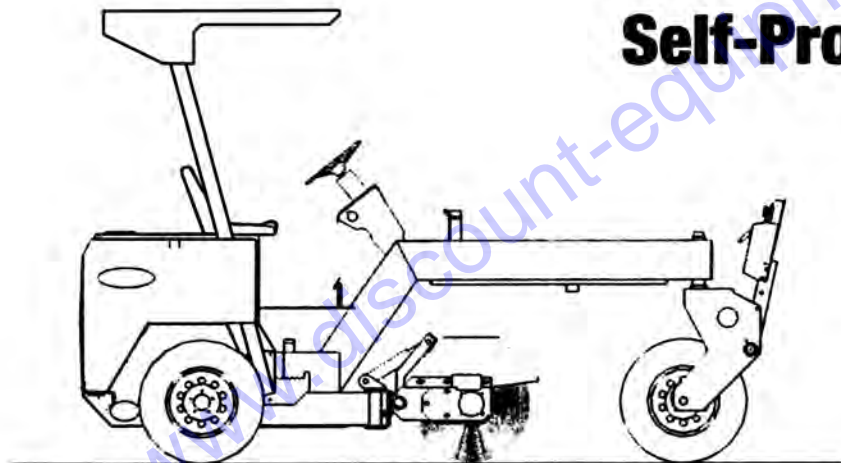




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6HC/8HC

Self-Propelled Sweeper



OPERATORS MANUAL

376194-10-00

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FORWARD

The Operators Manual provides you with the necessary information for the proper operation, lubrication and maintenance for your Lay-Mor Sweeper.

We especially call your attention to the section on "SAFETY". Although your sweeper is designed with the safety of the operator in mind; accidents can still happen. Therefore, **UNDERSTAND YOUR SWEEPER AND PRACTICE ALL SAFETY PRECAUTIONS.**

Remember, service to your sweeper can save costly repairs and valuable time loss because of breakdown. Replacement parts for your sweeper can be obtained through your dealer. When ordering parts, be sure to give the SERIAL and MODEL NUMBER of your loader. Record the sweeper and engine serial numbers in the spaces below so they are readily available when you need them. Refer to the Lay-Mor Parts Manual for the correct part number when ordering.

Should the Serial Number Plate located on the right hand side of the front frame be lost, the Serial Number is also stamped in the frame on the lower right hand side.

We are happy to have you as an owner of a Lay-Mor Sweeper and trust it will serve you well for the purpose for which it was purchased.

IMPORTANT

The data and information listed herein is correct to the best of our knowledge and belief, having been compiled from reliable and official sources of information. However, **WE CANNOT ASSUME ANY RESPONSIBILITY** for possible error.

SWEEPER SERIAL NO. _____

ENGINE SERIAL NO. _____

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LAY·MOR**6HC/8HC SELF-PROPELLED SWEEPER**

Technical Data

STEERING

Description Single Front Wheel with
hydraulic power steering.

Minimum Turning Radius,
Inside of Rear Tire 168.0 in. (4267.2 mm)

Steering Cylinder 2.00" x 8.00"
(50.8 mm x 20.3 cm)

BRAKES

Service Hydro-Dynamic Braking

Secondary and Parking Single Drum

Towing Dual Hydraulic Drum

SERVICE CAPACITIES

Fuel Tank 9 U.S. Gal. (34.0 lit.)

Water Tank 35 U.S. Gal. Each (132.5 lit.)

Hydraulic System 21 U.S. Gal. (79.5 lit.)

Engine Crankcase 6.3 Quarts (6.0 lit.)

Engine Coolant 1.06 U.S. Gal. (4.0 lit.)

TIRES

Tire Inflation Pressure (Cold) 35 PSI

Wheel Size 14" x 6"

Tire Size P205/75R14

Loaded Radius Rear 11.3"



6HC/8HC SELF-PROPELLED SWEEPER

Technical Data

ENGINE

Make & Model Kubota, V1505-E
 Displacement 91.41 in³ (1498cc)
 Number of Cylinders 4
 Type Engine Vertical
 Fuel Diesel
 Cooling System Water Cooled
 SAE Net Horsepower
 @ 3600 RPM 37.5 (27.96 kw)
 Maximum Torque
 @ 2000 RPM 67.45 ft.lbs. (91.45 N/m)
 High Idle @ No Load 3000 rpm

Compression Ratio 23:1
 Dry Weight 242.5 lbs. (110 Kg)

NOTE: The net power is rated at SAE J1349 standard ambient temperature and barometric conditions 77°F (25°C) and 29.61 in.hg. (100kPa)

Air Cleaner Two Element Dry Type
 Pre-Cleaner Centrifugal Type
 Electrical System 12 Volt, Fused
 30 Amp Charging System

Battery
 CCA 675
 Group Size 78-60

HYDRAULIC SYSTEM

Broom Angle Cylinder 2.00" x 9.00"
 (50.8 mm x 22.5 mm)
 Broom Lift Cylinder 2.00" x 6.00"
 (50.8 mm x 15.0 mm)

Auxiliary Pump Type Gear
 Displacement 91 in./Rev (15 cc/Rev)
 Relief Setting 2250 psi (155 bar)

Broom Motor:
 Displacement 15.3 in³/Rev (251 cc/Rev)

Priority flow to steering 3.0 GPM
 Relief Setting 1400 psi (96 bar)

Control Valves:
 Broom 1-Spool Monoblock Motor Spool
 Lift & Angle 2-Spool Monoblock w/Float
 Relief Setting 1250 psi (86 bar)

Filtration:
 Return 10 Micron Spin-On 25 psi Bypass
 Charge 10 Micron Spin-On (No Bypass)
 High Pressure 10 Micron Canister
 50 psi Bypass
 Suction 100 Mesh Screen

HUBS

Front Steering:
 Spindle Size 1.25" Dia.
 Capacity 1,250 lbs.

Rear Drive:
 Type Mechanical Disconnect
 Semi-Floating

TRANSMISSION

Hydrostatic Pump:
 Type Piston
 Pump Direct Swash Plate via Pedal
 Displacement in³/rev 0-1.24 (20.3 cc/rev)
 GPM @ Max. PSI & RPM 17.0 (64.3 l/min.)
 Maximum Rated Speed 3600 rpm
 Relief Setting 3000 psi (207 bar)
 Max. Increment PSI 5000 psi (345 bar)

Charge Pump:
 Displacement 42 in³/Rev (6.9 cc/Rev)
 Operating PSI Range 100-150 psi (6.9-10 bar)
 Maximum Inlet Vacuum . 6 in.hg (.80 bar absolute)
 Forward/Reverse Valve 1-Spool Monoblock

Wheel Motor
 Type Roller Stator
 Displacement 18.3 in³/Rev. (300 cc/Rev)

Speed M.P.H. 0-6.5 (0-10.4 kmph)

PERFORMANCE/DIMENSIONS

Overall Height	93.0" (2362 mm)
Overall Length	143.0" (3632 mm)
Wheel Base	98.0" (2489 mm)
Operating Weight	3300 lb. (1524 Kg)

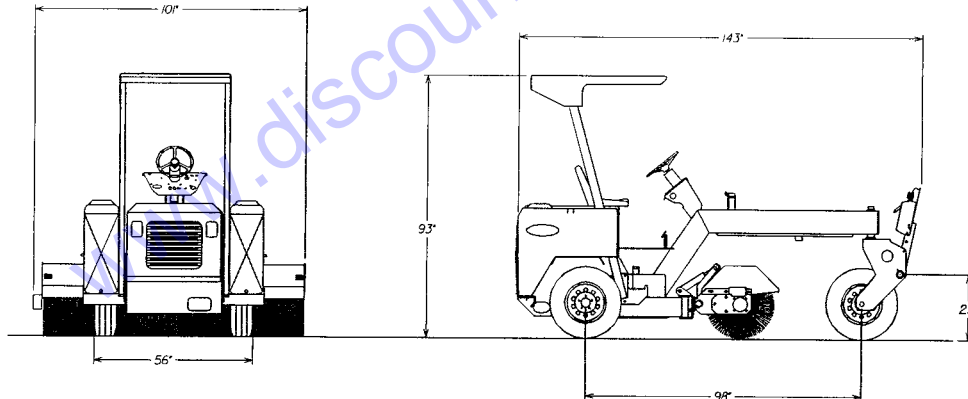
Broom Head

6.0 Ft.

8.0 Ft.

Overall Width	83.0" (2108 mm)
Inside Sweeping Radius	30.0" (762 mm)
Max. Sweeping Width	72.0" (1829 mm)
Min. Sweeping Width	60.0" (1524 mm)
Sweep Angle	40°

Overall Width	101.0" (2565 mm)
Inside Sweeping Radius	24.0" (610 mm)
Max. Sweeping Width	96.0" (2438 mm)
Min. Sweeping Width	74.0" (1880 mm)
Sweep Angle	40°





SAFE OPERATION


Careful operation is your best insurance against an accident. Read and understand this section carefully before operating the sweeper. All operators, no matter how much experience they may have had, should read this and other related manuals before operating the sweeper or any equipment attached to it. It is the owner's obligation to instruct all operators in safe operation.

SAFETY INSTRUCTIONS

SECTION 2

This part outlines basic safety measures which apply to the operation and maintenance of the Lay-Mor Sweeper.

The Lay-Mor Sweeper is a machine that must be used and maintained with respect and caution. Misuse or carelessness may result in serious injury or damage to equipment and property. Always follow safety rules.

This safety alert sign  is used in this book and on the machine. When you see this sign, carefully read what it says. Your safety is at stake.

This safety sign will be used with these words: **DANGER, WARNING** and **CAUTION**.

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury and damage to property and equipment.

Not knowing how to use this machinery can be hazardous. Trial and error is not the way to learn how to run this machine. Before running the sweeper, read and understand carefully this Operator's Manual and the machines operational and hazard alert decals. Then you should be shown how to operate this machine by someone who already knows how.

Learn how to operate and work safely. Know your equipment and its limitations. Always keep the sweeper in good operating condition.

Before allowing other people to use your sweeper, explain how to operate it and have them read this manual before operation.

DO NOT modify the sweeper. **UNAUTHORIZED MODIFICATIONS** to the sweeper may impair the function and/or safety and affect sweeper life.

SAFETY INSTRUCTIONS

Learn and practice safe use of the controls before operating the sweeper. It is your responsibility to understand and follow the manufacturer's instruction on machine operation and service and to observe pertinent laws and regulations.

It is finally the operators responsibility to be alert and recognize and avoid any potential hazard that may be encountered.

On pages 2-2 thru 2-8 is a list of operator precautions and on pages 2-8 thru 2-13 are shown illustrations of the safety decals and their location as well as a brief description about each safety decal.

Keep all decals legible. If decals are missing or illegible, they must be replaced. Contact Lay-Mor for replacement decals.

OPERATOR PRECAUTIONS:

The following is a list of specific operator precautions that should be taken into consideration in the operation of the Lay-Mor Sweeper.

Read the Operators and Service Manual thoroughly prior to operation.



A. Personnel Precautions:

1. Avoid loose fitting clothing, loose or uncovered long hair, jewelry and loose personal articles.
2. Know and use the protective equipment that is to be worn when operating this machine. Hard hats, protective glasses, protective shoes, gloves and ear protection are examples of types of equipment that may be required.
3. Do not rush. Walk, do not run.
4. Know and use the hand signals required for particular jobs and know who has the responsibility for signaling.
5. DO NOT operate any machinery while under influence of alcohol, medication, legal or illegal drugs or while fatigued.
6. DO NOT wear radio or music headphones while operating the sweeper.



B. Operator - General Precautions

1. It is the responsibility of the operator to read and understand the Operators Manual and other information provided and use the correct operating procedure.

SAFETY INSTRUCTIONS

2. Seat belt should always be fastened. Failure to use seat belt renders ROPS ineffective.



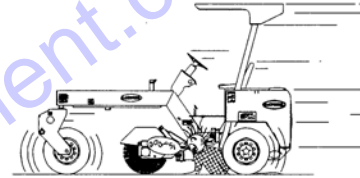
3. Do not permit riders on the machine.
4. Make sure that all protective guards, doors, etc are in place and secure.
5. Remove all loose objects stored on the machine.



C. Mounting and Dismounting Precautions:

1. Use the recommended hand holds and steps with at least three points of support when getting on and off the machine. Keep steps and platform clean. Face the machine when climbing up and down.
2. Do not jump off the machine.

3. Do not dismount while the machine is in motion.



4. Do not leave machine unattended with engine running.
5. Always set Parking Brake, before dismounting.

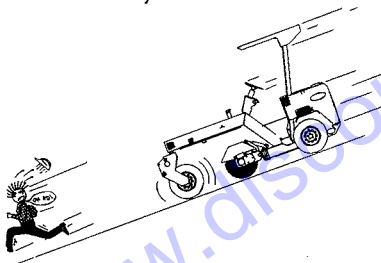


D. Starting and Stopping Precautions:

1. Do not start the machine until all personnel are clearly away from the machine.
2. Check that the Parking Brake is applied before starting the machine.
3. Adjust the seat and fasten the seat belt before starting the machine.
4. Be sure foot is clear of directional pedal before starting.
5. Start and operate the machine only from the operator's seat.

SAFETY INSTRUCTIONS

6. Use Jumper Cables only in the recommended manner. Improper use can result in battery explosion or operator injury.
7. Do not operate the engine in an enclosed area without adequate ventilation.
8. Engine exhaust fumes can be very harmful if allowed to accumulate. Be sure to run the engine in a well ventilated place and where there are no people or livestock near the engine.
9. Park the machine on level ground whenever possible and apply the Parking Brake. On grades, park the machine with the wheels securely blocked.



10. Before leaving the operator's seat, lower the broom to the ground till it just touches, set the parking brake and shut off the engine.
11. Remove the ignition key when leaving the machine parked or unattended.



E. Operating Precautions:

1. Check brakes, steering and other machine control devices prior to starting operation. Observe all gauges or warning instruments for proper operation. Operate all controls to insure proper operation. If any malfunctions are found, follow the shutdown procedure and report the malfunction for resolution.
2. In a failure that causes loss of control such as steering, service brakes or engine occurs, stop the machine motion as quickly as possible, follow the shutdown procedure on page 4-3, and keep machine securely parked until the malfunction is corrected or the machine can be safely towed.
3. Understand the machine limitations and keep the machine under control.
4. Drive the machine with care and at speeds compatible with conditions. Use extra caution when operating over rough ground, on slopes, and when turning the machine.
5. Avoid all hazards and obstructions such as ditches, underground lines, overhead electrical wires or areas where there is danger of a slide.
6. Come to a complete stop before changing direction of travel.

7. Before starting this machine, always inspect both (2) Variable-Speed-Pedal return springs located on right side of machine below floorboard. Do not start or operate this machine if both (2) Variable-Speed-Pedal return springs are not in place and functional.
8. Know and understand the job site traffic flow patterns and obey flagmen, road signs and signals.
9. Watch for bystanders and never allow anyone to be within 50 ft. of machine while sweeping.
10. Select a throttle setting that will prevent excessive speed when going down hill. Do not coast downhill.
11. Do not road the machine unless it is equipped with 4-Way flashers and a Slow Moving Vehicle emblem in the rear. Check local authorities for additional requirements.
12. The exhaust gas from the muffler is very hot. To prevent a fire do not expose dry grass, mowed grass, oil and any other combustible materials to exhaust gas. Also, keep the engine and muffler clean all the time.



F. Maintenance Precautions:

1. Do not attempt repairs unless trained. Refer to manuals and experienced repair personnel for help.

2. Wear protective glasses and other required safety equipment when servicing or repairing the machine.



3. Disconnect the battery before working on the electrical system or welding on the unit.
4. To avoid a fire, do not short across power cables and wires. Check to see that all power cables and wirings are in good condition. Keep all power connections clean. Bare wire or frayed insulation can cause a dangerous electrical shock and personal injury.
5. Be sure to stop the engine before checking or adjusting belt tension and cooling fan.
6. Keep your hands and body away from the rotating parts, such as cooling fan, V-belt, fan drive V-belt pulley or flywheel causing personal injury.
7. DO NOT run the engine with safety guards removed. Install safety guards securely during operation.
8. Avoid lubrication or mechanical adjustments with the machine in motion or the engine operating. If the engine must be in operation to make certain adjustments, place the Directional Control Lever in neutral, apply the parking brake, place the equipment in a safe position, securely block the wheels and use extreme caution.

SAFETY INSTRUCTIONS

9. Securely block the machine or any component that may fall before working on the machine or component.
10. To avoid a fire, be alert for leaks of flammables from hoses and lines.
11. Do not change relief valve settings. They are factory set for the designed performance and safety.
12. Never make repairs on the pressurized components, fluids, gas or mechanical items until the pressure has been relieved.
13. Before applying pressure to the system, be sure all connectors are tight and hoses are not damaged.
14. Use extreme caution when removing radiator caps, drain plugs, grease fittings or pressure taps. Park the machine and let it cool down before opening a pressurized compartment.
15. Release all pressure before working on systems which are pressurized.
16. DO NOT check for pressure leaks with your hand. High pressure oil or fuel can cause personal injury.

Escaping hydraulic fluid under pressure has sufficient force to penetrate skin causing serious personal injury.

Fluid escaping from pinholes may be invisible. Use a piece of cardboard or wood to search for suspected leaks: do not use hands and body. Use safety goggles or other eye protection when checking for leaks.

17. To avoid burns, be alert for hot components, e.g. muffler, muffler cover, radiator, pipings, engine body, coolants, engine oil, etc. during operation and just after the engine has been shut off.
18. When inflating tires, use a self-attaching inflation chuck with remote shutoff and stand clear of the tire.
19. When necessary to tow the machine, see Section 5. Do not exceed the recommended towing speed of 55 m.p.h.. Be sure the towing machine has sufficient braking capacity to stop the towed load.
20. Keep the brakes and steering systems in good operating condition.
21. Replace all missing, illegible or damaged safety decals. Keep all safety decals clean.
22. Attach a DO NOT OPERATE tag or similar warning tag to the starter switch or steering lever before performing maintenance on the machine. If the engine should not be started, remove the key.
23. If the ROPS is removed, reinstall correctly, before the machine is started or moved in any way.

Do not modify the ROPS in any manner. Unauthorized modifications such as welding, drilling, cutting or adding attachments could weaken the structure, reduce your protection and also nullify the ROPS certification.

Replace the ROPS if it is damaged in any manner such as rollover or collision. Do not attempt to repair the ROPS. If necessary, install a new ROPS and seat belt before operating a machine that has rolled over.



G. Fuel Handling Precaution:

1. Always stop the engine before refueling and/or lubricating.
2. Do not smoke or permit open flames while fueling or near fueling operations.
3. Refuel in a well ventilated and open area.
4. Never remove the fuel cap or refuel with the engine running or hot. Never allow fuel to spill on hot machine components.
5. Maintain control of the fuel filler nozzle when filling the tank.
6. Do not fill the tank to capacity. Allow room for expansion.
7. Clean up spilled fuel immediately.
8. Tighten the fuel tank cap securely. Should the fuel cap be lost, replace it with the original manufacturer's approved cap. Use of a non-approved cap without proper venting may result in pressurization of the tank.



9. Never use fuel for cleaning purposes.
10. DO NOT mix gasoline or alcohol with diesel fuel. The mixture can cause a fire.
11. Use the correct fuel grade for the operating season.

Diesel engines, generally the use of #1 or #2 grade diesel fuel is recommended. Diesel fuel should not have a sulphur content of more than .5%. Anything higher will require more frequent engine oil changes.

For more information consult your engine Operators manual or the fuel supplier in your area.



H. Battery Precaution:

1. The battery presents an explosive hazard. When the battery is being activated, hydrogen and oxygen gases are extremely explosive.
2. Keep sparks and open flames away from the battery, especially when charging the battery. DO NOT strike a match near the battery.
3. DO NOT check battery charge by placing a metal object across the terminals. Use a voltmeter or hydrometer.
4. DO NOT charge battery if frozen. It can be explosive. When frozen, warm the battery up more than 16°C (61°F).

SAFETY INSTRUCTIONS

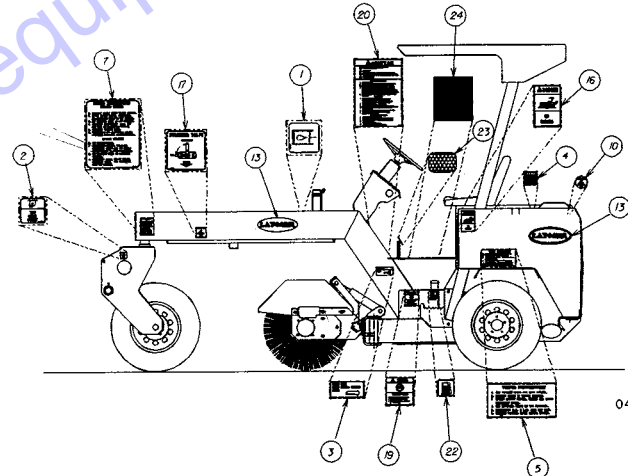


1. Anti-Freeze & Disposal of Fluids:

1. Antifreeze contains poison. Wear rubber gloves to avoid personal injury. In case of contact with skin, wash it off immediately.
2. DO NOT mix different types of Antifreeze. The mixture can produce chemical reaction causing harmful substances. Use only Ethylene Glycol Antifreeze.
3. Be mindful of the environment and the ecology. Before draining any fluid, find out the correct way of disposing of them. Observe the relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters and batteries.
4. When draining fluids from the engine, place some container underneath the engine body.
5. DO NOT pour waste onto the grounds, down a drain, or into any water source.

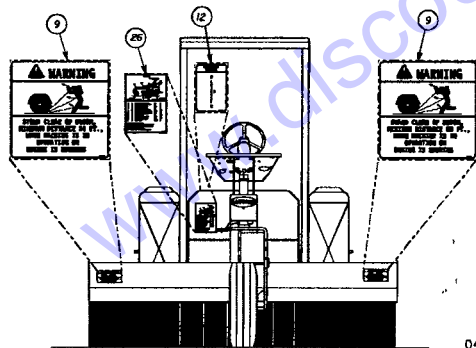
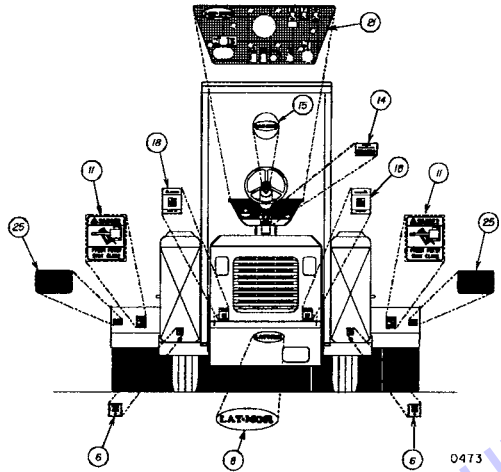
The following safety decals have been placed on your machine in the areas indicated. They are intended for your personal safety and for those working with you. Please take this manual and walk around your machine to note the content and location of these warning decals. Review these warning decals and the operating instructions detailed in the operators manual with your machine.

DECAL LOCATION



DECAL LOCATION

376194/2-9

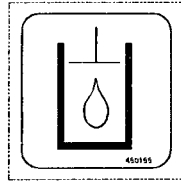


ITEM	QTY	PART NO.	DESCRIPTION
1	1	450155	Decal, Hydraulic Oil
2	2	472746	Decal, Tie Down
3	1	472811	Decal, Filter Screen
4	2	472753	Decal, Water Tank
5	2	472837	Decal, Tow Bar Checklist
6	2	472761	Decal, Water Tank Drain
7	2	472829	Decal, Towing Instructions
8	1	9101138	Decal, Lay-Mor (3.37 x 9.25)
9	2	467266	Decal, Warning "Stand Clear of Boom"
10	1	472795	Decal, Radiator Cap
11	2	472720	Decal, Danger Pinch Point
12	1	472803	Decal, Direction Control
13	4	9101137	Decal, Lay-Mor
14	1	448811	Decal, California Warning
15	1	462606	Decal, Steering Cap (Lay-Mor)
16	2	472738	Decal, Danger "No Riders"
17	1	472779	Decal, Steering Valve
18	2	443614	Decal, Danger Rotating Fan
19	1	445387	Decal, Danger "Explosion Hazard"
20	1	472712	Decal, Operation Instructions
21	1	472704	Decal, Dash
	1	468181	Decal, Dash (Optional)
22	1	450148	Decal, Diesel Only
23	1	460170	Pad, Pedal
24	1	432955	Safety Walk
25	2	436261	Tape, Reflector (Red)
26	1	467910	Decal, Maintenance & Lubrication Chart

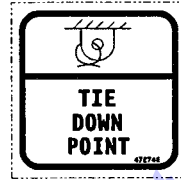
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The "Hydraulic Oil" decal is located on top of the hydraulic tank, next to the filler tube. P/N 450155

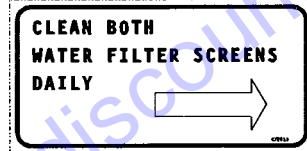
DECALS



This decal is located on both sides of the front fork near the hole provided for tie-down chains. P/N 472746



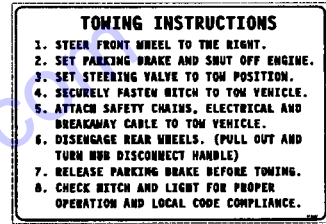
This decal is located below the flooring near the water pump and water filters. This is a reminder decal. Empty and clean water screens daily. P/N 472811



The "Water" decal is located on top of both water tanks near the filler. P/N 472753



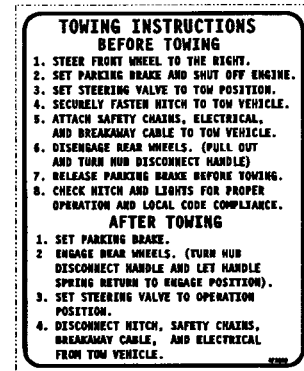
This "Tow Bar Checklist" decal is located on the side of each water tank, just above the wheel. To prevent damage to hydraulic motors make sure lockout hubs are disconnected. P/N 472837



The "Water Tank Drain" decal is located on the lower back of each water tank near the drain port. In freezing weather make sure tanks have been drained and the system flushed or empty. P/N 472761

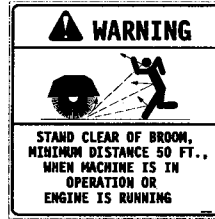


This "Towing Instructions" decal is located on both sides of the hydraulic tank at the very front above the front fork assembly. Follow instructions carefully to prepare unit for towing and placing back into service. P/N 472829

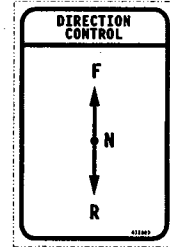


DECALS

The "Warning - Stand Clear of Broom" decals are located at the front, outside edge of the broom cover. Keep all bystanders 50 ft. or further away from operating broom. P/N 467266



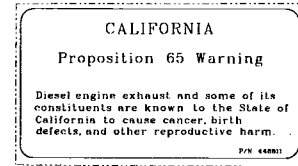
The "Directional Control" decal is placed next to the Directional Control Valve Lever to the right of the operator's seat. Come to a complete stop before placing control in neutral or changing directions. P/N 472803



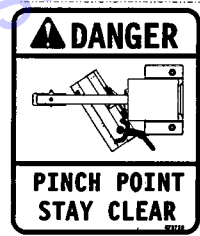
This radiator warning decal is on top or to the side of the radiator cap. Do not remove cap until machine has cooled down. P/N 472795



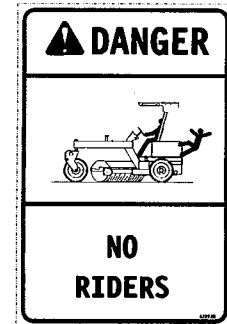
The "California Proposition 65 Warning" decal is located at the lower center of the control panel. P/N 448811



The "Danger - Pinch Point" decals are located on the back, outside edge of the broom cover. Do not operate Broom Angle Lever unless seated in the operators seat. P/N 472720

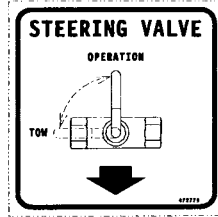


A "Danger - No Riders" decal is located on each side in the front, upper corner of the water tank. Additional riders other than the operator are not permitted. P/N 472738

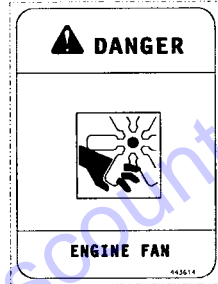


2-12/376194

The "Steering Valve" decal is located on right side of the hydraulic tank above the steering cylinder. Before towing open valve to prevent front tire skidding. Close valve before operating sweeper. P/N 472779



"Danger - Engine Fan" decals are located inside the engine compartment, on each side of the radiator. Stop engine before adjusting fan belt or working on engine. P/N 443614

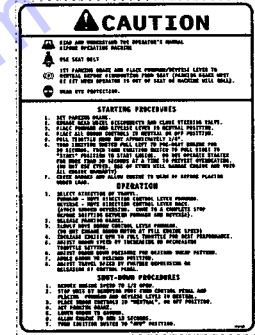


A "Danger - Explosion Hazard" decal is located on the left side of the unit, on the fuel tank. Do not smoke while refueling. P/N 445387

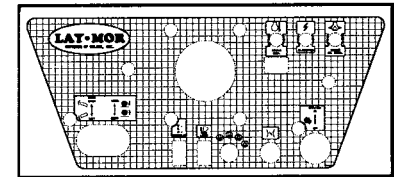


DECALS

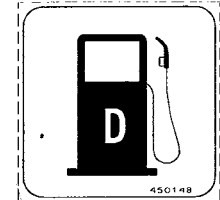
The operating instructions decal is placed on lower part of the hydraulic tank below the control panel and above the floor. This decal gives the operator brief instructions on starting, operating, and stopping the machine. It does not replace the responsibility of the operator to read and thoroughly understand the detailed operation instructions found in this manual. P/N 472712



A one piece dash panel decal covers the dash panel to identify all controls. P/N 472704



A diesel fuel identification decal is placed on the left side of the unit, on the fuel tank near the filler. Stop the engine before refueling. P/N 450148



DECALS

A red, adhesive backed reflector is placed on each outside, rear edge of the broom cover.

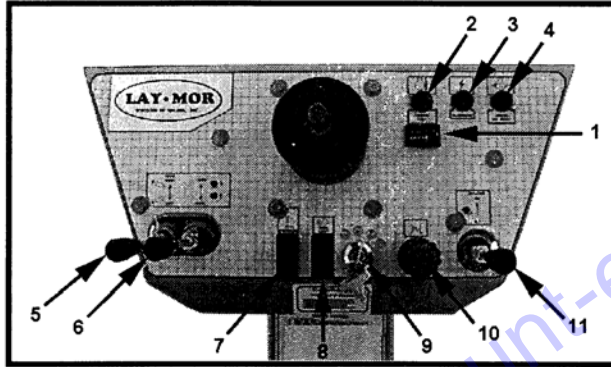
Care of Warning and Caution Decals:

1. Keep warning and caution decals clean and free from obstructing material.
2. Clean warning and caution decals with soap and water, dry with soft cloth.
3. Replace damaged or missing warning and caution decals with new decals from Lay-Mor.
4. If a component with warning and caution decal(s) affixed is replaced with new part, make sure new decal(s) is (are) attached in the same location(s) as the replaced component.
5. Mount new warning and caution decals by applying on a clean dry surface and pressing any bubbles to outside edge.

OPERATION SECTION 3

376914/3-1

CONTROLS AND INSTRUMENTS:



1. Hour Meter
2. Engine Temperature Light
3. Alternator Light
4. Engine Oil Pressure Light
5. Broom Angle Lever
6. Broom Lift Lever
7. Sprinkler Switch (Optional)
8. Work Light Switch (Optional)
9. Ignition Switch
10. Engine Throttle Control
11. Broom Rotation Lever

1. **Hour Meter** - The intervals at which the various working parts of your sweeper should be lubricated, serviced or adjusted are based on hours of operation.

Use the hour meter to determine when periodic services are required. The hour meter, which operates whenever the ignition switch is on, shows the accumulated hours of operation. We strongly suggest keeping an accurate maintenance record.

2. **Engine Temperature Light**- The engine temperature light warns of coolant overheating. Check overflow bottle for proper water quantity. **NEVER** open a hot radiator cap!
3. **Alternator Light** - The alternator warning light indicates improper electrical supply to the battery or battery malfunction.
4. **Engine Oil Pressure Light** - The engine oil pressure light warns of low oil pressure. Check engine oil dipstick for proper level.
5. **Broom Angle Lever** - The broom angle lever moves a 3-position spring returned valve used to position the broom assembly to the desired working angle. Forward movement of the handle will rotate the broom to the left; rearward movement will rotate the broom to the right.

OPERATION

6. **Broom Lift Lever** - The broom lift lever moves a 4-position (3-Position spring return with a detented 4th position float) valve used to raise or lower the broom assembly.

Forward motion of the lever will lower the broom into working position. Continued forward movement will put the control into the detented float position which is used during sweeping operations.

In "float" position, downward motion will be limited by the setting of the broom down pressure valve (See Item 1). A rearward motion of the valve handle raises the broom taking it out of service.

To prevent "setting" the bristles always position the broom so bristles are just above the ground and place control in the centered neutral position. Leaving the control in the float position will allow the weight of the broom to rest on the bristles. After an extended time in this position bristles will be permanently bent taking on an unwanted set.

7. **Sprinkler Switch** (Optional) - This electrical 2-position switch activates the water pump to supply water to the spray nozzles.
8. **Work Light Switch** (Optional) - The work light switch is a 3-position switch to activate the work lights as needed. The full forward position on the switch will turn all work lights off; the center position will activate the front lights only the full back position will turn on both front and rear lights.

9. **Ignition Switch** - The ignition switch is a 4-position switch. The full left position will supply power to the engine glow plugs to preheat the engine. The first position right of the glow plug switch is the off position to turn off all power to the unit. The next position clockwise is the run position. The fourth clockwise position is the starter activation switch. This position is spring loaded and will return to the run position when released.

10. **Throttle** - The throttle control is a vernier cable. By depressing the button located in the center of the knob, a rapid adjustment of the throttle setting may be made.

Fine setting of the throttle may be accomplished by rotation of the knob. Rotate knob counterclockwise to increase speed. Clockwise to decrease. Once the desired throttle setting is reached the throttle cable may be locked by rotation of the locking knob. Before shutting the engine off, return the throttle control to the idle position, and allow the engine to cool.

11. **Broom Rotation Lever** - The broom rotation lever moves a 2-position on/off hydraulic valve used to place the broom in service. Full forward motion of the valve handle will activate the broom; pulling the handle to the full back position will deactivate the broom.

CAUTION: Ensure all personnel are at least 50 ft. from the unit before activating the broom.

12. **Parking Brake** - Set the parking brake by pulling up on the handle. Adjust the tension by twisting the knob on the end of the handle. Always park sweeper with broom down and parking brake set.

Note: Ensure parking brake is set before starting engine; before leaving unit unattended; when unit is parked on an incline; or while unit is being serviced.

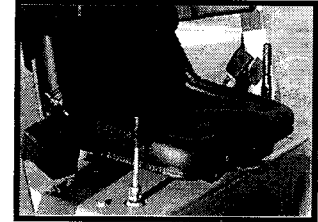


13. **Seat Belt** - Seat belts have been installed for your protection. **USE THEM!!**
14. **Seat** - The seat is mounted on slide rails to allow the operator to adjust the seat to a comfortable position. The lock lever is located under the seat on the front left side. Arm rests are also included.



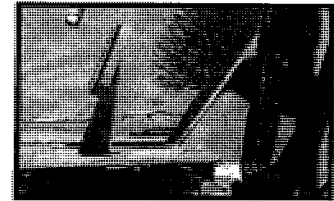
15. **Forward/Reverse Lever** - The forward/reverse lever moves a 3-position (forward-neutral-reverse) hydraulic valve, that controls machine direction of travel.

Full forward on the valve handle shifts the valve so that the result of the operator stepping on the pump stroking pedal moves the unit forward, the neutral (center) position shifts the valve so that result of the operator stepping on the pump stroking pedal results in no movement of the machine, full back on the valve handle shifts the valve so that the result of the operator stepping on the pump stroking pedal results in the unit moving in reverse.



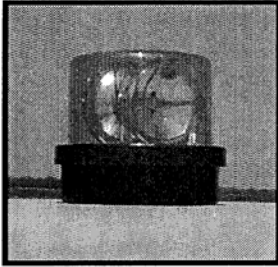
Always come to a complete stop before moving lever. Always place control handle in the neutral position before leaving the operators position or before shutting off the engine.

16. **Pump Stroking Pedal** - Depressing the pedal strokes the hydrostatic ground drive pump. The pedal is a variable control, the further the pedal is pushed the faster the unit will travel. Sweeper direction is determined by Item #16, Forward/Reverse Lever.



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17. **Rotating Beacon or Strobe Light** (Optional) - A safety beacon or strobe light is connected through the ignition switch and will activate as soon as the key is turned to the "on" position.



18. **Hood Prop** - The Hood Prop Rod "self catches" in the open position (with the seat moved all the way forward). To unlatch, lift hood, slide the bottom of the Prop Rod bar to the right and let the hood down.

OPERATIONS SECTION 4

I Pre-Startup Procedures

A. Check the following: (Also see page 7-4 for Lubrication checklist and interval schedule.)

1. Location to see that the unit is on a level surface and the parking brake is set and adjusted to prevent the machine from rolling.
2. Check the fluid levels (engine oil, hydraulic oil, engine coolant) and fuel and grease unit.
3. Air Cleaner - Open and remove accumulated dirt. Replace filter element(s) as required.
4. Tire pressure to 35 psi (240 kPa)
5. Inspect unit for oil or water leaks.
6. Visually inspect unit for loose, missing or worn parts. Paying particular attention to:

Wheel Lug Nuts
Drive Motor Mount Bolts
Debris Around Front Wheel Spindle
Debris Around Drive Motor and Bearing

Have repairs made before starting engine.

7. Inspect to see that all guards are in place and in proper repair.

8. Check to see if there is a safe distance around the sweeper. Always keep the sweeper at least 3 ft. (1 meter) away from buildings or other equipment.
9. Tow bar is locked in stowed position.
10. Steering Valve is in "Operation" position.
11. Rear wheel lockout hubs are "in" or engaged.
12. Pump stroking pedal is in full up position and both springs are connected to the pump control arm.

II Engine Start-up Procedure

A. Breaking in new engines

The proper break-in of a new engine will greatly increase its life. Refer to the Engine Operators Manual, provided with each sweeper, for the proper procedure as recommended by the engine manufacturer.

B. Starting Engine

1. Operator must be seated in operators seat.
2. Adjust seat to desired position.
3. Fasten and adjust seat belt.
4. Make sure the Parking Brake is set and properly adjusted.

OPERATIONS

B. Starting Engine Cont'd.

5. Place Directional Control Selector in neutral.
6. Adjust throttle control to approximately the half-throttle.
7. Turn the ignition switch on, check instruments and indicator lights.
8. Turn the ignition switch to preheat position for about 10 seconds. Then turn the switch to the extreme right to start the engine. Release the key immediately when the engine starts.

DO NOT operate starter more than 30 seconds at a time. Longer periods may cause starter to overheat. Allow at least two minutes between attempts to allow starter to cool.

DO NOT attempt to start the engine by towing. The sweeper is hydrostatically driven and cannot be started by towing.

DO NOT use ether or starting fluid to start the engine, or severe damage will occur.

9. Check to see that the oil pressure and charge lamps are off. If either lamp is still on, immediately shut down the engine and determine the cause.

10. Warm up the engine at medium speed with out load. Be sure to warm up the engine, not only in winter, but also in warmer seasons. An insufficiently warmed up engine can shorten service life.
11. Inspect color of exhaust fumes and listen for unusual noise.
12. Once the engine is started and properly warmed, operate the broom angle, lift and the steering controls through several complete cycles. This will help pre-lubricate the hydraulic cylinder seals before placing them under a load.

IMPORTANT: *If any malfunction of these controls occurs, shut down the engine and have proper repairs made to the sweeper.*

III Driving the Sweeper

1. Set the throttle at half-open position.
2. Raise broom fully.
3. Select direction of travel using the Forward/Reverse Lever.
4. Release the Parking Brake.
5. Slowly depress pump control pedal. The sweeper will begin to move. To increase sweeper speed, further depress pump control pedal and increase engine speed. Care should be taken to gradually depress and release pump stroking pedal to prevent abrupt sweeper movement.

IV Sweep Operation

1. Adjust the broom angle to the desired position using the Broom Angle Control.

NOTE: Pay attention to the broom swing path to prevent anyone from stepping inside the "Pinch Point Area".

2. Place broom wafers in operation by placing Broom Control Valve in "On" position.

NOTE: Keep bystanders at least 50 ft. away from broom during operation. Care should also be taken to avoid discharge being aimed toward vehicles or buildings.

3. Increase engine R.P.M. to desired speed.
4. Place direction control lever in forward position.
5. Lower broom assembly to desired sweep pattern by placing broom lift lever in float position. (See page 5-2 for setting sweep patterns.)
6. Slowly depress pump stroking pedal until desired speed is reached.

V Engine Shutdown

1. Slowly raise pump stroking pedal.
2. Raise broom.
3. Decrease engine R.P.M.

4. Place broom rotation lever in "off" position.

5. Drive sweeper to desired parking area.

NOTE: When parking the sweeper for an extended time, park on a level surface.

If parking must be done on an inclined surface, park the sweeper with at least one wheel against a curb or similar obstruction, if this is not possible, wheel chocks are recommended.

6. Set the parking brake.
7. Move directional control lever to the neutral position.
8. Reduce throttle setting to approximately 25% (low idle) and allow the engine to cool while running.
9. Lower broom assembly until bristles just touch the ground.
10. Turn ignition switch to "off" position and remove the key.

Following the general steps above for correct shutdown is important for safe operation.

OPERATIONS

VI Operating Tips

It is not possible for us to go on location when each new Lay-Mor Sweeper is placed in service for the first time. We submit here some helpful suggestions as reported by the drivers of our sweepers equipped with various brooms, as well as ideas we have picked up during our years of experience in the field.

There is a variety of sweeping conditions. We can only give you general ideas to follow:

1. Leaves, Average Streets, Average Dirt Conditions

A 2" to 3" sweeping pattern will give best results. Leaf carry-over is a problem with all types of brooms. The only solution is to slow down the forward movement until the broom can handle the leaves. If the broom is worn to a small diameter, this condition will be accelerated.

2. Heavy Dirt Conditions

Slow the forward movement of the sweeper to between 3 and 5 miles per hour and speed up the R.P.M. of the broom. It is more economical to make a quick second pass in small areas of heavy dirt concentration than to keep the broom adjusted with too large a pattern. If you are working totally in heavy dirt, you may want to adjust your broom to a 5" to 7" sweeping pattern. We have not seen a condition where a pattern in excess of 8" improves performance of the broom.

The greater the sweeping pattern, the faster the broom wafers wear. A pattern in excess of 8" causes the broom

filaments to press the dirt into the ground, rather than get behind it and pick it up. Excessive sweep patterns will also stall out the broom rotation.

3. Hillside Streets

Hillside streets with high crowns, deep gutters, broken pavement and chuckholes present the worst condition. Dirt gravitates to the lowest spot, to reach it the broom pattern may have to be temporarily disregarded. Immediately after sweeping such areas the sweeping pattern should be reestablished.

4. Icy or Snowy Conditions

Weight (moisture content) of accumulated snow may create special conditions pertaining to sweep pattern and forward speed of the sweeper. Adjustments to either will have to be made to match the conditions at the time.

The same precautions apply to driving a sweeper on ice or snow that apply to driving any vehicle under these conditions. Care must be taken to maintain wheel traction and prevent slippage. This may require a change of tires to a mud and snow tread configuration and/or addition of tire chains.

BROOM WAFER REPLACEMENT

SECTION 5

376194/5-1

Broom Storage:

Do not store brushes in direct sunlight. Polypropylene is chemically affected in direct sunlight. After prolonged exposure to sunlight, the material can deteriorate and crumble, greatly shortening the life of the bristle.

Do not let Lay-Mor sweepers sit with the broom head lowered with the weight on the bristles for more than half a day. When this happens the weight on the bristles will permanently deform the bristles, destroying the sweeping effectiveness of the brush. To avoid this, block the broom head up off the ground.

Wire Wafers:

Wire wafers work best for aggressive sweeping conditions; mud, rocks, bricks, chip seal, seal coating, rotomill, concrete curing compounds, and snow, etc. Strongest and most aggressive type of filament with very sharp tips for cutting action.

The very sharp tips or ends of the wire cut through snow and ice much quicker and faster than poly so less down pressure is needed. We recommend a maximum of 2" down pressure pattern for all wire brooms. Too much down pressure will cause wire breakage, leaving wires on the pavement. If a 6" sweeping pattern is used, the wire will be sweeping on the ground 6" from the ends. The wire will wear into two pieces 6" from the end with the filament ends being left on the pavement. Excessive down pressure reduces broom life considerably.

A wire wafer is less susceptible to snow and ice buildup during sweeping than a poly wafer. Excessive snow buildup occurs during sweeping and can cause the snow to freeze within the poly wafer bristles, resulting in reduced coverage, increased streaking, less flicking or throwing of snow and excessive weight on broom head.

A wire wafer has many more filament ends than a poly wafer and thus gives greater coverage and more consistent sweeping.

Poly Wafers:

Poly wafers are used for normal sweeping conditions light debris, dethatching, dirt, sand, leaves, paper, etc. Longest lasting filament used for dry sweeping in the spring, summer and fall. Not recommended for aggressive sweeping because poly has too soft of a tensile strength.

1/2 Poly 1/2 Wire Wafers:

1/2 and 1/2 Poly/Wire wafers are used for varying sweeping conditions. The 1/2 and 1/2 combination is used to sweep throughout the year without changing cores. Effective for dry sweeping but more costly because wire does not last as long as poly. Not as effective for aggressive sweeping because poly is too soft and not designed for aggressive sweeping. This combination is a "Middle of the Road" approach.

Brush Wafer Wear Life:

The brushes on Lay-Mor Sweepers are sometimes the most misunderstood part of the sweeper.

BROOM WAFER REPLACEMENT

Brush Wafer Wear Life Cont'd.:

One of the first questions often asked is, "How long will the brush last?" followed shortly by, "How much does the replacement brush cost?"

How long will the brush last? It is a wearable part, like a grader cutting edge, the line on a fishline trimmer, or a razor blade. The brush wafer wear and replacement costs are aggravated by operating a sweeper in the wrong way thus giving the lowest possible brush wafer life.

The life of brush wafers is directly related to the way they are used. When proper sweeping techniques are implemented, the life of brush wafers can be increased for 50 to 200 hours.

Three controllable factors that give longer brush wafer life:

1. Brush Down Pressure
2. Brush Level (Uneven brush wear from one end of the broom to the other end.)
3. Ground Speed of Sweeper

1. Brush Down Pressure

Most problems of filament loss, breakage, and rapid wear are caused by excessive down pressure. If the proper amount is used you can increase your sweeping performance and broom life dramatically.

Proper down pressure setting and filament type will eliminate filament breakage.

More down pressure does not give a better sweep! A brush gets its sweeping action by the flicking action of the tip ends of the bristles.

When too much down pressure is used the brush is working with the sides of the bristles, not the ends.



A. The Lay-Mor Broom works with Wafer Bristle ends.

B. A mop works with the side of the Bristles.

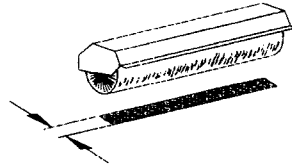
This mopping action not only decreases the ability of the brush to sweep properly, but also causes from 1/2" to 1-1/2" of bristle to be worn off very rapidly. Improper down pressure, can decrease overall brush wafer life up to 95%.

2. To Set Brush Sweep Pattern

Lay-Mor Sweepers are equipped with a Down Pressure Adjustment Screw and Spring. Too often this function is ignored.

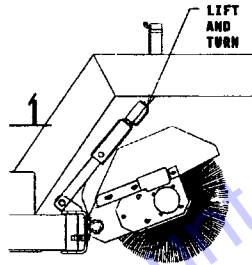
Set broom down pressure to maintain sweeping pattern width of 2-4 inches as shown.

Correct down pressure will optimize sweep quality and extend brush life.



To Adjust Down Pressure Setting:

1. Raise broom; set park brake and shut off engine.
2. Lift knob up out of keeper.
3. Twist knob clockwise to decrease sweep pattern width. Counter-clockwise to increase sweep pattern width.
4. Lower and "seat" hex section of knob into keeper before operating broom.
5. For new brushes turn knob fully clockwise to obtain proper sweep pattern.



3. Broom Head Level

Running an unlevel broom head can cut wafer life 50%. The small amount of time spent leveling a broom head before sweeping is paid back many times over with longer brush life.

As a general rule broom head levelness should be checked every day before operating. (See Figure 3, page 5-4)

Uneven brush wear can also be caused by discharging material to the same side of the brush all the time.

4. Improper Ground Speed

All Rotary Sweepers sweep with the flicking action of the bristle. The brush can sweep material up to half of diameter of the brush. If the ground speed of the vehicle is too fast the material piles up in front of the brush because it cannot be discharged. This "Plow" effect, caused by bulldozing with the sweeper instead of discharging, causes a side thrust on the brush, core and frame.

This sideward thrust causes the bristles to flex against the steel ring holding them. Eventually this flexing will break the bristles off at the ring.

Always sweep at a high enough brush speed and low enough ground speed to effectively discharge the material being swept.

REMOVING THE BROOM CORE:

1. Clean all debris from broom head. Drive machine onto a clean flat surface and lower broom head slowly until broom bristles just touch the surface.
2. Using a 3/4" socket, remove the (3) 1/2" bolts (A. In Figure 1) that secures the Broom Motor Mount Assembly. Then using a 9/16" socket remove the 3/8" bolt from the front of Broom Motor Mount Assembly (B. In Figure 1).

BROOM WAFER REPLACEMENT

REMOVING THE BROOM CORE CONT'D.:

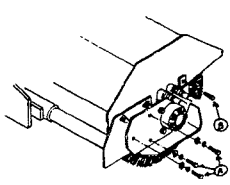


FIGURE 1

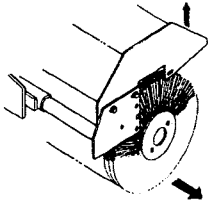


FIGURE 2

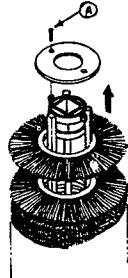


FIGURE 3

Then grasp the Motor Mount Assembly by the motor and hoses and pull the entire assembly out of the square hole in the end of the core and lay it back to the side, with hoses left hooked up. On single drive motor units loosen lock collar on bearing and remove bearing mount and bearing from core shaft.

3. Start the machine and partially raise the broom head. Then pull on the end of the core assembly and remove it from under the broom hood.
4. Stand core on end with removable cap plate end up. Remove the (4) flat head capscrews (A. In Figure 3) and the cap plate.

REPLACEMENT OF LAY-MOR CONVOLUTED (SPACER-LESS) WAFERS:

1. Remove worn wafers from the core. If the wafers are unable to be slipped off of the core by hand, they may need to be cut loose. This is done by cutting the wafer center ring between one of the tubes/angle's.
2. Slide a wafer onto the core with the drive pins straddling one of the tubes/angles on the core weldment. (See illustration below)
3. When installing the next wafer onto the core put it on the opposite way of the proceeding wafer by flipping it over. Then rotate the wafer 1/3 of a turn. See illustration below, if the proceeding wafer installed was number (2) in the illustration, then the next wafer to go on the core would be placed with the drive pins as shown in number 3. Use a heavy rubber hammer to tap the wafers tightly together to insure installing the proper quantity of wafers on the core.

Note: When installing a 1/2 wire and 1/2 poly wafer mix, be sure that a poly wafer is on each end.

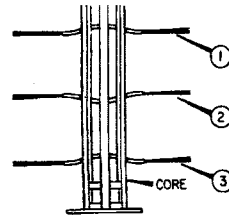


FIGURE 1

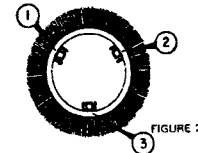
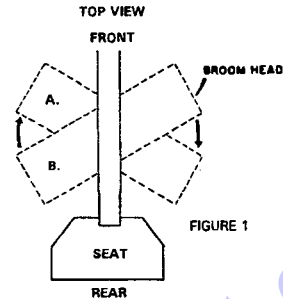


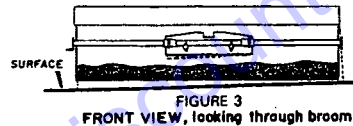
FIGURE 2

SETTING AND ADJUSTING BROOM:

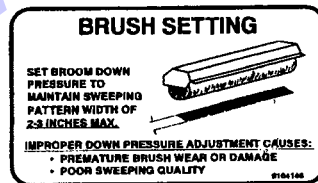
1. Set the broom angle to the position that will be used for the day. (Usually B.)



2. Set the broom horizontal level contact (See Front View - Fig.3). Loosen the 5/8" lock nuts (one on each side of the pivot bearings). Lift up or push down on Broom Motor to achieve uniform brush contact to the surface across entire length of broom.



3. Set broom contact per these instructions.



TOWING INSTRUCTIONS

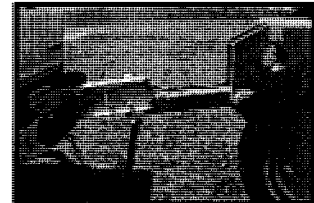
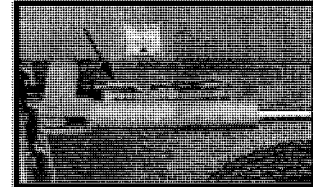
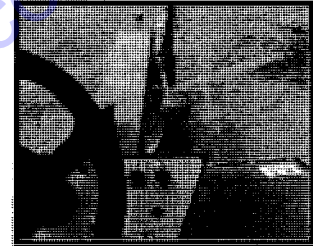
SECTION 6

Before Towing the Sweeper Check:

1. Tow vehicle's towing capacity. Lay-Mor 6HC and 8HC can weigh up to 3,700 lbs. when equipped with cab, sprinkler and full water tanks. The tongue load is less than 100 lbs. Consult the tow vehicle's Operators Manual or contact the dealer in your area to determine the towing capacity.
2. Tow vehicle's hitch capacity and size. Lay-Mor Sweepers are equipped at the factory with Class III safety chains, a surge actuated brake hitch, and a choice of 2" ball, 2.5" ball or a 3" pintle eye couplings. Inspect hitch ball to ensure ball size is identical to coupler size (i.e. 2" ball for a 2" coupler).
3. Tow vehicle's light and light receptacle capacity. Lay-Mor 6HC and 8HC are supplied with a 4-pin receptacle to be installed on the vehicle.
4. Always comply with all Federal, State, and local laws pertaining to trailer hitches and towing. DO NOT tow this machine with any vehicle that does not meet or exceed Federal, State, and local laws for vehicle GVWR, trailer hitch and lighting requirements for all the states in which you operate this sweeper.

To Tow the Sweeper:

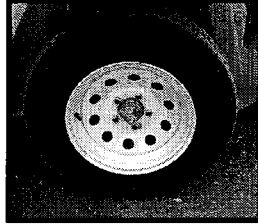
1. Steer front wheel to the right. Note: this allows the steering cylinder to move easily.
2. Raise broom assembly to full "up" position.
3. Set Parking Brake and shutt off engine.
4. Set steering valve to "Towing" position.
5. Securely fasten tow bar to tow vehicle.
6. Attach safety chains.
7. Attach Surge Brake break away cable.
8. Attach tow bar lighting harness to tow vehicle harness, then test lights to ensure proper operation.



To Tow the Sweeper Cont'd.

9. Disengage rear wheel hubs by pulling out and turn disconnect handle.

NOTE: Failure to disconnect hubs will result in hydraulic drive motor damage.



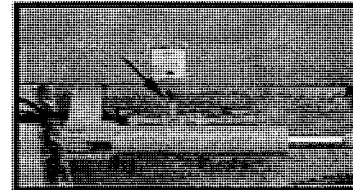
10. Disengage the Parking Brake.
11. Check tire inflation to 35 psi (240 kPa).
12. Check surge brake fluid level for proper quantity to operate brakes.
13. Check tow vehicle's side view mirrors for maximum viewing area of and around sweeper.

Towing The Sweeper:

1. Always tow the sweeper at the safest speed for road and traffic conditions. DO NOT tow the sweeper in excess of 55 miles per hour. Check Federal, State and local speed limits for combination vehicles. Obey all applicable laws pertaining to towing the sweeper.
2. Because of articulated steering on the sweeper, the unit will be very difficult to back when in towing configuration. Back the unit only when absolutely necessary. Use of a backing spotter is recommended.

To Unhitch Sweeper and Ready for Operation

1. If possible, park on a level surface.
2. Set sweeper parking brake.
3. Disconnect lighting harness.
4. Disconnect break away cable.
5. Disconnect safety chains.
6. Disconnect hitch connector from hitch ball. Raise tow bar to full upright position and secure with the tow bar stow pin. Hook safety chain hooks in end of tow bar tube for storage.
7. Set steering valve to "Operate" position.



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8. Engage rear wheel hubs.
9. Check hydraulic oil, engine oil and coolant, and fuel levels; fill if needed.
10. From the operator's seat, start engine. Test all controls before releasing parking brake and putting the sweeper in operation.

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LUBRICATION SECTION 7

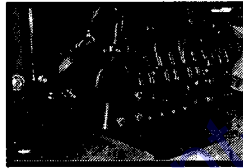
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HOUR METER - The intervals at which the various working parts of your sweeper should be lubricated, serviced or adjusted are based on hours of operation.

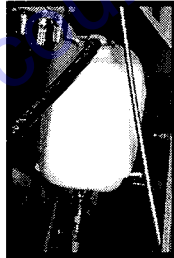


Use the hour meter to determine when periodic services are required. The hour meter, which operates whenever the engine is running, shows the accumulated hours of operation. We strongly suggest keeping an accurate maintenance record. See Page 4-4.

ENGINE OIL AND FILTER - Check engine oil daily. See your Engine Operator's Manual for detailed information concerning the checking and changing of engine oil and filter.

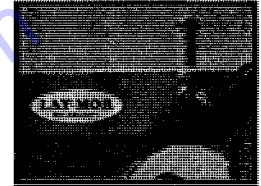


ENGINE COOLANT - Check engine coolant daily. Coolant overflow bottle should be 1/3 to 1/2 full when engine is cold. Do not open Radiator cap to check fluid. See your Engine Operator's Manual for detailed information concerning the checking and changing of engine coolant.



KEEP YOUR ENGINE CLEAN

CHECKING HYDRAULIC FLUID - Check fluid level daily or every ten hours of operation and replenish if necessary to maintain in sight glass. Check oil level with machine on level surface and broom in raised position.



In choosing an oil for the hydraulic system of your sweeper, consideration must be given to the temperature range at which the oil will be working and the actual application as it exists. The oil that is recommended has been chosen because of its operating temperature range for hot or cold conditions best fits the needs of the various component parts of your sweeper.

In this sweeper there are three valves, one flow divider, one steering orbitrol unit, one hydraulic auxiliary pump, one hydrostatic system, three hydraulic cylinders, and broom drive motor (s).

To best fit the needs of all these parts we recommend the use of 10W-20 hydraulic fluid or equivalent. We recommend the following viscosity grades based on Ambient temperatures.

<u>Viscosity Grade</u>	<u>Ambient Temp.</u>	<u>Max. Hyd. Oil Temp.</u>
ISO 32	0 - 50° F	140°F
ISO 46	15° - 80° F	170°F
ISO 68	50° - 110° F	200° F

See Service Bulletin No. 11-35 for specific oil information.

LUBRICATION

All parts of the complete hydraulic system are lubricated by the hydraulic oil in the circuit. Particular attention must be paid to keep the oil in the system clean. Whenever there is a pump or motor failure, there is reason to feel that metal particles may be in the system. The oil should be drained, the entire system flushed clean and new filters installed.

DO NOT OPERATE UNIT IF OIL TEMPERATURE GOES ABOVE 220°F, ESPECIALLY WHEN USING THE OILS AS SHOWN ON THE CHART. IF YOU HAVE A PROBLEM OF HIGH OIL TEMPERATURE, CONTACT YOUR DEALER, DISTRIBUTOR OR THE FACTORY IMMEDIATELY. WHEN OPERATING IN TEMPERATURES OF 0° F OR BELOW, SPECIAL CARE SHOULD BE TAKEN OF SYSTEM WHEN STARTING. IT IS RECOMMENDED THAT THE UNIT BE STORED INSIDE OR SPECIAL HEATERS BE INSTALLED TO KEEP SYSTEM ABOVE 0° F. IF YOU ARE UNABLE TO DO THIS, WINTERIZE THE SYSTEM AND CONTACT THE FACTORY FOR SPECIAL APPLICATION.

HYDRAULIC FILTER SYSTEM - The sweeper is equipped with three filters. The High Pressure Filter is located on the right side of the engine compartment. The element should be changed every 500 hours. The two Low Pressure Filters are located beneath the floor on the right side of the operator's station. The Spin-On elements should be changed after the first 50 hours of operation and every 250 hours thereafter; more often if the hydraulic oil shows any sign of discoloration or contamination. Clean oil will add much to the life of your sweeper.

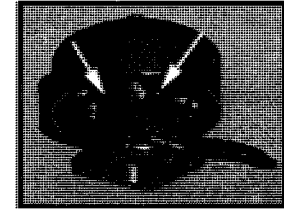


CAUTION

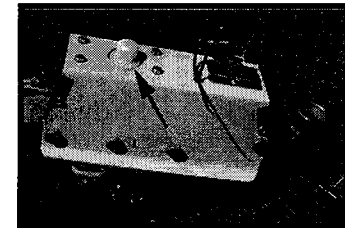
BEFORE STARTING THE ENGINE AFTER THE HYDRAULIC OIL HAS BEEN CHANGED SEE START-UP PROCEDURE IN SERVICE MANUAL.



DISCONNECT HUBS - Check the oil level of the two disconnect hubs every 200 hours of operation. Maintain the oil level at lower edge of filler test plug opening. Every 1000 hours of operation drain the oil and replenish with new 10W-40.



SURGE BRAKE SYSTEM
The brake master cylinder is in the coupler. Use DOT-3 brake fluid in this system.



PUMP CONTROL PEDAL -

Lubricate the lube fitting on the pump control pedal assembly every 50 hours with a multipurpose grease.



FRONT WHEEL BEARINGS - The front wheel bearings should be greased with multipurpose extreme pressure grease every 50 hours. Lube fitting is accessible by removing center cover of front hub cap. Inspection of the hub should be made daily to check for leakage or debris wrapped around the hub.



FRONT FORK - The front steering fork is pre-packed when the unit is assembled and should require little maintenance. If the fork is disassembled, repack the cavity between the brass bushings with multipurpose extreme pressure grease at reassembly.



HYDRAULIC TANK SCREEN - The hydraulic tank suction screen is constructed of fine wire mesh. Remove, clean and inspect the screen every 500 hours for damage.



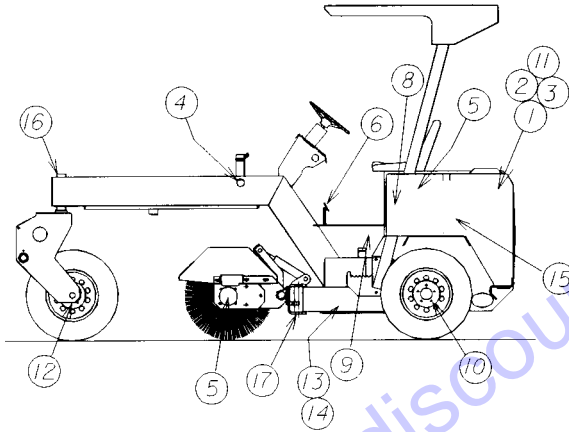
BROOM PIVOT - The bearings in the broom pivot are factory lubed. Built up debris should be removed and the bearings inspected for excessive wear every 250 hours.



BROOM FLANGE BEARING - Lubricate the broom flange bearing using the grease fitting on the bearing housing every 50 hours. Inspect the broom shaft and remove any debris buildup.



LUBRICATION CHART



ITEM	NO. OF		DESCRIPTION	LUBRICANT	INTERVAL HOURS
	POINTS				
1	1		Check Engine Oil Level	CEM	10
2	1		Check Eng.Coolant Level	EC	10
3	1		Check Air Cleaner	-	10
4	1		Check Hydraulic Fluid	HYDO	10
5	1		Broom Flange Bearing	GR	50
6	1		Transmission Control Pedal	GR	50
7	1		Change Eng. Oil/Filter	CEM	200
8	1		Change H.P. Filter	-	250
9	1		Change Hyd. Oil Filter	-	250
10	2		Check Rear Wheel Disconnects	EO	250
11	1		Change Eng. Fuel Filter	CEM	400
12	1		Wheel Bearings	GR	50
13	1		Change Hyd. Fluid	HYDO	500
14	1		Hydraulic Tank Screen	-	500
15	1		Fuel Filter (In-Line)	-	1000
16	1		Front Steering Fork	GR/NM	PL
17	1		Broom Pivot	GR/NM	PL

GR - Multipurpose Extreme Pressure Grease

CEM - Consult Engine Manual

HYDO - Hydraulic Oil 10W-20

NM - No Maintenance Required

EC - Engine Coolant 50/50 Antifreeze/Water

EO - Motor Oil 10W-40

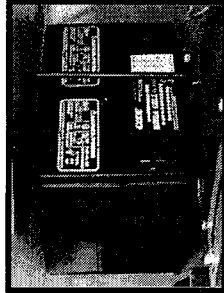
PL - Permanently Lubricated at Factory

PERIODIC MAINTENANCE SECTION 8

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ELECTRICAL:

BATTERY - The Lay-Mor Sweeper is equipped with a maintenance free battery. (See specifications on Page 1-1). Since the battery is maintenance free and never needs water, there are no filler caps.



WIRING - Inspect the wiring harness for possible damage. Make sure it is carefully routed and protected from potential hazards such as sharp edges or hot surfaces or moving components. Make sure lights and reverse alarm work properly.

NUTS AND BOLTS:

Check Torque after first 50 hours of operation and then thereafter every 1000 hours.

ITEM

Front Fork Retaining Bolt
Wheel Lug Nuts
Hydrostatic Pump Mount Bolts
Hydraulic Pump Auxiliary Mount Bolts
Power Steering Wheel Nut

TORQUE

100 ft.lbs.
60 ft. lbs.
75 ft. lbs.
75 ft. lbs.
30-35 ft.lbs.

NUTS AND BOLTS CONT'D.:

ITEM

Cylinder Piston Nut
Ground Drive Hyd. Motor to Lockout Hub
Lockout Hub to Frame
Lockout Hub Drum Nut

TORQUE

160-180 ft.lbs.
100 ft.lbs.
100 ft.lbs.
250 ft.lbs.

CHASSIS AND FRAME COMPONENTS:

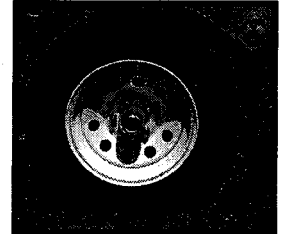
Inspect components for cracks or damaged areas. When excessive wear or play is observed replace the bushings, bearings or pins before permanent damage occurs to the major components. See Parts and Service Manuals for repair parts or procedures.

TIRES, AXLES AND SPINDLES:

Check tires for proper inflation and excessive wear.

Front & Rear - 35 psi (240kPa)

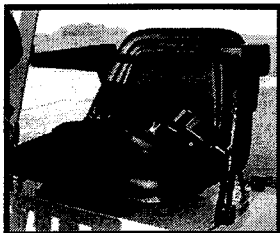
Check lug nut torque after first 20 hours of operation and then thereafter every 200 hours. Torque to 60 ft.lbs. Inspect front and rear hubs daily for leaks. Remove all built-up dirt and debris.



PERIODIC MAINTENANCE

SEAT BELT INSPECTION AND CARE:

1. Keep sharp edges and other damaging objects away from belts.
2. Periodically inspect belt buckle and anchors for damage that lessen the effectiveness of the restraint system.
3. Have all questionable parts replaced.
4. Replace belts if cut, weakened or frayed.
5. Keep seat belts clean and dry. Clean only with mild soap solution and lukewarm water.
6. Do not bleach or die belts, this will severely weaken belts.



CAUTION

Seat belts have been installed for your protection. USE THEM!

SEAT:

1. Inspect seat cushion for tears or damage.
2. Inspect slide adjusters for smooth operation.
3. Check mount bolts and tighten if necessary.
4. To extend seat cushion life periodically treat them with a vinyl protector.



CONTROLS:

STEERING WHEEL - Make sure steering wheel is secure and properly attached.

CONTROLS - Inspect controls for excessive wear or binding, replace if necessary.

PUMP CONTROL PEDAL - Inspect pedal movement. Pedal return springs should bring pump back to neutral so that it does not creep when the operator's foot is removed. Adjust pedal's neutral position by loosening the jam nut and adjusting pump lever stop bolt. Retighten jam nut.



HYDRAULICS:

HOSES - Make a visual inspection of all hoses for leaks, loose connections or worn areas. Tighten and reroute hoses as required.

CAUTION

DO NOT CHECK FOR LEAKS WITH BARE HANDS!

ADAPTERS - Inspect adapters for damage, leaks or loose connections. Tighten or replace as needed.

CYLINDERS - With the hydraulic oil warmed up, cycle the cylinders ten (10) times through their entire stroke then fully extend the cylinder. Inspect the cylinder rods for damage and the cylinders for leaks or loose connections. Repair or replace as needed.

VALVES - Inspect valves for leaks around spool retainers and positioners. Clean debris from the top of the valves to prevent spool scouring or seal wear.

PUMP/MOTOR - Visual inspect pump and motors for any leaks especially around the shaft seals and port locations. Check wheel motors, broom drive motor and remove debris.

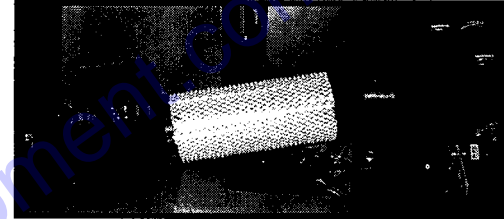
SYSTEM - Visually inspect the other components (orbitrol, flow divider, reservoir, etc.) for worn areas, leaks or loose adapters.

ENGINE:

The air cleaner is designed to give maximum engine protection with a minimum of parts. Maintenance costs are low because the service parts of the air cleaner are few and easily serviced. Use only Genuine filter cartridges. They are designed for maximum performance with simplicity of operation and maintenance.

1. Stop engine before removing element (otherwise dirt will be drawn into engine).

2. Release snap clamps and remove element from body. Remove safety element. Clean inside of body and cover.



3. Clean the element by the following method. Direct compressed air of not more than 100 psi up and down the pleats inside the element.
4. Inspect element by placing light inside and inspect for thin spots, pin holes, or slightest ruptures which call for replacement. Do not leave light inside element any longer than necessary as heat generated by the bulb may ruin element. Do not try to clean the safety element. Change the safety element every third time the primary filter element is changed.



5. Replace the safety element. Replace the element and cover securely.

PERIODIC MAINTENANCE

COOLING AREAS:

To ensure proper cooling make sure the cooling fins and other external surfaces of the engine are clean.

DRAINING COOLING SYSTEM:

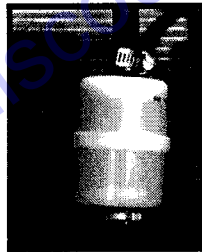
Open drain cock in bottom of radiator, remove radiator cap to increase flow. The last bit of coolant to drain may require remove of lower radiator hose.



FUEL SYSTEM:

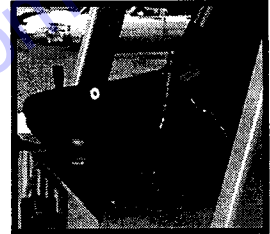
Inspect the fuel system for leaks and contamination. Make sure the fuel lines are not in contact with any sharp edges or engine exhaust components.

The In-line Pre-Filter, located on the left side of the engine compartment needs to be inspected weekly and replaced when dirty.



BRAKE LEVER:

Adjust handle as required to maintain proper tension. Make sure all pins and bolts are locked and tight.

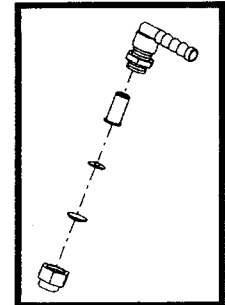


WATER SYSTEM: (Optional)

FILTERS - The water system filters are located under the left side operator's floor. These filters should be cleaned daily by removing canister cleaning filter and reinstalling. Replace if damaged.



SPRAY BAR NOZZLE SCREENS - Each spray bar nozzle screen should be inspected and cleaned daily. Remove nozzle retaining nut, disassemble parts, clean screen, nozzle and orifice reinstall parts and tighten nut.



CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

WARNING: Battery posts, terminal and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **Wash hands after handling.**