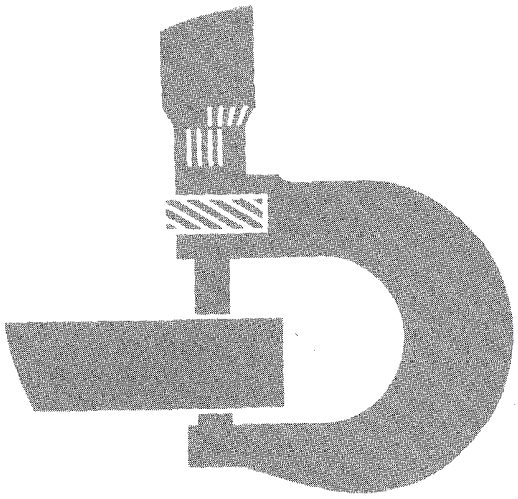
793D
Feller-Buncher



TECHNICAL MANUAL

TM1416 (30MAY90)

LITHO IN U.S.A.

Introduction

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.

Contents

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.

TM1416-19-30MAY90

Section I
GENERAL INFORMATION

Contents

310590

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.

TS227 -UN-23AUG88

O53,FLAME -19-26JAN90

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).

TS204 -UN-23AUG88

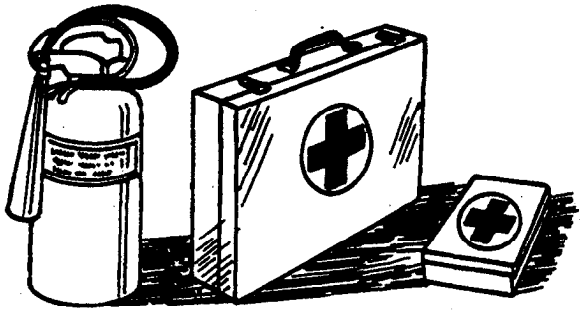
O53,SPARKS -19-26JAN90

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.



TS291 -UN-23AUG88

O53,FIRE2 -19-26JAN90

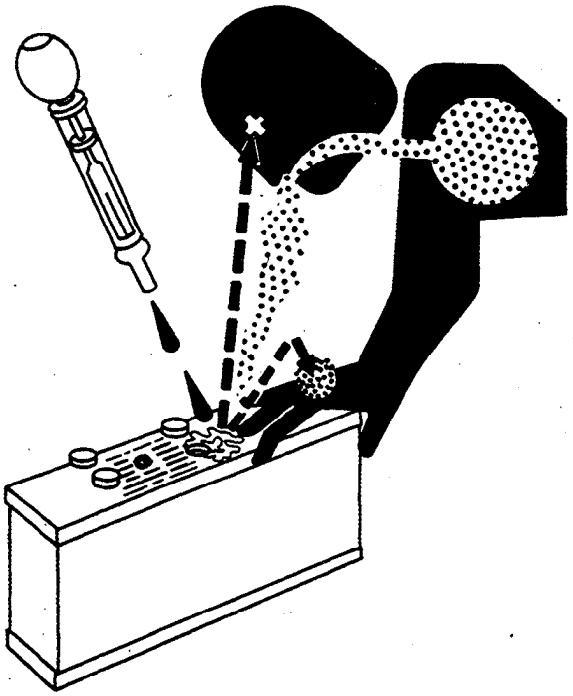
PREVENT ACID BURNS

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 -UN-23AUG88

O53,POISON -19-26JAN90

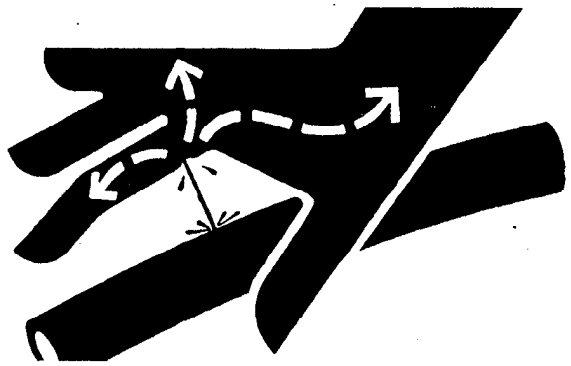
AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury may call the Deere & Company Medical Department in Moline, Illinois, or other knowledgeable medical source.

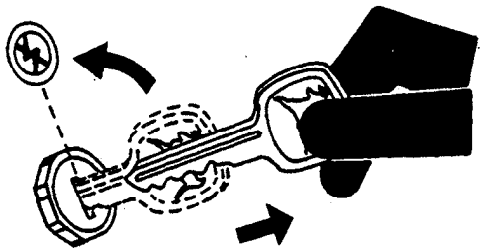


X9811 -UN-23AUG88

O53,FLUID -19-26JAN90

PARK MACHINE SAFELY

Before working on the machine:
- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.



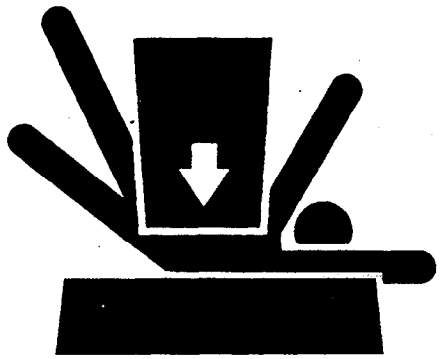
TS230 -UN-24MAY89

O53,PARK -19-26JAN90

SUPPORT MACHINE PROPERLY

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



TS229 -UN-23AUG88

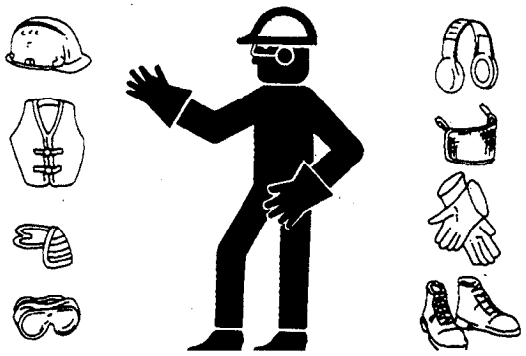
O53,LOWER -19-26JAN90

WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



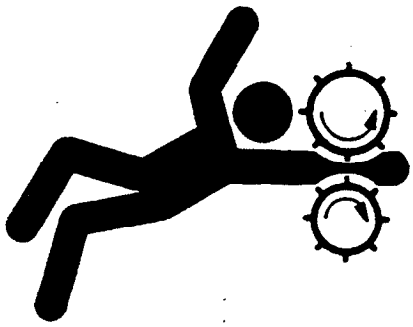
TS206 -UN-23AUG88

O53,WEAR -19-26JAN90

SERVICE MACHINES SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



TS228 -UN-23AUG88

O53,LOOSE -19-26JAN90

MEASURE TRACK BUSHING WEAR

BUSHING OUTER DIAMETER SPECIFICATIONS

New . . . . . 66.6 mm (2.62 in.)

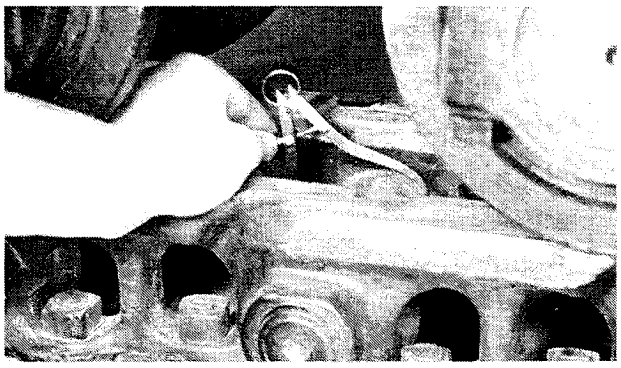
Minimum used . . . . . 61.8 mm (2.43 in.)

Minimum used is the maximum allowable wear for turning pins and bushings.

1. Measure bushing outer diameter at the two worn places using a caliper such as the D-17524C1 100 mm Caliper from JT05518 or JT05523 Undercarriage Inspection Service Tool Kit.

NOTE: Bushing outer diameter is measured at two places because of the forward and reverse travel of unit.

See Undercarriage Appraisal Manual SP-326 for additional information.



TX,0130,WW104 -19-16APR90

MEASURE TRACK PITCH

TRACK PITCH SPECIFICATIONS

New . . . . . 812 mm (31.97 in.)

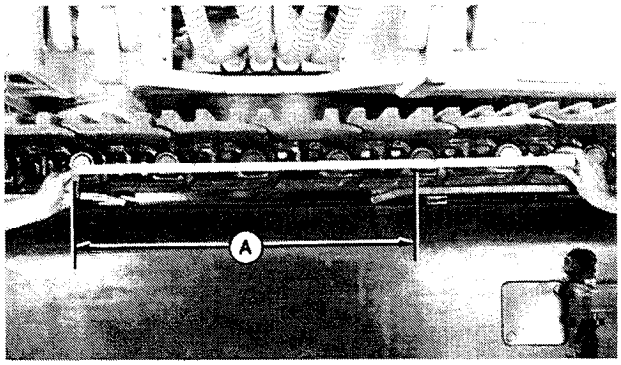
Maximum used. . . . . 824.7 mm (32.47 in.)

Maximum used is the maximum allowable wear for turning pins and bushings.

1. Remove slack by putting a wooden block between sprocket and chain, then slowly move unit in reverse to tighten chain.

2. Measure pitch across several five link sections (A), except section on either side of master pin, to find average chain wear. Use a tape measure such as the JT05520 Metric Tape from JT05518 or JT05523 Undercarriage Inspection Service Tool Kit.

NOTE: See Undercarriage Appraisal Manual SP-326 for additional information.



TX,0130,WW103 -19-16APR90

MEASURE TRACK LINK WEAR

LINK HEIGHT SPECIFICATIONS

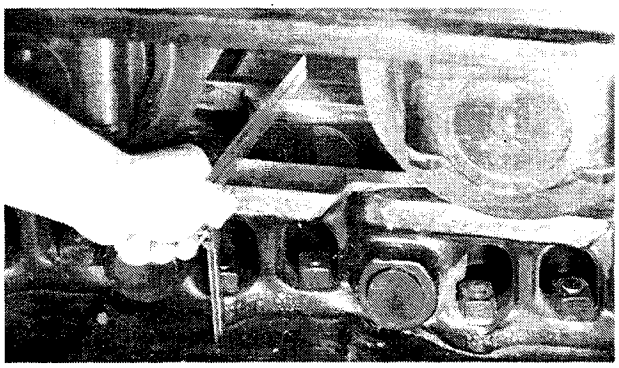
New . . . . . 121.5 mm (4.78 in.)

Minimum used . . . . . 110.0 mm (4.33 in.)

Minimum used is the maximum allowable wear for rebuilding links.

1. Measure height of several links to find an average using a depth gauge such as the JT05521 200 mm Ruler, JT05534 Right Angle Attachment, and D-05231ST 300 mm Ruler from JT05518 or JT05523 Undercarriage Inspection Service Tool Kit.

NOTE: See Undercarriage Appraisal Manual SP-326 for additional information.



TX,0130,WW105 -19-16APR90

MEASURE TRACK SHOE GROUSER WEAR

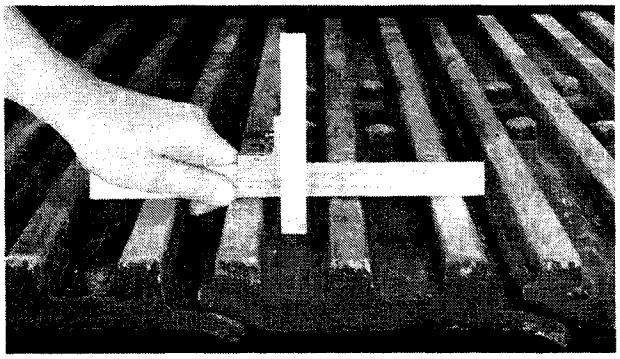
GROUSER HEIGHT SPECIFICATIONS

New:
Single Bar Grouser Height. . . . . 71.5 mm (2.81 in.)
Two Bar Height . . . . . 37.0 mm (1.46 in.)
Minimum used:
Single Bar Grouser Height. . . . . 33.4 mm (1.31 in.)
Two Bar Height . . . . . 16.0 mm (0.63 in.)

Minimum used is the maximum allowable wear for rebuilding grouser bars with weld.

1. Measure grouser height of several track shoes to find an average using a depth gauge such as the JT05521 200 mm Ruler, JT05534 Right Angle Attachment, and D05231ST 300 mm Ruler from JT05518 or JT05523 Undercarriage Inspection Service Tool Kit.

NOTE: See Undercarriage Appraisal Manual SP-326 for additional information.



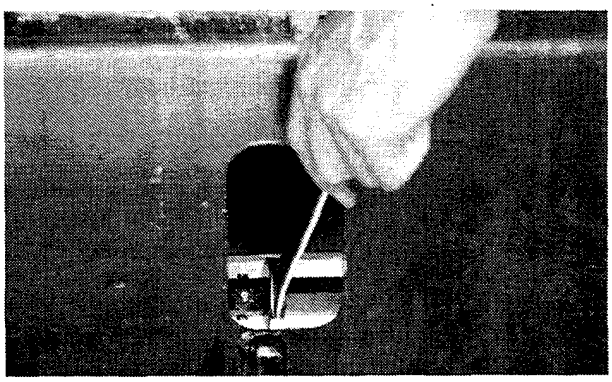
TX,0130,WW106 -19-16APR90

REMOVE AND INSTALL TRACK GUIDES AND SLIDES

IMPORTANT: Slides must be replaced when track chain bushings start to make contact with track guide to prevent excessive wear to bushings.

⚠ CAUTION: Grease in track adjusting cylinder is under extreme pressure. DO NOT remove grease fittings to release track tension.

1. Turn the track relief valve counterclockwise approximately three turns to release the grease from track adjusting cylinder.

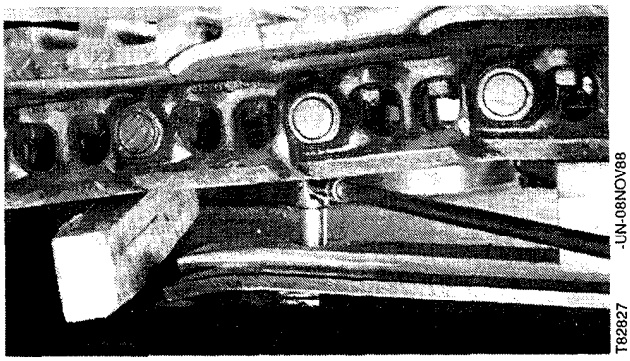


TX,0130,WW100 -19-16APR90

2. Lift the track using a chain and hoist.

3. Put wooden blocks between track chain and frame.

4. Remove the cap screws and lock washers to remove track guide, washers and slide.



TX,0130,WW101 -19-16APR90

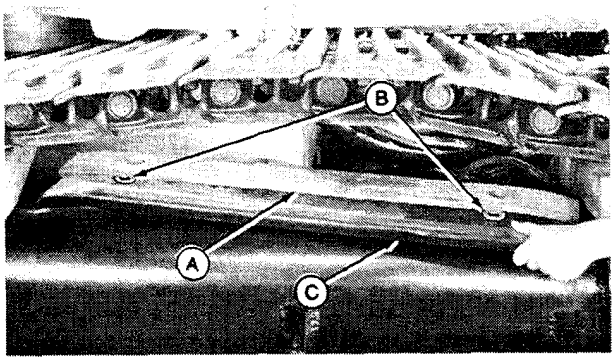
5. Install the slide (C), washers (B) and guide (A).

6. Install the lock washers and cap screws.

TORQUE SPECIFICATIONS

Cap screw . . . . . 325 N·m (240 lb-ft

7. Adjust track sag. (See procedure in group 9020.)



TX,0130,WW102 -19-16APR90

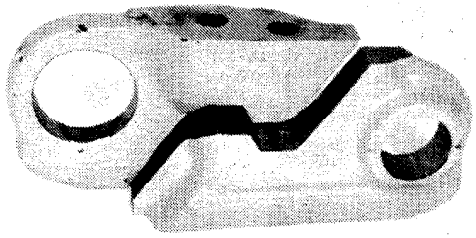
REMOVE AND INSTALL TRACK PARTS

See TM-1396 790D and 892D—LC for standard remove and install stories. Components that are used only on 793D Feller—Buncher will be covered in this manual.

TX,0130,WW97 -19-16APR90

DISASSEMBLE AND ASSEMBLE TRACKS—LATER UNITS

Later units use split link shown to make it easier to disassemble chain. These new links can be installed on Early Unit track chains but will require a track pin press. See TM-1396 for instructions on how to disassemble chain.



T7076BA -UN-02JUN89

NOTE: If new link is installed on Early Unit chain the Master Link track pad will have to be redrilled to new bolt pattern.

MASTER LINK SPECIFICATIONS

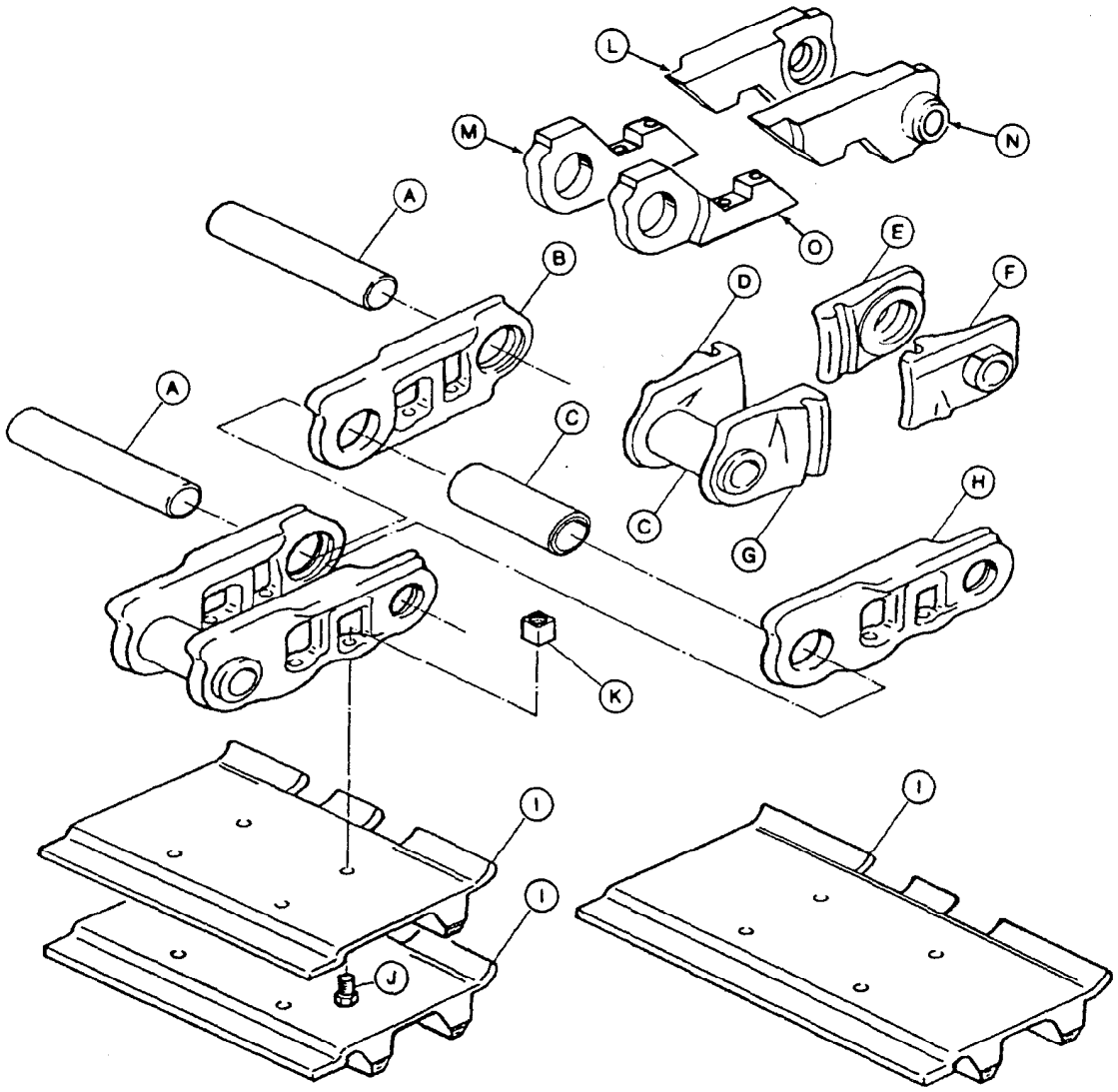
Master Split Link Cap screw	
Snug Torque	298 N·m (220 lb-ft)
Torque Turn	1/2 Turn (180°)

NOTE: Master link cap screws and bearing surfaces under head must be lubricated with PT 569 John Deere NEVER-SEEZ® Lubricant or an equivalent.

NEVER-SEEZ is a trademark of the Never-Seez Compound Corp.

TX,0130,WW123 -19-16APR90

DISASSEMBLE AND ASSEMBLE TRACKS



A—Pin (45 used)
B—Right Chain Link (44 used)
C—Bushing (45 used)
D—Master Link, Bushing End (Early Units)
E—Master Link, Pin End (Early Units)
F—Master Link, Pin End (Early Units)
G—Master Link, Bushing End(Early Units)
H—Left Chain Link (44 used)
I—Grouser Shoe (45 used)
J—Cap Screw (180 used)
K—Nut (180 used)
L—Master Link, Pin End (Later Units)
M—Master Link, Bushing End (Later Units)
N—Master Link, Pin End (Later Units)
O—Master Link, Bushing End (Later Units)

TX,0130,WW122 -19-16MAY90

SPECIFICATIONS

Link Height:
- New . . . . . 121.5 mm (4.78 in.)
- 100% Worn . . . . . 110.0 mm (4.33 in.)

Track Pitch: (across five pins)
- New . . . . . 812.0 mm (31.97 in.)
- 100% Worn . . . . . 824.7 mm (32.47 in.)

Bushing Outer Diameter:
- New . . . . . 66.6 mm (2.62 in.)
- 100% Worn . . . . . 61.8 mm (2.43 in.)

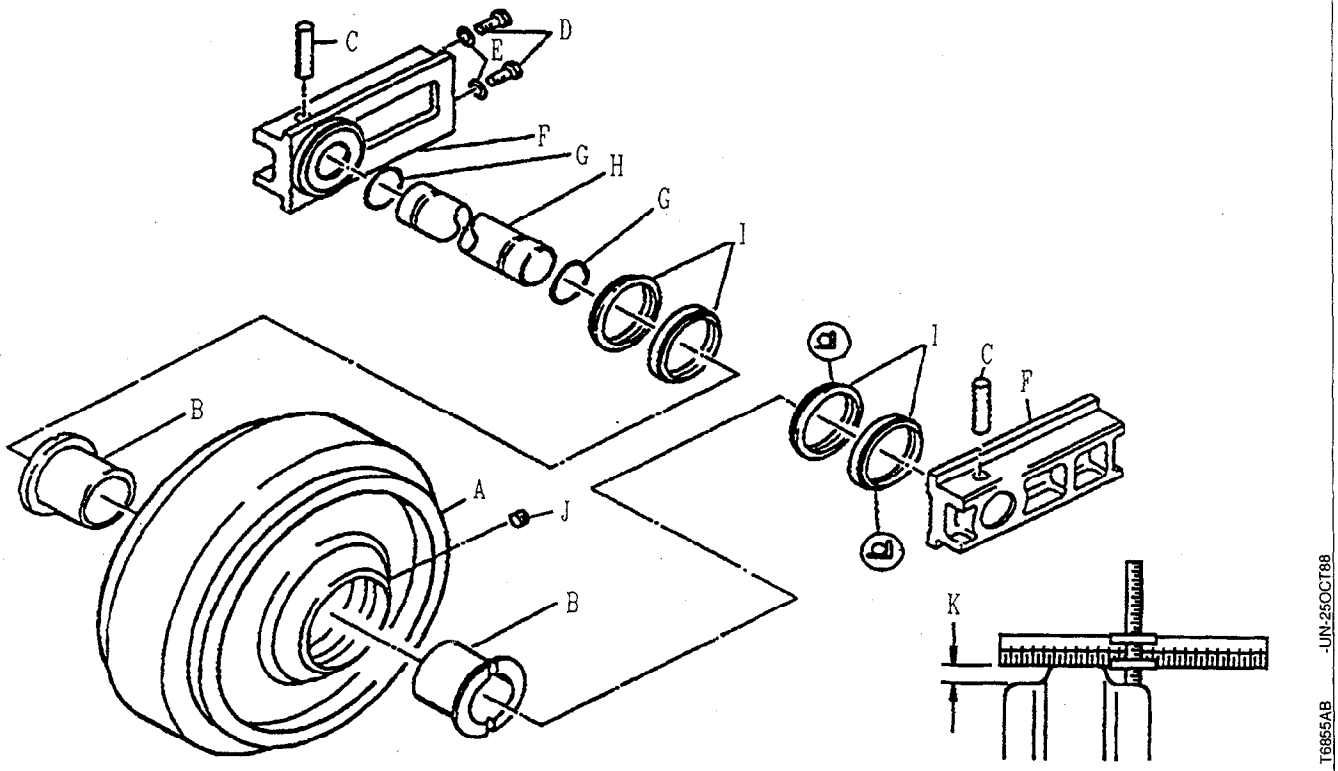
Single Bar Grouser Height:
- New . . . . . 71.5 mm (2.81 in.)
- 100% Worn . . . . . 33.4 mm (1.31 in.)

Two Bar Height:
- New . . . . . 37.0 mm (1.46 in.)
- 100% Worn . . . . . 16.0 mm (0.63 in.)

NOTE: New Alternate Split Link shown in Later Units can be installed on Early Unit chains. The Master Link track pad bolt pattern will have to be redrilled to match new split link.

TX,0130,SS392 -19-16MAY90

DISASSEMBLE AND ASSEMBLE FRONT IDLER



A—Idler
B—Bushing (2 used)
C—Spring Pin (2 used)
D—Cap Screw (2 used)
E—Washer (4 used)
F—Bracket (2 used)
G—O-Ring (2 used)
H—Shaft
I—Seal (2 used)
J—Plug
K—Flange Height

1. Remove parts as shown.

2. Remove plug (J) to drain oil.

3. Remove bushings (B) using a puller.

4. Inspect seals (I). Replace if necessary.

5. Install bushings (B) into idler so flange is tight against idler.

6. Install remaining parts.

7. Apply lubricant to end of shaft from O-ring outward, to bore in bracket and to spring pin.

8. Fill idler using recommended oil so it just starts to drip from hole at horizontal to 45° above horizontal.

9. Apply thread lock and sealer (low strength) to threads of plug (J). Tighten plug.

10. Test idler for oil leakage. See procedure in this group.

SPECIFICATIONS

Front Idler Flange Height: (K)	
New	25.0 mm (0.98 in.)
100% Worn	18.0 mm (0.71 in.)

0130,AA4 -19-16APR90

310590

TEST FRONT IDLER FOR OIL LEAKAGE

1. Turn shaft several turns to seat seals.

2. Remove oil plug.

3. Install parts from leak detector kit such as the D-05361ST Rubber Stopper/Leak Detector Kit.

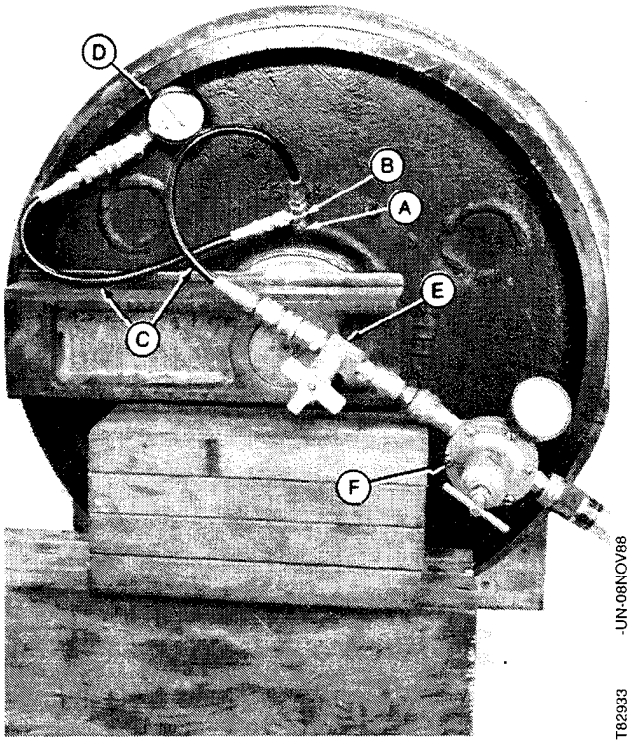
4. Holding plug so it is not pushed out, slowly pressurize oil cavity to 110 ± 28 kPa (1.1 ± 0.3 bar)(16 ± 4 psi) using air.

5. Close valve from leak detector kit and wait for a minimum of 30 seconds to check for oil leakage. Check gauge to see if air pressure has decreased.

6. If there is external leakage, disassemble idler and replace parts as necessary.

7. Check oil level in idler. If the oil level is down and there is no external leakage, check for a leak from oil cavity to interior of idler wheel.

8. Apply thread lock and sealer (low strength) to threads of oil plug. Install and tighten plug.

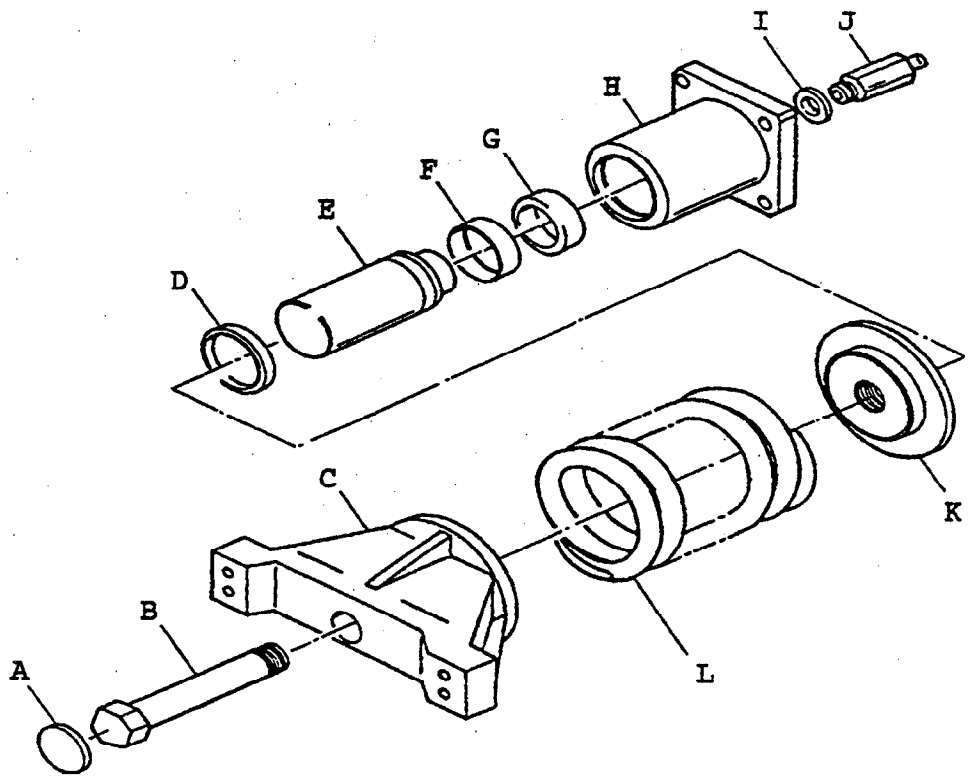


T82933 -UN-06NOV88

A—Plug, Barbed Adaptor and Connector
B—TO30001 Tee Fitting 7/16-20M 37° x 7/16-20F 37° SW x 7/16-20M
C—Hose
D—Pressure Gauge
E—Snubber (Needle) Valve
F—Air Pressure Regulator

TX,0130,WW95 -19-16APR90

DISASSEMBLE TRACK ADJUSTER AND RECOIL SPRING

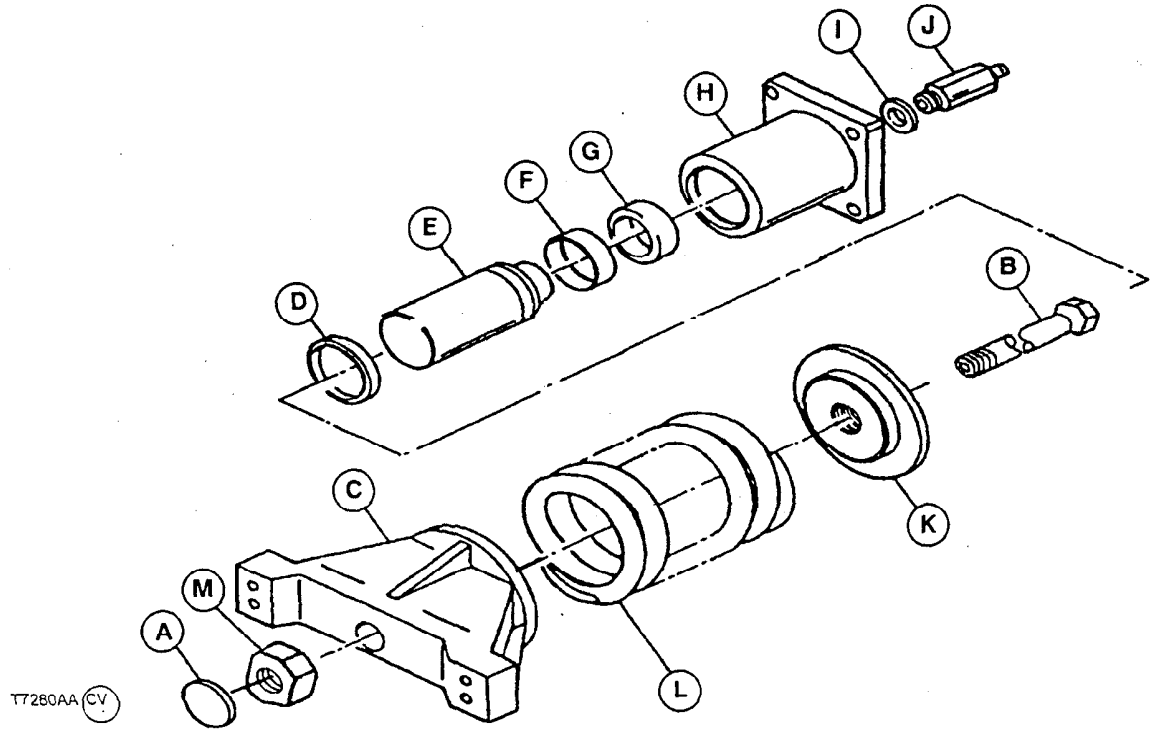


T6815BL -UN-25OCT88

A—Disk
B—Cap Screw
C—Yoke
D—Wiper Ring
E—Piston
F—Piston Guide Ring
G—Seal
H—Barrel
I—Washer
J—Grease Fitting
K—Plate
L—Spring

Early Units

TX,0130,WW148 -19-17APR90



A—Disk
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D—Wiper Ring
E—Piston
F—Piston Guide Ring
G—Seal
H—Barrel
I—Washer
J—Grease Fitting
K—Plate
L—Spring
M—Nut

Later Units

1. Disassemble track adjuster parts (D—J).
2. Remove weld on disk (A) using a torch.

TX,0130,WW127 -19-17APR90

CAUTION: Spring or cap screw may break if dropped while handling, transporting or disassembling. Nicks or weld craters in spring and cap screw assembly can cause stress concentration resulting in a weak spot that may result in immediate or eventual spring failure creating a risk of personal injury. Put a heavy protective covering around spring when handling assembly.

A compression tool must be used for disassembly and assembly because of the extreme preload on spring.

3. Place jack on bottom of ST4920 Track Recoil Spring Disassembly and Assembly Tool (A). (See Section 99 for instruction to make tool.)

4. Remove nuts (B) and top plate (C).

SPECIFICATIONS

Recoil Spring Overall Length	
Free	609 mm (23.98 in.)
Compressed	521 mm (20.5 in.)

5. Connect recoil spring assembly to a hoist using lifting strap around spring.

CAUTION: The approximate weight of recoil spring assembly is 144 kg (316 lb).

6. Place recoil spring assembly in compression tool (A).

7. Install DFT1087 Track Recoil Spring Disassembly and Assembly Guard Tool (D). (See Section 99 for instruction to make tool.)

8. Install plate (C) and nuts (B).

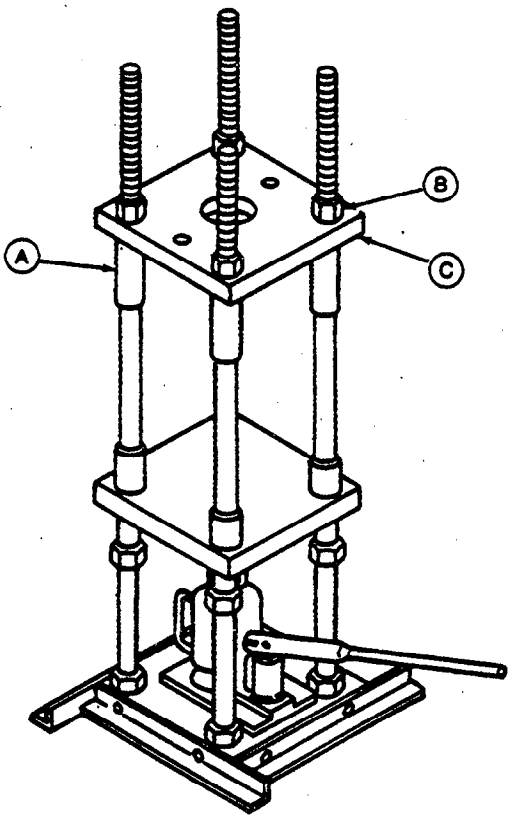
9. Operate jack to compress spring until load is off nut (later units) or cap screw head (early units).

10. Remove nut (later units) or cap screw (early units).

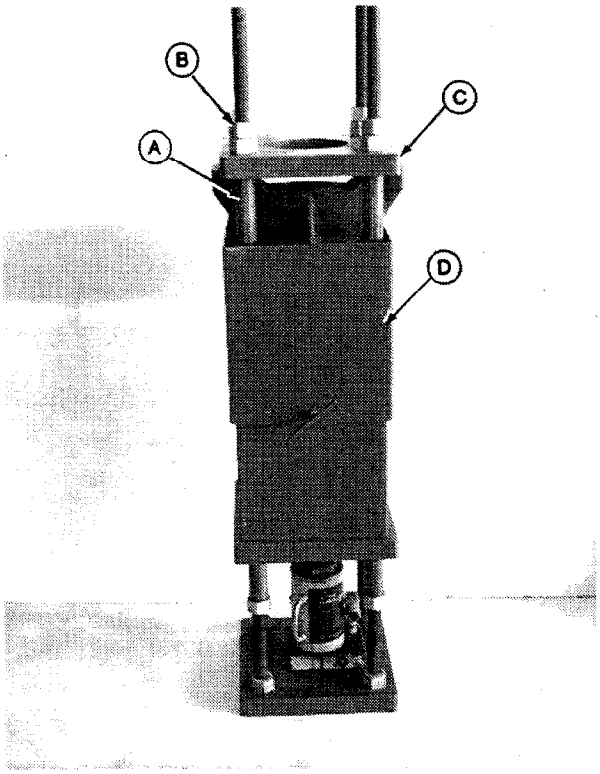
11. Lower jack to release spring force.

12. Remove nuts (B) and plate (C).

13. Remove remaining parts.



T6557DY -UN-25OCT88



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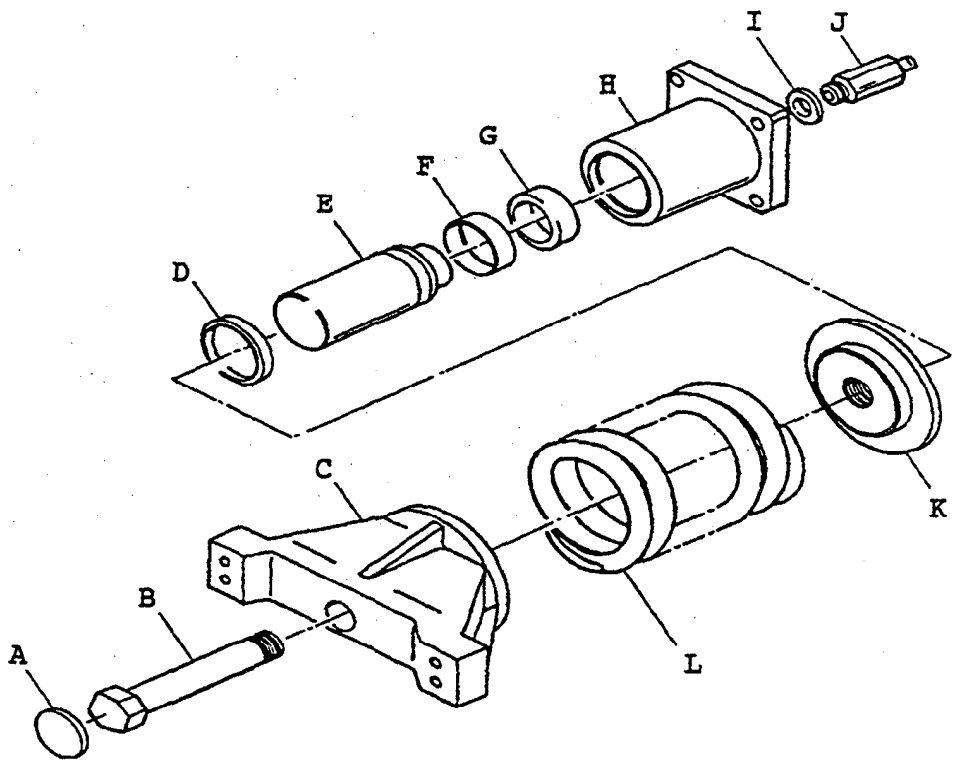
TX,0130,WW129 -19-17APR90

ASSEMBLE TRACK ADJUSTER AND RECOIL SPRING

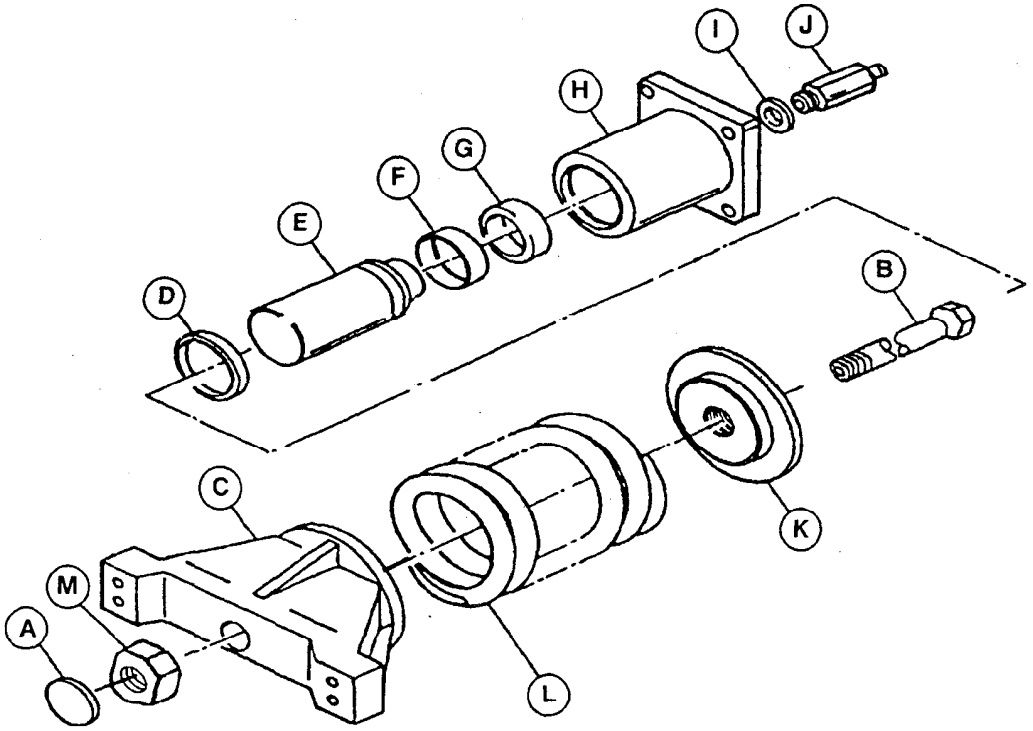


T6815BL -UN-25OCT88

A—Disk
B—Cap Screw
C—Yoke
D—Wiper Ring
E—Piston
F—Piston Guide Ring
G—Seal
H—Barrel
I—Washer
J—Grease Fitting
K—Plate
L—Spring

Early Units

TX,0130,WW130 -19-17APR90



T7280AA (CV)

T7280AA -UN-23APR90

A—Disk
B—Cap Screw
C—Yoke
D—Wiper Ring
E—Piston
F—Piston Guide Ring
G—Seal
H—Barrel
I—Washer
J—Grease Fitting
K—Plate
L—Spring
M—Nut

Later Units

1. Assemble track adjuster parts (D—J).
2. Apply grease to piston, seal and bore of barrel.
3. Push piston to bottom of barrel to push out the air.

TX,0130,WW131 -19-17APR90

4. Install cap screw, plate, spring and yoke in track recoil spring disassembly and assembly tool (A).

5. Install jack on bottom of tool.

6. Install track recoil spring disassembly and assembly guard tool (D).

7. Install plate (C) and nuts (B).

8. Operate jack to compress spring to the compressed length.

SPECIFICATIONS

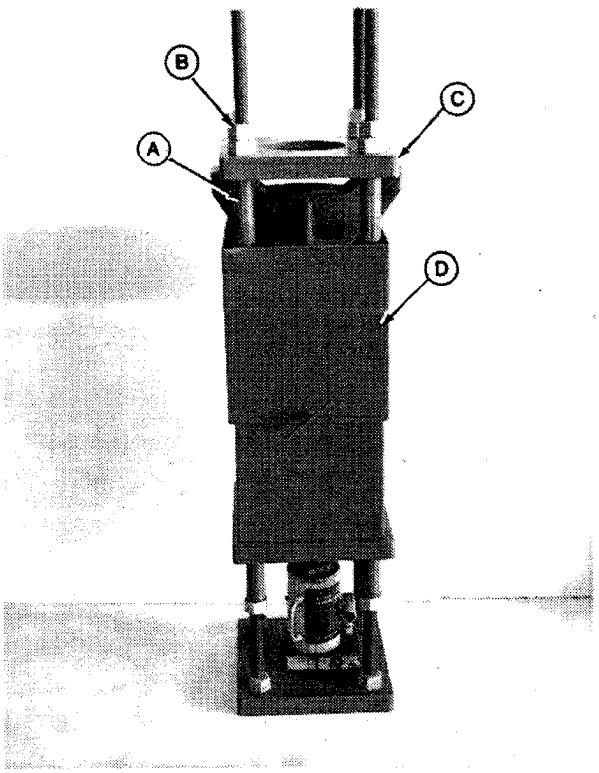
Recoil Spring Overall Length	
Free	609 mm (23.98 in.)
Compressed	521 mm (20.5 in.)

9. On later units, install nut and tighten. On early units, install cap screw and tighten.

10. Lower jack.

11. Remove nuts (B) and plate (C). Remove guard (D).

12. Remove recoil spring assembly from tool (A) using a hoist with a lifting strap around spring.



T7139AA -UN-23APR90

TX,0130,WW125 -19-17APR90

MEASURE LOWER TRACK ROLLER WEAR

ROLLER TREAD DIAMETER SPECIFICATIONS

New . . . . . 150 mm (5.90 in.)

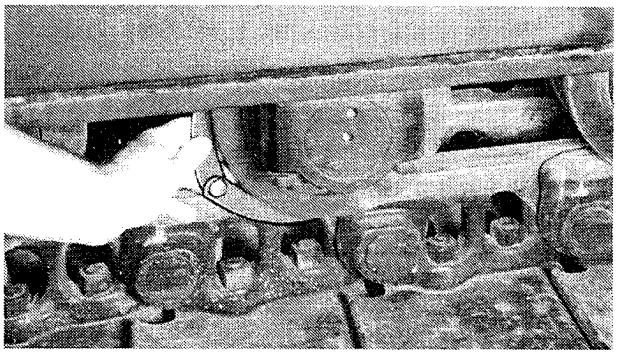
Minimum Used . . . . . 140 mm (5.51 in.)

Minimum used is the maximum allowable wear for rebuilding roller thread.

Under some conditions roller wear can be uneven. If wear is uneven, rollers may be interchanged to even out the wear.

Measure roller tread diameter using a caliper available in the JT05518 or JT05523 Undercarriage Inspection Service Tool Kit.

NOTE: See Undercarriage Appraisal Manual SP-326 for additional information.

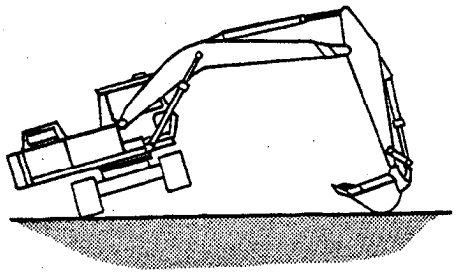


T87973 -UN-08NOV88

TX,0130,WW98 -19-16APR90

REMOVE AND INSTALL LOWER TRACK ROLLER

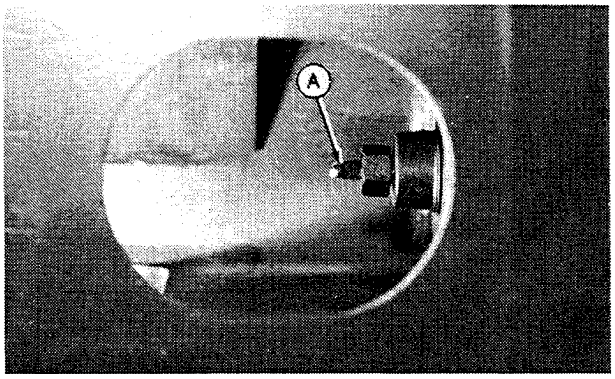
1. Swing upperstructure 90° and lower bucket to raise track off ground. Keep angle between boom and arm 90°—l00° and position round side of bucket on ground.



T6557CN -UN-19OCT88

0130,NN4 -19-16APR90

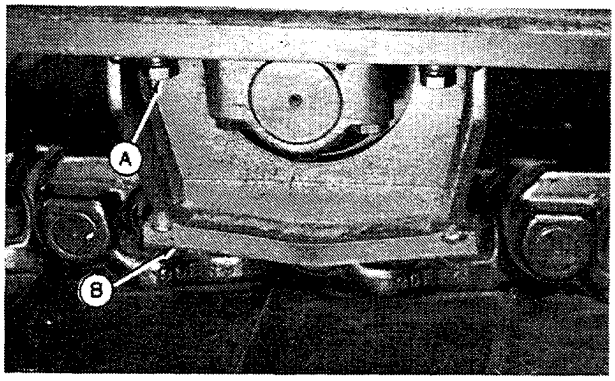
2. Open adjuster grease valve (A) to drain grease.



T6557DB -UN-25OCT88

0130,NN5 -19-16APR90

3. Remove cap screws (A) and roller guard (B).



0130,NN6 -19-16APR90

4. Remove cap screws (A).

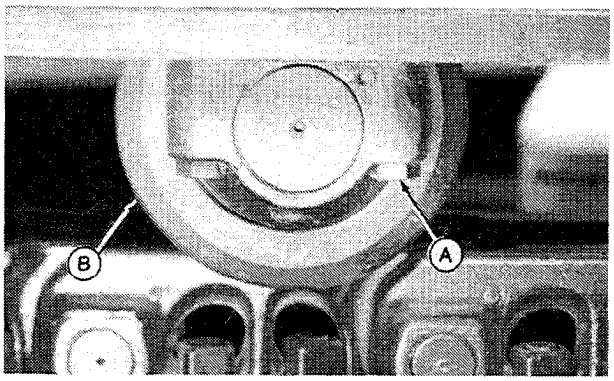
⚠ CAUTION: Lower roller weighs approximately 38 kg (84 lb).

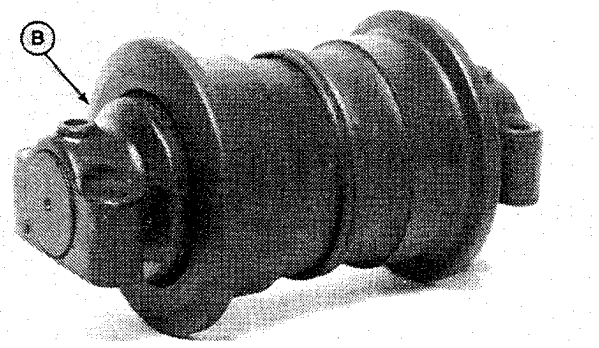
5. Attach hoist to lower roller (B), remove and repair or replace parts. (See procedure in this group.)

6. Install roller on track link with flat portion of collar pointing upward.

7. Lower excavator enough to allow cap screws (A) to be installed.

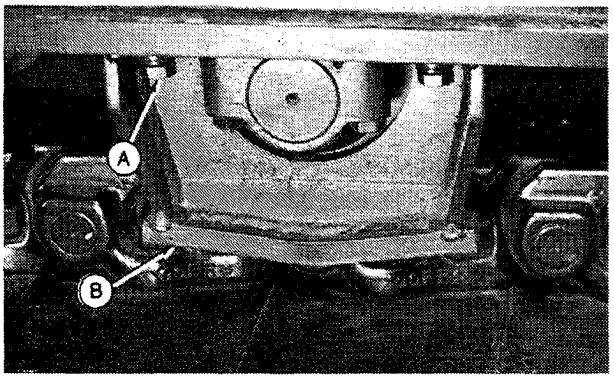
8. Apply thread lock and sealer (high strength) to cap screw threads. Tighten cap screws to 264 N·m (195 lb-ft).





TX,0130,WW108 -19-16APR90

9. Install roller guard (B) and tighten cap screws (A) to 264 N·m (195 lb-ft).



0130,NN8 -19-16APR90