

Product: TRACK LOADER  
Model: 931 TRACK LOADER 78U  
Configuration: 931 TRAXCAVATOR 78U00001-03913 (MACHINE)

## Disassembly and Assembly D3 & 931 BACKHOE

Media Number -SEN7922-00

Publication Date -01/09/1979

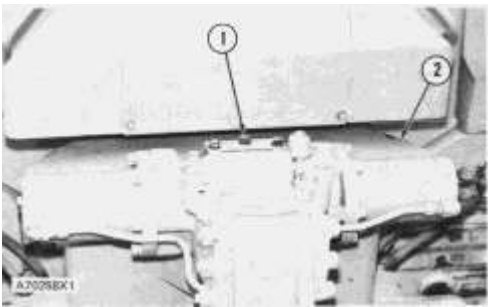
Date Updated -12/10/2001

### Swing Actuator

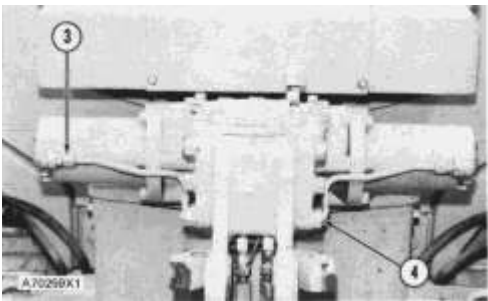
SMCS - 5459-12; 5459-15; 5459-16; 5459-11

### Remove Swing Actuator

**NOTE:** Boom and boom cylinder were removed for better photo illustration.



1. Remove three bolts and lockwashers (1).
2. Remove two bolts and lockwashers (not shown). Remove guard assembly (2).

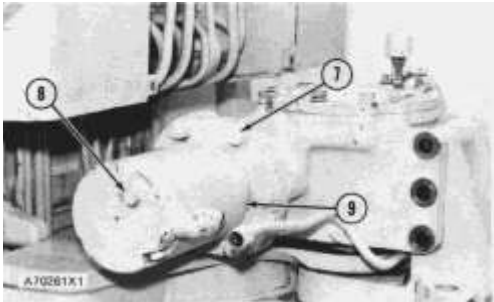


3. Disconnect two tube assemblies (3) from the cylinder assemblies.
4. Remove three nuts, lockwashers, washers and bolts (4).

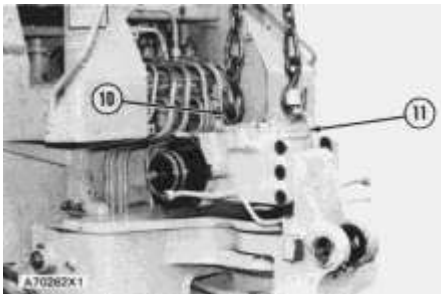


5. Remove six bolts and lockwashers (5). Remove guard assembly (6).

**NOTE:** Remove the plugs to prevent a vacuum.



6. Remove two plugs (8). Remove ten bolts and lockwashers (7). Remove two cylinder assemblies (9).

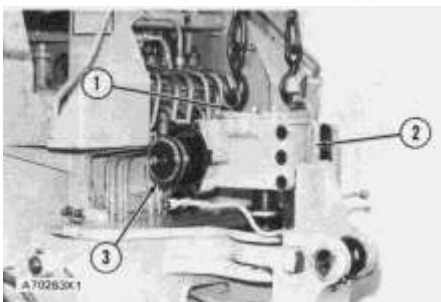


7. Remove two bolts and lockwashers. Install two 1/2"-13 NC forged eyebolts (10).

8. Fasten a hoist to the swing actuator. Remove swing actuator (11). Weight is 185 lb. (84 kg).

## Install Swing Actuator

**NOTE:** Boom and boom cylinder were removed for better photo illustration.

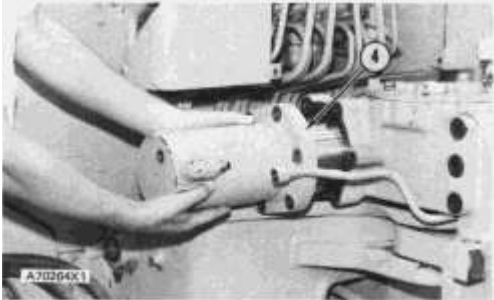


1. Remove two cover bolts and washers. Install two 1/2"-13 NC forged eyebolts (1).

2. Fasten a hoist to the swing actuator. Weight is 185 lb. (84 kg).

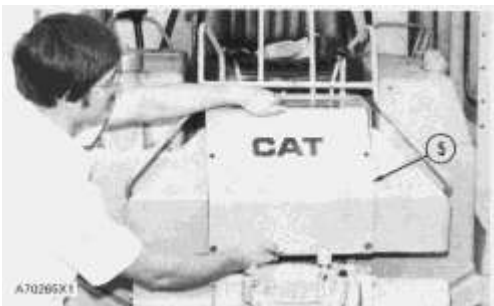
**NOTE:** If rack assembly (3) was moved after removal of swing actuator, see Specifications for correct alignment before installation.

3. Put swing actuator (2) in position. Remove the hoist and the eyebolts. Install the two cover bolts. Tighten the bolts to a torque of  $100 \pm 11$  lb.ft. ( $135 \pm 15$  N·m).

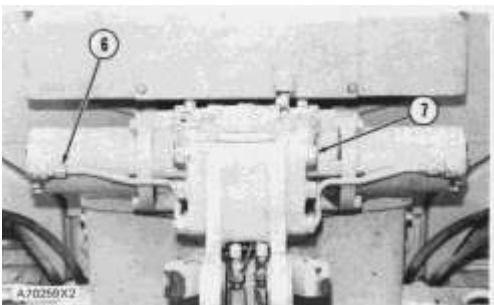


4. Put two cylinder assemblies (4) in position on the swing actuator.

5. Install the ten lockwashers and bolts that hold the cylinder assemblies in position. Tighten the bolts to a torque of  $175 \pm 20$  lb.ft. ( $240 \pm 25$  N·m). Install the plugs in the cylinder assemblies.



6. Put guard assembly (5) in position. Install the six lockwashers and bolts that hold the guard in position.



7. Connect two tube assemblies (6). Install three bolts, lockwashers, washers and nuts (7). Tighten the bolts to a torque of 400 lb.ft. (540 N·m).



8. Put guard assembly (8) in position. Install the three bolts and washers on top. Tighten the bolts to a torque of  $100 \pm 11$  lb.ft. ( $135 \pm 15$  N·m).

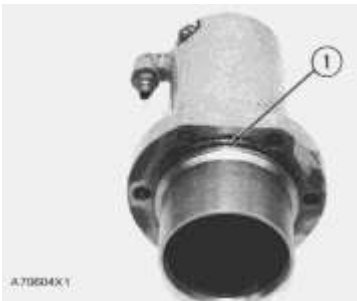
9. Install the two lockwashers and bolts beneath the cover. Tighten the bolts to a torque of  $175 \pm 20$  lb.ft. ( $240 \pm 25$  N·m).

10. Check the level of the hydraulic tank before operation. See LUBRICATION AND MAINTENANCE GUIDE for correct level.

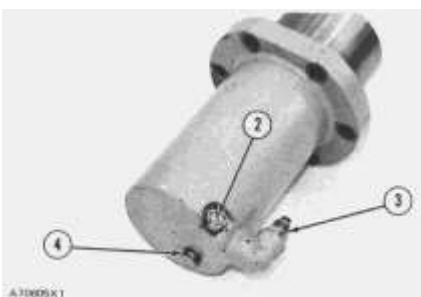
## Disassemble Swing Actuator

start by:

a) remove swing actuator



1. Remove O-ring seal (1) from the cylinder assembly.

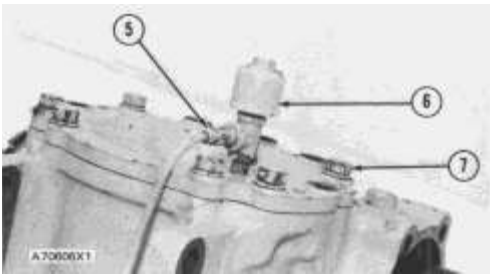


2. Remove fitting (3). Remove the O-ring seal from the fitting.

3. Remove plug (4). Remove the O-ring from the plug.

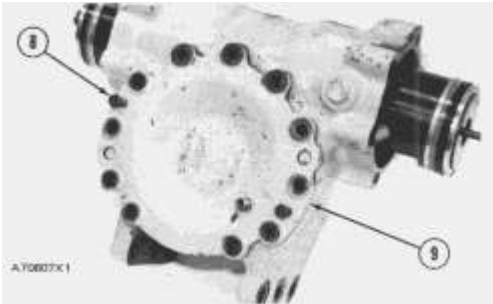
4. Remove relief valve (2).

5. Use Steps 1 through 4 for the other cylinder assembly.



6. Remove tube assembly (5). Remove breather (6).

7. Remove six bolts and lockwashers (7).



8. Install two 3/8"-16 NC forcing bolts (8) and tighten the forcing bolts evenly. Remove cover (9) from the housing.



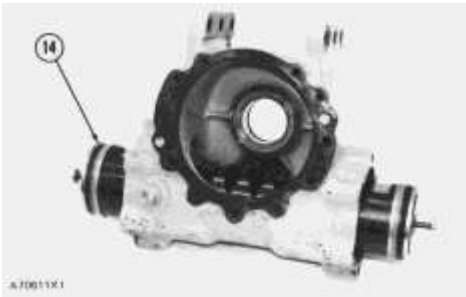
9. Remove O-ring seal (11) from the cover. Remove bearing (10) if necessary.



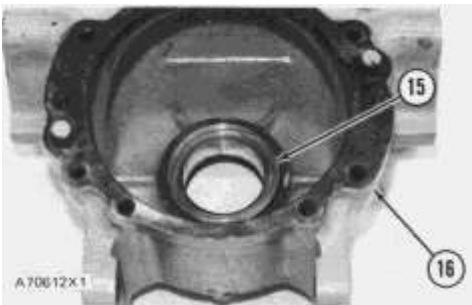
10. Remove shims (12). Put identification on shims for correct installation.



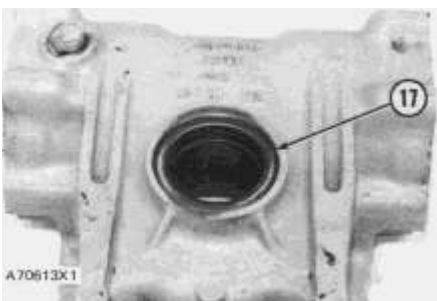
**11.** Remove pinion (13).



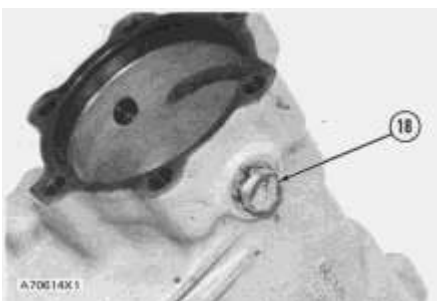
**12.** Use a hoist or two persons. Remove rack assembly (14). Weight is 80 lb. (36 kg).



**13.** Remove bearing (15) if necessary from housing (16).



**14.** Turn the housing as shown. Remove seal (17).



15. Remove plugs (18) from each side of the housing. Remove the O-ring seals from the plugs.

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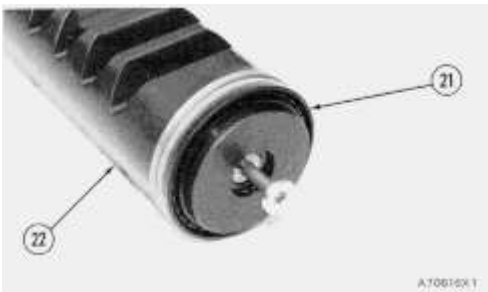
### NOTICE

**Do not install pin in holder beyond thickness of holder or seal can be damaged.**

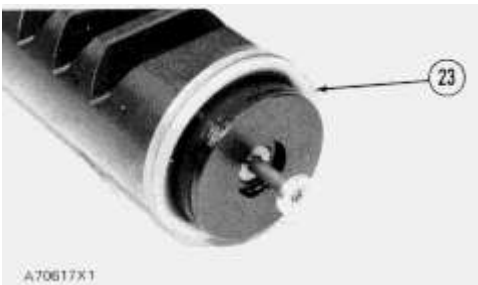
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16. Turn holder (20) counterclockwise to remove rod (19). Remove the holder.



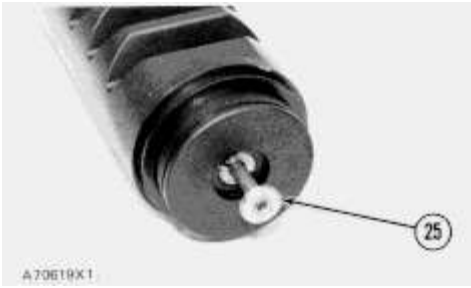
17. Remove seal (21) from rack (22).



18. Remove teflon seal (23).



19. Remove ring (24).



20. Remove cushion valve assembly (25).

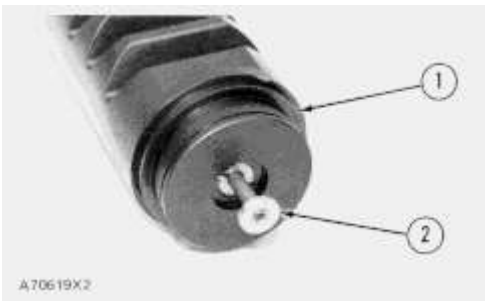
21. Use Steps 16 through 20 to disassemble the other end of the rack.

## Install Swing Actuator

	<b>Tools Needed</b>	<b>A</b>
<b>1P520</b>	<b>Driver Group</b>	<b>1</b>

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 cushion valve assembly (2) in rack (1).



4. Install ring (3).





5. Install teflon seal (4).



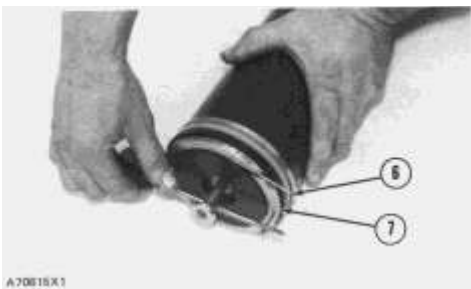
6. Install seal (5).

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### NOTICE

**Do not install pin in holder beyond thickness of holder or seal (5) can be damaged.**

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7. Install holder (7). Install bent end of the rod in the rack and turn holder clockwise to install rod (6).

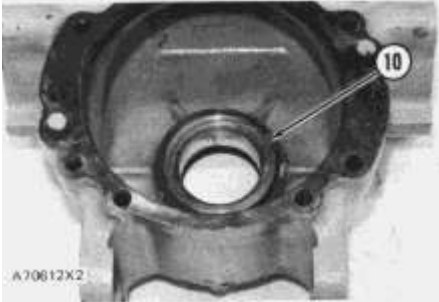
8. Use Steps 3 through 7 to assemble the other end of the rack.



9. Install the O-ring seals on the plugs. Install two plugs (9) in housing (8).

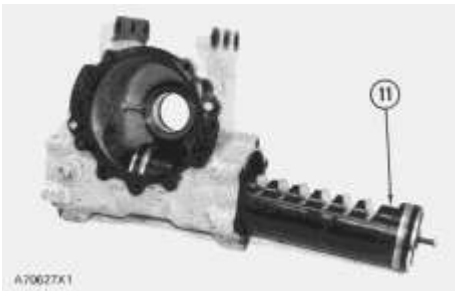


10. Install the seal in the housing with tooling (A).

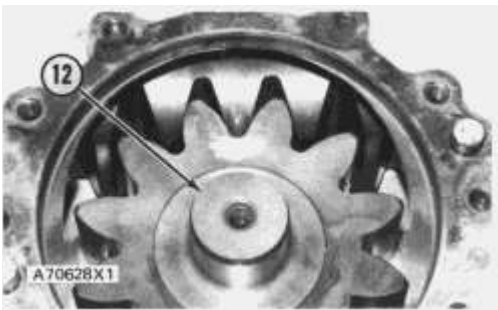


11. If the bearing was removed, put a support under the housing and install bearing (10) with a press.

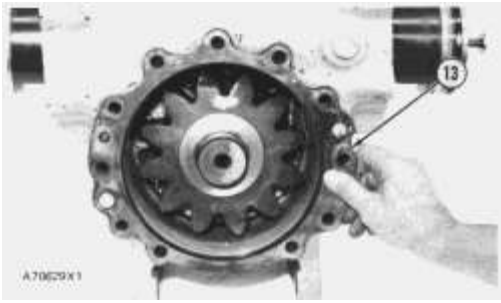
**NOTE:** Put the rack assembly in position so timing mark on tooth is toward cover.



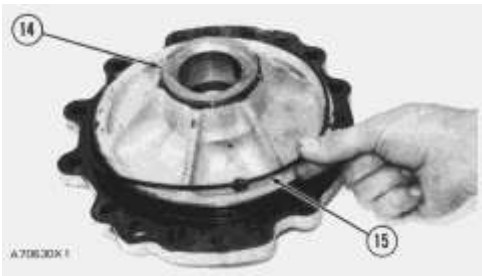
12. Use a hoist or two persons. Install rack assembly (11) in the housing. Weight is 80 lb. (36 kg).



13. Put pinion (12) in the housing with the timing mark on the pinion in alignment with timing mark on the rack. See Specifications.

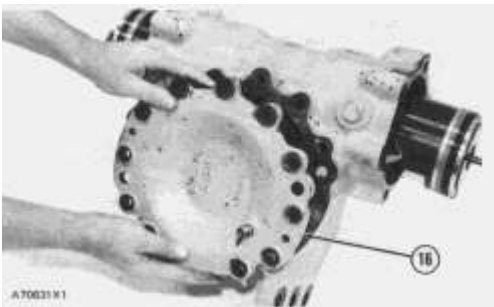


14. Install shims (13) on the housing. See Specifications for correct amount of shims.

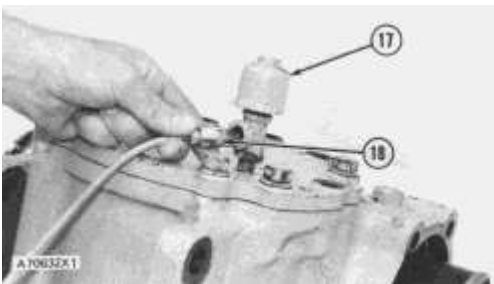


15. If the bearing was removed, put a support under the cover and install bearing (14) with a press.

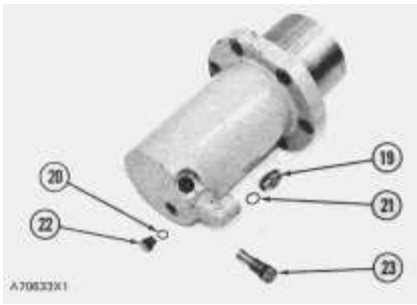
16. Install O-ring seal (15) in the cover.



16. Put cover (16) in position on the housing. Install six lockwashers and bolts.



17. Install breather (17). Install tube assembly (18).



**18.** Install relief valve (23) on the cylinder.

**19.** Install O-ring seal (20) on the plug. Install plug (22).

**20.** Install O-ring seal (21) on the fitting. Install fitting (19).



**21.** Install O-ring seal (24) on the cylinder.

**22.** Use Steps 18 through 21 to assemble the other cylinder.

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Publication Date -01/09/1979

Date Updated -12/10/2001

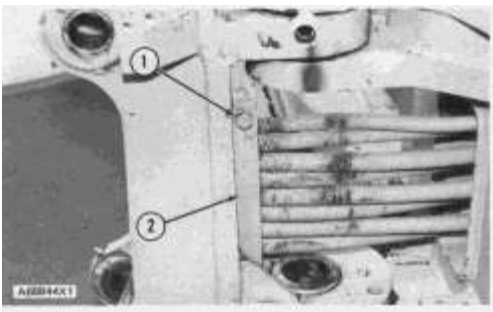
### Swing Frame

SMCS - 4151-11; 4151-12; 4151-17

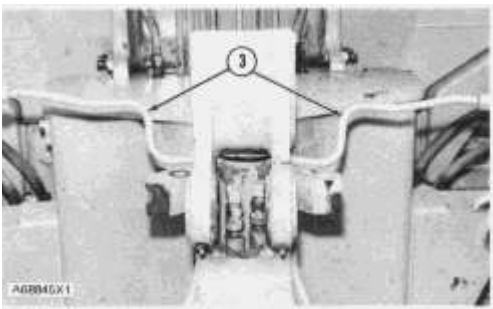
### Remove Swing Frame

start by:

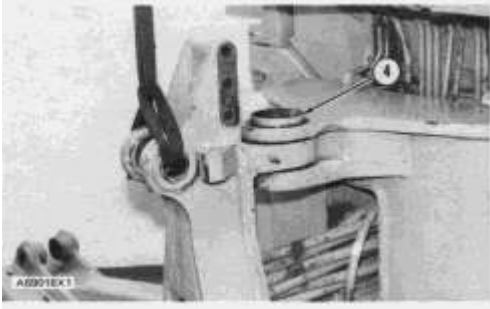
- a) remove boom and boom cylinder
- b) remove swing actuator



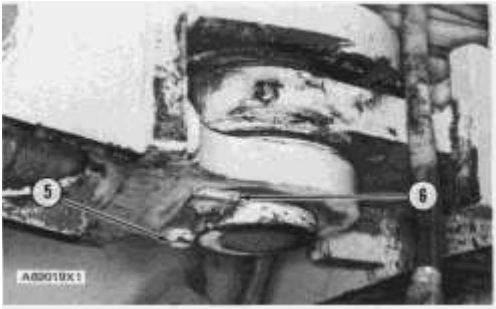
1. Remove five bolts and lockwashers (1). Remove bracket (2).



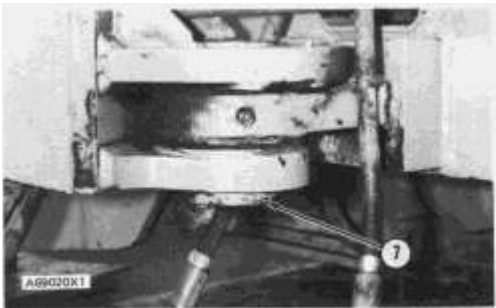
2. Remove two hydraulic tube assemblies (3).



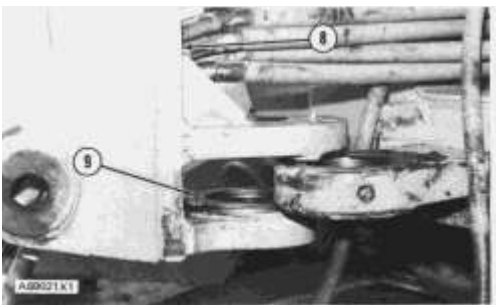
3. Fasten a hoist to the swing frame. Remove pin (4).



4. Remove two bolts and lockwashers (5). Remove plate (6).



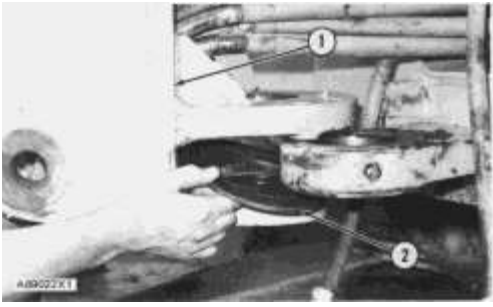
5. Remove pin (7).



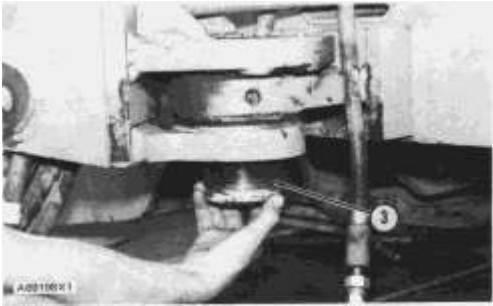
6. Remove swing frame (8). Weight is 210 lb. (94.5 kg). Remove two washers (9).

## **Install Swing Frame**

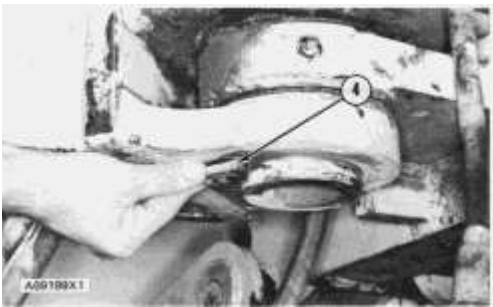
1. Check all parts for damage. If damaged, use new parts for replacement.
2. Make sure all parts are clean and free of dirt and foreign material.



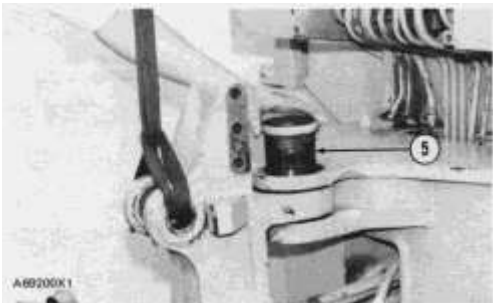
3. Fasten a hoist to swing frame (1). Weight is 210 lb. (94.5 kg). Put the swing frame in position and install two washers (2).



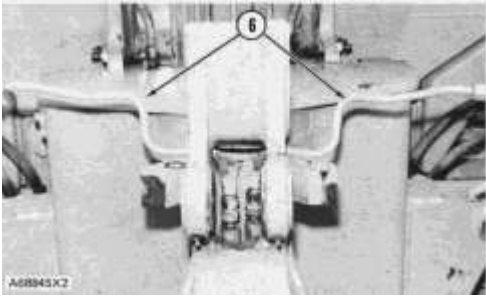
4. Install pin (3).



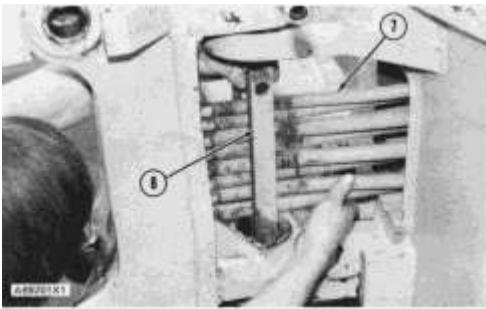
5. Put plate (4) in position and install the two lockwashers and bolts that hold it in position.



6. Install pin (5). Remove the hoist.



7. Install two tube assemblies (6).




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### NOTICE

**Hydraulic hoses (7) must have enough play to prevent damage when the swing frame moves.**

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8. Put bracket (8) in position and install the five lockwashers and bolts that hold it in position.

end by:

- a) install swing actuator
- b) install boom and boom cylinder

## Disassemble And Assemble Swing Frame

	Tools Needed	A	B
1P510	Driver Group	1	
1P520	Driver Group		1

start by:

- a) remove swing frame

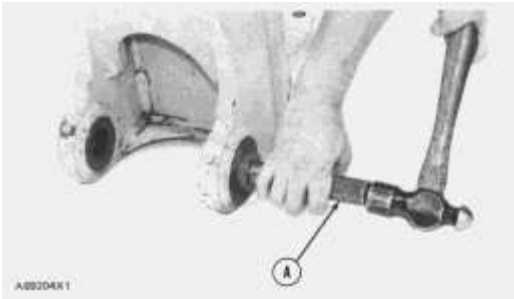
**NOTE:** Remove bearings only if necessary.

1. Remove the top pivot bearing from the swing frame.

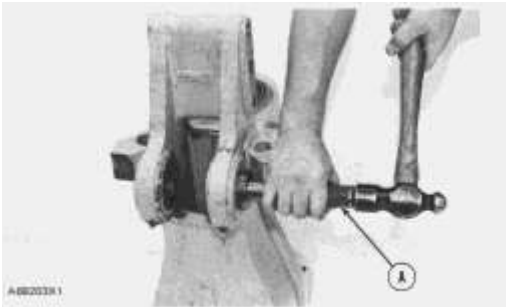


2. Remove the top hinge bearings from the swing frame.
3. Remove the bottom hinge bearings from the swing frame.
4. Use new parts for replacement.
5. Make sure all parts are clean and free of dirt and foreign material.

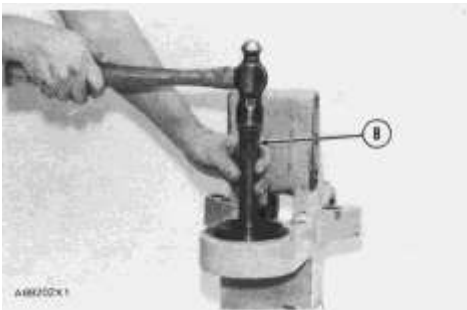
**NOTE:** Lower the temperature of the bearings to -40°F (-40°C) before installation.



6. Install bottom hinge bearings in the swing frame with tooling (A).



7. Install top hinge bearings in the swing frame with tooling (A).



8. Install top pivot bearings in the swing frame with tooling (B).

end by:

- a) install swing frame
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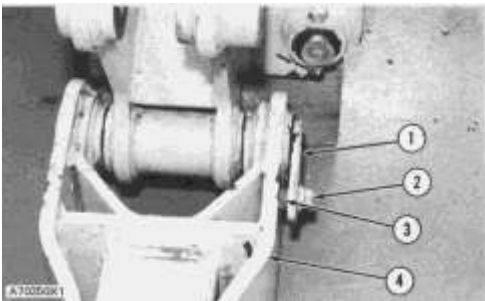
### Backhoe Stabilizers

SMCS - 6505-11; 6505-12

### Remove Backhoe Stabilizers

start by:

a) remove stabilizer cylinder



1. Remove bolt, lockwasher and washer (2). Remove pipe (3).
2. Fasten a hoist to the stabilizer. Remove pin (1). Remove backhoe stabilizer (4). Weight is 160 lb. (72 kg).

### Install Backhoe Stabilizers

1. Fasten a hoist to the backhoe stabilizer.



2. Put backhoe stabilizer (1) in position on the frame.

**3.** Install pin (2).

**4.** Install the pipe, washer, lockwasher and bolt that hold the pin in position.

end by:

**a)** install stabilizer cylinder

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## Disassembly and Assembly D3 & 931 BACKHOE

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Date Updated -12/10/2001

### Console

SMCS - 6505-11; 6505-12

### Remove Console

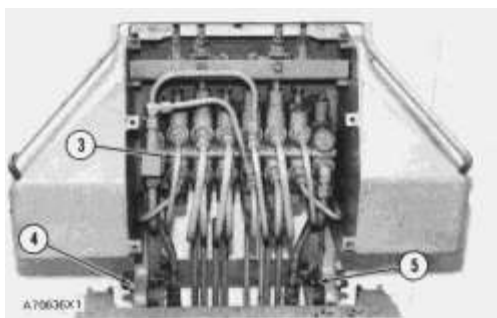
**NOTE:** Console can be removed with the backhoe on the machine, but it will be difficult.

1. Remove the backhoe from the machine. See Special Instructions Form SMHS6867.



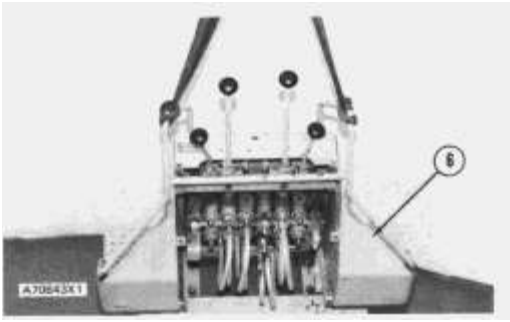
2. Remove six bolts and lockwashers (1). Remove cover (2). Disconnect the four hydraulic hoses to the stabilizer cylinders.

3. Put identification on the tube assemblies for correct assembly.

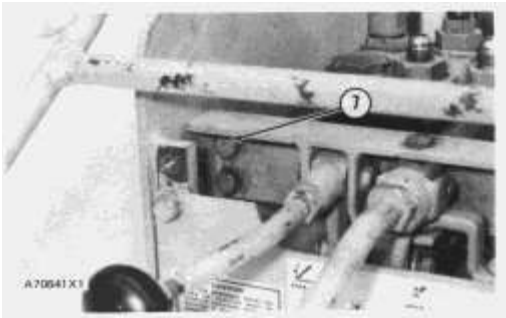


4. Disconnect all tube assemblies (3) from the control valve.

5. Remove four nuts (4). Remove the four tube assemblies to the stabilizer cylinders. Remove four bolts and lockwashers (5).



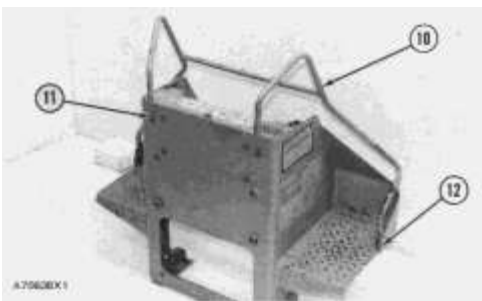
6. Fasten a hoist to the console. Remove console (6). Weight is 184 lb. (83 kg).



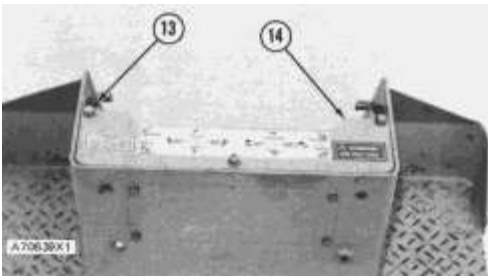
7. Remove four bolts and lockwashers (7).



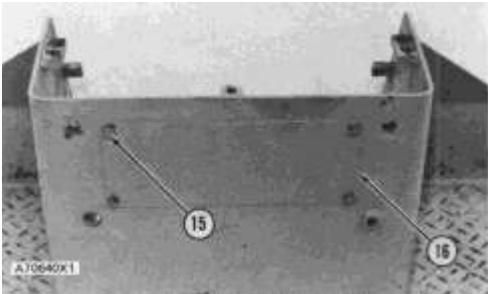
8. Remove four bolts and lockwashers (9). Remove control valve (8). Use two persons or a hoist. Weight is 106 lb. (47.7 kg).



9. Remove two bolts and lockwashers (11). Remove two nuts, lockwashers and screws (12). Remove grab iron (10).



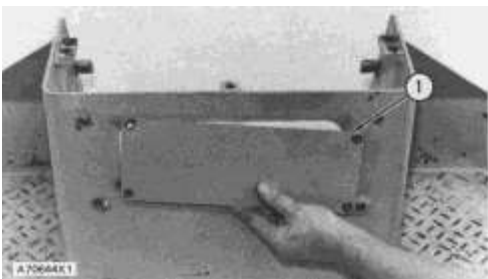
10. Remove three bolts and lockwashers (13). Remove cover (14).



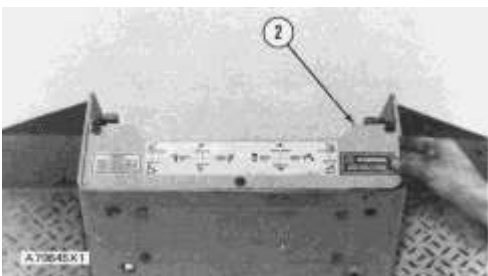
11. Remove four bolts and lockwashers (15). Remove cover (16).

## Install Console

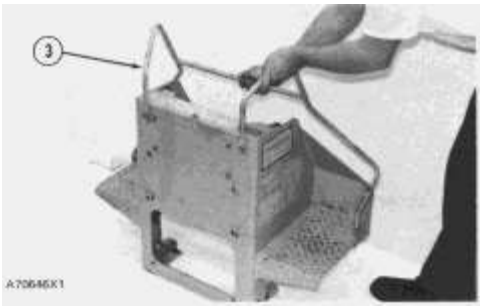
1. Check all parts for damage. If damaged, use new parts for replacement.



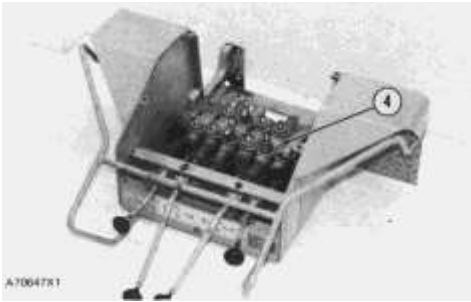
2. Put cover (1) in position. Install the four lockwashers and bolts that hold the cover in position.



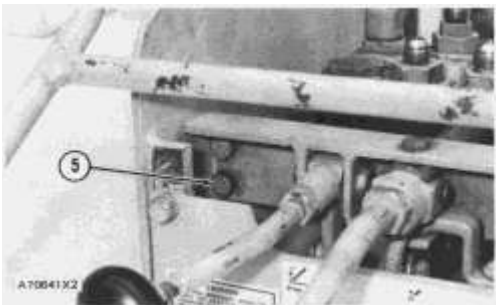
3. Put cover (2) in position. Install three lockwashers and bolts that hold the cover in position.



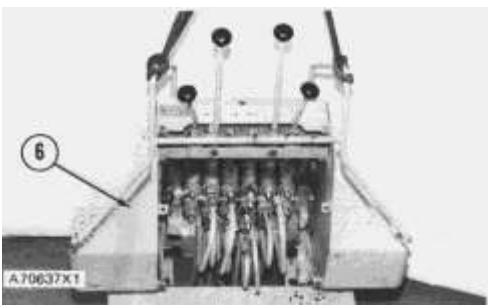
4. Put grab iron (3) in position. Install the two screws, lockwashers, nuts, also the two bolts and lockwashers that hold the grab iron in position.



5. Use two persons or a hoist. Weight is 106 lb. (47.7 kg). Put control valve (4) in position. Install four lockwashers and bolts that hold the control valve in position.

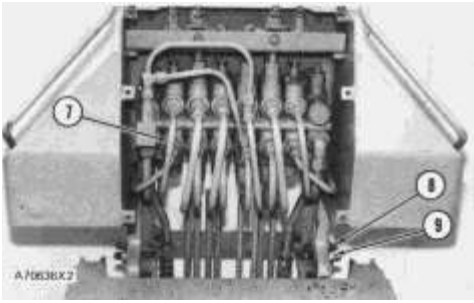


6. Install four lockwashers and bolts (5).



7. Fasten a hoist to the console. Weight is 184 lb. (83 kg). Put console (6) in position on the backhoe. Install the four lockwashers and bolts that hold the console in position.

**NOTE:** Connect tube assemblies as per identification.



**8.** Put four tube assemblies (8) in position and install nuts (9).

**9.** Connect all tube assemblies (7) to the control valve. Connect the four hydraulic hoses from the stabilizer cylinders.



**10.** Put cover (10) in position and install the six lockwashers and bolts that hold the cover in position.

**11.** Install the backhoe on the machine. See Special Instructions Form SMHS6867.

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