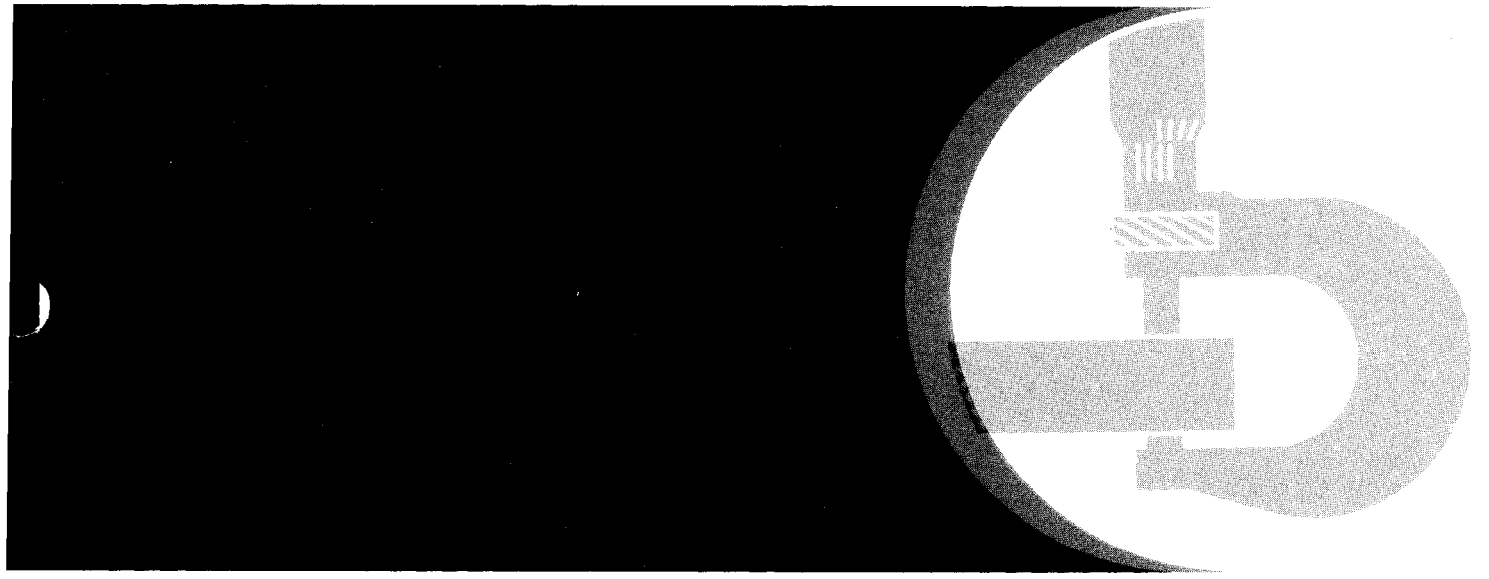
450D
Crawler Bulldozer
455D
Crawler Loader

JOHN DEERE



TECHNICAL MANUAL

TM1291 (Oct-87)
LITHO IN U.S.A.

TO ALL JOHN DEERE DEALERS

IMPORTANT: PLEASE REMOVE THIS PAGE AND ROUTE THROUGH YOUR SERVICE DEPARTMENT.

This is a complete revision for TM-1291, 450D Crawler Bulldozer and 455D Crawler Loader.

Binder and tabs from old manual may be saved and used with this bound manual.

The new pages are dated (Oct-87). Listed below is a brief explanation of "WHAT" was changed and "WHY" it was changed.

This manual was revised to include the correct art and story for steering pedal configuration.

450D CRAWLER BULLDOZER AND 455D CRAWLER LOADER TECHNICAL MANUAL TM-1291 (OCT-87)

SECTION AND GROUP CONTENTS

Continued on next page

All information, illustrations and specifications contained in this technical 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.

T64;1291 01 220987

T75;1291 01 250987Y

SECTION AND GROUP CONTENTS - Continued

T64;1291 02 070683

INTRODUCTION

This technical manual is part of a twin concept of service.

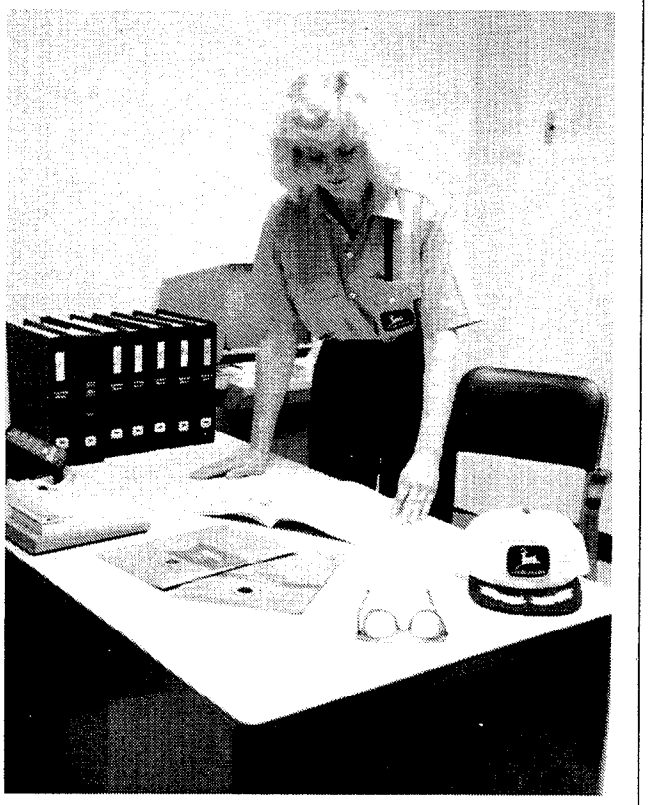
FOS Manuals - for reference

Technical Manuals - for actual service

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

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

Technical manuals are concise service guides for specific machines. Technical manuals are on-the-job guides containing only the vital information needed by an experienced service technician.



63A;T85956, T28;I II01 150383

FEATURES OF THIS TECHNICAL MANUAL

- John Deere ILLUSTRUCTION format emphasizing detailed pictures and fewer words in easy-to-use modules.
- Removal and installation groups preceding some repair groups.
- A section of system diagnostic testing.
- Table of contents of all sections at the front of the manual and a listing of all groups and headings at the front of each section.
- Special tools and specifications listed at the front of each group they are used in.
- Special tools illustrated in numerical order at end of manual.
- Alphabetical listing of all major components, specifications, and special tools.
- Safety rules, general specifications, and lubrication specifications.

This technical manual was planned and written for you - an experienced service technician. Keep it in a permanent binder in the shop where it is handy. Refer to it when you need to know correct service procedures or specifications.

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.

63A;T85959 T28;I II15 150383

SAFETY AND YOU

CAUTION: This safety symbol is used for important safety messages. When you see this symbol, follow the safety message to avoid personal injury.

63A;T81389 T28;I I102 150383

AVOID FIRE HAZARDS

Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located — know how to use them.

Do not smoke while refueling or handling highly flammable material.

Shut off the engine when refueling.

Use care in refueling if the engine is hot.

Do not use open pans of gasoline or diesel fuel for cleaning parts. Use good commercial, nonflammable solvents.

Provide adequate ventilation when charging batteries.

Do not check battery charge by placing metal objects across the posts.

Do not allow sparks or open flame near batteries.

Do not smoke near battery.

Never check fuel, battery electrolyte, or coolant levels with an open flame.

Never use an open flame to look for leaks anywhere on the equipment.

Never use an open flame as light anywhere on or around the equipment.

When preparing engine for storage, remember that inhibitor is volatile and therefore dangerous. Seal and tape openings after adding the inhibitor. Keep container tightly closed when not in use.

Inspect electrical wiring for worn or frayed insulation. Install new wiring if wires are damaged.

88A;T86875 T82;SKSA L 150383

PREVENT FIRES BEFORE STARTING ENGINE

If machine is equipped with a fire extinguisher, check for correct charge.

Open both side shields and grille and remove trash.

Remove trash from other bottom guards, drive lines, batteries, hydraulic lines, fuel tank and operator's station.

Check for leaking fuel lines, hydraulic lines, hoses, or fittings with a piece of cardboard or wood. Do not use your hands. Tighten loose fittings. If lines are bent or hoses kinked, install new parts.

T82;CRSA A 080483

PREVENT FIRES AFTER STOPPING ENGINE

Temperature in engine compartment may go up immediately after you stop the engine. **BE ON GUARD FOR FIRES.**

Before you clean trash from the engine compartment, wait until the engine has cooled. Open side shields to cool the engine faster. While the engine cools, clean trash from other areas.

T82;SKSA B 061282

HANDLE STARTING FLUID SAFELY

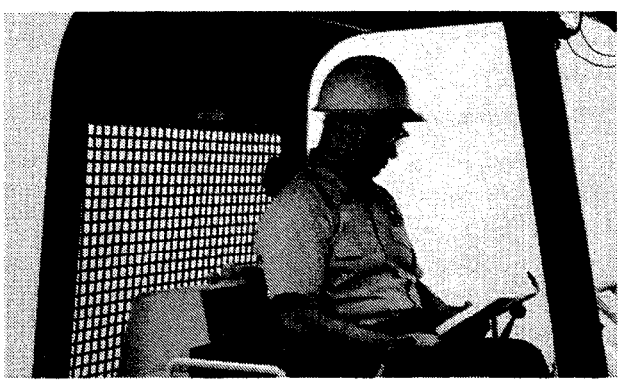
If your machine is equipped with a starting fluid starting aid, remember starting fluid is highly flammable. DO NOT incinerate or puncture a starting fluid container. DO NOT store a starting fluid container in a high-temperature area.

88A;T90207 T82;CRSA G 210283

UNDERSTAND MACHINE OPERATION

Only qualified people should operate the machine.

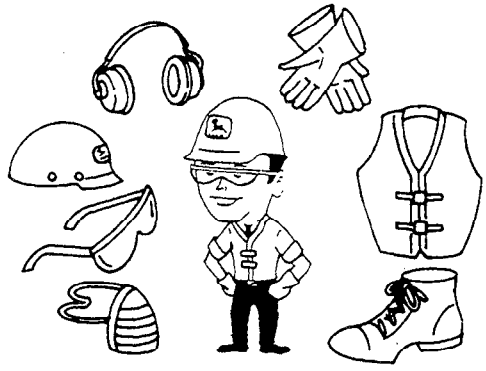
Learn the location and purpose of all controls, instruments, indicators, and labels.



88A;T90203 T82;CRSA B 210283

WEAR PROTECTIVE CLOTHING

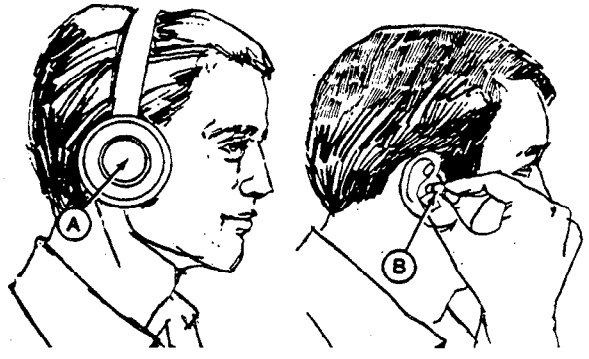
Wear fairly tight clothing . . . and safety equipment.



88A;T85056 T82;EXSA B 100183

PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear a suitable hearing protective device such as earmuffs (A) or earplugs (B) to protect against objectionable or uncomfortable loud noise.

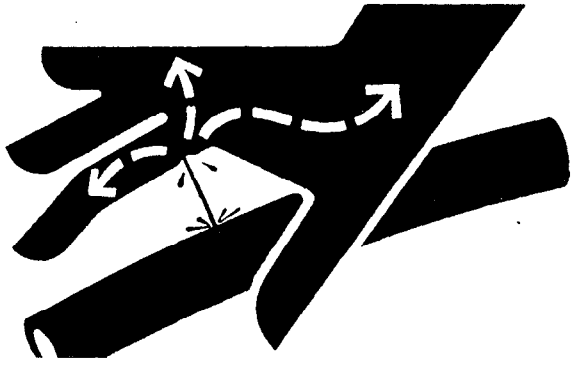


88A;X7662 T82;BHSA E 100183

AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.



88A;X9811 T82;BHSA F 100183

START ENGINE FROM OPERATOR'S SEAT ONLY

Avoid possible injury or death from machinery runaway.

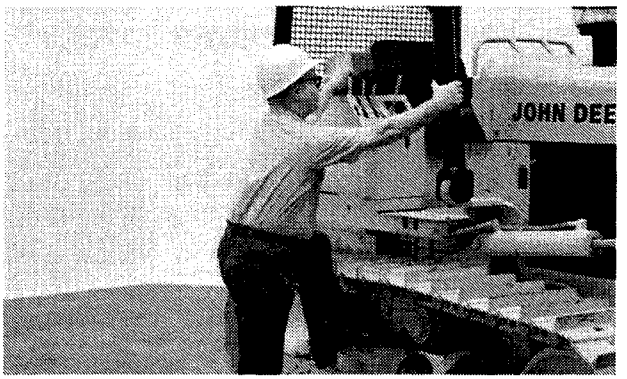
Do not start engine by shorting across starter terminals. Machine will start in gear and will move if normal circuitry is bypassed.

NEVER start engine while standing on ground. Start engine only from operator's seat, with transmission in neutral, neutral-lock lever in LOCK position and brake lock lever engaged.

T82;CRSA AD 260483

USE HAND HOLDS AND STEPS

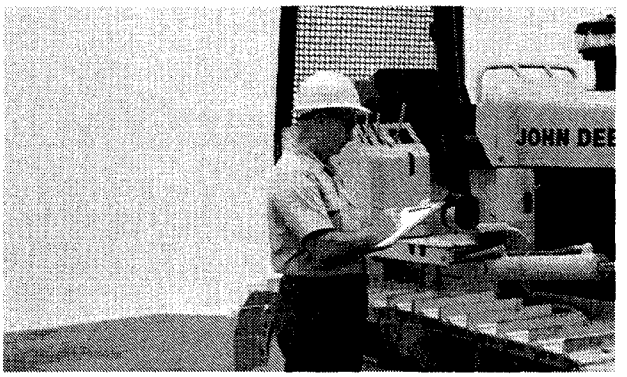
When you get on and off the machine, use handholds and steps.



88A;T90204 T82;CRSA C 210283

INSPECT MACHINE

Inspect your machine carefully each day before you start it. See "Pre-Start Inspection".



88A;T90205 T82;CRSA D 210283

OPERATE MACHINE SAFELY

DO use your seat belt if your machine has a roll-over protective structure (ROPS).

DO NOT use your seat belt if your machine does not have a ROPS.

88A;T90206 T82;CRSA E 180383

Before you move any equipment, be sure all persons are away from the machine.

When the machine is operating, ONLY the operator should be on it.

Keep operating area level.

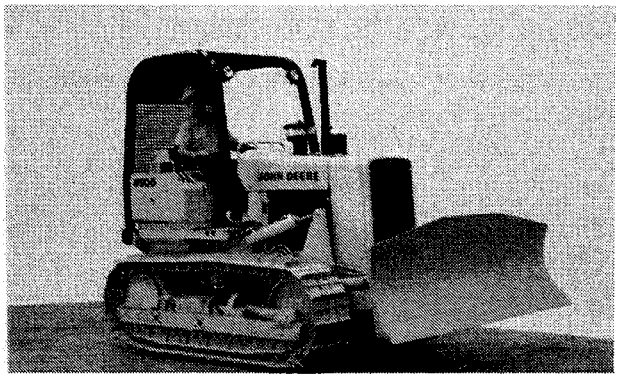
T82;CRSA F 210283

DRIVE CRAWLER BULLDOZER SAFELY

Drive carefully:
- on slopes.
- where room is limited.
- over rough ground, curbs, or tracks.
- near a ditch or excavation.

For traveling:
- carry blade low.
- keep machine in gear at all times.

Use accessory lights and safety devices to warn operators of other vehicles.



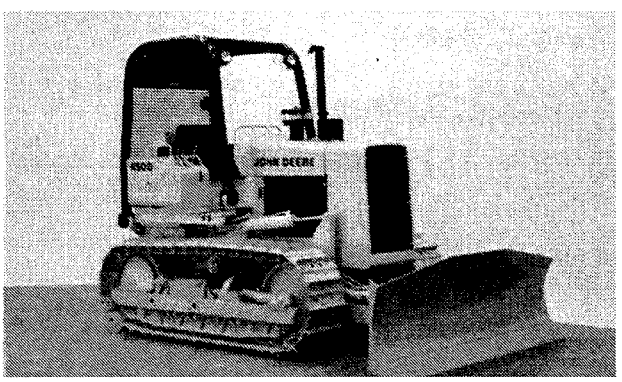
88A;T90208 T82;CRSA H 210283

PARK SAFELY

Be sure all equipment is on the ground or locked in position.

Before leaving operator's seat be sure machine will not move.

Remove keys from switches and locks.

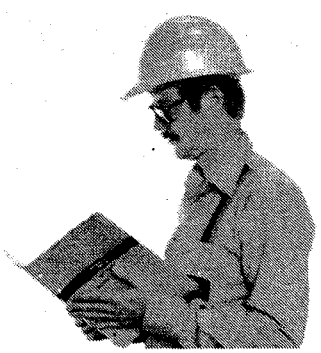


88A;T90209 T82;CRSA I 210283

UNDERSTAND CORRECT SERVICE

Be sure you understand a service procedure before you work on the machine.

Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.



63A;T87358 T82;TLSA H 191282

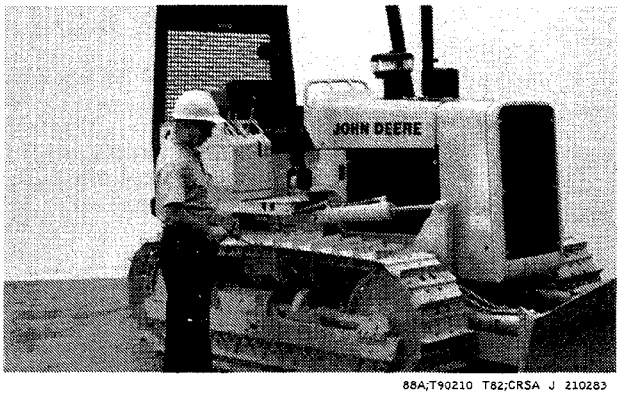
If it is necessary to make checks with the engine running, ALWAYS USE TWO PEOPLE — with the operator at the controls, able to see the person doing the checking.

Be sure transmission shift lever is in neutral. Apply and lock foot brake.

KEEP HANDS AWAY FROM MOVING PARTS.

T82;BHSA P 080482

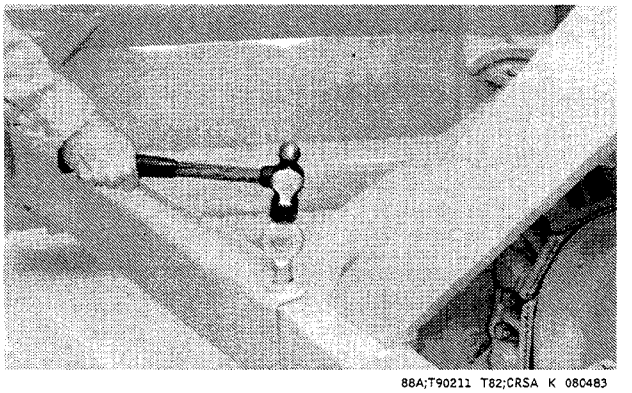
CLEAN THE MACHINE REGULARLY



88A;T90210 T82;CRSA J 210283

PROTECT AGAINST FLYING DEBRIS

When you drive connecting pins in or out, guard against injury from flying pieces of metal or debris. Wear goggles or safety glasses, hard hat, and gloves.

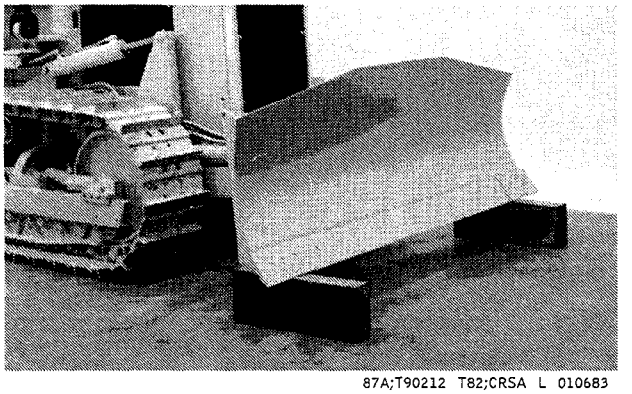


88A;T90211 T82;CRSA K 080483

SUPPORT RAISED EQUIPMENT

Do not work under raised equipment unless it has a support under it.

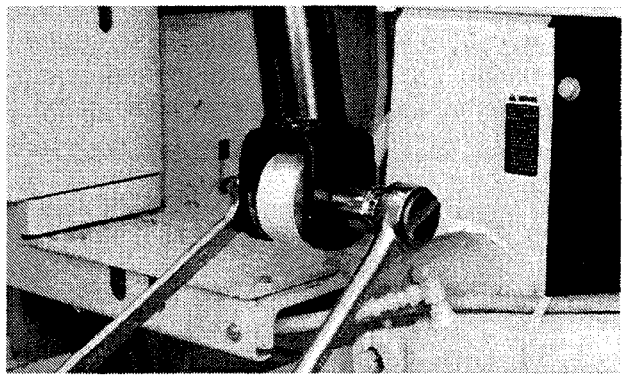
If a support is not available, lower equipment to the ground.



87A;T90212 T82;CRSA L 010683

KEEP ROPS INSTALLED PROPERLY

If ROLL-OVER protective equipment is loosened or removed for any reason, make certain all parts are reinstalled correctly. Tighten mounting bolts to proper torque. The protection offered by ROPS will be impaired if the ROPS is subject to structural damage, has been involved in an overturn incident or is in anyway altered. Damaged ROPS should be replaced, not reused.

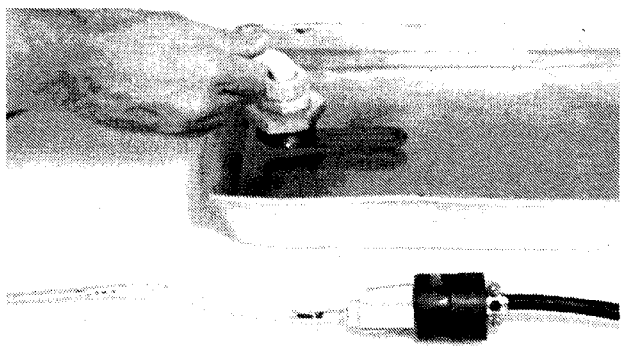


88A;T90213 T82;CRSA M 120483

TEST COOLANT HEATER IN LIQUID ONLY

Use a heavy-duty grounded cord to connect coolant heater to electrical power.

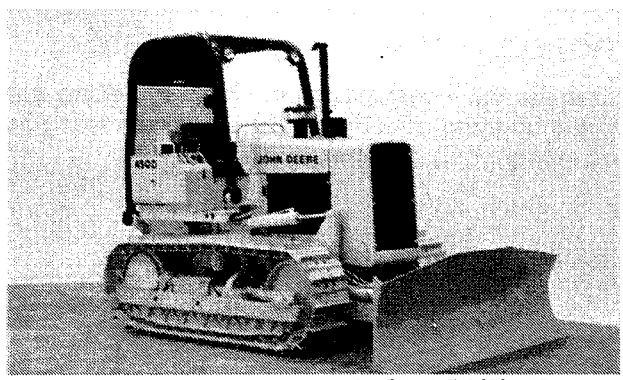
Do not plug into electrical power unless heating element is immersed in coolant. Sheath could burst and result in personal injury.



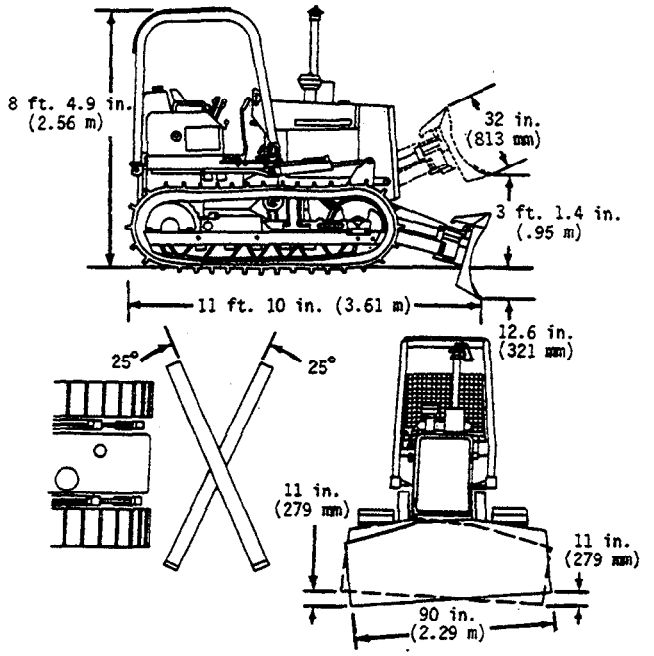
88A;T87098 T82;BHSA T 110183

PREPARE MACHINE FOR REPAIR

1. Lower all equipment to the ground.
2. Put transmission in PARK or engage parking brake.
3. Stop the engine.
4. Operate all hydraulic control levers to release hydraulic pressure in the system.
5. Disconnect negative (-) battery cable.

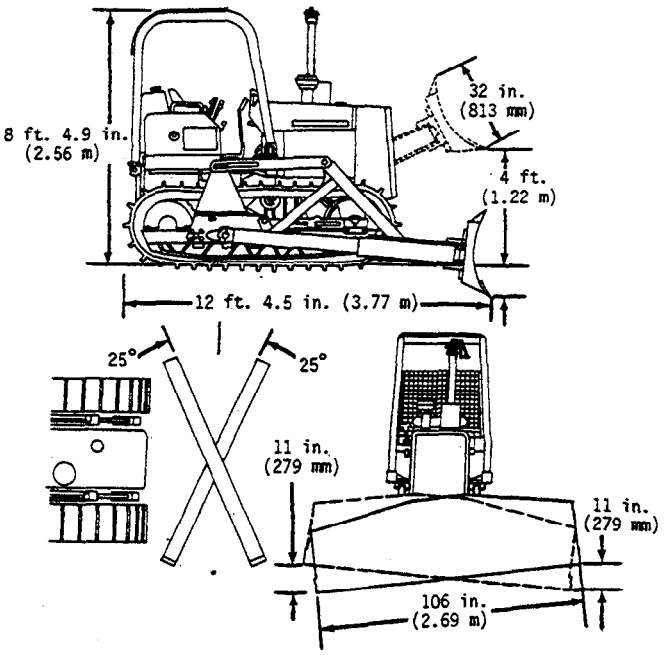


88A;T90209 T82;CRSA AB 200683



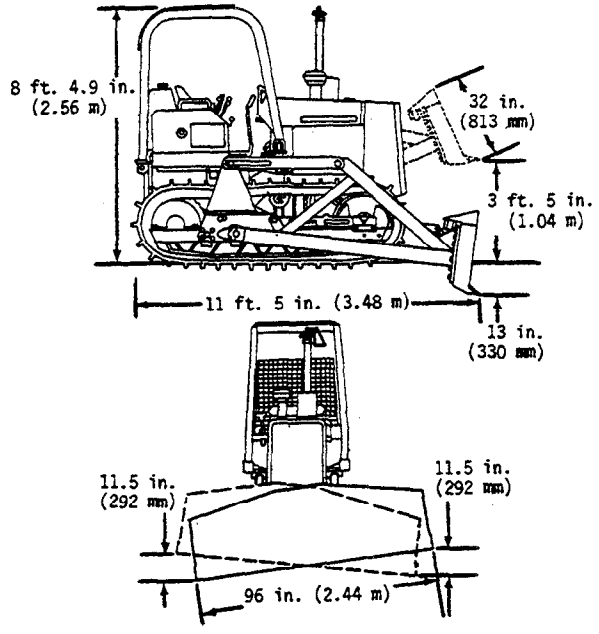
450D Crawler Dozer With 6405 Blade

88A;T90425 T82;CRSP A 250283



450D Crawler Dozer With 6410 Blade

88A;T90426 T82;CRSP C 250283



450D Crawler Dozer With 6415 Blade

88A;T90427 T82;CRSP D 250283

450D Crawler Dozer

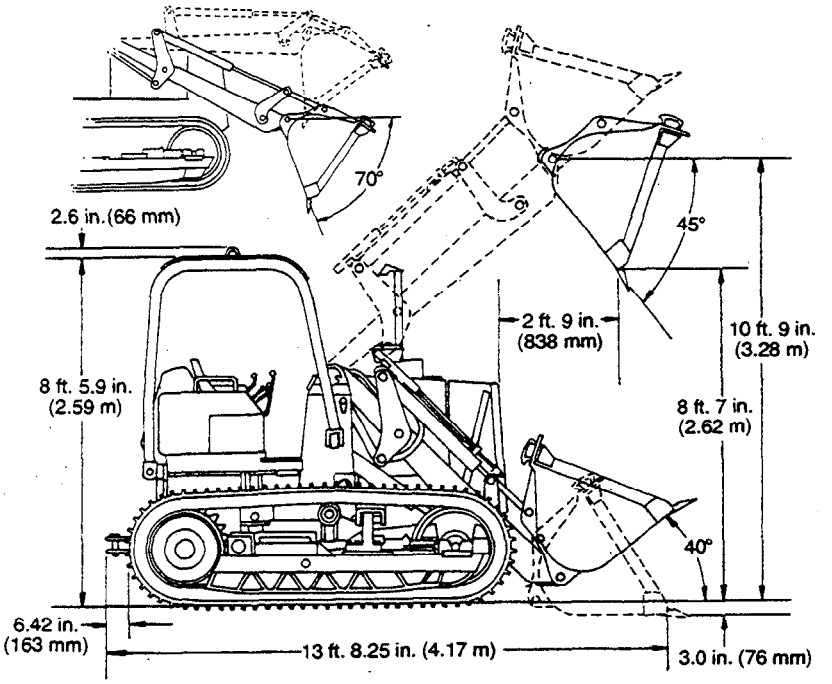
Capacities:	**U.S.**	**Metric**
Engine coolant	4 gal	15.0 L
Engine oil including filter	9 qt	8.5 L
Transmission	8 gal	30.3 L
Final drive (each side)	6.25 qt	5.9 L
Hydraulic reservoir	6 gal	22.7 L
Hydraulic system:		
(6405 dozer)	9.5 gal	36.0 L
(6410 dozer)	8.5 gal	32.2 L
(6415 dozer)	8.5 gal	32.2 L
Steering clutch housing (each side)	7 gal	26.5 L
Fuel tank	31 gal	117.3 L

SAE Operating Weight:

16 in. (406 mm) grouser shoes	12,260 lb (5560 kg)
6405 dozer and 16 in. (406 mm) grouser shoes	14,640 lb (6640 kg)
6410 dozer and 18 in. (457 mm) grouser shoes	14,830 lb (6727 kg)
6415 dozer and 18 in. (457 mm) grouser shoes	15,240 lb (6913 kg)

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure and standard equipment.)

T82;CRSP M 200683



455D Crawler Loader

88A;T92254 T82;CRSP K 170583

455D CRAWLER LOADER

455D Crawler Loader

Capacities:	**U.S.**	**Metric**
Engine coolant	4 gal	15.0 L
Engine oil including filter	9 qt	8.5 L
Transmission	8 gal	30.3 L
Final drive (each side)	6.25 qt	5.9 L
Hydraulic reservoir	6 gal	22.7 L
Hydraulic system:		
(6405 dozer)	9.5 gal	36.0 L
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(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure and standard equipment.)

T82;CRSP N 200683

HARDWARE TORQUE SPECIFICATIONS

Check all cap screws and nuts, which can be easily reached, to be sure they are tight. If hardware is loose, tighten it to torque shown on chart below unless a special torque is specified.

T82;EXMA V 150383

NOTE: Torques shown are for dry (no lubrication on threads) hardware.

NOTE: Torque wrench tolerance is ± 10 percent of specified torque.

Customary Hardware

Cap Screw Size-Inches	 Grade B		 Grade D		 Grade F	
	lb-ft.	(N-m)	lb-ft.	(N-m)	lb-ft.	(N-m)
1/4	----	----	10	(14)	14	(19)
5/16	----	----	20	(27)	30	(41)
3/8	----	----	35	(47)	50	(68)
7/16	35	(47)	55	(75)	80	(108)
1/2	55	(75)	85	(115)	120	(163)
9/16	75	(102)	130	(176)	175	(237)
5/8	105	(142)	170	(230)	240	(325)
3/4	185	(251)	300	(407)	425	(576)
7/8	160	(217)	445	(603)	685	(929)
1	250	(339)	670	(908)	1030	(1396)
1-1/8	330	(447)	910	(1234)	1460	(1979)
1-1/4	480	(651)	1250	(1695)	2060	(2793)

88A;T88884 T82;EXMA S 150383

O-RING BOSS FITTING SERVICE RECOMMENDATIONS

1. Inspect boss O-ring seat. It must be free of dirt and defects. If repeated leaks occur, inspect for defects with a magnifying glass. Some raised defects can be removed with a slip stone.

Occasionally a lower durometer O-ring will seal against a rough seat. If neither of these solutions work, the component must be replaced.

2. Put hydraulic oil, petroleum jelly or soap on the O-ring. Put a thimble over the threads to protect O-ring from nicks. Slide O-ring over the thimble and into the turned down section of fitting.

For angle fittings, loosen special nut and push special washer against threads so O-ring can be installed into the turned down section of fitting.

3. Turn fitting into the boss by hand until special washer or washer face (straight fitting) contacts boss face and O-ring is squeezed into its seat.

4. To position angle fittings, turn the fitting counterclockwise a maximum of one turn.

5. Tighten straight fittings to the torque valve shown in chart. For angle fittings, tighten the special nut to valve shown in the chart while holding body of fitting with a wrench.

STRAIGHT FITTING OR SPECIAL NUT TORQUE (1)

Thread Size	Torque[1] N·m	(lb-ft	Number Of Flats[2]
3/8-24 UNF	8	(6)	2
7/16-20 UNF	12	(9)	2
1/2-20 UNF	16	(12)	2
9/16-18 UNF	24	(18)	2
3/4-16 UNF	46	(34)	2
7/8-14 UNF	62	(46)	1-1/2
1-1/16-12 UN	102	(75)	1
1-3/16-12 UN	122	(90)	1
1-5/16-12 UN	142	(105)	3/4
1-5/8-12 UN	190	(140)	3/4
1-7/8-12 UN	217	(160)	1/2

1. Tolerance ± 10%.

2. To be used if a torque wrench cannot be used. After tightening fitting by hand, put a mark on nut and boss; then tighten special nut or straight fitting the number of flats shown.

T82;TLP0 AA 150483

TUBE AND HOSE FITTING, 37° FLARE AND 30° CONE SEAT CONNECTOR SERVICE RECOMMENDATIONS

1. Inspect the flare and the flare seat. They must be free of dirt and defects. If repeated leaks occur, inspect for defects with a magnifying glass. If burrs and raised nicks on the connector body cannot be removed with a slip stone, replace the connector.

2. Defects in the tube flare cannot be repaired. Replace the tube. Overtightening a defective flared fitting will not stop leaks.

3. As a field repair, a ductile truncated cone shaped washer can be used between the tube flare and connector body. These washers are soft enough to fill defects in the seat and flare. They will also seal the connection. Ductile washers are available from industrial supply houses.

4. Align the tube with the fitting before attempting to start the nut. Failure to do so can cause a deformed flare and subsequent leaks. Install hoses without twists. A twisted hose attempts to straighten out when pressure is applied. This exerts a torque on the connection, eventually causing failure.

5. Lubricate the connection with hydraulic fluid, petroleum jelly or soap. Tighten the swivel nut by hand until it is snug.

6. Mark a line across the nut and connector body. This line will serve as a visual indicator as to whether the nut has been tightened and by how much.

7. Using two wrenches, one on the connector body and a torque wrench on the nut, tighten the nut to the torque value as shown in the chart. In the case of a hose, it may be necessary to use three wrenches to prevent twisting.

TUBE AND HOSE FITTING, 37° FLARE AND 30° CONE SEAT CONNECTOR TORQUE

Thread Size	Torque[1] N·m	Torque[1] (lb-ft)	New[2] Number of Flats	Used[3] Number of Flats
3/8-24 UNF	8	(6)	2-1/2	1
7/16-20 UNF	12	(9)	2-1/2	1
1/2-20 UNF	16	(12)	2-1/2	1
9/16-18 UNF	24	(18)	2	1
3/4-16 UNF	46	(34)	2	1
7/8-14 UNF	62	(46)	1-1/2	1
1-1/16-12 UN	102	(75)	1	3/4
1-3/16-12 UN	122	(90)	1	3/4
1-5/16-12 UN	142	(105)	3/4	3/4
1-5/8-12 UN	190	(140)	3/4	3/4
1-7/8-12 UN	217	(160)	1/2	1/2

1. Tolerance of ± 10%.

2. To be used if a torque wrench cannot be used. After tightening fitting by hand, put a mark across the fittings, then tighten fitting the number of flats shown.

3. Flare connection seal by deforming or squeezing the tube between the nut and the connector. More deformation is possible with new parts than with old. Therefore, if a torque wrench is not used for re-assembly, the values in this column must be used to prevent damage.

T82;TLP0 AB 150383

SAE FOUR BOLT FLANGE FITTING SERVICE RECOMMENDATIONS

1. Inspect the sealing surfaces for nicks or scratches, roughness or out-of-flat condition. Scratches cause leaks. Roughness causes seal wear. Out-of-flat causes seal extrusion. If these defects cannot be polished out, replace the component.

2. Install the correct O-ring (and backup washer if required) into the groove using petroleum jelly to hold it in place.

3. For split flange; loosely assemble split flange halves, being sure that the split is centrally located and perpendicular to the port. Hand tighten cap screws to hold parts in place. Do not pinch O-ring.

4. For single piece flange; put hydraulic line in the center of the flange and install four cap screws. With the flange centrally located on the port, hand tighten cap screws to hold it in place. Do not pinch O-ring.

5. For both single piece flange and split flange, be sure the components are properly positioned and cap screws are hand tight. Tighten one cap screw, then tighten the diagonally opposite cap screw. Tighten the two remaining cap screws. Tighten all cap screws within the specified limits shown in the chart.

DO NOT use air wrenches. DO NOT tighten one cap screw fully before tightening the others. DO NOT overtighten.

SAE FOUR BOLT FLANGE FITTING TORQUE

Nominal Flange Size	Cap Screw Size[1]	Torque[2] N·m Min.	N·m Max.	(lb-ft) Min.	(lb-ft) Max..
1/2	5/16 - 18 UNC	20	31	(15)	(23)
3/4	3/8 - 16 UNC	28	54	(21)	(40)
1	3/8 - 16 UNC	37	54	(27)	(40)
1-1/4	7/16 - 14 UNC	47	85	(35)	(63)
1-1/2	1/2 - 13 UNC	62	131	(46)	(97)
2	1/2 - 13 UNC	73	131	(54)	(97)
2-1/2	1/2 - 13 UNC	107	131	(79)	(97)
3	5/8 - 11 UNC	158	264	(117)	(195)
3-1/2	5/8 - 11 UNC	158	264	(117)	(195)
4	5/8 - 11 UNC	158	264	(117)	(195)
5	5/8 - 11 UNC	158	264	(117)	(195)

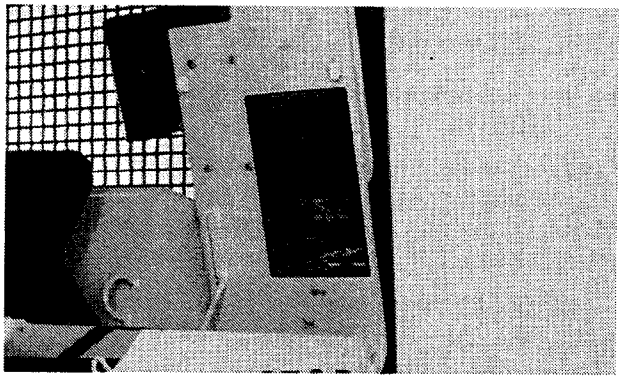
1. SAE Grade 5 or better cap screws with plated hardware.

2. Tolerance ± 10%. The torques given are enough for the given size connection with the recommended working pressure. Torques can be increased to the maximum shown for each cap screw size if desired. Increasing cap screw torque beyond this maximum will result in flange and cap screw bending and connection failures.

T82;TLPD AC 150383

USE PERIODIC MAINTENANCE CHART

The chart and the operator's manual list all the service points and the procedures for maintaining the machine. Use them to check, service, and adjust your customer's machine.



88A;T90560 T82;CRFL G 210683

FUEL SPECIFICATIONS

Use ONLY clean, high-quality fuel.

Use Grade No. 2-D fuel above 40°F (4°C).

Use Grade No. 1-D fuel at temperatures below 40°F (4°C). Use Grade 1-D fuel for all air temperatures at altitudes above 5000 ft (1 500 m).

IMPORTANT: If fuel sulfur content exceeds 0.5 percent, the engine oil drain interval must be reduced by 50 percent (to 100 hours).

Use fuel with less than 1.0 per cent sulfur. If possible, use fuel with less than 0.5 per cent sulfur.

For maximum filter life, sediment and water should not be more than 0.10 per cent.

The cetane number should be 40 minimum. If you operate your machine where air temperatures are normally low or where altitudes are high, you may need fuel with a higher cetane number.

Cloud Point - For cold weather operation, cloud point should be 10°F (6°C) below lowest normal air temperature.

T82;BHFL F 150982

FUEL STORAGE

NOTE: Diesel fuels stored for a long time may form gum and plug filters.

Keep fuel in a clean container in a protected area. Water and sediment must be removed before fuel gets to the engine. Do not use de-icers to remove water from fuel. Do not depend on fuel filters to remove water.

If possible, install a water separator at the storage tank outlet. See your John Deere dealer for this part.

IMPORTANT: Keep all dirt, scale, water or other foreign material out of fuel.

Store fuel drums on their sides with plugs up.

T82;BHFL G 150982

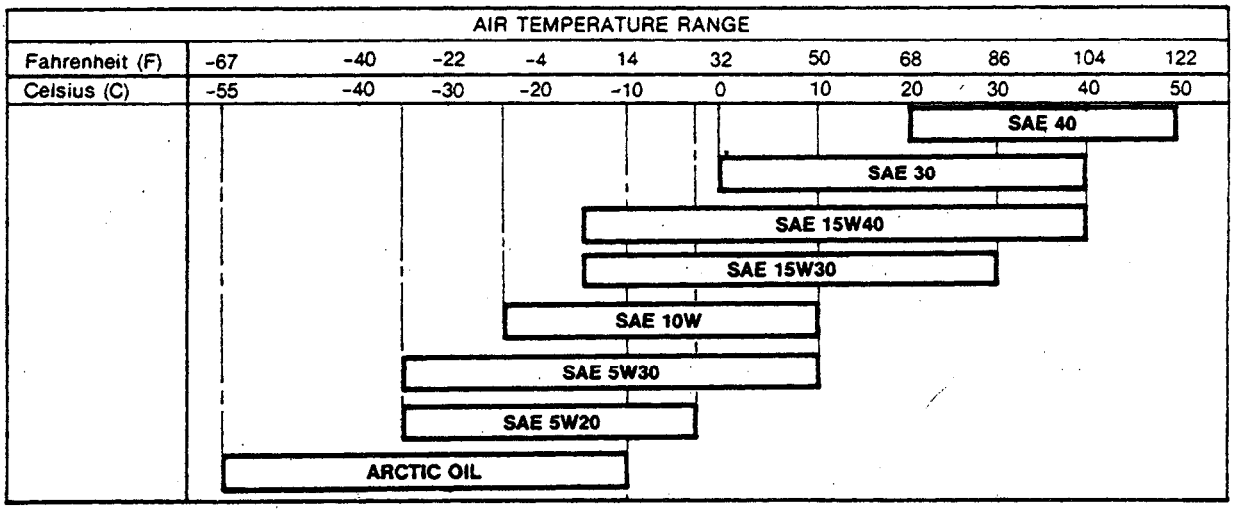
FUEL TANK

CAUTION: Handle fuel carefully. If the engine is hot or running, do not fill the fuel tank. Do not smoke while you fill fuel tank or work on fuel system.

To avoid condensation, fill the fuel tank at the end of each day's operation.

T82;BHFL H 080483

ENGINE OIL



Depending upon the expected air temperature range between oil changes, use oil viscosity shown on the temperature chart above.

Additives are not required nor recommended.

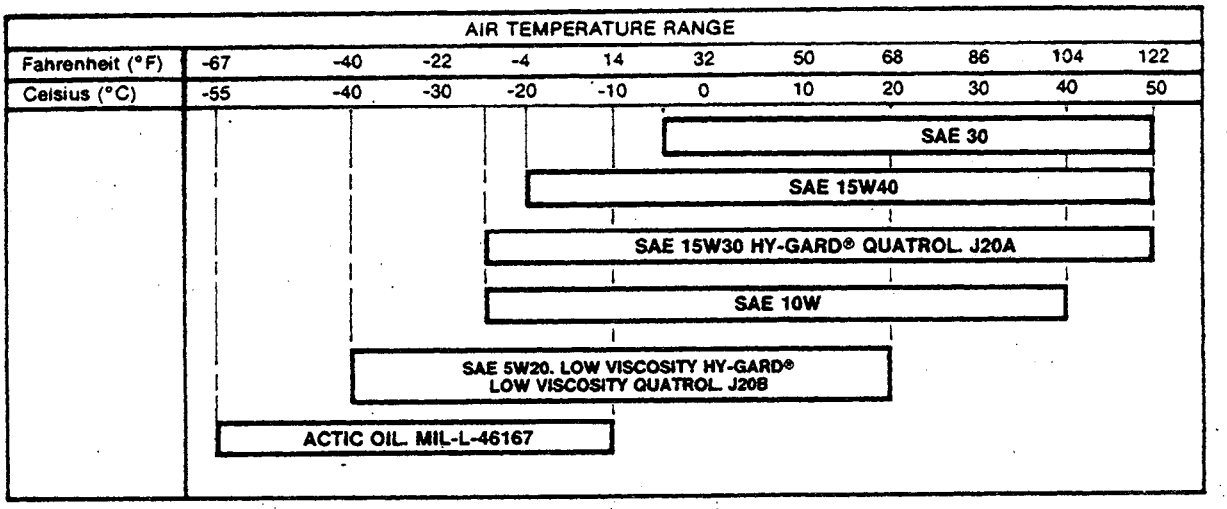
John Deere TORQ-GARD SUPREME® engine oil is recommended. If other oils are used, they must have the following minimum specifications:

Oil Specification	Use
API Service CD/SC (MIL-L-2104C)	Recommended.
API Service CC/SC* or MIL-L-46152*	For SAE 5W20, SAE 5W30 and arctic oil only, use if recommended oil is not available.
MIL-L-46167*	For arctic oil only.

*Change oil at 100 hours, which is half the normal drain interval.

88A;T91372 T82;CRFL E 270483

TRANSMISSION - STEERING CLUTCHES AND HYDRAULIC SYSTEM OIL



Depending upon the expected air temperature range between oil changes, use oil viscosity shown on the temperature chart above.

The following oils are recommended:

John Deere HY-GARD® Transmission and Hydraulic Oils.

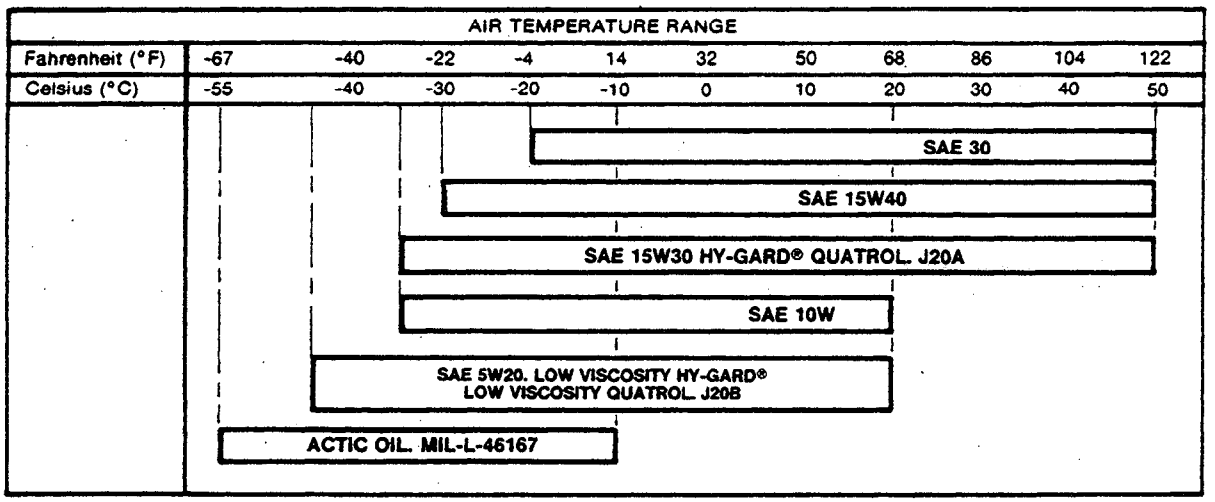
Engine oil meeting API Service CD/SC (MIL-L-2104C), CC/SC, or MIL-L-46152.

You may also use QUATROL® oils, which are oils that meet John Deere standards, or other oils meeting John Deere Standard J20A or J20B.

Oil meeting MIL-L-46167 may be used as an arctic oil.

88A;T91368 T82;CRFL A 260483

FINAL DRIVE OIL



Depending upon the expected air temperature range between oil changes, use oil viscosity shown on the temperature chart above.

The following oils are recommended:

John Deere HY-GARD® Transmission and Hydraulic Oils.

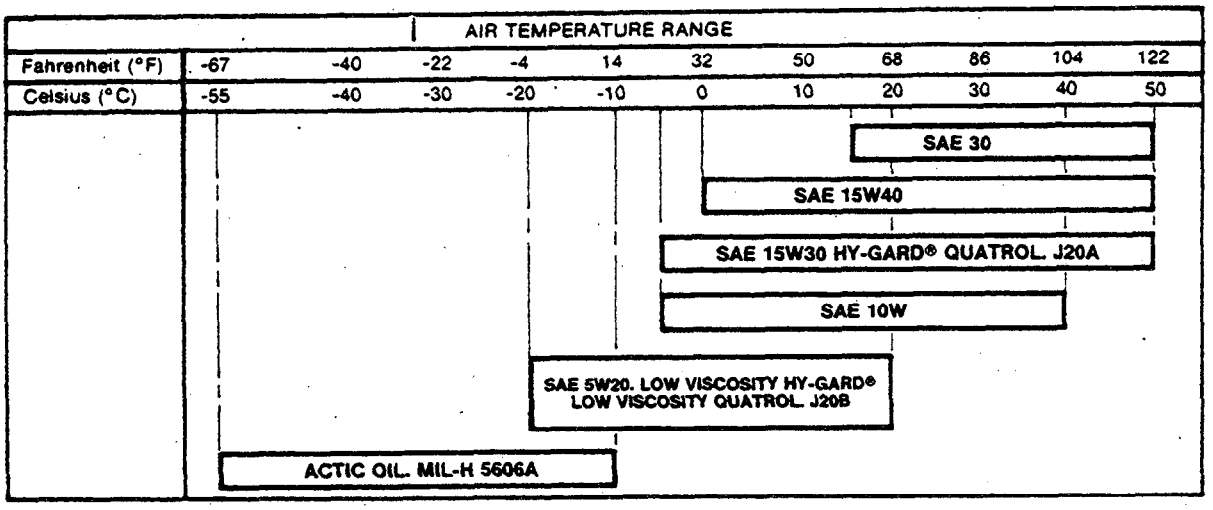
Engine oil meeting API Service CD/SC (MIL-L-2104C), CC/SC, or MIL-L-46152.

You may also use QUATROL® oils, which are oils that meet John Deere standards, or other oils meeting John Deere Standard J20A or J20B.

Oil meeting MIL-L-46167 may be used as an arctic oil.

88A;T91369 T82;CRFL B 260483

WINCH OIL



Depending upon the expected air temperature range between oil changes, use oil viscosity shown on the temperature chart above.

The following oils are recommended:

John Deere HY-GARD® Transmission and Hydraulic Oils.

Engine oil meeting API Service CD/SC (MIL-L-2104C), CC/SC, or MIL-L-46152.

You may also use QUATROL® oils, which are oils that meet John Deere standards, or other oils meeting John Deere Standard J20A or J20B.

Oil meeting MIL-H-5606A may be used as an arctic oil.

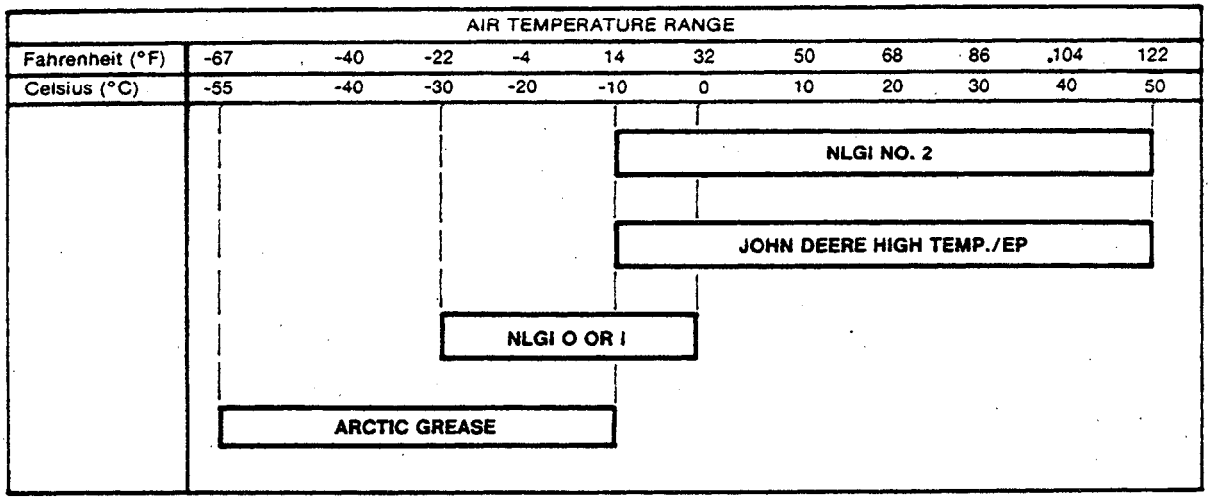
88A;T91370 T82;CRFL C 260483

TRACK ROLLER, FRONT IDLER, AND CARRIER ROLLER OIL

Use SAE 80W90 gear oil meeting API Service GL-5 (MIL-L-2105B or MIL-L-2105C).

T82;CRFL D 080483

GREASE



Depending on the expected air temperature range during use, use grease shown on chart above.

Greases recommended are:

SAE Multipurpose Grease with Extreme Pressure (EP) performance and containing 3 to 5 per cent molybdenum disulfide (preferred).

John Deere High Temperature/EP Grease.

SAE multi-purpose EP grease.

Grease meeting MIL-G-10924C specifications may be used as arctic grease.

88A;T91371 T82;CRFL F 260483

COLD WEATHER OPERATION

Additional information on cold weather operation is available from your John Deere Industrial Region office.

T82;TLPD U 270183

ALTERNATIVE LUBRICANTS

Conditions in certain geographical areas may require special lubricants and lubrication practices which do not appear in this manual. If you have any questions, consult your John Deere Industrial Region office to obtain the latest information and recommendations.

T82;TLPD Y 270183

LUBRICANT STORAGE

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture, and other contamination. Store drums on their sides.

T82;BHFL J 080483

Section 01
TRACKS

CONTENTS

T47;0100 109 190883

SPECIAL TOOLS

NOTE: Order tools from your SERVICE-GARD Catalog unless othewise indicated.

Number	Name	Use
D-01030AA	Master Pin Pusher	Remove master track pin.
D-01045AA	Bushing, Bearing and Seal Driver Set	Remove and install bushings.
JD284	Hydraulic Track Adjuster Service Set	Install track adjuster seals.
JT05518	Undercarriage Inspection Service Tool Kit (attache case)	Measure undercarriage wear.
JT05523	Undercarriage Inspection Service Tool Kit (soft briefcase)	Measure undercarriage wear.
T16678	Special Bolt	Remove and install track idler recoil spring.
D-01031AA	200 Ton Twin Head Track Press	Disassemble and assemble track chain.
26815	Tooling Set	Disassemble and assemble track chain.

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OTHER MATERIALS

Number	Name	Use
PT569	John Deere NEVER-SEEZ® Lubricant	Sprayed on threads of T16678 Special Bolt.
—	Low carbon AWS-ASTM, E-7018 covered electrode (5/32 in. dia.)	Welding on track frame wear strips.

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

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TORQUE SPECIFICATIONS

Cap Screws	Torque
Upper carrier roller assembly support attaching	115 N·m (85 lb-ft)
Upper carrier roller plate socket head	54 ± 4 N·m (40 ± 3 lb-ft)
Upper carrier roller cover	47 N·m (35 lb-ft)
Upper carrier roller oil level check	41 ± 4 N·m (30 ± 3 lb-ft)
Front idler seal ring socket head	68 ± 7 N·m (50 ± 5 lb-ft)
Front idler guide	115 ± 11 N·m (85 ± 8 lb-ft)
Track adjusting cylinder yoke to idler bracket	115 ± N·m (85 ± 8 lb-ft)
Roller to track frame	175 ± 18 N·m (130 ± 13 lb-ft)
Inner roller bracket and idler bracket to shaft	407 ± 41 N·m (300 ± 30 lb-ft)
Outer roller and idler bracket to shaft (special cap screw)	
Part No. on head	407 ± 41 N·m (300 ± 30 lb-ft)
No marking on head	285 ± 28 N·m (210 ± 21 lb-ft)
Inner and outer rock guard	230 N·m (170 lb-ft)
Inner to outer rock guard spacer	163 ± 16 N·m (120 ± 12 lb-ft)
Drive sprocket to axle shaft	576 ± 57 N·m (425 ± 42 lb-ft)
Sprocket shield attaching	115 N·m (85 lb-ft)
Front crossbar to frame horizontal	339 ± 34 N·m (250 ± 25 lb-ft)
Front crossbar to frame vertical	474.6 ± 12.46 N·m (350 ± 35 lb-ft)
Front crossbar to track frame	576 ± 54 N·m (425 ± 40 lb-ft)
Rear crossbar bar bracket to steering clutch housing	407 ± 41 N·m (300 ± 30 lb-ft)
Dozer mounting frame to rear bar bracket	407 to 909 N·m (300 to 670 lb-ft)
Rear crossbar bracket cap to rear bar bracket	339 ± 39.5 N·m (250 ± 25 lb-ft)
Track shoe attaching	163 ± 16 N·m (120 ± 12 lb-ft)

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TRACK SPECIFICATIONS

Distance across four links (new chain)	640.1 mm (25.2 in.)
100% wear limit	652.8 mm (25.7 in.)
Link height (new chain)	90 mm (3.54 in.)
100% wear limit	82.8 mm (3.26 in.)
Bushing O.D. (new bushing)	51 mm (2.01 in.)
100% wear limit (normal loading)	46 mm (1.81 in.)
100% wear limit (high shock loading	48 mm (1.89 in.)
Bushing stickout	7.44 mm (0.298 in.)
Single grouser bar height (new shoe)	48.0 mm (1.89 in.)
100% wear limit	20.0 mm (0.79 in.)
Semi-grouser bar height (new shoe)	21.1 mm (0.83 in.)
100% wear limit	12.0 mm (0.47 in.)
Upper track carrier roller OD (new)	152.4 mm (6.0 in.)
100 % wear limit	139.7 mm (5.50 in.)
Track roller OD (new)	182.6 mm (7.19 in.)
100% wear limit	168.2 mm (6.62 in.)
Front idler flange height (new)	19.3 mm (0.76 in.)
100% wear limit	24.4 mm (0.96 in.)

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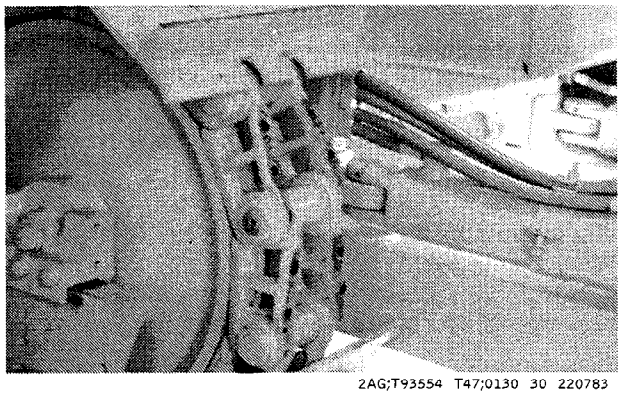
REMOVE TRACK CHAIN

1. Rotate track to position the master pin on the front idler as shown.

NOTE: Master pin is identified by drill point in end of pin.

CAUTION: Make sure track clears floor before rotating.

2. Remove two track shoes; one on each side of master pin.



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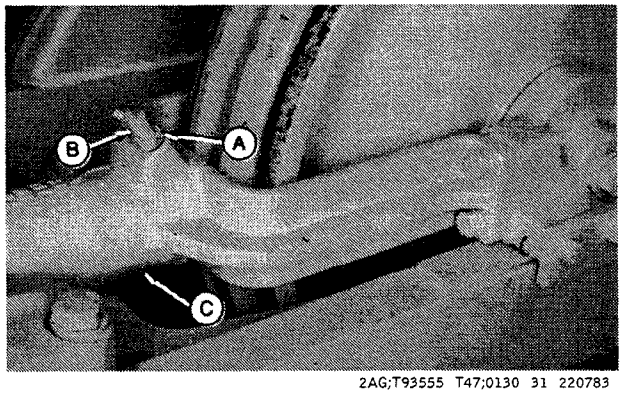
3. Release track tension by loosening nut (A) and turn set screw (B) out of the track adjusting cylinder (C) approximately three turns.



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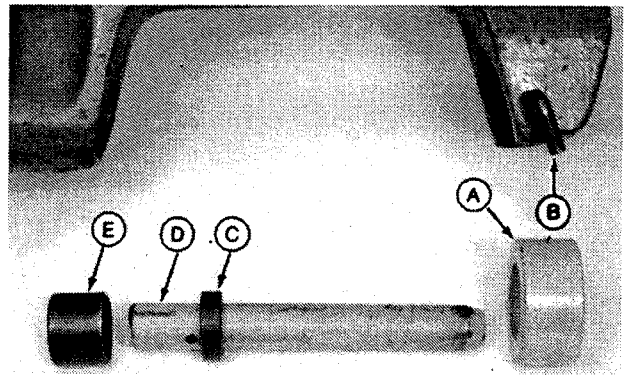
IMPORTANT: Do not remove the track master pin with a hammer. This will enlarge the link pin bore requiring installation of a new track link.

4. Remove master pin from track link using D-01030AA Master Pin Pusher. Install aligning adapter (A) into master pin pusher C-frame securing with holding screw (B). Put aligning bushings (C) over forcing pin (D) and install adapter (E) in C-frame.

A—Aligning Adapter
B—Holding Screw
C—Aligning Bushing
D—Forcing Pin
E—Pin Adapter



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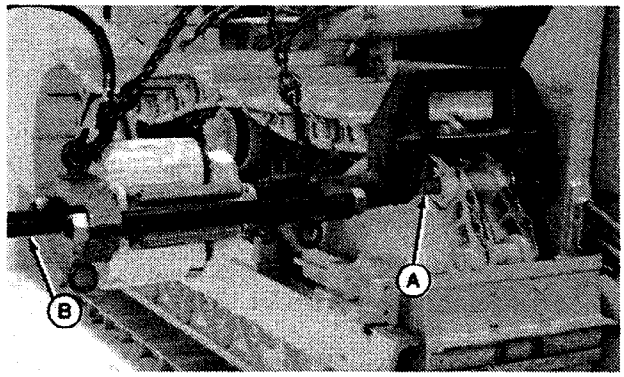
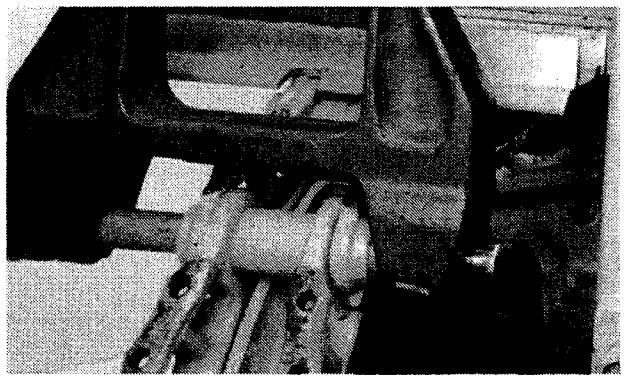
5. Position master pin pusher and forcing pin in alignment with master pin using load positioning sling and hoist.

6. Turn ram adjusting screw (B) clockwise with crank until forcing pin (A) contacts master pin.

7. Connect hand pump to pin pusher. Activate pump to remove master pin.

8. Remove forcing pin to separate track.





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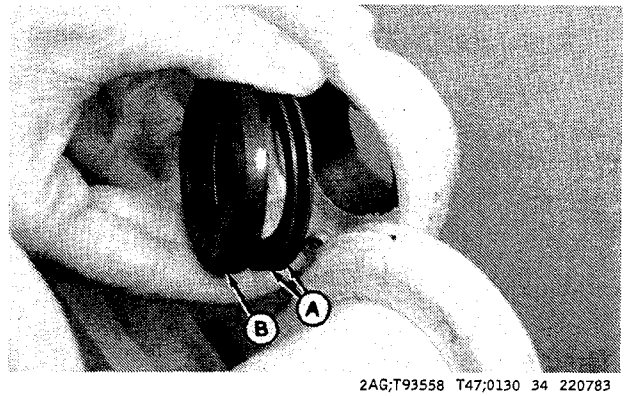
9. Pull track chain apart. Remove spacers (B) and seals (A) from between left and right track links.

10. Lift side of machine or operate crawler and rotate track in the reverse direction. Slowly, unwrap track off drive sprocket.

11. Place a jack under both crossbars and raise crawler to provide clearance. Block crawler up securely.



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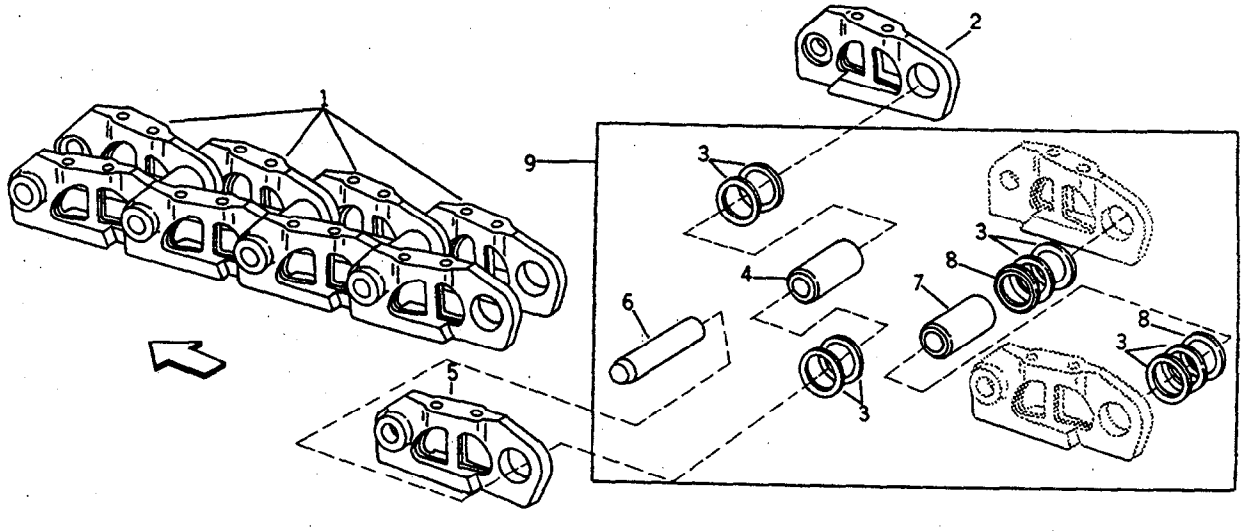

T59376F

1—Track Chain
2—Right Track Link
3—Belleville Seals
4—Bushing
5—Left Track Link
6—Pin, Standard
Pin, Master
(Drill Point On End)
7—Master Bushing
8—Spacer (Master Bushing)
9—Pin and Bushing Repair Kit

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DISASSEMBLE TRACK CHAIN

CAUTION: Always wear safety glasses when operating press. Parts may break or chip, causing eye injuries.

1. Remove track shoes from chain.

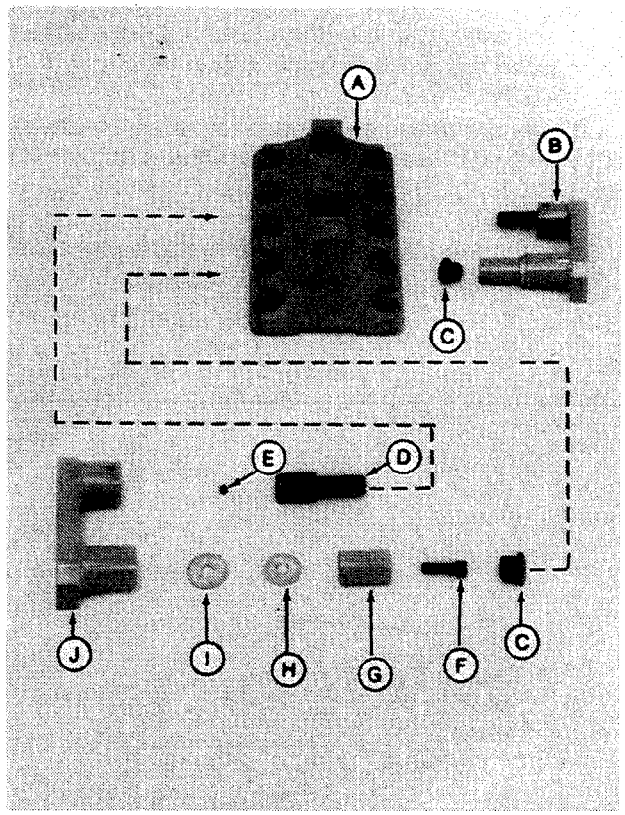
2. Install 40989 Saddle from 26815 Track Disassembly and Assembly Tooling Kit in track press frame and secure with cap screws.

T47;0130 04 220783

3. Adjust conveyor extension to desired conveyor working height.

4. Install left and right disassembly plates, sleeves and components from 26815 Tooling Set on work head of press and secure with attaching nuts.

A—(40989)Saddle
B—(26819) R.H. Disassembly Adapter Plate
C—(26327) Master Bushing Spacer (2 used)
D—(33266) Forcing Pin (2 used)
E—(10153) Set Screw (2 used)
F—(10103) Cap Screw (2 used)
G—(26429) Forcing Pin Sleeve (2 used)
H—(21887) Spacer (2 used)
I—(20636) Spacer (2 used)
J—(26820) L. H. Assembly Adapter Plate
Track Disassembly Tooling



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NOTE: If pins and bushings are to be turned and not replaced, be sure one end of each pin and bushing is marked prior to chain disassembly. The mark can then be referenced during assembly to insure an exact 180° turn.

T47;0130 06 220783

5. Position track chain on track press conveyor with cap screw hole side up.

6. Raise the elevating conveyor and advance the track chain assembly until the link assembly bushing end is directly over the saddle front seat.

7. Lower conveyor so the chain link assembly is in position over the saddle.

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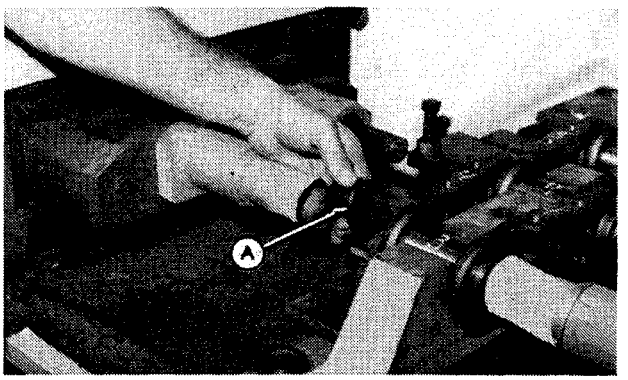
NOTE: When removing master bushing, 26327 insert Master Bushing Spacers (A) in bushing forcing sleeve. Remove spacer after removing bushing.



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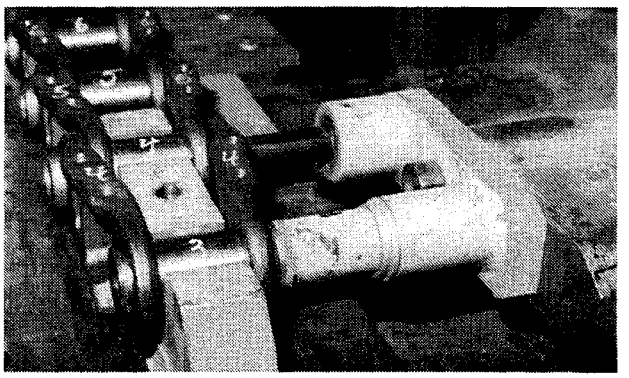
8. Advance right hand work head until it contacts pin and bushing. Check alignment of tooling with pin and bushing. Press pin and bushing from link.



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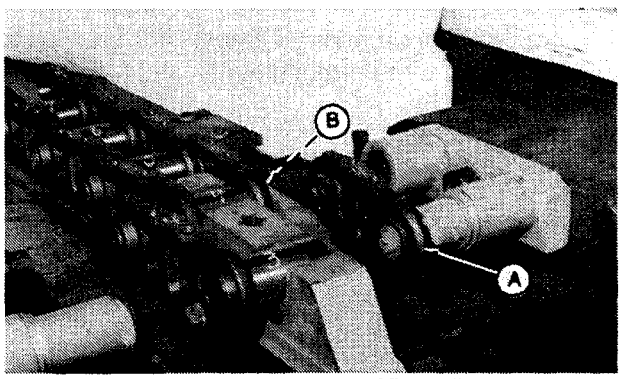
9. Retract the right ram. This action will carry the right side link with the ram. Remove the link (A) and two belleville seals (B). Seals should be discarded and replaced with new ones when reassembling.



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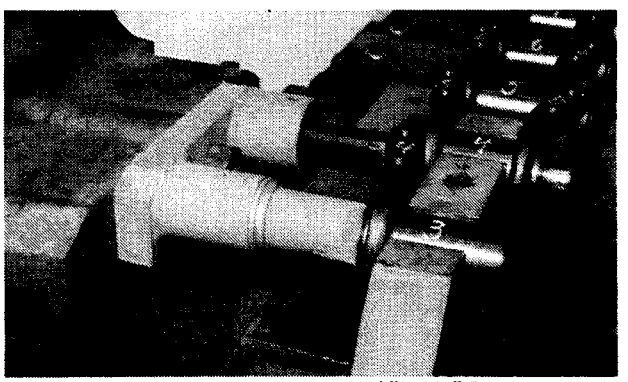
10. Advance the left work head of track press until the ram and disassembly adapter come in contract with bushing an pin. Check for proper alignment of tooling with bushing and pin. Press bushing, belleville seals, and pin from left-hand track link.



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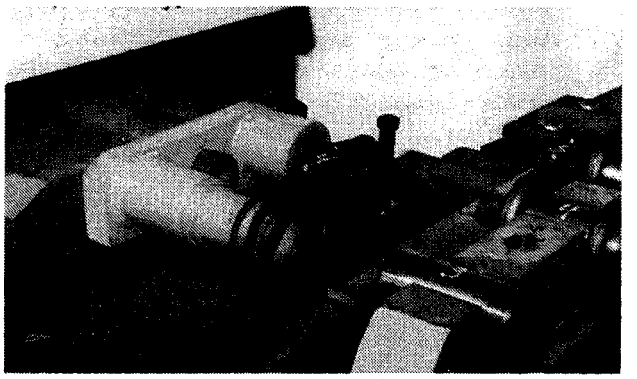
11. Retract the left ram carrying the left side link. Remove the link and two belleville seals.



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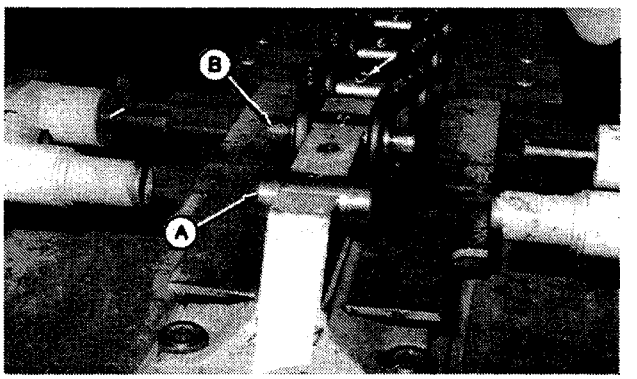
12. Raise elevating table and remove bushing (A) and pin (B).

13. Advance the track chain in position over the saddle.

14. Lower conveyor to rest chain link assembly into saddle.

15. Disassemble remainder of track chain using the method.



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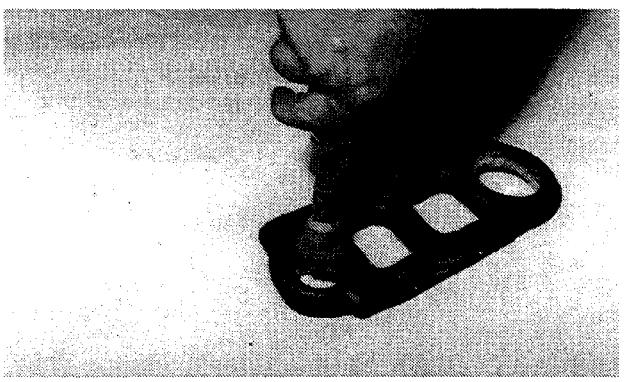
16. Inspect track chain parts for cracks or wear; replace if necessary. Use a wire brush to remove any rust or dirt on machined surfaces.



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