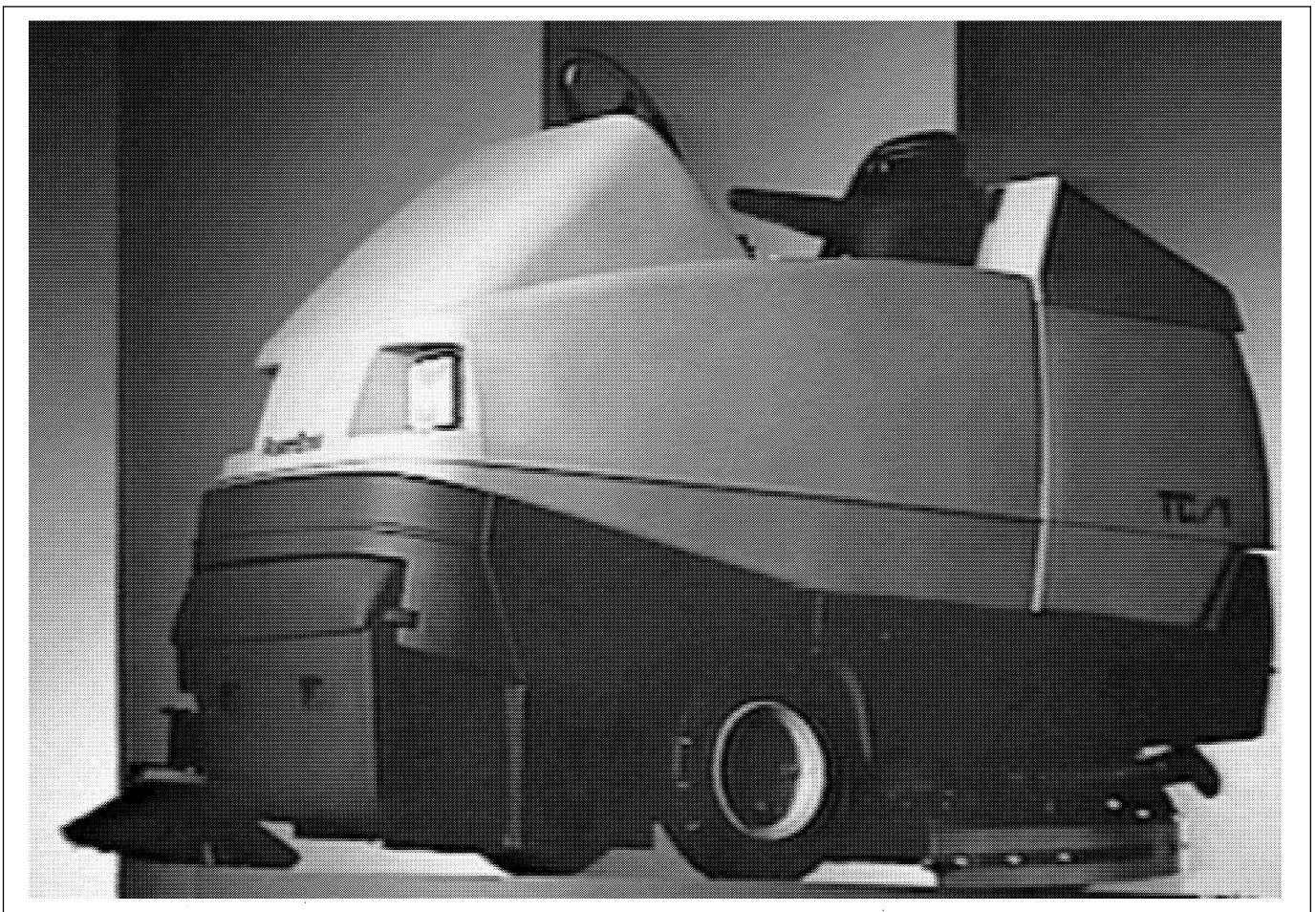


POWERBOSS®

OCTOBER '97

**OPERATION,
MAINTENANCE,
AND TROUBLESHOOTING**



Shrinkwrap protective cover

Please Discard

TC/1™ SWEEPER/SCRUBBER

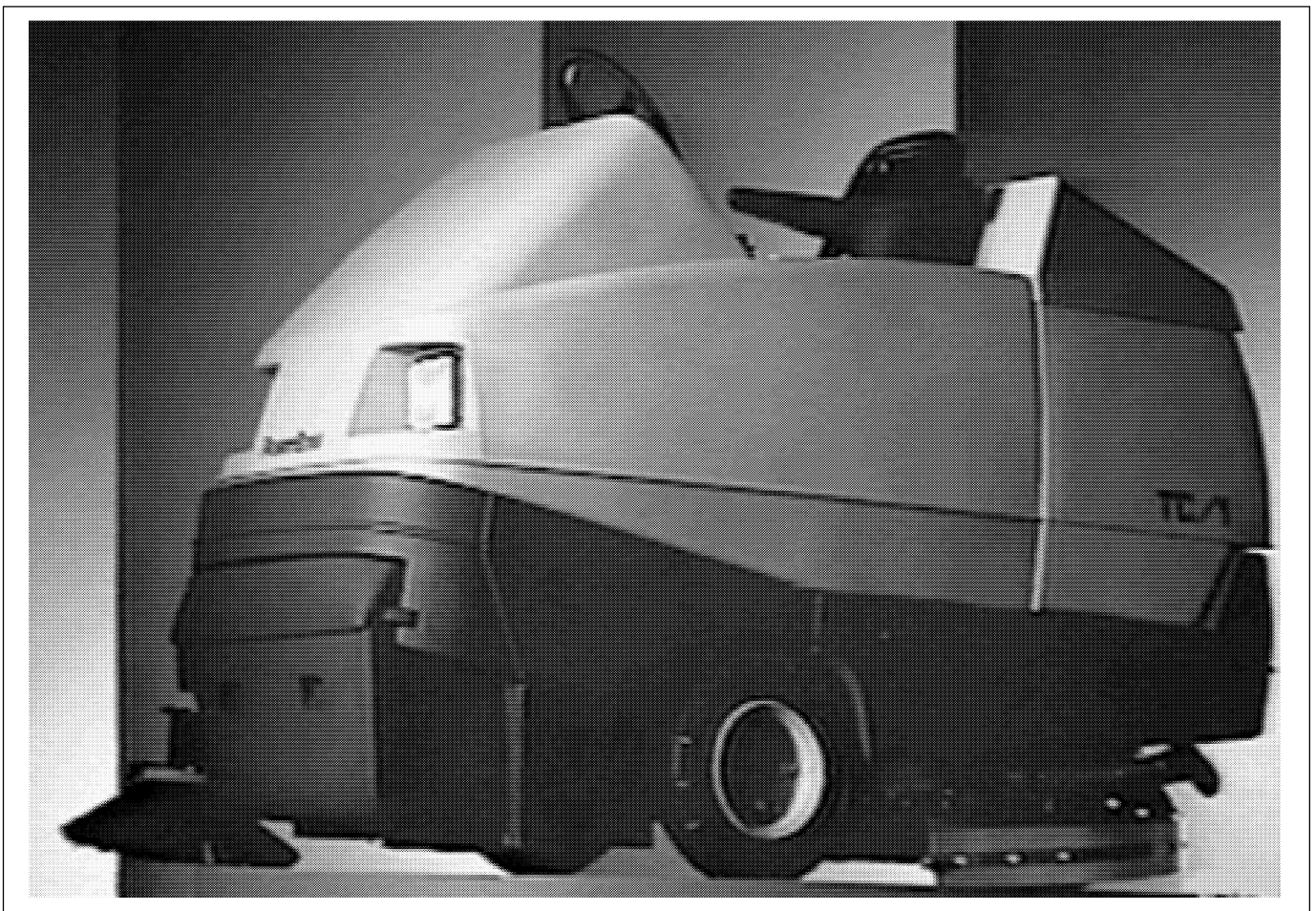
Electric Powered Model

SERIAL NUMBERS: 9475097 -

POWERBOSS®

OCTOBER '97

**OPERATION,
MAINTENANCE,
AND TROUBLESHOOTING**



TC/1™ SWEEPER/SCRUBBER

Electric Powered Model

SERIAL NUMBERS: 9475097 -

All information contained in this manual is current at the time of printing. However, due to constant updates and improvements we reserve the right to make changes at any time without notice.

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AAR POWERBOSS

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TC/1



FEATURES

1. Stylish exterior of Impact-Resistant, Space-Age Plastic Composite
2. Quick-Change/Remove Battery Loading System - Standard (Optional Handling Cart)
3. All-Wheel Steering for Excellent Handling and Maneuverability
4. Ergonomically-Designed Operator's Compartment
5. Squeegee Wand/Remote Scrubber Attachment Option

(LIMITED) PRODUCT WARRANTY
(NORTH AMERICA ONLY)

AAR PowerBoss warrants that the **PowerBoss** machine will be free from defects in material and workmanship for a period of **24 months or 2,000 operating hours on rider units, 12 months or 500 operating hours on walk-behind units from date of installation**, whichever comes first. Written notice of any claimed defect must be given to AAR within the warranty period and within thirty (30) days after such defect is discovered. Liability under this warranty is limited to either replacing or repairing, at AAR's election, any part or parts deemed defective after examination by AAR or an Authorized Service Representative. Any **PowerBoss** machine or any of its parts returned by customer to AAR or an Authorized Service Representative via prepaid transportation and which is found to be defective, will be repaired or replaced and returned to customer via prepaid surface transportation within the Continental U.S. On the other hand, should a part be found not defective, inspection and handling charges may be charged to the customer by AAR or an Authorized Service Representative.

For one hundred eighty (180) days from date of installation, AAR will provide repair labor, at no charge, solely through an Authorized Service Representative. Thereafter, labor will be charged.

This warranty does not extend to any **PowerBoss** machine, or its parts, that have been subject to misuse, accident or improper handling, installation, maintenance or application, nor does it extend to **PowerBoss** machine and/or parts which have been repaired or altered outside AAR's plant or the facility of Authorized Service Representative.

This warranty does not apply to routine wearable parts of the **PowerBoss** machine such as brushes, flaps, filters, seals, points, plugs, hoses or similar items. Moreover, this warranty does not extend to any **PowerBoss** machine or part replaced or repaired under this warranty.

Only replacement parts supplied by AAR are warranted for 30 days after installation.

The warranty for optional engines shall be limited to the warranty extended to AAR by the supplier.

THE WARRANTY SET FORTH HEREIN IS IN LIEU OF AND EXCLUDES ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND CUSTOMER WAIVES ANY OBLIGATION OR LIABILITY OF AAR ARISING IN TORT OR STRICT LIABILITY IN TORT, OR FOR LOSS OR USE, REVENUE OR PROFIT WITH RESPECT TO PowerBoss MACHINE AND/OR PARTS FOR ANY LIABILITY OF CUSTOMER TO ANY THIRD PARTY, OR FOR OTHER DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

SAFETY SYMBOLS

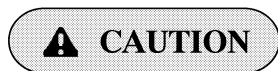
Five symbols are used throughout this manual to emphasize various levels of safety information. These symbols and the meaning of each are listed below.



DANGER: To warn of immediate hazards which will result in severe personal injury or death.



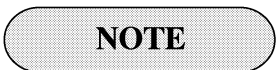
WARNING: To warn of hazards or unsafe practices which could result in severe personal injury or death.



CAUTION: To warn of hazards or unsafe practices which could result in minor personal injury.



ATTENTION! To warn of practices which could result in extensive equipment damage.



NOTE: To direct your attention to important equipment information or special instructions for preventing damage to equipment.

Symbols at the top of the list are the strongest warnings. However, all symbols represent important information which should be observed to protect you and others from harm and injury, and to prevent damage to equipment.

BASIC PowerBoss® SAFETY

PowerBoss sweeper/scrubbers should never be operated unless: 1. the operator is trained and authorized to operate the equipment and, 2. the equipment is free of malfunctions. Malfunctioning equipment should be removed from service.

DANGER

1. Keep cigarettes, matches, and all other flame sources away from the sweeper/scrubber. Lead acid batteries are dangerous due to the highly explosive hydrogen gas they emit.

WARNING

1. Before turning the machine on, make sure that:
 - You are securely seated in the operator's seat.
 - The parking brake is locked.
2. During operation:
 - Keep your hands and body clear of moving parts.
 - Make sure others in the area stay clear of the equipment and moving parts.
 - When adding cleaning solution, wear safety glasses to prevent possible eye injury.
3. When leaving the sweeper/scrubber unattended:
 - Place the controls in OFF position.
 - Set the parking brake.
4. During cleaning and maintenance:
 - Always stop the machine and set the parking brake before servicing.
 - Never use detergents or cleansers that are flammable or combustible.
 - Never place your hands near the intake hoses or inlet when the machine is running.
 - Always wear eye protection to prevent injury.
5. When servicing or repairing:

- Work in a properly ventilated area, do not smoke, or allow an open flame near the battery. Wear safety glasses.
 - Never bypass safety components unless you are testing them.
 - Never bypass the fuses, except when testing them (and always reconnect them after testing).
 - Always use a piece of paper to test for hydraulic leaks. Personal injury may occur if any part of your body comes in contact with hydraulic fluid forced through a small hole at a high rate of pressure.
6. **Replace any defective safety components before operating the sweeper/scrubber.**

⚠ CAUTION

1. Travel slowly when making turns.
2. Travel slowly on grades.
3. Place a block or chock behind the wheels when parking on inclines.
4. Use special care when traveling on wet surfaces.
5. Observe all proper procedures for operation and maintenance of the sweeper/scrubber, as outlined in this manual.
6. Remain alert at all times to people and equipment in and around your area of operation.

ATTENTION !

1. Never push or tow a machine faster than specified.
2. Never make sharp turns or U-turns at high speeds.

TC/1

Power	36-Volt electric system. 450 AmpHours.
Frame	Unitized steel frame with 1.5-inch (38 mm) X 4-inch (101.6 mm) box section reinforcement.
Drives	Direct drive of front wheels through gearbox by 2.0 HP (1.49 kw) electric motor with solid state, variable speed control. Transport speed to 8 mph (13 kph). Main broom is belt-driven. Scrub brushes direct drive through right angle gear boxes.
Steering	All-wheel hydraulic-assisted power steering.
Turning Radius	Left Hand - 69.0 inches (1753 mm) Right Hand - 65.5 inches (1664 mm)
Sweep Path	45" (1142 mm) including side broom
Sweep Coverage	85,800 Sq. Ft. (7971 m ²) Per Hour based on a 45-inch (1143 mm) Path at 5 MPH (8 kmh) with 6-inch (152 mm) overlap.
Sweeping Brooms	Main Broom: 8-inch (203 mm) diameter, 34-inch (863 mm) length. Cylindrical, one-piece plastic core. Operates at constant 365 rpm. Floats for uneven surfaces. Adjustable for pressure and wear. Side Broom: 16-inch dia. (406 mm) rotary, one-piece. Quick-change in seconds without tools. Retracts inward upon impact. Operates at 100 rpm. Adjustment for pressure and broom wear.
Debris Hopper	3 Cu. Ft. (0.08 m ³) holds up to 152 lbs. (69 kg).
Scrub Path	40-inch (1016 mm) scrub path.

TC/1 (CONT.)

Scrubbing Coverage	63,360 Sq. Ft. per hour based on 40-inch scrub path at 4 mph with 4-inch overlap.
Scrubbing Brushes	Two rotary 20-inch (508 mm) o.d. quick-change brushes are electrically-driven at 340 rpm. Scrub deck extends 4-inches (101.5 mm) from side of unit for Edge Scrub™.
Solution And Recovery Tank	65-gallon (246 l) capacity - Single, dual-function tank with flexible polyurethane membrane for solution and recovery.
Vacuum Pick-Up	Two tri-stage 5.7-inch dia. (145 mm) 36-volt DC double ball bearing vacuum motors provide water pick-up through rear squeegee.
Squeegee	One 42.5-inch (1079 mm) wide, parabolic squeegee with quick-change rubber.
Squeegee Assembly	May be removed from machine in minutes. Squeegee automatically lifts when machine is in reverse.
Controls	Operator directs all functions of sweeping and scrubbing while seated. Hydraulic front brakes. Accelerator foot pedal.F-N-R rocker switch shifter. Hand-lever parking brake. Horn.
Instruments	Battery condition and hour meters. Emergency "kill system switch".
Tires	Three 16-inch (406 mm) OD Industrial Solid pneumatic-style (optional non-marking).
Weight	Net - 1,384 Lbs. (516.6 kg). Shipping - 1,534 Lbs. (572.5 kg). Shipping - 3,034 Lbs. (1132.3 kg) with batteries. All approximate.
Dimensions	Length - 80-inches (2030 mm). Width - 40-inches (1015 mm). Height - 56-inches (1421 mm). 85-inches (2159 mm) with overhead guard.

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SWEEP COMPONENTS

- Main Broom** The 34 inch (863 mm) main broom has the following features:
- one-piece, cylindrical
 - runs at constant 365 rpm
 - raised and lowered from operator compartment
 - floats for uneven surfaces
 - adjustable for pressure and wear
 - belt-driven
- Side Broom** A 16 inch (406 mm), rotary, one-piece side broom can be quick changed in seconds without tools, retracts inward upon impact and adjustable for pressure and wear.
- Skirts** Skirts on the bottom of each side panel and at the back of the broom chamber help contain the dust inside the sweeping and vacuuming compartment.
- Capabilities** Sweep paths and coverages are listed by model in the Specifications section of this manual.

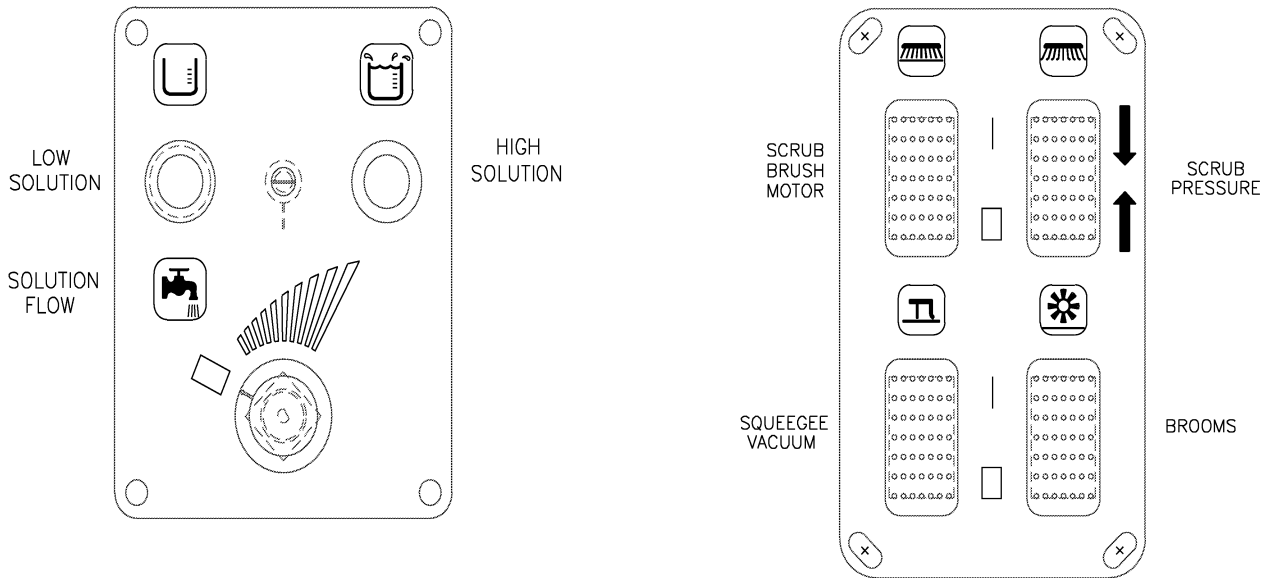
HOPPER Heavy gauge plastic hopper, manual dump.

**STEERING, BRAKES,
AND TIRES**

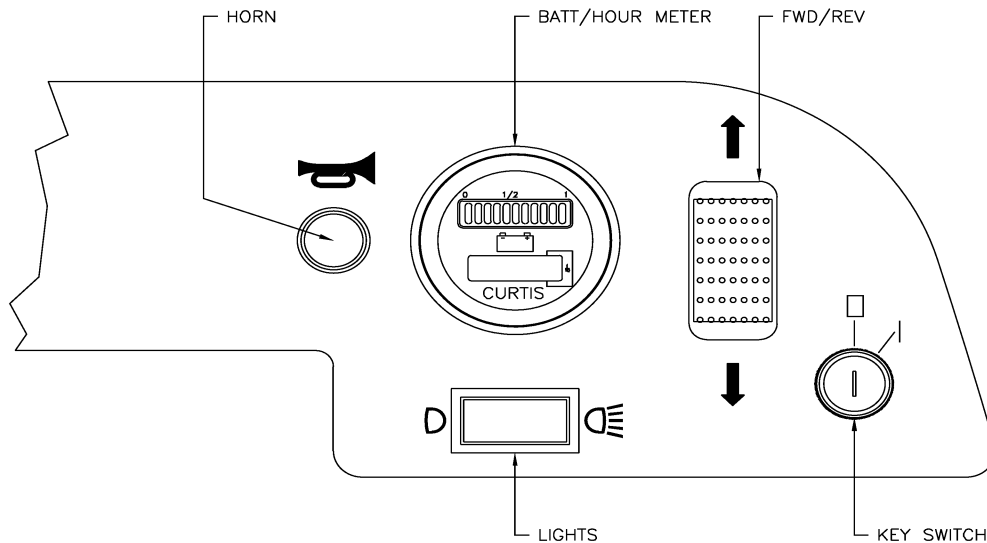
- Steering** All-wheel hydraulic-assisted power steering..
- Brakes** All models have hydraulic front brakes with hand-lever parking brake.
- Tires** Three 16 in. (406 mm) OD industrial solid pneumatic-style (optional non-marking)

BASIC OPERATING CONTROLS

CONSOLE



DASH



BASIC OPERATING CONTROLS

IGNITION SWITCH

The one position keyswitch is used to turn the machine's power on and off. It is located on the dash.

HORN

The horn is activated by pressing the horn button on the dash.

BATTERY LEVEL GAUGE

The battery gauge indicates the amount of charge remaining in the batteries. It is located on the dash.

EMERGENCY SHUTOFF

The emergency "kill" switch (or shutoff) is located on the console and shuts off all electrical current in the event of a shortage.

DIRECTIONAL CONTROL SHIFTER

The directional control pedal controls the speed of the machine. The shifter control is located beside the ignition switch on the dash.

- To propel the machine forward, push shifter control up. Apply pressure to the pedal, increasing pressure to increase speed.
- To propel the machine backward, push shifter control down. Apply pressure to the pedal.
- To slow or stop the machine, move foot from accelerator pedal to brake pedal.

BRAKES

The hydraulic brakes on the two front wheels are operated by pressing on the brake pedal. The parking brake is cable-actuated. To engage the parking brake pull upward on the hand brake lever located on the left side, by the operator's leg.

SWEEPING CONTROLS

MAIN BROOM The main broom and side brooms are raised and lowered by the switch panel located on the console. Push to lower and start sweeping, push again to stop sweeping, and to raise the broom.

The side broom, also known as the curb broom, is used to widen the sweep path and to clean close to walls and other obstructions.

SCRUBBING CONTROLS

FILLING THE SOLUTION TANK

To fill the solution tank follow these steps:

1. Drive to the solution filling site.
2. Park the machine on a level area and lock the parking brake.
3. Open the top door or right side of the machine and fill the tank with cleaning water solution.
4. When the tank is full, close the door.

⚠ CAUTION

Never use detergents or cleaners that are flammable or combustible. Always wear safety glasses when using chemicals of any kind.

MAIN SCRUB BRUSHES

To operate the main scrub brushes follow these steps:

NOTE

After 8 seconds of inactivity, the scrub brushes and solution will cease operation. Press accelerator to resume.

1. Turn on scrub brushes, by the switch located on the console.

NOTE

To sweep simultaneously, lower the brooms at this time.

2. Lower the scrubdeck with the momentary switch located beside the scrub brush switch. Increasing pressure on switch increases downward scrub pressure.

NOTE

Solution functions are only operable when scrub brush switch is ON.

3. Turning OFF the scrub brush switch will raise the scrubdeck, automatically or you can raise it manually by pressing the momentary switch.
4. To lower the squeegee and turn on the vacuum motors, turn the switch on the console to the ON position.

NOTE

The shifter switch has to be in the FORWARD position for squeegee to lower. In reverse, it will automatically raise.

SCRUBBING CONTROLS *(Continued)*

5. To activate solution release, turn the switch located on the solution panel. The flow rate can be varied from LOW (.5 gallons/minute), MEDIUM (1 gallon/minute), and HIGH (2 gallons/minute).

NOTE

When the LOW SOLUTION light comes on, you have 60 seconds of operation time before solution pump will shut off automatically, to avoid motor damage. When HIGH RECOVERY light comes on, you have 60 seconds before vacuum motors shut off, to protect motors.

6. Drive forward slowly.

CAUTION

Use care when driving on wet surfaces.

CAUTION

Always travel slowly on grades.

DOUBLE SCRUBBING

For double scrubbing proceed as follows:

1. Follow the procedures on the previous page for scrubbing *without* lowering the squeegee to the floor.
2. Make multiple passes over the same area of floor as conditions dictate.
3. Lower the squeegee into position with the squeegee button for the final pass. The squeegee can be raised with the same button.

DRAINING THE RECOVERY TANK

Follow these steps to drain the recovery tank:

1. Park the machine on a level surface with the left rear of machine beside the drain site.
2. Engage the parking brake.
3. Turn off the machine.

SCRUBBING CONTROLS *(Continued)*

4. Pull out hose from left side (under skirt).
5. Pull out the drain hose for maximum reach.
6. Place the drain hose at the floor drain opening, grate or on the ground.
7. Loosen T-Bar on plug in drain hose.
8. Drain the tank completely and re-install drain plug.
9. Reposition the drain hose in its storage area.

CLEANING THE RECOVERY TANK

To clean the recovery tank proceed as follows:

NOTE

The recovery tank should be cleaned after every shift.

1. Engage the parking brake.
2. Shut off the machine.
3. Remove the drain hose and position it over the floor drain opening.
4. Spray the recovery tank with clean water, flushing all sludge out the drain tube.
5. Replace plug.
6. Reposition the hose in the storage area.

OPERATING PROCEDURES

PRE-OPERATION CHECKS

Prior to starting the machine, check the following:

1. Battery water level
2. Brakes, steering, and directional controls
3. The floor beneath the machine for signs of fluid leaks

Fluid levels should be correct. Brakes, steering, and directional controls should be functioning properly. Hoses, lines, and tanks should be free of damage and leaks.



Before starting the machine, seat yourself in the operator's seat and make sure the parking brake is locked.

STARTING

1. Make sure the directional control shifter is in neutral position.
2. Make sure the parking brake is released.
3. Turn key switch to START position.
4. Move the machine forward or backward as follows:
 - **Forward:** Press shifter up. Apply pressure to the pedal, increasing pressure to increase speed.
 - **Reverse:** Press shifter down. Apply pressure to the pedal, increasing pressure to increase speed.

SLOWING AND STOPPING

1. Release pressure on foot pedal. The machine will slow to a stop.
2. To stop, release accelerator pedal and apply pressure to foot brake.

OPERATING ON GRADES

1. Always travel slowly.
2. Exercise extreme caution when traveling across or turning on grades.
3. Always turn slowly.

SWEEPING

1. Lower the brooms.
 - Lower the main and side broom by pressing the broom switch on the console.
2. Drive the machine over the area to be swept.

DUMPING THE HOPPER

1. Drive the machine to the dumping area.
2. Remove the hopper manually and dump the trash into container.

NOTE

Note: *Brooms must be turned off.*

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 are a total of 4 tie-down areas.)

NOTE

Note: Attach the tie downs to the frame only.

**Pushing
or Towing**

1. Push the machine from the front or rear using bumpers only.
2. Before towing, check to see if parking brake is released.

INTRODUCTION

Regular maintenance on your sweeper/scrubber 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/scrubber 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					ELECTRICAL SYSTEM Check electrolyte level in battery cells and fill as needed. Clean battery top.
X					
X					SWEEPING COMPONENTS Inspect brooms for wear and remove strings and debris from bristles and drive assembly. Inspect broom skirts for wear and adjust or replace as needed. Rotate main broom end-to-end. Perform main broom adjustment test and adjust as needed. 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>
	X				
	X				
	X				
X					

PLANNED MAINTENANCE CHART

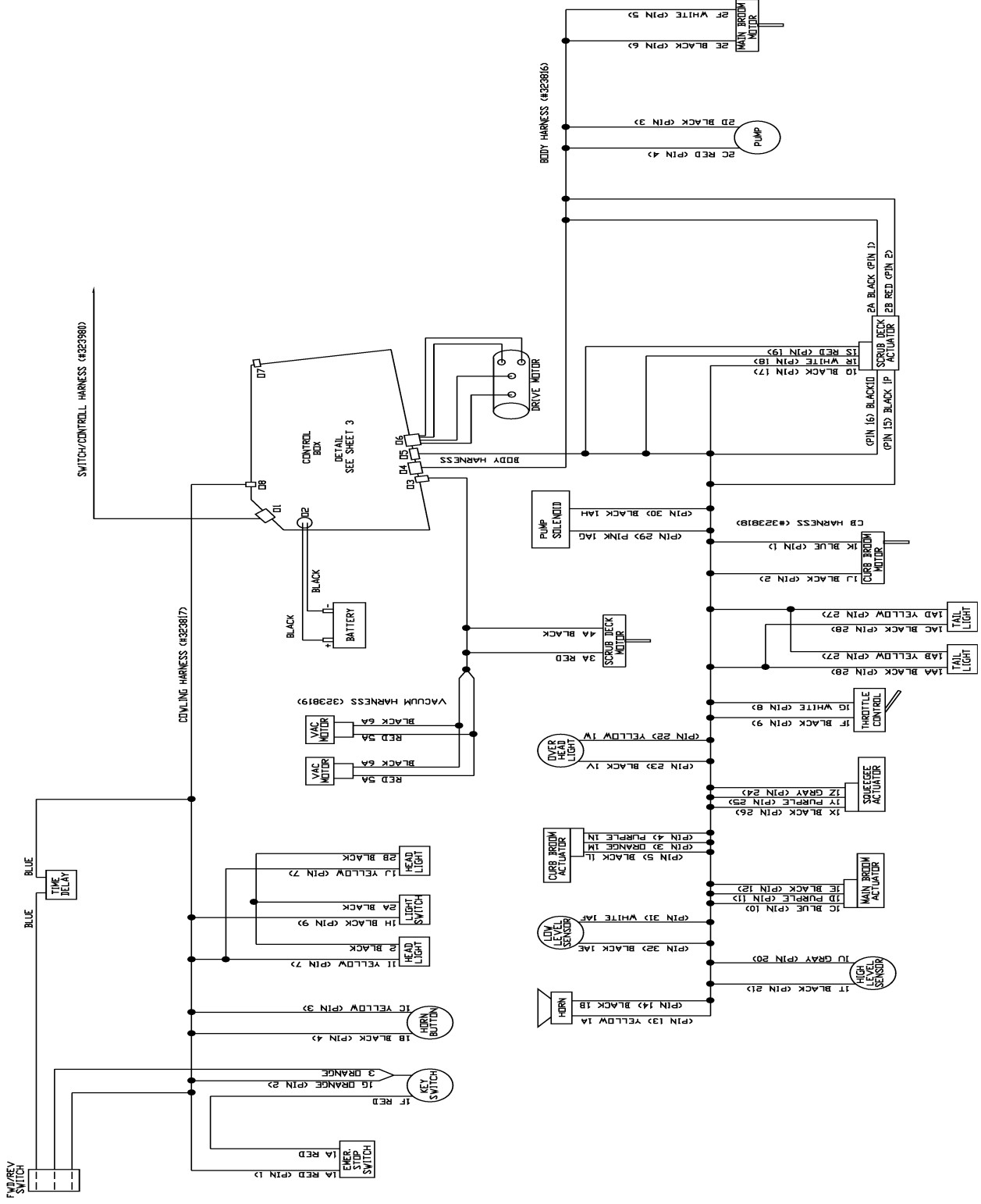
FREQUENCY (IN HOURS)					SERVICE (BY MAINTENANCE AREA)
DAILY	50	100	200	500	
X					<p>HOPPER</p> <p>Inspect the hopper flaps for wear or damage and replace as needed.</p>
	X			X	<p>STEERING</p> <p>Lubricate steering fork assembly.</p> <p>Check for leaks.</p>
	X				<p>PARKING BRAKE</p> <p>Check for proper functioning and adjust as needed.</p>
X					<p>TANKS</p> <p>Check squeegee tool and vacuum hose for clogs.</p>

PLANNED MAINTENANCE CHART

FREQUENCY (IN HOURS)					SERVICE (BY MAINTENANCE AREA)
DAILY	50	100	200	500	
X					<p>TIRES</p> <p>Visually inspect for wear and damage. Repair or replace as needed.</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>SCRUB & WATER PICK-UP COMPONENTS</p> <p>Inspect scrub brushes and replace as needed.</p>
X					<p>Inspect squeegee flare and adjust as needed.</p>
	X				<p>Check main squeegee for wear. (Turn or replace as needed.)</p>

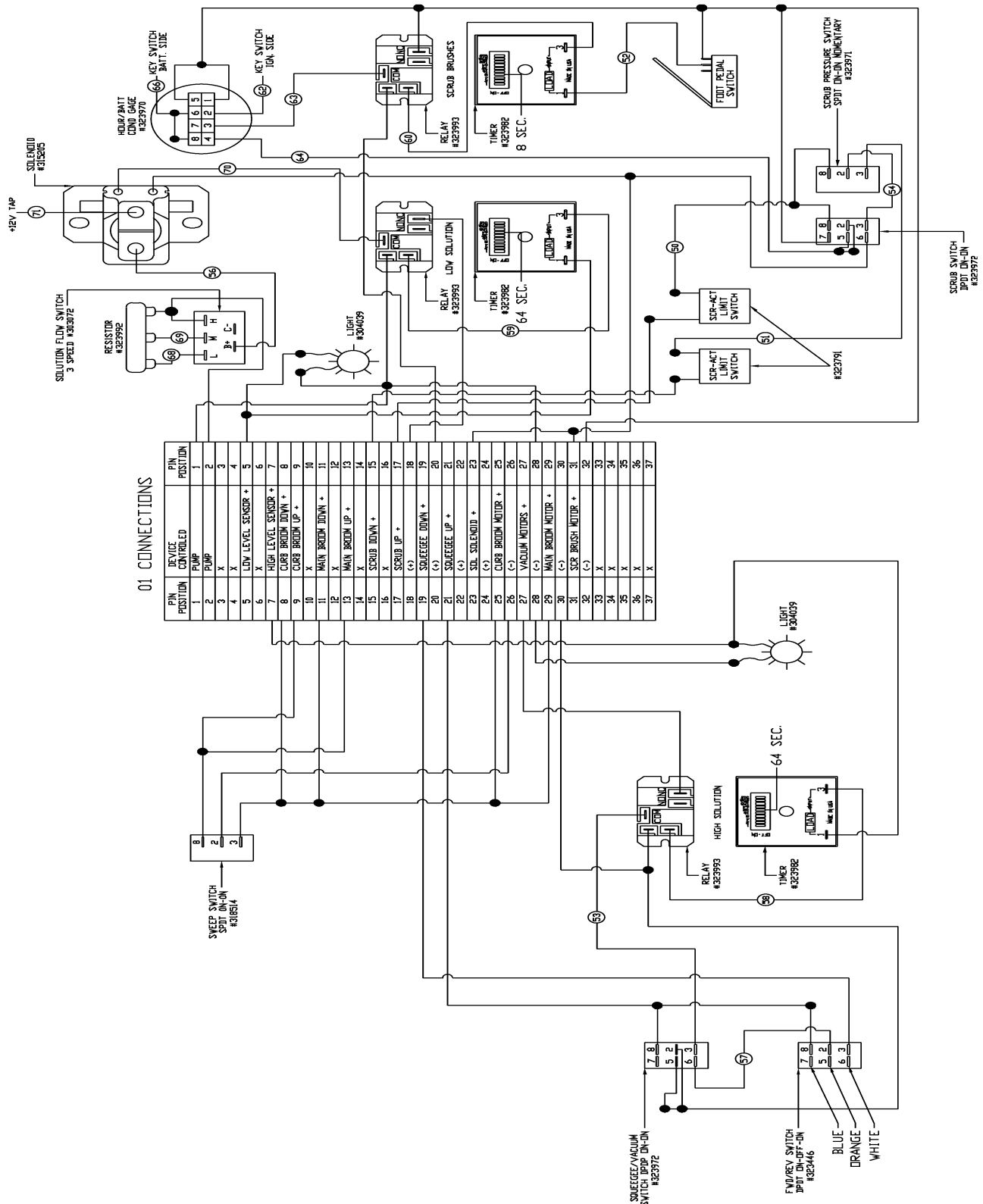
ELECTRICAL SCHEMATIC

TC/1



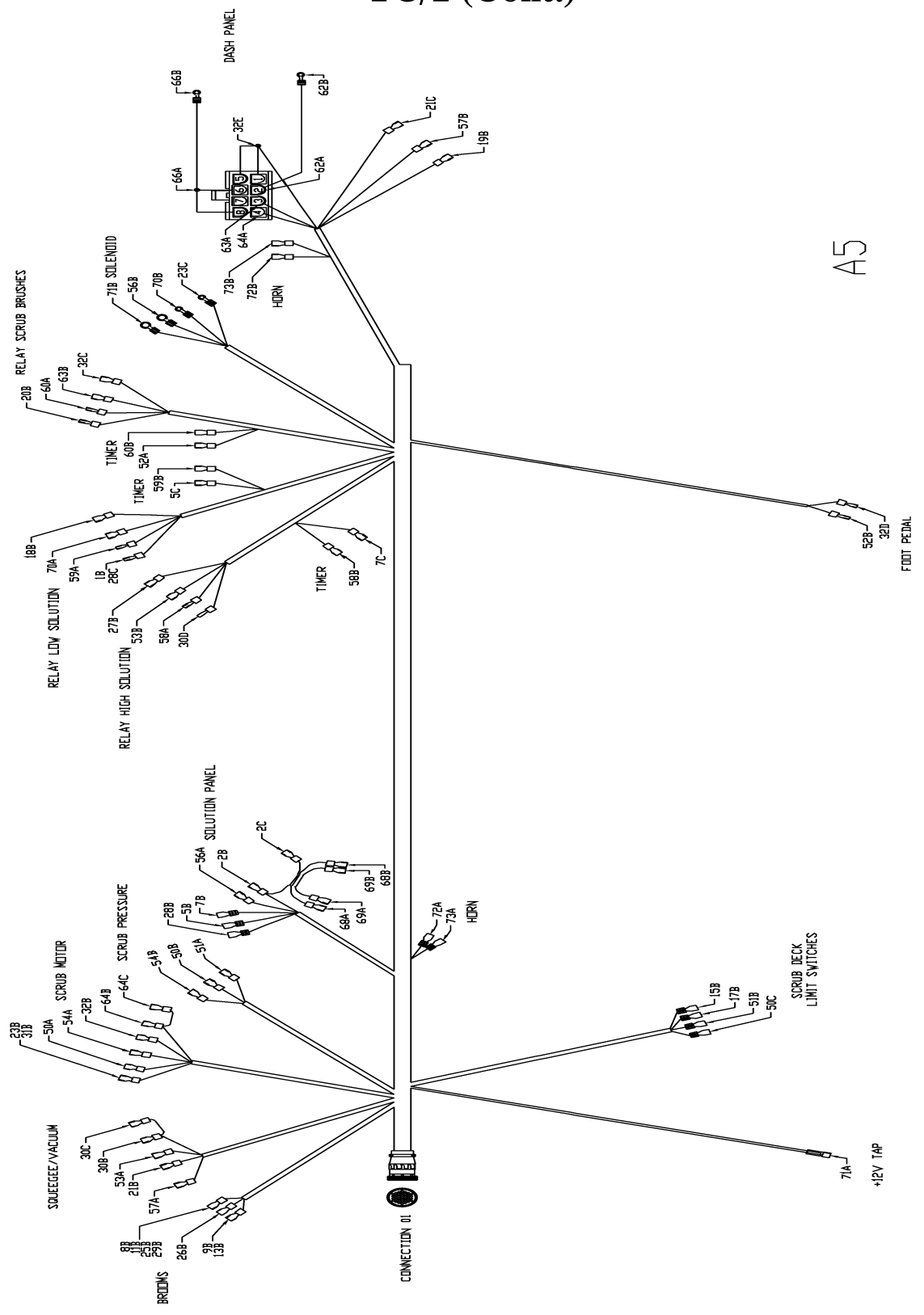
ELECTRICAL SCHEMATIC

TC/1 (Cont.)



ELECTRICAL SCHEMATIC

TC/1 (Cont.)



A5

ELECTRICAL SYSTEMS

To keep the electrical system in good condition, the following maintenance is required:

- Check the electrolyte level in each of the battery cells daily and replenish as needed.
- Use the electrical schematic provided in this section to assist you with troubleshooting, testing, and diagnosis.

SERVICE INSTRUCTIONS

⚠ WARNING

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.

⚠ WARNING

Never service a battery without wearing safety glasses.

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.

BATTERY REPLACEMENT

1. Unplug the battery connectors.
2. Remove the battery by rolling it out on the rollers beneath it and onto the optional battery cart or a forklift. Install the battery stop on the side cart.



WARNING

Batteries are extremely heavy. Make sure the machine is chocked and the parking brake is engaged before attempting to move them. Also make sure that the optional battery cart or forklift are in position.

3. Install new battery.
4. Plug in battery connectors.

FUSES

If a fuse blows, it must be replaced with a fuse of the same amperage. Fuses 1-8 are 20 amps, and breakers S1-S3 are 45 amps. *See parts manual for part numbers.*

FUSE USAGE		
S1.Vacuum Motors	7	8
S2.Scrubhead Motor		
S3.Scrubhead Motor		
1.Scrub Deck Actuator	5	6
2.Curb Broom Motor		
3.Main Broom Motor	3	4
4.Solution Valve		
5.Curb Broom Actuator		
6.Squeegee Actuator	1	2
7.Main Broom Actuator		
8.Lights		
<i>(NOTE: AS VIEWED FROM DRIVER'S SEAT, LEFT HAND SIDE)</i>	S3	S2
		S1

FUSE REPLACEMENT

1. Remove the blown fuse by turning the fuse holder cap counter-clockwise.
2. Insert the correct amperage fuse into the fuse holder cap.
3. Install the fuse holder cap by turning the cap clockwise.

LUBRICATION POINTS

Lubrication	Type of Lubrication	Frequency (In Hours)
Linkage (1 fitting)	Grease	100
Hood Latches & Hinges	Oil	200

SWEEP COMPONENTS

The following maintenance is required to assure maximum cleaning efficiency and service life of sweep components:

- Inspect brooms daily for wear. Remove any strings, wires, or other debris entangled in the bristles or drive assembly.
- After every 50 hours of operation:
 - Inspect broom skirts for wear and replace as needed.
 - Rotate the main broom end-to-end.
 - Perform the main broom adjustment test and adjust as needed.
 - Inspect the side broom for proper contact and adjust as needed.
- Perform taper adjustment when the main broom adjustment test indicates it is necessary.
- Replace main broom when bristles wear to a length of 1". Replace side broom when bristles wear to a length of 3".

SERVICE INSTRUCTIONS



WARNING

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.

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" above the floor.
3. Worn and damaged flaps should be replaced immediately to maintain proper dust control. (See illustration on the next page.)

MAIN BROOM HEIGHT ADJUSTMENT TEST

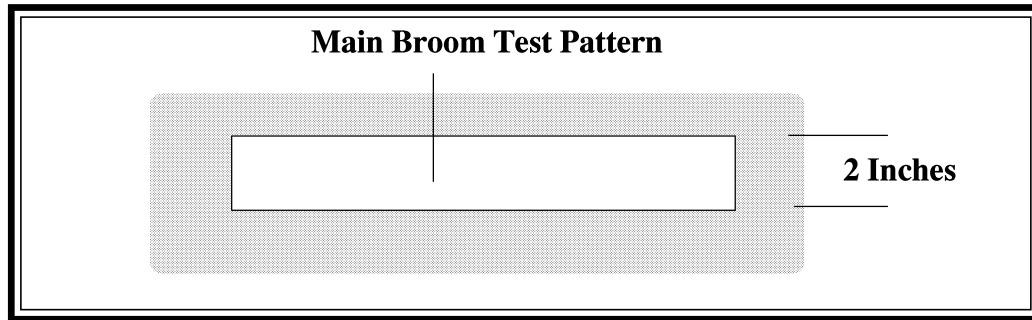
NOTE: Perform this adjustment on a flat, smooth test surface.

1. Drive the machine onto the test surface with the main broom turned off.
2. Set the parking brake and press the main broom button to lower broom.
3. Allow about 45 seconds for the broom to operate, then turn OFF the broom by pressing the main broom button again.

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

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

NOTE: A rectangular shape the length of the main broom, 1.5" wide, indicates the main broom is properly adjusted. A pattern smaller than 1.5" indicates need for lower adjustment. A pattern wider than 1.5" 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 HEIGHT ADJUSTMENT

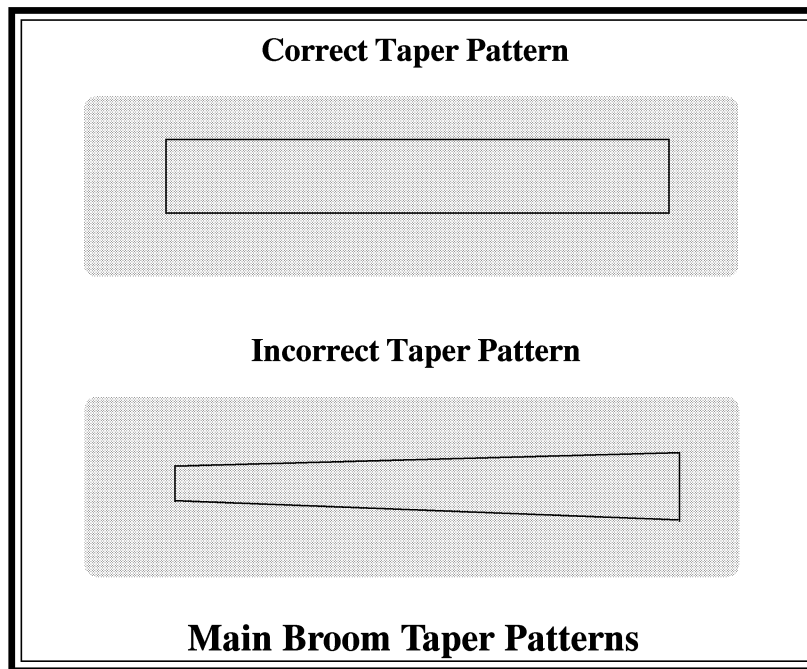
1. Turn the machine off and lock the parking brake.
2. Position the main broom in the LOWER position.

NOTE: The adjustment knob is accessed by opening a panel in the floorboard at the operator's left foot.

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

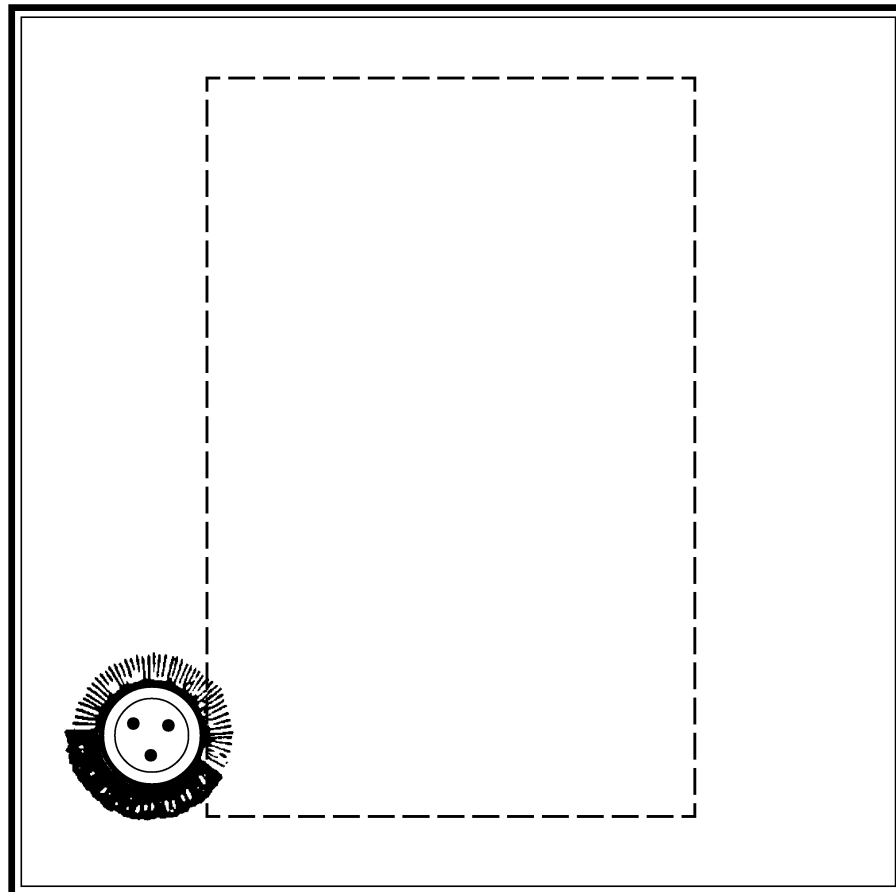
NOTE It is not usually necessary to perform this adjustment. However, if the main broom adjustment test shows a pattern that is tapered in length (one end is wider than the other), perform the procedures which follow.



1. Remove the hopper.
2. Open the side door for broom access.
3. Loosen the two bolts that fasten the broom pivot block and raise or lower the left end of the main broom. (The right end of the broom remains fixed. All adjustments affect the right end of the broom.)
4. After adjustment, tighten pivot block bolts.
5. Repeat the main broom adjustment test to see that the broom is properly adjusted.

SIDE BROOM ADJUSTMENT INSPECTION

Inspect the side broom for proper contact with the floor. Proper contact is achieved when the bristles contact the floor from 3:00 to 10:00 as shown in the drawing below.



SIDE BROOM HEIGHT (WEAR) ADJUSTMENT

The height of the side broom is adjusted by loosening the hex bolt located on the back side of the curb broom arm. As the side broom wears it will be necessary to lower the arm. Check side broom for proper contact and re-tighten the knob.

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

1. Turn the machine off and lock the parking brake.
2. Open the broom access door on the left side of the machine.
3. Remove the left side panel (on side opposite driver's seat). (This involves removing one bolt.)
4. Using a wrench, remove the hex bolt on the main broom idler mount.
5. Pull the main broom idler mount straight out to remove.
6. Pull the main broom straight out and clear of the broom chamber.
7. At this point, 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. In either case, you need to 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, it may be easier to 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 left side panel.
12. Perform a main broom adjustment test and adjust as needed.

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

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

1. Turn the side broom by hand until the brush clevis pin is accessible.
2. Remove the clevis pin and push down on the broom until it slides off of the motor shaft.
3. Install the new broom by sliding it up onto the motor shaft and inserting the pin.

SCRUB & WATER PICK-UP COMPONENTS

The following maintenance is required to assure maximum cleaning efficiency and service life of scrub & water pick-up components:

- After every 50 hours of operation:
 - Inspect scrub brushes for wear and replace as needed.
 - Check the main squeegee for wear. Turn or replace as needed.
- Inspect squeegee flare daily and adjust as needed.

SERVICE INSTRUCTIONS



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.

SCRUB BRUSH REPLACEMENT

The scrub brush features a quick release mechanism which enables the operator to remove the brush in seconds.

NOTE: Brushes should be replaced when bristles are less than 1/2" long.

1. Raise the scrubhead.
2. Turn the scrub brush by hand until the brush retainer spring is accessible.
3. Squeeze the spring to release the brush.
4. Install the new brush by lining up the notches with the drive hub.
5. Lift and squeeze the spring until the brush goes into the drive hub.
6. Check to make sure both brushes are properly engaged.

ADJUSTING THE SCRUBHEAD

The only adjustment necessary is side to side leveling. If you need to make this adjustment, then:

1. Lower brushes on level surface. Run brushes to get a pattern. If one side is light or uneven, then turn off machine and engage emergency shutoff to prevent accidental starting. Engage parking brake.
2. Using the rods that come up through the lift channel, screw the nut in on the opposite side and check pattern again.
3. Repeat Step 2 until you have an even pattern from side to side.

CHECKING & ADJUSTING THE REAR SQUEEGEE FLARE

1. Park the unit on a flat, smooth surface.
2. Lower the squeegee.
3. Loosen the locking nut on the two (2) squeegee casters and screw the casters all of the way up.
4. Locate the squeegee lift arms on each side of the squeegee assembly.
5. Loosen the 5/16 jam nuts on the squeegee adjustment links, both sides. Loosen the 3/8 bolts at the squeegee adjustment links.
6. Pull the TC/1 forward until the rear squeegee rubber flares evenly all around. NOTE: There should be about 1/4 inch of deflection and the squeegee rubber should drag on its inside edge.
7. Tighten the 5/16 jam nuts on the squeegee adjustment links. Tighten the 3/8 inch bolts on the squeegee adjustment links.
8. Lower the two casters until they clear the floor by 1/16 - 1/8 inch and tighten squeegee caster locking nut.
9. With the squeegee in the down position, drive the machine forward and examine the flare in the squeegee rubber. If the flare is not uniform around the entire curve of the squeegee, return to adjustment steps 3 - 8.

TURNING OR REPLACING THE MAIN SQUEEGEE RUBBER

The primary rubber on the main squeegee frame has four different edges that may be used: the front and back lower edge, and the front and back upper edge. When the edge in use becomes worn to the midpoint of thickness, turn the rubber to an unused edge in the order indicated: 1. Front Lower Edge, 2. Opposite Lower Edge, 3. Front Upper Edge, 4. Opposite Upper Edge. In other words, first use the opposite side of the lower front edge, then turn the squeegee upside down to use the front and then the back of the upper edge. Removal and replacement instructions follow. This procedure can be performed with the squeegee tool on or off machine.

***NOTE:** Removal and replacement of the main squeegee elements is easier if the squeegee frame is removed from the machine.*

1. Remove the hex bolts located on the sides of the squeegee frame, then loosen the tightening units at each end.
2. Remove the metal strap and the outer squeegee rubber.
3. Turn the side ends of the squeegee rubber 180°, or turn the rubber upside down, to expose an unused edge. Reposition the rubber on the pins of the squeegee frame.
4. Reposition the metal strap so that the center slot is on the center stud.
5. Tighten the strap with the adjusting nuts at each end.
6. Install the hex bolts on the sides of the squeegee frame.

MAIN SQUEEGEE TOOL REMOVAL

All machines are equipped with auto-squeegee lift. To remove the squeegee tool, proceed as follows:

1. Engage parking brake and chock wheels.
2. Put the squeegee switch in the down position and turn the ignition switch off. (This will hold the squeegee in the down position.)
3. Disconnect the vacuum hose from the squeegee.
4. Disconnect the lifting cable from the squeegee.
5. Locate the squeegee frame supports on each side of the squeegee and remove the hex nuts (one on each side).
6. Lift the supports up off the pins on the squeegee frames and slide the squeegee tool toward the rear of the machine.
7. Go to the back of the machine and pull the squeegee straight back and out.

MAIN SQUEEGEE TOOL INSTALLATION

1. At the back of the machine, push the squeegee forward under the machine.
2. Lift the supports up onto the pins on the squeegee frames.
3. On each side of the squeegee attach the hex nuts (one on each side) to the squeegee frame supports.
4. Put the squeegee switch in the down position and turn the ignition switch off. (This will hold the squeegee in the down position.)
5. Connect the lifting cable to the squeegee.
6. Connect the vacuum hose to the squeegee.

INNER SQUEEGEE REPLACEMENT

The inner squeegee is a component of the rear squeegee. When the squeegee is down, locked, and the rear squeegee rubber is flared, the inner squeegee has become too worn to make proper contact with the floor.

1. Remove the main squeegee tool (see removal instructions).
2. Remove nuts on the front of the inner squeegee frame.
3. Remove the strap and the inner squeegee rubber.
4. Install the new inner squeegee rubber.
5. Position the strap and secure with the nuts.

HOPPERS

The following maintenance is required to assure maximum cleaning capacity of hoppers:

- Inspect hopper flaps daily for wear and damage and replace when needed.

SERVICE INSTRUCTIONS

⚠ WARNING

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.

HOPPER FLAP REPLACEMENT

The flap located at the entrance lip of the hopper must be replaced when worn or damaged.

1. Park the machine on a level surface and engage the parking brake.
2. Remove the hopper.
3. Turn the keyswitch to OFF.
4. Remove the flap retaining angle and worn or damaged flap.
5. Install the new flap.
6. Replace the retaining angle.

⚠ CAUTION

Always wear safety glasses to prevent eye injuries.

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!!

ADJUSTING THE PARKING BRAKE CABLE LENGTH

1. Park the machine on a level surface.
2. Place parking brake lever in "OFF" position.
3. Turn front wheels to the left.
4. Loosen inner jam nut that holds brake cable in the right front steering fork.
5. Tighten the outer nut on the cable to adjust brake.
6. Tighten inner jam nut on cable.
7. Repeat steps 4 through 7 on the left front wheel after turning the wheels to the right.

TIRES

PowerBoss® TC/1 sweeper/scrubbers use a tire and rim. Tire maintenance requires the following:

- Visually inspect tires daily for wear and damage.
-

SERVICE INSTRUCTIONS



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.

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 200 hours of use. Re-tighten and oil if necessary.
 - Inspect cables for wear every 200 hours.
-

BASIC MACHINE OPERATING PROBLEMS

PROBLEM	CAUSE	SOLUTION
PowerBoss® moves slowly or does not move.	Parking brake is on.	Release brake.
	Foot pedal jammed, damaged, or not adjusted properly.	Clear jam or adjust linkage.
	Tires skidding from contact with oil or grease.	Clean tires or drive through a solvent absorbing substance.
	Wheels jammed.	Clear jam.
	Fuse blown.	Replace.
	Drive contactor defective.	Replace.
	Loose potentiometer switch wire(s).	Connect wires.
	Drive circuit not engaged.	Switch Forward/Reverse switch to neutral and then back to forward.

BASIC MACHINE OPERATING PROBLEMS (CONT.)

PROBLEM	CAUSE	SOLUTION
No power.	Battery cable connections worn. Batteries not charged. Loose wires at ignition switch or potentiometer switch. Fuse blown.	Replace cables. Charge batteries. Connect wires. Replace.
Vacuum motors will not operate.	Fuse blown. Loose or defective switch (beside vacuum box tube).	Replace. Connect, if loose. Replace, if defective.

SWEEPING PROBLEMS

PROBLEM	CAUSE	SOLUTION
Sweeper unit leaving debris.	Hopper full.	Dump hopper.
	Broom(s) out of adjustment.	Adjust.
	Broom bristles worn.	Check broom for wear and adjustment.
	Poor performance of broom drive mechanism.	Check for jam in broom chamber.
	Broom lift arm hung up with debris.	Clear out debris.
	Hopper flaps damaged or missing.	Replace or adjust clearance.

SCRUBBING PROBLEMS

PROBLEM	CAUSE	SOLUTION
Scrubhead will not lower.	Breaker tripped. Loose scrubhead switch wires. Loose connection of plug at actuator. Defective actuator.	Push breaker button down. Connect wires. Connect. Replace.
Scrubhead motors will not turn.	Defective contactor. Breaker tripped. Loose plug at scrubhead motor. (Check all.)	Replace. Push breaker button down.. Re-seat plug.

SQUEEGEE PROBLEMS

PROBLEM	CAUSE	SOLUTION
Squeegee will not lower.	Fuse blown. Actuator is damaged.	Replace. Replace actuator.

