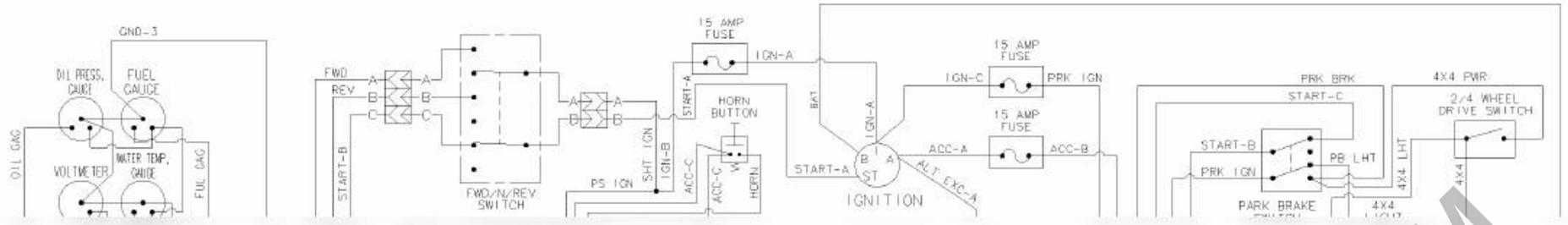


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Attachment Installation



1. Retract Quick Switch™ (Attachment-Tilt lever forward) to provide clearance. Check to be sure lock pin is secured in raised position with retainer pin.



2. Align boom head pivot with recess in attachment. Raise boom slightly to engage boom head pivot in recess.



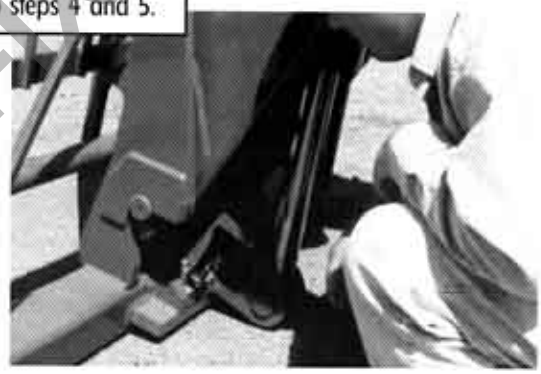
3. Engage Quick Switch (Attachment-Tilt lever backward).

⚠ WARNING

This installation procedure is designed for one-man operation. If a helper is involved, shut off the engine before proceeding to steps 4 and 5.



4. Remove retainer pin and lower lock pin fully.



5. Secure lock pin in locked position using retainer pin.

⚠ DANGER

Always be certain that carriage or attachment is properly positioned on boom head and is secured by lock pin and retainer pin. Failure to ensure proper installation could permit carriage/attachment/load to disengage and cause serious injury or death.

Attachment Operation

Operation of the handler equipped with carriage/fork combination is covered in the **GRADALL Material Handler Safety Manual**, the **EMI Rough-Terrain Forklift Safety Manual** and this **Owner/Operator Manual**.

Operation of the handler when equipped with other approved attachments is covered in this section or in separate instructions furnished with the attachment. Any separate instructions must be kept in Manual Holder in cab with this **Owner/Operator Manual.**

When an attachment is installed on the handler, take extra care when engaging, securing, manipulating, transporting and positioning the load.

Operate a handler equipped with an attachment as a partially loaded handler. Pay special attention to capacity and range limits for the handler/attachment combination.

Practice operation of handler and attachment in a safe, open area, not hazardous to yourself, other persons, equipment or property. Become thoroughly familiar with response of handler and attachment to controls before operating in a work situation.

Always consider terrain between present location of load and delivery point. Never attempt to transport a load across terrain which could cause handler to tip over.

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RECOMMENDED LUBRICANTS & CAPACITIES

APPLICATION	SYMBOL	WHEN USED	GRADE	SPECIFICATION	CAPACITY*	
Boom Cable Adj. Threads	MY (moly lube)	All Year	-	P/N 1440-3323	-	-
Boom Slide Bearing Paths	MG (extreme pres. moly lube)	All Year	NLGI #2	**	-	-
Engine Cooling System	AF (anti-freeze)	All Year	½ & ½	Permanent	17.7 qts	16.6 L

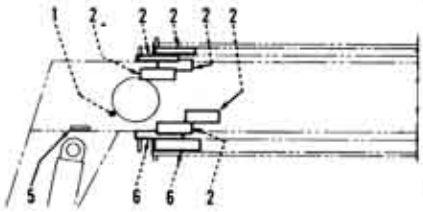
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LUBRICATION & MAINTENANCE DIAGRAM

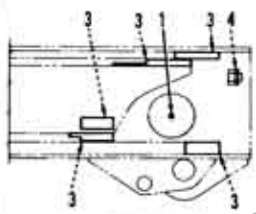
NOTE! 522 and 524 Material Handlers may be equipped with either a 2-section boom or a 3-section boom.



Lubricant Symbols

CG - GREASE (extreme pressure)
DF - DIESEL FUEL
EO - ENGINE FUEL
GO - MULTI-PURPOSE LUBE
HF - HYDRAULIC FLUID
MG - MOLY LUBE (extreme pressure)
MY - MOLY LUBE (cable threads)
SL - SPECIAL LUBE (differential)

See page 33

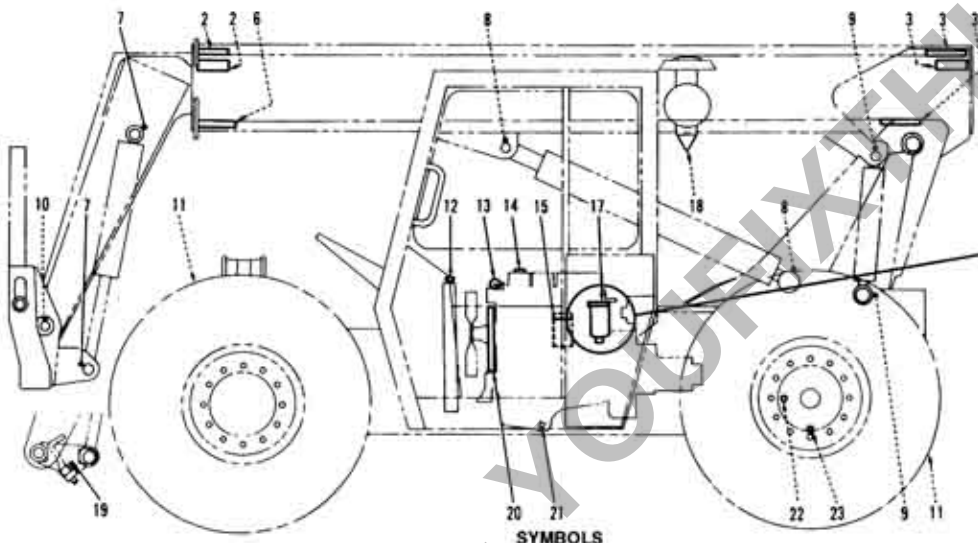


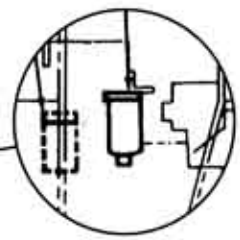
SYMBOLS

• = Lube Fitting
→ = Other Service
⋯→ = Service Both Sides

IMPORTANT NOTICE

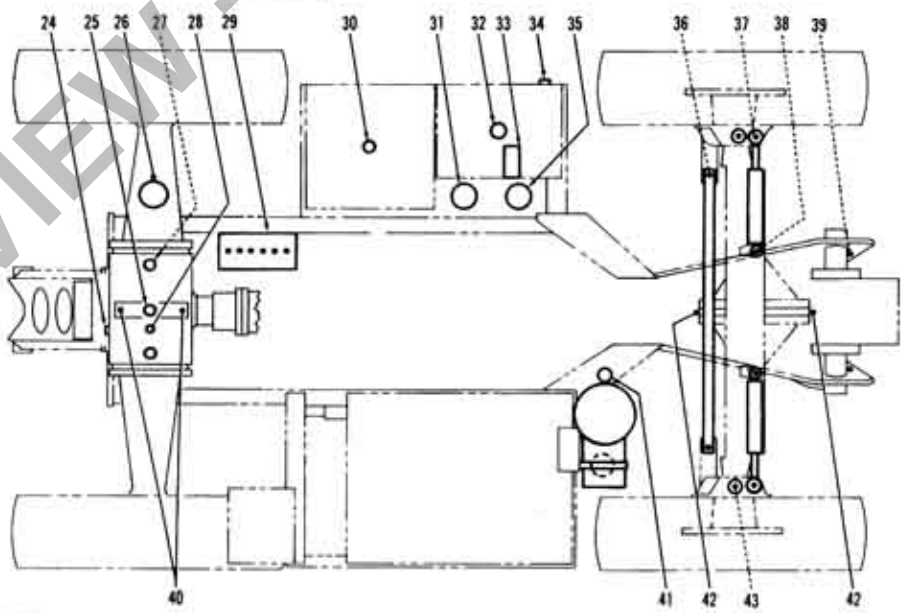
Be certain to check extend cable adjustment every 5 weeks or 250 hours and adjust as required. Cable damage can occur if cable is not adjusted properly.





On the 534C-6T ONLY, the Fuel Filter & Water Separator have been combined into one unit. See item 17.

SYMBOLS



FAILURE TO USE GRADALL HYDRAULIC FILTER ELEMENTS COULD VOID WARRANTY

DETAILED SERVICE INSTRUCTIONS ARE CONTAINED IN THE GRADALL SERVICE MANUAL FOR YOUR PARTICULAR MATERIAL HANDLER.

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PREPARATION FOR DISASSEMBLY

Overhaul pump only in a clean, dust-free location, using clean tools and equipment. Dirt or grit will damage the highly machined surfaces and will result in leakage or premature failure of the pump.

Before beginning disassembly, scribe match marks on the inlet side of the body and cover to insure that the pump will be reassembled in the same manner as it was shipped from the factory. If the body or rear cover is replaced during overhaul, scribe a match mark on the new part in the same location as on the part it replaced.

DISASSEMBLY OF PUMP

NOTE

All reference numbers refer to items illustrated in the exploded view provided with the parts list section of this publication.

1. Clean outside of pump with a good grade solvent and dry thoroughly.
2. On models with splined drive shaft, proceed to step 3. On models with keyed drive shaft, remove woodruff key (9) from drive shaft. Using a file or stone, remove any burns from shaft end, or key way, lightly grease key way before removal of gear.
3. Secure unit in soft jawed vise (use light clamping pressure) with shaft end down; remove cap screws (1) and washers (2).

NOTE

During disassembly, take special note of the wear patterns on the wear plate (6) and thrust plate (4). Relate these patterns to the inlet side of the pump. The large port in the rear cover (10) always corresponds to the inlet side of the pump. The inlet side can be further identified by the gear contact pattern in the gear bore. The wear plate (6) will have a somewhat heavier wear pattern on the inlet side. The thrust plate (4) will also have a pattern that can be established for reassembly. Also note that the long journal of the driven gear (11) is toward the front of the pump.

4. Separate rear cover (10) from body (13) by supporting pump, shaft end up, on mounting flanges and pressing on drive shaft end in arbor press.

CAUTION

Use one hand to support rear cover from underneath, since cover and internal parts will drop suddenly when dowels are disengaged.

An alternate method of removing the rear cover is to pry simultaneously with two large screwdrivers in the relieved areas between body and cover, or lightly tapping drive shaft with a plastic mallet.

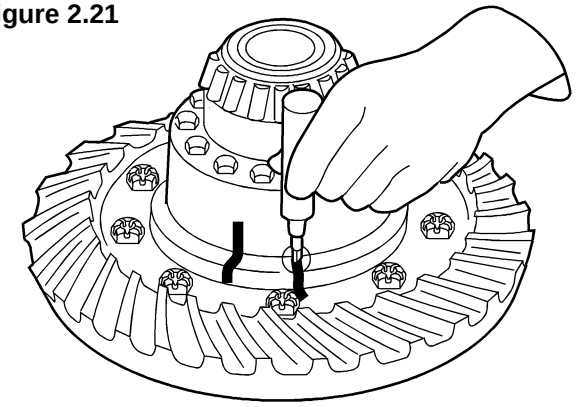
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Disassemble Differential Case

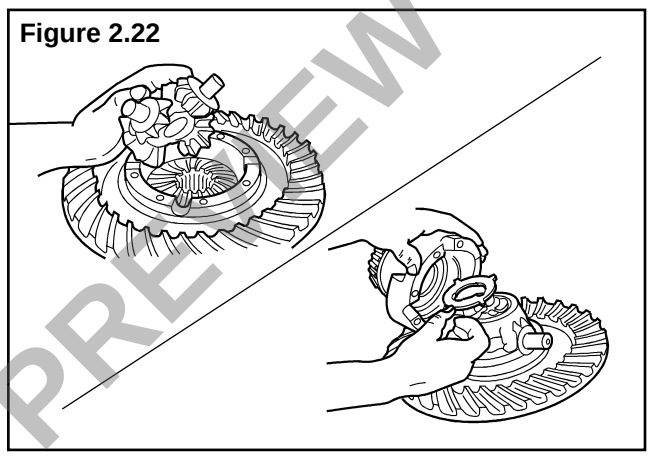
1. Before disassembling differential case, mark position of both halves and spider cross for easier reassembly. **Figure 2.21.**

Figure 2.21



2. Remove differential case capscrews.
3. Separate differential case halves. If necessary use a brass or rubber hammer to separate halves.
4. Remove spider cross, differential pinions, side gears and washers. If differential case is "Limited Slip," remove friction disc pack. **Figure 2.22.**

Figure 2.22



5. If differential case is "integral," remove differential pinion axle lock capscrew and differential pinion axle. Then turn side gears and remove differential pinions, side gears and washers. **Figures 2.23, 2.24 and 2.25.**

Figure 2.23

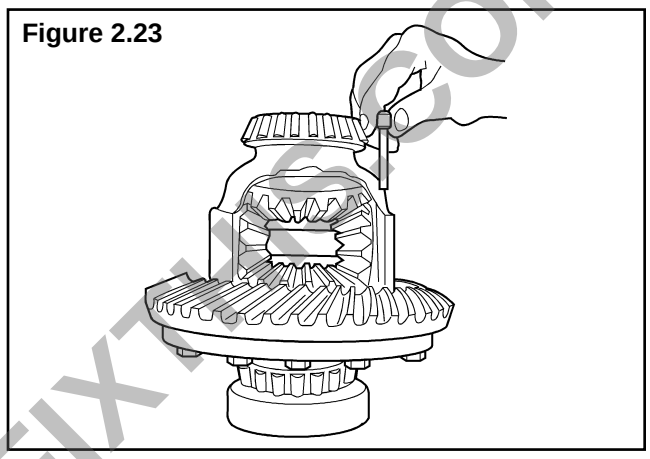


Figure 2.24

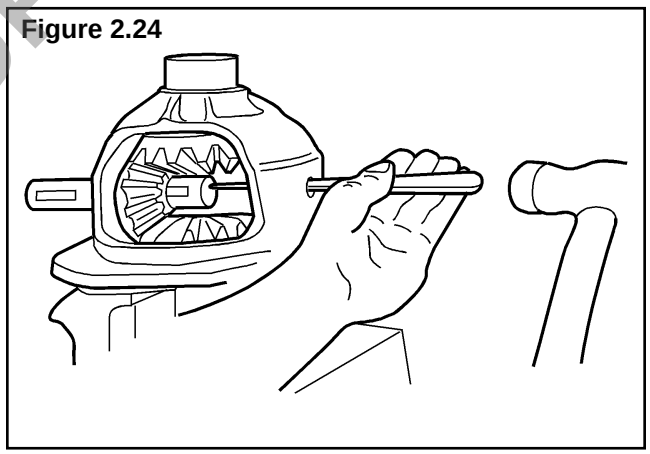
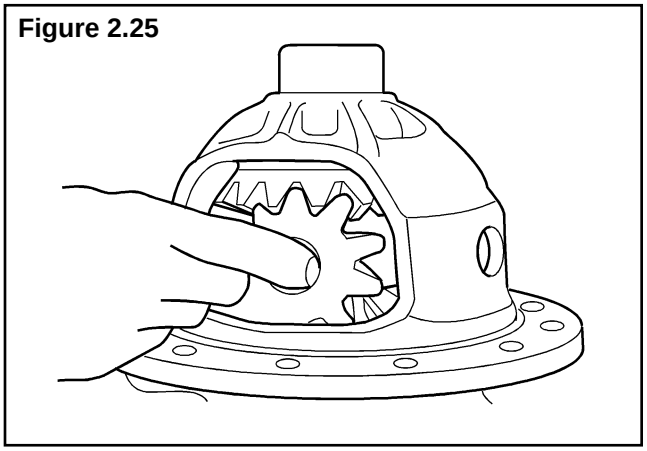


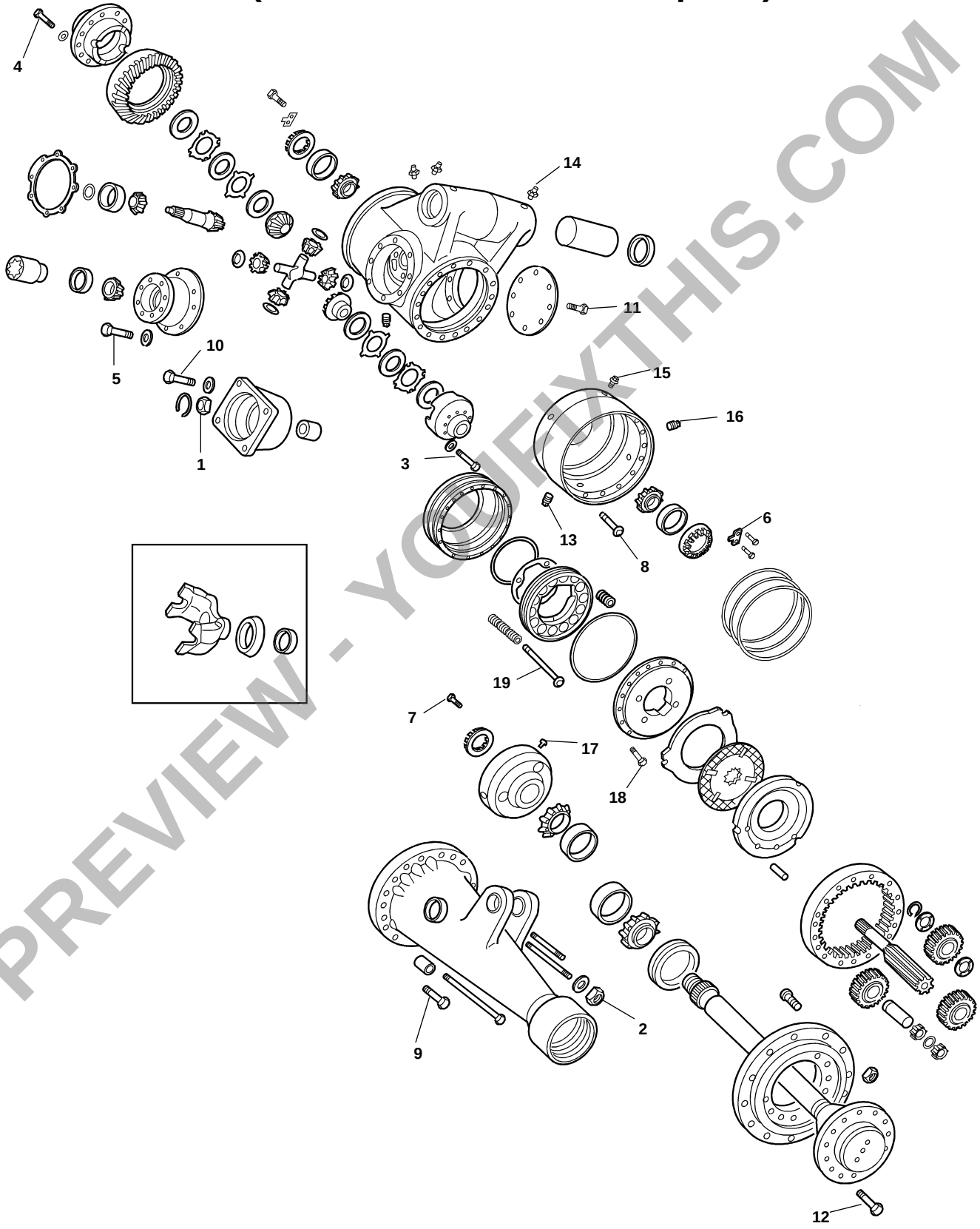
Figure 2.25



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PROA 352/382 (With Mechanical Drive Option)



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Boom Wear Pad Adjustments

To maximize boom service life, wear pads must be carefully adjusted at all times. The following Service Notes are a general guide for properly adjusting boom wear pads:

General Service Notes

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(7E) Extension Cable Reinstallation

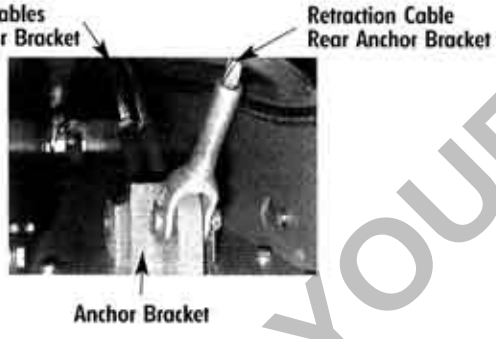
To reinstall the extension cable, you must be able to reach into the rear of the boom assembly to the cable anchor bracket weldment. The anchor bracket is welded to the bottom rear boom plate of Boom-Section 3. If you can't reach the bracket, the booms must be separated. Make sure the keys have been removed from the ignition and fasten a "do not operate" tag to the steering wheel before you reach into the boom.

→ Preparation

- Place the machine in a level, open area with sufficient space to work safely.
- Procure the tools and platforms required for this operation.
- If working with a helper, review each of your duties.
- Be certain the boom assembly is still retracted fully. If not, mechanically push the boom into the correct position. **DO NOT reach into the boom assembly while sections are being mechanically retracted/extended.**

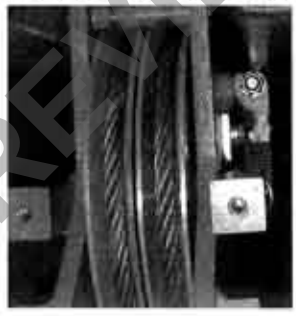
→ Stage 1

1. Tie a rope to the extension cable threaded end and pull the cable to the anchor bracket weldment area.
2. Install the extension cable socket end and the mounting hardware to the cable anchor bracket weldment.



3. **532C-6, 534C-6 & 536D-6:**
   If it has been removed, install the crowd cylinder into the boom assembly from the rear.
4. If it has been removed, install the extension cable sheave bracket to the front of the crowd cylinder.

532C-6, 534C-6 & 534D-6
Extension Cable Sheave Bracket



5. Install the extension cable threaded end through the sheave bracket and feed to the rear of the boom.
6. **534C-9/C10 & 534D-9/D-10:**
   Assemble all extension cable sheave bracket components to the front of the push beam. Be certain that the cable threaded end is inserted through the sheave bracket before the sheave components are installed.

534C-9/C-10 & 534D-9/D-10
Push Beam Front,
Extension Cable Sheave Bracket



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