

Tigercat[®]

860C/870C/L870C FELLER BUNCHER

OPERATOR'S MANUAL

SERIAL NUMBER 86012601 TO 86013500

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ISSUE 3.0, DECEMBER 2019

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VIBRATION AND NOISE LEVEL INSIDE CAB

Noise Level Inside Cab dB(A)				
As per Tigercat test ETR00047				
	Microphone direction:			
	Forward	Rear	Left	Right
Driving max speed (High)	77	76	77	76
Driving max speed (Low)	73	72	72	73
Boom operation	72	73	72	73

NOISELEVELS.PDF



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

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

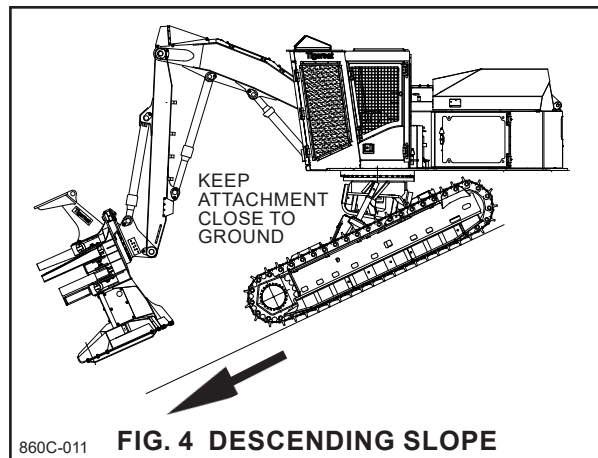
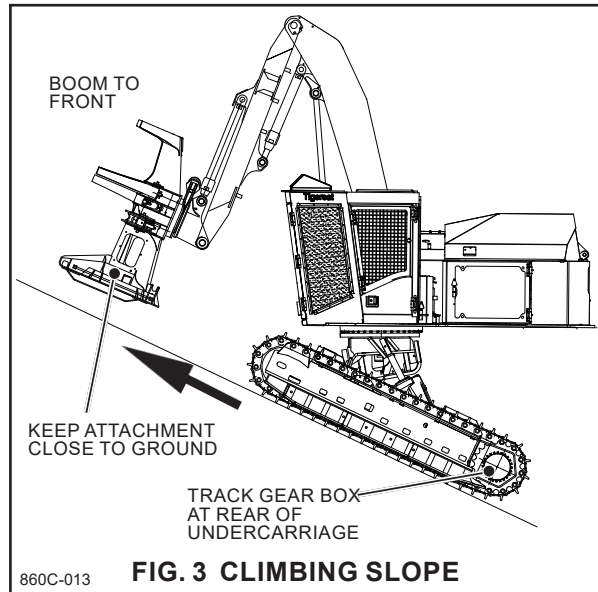
Vibration Level - Whole-body				
As per Tigercat test ETR007 & ISO 2631-1				
Weighted rms acceleration (m/s ²)				
	Seat		Seat-back	Feet
	Health	Comfort		
Driving max speed (High)				
x-axis (back-to-chest)	0.2370		0.5630	0.4020
y-axis (right-to-left)	0.2310		0.3200	0.4200
z-axis (buttocks-to-head)	0.4660		0.2110	0.6140
S	0.6571	0.5700	0.4850	0.2850
Driving max speed (Low)				
x-axis (back-to-chest)	0.1140		0.2150	0.1200
y-axis (right-to-left)	0.0764		0.0977	0.1440
z-axis (buttocks-to-head)	0.2170		0.0669	0.2230
S	0.2890	0.2568	0.1800	0.1000
Boom operation				
x-axis (back-to-chest)	0.4510		0.6140	0.1830
y-axis (right-to-left)	0.3710		0.2470	0.3300
z-axis (buttocks-to-head)	0.4440		0.0838	0.3670
S	0.9304	0.7310	0.5070	0.1740

Vibration Level - Hand/Arm	
As per Tigercat test ETR007	
Weighted rms acceleration (m/s ²)	
Driving max speed (High)	
S	1.770
Driving max speed (Low)	
S	1.170
Boom operation	
S	0.770

*Note for hand/arm, all weighted RMS acceleration values are below 2.5 m/s² as per clause 3.6.3 Machinery Directive 98/37/EC Annex 1.

OPERATING SAFETY PRECAUTIONS continued

- **NEVER** travel across a STEEP slope or side hill.
- Always carry any load on the uphill side of the machine.
- Do not lift or move objects that exceed machine stability.
- Always be prepared to release the load in case it causes the machine to tip.
- Always position the cab so that you have a clear view in the direction of travel. Be aware of ground conditions and obstacles in the machine's path before moving the machine.
- When crossing obstacles (boulders, stumps, ditches etc.) the machine can shift rapidly, greatly affecting the stability of the machine. Move slowly over obstacles, and position the boom against the ground to reduce the risk of the machine shifting rapidly.
- Backing over obstacles unexpectedly while travelling down a slope poses a tipping risk. Know the path of the tracks whenever the machine is moved.
- When climbing a slope the boom should face uphill and the attachment should be kept close to the ground (FIG. 3). When descending a slope the boom should face down hill and the attachment should be kept close to the ground (FIG. 4). Be aware that the machine is in its least stable position on a slope with the boom to the rear. Be particularly aware of machine stability when changing directions on, or travelling back down a slope.
- As you gain experience, recognize that the maximum slope on which the machine can operate cannot be defined simply by an angle value. Variables in surface terrain, soil types, rocks, boulders, stumps, and fallen trees, changing weather conditions, and first and foremost the operator's experience and skill levels greatly affect the maximum slope limitations. Be aware that these factors can result in a shallow slope posing greater risk than a relatively steeper slope. **DO NOT attempt to work on slopes beyond your personal capability level.**



SERVICING SAFETY PRECAUTIONS continued

Work in a ventilated area. If it is necessary to run an engine in an enclosed area, use an exhaust pipe extension to remove toxic exhaust fumes.

If you don't have an exhaust pipe extension, either work outside, or open the shop doors.



Dispose of fluids properly.

Do not pour fluids into the ground, stream, pond or lake.

Before draining any fluids, know the proper way to dispose of them.

When performing required hydraulic checks and blade speed adjustments. **Install the saw blade guard.** Refer to attachment manufacturer's instructions.

Read, understand and follow all operating safety precautions specified by harvesting attachment manufacturer.

MACHINE MODELS EQUIPPED WITH A LEVELING SYSTEM



Always install support braces in the leveling mechanism while performing service and maintenance tasks. This area is a crush zone. Keep clear to avoid personal injury or death.

DRY CHEMICAL CLEANUP PROCEDURES

Both ABC dry chemical fire extinguishers and fire suppression systems discharge a chemical powder to extinguish the fire. The chemical makeup and the small particle size of the powder as well as the force of the discharge all contribute to the fire fighting capability. These same characteristics also permit the powder to penetrate into and fully cover all components in the vicinity of the discharge.

The following are recommendations for the cleanup and neutralizing of areas exposed to dry chemical powder.

Workers performing this work should wear protective clothing, safety goggles and a fine particle dust mask to minimize their personal exposure to the dry chemical powder.

Ensure that all electrical systems have been completely de-energized prior to any cleanup.

1. In areas of the machine that remained cool and dry during the fire, the dry chemical will stay in powder form.

Be certain to clean these areas immediately to prevent any settled residual powder from coming into contact with moisture whether through direct contact or humidity in the air.

Remove the powder residue by blowing off with air, sweeping, dusting or vacuuming using a HEPA filter capable of trapping the small dry chemical particles. Then wipe all surfaces with a damp cloth.

2. In areas exposed to moisture, the dry chemical powder will combine with water to form a paste that is mildly acidic.

NOTE: that all surfaces covered by this dry chemical paste including electrical contacts are vulnerable to corrosive attack.

To neutralize the acidic paste on large surfaces, spray or wash these areas with a mixture of three parts hot water to one part baking soda. Allow this mixture to stand for several minutes before rinsing with warm water. Wash the area with a mild soap and water solution. Rinse thoroughly with water. Blow-dry to remove all residual water.

Cleaning of electrical contacts should be done using an electrical contact cleaner that has no flash or fire point and is noncorrosive and non-conductive such as CRC Contact Cleaner 2000.

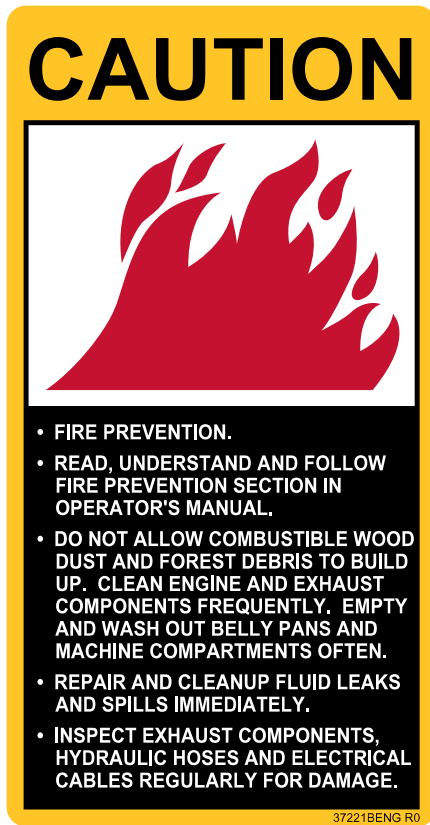
3. In areas exposed to heat during the fire, the dry chemical powder will melt forming a coating that cakes or crusts on all surfaces.

To break down the caked dry chemical, spray or wash these areas with a 50/50 mixture of hot water and isopropyl alcohol. Allow this mixture to stand in place for several minutes.

The caked dry chemical when exposed to moisture is also mildly acidic. Therefore when the break down procedure has been completed, follow this immediately with the neutralizing procedure as described in step 2

FIRE PREVENTION!

CHECK DAILY



This label advises operators of the following:

READ, UNDERSTAND AND FOLLOW THE FIRE PREVENTION GUIDELINES IN THIS MANUAL.

These guidelines provide all the necessary action required to preventing fires on this machine. **DO NOT OPERATE THIS MACHINE** until you have read these instructions and have performed any necessary maintenance required that will prevent the potential of a fire from starting on this machine.

It is also important to note that fire prevention inspections and maintenance **MUST BE PERFORMED FREQUENTLY** (several times per day). A clean combustible free machine as well as frequent inspections of the exhaust components, hydraulic hoses and electrical cables and performing any necessary repairs immediately will help prevent fires.

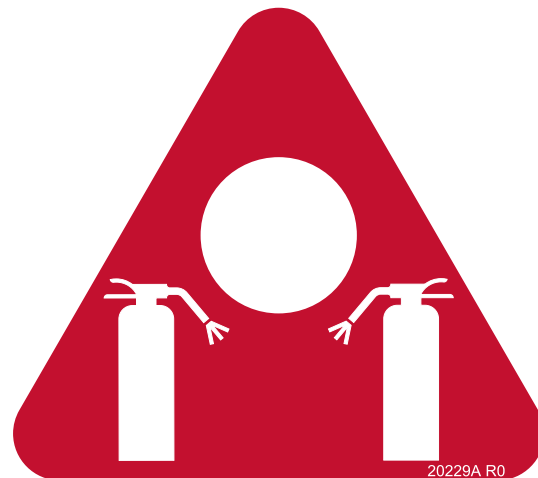
Maintain a **CHARGED fire extinguisher** on the machine at all times, know where it is and **KNOW HOW TO USE IT!**



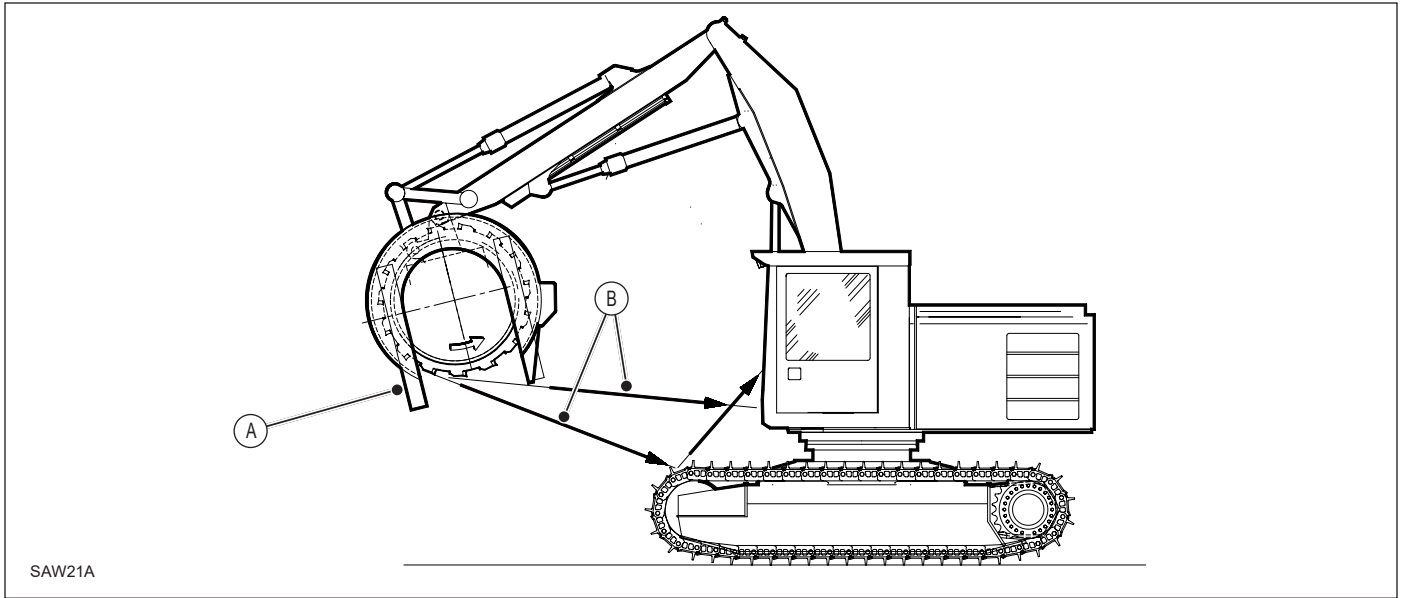
This label is installed in the cab. In addition to the previous label it is a reminder to check the machine daily for the possibility of debris build-up, leaks, damaged wires and hoses and take the necessary action required to clean up any debris accumulation, and repair any leaks, damaged wires or hoses.

The label also advises to check and ensure that all fire fighting devices are in good working order.

FIRE EXTINGUISHER ACCESS HOLE



This label indicates the location of each **FIRE EXTINGUISHER ACCESS HOLE**. The label is installed on each fire extinguisher hole on the engine door, pump compartment door and L.H. service door.



SAW21A

Disc Saw Felling Head with High Angle Wrist Rotation Capability

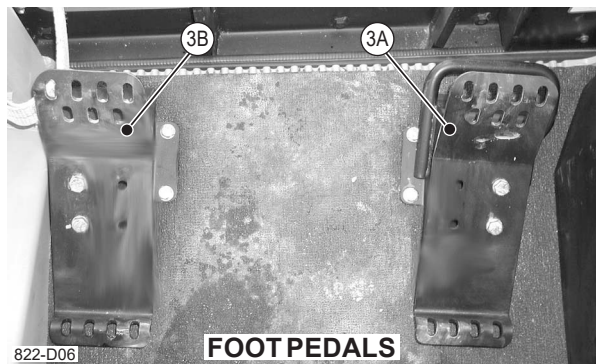
A Long Snout on Outgoing Side

B Discharge Paths

It is essential that the housing have a long snout on the ingoing side and, if equipped with a chip escape port, it should be guarded.

With these high mechanical freedom arrangements, there is a chance that an unforeseeable operator misadventure or equipment failure could result in an accidental direct or deflected throw at the operators cab. The cab should be capable of resisting such accidental and ricochet throws. The velocity energy of metal or rock pieces leaving the blade is extremely high. The operators cab cannot be considered safe to routinely operate in the chip throw area, even if it has been constructed to prevent penetration by accidentally thrown objects.

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3A. RIGHT FOOT PEDAL - RIGHT TRACK DRIVE

Depress foot pedal with TOE to drive RIGHT TRACK FORWARD.

Depress foot pedal with HEEL to drive RIGHT TRACK REVERSE.

3B. LEFT FOOT PEDAL - LEFT TRACK DRIVE

Depress foot pedal with TOE to drive LEFT TRACK FORWARD.

Depress foot pedal with HEEL to drive LEFT TRACK REVERSE.

Travelling

Travel is accomplished by depressing both foot pedals simultaneously. Travel over distances should be done in the forward direction to reduce the wear on track components. Track drive gearboxes are considered to be at the rear of the machine for travelling in the forward direction.



4. TRAVEL SPEED CONTROL

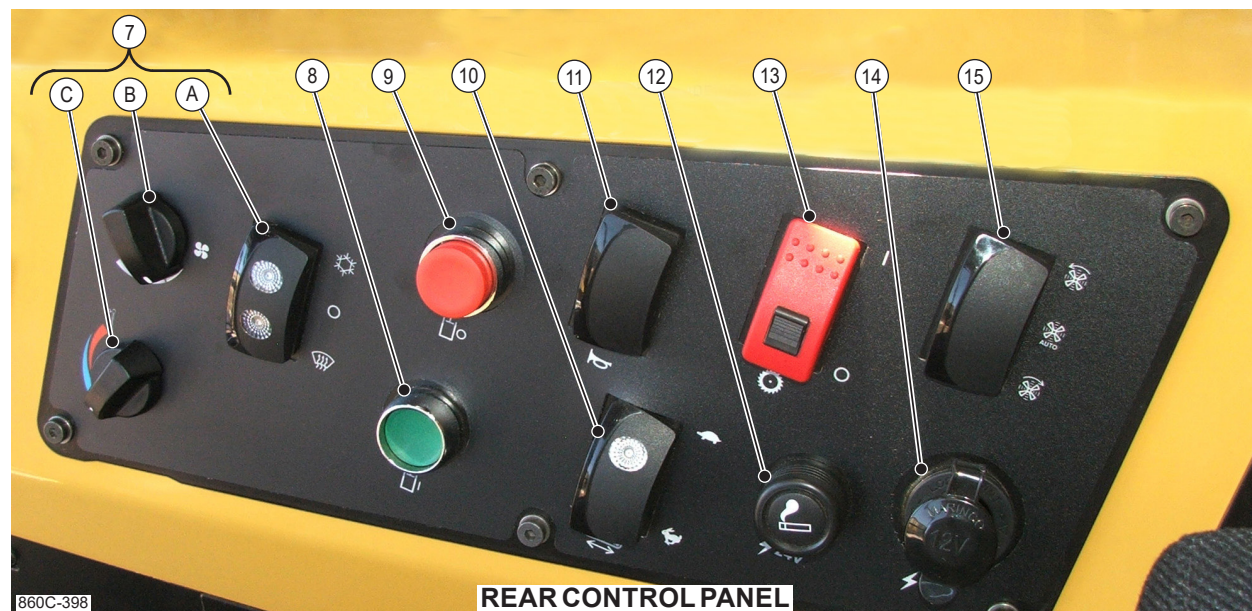
The speed control feature of the MD3 computer allows the operator to set the maximum speed of the machine to maintain a given speed without having to feather the drive pedals.

Push the down arrow button on the MD3 computer to decrease the maximum speed of the machine. The green track speed indicator will display a reduction in speed as the adjustment is performed.

Push the up arrow button on the MD3 computer to increase the maximum speed of the machine, or press the OK button to reset back to maximum speed.

This function can be used while the machine is in motion in either HI or LOW travel speed selections.

NOTE: When the ignition key is turned OFF and then turned back ON the travel speed control resets back to maximum speed.



7. AIR CONDITIONER/HEATER

The three controls on this panel are used to adjust the heating and air conditioning temperature for operator comfort in the operator's cab.

A. A/C DEFROST SWITCH

This is a three-position switch labelled A/C - OFF - DEFROST. Push this switch up to turn ON the A/C compressor for cooling. Push the switch down for the defrost mode.

B. FAN SPEED - OFF/LOW/MED/HIGH

This is a rotary, four position switch for controlling the speed of the blower fan.

C. HEAT/COOL - VARIABLE

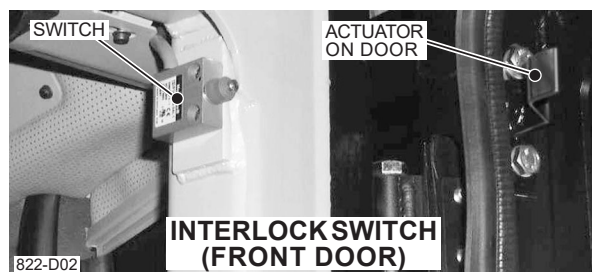
This is a variable, rotary dial to adjust the amount of heated air for the cab by controlling the flow of engine coolant through the heater core. Make sure this control is set to the MAX COLD position when using the air conditioning.

NOTE: To maximize the efficiency of the air conditioning, the heat/cool control must be rotated to the MAX COLD position and the two hot water shut-off valves on the engine should be turned to the OFF position. Refer to HOT WATER SHUT-OFF VALVE in THIS SECTION.

Refer to AIR CONDITIONING SYSTEM, CHECKING THE SYSTEM in SECTION 3 of THIS MANUAL.

8. PILOT SYSTEM RESET - PUSH BUTTON SWITCH

This is a push ON spring return switch. With the engine running and the front door closed, push this switch to activate the *pilot system*. The pilot ON icon will be activated (green) on the MD3 computer display.



NOTE: The front door must be closed to ACTIVATE the pilot system. The side door exit WILL NOT DE-ACTIVATE the pilot system when opened.

9. PILOT SYSTEM OFF - PUSH BUTTON SWITCH

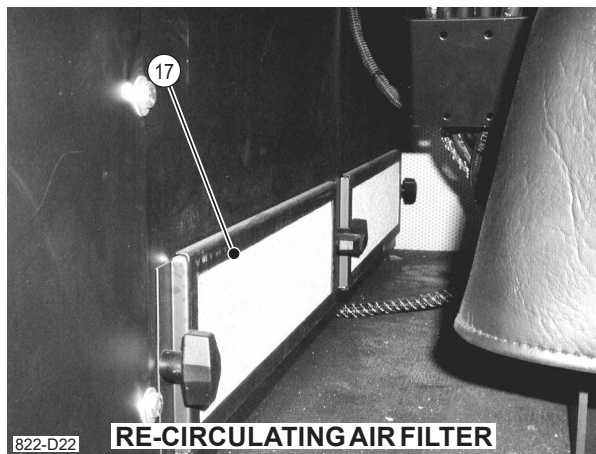
This is a push OFF spring return switch. This switch shuts off the *pilot system*, deactivating all operating functions as well as applying the track drive brake and swing brake. The pilot OFF icon will be activated (yellow) on the MD3 computer display.

The pilot system can be REACTIVATED when the PILOT RESET button (item 8) is pressed with the front door closed.



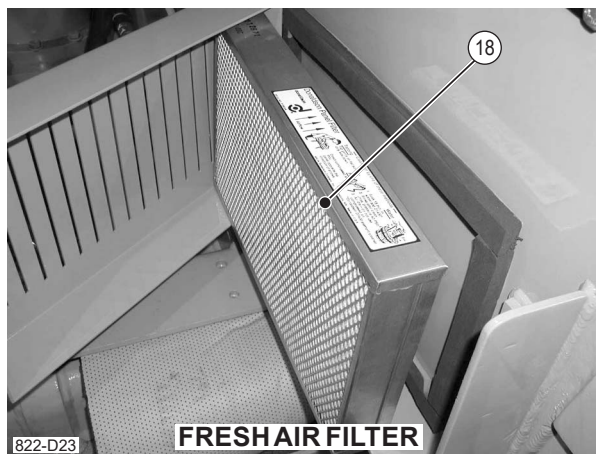
WARNING

If the PILOT OFF SWITCH does not stop functions, TURN IGNITION KEY OFF.



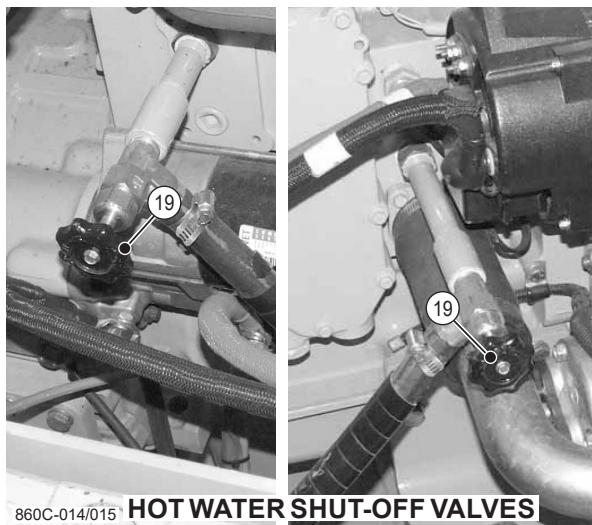
17. FILTER, RE-CIRCULATING AIR - A/C UNIT

Air in the cab is drawn into the A/C HEATER unit via this filter and re-circulated. The filter should be inspected and cleaned on a regular basis. The A/C will not cool efficiently if these filters become dirty or plugged.



18. FILTER, FRESH AIR - A/C UNIT

Outside air is continuously drawn into the cab air conditioning unit through this filter and mixed with interior air from the cab. The filter is located on the right side of cab and can be serviced from the outside by removing the two fasteners holding the hinged cover. The filter should be inspected on a regular basis and cleaned/replaced when dirty or when wet. NEVER operate air conditioner without a filter installed.



19. HOT WATER SHUT-OFF VALVES (ENGINE)

To maximize the efficiency of the air conditioning, the heat control (C) on the A/C heater control panel must be rotated to the MAX COLD position. During times when cab heating is not required close both of the HOT WATER SHUT-OFF VALVES on the engine block, this will prevent hot water from seeping through the A/C unit and thereby reducing the effectiveness of the cooling system.



20. INTERIOR LIGHTS

The switch is activated by sliding the light lens.



ADJUSTMENT MENU



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



The adjustment menu screen will be displayed. The adjustment menu icon is on display and all the adjustment selections will also be displayed. The adjustment selections are as follows:

- Cooling Fan Service Mode - select F1
- Oil Grade Adjustments - select F2
- Auto Accumulation Mode Status - select F3



COOLING FAN SERVICE MODE



Press the F1 button to select **FAN SERVICE MODE** Menu from the ADJUSTMENT MENU. The fan service mode menu appears. Two choices are given, ON or OFF. Press the up arrow or down arrow buttons to scroll to the desired selection and press the OK button to set the selection.

This mode is for when a mechanic has to be in the engine compartment. This mode will run the fan in the CLEAN direction and will adjust the speed according to the requirements of the cooling system so that the mechanic doesn't get blasted with hot air. The A/C will be switched off as well.

Press the Back button (⏪) to return to the adjustment menu. Press the Back button again to return to the main menu.



OIL GRADE SELECTION



Press the F2 button to select OIL GRADE Menu from the ADJUSTMENT MENU.

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NOTE: When in the CW Min Adjust menu only the Min current will be applied to the wrist when the function is activated.

Activate and hold the CW function on the joystick and at the same time using the up or down arrow adjust the CW Wrist Min setting so that the wrist just starts to creep.

NOTE: An inaccurate adjustment of the Min Current renders the start and stop ramps inaccurate.

Once the setting has been adjusted press OK.



NOTE: When in the CW Max Adjust menu only the Max current will be applied to the wrist when the function is activated.

Activate and hold the CW function on the joystick and at the same time using the up or down arrow adjust the CW Wrist Max setting. It may be necessary to switch between the Wrist CW and CCW on the joystick to set this adjustment.

Adjustment of this setting will determine the speed of the Wrist in the CW direction. Increasing this setting will speed the wrist up while decreasing the setting will slow it down. Once the setting has been adjusted press OK. For recommended speed setting refer to PRESSURE AND SPEED SETTINGS in SECTION 3 of this manual.



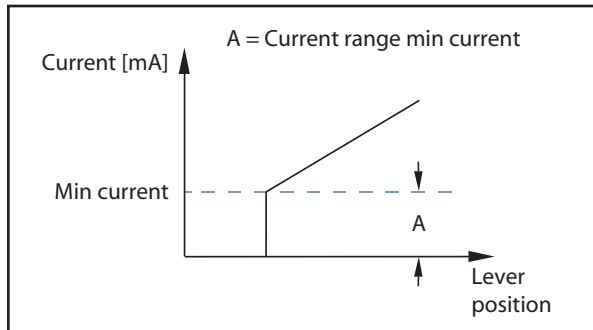
Using the up or down arrow adjust the CW Wrist Start setting. Adjustment of this setting (along with the CW Min setting) will determine how the Wrist will start in the CW direction. Increasing this setting will result in a less aggressive start while decreasing the setting will result in a more aggressive start. Once the setting has been adjusted press OK.



Using the up arrow or down arrow adjust the CW Wrist Stop setting. Adjustment of this setting (along with the CW Min setting) will determine how the wrist stops in the CW direction. Increasing this setting will result in a less aggressive stop while decreasing the setting will result in a more aggressive stop. Once the setting has been adjusted press OK. The CW wrist adjustment is now complete.

LEVELER ADJUSTMENT SETTINGS

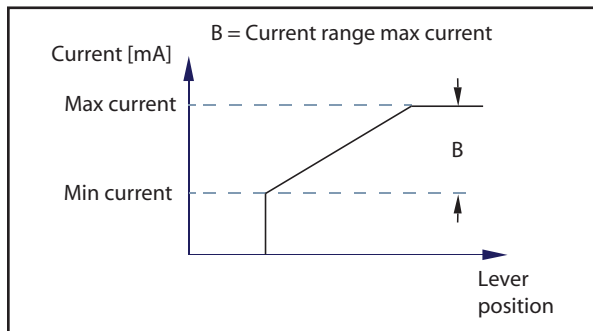
These settings (defined below) fine tune the operating speeds, start/stop ramps and cylinder tracking for the leveler functions.

MIN = MINIMUM CURRENT (mA)

Minimum current settings control function start speed. Coils on hydraulic valves require a certain amount of current before they begin to operate the valve. The Min current value is the current that will be sent to the hydraulic valve coil when the function switch is activated.

The Min current is adjusted to a value that causes the function to just begin to creep.

NOTE: Use the default setting of 300 mA when setting the Min Current.

MAX = MAXIMUM CURRENT (mA)

Maximum current settings control the maximum speed the function will operate at. Increasing this value will increase the travel speed of the cylinder.

NOTE: The mA +(extend) and mA- (retract) settings for the left and right cylinders need to be set separately to avoid tracking (one cylinder extending or retracting faster than the other).

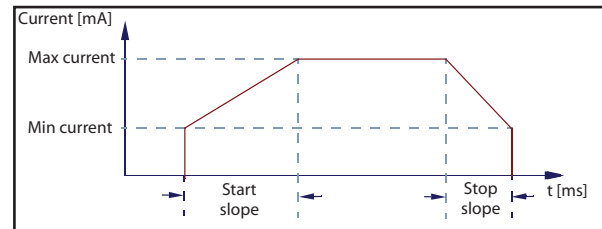
START RAMP

This is the amount of time in mS that it takes for the current to get from the Min Current value to the Max Current when turning on a function. A higher setting will cause a delay in the time that it takes the function to reach top speed. Note that if the mS setting is set to 0ms then the min current setting is negated as the function will start at max current as soon as it is turned on.

STOP RAMP

This is the amount of time in mS that it takes for the current to get from the Max Current to the Min current when turning off a function. A higher setting will cause a delay in the time that it takes for the function to come to a stop from top speed. Note that if the mS setting is set at 0mS then the min current setting is negated and the function would stop as soon as it is turned off.

Below is a typical graph showing the four settings.



NOTE: The start and stop ramps adjust both the left and right cylinders to the same value.

FORWARD LEVELING SPEED

This adjusts both the left and right cylinder speeds proportionally to their respective Max mA+(cylinder extend) settings.

REAR LEVELING SPEED

This adjusts the left and right cylinder speeds proportionally to their respective Max mA-(cylinder retract) settings.

DISPLAY ADJUSTMENT



After selecting F1 the display adjustment screen opens and the following adjustments can be selected:

RETURN TO MAIN MENU - Select F1

BACKLIGHT ADJUSTMENT - Select F2

SCREEN SAVER - Select F3

BACKLIGHT ADJUSTMENT



After selecting F2 the backlight adjustment screen opens. Use the up arrow or down arrow buttons to adjust the display backlight. The range is 10 to 100. The default setting is 100.

When the desired setting is selected press the OK button. A good rule to follow is the lower the number the longer the life of the display unit. Press the back button (⏪) to return to the main menu screen.

SCREEN SAVER ADJUSTMENT



Select F3 to access the screen saver adjustment options. Use the up arrow or down arrow buttons to scroll through the choices. Three choices are available:

- SCREEN SAVER - **Off**
- SCREEN SAVER - **Dimmed**
Timeout - 5 seconds
Dimmed light - 80
- SCREEN SAVER - **Black**
Timeout - 5 seconds



After making a selection press the OK button to set the selection and press the back button (⏪) to return to the main menu screen.

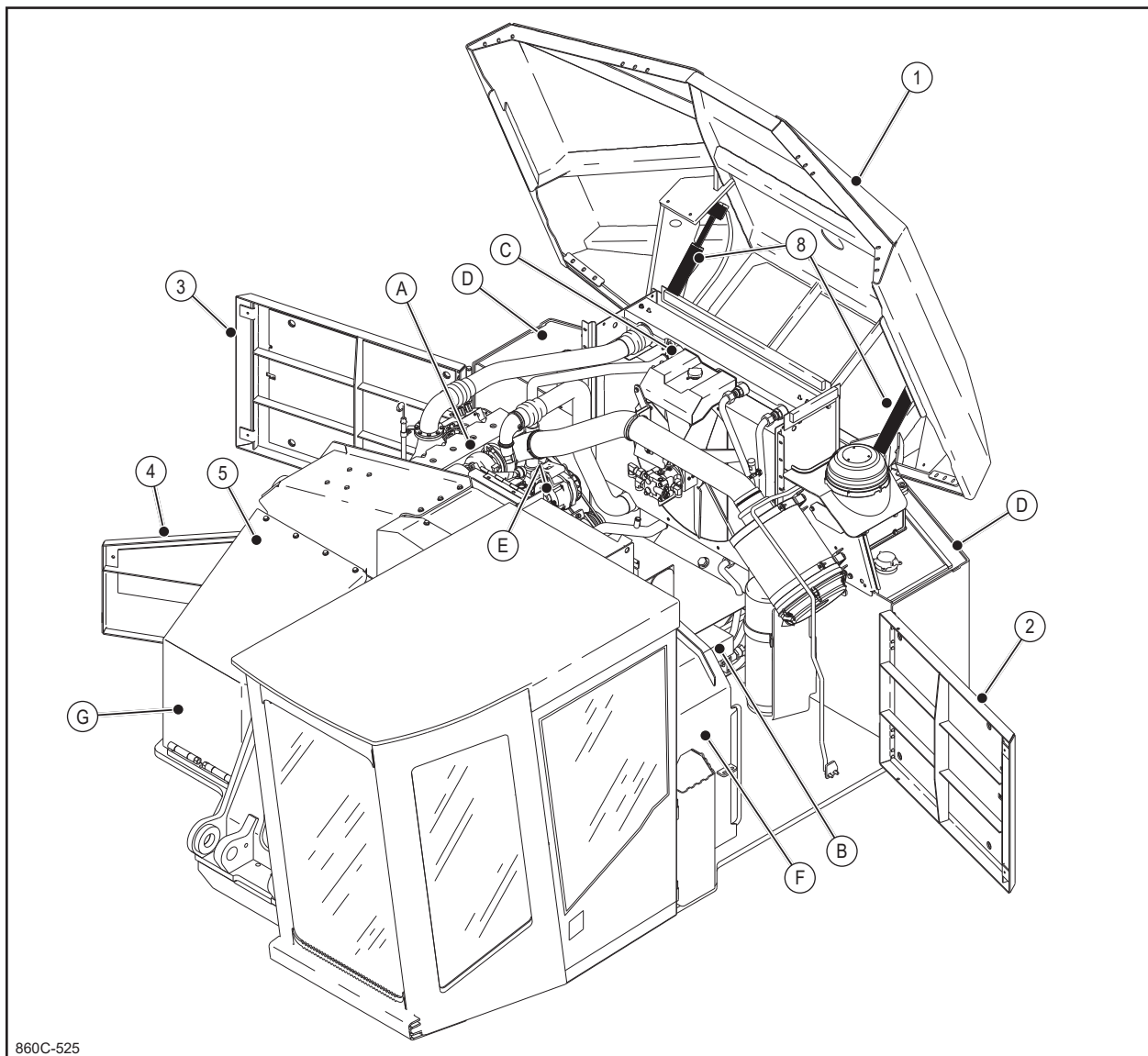
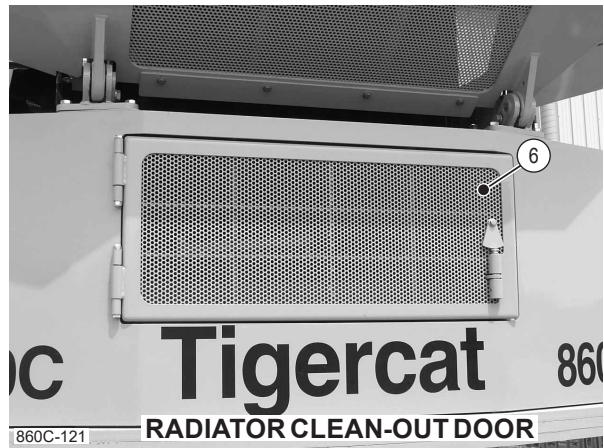
SERVICE ACCESS DOORS

Service access doors:

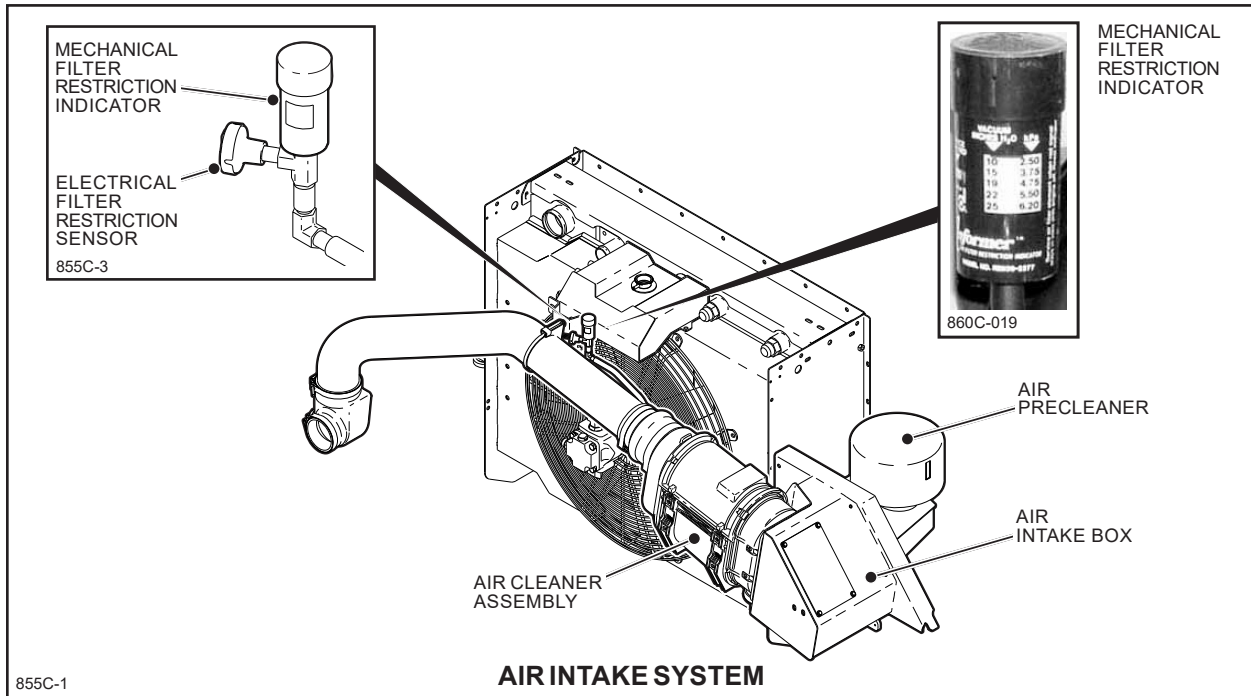
1. Main Service Compartment Door
2. L.H. Access Door
3. R.H. Access Door
4. Pump Compartment Access Door
5. Pump Compartment Cover
6. Radiator Clean-out Door
7. Main Service Compartment Door Switch
8. Main Service Compartment Door Cylinders

Provide access to the:

- A. Engine Compartment
- B. Battery Compartment
- C. Radiator/Oil Cooler/Charge Air Cooler
- D. Fuel Tank
- E. Hydraulic Valves
- F. Hydraulic Oil Tank
- G. Hydraulic Pump Compartment



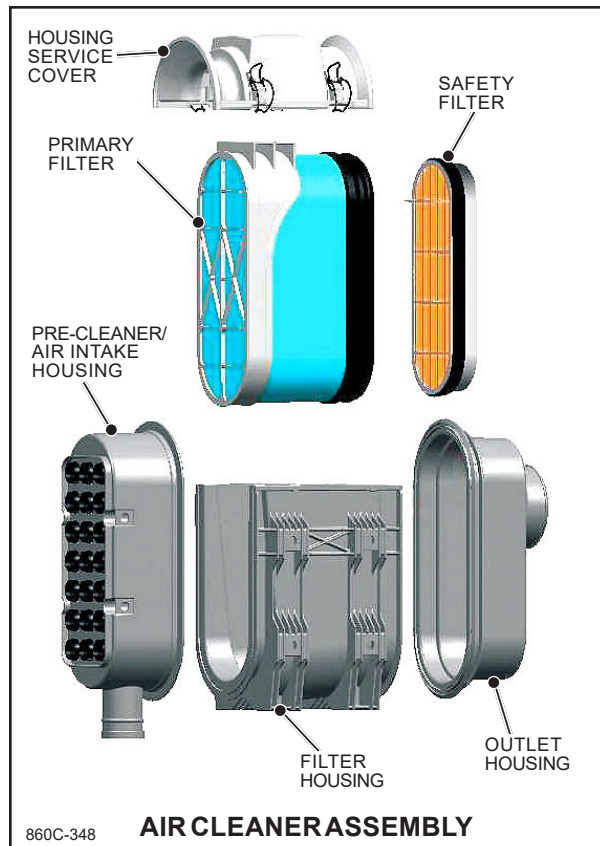
AIR INTAKE SYSTEM - 8***2601 TO 8***2632



AIR CLEANER

This style of air cleaner uses two filters, a primary filter and a safety filter. The air intake should be **checked daily** to make sure that foreign materials have not plugged the air intake area.

To ensure maximum engine protection, it is important that the filters be serviced correctly and at proper servicing intervals. Refer to ENGINE AIR INTAKE SYSTEM, in SECTION 3 of THIS MANUAL.





16. Never start or use a machine if the disc saw has missing teeth, missing teeth fasteners or a bent or damaged disc.



17. Check that the saw housing is clear and undamaged.
18. Shut down the machine immediately if you feel a vibration when the cutting disc is running.
19. Check all exits.
20. Be sure that all doors and access panels are securely fastened.
21. Unlock all cab doors.

IMPORTANT!

Unlock both doors before operating machine to allow opening from the outside in case of an emergency. Make sure that the doors are operational, open the doors twice, once using the exterior latch handle and once using the interior handle.

GRAFFITI REMOVAL

- For removal of paints, marking pen inks, etc., the use of Butyl Cellosolve is generally effective. The use of masking tape, adhesive tape or lint removal tools works well for lifting off old weathered paints.
- To remove labels, stickers, etc., the use of kerosene, VM&P Naphtha, or petroleum spirits is generally effective. When the solvent will not penetrate sticker material, apply heat (hair dryer) to soften the adhesive and promote removal.

Refer also to RESISTANCE TO CHEMICALS for a list of chemicals which should not be permitted to come into contact with polycarbonate windows.

FIRE PRECAUTIONS

Polycarbonate window material will ignite when exposed to an ignition source in excess of 427°C (800°F). When working around polycarbonate windows, observe similar fire precautions to those in place for wood.

REMOVAL OF ANTI-CORROSION SPRAY (IF APPLICABLE)

Some machines, particularly machines shipped outside North America, are shipped with an optional anti-corrosion spray to protect the machine from corrosion during shipment.

This anti-corrosion spray should be removed when the machine reaches its destination as it may cause debris to stick to the treated surfaces of the machine.

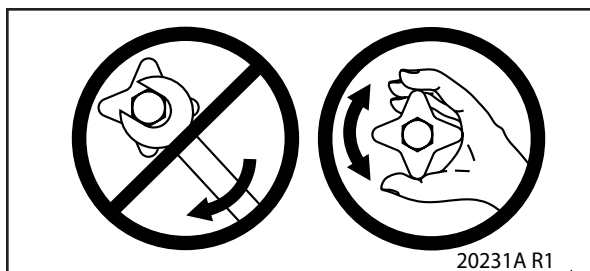
The anti-corrosion can be removed with a pressure washer, a sponge and soap.

**SIDE WINDOW SCREENS**

The side window screens (if equipped) can be removed to clean the windows. Screens are provided for the personal protection of the operator and must be reinstalled immediately after cleaning the windows.

A hand knob is provided on both the inside and the outside. By unscrewing either (not both) of these knobs, the screen will be free to swing out on the hinges. Be aware that the screen will swing outwards with considerable force, if the door is open.

All hand knobs should be **hand tightened only** at all times.



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SCHEDULED MAINTENANCE

FREQUENTLY:

- **Check engine cooling** air intake screens for possible restriction
In broad leaf applications it may be necessary to reverse the cooling fan as frequently as every **10 mins**.
- **Check for debris**, snow and ice buildup on emergency exits and remove accumulation immediately.
- **ER Boom system:**
Periodically, the hoist boom must be lifted up as far as it will go and then lowered to operating height in an area free from overhead obstructions in order to circulate hydraulic oil from the cylinders back through the cooler and filters. This oil does not circulate through the cooler or filters during normal horizontal motion and the oil does not get completely changed during normal vertical motion, so it is important that this procedure be followed at least once every hour.

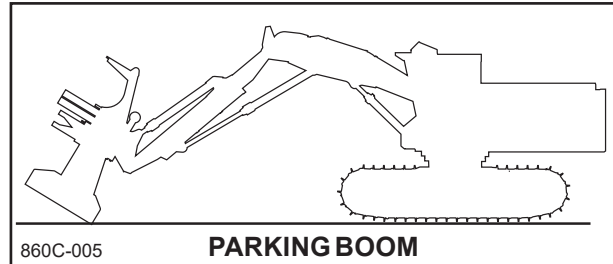
EVERY 8 HOURS:

- **Perform frequently maintenance**
And in addition:~
 - Check engine coolant level.
 - Check engine oil level.
 - Drain water from fuel/water separator.
 - Check air intake precleaner operation.
 - Check air cleaner unloader valve if equipped.
 - Check air intake 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.
 - Check hydraulic oil level.
 - Check swing drive gear box gear oil level.

Lubricate:

- Swing pinion; 1-fitting - 10 shots
With dual swing; 2-fittings - 10 shots each
- Cylinders, Levelling; 4-fittings total - purge (If equipped with leveller)
- Thrust bearing, Levelling; 2-fittings - purge (If equipped with leveller)

- ‡ Boom joints:
Conventional Boom; 6-fittings - purge
Conventional w/Tilt Link; 12-fittings - purge
ER Boom System; 12-fittings - purge
- ‡ Cylinders; hoist, stick & tilt;
Conventional Boom; 8-fittings - purge
ER Boom System; 10-fittings - purge



‡ Lubricating cylinder pins and boom joints:-

1. Ensure machine is on level ground
2. Completely tilt felling head back
3. Fully extend stick boom cylinder
4. Force heel of felling head onto ground
5. While in this position lubricate all cylinder retaining pins and boom joints

NOTE: This procedure will allow grease to flow to the normally "loaded side" of the pin/bearing surfaces.

Clean:

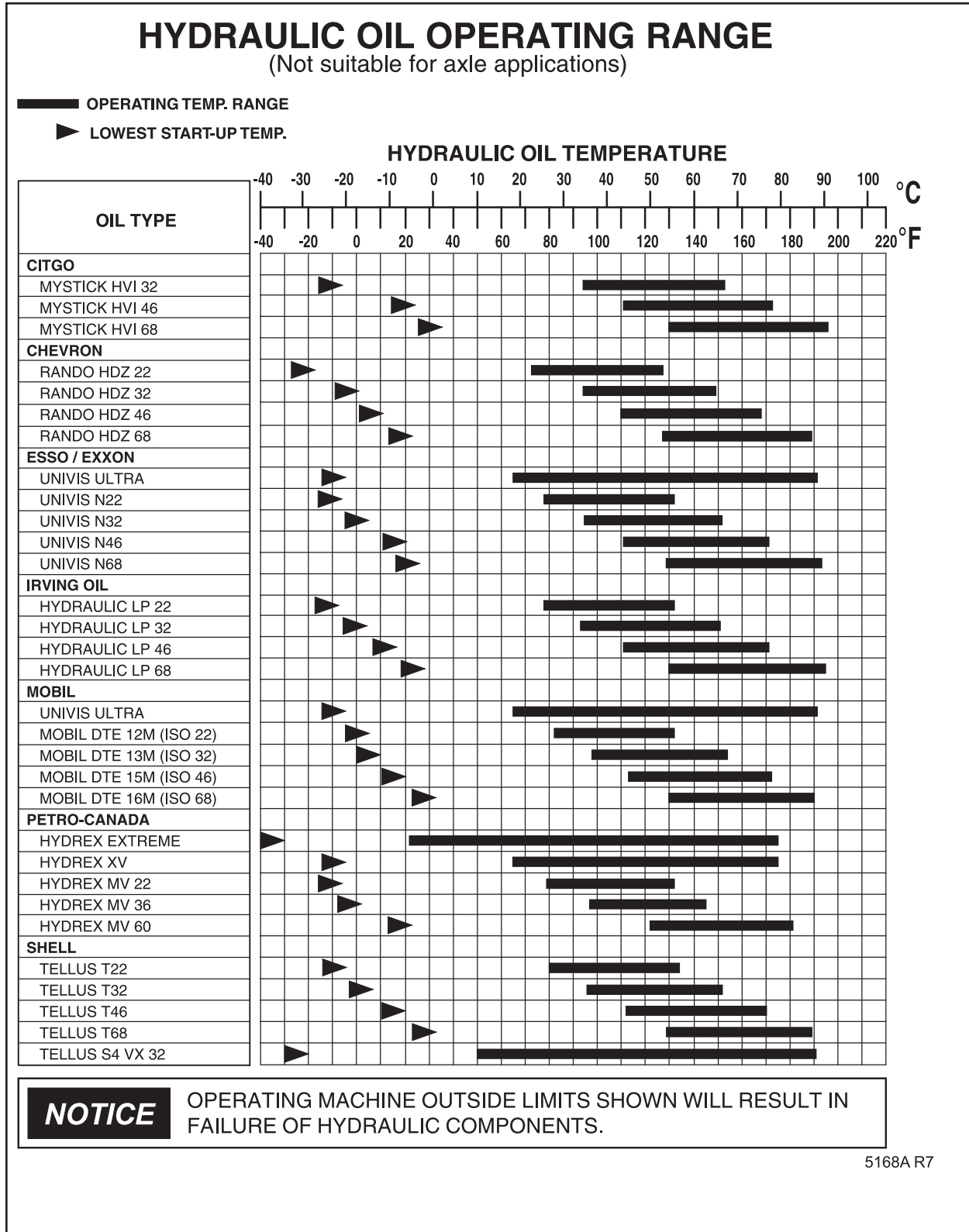
- Oil cooler, engine radiator and enclosure screens.
- Remove potentially damaging limbs or sticks.

Check:

- All 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 or replace immediately.
- For leakage around hydraulic components and flexible hoses.
- For loose nuts, bolts and fittings.
- Condition and tension of belts.
- Visually check condition of tracks.
- Exhaust system for leaks.
- Conduct an overall visual inspection.
- Refer to diesel engine service manual and attachment manual for additional required maintenance at this scheduled time period.

APPROVED HYDRAULIC OILS

Use one of the following oils to fill or replenish the hydraulic system.



HYDRAULIC FILTER SERVICING GUIDELINES

IMPORTANT! NEVER PRE-FILL HYDRAULIC FILTERS

Tigercat generally does not recommend the pre-filling of spin-on filters due to the risk of damage to the hydraulic system caused by unfiltered oil. Unfiltered oil used to pre-fill filters enters directly into the hydraulic circuit. Contaminants in unfiltered oil can cause significant and costly damage to hydraulic valves, pumps and motors. The cleanliness of hydraulic oil cannot be guaranteed unless it is always pre-filtered before use.

Contaminated hydraulic fluid can lead to premature failure of hydraulic components and costly repairs. Filters must be replaced at the recommended time intervals, Refer to SCHEDULED MAINTENANCE in THIS SECTION.

Use of hydraulic oil filters other than the Tigercat brand could lead to severe wear and rapid failure of hydraulic system components.

WARNING



WARNING. HOT HYDRAULIC OIL AND HOT MACHINE SURFACES CAN CAUSE SERIOUS BURNS!

- Before servicing the machine, allow the 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 38°C (100°F).

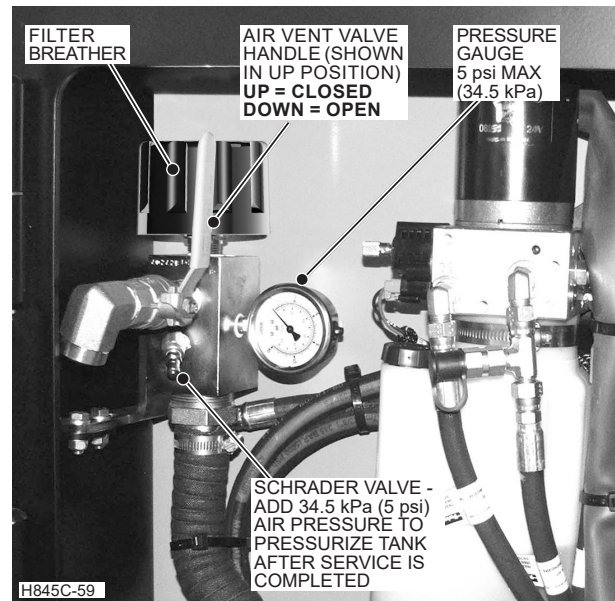
HYDRAULIC TANK PRESSURIZATION INSTRUCTIONS.

IMPORTANT!

PRESSURIZED HYDRAULIC TANK. 34.5 kPa (5 psi) MAXIMUM.

Before servicing hydraulic system, release air pressure from tank using air vent valve.

To release pressure from the hydraulic tank:



Wearing eye protection, release air from the hydraulic tank by opening the AIR VENT VALVE. Pull valve handle down 90° to open. Push valve handle up to close.

Note: Expelled air from vent valve will blow accumulated loose debris in the enclosure.

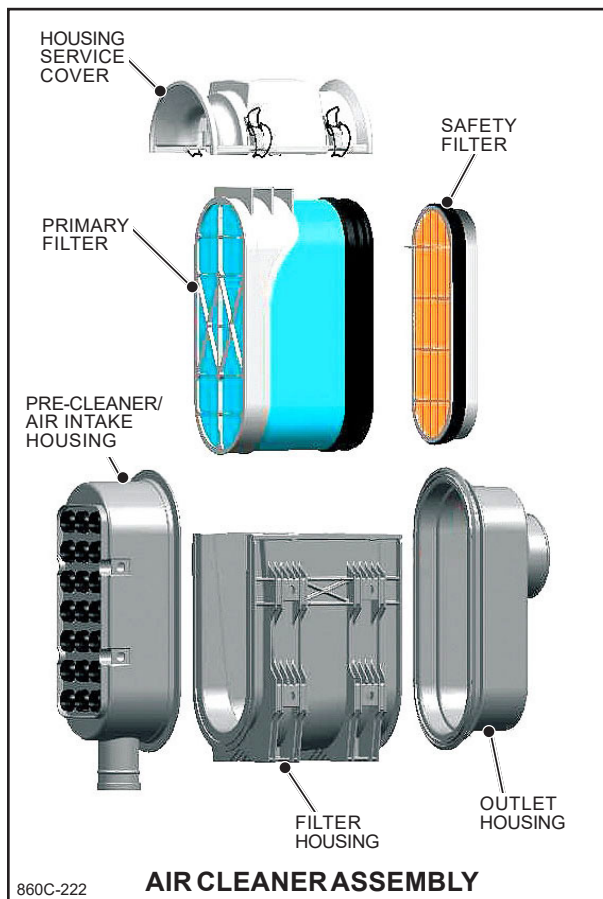
Releasing hydraulic tank pressure in the event of a hose breakage may reduce oil loss.

IMPORTANT! AIR VENT VALVE MUST BE OPENED BEFORE CHANGING HYDRAULIC FILTERS AND STRAINERS OR PERFORMING ANY OTHER SERVICE ON HYDRAULIC CIRCUITS. DO NOT OPERATE MACHINE WITH THE AIR VENT VALVE IN THE OPEN POSITION.

During a filter change or return hose replacement, air is able to enter the return hydraulic circuit. It is important to bleed as much of this air as possible out prior to restarting the machine. See **HYDRAULIC OIL RETURN FILTERS "filter change procedure"** for instructions on bleeding air from return circuit. AIR BUBBLES IN THE HYDRAULIC SYSTEM WILL DAMAGE THE PUMPS.

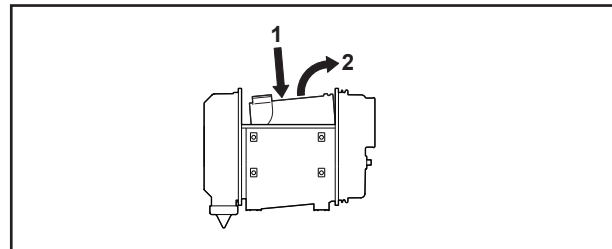
After service is completed, close air vent valve and add air pressure from a clean air source to the hydraulic tank via the schrader valve. **Do not exceed 34.5 kPa (5 psi).**

IMPORTANT STEPS TO FOLLOW WHEN CHANGING AIR FILTERS



1. Shut off engine. Unlatch and remove the housing service cover.
2. Remove primary filter carefully to avoid dislodging dust.
First, loosen the filter gasket seal. Using the handle, push down on the filter to loosen the seal, tilting the filter to a 5° angle. Pull the filter out of housing.
3. Remove safety filter (if replacing). Using the plastic handle on the face of the secondary filter, pull the filter towards the centre of the housing and remove.
NOTE: Replace the safety filter on every third primary filter change.
4. Always clean the inside of the outlet tube when replacing the safety filter.
5. Always clean sealing surfaces before inserting new filter(s).

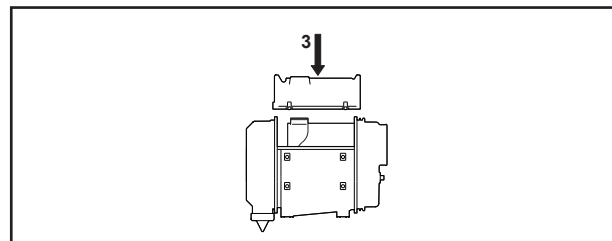
6. Check your old filter for foreign material on sealing surfaces that is causing leakage.
NOTE: Filters should never be cleaned and reused. Cleaning causes dust to bypass the filter and be deposited on the inner surface of the filter media. The dust is then drawn directly into the engine.
7. Inspect the new filter(s) before installing. Visually check for cuts, tears or indentations on the sealing surfaces before installation. If any damage is visible, do not install.
8. Replace safety filter (if replacing).
Insert the safety filter tab into the positioning slot before pushing the filter in place. Using the plastic handle on the safety filter, slide the filter at an angle into the outlet side and push in place until the filter seats firmly and evenly within the housing.
9. Insert the primary filter.



Slide the filter down at a 5° angle (1) until it hits the end of the housing. Push the filter toward the outlet housing (2) to complete the seal.

NOTE: The safety filter must be installed correctly and seated firmly to allow installation of the primary filter.

10. Replace the service cover.



Place the service cover (3) in position and fasten the latches.

NOTE: If the cover doesn't seat, remove and re-check the filter position. Cover will be difficult to install if filter is not installed correctly.

11. Inspect connections and ducts for 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.



Watch transition areas.

Try to minimize travel over transition obstacles as this accelerates undercarriage wear. If you must go across a transition, position the machine 90° to the transition. Without ground support, the undercarriage is subjected to side stresses that can result in rapid, excessive wear.

Other factors:



Application refers to the type of work you do. Bunching, loading, grading, digging and trenching are a few examples. This factor is largely beyond your control, but generally speaking, the more you work in high horsepower, high-torque applications, the faster your undercarriage will wear.

Material type is another key contributor to undercarriage wear that is outside your control, the more abrasive the material, the more rapid the wear rate.

Terrain, a third uncontrollable factor, describes the contours and slopes at your job site. The more time you spend in rugged, sloped areas, the faster your undercarriage will wear out.



Configuration refers to the way your machine is equipped and is therefore something you can control. To minimize undercarriage wear on steel-track machines, always use the narrowest track shoe possible that meets your flotation requirements. If you work in very sticky materials, consider using center-punched track shoes to reduce material packing in the undercarriage area.

Maintenance discipline plays a big role in undercarriage component life. One of the most critical maintenance practices is track adjustment. Tight track is the number-one "track killer." But whether your track is too loose or too tight, improper adjustment accelerates wear which can increase downtime and repair costs. Follow the manufacturer's recommendations for track adjustment, and always perform the adjustment in the machine's working environment. A second important maintenance process is cleaning the undercarriage. To maximize wear life, remove mud and debris at the end of every shift, or more frequently if necessary.

Talk to the experts:

Undercarriage components are expensive! To get long life and maximum value from your investment, consult with a dealer or factory rep that really knows the undercarriage business. Ask for advice on operating techniques. Explore relevant application, material and terrain issues. Fine-tune your maintenance processes. Working together with an undercarriage expert, you can manage your equipment investment over the long term.

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