KOEHRING WATEROUS

Operator's Manual
Koehring Waterous
18" Disc Saw Felling Head
OM 7015475 (English) S/N 68110

CALIFORNIA
Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

If this product contains a gasoline engine:

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

Worldwide Construction
And Forestry Division
LITHO IN U.S.A.

Safety Precautions

General Safety Precautions

Koehring Attachment Products policy is to produce products that are safe and reliable. However, even when using well engineered equipment, there will always be an element of risk in heavy-duty equipment operation.

To minimize the risks and promote safety at all times, this section of the Parts and Service Manual details a number of safety rules which should always be followed and obeyed.

Study all the safety messages in this manual and on the felling head carefully.

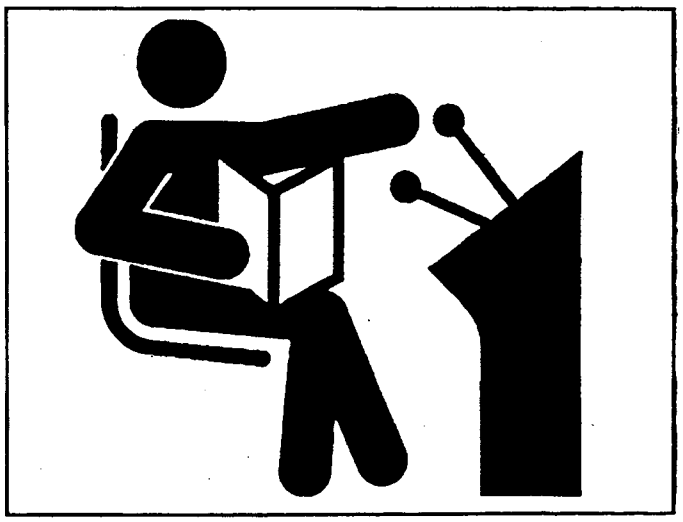
You must be fully trained to operate this equipment. Know the capabilities and the limitations of the equipment. Learn the most efficient operating techniques.

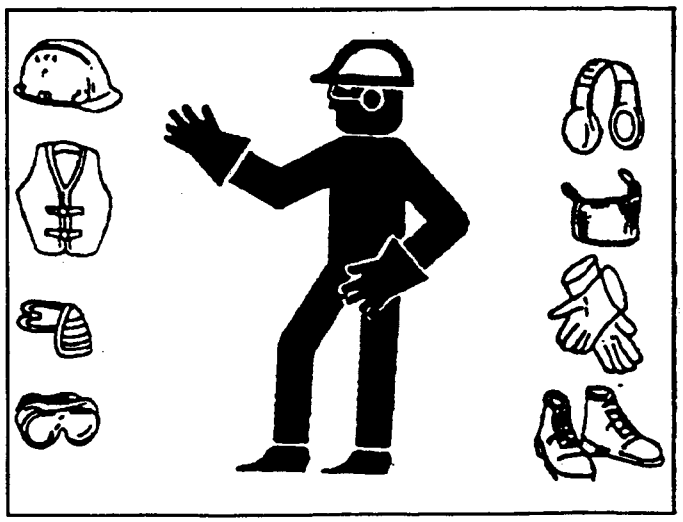
Do not let an untrained person operate the felling head.

Use recommended protective clothing and safety devices such as gloves, safety boots, safety hat, goggles, and ear protection when necessary.

These safety rules highlight both general and specific measures the operator should be familiar with and adhere to. More specific measures are illustrated with pictograms which may also be attached to the saw head in locations pertinent to their respective message. Keep safety signs in good condition. Repair or replace damaged signs.

WHEN IT COMES TO SAFETY, NOTHING WILL EVER REPLACE A CAREFUL OPERATOR.

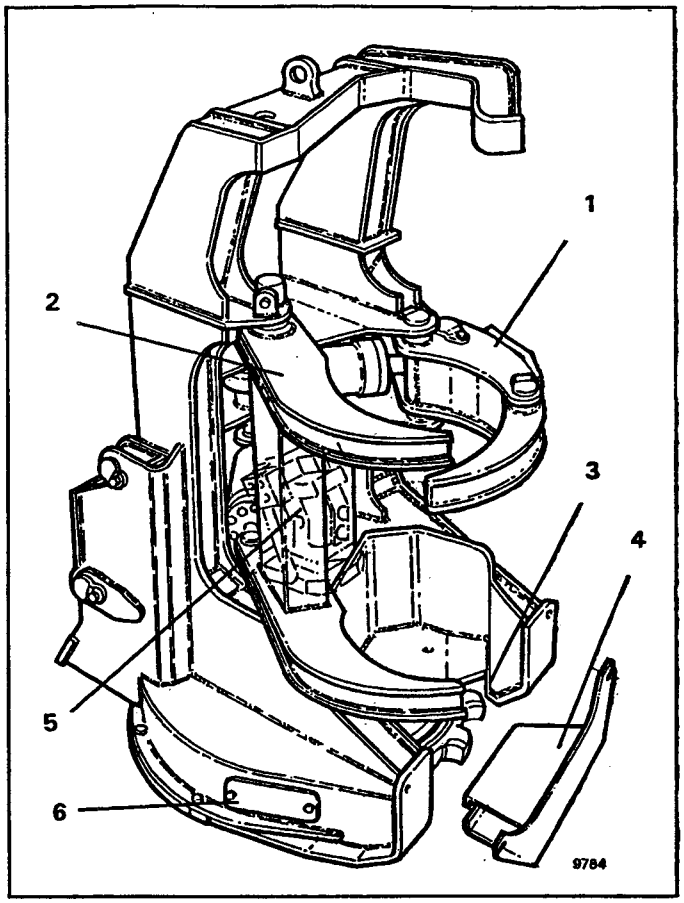


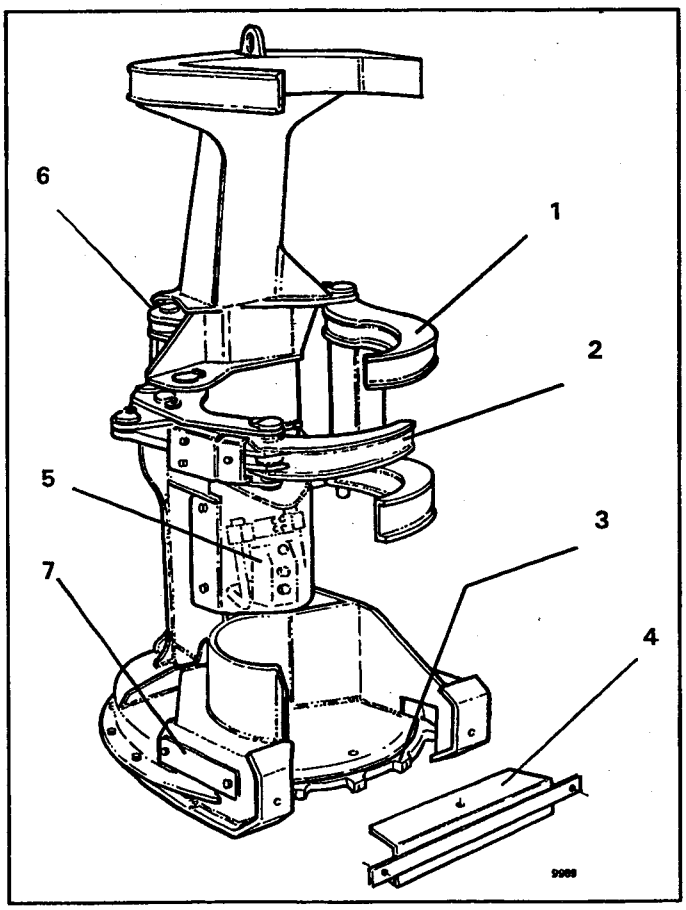


Description

18 " Felling Head (Drive to Tree)

1. Left Hand (Accumulating) Clamp Arm
2. Right Hand (Harvesting) Clamp Arm
3. Disc Saw Blade
4. Blade Guard
5. Hydraulic Motor
6. Chip Exhaust Cover





18 " Felling Head (Swing to Tree)

1. Left Hand (Harvesting) Clamp Arm
2. Right Hand (Accumulating) Clamp Arm
3. Disc Saw Blade
4. Blade Guard
5. Hydraulic Motor
6. Wrist
7. Chip Exhaust Cover

Maintenance Procedures

⚠ DANGER

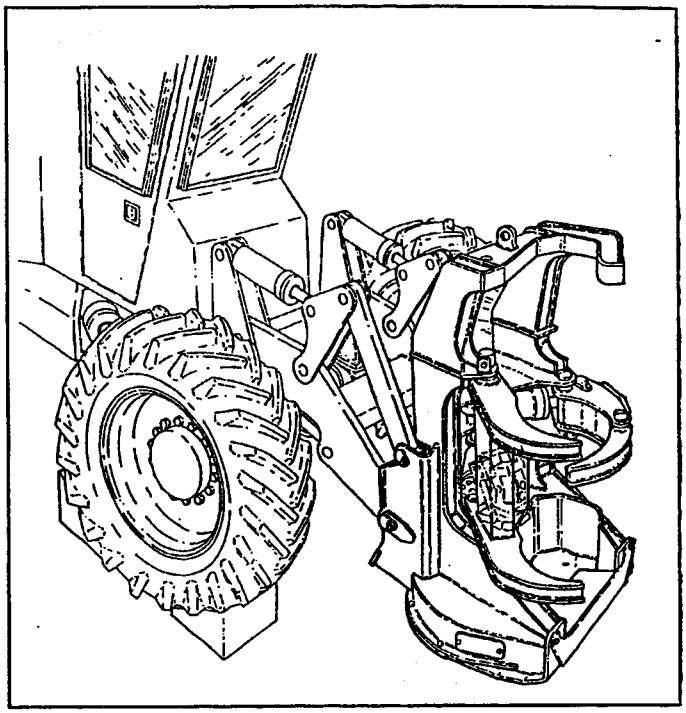
Turn off the saw controls and switch off the master disconnect switch except when checking hydraulic pressures or blade speed. Support the felling head. Never work under the felling head in a raise positon.

Wear work gloves and keep your fingers clear.

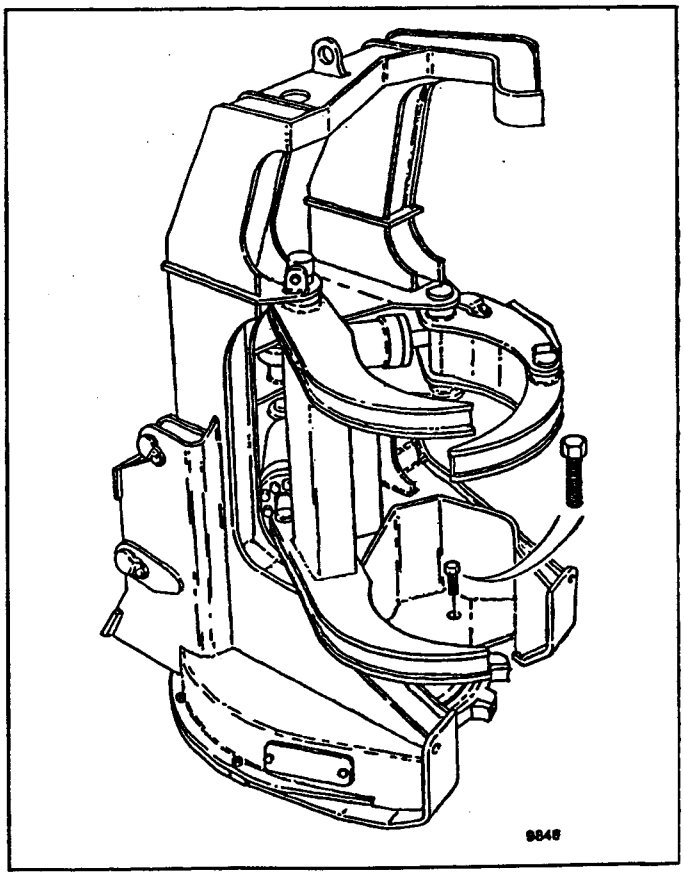
Failure to follow these safety precautions can lead to risk of serious injury.

Set the head on blocks heavy enough to support the felling head.

Block the wheels to prevent accidental movement. Install the blade guard.

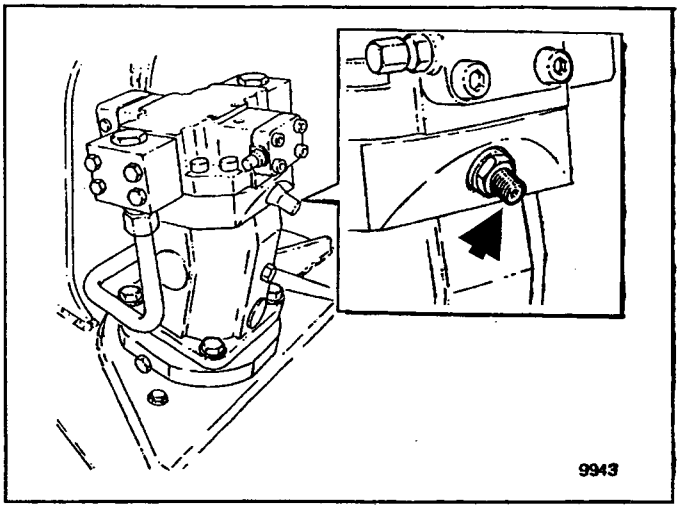


Lock the blade to prevent free rotation by using the bolt located in the lower front corner of the saw head.
When not in use, store this bolt in the tapped hole provided.



Maintenance Procedures

5. Check Saw Blade R.P.M.



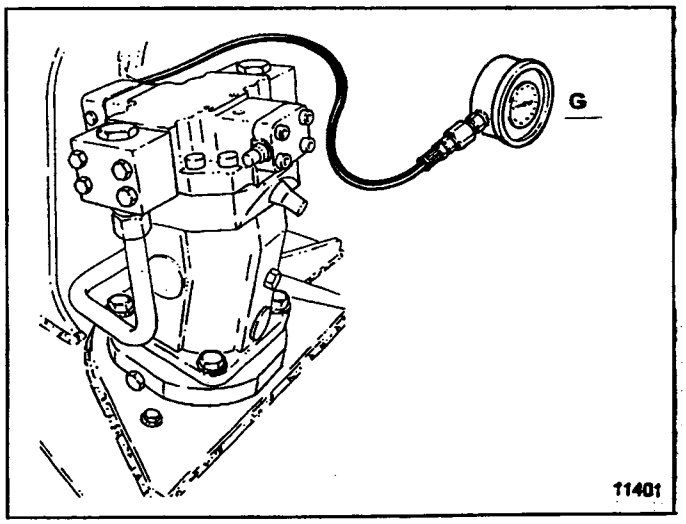
With the saw blade free ti rotate, turn the saw On and bring the engine speed up to full rpm.
See specifications for applicable blade speed.

If speed adjustment is necessary:

(a) turn the saw speed adjustiing screw out (counter clockwise) to increase

(b) turn the saw speed adjusting screw in (clockwise) to decrease blade speed.

6. Check Hydraulic Pressure Setting



Install a 0 - 5000 psi gauge in the feller buncher saw valve test port, or "G" port on the saw motor (a test fitting is provided on L.H. side of motor for gauge installation).

Start the engine and move throttle to maximum speed.

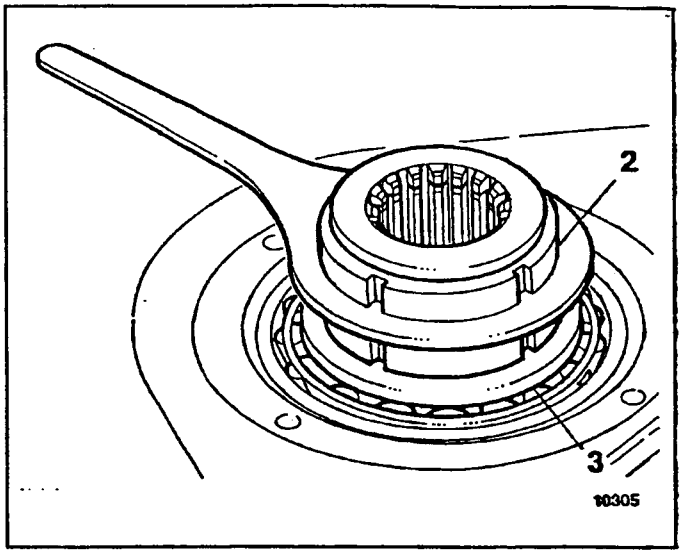
Have an assistant turn the saw motor on and record the pressure settings on the gauge:

Approximate Gauge Reading	Elapsed Time	
See Specifications	First 10 seconds	Main Pump Relief or P.O.R. setting
See Specifications	Next 12 - 15 seconds	Begin of Stroke setting (saw motor)
800-1500 psi	25 - 35 seconds	Saw Blade at Full rpm

Note: Refer to the carrier and saw head specification sheets (page 6-3) for specific pressure setting.

Driveshaft Removal

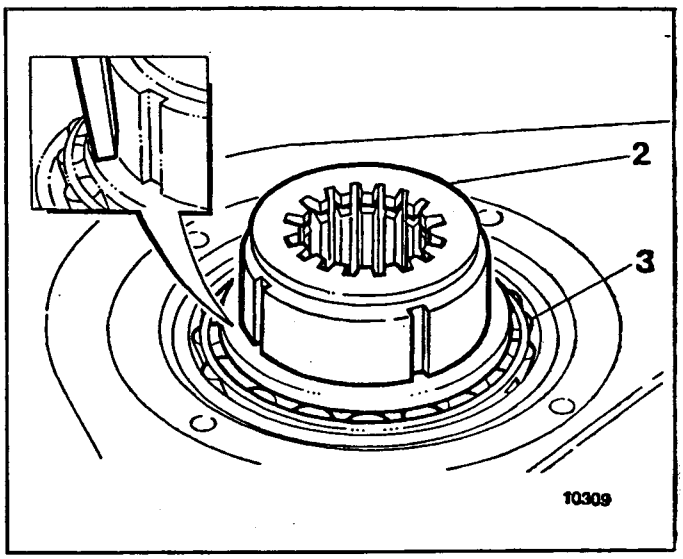
5. Loosen the lock nut two or three turns.



⚠ CAUTION:
Avoid hammering directly on the shaft. This could damage the splines or upper bearing assembly.

6. Using a soft steel punch, carefully drive the shaft down until the bearing cone bottoms against the lock nut.
   Alternate between loosening the lock nut and driving the shaft down until the lock nut is backed off about half way up the threaded part of the driveshaft.

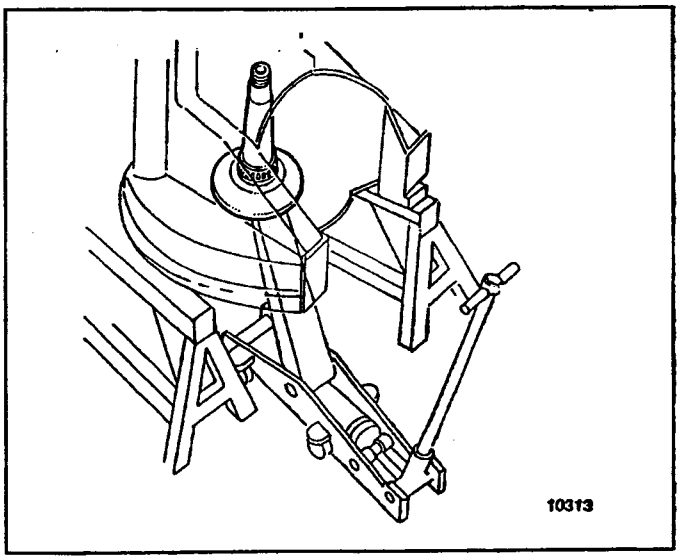
   Note:
   If the driveshaft cannot be hammered down, then the upper bearing cone will have to be *carefully* removed using a cutting torch. Be careful not to damage the driveshaft.



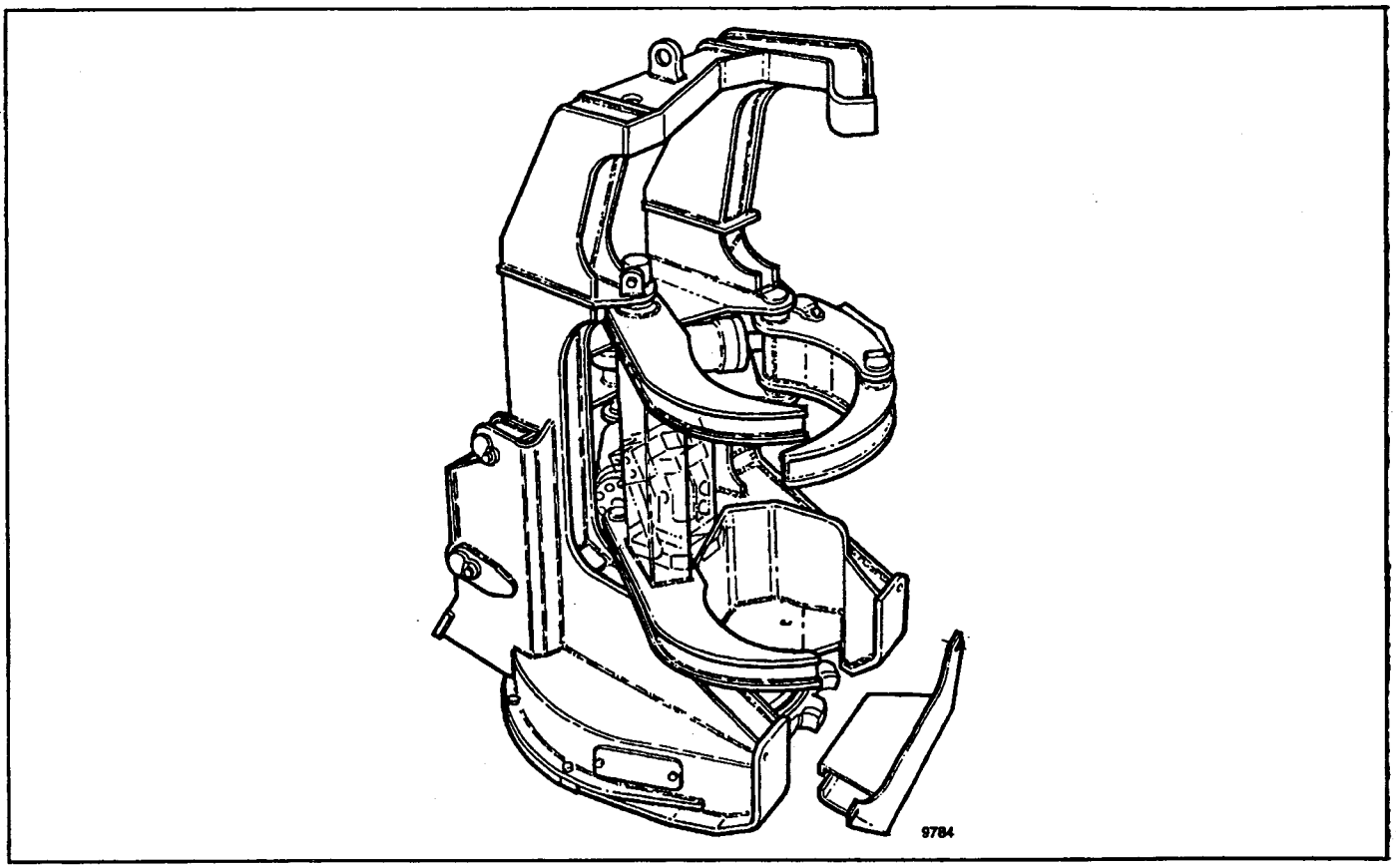
⚠ CAUTION
The drive shaft is heavy (75 lbs). Make sure that it is supported to prevent it from falling and being damaged when the motor is removed.

Failure to follow these safety recommendations could lead to risk of personal injury.

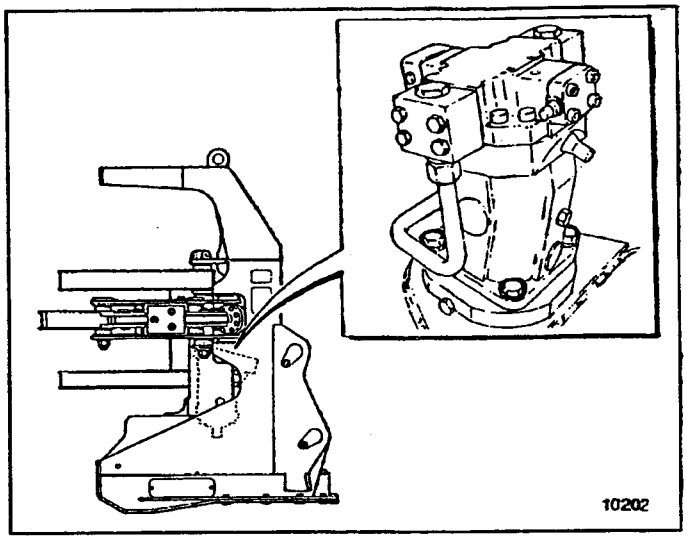
7. Place a hydraulic floor jack under the driveshaft. Once the weight of the driveshaft in resting on the jack, remove the lock nut.



4. Disc Blade



Description

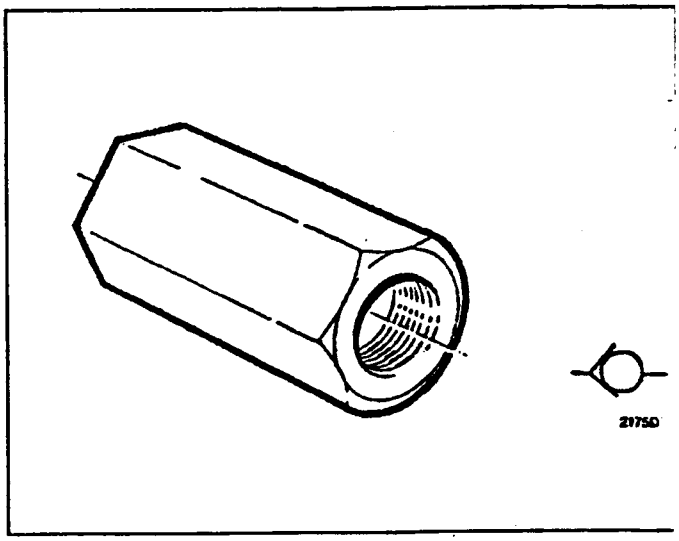


Motor
The saw drive shaft is driven by a bent-axis piston type variable displacement motor. The motor is mounted to an adapter plate and coupled to the drive shaft by a splined coupler.

Pump
Hydraulic oil for the saw drive is supplied by a machine mounted pump.

Control Valve
Flow from the pump is directed to motor port 'B' via a machine mounted control valve.

Refer to Carrier Operator Manual for pump and control valve description.



Bypass Check Valve
(free wheel check valve)
is installed in parallel circuit with the motor between the high pressure and return hydraulic lines. Oil is blocked from going to tank during normal operation. When the engine rpm drops, due to hydraulic loads, the engine stalls, or the saw motor is shut off, while the blade is rotating, return oil will open the check valve and allow oil to go to the pressure side of the motor. This bypassing oil prevents the motor from cavitating.

Specifications

SERVICE SPECIFICATIONS by MODEL

TIGERCAT 720

Motor Displacement	160 CC
Blade Speed	1300 +/- 50
Main Regulating Pressure	3600 psi
Begin of Stroke	3000 psi
Upper Clamp Port Relief	3200 psi
Upper Clamp Main Relief	2700 psi
Lower Clamp Port Relief	3200 psi
Lower Clamp Main Relief	2700 psi
Clamp Open Pressures	1000 psi

VALMET

Motor Displacement	107 CC
Blade Speed	1200 +/- 50
Main Regulating Pressure	3000 psi
Begin of Stroke	2500 psi
Upper Clamp Port Relief	3200 psi
Upper Clamp Main Relief	2700 psi
Lower Clamp Port Relief	3200 psi
Lower Clamp Main Relief	2700 psi
Clamp Open Pressures	1000 psi