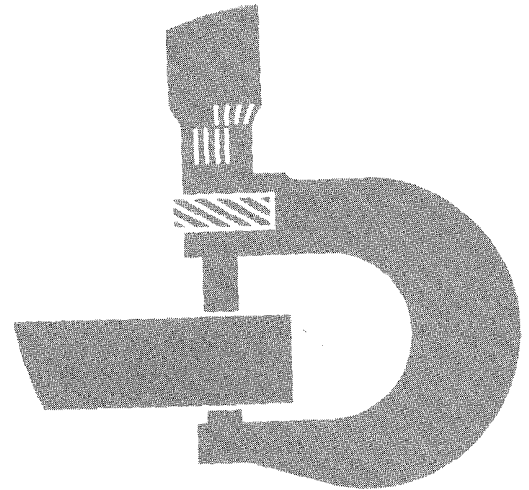


# 992D-LC Excavator



## TECHNICAL MANUAL

TM1463 (23OCT89)  
LITHO IN U.S.A.

## FOREWORD

This manual is written for an experienced technician. Essential tools required in performing certain service work are identified in this manual and are recommended for use.

Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.



This is the safety-alert symbol. When you see this symbol on the machine or in this manual, be alert to the potential for personal injury.

Technical manuals are divided in two parts: repair and diagnostics. Repair sections tell how to repair the components. Diagnostic sections help you identify the majority of routine failures quickly.

Information is organized in groups for the various components requiring service instruction. At the beginning of each group are summary listings of all applicable essential tools, service equipment and tools, other materials needed to do the job, service parts kits, specifications, wear tolerances, and torque values.

Binders, binder labels, and tab sets can be ordered by John Deere dealers direct from the John Deere Distribution Service Center.

This manual is part of a total product support program.

### FOS MANUALS—REFERENCE

#### TECHNICAL MANUALS—MACHINE SERVICE

#### COMPONENT MANUALS—COMPONENT SERVICE

Fundamentals of Service (FOS) Manuals cover basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced technicians.

Technical Manuals are concise guides for specific machines. Technical manuals are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing, and repair.

Component Technical Manuals are concise service guides for specific components. Component technical manuals are written as stand-alone manuals covering multiple machine applications.

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*All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.*

TM1463-19-23OCT89

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# Section I

# GENERAL INFORMATION

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### **HANDLE FLUIDS SAFELY—AVOID FIRES**

When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.



O53,FLAME -19-05JAN88

TS227 -UN-23AUG88

### **PREVENT BATTERY EXPLOSIONS**

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).



O53,SPARKS -19-05JAN88

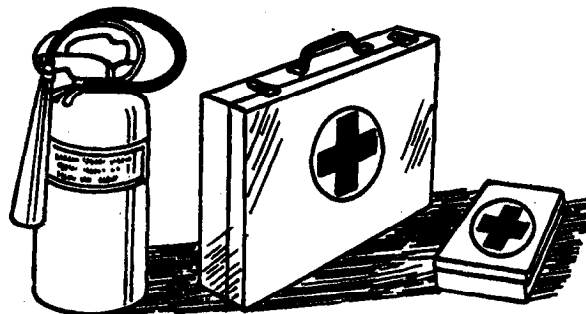
TS204 -UN-23AUG88

### **PREPARE FOR EMERGENCIES**

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



O53,FIRE2 -19-03MAR88

TS291 -UN-23AUG88

## PREVENT ACID BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

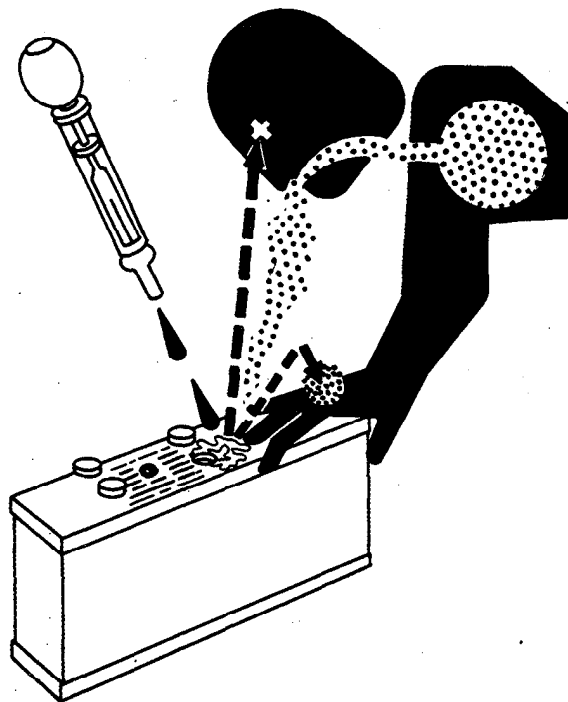
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 10—15 minutes. Get medical attention immediately.

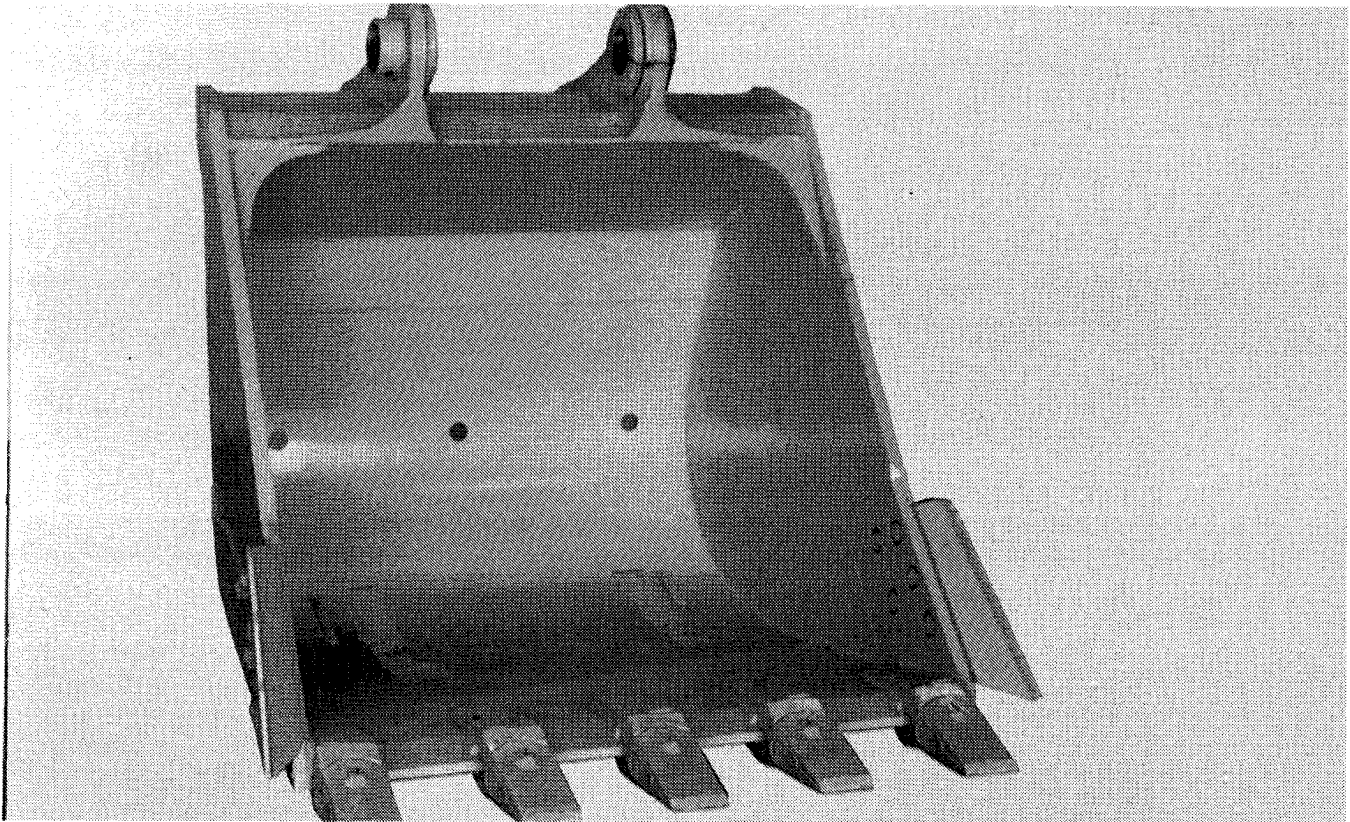
If acid is swallowed:

1. Drink large amounts of water or milk.
2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
3. Get medical attention immediately.



TS203 -JUN-23AUG88

O63,POISON -19-21DEC87



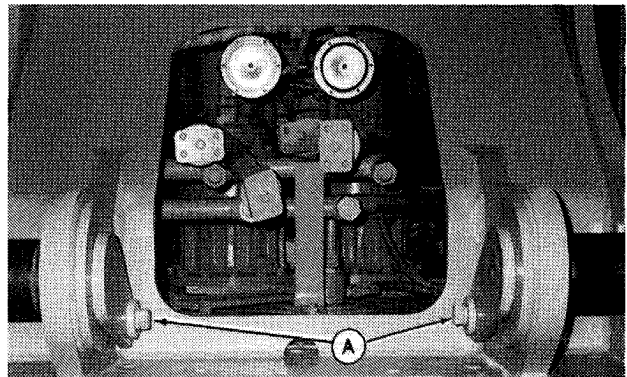
Bucket

T6929BD -JUN-06DEC88

05T,130,K4 -19-10JAN89

**⚠ CAUTION:** The approximate weight of boom cylinder head end pin is 22.7 kg (50 lb).

1. Loosen cap screws (A) to remove pins.



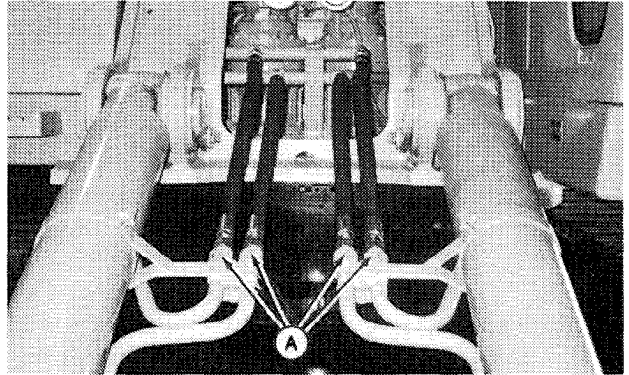
T6912AA -JUN-28OCT88

05T,130,K5 -19-06DEC88

**CAUTION:** The approximate weight of boom cylinder is 420 kg (925 lb).

2. Install cylinders, left cylinder first. Position tubes under cylinder with connectors (A) toward middle.

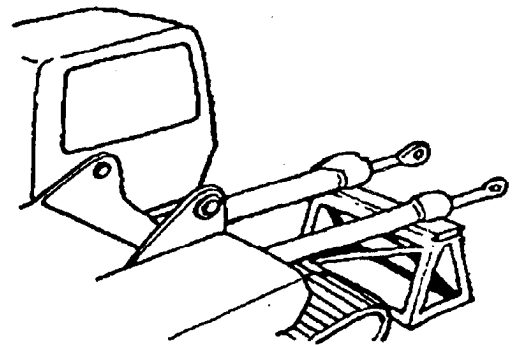
Install the thick shim on the inside of each cylinder head end.



05T,130,K6 -19-04JAN89

T6912AD2  
-UN-09JAN89

3. Put shop stands under rod end for support.



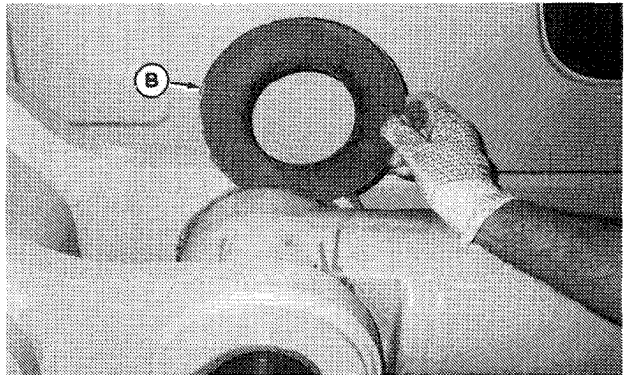
T6912AL

05T,130,K7 -19-06DEC88

T6912AL  
-UN-07APR89

4. Install shims (B), as required. Do not shim gap tighter than 0.5 mm (0.019 in.).

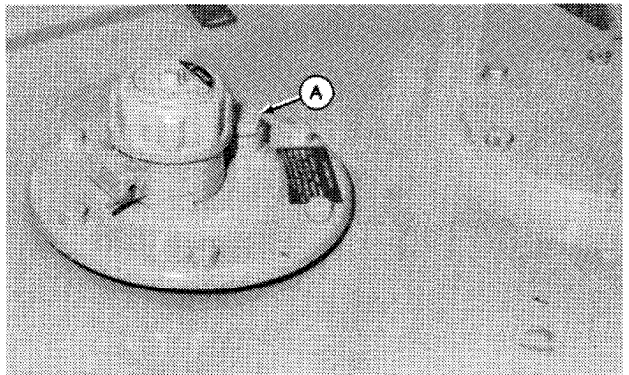
5. Install pins and cap screws. Tighten cap screws.



05T,130,K8 -19-06DEC88

T6912AB  
-UN-28OCT88

6. Slowly turn screw (A) counterclockwise to release reservoir air pressure.



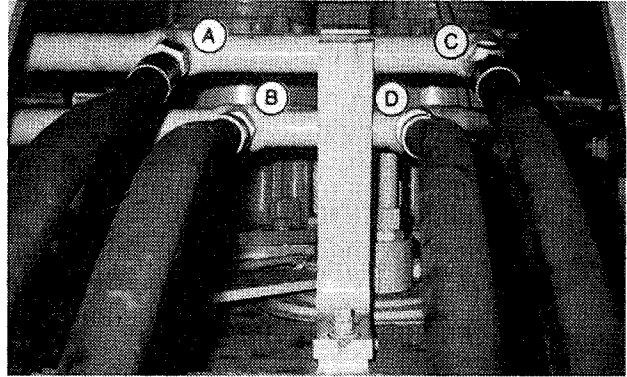
05T,130,K9 -19-06DEC88

T6511AX  
-UN-19OCT88



7. Slowly remove hydraulic tube caps and connect hoses (A—D).

A—Right Boom Cylinder Head End  
B—Right Boom Cylinder Rod End  
C—Left Boom Cylinder Head End  
D—Left Boom Cylinder Rod End



05T,130,K10 -19-06DEC88

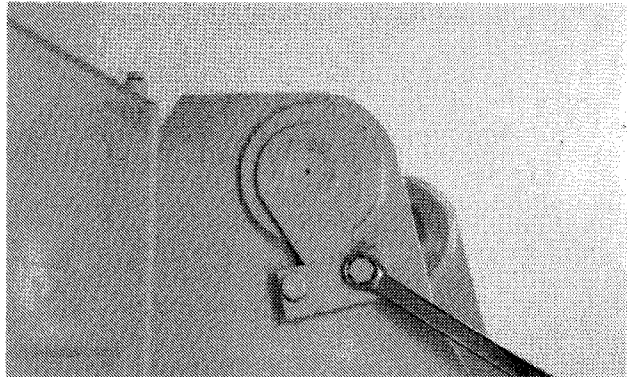
T6912AC -JUN-28OCT88

**⚠ CAUTION:** The approximate weight of boom pivot pin is 116 kg (257 lb).

8. Remove retainer to slide pin out.

**⚠ CAUTION:** The approximate weight of boom and arm cylinder is 3,727 kg (8,209 lb).

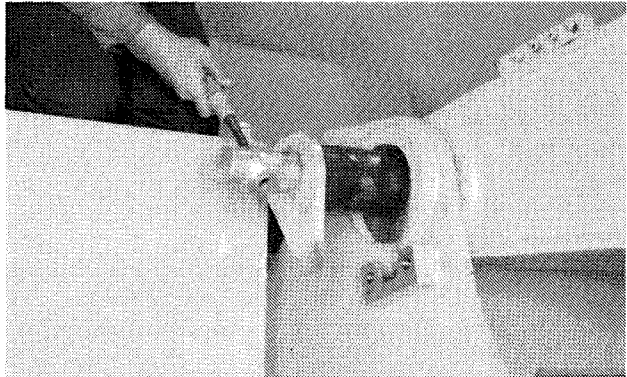
9. Lift boom into position, install pin. Install shims, as required, in each side of boom.



05T,130,K12 -19-04JAN89

T5856AS -JUN-27OCT88

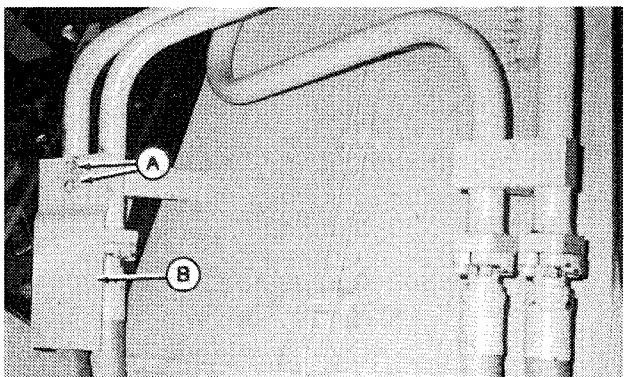
10. Install retainer and cap screws. Tighten cap screws.



05T,130,K13 -19-04JAN89

T5856AT -JUN-27OCT88

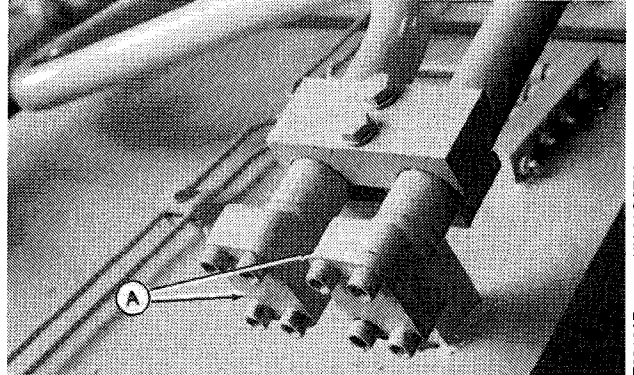
11. Remove cap screws (A) to remove guard (B).



05T,130,K14 -19-04JAN89

T6912AJ -JUN-28OCT88

12. Remove tube and hose caps (A) and discard.



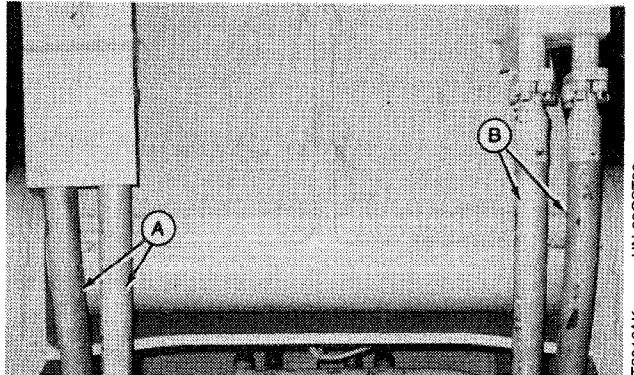
05T,130,K15 -19-04JAN89

T6912AE -JUN-28OCT88

13. Connect hoses (A and B) to the tubes on boom as follows:

- Outside hose (A) to outside left boom tube.
- Inside hose (A) to inside left boom tube.
- Outside hose (B) to outside right boom tube.
- Inside hose (B) to inside right boom tube.

14. Attach guard.



05T,130,K16 -19-04JAN89

T6912AK -JUN-28OCT88

15. Tighten reservoir bleed screw (A).

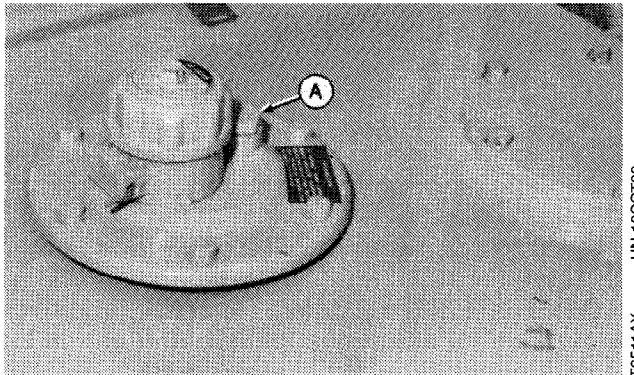
16. Start engine.

**IMPORTANT: Cylinder rod seal friction burn damage may result if cylinder is cycled too rapidly when removing air from circuit.**

17. Run engine at slow idle. Operate hand controller slowly to extend and retract boom cylinders completely.

18. Cycle each cylinder slowly a minimum of six times to remove air from circuit.

19. Repeat last step to remove air from air cylinder circuit.



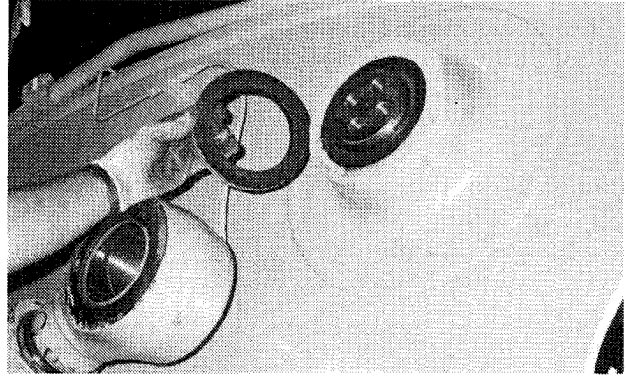
05T,130,K50 -19-10JAN89

T6511AX -JUN-18OCT88

**CAUTION:** The approximate weight of boom cylinder rod end pin is 94 kg (206 lb).

20. Remove four cylinder rod end-to-boom cap screws and retaining ring from one side of boom pin.

21. Drive pin in until flush with exterior boss.



05T,130,K17 -19-04JAN89

T6912AF -JUN-28OCT88

22. Tighten air bleed screw on reservoir.

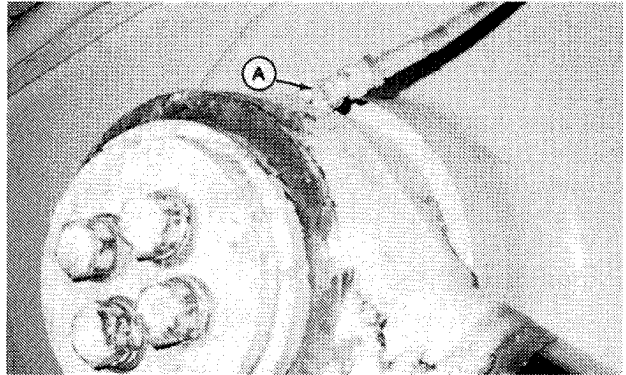
23. Attach hoist to cylinder.

24. Raise cylinder into position. Operate hand controller to align rod end with pin.

25. Insert pin. Install retainer and cap screws.

26. Attach lubrication hose (A).

27. Repeat procedure for opposite cylinder.

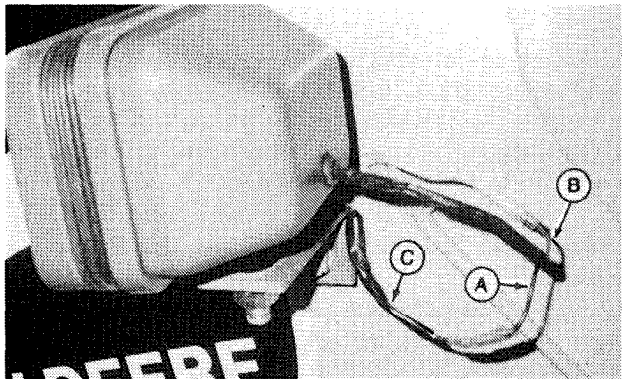


05T,130,K18 -19-05MAR89

T6912AG -JUN-28OCT88

28. Install light on bracket located on left side of boom.

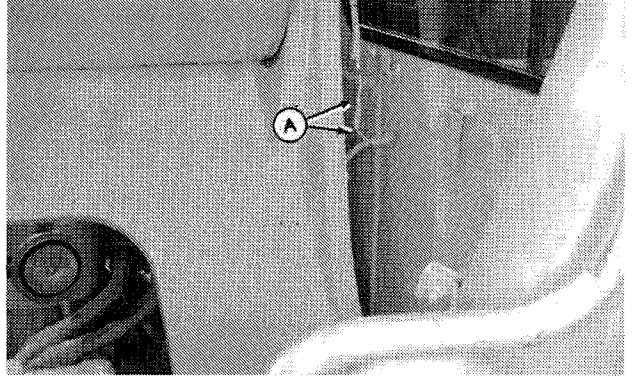
29. Connect black (ground) wire (A) from light to black (ground) wire (C) attached to the bracket. Connect the red (HOT) wire (B) into the harness on boom.



05T,130,K19 -19-05MAR89

T6912AH -JUN-28OCT88

30. Connect boom work light wiring harness (A).



05T,130,K20 -19-05MAR89

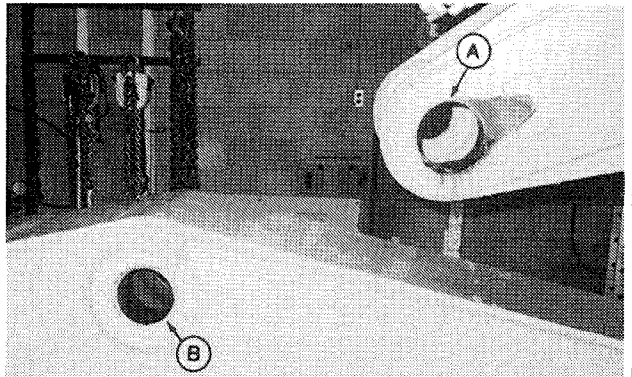
T6907AA -JUN-27OCT88

**⚠ CAUTION: The approximate weight of arm with bucket cylinder is 2,393 kg (5,170 lb).**

31. Lift arm assembly into position. Align arm pin hole (B) with boom pin hole (A).

**⚠ CAUTION: The approximate weight of arm-to-boom pivot pin is 61 kg (135 lb).**

32. Insert pin. Add shims as required, add pin retainer, tighten cap screws.

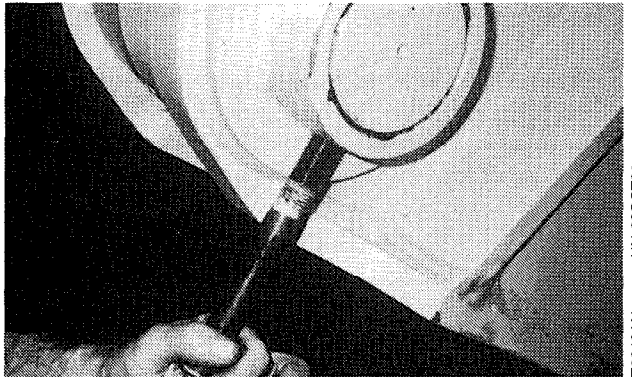


05T,130,K21 -19-05MAR89

T6912AM -JUN-28OCT88

**⚠ CAUTION: The approximate weight of arm cylinder rod end pin is 25 kg (54 lb).**

33. With rod end lubrication fitting pointing up, lift and extend arm cylinder rod end into position, attach pin and cross bolts.

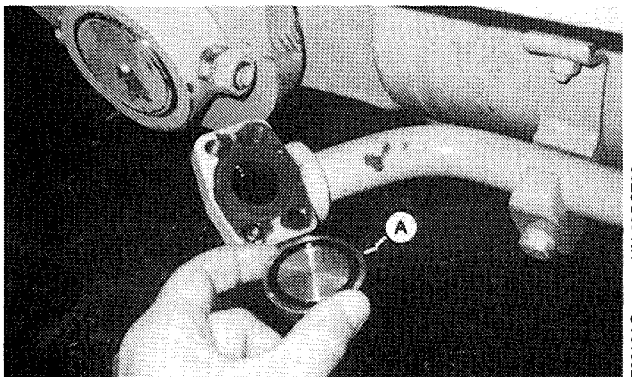


05T,130,K22 -19-05MAR89

T6912AN -JUN-28OCT88

34. Loosen reservoir air bleed screw to release air pressure in reservoir.

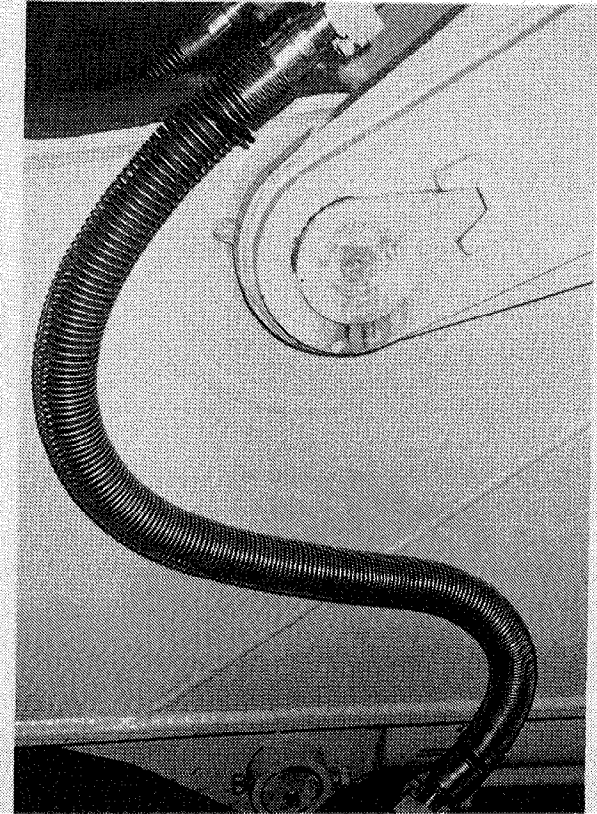
35. Slowly remove hydraulic tube caps (A) from bucket cylinder tubes.



05T,130,K23 -19-05MAR89

T6912AO -JUN-28OCT88

36. Attach bucket cylinder-to-boom end hoses as shown.



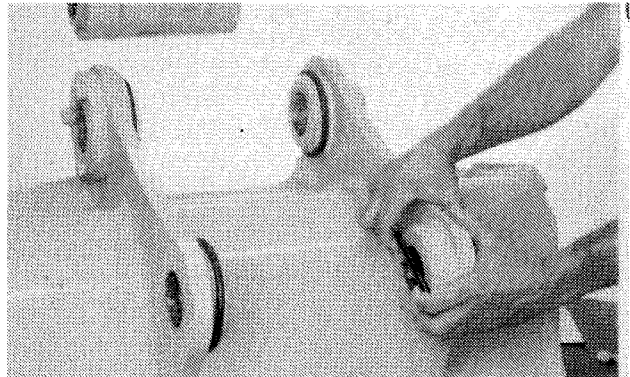
T6912AP -UN-28OCT88

05T,130,K24 -19-05MAR89

37. Slide four dust seals (O-rings) over inside of bosses.

**⚠ CAUTION: The approximate weight of bucket is 1,575 kg (3,475 lb).**

38. Lift bucket into position.



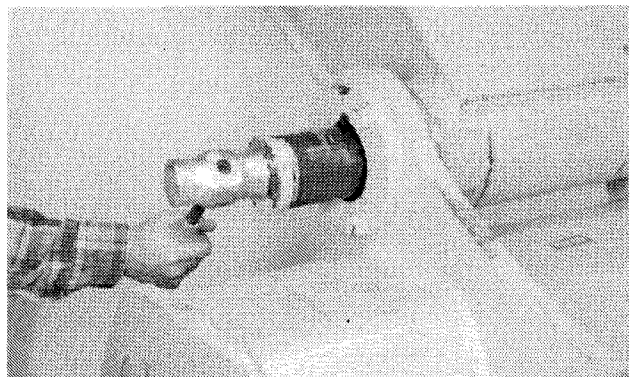
T96159 -UN-10NOV88

05T,130,K25 -19-05MAR89

39. Tighten reservoir air bleed screw.

40. Operate hand controller to extend arm into position.

41. Install pin and cross bolt.



T5657AQ -UN-27OCT88

05T,130,K26 -19-05MAR89

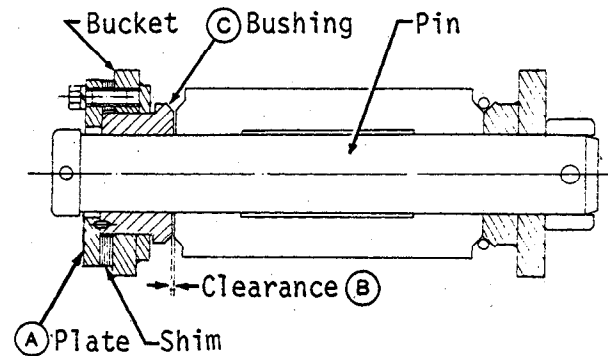
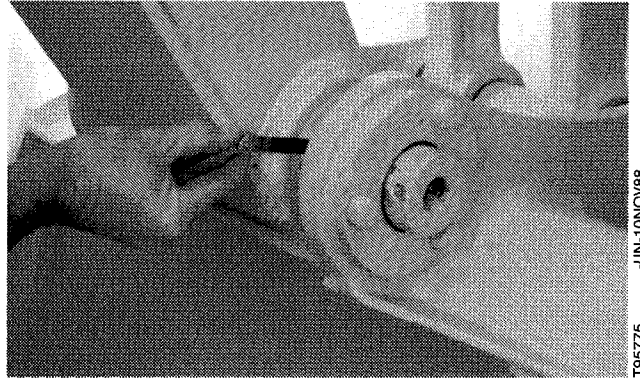


## ADJUSTING BUCKET LINKAGE

Unit has bucket adjustment system to take up play in the linkage. When play in the linkage increases, remove shims as follows:

1. Measure distance (B) between the bushing (C) and the arm. This distance should not be adjusted below 0.5 mm (0.20 in.).
2. Remove plate (A).

*NOTE: Alternate buckets may have different adjustment procedures.*



05T,130,K27 -19-15DEC88

3. Remove shim(s) according to distance measured. This will allow the bushing to move to the right and take up the excessive play.

4. Install plate and tighten cap screw.



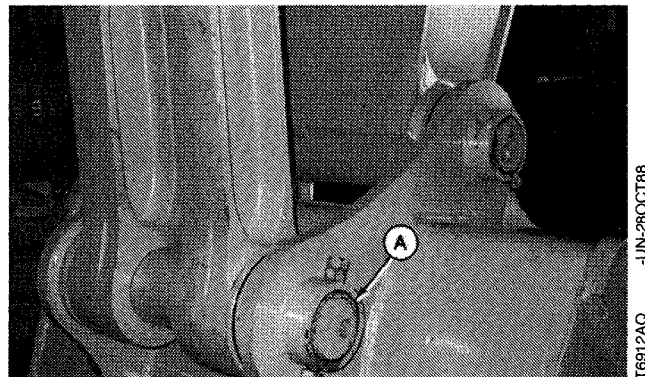
05T,130,K28 -19-06DEC88

5. Raise arm and extend bucket cylinder links to position.

**CAUTION:** The approximate weight of bucket cylinder links-to-bucket pin is 53 kg (118 lb).

6. Install pin (A).

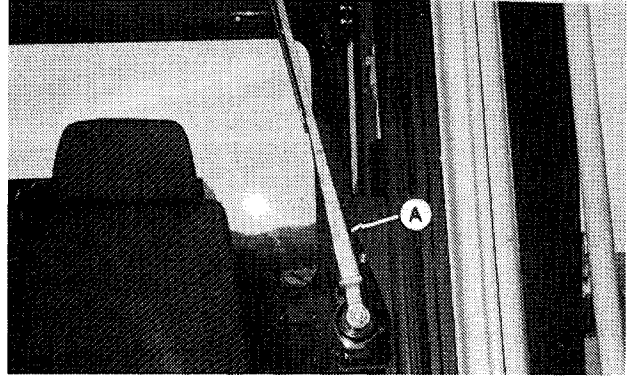
7. Slide the four dust seals (O-rings) into position between bucket and linkage.



05T,130,K29 -19-06DEC88

### ATTACH WINDSHIELD WIPER

1. Attach windshield wiper blade (A) at position shown.
2. Operate windshield wiper. If necessary, re-position wiper blade to adjust travel.

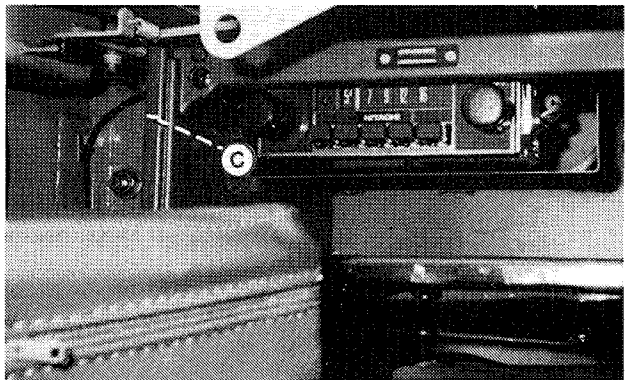
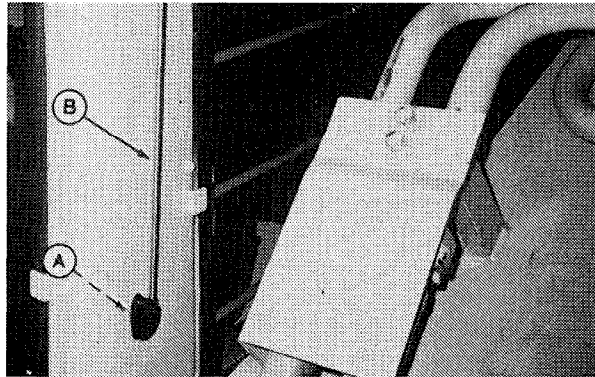


05T,130,K30 -19-06DEC88

T6912AR -JUN-28OCT88

### INSTALL RADIO ANTENNA

1. Connect radio antenna cable to feed wire protruding from hole (A) located on the right rear outside corner of the cab.
2. Pull the guide wire (with cable attached) through the interior cab wall over the cab floor behind operator seat into left operator console (C).
3. Remove feed wire and discard. Connect antenna cable jack to back of radio.
4. Attach antenna (B) to mounting brackets on exterior of cab.



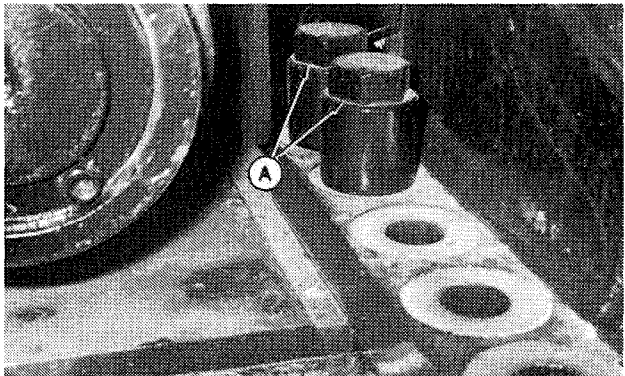
05T,130,K31 -19-06DEC88

T6912AS -JUN-28OCT88

T6912AT -JUN-28OCT88

### TRACK GAUGE WORK POSITION ADJUSTMENT

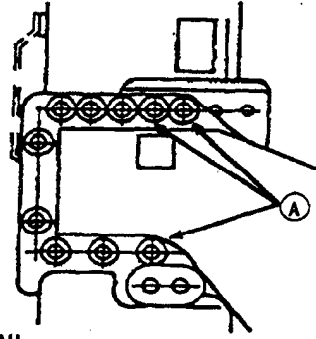
1. Remove the six bolts (A) on the side frame to be extended (three bolts each from the two track frame supports).
2. Swing upperstructure perpendicular to side frame.



05T,130,K32 -19-06DEC88

T6929BE -JUN-09DEC88

3. Attach a short chain or cable around the center of the side frame forming a loop.
4. Attach a longer chain on cable from the arm and connect to loop.



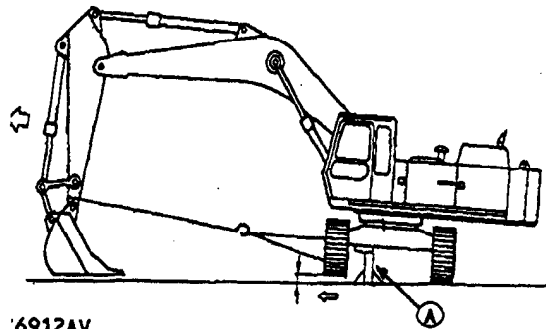
T6912AU

05T,130,K33 -19-12DEC88

T6912AU -UN-07APR89

**CAUTION:** The approximate weight of machine without counterweight is 35,730 kg (78,700 lb).

5. Lift the side frame slightly off ground with service jack (A).



T6912AV

05T,130,K34 -19-06DEC88

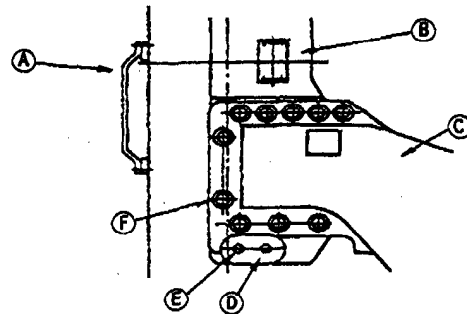
T6912AV -UN-07APR89

6. Extend arm slowly until side frame slides up against stop guide (D).

7. Lower machine to the ground and fasten 18 cap screws (F) (nine cap screws per section). Tighten cap screws to 1,720 kg (1,270 ft lbs).

Repeat steps 1—7 to move opposite side frame to work position.

- |                   |                         |
|-------------------|-------------------------|
| A—Side Frame Step | E—Stop Cap Screw        |
| B—Side Frame      | F—Track Frame Cap Screw |
| C—Track Frame     |                         |
| D—Stop Guide      |                         |



T6912AW

05T,130,K35 -19-12DEC88

T6912AW -UN-07APR89



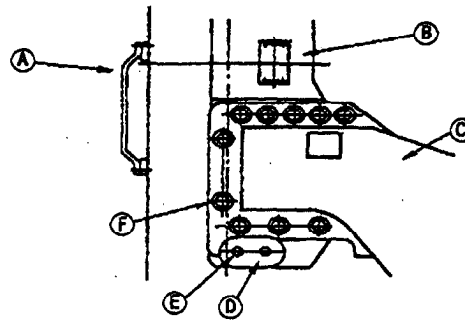
## TRACK GAUGE TRANSPORT POSITION ADJUSTMENT

1. Remove the 18 cap screws (nine screws from each of the track frame supports) of the side frame to be retracted.

**CAUTION:** Do not loosen side frame STOP cap screws (E).

2. Swing upper structure perpendicular to side frame.

- |                   |                         |
|-------------------|-------------------------|
| A—Side Frame Step | E—Stop Cap Screw        |
| B—Side Frame      | F—Track Frame Cap Screw |
| C—Track Frame     |                         |
| D—Stop            |                         |



T6912AW

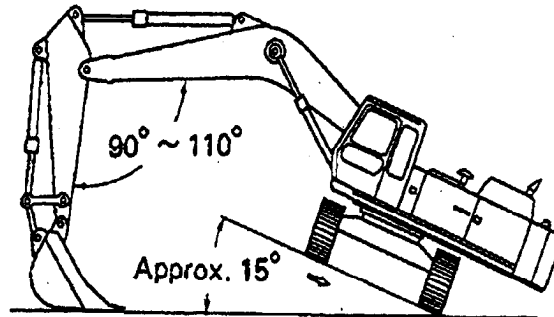
05T,130,K36 -19-06DEC88

T6912AW -JUN-07APR89

3. Raise the side frame 15 degrees off the ground.

4. The side frame must slide against the inside stopper.

5. If the side frame does not slide in this condition, vibrate the side frame by slowly moving the track back and forth.



T6912AX

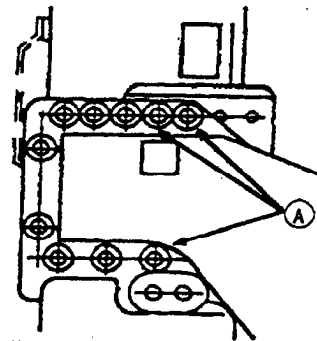
05T,130,K37 -19-06DEC88

T6912AX -19-07APR89

6. Lower the machine to the ground.

7. Fasten the six cap screws (A) as shown (three cap screws at each of the two track frame supports). Tighten to 1,720 kg (1,270 ft-lb).

8. Repeat steps 1—7 to move opposite side frame into transport position.



T6912AU

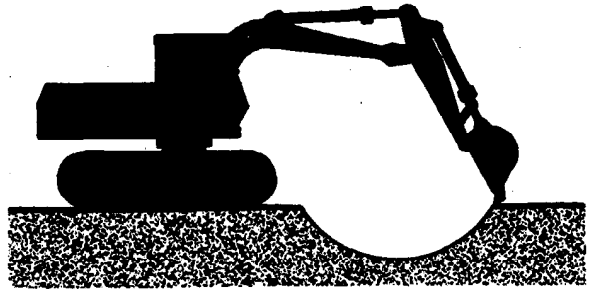
05T,130,K38 -19-06DEC88

T6912AU -JUN-07APR89

## CHECK HYDRAULIC OIL LEVEL

**IMPORTANT: Do not run the engine without oil in reservoir.**

1. Park machine on level ground.
2. Position machine with arm cylinder fully retracted and bucket cylinder fully extended.
3. Lower bucket to the ground.



05T,130,K39 -19-06DEC88

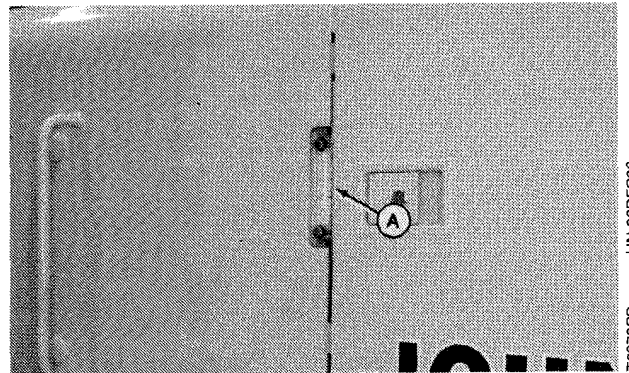
T6811AF -JUN-18OCT88

4. Turn auto idle switch off.
5. Pull engine stop handle up to stop engine.

**IMPORTANT: DO NOT turn key switch off while engine is running. Electrical system will be damaged.**

6. Turn key switch to OFF. Remove key from switch.
7. Pull pilot control shutoff lever to locked position.
8. Check oil level window (A). Oil must be between marks on window.

If necessary, add oil.



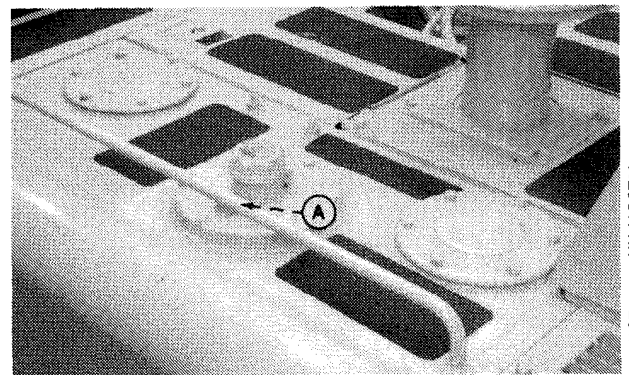
05T,130,K40 -19-06DEC88

T6879CC -JUN-06DEC88

**CAUTION: The hydraulic reservoir is pressurized. Do not remove vent plug (A). Release pressure by loosening vent plug.**

To add oil:

9. Loosen vent plug (A) to release reservoir pressure.



05T,130,K41 -19-06DEC88

T6879CE -JUN-28OCT88

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please download the PDF  
document first and then  
click on it.**

*Predelivery Assembly Instructions/Hydraulic Oil Level*

10. Insert 5 mm hex wrench (D) into hole (E) and turn counterclockwise.

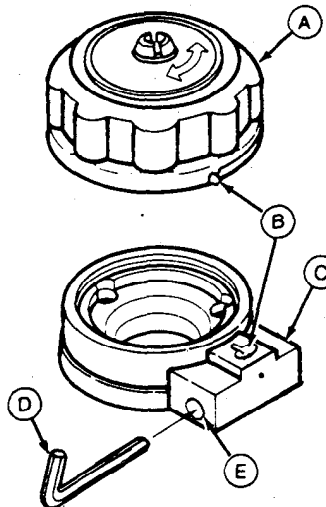
11. Turn cap (A) counterclockwise and remove.

12. Add oil.

13. Reset cap (A) to case assembly (C) by aligning marks (B) and turn cap (A) clockwise to lock position.

A—Cap  
B—Aligning Marks  
C—Case Assembly

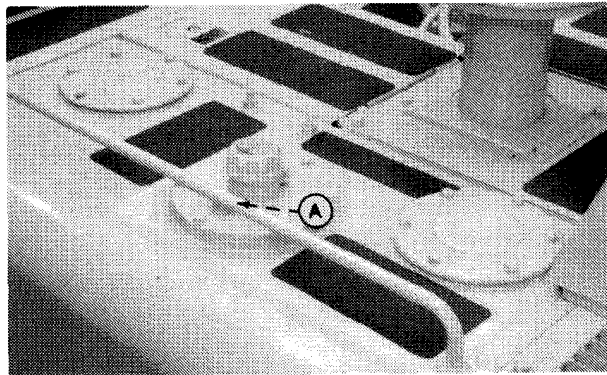
D—Hex Wrench  
E—Hole



05T,130,K42 -19-06DEC88

T6457E1 -JUN-18OCT88

14. Tighten plug (A).



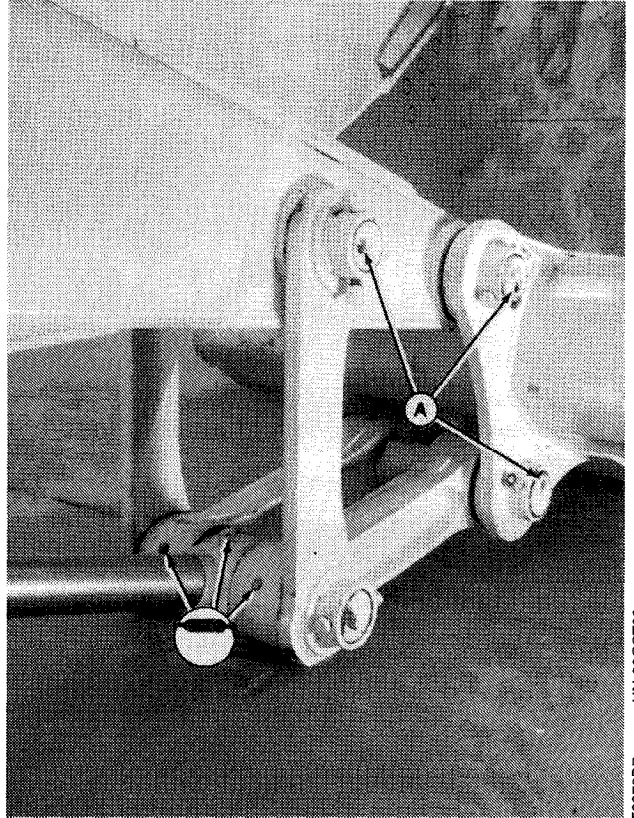
05T,130,K43 -19-06DEC88

T68790E -JUN-28OCT88

## LUBRICATE BUCKET PIVOTS

Lubricate bucket pivots until grease escapes at joints.  
(See Fuels and Lubricants chapter.)

A—Left Side Shown



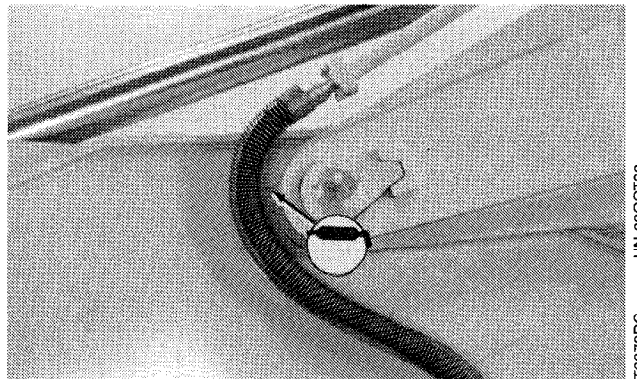
Nine Points

T6879DB -UN-28OCT88

05T,130,K44 -19-12DEC88

## LUBRICATE WORKING TOOL PIVOTS

Lubricate these areas until grease escapes at joints.  
Grease daily for first 100 hours and when working in  
mud or water.

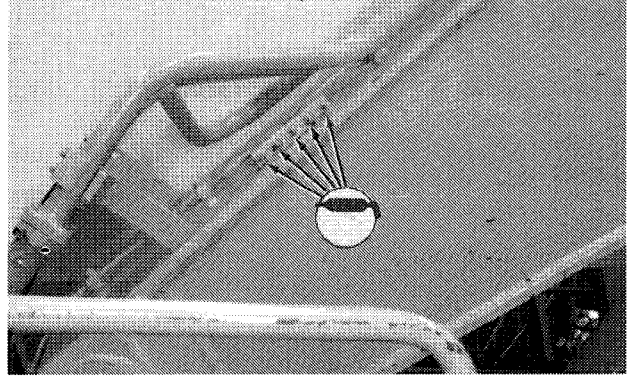


Two Points-Left Side Shown

T6879DG -UN-28OCT88

05T,130,K45 -19-06DEC88

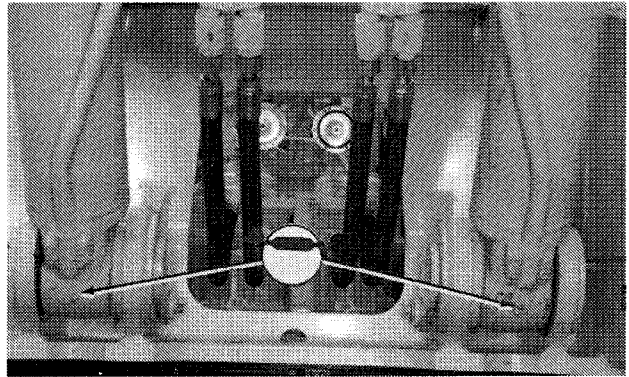
Predelivery Assembly Instructions/Working Tool Pivots



Five Points

05T,130,K46 -19-06DEC88

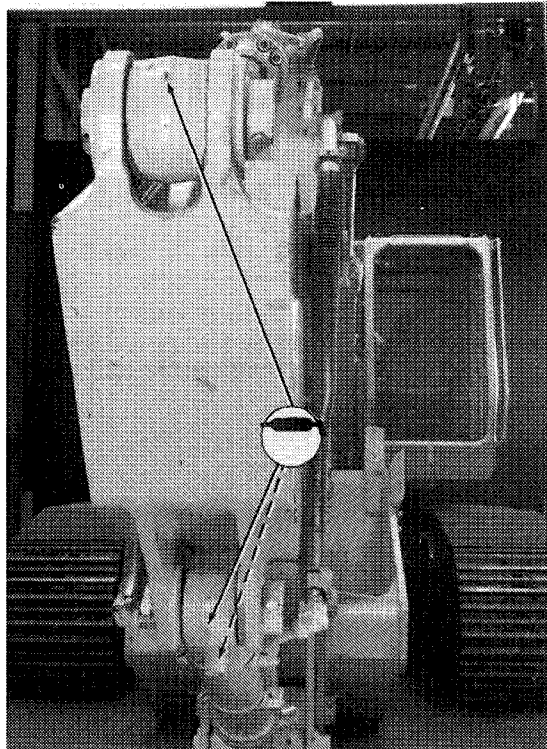
T6879DE -UN-28OCT88



Two Points

05T,130,K47 -19-06DEC88

T6879DF -UN-28OCT88



Three Points

05T,130,K48 -19-09DEC88

T6879DH -UN-28OCT88