OPERATOR'S MANUAL
Tigercat 720D FELLER BUNCHER

ISSUE 1.2, APRIL 2005

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720D Available Literature

Operator's Manual (Ser No 7200101 to 7203860)	Part No.	18873A
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Service Manual (Ser No 7203861 and up)	Part No.	26293A
Parts Catalog	Part No.	18871A
Hydraulic Adapters Book	Part No.	1472A
Hose Assemblies Book	Part No.	3707A

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GENERAL SAFETY PRECAUTIONS continued

Maintain a charged fire extinguisher on the vehicle at all times and KNOW HOW TO USE IT.

Do not carry passengers either in the cab or anywhere else on the machine. The vehicle is provided and approved with seating for the operator only.

Do not allow anyone to operate the machine who may not be physically fit or who may be under the influence of alcohol or drugs.

When moving the machine, watch that enough clearance is available on both sides and above the machine or any of its attachments. Extra clearance may be required particularly where the ground is uneven.

Approach with extreme caution any area where overhanging electrical power lines are present. Serious injury or death by electrocution can result if the machine or any of its attachments are not kept a safe distance from these lines.

Maintain a distance of 10 feet. (3 meters) between the machine or boom and any power line carrying up to 50,000 volts or less plus 1/2 inch (10 mm) for each additional 1,000 volts above the 50,000 volt level.

If State/Provincial, local or job site regulations require even greater safety distances than stated above, adhere strictly to these regulations for your own protection.

If the machine must be transported, make sure that it is adequately secured to the transporting vehicle.

Even though the brakes are fully engaged, block the wheels to prevent movement during transport.

Install the articulation lock bar when ever the machine is to be transported.

Comply with instructions in this manual and also your company's regulations for the operation of this machine.

Read, understand and follow all general safety precautions specified by felling head manufacturer.

WARNING

Engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

WARNING

Battery posts, terminals and related accessories contain lead and lead compounds.
Wash hands after handling.

FIRE PREVENTION continued

12. **Shut down equipment immediately** when a problem is suspected or smoke is detected.
13. **Park the machine at least 50 feet away** from other equipment at the end of each shift.
14. **Turn the battery disconnect switch to OFF** at shut down to avoid loss by electrical short.
15. **Remain with the machine** for at least 45 minutes at the end of operations while the machine cools.
16. **Once a fire has started** on a machine hoses will quickly burn through causing pressurized fluids (diesel fuel, hydraulic oil, etc.) to fuel the fire. NEVER leave the machine parked with booms or arches suspended off the ground, as they will inject hydraulic oil into the fire if a supporting hose burns through.
17. **Remove all keys,** lock equipment and fuel cap at the end of operations to reduce the risk of vandalism.
18. **Before starting repair work,** such as welding, the surrounding area should be cleaned and a fire extinguisher should be close by.
19. **Use only nonflammable solutions for cleaning** the machine or components.
20. **Store rags and other combustible materials** in a safe, fireproof location.
21. **Do not use the machine** on top of or to push piles of burning timber. A machine fire will result.

EQUIPMENT FIRES ADVERSELY EFFECT YOUR ABILITY TO LOG, MAY INCREASE YOUR INSURANCE PREMIUMS DRAMATICALLY OR PREVENT YOU FROM OBTAINING INSURANCE COVERAGE AT ALL.

WHAT ELSE TO DO BEFORE YOU EXPERIENCE A FIRE

- Ensure that you are familiar with emergency procedure in the event of a fire.
- Ensure that your fire suppression system* is charged and functional.
- Ensure that any hand held fire extinguishers are charged and functional.
- Ensure that any stored water systems on the machine are charged and functional.
- Ensure that the nozzle of any hand held extinguishers available at the work site fits within the access holes in the doors of the machine.
- Ensure that you have the proper fire extinguishers on site. Most fires involving mobile equipment will be of the **A** or **B** type. You should have a dry chemical extinguisher rated **ABC** and a pressurized water extinguisher rated **A**.
- Prevent the fire from happening by ensuring that the machine is cleaned regularly and all systems are well maintained.

  ***NOTE:** Dry chemical fire suppression systems are offered by Tigercat as an optional installation on some of the Tigercat product lines. Please disregard any references made to fire suppression systems if not installed on your machine.

WHAT TO DO IN CASE OF A MACHINE FIRE

- At all times ensure your own personal safety and the safety of anyone that may be in the area. Approach any fire with extreme caution.
- If the machine is in a dangerous position, attempt to move to a safe position. Lower working attachment to the ground.
- Shut the engine off.
- Activate the fire suppression system*
- Radio or call for help (as appropriate).
- Exit the machine taking fire extinguisher or water hose (if applicable) with you.
- If you can safely do so, turn OFF battery disconnect switch.
- If you can safely open the access panels to the machine, in the area of the fire, do so.
- If you can safely do so, attempt to extinguish the fire.
- A dry chemical fire extinguisher should be used first, if available.

Continued on page 16

COMMENTS AND INSTRUCTIONS

Recognizing the Dangers

While it may appear that these illustrated danger areas can be visually recognized on the job by observing how far chips fly during a cut, that is only true for chips and other light weight materials. Metal parts and wooden spears can be thrown to surprisingly greater distances. Even distant personnel on the ground, in other vehicles, or in buildings are at risk if the throw is in their direction.

Direction of throw

The direction of possible tangential throw for metal parts and stones is dependent on the housing configuration and might be expected to be the same as observed for the chips. However, these throws can occur at any time the saw is running, in whichever direction the angle of throw is pointed by boom geometry, not just when a cut is being made.

Throw distance

The throw distance for metal pieces and stones, can be many times the distance shown by the pattern for chips. More testing and data collection is needed to pin down a “safe distance” but if someone or something is in a place that can be seen by the operator and in the throw direction of a high speed disc saw, then the operation is not safe regardless of the distance.

Safe operating areas

These saw heads must not be used in areas where the logging operation does not have control over the presence and movement of people. In particular, clearing of vegetation in urban and populated areas should not be done with a Tigercat manufactured or supplied high speed disc saw. High speed disc saw heads are intended for high productivity wood harvesting in areas remote from normal habitation. The possible presence of people and property within throw range and the likelihood of encountering scrap metal, wire fencing, steel posts and concrete must be respected.

Assessing the potential dangers on the job site

The extent of danger from high speed disc saws on the logging operation has to be assessed on the job site, depending on how much other work activity is in the area and whether the operator can do his job of cutting and bunching with good control of throw patterns. Danger is greater if the saw is equipped with detachable, or fragile, or brittle teeth, or if the site contains stones or abandoned metal.

Tigercat 720D Feller Buncher

SECTION 2 - CONTROLS AND OPERATION

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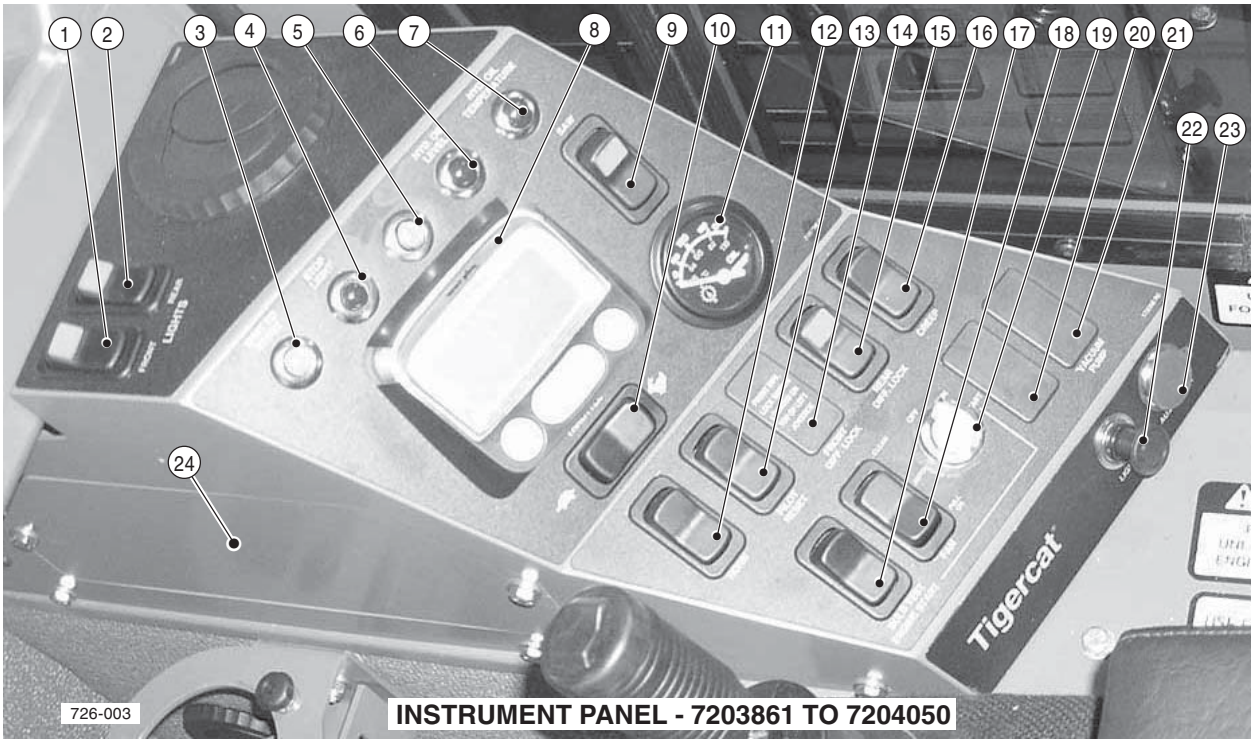


INSTRUMENT PANEL - 7203861 TO 7204050

INSTRUMENT PANEL - SERIAL NUMBER 7203861 TO 7204050

COMPONENT DESCRIPTION

1. LIGHTS, FRONT (OPTIONAL)

This switch will turn on the lights that illuminate the area in front of the cab. No switch is installed if option not installed.

2. LIGHTS, REAR (OPTIONAL)

This switch will turn on the lights that illuminate the area behind the cab. No switch is installed if option not installed.

3. WAIT TO START - YELLOW LIGHT

This YELLOW warning light will be ON during the "key ON" engine pre-heat time. Heating elements (grid heater elements) located in the engine air intake manifold are turned ON during cold weather conditions to heat the intake air when starting the engine. The engine **must not** be started until this light turns OFF automatically.

4. WATER IN FUEL - YELLOW LIGHT

The light will come ON when water is detected in the base of the fuel filter.

DO NOT start engine or continue to operate engine when this light is ON. Drain Fuel Water Separator. See procedure in section three of this manual.

5. STOP LIGHT - RED LIGHT AND HORN

The light will come ON and horn will SOUND when engine oil pressure falls below 10psi.

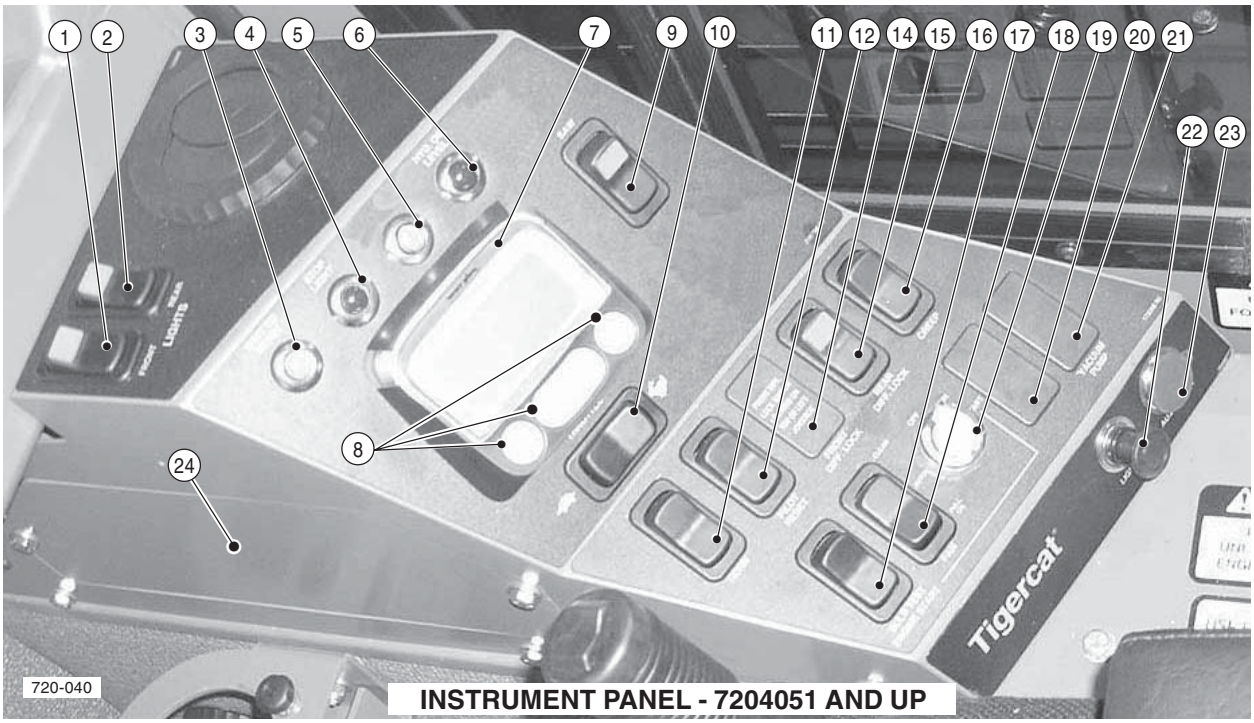
Note that the automatic engine shutdown feature will automatically stop the engine if oil pressure falls below 10psi. Investigate the cause and correct the fault before attempting to restart the engine. See OPERATING MACHINE in this SECTION for more information.

6. LOW HYDRAULIC OIL LEVEL - RED LIGHT AND HORN

This light will come ON and a horn will SOUND when the hydraulic oil level falls approximately 10 gal. US (38L) below the FULL mark.

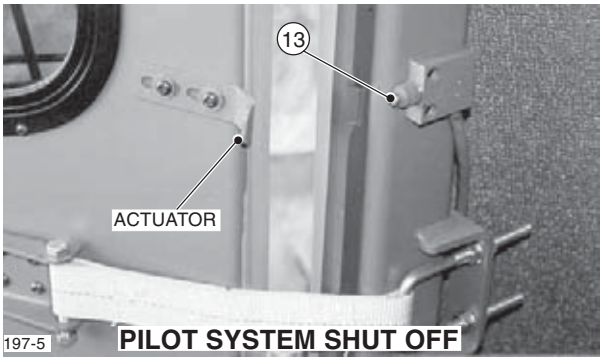
Stop the engine immediately when this alarm is activated. Operating machine with a low hydraulic oil level can cause hydraulic pumps to fail.

When this alarm is activated stop the engine and look for signs of broken hoses or other leaks. Repair leaks and refill the tank to FULL mark on the sight gauge. Restart engine and inspect for leaks.



INSTRUMENT PANEL - 7204051 AND UP

INSTRUMENT PANEL - SERIAL NUMBER 7204051 AND UP



PILOT SYSTEM SHUT OFF

13. PILOT SYSTEM SHUT OFF

Both doors are equipped with interlock switches to prevent the machine from being operated while the doors are open (pilot system shut off).

To operate: Close both doors and press the pilot reset switch.

NOTE: All functions on the machine can now be operated, either as intended or by **accidentally** touching them.

Once the safety interlock system has been activated, the safety of both the operator and all persons outside the cab becomes the **responsibility of the operator.**

These door interlock switches and the pilot reset switch are **safety features** and their function **must not be defeated in any way.**

14. DIFFERENTIAL LOCK, FRONT (WITH OPTIONAL STEERING WHEEL ONLY)

Placing this rocker switch in the ON position will lock up the front axle differential and provide drive torque to both front wheels.

Machines equipped with joystick steering have the front differential lock located on the left hand steering joystick thumbswitch. Refer to JOYSTICK, LEFT - THUMBSWITCH in THIS SECTION.

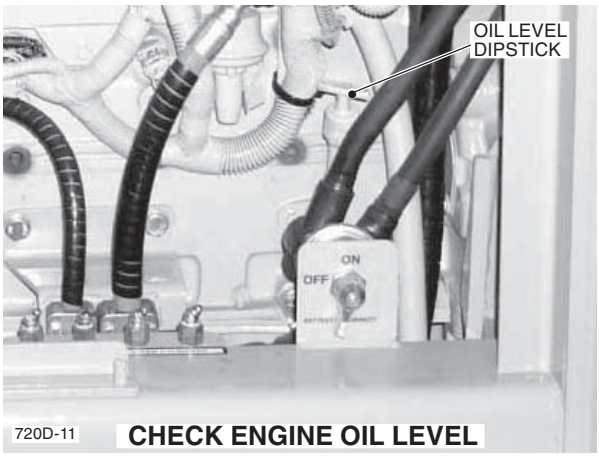
15. DIFFERENTIAL LOCK, REAR

This is a two position switch with a GREEN light.

Place this switch in the ON position to LOCK the REAR differential and provide driving torque to BOTH rear wheels. The light in the switch will stay ON when the rear differentials are locked. Place this switch in the OFF position to UNLOCK the rear differential.

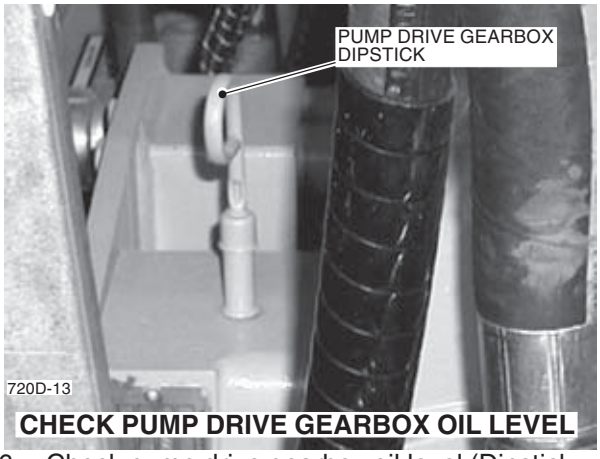
16. CREEP

This is a two position switch with a GREEN light. Placing this rocker switch in the ON position will put the hydrostatic drive into CREEP MODE. Creep mode provides maximum available tractive force to the wheels at a reduced speed. The light in the switch will stay ON when in creep mode. Place this switch in the OFF position to disengage CREEP MODE.



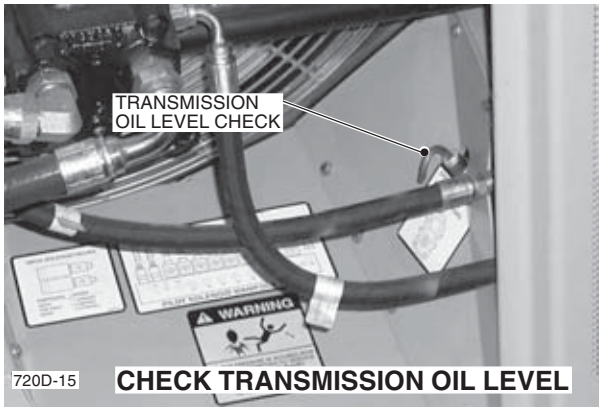
720D-11 **CHECK ENGINE OIL LEVEL**

5. Check the engine oil level. The level of the oil must be between the ADD and FULL marks on the dipstick.



720D-13 **CHECK PUMP DRIVE GEARBOX OIL LEVEL**

6. Check pump drive gearbox oil level (Dipstick provided)



720D-15 **CHECK TRANSMISSION OIL LEVEL**

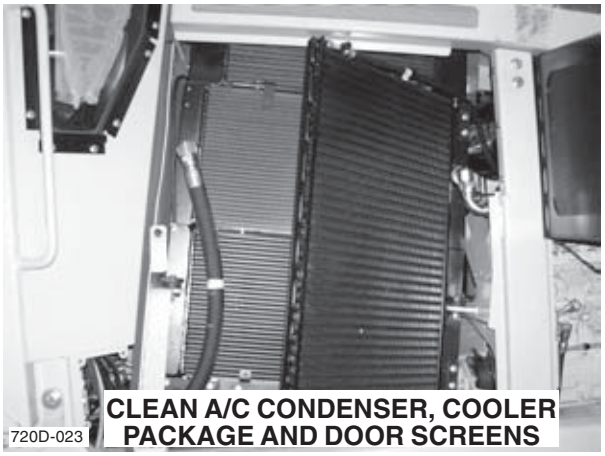
7. Check transmission oil level (dipstick).

195-17 **CHECK ENGINE COOLANT LEVEL**

8. Check the engine coolant level.

WARNING

Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

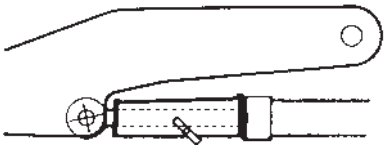


720D-023 **CLEAN A/C CONDENSER, COOLER PACKAGE AND DOOR SCREENS**

9. Clean A/C condenser, charge air cooler, radiator, oil cooler and door screens.

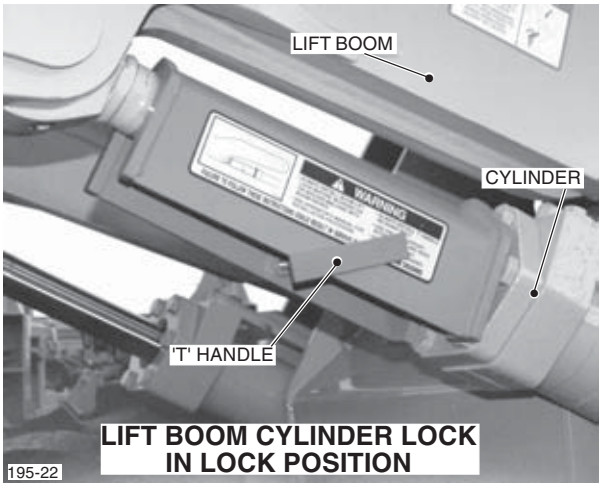
LIFT BOOM CYLINDER LOCK

WARNING



Always install lift boom lock before working on or around machine with boom raised.
- **Always install 'T' handle retainer bolt**
- **Use only to support boom and attachment.**

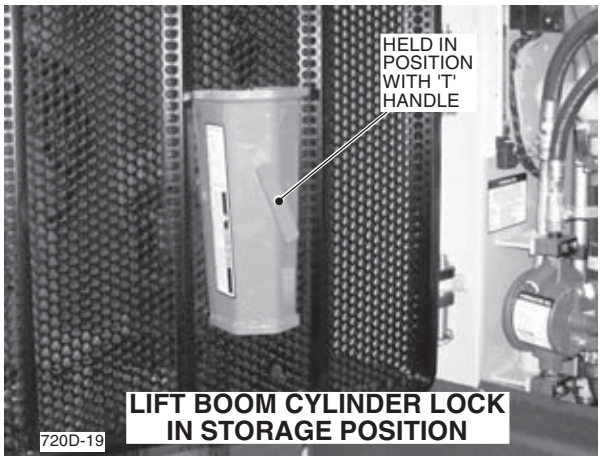
Before performing work under the felling head or lift boom, ensure that the attachment is firmly supported on level ground, on solid stands or, install lift boom cylinder lock.



LIFT BOOM CYLINDER LOCK IN LOCK POSITION

Completely raise lift boom and place lock over one of the two cylinder rods with the open side facing down and wide end against the keeper plate bolt heads. Install 'T' handle retaining bolt through center hole.

Do not place yourself under the boom or felling head, while doing this. Do not damage the piston rod when installing the boom lift lock. Turn off the engine, turn key back to RUN position, press the PILOT RESET to activate the pilot oil system and SLOWLY lower the boom until the boom lift lock is securely in place. To remove the boom lift lock, start the engine, press PILOT RESET and raise the boom completely. Without placing yourself under the boom or felling head, remove the 'T' handle retainer bolt, remove the boom lift lock and secure it in place inside the rear compartment door using the 'T' handle retainer bolt.



LIFT BOOM CYLINDER LOCK IN STORAGE POSITION

SCHEDULED MAINTENANCE

EVERY 125 HOURS:~

- **Perform 8 hour maintenance**

And in addition:~

- Lubricate rear axle pivot, 2-fittings, purge
- Lubricate rear drive shaft slip joint 1-fitting, purge

Check:-

- Engine coolant level
- Air intake primary filter element, check restriction indicator at FULL rpm
- Fluid level in batteries unless maintenance free
- Engine rpm.
- Hydraulic oil restriction indicator for boom/saw circuit with engine at FULL rpm
- Hydraulic pump and motor securing bolts
- Check fuel tank filler screen
- Torque tightening points as per new machine maintenance
- Proper operation of pressurized water system. (Refer to PRESSURIZED WATER SYSTEM in SECTION 2 of the OPERATOR'S MANUAL and PRESSURIZED WATER SYSTEM MAINTENANCE in THIS SECTION)

Visually check for damage to:-

- Lift boom and tilt linkage
- Front and rear frame
- Center joint area
- Attachment

Make repairs immediately

Visually inspect for:-

- Frayed electrical wiring and hydraulic hose
- Wear in any other components

Clean/replace:-

- Air conditioner re-circulation filter
- Cab fresh air filter
- Refer to diesel engine service manual and attachment manual for additional required maintenance at this scheduled time period.

EVERY 250 HOURS:~

- **Perform 8 hour maintenance**
- **Perform 125 hour maintenance**

And in addition replace:~

- Engine oil and change oil filter
- Engine fuel filter
- Air intake primary element
- Oil in pump drive gearbox
- Oil in transmission
- Refer to diesel engine service manual and attachment manual for additional required maintenance at this scheduled time period.

In addition to the LUBRICATION AND MAINTENANCE SCHEDULE outlined in THIS SECTION, the following instructions should also be noted:

The most common and damaging servicing problems are:

OVER SERVICING

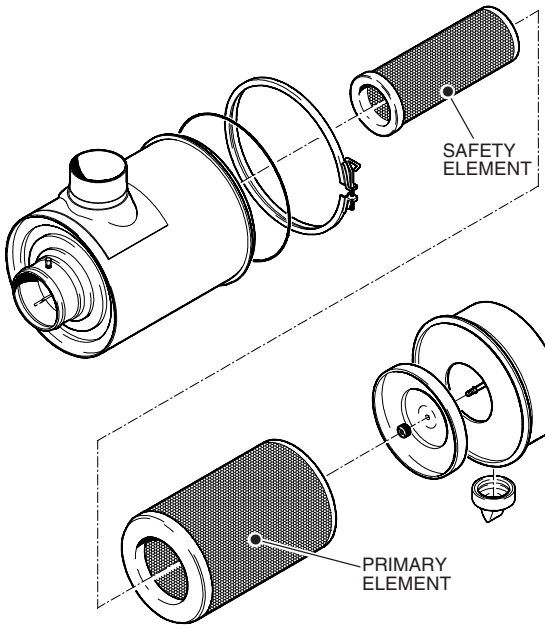
Filter elements increase in dust cleaning efficiency as dust builds up on the media. Looks can be deceiving. A filter that looks dirty may actually more efficient than one that is clean. A filter with dust build up on the media reaches nearly 100% dust cleaning efficiency. Only when a filter is so clogged with dirt that air restriction goes beyond engine manufacturer's guidelines, should a filter be replaced.

NOTE: This does not apply to hydraulic oil or diesel engine oil filters.

SERVICING

Engine exposure to dust during servicing is a large reason for engine damage due to dust.

Abrasive dust can easily enter the intake system once the air cleaner cover and protective filter element are removed for replacement. The safety element does reduce this risk but it should also be replaced at every third primary element change.

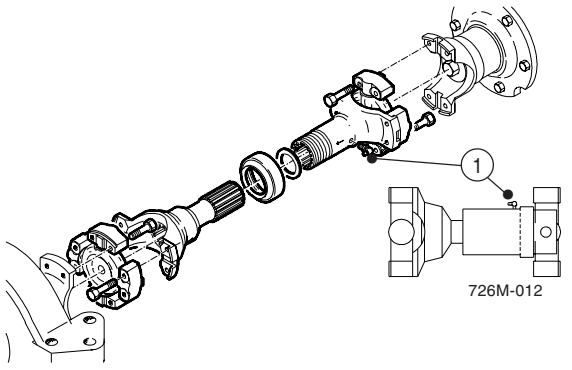


AIR CLEANER .PLT **AIR FILTER ELEMENTS**

IMPORTANT STEPS TO FOLLOW WHEN CHANGING FILTER ELEMENTS

1. Release the cover latch gently to reduce the amount of dust dislodged.
2. Avoid dislodging dust from filter element(s) by gently pulling the element off the outlet tube.
3. Check your old filter sealing surfaces, This will help detect foreign material on the sealing surface that is causing leakage.

   NOTE: Filter elements should never be cleaned and reused. Cleaning causes dust to bypass the filter and be deposited on the inner surface of the filter media. The dust is then drawn directly into the engine.
4. Always clean the inside of the outlet tube.
5. Always clean the sealing surface of the outlet tube before inserting a new filter element.
6. Inspect the new filter for damage.
7. Insert the new filter properly. Apply pressure to the outer rim of the filter not the flexible centre.
8. Check connections and ducts for an air tight fit. Ensure that all clamps, bolts and connections are tight. Check rubber elbows for splits or wear points. Leaks in these locations send dust directly to the engine.



726M-009 **REAR SLIP SPLINE**

REAR SLIP SPLINE LUBRICATION

4. Apply grease to grease nipple (1) until new, clean grease appears at the relief hole at yoke end of slip spline, FIG. 'C'.
5. Plug or cover relief hole and continue to apply pressure to grease nipple until new, clean grease appears at slip spline seal.
6. If grease does not appear at slip spline seal and continues to exit from the covered relief hole, remove the drive shaft and inspect for "hardened" grease build up, rust or other contaminants within the drive shaft. Repair or Replace drive shaft.

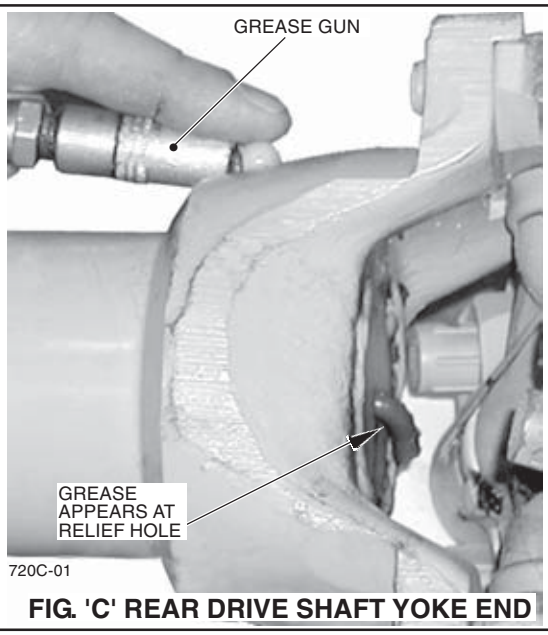


FIG. 'C' REAR DRIVE SHAFT YOKE END