

Tigercat[®]

610C SKIDDER

OPERATOR'S MANUAL

SERIAL NUMBER 6100701 TO 6101100



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VIBRATION AND NOISE LEVEL INSIDE CAB

Noise Level Inside Cab dB (mean) As per Tigercat test ETR00131		
	Microphone direction:	
	Left	Right
Driving max speed	83	82
Driving low speed	76	75



Wear suitable hearing protective device such as earmuffs or earplugs to protect against noise. Prolonged exposure to loud noise can cause permanent hearing loss. This machine exceeds 70dB(A) in the cab and exceeds 85dB(A) when servicing machine engine.

Check with your local Safety Commission to determine if hearing protection is required at these levels.

Vibration Level - Whole-body As per Tigercat test ETR00074 & ISO 2631-1:1997(E) Weighted rms acceleration (m/s ²)				
	Seat-buttocks		Seat-back	Pedal-foot
	Health	Comfort		
Driving max speed (Highest motor speed)				
x-axis (back-to-chest)	0.2590		0.5990	0.2660
y-axis (right-to-left)	0.2510		0.3070	0.2730
z-axis (buttocks-to-head)	0.4280		0.3320	0.4520
Σ	0.6610	0.5597	0.3880	0.2040
Driving max speed (Lowest motor speed)				
x-axis (back-to-chest)	0.1050		0.2280	0.0682
y-axis (right-to-left)	0.1110		0.1090	0.0864
z-axis (buttocks-to-head)	0.2480		0.1170	0.2280
Σ	0.3270	0.2913	0.1420	0.0950
Arch/Boom/Grapple Operation				
x-axis (back-to-chest)	0.1070		0.2240	0.1630
y-axis (right-to-left)	0.0912		0.1190	0.1210
z-axis (buttocks-to-head)	0.2290		0.1480	0.2060
Σ	0.3010	0.2687	0.1600	0.0966

Vibration Level - Hand/Arm Weighted rms acceleration (m/s ²)			
	Seat Joystick	Control Panel	Steering Wheel
	Driving max speed (Highest motor speed)		
Σ	1.170	0.758	0.355
Driving max speed (Lowest motor speed)			
Σ	0.313	0.241	0.608
Arch/Boom/Grapple Operation			
Σ	0.478	0.189	1.060

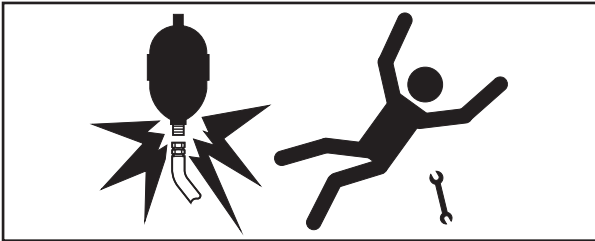
⚠ WARNING

Diesel fuel or hydraulic fluid under pressure can penetrate the skin and cause serious personal injury, blindness, or death. If any fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with treating this type of injury.

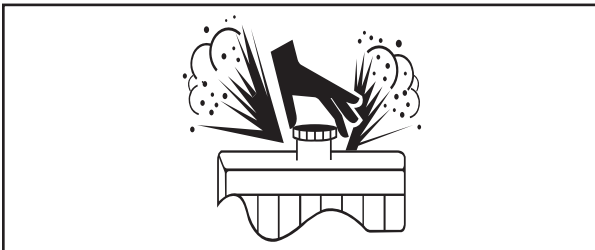
Never use your bare hands to check for fluid leaks.



Fluid leaks under pressure may not be visible. When searching for leaks, wear work gloves and use a wrench or piece of wood to move hydraulic hoses. Do not grab hold of hydraulic hoses. Wear safety goggles for eye protection.



Pressure can be maintained in a hydraulic system long after the power source and pump have been shut down. Lower grapple and dozer blade to the ground and relieve trapped pressure from the brake accumulator before performing work on components, or disconnecting any hoses. For the procedure to RELIEVE PRESSURE, refer to PARKING THE MACHINE in THIS SECTION.



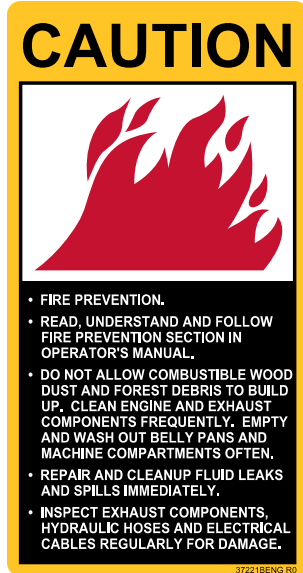
Explosive release of fluids from pressurized cooling system can cause serious burns.

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.

⚠ WARNING**WARNING. HOT FLUIDS AND HOT MACHINE SURFACES CAN CAUSE SERIOUS BURNS!**

- Before servicing the machine, allow the engine cooling system, fuel system, exhaust system, hydraulic system and machine surfaces to cool down.
- Use a thermometer to check surface and system temperatures to ensure it is safe to begin service work.
- DO NOT begin service work until the surface or system temperature has cooled down to below 100°F (38°C)!

13. **Turn the battery disconnect switch to OFF** at shut down to de-energize all electrical circuits.
14. **Remain with the machine** for at least 45 minutes at the end of operations while the machine cools.



15. **Remove all keys**, lock equipment and fuel cap at the end of operations to reduce the risk of vandalism.
16. **Be cautious when smoking.** An open flame, a lighted cigarette, etc., should not be permitted around any vehicle, especially during fuelling operations or when the fuel system is open to the atmosphere or when servicing batteries.
17. **AFTER transporting (trucking) a machine** from one job site to the next, open all doors and access panels and blow off any debris that may have repositioned itself onto the engine and exhaust parts due to wind turbulence caused by the journey.
18. **Before starting repair work**, such as welding, the surrounding area should be cleaned and a fire extinguisher should be close by.
19. **Store rags and other combustible materials** in a safe, fireproof location.
20. **Do not use the machine** on top of or to push piles of burning timber. A machine fire will most probably result.

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

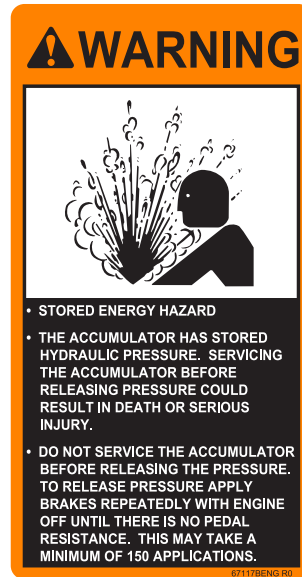
WHAT TO DO TO PREPARE FOR A MACHINE FIRE

- Prevent the fire from happening in the first place by ensuring that all machine systems are frequently inspected and always well maintained.
- Ensure that any hand held fire extinguishers are charged and in working order. Fire extinguishers require routine care. Follow the manufacturer's instructions for inspection and maintenance shown on the label of the fire extinguisher and in the extinguisher manufacturer's manual.
- Ensure that any pressurized water systems on the machine (if applicable) are charged and in working order. Refer to **PRESSURIZED WATER SYSTEM MAINTENANCE** in **SECTION 3** of the **OPERATOR'S MANUAL**.
- Ensure that you have the proper fire extinguishers on site. Most fires involving mobile forestry equipment will be **Class A** or **B**. Dry chemical extinguishers should be rated **ABC** and pressurized water extinguishers should be rated **A**.
Class **A** fires involve ordinary combustibles such as wood, cloth, paper, rubber and many plastics, Class **B** fires occur with flammable liquids such as diesel fuel, oil and grease and Class **C** fires apply to energized electrical equipment.

DO NOT LOOSEN CAP UNTIL COOL

This label warns of a **PRESSURE AND FLUID SPRAY HAZARD** when the coolant in the radiator is hot.

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

STORED ENERGY HAZARD

This label warns of a **STORED ENERGY HAZARD**. This label is located on the right side of the front chassis below the cab.

The machine is equipped with an accumulator. The accumulator has stored hydraulic pressure. Servicing the accumulator or any hydraulic components before releasing pressure could result in death or serious injury.

DO NOT SERVICE ACCUMULATOR BEFORE RELEASING PRESSURE by applying brakes repeatedly with the engine OFF until there is no pedal resistance. This may take a minimum of 150 applications.

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5b. MAXIMUM SPEED CONTROL (ROTATING SEAT & JOYSTICK STEERING)

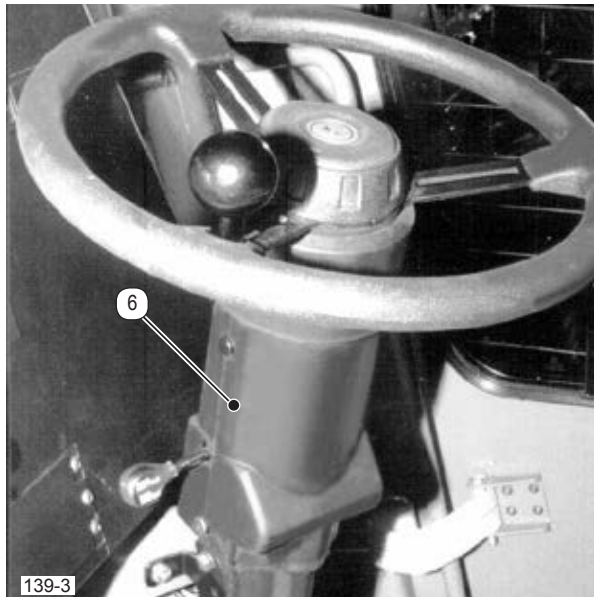
The maximum speed control allows the operator to set the maximum travel speed of the machine to maintain a given travel speed without having to feather the drive pedal.

Push control forward to increase the maximum travel speed.

Pull control back to decrease the maximum travel speed of the machine.

This control can be used while the machine is in motion.

Caution: Setting the maximum speed control to the minimum setting lowers maximum travel speed only, it will NOT prevent the machine from travelling when the forward or reverse travel controls are used.



6. STEERING WHEEL (STATIONARY SEAT & STEERING WHEEL)

METERED STEER VALVE

This machine is equipped with Variable Ratio Load Sensing Steering. The speed that the vehicle responds to the steering wheel input will vary, depending on the speed at which the steering wheel is moved.

When operating on the road, a slow movement of the steering wheel will not overcorrect and will steer a straight normal course.

Operating in the woods requires quick steering changes and this is produced by a rapid movement of the steering wheel, which will quickly change the vehicle's direction.

The lever on the left side of the Steering Column allows the selection of Telescopic and Tilt options.

The horn button is located in the center of the steering wheel.

QUICK STEER VALVE (OPTIONAL)

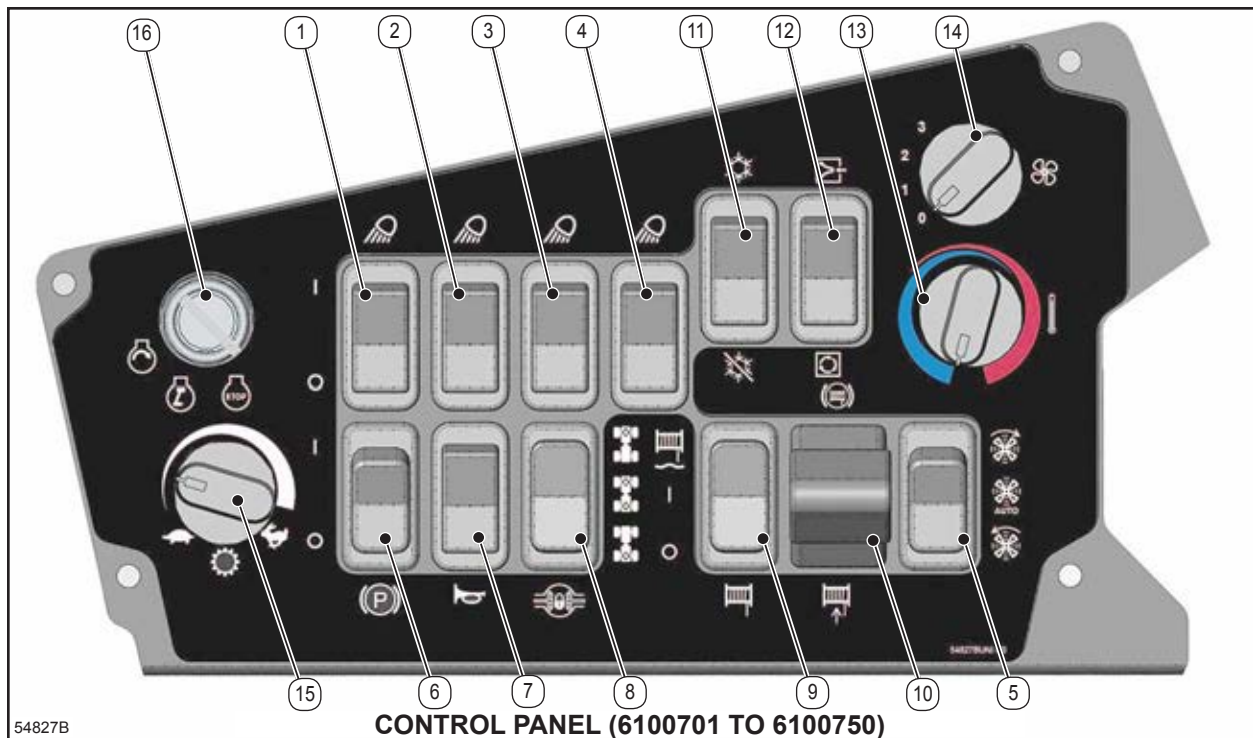
This machine is equipped with Variable Ratio Load Sensing Steering. The speed that the vehicle responds to the steering wheel input will vary; depending on the angle the steering wheel is turned. Turning the steering wheel $\pm 50^\circ$ results in controlled flow, from zero to full steering flow.

When operating on the road, turning the steering wheel only a few degrees in either direction will result in slower steering, not overcorrect and will steer a straight normal course.

Operating in the woods requires quick steering changes and this is produced by fully turning the steering wheel ($\pm 50^\circ$), which will fully lock steering and quickly change the vehicle's direction.



The lever on the left side of the Steering Column allows the selection of Telescopic and Tilt options.

The horn button is located in the center of the steering wheel.



54827B


CONTROL PANEL (6100701 TO 6100750)

must be turned off to activate a pull with the winch. The winch freespool icon  on the main menu of the computer display will be illuminated when the winch selector switch is in the  position.


Refer also to WINCH CONTROL LEVER in THIS SECTION .


10. WINCH CONTROL LEVER

FOR CARCO WINCH

Place the winch select switch (to the left of the lever) in the I (ON) position. Push and hold the winch control lever FORWARD to release the dynamic brake  for dropping a load on the fly or drive away from a load with slight tension on the cable. The control lever will return to the centre neutral position when released.

The neutral or centre position actuates the winch pinion brake and prevents the drum from rotating.

Place the winch select switch (to the left of the lever) in the I (ON) position. Pull and hold the winch control lever BACK to wind in the winch cable . The control lever will return to the centre neutral position when released.

Placing the winch select switch (to the left of the lever) in the  (FREESPOOL) position permits the cable to unwind freely. The cable can then be pulled from the drum by the operator by hand. The freespool function is intended for use in pulling the cable by hand


only and must not be used when the cable is loaded. Improper use of the freespool function will result in damage to the winch.


Refer also to WINCH SELECT SWITCH in THIS SECTION.

FOR ALLIED WINCH

The dynamic brake  position is not used for Allied Winch applications.

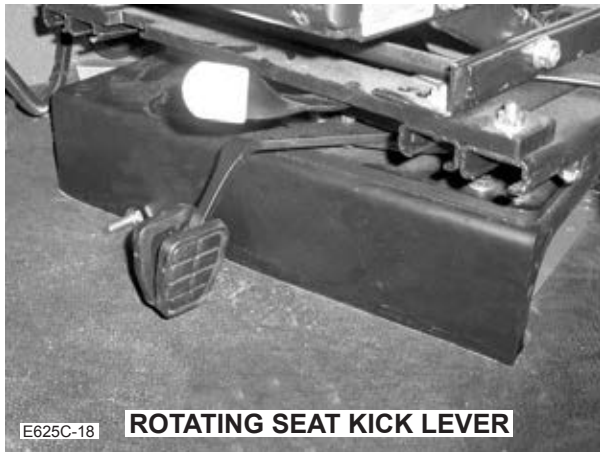
The neutral or centre position actuates the winch pinion brake and prevents the drum from rotating.

Place the winch select switch (to the left of the lever) in the I (ON) position. Pull and hold the winch control lever BACK to wind in the winch cable . The control lever will return to the centre neutral position when the handle is released.

Placing the winch select switch (to the left of the lever) in the  (FREESPOOL) position permits the cable to unwind freely. The cable can then be pulled from the drum by the operator.

Refer also to WINCH SELECT SWITCH in THIS SECTION.

ROTATING SEAT KICK LEVER (ROTATING SEAT & JOYSTICK STEERING)



This lever releases the seat to rotate between forward facing position and the rear facing position.

To rotate from the forward facing position to the rear facing position kick the left side of the lever and rotate the seat to the right until the seat locks in the rear facing position.

To rotate from the rear facing position to the forward facing position kick the right side of the lever and rotate the seat to the left until the seat locks in the forward facing position.

For safe operation of all controls the operator's seat must be locked in either the forward facing or rear facing position. A limit switch located in the seat pedestal sends a signal to the computer control system indicating the position of the operator's seat.

Note that control of machine travel is automatically transferred by the computer control system from the forward facing pedal to the rear facing pedal based on the position of the operator's seat. Both brake pedals operate regardless of seat position. Refer also to FOOT PEDALS, FORWARD FACING AND REAR FACING ~TRAVEL/ENGINE SPEED PEDAL and LEFT HAND JOYSTICK ~DIRECTION SELECTION SWITCH in THIS SECTION.

Note that steering control is automatically adjusted by the computer control system based on the position of the operator's seat. Refer also to LEFT HAND JOYSTICK ~ STEERING in THIS SECTION. It should also be noted that the machine steering invert function can be disabled. Refer to COMPUTER ~ MESSAGES - INFORMATION ~ MACHINE STEERING INVERT

DISABLED and COMPUTER ~ ADJUSTMENT MENU - SERVICE SETTINGS ~ STEER INVERT (JOYSTICK STEERING ONLY) in THIS SECTION.

FRONT AND REAR ORIENTATION NOTE:

The dozer blade is considered to be at the front of the machine. The attachment is considered to be at the rear of the machine. Therefore in the forward facing position the operator's seat is facing the dozer blade and in the rear facing position the operator's seat is facing the attachment.



ENGINE MENU



From the main menu press the F1 button to select the engine display.

When selected the engine menu icon is on display and the engine functions will also be displayed.



The engine functions on display are as follows:

- Engine Speed - rpm
- Engine Torque - %
- Coolant Temperature - °F or °C
- Engine Oil Pressure - psi or bar
- Turbocharger Boost Pressure - psi or bar
- Charge Air Temperature - °F or °C
- Voltage - V
- Engine Hours - h



ENGINE FUNCTIONS (6100701 TO 6100750)

Press the F1 button to select the fuel information display.

Press the F2 button to toggle the cold idle function ON/OFF. Refer to COLD IDLE OPERATION and COLD IDLE SPEED ADJUSTMENT in THIS SECTION.

Press the F3 button to toggle between metric and imperial units of measure.

Press the back button to return to the main menu.



INFORMATION FUNCTIONS

1. Hydraulic Oil Temperature (°F or °C)

This display indicates the current hydraulic oil temperature registered in the main hydraulic tank.

If the temperature rises above the recommended operating range for the type of hydraulic oil in use, alarm will sound, check the following:

- Plugged oil cooler
- Malfunction in a hydraulic system
- High loads on the hydraulic system
- Malfunction of the cooling fan
- Low hydraulic oil level
- Correct Hydraulic Oil Grade Selection

If hydraulic oil temperature rises above the recommended operating range DO NOT continue to operate the machine.



NOTE ALSO: Hydraulic oil temperature can also be monitored using the hydraulic oil temperature gauge shown on the main menu.

The alarm must not be used to monitor the hydraulic oil. The operator must use the hydraulic oil temperature gauge on the main menu of the computer display, together with the operating range chart in SECTION 3 to prevent damage to the hydraulic system.

Hydraulic oil grade information is shown on the main menu below the hydraulic oil temperature gauge.

Operating outside the recommended operating range will shorten hydraulic component life.

Refer to COMPUTER ~ ADJUSTMENT MENU - SERVICE SETTINGS ~ HYDRAULIC OIL GRADE in THIS SECTION for hydraulic oil grade selection settings information.

Refer also to APPROVED HYDRAULIC OILS in SECTION 3 of THIS MANUAL for hydraulic oil operating range information.

Refer also to COMPUTER ~ MESSAGES - CRITICAL ~ HYDRAULIC OIL TEMPERATURE HIGH in THIS SECTION for more information about the hydraulic oil temperature warning.

2. Drive Pressure Forward - psi or bar

This display indicates forward drive pressure.

3. Drive Pressure Reverse - psi or bar

This display indicates reverse drive pressure.

4. Drive Motor Speed - rpm

This display indicates the drive motor speed in rpm.

5. Hydrostatic Circuit Temperature -°F or °C

This display indicates the hydrostatic circuit temperature as read by the temperature sensor located on the drive pump.

6. Machine Hours - h

This display indicates the total number of hours the machine has run.



MODULES

From the Info menu press F1 to select the modules menu.

This menu provides information on the following machine modules:

- Display (MD3 Computer Module)
- Cab Module (XS2 Module)
- Front Chassis Module (XA2 Module)
- Cummins Engine ECM



Shown above the MD3 module has been selected. Specific information for the MD3 is displayed on the screen.

Use the Arrow Up or Arrow Down to select the menu item. Press OK to confirm the selection.

This menu is used by Tigercat service technicians. Refer to SECTION 6 of the SERVICE MANUAL for more information.

⌂ Press the back button (or F1) to return to the main menu page.



LOGS

Press F3 from the info menu page to select logs.

This menu lists the logs available in the machine program and the number of records within each log.

The records are a list of all the fault occurrences in each log. Records cannot be cleared by operators.

Use the Arrow Up or Arrow Down to select the menu item. Press OK to confirm the selection.

This menu is used by Tigercat service technicians. Refer to SECTION 6 of the SERVICE MANUAL for more information.

⌂ Press the back button (or F1) to return to the main menu page.

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ERROR MESSAGES (RED)

Error messages advise the operator that a critical machine fault is about to occur or a system fault has occurred.

Error messages are computer system generated and are generally triggered by computer system error and fault related conditions.

Error messages have the second highest level of priority and are used to alert operator that immediate action must be taken to prevent damage to machine or to ensure operator safety.

Error messages are activated whenever a fault such as an electrical connection is broken/ disconnected. Most error messages are due to computer system hardware or connection faults.



When an error message is displayed, the master alarm and alarm light will sound and flash continuously. The message remains on the screen until the operator hides it.

The message will give brief details of the fault and advise what action is necessary.

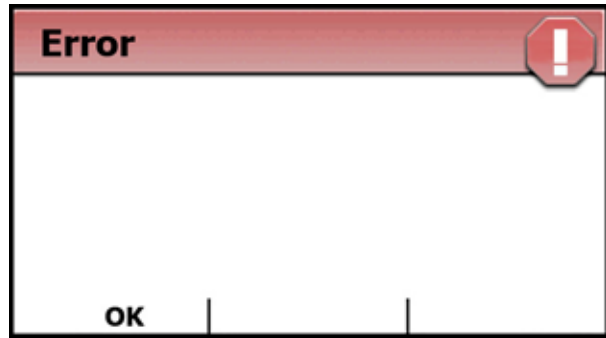
In some instances the machine requires immediate action to correct the problem which requires the operator to STOP machine operation, SHUT THE ENGINE OFF and service the machine to correct the problem.

However, if the machine cannot be stopped immediately for safety reasons, the operator can hide the message. In this instance the machine should only be operated long enough to move the machine to a safe location then STOP machine operation and SHUT THE ENGINE OFF before serious machine damage can occur!

Messages are acknowledged by pressing the F2 button (OK). To recall active messages turn key off and on. On screen messages will indicate to the operator that an active hardware fault has been hidden.

Error messages flash the critical symbol  or the  above the F4 button when active messages are hidden depending on the type of error message. The symbol will continue to flash until the problem is resolved and the fault becomes inactive.

Active messages that have been hidden can be reviewed by pressing the F4 button.



A list of some types of **ERROR MESSAGES** is as follows:

Module No Contact Error

Module VREF Error

Voltage Input Error (VIN)


Digital Input Error (DIN)

Digital Output Error (DOUT)

Current Output Error (COUT)

* Note that not all error messages are shown.



Alert 

Hardware Failure - VIN


Active fault has been hidden. Turn key off and on to recall active hidden hardware faults.

Hide | |

HARDWARE FAILURE - VIN

This warning will be displayed when a voltage input error message has been hidden.

To recall the original active fault(s) the operator must turn the key off and on.

Alert 

Hardware Failure - DOUT


Active fault has been hidden. Turn key off and on to recall active hidden hardware faults.

Hide | |

HARDWARE FAILURE - DOUT

This warning will be displayed when a digital output error message has been hidden.

To recall the original active fault(s) the operator must turn the key off and on.

Alert 

Hardware Failure - DIN


Active fault has been hidden. Turn key off and on to recall active hidden hardware faults.

Hide | |

HARDWARE FAILURE - DIN

This warning will be displayed when a digital input error message has been hidden.

To recall the original active fault(s) the operator must turn the key off and on.

Alert 

Hardware Failure - COUT

Active fault has been hidden. Turn key off and on to recall active hidden hardware faults.

Hide | |

HARDWARE FAILURE - COUT

This warning will be displayed when a current output error message has been hidden.

To recall the original active fault(s) the operator must turn the key off and on.



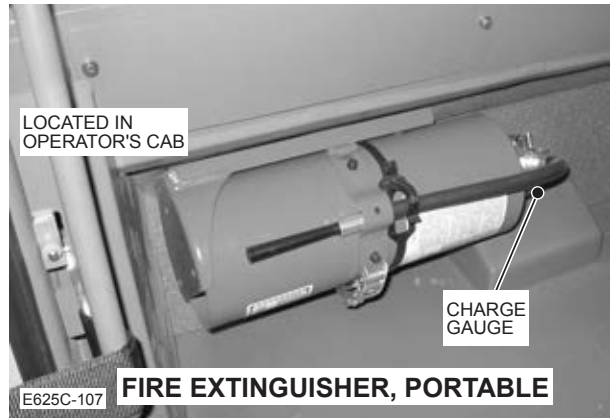
AM/FM STEREO CD

With two front mounted speakers. Consult the manufactures instruction manual for additional information.



RADIO - CB (IF EQUIPPED)

Consult the manufacturer's instruction manual for additional information.



FIRE EXTINGUISHER, PORTABLE

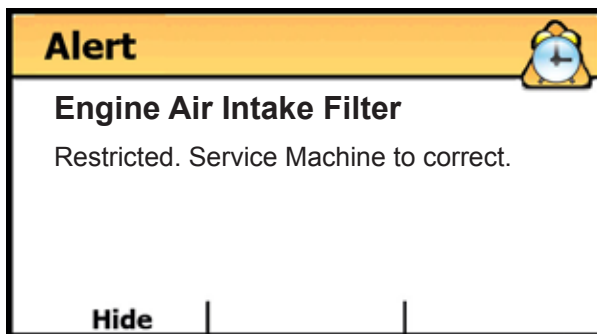
A portable fire extinguisher is located in the operator's cab. The extinguisher should be checked daily to ensure that it is charged. The pointer on the charge gauge should point to the green region. If the indicator falls out of this green area, the extinguisher should be serviced immediately. Refer also to FIRE PREVENTION in SECTION 1 of THIS MANUAL.

AIR CLEANER

The air cleaner on this machine uses two filter elements, a primary element and a safety element accessible from the left side of the engine compartment.

To ensure maximum engine protection, it is important that the elements be serviced correctly and at proper servicing intervals.

A filter restriction indicator is mounted to the output side of the filter, this should show green when the engine is running under load. Service is required if the indicator shows red. The filter restriction indicator is equipped with a switch used to send a signal to the computer control system in the event of a filter restriction.



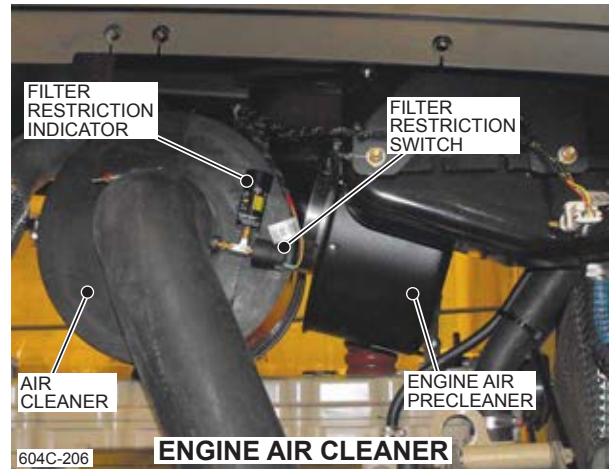
When a signal is received from the restriction indicator switch on the engine air cleaner a warning message will be displayed. Refer to COMPUTER~MESSAGES - ALERT~ENGINE AIR INTAKE FILTER RESTRICTED in THIS SECTION.

AIR CLEANER UNLOADER VALVE

This rubber valve on the tube of the air cleaner housing should be checked at the beginning of every shift (8 hours). If this valve is missing, damaged or has become hard, it will cause the air cleaner to become ineffective. The valve should suck closed at 1/3 throttle

This valve should be **replaced every 1000 hours**. Remove the unloader valve from the tube of the air cleaner housing. Check and clean the valve. A good valve should be soft and flexible. If it is plugged, be sure to check the filter elements as they may need replacing as well. Reattach the valve to the tube.

When operating in high dust conditions, the unloader valve should be checked and squeezed **every 2 hours** to release dust buildup.



FILTER RESTRICTION INDICATOR

A filter restriction indicator is connected to the outlet side of the air filter. Replace the primary air filter when the indicator shows RED. This indicator provides a continuous reading whether the engine is running or is shut down. After replacing the filter, reset the indicator by pressing the reset button.

NOTE: Replace the safety element every third primary filter change.

In addition refer to the LUBRICATION AND MAINTENANCE SCHEDULE and AIR CLEANER MAINTENANCE in SECTION 3 of THIS MANUAL

COLD IDLE SPEED ADJUSTMENT



From the main menu press F2 button to select the ADJUSTMENT MENU.



Press the arrow up or arrow down buttons to scroll to the setting to be adjusted.

Press the F2 button to reset to default setting. Press F2 (Yes) or F3 (No) to confirm.



The engine settings menu will appear by default. Press F1 (Adjust) to adjust engine settings



Continued on next page

CARE OF THE MACHINE

1. Ensure that all fluid levels are always at the proper level. Use the preventative maintenance schedule in SECTION 3 of this manual .
2. Follow proper procedure for cleaning windows described in this section.
3. Apply grease to all lubrication points at required intervals.
4. Do not apply load to a cold engine.
5. Close and secure all doors and access covers.
6. Do not allow branches, twigs, leaves or pine needles to build up around radiator intake doors or anywhere else on the machine. Clean frequently but at least once daily.

Refer to CLEANING A/C CONDENSER AND COOLING ASSEMBLY in THIS SECTION.
7. Be sure that the grapple and dozer blade are resting on the ground before servicing or parking the machine.

CARE OF POLYCARBONATE WINDOWS IN CAB

Most windows used in the cab are made from a polycarbonate resin thermoplastic. This material is a replacement for glass when improved strength, durability and safety is required.

Polycarbonate material is expected to resist heavy impact from large branches and falling tree tops and to absorb high levels of energy when contacted by high velocity thrown objects such as wood chips, disc saw blade teeth or broken harvester head saw chain.

The extreme operating environment seen in logging applications heightens the need to regularly inspect and properly maintain polycarbonate cab windows.

Polycarbonate windows are an essential piece of operator protective equipment and should be maintained as such. It is important to note that cracks, chips, notches or scarring anywhere on the viewing surface or edges of the window will decrease ability to resist heavy impacts and therefore compromise effectiveness as operator safety protective equipment. Windows with these defects must be replaced immediately.

Refer to the next section for detailed information regarding inspection and maintenance of polycarbonate windows.

INSPECTION AND MAINTENANCE

Daily inspection and maintenance is essential to confirm that the window's ability to protect the operator has not been compromised.

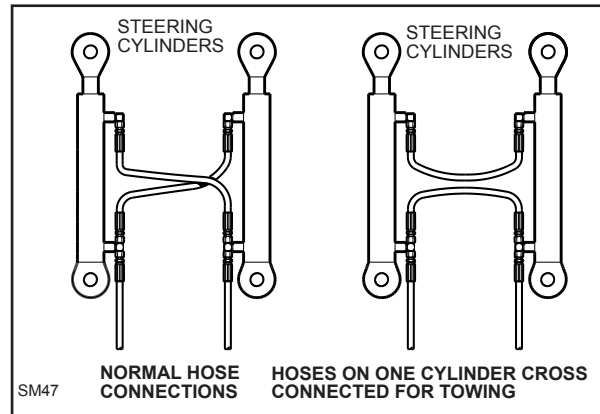
- Inspect all windows daily and immediately after any impacts.
- Check for any damage to the window material or steel structure in the area of the window mounting.
- The edges of the polycarbonate window must be evenly and fully supported on a flat surface around the entire window opening at all times. Bent or dented skylight structures must be replaced immediately. Bent or dented cab structures must be evaluated immediately for possible repair or replacement.
- The edges of the polycarbonate window must be free from cracks, chips, notches or scarring and must not be pinched or stressed. These defects will decrease ability to resist heavy impacts. Windows with these defects must be replaced immediately.
- Cracks, chips, notches or scarring anywhere on the viewing surface of the window will decrease ability to resist heavy impacts. Windows with these defects must be replaced immediately.
- Bent, dented or missing window retaining parts must be replaced immediately.
- Rubber materials used in mounting the window must be maintained in good condition.
- Identification of the polycarbonate originally used by Tigercat is hot stamped in a corner of the window to identify its composition. Do not use any replacement window without proof of its material composition. Do not substitute with any other materials.
- Skylights, cab structures, windows and window retaining parts must not be modified or replaced with components that are not approved by Tigercat.

4. To allow the machine to steer while towing and prevent damage to the steering cylinders, cross hydraulic hoses on one of the steering cylinders. This will allow trapped oil to flow freely between the two steering cylinders, providing ease of turning with some dampening effect.
5. The machine will be towed from the front, making use of the towing lugs at front of machine behind the dozer blade.

Ensure a vehicle of equal power and size is used for towing.

When going downhill, be sure to use a hold-back vehicle as the machine is now without any effective braking.

6. When towing is completed, reconnect parking brake supply hose and steering cylinder hoses in their proper locations.



SCHEDULED MAINTENANCE

FREQUENTLY:~

- Check engine cooling air intake screens for possible restriction.

EVERY 8 HOURS (EVERY SHIFT):~

- Perform "frequently" maintenance check, and in addition:~
- Check engine coolant level
- Check engine oil level
- Drain primary fuel filter/water separator
- Drain secondary fuel filter/water separator
- Check air intake precleaner, clean as required
- Check air cleaner unloader valve
- Check engine air filter restriction indicator
*Replace primary filter if indicator is in red zone.
Replace secondary (safety) filter every third primary filter change to guarantee maximum performance and reliability.*
- On machines 6100701 to 6101000, check hydraulic oil level with grapple head fully open, grapple head and dozer blade on the ground.
- On machines 6101001 to 6101100, check hydraulic oil level with shield and dozer blade on the ground.
- Check winch sump oil level (6100701 to 6101000 - if equipped)
- Check transmission oil level with dipstick
- Lubricate front axle pivot, 2-fittings, purge
- Lubricate mid drive shaft 1-fitting, purge
Note: *Lubrication of mid drive shaft slip joint should be done with machine fully articulated and locked. Refer also to ARTICULATION LOCK ~ ARTICULATED LOCKED POSITION in THIS SECTION.*
- On machines 6100751 to 6101000, lubricate rear drive shaft bearing, 1-fitting, purge
- Lubricate center joint bearings, 2-fittings, purge
- Lubricate steering cylinder ends, 4-fittings, purge
- Lubricate arch cylinders and pivots , 6 or 12-fittings, purge (if equipped)
- Lubricate dozer blade cylinders and pivots, 6-fittings, purge
- Lubricate grapple snubbers, 2-fittings, purge (if equipped)

- Lubricate grapple, 8-fittings, purge (if equipped)
- Lubricate grapple yoke, 8-fittings, purge (if equipped)

Clean:~

- Potentially damaging limbs or sticks from machine
- A/C condenser, oil cooler, radiator refer to CLEANING A/C CONDENSER AND COOLING ASSEMBLY in SECTION 2 of the OPERATOR'S MANUAL.

Check:~

- Service brake for proper operation. Refer to SERVICE BRAKE ~ CHECKING BRAKE AND ACCUMULATOR FOR PROPER OPERATION in THIS SECTION.
- All engine air intake system components (including charge air cooler) rubber elbows, connector hoses, tubes and clamps for damage, hardening, wear, cracks, leaks, loose clamps or loose hanger bracket hardware and repair immediately.
- Charge Air Cooler for damage, wear, cracks, or leaks and repair immediately.
- For leakage around hydraulic components and flexible hoses. See "Oil lost from leakage" chart.
- For loose nuts, bolts and fittings
- Condition and tension of fan belts.
- Exhaust system for leaks.
- Water pressure (60 psi) for pressurized water system (if equipped).

If the water system has been operated, refer to PRESSURIZED WATER SYSTEM MAINTENANCE in THIS SECTION for refilling and charging instructions.

- Conduct an overall visual inspection.
Refer to diesel engine service manual and attachment manual for additional required maintenance at this scheduled time period.

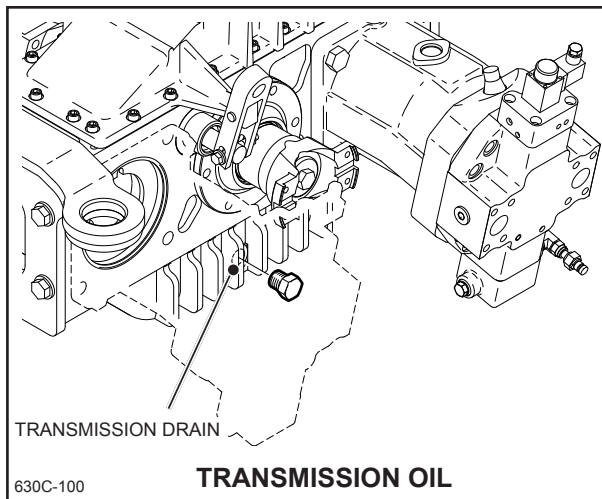
MACHINES 6101001 TO 6101100

Tigercat Model 610C												
SERVICE AND LUBRICATION POINTS												
REFER TO Tigercat OPERATOR'S MANUAL FOR FURTHER INFORMATION												
SERVICE POINT NO.	ITEM	SERVICE EVERY						CAPACITY			DESCRIPTION	
		8 ⌘	125 ⌘	250 ⌘	500 ⌘	1000 ⌘	2000 ⌘	LITERS	USG	QTY		
1	COOLING SYSTEM	CHK	CHANGE COOLANT EVERY 2 YEARS						34.4	9.1		60/40 ANTIFREEZE *
2	ENGINE OIL/FILTER CUMMINS QSB SERIES	CHK									* SEE ENGINE MANUFACTURER'S MAINTENANCE MANUAL FOR PROCEDURES, CAPACITIES AND REPLACEMENT INTERVALS	
3	FUEL FILTER/WATER SEPARATOR (ENGINE)	DRN		REP						1		
3A	SECONDARY FUEL FILTER / WATER SEPARATOR	DRN		REP						1		
4	FUEL TANK FILLER SCREEN		CHK							1		
5	AIR INTAKE PRECLEANER	CHK								1	CLEAN AS REQUIRED	
6	AIR INTAKE PRIMARY ELEMENT	CHK								1	CHECK FILTER RESTRICTION INDICATOR. REFER TO 8 HOUR SCHEDULED MAINTENANCE FOR DETAILS.	
	AIR INTAKE SAFETY ELEMENT	CHK								1		
7	AIR CLEANER UNLOADER VALVE	CHK				REP				1	REFER TO SECTION 3 IN MANUAL	
8	AIR INTAKE CONNECTIONS	CHK					REP			1	CHECK FOR LOOSE CLAMPS AND DAMAGED RUBBER COMPONENTS. REPLACE RUBBER COMPONENTS.	
9	HYDRAULIC RESERVOIR (GAUGE ON TANK)	CHK						89	23.5	1	D/R AS REQUIRED (SEE HYDRAULIC OIL CHART)	
10	HYDRAULIC FILTER, FULL FLOW, INCLUDES: 1 BLUE WATER ABSORBING ELEMENT * 1 WHITE HIGH PERFORMANCE FILTER				REP	†				2	*NOTE: MUST USE 1 BLUE FILTER ELEMENT AND 1 WHITE FILTER ELEMENT	
11	CHARGE PRESSURE FILTER				REP	†				1	CHECK FILTER RESTRICTION INDICATOR ON FILTER WITH ENGINE RUNNING AT FULL AND WITH OIL FLOW	
12	EHS TRANSMISSION FILTER				REP	†				1		
13	EHS TRANSMISSION	CHK			D/R			10	2.6	1	FILL WITH MIL-L-2105C OR API-GL-5 LUBRICANT GRADE 75W-90	
14	AXLES: FRONT REAR		CHK			D/R	***	25.6 40.5	6.8 10.7	2	FILL WITH MIL-L-2105C OR API-GL-5 LUBRICANT GRADE/WEATHER TEMPERATURE: BELOW -10°F(-23°C) USE 75W-90 UP TO 100°F(38°C) USE 80W-90 ABOVE 100°F(38°C) USE 85W-140	
15	PINION GREASE SEAL - FRONT AND REAR AXLE					LUB		PURGE		2	ONE FITTING PER AXLE LITHIUM BASE EP2 GREASE ◆	
16	AXLE-PIVOT (FRONT ONLY)	LUB						PURGE		2	LITHIUM BASE EP2 GREASE ◆	
17	FRONT DRIVE SHAFT			LUB				PURGE		1		
	MID DRIVE SHAFT	LUB	**					PURGE		1	LITHIUM BASE EP2 GREASE ◆	
	REAR DRIVE SHAFT			LUB				PURGE		1		
18	CENTER JOINT	LUB						PURGE		2	LITHIUM BASE EP2 GREASE ◆	
	CENTER JOINT BEARING PRELOAD	CHK	48 ⌘			CHK					REFER TO SECTION 3 OF THE MANUAL FOR DETAILS	
19	STEERING CYLINDERS	LUB						PURGE		4	LITHIUM BASE EP2 GREASE ◆	
20	DOZER BLADE CYLINDER & PIVOTS	LUB						PURGE		6	LITHIUM BASE EP2 GREASE ◆	
21	CLAMP ARM CYLINDER & PIVOTS	LUB						PURGE		6	LITHIUM BASE EP2 GREASE ◆	
22	PARKING BRAKE			CHK		D/R		0.5	0.13		FILL WITH MIL-L-2105C OR API-GL-5 LUBRICANT GRADE/WEATHER TEMPERATURE: BELOW -10°F(-23°C) USE 75W-90 UP TO 100°F(38°C) USE 80W-90 ABOVE 100°F(38°C) USE 85W-140	

610C LUBCHART 58333BR2 11/13

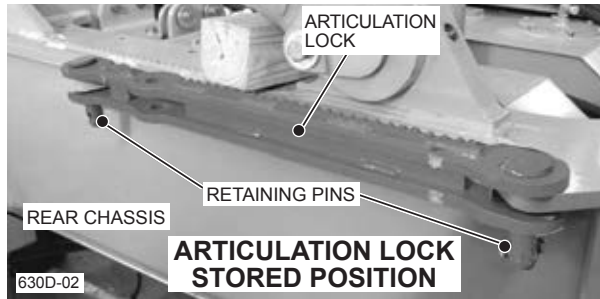
DRAINING TRANSMISSION OIL

1. The transmission is equipped with a plug to drain the contents of the transmission into a storage container.
2. Remove the belly pan in the front chassis closest to the articulation joint.
3. Remove the drain plug on the hydraulic motor side of the transmission (pic).
4. Once fluid has been drained, replace the drain plug in the transmission housing once draining has completed.

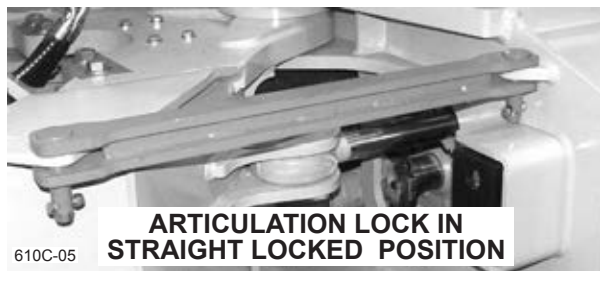


**ARTICULATION LOCK ~
STRAIGHT LOCKED POSITION**

1. Position machine on level ground and steer machine into a straight ahead position.
2. Lower grapple and dozer blade to the ground, engage parking brake, stop engine and remove ignition key.

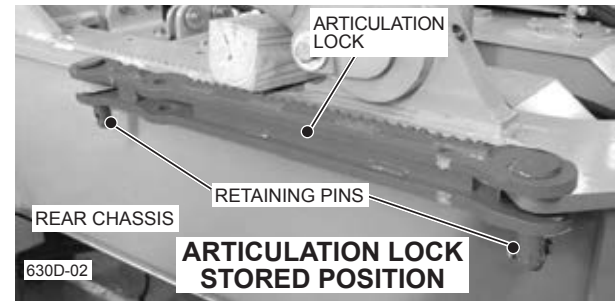


3. Remove both retaining pins from the articulation lock. Relocate articulation lock between front and rear chassis. Line up holes at each end of articulation lock with holes in chassis' and secure in place with both retaining pins.
4. After work is completed, relocate articulation lock into storage position on rear chassis and hold in place with retaining pins.

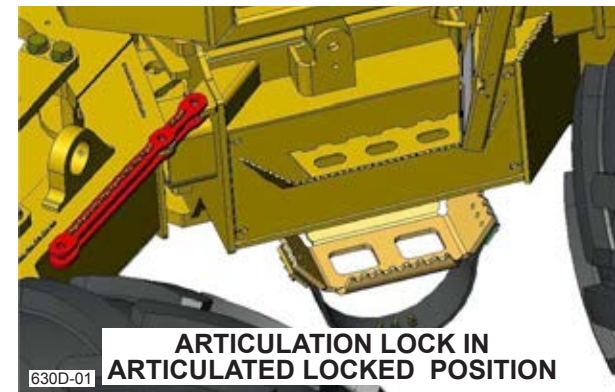


**ARTICULATION LOCK ~
ARTICULATED LOCKED POSITION**

1. Position machine on level ground and steer machine into a fully articulated position to the right.
2. Lower grapple and dozer blade to the ground, engage parking brake, stop engine and remove ignition key.



3. Remove both retaining pins from the articulation lock. Relocate articulation lock between front and rear chassis. Line up holes on the articulation lock with holes in chassis' as shown and secure in place with both retaining pins.
4. After work is completed, relocate articulation lock into storage position on rear chassis and hold in place with retaining pins.



MAINTENANCE

Maintenance of the winch is limited to the hydraulic system maintenance of the skidder itself.

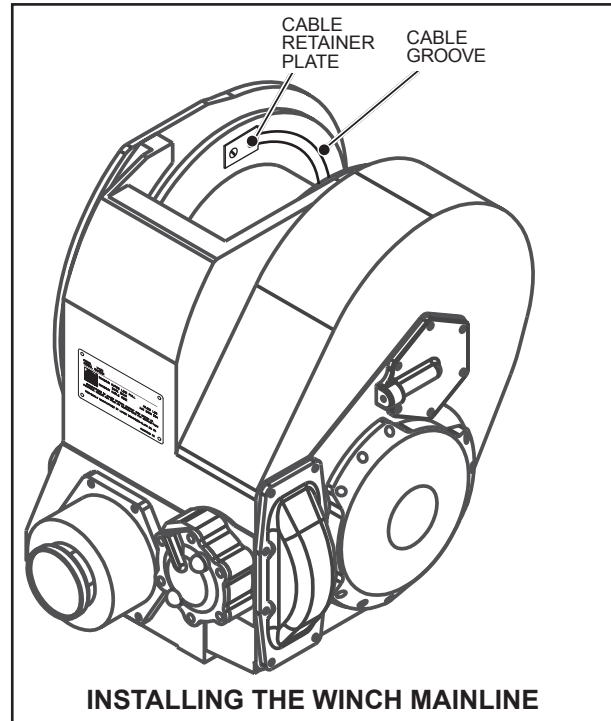
Periodically check the winch, control valve, and connecting hoses for damage or hydraulic oil leakage. If any problems are found, they should be corrected before operating the winch.



ADJUST THE WINCH FREE-SPOOL TENSION

If the winch cable requires too little effort to pull it from the cable drum, the tension can be adjusted as follows:

- Loosen the lock screw.
- Tighten the adjusting nut to increase the tension and/or loosen it to decrease it.
- Tighten the locknut.



INSTALLING THE WINCH MAINLINE

⚠ WARNING

Use extreme care when removing cable and ferrule from the drum. When the ferrule is released the cable may spring out with force.

Installing the winch mainline as follows will provide a safety break-away feature. If the load should fall down a hillside, the operator should IMMEDIATELY put the winch control in FREESPOOL position. This will allow the cable to unwind freely from the cable drum and break away from the winch, preventing the machine from being pulled over.

- Start the engine and rotate the winch cable drum so that the cable and ferrule groove in the inside, left hand wall of the drum is at the top and shut down engine.
- Remove the cable retainer plate capscrews and retainer plate from the cable drum.
- Insert the cable ferrule into the groove in the drum and hold the cable against the drum.
- Install the retaining plate and capscrews to hold the cable in place.
- Start the engine and winch in the cable onto the drum.

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