Tigercat®

620E/630E/635E SKIDDER

OPERATOR'S MANUAL

SERIAL NUMBER 6206201 TO 6206400
SERIAL NUMBER 6304001 TO 6304200
SERIAL NUMBER 6351501 TO 6352000

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Tigercat Industries Inc.
P.O. Box 637
Brantford, Ontario
Canada N3T 5P9
Tel: (519) 753-2000
Fax: (519) 753-8272

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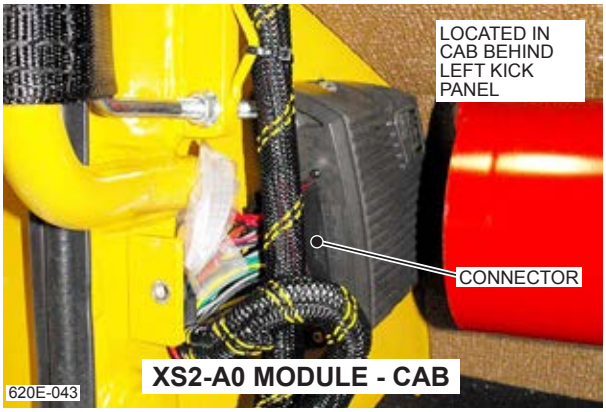
VIBRATION AND NOISE LEVEL INSIDE CAB

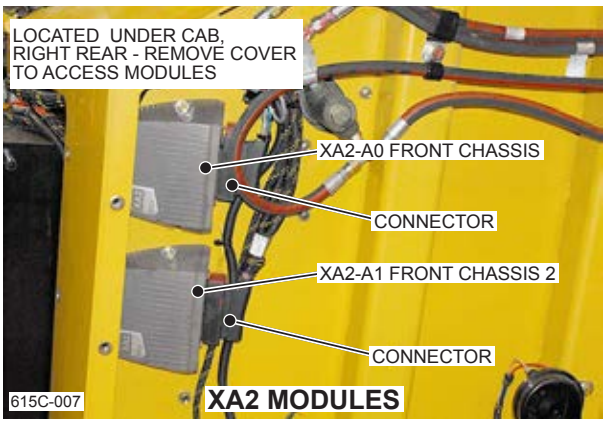
VIBRATION AND NOISE LEVEL INFORMATION TO FOLLOW, NOT AVAILABLE AT TIME OF PRINTING.

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.

Remove the MD3 module fuse from the fuse and relay panel





Disconnect the other IQAN control module harness connectors. One module is located in the cab. Two modules are located under the cab.

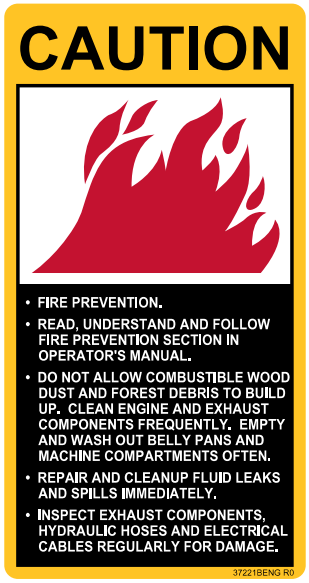
When welding is completed reconnect all connectors, ground and fuse then attach the battery cables reconnecting the positive (+) cables first and turn the battery disconnect switch ON.

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**.

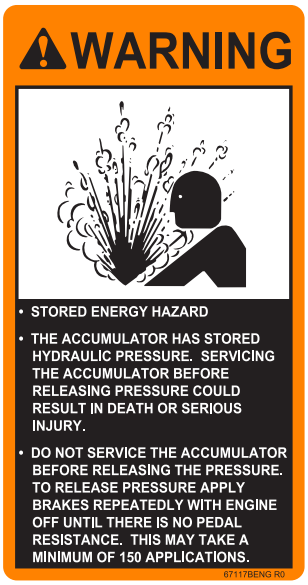
  Class **A** fires involve ordinary combustibles such as wood, cloth, paper, rubber and many plastics, Class **B** fires occur with flammable liquids such as diesel fuel, oil and grease and Class **C** fires apply to energized electrical equipment.

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.

7d Grapple open/close - Two push buttons (Bottom)

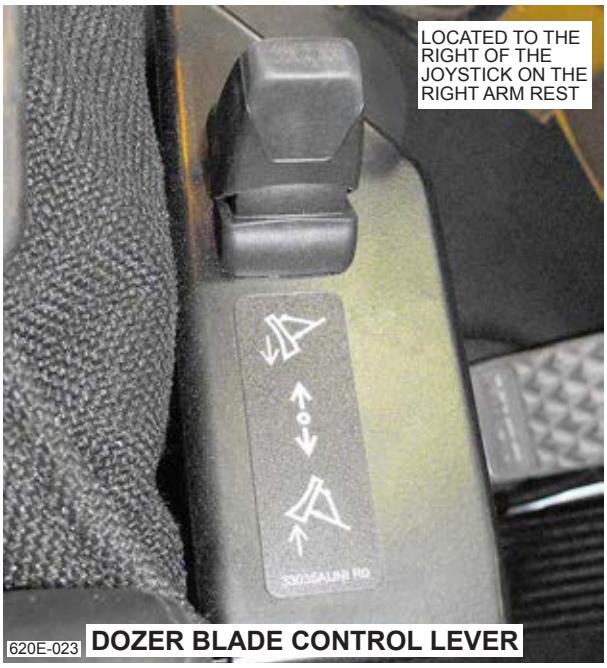
Push LEFT BUTTON to CLOSE grapple .

Push RIGHT BUTTON to OPEN grapple .

7e. Engine Speed Control - Trigger

Pull this trigger to increase engine speed when performing machine functions which do not require machine travel. Release trigger to return to engine idle speed.

Refer also to COMPUTER ~ ADJUSTMENT MENU - ENGINE SETTINGS ~ AUTO RPM in THIS SECTION.



8. DOZER BLADE CONTROL LEVER

Pull the lever BACK to RAISE the dozer blade.

Push the lever FORWARD to LOWER the dozer blade.

The control lever will return to the center neutral position when released.

NOTE: Always travel with the dozer blade in the raised position to avoid obstacles.

CAUTION

Never use the dozer blade to remove tree stumps or large boulders.

WARNING

When leaving the cab, always lower the grapple and dozer to the ground, engage the parking brake and turn the ignition switch off.
If leaving the Skidder unattended, also remove the ignition key and switch the battery disconnect switch to the OFF position .

OPERATOR'S SEAT - AIR RIDE ADJUSTMENTS

⚠ WARNING

The seat belt supplied with this seat must be used at all times when operating this machine.

AIR RIDE ADJUSTMENT PROCEDURES

The ride adjustment can be made by pulling or pushing the air ride control valve knob.

To stiffen the air ride

For a **stiffer** ride **push** on the **air ride adjustment knob** to increase the air pressure in the suspension air bag.

To soften the air ride

For a **softer** ride, **pull** on the **air ride adjustment knob** to decrease the air pressure in the suspension air bag.

2-WAY ADJUSTABLE LUMBAR

To increase lumbar support pressure, turn lumbar adjustment control clockwise. To decrease lumbar support pressure, turn lumbar adjustment lever counterclockwise

BACKREST - ANGLE ADJUSTMENT

Rotate backrest angle adjustment control to place backrest at the desired angle.

SEAT - HORIZONTAL POSITION

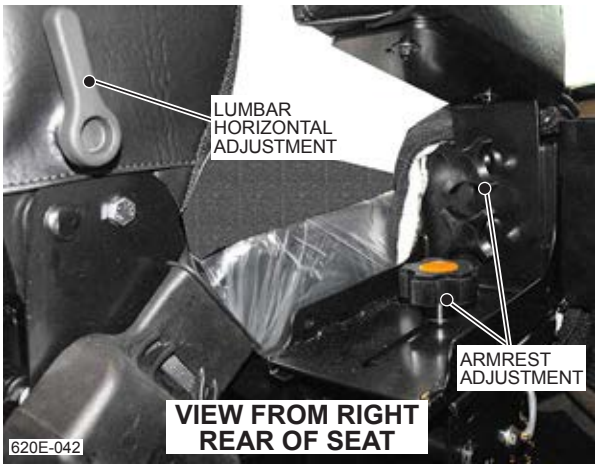
Move and hold fore/aft slide lever. Roll seat forwards or backward to the desired position relative to the foot pedal controls.

ARMREST ADJUSTMENT

Each armrest has 2 adjustments to place it in the desired position. Loosen adjustment knobs to reposition armrest height and fore/aft position.

HEIGHT ADJUSTMENT PROCEDURES

This seat is equipped with a fixed (bolted) two position height adjustment. The second position provides a total height increase of 1". Four bolts are used to reposition the seat for height adjustment.



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

Refer to COMPUTER ~ INFORMATION MODE MENU ~ HYDRAULIC OIL TEMPERATURE in THIS SECTION for hydraulic oil temperature information display.

Front Tire Size

Not Configured
28L
24.5
30.5L
35.5L
DH73

This information is used by the machine program to accurately calculate and display machine travel speed.

Program Mode

Normal*
Engine HP Test Mode
Drive Motor Setup Mode
Drive Pump POR Setup Mode
Drive Pump Regulation Setup
Function Setup Mode
Max Current Setup Mode (if equipped)

*** NOTE:** Reset default settings are marked.

Refer to COMPUTER – ADJUSTMENT MENU – EXAMPLE – ADJUSTMENT MENU NAVIGATION for an example of adjustment menu navigation.

IMPORTANT !

Machine must be in the Normal Program Mode to operate normally.

Other program modes are used for service/setup procedures only.

When setup program modes are chosen an information message is shown on the electronic display until the message is acknowledged.

In each program mode some controls are deactivated for safety during setup procedures. Attempting to use these controls will reactivate the information message.

Steer Adjust (Joystick steering only)

Range 50 to 100% (75*%)

This setting adjusts the performance of the joystick steering function. A lower setting will result in a slower response. A higher setting will result in a quicker response.

Steer Invert (Joystick steering only)

On* or Off

When ON the joystick steering control is automatically adjusted by the computer control system based on the position of the operator's seat. Therefore LEFT articulation and RIGHT articulation are considered to be left and right as viewed by the operator either from the forward facing seat position or the rear facing seat position.

When OFF the joystick steering invert function is disabled. Steer joystick direction does not change when operator is facing rearward. Therefore LEFT articulation and RIGHT articulation are considered to be left and right as viewed by the operator from the forward facing seat position regardless of the position of the operator's seat. The machine steering invert disabled information message will be shown each time the machine is started to inform the operator that the steer invert function has been disabled.

Refer also to LH JOYSTICK ~ STEERING, ROTATING SEAT KICK LEVER and COMPUTER ~ MESSAGES - INFORMATION ~ MACHINE STEERING INVERT DISABLED in THIS SECTION.

DATE/TIME ADJUSTMENT

From the preferences menu press the F2 button to access date/time adjustment.

The following menu items can be selected:

- Date - Press F1 to select
- Time - Press F2 to select

Press the back button to return to the preferences menu.

Date Adjustment

Press F1 to access the date adjustment.

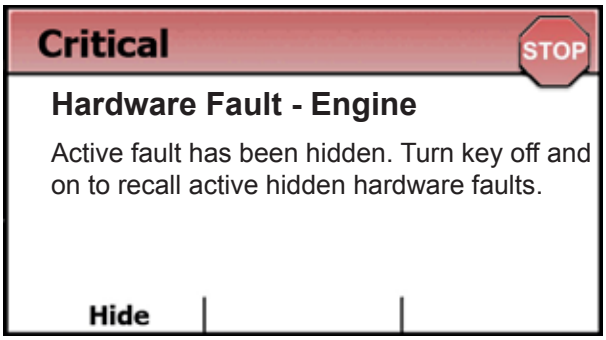
Use the Arrow Up or Arrow Down to scroll through the YEAR list to select the year.

Press the OK button to confirm year selected.

When the year has been confirmed the display will highlight the MONTH.

Use the Arrow Up or Arrow Down to select the month.

Press the OK button to confirm month selected.

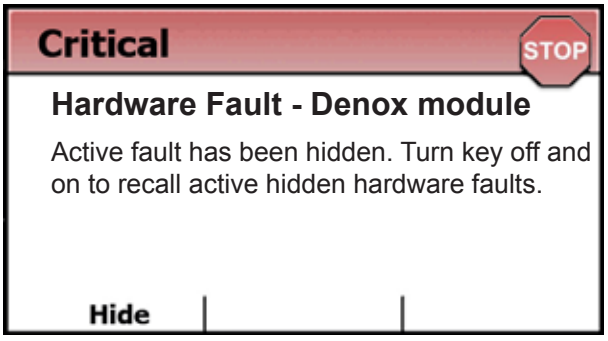


HARDWARE FAULT - ENGINE

This warning will be displayed, alarm warning light will flash and alarm will sound when a critical active hardware fault related to the Engine has been hidden.

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

No contact error is an example of the type of hardware fault which may be the original active fault which triggers this message.

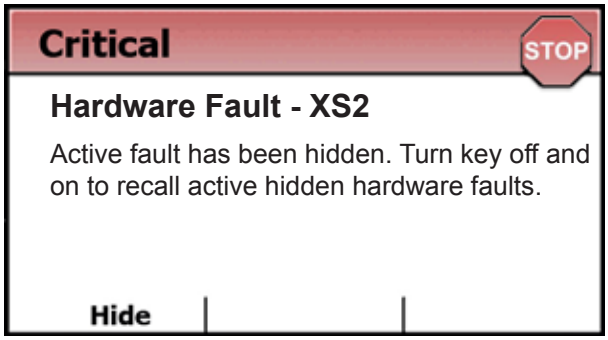


HARDWARE FAULT - DENOX MODULE

This warning will be displayed, alarm warning light will flash and alarm will sound when a critical active hardware fault related to the Denox Module has been hidden.

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

No contact error is an example of the type of hardware fault which may be the original active fault which triggers this message.

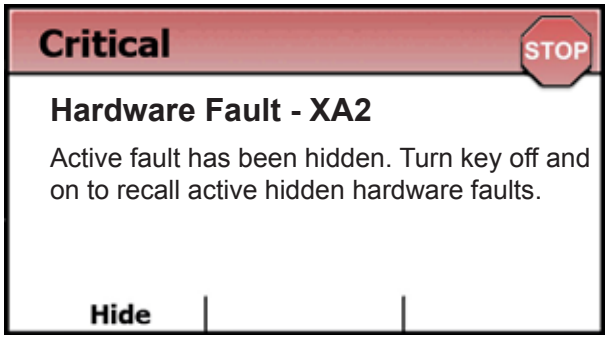


HARDWARE FAULT - XS2

This warning will be displayed, alarm warning light will flash and alarm will sound when a critical active hardware fault related to the XS2 Cab Module has been hidden.

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

A VREF and no contact errors are examples of the type of hardware fault which may be the original active fault which triggers this message.



HARDWARE FAULT - XA2

This warning will be displayed, alarm warning light will flash and alarm will sound when a critical active hardware fault related to the XA2 Front Chassis Module has been hidden.

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

A VREF and no contact errors are examples of the type of hardware fault which may be the original active fault which triggers this message.

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.

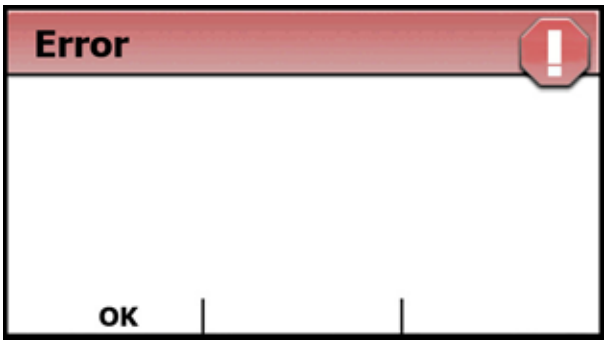
In some instances the machine requires immediate action to correct the problem which requires the operator to STOP machine operation, SHUT THE ENGINE OFF and service the machine to correct the problem.

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.

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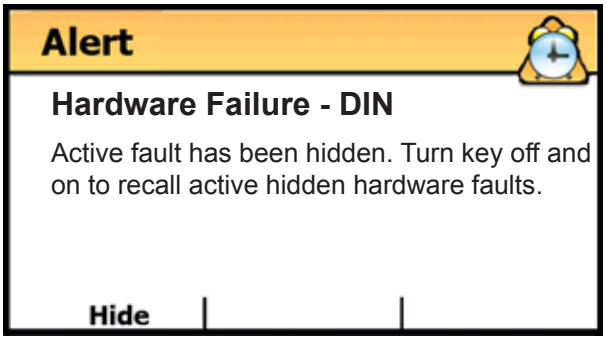
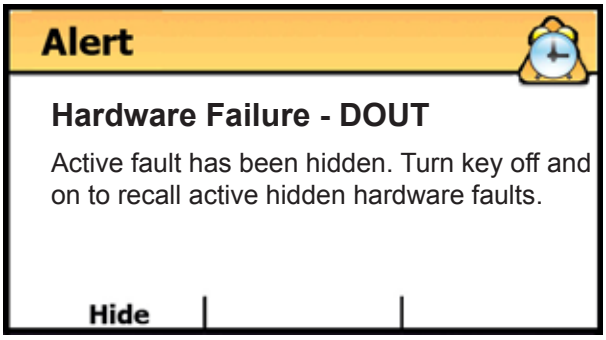


HARDWARE FAILURE - DIN

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

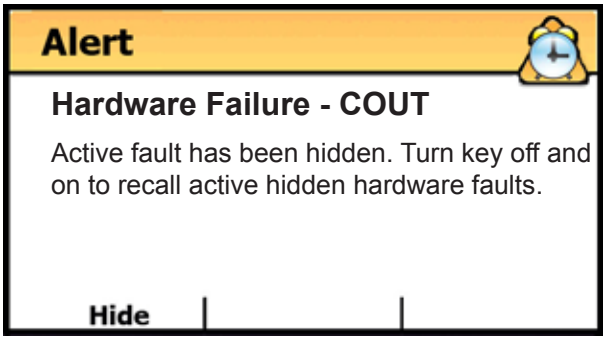
To recall the original active fault(s) the operator must turn the key off and on.



HARDWARE FAILURE - DOUT

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

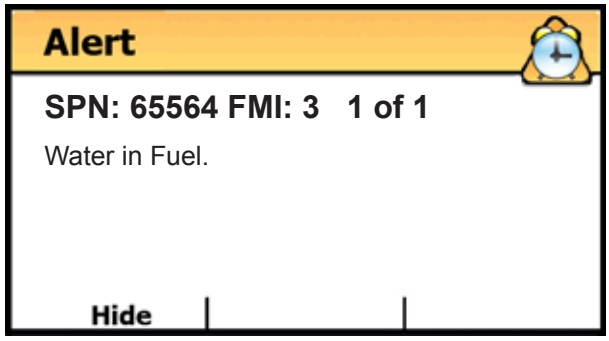
To recall the original active fault(s) the operator must turn the key off and on.



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.



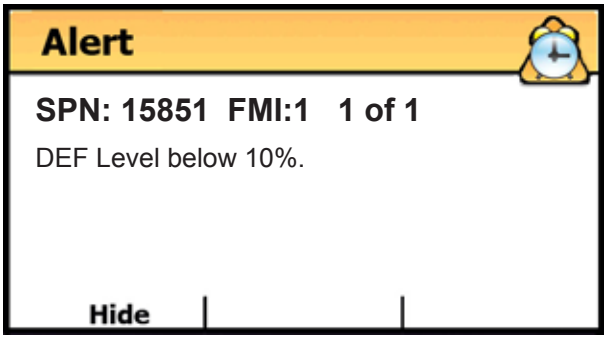
FUEL - WATER IN FUEL

This warning will be displayed when water is detected in the fuel by the engine computer system.

Refer to engine manufacturer's manual for specific information regarding the engine.

DIESEL EXHAUST FLUID LEVEL WARNINGS

There are three levels of diesel exhaust fluid level warnings generated by the Denox Module.



DIESEL EXHAUST FLUID LEVEL <10%

This warning will be displayed, alarm warning light will flash and alarm will sound when a diesel exhaust fluid level below 10% is detected. Action to correct DEF levels should be taken immediately to avoid affecting engine performance and damage to the selective catalytic reduction (SCR) after treatment system components.

Fill DEF tank and restart engine to clear the warning.

Refer to DIESEL EXHAUST FLUID TANK in SECTION 2 of THIS MANUAL.

AM/FM STEREO CD

With two front mounted speakers. Consult the manufacturer's instruction manual for additional information.

RADIO - CB (IF EQUIPPED)

Consult the manufacturer's instruction manual for additional information.

FIRE EXTINGUISHER, PORTABLE

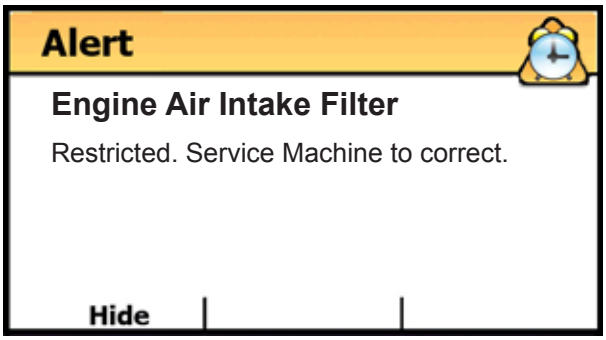
A portable fire extinguisher is located in the operator's cab. The extinguisher should be checked daily to ensure that it is charged. The pointer on the charge gauge should point to the green region. If the indicator falls out of this green area, the extinguisher should be serviced immediately. Refer 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. This machine is also equipped with a switch used to send a signal to the computer control system in the event of a filter restriction.



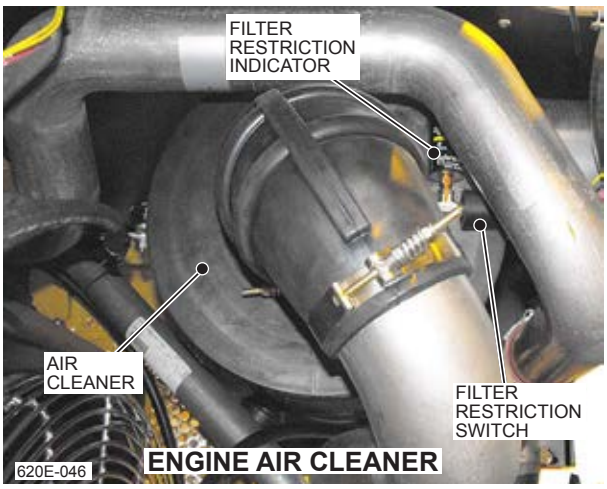
When a signal is received from the restriction indicator switch on the engine air cleaner a warning message will be displayed. Refer to COMPUTER~MESSAGES - ALERT~ENGINE AIR INTAKE FILTER RESTRICTED in THIS SECTION.

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.

The engine settings menu will appear by default.

Press F1 (Adjust) to adjust engine settings

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

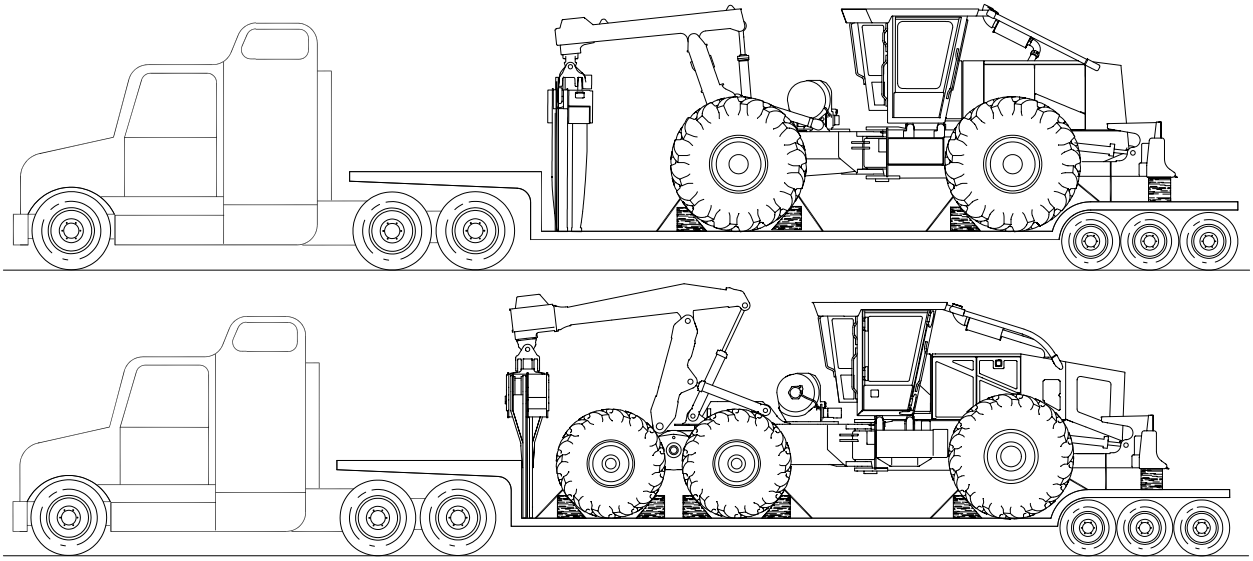
Press the F2 button to reset to default setting. Press F2 (Yes) or F3 (No) to confirm.

Continued on next page

CABLE SKIDDING:

1. Locate the skidder so that the winch cable will lay in a fairly straight line.
2. Lower the dozer and grapple to the ground to anchor the machine.

   Grapple may have to be raised, depending on winching angle and land terrain.
3. Chokers should be attached close to the butt end of the log.
4. If skidding multiple logs, attach furthest log away, to end of main cable, with closer logs ahead of it.
5. Winch in a straight line to prevent tip over problems. Note that cab doors must be closed and parking brake disengaged to operate the winch in function.
6. Draw the logs in as close as possible to the butt pan and as high as stability will permit.
7. Raise the grapple to a safe height and raise the dozer to its full height.
8. If you encounter soft ground or steep hills it may be necessary to drop the load “on the move” and allow the winch to “free spool” without stopping the skidder. Once on solid ground or on top of the hill, stop the skidder, lower the dozer and winch the load back into the butt pan.
9. Adjust your speed to the terrain, ground conditions and the load your skidding.



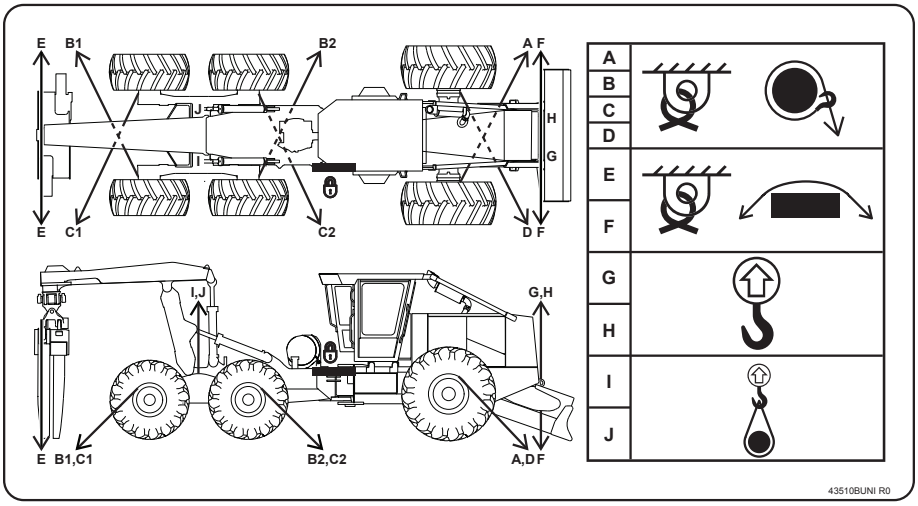
TIE DOWN POINTS

1. When a skidder is to be transported on a flat bed the articulation lock bar must be installed so that the machine is oriented in the straight locked position.
2. Chains must be used to prevent forward, reverse and side to side movement of the machine. Tie-down locations are provided on the machine for this purpose. All tie-down points must be used to ensure no movement of the machine, or it's associated parts, occur during transport.
3. The front axle of the machine must be cross chained from side to side. The front axle tie-down points are labeled 'A' and 'D' on the machine lifting/tie-down label.

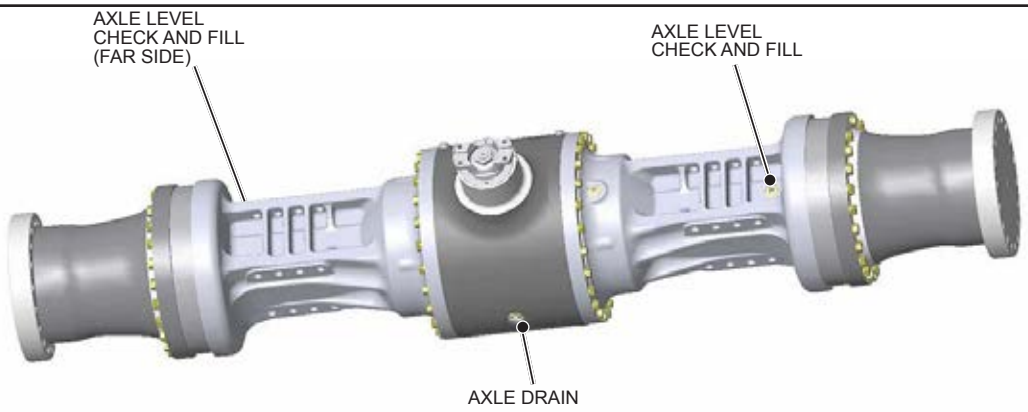
   The chain should be wrapped around each end of the axle housing, without overlapping, and chained at a 45° angle in the forward, reverse and side to side directions.
4. In the case of a 4 wheeled machine, the rear axle of the machine must be cross chained from side to side of the flat bed. The rear axle tie-down points are labeled 'B' and 'C' on the machine lifting/tie-down label.

   The chain should be wrapped around each end of the axle housing, without overlapping, and chained at 45° angle in the forward, reverse and side to side directions.
5. The grapple is to be stored in a position with grapple tongs closed and supported by the flat bed platform. The grapple tie-down points are labelled 'E' on the machine lifting/tie-down label.

   A strap or chain is to be tightened across the top of the grapple box to prevent grapple movement.
6. The dozer blade is to be stored in a position with its blade tip supported by the flat bed platform. The dozer blade tie-down points

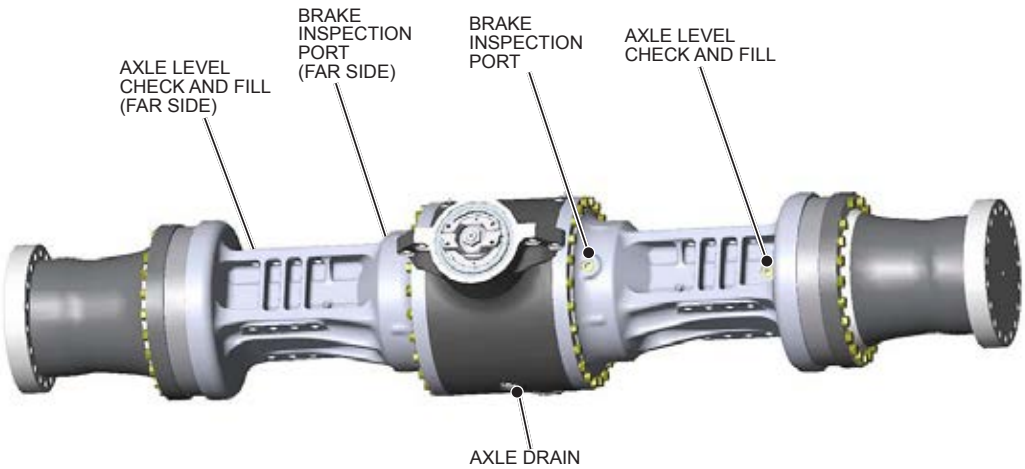


TIGERCAT FLUID ANALYSIS PROGRAM



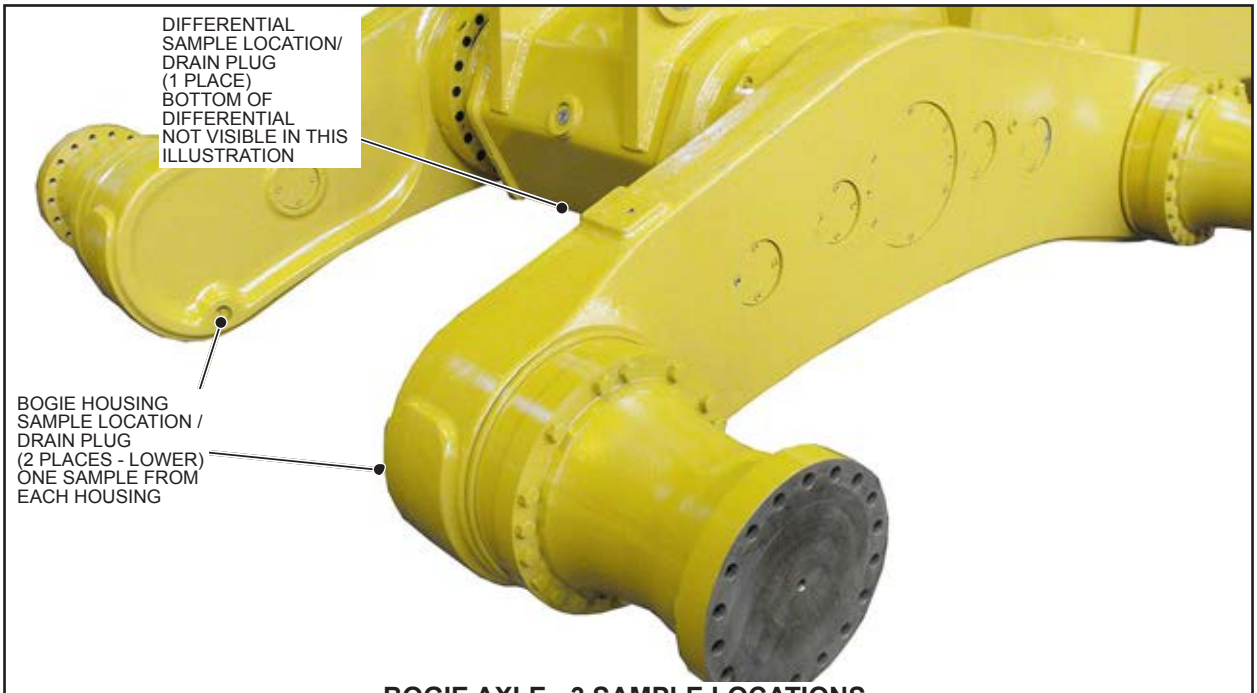
4634D01

SEVERE DUTY AXLE DRAIN AND FILL LOCATIONS (REAR AXLE SHOWN)



4634D02

SEVERE DUTY AXLE DRAIN AND FILL LOCATIONS (FRONT AXLE SHOWN)



635E-001

BOGIE AXLE - 3 SAMPLE LOCATIONS

Tigercat Model 610E/620E/630E

SERVICE AND LUBRICATION POINTS

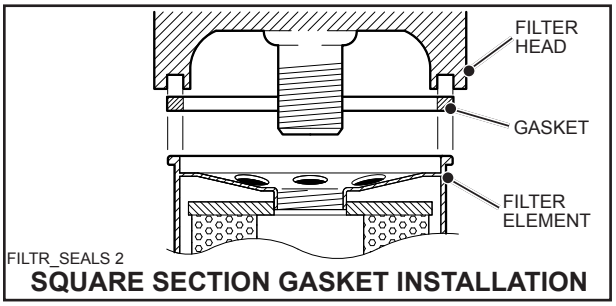
REFER TO **Tigercat** OPERATOR'S MANUAL FOR FURTHER INFORMATION

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		SEE ENGINE MANUFACTURER'S OPERATION AND MAINTENANCE MANUAL FOR REQUIRED ANTIFREEZE SOLUTION AND MIXTURE.
2	ENGINE OIL/FILTER	CHK •		REP •				•	•		• SEE ENGINE MANUFACTURER'S OPERATION AND MAINTENANCE MANUAL FOR PROCEDURES AND CAPACITIES.
3	CRANKCASE VENTILATION FILTER - T4F ONLY				REP •					1	
4	FUEL FILTER			REP •						1	
4A	FUEL FILTER/WATER SEPARATOR	DRN		REP						1	REFER TO SECTION 3 OF THE MANUAL FOR DETAILS.
5	DEF DOSING MODULE FILTER			REP						1	
6	FUEL TANK FILLER SCREEN		CHK							1	
7	AIR INTAKE PRECLEANER/INLET HOOD	CHK								1	CLEAN AS REQUIRED.
8	AIR INTAKE PRIMARY ELEMENT	CHK								1	CHECK FILTER RESTRICTION INDICATOR. REFER TO 8 HOUR SCHEDULED MAINTENCE FOR DETAILS.
	AIR INTAKE SAFETY ELEMENT	CHK								1	
9	AIR CLEANER UNLOADER VALVE	CHK				REP				1	REFER TO SECTION 3 IN MANUAL.
10	AIR INTAKE CONNECTIONS	CHK					REP			1	CHECK FOR LOOSE CLAMPS AND DAMAGED RUBBER COMPONENTS. REPLACE RUBBER COMPONENTS.
11	HYDRAULIC TANK, 620E, 630E HYDRAULIC TANK, 610E	CHK						100 90	26.4 23.5	1	DRAIN AND REFILL AS REQUIRED BY SEASONAL OIL CHANGE. (SEE HYDRAULIC OIL CHART)
12	HYDRAULIC FILTER, FULL FLOW, INCLUDES: 1 BLUE WATER ABSORBING ELEMENT 1 WHITE HIGH PERFORMANCE FILTER				REP †					2	**NOTE**: MUST USE: 1 BLUE FILTER ELEMENT. 1 WHITE FILTER ELEMENT.
13	CHARGE PRESSURE FILTER				REP †					1	CHECK FILTER RESTRICTION INDICATOR ON FILTER WITH ENGINE RUNNING AT FULL AND WITH OIL FLOW.
14	EHS TRANSMISSION FILTER (OPTIONAL)				REP †					1	
15	HYDRAULIC TANK BREATHER						REP			1	
16	PRESSURIZED WATER SYSTEM	CHK	TEST			D/R		52	13.7		SEASONAL DRAIN AND REFILL.
17	TRANSMISSION TRANSMISSION, EHS (OPTIONAL)	CHK			D/R			6.2 12.6	1.6 3.3	1	FILL WITH MIL-L-2105C OR API-GL-5 LUBRICANT GRADE 75W-90.
18	AXLES, STANDARD DUTY : FRONT 610E FRONT 620E, 630E REAR AXLES, SEVERE DUTY : FRONT REAR		CHK			D/R ***		33 36 39 39 42	8.7 9.5 10.3 10.3 11.1	1 1 1 1 1	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
19	PINION GREASE SEAL - FRONT AND REAR AXLE					LUB		PURGE		2	ONE FITTING PER AXLE LITHIUM BASE EP2 GREASE ◆
20	AXLE-PIVOT (FRONT ONLY)	LUB						PURGE		2	LITHIUM BASE EP2 GREASE ◆
21	FRONT DRIVE SHAFT				LUB			PURGE		1	LITHIUM BASE EP2 GREASE ◆
	MID DRIVE SHAFT	LUB **								1	
	REAR DRIVE SHAFT BEARING	LUB								1	
22	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.
23	STEERING CYLINDERS	LUB						PURGE		4	LITHIUM BASE EP2 GREASE ◆
24	SINGLE ARCH CYLINDER & PIVOTS	LUB						PURGE		6	LITHIUM BASE EP2 GREASE ◆
25	DOUBLE ARCH CYLINDER & PIVOTS	LUB						PURGE		12	LITHIUM BASE EP2 GREASE ◆
26	DOZER BLADE CYLINDER & PIVOTS	LUB						PURGE		6	LITHIUM BASE EP2 GREASE ◆
27	GRAPPLE, **Tigercat**	SEE LUBRICATION POINTS DIAGRAM									
28	WINCH: CARCO ALLIED	CHK				D/R		12 3.8	3 1		REFER TO WINCH MAINTENANCE IN SECTION 3 OF MANUAL. SEE ALSO WINCH MANUFACTURER'S MANUAL.

LUBECHART 59686BENG R9.PDF 9/18

Changing the filters:

1. Park the machine on level ground. Install the articulation lock bar. Lower the grapple and dozer blade to rest firmly on the ground.
2. Engage the parking brake.
3. Turn OFF the engine.
4. Remove the ignition key.
5. Turn OFF the battery disconnect switch
6. Block wheels
7. Wipe clean the area around the filter and head.
8. Place rags below to catch the spillage of oil.
9. Wearing face protection (in case of an oil squirt), unscrew the old filter. Dispose of old filter and any oil properly.
10. The new **Tigercat** filter is supplied with two gaskets enclosed, examine the filter head closely to determine which gasket should be used and follow the instructions to ensure proper installation.



SQUARE SECTION GASKET INSTALLATION

■ Square Section Gasket

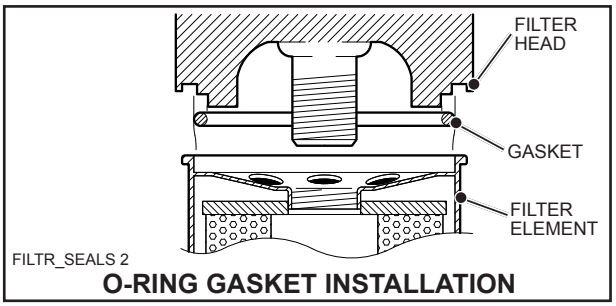
Remove used gasket and clean groove in head.

Apply clean oil to new gasket surfaces.

Install new gasket into groove in filter head.

Screw on new filter until gasket makes contact.

Tighten filter an additional 3/4 turn.



O-RING GASKET INSTALLATION

● **O-Ring Gasket**

Remove used gasket and clean gasket seat in head.

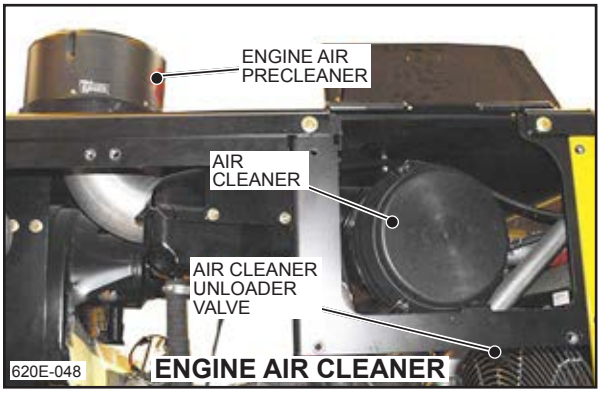
Apply clean oil to new gasket surfaces.

Install new gasket on inside lip of filter.

Screw on new filter until gasket makes contact.

Tighten filter until top edge makes metal to metal contact with filter head. (approximately 1 1/2 additional turns after gasket contact)

11. Turn ON the battery disconnect switch.
12. Check that all personnel are clear of the machine before starting the engine.
13. Insert the ignition key and turn to the RUN position.
14. Sound horn to warn personnel of machine start-up.
15. Start the engine.
16. Check for leaks.

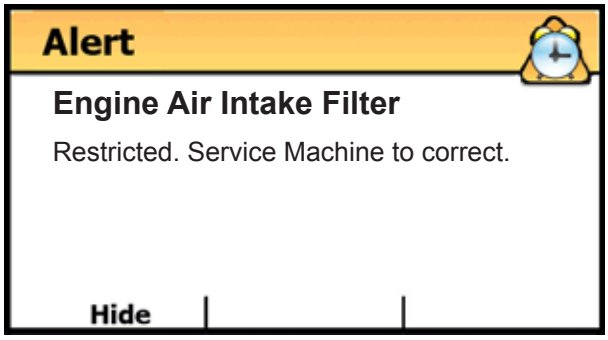


AIR CLEANER

The air cleaner on this machine uses two filter elements, a primary element and a safety element accessible from the right 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. This machine is also equipped with a switch used to send a signal to the computer control system in the event of a filter restriction.



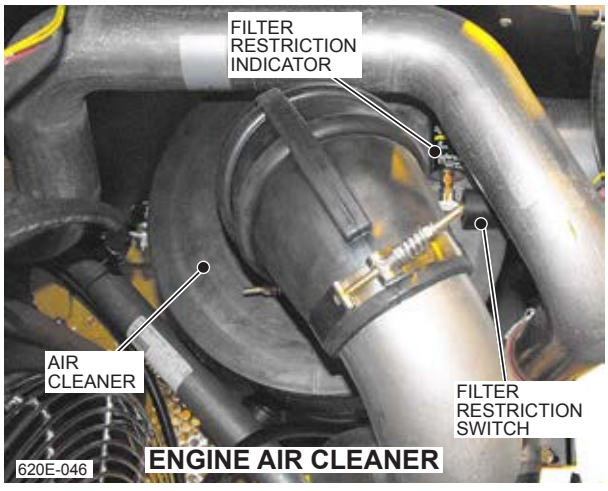
When a signal is received from the restriction indicator switch on the engine air cleaner a warning message will be displayed. Refer to COMPUTER~MESSAGES - ALERT~ENGINE AIR INTAKE FILTER RESTRICTED in SECTION 2 of the OPERATOR'S MANUAL.

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.

DIESEL EXHAUST FLUID (DEF) HANDLING

Diesel exhaust fluid (DEF) is an aqueous urea solution with 32.5% high purity urea and 67.5% deionized water. Note that DEF may also be referred to as AUS32 or AdBlue and should meet ISO 22241 specifications. Use only DEF meeting this standard.

It is important to avoid contamination of DEF as this may cause costly damage to SCR system components and affect the proper operation of the SCR system and the engine.

When a problem with DEF quality is detected information messages will be shown on the computer display. Note that DEF quality problems may result in derating of engine performance to meet emission standard requirements. Action to correct DEF quality problems should be taken immediately to avoid affecting engine performance and damage to SCR after treatment system components. Refer also to COMPUTER~MESSAGES in SECTION 2 of the OPERATOR'S MANUAL or SECTION 6 of the SERVICE MANUAL.

For safety information refer to DIESEL EXHAUST FLUID (DEF) in SECTION 1 of THIS MANUAL.

⚠ WARNING

Use only diesel exhaust fluid (DEF) which meets ISO 22241 specifications. NEVER fill the DEF tank with any other fluid.
DEF is injected into the exhaust gas stream during normal operation of the Selective Catalytic Reduction (SCR) after treatment system.
Use of other fluids may cause component damage, or a fire risk which could result in death or serious injury.

AVOID DEF QUALITY PROBLEMS WITH PROPER HANDLING PRACTICES

Most DEF quality problems can be avoided entirely with a little care and proper handling of DEF.

FILLING THE DEF TANK

- Always clean the area around the fill cap and avoid introducing contaminants into the DEF tank when filling.
- Always use only diesel exhaust fluid (DEF) which meets ISO 22241 specifications. Use of any other fluid will contaminate the after treatment system and may pose a safety hazard.

USE OF PROPER STORAGE CONTAINERS

- To prevent contaminants from affecting DEF quality it should be handled only in storage, transport and filling containers intended exclusively for that purpose.
- Polyethylene or stainless steel containers are recommended. Refer also to DEF manufacturer's recommendations.
- DEF is corrosive to metals other than stainless steel. Transport in metal containers other than stainless steel will result in contamination.

PROPER STORAGE CONDITIONS TO MAXIMIZE SHELF LIFE

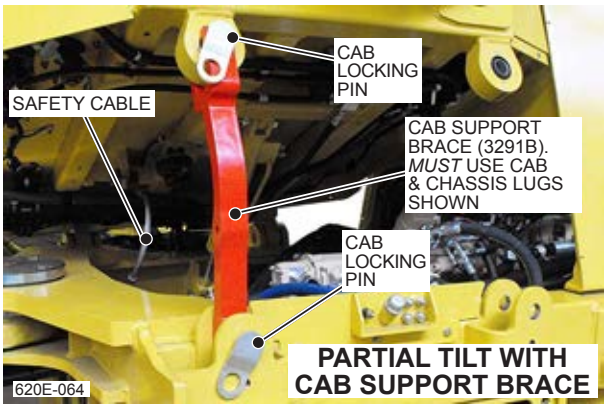
- DEF should be stored between -11°C (12°F) and 30°C (86°F) and out of direct sunlight to maximize shelf life and to avoid DEF quality problems caused by improper storage.
- DEF quality problems can often be avoided with proper storage and handling practices to maximize shelf life.
- DEF storage areas should always be out of direct sunlight and away from heat sources to avoid reducing shelf life.
- DEF shelf life is limited. It should be consumed on a first in first out basis, within manufacturer's recommended shelf life limits. DEF beyond manufacturer's recommended shelf life limits may not meet ISO 22241 specifications.

⚠ WARNING

Before working under cab;

Machine must be parked on level ground. Cab must be fully tilted with safety cable completely tight, or cab support brace must be installed.

CAB AT FULL TILT SUPPORTED BY SAFETY CABLE

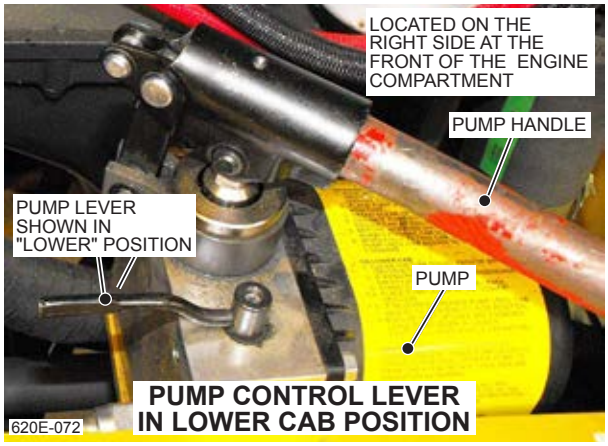


PARTIAL TILT WITH CAB SUPPORT BRACE

CAB SUPPORT BRACE STORED IN COMPARTMENT BELOW RIGHT CAB DOOR

LOWERING THE CAB

1. Clear the area under the cab of obstructions and secure all lines and wires.
2. If the Cab Support Brace was used, you may have to take the weight off of it by slightly raising the cab before removing it.



PUMP CONTROL LEVER IN LOWER CAB POSITION

3. Turn the lever on the pump manifold to LOWER (pointing to the rear of the machine)

⚠ CAUTION

Keep hands away from the locking pin area as the cab is being lowered.

4. Pump the handle in a steady motion to lower the cab.
5. Watch closely for pinching of hydraulic lines and wires.
6. When fully lowered, insert Cab Locking Pins and tighten locking bolts (2 pins) (2 bolts)
7. Turn the lever on the pump manifold to point toward the front of the machine and store the pump handle inside the cab.
8. Close the maintenance door securely.
9. Replace the Cab Sweep Bolts. (2 bolts)

⚠ WARNING

If cab support brace is damaged or lost, it must be replaced immediately with Tigercat brace PART NO. 3291B. DO NOT attempt to work under a raised cab supported only by the hydraulic cylinder or a substitute device.

⚠ WARNING

If cab safety cable is damaged or lost, it must be replaced immediately with Tigercat PART NO. 3361B. DO NOT attempt to work under a raised cab supported only by the hydraulic cylinder or a substitute device.

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