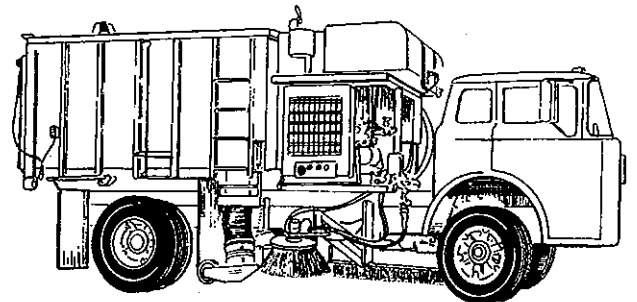
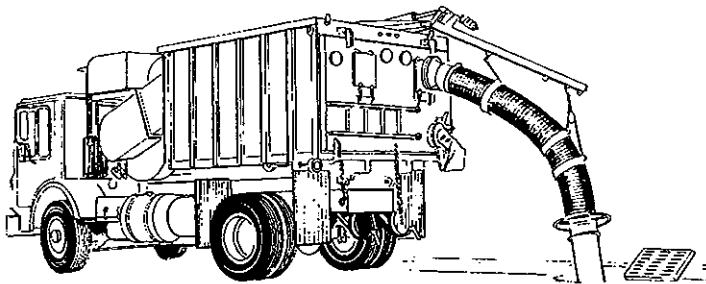


VACALL

vacuum equipment

E5/E10 operators manual over 3910



TO ORDER PARTS

Contact your authorized **VACALL** Signature Original Factory Parts distributor

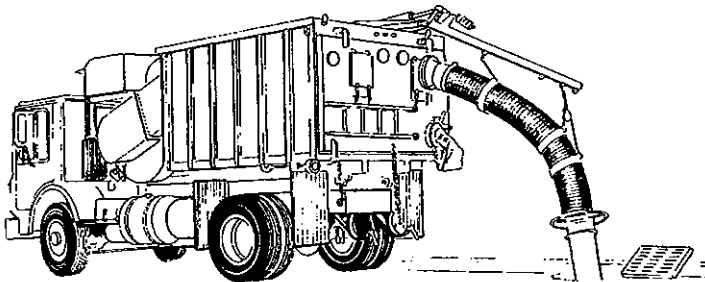
Your Authorized **VACALL** Distributor

provide the following information:

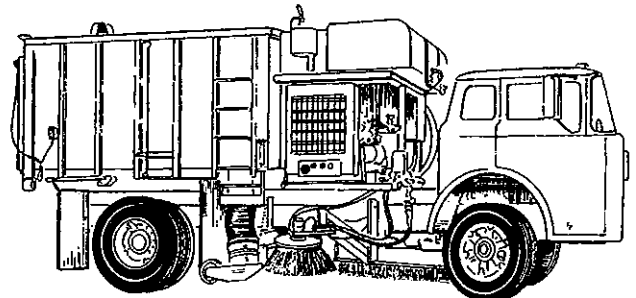
- A. Company name
- B. Date
- C. Your order number
- D. Routing instructions
- E. Quantity, part number and description
- *F. Model and serial number of unit

Accept only **VACALL** Signature Original Factory Parts

E5



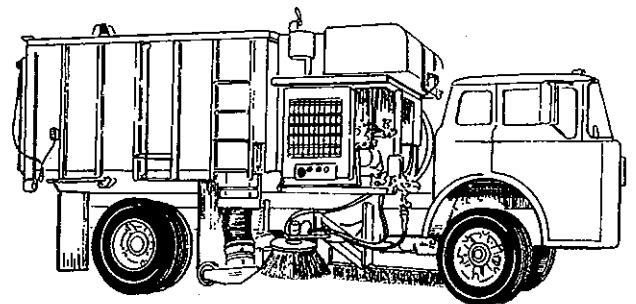
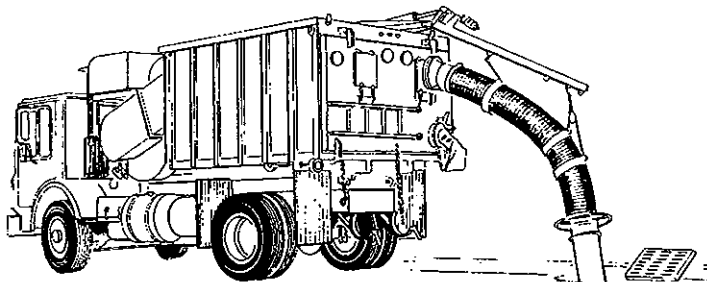
E10



VACALL

vacuum equipment

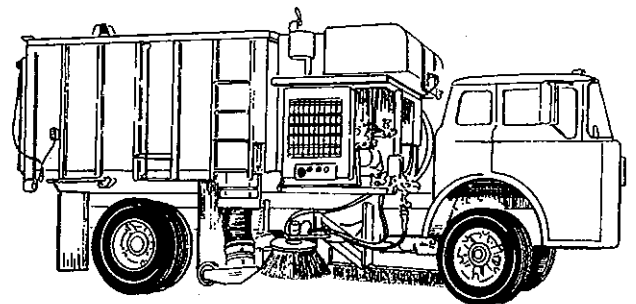
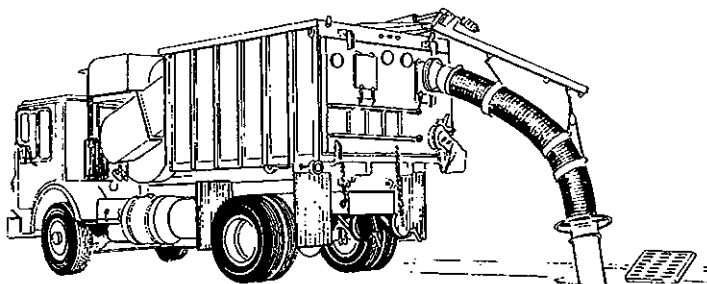
E5/E10 operators manual over 3910



VACALL

vacuum equipment

E5/E10 operators manual over 3910



E5/E10 TABLE OF CONTENTS

To Order Parts

Warranty	..II
Table of Contents	..III

SECTION 1 INTRODUCTION

Introduction	..1-1
Terms You Will Need To Know	..1-2
Sweeping	..1-4
Vacuuming (Optional)	..1-4
Water System	..1-4
Unloading	..1-4
General	..1-5
Danger, Warning and Caution Decals	..1-5
Prior to Start-Up	..1-5

SECTION 2 SAFETY PRECAUTIONS

Decals	..2-1
E5 Decals	..2-2
E10 Decals	..2-4
Operation	..2-6
When Vehicle Is Moving	..2-6
High Velocity Air	..2-8
High Pressure Water	..2-8
Hydraulics	..2-8
Fire Protection	..2-8
Housekeeping	..2-8
Shut Down	..2-8

SECTION 3 OPERATION

General	..3-1
Description of Operating Controls	..3-1
Beacon Light On/Off Switch	..3-4
Throttle Controller	..3-4
Description of Operating Controls	..3-5
Tailgate Latch (Manual)	..3-5
Operating Procedures	..3-6
Pre-Operational Inspection	..3-6
Blower Drive Engine	..3-8
Start Up	..3-9
Shut Down	..3-9
Blower Operation	..3-10
Blower Start Up	..3-10
Blower Shut Down	..3-10
Fill the Water Tank	..3-11
Water Jetting System	..3-12
Hand Gun	..3-12
Sweeper Attachment	..3-12
Hand Gun Start Up/Operation	..3-13
Sweeper Water System Start Up/Operation	..3-13

E5/E10 TABLE OF CONTENTS

SECTION 3 OPERATION (Continued)

Shut Down	3-14
Cold Weather Sweeping	3-14
Pre-Operation Set Up	3-15
Start Up Sweeping Operation	3-18
Shut Down Sweeping Operation	3-19
Unloading Procedure	3-20
Dumping	3-20
Cleaning the Debris Body	3-21
Shut Down	3-22
Monthly Cleaning	3-23
Draining the Water System	3-23
Winterizing Procedure	3-23

SECTION 4 OPTIONAL CATCH BASIN INTAKE HOSE ASSEMBLY

Optional Catch Basin Attachment	4-1
Position the Unit	4-1
Power Boom Operation	4-2
Remove Hose from Travel Position	4-2
Place Hose in Travel Position	4-2
Vacuum Position	4-3
Set-Up	4-3
Start Up Vacuum Operation	4-4
Shut Down Vacuum Operation	4-4

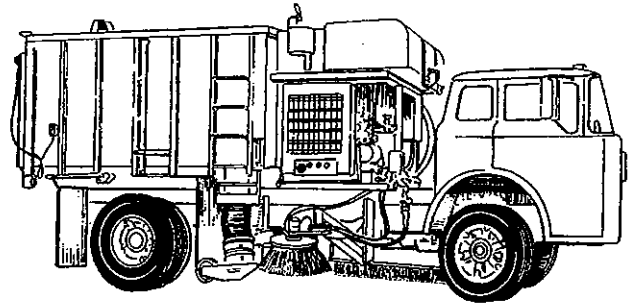
Manuals & Literature Order Form
Reward

INTRODUCTION

The Vac/All Model E5/E10 utilizes an independent power source to operate the hydraulic, vacuum and water systems simultaneously or separately. The water system must be used for lubrication, general clean-up and dust control. The vacuum system conveys air and material into the body where the debris is deposited and the air is exhausted back to the atmosphere. For a more detailed description of the unit and its components, read the complete E5/E10 Vac/All Service Manual.

The following describes how the unit performs those tasks in the most basic terms.

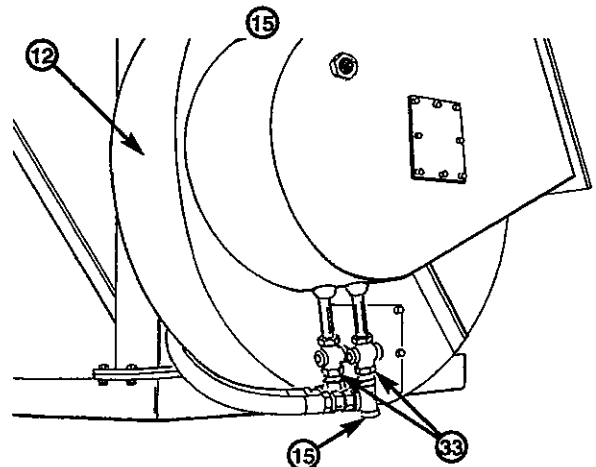
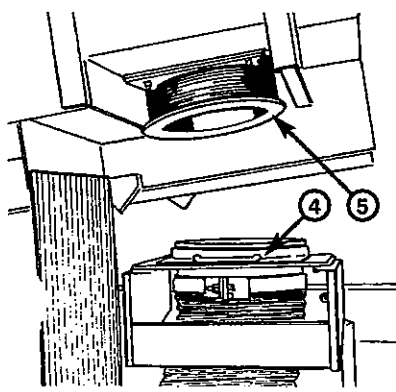
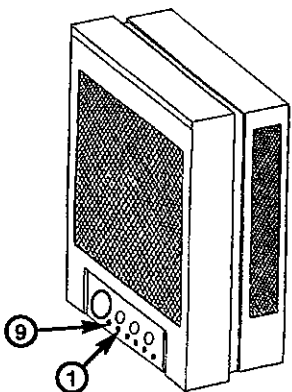
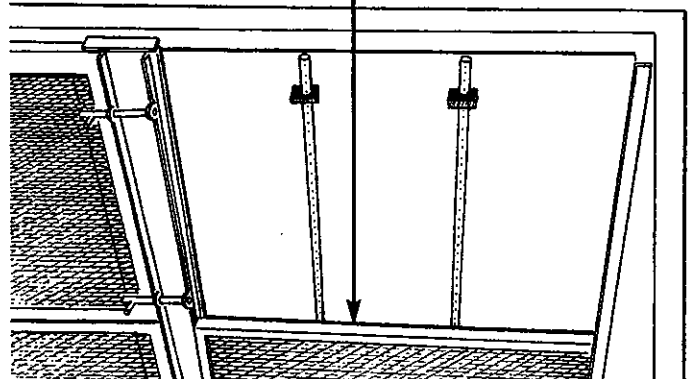
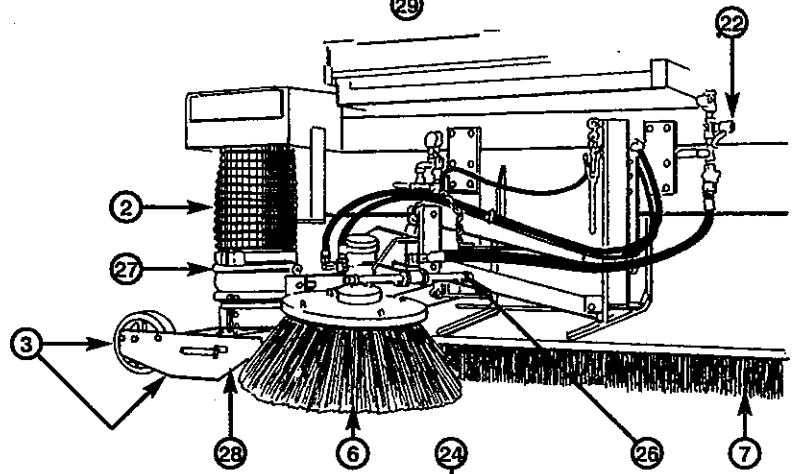
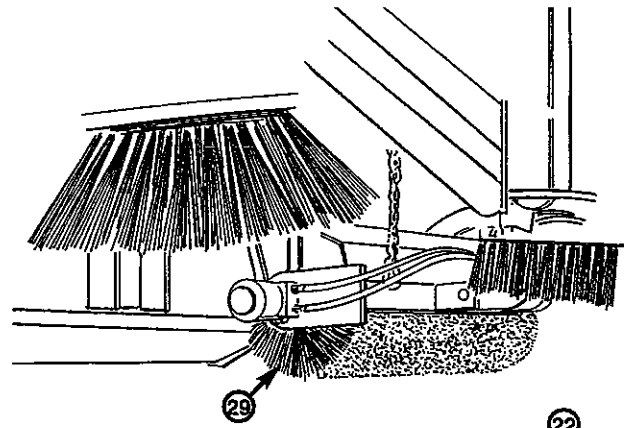
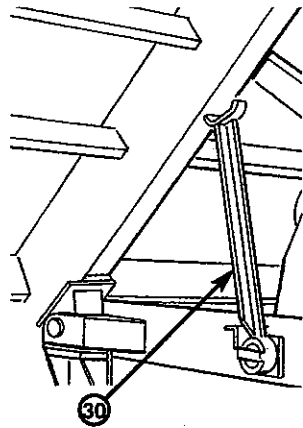
Before going further, look at the accompanying full page illustration and become familiar with the terms you will need to know.



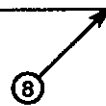
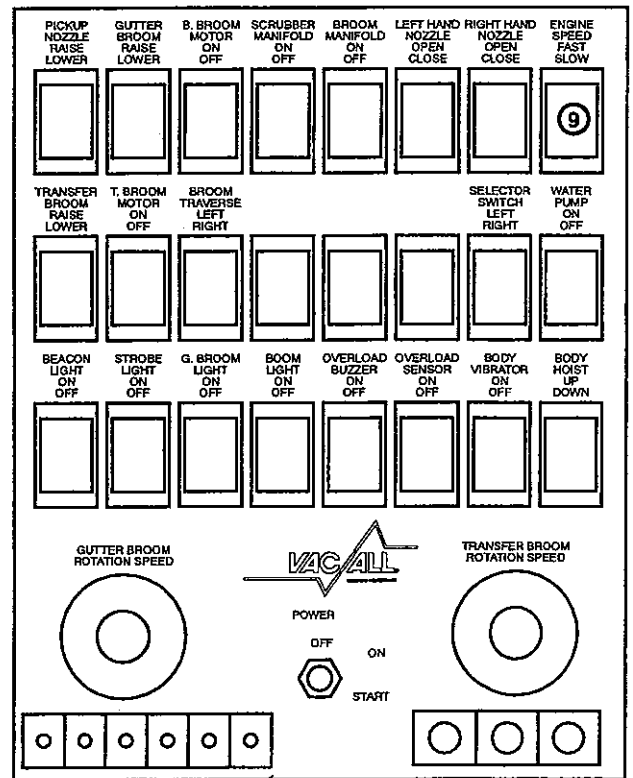
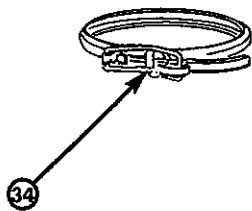
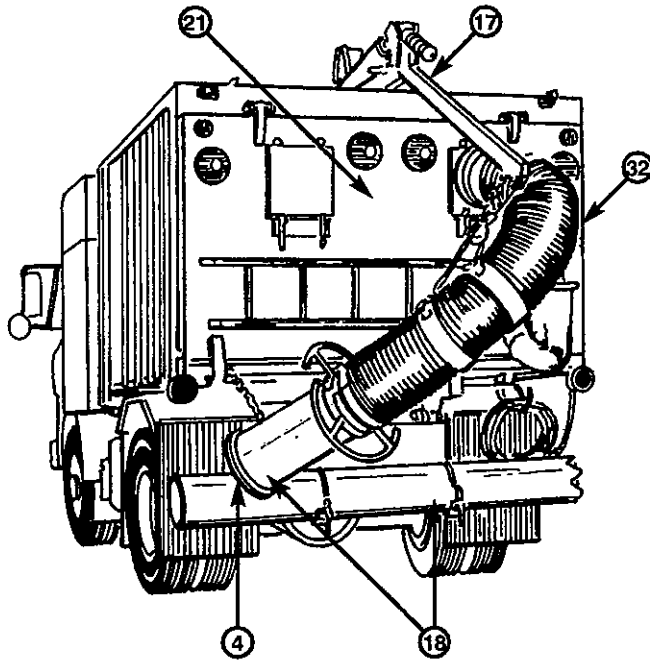
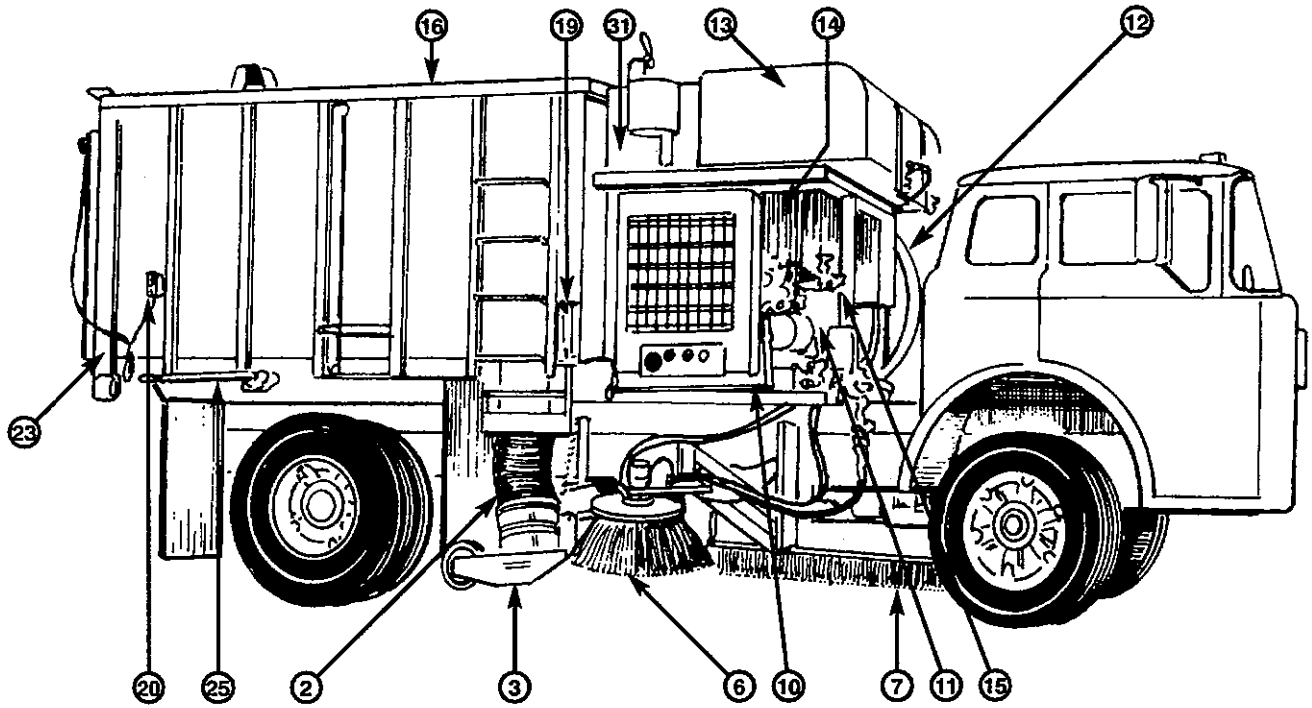
SECTION 1 INTRODUCTION

Terms You Will Need To Know:

1. Body Hoist Control Switch
2. Nozzle Intake Hose
3. Vacuum Nozzle
4. Cover Plates
5. Intake Ports
6. Gutter Broom
7. Deflector Brush
8. Sweeper Controls (cab)
9. Throttle Controller
10. Blower Clutch Lever
11. Water Pump Clutch Lever
12. Blower
13. Water Tank
14. Engine
15. Hydrant Fill/Drain
16. Debris Body
17. Power Boom
18. Tube and Extensions
19. Air Chamber Covers
20. Boom Pendant
21. Tailgate
22. Water System
23. Hand Gun
24. Filter Screen
25. Tailgate Latch Handle
26. Spray Bar
27. Scrubber Manifold
28. Deflector Manifold
29. Transfer Boom
30. Body Prop
31. Silencer
32. Catch Basin Intake Hose
33. Hydraulic Reservoir & Shut Off Valves
34. Over center Clamp



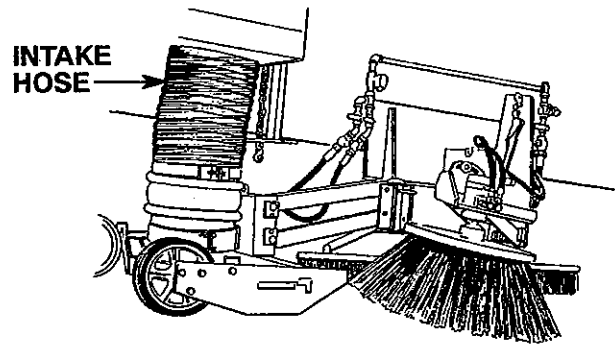
SECTION 1 INTRODUCTION



SECTION 1 INTRODUCTION

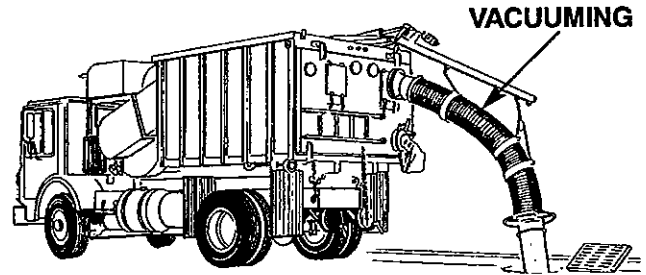
SWEEPING

Street debris such as sand, bricks, stones, bottles and cans are swept by a gutter broom and/or transfer broom, which are controlled by a deflector brush. The debris, now in the path of the pickup nozzle, is drawn up the nozzle and intake hose by the high velocity air stream. When the debris enters the large area of the debris body, the air velocity is greatly decreased and the debris falls out of the air stream into the body.



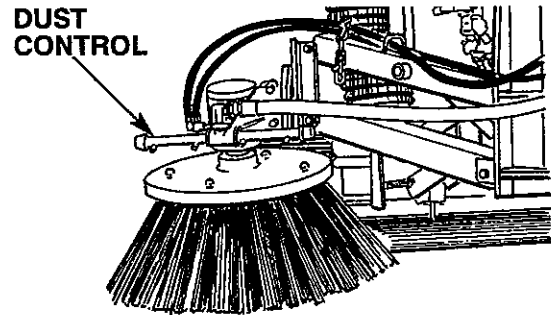
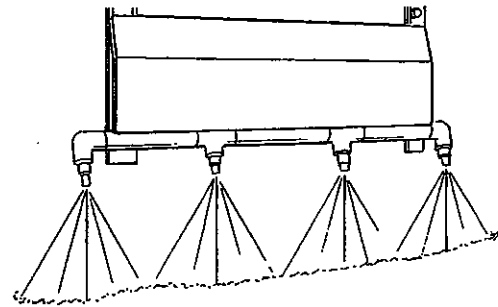
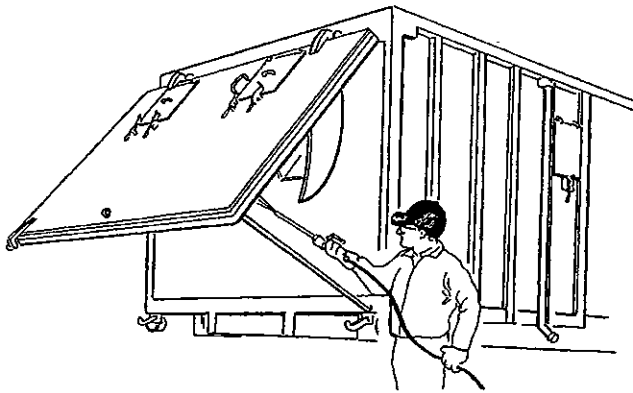
VACUUMING

Debris such as street sweepings, sand, bricks, stones, bottles, cans or liquid, are picked up by means of high velocity air. When the debris enters the large area of the debris body, the air velocity is greatly decreased and the debris falls out of the air stream into the body.



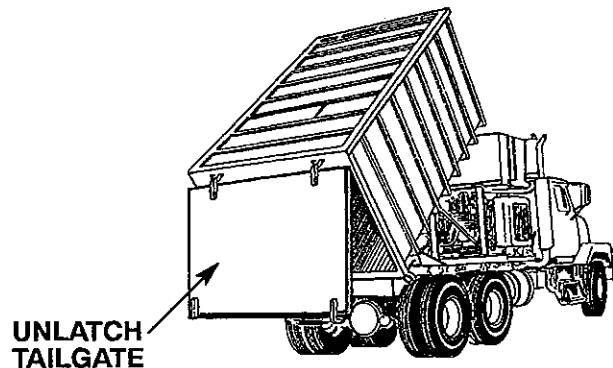
WATER SYSTEM

Water use is mandatory when vacuuming material. This system is designed to provide water for dust control, at the gutter broom, lubrication at the nozzle and intake hose, and to supply water to the hand wand which is used for general clean-up or to clean the debris body.



UNLOADING

At the dump site the unit is unloaded in four easy steps. First, the tailgate is unlatched. Second, the body is raised, dumping the material. Once all the debris has exited the body, it can now be lowered. The final step is latching the tailgate.



SECTION 1 INTRODUCTION

GENERAL

The Vac/All E5/E10 has been designed with the operator in mind. However, as with any industrial machinery, especially those that are large and convey high velocity air, the ultimate responsibility for safety rests with you — the user. An alert, conscientious attitude and observance of all known safe operating practices is the best way to prevent accidents.

Before operating the unit, it is the operator's responsibility to be thoroughly familiar with the instructions contained in the Operator's Manual.

Publication of these precautions does not imply or in any way represent an all inclusive list. It is the operator's responsibility to be familiar with and ensure that operation is in accordance with safety requirements and codes including all applicable Occupational Safety & Health Act (OSHA) and American National Standards Institute (ANSI) regulations.

DANGER, WARNING AND CAUTION DECALS

See the accompanying illustration for the location and label content of all safety decals.

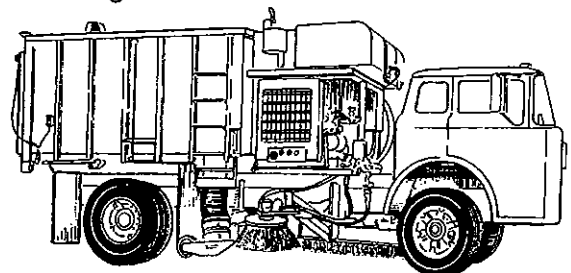
1. These decals must be obeyed at all times.
2. These decals must be in place at all times. Report any damaged or missing decals to the proper authority at once.
3. Replacement decals can be ordered free of charge from your local distributor.

DANGER, WARNING, CAUTION and **NOTE** notations appear throughout this manual.

- The word **DANGER** precedes information pertaining to specific immediate hazards which if disregarded **WILL** result in **SEVERE PERSONAL** injury or death of the user or others.
- The word **WARNING** precedes information pertaining to hazards or unsafe practices which **COULD** result in personal injury or death.
- The word **CAUTION** precedes information pertaining to potential hazards or unsafe practices which if disregarded, **MAY** result in minor personal injury or damage to the equipment.
- The word **NOTE** precedes information which is vital to the proper operation or maintenance of the equipment.

PRIOR TO START-UP

1. Never operate machinery while wearing jewelry or loose clothing which may catch on moving parts. Wear proper safety equipment as specified by your employer.
2. Never operate machinery while under the influence of intoxicants or narcotics. Workers under the influence of intoxicants or narcotics present a hazard to themselves and others.
3. Perform checks listed under Pre-operation "Walk-around" inspection in Section 3, OPERATION. Never start or operate any malfunctioning equipment.
 - a. Be sure to immediately report any malfunctions to the proper authority.
 - b. Power must be shut off, ignition key removed, and a sign attached to the steering wheel stating "inoperative" or "malfunctioning equipment".
4. Drivers will not attempt to perform any service procedures on the equipment. Proper servicing requires specialized tools and procedures. Service must be performed by authorized personnel only, following procedures in the Vac/All Service Manual.
5. Walk completely around the vehicle to make sure all persons are clear of the unit before starting.



SECTION 1 INTRODUCTION

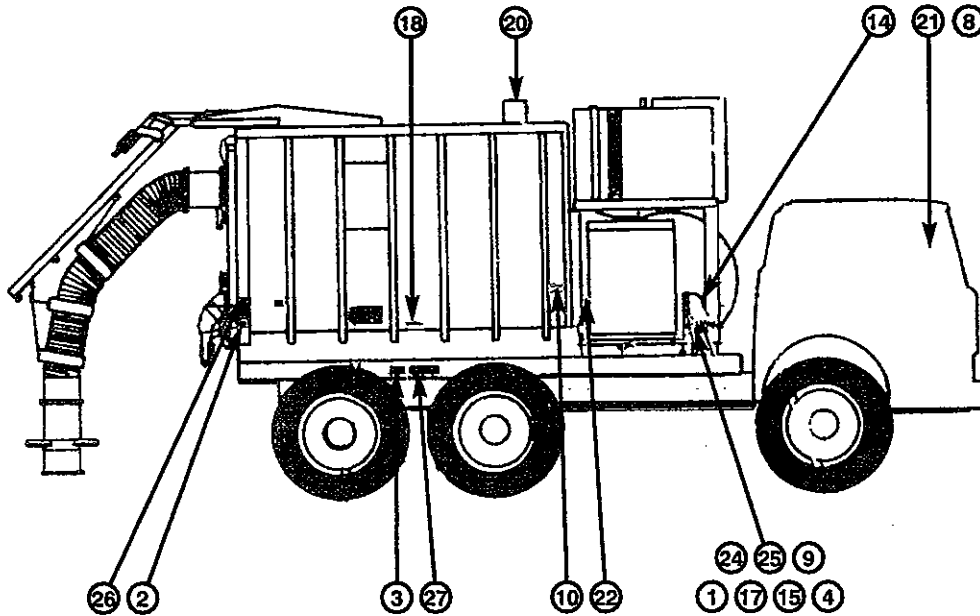
SAFETY PRECAUTIONS

SECTION 2

Please read this section with extra care.

REF NO.	PART NUMBER	DESCRIPTION	SIZE (INCHES)	QTY.
1	4160-0240A	Important: Lubrication instructions	4.125 x 2.625	1
2	4160-0018A	Caution: Tailgate must be securely propped...	3.5 x 2.25	2
3	4160-0019A	Warning: Body Prop is to be used only...	5 x 3	2
4	4160-0020A	Warning: Slowly engage blower when...	5.5 x 3.5	1
5	4160-0026A	Caution: Do no operate blower...	9.375 x 4.5	1
6	4160-0027A	Warning: Failure to periodically inspect...	7.5 x 1.75	1
7	4160-0060A	Caution: Raise nozzle & gutter...	4 x 1.25	6
8	4160-0068A	Caution: Whenever the body...	4.5 x 1.75	3
9	4160-0069A	Drain Daily	2.75 x .625	2
10	4160-0072A	Air chamber clean out door...	4.5 x 1.25	2
11	4160-0079A	No Step	5 x 3	14
12	4160-0080A	Boom must be chained in stored position...	5.375 x 1.25	1
13	4160-0125A	When broom or nozzle are in traveling...	5.875 x .625	6
14	4160-0156A	Throttle Control	2.125 x 1	1
15	4160-0163A	Caution: Do not engage clutch when...	5 x 3	1
16	4160-0164A	Gasoline	10.125 x 2	1
17	4160-0165A	Warning: Do not run pump without liquid...	5 x 2.5	1
18	4160-0166A	Screen Washer	5 x 1.125	1
19	4160-0167A	Warning: Diesel fuel only	8 x 6	1
20	4160-0168A	Hydraulic oil	12.75 x 2	2
21	4160-0170A	Caution: Whenever the tailgate is...	4.5 x 1.875	2
22	4160-0171A	Caution: Alternator installation	4.5 x 3.625	1
23	4160-0172A	Pendant Station	1.5 x .875	1
24	4160-0176A	Body hoist operation	6 x 2	1
25	38164	Warning: This vehicle requires...	4.5 x 2.5	2
26	38979	Danger: Stand clear when tailgate...	3 x 7.5	2
27	41894	Danger: Do not enter under chassis...	10 x 2.875	2
28	4160-0122A	VAC/ALL (black)	4.5 x 1.5	1
29	4160-0121A	VAC/ALL (white)	4.5 x 1.5	1
30	4160-0095C	VAC/ALL (black)	19 x 6.25	4
31	4160-0096C	VAC/ALL (white)	19 x 6.25	4

E5 DECALS 9486-0059A



NOTICE		
LUBRICATION INSTRUCTIONS		
PTO BEARING 1 STROKE DAILY		
INBOARD	BLOWER BEARING 15-20 STROKES DAILY	OUTBOARD 4160-0240A

①

CAUTION
TAILGATE MUST BE SECURELY PROPPED WHEN IN A RAISED POSITION.

②

WARNING
BODY PROP IS TO BE USED ONLY WITH EMPTY BODY. BODY MUST BE SECURELY BLOCKED WHEN REPAIR WORK IS DONE. VEHICLE IS NOT TO BE MOVED WHILE BODY PROP IS UP.

③

WARNING

SLOWLY ENGAGE BLOWER WHEN ENGINE SPEED IS AT 1000 RPM. BLOWER IS TO BE OPERATED ONLY WHEN BODY IS DOWN. DO NOT SHUT DOWN ENGINE WHEN BLOWER IS ENGAGED. RUN ENGINE FOR A MINIMUM OF TWO MINUTES AFTER DISENGAGING BLOWER.

④

CAUTION

- DO NOT OPERATE BLOWER IF UNUSUAL VIBRATION OR NOISE OCCURS. INSPECT THE BLOWER THOROUGHLY AND REBALANCE. SEE SERVICE MANUAL FOR MAINTENANCE AND BALANCING INSTRUCTIONS.
- INSPECT THE BLOWER EVERY 200 HOURS OF OPERATION. INSPECT THE CONDITION OF EACH BLADE AT THE TIP, AT THE HUB AND AT THE FRONT AND BACK BLOWER PLATES. INSPECT THE BLOWER BEARING.
- WHENEVER WELDING OR HARDFACING IS ADDED TO THE BLADES OR ANY OTHER REPAIRS ARE MADE REBALANCE THE WHEEL PRIOR TO PLACING UNIT BACK INTO SERVICE.
- DO NOT OPERATE BLOWER WITHOUT PROPER DUST CONTROL.

⑤

WARNING

FAILURE TO PERIODICALLY INSPECT THIS BLOWER AS OUTLINED, COULD RESULT IN SERIOUS DAMAGE AND VOID THE WARRANTY ON THIS EQUIPMENT.

⑥

CAUTION

RAISE NOZZLE & GUTTER BOOM BEFORE BACKING UP

⑦

CAUTION

WHENEVER THE BODY IS IN ANY ELEVATED OR RAISED POSITION IT MUST BE SECURELY PROPPED OR BLOCKED SO IT CAN NOT FALL ON ANYONE

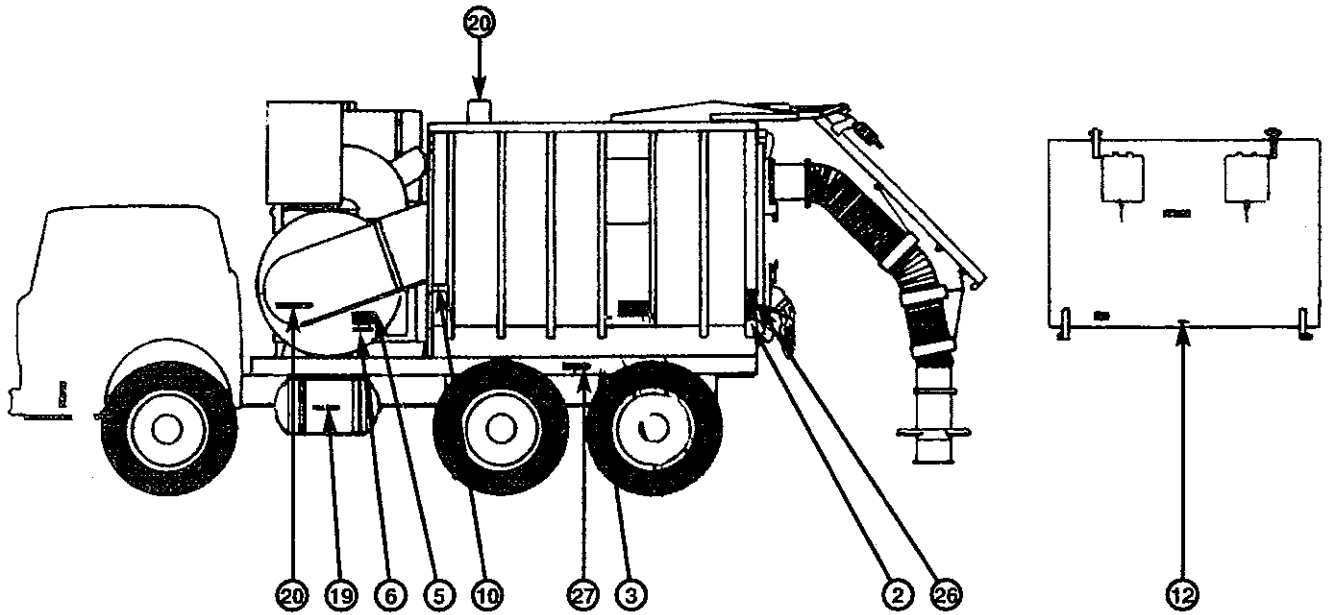
⑧

DRAIN DAILY

⑨

**AIR CHAMBER CLEAN OUT DOOR
CLEAN OUT DAILY
LEAVE OPEN AFTER WORK DAY**

⑩



11 **NO
STEP**

15 **CAUTION**
DO NOT ENGAGE CLUTCH
WHEN ENGINE SPEED
IS ABOVE 800 RPM

19 **WARNING**
**DIESEL
FUEL ONLY**

12 BOOM MUST BE CHAINED IN STORED
POSITION WHEN TRAVELING

14 **THROTTLE
CONTROL**

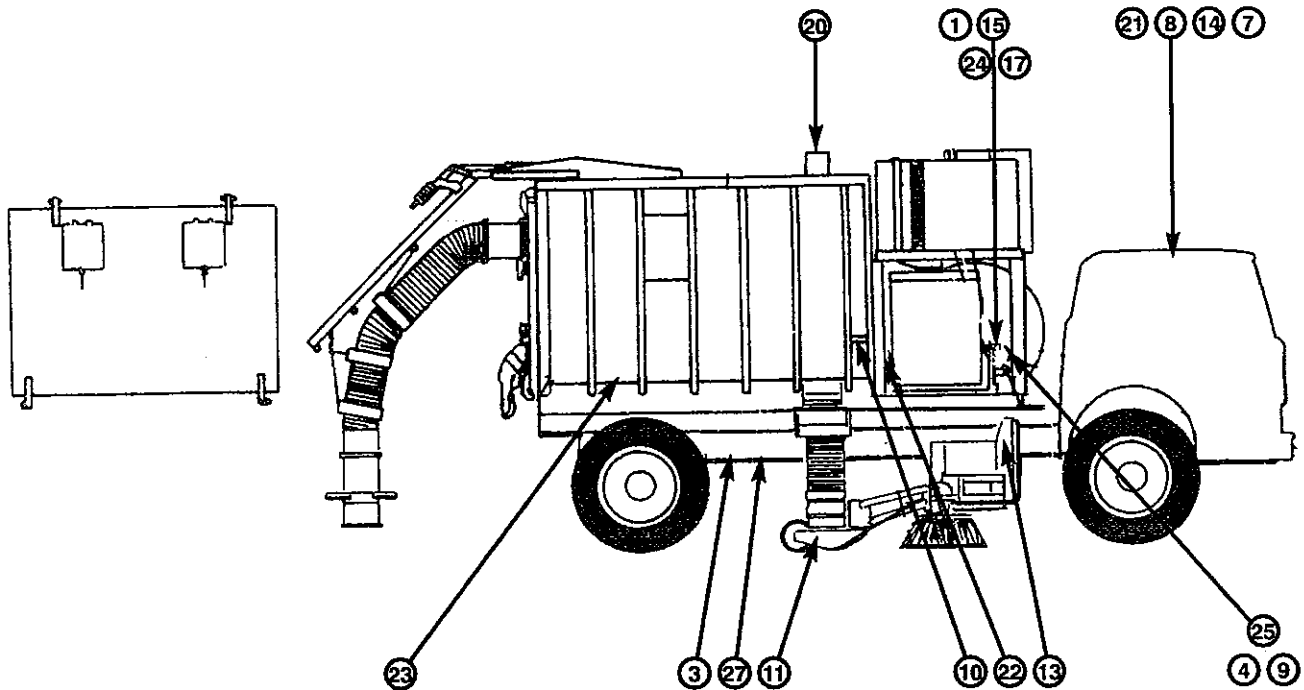
17 **WARNING**
DO NOT RUN PUMP WITHOUT
LIQUID OR SHAFT SEAL WILL
BE DESTROYED!

13 **WHEN BROOM OR NOZZLE ARE IN TRAVELING
POSITION, SAFETY CHAINS MUST BE SECURED.**

16 **GASOLINE**

18 **SCREEN WASHER**

20 **HYDRAULIC OIL**



21 CAUTION
WHENEVER THE TAILGATE IS IN A RAISED POSITION IT MUST BE SECURELY PROPPED SO IT CANNOT FALL ON ANYONE

PENDANT STATION

23

24 BODY HOIST OPERATION
● PULL HANDLE OUTWARD TO RAISE
● PUSH HANDLE INWARD TO LOWER

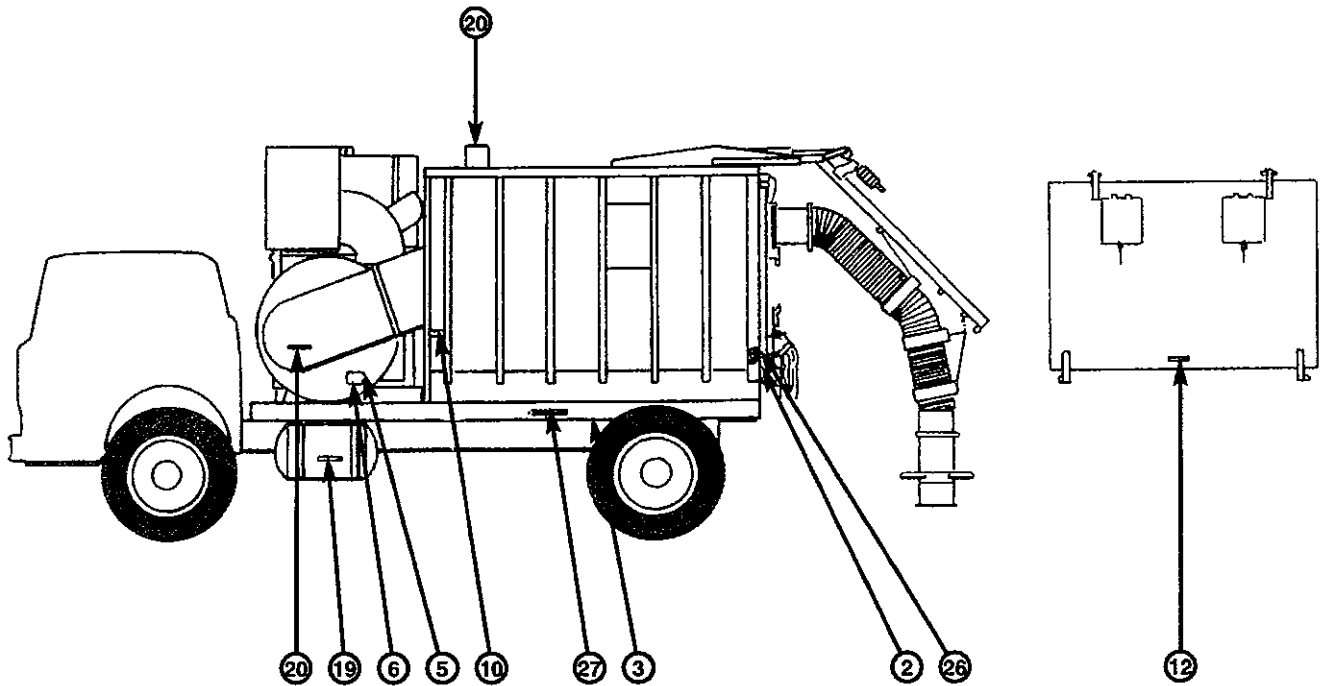
22 CAUTION
ALTERNATOR INSTALLATION
DO NOT connect the battery cables until all wiring harness connections have been made and properly tightened.
If accidentally grounded, the lead to the battery terminal of the alternator will burn the wiring harness.
DO NOT pry against the steel center-section (stator), the rear housing, or the through bolts when adjusting drive belt tension. Always place the pry bar against the front housing.
Prying against the wrong parts will bend the through bolts and cause alternator assembly misalignment.
DO NOT attempt to polarize the alternator. It can damage the voltage regulator and is not necessary.
DO NOT connect battery terminals in reverse polarity. This will burn out the alternator diodes. Connect positive (+) to positive and negative (-) to negative.
DO NOT disconnect alternator wires before disconnecting battery cables. Accidental grounding will burn the wiring harness.
DO NOT connect a battery charger to the battery before disconnecting the battery cables. When connecting the battery charger, connect positive (+) to positive and negative (-) to negative.
DO NOT use an electric welder on machine unless both battery cables and alternator wires are disconnected.

25 WARNING
THIS VEHICLE REQUIRES OF OVERHEAD CLEARANCE AS ORIGINALLY MOUNTED.

26 DANGER

STAND CLEAR WHEN TAILGATE IS IN MOTION & DURING UNLOADING CYCLE. DO NOT STAND UNDER OR CROSS UNDER RAISED TAILGATE.

27 DANGER
DO NOT ENTER UNDER CHASSIS UNLESS ENGINE OR POWER UNITS ARE STOPPED AND IGNITION KEYS REMOVED



28 **VAC/ALL**

29 **VAC/ALL**

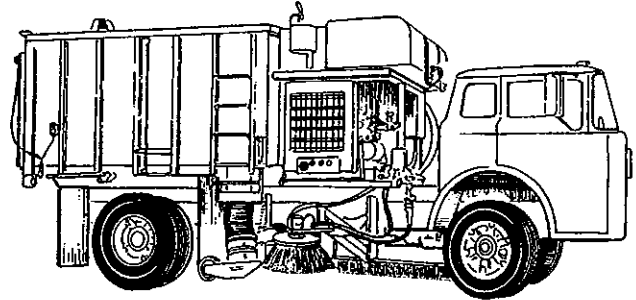
30 **VAC/ALL**

31 **VAC/ALL**

SECTION 2 SAFETY PRECAUTIONS

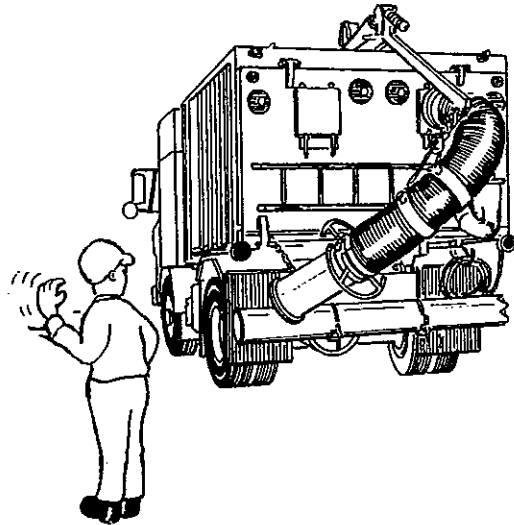
OPERATION

1. It is the operator's responsibility to ensure that operation of the unit is in accordance with the guidelines contained in this manual and in accordance with all applicable codes including the Occupational Safety and Health Act (OSHA) and the American National Standards Institute (ANSI) regulations.
2. Do not attempt to operate this equipment without proper training.

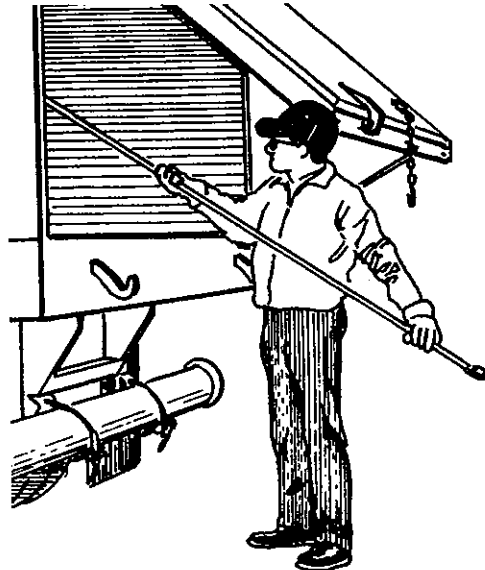


WHEN VEHICLE IS MOVING

3. Ride only in the cab.
4. Move the vehicle as slowly as possible without stalling when traveling in reverse.
5. Always make sure the roadway is clear before traveling in reverse. Make sure the backup alarm is working properly.
6. Do not travel in reverse for distances greater than those dictated by local ordinances. If reverse travel exceeds ten (10) feet, use a "spotter" or move the vehicle in ten (10) foot increments only, and then check to make sure the roadway is clear between increments.
7. Never use controls or hoses for hand holds. Controls and hoses are movable. They do not provide proper support and may cause accidental equipment movement.
8. Never operate the unit in reverse if the nozzle(s) or gutter broom(s) is in its lowered position.



9. Keep all shields and belt guards in place.
10. All service opening covers and access doors must be maintained and latched in place while operating the equipment.
11. Always ensure that all persons are clear of the equipment before actuating controls.
12. Always ensure that all persons are clear of the unit and tailgate before raising or lowering either the body or tailgate. It is the operator's responsibility to warn all persons not to stand or cross under a raised body or tailgate.
13. Do not move the vehicle with the tailgate or body raised except during unloading and then only as necessary to clear the load before lowering.
14. If it is necessary to manually clean debris from the body or tailgate area, use a long probe and DO NOT stand under the tailgate.



SECTION 2 SAFETY PRECAUTIONS

15. Never use the unit to push or tow another vehicle.
16. Never unload uphill or against a pile of refuse or into the bank of a hill.
17. Never enter the Vac/All body until the auxiliary engine ignition is off with the key removed and placed in your pocket. Before entering the body, secure the tailgate prop in the locked position.
18. Never place your head, body, fingers, or any limbs into a scissors or pinch point on the equipment.
19. To avoid possible bodily injury or unit damage, lower the tailgate and/or body slowly.
20. Know the height of the unit before going through any underpass. Be sure to allow for sufficient clearance.
21. Before operating the vehicle the driver must be thoroughly familiar with the employer's safety program concerning traffic rules, warning devices, and hand signals.
22. Be sure to know where to get assistance in the event of an emergency.
23. Know your machine. Know the location and function of all controls, gauges, instruments, and protective devices.
24. Wear your seat belt.
25. Start the engine(s) following the manufacturer's recommended procedure.
26. The tailgate must be latched before starting to load.
27. Always set the parking brake when stopped.
28. Do not operate the blower if excessive vibration or noise occurs.
29. Do not operate the blower without proper dust control.
30. Turn on appropriate warning lights, position safety markers and put on a safety vest, protective glasses, and protective shoes.
31. If the intake hose or vacuum nozzle becomes clogged, before cleaning disengage the blower, shut off the engine, and remove the key. SEE SECTION 3.
32. When operating the power boom or body hoist be aware of any height restrictions such as wires, branches, crossovers or bridges.
33. Never enter under a raised body unless it is securely propped up.
34. Never enter under the vehicle unless all function switches are in the "off" position and the keys are in your pocket. Always set the parking brake and block the wheels.
35. Never raise a loaded body without first opening/releasing the tailgate.
36. Never use the nozzle or gutter broom as a foot step, (engaged or disengaged). These are movable parts and present a hazard.
37. It is the operator's responsibility to ensure that all obstacles and persons are clear of the gutter broom(s) and nozzle(s) before raising or lowering and engaging.
38. The operator should be aware of and stay clear of any obstacles or persons that may come near or in contact with the sweeping mechanism while the vehicle is moving.
39. Never leave the vehicle unattended while engine(s) or controls are engaged.
40. Always use the gutter broom as a guide while sweeping.
41. Raise the nozzle when crossing railroad tracks or large holes.

SECTION 2 SAFETY PRECAUTIONS

HIGH VELOCITY AIR:

1. High air velocities are created in the vacuum system. Avoid placing arms or legs near the end of the vacuum nozzle, or intake tube if so equipped.
2. Do not go near the exhaust duct while the unit is running.
3. Never enter the debris body with the unit running.

HIGH PRESSURE WATER:

1. The water system operates at high velocities and pressure. Avoid direct contact with any high pressure system.
2. Never use hands to check for leaks. Water escaping under high pressure may cause injury.
3. In case of injury seek proper medical treatment immediately.
4. Never use worn or damaged hose.

HYDRAULICS:

1. Hydraulic fluid operates under high temperatures. Avoid contact with piping, hoses or cylinders to prevent burns.
2. Never use hands to check for leaks. Hydraulic fluid escaping under pressure may cause injury.
3. In case of injury seek proper medical treatment immediately.
4. Never attempt to stop, stall or slow a hydraulically driven device (such as a gutter broom) with hands, feet, or any portion of your body.

FIRE PROTECTION

1. Keep a fire extinguisher accessible at all times, as recommended by the Bureau of Motor Carrier Safety.
2. Never use lighted smoking materials, open flame or sparks when working with flammable materials such as fuel tanks or storage batteries.
3. Never use an open flame as a light source.
4. Never load ashes or other materials which might be smoldering. These materials could ignite material in the body.

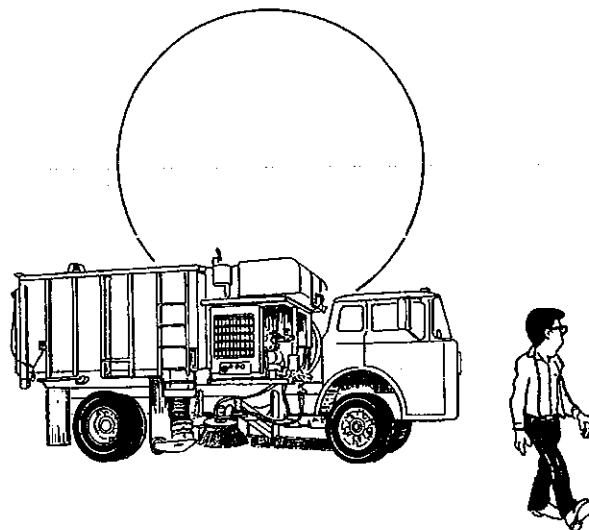
HOUSEKEEPING

Good housekeeping habits are a major factor in accident prevention.

1. Keep hand rails and steps clean and free of grease or debris.
2. Do not store brooms or other equipment where they could inadvertently activate controls.

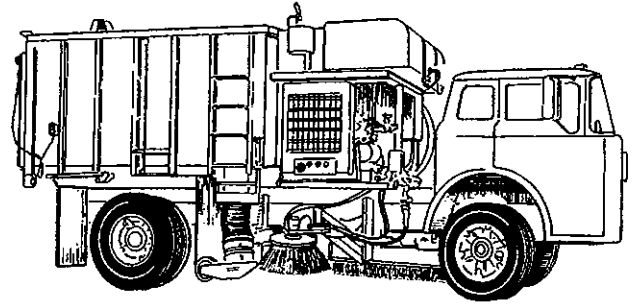
SHUTDOWN

1. Put all controls in neutral.
2. Attach chain binders to nozzle(s) and gutter broom(s).
3. Set parking brake.
4. Shut off engine.
5. Remove key.
6. Lock vehicle.



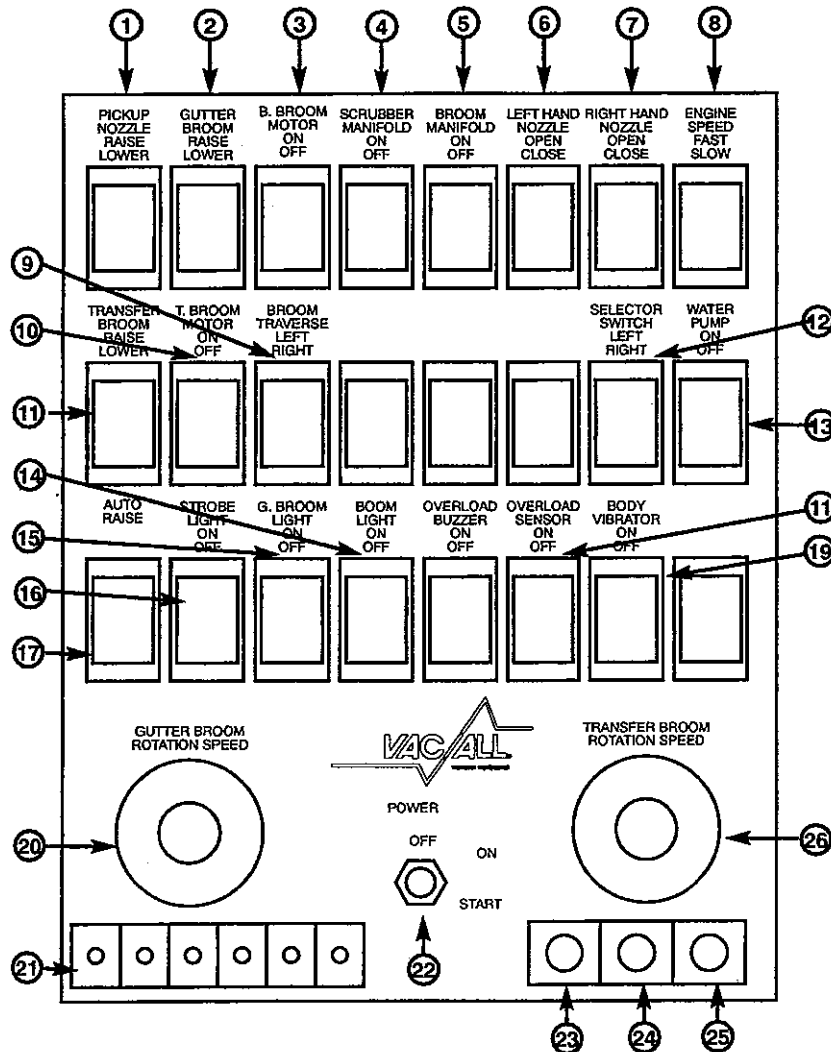
GENERAL

This section will provide all of the instructions necessary to operate the unit. However, prior to attempting any operation make sure you are familiar with all of the safety information contained in Section 2 SAFETY PRECAUTIONS.



DESCRIPTION OF SWEEPER OPERATING CONTROLS

Various controls are required for the complete and efficient operation of the unit. It is important that you are aware of the location and function of each control before attempting to operate the unit. Refer to the accompanying illustrations for their locations.



SECTION 3 OPERATION

⚠ DANGER

The following information is for descriptive purposes only. It is not to be misconstrued as operation instructions. For operating instructions refer to OPERATING PROCEDURES later in this section.

NOTE:

The operation of the Vac/All Street Sweeper is controlled from the cab. The electric control console is located just to the right of the operator in the cab.

1. **Nozzle** – Controls the raising and lowering of the nozzle. To raise the nozzle, press the switch to the raise position and hold until the nozzle reaches the fully raised position then release the switch and it will return to the off position. To lower the nozzle press the switch to the lower position and release. The switch will remain in this position and allow the nozzle to lower to the operating position and to float with the surface. **DO NOT PLACE SWITCH IN THE OFF POSITION WHILE SWEEPING IT WILL NOT ALLOW THE NOZZLE TO OPERATE IN THE FLOAT POSITION. DO NOT BACK UP WITH THE NOZZLE DOWN, DAMAGE MAY ACCURE.**
2. **Gutter Broom** – Controls the raising and lowering of the gutter broom and deflector brush. To raise the gutter broom and deflector brush press the switch to the raise position and hold until both the brooms reach the fully raised positions then release the switch and it will return to the “off” position. To lower the broom and deflector brush press the switch to lower position and release. The switch will remain in this position and allow the broom and deflector brush to lower to the operating position and to float the surface. **DO NOT PLACE SWITCH IN THE OFF POSITION WHILE SWEEPING IT WILL NOT ALLOW THE GUTTER BROOM TO OPERATE IN THE FLOAT POSITION. DO NOT BACK UP WITH THE GUTTER BROOM DOWN, DAMAGE MAY ACCURE.**
3. **Gutter Broom Motor** – Controls the gutter broom rotation. To turn the gutter broom “on”, press the switch to the “on” position. To turn the gutter broom “off”, press the switch to the “off” position.
4. **Scrubber Manifold** – Provides on-off control for water to the nozzle water manifold and scrubber collar. To turn the scrubber manifold “on” press the switch to the “on” position. To turn the scrubber manifold “off”, press the switch to the “off” position.
5. **Broom Manifold** – Provides on-off control for the water to the gutter broom spray bar and transfer broom spray bar. To turn on the broom manifold “on” press the switch to the “on” position. To turn the broom manifold “off”, press the switch to the “off” position.
6. **Left Hand Nozzle** – Controls the left hand nozzle, open or close. This automatically opens or closes a slide gate that opens or closes the air flow to the left hand nozzle. To “open” the slide gate press the switch to the “open” position. To “close” press the switch to the “close” position if the unit is so equipment.
7. **Right Hand Nozzle** – Controls the right hand nozzle, open or close. This automatically opens or closes a slide gate that opens or closes the air flow to the right hand nozzle. To “open” the slide gate press the switch to the “open” position. To “close” press the switch to the “close” position if the unit is so equipment.
8. **Engine Speed** – Controls the remote throttle to the auxiliary engine. It allows the auxiliary throttle to be adjusted from idle to maximum governed speed by depressing the switch from fast to slow.
9. **Transfer Broom Traverse** – Controls the positioning of the transfer broom. For right hand operation depress and hold the switch in the right hand position until the broom completes its right hand traverse, then release. For left hand operation depress and hold the switch in the left hand position until the broom completes its left hand traverse, then release. This switch will only be on units equipment with a left and right hand gutter brooms, with the transfer broom.
10. **Transfer Broom Motor** – Controls the transfer broom rotation. To turn on the transfer broom “on” press the switch to the “on” position. To turn the transfer broom “off”, press the switch to the “off” position if the unit is so equipment.
11. **Transfer Broom** – Controls the raising and lowering of the transfer broom. To raise the transfer broom press the raise position and hold until the transfer broom reaches the fully raised position then release the switch and it will return to the “off” position. To lower the broom press the

⚠ CAUTION

DO NOT OPERATE THE JETTING PUMP WITHOUT WATER.

SECTION 3 OPERATION

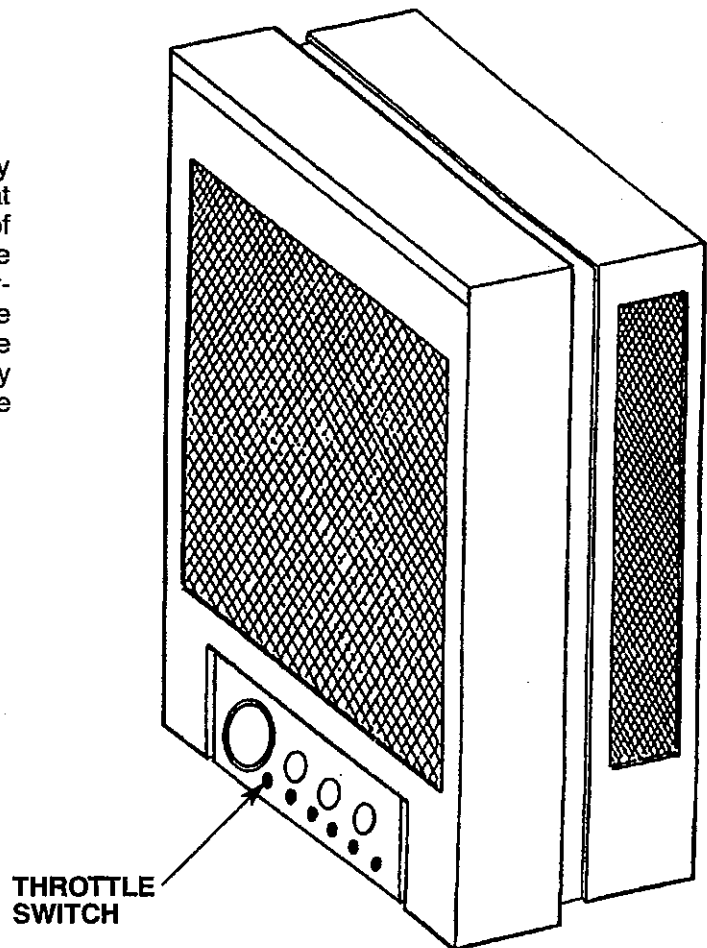
switch to the lower position and release. The switch will remain in the position and allow the broom to lower to the operating position and to float with the surface if the unit is so equipped. DO NOT OPERATE THE TRANSFER BROOM WITH THE SWITCH IN THE "OFF" POSITION IT WILL NOT ALLOW THE TRANSFER BROOM TO OPERATE IN THE FLOAT POSITION. DO NOT BACK UP WITH TRANSFER BROOM DOWN, DAMAGE MAY OCCUR.

12. **Selector** – Controls the selection of the right or left sweeper and nozzle assembly on the units equipped with dual sweepers. This switch is not installed on single sweepers models.
13. **Water Pump** – Controls the water pump, activates and deactivates. To engage the water pump place the switch to the "on" position. To disengage the water pump place the switch in the "off" position if the unit is so equipped.
14. **Broom Light** – Controls the broom lights. When the switch is in the "on" position, the strobe light will be "on". To disengage, place the switch in the "off" position if the unit is so equipped.
15. **Gutter Broom Light** – Controls the gutter broom work lights. When the switch is in the "on" position, the work lights will be "on". To disengage, place the switch in the "off" position if the unit is so equipped.
16. **Strobe Light** – Controls the strobe light. When the switch is in the "on" position, the strobe light will be "on". To disengage, place the switch in the "off" position if the unit is so equipped.
17. **Auto Raise** – Controls the raising of the nozzle, gutter broom deflector brush, transfer broom. To "raise", press and hold the switch and all functions will "raise". Release the switch will return functions to where they were if the unit is so equipped.
18. **Overload Buzzer** – Controls the over load alarm. When the switch is in the "on" position the overload alarm will sound. To disengage place the switch in the "off" position and the alarm will not sound if the unit is so equipped.
19. **Body Vibrator** – Controls the body vibrator. When the switch is depressed the vibrator will be activated, if the unit is so equipped. THIS SWITCH SHOULD ONLY BE DEPRESSED FOR 5 TO 8 SECONDS AT A TIME. DAMAGE WILL OCCUR SHOULD SWITCH BE DEPRESSED LONGER THAN 10 SECONDS.
20. **Gutter Broom Speed** – Adjusts the gutter broom speed. By turning the rheostat clockwise will increase the rotation speed of the gutter broom. Rotating the rheostat counter clockwise will reduce the gutter broom rotation speed.
21. **Star Light Indicator** – Indicates output of the warning lights on the tailgate of the unit. This light system will indicate five different light patterns if the unit is so equipped.
22. **Power/Start Switch** – This switch controls the on-off, power supply, and cab start of the unit. With the key in the "off" position the power supply to the Vac/All will be inoperative, the key switch must be in the "on" position to operate any of the controls. To start turn the key switch clockwise to the start position once the engine starts let the key return to the on position. NOTE IF THE KEY IS LEFT IN THE ON POSITION FOR 15 SECONDS THE SHUT DOWN SYSTEM OF THE UNIT WILL BE ACTIVATED AND THE UNIT WILL NOT START. TO START THE UNIT RETURN THE KEY TO THE OFF POSITION AND THAT WILL RESET THE SHUT DOWN SYSTEM.
23. **Body Overload** – This light provides an indication if the body is overloaded, this works in conjunction with a switch on the rear of the unit. When the light is illuminated the body has reached the unit weight limitations if the unit is so equipped. NOTE: THIS SWITCH IS NOT ADJUSTED AT THE FACTORY AS THERE ARE DIFFERENT WEIGHT LIMITATIONS IN DIFFERENT AREAS.
24. **Water Level** – This light provides an indication if the water supply in the water tank is low, this works in conjunction with a switch that is located in the water tank. When the light is illuminated the water level is low and needs to be refilled if the unit is so equipped.
25. **Transfer Broom** – This light provides an indication if the transfer broom is in the fully raised position, this works with a switch that is located on the transfer broom frame. When the light is illuminated the transfer broom is fully raised if the unit is so equipped.
26. **Transfer Broom Speed** – Adjusts the transfer broom speed. By turning the rheostat clockwise will increase the rotation speed of the transfer broom. Rotating the rheostat counter clockwise will reduce the transfer broom rotation speed.

SECTION 3 OPERATION

THROTTLE CONTROLLER

The throttle switch is located under the auxiliary engine. On sweeper units it is inside the cab unit at the control console. These are remote methods of adjusting the engine rpm level. The key switch on the control console turned to the "on" position allows current to flow to the electric throttle controller. With the key switch "on" and by positioning the switch in the "up" position, the engine rpm's are increased. By depressing the switch to the "down" position the engine rpm's decrease.



SECTION 3 OPERATION

DESCRIPTION OF OPERATING CONTROLS

TACHOMETER/HOURMETER – Monitors the engine rpm and records the engine operation hours.

COOLANT TEMPERATURE GAUGE – Monitors the engine coolant temperature and will shut down the engine if the coolant temperature rises above a factory preset temperature.

VOLT METER – Monitors the voltage output of the engine's alternator.

OIL PRESSURE GAUGE – Monitors the engine oil pressure and will shut down the engine if the oil pressure falls below a factory preset pressure.

THROTTLE SWITCH – Controls the remote throttle to the auxiliary engine. It allows the auxiliary throttle to be adjusted from idle to maximum governed speed by depressing the switch from fast to slow.

BODY HOIST SWITCH – Located at the engine panel, activates the debris body hoist for raising and lowering of the debris body.

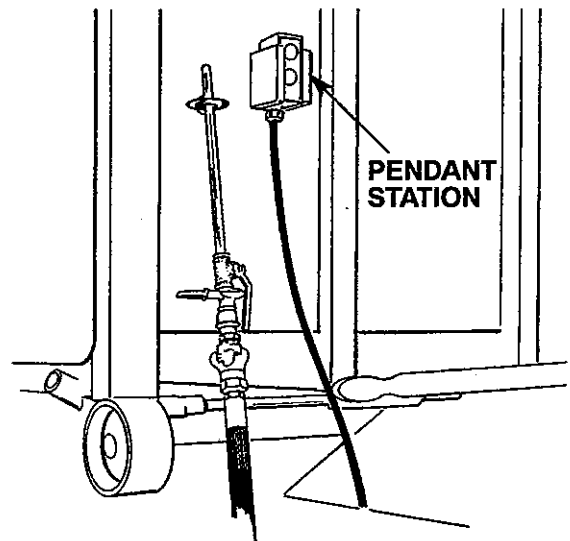
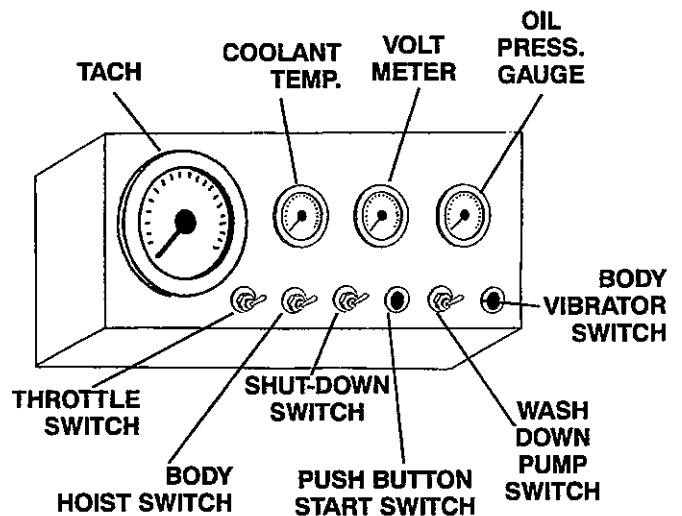
SHUT-DOWN SWITCH – Controls the remote shut-down of the auxiliary engine. By flipping the switch it will shut down the auxiliary engine. **NOTE: THIS SWITCH NEEDS TO BE IN THE RUN POSITION FOR THE ENGINE TO START.**

STARTER SWITCH – Controls the starting of the auxiliary engine. By depressing the switch it will engage the starter to the auxiliary engine. To shut engine off there are two locations; shut-down switch or the main power supply key switch inside the cab.

WASH-DOWN PUMP SWITCH – Engages and dis-engages the water pump.

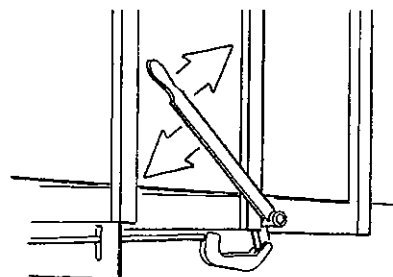
BODY VIBRATOR SWITCH – Controls body vibrator. By depressing the switch it will engage the body vibrator. **NOTE: DAMAGE MAY ACCURE IF THE SWITCH IS DEPRESSED LONG THAN 5 TO 8 SECONDS.**

POWER BOOM PENDANT STATION – Located at the right rear corner of the debris body, it activates the power boom pump and valve.



TAILGATE LATCH (Manual)

This handle mechanically latches or unlatches the tailgate. Pull the handle toward the rear to latch and toward the front to unlatch the tailgate.



SECTION 3 OPERATION

OPERATING PROCEDURES

This section of the manual provides instructions necessary to start and operate the Vac/All unit including specific instructions for pre-operational checks, operation, dumping and shut-down.

NOTE:

It is important that operators and mechanics understand these procedures before attempting to start or operate the unit.

PRE-OPERATIONAL INSPECTION

Each day before starting the unit, perform the following operational inspection:

CAUTION

Read Section 2 SAFETY PRECAUTIONS, before attempting to perform pre-operational inspection:

NOTE:

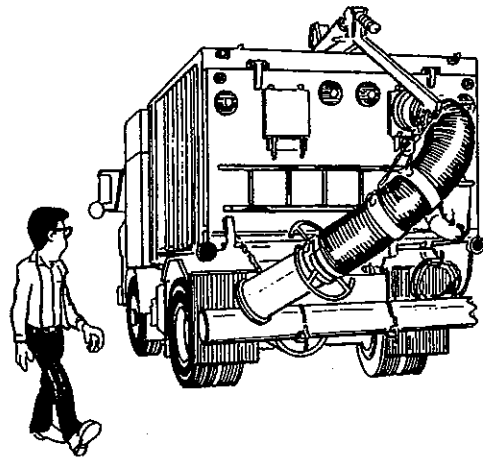
The unit should be stored empty, with body tipped slightly. Remove air chamber covers to allow air flow through the body and filter system.

1. Refer to the decal location illustration in Section 2 SAFETY PRECAUTIONS; of this manual and make sure all decals are in place and readable. Replace any decals that are not.

NOTE:

A decal kit is available, free of charge, from your local Vac/All distributor.

2. As you are checking for decals, also look for fluid leaks on and around the unit. Also check for fluid leaks at the hydraulic cylinders, valves, and fittings.
3. Inspect the mounting sills and attaching hardware. Make sure everything is tight and that there are no broken or excessively worn parts. Check all bolts and fasteners for tightness, and visible welds for cracks.

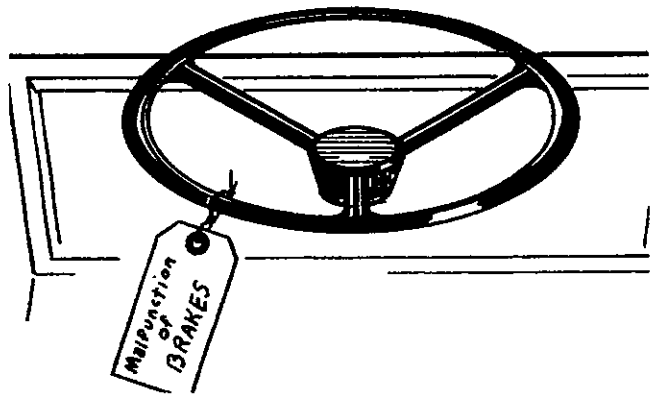


SECTION 3 OPERATION

15. Start the chassis engine according to the manufacturer's instructions and while it is warming up, check all of the operating, running, and warning lights. Make sure none are missing or damaged and that there are no burned out bulbs.
16. Back the unit up a few feet to ensure that the backup alarm is working properly.
17. Report any problems found during the preoperation inspection to the maintenance supervisor for service or repair, then place a tag on the steering wheel which says "inoperative" and remove the keys.

CAUTION

Do Not operate a unit that needs service or repair.

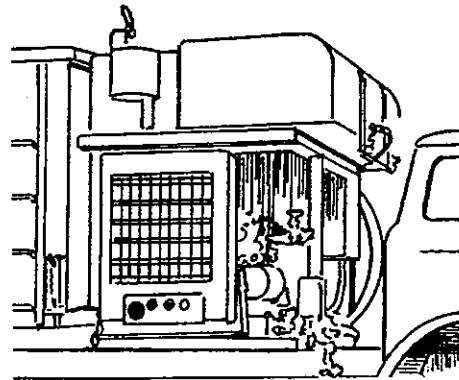


BLOWER DRIVE ENGINE

The blower drive engine (blower engine) powers the blower wheel, the water pump and hydraulic pump. The blower engine has its own fuel tank, battery, and charging system.

The engine speed is controlled electrically from the engine or at the cab control console. The key switch on the cab control console must be turned to the "on" position to activate the system.

The engine is also equipped with a low oil pressure and high coolant temperature shut down system which automatically shuts down the engine if the oil pressure becomes too low and/or the coolant temperature becomes too high.



SECTION 3 OPERATION

BLOWER OPERATION

The blower is a centrifugal type fan which is belt driven by the blower engine through a clutch. It is capable of moving a maximum 16,500 CFM's of air, creating air velocities in excess of 180 mph through the vacuum nozzle and catch basin intake hose if optionally equipped.

BLOWER START UP

CAUTION

Read carefully Section 2 SAFETY PRECAUTIONS before attempting to operate the blower, water pump or hydraulics.

1. Read carefully Section 2 SAFETY PRECAUTIONS and Section 3 OPERATION, before attempting to operate the blower, water pump and hydraulics.
2. Start and warm up the engine as described in the engine manufacturer's operation and maintenance manual. When the engine is started the PTO will automatically engage itself with a no load condition to the engine. The blower will begin the spinning.

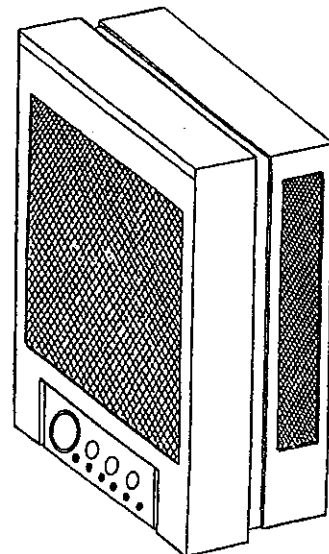
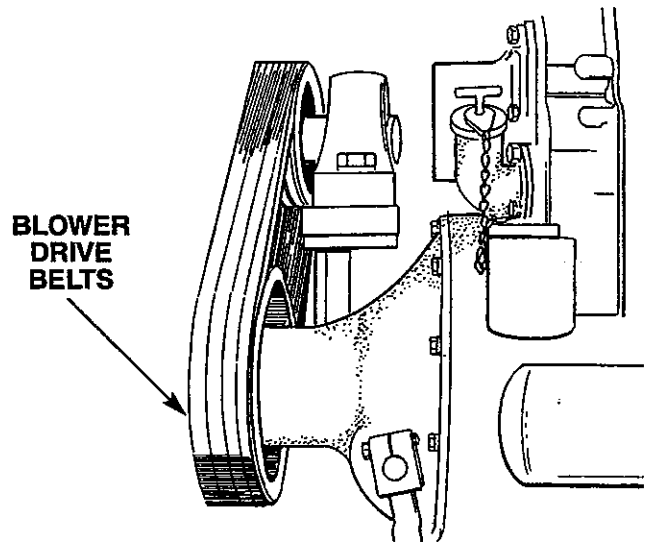
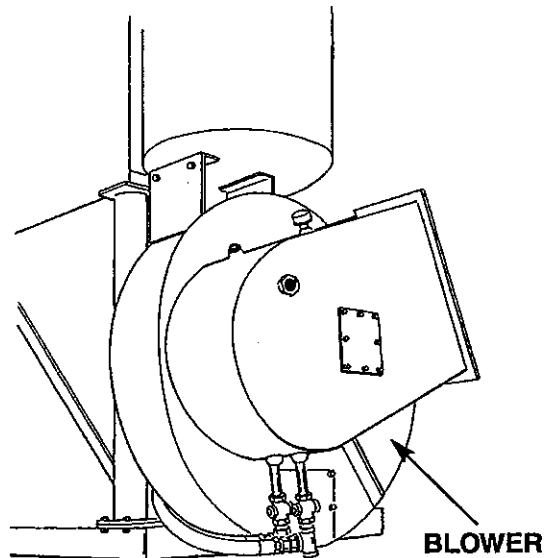
CAUTION

Caution should be taken if the unit is inside as the blower will start exhausting air through the silencer.

3. As engine rpm's are increased the PTO will lock up at 1200 to 1400 rpm's. Increase the engine rpm's to full operating speed as conditions require.
4. To disengage the blower return the engine rpm's back to idle and let the engine cool as instructed in the engine operating manual. Once cooled, shut the engine off.

SHUT DOWN

1. Adjust the engine throttle to the idle position.
2. When the engine speed falls to idle, disengage the jetting clutch (if engaged).
3. Shut down the engine as described earlier in this manual.



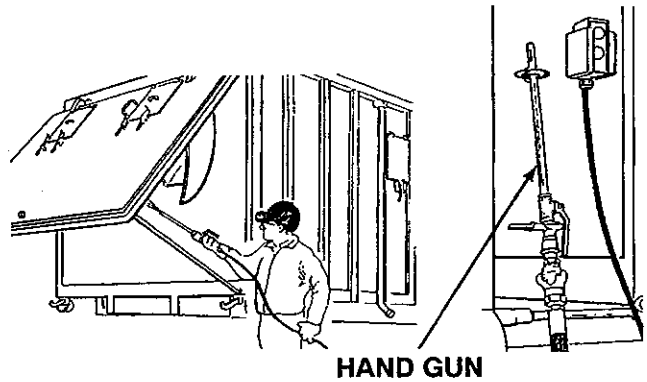
SECTION 3 OPERATION

WATER SYSTEM

HAND GUN

The water wash down system for the hand gun consists of the following basic components:

1. Water tank
2. Suction strainer
3. Hydrant fill/drain
4. Jetting pump
5. Hand gun



The water jetting pump draws water from the water tank and supplies water pressure at the hand gun. The hand gun is used for general clean up and to clean out the debris body.

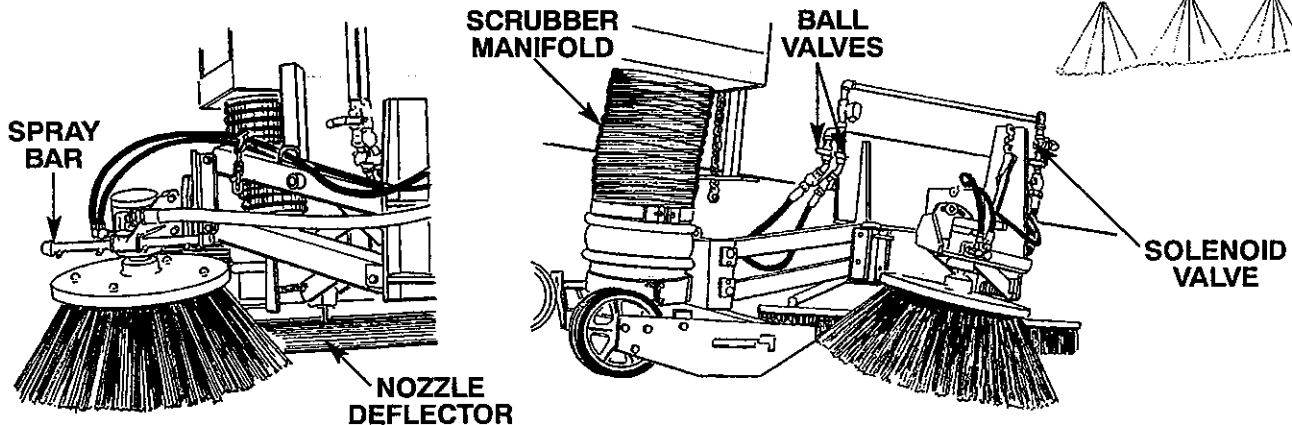
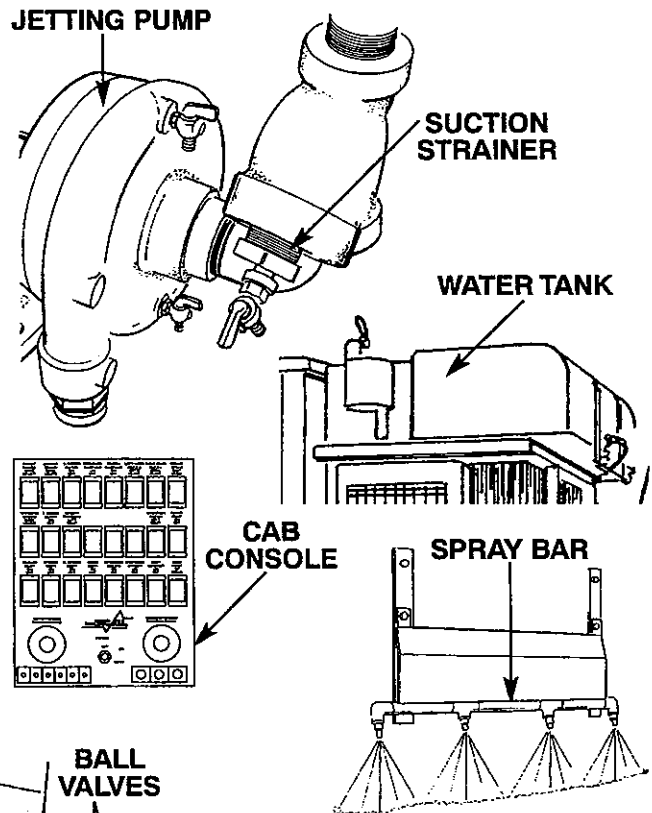
SWEEPER ATTACHMENT

The water system for the sweeper attachment consists of the following components.

1. Water tank
2. Suction strainer
3. Hydrant fill/strain
4. Jetting pump
5. Hand gun
6. Ball valves
7. Solenoid valves
8. Nozzle deflector manifold
9. Scrubber manifold
10. Spray bar (Gutter Broom)
11. Spray bar (Transfer Broom)
12. Cab control switches (spray bar/scrubber-deflector)

NOTE:

Units equipped with dual sweepers will have an identical set of ball valves on the opposite side of the unit. These valves will have to be opened when draining the water system.



SECTION 3 OPERATION

SHUT DOWN

1. Bring the engine to an idle and shut off the spray bar and scrubber switch(es) on the control console in the chassis cab.

NOTE:

If the pump is engaged after bringing the engine rpm's to idle, disengage the clutch.

2. If the water system is not to be used again during the shift, drain the system as follows:
 - a) Disconnect the hose from the rear port and open the valve.

- b) Open the three (3) ball valves for the spray bars, nozzle deflector and scrubber manifold. Turn the cab control console to the "on" position and open all solenoid valves by positioning the spray bar/scrubber switches to "on". Once all the water has drained from the system both switches can be returned to "off" and the control console key switch, switched to "off".
- c) Open the three (3) drain valves at the water pump.
- d) Open the hydrant fill/drain valve.

NOTE:

Units equipped with the optional dual sweeper arrangement will have an identical set of ball valves on the left side of the unit which will also have to be opened when draining the water system.

COLD WEATHER SWEEPING

Water must be used when sweeping because dry abrasive materials can be very harmful to the sweeper intake duct assembly and the blower.

If it becomes necessary to sweep in freezing weather, it is possible to add an anti-freeze additive to the water system to keep it from freezing. Alcohol, ethylene glycol or an equivalent anti-freeze will not harm the water system. The following must be checked periodically for icing when sweeping.

1. Pick-up nozzle assembly
2. Spray bars
3. Hose assembly
4. Filter screens
5. Suction fan assembly
6. Water pump

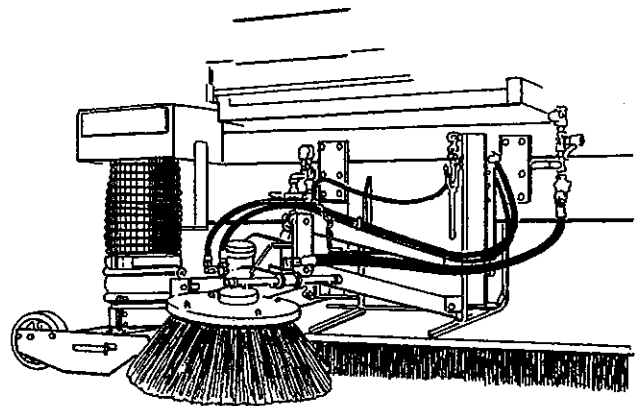
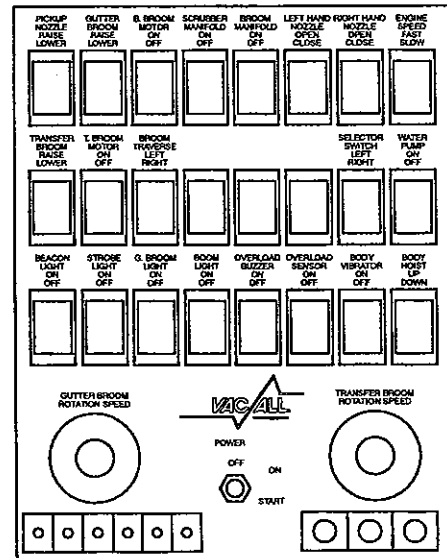
Consult your local anti-freeze supplier for advice on the amount required to keep the water system from freezing. Remember that the water must pass through a small orifice at the pick-up nozzle and spray bar and it is imperative that adequate anti-freeze be added for operations below 32° F (0° C).

If anti-freeze is used, the complete water system should be flushed periodically (ONCE EVERY TWO (2) WEEKS) and all the above mentioned areas be checked for anti-freeze residue build-up. If residue does occur, the components should be completely cleaned. Should the material being picked up have a tendency to freeze in the hopper body, the operator must be very careful when dumping the material so that the unit is not damaged.

The unit should be kept in a heated garage when storing overnight.

SECTION 3 OPERATION

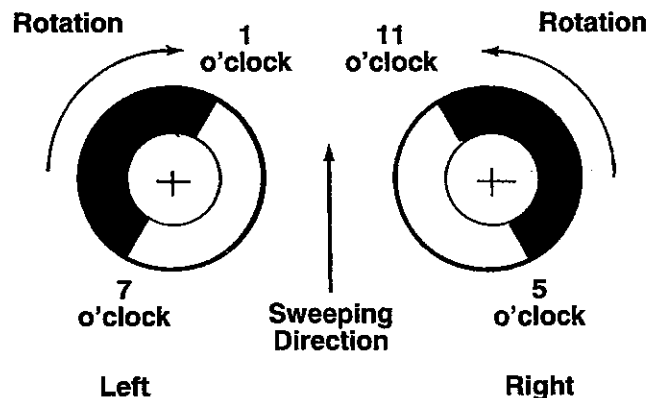
- Turn the remote engine controller key to the "on" position. Start the auxiliary engine as described earlier and turn the key on at the cab control console. Press the broom/deflector switch, the nozzle switch and the broom transfer broom switch to their raised position. Remove the chain binders at the gutter broom and disconnect the chain hook at the nozzle and transfer broom. Next lower the nozzle and gutter broom by pushing the broom and nozzle buttons to the lower position and release. If your unit is equipped with power traverse for the transfer broom determine which direction you wish to move the material (left or right) and position the transfer broom in that direction by selecting left or right on the control console traverse switch. Lower the transfer broom by selecting the "lower" position of the transfer broom switch and release. Reduce engine rpm's and shut down Vac/All engine.
- With the transfer broom lowered check for contact of the broom with the pavement. Check for excessive wear at the broom which would prevent the broom's ability to move material into the path of the nozzle. Further assure that the broom is positioned left or right for proper sweeping pattern.
- With the gutter broom lowered check for the pitch at the broom.



The gutter broom can be adjusted for road contact and wear at the motor mounting bracket and the lower broom pivot arm. The correct contact area is illustrated.

Rotating the angle of contact of the broom is done by rotating the motor mounting bracket. To do this loosen the two (2) clamp bolts located in the motor mounting bracket. Swivel the broom to the correct angle and retighten the clamp bolts. Lateral movement of the broom, away or toward the truck chassis is done by adjusting the lower broom pivot arm. The proper broom contact areas are counter clockwise from a 5 o'clock position to an 11 o'clock position for the right hand broom and clockwise from 7 o'clock to 1 o'clock for the left hand broom (if so equipped).

An additional adjustment is provided in the broom tie rod. To change the length of the rod assembly, loosen the locknuts located at the ends of the rod. Turn the tie rod in or out to the required length. Retighten the locking nuts. Lengthening the tie rod assembly will produce a wider swath when the broom is in contact with the road. This will also cause the broom to retract a shorter distance when raised. Shortening the tie rod assembly will effect a narrower swath, closer to the truck, when the broom is down. This will also cause the broom to retract a further distance when it is raised.



SECTION 3 OPERATION

START UP

SWEEPING OPERATION

1. Start the engine as previously described, making sure the remote engine throttle controller is in the on position. Bring the engine to idle.
2. Fill the water tank.
3. Travel to the job site.

CAUTION

Whenever the unit is traveling make sure the chain binders are attached to the sweeping apparatus.

4. At the job site release the chain binders from the nozzle, gutter broom and transfer broom.

NOTE:

If the Vac/All is equipped with the dual sweeper option, the side of the unit that is remaining idle should remain in its chained up position while operating with the exception of the transfer broom.

5. Return to the cab and turn the control console on.
6. Turn the beacon light and all applicable flashers and signal lights on.
7. Lower the nozzle and then the gutter broom and then the transfer broom by depressing the switches on the cab console.
8. Turn the scrubber switch to the on position and adjust the water volumes at the ball valves. If dust control is needed at the spray bars push the spray bar switch to the on position and open the ball valve to the desired flow.

NOTE:

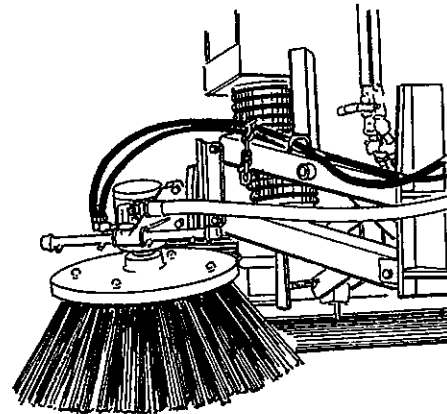
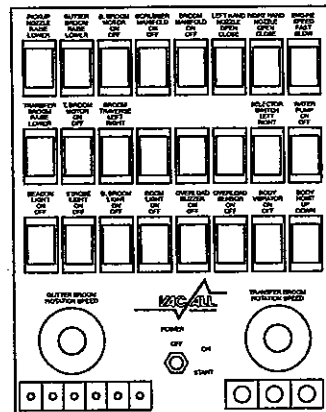
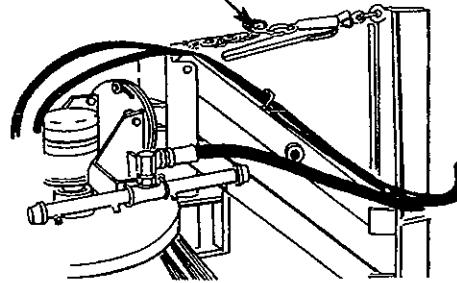
In heavy sweeping conditions it may be necessary to engage the water pump to supply greater water volumes to control dust. (See Section 3, Water System-Sweeper Attachment) Adjust ball valves at full engine rpm with water pump engaged.

9. Engage the blower as previously described and return to cab.
10. Push the engine speed switch on the cab console to the run position until the engine reaches the desired rpm level.

NOTE:

Full engine rpm is not always required. Adjust speed to the conditions.

CHAIN BINDERS



11. Prepare to move forward. Just before moving forward place the broom motor switch to the on position and the transfer broom switch to the on position.
12. Using the rheostat controls adjust the brooms to the desired sweeping speed.

NOTE:

The brooms should only turn as fast as necessary to move the material into the path of the pick up nozzle. Overspeeding of the brooms will result in material being thrown over the deflector brush and out of the path of the nozzle.

SECTION 3 OPERATION

UNLOADING PROCEDURE

The Vac/All E5/E10 is designed to dump the material collected in the debris body similar to a traditional dump truck. The material will exit the rear of the debris body when the tailgate is unlatched and suspended by the power boom and the body raised.

After unlatching the tailgate it is necessary to raise the tailgate by attaching the tailgate lift chain and operating the power boom.

The body hoist raises and lowers the body.

DUMPING

1. Read carefully Section 2, Safety and Section 3, Operations before attempting to dump the debris body.
2. Fill the water tank.
3. Position the unit so that the material will not flow back under the unit when the tailgate is opened and the debris body raised.
4. Connect the hand gun to the rear port and place the gun out of the path of the material. Remove both air chamber covers and place them in the chassis cab on the driver's side.
5. Attach the tailgate lift chain to the power boom.
6. Engage the hydraulics by starting the auxiliary engine and engage the jetting pump as previously described. Bring the engine to at least 1,200 rpm and unlatch the tailgate.
7. Once the liquid or solid material has fallen out raise the tailgate using the chain attached to the power boom.

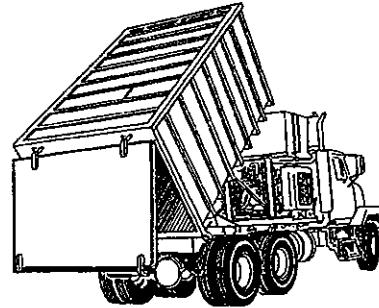
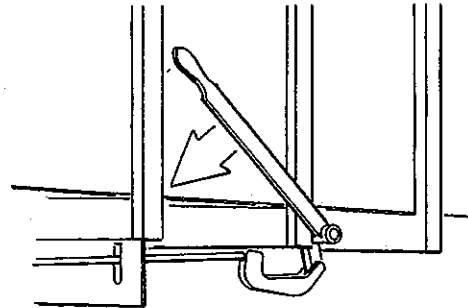
⚠ CAUTION

Be sure that both latches have dropped away from both tailgate latch pins before raising the body.

8. Lift and hold the body hoist switch up until the body is in the fully raised position.

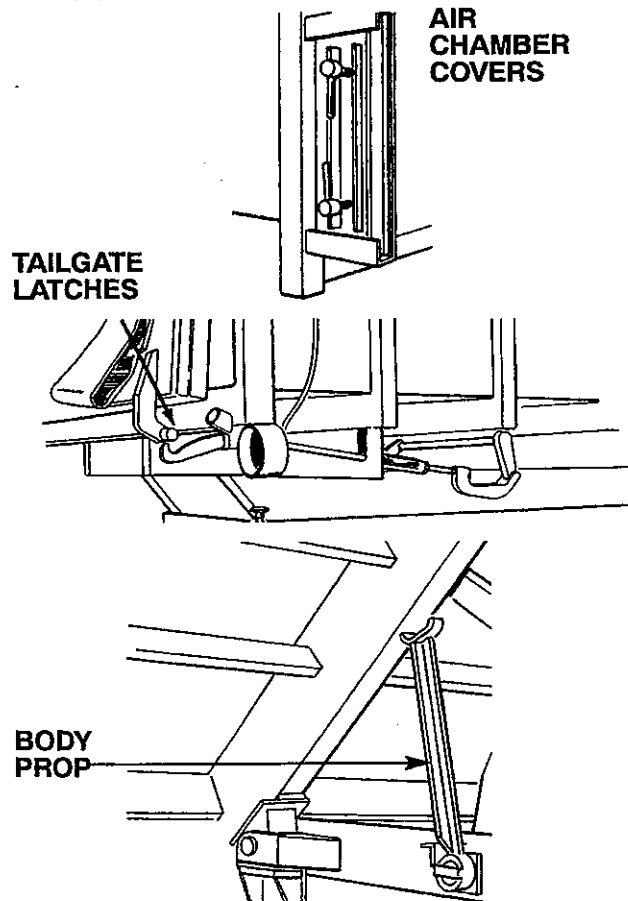
⚠ DANGER

Do not stand under the body when it is in the raised position unless the body props are in position.



⚠ DANGER

Be sure that the unit is on a solid, level surface and that there is sufficient overhead clearance when the debris body is raised.



TAILGATE LATCHES

AIR CHAMBER COVERS

BODY PROP

SECTION 3 OPERATION

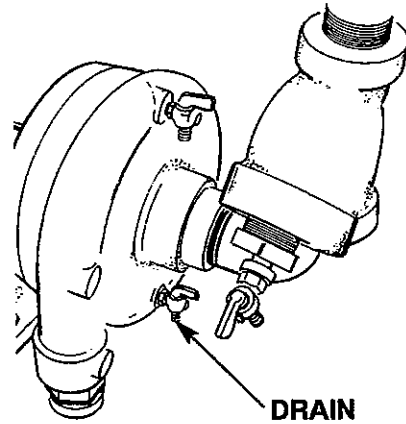
SHUT DOWN

Shutting down the Vac/All unit at the end of the shift consists of completely draining the water system and opening the body to allow air to circulate through it.

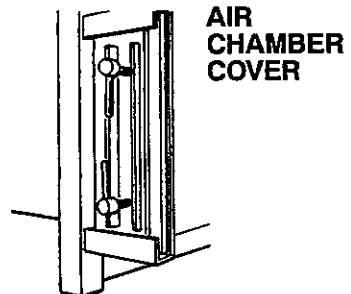
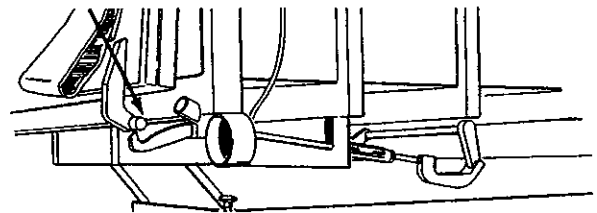
1. Read carefully Section 2, Safety, and Section 3, Operation before attempting to shut down the unit.
2. Be sure that the unit is thoroughly cleaned as described in the Dumping Section.
3. Open all the water system drain valves.
4. Open the tailgate latch. Remove the air chamber covers and place in the chassis cab.
5. Put the transmission in neutral.
6. Set the parking brake.
7. Shut off the engines, remove the keys, lock the doors.
8. Perform maintenance as described in the lubrication charts.

NOTE:

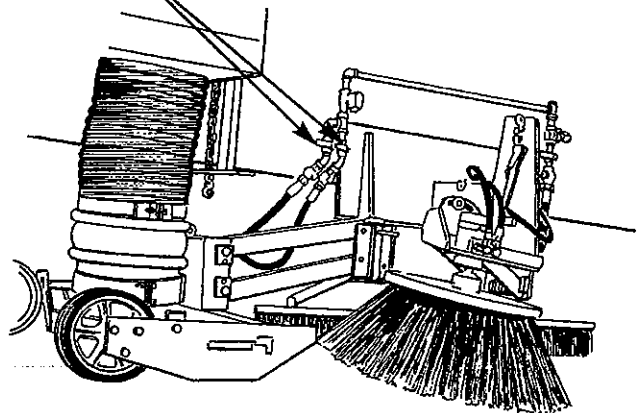
If the unit is to be stored longer than overnight, the tailgate should be propped open and the body partially raised and blocked.



TAILGATE LATCH



BALL VALVES



SECTION 3 OPERATION

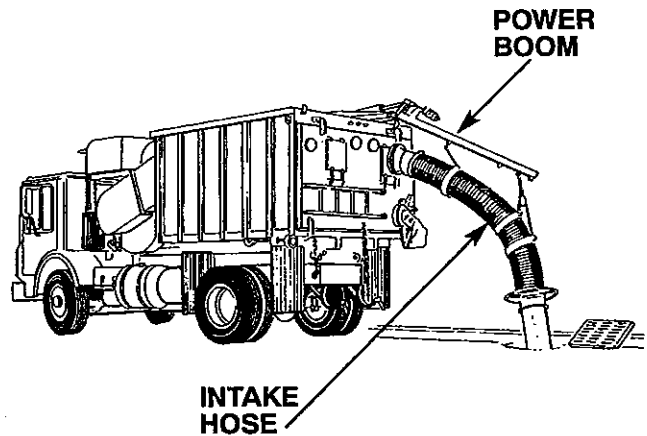
SECTION 4 CATCH BASIN INTAKE HOSE ASSY.

POWER BOOM OPERATION

The power boom is hydraulically raised to support the vacuum intake hose. The boom is operated with a two (2) button pendant station suspended from the boom which allows the operator safe and easy movement of the intake hose and tube during operation.

NOTE:

The power boom has a self contained electric over hydraulic system which does not require engine power to operate.

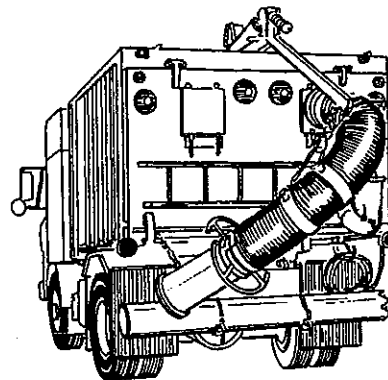


REMOVE HOSE FROM TRAVEL POSITION

1. Using the 2 button pendant station lower the boom allowing the travel and tailgate opening chains to be disconnected. Lower the intake hose manually to ground level.
2. Next use the 2 button pendant to raise the boom allowing the intake hose to clear the ground.

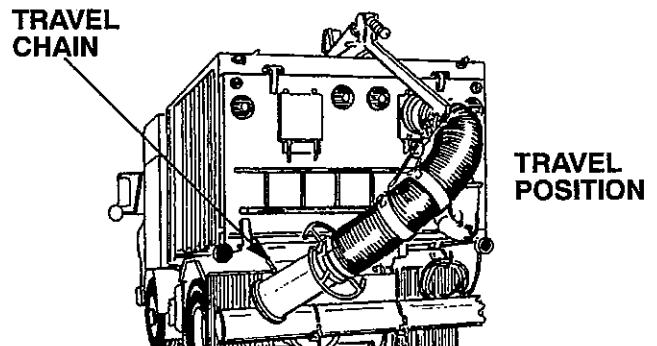
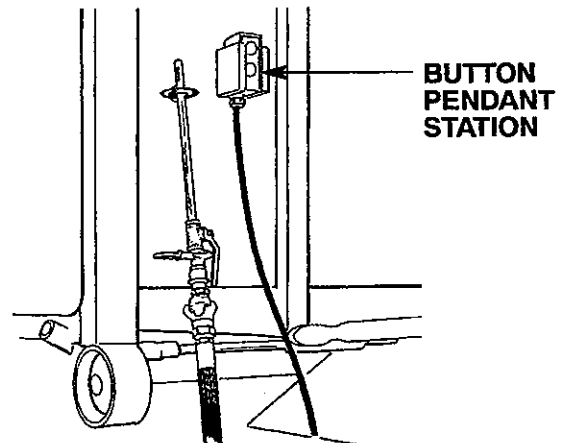
▲ DANGER

Before operating the power boom be sure there is sufficient clearance. Failure to do so may result in severe personal injury, death, and/or damage to the unit.



PLACE HOSE IN TRAVEL POSITION

1. Detach all extension tubes and accessories from the end of the intake hoses before attempting to place the hose in the travel position.
2. Hook the end of the intake hose to the tailgate chain. Raise the boom until the end of the hose moves away from the tailgate.



SECTION 4 CATCH BASIN INTAKE HOSE ASSY.

START UP VACUUM OPERATION

1. Start the engine and engage the water pump bringing the engine to at least 1200 rpm.
2. Using the pendant station, slowly lower the tube onto the material or liquid. Use the jetting gun to wash solids and slurries to the pickup tube or to add water to the debris to prevent abrasive wear or dirt buildup on the blower.

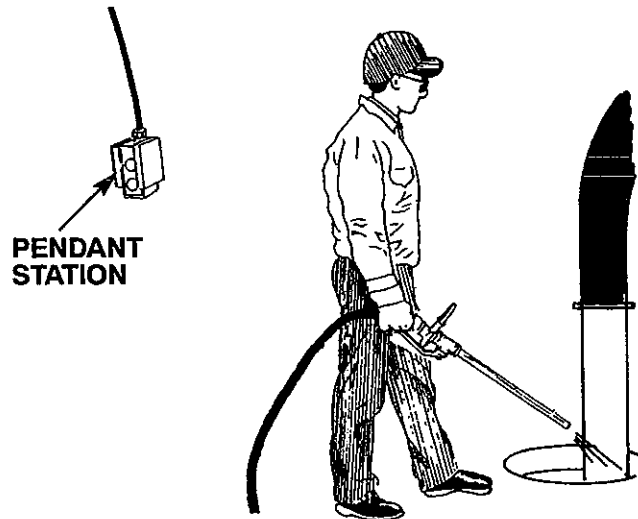
CAUTION

It may be necessary to add water under dry conditions to prevent component wear due to abrasion or dirt buildup.

3. Adjust the engine speed to accommodate the material being picked up; it may not be necessary to run the unit at full speed in lighter materials.

CAUTION

Never operate water pump without water.



SHUT DOWN VACUUM OPERATION:

1. Raise the tube up and away from the material or liquid and allow the tube to clear itself for about one minute.

NOTE:

It is often helpful to use the hand gun to put clean water at the intake tube to flush the tube and hose.

2. Bring the engine to an idle, and disengage the water pump.
3. Disconnect the tube(s) from the end of the intake hose and place the boom, and tubes and accessories, in their proper storage position before moving the unit.

CAUTION

Do not connect or disconnect the tube(s) from each other and/or the end of the intake hose until the blower has completely stopped.

