

SERVICE MANUAL

This Manual has been prepared for and is considered part of -

5560B & YB5518

Crane Model Number

Crane Serial Number

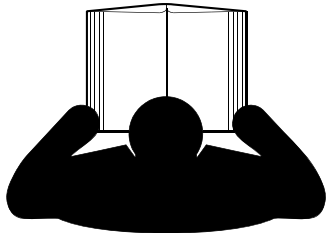
This Manual is Divided into the following Sections:

SECTION 1	INTRODUCTION
SECTION 2	SAFETY PRACTICES
SECTION 3	ELECTRIC SYSTEM
SECTION 4	HYDRAULIC SYSTEM
SECTION 5	PREVENTATIVE MAINTENANCE
SECTION 6	ENGINE AND ENGINE SYSTEMS
SECTION 7	TRANSMISSION AND TORQUE CONVERTER
SECTION 8	AXLES/DRIVE SHAFTS/WHEELS AND TIRES
SECTION 9	BRAKE SYSTEM
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SECTION 12	SCHEMATICS/WIRING DIAGRAMS

NOTICE

The crane serial number is the only method your distributor or the factory has of providing you with correct parts and service information.

The crane serial number is identified on the builder's decal attached to the operator's cab. **Always furnish crane serial number** when ordering parts or communicating service problems with your distributor or the factory.



WARNING

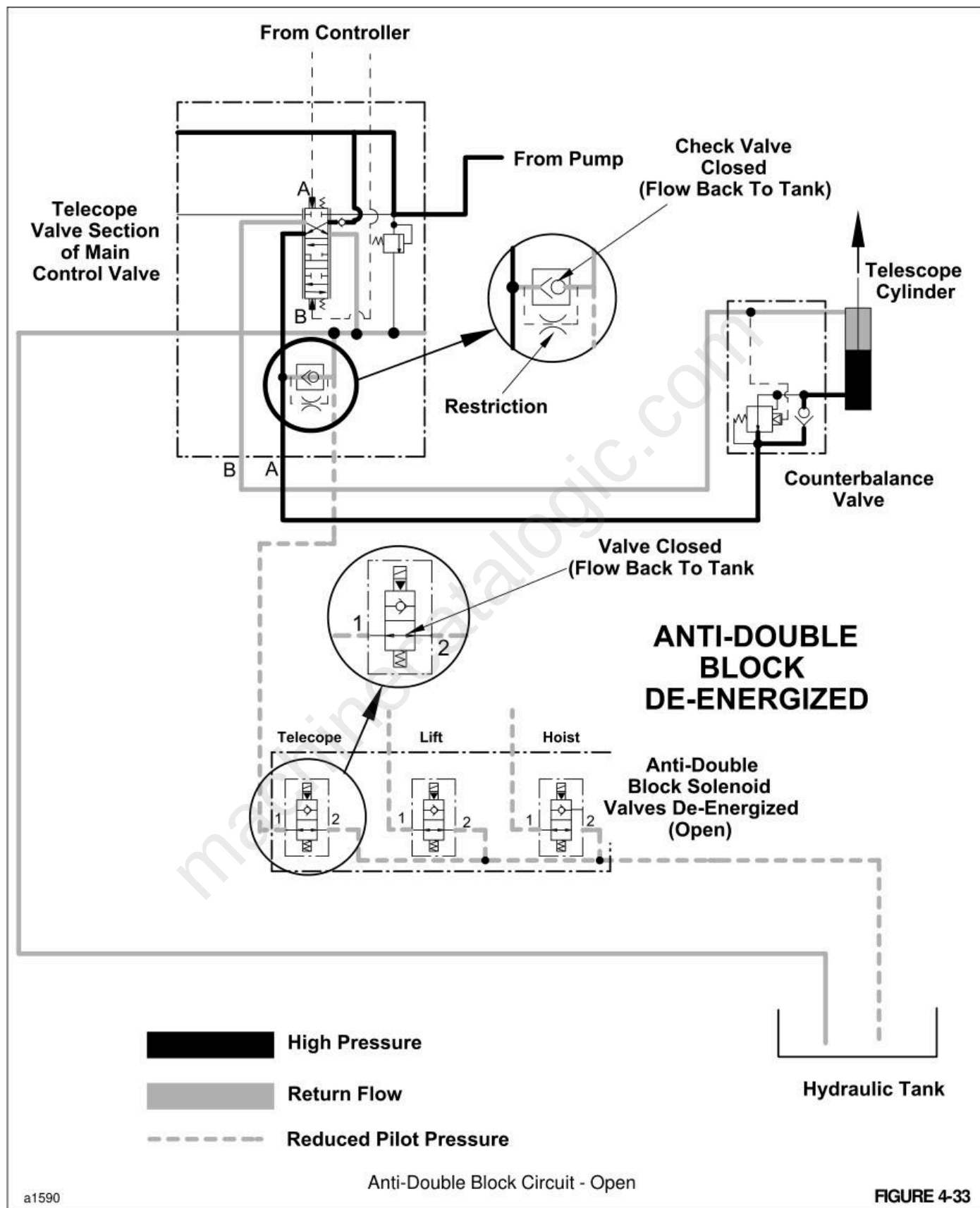
To prevent death or serious injury:

- Avoid unsafe operation and maintenance.
- This crane must be operated and maintained by trained and experienced personnel. Manitowoc is not responsible for qualifying these personnel.
- Do not operate or work on this crane without first reading and understanding Operator's Manual and Rating Plate supplied with crane.
- Store Operator's Manual in holder provided on crane.
- Attach laminated Capacity Charts supplied with crane to chain in operator's cab.
- If Operator's Manual or Capacity Charts are missing from cab, contact your distributor for new ones.

	What to do	Why
Pressure Testing	Make sure all test equipment is in good condition. Use only specified gauges. Comply with test procedures specified.	Inhibits damage to the system or the equipment and inhibits the possibility of personal injury.
Parking	Do not park or attempt to service the crane on an incline. If unavoidable block the tires.	Inhibits serious injury and/or death.
Wheels and Tires	Do not overinflate the tires.	Over-inflation can cause tires to burst and could result in injury.

FINAL WORD

Safety precautions are very seldom the figment of someone's imagination. They are the result of sad experiences-most likely personal injury. Heed these precautions and you will protect yourself and others accordingly. Disregard them and you may duplicate the sad experiences of others.



gasket makes contact. Then, tighten the filter 1/2 to 3/4 turn to achieve a tight seal.

- b. Start the engine and check for leaks around the filter.

Replace L.P.G. In-Line Filter



WARNING

Before disconnecting any L.P.G. lines and fittings, be sure the gas supply is shut off at the tank. L.P.G. gas is explosive and can cause serious personal injury or death.



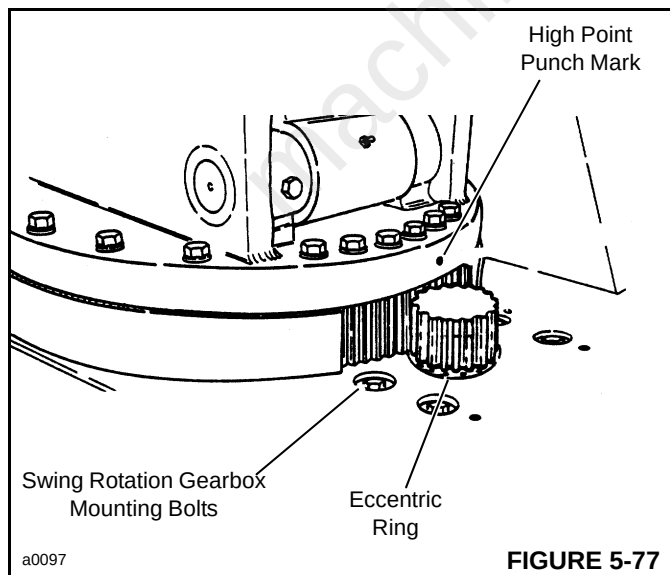
WARNING

Keep flames from the surrounding area when disconnecting L.P.G. lines. L.P.G. gas is explosive and can cause serious personal injury or death.

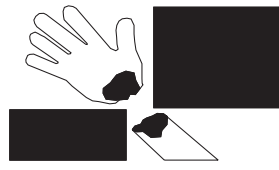
Shut off the L.P.G. supply at the tank and slowly loosen the hose at the bottom of in-line swivel until all gas has escaped. Then, disconnect the hose and remove the in-line filter. Install a new filter and attach the hose. Open the L.P.G. supply and check for leaks, using a soap and water solution. Bubbles will appear if leaks are present. Do not operate the crane with gas leaks. Tighten any loose connections.

Check Swing Gear/pinion Backlash

1. Remove the cover to expose the swing pinion and ring gear.



WARNING



PINCH POINT
Pain and amputation
can occur.
Keep Away

w0022

1109262

FIGURE 5-78



WARNING

Rotating gears can cause injury. Keep hand clear of rotating pinion and gear while the mast is rotating. Start the engine and rotate the mast until the high point on the swing gear is in alignment with the pinion. The high point is punch-marked on the mast plate Figure 5-76.

2. Using a feeler gauge, check the backlash between the gear and pinion. There should be no clearance between the swing gear tooth and the pinion tooth. If there is any clearance, adjust the backlash. See Section 11.

Cleaning The PVC Valve (Gasoline Engine)

Remove the PVC valve from the engine and clean in a suitable solvent. If the valve does not rattle after cleaning, replace the valve.

Cleaning the PVC Tubing and Fittings (Gasoline Engine)

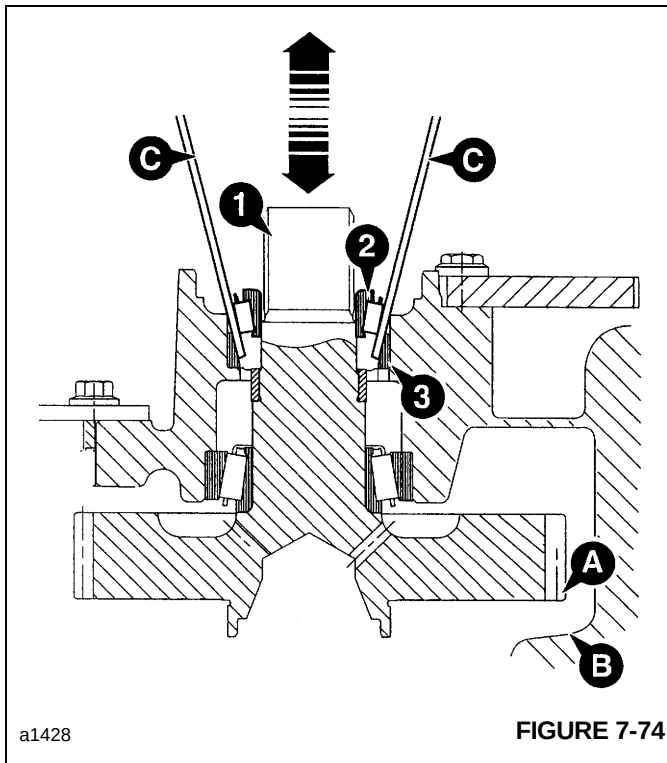
Clean all tubes and fittings connecting the PVC valve in a suitable solvent.

Replacing the Spark Plugs (Gasoline Engine)

Disconnect one spark plug wire at a time and then replace the old spark plug with a new plug. The correct spark plug number is AC R42LTS. The spark plug gap should be 0.035 inches (0.90 mm). Connect the spark plug wire and then remove the next wire.

Replacing the In-Line Fuel Filters (Gasoline Engine)

The fuel system for the gasoline engine has a course fuel filter and a fine fuel filter installed in the circuit. The course filter is installed before the fuel pump and fine filter is installed before the fuel injectors.



1. Push the output shaft **1** until gear **A** contacts the housing at position **B**, be sure not to damage the housing of gear **A**.

Although the bearing inner cup/taper rollers **2** will be forced partially up shaft **1**, it will not be possible to remove the shaft at this stage.

CAUTION

If the output shaft is being removed after initial assembly, typically to set the end play, take extreme care to avoid damage to the bearing outer **3** and inner/taper rollers **2**. Use aluminum spacers **C**, **DO NOT USE HARDENED STEEL ITEMS SUCH AS SCREWDRIVERS**.

2. Pull up on output shaft **1**. Position suitable aluminum spacers **C** between the taper rollers **2** and bearing outer cups **3**.
3. Push down on the output shaft, the inner cup/taper rollers **2** will be forced further up shaft **1** allowing them to be removed.
4. If the inner cup/taper rollers **2** are still engaged in the shaft, repeat steps 2 and 3 using thicker spacers **C**.
5. With bearing inner cup/taper rollers **2** removed, the output shaft and gear can be lowered and tilted to one side, allowing gear **A** to clear the housing and shaft **1** to be removed.

Installation of 75 Micron Strainer

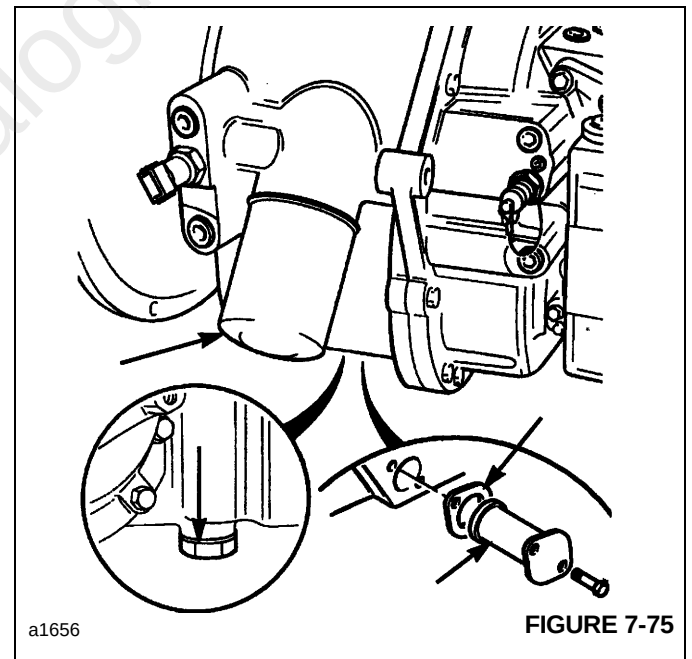
If the transmission has not been thoroughly cleaned during overhaul, any particles below 200 microns (0.2 mm) can pass through the existing suction strainer and into the transmission pump before being caught in the pressure filter. Contamination can cause scoring of bearings and clutch housings.

It is recommended that a special 75 micron (0.075 mm) service suction strainer be temporarily installed after overhaul and the system cleaned to inhibit damage to the transmission.

The need to change the transmission filter after 100 hours of operation after a major overhaul is not required **PROVIDED** the transmission failure was not caused by oil cooler failure and procedure of installing a 75 micron service strainer is carried out.

Service Procedure

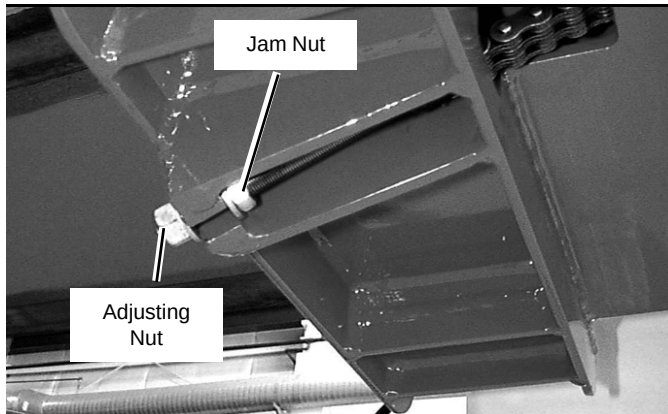
1. During overhaul, clean the transmission of as much debris as possible and install a 75 micron service suction strainer **A** and gasket **B** Figure 7-75.



2. If there is a significant amount of debris it is recommended that the oil cooler and the transmission cooling lines be cleaned.
 - a. After the transmission has been installed in the crane, fill the transmission with recommended fluid. The transmission should be overfilled for initial start-up.
 - b. Disconnect the oil feed line **E** Figure 7-77 and place it in a suitable container. Run the engine at idle and drain oil into the container. This will inhibit

no slack in the chain. In most cases the chain will be loose due to chain stretching during use.

3. To adjust the chain, loosen the jam nut on the lower chain adjusting rod Figure 11-11. Tighten the chain by turning the adjusting nut clockwise. Tighten the chain until there is no slack in the chain.
4. Tighten the jam nut.



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Chain Adjusting Rod and Nuts

FIGURE 11-11

Boom Repair

Removal

NOTE: Use at least a 3 ton overhead crane when lifting the boom assembly.

1. Lower the boom to its lowest position. Retract the booms.
2. Lower the drop block to the ground.
3. Disconnect the wedge assembly from the boom head to free the winch rope.
4. Unwrap the rope from the drop block sheaves and the boom head sheaves. Wind the wire rope onto the winch.
5. Disconnect the anti-double blocking wire from the electrical swivel on top of the hydraulic swivel. Disconnect any wires from the boom and electrical swivel.
6. Place a suitable container under the bulkhead fittings at the base of boom assembly. Disconnect the two crowd cylinder hoses from the bulkhead fittings and drain oil into the container.
7. Using an overhead crane and sling arrangement support the boom assembly.
8. At one of the lift cylinders, remove the lift cylinder rod end pin from the mounting bracket on the boom assembly. Place a piece of 2 x 4 wood board between

the base end of the cylinder and the mounting bracket on the mast assembly to hold the lift cylinders from falling. If necessary, secure the cylinder to the mast assembly.

9. Following Step 8, remove the rod end pin from the other lift cylinder.
10. Remove the boom mounting pin and remove the boom assembly. Place the boom assembly on supports capable of holding the assembly.
11. If the boom is to be disassembled, remove the cover from the base end of the boom assembly and disconnect and remove the hoses from the rod end of the crowd cylinder.
12. Disconnect the anti-double blocking wire from the boom head and rewind onto the cord reel.

Four Section Boom Repair

Special Tools

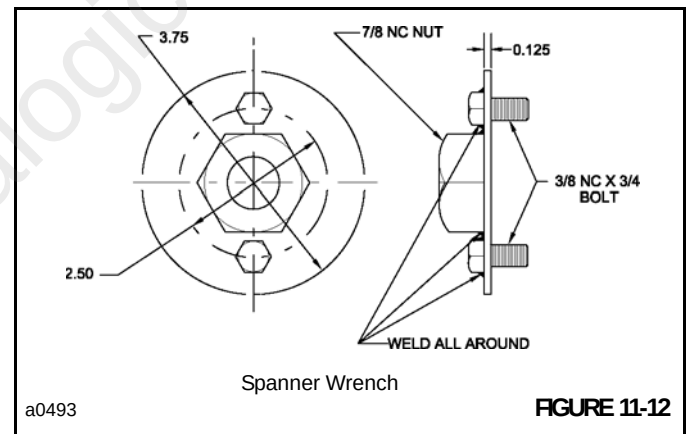


FIGURE 11-12

Disassembly

1. At the base end of 1st boom assembly (52, Figure 11-13), remove cotter pin 73 and nut 77 from retract rod 41. Remove cotter pin 74, nut 75 and flat washer 76 from crowd cylinder 42.
2. Pull 2nd, 3rd and 4th boom sections as an assembly out of first section far enough to loosen the 3rd section lower retract chain 43.
3. When chain is loose, remove hex bolts 78 and lockwashers 79. This will loosen retainer bracket 80.
4. Pull the boom assembly out far enough to attach a sling and overhead crane.
5. Remove the four plugs (88, Figure 11-13) with set screws 89. Remove four guide pads 87.
6. Remove retainer plates 91. Lift up on the boom assembly and remove boom pads 90.

freewheeling direction to start it through the sprag clutch. If the inner race will not go through the bushings, the bushings have probably been damaged and should be replaced.

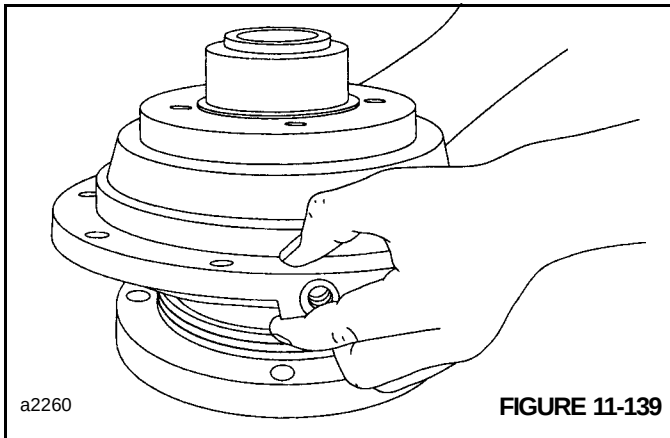


FIGURE 11-139

6. Turn the assembly over with the snap ring down. Install the second retainer and snap ring (Figure 11-140). Make sure the snap ring is properly seated in the groove.

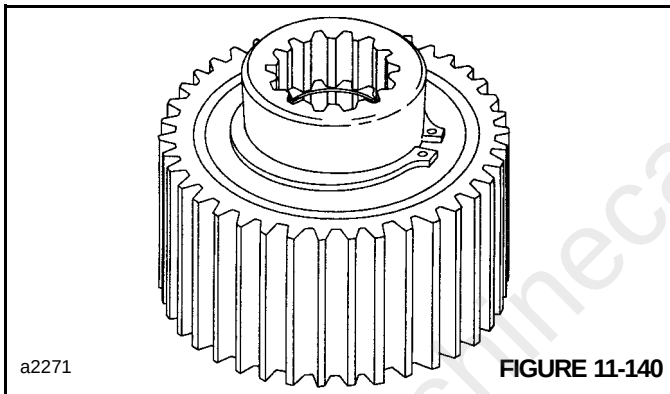


FIGURE 11-140

7. Figure 11-141 shows a completed clutch assembly.

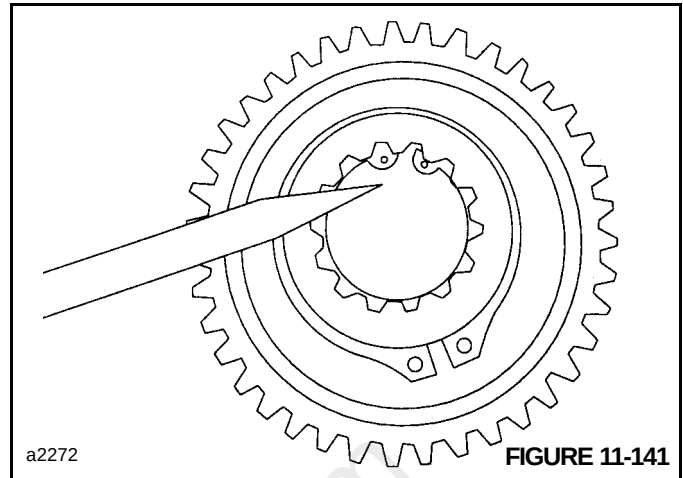


FIGURE 11-141



WARNING

Be certain the snap ring is seated in the groove in the splined bore of the inner race. This snap ring will keep the brake clutch assembly correctly positioned in the center of the friction brake pack. Binding of the brake or brake failure may occur if this snap ring is omitted.

Winch Tension Roller Subassembly Service

Disassembly

Use Figure 11-142 as a guide in disassembling the tension roller assembly.

Assembly

1. When assembling the tension roller assembly use washers (6, Figure 11-142) to center the roller assembly between the drum flanges.
2. Tighten each eyebolt (9) to the dimension shown in Figure 11-142.
3. Apply grease to shaft and I.D. of rollers. Rollers must turn freely.

Full Version Available

Grove 5560B + YB5518 Rough Terrain Crane Service Manual

Grove 5560B, YB5518 rough terrain crane service manual with repair procedures, adjustments and troubleshooting. 444-page PDF. Instant PDF download.

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