

Product: TRACK-TYPE TRACTOR

Model: D3 TRACK-TYPE TRACTOR 79U

Configuration: D3 TRACTOR 79U04709-UP (MACHINE) POWERED BY 3204 ENGINE

## Disassembly and Assembly D3 & 931 BACKHOE

Media Number -SEN7922-00

Publication Date -01/09/1979

Date Updated -12/10/2001

### Hydraulic Cylinders

SMCS - 5456; 5457; 5458; 5468-16; 5468-15

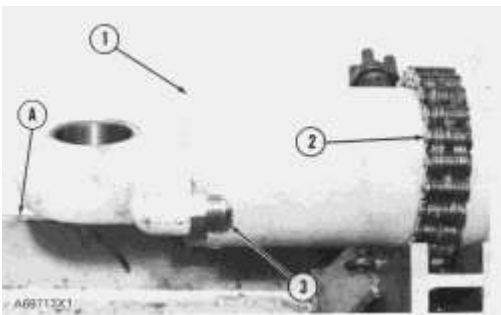
### Disassemble Hydraulic Cylinders

	Tools Needed	A	B	C	D
1P1784	Hydraulic Cylinder Repair Stand	1			
3P1534	Chain Wrench		1		
5P3100	Pump Group (or electric)			1	
1P850	Torque Multiplier				1
1P851	Spline Adapter				1
1P852	Male Adapter				1
5P3588	Adapter				1
	*See Page 62				1

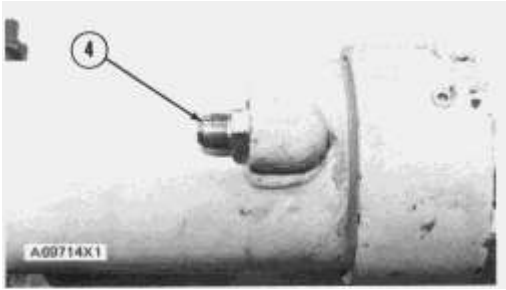
start by:

a) remove boom, bucket, stick or stabilizer cylinder

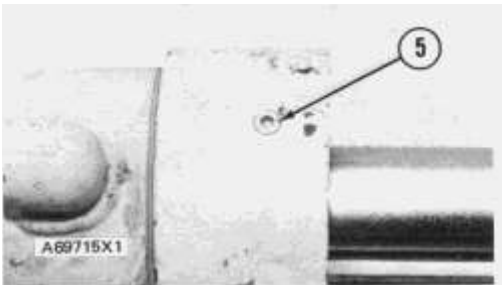
1. Fasten a hoist to the hydraulic cylinder.



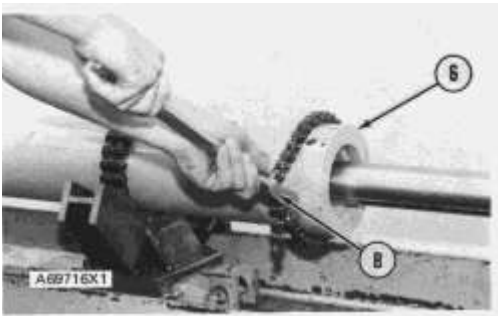
- Put hydraulic cylinder (1) in position on tooling (A) and fasten in position with chain clamps (2).
- Remove fitting (3) from the pivot end. Remove the O-ring seal from the fitting.



- Remove fitting (4) from the rod end of the cylinder. Remove the O-ring seal from the fitting.



- Remove screw (5).



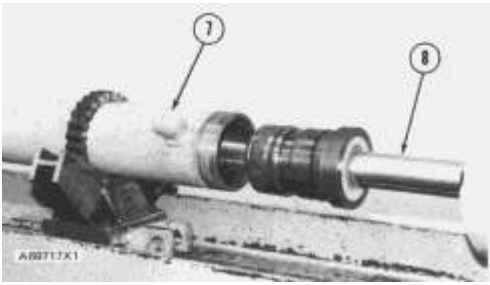
- Remove crown (6) with tool (B).

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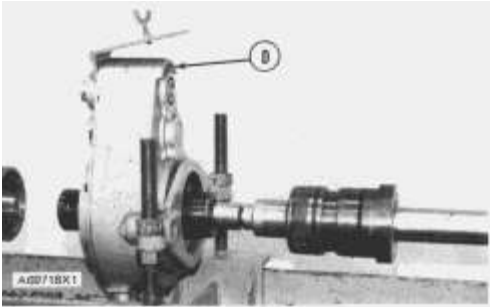
## NOTICE

**Put a support under the rod assembly when it is removed.**

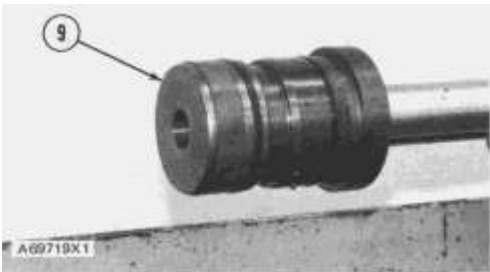
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7. Remove rod assembly (8) with tooling (A) and (C) from tube assembly (7).



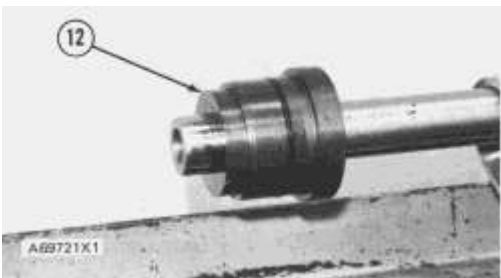
8. Remove the bolt and the washer from the rod assembly with tooling (D).



9. Remove piston (9).



10. Remove seal assembly (10) and wear ring (11) from the piston.



11. Remove head (12) from the rod.



12. Remove O-ring seal and back-up seal (13) from the head.



13. Remove three seals (14) from head.

14. Remove the bearing from the pivot end of the cylinder.

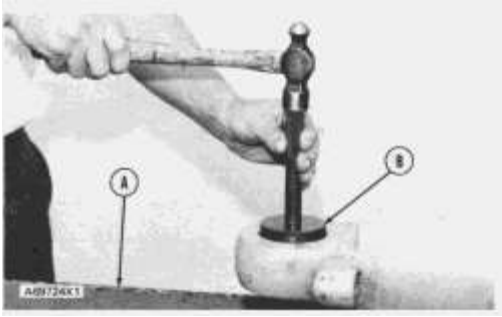
15. Remove the bearing from the rod end.

## Assemble Hydraulic Cylinders

Tools Needed		A	B	C	D	E	F
1P1784	Hydraulic Cylinder Repair Stand	1					
1P510	Driver Group		1				
4S9458	Teflon Seal Tool Group			1			
1P850	Torque Multiplier				1		
1P851	Spline Adapter				1		
1P852	Male Adapter				1		
5P3588	Adapter				1		
*See Page 62					1		
5P3100	Pump Group (or electric)					1	
3P1534	Chain Wrench						1

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

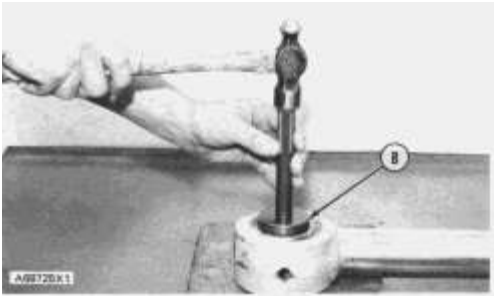
2. Make sure all parts are clean and free of dirt and foreign material.



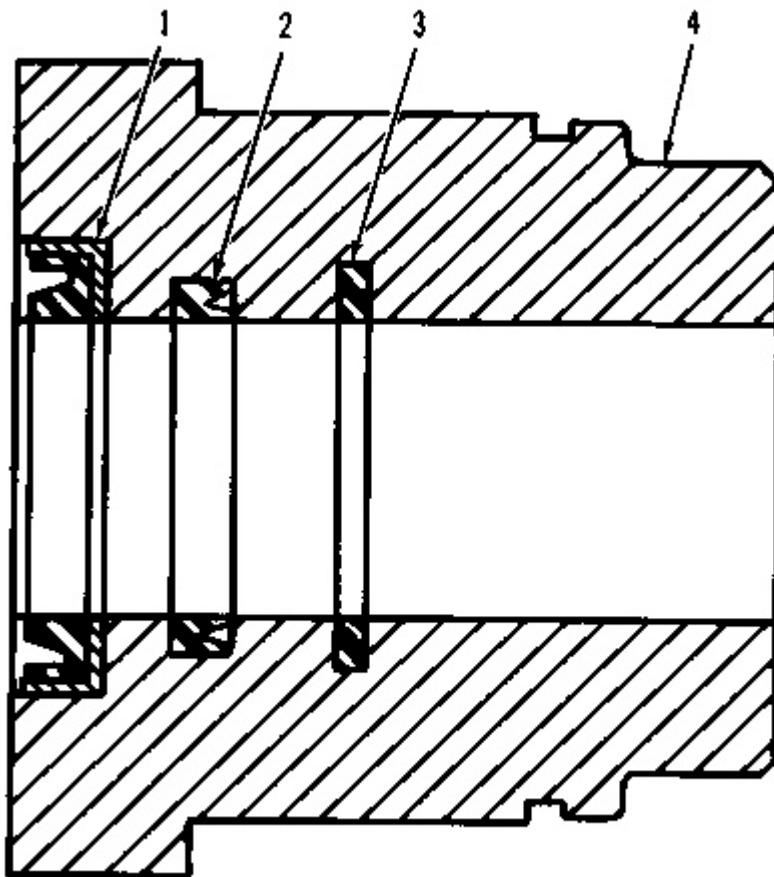
3. Fasten the tube assembly to tooling (A).

**NOTE:** Lower the temperature of the bearings to  $-40^{\circ}\text{F}$  ( $-40^{\circ}\text{C}$ ) before installation.

4. Install the bearing in the pivot end with tooling (B).



5. Install the bearing in the rod end with tooling (B).



A72348X1

**NOTE:** The groove of the U-cup seal (2) must be toward the piston.

6. Install seal (3) and U-cup seal (2) in head (4).

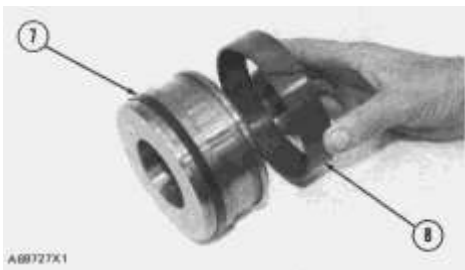
**NOTE:** The lip of the lip type seal must be away from the inside of the cylinder.

7. Install seal (1) in the head with tooling (B).

**NOTE:** The curve of the back-up ring must be next to the O-ring seal.



8. Install back-up ring (5) and O-ring seal (6) on the head.



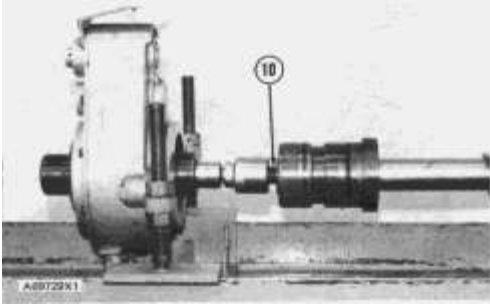
**NOTE:** See SPECIAL INSTRUCTIONS Form FM055100 for installation of seal assembly (7).

9. Install seal assembly (7) with tooling (C) and wear ring (8) on the piston.

**NOTE:** Put lubricant to be sealed on the lip of the lip type seal in the head.

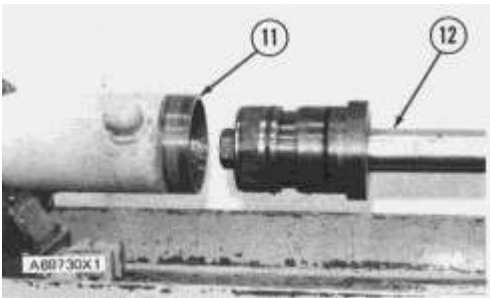


10. Put head (4) and piston (9) in position on the rod.

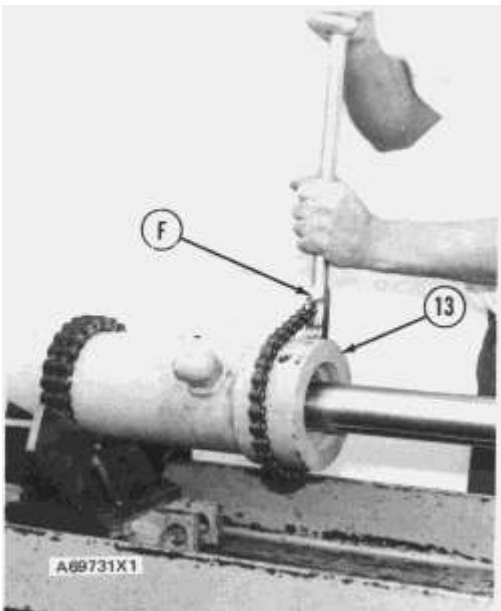


**11.** Put lubricant on the threads of the bolt. Install the washer and bolt (10) with tool (D). Tighten the bolt to the correct torque shown on Page 62.

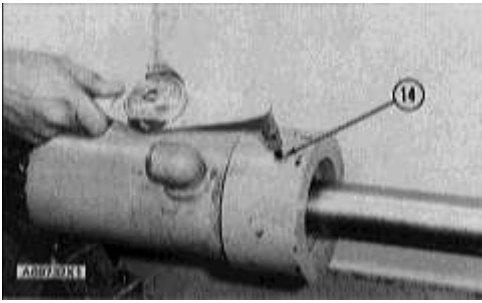
**NOTE:** Put clean grease on the outside diameter of the head and the inside diameter of the crown.



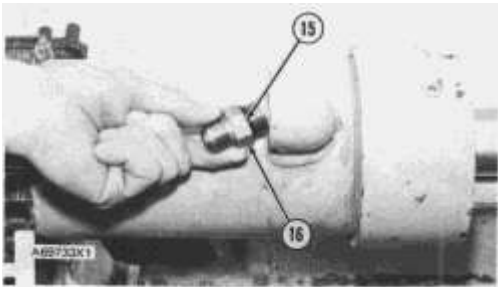
**12.** Install rod assembly (12) in tube assembly (11) with tooling (C) and (E).



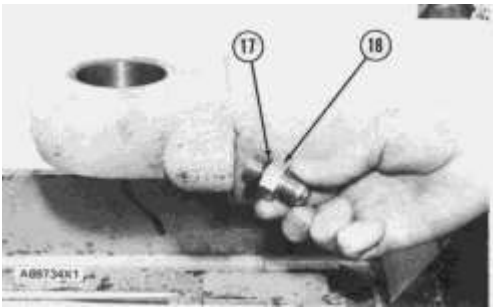
**13.** Install crown (13) with tool (F) and with the rod assembly fully extended. Tighten the crown to a torque of 350 to 550 lb.ft. (470 to 750 N·m).



14. Install screw (14) and tighten to a torque of  $25 \pm 3$  lb. ft. ( $35 \pm 4$  N·m).



15. Install O-ring seal (15) on the fitting. Install fitting (16).



16. Install O-ring seal (17) on the other fitting. Install fitting (18).

end by:

a) install stabilizer, stick, bucket or boom cylinder

APPLICATION	BOLT TORQUE	*SOCKET
BOOM CYLINDER	$1250 \pm 125$ lb.ft ( $1690 \pm 170$ N·m)	8H8541
BUCKET CYLINDER	$800 \pm 80$ lb.ft. ( $1090 \pm 110$ N·m)	8H8537
STABILIZER CYLINDERS		
STICK CYLINDERS		



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Publication Date -01/09/1979

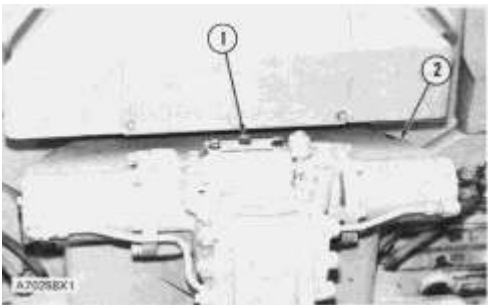
Date Updated -12/10/2001

### Swing Actuator

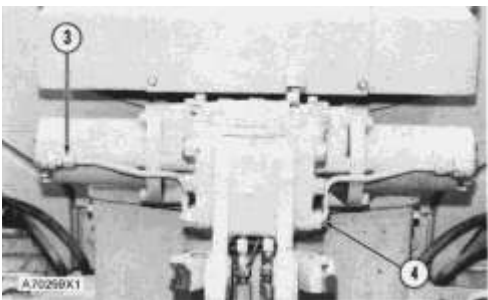
SMCS - 5459-15; 5459-16; 5459-11; 5459-12

### 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).

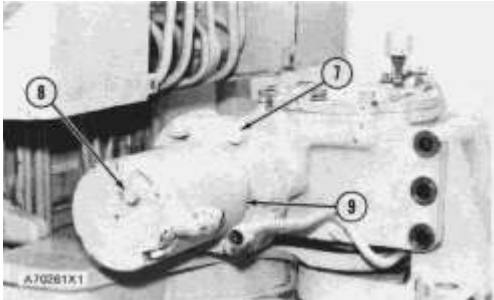


3. Disconnect two tube assemblies (3) from the cylinder assemblies.
4. Remove three nuts, lockwashers, washers and bolts (4).

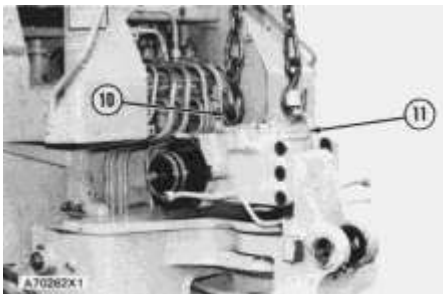


5. Remove six bolts and lockwashers (5). Remove guard assembly (6).

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



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

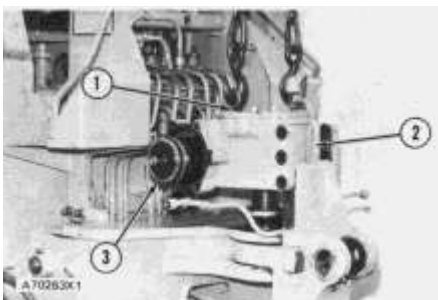


7. Remove two bolts and lockwashers. Install two 1/2"-13 NC forged eyebolts (10).

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.

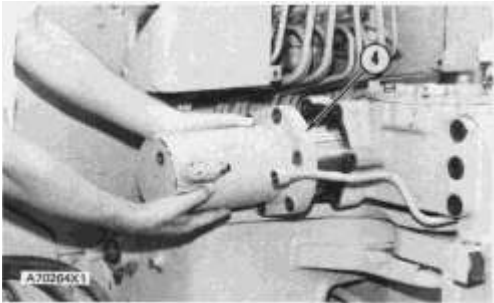


1. Remove two cover bolts and washers. Install two 1/2"-13 NC forged eyebolts (1).

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).

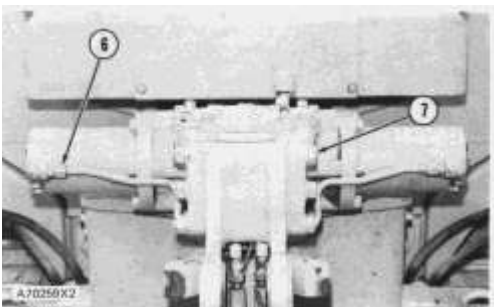


4. Put two cylinder assemblies (4) in position on the swing actuator.

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).

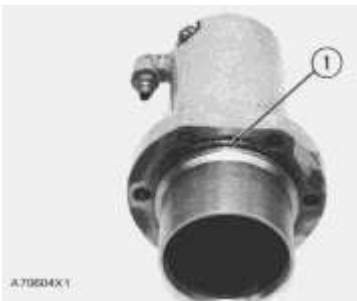
**9.** Install the two lockwashers and bolts beneath the cover. Tighten the bolts to a torque of  $175 \pm 20$  lb.ft. ( $240 \pm 25$  N·m).

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

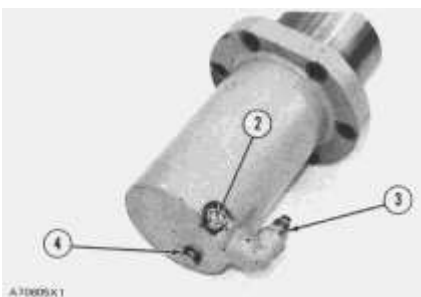
## Disassemble Swing Actuator

start by:

**a)** remove swing actuator



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

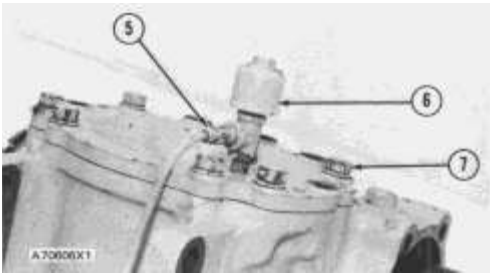


**2.** Remove fitting (3). Remove the O-ring seal from the fitting.

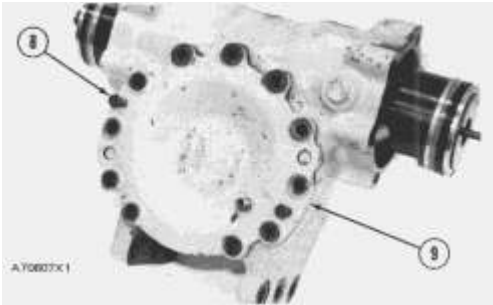
**3.** Remove plug (4). Remove the O-ring from the plug.

**4.** Remove relief valve (2).

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



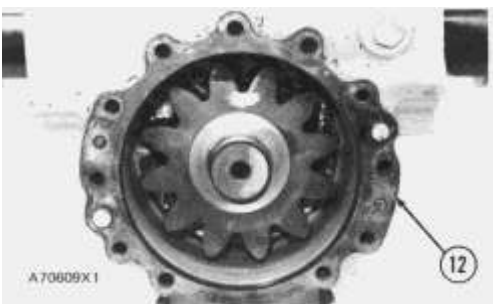
6. Remove tube assembly (5). Remove breather (6).
7. Remove six bolts and lockwashers (7).



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



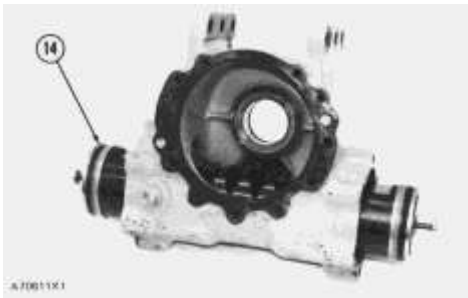
9. Remove O-ring seal (11) from the cover. Remove bearing (10) if necessary.



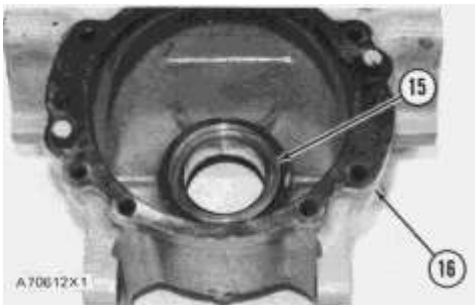
10. Remove shims (12). Put identification on shims for correct installation.



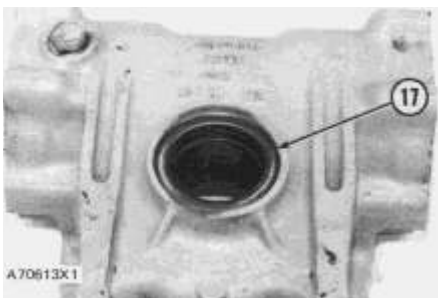
**11. Remove pinion (13).**



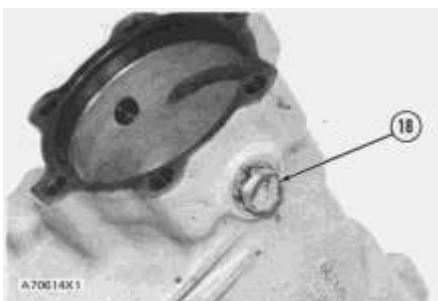
**12. Use a hoist or two persons. Remove rack assembly (14). Weight is 80 lb. (36 kg).**



**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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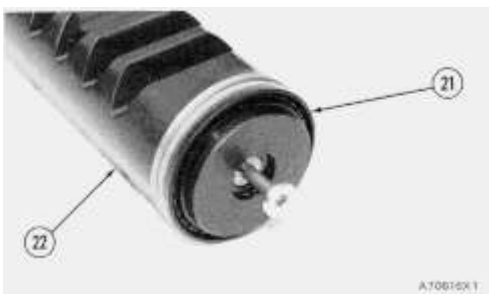
### NOTICE

**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.



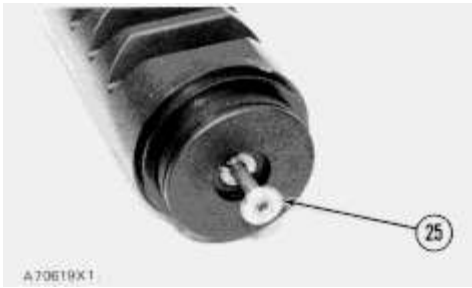
17. Remove seal (21) from rack (22).



18. Remove teflon seal (23).



19. Remove ring (24).



20. Remove cushion valve assembly (25).

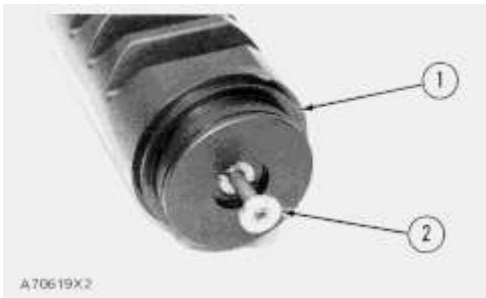
21. Use Steps 16 through 20 to disassemble the other end of the rack.

## Install Swing Actuator

Tools Needed		A
1P520	Driver Group	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 cushion valve assembly (2) in rack (1).



4. Install ring (3).



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