Product: EXCAVATOR
Model: 215 EXCAVATOR 96L
Configuration: 215 EXCAVATOR 96L00001-00786 (MACHINE) POWERED BY 3304 ENGINE

Operation and Maintenance Manual
215 EXCAVATOR

Media Number -SEBU5513-01 **Publication Date -01/12/1979** **Date Updated -11/10/2001**

Foreword

SMCS - 7606

This guide is a reference for the new operator and a refresher for the experienced one. Read - Study - and keep it handy.

Illustrations guide the operator through the correct procedures of checking, starting, operating and stopping the vehicle and attachments.

Operating techniques outlined in the guide are basic. Skill and techniques develop as the operator gains knowledge of the vehicle and its capabilities.

Your safety and the safety of others depends upon care and judgment in the operation of this vehicle. A careful operator is good insurance against an accident.

Some photographs in this publication may show details or attachments that may be different from your unit.

Continuing improvement and advancement of product design may cause changes to your machine which may not be included in this publication. Each publication is reviewed and revised, as required, to update and include these changes in later editions.

When a question arises regarding your Caterpillar product, or this publication, please consult your Caterpillar dealer for the latest available information.

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Safety

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WARNING

Do not operate this machine unless you have read and understand the instructions in the Operator's Guide. Improper machine operation is dangerous and could result in injury or death.

WARNING

Watch boom clearance when traveling. Uneven ground may cause the boom to move side to side or up and down.

WARNING

KNOW THE MAXIMUM HEIGHT AND REACH OF YOUR MACHINE

Serious injury or death by electrocution may occur if machine or attachments are not kept a safe distance from electrical power lines. Keep distance at least 10 feet (3.05 M) plus additional .4 inch (10 mm) for each 1,000 volts over 50,000 volts. Local and state codes or job site operating directives may require greater distance for safety.

⚠ WARNING

CLAMSHELL SWING

PERSONAL INJURY MAY RESULT IF CLAMSHELL SWINGS INTO THE CAB OR A PERSON IN THE WORK AREA.

CLAMSHELL CAN SWING IN ALL DIRECTIONS.

Controls must be operated smoothly to avoid excessive clamshell swing.

WARNING

Before leaving the operator's compartment, lower all equipment (clamshell in the open position) and engage the hydraulic lock lever.

General

Read and understand all safety precautions and warnings before operating the machine.

Wear a hard hat, protective glasses and other protective equipment as required by job conditions.

Do not wear loose clothing or jewelry that can catch on controls or other parts of the machine.

Be alert ... always keep your eyes on the moving load ... if you can't see the load, be sure to have a signal man in full view.

Keep boom away from all overhead lines. Treat all wires as "hot" until you have reliable information to the contrary.

Keep machine, especially walkways, free of foreign material. Secure all loose items such as lunch boxes, tools, etc.

Know the hand signals and who gives them. Accept signals from one person only.

Do not smoke while refueling or when near batteries.

If power line is hit, stay on machine until line is clear or power is disconnected.

Warn people to stay away if machine is in contact with power lines.

Mounting and Dismounting

Climb on or off the machine only where steps and/or grab irons are provided.

Use both hands when mounting and dismounting and face machine.

Never get on or off a moving machine ... and never jump.

Learn location of emergency exits and use when necessary.

Preparing to Start

Inspect seat belt (if equipped). Replace if damaged or worn.

Make certain all protective guards and covers are secured in place.

Inspect machine for potential fire hazards.

Make sure machine is equipped with proper lighting system as required by job conditions.

Always have a fire extinguisher on hand and know how to use it. Inspect as recommended.

Starting

Do not start the machine or move any of the controls if there is a warning tag hanging on the controls.

Make sure no one is working on, underneath, or close to the machine before starting engine or beginning to move.

Move all implement controls to hold or neutral before starting engine.

Start and run engine only in well ventilated area.

Preparing to Operate

Fasten seat belt (if equipped).

Check for proper operation of all controls and protective devices while moving slowly in an open area. See Lubrication and Maintenance Guide for adjustments.

* Right and left steering.

* All brakes.

* Engine governor control lever.

* Other devices such as lights, backup alarm, horn, etc.

Operating

Operate controls only while seated.

Do not allow riders on the vehicle or implements unless additional seat, seat belt, and rollover protection is provided.

The operator must satisfy himself that no one will be endangered before moving the machine.

Be careful to avoid tipping when working on hills, banks or slopes and when crossing ditches, ridges or other obstructions.

Stay a safe distance from the edge of cliffs, overhangs and slide areas.

If your machine begins to side slip on a grade, immediately dispose of the load and turn the machine downhill.

Reverse steering may occur when traveling downhill.

Connect trailing equipment to drawbar or hitch only.

Personnel should not be between machine and trailing equipment while maneuvering to connect. Block tongue or hitch of trailing equipment to align it with drawbar or hitch.

Be sure hitch points and tow cable are adequate.

Never straddle cable nor allow others to do so.

Wear gloves when handling cable.

Do not use cable if it is tangled, kinked, frayed or damaged.

Keep other machines back away from edge of excavation when you are digging.

Get help for jobs such as spooling cable. Unspool and respool properly.

Swing boom to upper side of hill to avoid tipping except when using as a crutch.

For long moves, position boom in direction of travel.

Know the exact location of buried pipes and cables - mark them clearly.

Back machine away from excavation before leaving machine.

Avoid fast swings, hoists or sudden stops.

Use caution on slopes...tipping can occur if you travel with load beyond safe operating radius.

Beware of reduced stability when swinging over side of track.

When working in pit or near high banks, keep check on pit men ...be quick to alert them if a cave in appears imminent.

When loading trucks, never swing over the truck cab. Make sure the driver remains out of the truck, and clear of the excavator, during loading.

Parking Machine

Lower equipment to the ground with slight down pressure. Engage hydraulic lock lever, stop engine, turn off disconnect switch and remove key.

If machine must be parked on a slope always block the tracks.

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Symbol Identification

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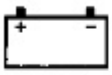
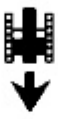
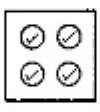
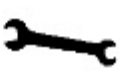
THESE PAGES EXPLAIN THE MEANING OF SYMBOLS THAT MAY APPEAR ON YOUR MACHINE.

PRESSURIZED-COMPARTMENT 	DISENGAGE 	EMPTY 	ENGINE OIL-LEVEL 
HANDS-NO 	ENGAGE 	FULL 	ENGINE OIL-TEMPERATURE 
SLOW 	HOURS 	ONE HALF FULL 	ENGINE OIL-PRESSURE 
FAST 	COOLER-CONTROL 	CONTINUOUSLY VARIABLE 	ENGINE-IGNITION 
LOCK 	HEATER-CONTROL 	LUBRICATE-GREASE 	ENGINE-NOT RUNNING 
UNLOCK 	LEVER-MOVEMENT	LUBRICATE-OIL 	ENGINE-ETHER AID START 
ON 	LEVER-MOVEMENT 	ENGINE-OIL 	ENGINE-HEAT 
OFF 	NEUTRAL 	ENGINE OIL-FILTER 	ENGINE-HOURS 

STEERING 	LIGHT-ALL 	DIESEL 	COOLANT-TEMPERATURE 
TURN-LEFT 	LIGHT-BRIGHT 	FUEL-FILTER 	HYDRAULIC-OIL 
TURN-RIGHT 	LIGHT-DIM 	FUEL-LEVEL 	HYDRAULIC-OIL-FILTER 
AIR-CIRCULATION-INSIDE 	LIGHT-FLOOD OR WORK 	FUEL-PRESSURE 	HYDRAULIC-LEVEL 
AIR-CIRCULATION-OUTSIDE 	LIGHT-INSTRUMENT OR PANEL 	FUEL SHUTOFF 	HYDRAULIC-PRESSURE 
AIR-FILTER 	LIGHT-PARK 	COOLANT-FLOW 	HYDRAULIC-TEMPERATURE 
AIR-PRESSURE 	LIGHT-TAIL 	COOLANT-FLOW-NO 	DEFROSTER-CONTROL 
AIR-EMERGENCY 	LIGHT-INTERIOR 	COOLANT-LEVEL 	WASHER-CONTROL 
FAN 	LIGHTER 	COOLANT-PRESSURE 	WIPER-CONTROL 

HORN-CONTROL 	DISCONNECT SWITCH OFF 	BACKHOE BOOM-RAISE 	CLAMSHELL OPEN 
AMMETER OR ALTERNATOR 	DISCONNECT SWITCH ON 	BACKHOE BOOM-LOWER 	CLAMSHELL CLOSE 
BATTERY 	FORWARD 	BACKHOE-DIG 	CLAMSHELL ROTATE CLOCKWISE 
VOLTAGE-HIGH 	REVERSE 	BACKHOE-DUMP 	CLAMSHELL ROTATE COUNTER-CLOCKWISE 
VOLTAGE-LOW 	MONITORING SYSTEM 	BACKHOE STICK-OUT 	STICK-RAISE 
SWITCH-EMERGENCY 	TEST 	BACKHOE STICK-IN 	STICK-LOWER 
CIRCUIT BREAKER 	FRAGILE 	BACKHOE-SWING RIGHT 	STICK-IN 
CIRCUIT BREAKER-RESET 	LIFT-POINT 	BACKHOE-SWING LEFT 	STICK-OUT 
FUSE	LIFT-DO NOT 	SERVICE 	EMERGENCY EXIT 

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Model Views

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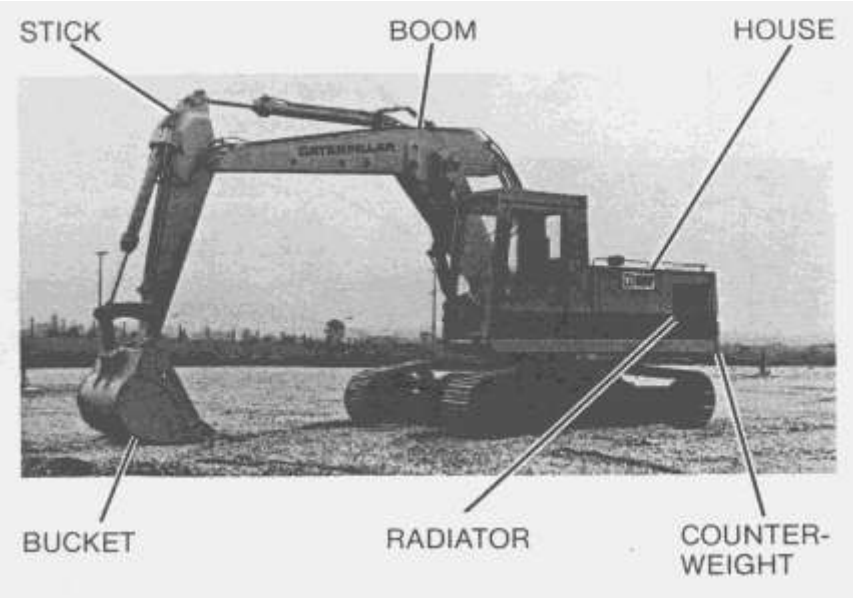

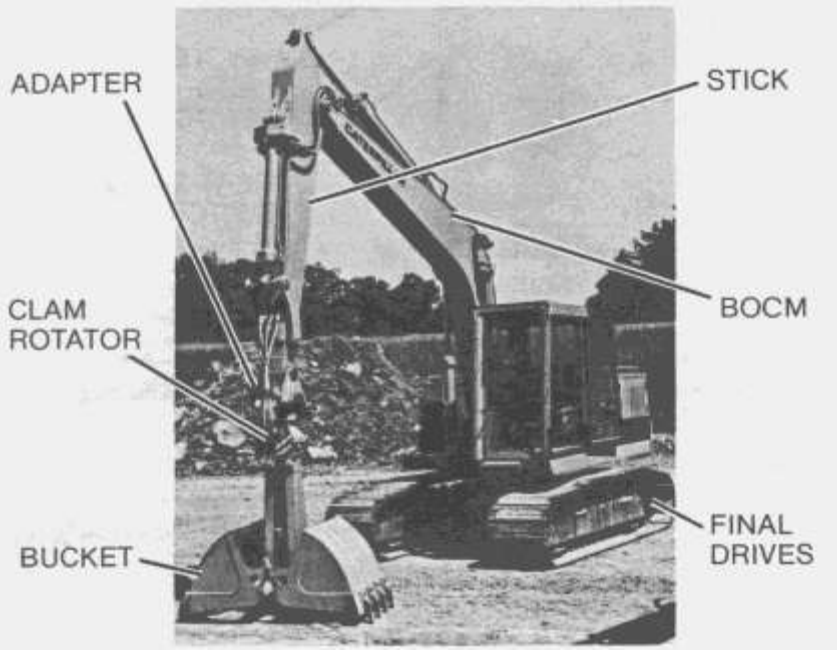

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Operator's Compartment

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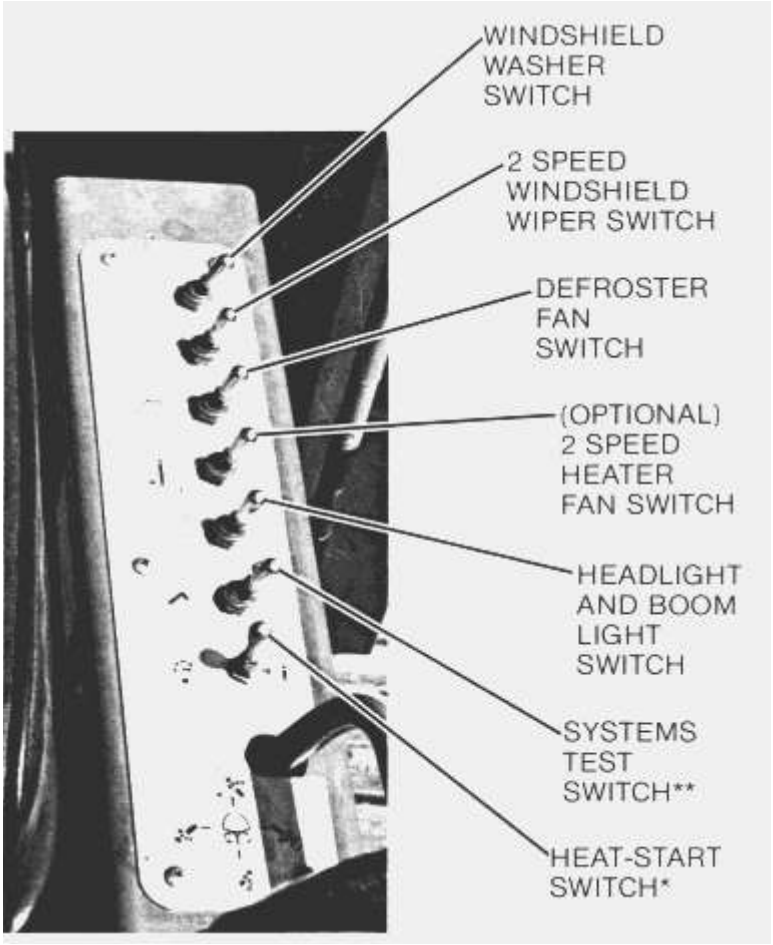

NOTE: All switches except HEAT-START SWITCH are OFF in the operator's far left position. The HEAT-START SWITCH is centered when OFF.

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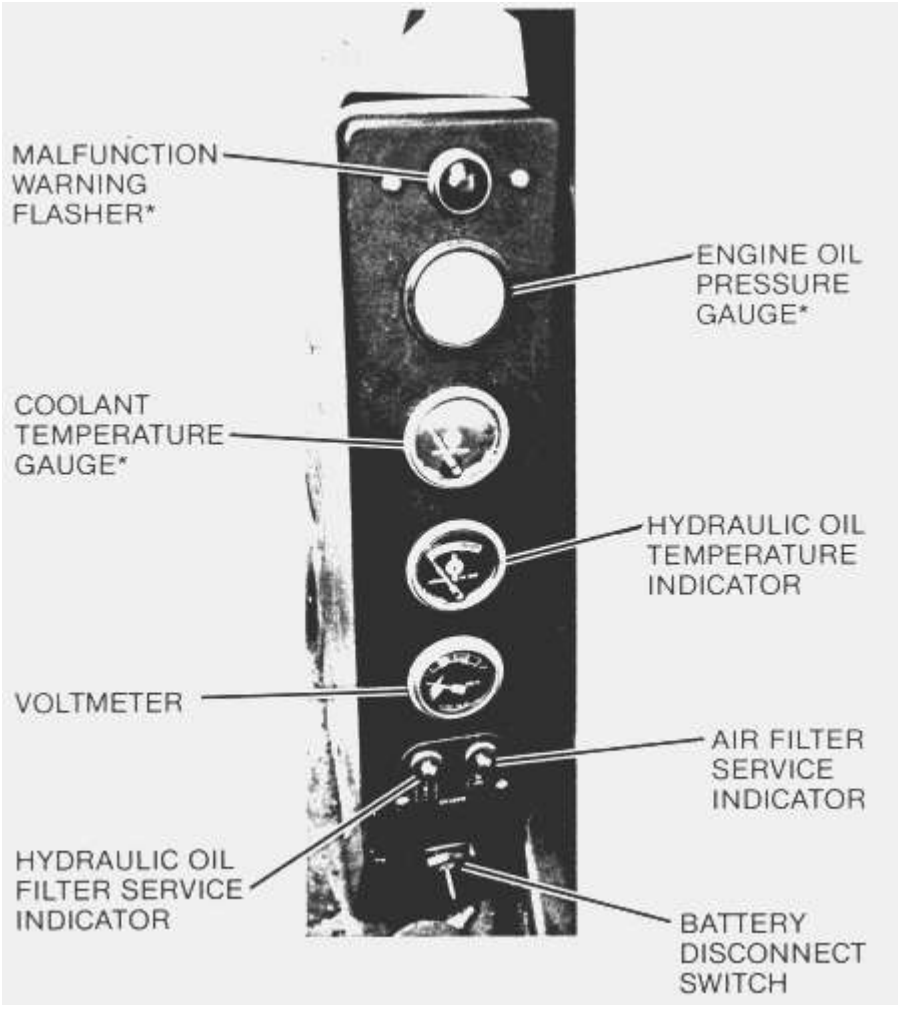
*HEAT-START SWITCH must be pulled up to move it to HEAT or START on later machines.

**For testing the warning flasher and indicators mounted at lower right hand side of cab.



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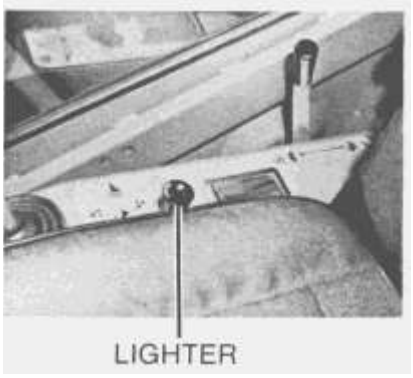
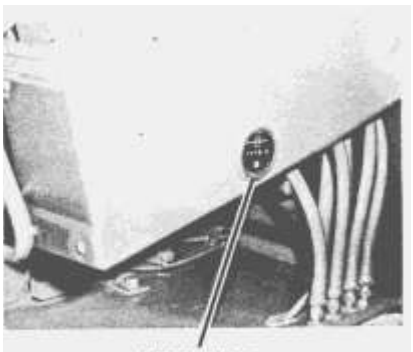
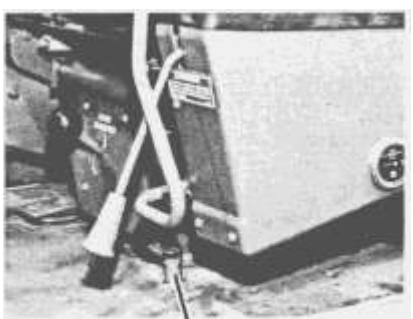
*The MALFUNCITION WARNIING FLASHER operates in conjunction with COOLANT TEMPERATURE GAUGE or ENGINE OIL PRESSURE GAUGE, when coolant temperature is too high, or engine oil pressure is too low.





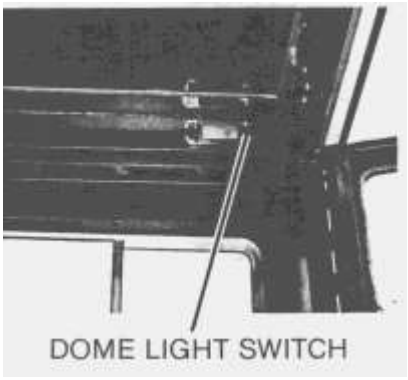
SERVICE
METER

GAUGE
PANEL
LIGHT



HORN
BUTTON

FUSE BOX*



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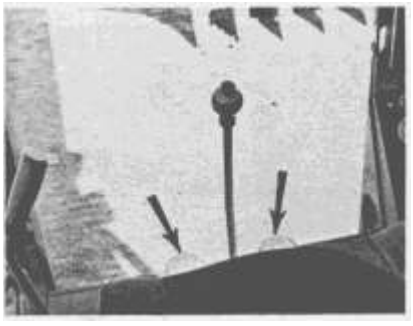
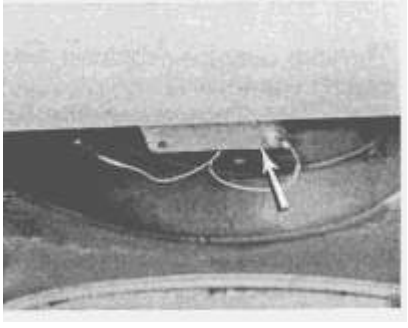
*FUSEBOX is located inside of the left side front access door.

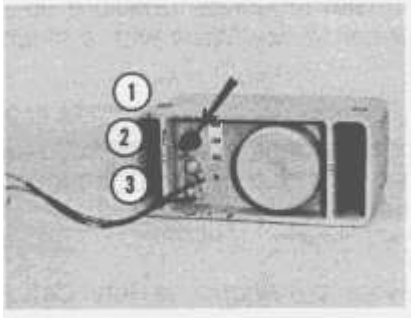
Travel Alarm (If equipped)



The alarm operates, when forward or reverse travel pedals are engaged, to warn nearby personnel of machine movement.



The alarm unit is located under the rear of the house.



A switch at the rear of the unit adjusts the sound level to meet the job requirements.

(1) HIGH

(2) LOW

(3) MEDIUM

NOTE: The alarm is set at the highest sound level when shipped from the factory.

A button, at the top of the steering control lever, can be depressed to stop the alarm when it is not required.

NOTE: When the button is depressed, the alarm will sound for 10 seconds after a travel pedal is depressed, then turn off.

It will remain off until the button is released, or the machine is stopped and travel, in either direction is resumed.

Plastic Cab Windows (If equipped)

The cab may be provided with plastic windows at the rear and both sides. They are shatter resistant, and reduce the need for vandalism protection.

NOTICE

Care must be used when cleaning the plastic to prevent damage.

Cleaning Plastic Windows

With Aircraft Windshield Cleaner:

Apply cleaner with soft cloth, rub with moderate pressure until all dirt is removed. Allow the cleaner to dry. Wipe with a clean soft cloth.

With Soap and Water:

Wash windows with a mild soap or detergent, and plenty of lukewarm water, using a clean sponge or soft cloth. Rinse thoroughly. Dry with a moist chamois skin or moist cellulose sponge.

Stubborn Dirt and Grease:

Wash in a good grade of naptha, isopropyl alcohol or Butyl Cellosolve. Follow by washing with soap and water.

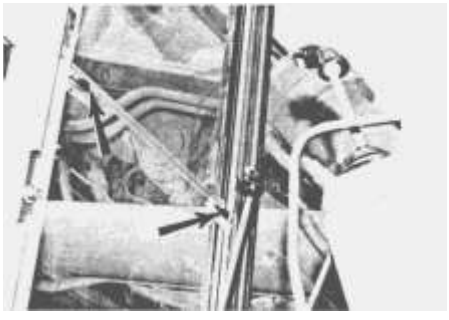
NOTICE

Never use gasoline, benzine, acetone, carbon tetrachloride, fire extinguisher fluid, anti-ice fluid, lacquer thinner, acids, alkali, or glass cleaner to clean the plastic. These materials will attack the plastic and may cause it to craze. Do not use abrasive cleaners. Do not use scraper blades or other sharp instruments. Do not rub plastic with dry cloth, since this builds up a static charge that attracts dust.

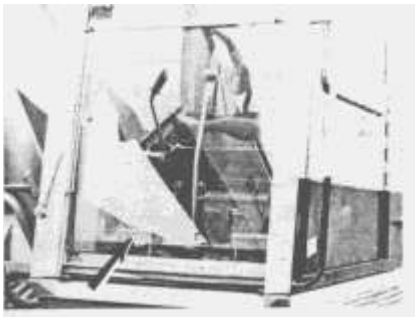
NOTE: Hairline scratches and minor abrasions can be removed, or minimized, by using a mild automotive or commercial wax. A thin even coat of wax, polished by hand with a clean cloth, will help prevent further scratching.

Windshield - Lower Window

1. To provide ventilation, the lower window can be opened.



2. Unlatch the window at each side.



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