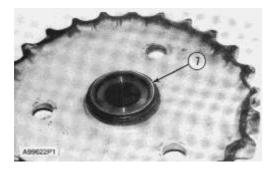


Do not remove 6F8343 Adapter (5) or the sprocket can fall when the tooling is removed.

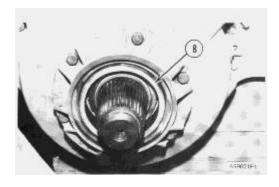
**5.** Remove tooling (A) except for 6F8343 Adapter (5). Fasten a hoist to the sprocket as shown. Remove 6F8343 Adapter (5) from the sprocket shaft. Remove sprocket (4). The weight is 52 kg (115 lb.).



**6.** Remove gasket (6) from the sprocket.



7. Remove outer half of Duo-Cone seal (7) from the sprocket.



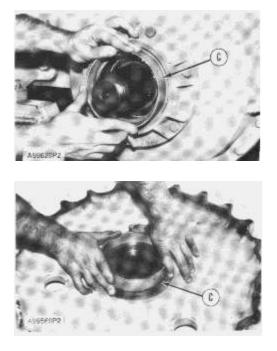
8. Remove inner half of Duo-Cone seal (8) from the retainer.

# **Install Sprockets**

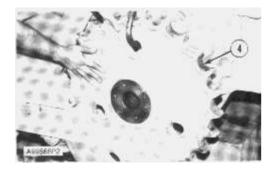
	Tools Needed	C	D	E	F
554275	Duo-Cone Seal Installer	1			
5P3100	Pump Group (or electric)		1		
9\$8900	Cylinder Group		1		
6F8343	Adapter		1		
5F9892	Pin		1		
5F9888	Adapter		1		
7F6068	Sleeve		1		
6F6922	Depth Gauge			1	
2B1730	Socket				1

**NOTE:** The rubber seals and all surfaces that make contact with the seals must be clean and dry with no damage to the surface. After installation of the seals, put oil on the contact surfaces of the Duo-Cone seals.

**1.** Install the inner half of the Duo-Cone seal in the retainer with tool (C).



2. Install the outer half of the Duo-Cone seal in the sprocket with tool (C).



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