

Service Manual

ARMADILLO 6X BATTERY



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**USING THE
ROTARY TRASH
RELOCATOR (RTR™)**

NOTE

1. Use the directional control pedal to stop the machine on a level surface.
2. (On 62IC) Move the throttle to IDLE position.

Note: As you complete Steps three and four, observe the two red lights labeled 1 and 2 in the upper left corner of the control panel.

- Light 1 illuminates when the hopper reaches the minimum height required to use the RTR feature.
- Light 2 illuminates when the hopper reaches the rotation stop point.

3. Pull back Lever 1 to the RAISE position and hold until Light 1 illuminates, then pull Lever 1 to "HOLD" position.

⚠ WARNING

Make sure no one is in the area under or around the hopper.

4. Pull back Lever 2 to DUMP position and hold until Light 2 illuminates, then release.

NOTE

Note: This rotates the hopper, causing debris to move from the rear entrance to the front wall of the hopper. Rotating beyond this point will cause debris to be dumped from the hopper.

5. Push Lever 2 forward to RETURN position until the hopper rotates back and stops.
6. Push Lever 1 forward to the LOWER position until the hopper returns to the normal operating position.

TRANSPORTING THE MACHINE

Loading

1. Position the machine on the transport vehicle or trailer and apply the parking brake.
2. Tie the machine down using the tie down holes in the frame in front of both front wheels and in the rear of the frame. (There is a total of 4 tie-down areas.)

NOTE

Note: Attach the tie downs to the frame only.

Pushing

1. Push the machine from the front or rear using bumpers only.
2. On the 62IC, before towing, open the tow valve located on top of the main pump by rotating the valve stem 90°. After towing is complete, return valve stem to its original position.

ATTENTION!

Do not tow or push the machine a distance of more than .5 miles (.80 kilometers) or faster than one mile per hour (1.61 km). Exceeding these restrictions may cause damage to the hydraulic system of the 62IC. If towing will exceed the above restrictions, the rear wheel must be raised or supported by a dolly.

INTRODUCTION

Regular maintenance on your sweeper results in better cleaning, faster cleaning, and a prolonged service life for the equipment and components. This section contains the following information to help you give your sweeper the maintenance attention it requires:

- A Planned Maintenance Chart
- Service Instructions for Required Maintenance Tasks

Because it is extremely important to your safety, you will see the following **WARNING** repeated throughout this section:

Never attempt to perform any service on the equipment or components until the machine is OFF, the parking brake is LOCKED, and the wheels are CHOCKED.

PLANNED MAINTENANCE CHART

FREQUENCY (IN HOURS)					SERVICE (BY MAINTENANCE AREA)
DAILY	50	100	200	500	
		X			<p>ENGINE (62IC)</p> <p>Pressure wash engine</p> <p><i>For additional maintenance requirements, refer to the engine manual furnished with this manual.</i></p>
X		X			<p>AIR INTAKE AND EXHAUST SYSTEMS(62IC)</p> <p>Empty rubber dust cup of air filter element.</p> <p>Clean air filter. <i>NOTE: Clean more often in dusty conditions.</i></p> <p>Replace air filter.</p>
		X			<p>ELECTRICAL SYSTEM</p> <p>Check electrolyte level in battery cells and fill as needed.</p> <p>Clean battery top.</p>
X			X		<p>COOLANT SYSTEM (62IC)</p> <p>Check coolant level and fill as needed.</p> <p>Inspect radiator fins and clean as needed.</p> <p>Blow out radiator fins.</p>
	X				
		X			

PLANNED MAINTENANCE CHART

FREQUENCY (IN HOURS)					SERVICE (BY MAINTENANCE AREA)
DAILY	50	100	200	500	
					HYDRAULIC SYSTEM
X					Check hydraulic fluid level and fill as needed.
				X	Replace breather cap filter element.
				X	Replace hydraulic fluid and filter.
X					Check functioning of directional control pedal and adjust as needed.
				X	Clean hydraulic fluid strainer in reservoir.
	X				Inspect hydraulic oil cooler fins & clean as needed (if so equipped).
		X			Blow out hydraulic oil cooler fins with compressed air (if so equipped).
					SWEEPING COMPONENTS
X					Inspect brooms for wear and remove strings and debris from bristles and drive assembly.
	X				Inspect broom skirts for wear and adjust or replace as needed.
	X				Rotate main broom end-to-end.
	X				Perform main broom adjustment test and adjust as needed.
X					Inspect the side broom for wear and adjust as needed.
					<i>Replace main and side brooms as needed.</i>
					<i>Main Broom - Bristles are 1" in length.</i>
					<i>Side Broom - Bristles are 3" in length.</i>

PLANNED MAINTENANCE CHART

FREQUENCY (IN HOURS)					SERVICE (BY MAINTENANCE AREA)
DAILY	50	100	200	500	
					<p>HOPPER</p> <p>Check hopper filter and clean or replace as needed.</p> <p>Check hopper clearance from floor and adjust as needed.</p> <p>Inspect the hopper flaps for wear or damage and replace as needed.</p> <p>Inspect hopper side and frame seals for wear or damage. Adjust or replace as needed.</p> <p>(on 62IC) Lubricate the pillow blocks supporting the dump mechanism.</p>
X					
	X				
X					
		X			
				X	
				X	
				X	
	X				<p>STEERING</p> <p>Lubricate steering linkage rod ends.</p> <p>Lubricate steering fork assembly.</p> <p>Check for leaks.</p>
					<p>PARKING BRAKE</p> <p>Check for proper functioning and adjust as needed.</p>
			X		

PLANNED MAINTENANCE CHART

FREQUENCY (IN HOURS)					SERVICE (BY MAINTENANCE AREA)
DAILY	50	100	200	500	
X			X		<p>TIRES</p> <p>Visually inspect for wear and damage. Repair or replace as needed.</p> <p>Check pneumatic tires for proper air pressure (90 psi).</p>
				X	<p>MISCELLANEOUS</p> <p>Inspect latches and hinges. Tighten and lubricate as needed.</p>
			X		<p>Check anti-static drag chain on rear wall of broom chamber for damage or excessive wear. Replace as needed.</p>
				X	<p>Check side broom lift cable, and brake cable for wear.</p>
			X		<p>Check lugnuts for proper torque.</p>
X					<p>IMPELLER (62IC)</p> <p>Check for hydraulic fluid leaks.</p>

ENGINE (62IC)

Maintenance requirements and service instructions for your sweeper engine are outlined in the following parts of this Maintenance section:

- Air Intake and Exhaust Systems
- Electrical System
- Fuel System
- Coolant System
- Lubrication System

All basic maintenance tasks are listed with their recommended frequencies on the Planned Maintenance Chart in this manual. Important additional maintenance requirements and instructions are explained in the engine manual which comes with your machine.



Never attempt to perform any service on the equipment or components until the engine is OFF, the parking brake is LOCKED, and the wheels are CHOCKED.

AIR INTAKE AND EXHAUST SYSTEMS (62IC)

SERVICE INSTRUCTIONS

AIR FILTER REMOVAL

1. Turn off the engine and set the parking brake.
2. Lift the engine cover.
3. Locate the air filter and unlatch the ring clamp.
4. Remove the dust cup.
5. Pull the rubber plug out of the dust cup and empty the contents.
6. Unscrew the wingnut.
7. Pull the air filter out of its housing.

AIR FILTER CLEANING

1. Once you have removed the air filter, empty the dust cup and clean the interior of the air filter housing.
2. Use an air hose to blow out the air filter. Air pressure should be 100 psi or less.

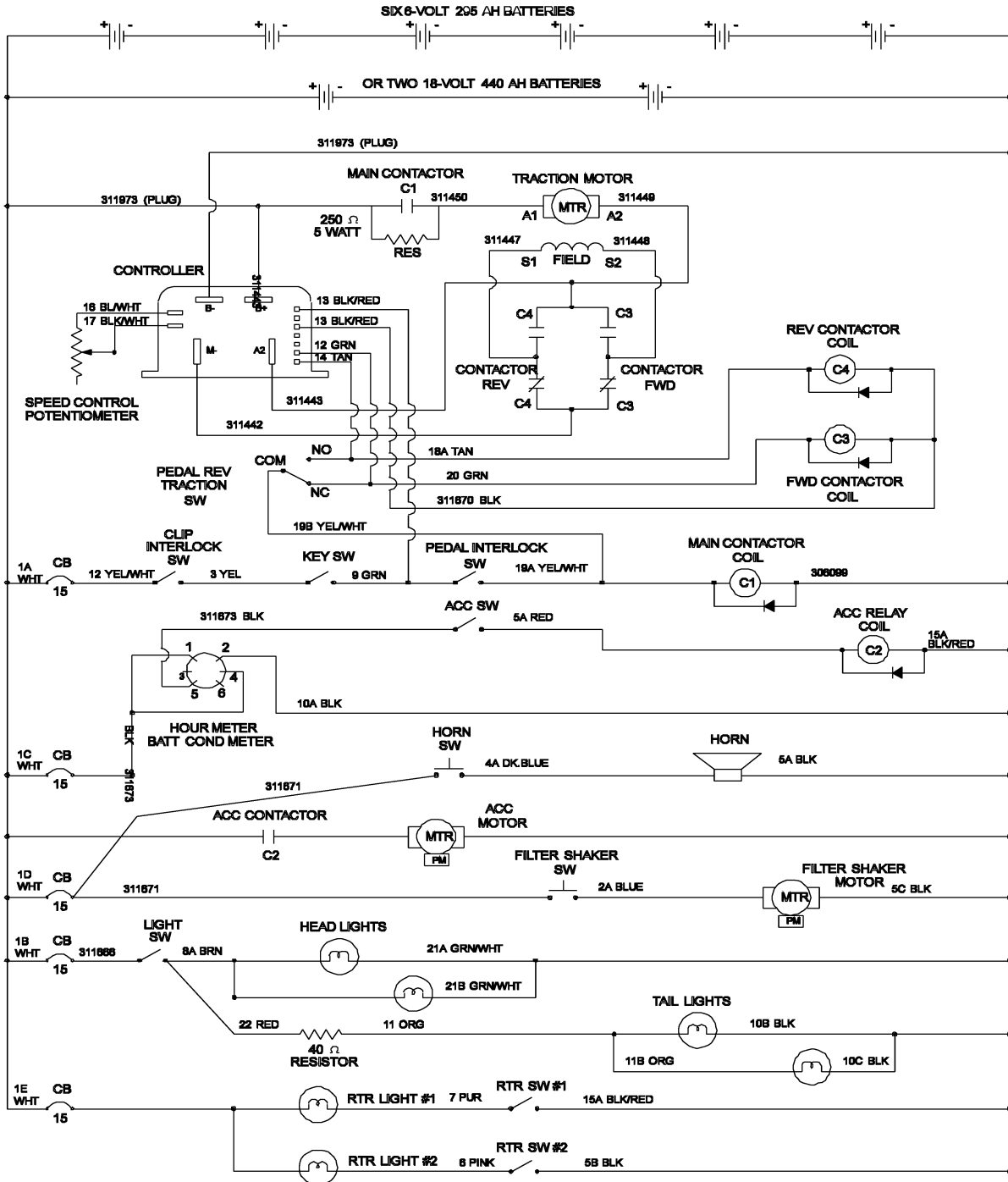
AIR FILTER INSPECTION

1. After you clean the air filter, check it for holes by passing a light bulb inside it.

AIR FILTER INSTALLATION

1. Wipe out the air cleaner housing with a damp cloth. Be sure all dirt is removed.
2. Install the cleaned replacement filter so that the fins are at the far end of the housing. Be careful not to damage the fins.
3. Replace the wing nut and tighten it.
4. Replace the rubber plug in the dust cup.
5. Replace dust cup, being sure embossed word "top" on cup is positioned correctly (up).
6. Tighten the ring clamp.
7. Check the condition of intake hoses and clamps.
8. Close the engine cover.

ELECTRICAL SCHEMATIC SW/62E



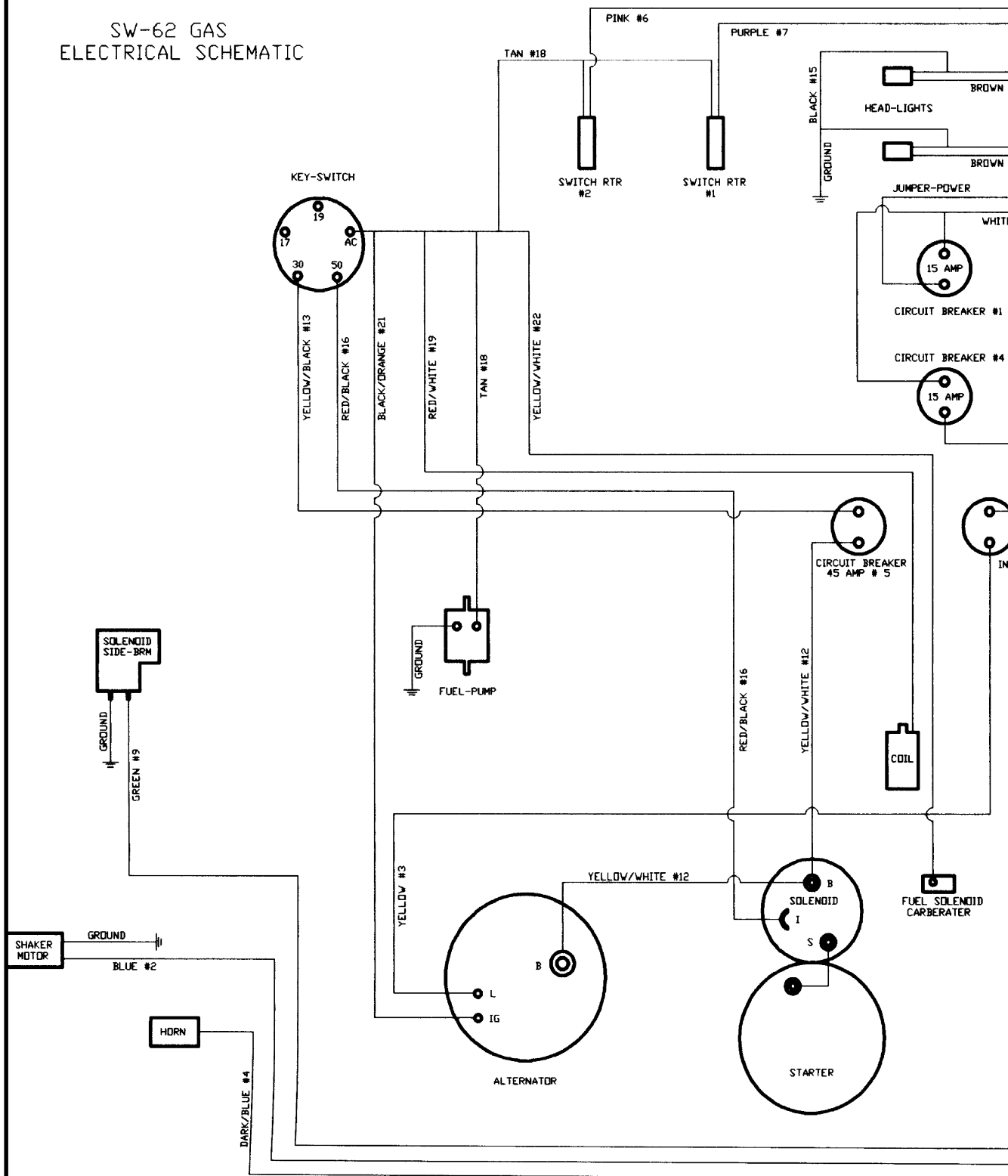
ELECTRICAL SCHEMATIC SW-62E

ELECTRICAL SCHEMATIC

SW/62IC

- GASOLINE & LP GAS - KUBOTA WG-750 GASOLINE

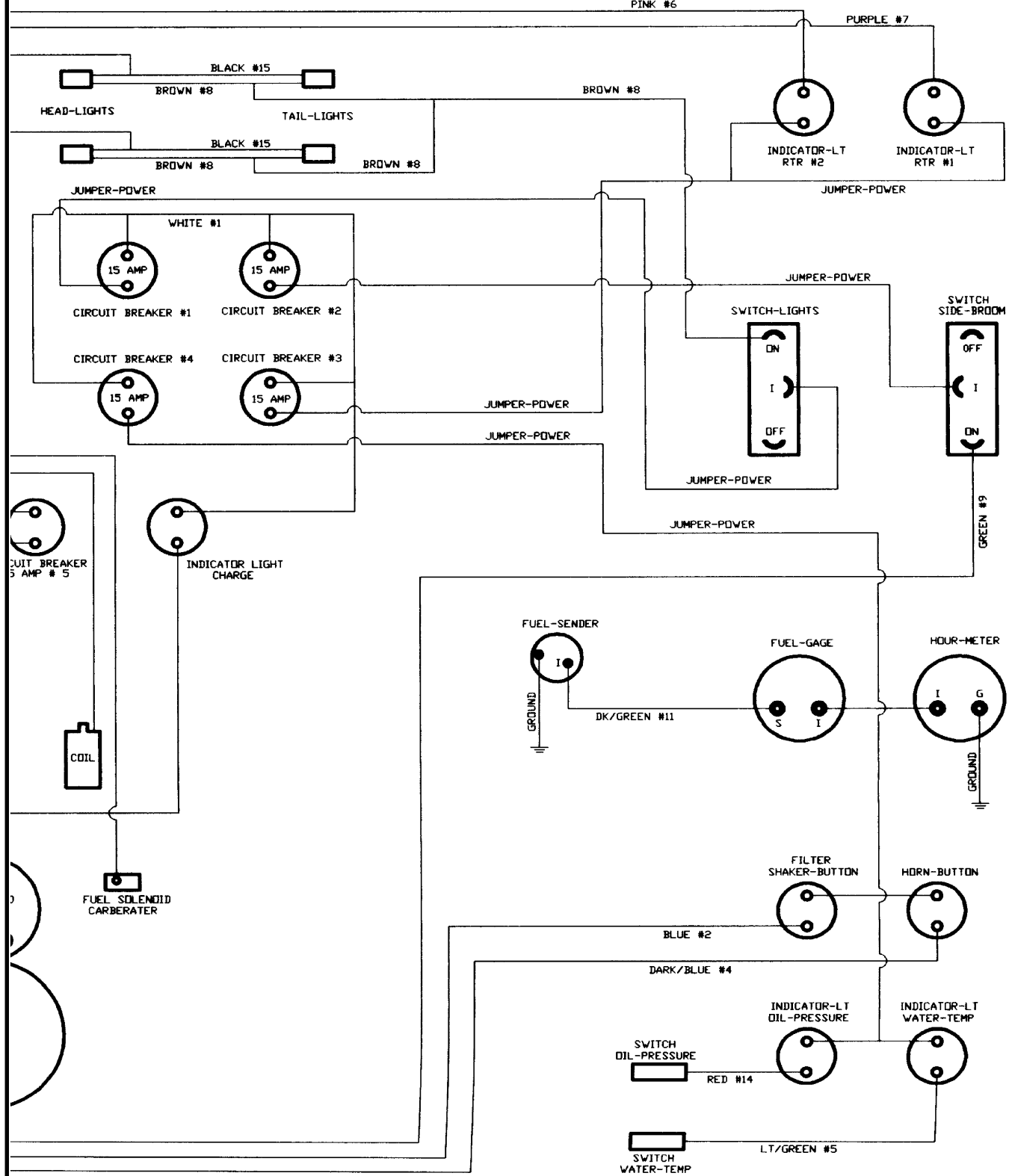
SW-62 GAS
ELECTRICAL SCHEMATIC



ELECTRICAL SCHEMATIC

SW/62IC (Cont.)

- GASOLINE & LP GAS - KUBOTA WG-750 GASOLINE-

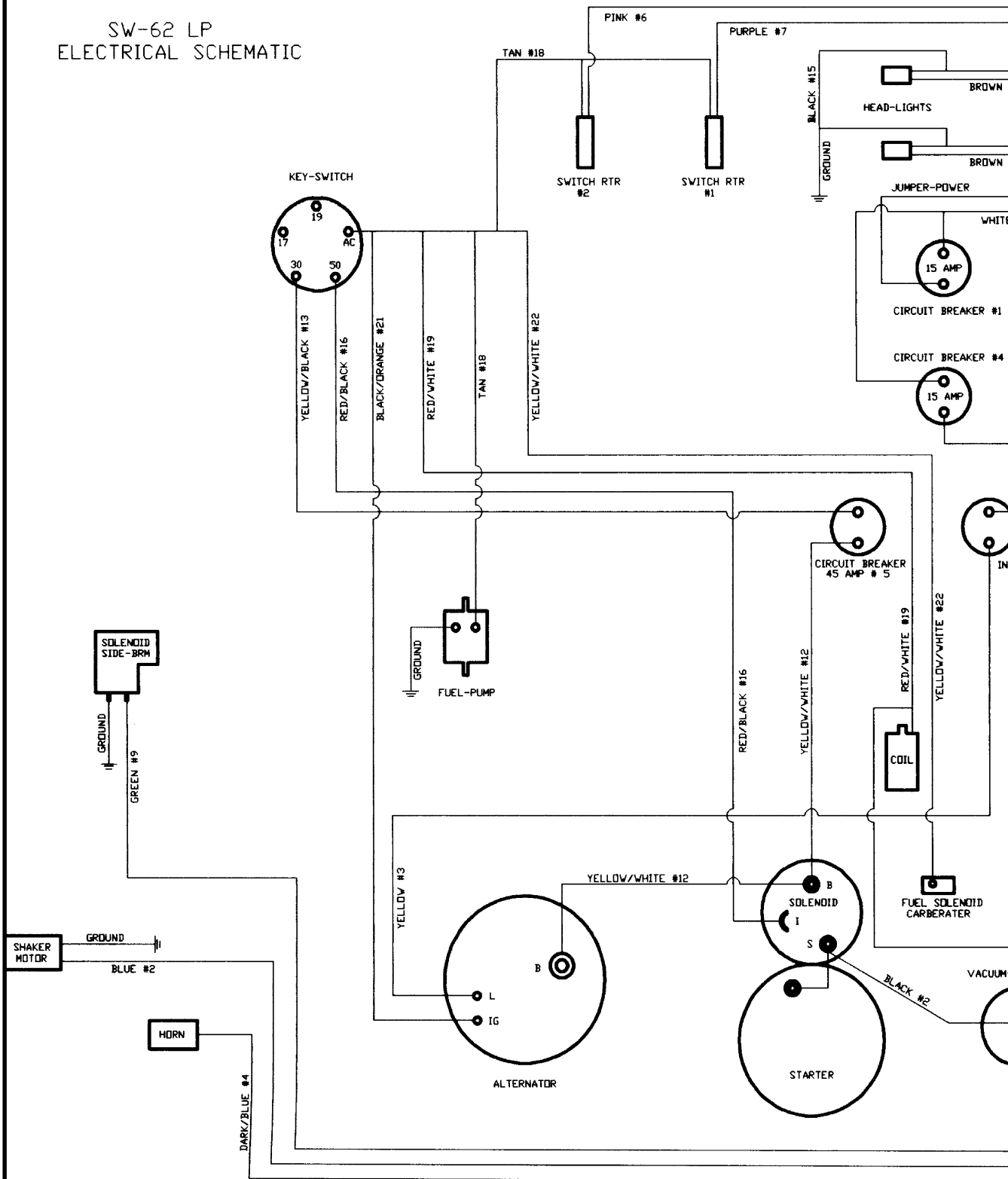


ELECTRICAL SCHEMATIC

SW/62IC

- LPG - KUBOTA WG-750 LIQUID PROPANE

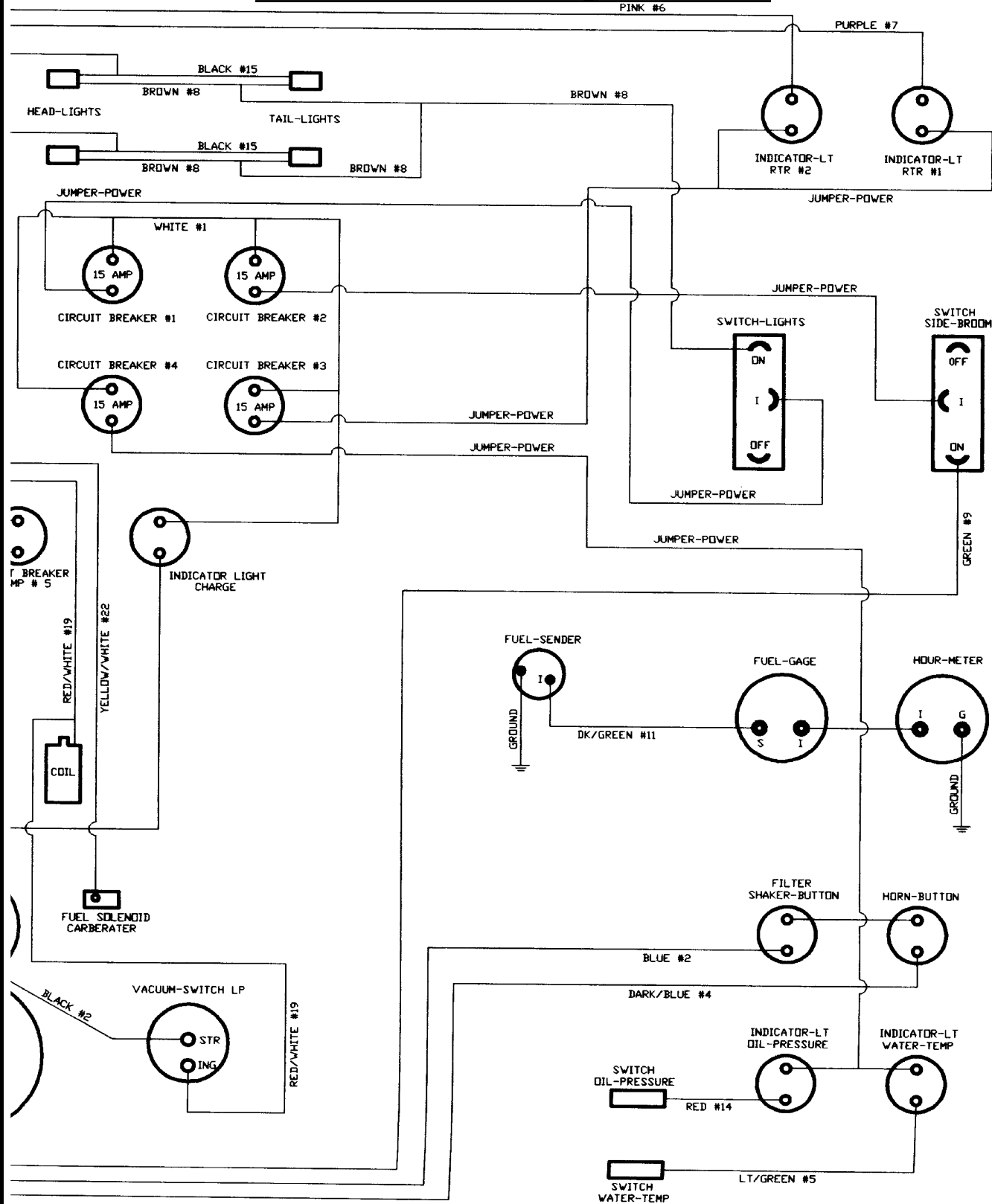
SW-62 LP
ELECTRICAL SCHEMATIC



ELECTRICAL SCHEMATIC

SW/62IC (Cont.)

- LPG - KUBOTA WG-750 LIQUID PROPANE

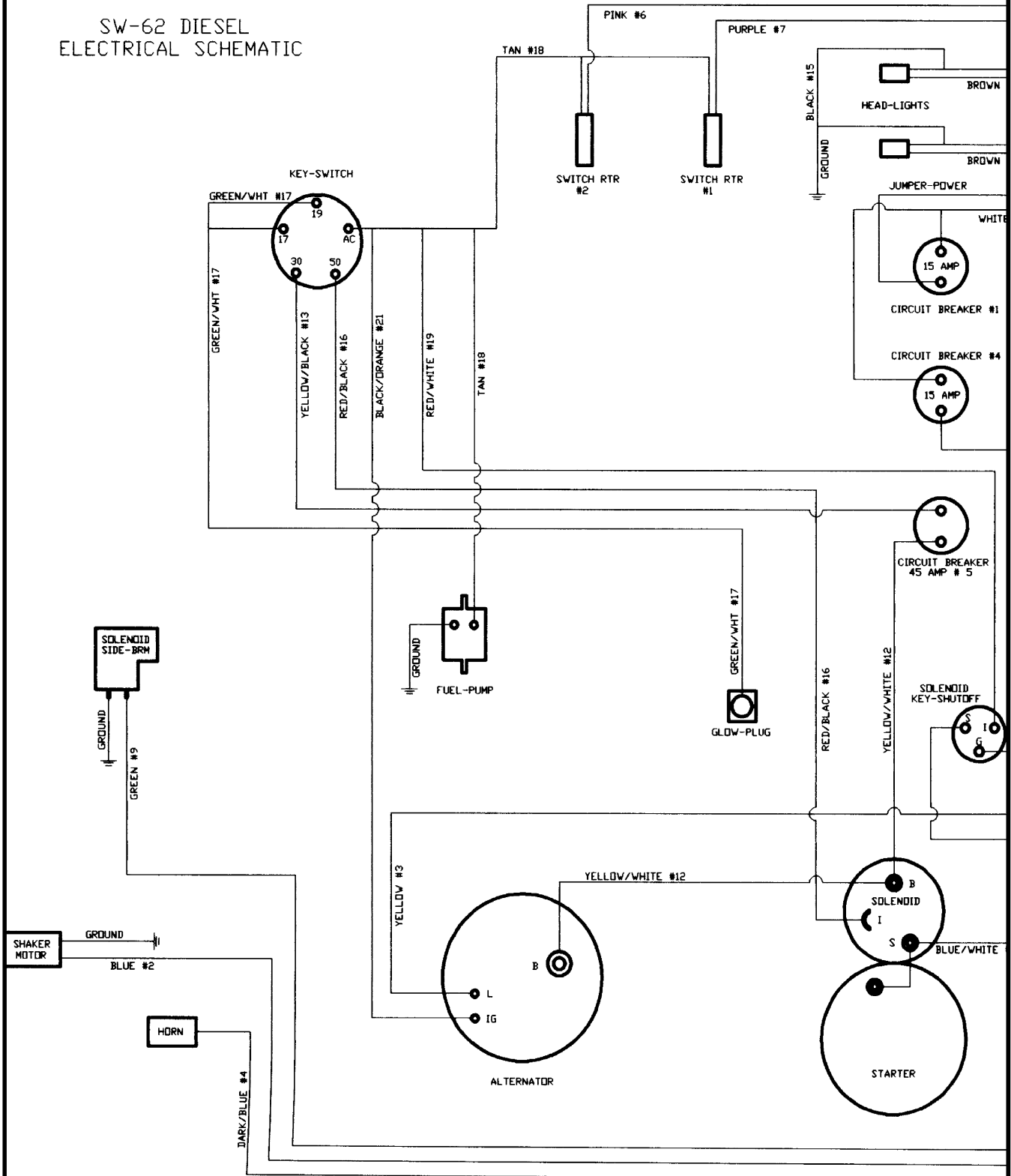


ELECTRICAL SCHEMATIC

SW/62IC

- DIESEL - KUBOTA D-722 DIESEL

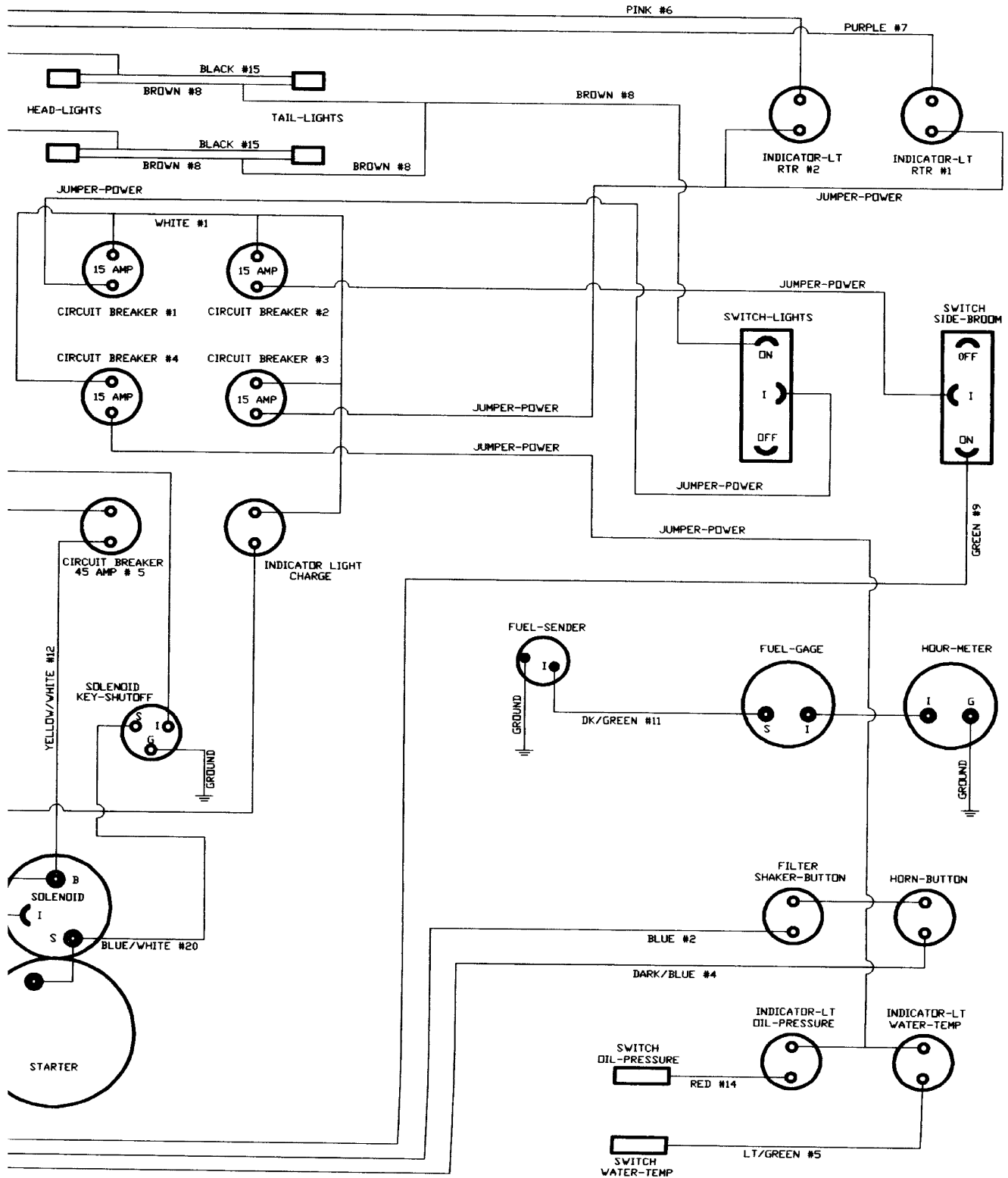
SW-62 DIESEL
ELECTRICAL SCHEMATIC



ELECTRICAL SCHEMATIC

SW/62IC (Cont.)

- DIESEL - KUBOTA D-722 DIESEL



ELECTRICAL SYSTEMS

SERVICE INSTRUCTIONS

BATTERY CLEANING

1. Combine baking soda and water in a strong solution.
2. Brush the solution over the battery top, including terminals and cable clamps. Make sure the solution does not enter the battery.
3. Using a wire brush, clean the terminal posts and cable clamps.
4. Apply a thin coating of vaseline to the terminals and cable clamps.

BATTERY REPLACEMENT (62IC)

Remove the negative battery cable before you remove the positive battery cable. This is done to prevent accidental electrical shorting which can result in personal injury.

1. Disconnect the negative (-) cable and then the positive (+) cable.
2. Remove the battery.
3. Install new battery.
4. Connect the positive (+) battery cable first, then the negative (-) cable.

CIRCUIT BREAKERS

If a circuit breaker trips, it can be reset by pressing the reset button in the center of the breaker. (The circuit breakers are located on the rear cover to the left of the driver.)

FUEL SYSTEM (62IC)

▲ WARNING

1. Never attempt to perform any service on the equipment or components until the engine is OFF, the parking brake is LOCKED, and the wheels are CHOCKED.
2. Never operate an LPG powered sweeper when any component in the fuel system is malfunctioning or leaking.
3. Never bypass safety components unless you are testing them.
4. Replace any defective safety components before operating the sweeper.
5. During repair or servicing of the fuel system, work in a properly ventilated area and do not smoke or allow an open flame near the fuel system.
6. When disconnecting the tank coupling, always wear gloves. LPG fuel can freeze bare hands.
7. Under no circumstances should the fuel filter lock be bypassed, except when testing. After testing, always reconnect lock. Bypassing the fuel filter lock after testing creates a potential fire hazard.

CHECKING THE LPG FUEL FILTER LOCK

1. Start the engine. Then remove the vacuum hose going to the fuel filter lock. The solenoid should close, shutting off the fuel supply and stopping the engine.
 - If the engine continues to operate, the fuel filter lock should be replaced.
 - If the engine stops, the fuel filter lock is operating properly.
2. With the engine stopped, let the machine stand while the LPG tank valve is open (the hose is removed from the fuel filter lock). After 10 minutes, try the starter motor.
 - If the engine starts or fires, this indicates a fuel leak has occurred. Replace the fuel filter lock immediately.
 - If the engine simply turns over, this indicates the fuel filter lock is operating correctly.

COOLANT SYSTEM (62IC)

SERVICE INSTRUCTIONS

BLOWING OUT RADIATOR FINS

NOTE: Make sure radiator is cool before blowing out the radiator fins with compressed air.

REVERSE FLOW FLUSHING

1. At the engine, disconnect the hoses.
2. Make sure the radiator cap is on tight.
3. Using a hose clamp, clamp a flushing gun onto the lower hose.
4. Turn on the water and fill the radiator.
5. To keep from damaging the radiator, apply air pressure slowly and carefully.
6. Shut off the air pressure, refill the radiator with water, and reapply the air pressure. You will need to repeat these steps until water flushed from the radiator runs out clear.
7. Inspect and clean the radiator cap.
8. Inspect and reconnect the hoses.
9. Refill the radiator with coolant.

NOTE: Use a 50/50 mixture of water and an anti-freeze with an ethylene glycol base.

LUBRICATION

Gasoline and LPG Engines: Use any SF or SG rated oil meeting API specifications and suited to seasonal temperatures.

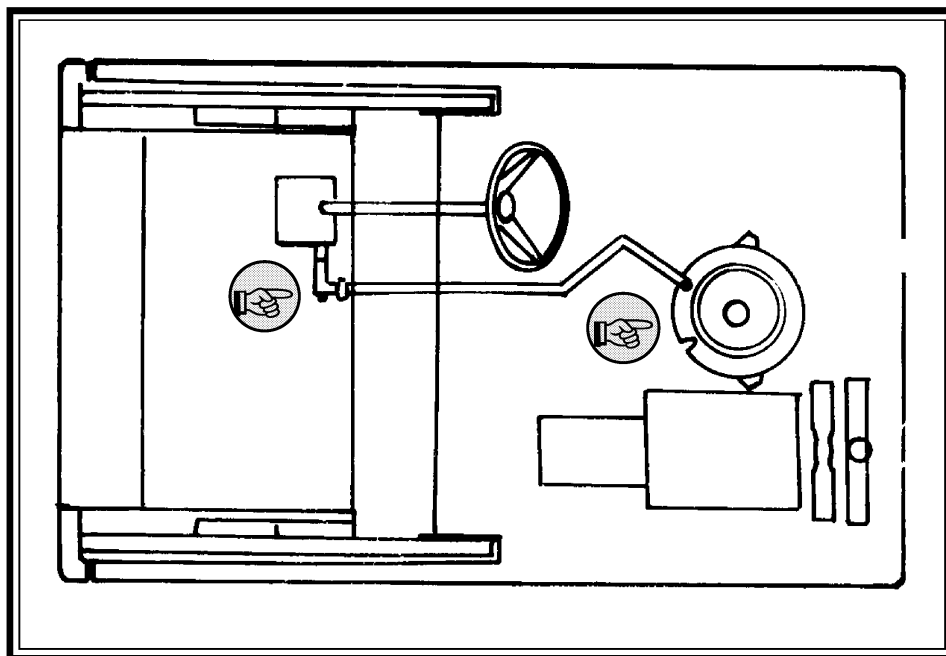
Refer to the Engine Manufacturer's Operator Manual for these specifications.

CHANGING ENGINE OIL (62IC)

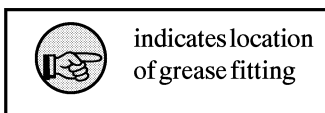
1. Place a drain pan under the engine on the floor.
2. Remove the drain plug and allow oil to drain into the pan (Gasoline or LPG engines will drain from front of oil pan. Diesel engines will drain from bottom of oil pan.)
3. Remove the used oil filter and replace with a new one.
4. Dispose of oil and oil filter in an approved manner.
5. Remove the engine oil cap, add oil in the amounts listed in engine manual, then secure the cap.

LUBRICATION POINTS

Lubrication	Type of Lubrication	Frequency (In Hours)
Steering Cylinder (2 fittings)	Grease	500
Steering Fork Assembly	Grease	500
Hood Latches & Hinges	Oil	500



Steering Lubrication Points



HYDRAULICS SYSTEM

SERVICE INSTRUCTIONS

FILLING THE FLUID RESERVOIR

NOTE: *The reservoir is located inside the machine and is accessible by tilting the rear cover or clip backward.*

1. When the machine is cool and the hopper is in the lowered position, remove the dipstick. Fluid level should be between the high and low marks on dipstick.

NOTE: *DO NOT OVERFILL! DO NOT USE TRANSMISSION FLUID INSTEAD OF HYDRAULIC FLUID. AAR PowerBoss recommends Chevron Dello 400.*

2. If the fluid level is not acceptable, add hydraulic fluid.

HYDRAULIC FLUID VISCOSITY SPECIFICATIONS

SUS @ 100° F 510-560

SUS @ 210° F 78-84

CHANGING THE HYDRAULIC FLUID (62IC)

1. Turn off the machine and engage the parking brake.
2. Place a drain pan on the floor below the reservoir.
3. Remove the drain plug located on the bottom rear of the reservoir and allow the fluid to drain.
4. Discard the fluid, then replace and retighten the drain plug.
5. Remove the filler/breather cap located on top of the reservoir and fill the reservoir with approved hydraulic fluid.

NOTE: **Five (5) gallons (US) of fluid required.**

6. Check the dipstick to ensure the proper two-thirds level is achieved.
7. Install a new filler/breather cap assembly.
8. Check the drain plug for leakage.

CHANGING THE HYDRAULIC FLUID FILTER

1. Turn off the machine and engage the parking brake.
2. Unscrew the oil filter cartridge from the mount and discard.
3. Apply a thin coating of fluid to the seal of a new filter element.
4. Thread onto the mount and hand tighten.
5. Tighten an additional one-half turn beyond hand tight.

NOTE: Do not overtighten.

6. Start the machine, shut it off, then check for leakage.

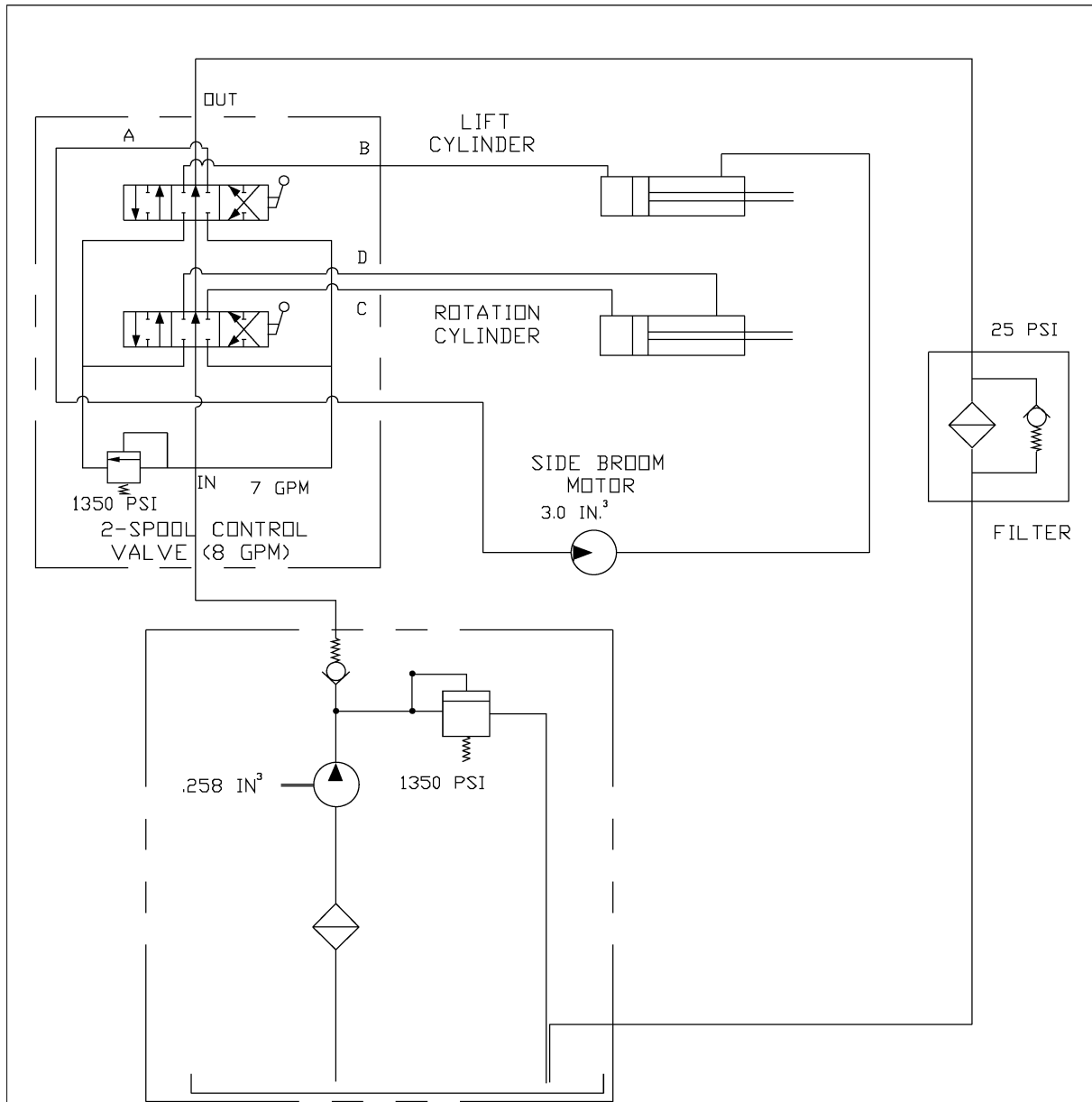
ADJUSTING THE DIRECTIONAL CONTROL RETURN SPRING (62IC)

You may encounter "creeping" problems from time to time. Creeping means the machine moves backward or forward when the forward/reverse pedal is in neutral. A grinding noise when the engine is shut down is also an indicator that the directional control return spring needs adjusting. If this occurs, perform the procedure which follows:

1. Turn off the engine, engage the parking brake, and chock both wheels.
2. Jack the rear of the machine so that the rear tire just clears the floor. Use two jack stands to support the machine. **DO NOT USE A JACK ALONE TO HOLD THE MACHINE !!**
3. Locate the forward/reverse adjustment bracket mounted beneath the pump on the pump mounting plate.
4. Slightly loosen the bolt on the center of the bracket.
5. Now loosen the locking nut on each of the adjusting bolts on the side of the bracket closest to the pump mounting plate.
6. From the operator's seat, start the engine and run at half throttle.
7. Turn the adjusting bolts while watching the rear wheel. Continue to adjust until the rear wheel does not turn in either direction.

8. Fully open throttle. Push the directional control pedal forward and backward to be sure pump stays in neutral. Check wheel again and adjust as needed until the wheel remains motionless.
9. Retighten all the locking nuts and the bolts.
10. Turn the engine off and lower the machine to the floor.

HYDRAULIC SCHEMATIC SW/62E

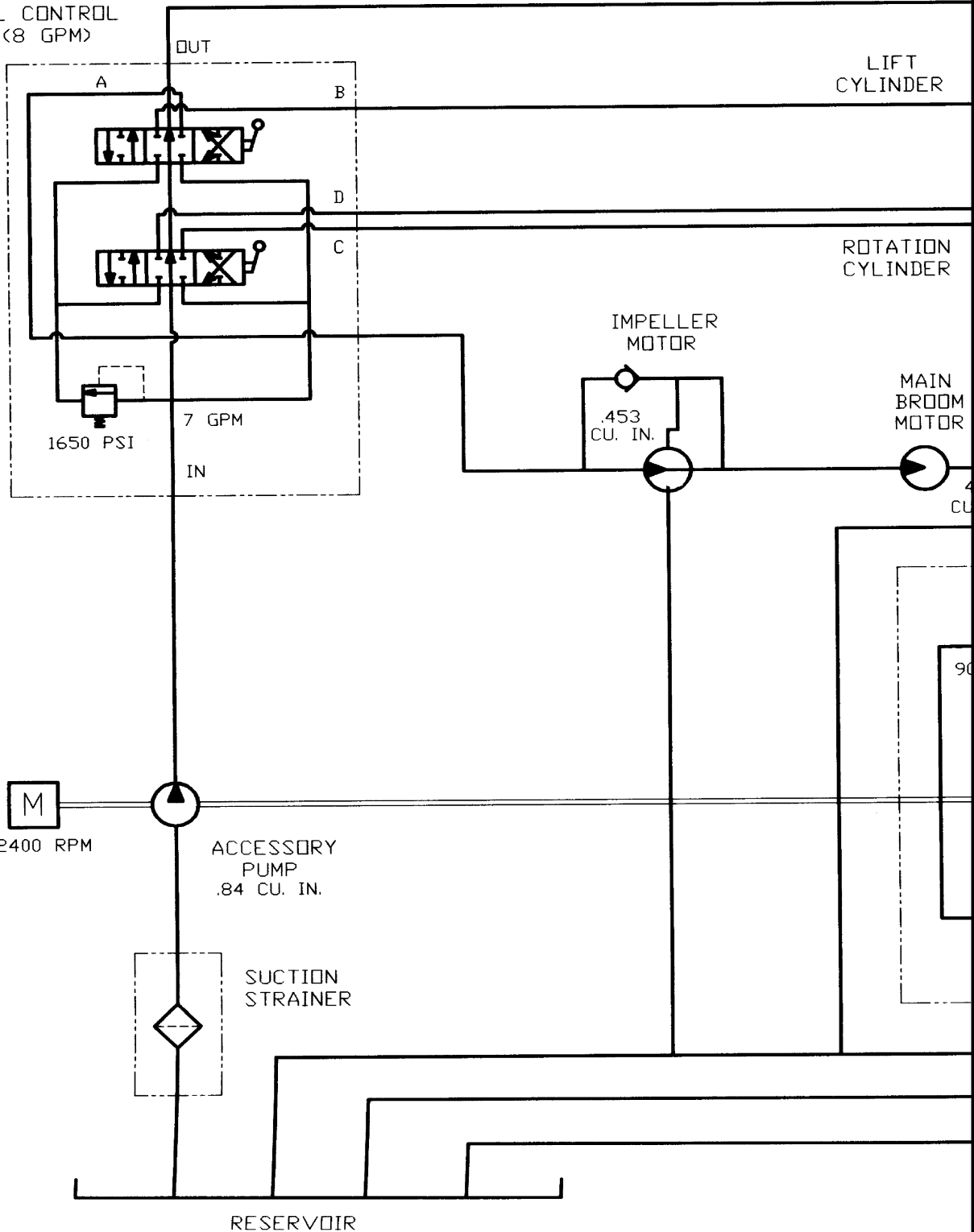


PUMP/RESERVOIR

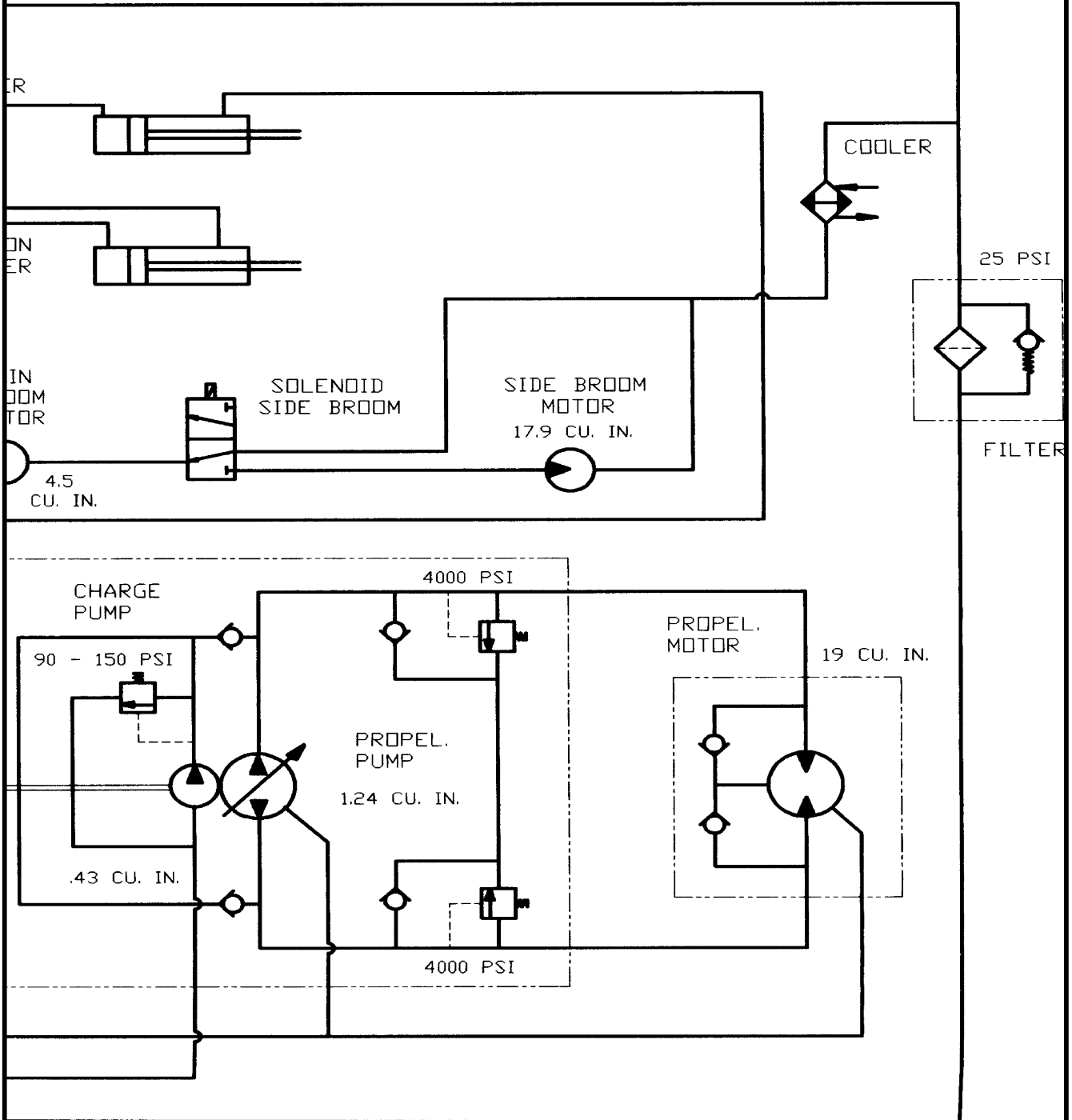
PowerBoss[™] SW/62 ELECTRIC
HYDRAULIC SCHEMATIC

HYDRAULIC SCHEMATIC SW/62IC

2-SPool CONTROL
VALVE (8 GPM)



HYDRAULIC SCHEMATIC SW/62IC



PowerBoss™ SW/62 GAS/DSL/LPG
HYDRAULIC SCHEMATIC

SWEEP COMPONENTS

SERVICE INSTRUCTIONS

BROOM DOOR FLAP INSPECTION

NOTE: Perform this inspection when the machine is parked on a level surface.

1. Turn the machine off and lock the parking brake.
2. Inspect broom door (side panel) flaps for wear and damage. Flap clearance should be 1/8" (3.18 mm) above the floor.
3. Worn and damaged flaps should be replaced immediately to maintain proper dust control.

BROOM DOOR FLAP REPLACEMENT AND ADJUSTMENT

The flaps are attached to the side panels by a retainer bar and hex bolts and nuts. To remove the flaps, remove nuts, bolts, and retainer bar. To adjust flaps, loosen nuts and bolts, slide flap up or down as needed. Retighten nuts and bolts.

MAIN BROOM ADJUSTMENT TEST

NOTE: Perform this adjustment on a flat, smooth test surface.

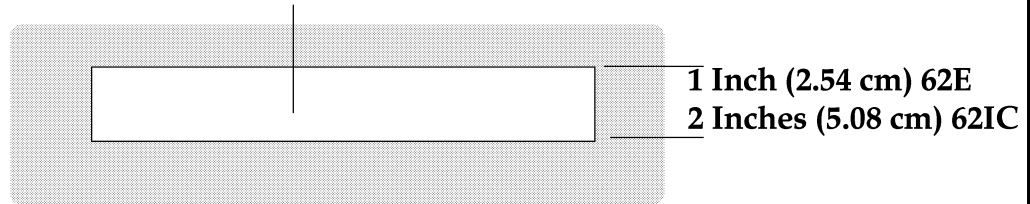
1. Drive the machine onto the test surface with the main broom in the RAISE position.
2. Set the parking brake and position the main broom handle in LOWER position.
3. Push the broom control lever to BROOMS ON position to activate the broom motor and open throttle to full RPM.
4. Allow about 45 seconds for the broom to operate, then deactivate the broom motor and raise the broom.

NOTE: Test time will vary according to the test surface used.

5. Drive the machine clear of the test site.
6. Examine the polished pattern made by the broom on the test area.

NOTE: A rectangular shape the length of the main broom, for the 62E, 1" (2.54 cm) wide, or 2" (5.08 cm) wide for the 62IC, indicates the main broom is properly adjusted. A pattern smaller than 1" (2.54 cm) or 2" (5.08 cm) indicates need for lower adjustment. A pattern wider than 1" (2.54 cm) or 2" (5.08 cm) indicates a need for higher adjustment. If pattern is tapered from end to end instead of rectangular, see Taper Adjustment on the next page.

Main Broom Test Pattern



MAIN BROOM HEIGHT ADJUSTMENT

1. Turn the machine off and lock the parking brake.
2. Position the main broom lever in the LOWER position.

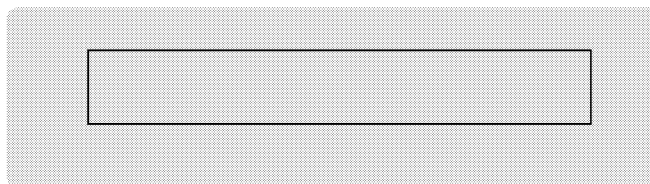
NOTE: The adjustment knob is located in the operator's compartment in front of driver's left knee.

3. Turn the broom adjusting knob clockwise one-eighth turn to free locknut.
4. Turn the locknut counter-clockwise to allow space for adjustment.
5. Make a lower or higher adjustment with the knob as required.
6. Retighten the locknut.
7. Repeat the main broom adjustment test to see that the broom is properly adjusted.

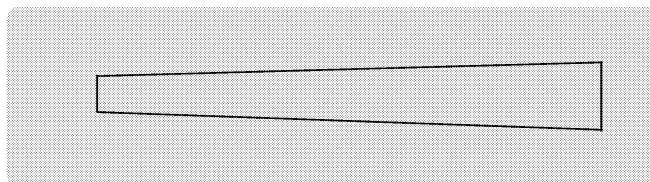
MAIN BROOM TAPER ADJUSTMENT

NOTE It is not usually necessary to perform this adjustment. However, if the main broom adjustment test shows a pattern that is tapered in length (one end is wider than the other), perform the procedures which follow.

Correct Taper Pattern



Incorrect Taper Pattern



Main Broom Taper Patterns

1. Locate the adjusting screws directly beneath the floor pan.
2. Loosen the retaining bolts on the outside of the mounting bracket.
3. Raise or lower the right end of the main broom. (The left end of the broom remains fixed. All adjustments affect the right end of the broom.)
4. After adjustment, tighten retainer bolts.
5. Repeat the main broom adjustment test to see that the broom is properly adjusted.

SIDE BROOM ANGLE ADJUSTMENT

The angle adjustment is controlled with a stop bolt. This stop bolt is located at the top front of the side broom arm (under the spring). To increase the angle of the side broom, loosen jam nut and turn stop bolt counter-clockwise. Be sure to retighten the jam nut back down once the adjustment is made.

SIDE BROOM HEIGHT (WEAR) ADJUSTMENT

The height of the side broom is adjusted with the use of a stop bolt located at the lower rear of the curb broom arm. As the side broom wears it will be necessary to lower the arm. To lower the side broom, loosen the jam nut on stop bolt. Turn the stop bolt in a counter-clockwise direction, check side broom for proper contact and re-tighten the jam nut.

SIDE BROOM LIFT CABLE ADJUSTMENT

This adjustment is made at the cable clevis attached to the side broom assembly. It controls the height of the side broom in the RAISED position. This adjustment must be made with the hopper fully lowered.

1. Pull the side broom lever into the RAISED position.
2. Loosen the locknut on the threaded rod at the clevis.
3. Turn the threaded rod in or out to set the side broom in the maximum raised position.
4. Secure the cable adjustment by tightening the locknut.

MAIN BROOM REPLACEMENT (Bristles worn to length of 1 inch ; 2.54 cm)

1. Turn the machine off and lock the parking brake.
2. Push the main broom control lever to the LOWER position.
3. Remove the right side panel (on side with driver's seat). (This involves removing three bolts.)
4. Using a 3/4" wrench, remove the hex bolt on the main broom idler mount.
5. Pull the main broom idler mount straight out to remove.
6. Grasp the main broom by the plastic drive hub, pull the main broom straight out and clear of the broom chamber.
7. Depending on broom condition, you can either rotate the old broom end-to-end and re-install it or you can install a new broom. Slide the main broom into the broom chamber and align the broom with the metal drive hub located at the far side of the broom chamber.

If a worn broom is being replaced, install the new broom by first adjusting the broom arms up, to better match the position of the drive hub with the hub on the new broom.

8. Once the broom is started onto the drive hubs, rotate the broom counter-clockwise while pushing lightly against the broom.
9. Once the broom is fully engaged, replace the idler hub while aligning the seats in the idler hub with the broom's drive hub ears.
10. Install the retaining bolt into position and tighten with the wrench.
11. Re-install the right side panel.
12. Perform a main broom adjustment test and adjust as needed.

SIDE BROOM REPLACEMENT (Bristles worn to length of 3 inches ; 7.62 cm)

NOTE: The side broom features a quick release mechanism which enables the operator to remove the brush in seconds.

1. Raise the side broom and lock in RAISE position.
2. Turn the side broom by hand until the brush retainer bar is accessible.
3. Lift the bar and turn the broom clockwise (about one eighth of a turn) until the lock pins in the broom disengage from the drive plate.
4. Install the new broom by positioning the three drive pins into the pilot holes of the drive plate.
5. Lift and rotate the broom until the broom retainer bar springs into the locked position.
6. Check to make sure all three drive pins are properly engaged.

HOPPERS

SERVICE INSTRUCTIONS

HIGH DUMP HOPPER REMOVAL AND REPLACEMENT

It is not usually necessary to remove or replace the hopper on high dump models. However, if it becomes necessary for maintenance or to install an option, use the following procedure to remove:

1. Park the machine on a level surface and engage the parking brake.
2. Raise the hopper and position the high dump hopper dolly, a platform truck or similar four wheeled cart under the hopper.
3. Set the hopper down on the truck and turn the engine off.
4. Cycle the rotation control handle (#2) in both positions to relieve any residual hydraulic pressure.
5. Remove three bolts, washers, nuts, and backing plate.
6. Disconnect the wire connections at the right side of the hopper.
7. While spreading dump arms slightly, roll the hopper away from the machine.

TO REPLACE:

1. Position the hopper on the dolly so as to align the mounting holes in the sides of the hopper with the rotation mounts on the arms. Lift arms should be positioned about 1/3 of way up.
2. Engage lift arm rotation plates with three mounting bolts on each side of the hopper.
3. Start the machine and lift hopper.
4. Drive the truck away from the hopper dolly or cart.
5. Lower hopper.
6. Engage wire connections at right side of hopper.

FILTER REMOVAL:

1. Release the latch on the hopper cover and raise cover.
2. Disconnect the wire harness leading to the filter shaker motor.
3. Unscrew the two screws (each attached using one conical washer and an isolator) securing the filter retainer bars to the hopper.
4. Remove the shaker motor assembly and filter retainer bars.
5. Lift out the panel filter.

FILTER CLEANING

The dust control filter is a permanent type paper element filter. It may be vacuumed, blown out with compressed air, tapped against the floor, or washed with soap and water.

1. If blown out with compressed air, use 100 psi or less.
2. If washed with soap and water, use 40 psi water pressure or less.

NOTE: *Make sure the filter is thoroughly dried while standing on its side before installing in the hopper. Do not install or use a wet filter.*

FILTER REPLACEMENT

1. Insert the panel filter.
2. Install the shaker motor assembly.
3. Install and tighten the four filter retaining screws & isolators.
4. Hook the wire harness to the filter shaker motor.
5. Close the hopper cover and secure the latch.

HOPPER FLOOR CLEARANCE & DUMP ADJUSTMENTS

In order to perform properly, the hopper must maintain a distance of 3-1/2" (8.89 cm) from the floor to the rear hopper entrance lip. The front of the hopper should be adjusted so that the front bumper aligns with the hopper frame where the two meet. When properly adjusted, the front edge of the hopper will be 5" (12.7 cm) to 6" (15.24 cm) from the floor.

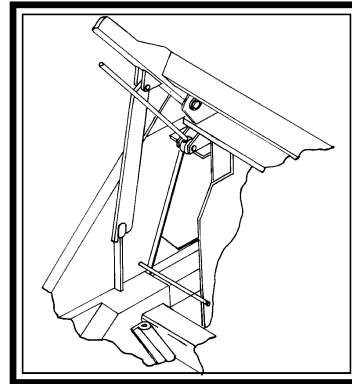
ADJUSTING MAXIMUM HOPPER DUMP ANGLE

1. Park the machine on a level surface, shut off the machine, and engage the parking brake.

▲ CAUTION

Do not rely upon hydraulic cylinders to keep hopper raised for maintenance. Always engage the safety arm before getting under the hopper.

**SAFETY ARM
ENGAGED**



2. Adjust the lift arm stop bolts located on top of the wheel wells as low as possible while still allowing the side broom assembly to clear the lift arms when the hopper is in normal position. Be sure that both lift arms contact the stop bolts at the same time.

NOTE: *This may involve raising and lowering the hopper several times.*

3. After adjustment, with the hopper down, use the two adjustable stops located on the rotation plates on both sides of the hopper to establish 3-1/2" (8.89 cm) clearance between the rear hopper entrance lip and the floor.

NOTE: *The stop on the driver's side is located immediately below the cylinder rod end and is threaded into the cylinder mount arm. The stop on the left side is located directly above the arm rotation plate.*

ADJUSTING MAXIMUM HOPPER DUMP ANGLE (CONT.)

4. After the 3-1/2" (8.89 cm) clearance is established, make sure both stops make contact simultaneously. The lower front edge of the hopper should be 5" (12.7 cm) -6" (15.24 cm) from the floor. A balanced adjustment of both sets of adjustment bolts is required to correctly adjust the hopper in the lowered position. If the bumper is lower than the frame, after the hopper is correctly adjusted, loosen the bumper attachment bolts and reposition the front bumper.
5. Next, raise the hopper and rotate fully.
6. Turn the engine off.

▲ CAUTION

Do not rely upon hydraulic cylinders to keep hopper raised for maintenance. Always engage the safety arm before getting under the hopper.

7. Adjust the stops on the hopper mounts on each side of hopper so that clearance between the lift arms and the cut outs in bumper is 1/4" (6.35 mm) maximum.
8. Loosen the locking set screw in the bottom side of the rotation cylinder rod end.
9. Using the hole in the cylinder rod, turn the rod to adjust cylinder extended length to match hopper rotation stops.
10. Tighten the set screw.
11. Rotate the hopper back, remove the safety arm, and lower the hopper.

HOPPER VACUUM GASKET MOUNT ADJUSTMENT

1. With hopper in normal position, observe contact between back of hopper and gasket. If complete seal is not maintained, raise high dump hopper.

▲ CAUTION

Do not rely upon hydraulic cylinders to keep hopper raised for maintenance. Always engage the safety arm before getting under the hopper.

2. Loosen mounting bolts in gasket mount. Move assembly toward hopper. Tighten bolts. Test and repeat, if necessary.

HOPPER FLAP REPLACEMENT

Flaps located at the entrance lip of the hopper, and on the sides of the hopper, must be replaced when worn or damaged. The flap panels may be replaced separately.

1. Park the machine on a level surface and engage the parking brake.
2. Raise the hopper.

▲ CAUTION

Do not rely upon hydraulic cylinders to keep hopper raised for maintenance. Always engage the safety arm before getting under the hopper.

3. Turn off the engine.
4. Remove the flap retaining angle and worn or damaged flaps.
5. Install new flaps.
6. Replace the retaining angle.

HOPPER / FRAME SEAL REPLACEMENT

FRONT FRAME SEAL

The hopper frame seal bolts to the front edge of the engine pan. Install a new seal by folding it in half to align holes. Doubled edge with holes goes on the bottom. Support the seal straight up while bolting the retainer bar in place. The seal should fall over the retainer bar after installation. Be certain that the seal edges are aligned to prevent twisting of the seal.

SIDE FRAME SEAL

The side frame seals should clear the floor by at least 1/8" (3.18 mm).

If the bottom of a side seal measures 1/2" (1.27 cm) or more above the floor, readjust it or replace it by removing the bolts on the inside of the frame wheel wells, installing a new seal, and securing it with the bolts. The double edge with the holes goes toward the front.

PARKING BRAKE

Normal adjustment of the parking brake can be accomplished from the operator compartment. Locate the knurled handle on the parking brake lever. Turn the handle clockwise to increase brake tension. *Note: Two or three turns is usually adequate. DO NOT OVERTIGHTEN!!*

If this adjustment becomes ineffective, it will be necessary to adjust the cable length.

CAUTION

Do not rely upon hydraulic cylinders to keep hopper raised for maintenance. Always engage the safety arm before getting under the hopper.

ADJUSTING THE PARKING BRAKE CABLE LENGTH

1. Park the machine on a level surface and chock wheels.
2. Place parking brake lever in "OFF" position.
3. Turn knurled handle counter-clockwise as far as possible.
4. Raise hopper and engage safety arm.
5. Locate the rod clevis ends at the brake bar.
6. Disconnect clevis ends from bar.
7. Loosen jam nuts at the base of the clevis.
8. Turn clevis clockwise three or four complete turns.
9. Tighten jam nuts and re-install clevis ends onto bar.
10. Adjust knurled handle on parking brake lever.

TIRES

SERVICE INSTRUCTIONS

CHANGING SOLID TIRES

NOTE: The procedures which follow apply to solid tires only.

1. Remove tire from vehicle by removing the five inner lug nuts.
2. Remove the ten hex head bolts and nuts.
3. Press the tire from rim.
4. Press the large rim half into the new tire.
5. Mount the small rim half and secure with hex head bolts.
6. Reinstall tire on machine.

CHANGING PNEUMATIC TIRES



Since procedures for changing pneumatic tires must be performed in a safety cage and require special tools, we recommend you have these tires changed by a professional tire dealer.

MISCELLANEOUS ADJUSTMENTS

- Each machine is equipped with an anti-static chain bolted to the back wall of the broom chamber. This should remain in contact with the floor at all times. Inspect the chain every 200 operating hours. Replace if at least one link does not drag the surface of the floor.
- Latches and hinges should be inspected after every 500 hours of use. Retighten and oil if necessary.
- Inspect cables for wear every 500 hours.

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BASIC MACHINE OPERATING PROBLEMS (62E ONLY)

PROBLEM	CAUSE	SOLUTION
No Power.	Battery dead. Battery Connections. Circuit breaker(s) tripped. Micro-switches. Safety Switch.	Recharge or replace battery. Tighten loose connections. Reset circuit breakers. Call for service. Call for service.
Machine has power, but no forward or reverse.	Safety Switch on Rear Clip. Directional Control Pedal micro-switch. Wires at directional control pedal micro-switch. Drive Motor.	If it needs replacing, call for service. Call for service. Check connections. Call for service.
Forward but no Reverse, or Reverse but no Forward.	Directional Control Pedal wires. Drive Motor.	Call for service. Call for service.
Machine has power, but no dust control, hydraulics or sweeping functions. (Auxiliary Motor failure)	Circuit Breaker(s) tripped. Loose Wires. Auxiliary Motor Switch failure. Auxiliary Motor damaged.	Reset circuit breaker(s). Check wire connections. Call for service. Call for service.

BASIC MACHINE OPERATING PROBLEMS (62IC ONLY)

PROBLEM	CAUSE	SOLUTION
<p>Engine will not start or runs roughly after start.</p> <p><i>NOTE: On machines with LPG Fuel, also check the following:</i></p>	Battery dead.	Recharge or replace battery.
	Machine out of fuel.	Refuel.
	Fuel filter plugged.	Clean or replace filter.
	Fuel line broken or obstructed.	Blow fuel line out with compressed air.
	Fuel line connection loose.	Tighten connection.
	Dirty air filter.	Clean or replace air filter. (See Maintenance Section.)
	Problems with spark plugs, ignition points, ignition coil, ignition switch, carburetor, regulator, wiring harness.	Review engine manual at back of this manual for maintenance and troubleshooting procedures.
	Tank valve not fully opened.	Open the valve slowly.
	Fuel tank type does not match fuel supply.	Use the correct tank type for the fuel supply.
Fuel tank and lines are frosting up.	Open shut-off valve slowly to 1/4 open, start.	
Defective vacuum lock-off.	Replace or repair.	

Engine overheats.

Low coolant level.

Supply coolant.

Clogged radiator.

Flush radiator.

Loose fan belt.

Tighten belt.

Defective thermostat.

Replace thermostat.

NOTE: If coolant loss has not occurred, check for malfunction of the temperature sending unit.

BASIC MACHINE OPERATING PROBLEMS (62IC AND 62E)

PROBLEM	CAUSE	SOLUTION
<p>PowerBoss® moves slowly or does not move.</p>	<p>Parking brake is on.</p> <p>Directional control pedal jammed, damaged, or not adjusted properly.</p> <p>Tires skidding from contact with oil or grease.</p> <p>Wheels jammed.</p> <p>Weak battery. (62E)</p> <p>Low hyd. fluid level. (62IC)</p> <p>Hydraulic fluid temperature too high and too thin caused by excessive load, climbing, high environment temperatures, worn pump, or improper fluid. (62IC)</p> <p>Damaged or worn pump drive coupling. (62IC)</p> <p>Other problems with the hydraulics system: pump failure, motor failure, relief valve leaking or stuck open. (62IC)</p>	<p>Release brake.</p> <p>Clear jam or adjust linkage. Check pedal switches.(62E)</p> <p>Clean tires or drive through a solvent absorbing substance.</p> <p>Clear jam.</p> <p>Charge battery.</p> <p>Add hydraulic fluid. Use the proper weight oil for the operation conditions; check pump.</p> <p>Replace damaged item.</p> <p>See Hydraulics System Problems in this section.</p>
<p>PowerBoss® creeps in neutral. (62IC)</p>	<p>Directional control pedal return spring is out of adjustment.</p>	<p>Perform the adjustment procedure.</p>

SWEEPING PROBLEMS

PROBLEM	CAUSE	SOLUTION
Brushes do not turn or turn very slowly.	Hydraulic system problem: Aux.motor problem. (62E)	See Hydraulics System Problems in this section. See Basic Operating - 62E Also check : wire connections, battery charge, belt adjustment
Little or no vacuum in broom compartment.	Filters clogged. Leak or clog in hose from impeller. Impeller failure.	Clean filters. Repair leaks; clear obstructions or replace hose. Check and repair.
Loss of dust control.	Debris in hose or impeller inlet. Broom skirts or seals worn. Skirt clearance from floor exceeds 1/8". Dust control filters clogged. Filter seals worn or missing. Poor seal with vacuum gasket at hopper.	Clean. Replace. Adjust clearance. Clean filters. Replace. Visually check and adjust, if necessary.
Sweeper unit leaving debris.	Hopper full. Broom(s) out of adjustment. Broom bristles worn. Poor performance of broom drive mechanism. Broom lift arms hung up with debris.	Dump hopper. Adjust. Check broom for wear and adjustment. Check for jam in broom chamber. Clear out debris.

SWEEPING PROBLEMS (CONT.)

PROBLEM	CAUSE	SOLUTION
Sweeper unit leaving debris. (Cont. from previous page)	Hopper flaps damaged or missing.	Replace or adjust clearance.
	Hopper out of adjustment.	Check hopper clearance.
	Dust control filters clogged.	Clean filters.
Hopper does not raise or lower.	Hydraulics system problem: - control valve - gear pump - lift cylinder - relief valve	See Hydraulics Systems Problems in this section.
	Hopper arms binding.	Lubricate or adjust arm linkage.
Hopper does not rotate or rotates too slowly.	Hopper load too heavy.	Dump more frequently.
	Hydraulics system problem: - control valve - gear pump - lift cylinder - relief valve	See Hydraulics System Problems in this section.

HYDRAULICS SYSTEM PROBLEMS

PROBLEM	CAUSE	SOLUTION
Hopper lift cylinder failure.	Line to cylinder leaking.	Tighten fittings or replace hose.
	Piston seals leaking.	Replace seals.
	Bent piston rod.	Replace rod.
Hydraulic control valve failure.	Misaligned control linkage.	Align.
	Foreign matter in spool bore.	Remove spool and clean bore.
	Valve seals leaking.	Replace seals.
	O-rings leaking.	Replace O-rings.
	Relief valve stuck open.	Clean or replace relief valve.
Hydraulic motor failure.	Motor leaking.	Replace seals.
	62E Drive malfunction.	Replace drive belt.
	62IC Drive link malfunction.	Replace drive link.
	Output shaft malfunction.	Replace output shaft and bearings.
Hydraulic gear pump failure.	Pump leaking.	Replace seals.
	Gears worn or scored.	Rebuild pump.
	Relief valve stuck.	Clean or replace (at control valve).
	Oil supply low.	Check and fill.
	Oil strainer clogged. (62IC)	Replace strainer (inside reservoir).
	Incorrect oil.	Use recommended viscosity oil.

HYDRAULICS SYSTEM PROBLEMS (CONT.)

PROBLEM	CAUSE	SOLUTION
Hydraulic gear pump failure. (Cont. from previous page.)	Damage due to entry of air into hydraulic system.	Maintain correct hydraulic fluid level in reservoir. Keep suction hose fittings tight.
Hydraulic variable displacement pump failure. (62IC)	Pump leaking. Relief valve(s) stuck. Drive coupling malfunction. Control linkage out of adjustment. Charge pump gears worn or scored. Damage due to entry of air into hydraulic system.	Replace seals. Clean or replace relief valve(s) at pump. Replace defective gears. Check to see if linkage is binding unfastened. Replace defective gears. Maintain correct hydraulic fluid level in reservoir. Keep suction hose fittings tight.
Hydraulic system noisy.	Air in system. Relief valve dirty or damaged. Loose suction line. Clogged section filter or pump inlet line. Internal pump or motor damage.	Check fluid level in reservoir; check for loose connections or leaks. Replace seals. (62E) Clean or replace. Tighten fittings. Replace filter, clear line; change fluid in reservoir if dirty and flush system. Inspect and repair.



“The Power of Clean”

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