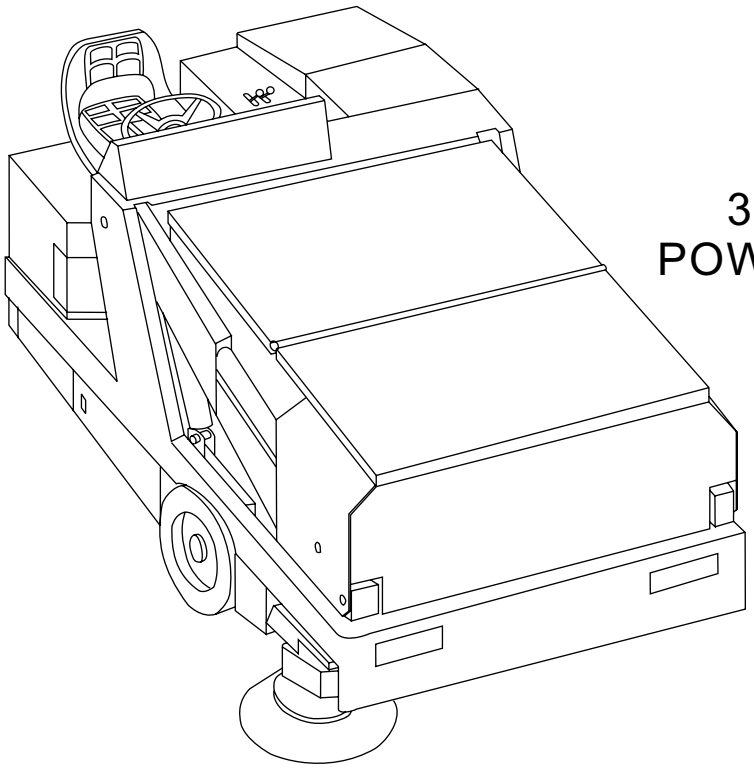
American-Lincoln®

OPERATOR'S MANUAL & PARTS LIST



3366/3366XP POWER SWEEPER

Beginning with Serial No. 585682

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.

ISO 9001

FILE A2287

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.

For new books, write to: American-Lincoln, Inc., 1100 Haskins Road, Bowling Green, Ohio 43402

Part no. 2-86-00145

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MACHINE SPECIFICATIONS

DIMENSIONS

Length	97.0 inches (246.4 cm.)
Width	70.5 inches (179.1 cm.)
Wheel Base	45.2 inches (114.8 cm.)
Height	59.5 inches (151.1 cm.)

DRIVES

Propelling	Variable Displacement Pump Hydraulic Drive Motor
Sweeping	(2) Hydraulic Motors
Vacuum	(1) Hydraulic Motor
Multi Level Dump	(4) Hydraulic Cylinders

HYDRAULIC CONTROLS

Single foot pedal controls forward, neutral, reverse and dynamic braking.
Switch controlled broom and vacuum fan on/off.
Steering wheel controls maneuverability to the right and left. Power steering system translates steering wheel rotation to rear wheel angle.

MECHANICAL SYSTEMS

Brakes	Foot operated with hand operated locking drum brakes
Brooms	
Main	Lift and height adjustment
Side	Lift

SWEEPING SYSTEM

Type	Direct throw
Hopper	27 cubic feet 1500 lbs. (680 Kg.)
Filter Area	170 square feet
Main Broom	
Length	50 inches (127 cm.)
Diameter	16 inches (40.6 cm.)
Bristle length	4.25 inches (10.8 cm.)

Features broom lift and adjustable broom height for wear compensation, standard proex and wire broom and quick change system.

Side Broom	
Diameter	23 inches (58.5 cm.)

Features side broom lift, independent broom angle and height adjustment for wear compensation and nylon fiber broom.

Dust Control System

Twin quick change treated pleated paper type panel air filters (85 square feet or 7.9 square meters) with a 9 inch (22.9 cm.) hydraulically driven vacuum impeller.

SPECIFICATIONS

SYSTEM FLUID CAPACITIES

Engine Cooling System	
Radiator and Hoses	4.0 quarts (3.8 liters)
Gas/LP System total	8.0 Quarts (7.6 l.)
Diesel system total	8.0 Quarts (7.6 l.)
Fuel Tank	
Gas, Diesel Fuel	9.2 gallons (34.8 liters)
LPG	33 lbs. (15 kg.)
Hydraulic System	7 gallons (26.5 liters)

GENERAL MACHINE PERFORMANCE

Sweeping Width	66 inches (167.6 cm.)
Speed	
Maximum Travel	8.0 MPH (12.9 Km/Hr)
Recommended Sweeping Speed	3.0 MPH(4.8 Km/Hr)
Turning Radius	
Left 68 inches (172.5 cm.)	
Right	110 inches (279.4 cm.)
Minimum aisle width for 180° turn	120 inches (304.8 cm.)

WEIGHT

3366 Gas Variable Dump	3700 lbs. (1678 Kg.)
3366 Gas Variable Dump w/Crate	4200 lbs. (1905 Kg.)

ENGINE DATA

FORD - VSG 413	
Bore and Stroke	2.91 x 2.97 in. (7.39 x 7.54 cm.)
Oil Capacity	3.5 quarts (3.3 liters)
Displacement	79 CID (1.3 liters)
Fuel	“Regular” Unleaded Gasoline
Maximum Power	53.7 hp @ 4000 RPM
Operating Speed	2600 RPM

FORD - VSG 423

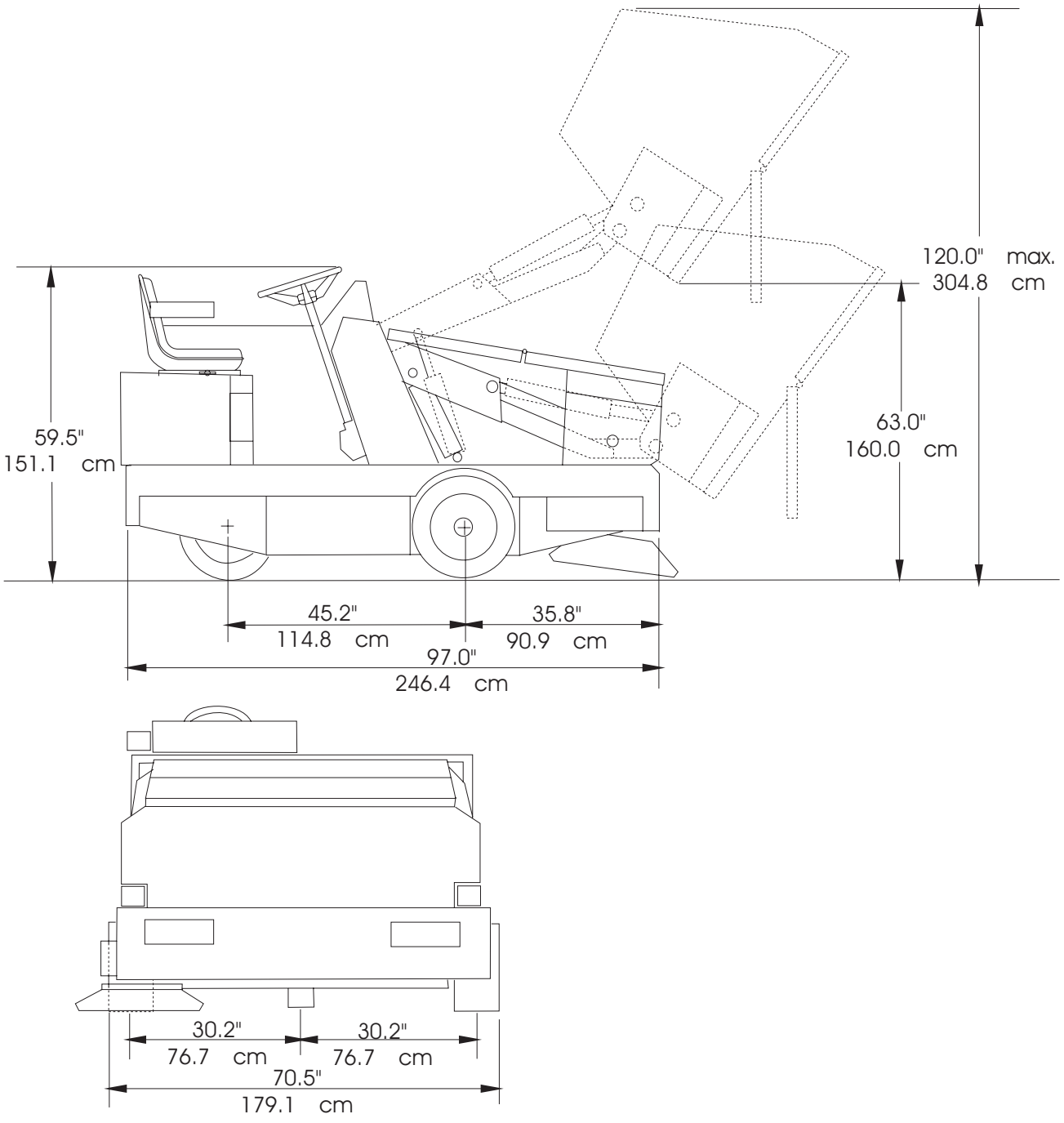
Bore and Stroke	3.78 x 3.125 in. (9.60 x 7.94 cm.)
Oil Capacity	4.0 quarts (3.8 liters)
Displacement	140 CID (2.3 liters, 4 cylinder)
Fuel	“Regular” Unleaded Gasoline

PERKINS - 104.19

Bore and Stroke	8.307 x 3.54 in. (8.4 x 9.0 cm.)
Oil Capacity	6.5 quarts (6.2 liters)
Displacement	122 CID (2 liters, 4 cylinder)
Fuel Oil	Minimum cetane number 40

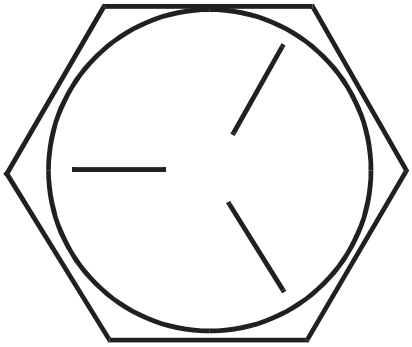
WHEELS

Diameter	21 inches
Tire	Pneumatic (6.90/6.00 x 9)
Rim	9 in. (22.86 cm), 5 bolts

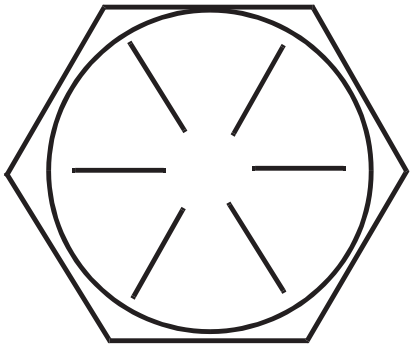

120.0" max.
304.8 cm
63.0"
160.0 cm
59.5"
151.1 cm
45.2"
114.8 cm
35.8"
90.9 cm
97.0"
246.4 cm
30.2"
76.7 cm
30.2"
76.7 cm
70.5"
179.1 cm

C-0100

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.

C2000/9905

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HYDRAULIC TORQUE REQUIREMENTS

Nominal SAE Dash Size	O-ring Face Seal End		SAE O-ringBoss 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 Not Defined for this tube size.

NOTE
Parts must be lightly oiled with hydraulic fluid.

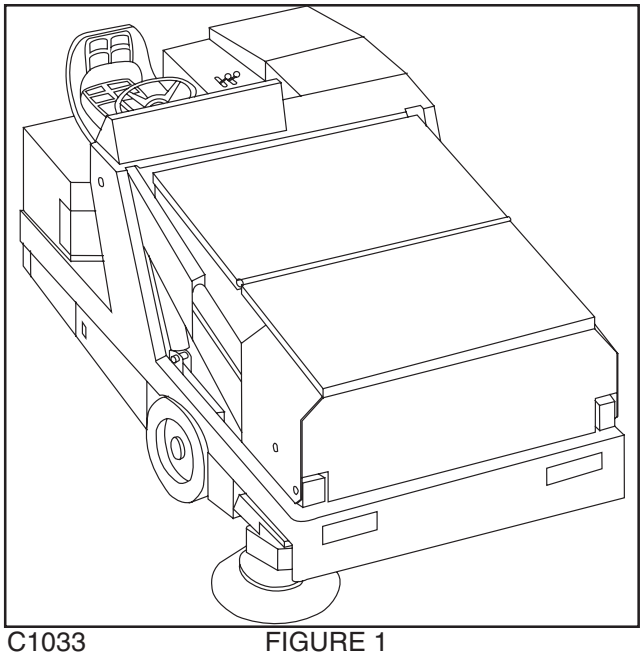
O-RING SIZE CHART

Part Number	O.D.	I.D.	Width	Description
2-00-04962	0.441	0.301+0.005	0.07	O-ring Seal Tube Size 4
2-00-04963	0.629	0.489+0.005	0.07	O-ring Seal Tube Size 8
2-00-04964	0.879	0.739+0.005	0.07	O-ring Seal Tube Size 12

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	0.5	12.7000	1	1.0000	25.4000

C-2001



C1033 FIGURE 1

Unpacking and Preparing the Machine for Operation

YOUR MODEL 3366 POWER SWEEPER HAS BEEN SHIPPED COMPLETE, BUT DO NOT ATTEMPT TO OPERATE WITHOUT READING THE FOLLOWING INSTRUCTIONS.

1. Uncrate the machine and carefully remove from skid to prevent damage.
2. Connect and tighten battery cables.
3. Fill tank with UNLEADED gasoline or Diesel Fuel.

WARNING

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

4. 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 chart.
5. 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 antifreeze.
6. Check oil level in the hydraulic reservoir located at center of machine beside the engine. The hydraulic reservoir is full, if oil can be seen in the sight glass with the hopper in “DOWN” position. If oil is required, add HYDRAULIC FLUID ONLY, automatic transmission fluid FORD type “F” ATF.

NOTE

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 YOURSELF AND OTHERS. THIS MACHINE SHOULD NOT BE USED IN HAZARDOUS LOCATIONS INCLUDING AREAS OF VOLATILE DUST OR VAPOR CONCENTRATIONS.

1. To avoid possible injury or property damage, read the operator's manual before using the machine.
2. Fire hazard. Fine dust, fuels solvents and thinner can explode and cause severe burns.
3. Do not use with/ or near flammable materials or vapors. Use only with good ventilation.
4. Heavy machinery, Improper use can cause personal injury.
5. Operate only from the designated operators position. Keep inside the body of the machine. Keep hands and feet on the designated controls. Always operate in well lighted areas.
6. Do not leave the machine on a ramp or dock. After stopping the machine, turn all the switches off.
7. 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).
8. Operate only when lids, doors, and access panels are securely closed.
9. Never travel with the hopper in the raised position.
10. The operator must exhibit extreme caution when negotiating, turning and traveling across grades or ramps.
11. Start, stop, change direction, travel and brake smoothly. Slow down when turning. Avoid uneven surfaces and loose materials.
12. Watch out for obstructions, especially overhead.
13. Carry no passengers on the machine.
14. Set parking brake when leaving the machine. Chock (block) the wheels if the machine is to be parked on a grade (ramp), or is to be worked on.
15. Never leave the operator's seat with the engine running.
16. Report damage or faulty operation immediately. Do not operate the machine until repairs have been completed.
17. Maintenance and repairs must be done by authorized personnel only.
18. Never manually depress the electrical switch on the left lift arm when the hopper is raised.

WARNING

TO MAINTAIN THE STABILITY OF THIS SWEEPER IN NORMAL OPERATION, THE COUNTER-WEIGHTS, OVER-HEAD GUARD, REAR BUMPER GUARD, OR ANY SIMILAR EQUIPMENT, INSTALLED BY THE MANUFACTURER AS ORIGINAL EQUIPMENT, SHOULD NEVER BE REMOVED. IF IT BECOMES NECESSARY TO REMOVE SUCH EQUIPMENT FOR REPAIR OR MAINTENANCE. THIS EQUIPMENT MUST BE REINSTALLED BEFORE THE SWEEPER IS PLACED BACK IN OPERATION.

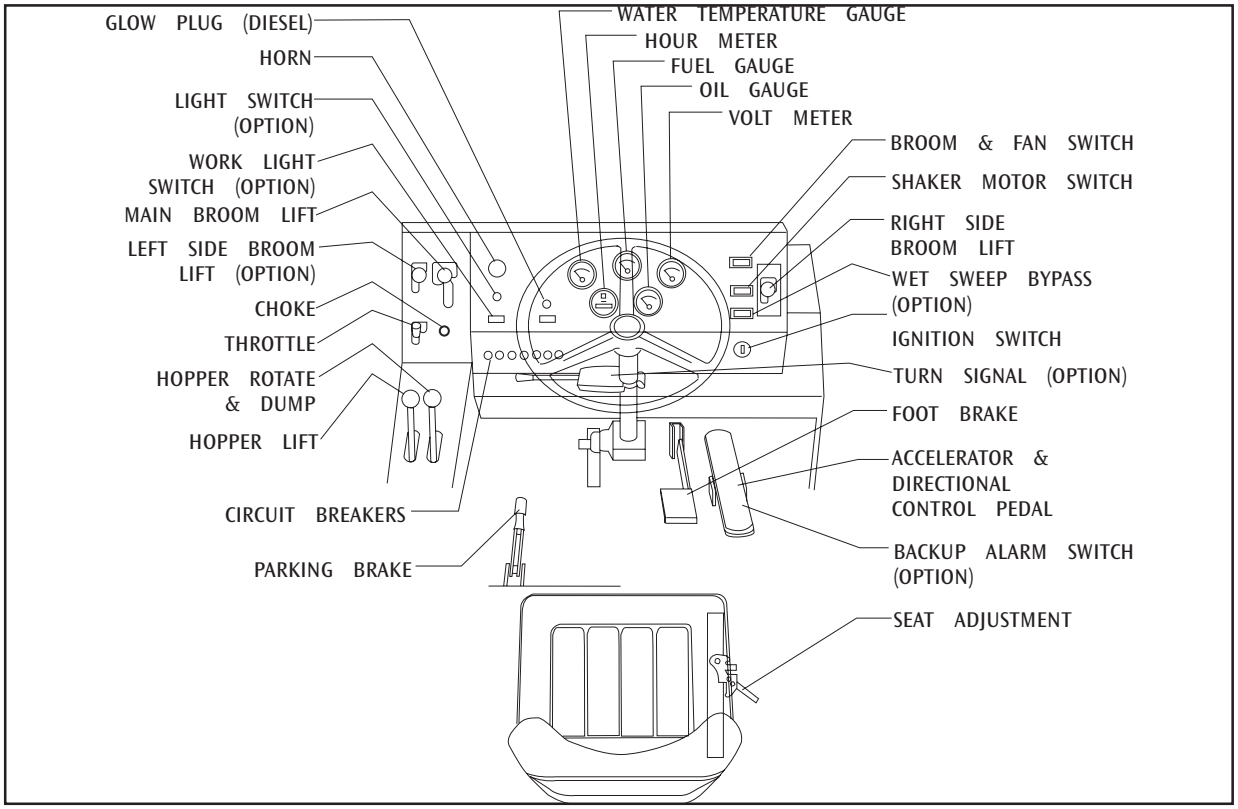
WARNING

WHEEL ASSEMBLY MAY EXPLODE CAUSING SERIOUS PERSONAL INJURY OR DEATH. WHEEL ASSEMBLY MUST BE SERVICED BY PROPERLY TRAINED AND QUALIFIED PERSONNEL IN ACCORDANCE WITH FEDERAL OSHA STANDARD 29 CFR PART 1910.177.<D>

WARNING

DO NOT ADD AIR TO TIRE AND RIM ASSEMBLIES THAT HAVE BEEN OPERATED IN A SERIOUS UNDERINFLATED OR FLAT CONDITION. THE TIRE AND RIM COMPONENTS CAN EXPLODE CAUSING SERIOUS OR FATAL INJURIES.

-Always deflate a tire and wheel assembly completely before removing it from the vehicle for servicing.
-An under inflated tire is one inflated to 80% or less of recommended air pressure.
-Never use mismatched tire/rim components.



P4586 FIGURE 2

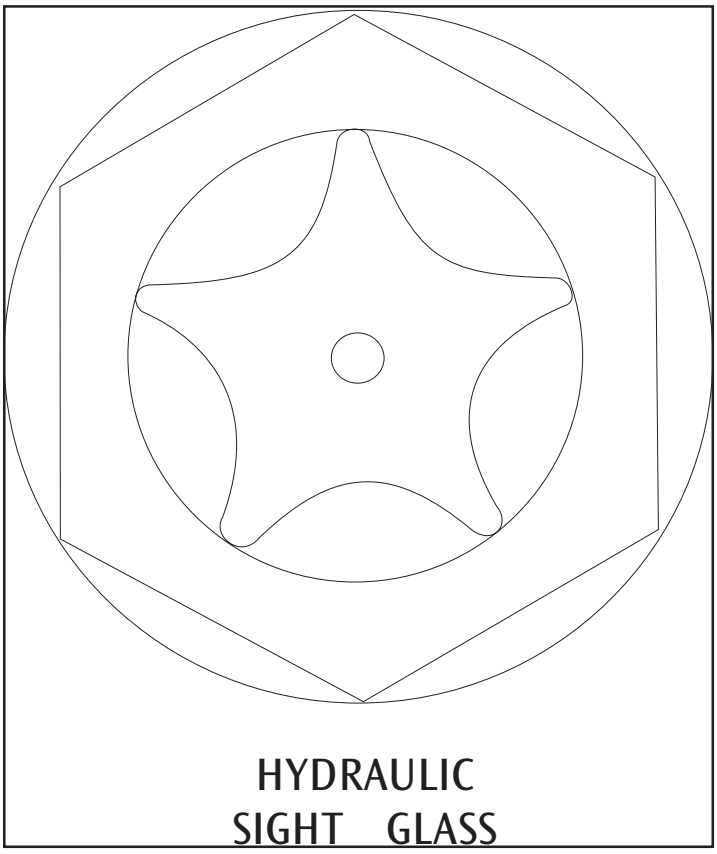
WATER TEMPERATURE GAUGE See Figure 2
The water temperature gauge is located on the instrument panel to the left of the fuel gauge. The gauge is activated by a sender in the engine. It displays the engine water temperature in °F.

HOUR METER See Figure 2
This meter is located to the left of the oil pressure gauge on the instrument console. This meter is activated when the key switch is in the “IGN/ON” position. The meter indicates actual “run” time of the machine. The meter can be used to indicate when maintenance should be done to the machine.

FUEL GAUGE See Figure 2
The fuel gauge is located between the water temperature gauge and the volt meter on the instrument panel, and indicates the level of fuel contained in the fuel tank.

OIL PRESSURE GAUGE See Figure 2
The oil pressure gauge is located on the instrument panel to the right of the hour meter. The gauge is mechanical and activated by a sender in the engine. It displays the engine oil pressure in PSI.

VOLT METER See Figure 2
The volt meter is located on the control panel to the left of the fuel gauge. The meter indicates the charging or discharging of the battery. When the key is in the accessory position the gauge will register approx. 12 volts. The meter will indicate approx. 13 to 14.5 volts when the engine is running. This indicates that the alternator is working correctly.



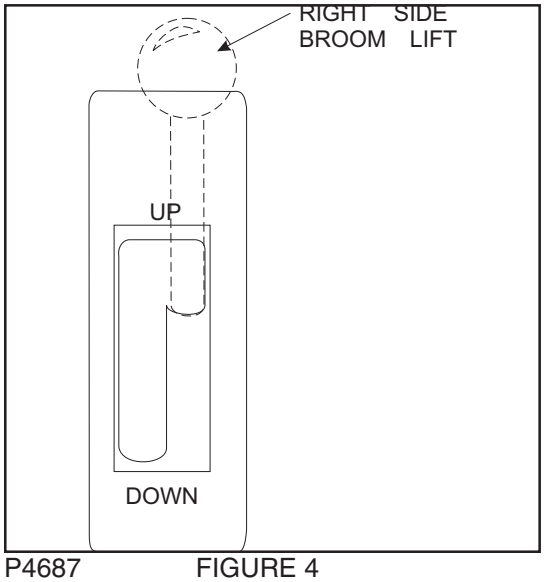
P4696a FIGURE 3

HYDRAULIC FLUID SIGHT GLASS See Figure 3
The sight glass is located on the side of the hydraulic oil reservoir.
The sight glass indicates the level of the hydraulic oil in the reservoir.
Fluid level must be visible in the sight glass when the hopper is in the down position. If the sight glass is completely full, then there is too much fluid in the reservoir.

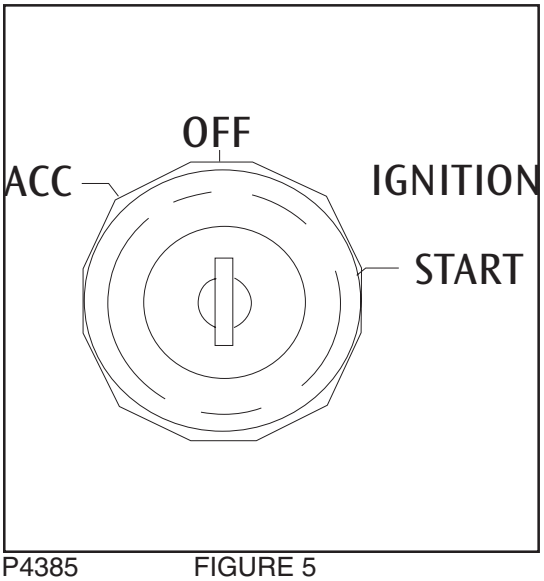
BROOM & FAN SWITCH See Figure 2
The broom and fan switch is located to the left of the right side broom lever. This switch “powers” the brooms and the vacuum fan system. It has on-off positioning.

SHAKER MOTOR SWITCH See Figure 2
The shaker motor switch is located below the broom and fan switch. This is a momentary switch that will activate the filter shaker motors. Hold the switch for 20 to 30 seconds to activate the shaker motors. When the shaker motors have been activated, the brooms and impeller fan will stop. The shaker motors will only operate with the hopper in the “SWEEP” position. The switch is not on the control panel if the machine is equipped with the CDC Dust Control Filter Option.

TIMED SHAKER MOTOR SWITCH (OPTION) See Figure 2
The shaker motor switch is located below the broom and fan switch. This is a momentary switch that will activate the filter shaker motors for 20 to 30 seconds after it has been pushed. When the shaker motors have been activated, the brooms and impeller fan will stop. The shaker motors will only operate with the hopper in the “SWEEP” position.



P4687 FIGURE 4



P4385 FIGURE 5

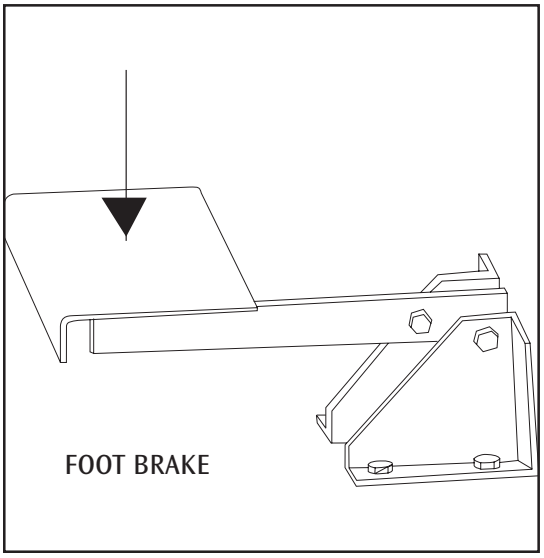
RIGHT SIDE BROOM LIFT AND POWER CONTROL See Figure 4
The right side broom lift and power control is located on the right side of the instrument panel. To raise and stop the side broom, grasp the lever and push the lever to the locking notch, marked “UP”. To lower the side broom, grasp the lever, push it up and to the left, away from the locking notch. Let the lever lower -until it rests by the “DOWN” mark. The broom will automatically begin rotating as it is lowered. To turn “ON” the side brooms, move the Hopper Lift/Side Broom Lever forward to the “ON” position (See Figure 9).

IGNITION SWITCH See Figure 5
The keyed ignition switch is located to the right of the steering column on the instrument panel. It has four positions.

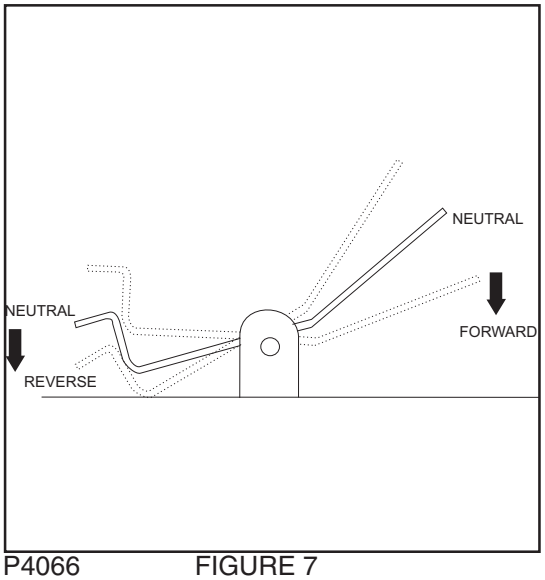
1. The key turned to the center “OFF” position will shut of the engine. The following items can be activated in the “OFF” position.
   a. Horn
   b. Filter Shaker Motors
   c. Light Options
2. The key turned to the left “ACCESSORY” position will allow the following additional items to be activated:
   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.

WET-SWEEP BYPASS SWITCH - (OPTIONS) See Figure 2
The wet-sweep bypass switch is located to the right of the steering wheel under the shaker motor switch. The switch activated will shut off the vacuum motor. This will keep the dust filters from being ruined by the water pickup from sweeping water.

TURN SIGNALS - 4 WAY (OPTIONS) See Figure 2
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.



P4689 FIGURE 6



P4066 FIGURE 7

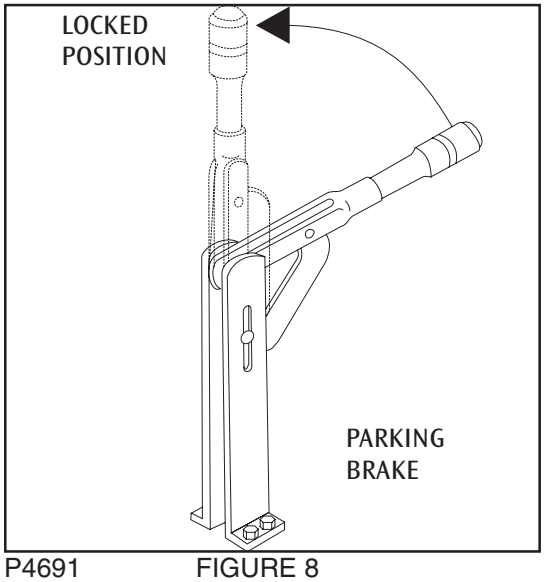
FOOT BRAKE **See Figure 6**
The foot brake pedal is located to the right of the steering column on the floor of the driver compartment. The foot brake on front wheels is a mechanical system actuated by the brake pedal.

ACCELERATOR and DIRECTIONAL CONTROL PEDAL See Figure 7
The accelerator and directional control pedal is located on the floor of the operator's area, 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 (OPTION) See Figure 2
The back up alarm is operated by a switch that is located under the lower section of the Accelerator and directional control pedal. The alarm makes a loud audible noise when the machine is being driven in reverse.

SEAT CONTROL See Figure 2
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.



P4691 FIGURE 8

PARKING BRAKE See Figure 8
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.

CIRCUIT BREAKERS See Figure 2
The circuit breakers are located to the left of the steering wheel. When a circuit breaker "pops" out, this is an indication of an electrical problem that must be corrected before the breaker can be reset.

There can be up to seven circuit breakers in the row. They control the following circuits, beginning with number 1 on the left:

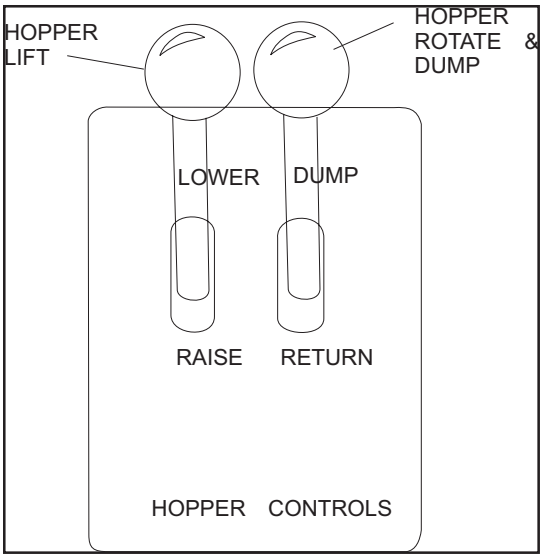
CB-1 = Filter shaker motors
CB-2 = Horn
CB-3 = Starter relay
CB-4 = Ignition
CB-5 = Accessory
CB-6 = Options
CB-7 = Cab Options

GLOW PLUG (DIESEL)

WARNING

It is advised that in no circumstances should either or any other unauthorized starting aids be used at the same time as the Glow Plugs.

To operate the glow plugs, the following procedure should be adopted.
1. Before operating he starter motor, press the "GLOW PLUG" button for approximately 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 a further 10 to 15 seconds. When a further attempt is made to start the engine, keep the glow plugs energized while starting and for a few seconds after the engine has fired until it is running smoothly.



P4686 FIGURE 9

HOPPER LIFT / SIDE BROOM LEVER See Figure 9
The Hopper Lift/Side Broom lever is located to the left side of the drive compartment. The lever is a three position control that operates the hopper lift, side broom and optional left side broom.

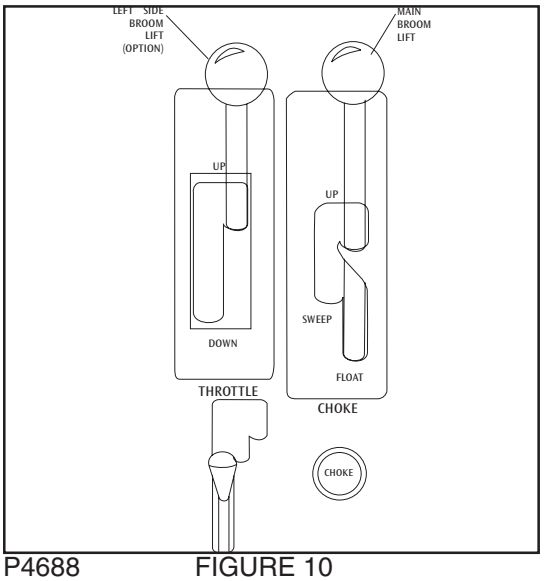
NOTE
The Hopper Lift lever will not function until the hopper has been rotated to clear the body of the sweeper.

The lever is spring centered from the rear position. The center position turns OFF the side broom (or brooms) and is the HOLD position when dumping the hopper. The lever is detonated in the forward position. Move the lever forward to turn ON the side broom when sweeping or to LOWER the hopper when dumping the hopper.

Move the lever back to RAISE the hopper when dumping. Release the lever when the hopper has reached the desired height. The lever will return to the center HOLD position.

HOPPER DUMP/RETURN CONTROL LEVER See Figure 9
The Hopper Dump/Return lever is located to the left of the drive compartment. The lever is a two position control that operates the hopper dump system. The lever is spring loaded to the center position which "STOPS" rotation of the hopper.

To rotate the hopper, move the lever forward to the dump position and hold. Release the lever when the hopper reaches the desired position. The return the hopper after dumping, move the lever back to the RETURN position. The hopper will rotate back and the hopper will lower to the seated position. Release the lever once the hopper has been seated in the body of the sweeper.



P4688 FIGURE 10

WARNING
Never turn off the engine with the hopper in the lifted position.

THROTTLE CONTROL See Figure 10
The throttle control is located to the left of the choke on the console. To raise the throttle to the full throttle, grasp the lever and push the lever to the locking notch. To lower the throttle to idle, grasp the lever, push it up and to the left away from the locking notch. Let the lever lower until it rests at the bottom of the slot. The engine must be operating at full governed speed of 2600 "No Load" RPM (broom control off and the machine sitting still) to maintain optimum machine travel speed, hopper loading and dust control. Before turning of the key and stopping the engine, return the lever to the idle position.

CHOKE CONTROL See Figure 2
LP and Diesel powered engines do not have a choke. The choke is located to the left of the steering column and the right of the throttle on the machine console. 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 warms up.

LEFT SIDE BROOM LIFT AND POWER CONTROL (OPTION) See Figure 10
The left side broom lift control is located on the left side of the instrument panel. To raise and stop the side broom, grasp the lever and push the lever to the locking notch marked “UP”. To lower the side broom, grasp the lever and push it up to the right away from the locking notch. Let the lever lower until it rests by the “DOWN” mark. To turn “ON” the side brooms, move the Hopper Lift/Side Broom Lever forward to the “ON” position.

MAIN BROOM LIFT See Figure 10
The main broom lift control is located to the left of the driver’s seat. To lower the main broom, grasp the lever and push up and to the left to clear the locking notch. Move the lever down to the first or second notch in the elongated slot. The first notch, “SWEEP”, is for normal sweeper (2 to 3 in. or 5 to 8 cm. broom pattern).
The second notch, “FLOAT”, is for heavy sweeping (4 to 5 in. or 10 to 13 cm. broom pattern), To raise the main broom, push the lever up and slide into the locking notch in the “UP” position. 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 in extremely uneven areas.

WORK LIGHT SWITCH - (OPTIONS)
The work light switch is located under the light switch to the left side of the steering wheel. It allows the operator to work the rear work light option when the headlights are on.

LIGHT SWITCH - (OPTIONS)
The light switch is located under the horn to the left side of the steering wheel. It will work various light options that are available for this machine, such as:

* Head Lights
* Tail Lights
* Side Broom Lights
* Instrument Lights

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

HORN BUTTON
The horn button is located to the left of the steering column. The horn button is always active. Push the horn button to sound the horn.

CAB - (OPTIONS)
The all weather cab is available for this machine along with several “cab only” options:

* Heater
* Windshield Wipers
* Defroster Fan
* Interior Light
  Pressurizer

These options have their controls located on the cab.

LOW OIL SHUTDOWN
This engine is equipped with a low oil pressure shutdown. If the engine oil pressure drops too low, the engine will shut down. Add engine oil until the oil is brought up to the correct level.

NOTE

Before starting the engine, perform these pre-start checks.

PRE-START CHECK LIST

1. Check engine air filter element indicator.
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.
8. Check broom patterns

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 Engines Only.) If machine is stored in extremely cold temperatures, (under 32° F. or 0° C.), pull choke and hold throttle open approximately halfway when starting engine.
3. Turn key to “On” position & release. Push choke in when engine starts.
4. If engine fails to start after following the above procedures, refer to Engine Manual Section.

NOTE

When machine has been stored in below freezing temperatures, run engine at not over 1/2 throttle with machine standing still for 5 to 10 minutes to warm engine and hydraulic oil.

TO OPERATE SWEEPER

1. Make sure parking brake is released.
2. Lower the side and main broom to the floor. (The main broom control may be placed in either the “FLOAT” or “SWEEP” position (See Figure 10).
3. Turn Broom Fan Switch on.
4. Pull engine throttle to “UP” position. (Engine must always be operated at full governed speed while sweeping to obtain recommended brush speed and dust control).
5. Push forward on directional control pedal to place machine in motion.
6. Vary your foot pressure on the directional control pedal to obtain desired travel speed.

TO STOP SWEEPER

1. 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.
2. Depress the foot brake.
3. Turn Broom Fan Switch off.
4. Put the broom controls (Side and Main) in the “UP” position.
5. Push engine throttle down. Turn key to “OFF.”
6. Set parking brake.

NOTE

After stopping the engine, perform these post operation checks.

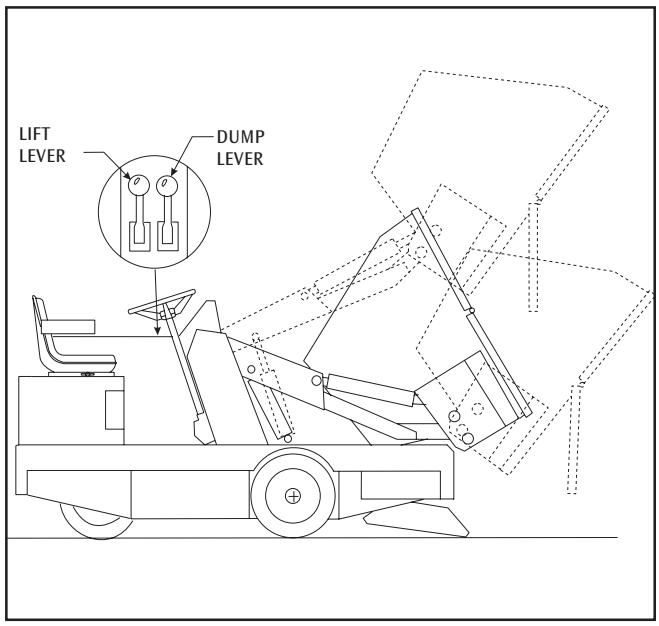
POST OPERATION CHECK LIST

1. Clean debris hopper.
2. Check sweeping brooms for wear or damage.
3. Check all flaps for wear, damage and adjustment.
4. Fill the fuel tank.

WARNING

The gasoline tank access is located behind the drivers seat, do not mistake the hydraulic reservoir for the gasoline tank.

5. Check all systems for leaks.



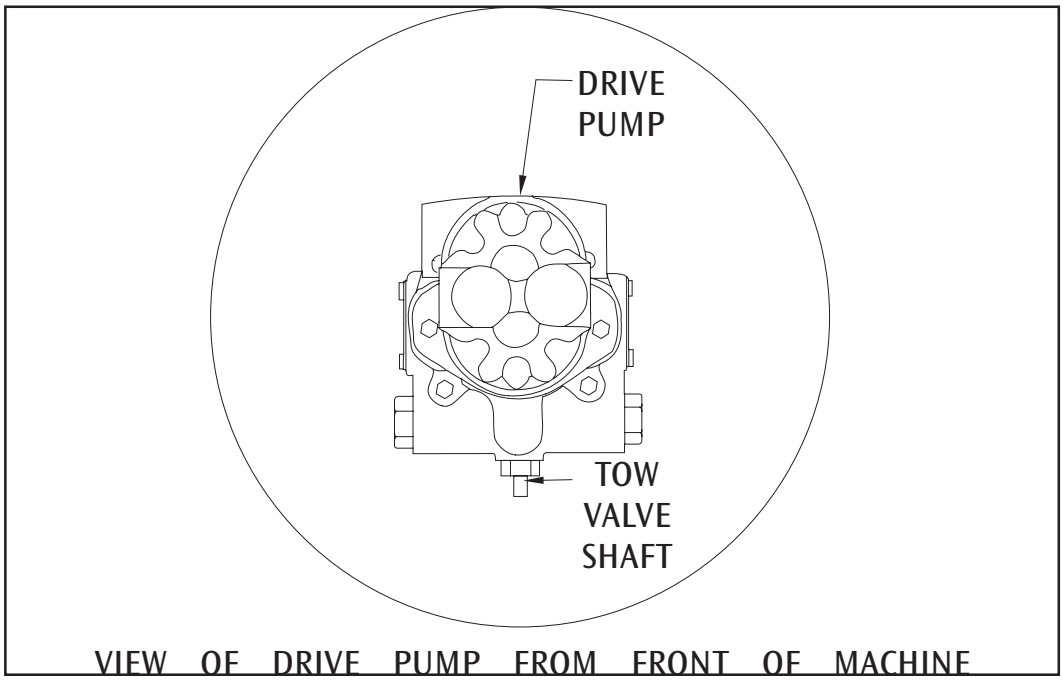
P4585 FIGURE 11

TO EMPTY DEBRIS HOPPER

1. Set engine throttle to full throttle position.
2. Push the hopper rotate and dump lever to the “DUMP” position. The hopper will begin to rotate.
3. Once the hopper rotation speed doubles, the hopper lift lever will work. Raise the hopper to the desired level (MINIMUM OF 8" or 20 cm. OF LIFT REQUIRED) by pulling back the hopper lift lever to the “RAISE” position.
4. Drive forward 12 to 18 inches slowly with the hopper up before completing the dump cycle.
5. Push the hopper rotation and dump lever to the “DUMP” position to complete dump cycle.
6. Drive in reverse 12 to 18 inches or 30 to 46 cm. slowly with the hopper up to clear the dumpster before lowering the hopper.
7. Pull the hopper rotation and dump lever to the “RETURN” position and the hopper will automatically rotate and lower to its proper position.

WARNING

Never turn off the engine with the hopper in the lifted position.



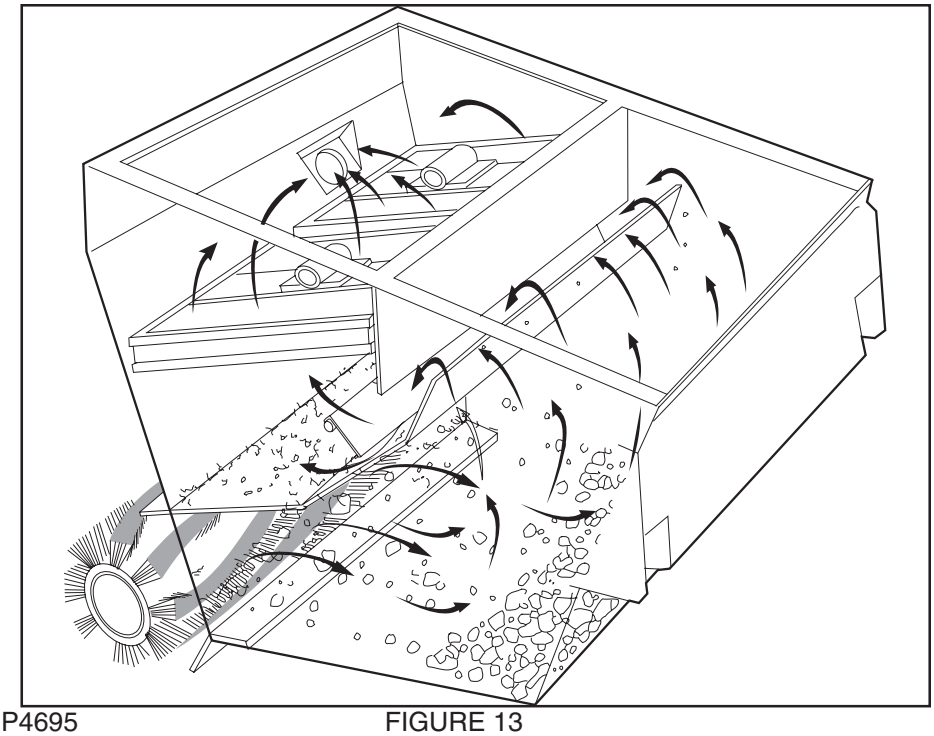
C0192 FIGURE 12

TOWING INSTRUCTIONS

1. Locate tow control shaft extension as shown in Figure 12. The tow control shaft is located underneath the pump.
2. To open hydraulic circuit to wheel drive motor turn shaft 90°.
3. After towing, turn shaft 90° to its original position.

DUST FILTERS

The Filter Panel can be periodically removed from the hopper and blown off with compressed air (not to exceed 100 P.S.I.) or cleaned with soap and water. (Do not attempt to use Filter Panels that have not dried completely.)



P4695 FIGURE 13

THE DUST CONTROL SYSTEM

The baffle system that is built into the debris hopper is designed minimize dust in the air while the machine is sweeping.

The debris from sweeping is thrown into the hopper. 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 filter. The lighter dust particles are captured by the dust filter. This allows the dust filter to remain cleaner and need less shaking to remove dust. When the dust filter becomes clogged the filter shaker switch should be pushed to start the dust shaker cycle. This will extend the life of the filter.

NOTE

The main broom and impeller fan will shut off automatically when the shaker motor is cycling.

THE CONTINUOUS DUST CONTROL (CDC) OPTION

The CDC Hopper Self-Cleaning Air Filter System Option, sets the standard for constant dust control at the sweeping broom. Less operator attention is required for all sweeping conditions.

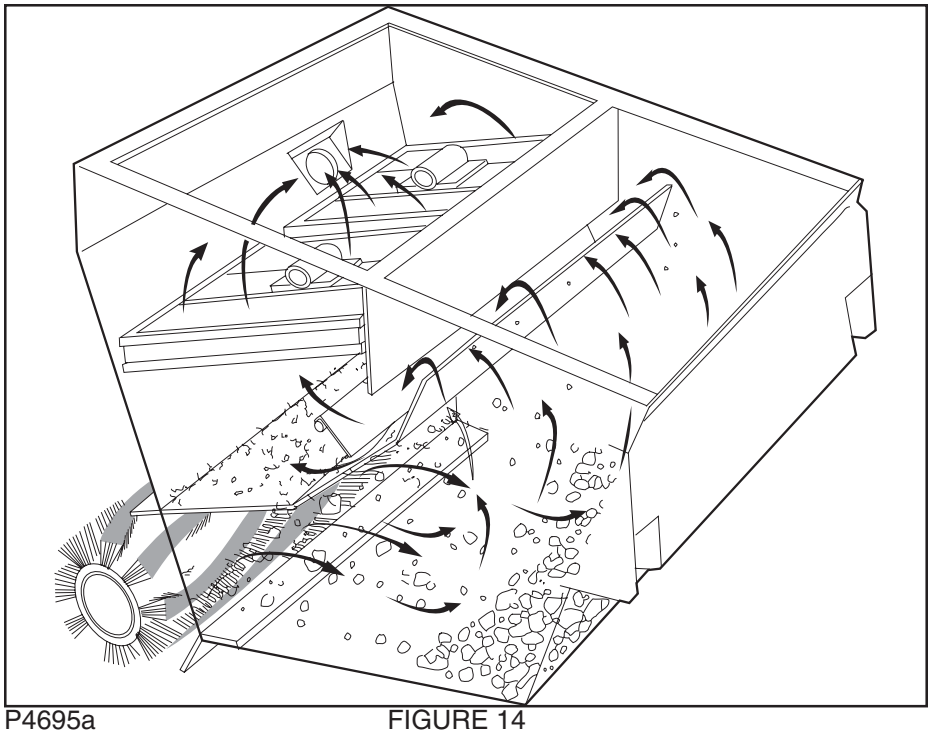
⚠ WARNING

To prevent possible injury from the compressed air blast emitted from the multi-jet filter cleaning heads, stop engine before opening the hopper filter chamber.

The air cleaning system removes dust from the vacuum fan induced air stream flowing through the sweeper hopper. The system provides prior to the fan two solids gas-separators that remove debris and dust scavenged from around the main broom.

The initial separator utilizes impaction and inertia to remove debris from the flow stream. The self-cleaning panel filter provides final high-level air cleaning before the vacuum fan interception.

Overlapping, multiple high energy gas jets automatically reverse and flush clean the filter to maintain a relatively constant hopper air flow. Energy for the filter cleaning gas multi-jets is from an engine driven compressor. Compressed air at 35/40 PSIG provides filter cleaning sequence and cleaning time lapse.



P4695a FIGURE 14

The compressor supplies air to a manifold for storage. Manifold compressed air energizes a stepper (linear motor) at 10/15 second intervals to operate one of four manifold exhaust valves. Compressed air flows from the valve into a multi-jet head for discharge through the overlapping gas jets. The multi-jet orifice geometric arrangement compliments the flow in the filter clean air shroud. The jet arrangement provides sealing contact of the high energy gas jet to the flow tube bore walls. This results in inducted high air flow for cleaning the filter.

Proper filter cleaning is critical. Reduced cleaning energy will increase the hopper air stream, the flow drag across the filter, and increase the dusting around the main broom.

Release of filter cleaning air through the multi-jet heads into the filter clean air shroud flow tubes is from the cyclic opening of four exhaust valves. Valve opening is sequential and from the pilot valve stepper. The stepper is energized by the manifold compressed air supplied through a pressure piloted stepper operator valve.

Following the discharge of the filter cleaning compressed air from the manifold, the stepper operator valve resets. This permits the compressed air to vent from the pilot valve stepper to the atmosphere.

The stepper is reset for the next flushing cycle by gas permanently accumulated in the rod end of the stepper piston barrel. The gas accumulator charges each time the stepper cycles.

SAFETY REQUIREMENTS

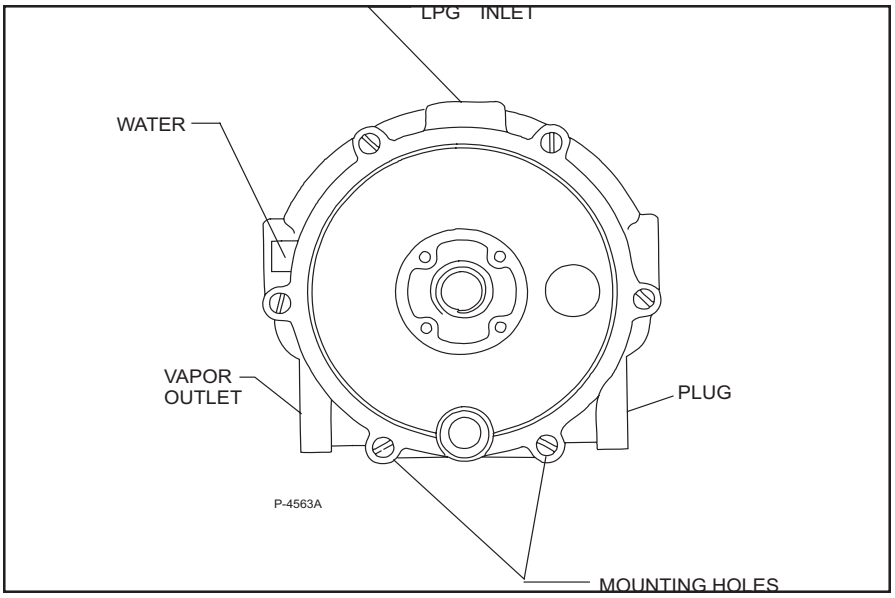
1. Keep cigarettes, sparks, and open flame away when working on LP equipment, when inspecting for gas leaks or when LP tanks are present.
2. Check all components for proper operation. Replace LP components when needed. Never by-pass defective safety components.
3. Check routing of all LP hoses. Keep them away from sharp edges, exhaust manifolds, or other hot surfaces. Check for signs of abrasion or deterioration.
4. Check for gas odor before and during starting operations. If gas odor is noticed, stop and check for leaks or component malfunction.
5. Make sure LP tank is free of dents or gouges.
6. Make sure service coupling is clean and free of damage. Make sure service coupling of tank matches machine service coupling.
7. Keep the engine properly tuned.
8. Make sure the LP tank matches the fuel system.
9. Make sure LP tank is securely mounted on the machine with the retainer bracket clamping the tank, and with the locating pin in position.
10. Park the machine in a shaded, cool area when not in use.
11. Keep the LP tank service valve closed when the tank is not in use.
12. Never overfill LP tank. Fill the LP tank to the recommended weight stamped on the tank.
13. Use care in handling LP tanks. Never drop or drag them.
14. Always store and transport LP fuel tanks with the safety relief valve in the “UP” position.
15. Avoid contact with the LP fuel to avoid frostbite.

When the machine is to stand unused for a period of time, overnight for example, park the machine in a designated area, shut off the service valve at the tank and operate the engine until the remaining fuel is consumed. Then, turn off the ignition switch.

LP CHECK LIST

This checklist can be made quickly. Be sure to make all of the checks listed on the maintenance chart.

1. Check connections for leaks.
2. Open the LP storage tank valve.
3. Check the regulator. Momentarily press fuel primer on the regulator cover to bleed air out of the system. See Figure 15.
4. Start the engine.



P4563a FIGURE 15

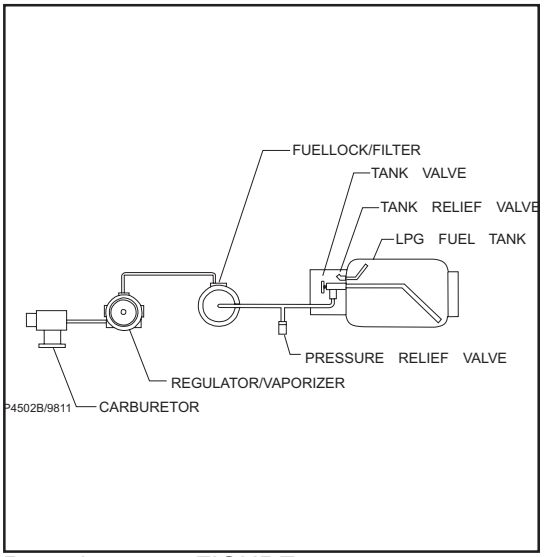
LP FUEL TANKS

Standard D.O.T. LP fuel tank sizes have 14, 20, 33.5, and 43.5 lb. capacities. The liquid volume permitted in these containers is less than the total volume of the cylinder, to provide for expansion of the LP fuel should the temperature increase a normal amount. Excessive heat may cause the fuel to expand too much, causing the safety relief valve to vent some LP fuel, relieving internal tank pressure.

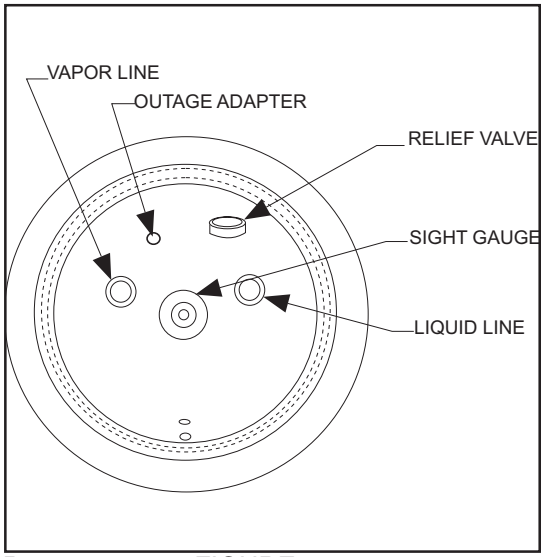
Each tank is marked showing the type of construction (liquid or vapor), the manufacturer, the date of manufacture, the capacity, the weight, and the date of requalification. D.O.T. LP fuel tanks must be requalified (checked) periodically. This requalification must be recorded and maintained for the life of the container. LP fuel tanks are equipped with the following approved valves and fittings.

1. Safety Relief Valve - This is a spring-loaded valve that relieves excessive pressures which might develop in the tank due to unusual conditions.
2. Liquid Service Valve - Liquid is withdrawn from the tank through this valve. The LP tank may be filled through this valve if the tank is not equipped with a filler valve.
   a. Excess Flow Valve - This valve is part of the liquid service valve. It is mounted inside the tank and prevents LP fuel from leaving the LP tank in the event of accidental breakage of external fittings or hoses. It permits flow in either direction, but stops outward flow if that flow becomes excessive.
3. Filler Valve - This valve is optional. If this valve is not present, the tank is filled through the service valve.
4. Liquid Level Gauge - This gauge is optional.

LP LIQUID WITHDRAWAL SYSTEM



P4502b FIGURE 16



P4502-1 FIGURE17

The liquid withdrawal LP fuel systems are made up of six components. Those components are: the LP tank, pressure relief valve, fuel filter lock, vaporizer-regulator and the carburetor. See Figure 16.

The liquid LP fuel flows from the LP tank, under its own pressure, to the pressure relief valve. This valve is normally closed, preventing LP fuel from escaping into the atmosphere. This LP gas is then piped to the LP fuel filter lock. The fuel filter lock removes unwanted tank cable and deposits from the LP gas. The vaporizer converts the liquid LP fuel into a gaseous LP fuel. The gaseous LP fuel is sent to the primary regulator. The primary regulator reduces the pressure of the LP fuel and makes the flow more constant. The secondary regulator reduces LP gas pressure to the level required by the carburetor. From the secondary regulator, it is piped to the carburetor where the LP fuel is finally metered into the air flow which is sent to the combustion chamber.

USE & CARE OF LP TANKS

If an LP tank is damaged or leaking, it should be removed to a designated safe area and the proper personnel should be notified. Do not attempt to make repairs to the cylinder, regardless of conditions. Repairs must be made by qualified personnel.

The care an LP tank receives has a direct bearing on how long that tank can be used safely. LP tanks must not be dropped, dragged, or slid across any surface. To move LP tanks, use a hand truck, or roll the LP tank on its foot ring while it is being held in a position slightly off the vertical.

CHANGING MACHINE LP TANKS

Refueling machines with LP tanks is an important function. Refueling is accomplished by replacing the empty LP tank with a full one.

The tank changing operation presents an opportunity for the machine operator to observe, carefully, the tank, tank fittings, and the fuel lines and the fittings for his own satisfaction. If abnormal wear is detected, the operator should report his findings to his supervisor for appropriate action.

To begin the tank changing operation, park the machine in a designated safe area and stop the machine. Next, close the tank valve, then remove the quick-disconnect coupling from the tank valve. Observe the machine fuel lines and the quick-disconnect for damage or abnormal wear.

Remove the empty tank from the holding device and observe the tank and tank fittings for damage or abnormal wear. Handle the tank carefully; it must not be dropped or mishandled.

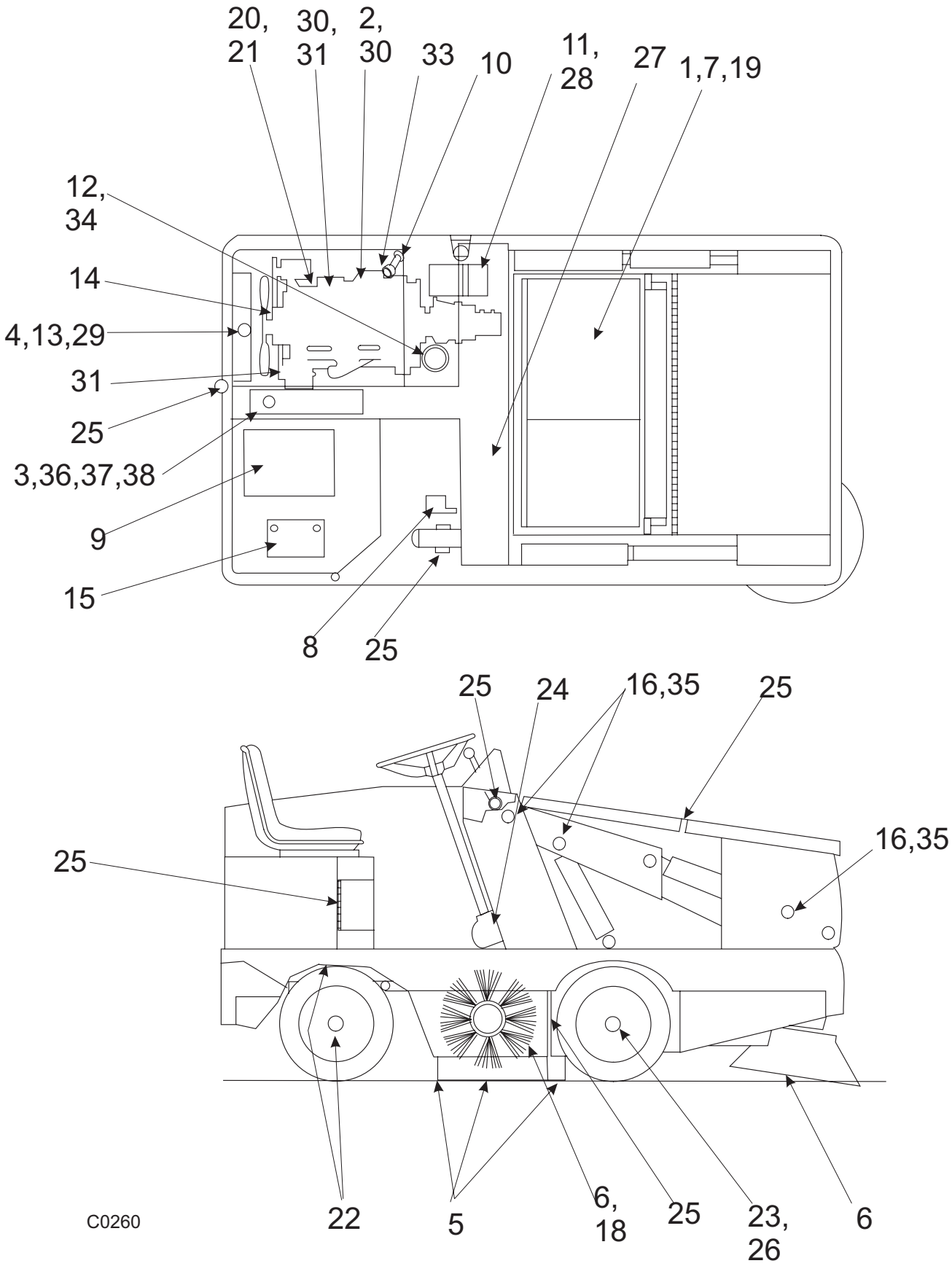
Store the LP tank in a designated safe area. Select a filled LP tank and observe it for damage or leaks. Carefully install the filled tank in the machine so that the tank centering pin enters the aligning hole in the tank collar. This assures that the tank is positioned properly, so that the safety relief valve, liquid level gauge, and service valves will operate properly. Fasten the tank retaining bracket so that the tank is locked into position. Reconnect the fuel line to the tank servicing coupling. Open the service valve slowly and check for leaks. If a leak is found, close the valve immediately and notify the appropriate personnel. If no leaks are found, the engine is ready to start. Do not start the engine unless the operator is in the operator's position, with the directional control pedal in the neutral position.

STORAGE OF LP FUEL TANK

Whether the storage is inside or outside, it should not be in the vicinity of combustible materials or high temperature sources such as ovens or furnaces, since the heat may raise the pressure of the fuel to a point where the safety relief valves would function. Care should be taken to insure that the cylinders are stored in such a manner that if the safety relief valves do function, they will relieve vapor, rather than liquid.

Valves on empty tanks must be closed during storage and transportation.

Similar precautions should be taken in storing machines fitted with LP fuel tanks. They may be stored or serviced inside buildings, provided there are no leaks in the fuel system, and the tanks are not overfilled. While machines are being repaired inside a building, the shut-off valve on the tanks must be closed, except when the engine must be operated.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6

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

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

1. Inspect panel filter 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 filter (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. Clean engine air filter dust cap and check filter
12. Check hydraulic return filter
13. Check coolant level

EVERY 50 HOURS

14. Check tension on all belts
15. Check battery electrolyte level (If battery is not maintenance free)
16. Lubricate dump system
17. Check all hydraulic hoses for wear or cuts
18. Rotate main brush (end for end)
19. Clean or replace panel filter

Perform recommended engine maintenance (See engine manual)

EVERY 100 HOURS

20. Change crankcase oil
21. Change engine oil filter
22. Lubricate drive wheel swivel bearing
23. Lubricate front wheel bearings
24. Lubricate steering gear box
25. Lubricate all moving joints
26. Check brake pads for wear and adjust accordingly
27. Lubricate the clamp ends of the throttle cable with NAPA #765-1363 or equivalent anti-seize lubricant.

Perform recommended engine maintenance (See engine manual)

EVERY 250 HOURS

28. Replace engine air filter element
29. Flush radiator coolant system
30. Remove spark plugs - clean or replace LP,G
31. Check distributor & points - service or replace LP,G
32. Clean and lubricate governor & choke linkage LP,G
33. Replace fuel filter
34. Replace hydraulic return filter element
35. Check brass bushings & pins on hopper & lift arms

Perform recommended engine maintenance (See engine manual)

EVERY 500 HOURS

36. Clean hydraulic reservoir
37. Clean hydraulic intake strainer
38. Change hydraulic fluid

Perform recommended engine maintenance (See engine manual)

LP = LP Gas G = Gas D = Diesel

CDC FILTER OPTION SERVICE CHART

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

EVERY 50 HOURS

1. Check the Pilot Valve Stepper for 10/15 second cycle
2. Check and clean or change engine air filter, if plugged
3. Coat the inside of the stepper with a spray of liquid silicon lubricant

EVERY 500 HOURS

4. Check hose tubing and connectors for leaks and kinks
5. Tighten the compressor belt, if loose
6. Check for dust leakage in clean air plenum
7. Check the vacuum fan impeller

EVERY 1000 HOURS

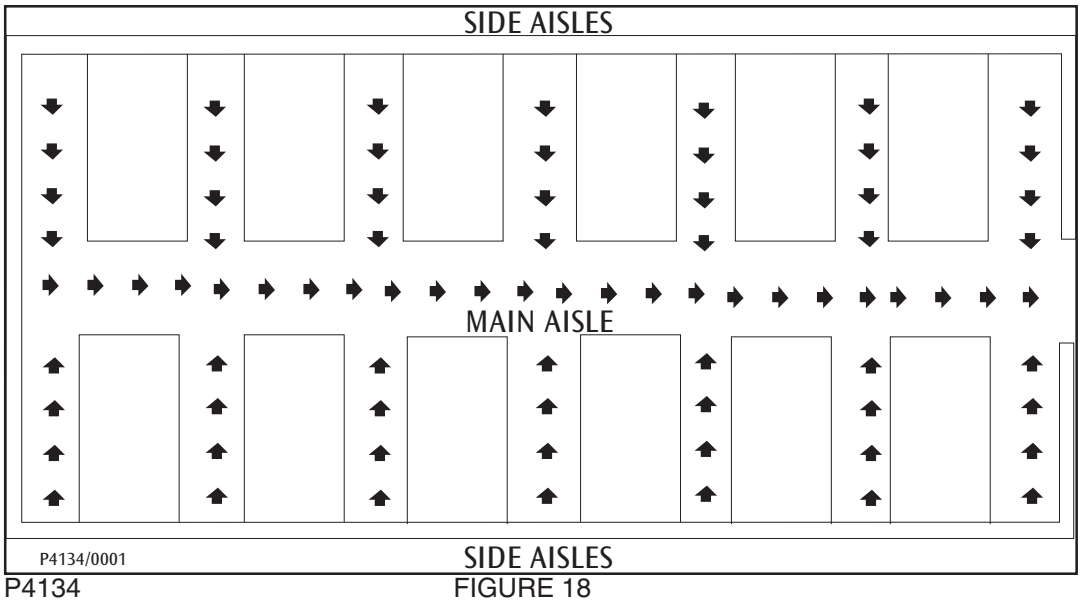
8. Check manifold pressure for 35/40 PSIG
9. Check and clean multi-jet heads for caked dust in ports

EVERY 2000 HOURS

10. Check hopper filter for dust leakage

EVERY 5000 HOURS

11. Check exhaust valve seals for rupture and replace if needed
12. Check stepper seals for wear and replace if needed



P4134 FIGURE 18

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.

WARNING

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

WARNING

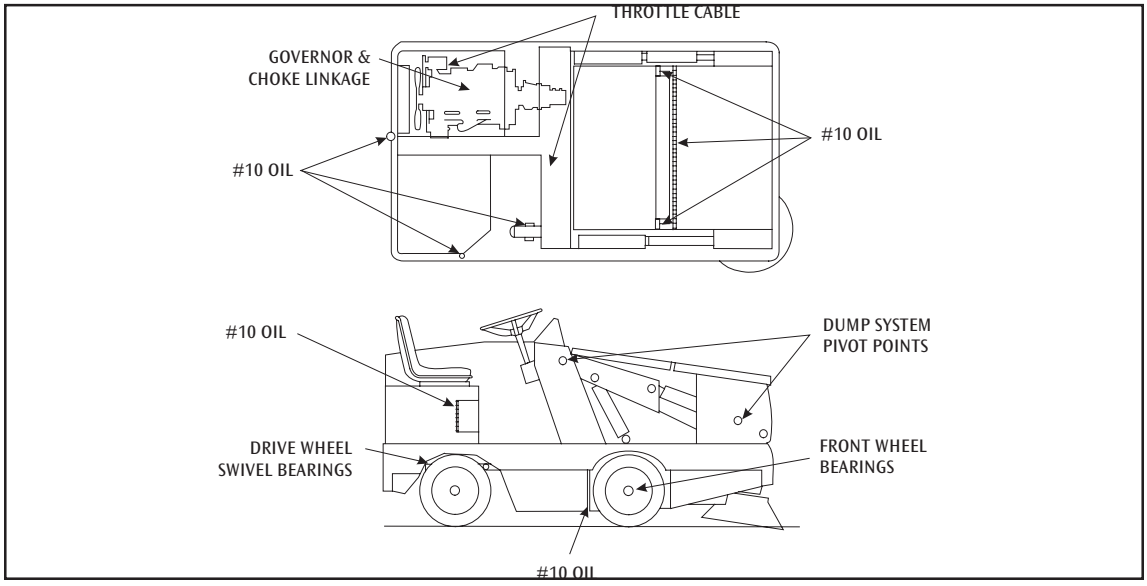
When the machine is in motion, do not push the directional / speed control pedal all the way forward. This is the same as starting in "High" and will put a strain on the motor and drive system.

1. Pick up large debris before sweeping with machine. Flatten and remove bulky cartons from aisle before sweeping large debris.
2. Use the machine to sweep debris from narrow aisles into main aisle. See Figure 17.
3. After the machine has made a sweeping run.
4. Push and hold the filter shaker control button for 20 to 30 seconds, the filter shakers will shake to unload accumulated dust. The main broom and fan will turn off automatically. The filter shakers only work when the hopper is in the sweep position.
5. Sweep debris from main aisle. See Figure 17.
6. Overlap of broom paths when sweeping. This will eliminate leaving dirty patches.
7. The machine will leave debris, while sweeping, when the hopper is full. Follow the hopper unloading cycle outlined on page 18.

NOTE

Replace main broom when bristles are reduced to 2-inch length. To order replacement brooms, see MAIN BROOM. Replace side broom when bristles are reduced to 3-inch length. To order replacement brooms see SIDE BROOM.

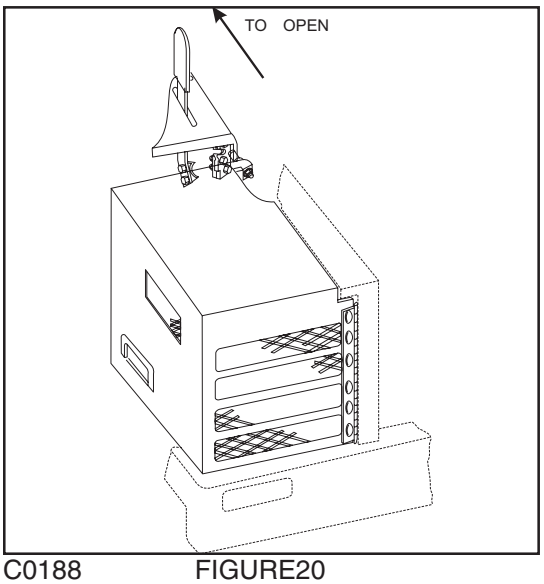
LUBRICATION



C0135 FIGURE 19

Perform the following lubrication procedures after every 50 hours of machine use:

1. Lubricate dump system pivot points, with a good grade multipurpose grease. Do the following lubrication procedures after every 100 hours of machine use.
2. Lubricate drive wheel swivel bearing, and the front wheel bearings with a good multipurpose grease.
3. The steering gear assembly has a grease fitting, located on the front section of the steering gear housing. Use E.P. Lithium grease to lubricate the steering gear through the grease fitting.
4. Lubricate all other moving joints of the machine with #10 oil.
5. Lubricate the clamp ends of the throttle cable with NAPA #765-1363 or equivalent anti-seize lubricant.

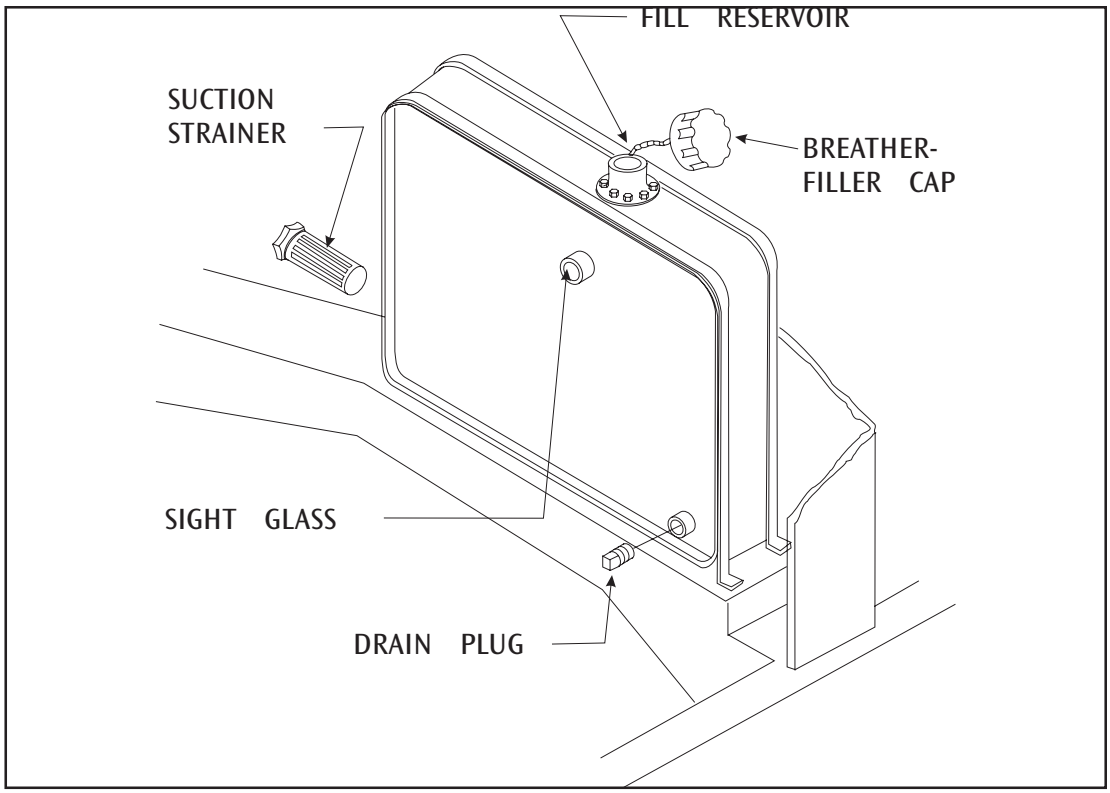


C0188 FIGURE20

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. To open the cover, push the engine cover latch lever toward the front of the machine.
2. Swing the cover over.



P4705b FIGURE 21

HYDRAULICS

The Hydraulics system controls the brooms, hopper lift and rotation, the machine drive motor and vacuum fan.

HOW TO FILL THE HYDRAULIC RESERVOIR

1. Open the engine cover.
2. Open the hydraulic reservoir breather filler cap.
3. Remove any debris that is in the breather filler cap screen.
4. Fill the reservoir until fluid is visible in the sight glass that is located on the side of the reservoir. Do not overfill.
5. Close the hydraulic reservoir breather filler cap.
6. Close the engine cover.

HYDRAULIC OIL COOLER

The hydraulic oil cooler is located next to the radiator. The cooler can be accessed by opening the engine cover. The oil cooler core must be kept clear of debris and dust.

HOW TO CLEAN THE HYDRAULIC SYSTEM

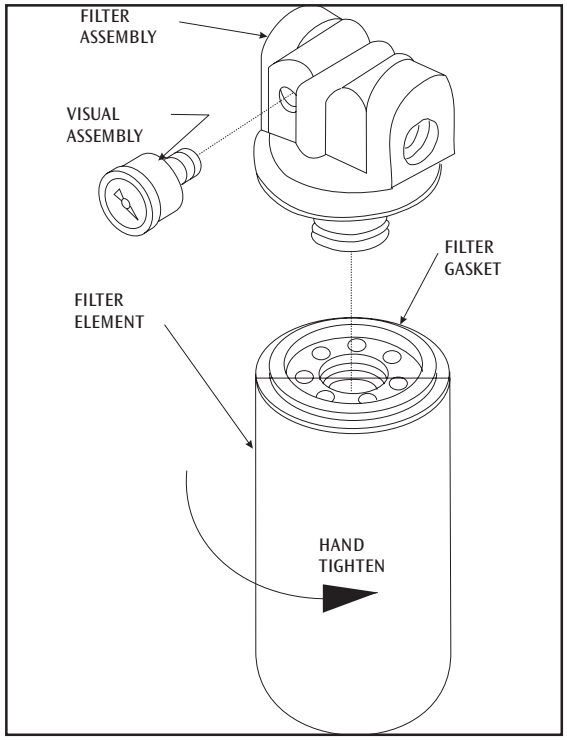
1. Put a drop cloth on the floor.
2. Drive the machine on to the drop cloth.
3. Set the parking brake.
4. Open the engine cover.
5. Put a container under the reservoir drain to catch the reservoir fluid.
6. Remove the drain plug. The reservoir fluid will drain. Do not use the drained reservoir fluid to refill the hydraulic reservoir. Dispose of the used fluid.

HOW TO CLEAN THE HYDRAULIC SUCTION STRAINER

The suction strainer is the filter assembly located in the bottom of the hydraulic reservoir and can be removed from the outside of the reservoir.

7. Turn the suction strainer counterclockwise by hand.
8. Remove the suction strainer from the reservoir.
9. Use a compressed air line on the inside of the strainer to blow impurities out of the filter media. If a com pressed air line is unavailable, use new FORD type “F” Automotive Transmission Fluid to flush the impurities out of the filter media.
10. Flush the interior of the hydraulic reservoir with clean fluid.
11. Put the cleaned strainer in the hydraulic reservoir.
12. Rotate the strainer clockwise into the bottom of the hydraulic reservoir. Stop rotating the strainer when it is hand tight.
13. Put the reservoir plug, removed in step six, back in the hydraulic tank drain and tighten.
14. Open the breather filler cap.
15 Fill the reservoir with new FORD type “F” automotive transmission fluid. The capacity of the tank is 6 gallons or 22.8 liters.
16. Close the breather filler cap.
17. Close the engine cover.

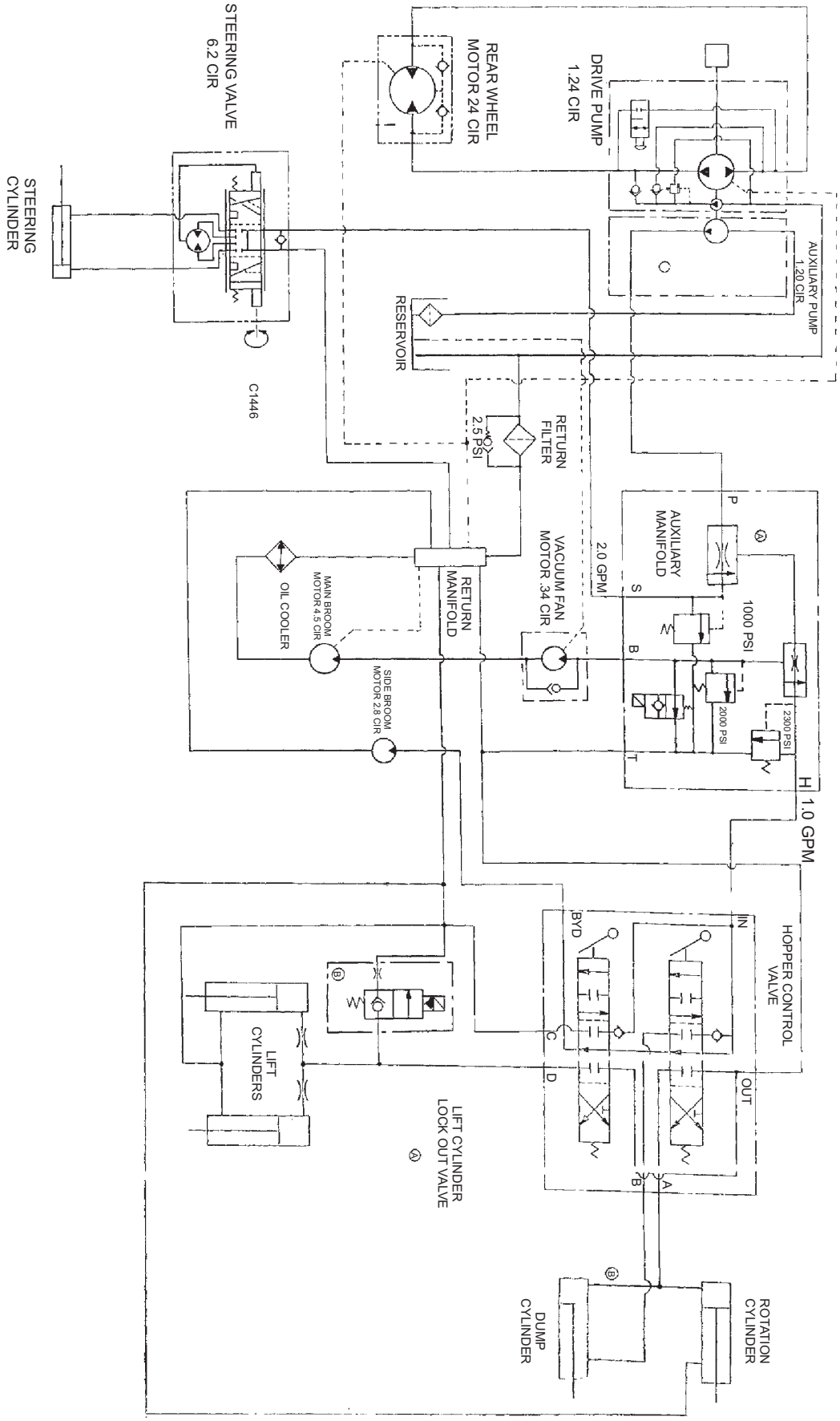
HOW TO REPLACE THE RETURN FILTER ELEMENT

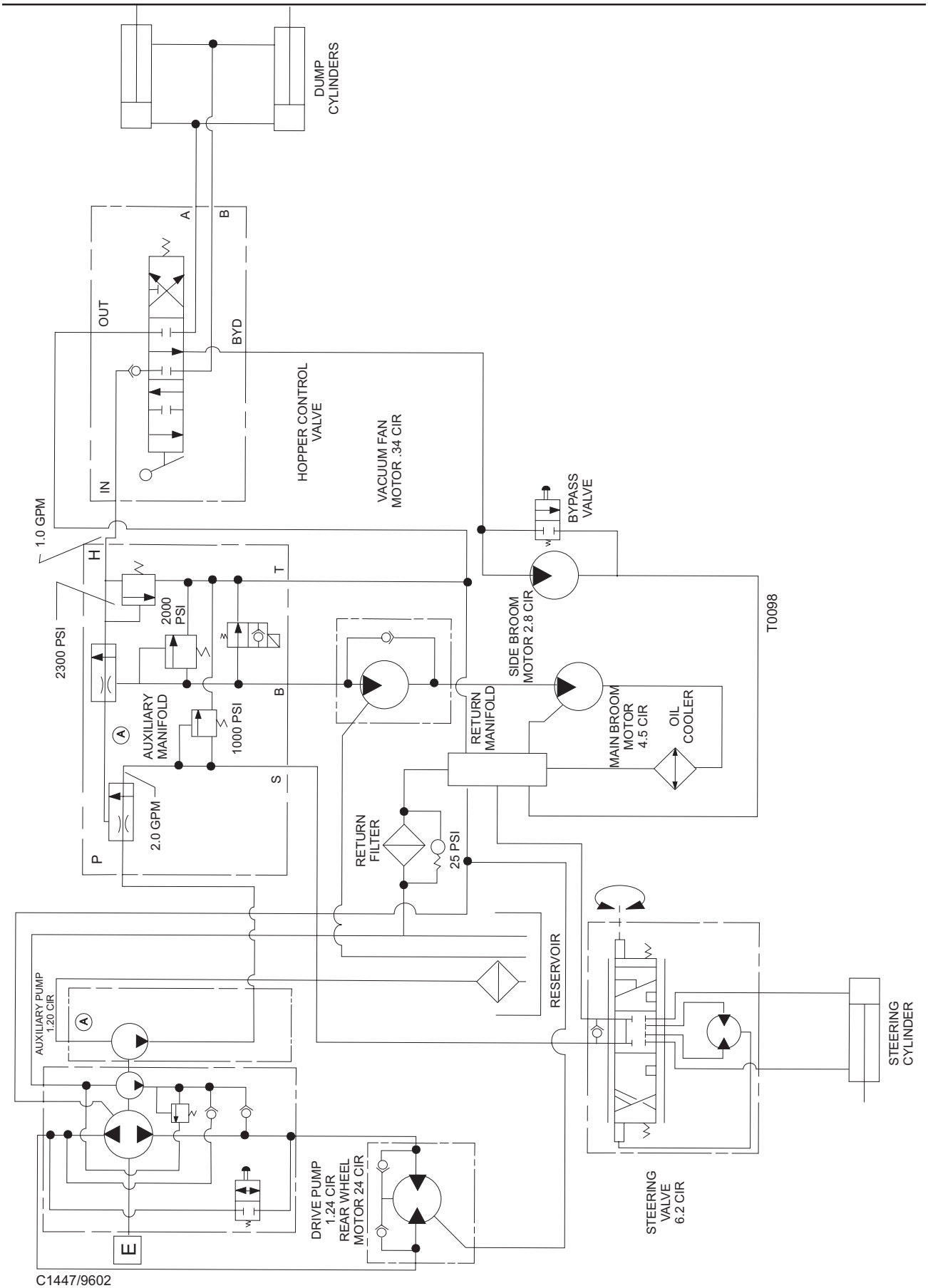


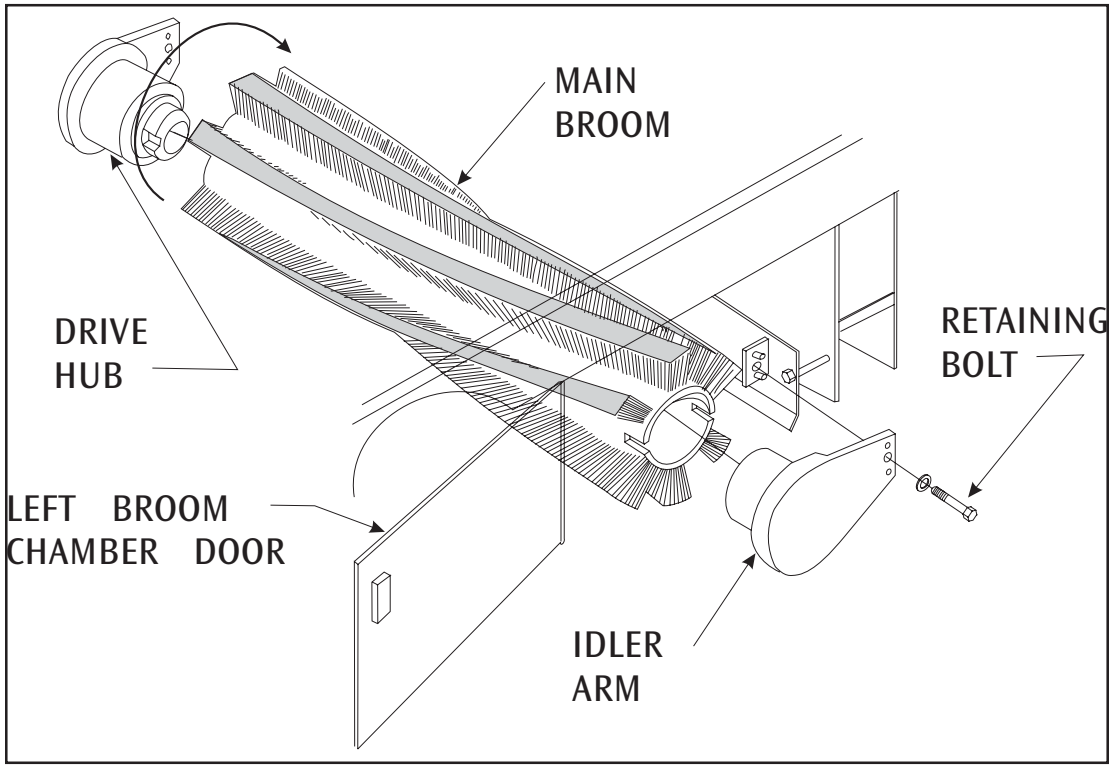
P4506b FIGURE 22

1. Check the visual indicator on the top of the filter assembly daily. When the indicator reads 40 PSI replace the return filter element immediately. This should be after 250 hours of machine run time.
2. Unscrew the filter element from the filter assembly and discard.
3. Moisten the filter gasket of a new filter element (Service Part Number 8-24-04018) with hydraulic fluid.
4. Put the filter element on threaded nipple of the filter assembly. Turn the filter clockwise, until it is hand tight.
5. Wipe clean any hydraulic reservoir fluid spills.

HYDRAULIC SCHEMATIC- VARIABLE DUMP




DUMP CYLINDERS
A
B
OUT
BYD
IN
HOPPER CONTROL VALVE
VACUUM FAN MOTOR .34 CIR
BYPASS VALVE
1.0 GPM
H
T
2000 PSI
2300 PSI
SIDE BROOM MOTOR 2.8 CIR
T0098
B
AUXILIARY MANIFOLD
1000 PSI
RETURN MANIFOLD
MAIN BROOM MOTOR 4.5 CIR
OIL COOLER
S
2.0 GPM
P
RETURN FILTER
25 PSI
RESERVOIR
AUXILIARY PUMP 1.20 CIR
STEERING CYLINDER
DRIVE PUMP 1.24 CIR REAR WHEEL MOTOR 24 CIR
STEERING VALVE 6.2 CIR
E
C1447/9602



P4388a FIGURE 23

HOW TO REPLACE THE MAIN BROOM
Replace the main broom when the bristles are worn to 2 inches in length.

1. Open the left broom chamber door.
2. Put the main broom control in the “SWEEP” position.
3. Remove the retaining bolt (See Figure 22).
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 or 5 to 8 cm. wide.

MAIN BROOM LEVEL ADJUSTMENT
The main broom level is factory set and should not need adjustment, if the level gets out of adjustment and the broom bristle contact pattern is not an even 2" to 3" wide, the broom arm lift frame (page 96, part number 27) will have to be adjusted. The frame is supported by two flange bearings (part number 22). These bearings are located inside the broom doors. The carriage bolts (part number 23) on the two end flanges will have to 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.

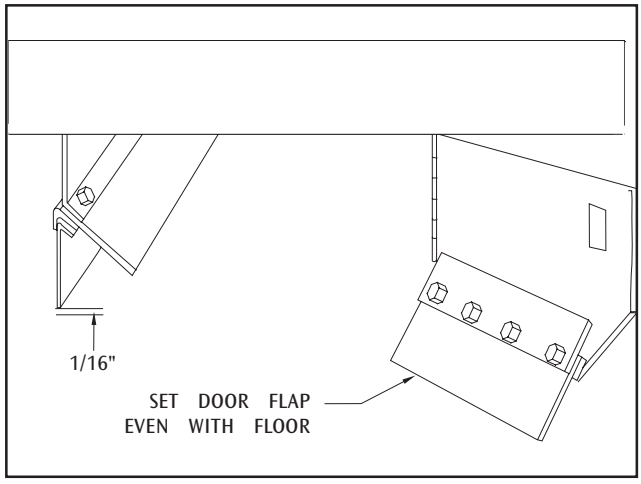
1. Loosen the wing nut located in the engine compartment (See page 22-23, part number 22).
2. Set the broom lever to the “Sweep” position and adjust the torque knob (part number 23) to obtain a 2 inch (5 cm.) broom pattern. The torque knob will move the linkage rod (part number 3) that adjusts the sweeping pattern of the broom for wear.
3. Tighten the wing nut against the torque knob.

SIDE BROOM LEVEL ADJUSTMENT

As the side broom wears, simply 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.

SIDE BROOM REPLACEMENT

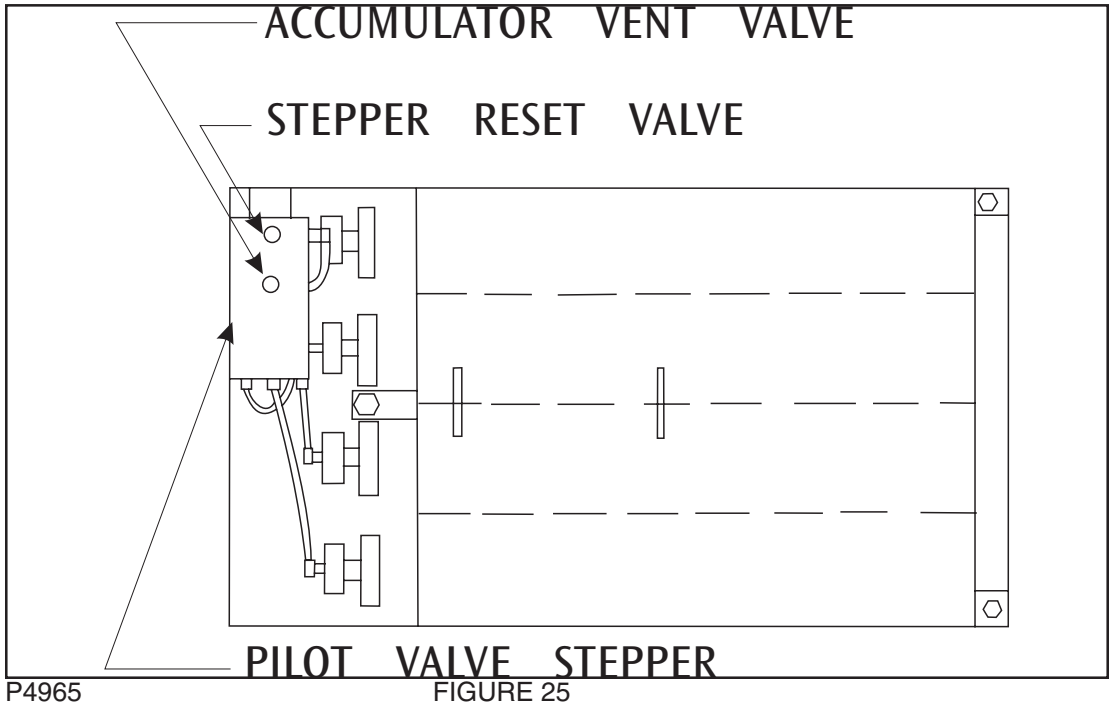
Put the side broom lift control in the “UP” position. Remove the retaining screw in the bottom middle of the side broom (part number 18 on page 26-27). Remove the side broom. Transfer the side broom flange, spacer, screws, washers, and nuts to the replacement side broom (part numbers 18, 19, 21, 22, 23, 24, and 25). Put the replacement side broom on the shaft. Put the retaining screw and washer (part number 18 and 19) in position and tighten.



P4488a FIGURE 24

BROOM FLAPS

The Urethane Flaps are susceptible to damage and should be inspected regularly and maintained in good condition. The side and hopper flaps are adjustable and should be maintained even with the floor. The rear flap must be maintained 1/16" (16 cm.) above the floor. All flaps should be replaced when worn or damaged to such an extent that they cannot perform their normal function.



P4965 FIGURE 25

CDC MAINTENANCE

CDC STEPPER MAINTENANCE

Every 50 hours of machine operation remove the accumulator vent valve and the stepper reset valve from the pilot valve stepper. Coat the inside of the stepper with a spray of liquid silicon lubricant. Put the two valves back into position on the pilot valve stepper.

CDC HOPPER FILTER

Replace the pleated filter. Properly align filter segment dividers to face of clean air plenum. Torque filter clamping bolt to compress seals. Do not over torque and collapse filter.

CDC EXHAUST VALVE SEALS

Refer to the repair kit. At installation, properly orient diaphragm to valve seat and pilot orifice pin. Evenly torque retainer cap screws.

NOTE

Thoroughly clean and avoid contamination.

CDC STEPPER SEALS

Refer to the repair kit.

NOTE

Thoroughly clean and avoid contamination.

CHARGING THE CDC STEPPER ACCUMULATOR

Newly installed systems and service repair may permit valve steppers that uncharges the accumulator to extend the stepper cam pilot pin. This pilots to open an exhaust valve. The valve will bark or chatter as the manifold attempts to fill with compressed air.

Correct this condition by charging the accumulator. With the compressor at operating speed, place index finger over the the stepper case vent valve opening for 5 to 8 seconds. Too sudden release of the case vent will continue unstable valve action.

Delayed release of the case vent port will overcharge the accumulator to single stroke the exhaust valve pilot. Correct this condition by pushing the stepper accumulator vent valve.

CDC EXHAUST PILOT VALVE

System filter cleaning problems are isolated by pushing the stepper reset button. If operation begins and then ceases, repeat the sequence and note the exhaust valve that fails to open. The part of the system operating this exhaust valve is most likely the problem. Check related pilot tubing leakage, exhaust valve seal leakage, and pilot valve sticking.

ENGINE AIR INTAKE SYSTEM

NOTE

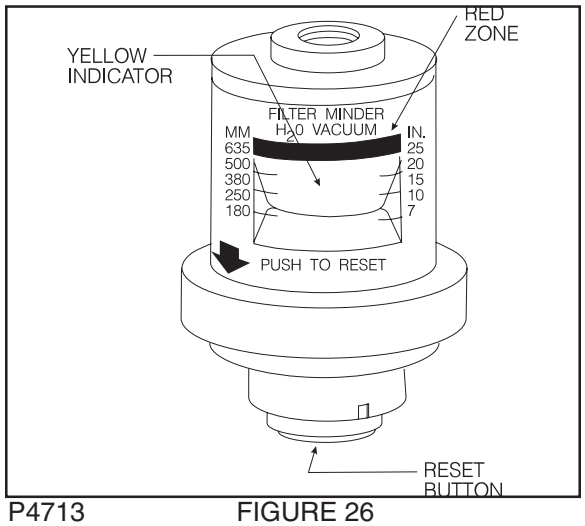
Monitor the air filter indicator daily

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 more damage than good. 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.



P4713 FIGURE 26

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.

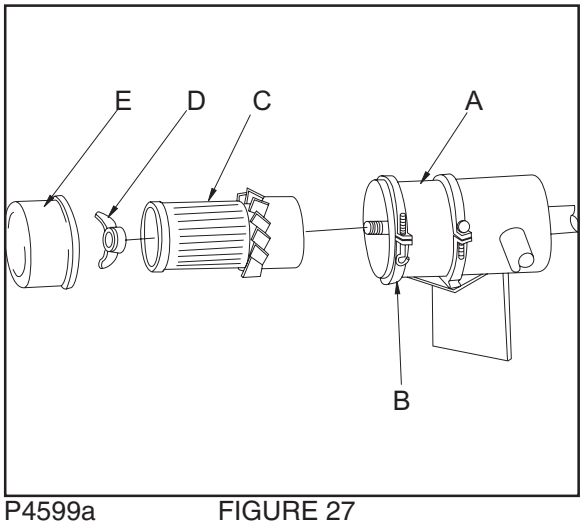
TO REPLACE AIR FILTER ELEMENT

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. Tilt the hopper forward until it is over the bumper.
3. Unscrew the clamp ring on the filter.
4. Remove the dust cap.
5. Empty the dust cap.
6. Remove the filter wing nut.
7. Gently pull the filter element out of the filter housing.



P4599a FIGURE 27

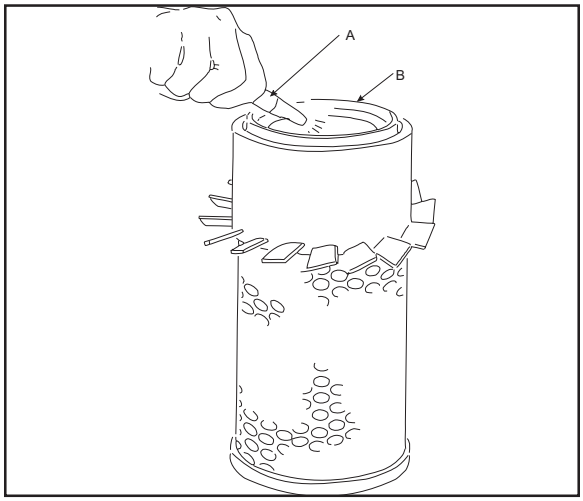
REMOVING AIR FILTER ELEMENT

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

8. Clean the interior of the air cleaner housing with a damp cloth. Clean the element housing sealing sur faces.
9. 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.

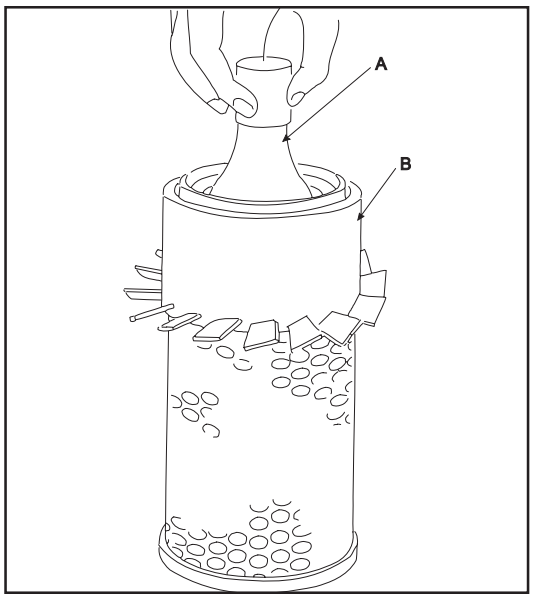


P4504 FIGURE 28

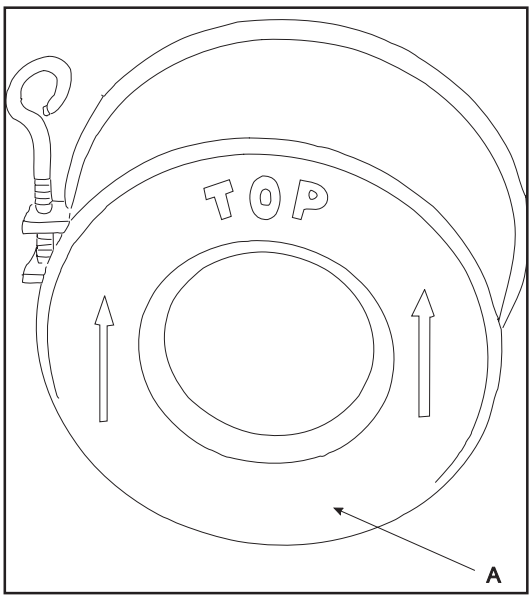
CLEANING AIR FILTER ELEMENT

A. Air Hose
B. Filter Element

10. After cleaning the air filter element (8-24-04106), inspect it for damage by placing a bright light inside. The slightest rupture requires replacement of the filter. Clean and inspect the ends of the element. They should be unbroken and flexible. Remember, the element must be replaced after it has been cleaned three times.



P4503 FIGURE 29



P4505 FIGURE 30

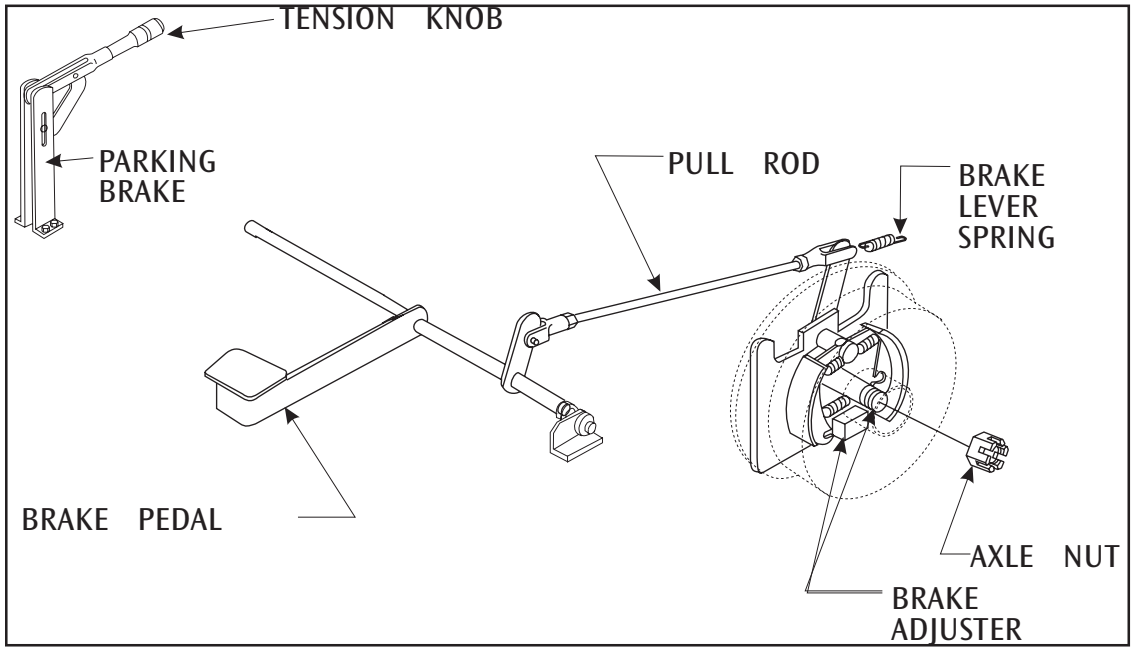
INSPECTING AIR FILTER ELEMENT

A. Bright Light
B. Filter Element

DUST CAP

A. Dust Cap

11. Install the new or cleaned filter element so that 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.
12. 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 abrasion.
13. Reset filter monitor after any filter service.
14. Retract the hopper.



P4718 FIGURE 31

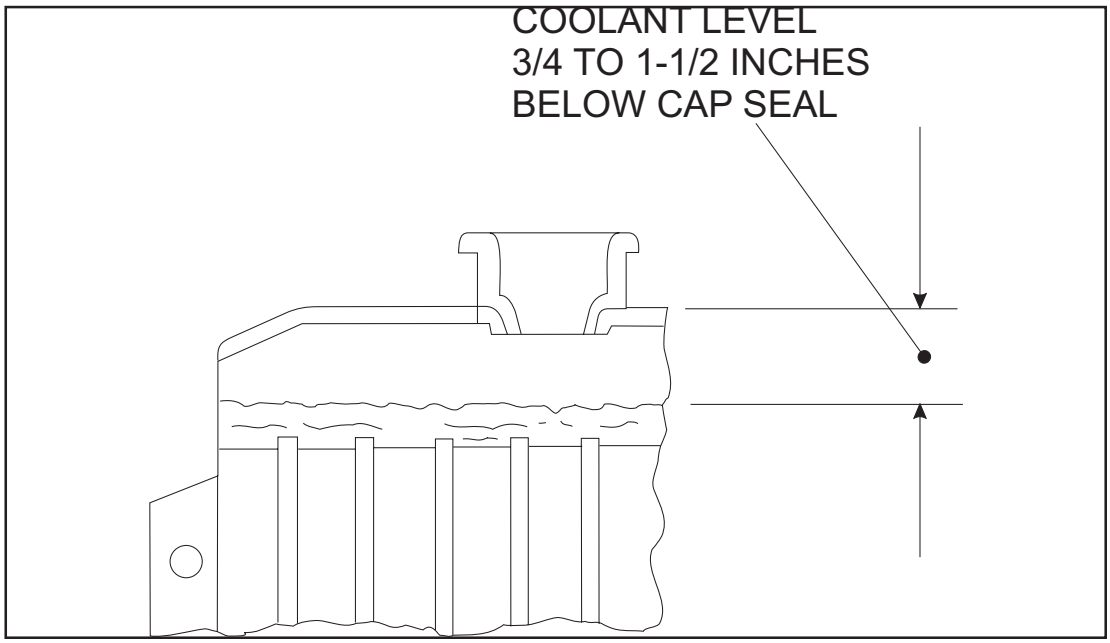
BRAKE ADJUSTMENT

1. Connect pull rod to brake lever then adjust to fit with brake pedal full up and the spring not attached.
2. Adjust tension knob on parking brake lever to hold machine on a 8 degree incline.
3. Attach the brake lever spring.

BRAKE DRUM ADJUSTMENT

1. Tighten the axle nut so that the wheel hub spins freely.
2. Set the brake adjusters so that brakes drag then back them off two (2) notches.

COOLING SYSTEM



P4404 FIGURE 32

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. See Figure 32

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

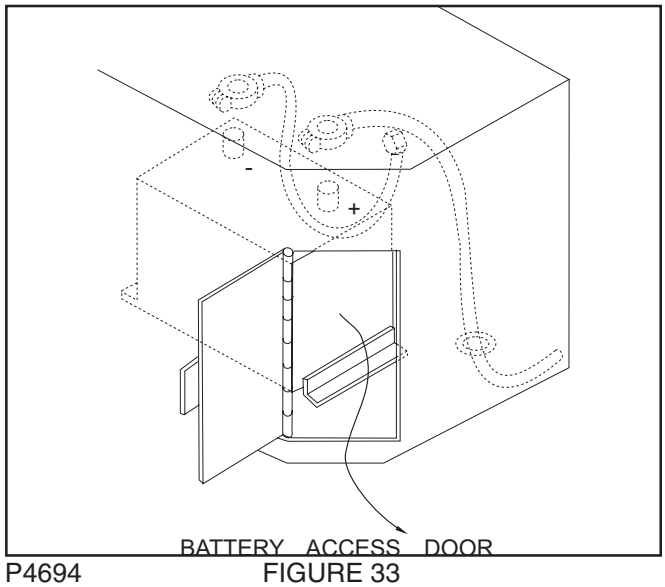
Inspect the exterior of the radiator for obstructions. Remove all bugs, dirt or foreign material with a soft brush or cloth. Use care to avoid damaging the fins. If available, use compressed air or a stream of water in the opposite direction to normal airflow. Open door for access.

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. A loose drive belt causes 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.

BATTERY

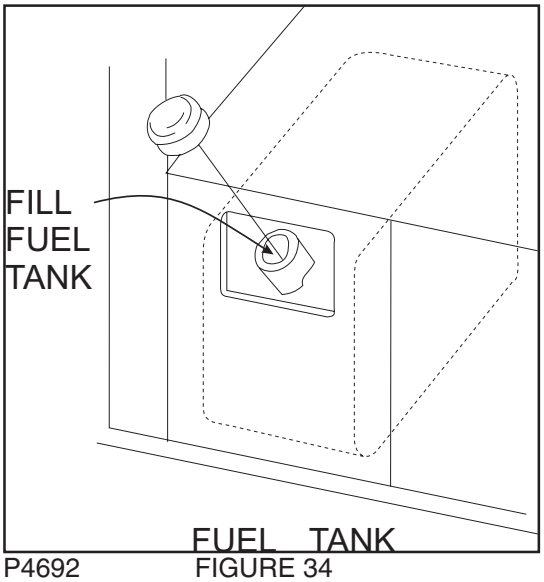


P4694 FIGURE 33

1. Access to the battery is through the door located beneath the driver's seat.
2. 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.

WARNING

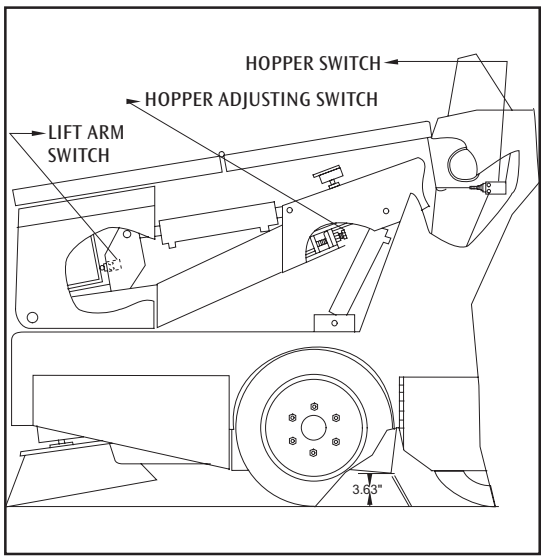
NEVER allow the soda solution to enter the cells. This will permanently discharge the battery.



P4692 FIGURE 34

GAS TANK

The gas tank is located under the drivers seat. It may be filed from the rear of the machine.

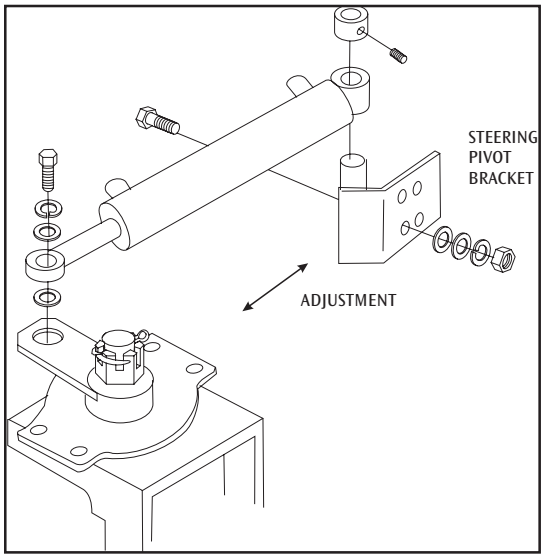


C0136 FIGURE 35

HOPPER ADJUSTMENT

The following adjustments are made to the hopper at the factory. Once adjusted, no further attention should be required.

1. Install hopper stops loosely.
2. Adjust stops to give 3 5/8 (9.2 cm.) inches clearance under rear bottom edge of hopper, then secure.
3. Using the adjusting screw, set the hopper square in the machine with equal clearance between the wheel wells and the outer edges of the hopper on both sides. Set the jam nut.



C0137 FIGURE 36

STEERING ADJUSTMENT

1. Loosen the mounting hardware at the steering pivot bracket.
2. Rotate the rear wheel yoke to a 90° full left turn position. Be sure the cylinder is fully extended.
3. Tighten the mounting hardware.

LP GAS SYSTEM

The propane powered Model 2260 is identical to the “standard” gasoline powered 2260, except that it’s 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:

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

These components are factory set, attempts at adjusting these components should only be made by authorized service personnel.

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 on top of the engine cover in the tank mounting bracket.

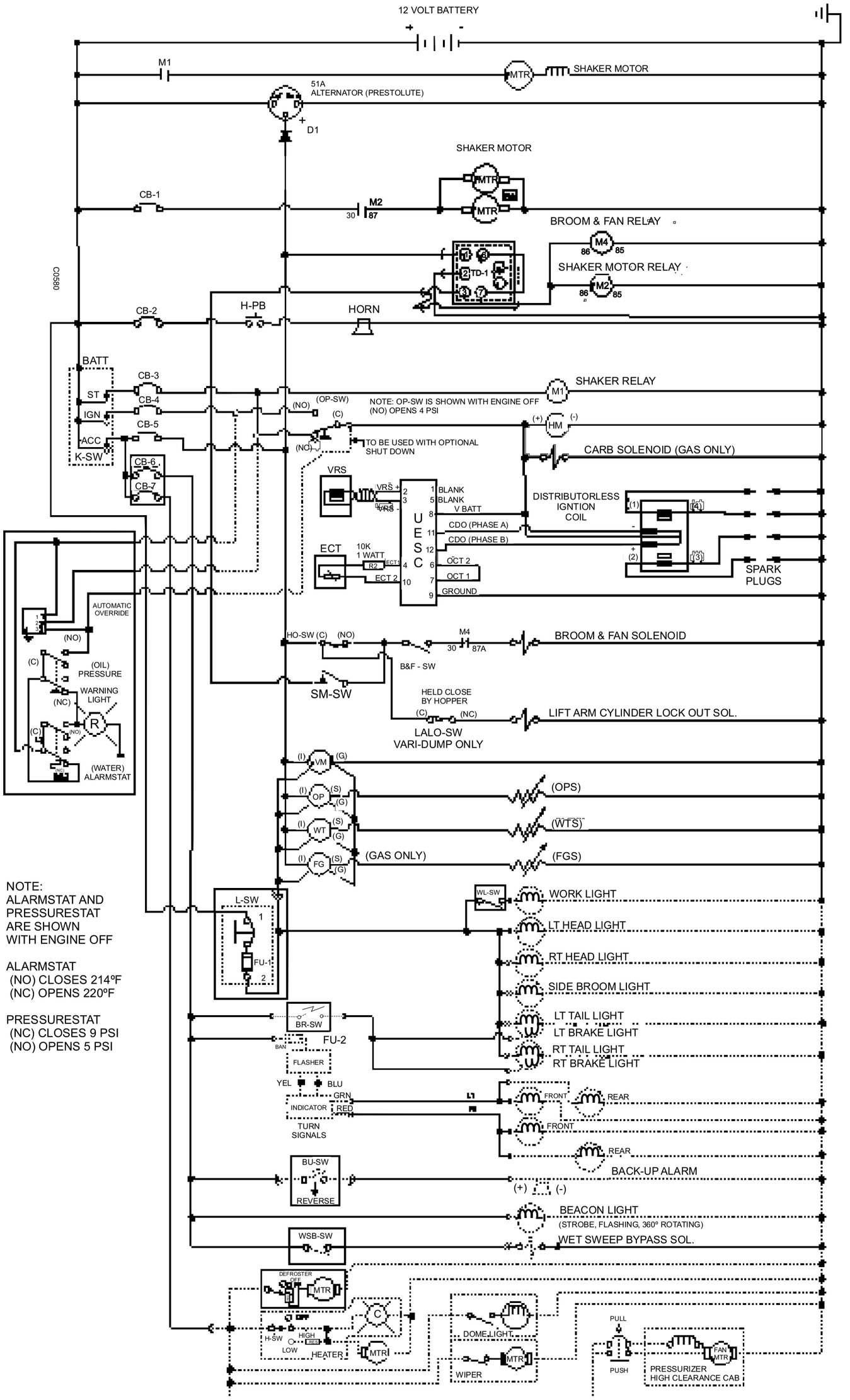
Use only the proper size and type of LP tank. The 2260 LP powered sweeper uses 33.5 lb. horizontal liquid withdraw tank. The designation of the tank is DOT 4BW-240.

PNEUMATIC WHEELS

The pneumatic wheels should be maintained at an inflation pressure of 100 PSI. Since the wheel rims are of a split rim construction, the outer bolt circle maintains the wheel assembly in one piece when the wheels are demounted from the machine.

WARNING

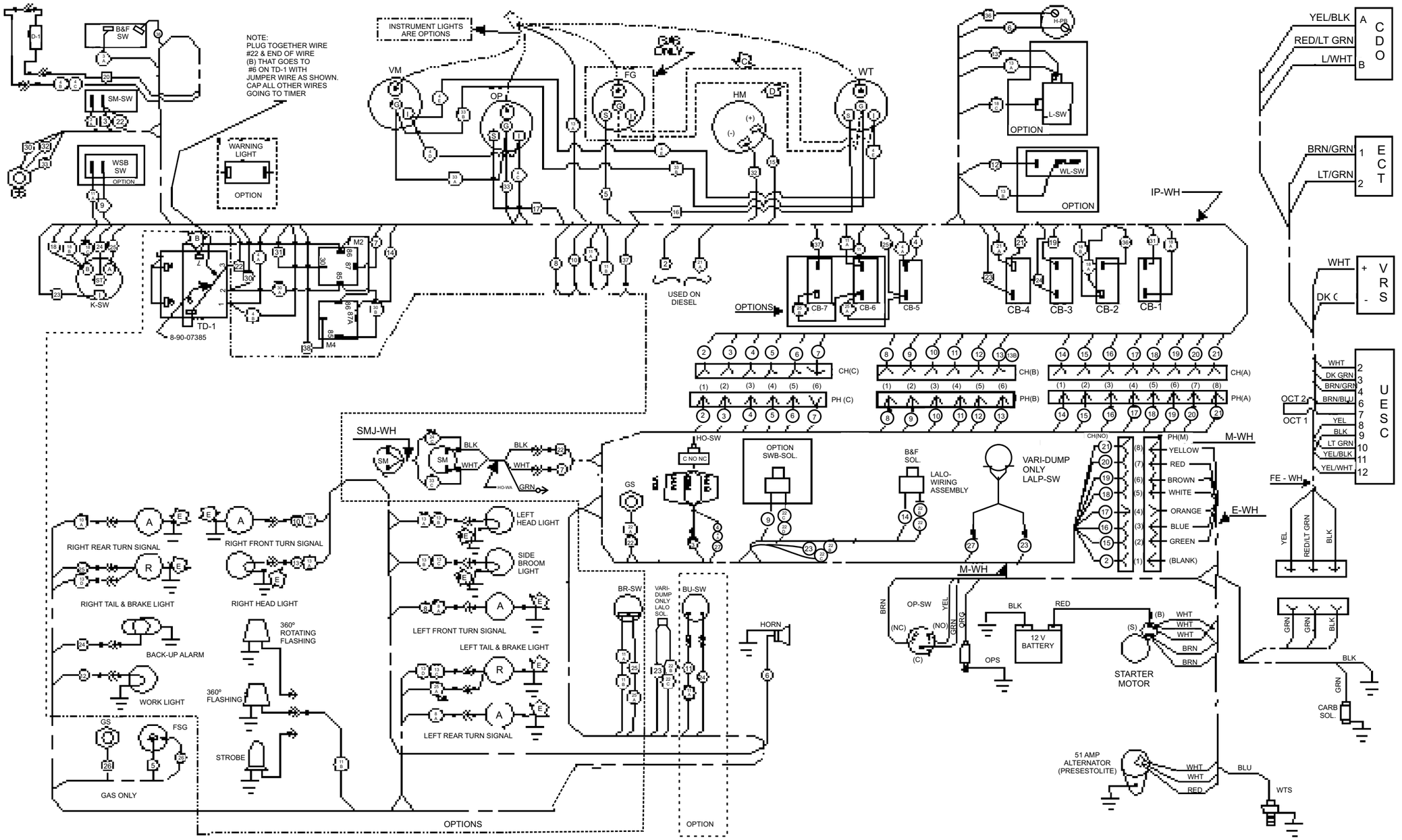
Fully deflate tires before removing the rim bolts.

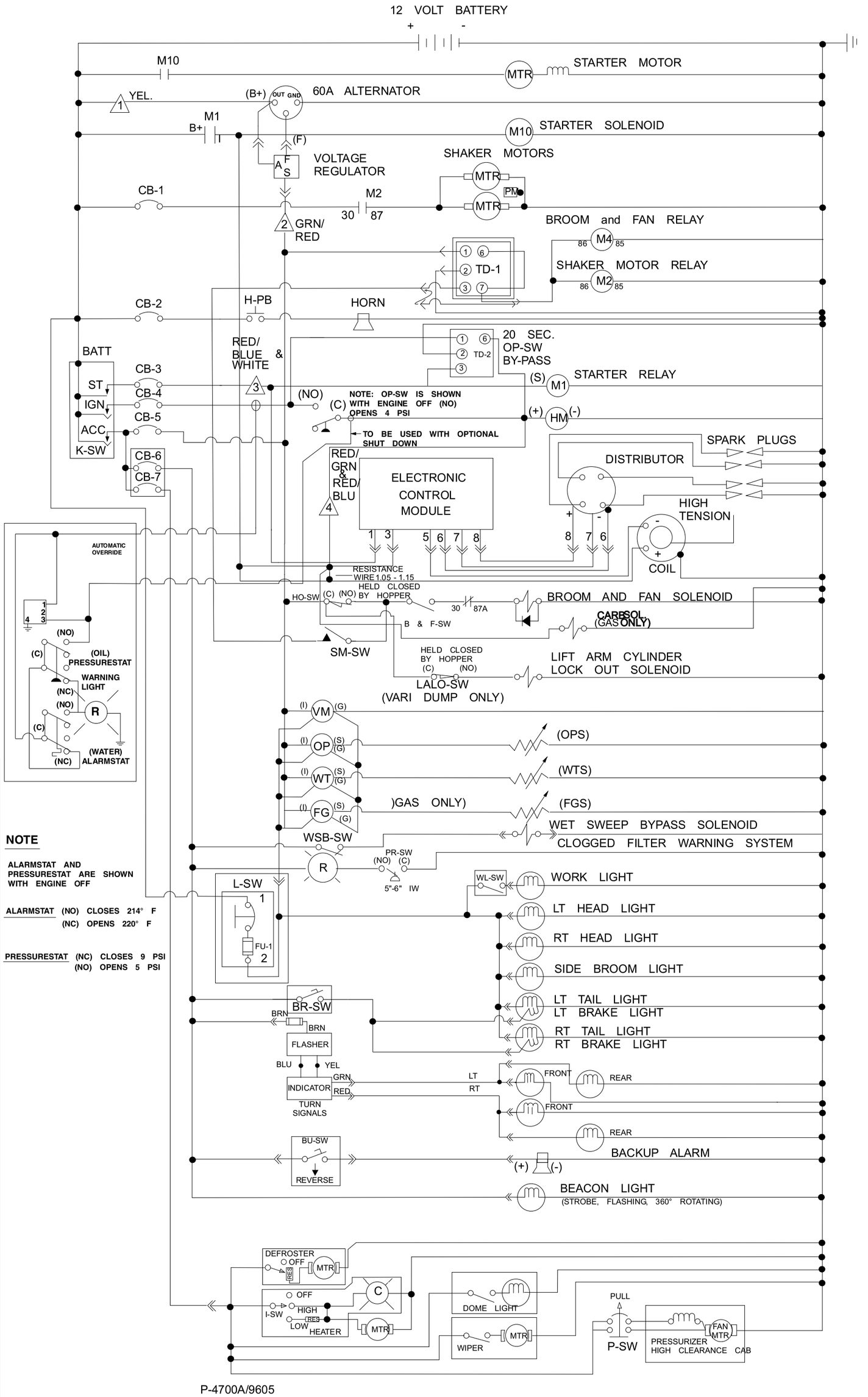


NOTE:
ALARMSTAT AND
PRESSURESTAT
ARE SHOWN
WITH ENGINE OFF

ALARMSTAT
(NO) CLOSES 214ºF
(NC) OPENS 220ºF

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


NOTE:
PLUG TOGETHER WIRE #22 & END OF WIRE (B) THAT GOES TO #6 ON TD-1 WITH JUMPER WIRE AS SHOWN. CAP ALL OTHER WIRES GOING TO TIMER
INSTRUMENT LIGHTS ARE OPTIONS
B&F SW
SM-SW
WSB SW
OPTION
WARNING LIGHT
OPTION
K-SW
TD-1
8-90-07385
M2
M4
VM
OP
FG
HM
WT
USED ON DIESEL
H-PR
L-SW
WL-SW
IP-WH
OPTIONS
CB-7
CB-6
CB-5
CB-4
CB-3
CB-2
CB-1
CH(C)
CH(B)
CH(A)
PH (C)
PH(B)
PH(A)
YEL/BLK
RED/LT GRN
L/WHT
CDO
BRN/GRN
LT/GRN
ECT
WHT
DK GRN
VRS
OCT 2
OCT 1
BRN/BLU
YEL
BLK
LT GRN
YEL/WHT
UESC
FE - WH
RED/LT GRN
SMJ-WH
HO-SW
C NO NC
OPTION SWB-SOL.
B&F SOL.
LALO-WIRING ASSEMBLY
VARI-DUMP ONLY LALP-SW
PH(M)
M-WH
YELLOW
RED
BROWN
WHITE
ORANGE
BLUE
GREEN
(BLANK)
E-WH
GS
BR-SW
VARI-DUMP ONLY LALO SOL.
BU-SW
OP-SW
12 V BATTERY
STARTER MOTOR
CARB SOL.
HORN
RIGHT REAR TURN SIGNAL
RIGHT FRONT TURN SIGNAL
RIGHT TAIL & BRAKE LIGHT
RIGHT HEAD LIGHT
BACK-UP ALARM
WORK LIGHT
360° ROTATING FLASHING
360° FLASHING
STROBE
GAS ONLY
FSG
LEFT HEAD LIGHT
SIDE BROOM LIGHT
LEFT FRONT TURN SIGNAL
LEFT TAIL & BRAKE LIGHT
LEFT REAR TURN SIGNAL
OPTIONS
OPTION
51 AMP ALTERNATOR (PRESESTOLITE)
WTS



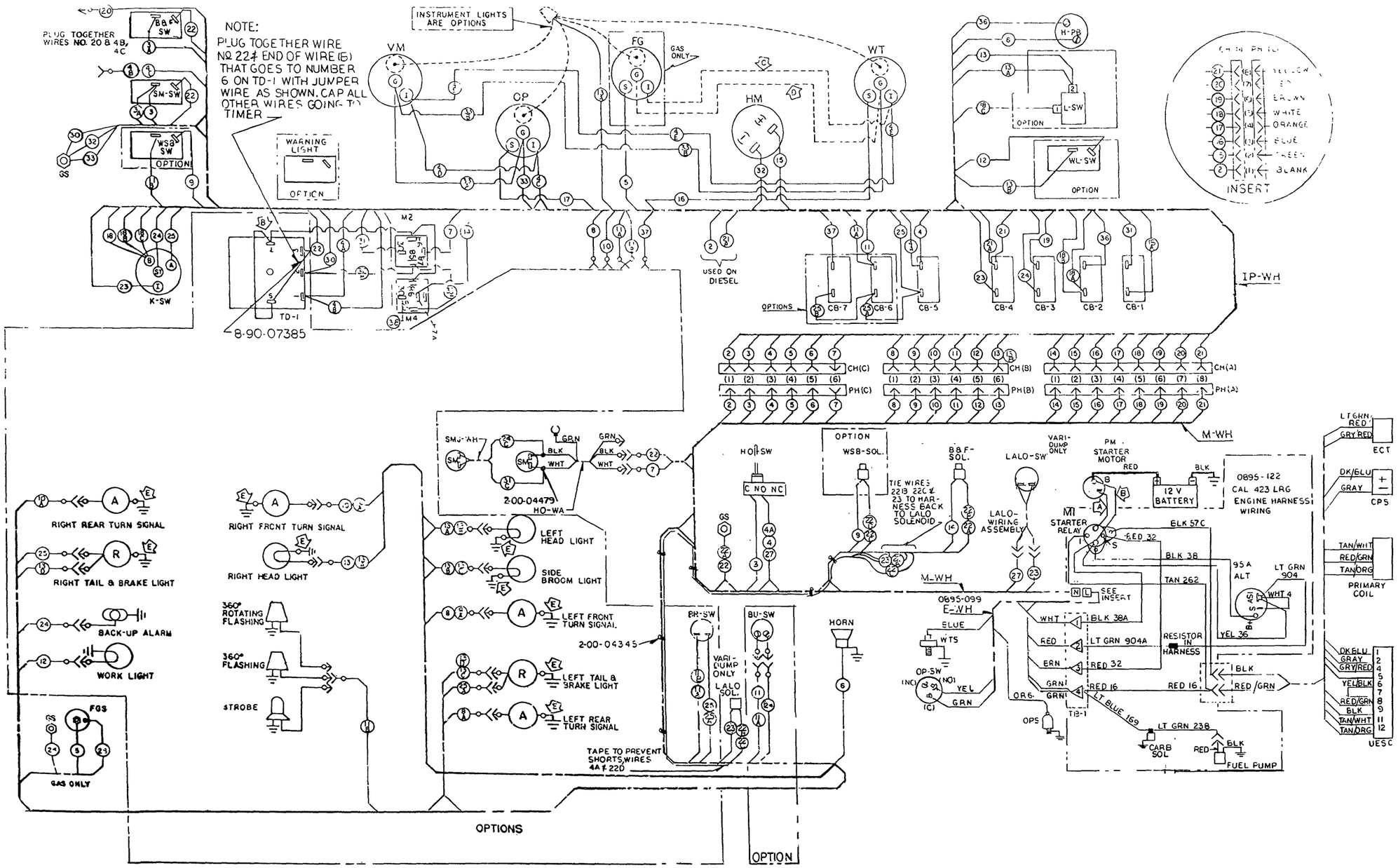
NOTE

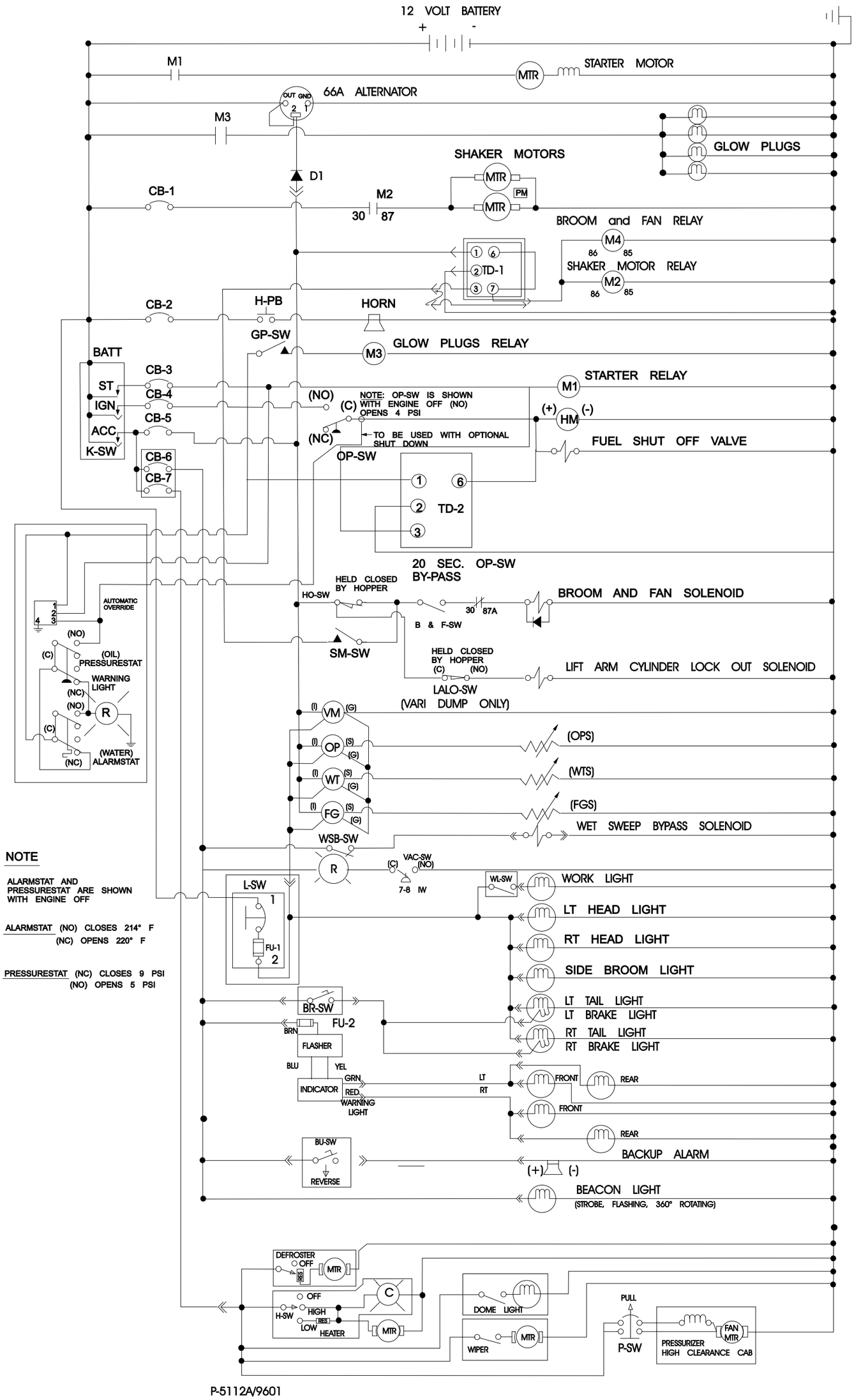
ALARMSTAT AND PRESSURESTAT ARE SHOWN WITH ENGINE OFF

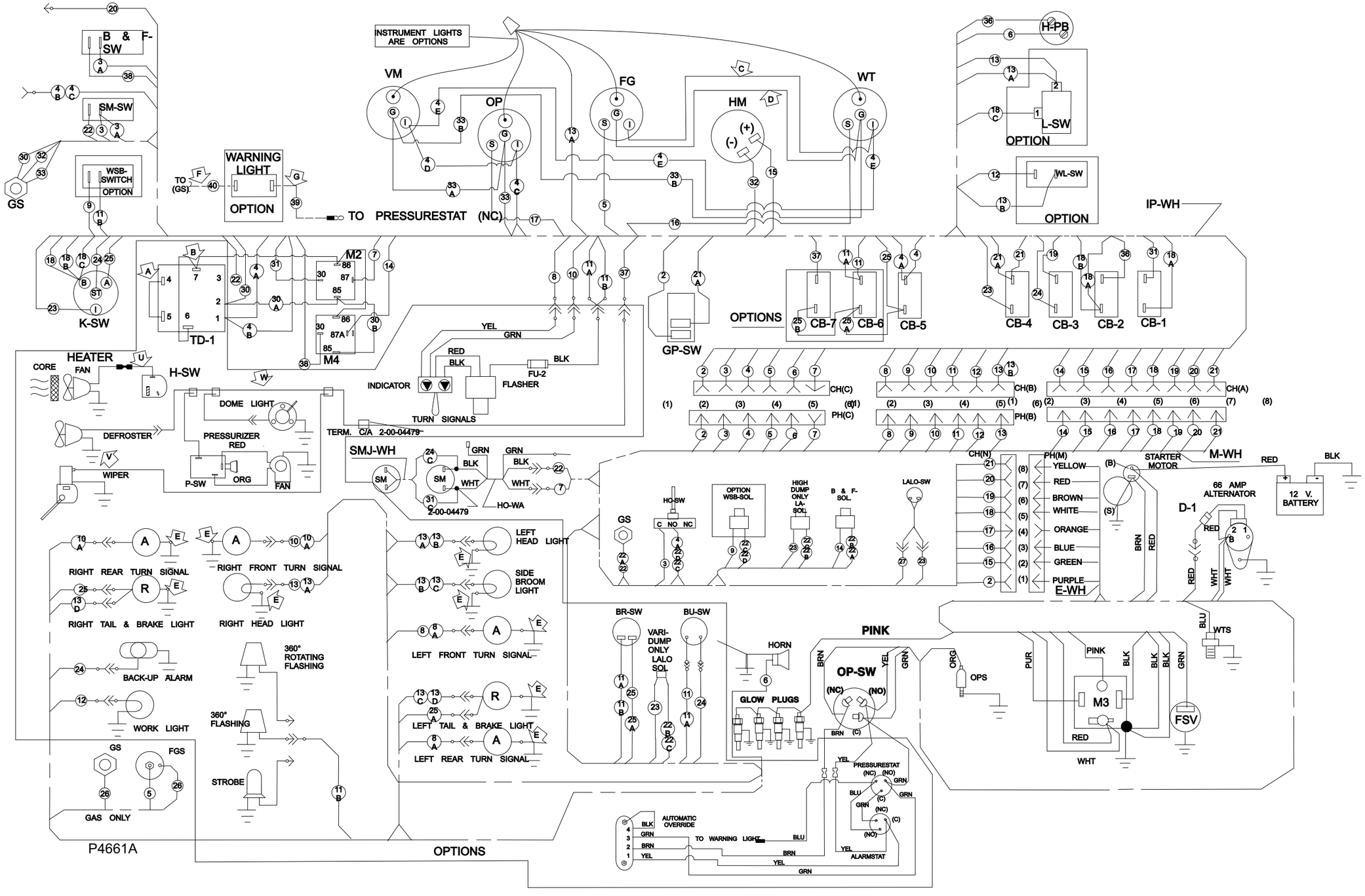
ALARMSTAT (NO) CLOSES 214° F
(NC) OPENS 220° F

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

P-4700A/9605


PLUG TOGETHER WIRES NO. 20 & 48, 4C
NOTE:
PLUG TOGETHER WIRE NO 22# END OF WIRE (6) THAT GOES TO NUMBER 6 ON TD-1 WITH JUMPER WIRE AS SHOWN. CAP ALL OTHER WIRES GOING TO TIMER
INSTRUMENT LIGHTS ARE OPTIONS
WARNING LIGHT
OPTION
VM
OP
FG
GAS ONLY
HM
WT
H-PB
L-SW
WL-SW
INSERT
YELLOW
BROWN
WHITE
ORANGE
BLUE
GREEN
BLANK
K-SW
TD-1
8-90-07385
USED ON DIESEL
OPTIONS
CB-7
CB-6
CB-5
CB-4
CB-3
CB-2
CB-1
IP-WH
CH(C)
CH(B)
CH(A)
PH(C)
PH(B)
PH(A)
M-WH
HOUR METER
HO-SW
WSB-SOL.
B&F-SOL.
LALO-SW
VARI-DUMP ONLY
PM STARTER MOTOR
12 V BATTERY
0895-122 CAL 423 LRG ENGINE HARNESS WIRING
M1 STARTER RELAY
95 A ALT
SEE INSERT
TIE WIRES 22B 22C & 23 TO HARNESS BACK TO LALO SOLENOID
LALO-WIRING ASSEMBLY
0695-099 E-WH
OP-SW
BR-SW
BU-SW
VARI-DUMP ONLY
LALO SOL.
HORN
CARB SOL
FUEL PUMP
RESISTOR IN HARNESS
TAPE TO PREVENT SHORTS, WIRES 4A & 22D
2-00-04479
HO-WA
2-00-04345
RIGHT REAR TURN SIGNAL
RIGHT TAIL & BRAKE LIGHT
BACK-UP ALARM
WORK LIGHT
RIGHT FRONT TURN SIGNAL
RIGHT HEAD LIGHT
360° ROTATING FLASHING
360° FLASHING
STROBE
LEFT HEAD LIGHT
SIDE BROOM LIGHT
LEFT FRONT TURN SIGNAL
LEFT TAIL & BRAKE LIGHT
LEFT REAR TURN SIGNAL
GAS ONLY
OPTIONS
OPTION
ECT
CPS
PRIMARY COIL
UESC


12 VOLT BATTERY
+
-
M1
MTR
STARTER MOTOR
66A ALTERNATOR
OUT
GND
2
1
M3
GLOW PLUGS
SHAKER MOTORS
D1
CB-1
M2
30
87
PM
BROOM and FAN RELAY
M4
86
85
SHAKER MOTOR RELAY
M2
TD-1
CB-2
H-PB
HORN
GP-SW
GLOW PLUGS RELAY
M3
BATT
ST
IGN
ACC
K-SW
CB-3
CB-4
CB-5
CB-6
CB-7
STARTER RELAY
M1
(NO)
(C)
(NC)
NOTE: OP-SW IS SHOWN WITH ENGINE OFF (NO) OPENS 4 PSI
TO BE USED WITH OPTIONAL SHUT DOWN
OP-SW
(+)
(-)
HM
FUEL SHUT OFF VALVE
TD-2
20 SEC. OP-SW BY-PASS
AUTOMATIC OVERRIDE
HELD CLOSED BY HOPPER
HO-SW
30
87A
B & F-SW
BROOM AND FAN SOLENOID
SM-SW
HELD CLOSED BY HOPPER
LIFT ARM CYLINDER LOCK OUT SOLENOID
LALO-SW
(VARI DUMP ONLY)
(OIL) PRESSURESTAT
WARNING LIGHT
R
(WATER) ALARMSTAT
VM
OP
WT
FG
(I)
(G)
(S)
(OPS)
(WTS)
(FGS)
WET SWEEP BYPASS SOLENOID
WSB-SW
VAC-SW
7-8 IW
L-SW
FU-1
WL-SW
WORK LIGHT
LT HEAD LIGHT
RT HEAD LIGHT
SIDE BROOM LIGHT
BR-SW
FU-2
BRN
FLASHER
LT TAIL LIGHT
LT BRAKE LIGHT
RT TAIL LIGHT
RT BRAKE LIGHT
BLU
YEL
GRN
RED
INDICATOR
WARNING LIGHT
LT
RT
FRONT
REAR
BU-SW
REVERSE
BACKUP ALARM
BEACON LIGHT
(STROBE, FLASHING, 360° ROTATING)
DEFROSTER
OFF
RS
OFF
HIGH
H-SW
RES
LOW
HEATER
C
DOME LIGHT
WIPER
PULL
P-SW
FAN MTR
PRESSURIZER
HIGH CLEARANCE CAB
NOTE
ALARMSTAT AND PRESSURESTAT ARE SHOWN WITH ENGINE OFF
ALARMSTAT (NO) CLOSES 214° F
(NC) OPENS 220° F
PRESSURESTAT (NC) CLOSES 9 PSI
(NO) OPENS 5 PSI
P-5112A/9601


B & F-SW
SM-SW
WSB-SWITCH
OPTION
GS
TO (GS)
WARNING LIGHT
OPTION
TO PRESSURESTAT (NC)
INSTRUMENT LIGHTS ARE OPTIONS
VM
OP
FG
HM
WT
H-PB
L-SW
OPTION
WL-SW
OPTION
IP-WH
K-SW
TD-1
M2
M4
HEATER
CORE
FAN
H-SW
DEFROSTER
WIPER
DOME LIGHT
PRESSURIZER
RED
P-SW
ORG
FAN
TERM. C/A 2-00-04479
INDICATOR
YEL
GRN
RED
BLK
FU-2
FLASHER
TURN SIGNALS
GP-SW
OPTIONS
CB-7
CB-6
CB-5
CB-4
CB-3
CB-2
CB-1
CH(C)
CH(B)
CH(A)
PH(C)
PH(B)
SMJ-WH
SM
HO-WA
2-00-04479
HO-SW
OPTION WSB-SOL.
HIGH DUMP ONLY LA-SOL.
B & F-SOL.
LALO-SW
CH(N)
PH(M)
YELLOW
RED
BROWN
WHITE
ORANGE
BLUE
GREEN
PURPLE
E-WH
STARTER MOTOR
M-WH
66 AMP ALTERNATOR
D-1
12 V. BATTERY
RIGHT REAR TURN SIGNAL
RIGHT TAIL & BRAKE LIGHT
RIGHT FRONT TURN SIGNAL
RIGHT HEAD LIGHT
LEFT HEAD LIGHT
SIDE BROOM LIGHT
LEFT FRONT TURN SIGNAL
LEFT TAIL & BRAKE LIGHT
LEFT REAR TURN SIGNAL
BACK-UP ALARM
WORK LIGHT
360° ROTATING FLASHING
360° FLASHING
STROBE
GS
FGS
GAS ONLY
BR-SW
BU-SW
VARI-DUMP ONLY LALO SOL
HORN
GLOW PLUGS
OP-SW
PINK
OPS
M3
FSV
WTS
PRESSURESTAT
ALARMSTAT
AUTOMATIC OVERRIDE
TO WARNING LIGHT
P4661A
OPTIONS

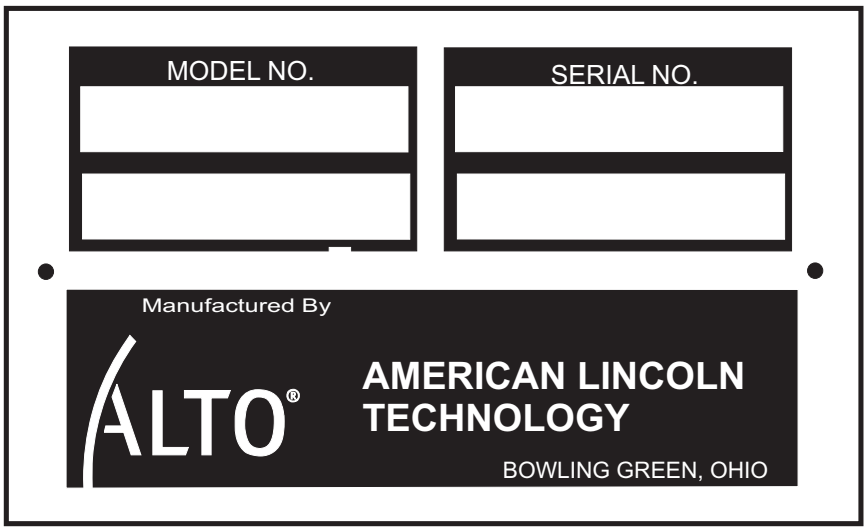
ABBREVIATIONS - SCREWS

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

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

578-530	Gas Variable Dump Sweeper (413 Ford Engine)
578-531	Gas Low Dump Sweeper (413 Ford Engine)
578-532	Gas Variable Dump Sweeper (425 Ford Engine)
578-533	Gas Low Dump Sweeper (425 Ford Engine)
578-534	Perkins Diesel Variable Dump Sweeper
578-535	Perkins Diesel Low Dump Sweeper