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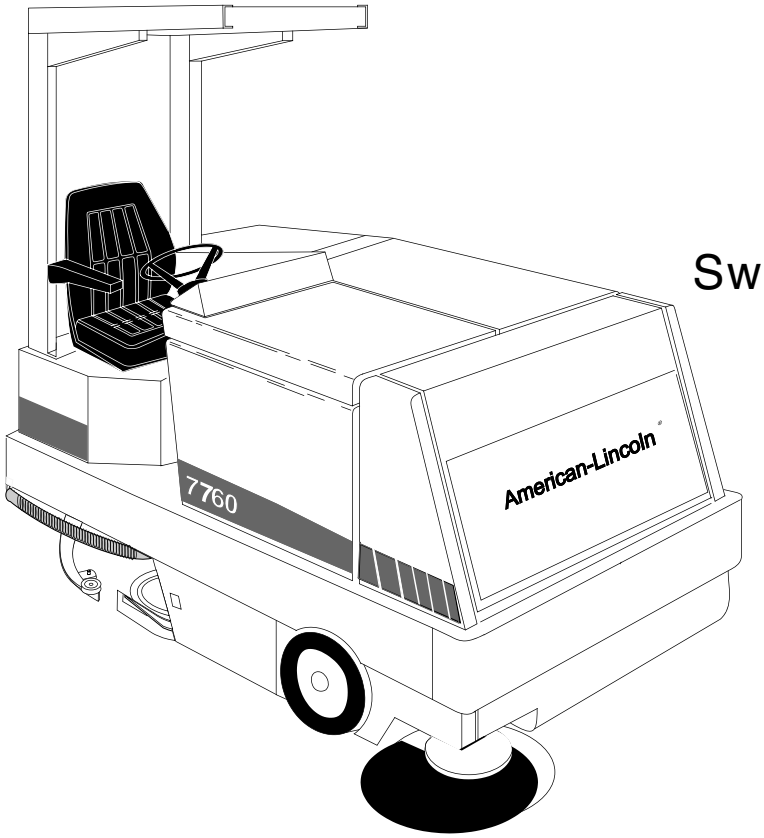
Operator's Manual & Parts List



Model 7760 Sweeper/Scrubber

Beginning with Serial No. 753391

READ THIS BOOK

This book has important information for the use and safe operation of this machine. Failure to read this book prior to operating or attempting any service or maintenance procedure to your machine could result in injury to you or to other personnel; damage to the machine or to other property could occur as well. you must have training in the operation of this machine before using it. If you or your operator (s) cannot read English, have this manual explained fully before attempting to operate this machine.

Si Ud. o sis operadores no pueden leer el Inglés, se hagen explicar este manual completamente antes de tratar el manejo o servicio de esta máquina.

All directions given in this book are as seen from the operator's position at the rear of the machine.

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DIMENSIONS

Length	107.0 Inches - 271.8 Cm.
Width	59.0 Inches - 149.9 Cm.
Height	61.5 Inches - 156.2 Cm.
Wheel Base	56.4 Inches - 143.2 Cm.
Height with Guard	85.5 Inches - 217.2 Cm.

DRIVES

Propelling	Variable Displacement Pump - Hydraulic Drive Motor
Sweeping	(1) Hydraulic Motor
Scrubbing	(3) Hydraulic Motors
Vacuum - Water Pick Up	(1) Hydraulic Motor

HYDRAULIC CONTROL

Single Foot Pedal Controls Forward, Neutral, Reverse & Dynamic Braking.
All Electro-Hydraulic Controls To Both Sweeping And Scrubbing Functions.

MECHANICAL SYSTEM

Steering	Power Steering with Rack and Pinion Gear.
Brakes	Parking/Foot Operated and Locked Disc Brakes
Brooms	Lift and Height Adjustment

SWEEPING SYSTEM

Type	Direct Throw
Hopper	1200 Lb. - 545 Kg. (Variable Dump) 400 Lb. - 181 Kg. (Manual Dump)
Main Broom	50 Inches Long X 14-Inch Diameter - 127 Cm. X 35.6 Cm. 3.25 Inch Bristle Length - 8.3 Cm. Features Broom Lift and Adj. Broom Height For Wear Compensation, Standard Poly-Fiber Broom, Quick Change System.

BRUSHES & SQUEEGEE

Brush	(3) 17.88 Inch (45.4 Cm.) Diameter Poly-Fiber Discs
Squeegees	(1) 62 Inch (157.48 Cm.) Wide Contoured Rear Swing Squeegee (2) 29 Inch (73.7 Cm.) Floating Side Squeegees, One On Either Side Of the Scrubbing Compartment

TANK CAPACITY (Standard)

100 Gallon (378.5 Liters) Solution Tank
100 Gallon (375.5 Liters) Recovery Tank

TANK CAPACITY (ESP System)

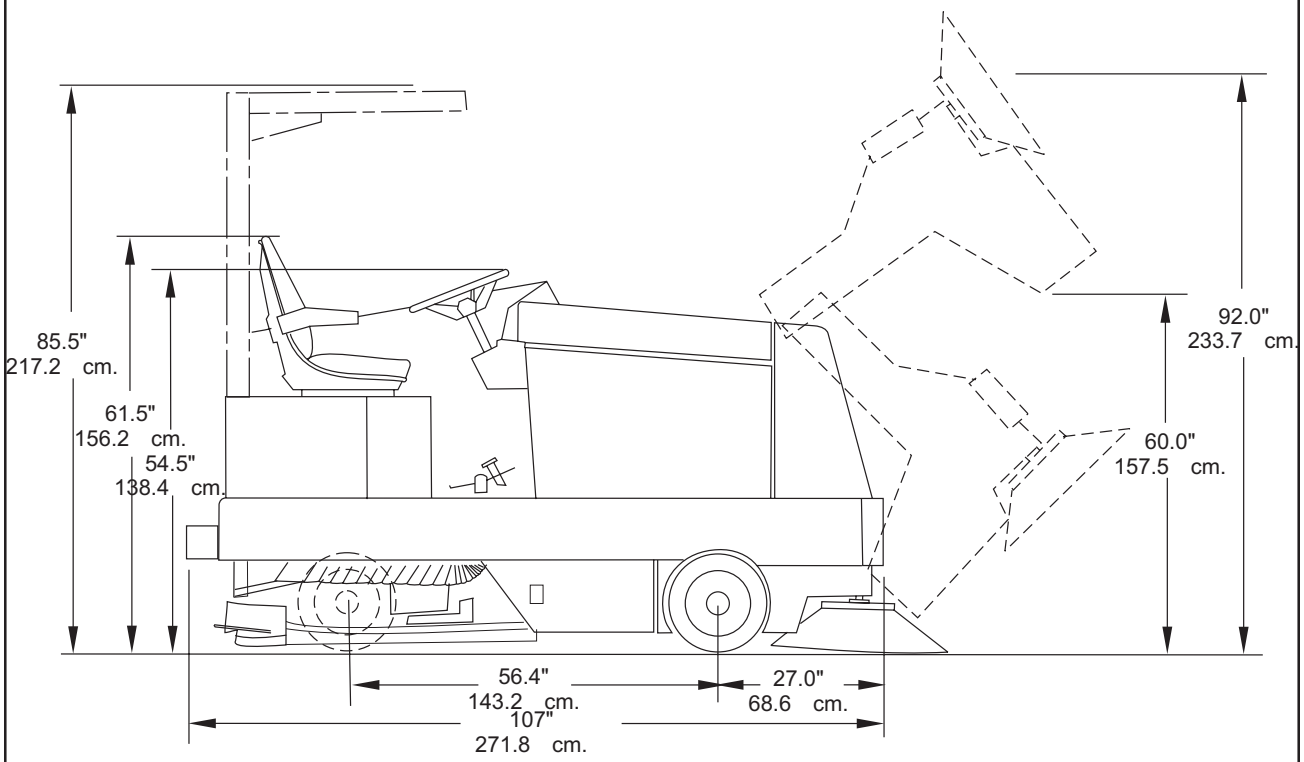
Interconnected Tanks Provide A Total Camel System Capacity Of 190 Gallons (719 Liters) Along With 5 Gallons (18.9 Liters) Of Detergent.

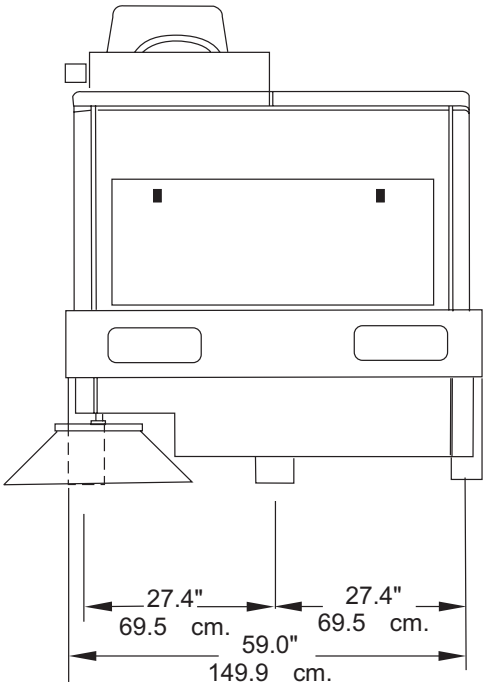
FUEL SYSTEM

Engine Cooling System	Radiator and Hoses (Approximately) 3 Quarts (2.8 Liters)
Gas/LP System Total	6.75 Quarts - 6.4 Liters
Diesel System Total	6.6 Quarts - 6.2 Liters
Gas, Diesel Fuel Tank	9.7 Gallons - 36.71 Liters
LPG Tank	33 Pounds
Engine Oil System	
Gas and LPG	4 Quarts - 3.8 Liters
Diesel	5 Quarts - 4.7 Liters
Hydraulic System	
Total System	11 Gallons - 41.6 Liters

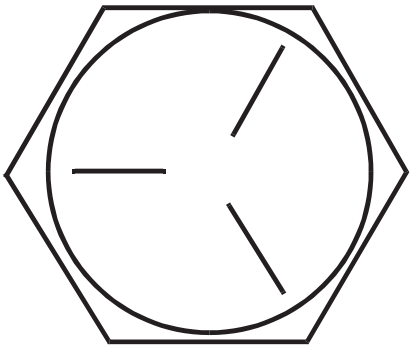
SWEEPING WIDTH	
	50 Inch (125.0 Cm.) Sweeping
	60 Inch (152.4 Cm.) Sweeping With Side Broom
SPEEDS	
Maximum Travel	7 Mph - 11.3 Km./Hr.
Recommended Maximum Sweeping And Scrubbing Speed	4.0 Mph - 6.4 Km./Hr.
TURNING RADIUS	
Left	82 Inches - 208.3 Cm.
Right	82 Inches - 208.3 Cm.
Minimum Aisle Width for 180° Turn	120 Inches - 305 Cm.
Scrubbing Width	54" Inches (137 Cm.) Provided By (3) 17.88 Inch (45.4 Cm.) Diameter Disc Brushes
WEIGHTS	
7760	Variable Dump/Manual Dump
Net	4150 Lb. - 1882 Kg. / 3700 Lb. - 1678 Kg.
Shipping W/ Crate	4600 Lb. - 2087 Kg./ 4150 Lb. - 1882 Kg.
ENGINE DATA	
Ford LRG - 425	
Bore And Stroke	3.78 X 3.126 In. - 9.60 X 7.94 Cm.
Oil Capacity	4 Quarts - 3.8 Liters
Displacement	4 Cylinders - 2.3 Liters (140 Cid)
Fuel	“Regular” Unleaded Gasoline
Perkins 104.19	
Bore And Stroke	8.307" X 3.543 (8.4 Cm X 9.0 Cm)
Oil Capacity	6.5 Quarts (6.2 Liters)
Displacement	4 Cylinders (2 Liters) (122 Cid)

MACHINE DIMENSIONS

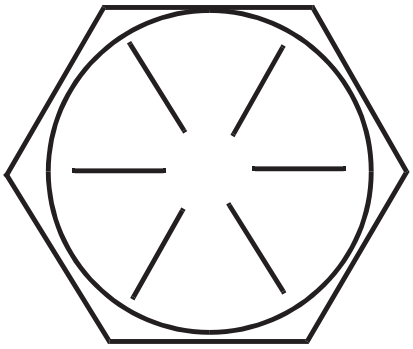




BOLT IDENTIFICATION



SAE - Grade 5



SAE - Grade 8

Screw Size	Grade 5 Plated		Grade 8 Plated		410H Stainless		Brass	Type F & T & BT		Type B, AB
	C	F	C	F	C	F		C	F	
*6	14	15	-	-	18	20	5	20	23	21
*8	27	28	-	-	33	35	9	37	41	34
*10	39	43	-	-	47	54	13	49	64	49
*1/4	86	108	130	151	114	132	32	120	156	120
5/16	15	17	22	24	19	22	6	-	-	-
3/8	28	31	40	44	34	39	10	-	-	-
7/16	44	49	63	70	55	62	16	-	-	-
1/2	68	76	95	108	85	95	-	-	-	-
9/16	98	110	138	155	-	-	-	-	-	-
5/8	135	153	191	216	-	-	-	-	-	-
3/4	239	267	338	378	-	-	-	-	-	-
7/8	387	-	545	-	-	-	-	-	-	-
1	579	-	818	-	-	-	-	-	-	-

C = Coarse Thread
F = Fine Thread
* = Torque values for #6 through 1/4 are lb./in. All others are lb./ft.

NOTE

Decrease the torque by 20% when using thread lubricant
The torque tolerance is ± on torque values.

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HYDRAULIC TORQUE REQUIREMENTS

Refer to the following chart for torque values on all hydraulic hoses and fittings.

Nominal SAE Dash Size	O-Ring Face Seal End		SAE O-Ring Boss End	
	Thread Size Inch	Swivel Nut Torque LB-FT	Thread Size Inch	Str. Fitting or Locknut Torque LB-FT
-3	*	*	3/8-24	8-10
-4	9/16-18	10-12	7-16-20	14-16
-5	*	*	1/2-20	18-20
-6	11/16-16	18-20	9/16-18	24-25
-8	13/16-16	32-35	3/4-16	50-60
-10	1-14	46-50	7/8-14	72-80
-12	1 3/16-12	65-70	1 1/16-12	125-135
-14	1 3/16-12	65-70	1 3/16-12	160-180
-16	1 7-16-12	92-100	1 5/16-12	200-220
-20	1 11/16-12	125-140	1 5/8-12	210-280
-24	2-12	150-165	1 7/8-12	270-360

* O-Ring face seal type end not defined for this tube size.

NOTE

Parts must be lightly oiled with hydraulic fluid.

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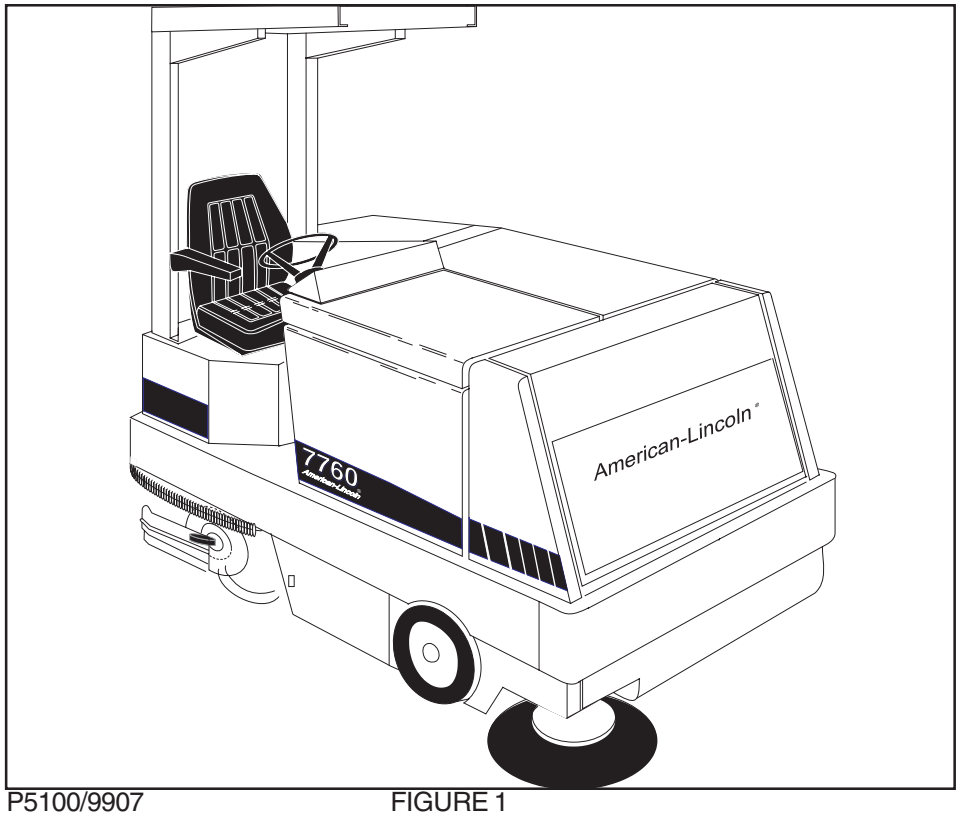
DECIMAL-METRIC CONVERSION TABLE

FRACTION	DECIMAL	MILLIMETER	FRACTION	DECIMAL	MILLIMETER
1/64	0.015625	0.3969	33/64	0.515625	13.0969
1/32	0.03125	0.7938	17/32	0.53125	13.4938
3/64	0.046875	1.1906	35/64	0.546875	13.8906
1/16	0.0625	1.5875	9/16	0.5625	14.2875
5/64	0.078125	1.9844	37/64	0.578125	14.6844
3/32	0.09375	2.3813	19/32	0.59375	15.0813
7/64	0.109375	2.7781	39/64	0.609375	15.4781
1/8	0.125	3.1750	5/8	0.625	15.8750
9/64	0.140625	3.5719	41/64	0.640625	16.2719
5/32	0.15625	3.9688	21/32	0.65625	16.6688
11/64	0.171875	4.3656	43/64	0.671875	17.0656
3/16	0.1875	4.7625	11/16	0.6875	17.4625
13/64	0.203125	5.1594	45/64	0.703125	17.8594
7/32	0.21875	5.5563	23/32	0.71875	18.2563
15/64	0.234375	5.9531	47/64	0.734375	18.6531
1/4	0.25	6.3500	3/4	0.75	19.0500
17/64	0.265625	6.7469	49/64	0.765625	19.4469
9/32	0.28125	7.1438	25/32	0.78125	19.8438
19/64	0.296875	7.5406	51/64	0.796875	20.2406
5/16	0.3125	7.9375	13/16	0.8125	20.6375
21/64	0.328125	8.3344	53/64	0.828125	21.0344
11/32	0.34375	8.7313	27/32	0.84375	21.4313
23/64	0.359375	9.1281	55/64	0.859375	21.8281
3/8	0.375	9.5250	7/8	0.875	22.2250
25/64	0.390625	9.9219	57/64	0.890625	22.6219
13/32	0.40625	10.3188	29/32	0.90625	23.0188
27/64	0.421875	10.7156	59/64	0.921875	23.4156
7/16	0.4375	11.1125	15/16	0.9375	23.8125
29/64	0.453125	11.5094	61/64	0.953125	24.2094
15/32	0.46875	11.9063	31/32	0.96875	24.6063
31/64	0.484375	12.3031	63/64	0.984375	25.0031
1/2	.05	12.7000	1	1.00	25.4000

C2001/9905



P5100/9907 FIGURE 1

YOUR 7760 MACHINE HAS BEEN SHIPPED COMPLETE, BUT DO NOT ATTEMPT TO OPERATE WITHOUT FOLLOWING THESE INSTRUCTIONS.

PREPARING THE MACHINE FOR OPERATION

1. Connect and tighten battery cables.
2. Fill the tank with REGULAR GRADE gasoline. (Diesel fuel if equipped with diesel engine.)

WARNING

Never fill tank while engine is running. Always be sure gasoline container and sweeper are electrically connected before pouring gasoline. This can easily be done by providing an insulated wire (permanently attached to container) with battery clip on the other end.

3. Check engine crankcase oil level. Although properly lubricated at factory, check before starting engine. No special break in oil is used and recommended number of operating hours before the initial oil change is the same as normal. See Maintenance.
4. Check radiator coolant level. Permanent type antifreeze is added at the factory to provide protection to approximately -35° F (37° C). To retain this protection level, always add 1/2 part water to 1/2 part anti freeze.
5. Check oil level in the hydraulic reservoir located at center of machine beside the engine. Oil fill level should be two (2) inches (5 cm.) below filler neck assembly. If oil is required, add HYDRAULIC FLUID ONLY, automatic transmission fluid FORD type “F”. After the first 50 operating hours, service must be performed on your engine to insure future high performance and trouble free operation. See Maintenance.

WARNING

FOR SAFETY, OBSERVE THE FOLLOWING WARNINGS. FAILURE TO COMPLY MAY CREATE A SERIOUS RISK OF INJURY TO YOU AND OTHERS. THIS MACHINE SHOULD NOT BE USED IN HAZARDOUS LOCATIONS INCLUDING AREAS OF VOLATILE DUST OR VAPOR CONCENTRATIONS.

Operators must be trained and qualified to operate this machine. They must also understand the operator's manual before starting.

Use caution when mounting or dismounting the machine particularly on wet slippery surfaces.

Operate only from the designated operator's position. Stay inside the body of the machine. Keep hands and feet on the designated controls. Always operate in well-lit areas.

Do not dump the hopper over an open pit or dock. Do not dump the hopper when positioned on a grade (ramp). The machine must be level (horizontal).

Exhibit extreme caution when negotiating, turning and traveling across grades or ramps.

Start, stop, change direction, travel and brake smoothly. Slow down when turning. Avoid uneven surfaces and loose materials.

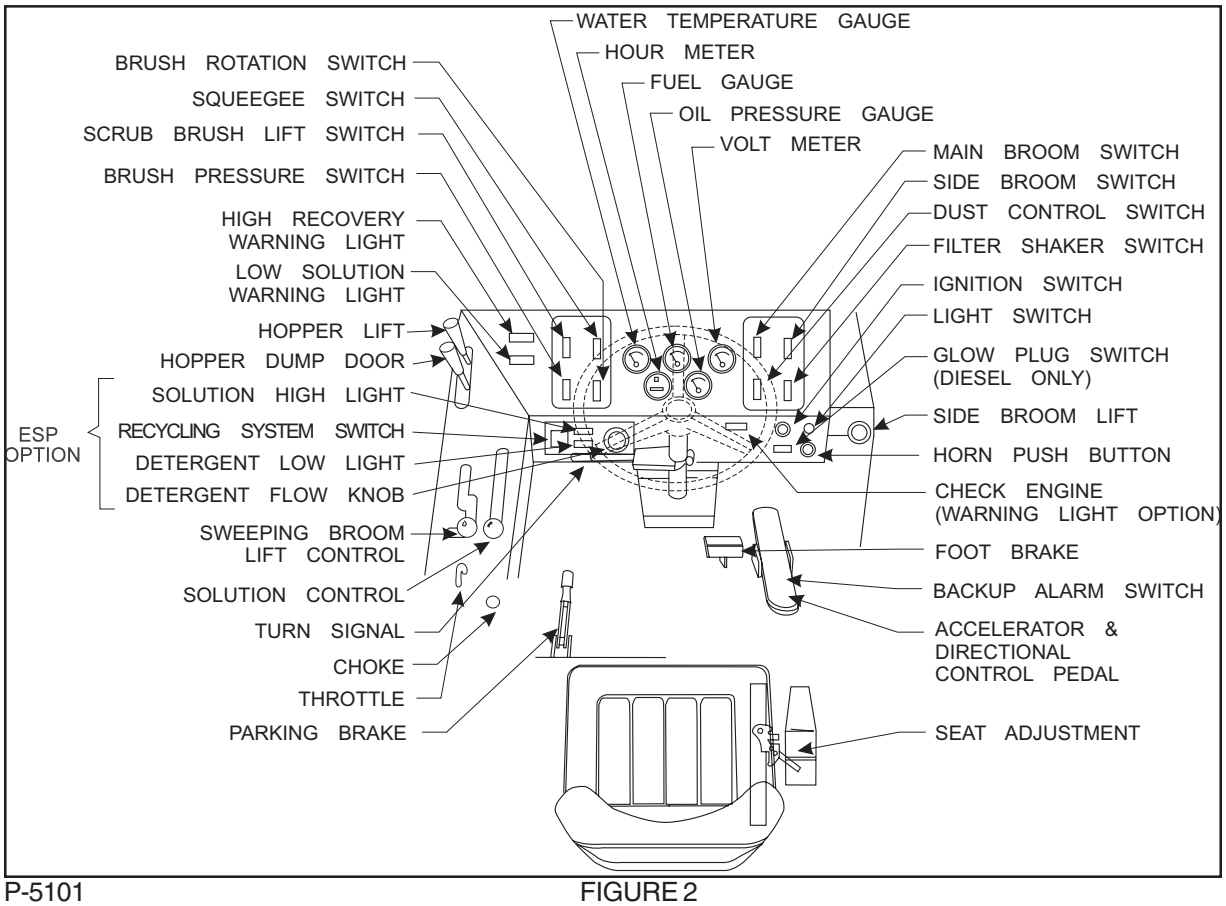
Watch out for obstructions, especially overhead.

Do not carry passengers on the machine.

Set parking brake when leaving the machine. Chock (block) the wheels if the machine is to be parked on a grade (ramp), or when working on it.

Never leave the operator's seat with the engine running.

Report damage or faulty operation immediately. Do not operate the machine until repairs have been completed.



P-5101 FIGURE 2

IGNITION SWITCH

The keyed ignition switch is located to the right of the steering column on the front face of the instrument console. It has four positions.

1. The key turned to the center “OFF” position will shut off the engine. The following items can be activated in the “OFF” position.
   (A.) Horn
   (B.) Light Options
2. The key turned to the left “ACCESSORY” position will allow the following additional items to be activated:
   (A.) Turn Signals
   (B.) Instrument Gauges
3. The key turned to the right “IGN/ON” position will allow all the items listed above to be activated. This position will not start the engine.
4. The key turned to the far right “START” position will start the engine. This position is a momentary position. The key will revert to the “IGN/ON” position when it is released.

LIGHT SWITCH

The light switch is located above the horn button to the right of the steering wheel. It will work various light options that are available for this machine, such as:

* HEAD LIGHTS
* TAIL LIGHTS
* INSTRUMENT LIGHTS

All gauges, with the exception of the hour meter can have an optional internal instrument light.

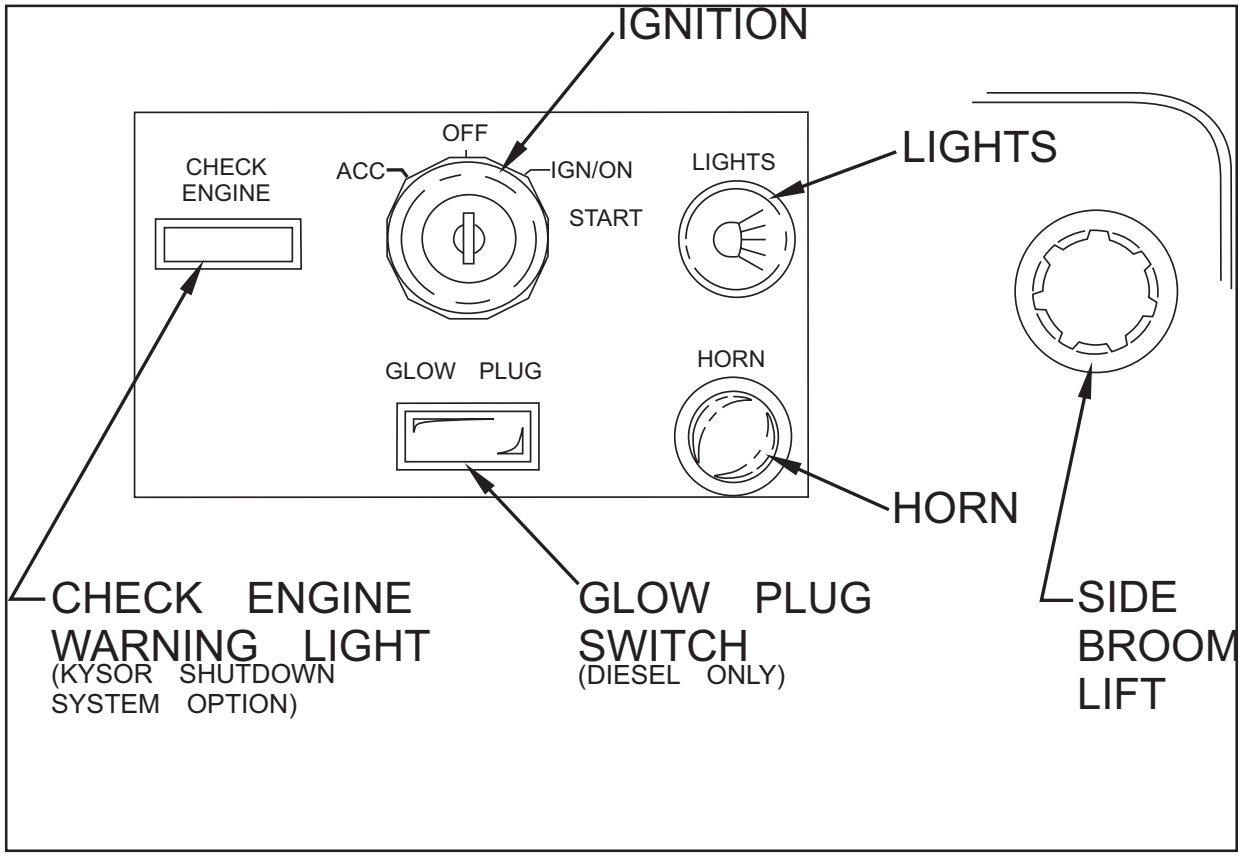
GLOW PLUG SWITCH (Diesel)
Under no circumstances should any other unauthorized starting aids be used at the same time as Glow Plugs. The Glow Plug Switch is located to the right of the steering column on the front face of the instrument console. Use the following procedure to operate.

1. Before operating the starter motor, press the “GLOW PLUG” button for 20 to 30 seconds.
2. With the “GLOW PLUG” button still depressed, engage the starter motor until the engine starts.
3. Continue to press the “GLOW PLUG” button for a few seconds after the engine has started until even running has been obtained.
4. If the engine does not start, disengage the starter motor, but keep the “GLOW PLUG” button depressed for an additional 10 to 15 seconds. Keep the Glow Plugs energized while starting the engine and for a few seconds after the engine has been running smoothly.

HORN PUSH BUTTON
The horn button is located to the right of the steering column on the front face of instrument console. The horn button is always active. Push the horn button to sound the horn.

CHECK ENGINE (WARNING LIGHT OPTION)
This engine has a low oil pressure and low water shutdown option. If the engine oil pressure or the water level drops too low, the engine will shut down. Add engine oil until the oil is brought up to the correct level, or water to the radiator to the correct level.

SIDE BROOM LIFT (OPTIONAL FOR MANUAL DUMP)
The Side Broom Lift Lever is located to the right of the instrument console. The handle pulled back and turned to the right will raise the side broom and lock it into position.



P-4853 FIGURE 3

MAIN BROOM SWITCH
The Main Broom Switch is located on the console to the right of the steering wheel in the SWEEPING section. This switch will activate the Main Broom. This switch has two positions “ON” and “OFF”. See Sweeping Broom Lift Control.

SIDE BROOM SWITCH (Option For Manual Dump Machines)
The Side Broom Switch is located on the console to the right of the steering wheel in the SWEEPING section. This switch will activate the Side Broom. This switch has two positions “ON” and “OFF”. See Side Broom Lift Control.

DUST CONTROL SWITCH (Wet Sweep Bypass Option - Option for Manual Dump Machine)
The Dust Control Switch is located on the console to the right of the steering wheel in the SWEEPING section. This switch will activate the dust control system.

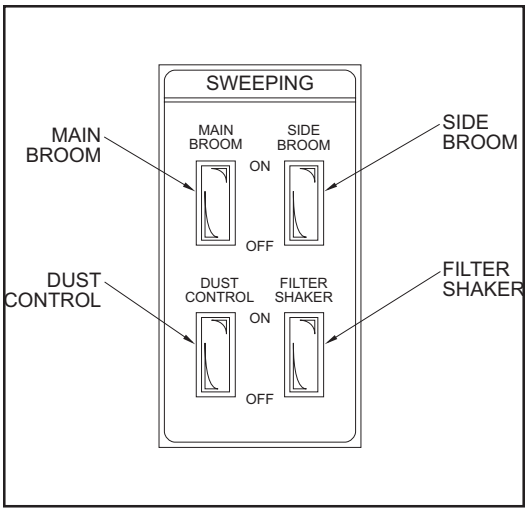
FILTER SHAKER SWITCH (Variable Dump Machines Only)
The Filter Shaker Switch is located on the console to the right of the steering wheel in the SWEEPING section.

NOTE - (Variable Dump Machines Only)

THE MAIN BROOM SWITCH MUST ALWAYS BE PLACED IN THE OFF POSITION BEFORE SHAKING THE FILTER. FAILURE TO DO SO WILL RESULT IN DUST REMAINING ON THE SURFACE OF THE FILTER ENVELOPES INSTEAD OF DROPPING INTO THE HOPPER.

The button can be used when the ignition key is in the “ignition” position. The filter shaker control button is used during the sweeping cycle and the hopper unloading cycle. Use the filter shaker control switch to remove dust from the filter. Use the following procedures to operate the filter shaker control switch.

1. After the machine has made a long sweeping run, turn the broom switch to the “OFF” position.
2. Push the filter shaker control switch for 5 to 15 seconds to allow the filter to unload.
3. Turn the broom switch to the “ON” position. Repeat this procedure after each long sweeping run.



P-4862 FIGURE 4

NOTE - (Variable Machines Only)

The main broom, side broom, dust control and filter shaker turn off automatically when the hopper is dumping and/or the dump door is in a closed position. SEE HOPPER LIFT and HOPPER DUMP DOOR.

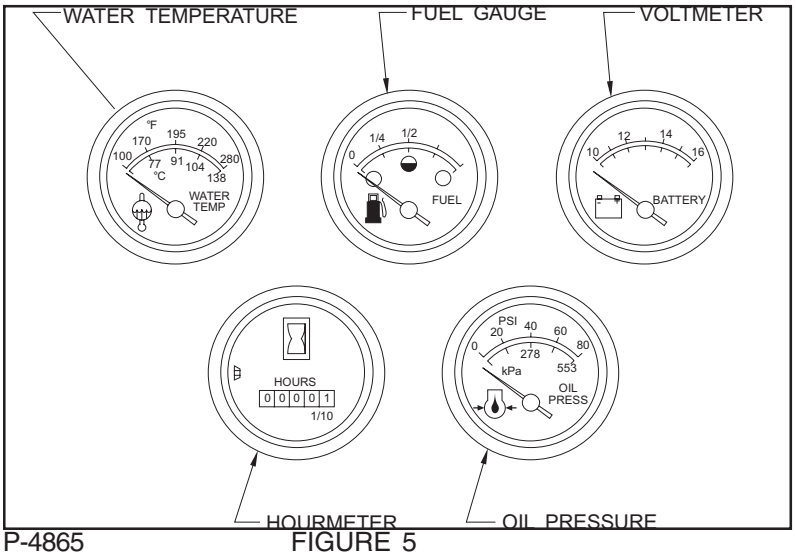
WATER TEMPERATURE GAUGE
The Water Temperature Gauge is located on the console panel above the steering wheel in the gauge cluster. The gauge is mechanical and activated by a sender in the engine. It displays the engine coolant temperature in farenheight.

HOUR METER
The Hour Meter is located on the console panel above the steering wheel in the gauge cluster. This meter is activated when the key switch is in the “ignition” position. The meter indicates actual “run” time of the machine. The meter is used to indicate when maintenance should be done to the machine.

FUEL GAUGE
The Fuel Gauge is located on the console panel above the steering wheel in the gauge cluster. This gauge indicates the level of fuel contained in the fuel tank.

OIL PRESSURE GAUGE
The Oil Pressure Gauge is located on the console panel above the steering wheel in the gauge cluster. The gauge is mechanical and activated by a sender in the engine. It displays the engine oil pressure in PSI.

VOLT METER
The Volt Meter is located on the console panel above the steering wheel in the gauge cluster. The gauge indicates the charging or discharging of the battery.



P-4865 FIGURE 5

SCRUB BRUSHES SWITCH
The Brushes Switch is located on the console to the left of the steering wheel in the “SCRUBBING” section. This switch in the position marked “LOWER” will lower the scrub brush deck and activate the three scrub brushes. The Brush Rotation Switch and The Brush Pressure switch can not be activated unless this switch is in the “LOWER” position. This switch in the “RAISE” position will stop the brushes from rotating and raise the scrub brush deck.

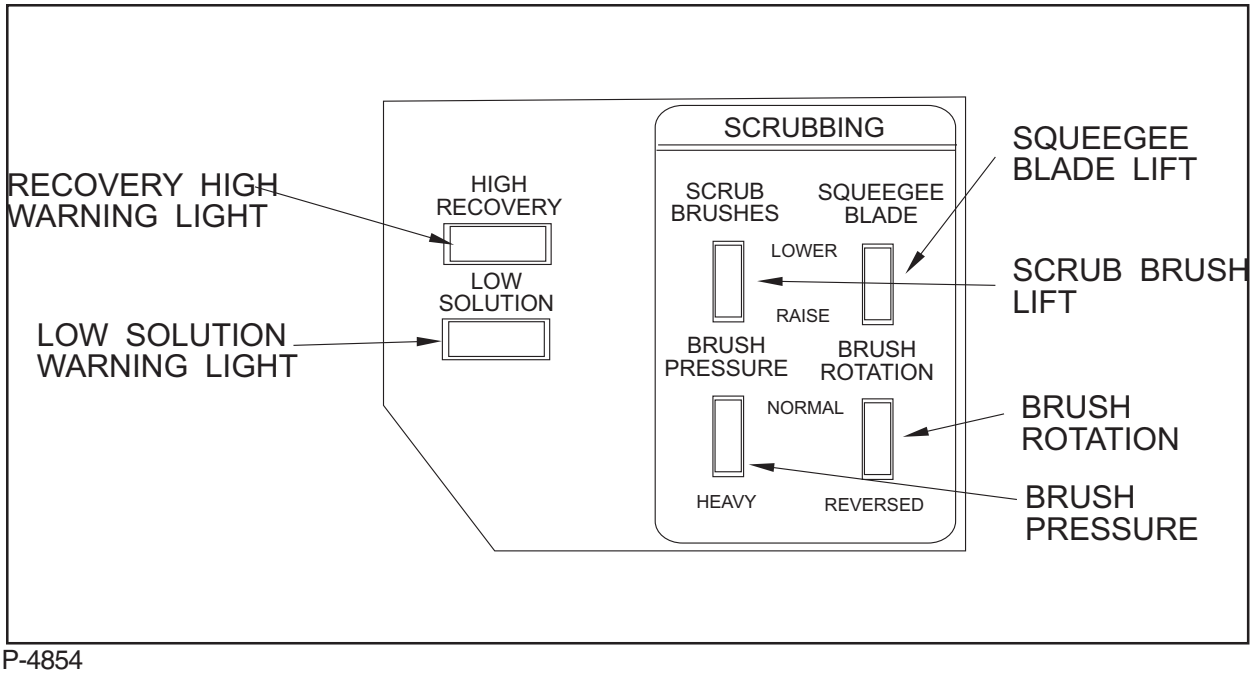
BRUSH ROTATION SWITCH
The Brush Rotation Switch is located on the console to the left of the steering wheel in the "SCRUBBING" section. This switch reverses the rotation of the scrub brushes. This switch has two positions "NORMAL" and "REVERSED". This switch can not be activated unless the Scrub Brush Lift Switch is in the "LOWER" position, the switch will light when activated.

BRUSH PRESSURE SWITCH
The Brush Pressure Switch is located on the console to the left of the steering wheel in the "SCRUBBING" section. This switch applies additional downward pressure to the scrub brushes. This switch has two positions "NORMAL" and "HEAVY". This switch can not be activated unless the Scrub Brush Lift Switch is in the "LOWER" position, the switch will light when the switch can be activated.

SQUEEGEE BLADE SWITCH
The Squeegee Blade Switch is located on the console to the left of the steering wheel in the "SCRUBBING" section. This switch in the position marked "LOWER" will lower the squeegee and activate the squeegee vacuum. This switch in the "RAISE" position will stop the squeegee vacuum and raise the squeegee. A switch activated by the forward-reverse foot pedal will automatically raise the squeegee if it is in the lowered position and the machine is in reverse.

HIGH RECOVERY WARNING LIGHT
The High Recovery Warning Light is located on the console to the left of the steering wheel beside the "SCRUBBING" section. The recovery warning light will illuminate approximately 5 minutes before the recovery tank is full, giving ample time to complete the scrubbing cycle before the mechanical float shuts off the vacuum to the recovery tank.

LOW SOLUTION WARNING LIGHT
The Low Solution Warning Light is located on the console to the left of the steering wheel beside the "SCRUBBING" section. The Solution Warning Light will illuminate when the solution tank is empty, marking the end of the scrubbing cycle.



P-4854

FIGURE 6

HOPPER LIFT - (Variable Machines Only)
The Hopper Lift Lever is located to the left of the steering wheel on the left side of the drivers compartment. This lever, which is marked “HOPPER”, raises and lowers the debris hopper to ease unloading.

WARNING

The hopper may drop unexpectedly and cause injury, always engage the safety arm before working under the hopper.

HOPPER DUMP DOOR - (Variable Machines Only)
The Hopper Dump Door Lever is located to the left of the steering wheel on the left of the driver compartment. This lever opens and closes the hopper door. This lever is located below the Hopper Lift Door and is marked “DUMP DOOR”.

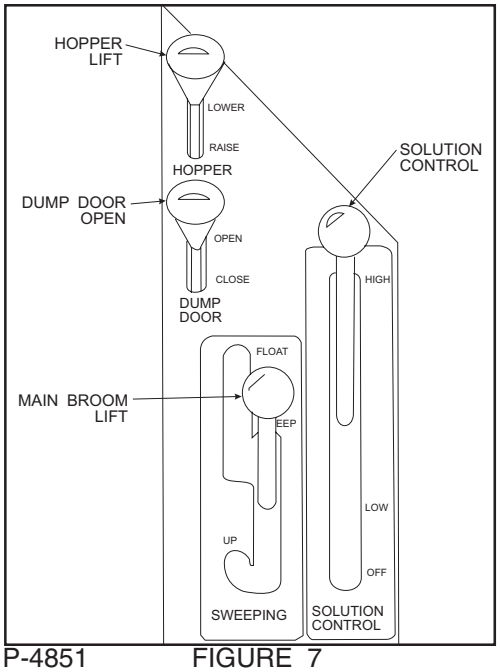
MANUAL DUMP HOPPER - (Manual Dump Hopper Only)
The Manual Dump Hopper Lever is located under the front bumper. To Dump debris, pull the Manual dump lever all the way to the position marked open. Leave the handle in the dump position and back the machine off the pile of debris. When clear of the debris, pull the manual dump lever to the position marked closed.

SOLUTION CONTROL
To apply solution to the scrubbing brushes, push the solution control lever forward until the desired setting is reached. The solution rate is continuously variable from off to approximately 1-3/4 GPM at low and 3-1/2 GPM at high. To stop application of solution, pull back on the lever until it stops at the “off” position. The solution warning light will illuminate when the solution tank is empty, marking the end of the scrubbing cycle.

NOTE
For best results, discontinue application of solution 10 feet before stopping or making a 90° or 180° turn.

SWEEPING BROOM LIFT CONTROL
The main broom lift control is located to the left of the driver seat. To lower the main broom, grasp the lever and pull back to clear the locking notch. Move the lever forward to the first or second notch in the elongated slot. The first notch, “SWEEP”, is for normal sweeping (2 to 3 inch [5 to 8 cm.] broom pattern). The second notch, “FLOAT”, is for heavy sweeping (4 to 5 inch [10 to 13 cm.] broom pattern).

To raise the main broom, pull the lever back and slide into the locking notch. You may operate the main broom in either the “SWEEP” or “FLOAT” position. However, the “SWEEP” position should be used for normal sweeping and will result in increased broom life. The “FLOAT” position should be used only when sweeping extremely uneven areas.



P-4851 FIGURE 7

NOTE - (Variable Dump Machines Only)

A switch triggered by the hopper and dump door’s position controls the sweeping functions, main broom, side broom, dust control, and filter shaker. The hopper must be down and the dump door open before these functions will work.

TURN SIGNAL - 4 Way (Option)
The turn signal option is located on the steering column and works as automotive turn signals work, forward on the lever for right and back on the lever for left. The 4-way flasher will activate when the turn signal lever is pulled out.

THROTTLE

The throttle control is located to the left of the driver compartment. The engine must be operating at full governed speed of 2150 “no load” RPM (broom control off and machine sitting still), to maintain optimum machine travel speed, hopper loading and dust control. Before turning off the key and stopping the engine, move lever to idle speed.

CHOKE

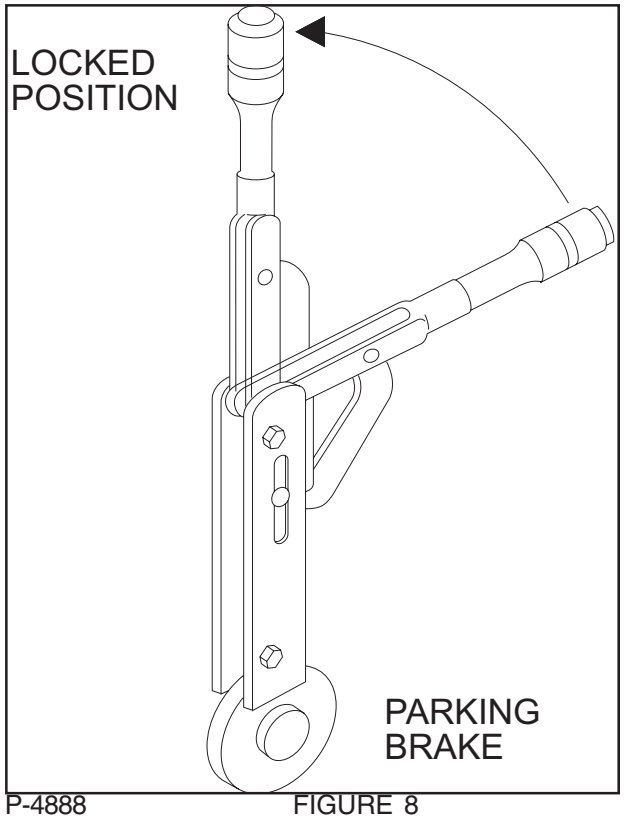
LP powered engines do not have a choke. The choke is located to the right of the throttle. The choke governs the mixture of air and fuel during the combustion cycle of the engine operation. The choke should be pulled out during the start of the engine and then gradually pushed back in after the engine is warm.

PARKING BRAKE

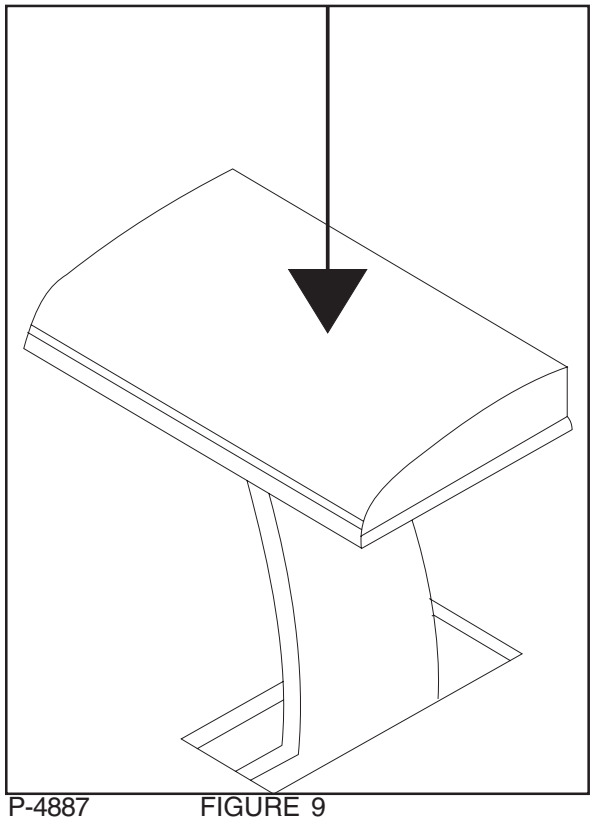
The parking brake lever is located in the left side of the driver compartment floor. This lever when raised to the upright position will “lock” the foot brake pedal in the down position.

FOOT BRAKE

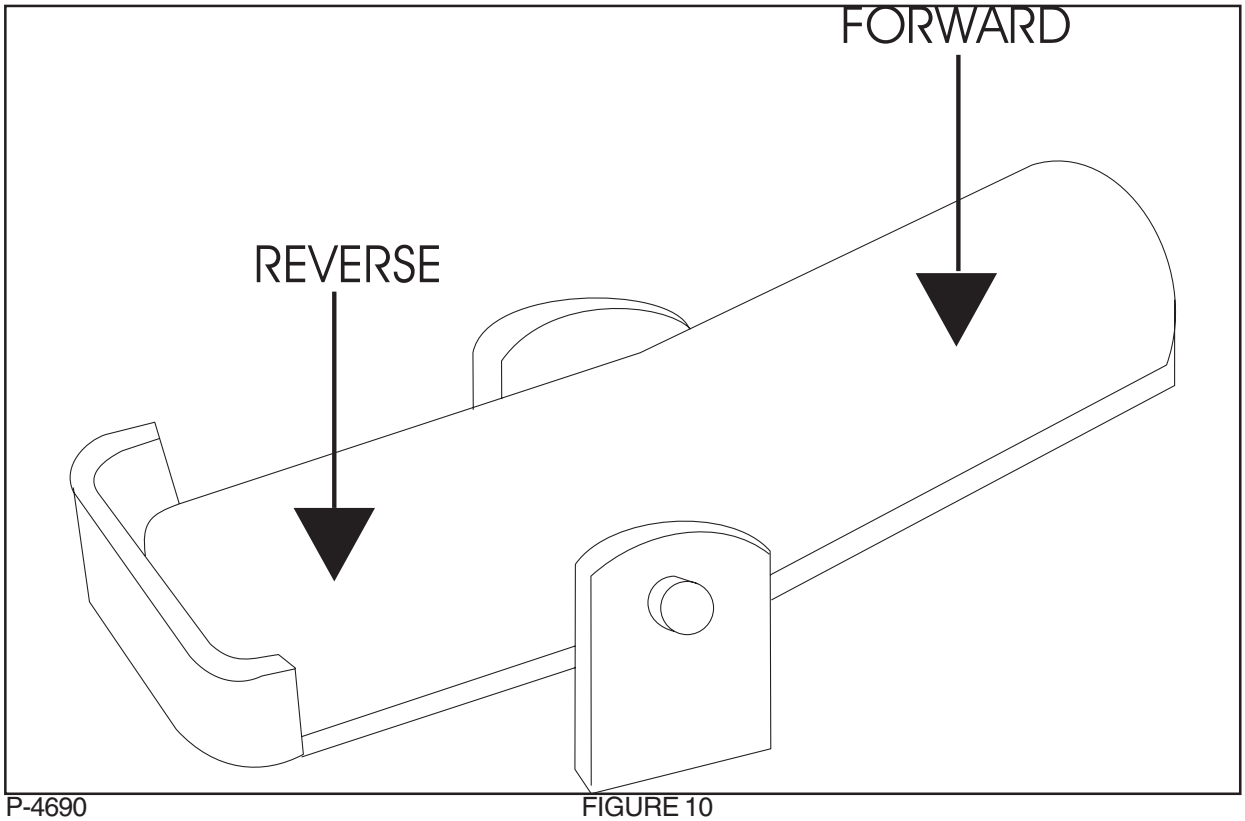
The foot brake pedal is located to the right of the steering column on the floor of the driver compartment. The foot brake on front wheels is a mechanical system actuated by the brake pedal.



P-4888 FIGURE 8



P-4887 FIGURE 9



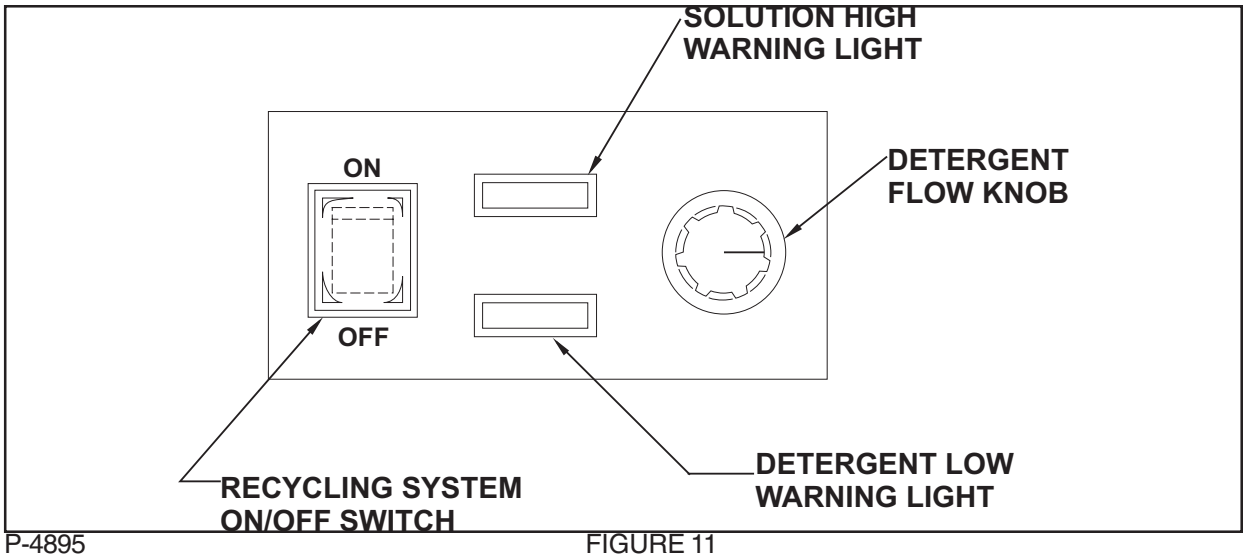
P-4690 FIGURE 10

ACCELERATOR & DIRECTIONAL CONTROL PEDAL
The accelerator and directional control pedal is located on the floor of the driver compartment, to the right of the brake pedal. The accelerator and directional control pedal controls the machine direction and travel speed.

1. Put foot pressure on the upper portion of the pedal. The machine will move forward.
2. Increase the foot pressure on the upper portion of the pedal to increase the forward speed.
3. Put foot pressure on the lower portion of the pedal. The machine will move in reverse.
4. Increase the foot pressure on the lower portion of the pedal to increase the reverse speed.
5. To stop the machine, put light foot pressure on the opposite end of the accelerator and directional control pedal. If the machine is moving forward put light foot pressure on the lower portion of the pedal. If the machine is moving in reverse put light foot pressure on the upper portion of the pedal.

BACKUP ALARM SWITCH
A switch that is located under the lower section of the Accelerator and directional control pedal operates the back up alarm. The alarm makes a loud audible noise when the machine is being driven in reverse.

SEAT ADJUSTMENT
This lever is located on the right of the seat. This lever allows the seat to be adjusted forward or back when the lever is moved.



P-4895 FIGURE 11

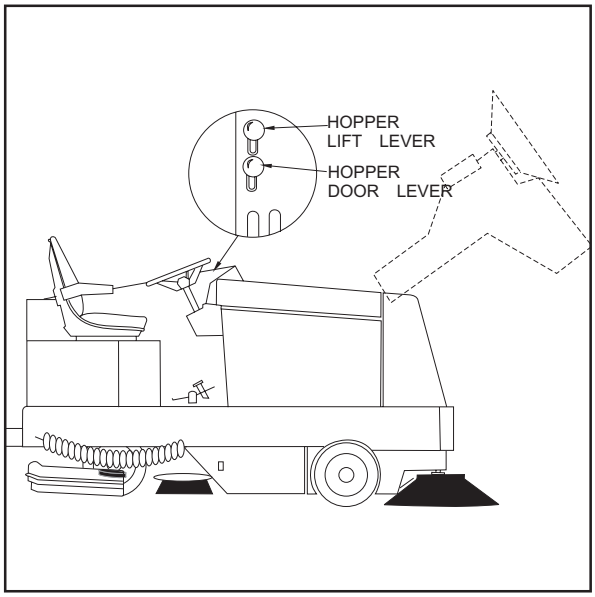
THE ESP RECYCLING CONTROL PANEL
THE ESP RECYCLING SYSTEM ON/OFF SWITCH
This switch turns the ESP recycling system on and off.

SOLUTION HIGH WARNING LIGHT
The solution high warning light will come on if the solution tank is too full of water from the recycling system.

DETERGENT LOW WARNING LIGHT
The detergent light will illuminate when the detergent tank is low, warning the operator to add detergent.

DETERGENT FLOW KNOB
This rotary knob controls the detergent flow into the scrubbing solution. The operator may choose from any detergent setting, for light to heavy cleaning applications. The detergent light will illuminate when the detergent tank is low, warning the operator to add detergent.

HOPPER SAFETY LOCK ARM
(Variable Dump Only)

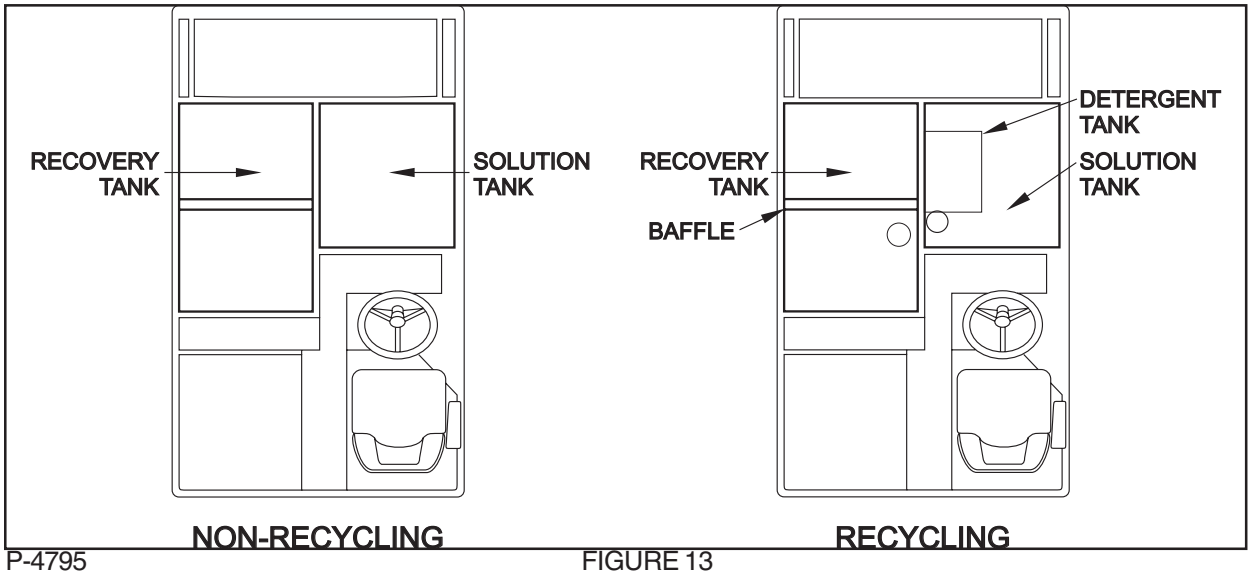


P-5104 FIGURE 12

WARNING
When the hopper is raised the safety arm must be engaged before ANY work is done under the hopper.

The Hopper Safety Lock Arm is located under the hopper assembly. After the work is complete the safety arm must be disengaged.

THE SCRUBBING SYSTEM - HOW IT WORKS



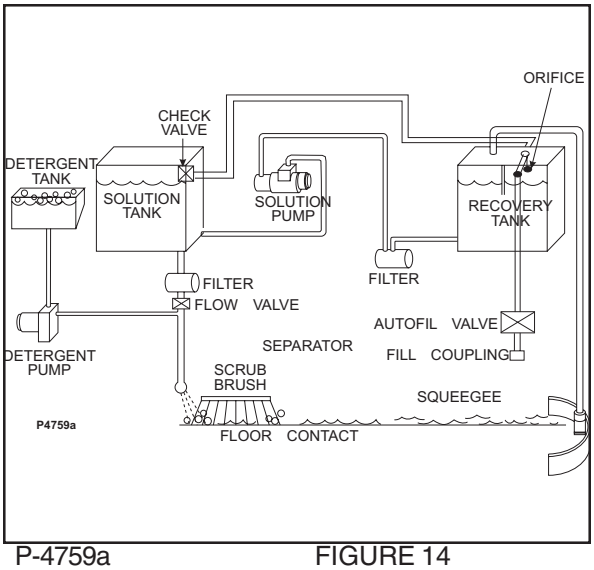
P-4795 FIGURE 13

There are two scrubbing systems available for the 7760 machine, the non-recycling or standard scrubbing system and the recycling or ESP scrubbing system.

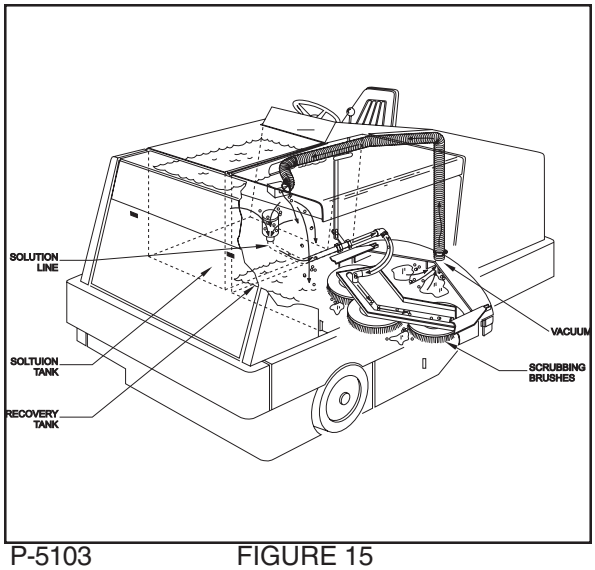
THE NON-RECYCLING OR STANDARD SCRUBBING SYSTEM - HOW IT WORKS

During the scrubbing process (shown in Figure 14), detergent solution water from the solution tank is fed to the solution line. There it is fed to the floor where three disc scrubbing brushes work to dislodge soil.

After scrubbing, the dirty solution is vacuumed from the floor and discharged into the containment chamber in the forward portion of the recovery tank, where a system of baffles helps to clarify the solution. Sensors in each tank will indicate by lights on the control panel when the water in the solution tank is too low or when the water in the recovery tank is too high.



P-4759a FIGURE 14

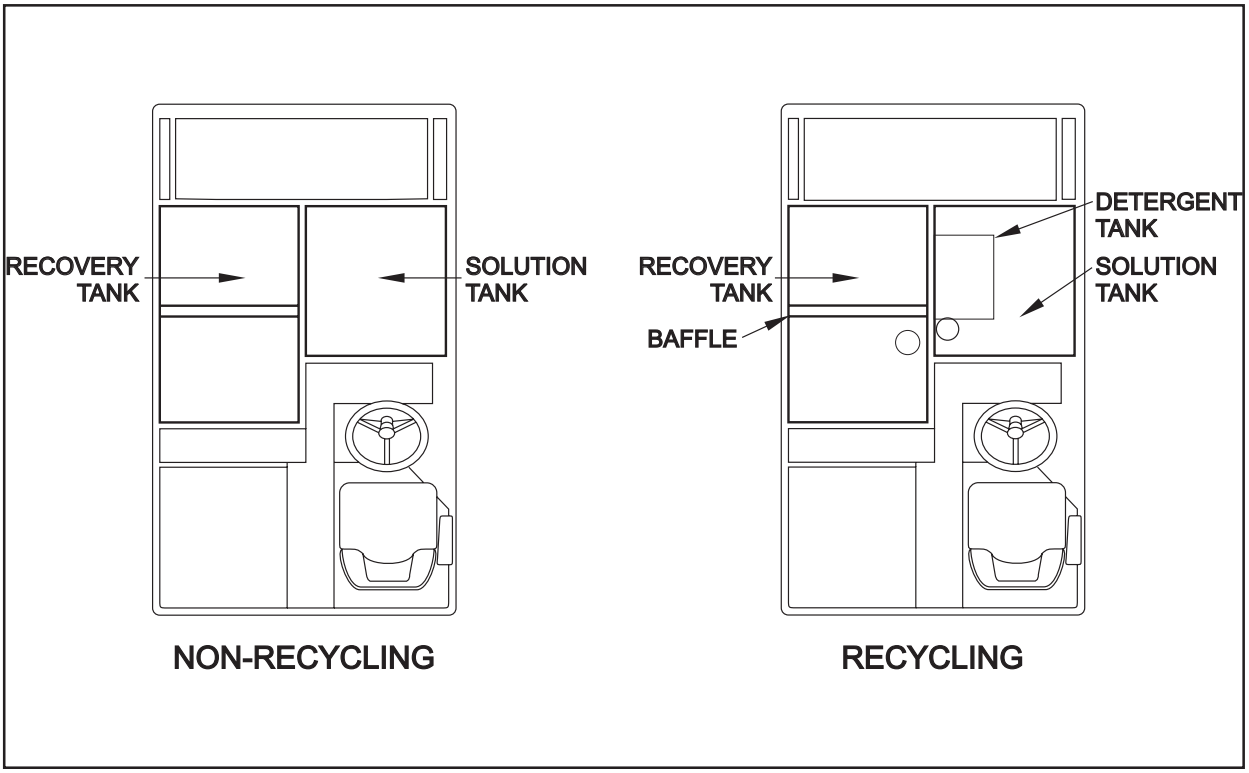


P-5103 FIGURE 15

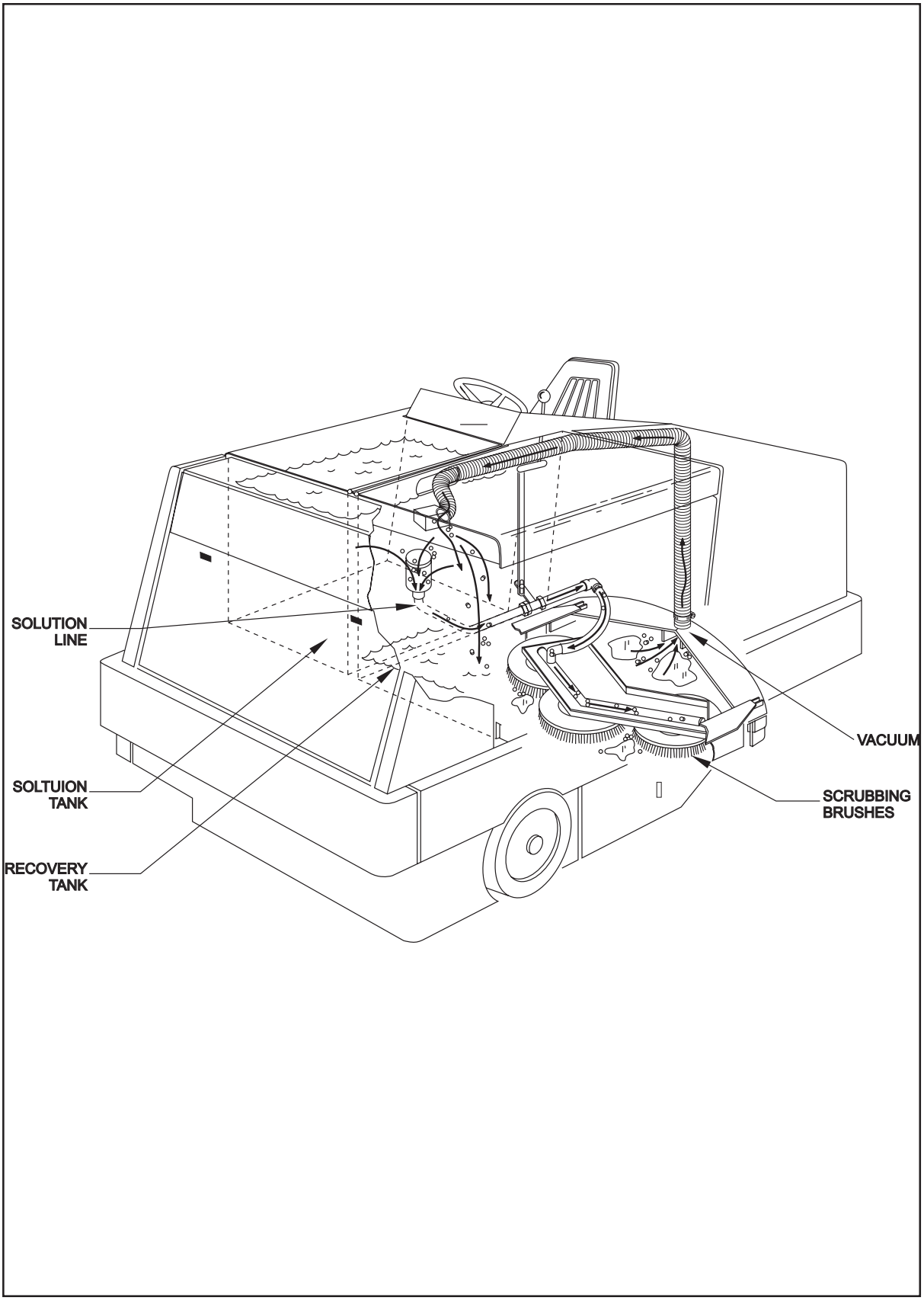
THE RECOVERY OR ESP SYSTEM - HOW IT WORKS

During the scrubbing process (shown in Figure 16), filtered water from the solution tank is fed to the solution line, where it combines with detergent from the metering pump. This mixture is then fed to the floor where three disc scrubbing brushes work to dislodge soil.

After scrubbing, the dirty solution is vacuumed from the floor and discharged into the containment chamber in the forward portion of the recovery tank, where a system of baffles helps to clarify the solution on its way to the pumping chamber in the rear of the recovery tank. At intervals, a system of sensors activates the recycling pump, which sends filtered solution from the pumping chamber on its way to the solution tank. Here, it is ready to be mixed with fresh, metered detergent and repeat the cycle.



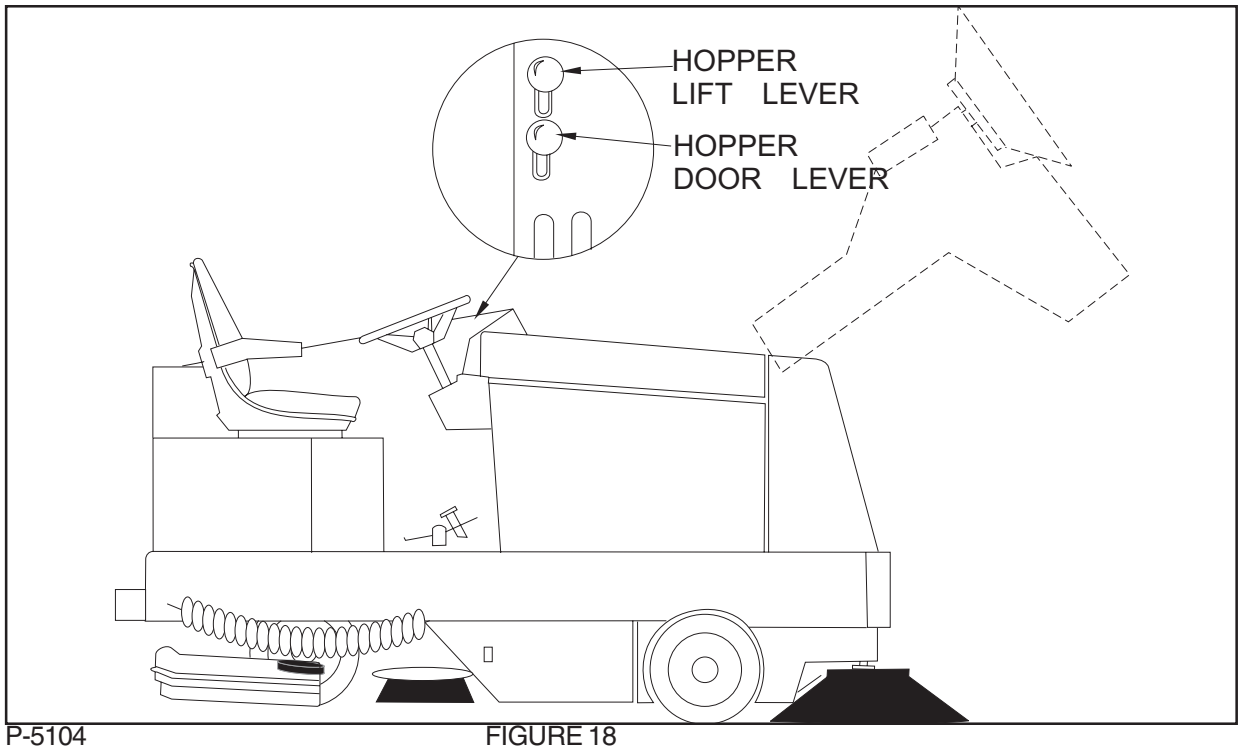
P-4795-1 FIGURE 16



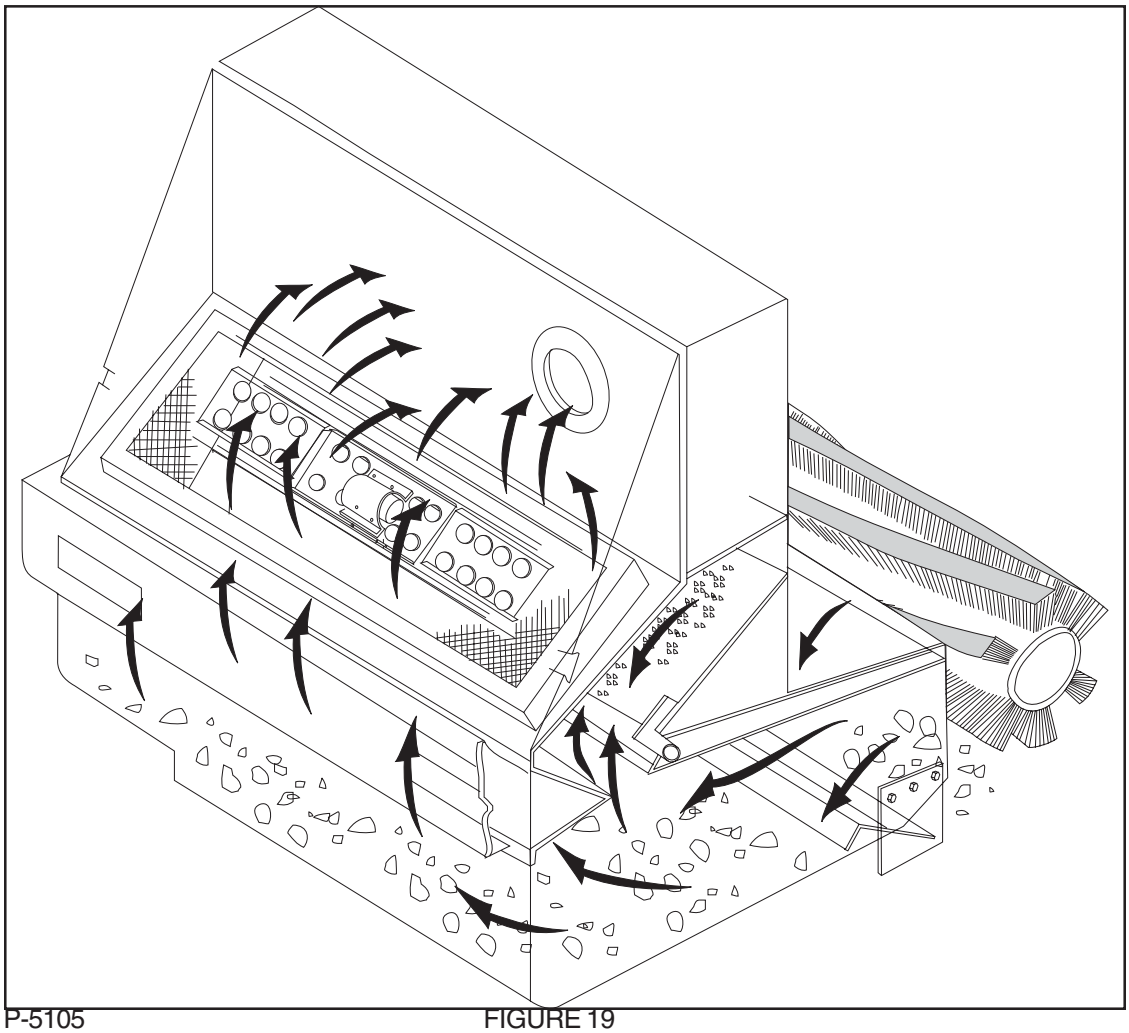
P-5103 FIGURE 17

THE VARIABLE DUMP SWEEPING AND DUST CONTROL SYSTEMS - HOW THEY WORK

Variable Dump 7760 machines are equipped with a sweeping and dust control system. Figure 18 shows the highest position for the variable dump.



P-5104 FIGURE 18



P-5105 FIGURE 19

The debris from sweeping is thrown into the hopper (Figure 19). The baffle system that is built into the variable dump debris hopper is designed to minimize dust in the air while the machine is sweeping. The impeller vacuum fan pulls the lighter dust up and through a baffle system. The Pre-Clean Flap separates the heavier dust particles to an area below the filters. The dust filters capture the lighter dust particles. This allows the dust filters to remain cleaner and need less shaking to remove dust. When the dust filters become clogged the filter shaker switch should be pushed to start the dust shaker cycle. This will extend the life of the filters.

NOTE
TURN MAIN BROOM OFF FIRST

FILLING THE SOLUTION TANK

NON-RECYCLING or Standard Scrubbing System

1. Make sure the solution control lever is in the “Off” (rear) position.
2. Open the solution tank cover (right hand side).
3. Fill the tank with 100 gallons of water and the correct mixture of American-Lincoln #100 Industrial Cleaner for the job on hand.
4. Close the solution tank cover (right hand side).

RECYCLING or ESP System

1. Make sure the solution control lever is in the “Off” (rear) position.
2. Open the solution tank cover (right hand side).
3. Fill the solution tank as outlined above with 100 gallons of pure water.
4. Fill the detergent tank with 5 gallons of American-Lincoln #100 Industrial Cleaner.
5. Close the solution tank cover (right hand side).

NOTE:

Fill recovery tank ½ way with water for the ESP system

WARNING

To prevent over-sudsing and machine damage, use only AMERICAN-LINCOLN Industrial Cleaning Solution # 100.

WARNING

DO NOT put gasoline, combustible or flammable material in the solution, recovery or detergent tanks.

NOTE

Before starting the engine, perform the pre-start checklist.

PRE-START CHECKLIST

1. Clean engine air filter element
2. Check engine oil level
3. Check radiator coolant level
4. Check hydraulic fluid level
5. Check fuel level
6. Check all systems for leaks
7. Check brakes and controls for proper operation

BEFORE STARTING ENGINE

1. Set parking brake
2. Make sure all controls are in the “Off” position

TO START ENGINE

1. Be sure accelerator and directional control pedal is in neutral.
2. Pull choke if engine is cold (Gas engine only). If machine is stored in extremely cold temperatures under, 32° f. (0° C.) pull choke and hold throttle open approximately halfway when starting engine.
3. Turn key to “On” position and hold it until the engine starts. Push choke in when engine starts.
4. If engine fails to start after following the above procedures, refer to Engine Manual Section.

WARNING

It is not advised to store the machine in below freezing temperatures unless all fluids have been drained from the detergent solution and recovery tanks and associated systems. When machine has been stored in below freezing temperatures, run engine at not over 1/2 throttle with machine standing still for 5-10 minutes to warm engine and hydraulic oil.

POST START CHECKLIST (Engine Running)

1. Check broom pattern.
2. Check squeegee deflection.

TO TRANSPORT MACHINE (No scrubbing or sweeping)

1. Be sure the sweeping broom, brushes and squeegee are in the “Up” position with all other controls in the “Off” position.
2. Release parking brake.
3. Push throttle control up and to left.
4. Push forward on the directional control pedal to place the machine in motion.
5. Vary your foot pressure on the directional control pedal to obtain desired travel speed.
6. To stop, allow directional control pedal to return to neutral (centered) position. (Pedal will automatically return to neutral when foot pressure is released). FOR NORMAL OPERATION, DEPRESS DIRECTIONAL CONTROL PEDAL WITH HEEL INTO NEUTRAL.
7. Push engine throttle down. Turn key to “Off”.
8. Set parking brake.

TO BEGIN THE CLEANING OPERATION

1. Choose the mode of operation (recycling ESP or non-recycling STANDARD) as dictated by the machine fill or machine type.
2. Bring engine to full RPM.
3. Lower the main broom.
4. Lower the side broom.
5. Turn on the main and side brooms.
6. Sweep for the length of the machine.
7. Move recovery switch to the “On” position.
8. Lower the scrub brushes.
9. Lower squeegee to the “Lower” position.
10. Move solution control lever to the desired setting.
11. Turn on the Recovery Switch for the ESP Recycling system, if applicable.
12. Begin scrubbing operation.

Single sweep and scrub the average floor with light to medium soil. In this operation the cleaning is accomplished in one pass, with simultaneous solution feed, sweeping, scrubbing and dirty water pick up. The rate of solution feed and the speed of travel required will vary with floor condition. This knowledge will come with operator experience.

TO STOP THE CLEANING OPERATION

Discontinue the cleaning operation whenever a solution or recovery warning or stop light is illuminated.

The solution light will illuminate when the solution tank is empty. At this time, discontinue the scrubbing cycle, put all controls in position for transport and drive to the drain area. See pages 30-32 for instructions on how to drain and clean the recovery tank, solution tank, and debris hopper.

The recovery warning light will illuminate approximately 5 minutes before loss of vacuum to the recovery tank. This warning period should give ample time to complete the scrubbing cycle and transport or scrub to the drain area.

NOTE

After stopping the engine, perform this post operation checklist.

POST OPERATION CHECKLIST

1. Clean debris hopper.
2. Check sweeping broom for wear or damage.
3. Check all flaps for wear, damage and adjustment.
4. Drain and clean solution tank (ESP system)
5. Clean solution filter screen (ESP system)
6. Drain and clean recovery tank.
7. Clean recovery tank screens and floats.
8. Check manifold and vacuum hoses for debris or obstructions, backflush if necessary.
9. Check scrub brushes for wear or damage.
10. Check rear and side squeegees for wear, damage and adjustment.
11. Fill fuel tank.
12. Check all systems for leaks.

TO DRAIN SOLUTION TANK (RECYCLING OPERATION) (ESP System)

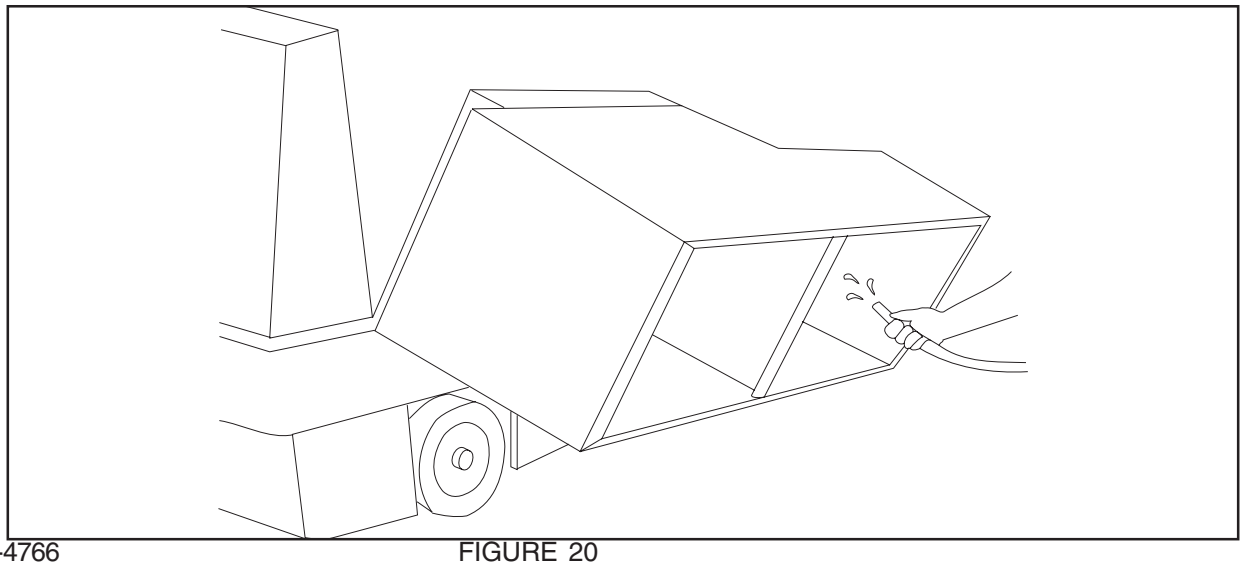
Draining the solution tank is accomplished by a 4-foot (92 cm.) long drain hose located under the frame channel. To drain the tank, lower the hose, remove the plug and drain. When the draining operation is completed, clean the solution tank as outlined below.

TO CLEAN SOLUTION TANK (RECYCLING OPERATION) (ESP System)

Cleaning the solution tank is simplified by the large access cover. Flush all deposits from the tank, also flush all probes and the solution line strainer to remove any deposits, remove strainer if necessary. When the cleaning operation is completed, plug and replace the hose. Close and secure covers.

TO DRAIN RECOVERY TANK

A 4-foot long drain hose for the recovery tank is located under the frame channel. To drain the tank, lower the hose, remove the plug and drain. Open the recovery tank and remove the drain plug. When the draining operation is completed, flush and clean the recovery tank as outlined below.



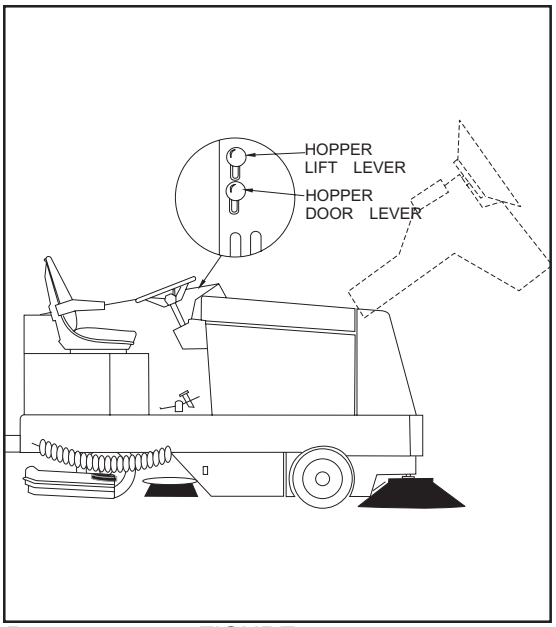
P-4766 FIGURE 20

CLEAN RECOVERY TANK

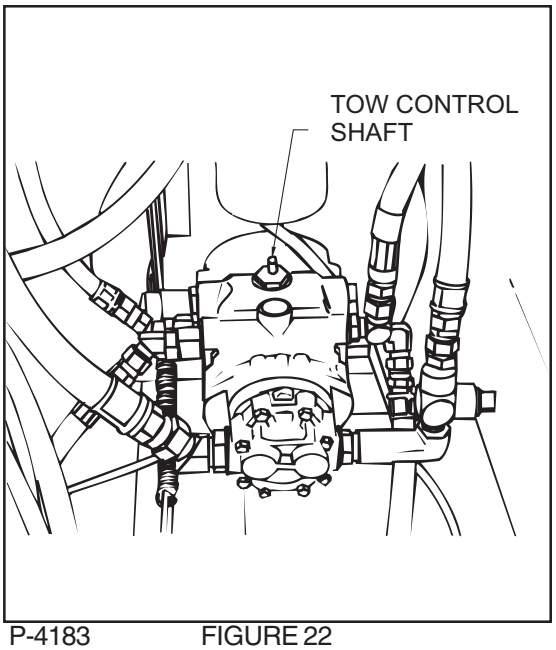
The large access cover on the recovery tank simplifies the cleaning process. Once the recovery tank lid is opened, tip out the tank. With the recovery tank in the tipped out position (figure 20), flush all sand, sludge, debris, etc. out of the tank with a water hose, then replace the tank and flush the manifold, ball float screen and level switch to remove any deposits.

WARNING

Do not attempt to flush large amounts of tank debris through the drain hose, this will cause clogging and hamper future drainage. Always flush the recovery tank with clean water at the end of each cleaning cycle. Never let debris accumulate, settle and harden in the tank or on associated hardware.



P-5104 FIGURE 21



P-4183 FIGURE 22

DOUBLE LID RECOVERY TANK

The Recovery Lid is a double lid. Removing the two hex head bolts, located on the side of the lid can open the lid. The oil cooler and recovery tank vacuum pump are located in the lid.

OIL COOLER

The oil cooler is located in the recovery tank double lid.

TO EMPTY DEBRIS HOPPER

1. Transport or sweep and scrub to the dump site.
2. Close the hopper dump door with the hopper dump lever.
3. Raise the hopper with the hopper lift lever to the desired level.
4. Move the machine forward, over the dumpster, if necessary.
5. Open the hopper dump door with the hopper dump lever.
6. Lower the hopper with the hopper lift lever to the normal operation position.

NOTE (Variable Dump Only)

The sweep functions - main broom, side broom, dust fan, and filter shakers - only work when the hopper is down and the dump door is open.

TOWING INSTRUCTIONS (See Figure 22)

1. Locate tow control shaft extension as shown in Figure 22. (See arrow)
2. To open hydraulic circuit to wheel drive motor, turn shaft 90° so that the flats on the shaft are parallel to the front axle.
3. After towing, turn shaft 90° so that the flats on the shaft are parallel to the pump centerline.

SERVICE CHART

For service assistance, consult the yellow pages under power sweepers and scrubbers. For best performance, replace worn parts with genuine American-Lincoln parts.

EVERY 8 HOURS or DAILY operation check and clean/adjust if necessary:

1. Inspect panel filters for damage and clean.
2. Check engine oil level.
3. Check hydraulic fluid level.
4. Check radiator core for blockage.
5. Check all flaps for wear or damage.
6. Check brooms for wear or damage, adjust as required.
7. Check panel filters (clean side) for leakage.
8. Check brake pedal and parking brake.
9. Check for LPG odor at connections. LP
10. Check water separator. D
11. Check engine air cleaner.
12. Check hydraulic oil filter.
13. Check coolant level.

50 HOUR (WEEKLY) MAINTENANCE CHECKLIST

14. Solution tank (recycling or ESP system).
15. Solution filter screen (recycling or ESP system).
16. Recovery tank.
17. Recovery tank screens and filters.
18. Scrub brushes for wear or damage.
19. Rear and side squeegees for wear or damage.
20. Check tension on all belts.
21. Check battery electrolyte level. (Unless Maintenance Free Battery)
22. Check all hydraulic hoses for wear or cuts.
23. Rotate main brush (end for end).
24. Clean or replace panel filters.

Perform recommended engine maintenance (see engine manual if applicable).

100 HOUR MAINTENANCE CHECKLIST

25. Change crankcase oil.
26. Change engine oil filter.
27. Lubricate drive wheel, l swivel wheel bearings, and steering rack guide (engine side above rear wheel).
28. Lubricate front wheel bearings.
29. Lubricate all moving joints.
30. Check brake pads for wear and adjust accordingly.
31. Lubricate all 6 DANHOUSER Bushings with NAPA #765-1363 or equivalent anti-seize lubricant. The bushings are located on the steering, scrub deck lift, squeegee lift, main broom lift, both threaded ends of the throttle cable and variable dump door cylinders. Perform recommended engine maintenance (see engine manual if applicable).

250 HOUR MAINTENANCE CHECKLIST

32. Lubricate squeegee casters.
33. Clean solution tank and filter screen.
34. Replace engine air filter element.
35. Flush radiator coolant system.
36. Remove spark plug - clean or replace. LP, G
37. Check distributor and points - service or replace. LP, G
38. Clean and lubricate governor & choke linkage. LP, G
39. Replace fuel filter.
40. Replace hydraulic filter element.

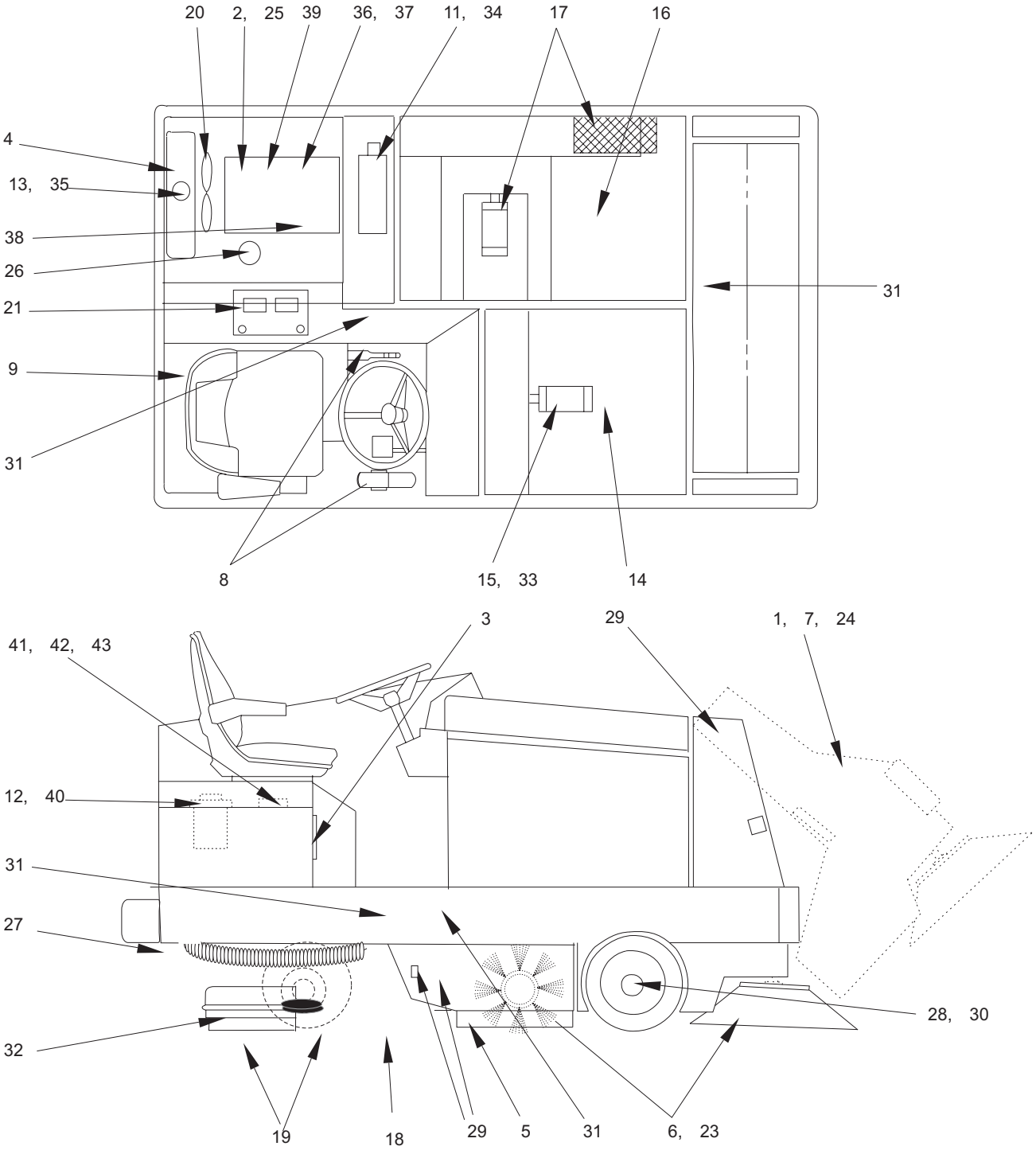
Perform recommended engine maintenance (see engine manual if applicable).

400 HOUR MAINTENANCE CHECKLIST

41. Clean hydraulic reservoir.
42. Clean hydraulic intake strainer.
43. Change hydraulic fluid.

Perform recommended engine maintenance (see engine manual if applicable).

LP = LPG G = Gas D = Diesel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11, 34
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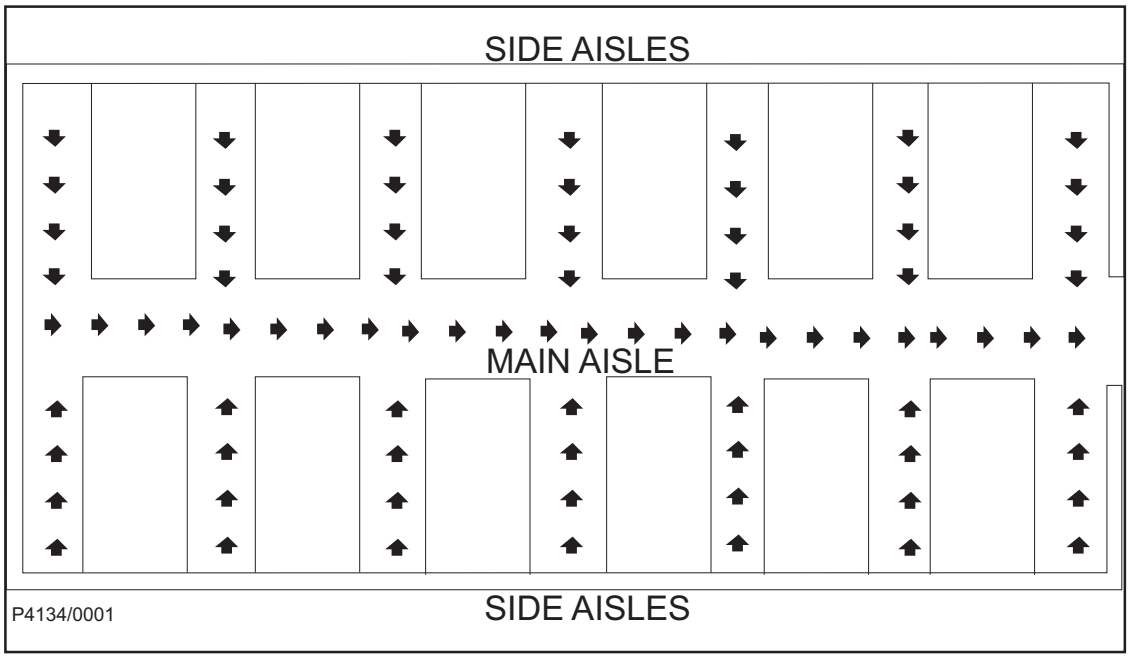


P-4134 FIGURE 23

WARNING

Do not turn the steering wheel sharply when the machine is in motion. The sweeper is very responsive to movement of the steering wheel. Do not make sudden turns.

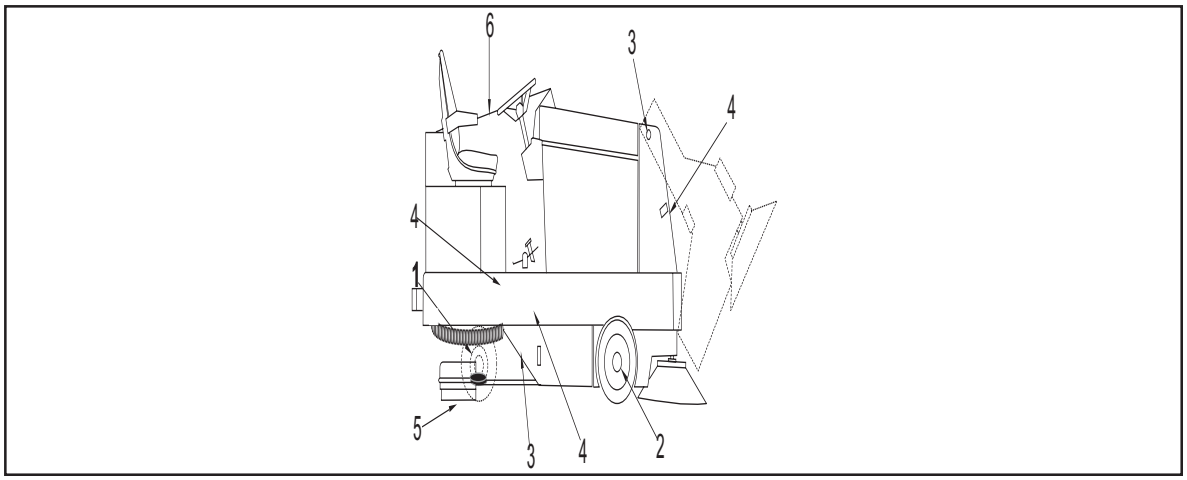
Scrub in straight paths. Do not bump posts. Do not scrape the sides of the machine.

When the machine is in motion, do not push the directional/speed control pedal all the way forward. This is the same as starting in "High" and will put a strain on the motor and drive system.

1. Plan your sweeping and scrubbing in advance. Try to arrange long runs with minimum stopping and starting. Sweep debris from narrow aisles out into main aisle ahead of time. Do an entire floor, or section at one time.
2. Pick up oversize debris before sweeping.
3. Allow a few inches of overlap of sweep and scrub paths. This will eliminate leaving dirty patches.
4. Don't turn steering wheel too sharply when machine is in motion. The machine is very responsive to movement of the steering wheel - so avoid sudden turns.
5. Try to follow as straight a path as possible. Avoid bumping into posts or scraping the sides of the machine.
6. When placing the machine in motion, avoid slamming the directional control pedal all the way forward quickly. This is equivalent to starting out in "HIGH" and puts needless strain on the engine and drive system.
7. Always allow the machine to warm up before operating in cold temperatures.
8. Periodically turn the sweeping broom end for end to prevent the bristles from "setting" in one direction.

NOTE

Replace sweeping broom when bristles are worn to 3-inch (8-cm.) length. To order replacement brooms, see page 179. Replace disc brushes when bristles are reduced to 1/2 inch (1.3 cm.) in length. To order replacement brushes, see page 180. Replace squeegee rubbers when all usable edges have become rounded with wear, impairing the wiping action. To order replacement squeegee rubbers, see page 168.



P-5114 FIGURE 24

100 Hour Lubrication

1. Lubricate drive wheel swivel, wheel bearings and steering rack guide.
2. Lubricate front wheel bearings.
3. Lubricate all moving joints.
4. Lubricate all 6 DANHOUSER Bushings with NAPA #765-1363 or equivalent anti-seize lubricant. The bush ings are located on the steering, scrub deck lift, squeegee lift, main broom lift, both threaded ends of the throttle cable and the variable dump door cylinders.

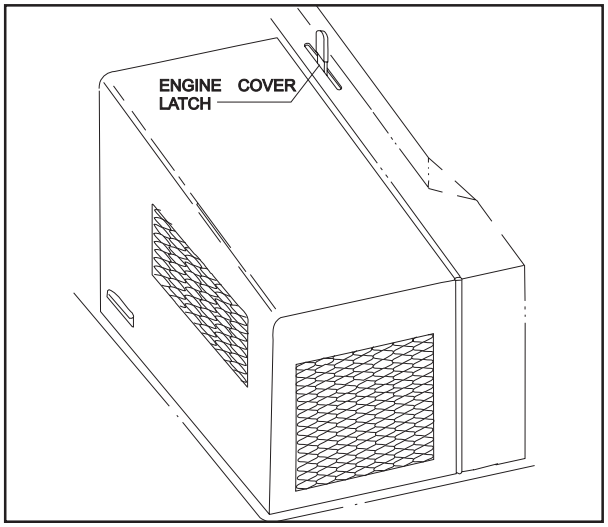
250 Hour Lubrication

5. Lubricate squeegee casters.
6. Lubricate governor & choke linkage.

Use good grade multipurpose grease. Avoid using too much grease.

WARNING

Only grease these units while they are in the raised position. Application of grease while the squeegee and the scrub deck are lowered will fill an empty cavity. Avoid too much grease.
All other moving joints should receive a few drops of #10 oil every 100 hours to keep them from rusting and/or binding.



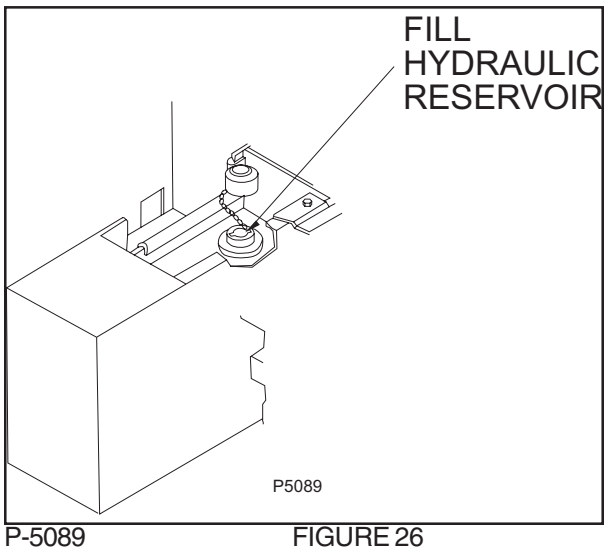
P-5107 FIGURE 25

HOW TO OPEN THE ENGINE COVER

The engine cover encloses the entire engine, radiator and hydraulic reservoir assembly. The cover can be swung open to completely clear the assembly and allow easy access to the engine.

1. Release the engine cover latch.
2. Lift the cover slightly to clear the engine cover stop.
3. Swing the cover open.

HYDRAULICS



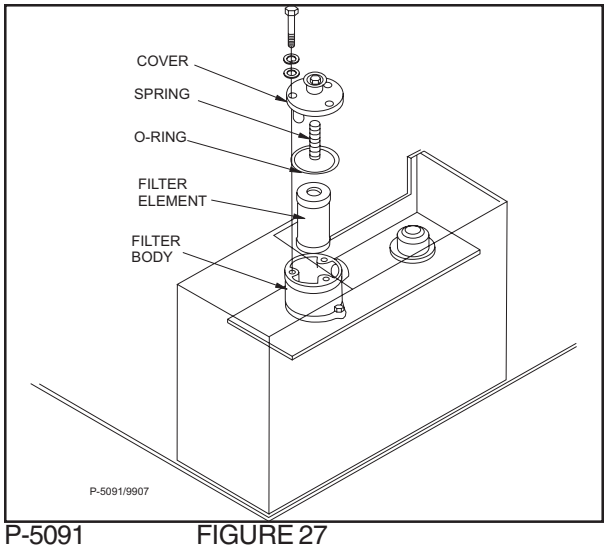
P-5089 FIGURE 26

HOW TO FILL THE HYDRAULIC RESERVOIR

1. Access to the hydraulic reservoir is located beneath the driver's seat.
2. Open the hydraulic reservoir breather filter cap.
3. Remove any debris that is in the breather filter cap screen.
4. Fill the reservoir until the fluid is at the "FULL" line on the hydraulic fluid sight gauge. The sight gauge is located on the front of the hydraulic reservoir.
5. Close the hydraulic reservoir breather filler cap.
6. Put the driver's seat back into position.

HOW TO CLEAN THE HYDRAULIC SYSTEM

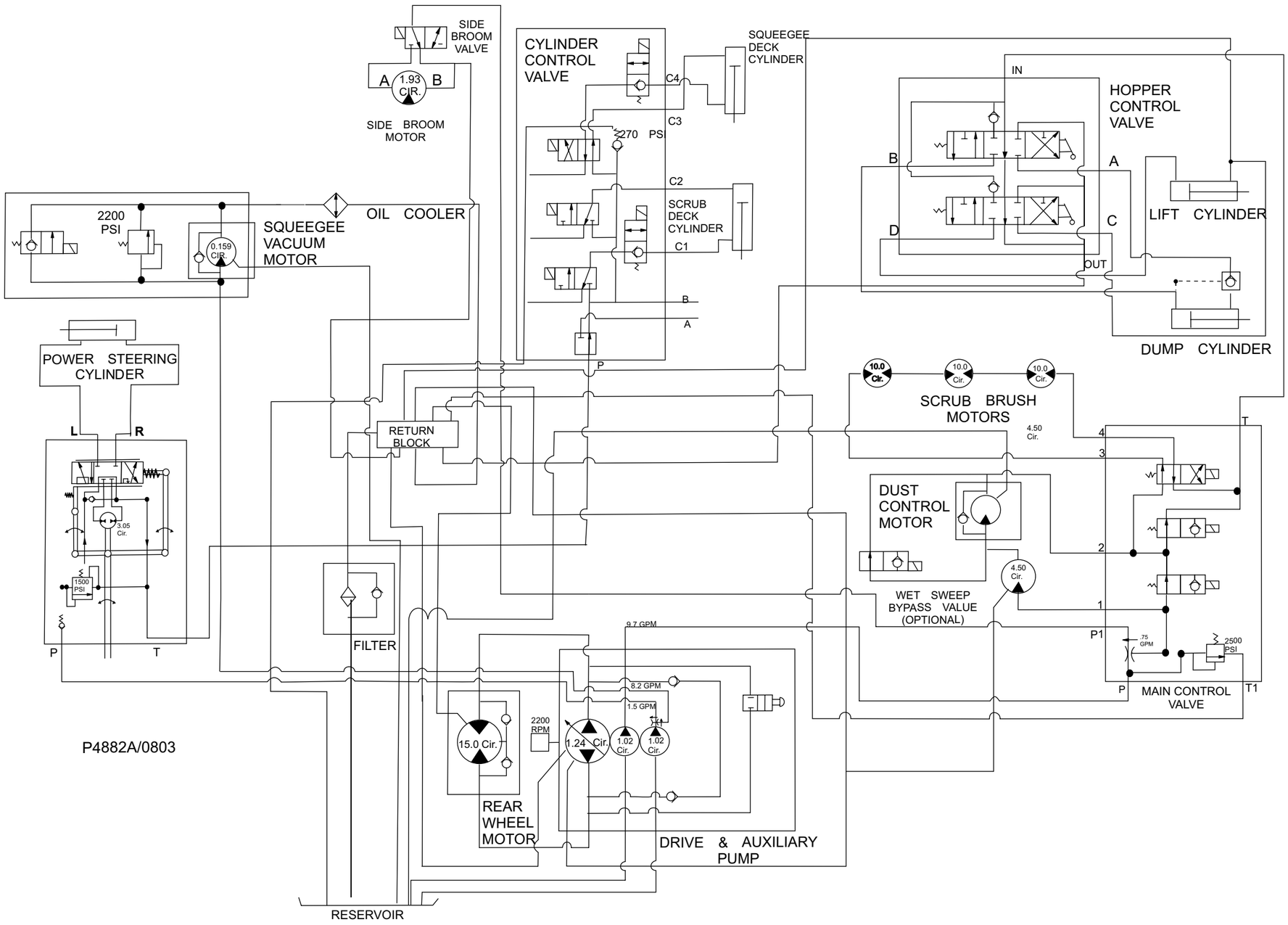
1. Put a drop cloth on the floor.
2. Drive the machine onto the drop cloth.
3. Set the parking brake.
4. Tip the seat to the side.
5. Put a container under the reservoir drain to catch the reservoir fluid.
6. Remove the drain plug. The reservoir fluid will drain. Do not use the drained reservoir fluid to refill the hydraulic reservoir. Dispose of the used fluid.
7. Flush the interior of the hydraulic reservoir with clean fluid.
8. Put the reservoir plug, removed in step six back in the hydraulic tank drain and tighten. A pipe thread sealer is required on the plug.
9. Open the breather filter cap.
10. Fill the reservoir with new FORD type "F" automotive transmission fluid. The capacity of the tank is 10 gallons. Fill to the "FULL" line on hydraulic fluid sight gauge.
11. Close the breather filter cap.
12. Tip the seat back to its original position.



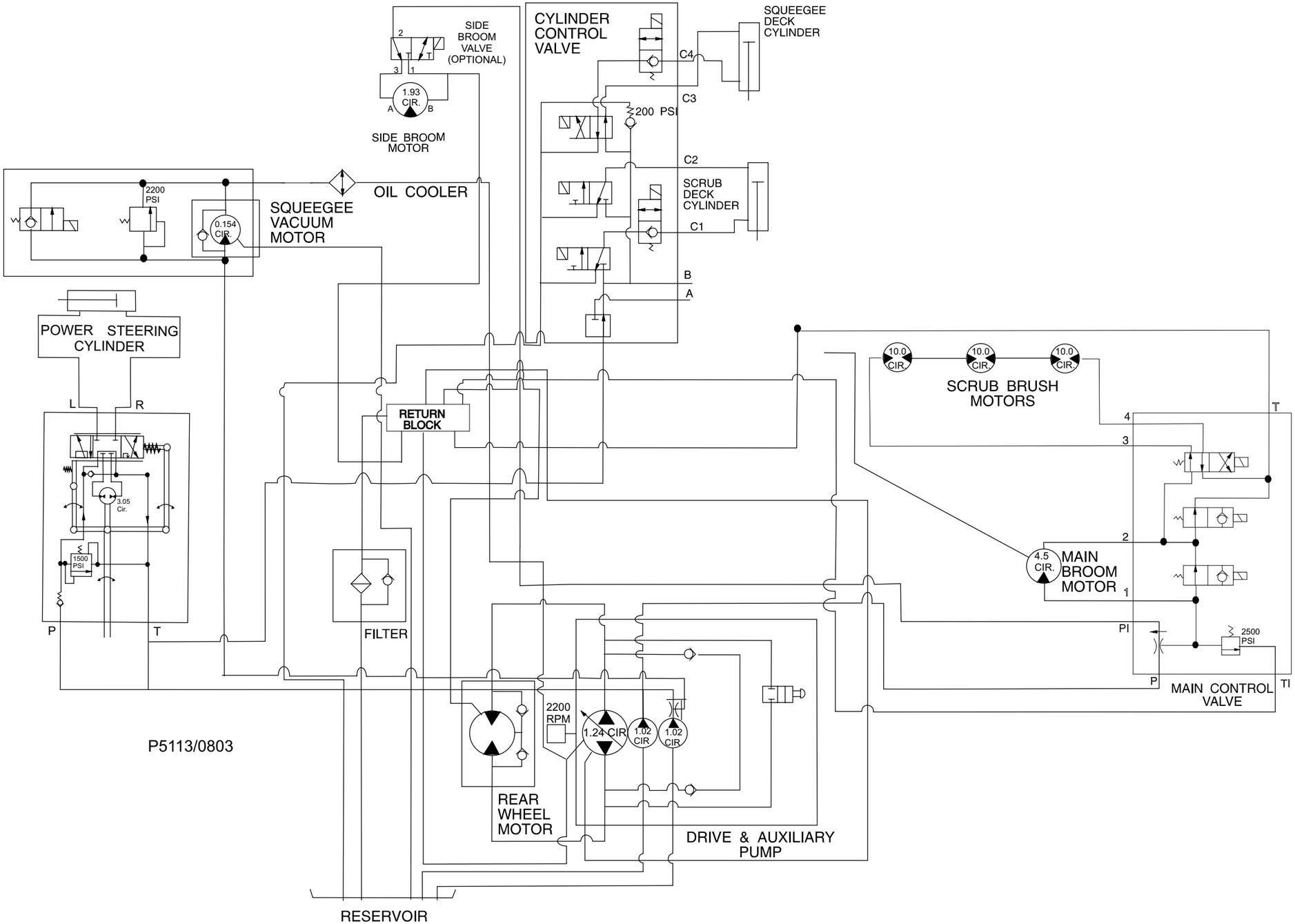
P-5091 FIGURE 27

HOW TO REPLACE THE RETURN FILTER ELEMENT

1. Replace the return filter after 250 hours of machine run time.
2. Unscrew the fasteners from the filter assembly cover and retain.
3. Remove the cover and the compression spring and retain.
4. Discard old filter element.
5. Position new filter element inside the filter body.
6. Put the compression spring in position. Wipe the cover magnet free of any metal filings or debris.
7. Place O-ring (Moisten with clean hydraulic fluid) and cover into position.
8. Reattach fasteners to filter cover.
9. Wipe clean any hydraulic reservoir fluid spills. The fluid can damage painted surfaces of the machine.


SIDE BROOM VALVE
A
1.93 CIR.
B
SIDE BROOM MOTOR
CYLINDER CONTROL VALVE
SQUEEGEE DECK CYLINDER
C4
C3
70 PSI
C2
SCRUB DECK CYLINDER
C1
B
A
P
IN
HOPPER CONTROL VALVE
B
A
D
C
OUT
LIFT CYLINDER
DUMP CYLINDER
2200 PSI
0.159 CIR.
SQUEEGEE VACUUM MOTOR
OIL COOLER
POWER STEERING CYLINDER
L
R
3.05 Cir.
1500 PSI
P
T
RETURN BLOCK
FILTER
10.0 Cir.
10.0 Cir.
10.0 Cir.
SCRUB BRUSH MOTORS
4.50 Cir.
DUST CONTROL MOTOR
4.50 Cir.
WET SWEEP BYPASS VALUE (OPTIONAL)
4
3
2
1
P1
T
.75 GPM
2500 PSI
P
MAIN CONTROL VALVE
T1
9.7 GPM
8.2 GPM
1.5 GPM
2200 RPM
15.0 Cir.
1.24 Cir.
1.02 Cir.
1.02 Cir.
REAR WHEEL MOTOR
DRIVE & AUXILIARY PUMP
RESERVOIR

P4882A/0803


SIDE BROOM VALVE (OPTIONAL)
2
3
1
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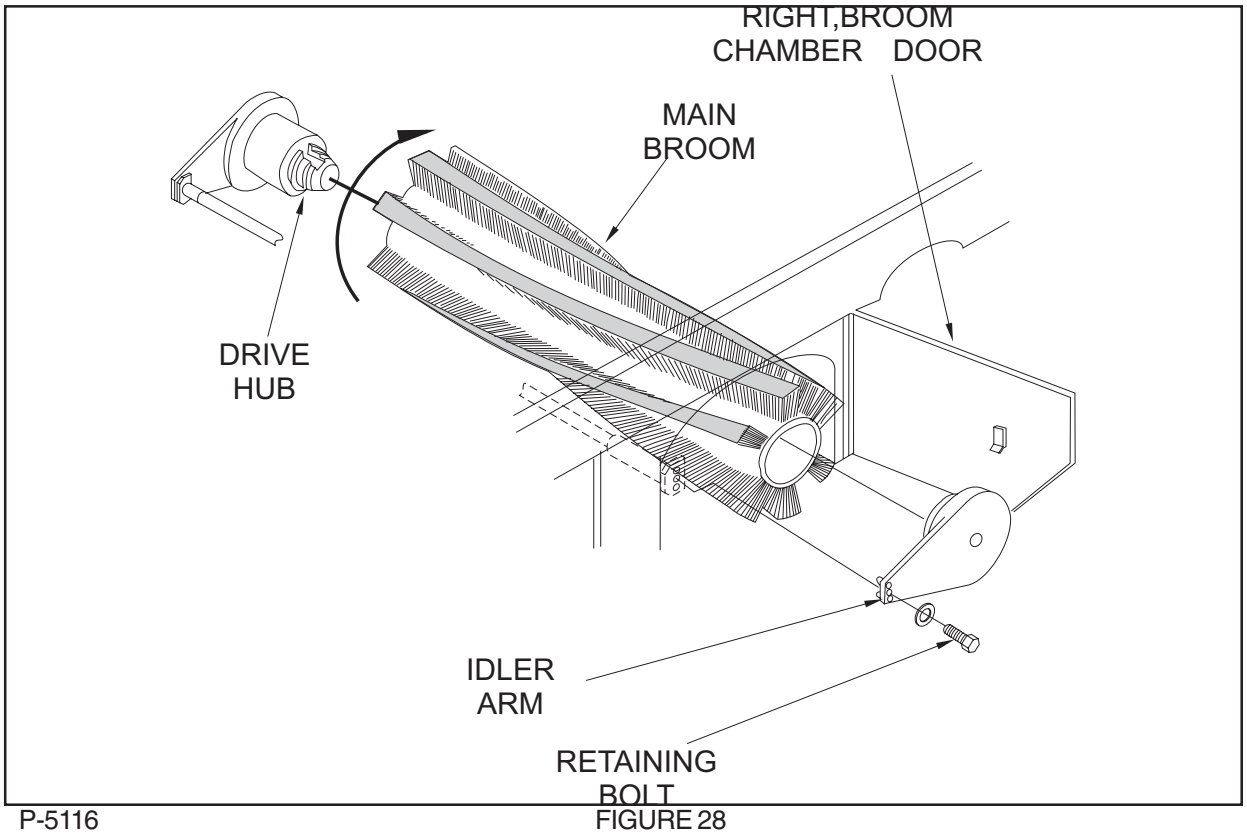
1.93 CIR.
A
B
SIDE BROOM MOTOR
CYLINDER CONTROL VALVE
SQUEEGEE DECK CYLINDER
C4
C3
200 PSI
C2
SCRUB DECK CYLINDER
C1
B
A
2200 PSI
0.154 CIR.
SQUEEGEE VACUUM MOTOR
OIL COOLER
POWER STEERING CYLINDER
L
R
3.05 Cir.
1500 PSI
P
T
RETURN BLOCK
FILTER
10.0 CIR.
10.0 CIR.
10.0 CIR.
SCRUB BRUSH MOTORS
4
3
2
1
4.5 CIR.
MAIN BROOM MOTOR
PI
P
2500 PSI
MAIN CONTROL VALVE
TI
2200 RPM
1.24 CIR
1.02 CIR
1.02 CIR
REAR WHEEL MOTOR
DRIVE & AUXILIARY PUMP
RESERVOIR
P5113/0803

ENGINE

Read and follow all the instructions in the Engine Manual Section. Due to the nature of work being done by the machine, extra care must be taken to protect the engine from these elements. Check the oil each day before starting operations. Be sure to check and clean the air cleaner as conditions demand. Do not let the engine become coated with dust and dirt.



P-5116 FIGURE 28

TO REMOVE MAIN SWEEPING BROOM

1. Open the left broom chamber door.
2. Put the main broom control in the “SWEEP” position.
3. Remove the retaining bolt.
4. Remove the idler arm assembly.
5. Remove the main broom and discard.
6. Put a new main broom in the broom chamber.
7. Rotate the new broom to the right on the drive hub until it engages the drive hub broom tabs.
8. Put the idler arm assembly in place.
9. Put the retaining bolt in place and tighten.
10. Close the broom chamber door.
11. Start the engine.
12. Put the broom lever in the “SWEEP” position.
13. Let the broom sweep in place for 30 seconds.
14. Put the broom lever in the “UP” position.
15. Back the machine off the test spot.
16. Inspect the polished area where the broom swept, for broom bristle contact with the floor. The area of broom bristle contact with the floor should be 2 to 3 inches (5 to 8 cm.) wide.

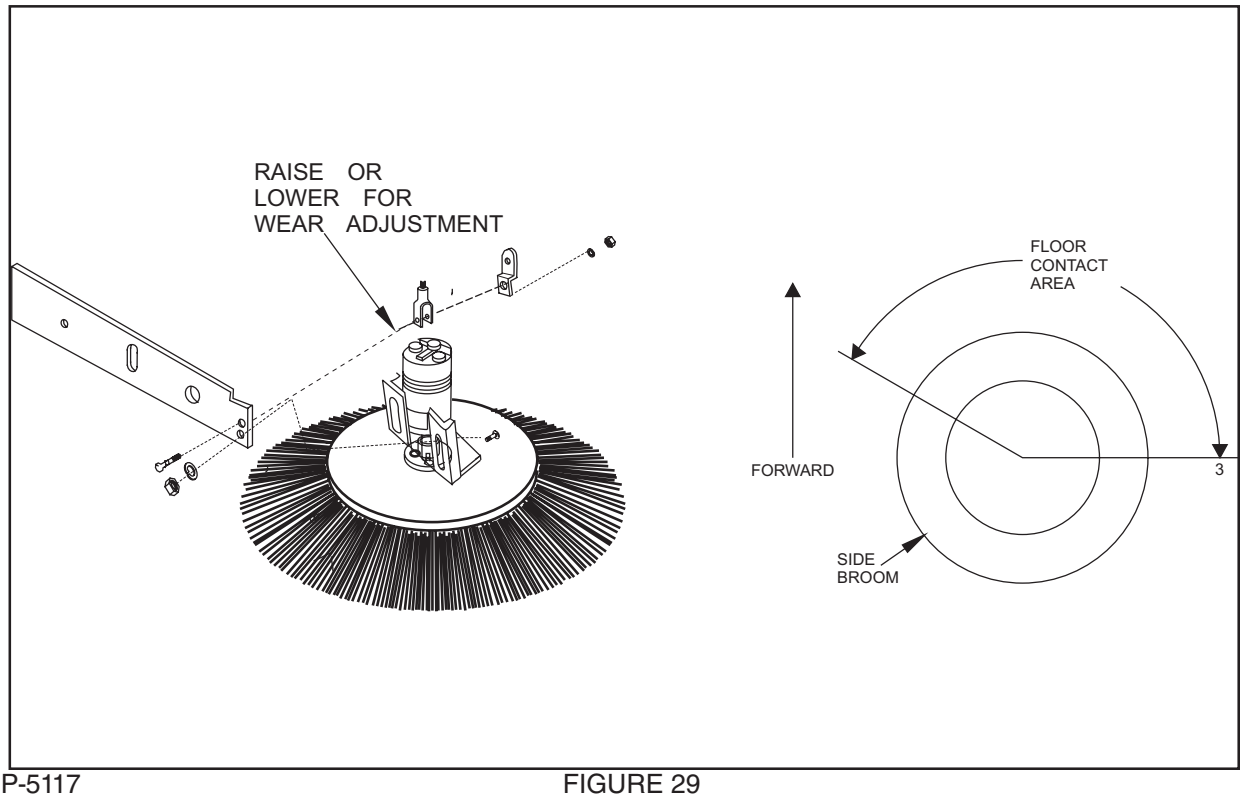
MAIN BROOM LEVEL ADJUSTMENT

The main broom level is factory set and shouldn't need adjustment, if the level gets out of adjustment and the broom bristle contact pattern is not an even 2" to 3" (5 to 8 cm.) wide. Adjust the broom arm lift frame (page 68, part number 7-03-04151 and 7-03-04152). The frame is supported by two flange bearings (part number 2-00-04889). These bearings are located inside the broom doors. The carriage bolts (part number 2-00-00196) on the two end flanges must be loosened. The frame can then be leveled and the bolts tightened.

HOW TO ADJUST MAIN BROOM WEAR PATTERN

When the bristles of the broom begin to wear out the following adjustments may be made to keep a 2-inch (5-cm.) broom pattern.

1. Loosen the nut located in the engine compartment (See page 70, key number 8).
2. Set the broom lever to the "Sweep" position and adjust the lock nut (key number 8) to obtain a 2-inch (5-cm.) broom pattern. The lock nut will move the adjusting rod (key number 3) that adjusts the sweeping pattern of the broom for wear.



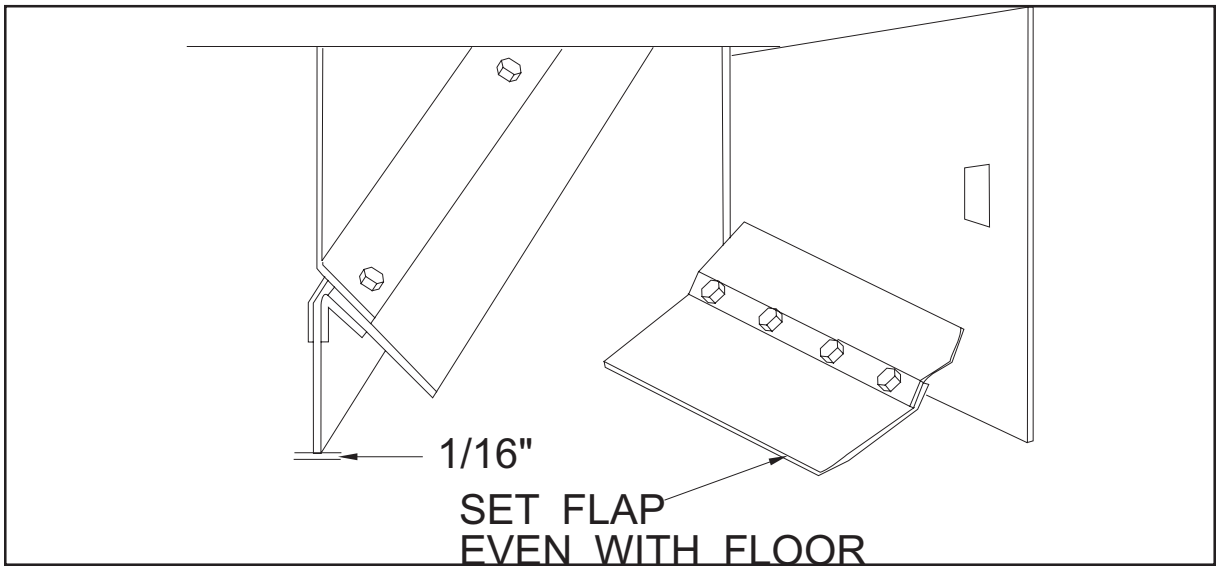
P-5117 FIGURE 29

SIDE BROOM LEVEL ADJUSTMENT

As the side broom wears, loosen the two wear adjusting bolts and slide the broom-motor assembly into a position so that the broom contacts the floor at a 3 degree angle when lowered as shown in Figure 29.

SIDE BROOM REPLACEMENT

Put the side broom lift control in the "UP" position. Remove the retaining screw in the bottom middle of the side broom (Key #8 on page 72). Remove the side broom. Transfer the side broom flange spacer and screws to the replacement side broom (Keys #3, 4, 5, 16,and 17). Put the replacement side broom on the shaft. Put the retaining screw (Key # 8) in position and tighten.

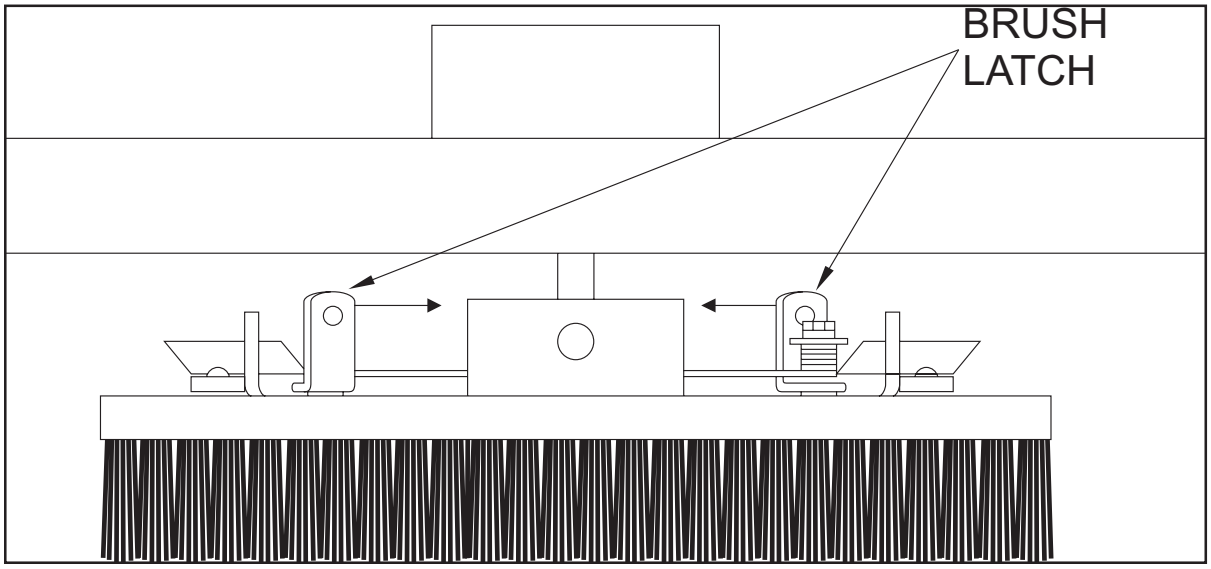


P-4793 FIGURE 30

FLAPS

The urethane and rubber flaps are susceptible to damage and should be inspected regularly and maintained in good condition. The side flaps are adjustable and should be maintained at approximately 1/16" (16 mm.) above the floor. The front and rear flaps have no provision for adjustment.

All flaps should be replaced when worn or damaged to such an extent that they couldn't perform their function.



P-4762 FIGURE 31

SCRUB BRUSH REPLACEMENT

1. Raise the scrub brush deck by pressing the “Scrub Brush” Switch on the instrument panel.
2. Press the brush latches in to release the scrub brush.
3. Remove old scrub brush.
4. Snap new brush into place.

COVERS AND LATCHES

The covers have been designed to allow access, either by hinge or removal, to all areas of the machine. No maintenance is required. For lubrication of latches see Lubrication Section.

SOLUTION WARNING LIGHT

The solution warning light will illuminate when the solution tank is empty. This part of the level control system requires no maintenance. If the system fails to operate, consult the Electrical Troubleshooting Guide.

RECOVERY WARNING LIGHT

The recovery warning will illuminate approximately 5 minutes before loss of vacuum to the recovery tank. This part of the level control system requires no maintenance, except for daily cleaning of the tank level switch. If the system fails to operate, consult the Electrical Troubleshooting Guide.

SOLUTION CONTROL (Non-Recycling or Standard)

The solution control lever controls the amount of solution applied to the scrubbing brushes. Except for a few drops of oil applied to the lever pivot every 100 hours, the system should require no major maintenance.

The solution control should shut off completely with the lever in the (rear) “off” position. If complete shut off does not occur, the control cable should be adjusted.

SOLUTION CONTROL (RECYCLING or ESP System)

In the recycling mode, the solution control lever is also used to activate the detergent pump. If the detergent pump fails to operate (engine running) when the solution control lever is moved into the low to high range, first check the circuit by manually activating the switch. If the detergent pump does not operate at this time, a further electrical or mechanical check is indicated. (See Electrical Troubleshooting Guide or Detergent Pump Troubleshooting).

RECYCLING PUMP ESP System
The recycling pump is located directly behind and under the recovery tank. The pump is electric and except for daily cleaning of the pump intake screens, it requires no regular maintenance.

NOTE

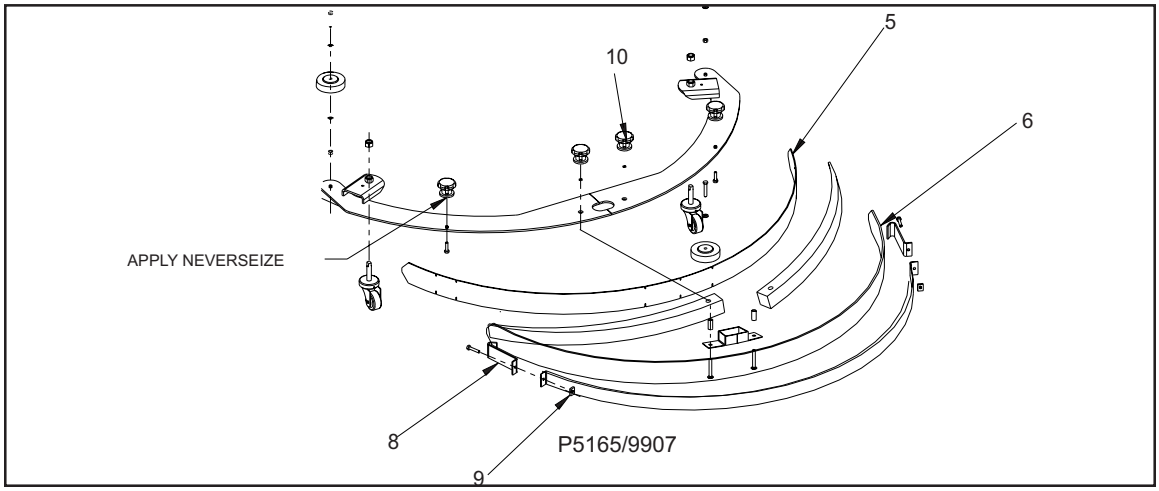
Do not run pump dry. The unit depends on the liquid pumped for lubrication.

RECYCLING (ESP) PUMP STORAGE
Always drain pump for extended storage, especially when freezing temperatures may be encountered.

RECOVERY TANK LID AND TANK ACCESS
Remove the two hex head screws to access the inside of the recovery tank lid. The hydraulic oil cooler is located inside the lid. See figure 34. To gain access to the Recovery Tank, open the engine cover and loosen the hold down strap located on the side of the recovery tank.

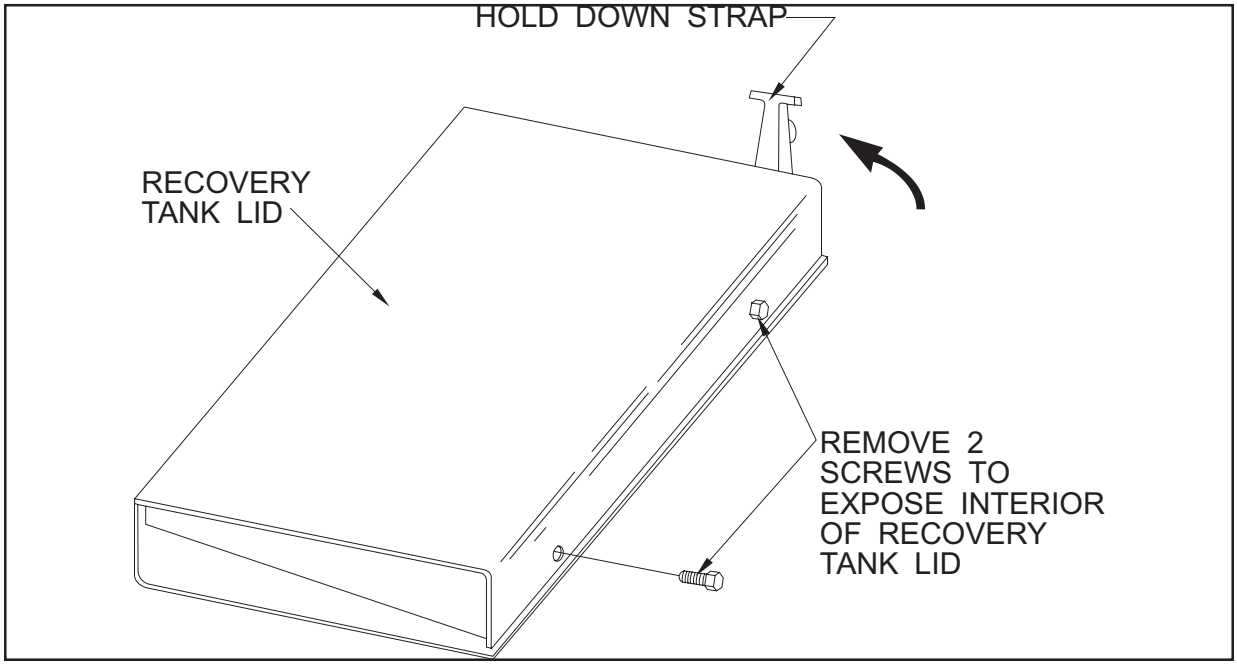
REAR SQUEEGEE
The squeegee will require service when the inner edges of the blades become round with wear, impairing the wiping action or water pickup. To service the rear squeegee use the following steps:
1. Loosen the four aluminum knobs (item 10, these hold the squeegee tool to the squeegee support)
2. Remove the squeegee tool and turn upside down to service the blades or caster wheels. The squeegee blades are designed to flip over and use another unworn edge (item 5 & 6).

To service the blades:
1. Loosen the clamp bolts, which clamp items 8 & 9 together.
2. Loosen far enough to slip the end clamp brackets off the squeegee tool. This will allow flipping the blades or installing new blades.
3. Install blades so that outer blade is 3/16” longer than inner blades, this is achieved by assembling the top edge of the blade against the squeegee tool weldment.
4. Reinstall squeegee clamp band and tighten clamp bolt tight.

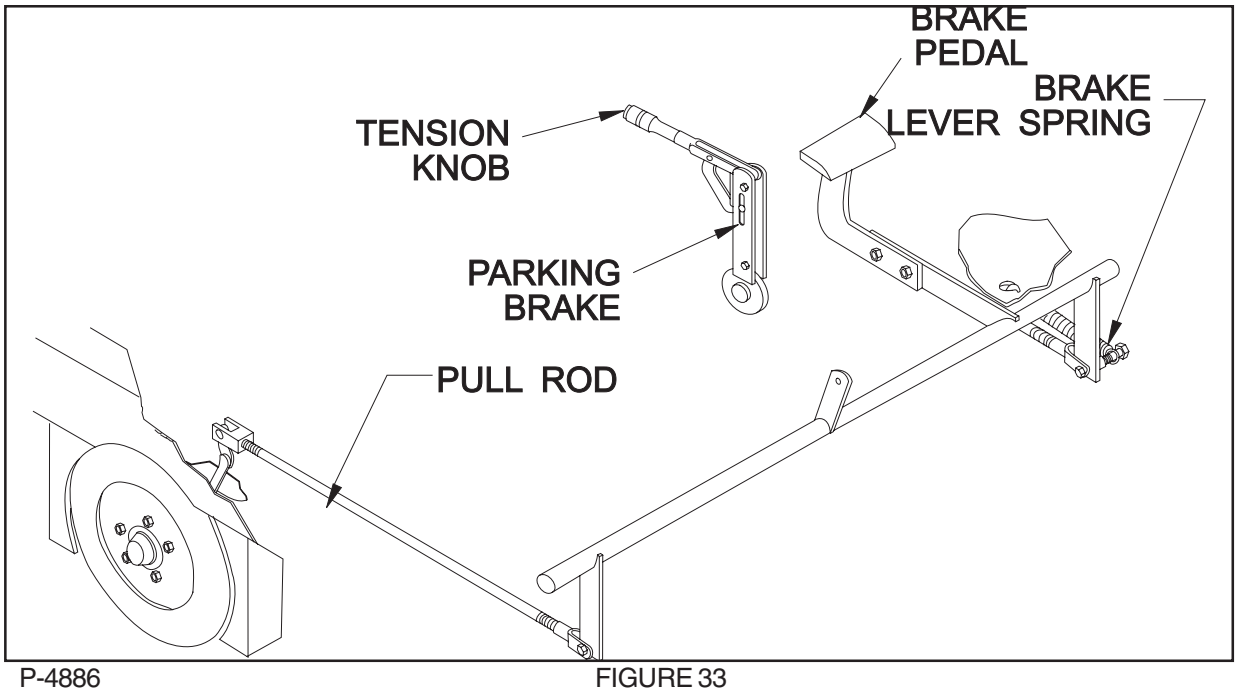


SQUEEGEE CASTER WHEELS
Grease caster wheel zerks (2) on each caster should be greased each time the blades are serviced for a total of 3 caster wheels.

ADJUSTING CASTERS
Lower squeegee on a flat surface, making sure the rear squeegee blade is perpendicular to the surface. Adjust caster 3/16" above the flat surface, Lock jam nuts.



P-4898 FIGURE 32



P-4886 FIGURE 33

BRAKE ADJUSTMENT

1. Connect pull rod, preset to 44.5 inch (113 cm.) clevis centerlines, to brake lever then adjust to fit with brake pedal full up and the spring attached.
2. Adjust tension knob on parking brake lever to hold machine on an 8-degree incline.

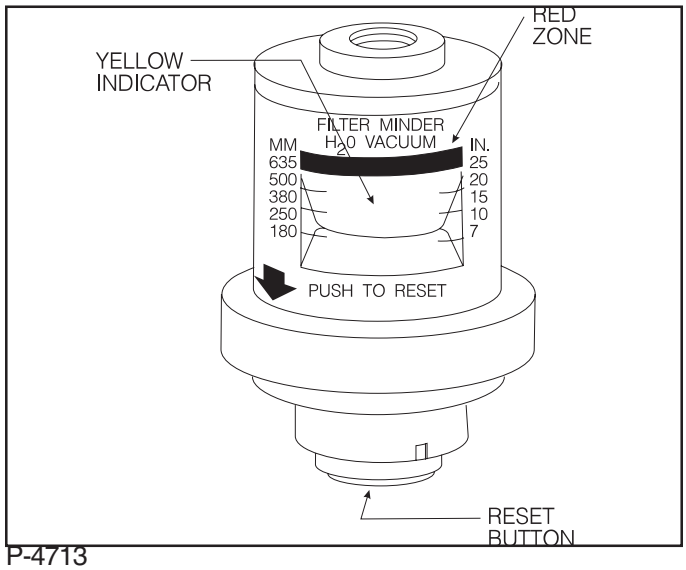
AIR INTAKE SYSTEM

NOTE
Monitor the air filter indicator daily

The importance of maintaining an air filter cannot be overemphasized. Dirt ingested through improperly installed, improperly serviced, or inadequate air filter elements wears out more engines than long hours of operation. Even a small amount of dirt will wear out a set of piston rings in just a few hours. Operating with a clogged air filter element also causes the fuel mixture to be richer, which can lead to formation of harmful sludge deposits in the engine. Always cover the air intake when the air filter is removed for servicing. Do not neglect servicing the air filter. Use only approved replacement parts. Keep all other air intake components, such as hoses and clamps, secure and in good condition to prevent entrance of unfiltered air.
Over maintenance can cause damage. Removing the air filter element more often than is needed allows contaminants to enter the engine unnecessarily.

AIR FILTER
The engine air filter housing includes a dust cap and a dry cartridge type air filter element. The dust cap must be emptied of dirt daily. The air filter element must be replaced every 75 to 100 hours. The filter element must be replaced if it is damaged or has been cleaned three times.

Replace the engine air filter only when the Yellow Filter Service Indicator reaches the red band at the top of the indicator. The yellow indicator will stay at the red band when the engine is off. Reset the indicator by depressing the black button at the bottom of the indicator.



P-4713

TO REPLACE AIR FILTER ELEMENT
1. Stop the engine and engage the machine parking brake.

WARNING
Always park on a level surface, stop the engine, and engage parking brake before working on the machine to keep it from creeping or rolling.

2. Unscrew the clamp ring on the filter.
3. Remove the dust cap.
4. Empty the dust cap.
5. Remove the filter wing nut.
6. Gently pull the filter element out of the filter housing.

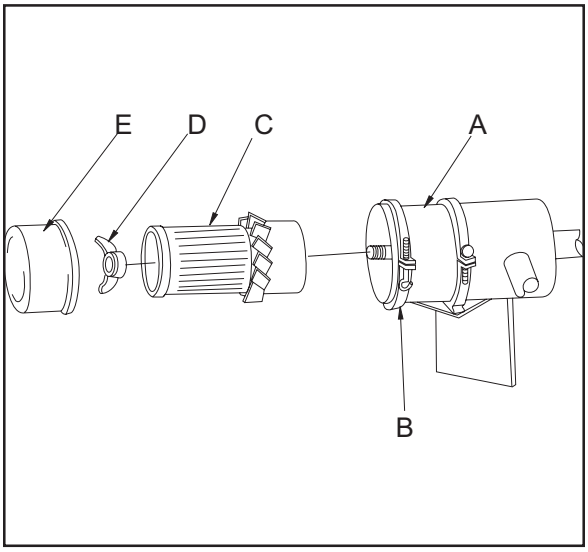
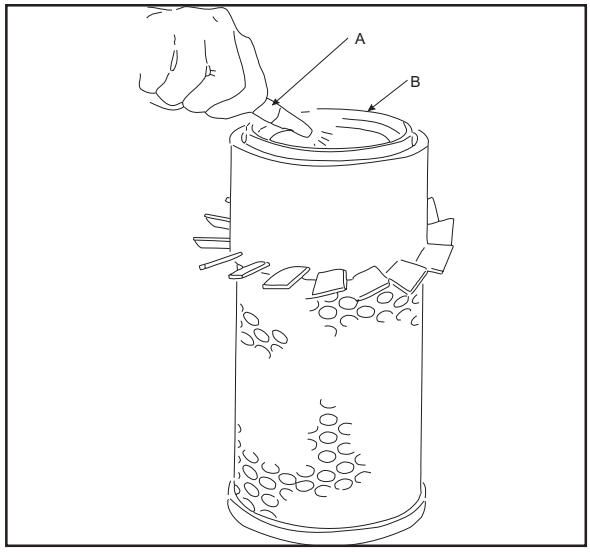


FIGURE 35

REMOVING AIR FILTER ELEMENT

A. Filter Housing
B. Clamp Ring
C. Filter Element
D. Wing Nut
E. Dust Cap



P-4504 FIGURE 36

CLEANING AIR FILTER ELEMENT

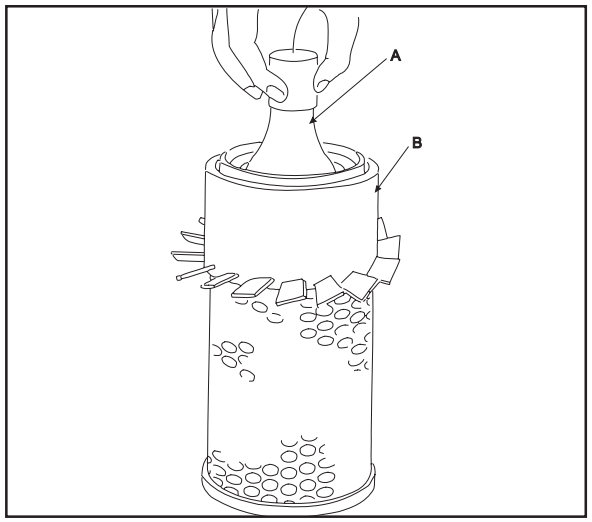
A. Air Hose
B. Filter Element

7. Clean the interior of the air cleaner housing with a damp cloth. Clean the element housing sealing surfaces.
8. Using an air hose, direct dry, clean air maximum 30 PSI up and down pleats on the inside of the filter. Do not rap, tap, or pound dust out of the element.

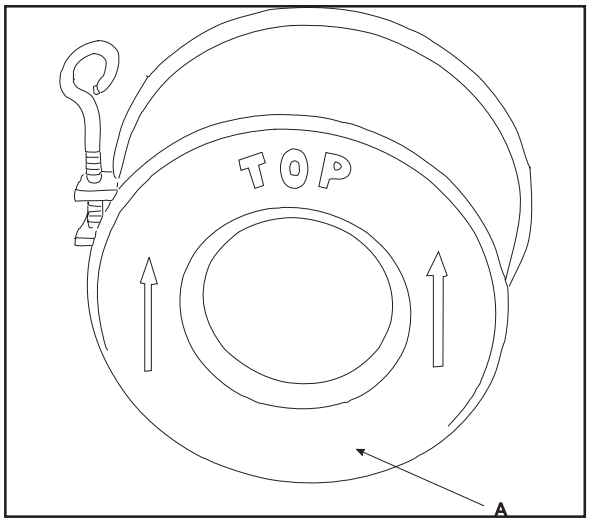
WARNING

Wear approved eye protection when using air or water hoses to prevent eye injury.

9. After cleaning the air filter element, inspect it for damage by placing a bright light inside. The slight estrupture requires replacement of the filter. Clean and inspect the ends of the element. They should be unbroken and flexible. Remember that the element must be replaced after it has been cleaned three times.



P-4503 FIGURE 37

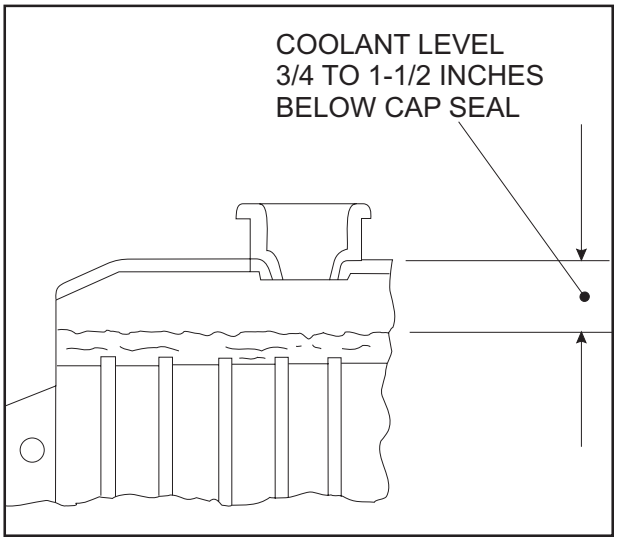


P-4505 FIGURE 38

INSPECTING AIR FILTER ELEMENT
A. Bright Light
B. Filter Element

DUST CAP
A. Dust Cap

10. Install the new or cleaned filter element so the fins on the element are at the intake end of the air cleaner. Use care so the fins are not damaged. Tighten the wing nut attaching the element.
11. Install the dust cap with the arrows pointing up. Tighten the clamp ring to hold it in place. Check all intake hose connections for leaks or abrasions.
12. Reset filter monitor after any filter service.



P-4404 FIGURE 39

COOLING SYSTEM

COOLANT LEVEL

Check the coolant level in the radiator daily, only when the engine is cool.

Maintain the coolant level at approximately 3/4 inches (1.9 cm.) below the filler neck seat on the radiator when the coolant is cold.

Whenever coolant level checks are made, check condition of radiator cap rubber seal. Make sure it is clean and free of any dirt particles. Rinse off with clean water if necessary. When replacing cap on radiator, also make sure radiator filler neck is clean.

WARNING

Never remove the radiator cap under any conditions while the engine is operating. Failure to follow these instructions could result in damage to the cooling system or engine and/or personal injury. To avoid having scalding hot coolant or steam blow out of the radiator, use extreme care when removing the cap from a hot radiator, if possible, wait until the engine has cooled, then wrap a thick cloth around the radiator cap and turn it slowly to the first stop. Step back while the pressure is released from the cooling system. When you are sure all the pressure has been released, press down on the cap (still with a cloth), turn and remove it. Do not add coolant to an engine that has become overheated until the engine cools. Adding coolant to an extremely hot engine can result in a cracked block or cylinder head.

Use only a permanent type coolant that meets FORD specification ESE-M97B44-A such as FORD Cooling System Fluid. Refer to the coolant chart on the container for additional antifreeze protection information. Do not use alcohol or methanol antifreeze, or mix them with the specified coolant. Plain water may be used in an emergency, but replace it with the specified coolant as quickly as possible to avoid damage to the system. With only water in the system, do not let engine run hot.

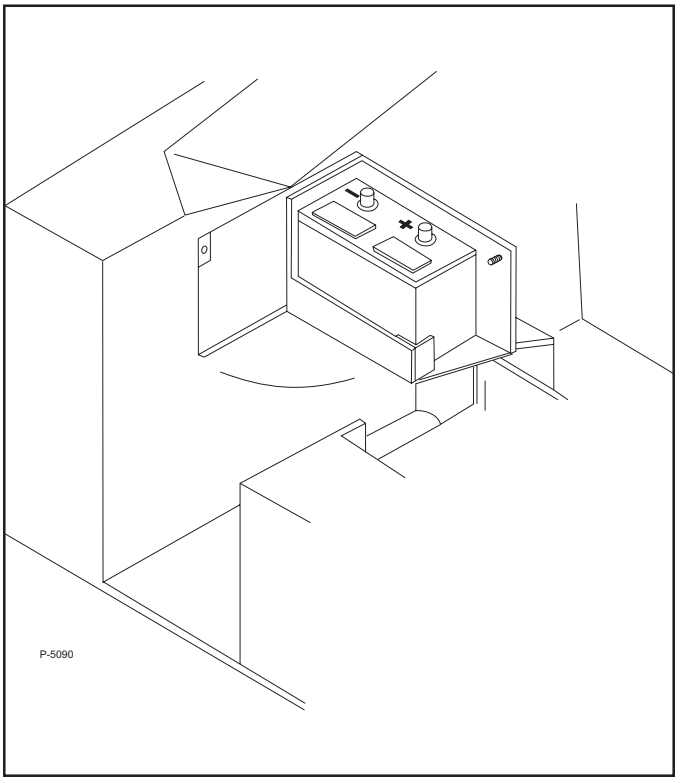
RADIATOR

Inspect the exterior of the radiator for obstructions. Remove all bugs, dirt or foreign material with a soft brush or cloth. Use care to avoid damaging the fins. If available, use compressed air or a stream of water in the opposite direction to normal airflow. Open door for access.

Check all hoses and connections for leaks. If any of the hoses are cracked, frayed, or feel spongy, they should be replaced.

DRIVE BELTS

The drive belt(s) should be properly adjusted at all times. Loose drive belts cause improper alternator, fan and water pump operation, and overheating. Overtightening the belt may result in excessive wear on the alternator and water pump bearings, as well as premature wear on the belt itself. Therefore, it is recommended that proper belt tension be maintained.



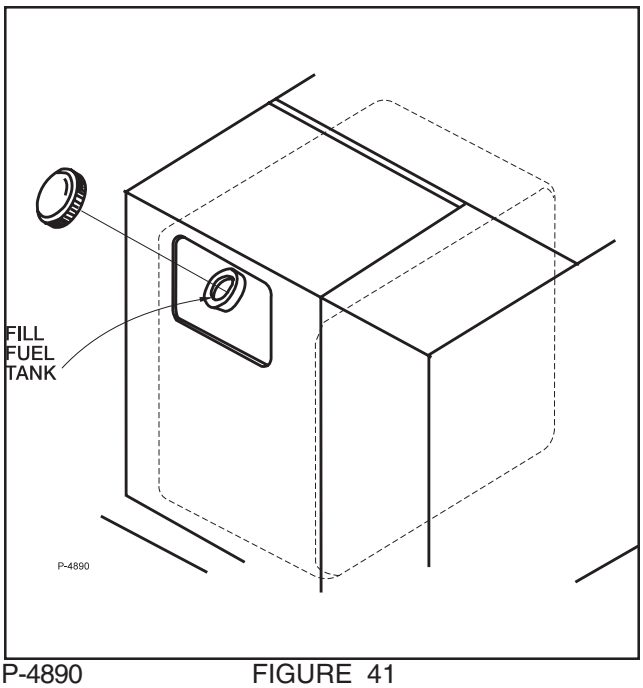
P-5090 FIGURE 40

BATTERY

1. Access the battery through the door located beside the driver's seat.
2. Open the seat cover and unscrew the access bolt to the battery door.
3. Swing the battery door out.
4. Keep the top of the battery clean and dry. Keep the terminals and connectors clean. To clean the tops of the batteries, use a damp cloth with a weak solution of ammonia or bicarbonate of soda solution. To clean the terminals and connectors, use a terminal and connector-cleaning tool.
5. Swing the battery door closed and fasten the access bolt.
6. Put the seat into position.

WARNING

NEVER allow the soda solution to enter the cells. This will permanently discharge the battery.



P-4890 FIGURE 41

GAS TANK

The gas tank is located under the driver's seat. It may be filled from the rear of the machine.

LP GAS SYSTEM

The propane powered Model 7760 is identical to the "standard" gasoline powered 7760, except that its fuel system has been modified to operate on LP vapor fuel.

The LP fuel system consists of several components not found on the gasoline system. The LP fuel system also contains the associated mounting hardware and plumbing for the LP components. The major LP components are as follows: These components are factory set, attempts at adjusting these components should only be made by authorized service personnel.

1. An LP carburetor
2. A combination water heated vaporizer and regulator
3. A combination LP fuel line filter and lock off valve
4. An LP fuel tank and fittings

LP GAS VAPORIZER-REGULATOR QUICK CHECK

Turn on the ignition switch and open the radiator cap. Check the coolant for bubbles. If bubbles are present, the vaporizer may have a leaking gasket or may have developed a pinhole leak, allowing the LP fuel to enter the cooling system.

LP GAS FUEL TANK

The LP tank is located under the driver's seat. Use only the proper size and type of LP tank. The 7760 LP powered sweeper uses 33.5 lb. liquid withdraw tank. The DOT designation of the tank is DOT 4BW-240.

NEUTRAL ADJUSTMENT

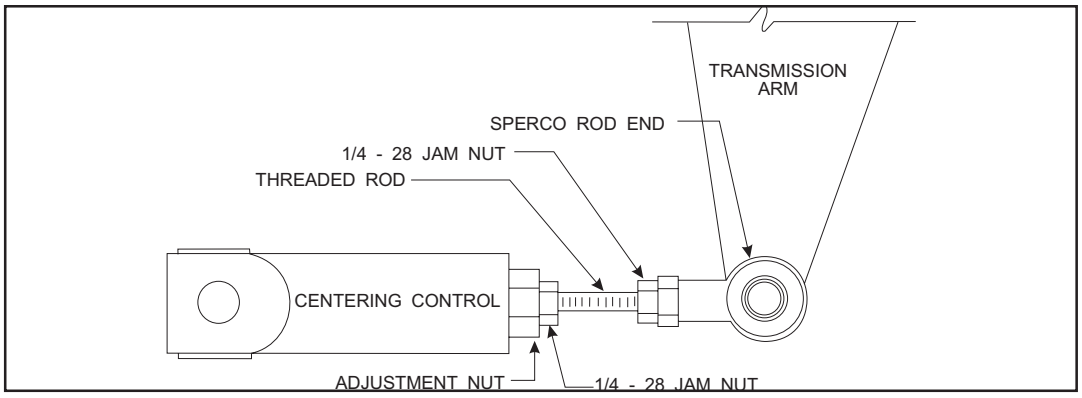
NOTE

Orientation of the transmission arm assembly depends upon which engine is installed in the 7760 Sweeper Scrubber. See pages 120 through 125 for proper identification.

NOTE

Adjustment directions given are as seen from the operator's position in the driver's seat.

1. Check engine no load RPM; 7760, 2150 RPM. Check hydraulic reservoir oil level.
2. Raise rear of machine onto jack stands so rear wheel is off the ground.
3. Loosen the jam nut away from the adjustment nut.
4. If the rear drive wheel is turning forward, turn the adjustment nut clockwise (this will shorten the threaded shaft). If the rear drive wheel is turning in reverse, turn the adjustment nut counter clockwise (this will lengthen the threaded shaft).
5. Tighten the jam nut against the adjustment nut.
6. Test for operation of neutral with engine at full throttle. If the rear drive wheel turns, repeat adjustment steps 3, 4 and 5.



P-5093 FIGURE 42

ABBREVIATIONS - SCREWS

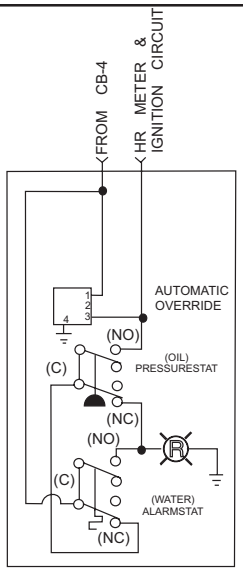
ADJ	=	Adjusting Screw
ADJ.SP	=	Adjusting Plunger Screw
BHM	=	Binding Head Machine Screw
BHS	=	Button Head Socket Screw
CAPT.SL	=	Captivated Slotted Screw
CAPT.WG	=	Captivated Wing Screw
FHM	=	Flat Head Machine Screw
FIL.HM	=	Filister Head Machine Screw
HHC	=	Hexagon Head Cap Screw
HHM	=	Hexagon Head Machine Screw
HIHD	=	1/2 High Head Screw
HSHC	=	Hexagonal Socket Head Cap Screw
HSFHC	=	Hexagonal Socket Flat Head Cap Screw
KNH	=	Knurled Head Screw
MHHC	=	Metric Hexagon Head Cap Screw
PHM	=	Pan Head Machine Screw
RHD	=	Round Head Drive Screw
RHM	=	Round Head Machine Screw
RHW	=	Round Head Wood Screw
SHC	=	Shiny Crown Cap Screw
SHTB	=	Shoulder Thumb Screw
SQ	=	Square Head Screw
TB	=	Thumb Screw
THM	=	Truss Head Machine Screw
WELD	=	Weld Stud
WG	=	Wing Screw

ABBREVIATIONS - SETSCREWS

HS	=	Hexagonal Socket Setscrew
S	=	Slotted Setscrew
SH	=	Square Head Setscrew
-KCP	=	Knurled Cup Point Setscrew
-CP	=	Cup Point Setscrew
-OP	=	Oval Point Setscrew
-FDP	=	Full Dog Point Setscrew
-HDP	=	Half Dog Point Setscrew
-FP	=	Flat Point Setscrew
-COP	=	Cone Point Setscrew

PROBLEM	PROBABLE CAUSE	REMEDY
Sweeping does not function	1. Dump door closed	1. Open dump door
	2. Hopper is raised	2. Lower hopper
	3. Hopper switch out of adjustment	3. Adjust hopper switch
Poor water pick up at squeegee	1. Side or rear squeegee are worn or damaged	1. Examine squeegee rubber blade for cuts or worn spots.
	2. Clogging in water pick up	2. Repair or replace hose and connection
	3. Air leaks in suction hose and connection	3. Repair or replace gaskets
	4. Air leaks at recovery tank cover and/or manifold gaskets	4. Check vacuum motor
	5. Poor vacuum	5. Check seal on recovery tank
	6. Drain hose or drain plug leakage or not closed properly..	6. Close, repair or replace drain plug in recovery tank.
Water spill from squeegee	1. Side squeegee blades, poor contact with floor	1. Readjust blades for proper contact
	2. Squeegee blades worn or damages	2. Replace or adjust
	3. Too much solution being applied before making turns	3. Shut off solution flow 5' to 10'
	4. Brushes rotating opposite direction	4. Check position of switches.
Lack or suction at rear	1. Clogged suction hose or pick up tool	1. Disconnect suction hose from squeegee; flush squeegee & hoses.
	2. Loose connections between suction hose and squeegee or between hoses or manifold inlet.	2. Check all hose connections for looseness or damage.
	3. Vacuum motor not operating	3. Check hydraulic motor in recovery
	4. Vacuum float cage clogged	4. Clean perforated metal thoroughly
	5. Vacuum float shut off	5. Excessive solution in recovery drain tank. Excessive foam build up, change cleaning chemical mixture. Use A-L approved materials.

PROBLEM	PROBABLE CAUSE	REMEDY
Poor scrubbing	1. Worn scrubbing brushes	1. Inspect brushes. If worn to ½" (1.3cm) or less, replace all 3 brushes
	2. Incorrect method of operation	2. Check scrubbing procedures, brush pressure, type of brush, solution flow, & cleaning chemical used. For extreme conditions double scrubbing may be necessary.
	3. Wrong cleaning agent or mixture	3. Use A-L recommended materials
	4. Poor solution distribution	4. Clean out distribution tube & metering holes to brushes. Check feed hose & clean if necessary. Check valve & cable control system.
Engine runs, but machine will not move on level ground	1. Foot pedal and/or linkage jammed or not adjusted	1. Check pedal linkage
	2. Front wheels jammed or brakes locked	2. Check wheels and brakes
	3. Hydraulic pump trouble	3. Check & repair pump, check tow valve. See CESSNA information.
	4. Rear wheel hydraulic motor, broken shaft key, broken shaft, ect.	4. Check & repair. See Char-Lynn information
Machine moves slowly	1. Low hydraulic oil level	1. Add oil to reservoir
	2. Brake dragging	2. Check brakes
	3. Hydraulic oil temp, too high	3. Check oil level, add SAE 5 (FORD Type F) ATF, if required
	4. Worn hydraulic pump or drive wheel motor	4. See hydraulic CESSNA
Hydraulic pump making excessive noise	1. Clogged inlet strainer or suction line	1. Clean inlet strainer. Drain & flush reservoir, if oil is dirty. Refill with clean SAE 5 (FORD Type F) ATF.
	2. Air bubbles in hydraulic fluid	2. Check for low hydraulic fluid level, leaking fittings or hoses
	3. Hydraulic pump is worn or damaged	3. See CESSNA Pump Section



NOTE: ALARMSTAT AND PRESSURESTAT ARE SHOWN WITH ENGINE OFF.

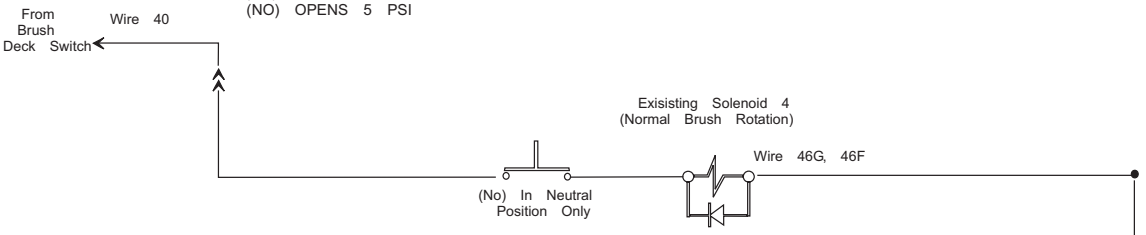
ALARMSTAT

(NO) CLOSES 214°F
(NC) OPENS 220°F — FORD LRG-423

(NO) CLOSES 194°F
(NC) OPENS 200°F — PERKINS DIESEL

PRESSURESTAT

(NC) CLOSES 9 PSI
(NO) OPENS 5 PSI



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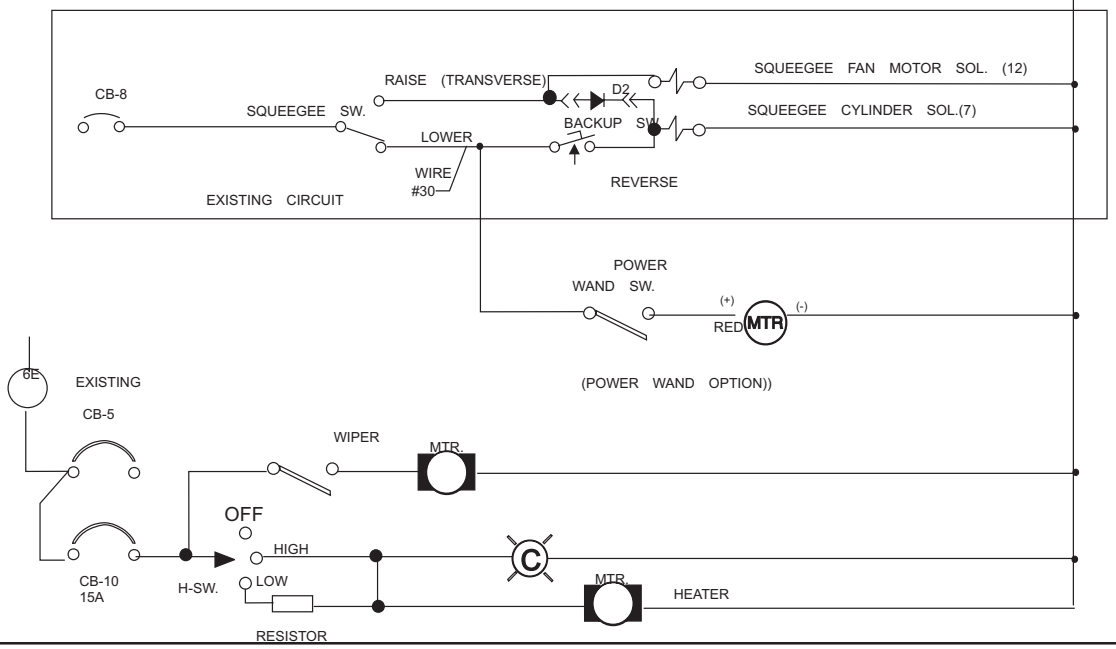
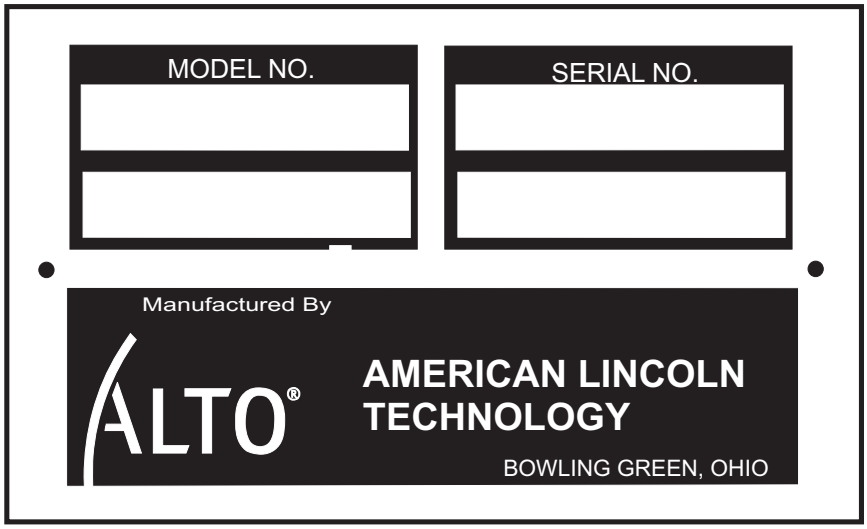


Parts may be ordered from American-Lincoln authorized distributors. Record the information from the American-Lincoln serial plate to avoid delays in filling your order:



1. Use the model number, catalog number, and serial number when ordering.
2. Give the part number, description, and quality of parts needed.
3. Give shipping instructions for either freight, UPS, or parcel post.

Parts and supplies listed in this manual can be ordered from the following address:

American-Lincoln	American-Lincoln authorized distributor
1100 Haskins Road Bowling Green, Ohio 4302 1-800-331-7692	

MACHINE CATALOG NUMBERS

505-230	Variable Dump - Gas
505-230CA	Gas Variable Dump (sold in CA only) (meets California emissions standards)
505-231	Variable Dump - Diesel
505-232	Manual Dump - Gas
505-232CA	Gas Manual Dump (sold in CA only) (meets California emissions standards)
505-233	Manual Dump - Diesel
505-234	Variable Dump - LP
505-234CA	LP Variable Dump (sold in CA only) (meets California emissions standards)
505-235	Manual Dump - LP
505-235CA	LP Manual Dump (sold in CA only) (meets California emissions standards)