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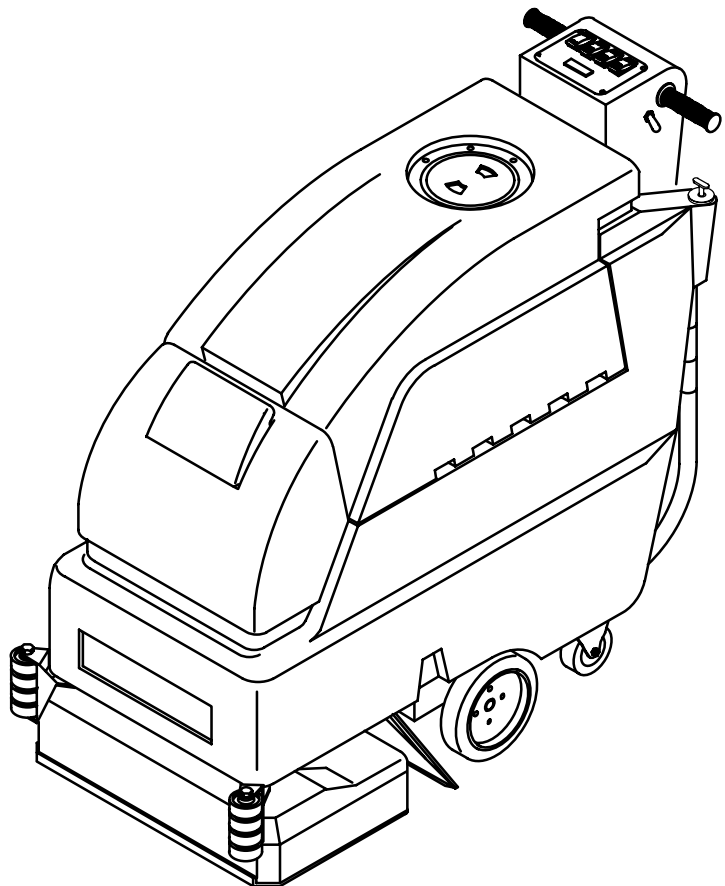


# 1500

## Battery Automatic Carpet Extractor

**Model No.:**  
**607647**  
**607653 – Pac**

### Operator and Parts Manual



**TENNANT COMPANY**  
**Commercial Products**  
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**607648**  
**Rev. 01 (02-02)**

# OPERATION

This manual is furnished with each new model. It provides necessary operation and maintenance instructions and an illustrated parts list.

**Read this manual completely and understand the machine before operating or servicing it.**

When ordering replacement parts use the illustrated Parts Lists in this manual. Before ordering parts or supplies, be sure to have your machine model number and serial number handy. Parts and supplies may be ordered by phone or mail from any authorized Service Center or Distributor.

This machine will provide excellent service. However, the best results will be obtained at minimum costs if:

- The machine is operated with reasonable care.
- The machine is maintained regularly - per the machine maintenance instructions provided.
- The machine is maintained with manufacturer supplied or equivalent parts.

## MACHINE DATA

Please fill out at time of installation for future reference. Model No.- _____ Install. Date - _____ Serial No.- _____
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Specifications and parts are subject to change without notice.

## TABLE OF CONTENTS

<p><b>SAFETY PRECAUTIONS</b> ..... 3</p> <p><b>MACHINE COMPONENTS</b> ..... 4</p> <p><b>CONTROL PANEL SYMBOLS</b> ..... 4</p> <p><b>MACHINE INSTALLATION</b> ..... 5</p> <p style="padding-left: 20px;">UNCRATING MACHINE ..... 5</p> <p style="padding-left: 20px;">INSTALLING BATTERIES ..... 5</p> <p><b>MACHINE SETUP</b> ..... 6</p> <p style="padding-left: 20px;">FILLING SOLUTION TANK ..... 6</p> <p style="padding-left: 20px;">ADJUSTING CONTROL GRIP HEIGHT ..... 6</p> <p><b>MACHINE OPERATION</b> ..... 6</p> <p style="padding-left: 20px;">PRE-OPERATION CHECKS ..... 6</p> <p style="padding-left: 20px;">WHILE OPERATING MACHINE ..... 7</p> <p style="padding-left: 20px;">CIRCUIT BREAKERS ..... 8</p> <p><b>OPTIONAL ACCESSORY TOOL SETUP AND OPERATION</b> ..... 8</p> <p><b>DRAINING TANKS</b> ..... 9</p> <p style="padding-left: 20px;">DRAINING RECOVERY TANK ..... 9</p> <p style="padding-left: 20px;">DRAINING SOLUTION TANK ..... 9</p> <p><b>BATTERY CHARGING</b> ..... 10</p> <p><b>MACHINE MAINTENANCE</b> ..... 11</p> <p style="padding-left: 20px;">DAILY MAINTENANCE ..... 11</p> <p style="padding-left: 20px;">WEEKLY MAINTENANCE ..... 11</p> <p style="padding-left: 20px;">MONTHLY MAINTENANCE ..... 12</p> <p style="padding-left: 20px;">QUARTERLY MAINTENANCE ..... 12</p> <p style="padding-left: 20px;">BATTERY MAINTENANCE ..... 12</p>	<p><b>STORING MACHINE</b> ..... 13</p> <p><b>TRANSPORTING MACHINE</b> ..... 13</p> <p><b>RECOMMENDED STOCK ITEMS</b> ..... 13</p> <p><b>TROUBLE SHOOTING</b> ..... 14</p> <p><b>SPECIFICATIONS</b> ..... 15</p> <p><b>ELECTRICAL DIAGRAMS</b> ..... 16</p> <p><b>PARTS LIST</b> ..... 18</p> <p style="padding-left: 20px;">SOLUTION TANK GROUP ..... 18</p> <p style="padding-left: 20px;">RECOVERY TANK GROUP ..... 20</p> <p style="padding-left: 20px;">LIFT GROUP ..... 22</p> <p style="padding-left: 20px;">BRUSH BASE GROUP ..... 24</p> <p style="padding-left: 20px;">DRIVE GROUP ..... 25</p> <p style="padding-left: 20px;">PLUMBING GROUP ..... 26</p> <p style="padding-left: 20px;">CONSOLE GROUP ..... 28</p> <p style="padding-left: 20px;">ELECTRICAL / BATTERY GROUP ..... 30</p> <p><b>OPTIONS</b> ..... 32</p> <p style="padding-left: 20px;">127 mm (5 in) HAND TOOL GROUP ..... 32</p> <p style="padding-left: 20px;">76 mm (3 in) CREVICE TOOL GROUP ..... 32</p> <p style="padding-left: 20px;">UPHOLSTERY TOOL GROUP ..... 33</p> <p style="padding-left: 20px;">330mm (13 in) WAND GROUP ..... 34</p> <p style="padding-left: 20px;">406mm (16 in) FLOOR TOOL ..... 36</p> <p style="padding-left: 20px;">SOLUTION AND VACUUM HOSES GROUP ..... 38</p>
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## SAFETY PRECAUTIONS

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This machine is intended for commercial use. It is designed to clean carpets in an indoor environment and is not constructed for any other use. Use only recommended cleaning solutions.

All operators must read, understand, and practice the following safety precautions:

The following safety alert symbols are used throughout this manual as indicated in their description.

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


**FOR SAFETY: To identify actions which must be followed for safe operation of equipment.**


The following information signals potentially dangerous conditions to the operator or equipment:

### FOR SAFETY:

1. **Do not operate machine:**
  - Unless trained and authorized.
  - Unless operation manual is read and understood.
  - In flammable or explosive areas unless designed for use in those areas.
2. **Before starting machine:**
  - Make sure all safety devices are in place and operate properly.
3. **When using machine:**
  - Go slow on inclines and slippery surfaces.
  - Use care when reversing machine.
  - Always follow safety and traffic rules.
  - Report machine damage or faulty operation immediately.
  - Follow mixing and handling instructions on chemical containers.
4. **Before leaving or servicing machine:**
  - Stop on level surface.
  - Turn off machine.

5. **When servicing machine:**
  - Avoid moving parts. Do not wear loose jackets, shirts, or sleeves.
  - Block machine tires before jacking machine up.
  - Use hoist or jack of adequate capacity to lift machine.
  - Disconnect battery connections before working on machine.
  - Wear protective gloves when handling batteries or battery cables.
  - Avoid contact with battery acid.
  - Use manufacturer supplied or approved replacement parts.

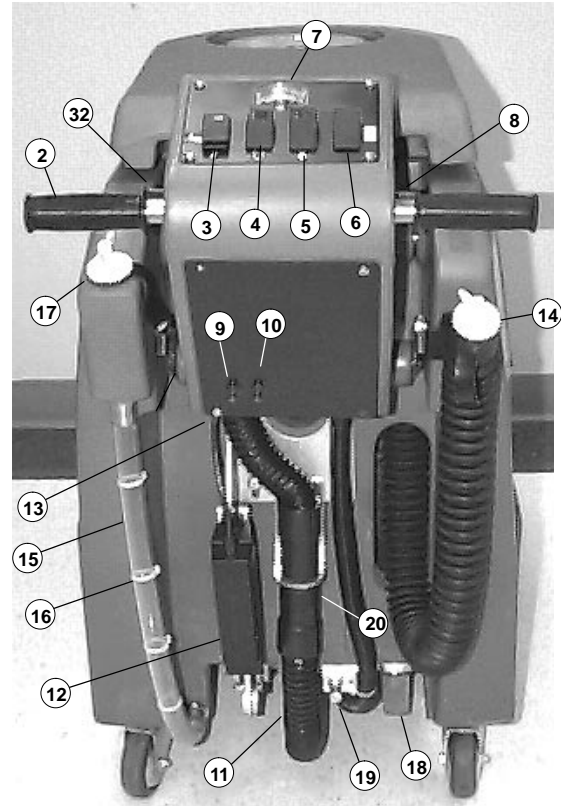
 **WARNING: Batteries emit hydrogen gas. Explosion or fire can result. Keep sparks and open flame away. Keep battery compartment open when charging.**

 **WARNING: Flammable materials can cause an explosion or fire. Do not use flammable materials in tank(s).**

 **WARNING: Flammable materials or reactive metals can cause explosion or fire. Do not pick up.**













# OPERATION

## MACHINE COMPONENTS



- |                                      |                                       |                             |
|--------------------------------------|---------------------------------------|-----------------------------|
| 1. Control Console                   | 12. Brush/Pickup Head Actuator        | 23. Solution Tank           |
| 2. Control Roll Grips                | 13. Adjustable Control Console Levers | 24. Solution Tank Fill Door |
| 3. Main ON/OFF Switch                | 14. Recovery Tank Drain Hose          | 25. Battery Compartment     |
| 4. Pump ON/OFF Switch                | 15. Solution Tank Drain Hose          | 26. Charger Plug            |
| 5. Vacuum ON/OFF Switch              | 16. 19L (5 Gal) Increment Markers     | 27. Drive Wheels            |
| 6. Brush/Pickup Head Actuator Switch | 17. Rear Fill Port                    | 28. Rear Casters            |
| 7. Battery Meter                     | 18. Inline Solution Filter Strainer   | 29. Wall Rollers            |
| 8. Speed Control Knob                | 19. Accessory Solution hose Coupler   | 30. Pick-up Head            |
| 9. Main/Pump/Brush Circuit Breaker   | 20. Accessory Vacuum Hose Connector   | 31. Brush Base              |
| 10. Vacuum/Drive Circuit Breaker     | 21. Recovery Tank                     | 32. Reverse Switch          |
| 11. Intake Vacuum Hose               | 22. Recovery Tank Lid                 |                             |

## CONTROL PANEL SYMBOLS

- |  |  |  |  |
|--|--|--|--|
|  Main Power |  Less Brush Pressure  |  Fast Speed                         |  Read Manual Before Operating |
|  Pump       |  More Brush Pressure  |  Slow Speed                         |  Main Power Circuit Breaker   |
|  Vacuum     |  Battery Charge Meter |  Vacuum/drive Motor Circuit Breaker |  Reverse                      |

## MACHINE INSTALLATION

### UNCRATING MACHINE

Carefully check carton for signs of damage. Report any damage at once to carrier.

Batteries and battery charger are packaged separately.

**ATTENTION: Battery installation must be accomplished after removing machine from shipping crate.**

To uncrate your machine, remove shipping straps and carefully lift or make a ramp using crate boards to remove machine from pallet.

**ATTENTION: Do not roll machine off pallet, damage may occur.**

### INSTALLING BATTERIES

**⚠ WARNING: Batteries emit hydrogen gas. Explosion or fire can result. Keep sparks and open flame away. Keep battery compartment open when charging.**

**FOR SAFETY: When servicing machine, wear protective gloves when handling batteries or battery cables. Avoid contact with battery acid.**

#### Battery Specifications:

Two 12 volt, deep cycle batteries. Consult with an Authorized Distributor for specific batteries. Maximum battery dimensions are 178 mm (7 in) W x 381 mm (15 in) L x 356 mm (14 in) H.

1. Turn all switches to the OFF position.
2. Carefully hinge open recovery tank to access battery compartment. Remove loose battery cable from compartment (Figure 1).

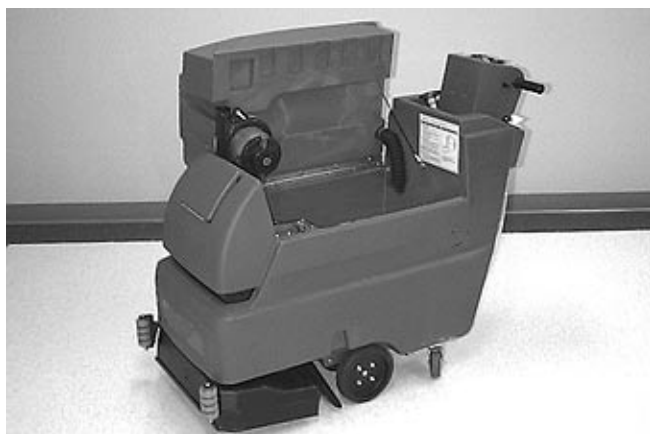


FIG. 1

3. Carefully install batteries into battery tray at bottom of compartment and arrange battery posts as shown (Figure 2).

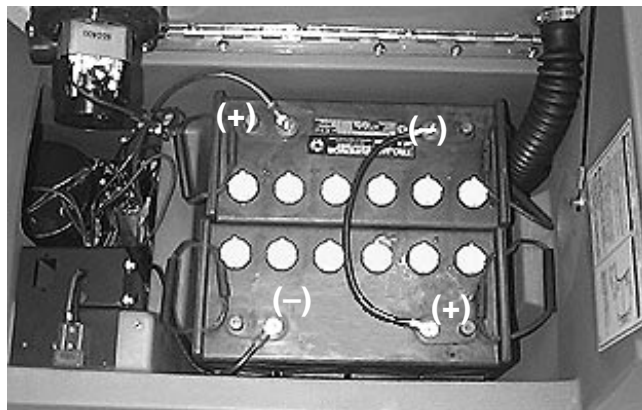


FIG. 2

**ATTENTION: Do not drop batteries into compartment, battery and machine housing damage may result. This damage is not covered by warranty.**

4. Connect battery cables to battery posts as shown (RED TO POSITIVE & BLACK TO NEGATIVE) (Figure 2).
5. After batteries are properly installed, turn on the main switch and check battery meter charge level to ensure batteries are fully charged. Charge if necessary, See Battery Charging (Figure 3).



FIG. 3

# OPERATION

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## MACHINE SETUP

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### FILLING SOLUTION TANK

1. Transport machine to filling station. Raise brush/pick-up head when transporting.
2. Turn off main switch.
3. Open solution fill door at front of machine and fill solution tank with 64 L (17 gal) of clean water, 60°C (140°F) maximum temperature. Or you can use the rear fill port to fill solution tank. Twist off plug and insert hose to fill. The clear tube below the fill port has 19 L (5 gal) increment markers to indicate amount of water in tank (Figure 4).



FIG. 4

**⚠ WARNING:** Flammable materials can cause an explosion or fire. Do not use flammable materials in tank(s).

**NOTE:** If filling with a bucket, be certain that bucket is clean. This will prevent possible solution line clogs.

4. Add cleaning chemical. See proper dilution ratio instructions on bottle.

**FOR SAFETY:** When using machine, follow mixing and handling instructions on chemical containers.

**ATTENTION:** Use only recommended cleaning chemicals, DO NOT use substitutes. Consult an authorized distributor to assist you with the recommended cleaning chemicals.

---

### ADJUSTING CONTROL GRIP HEIGHT

The machine has three control grip height settings.

1. Locate two spring loaded levers below console.
2. Squeeze levers together and lift or lower control grips to a comfortable operating height (Figure 5).

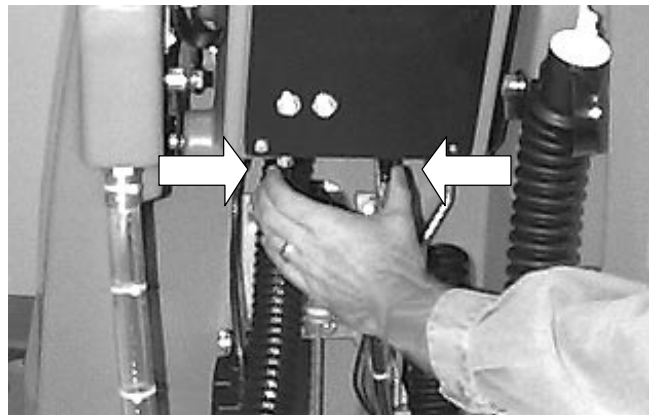


FIG. 5

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## MACHINE OPERATION

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### PRE-OPERATION CHECKS

- Vacuum floor and remove any debris.
- Check battery meter charge level to ensure batteries are fully charged (See Battery Charging).
- Check that spray bar is installed.
- Check that inline strainer filter is installed.
- Inspect spray tips for proper spray pattern (See Weekly Maintenance).

**FOR SAFETY:** Do not operate machine, unless operator manual is read and understood.

1. Turn on main switch.
2. Lower brush/pick-up head to floor by depressing brush height switch (Figure 6).



FIG. 6

3. Turn on vacuum and pump switches.

**NOTE:** The brush and pump will start once control grips are rotated.

- Before you begin cleaning, turn speed control knob to slowest speed (Figure 7).



FIG. 7

- To begin cleaning, rotate control grips completely forward and gradually turn speed control knob to desired cleaning speed (Figure 7).

For optimum cleaning results, operate at a cleaning speed of 15 m (50 ft) per minute for deep cleaning and 30 m (100 ft) per minute for interim cleaning.

**⚠ WARNING: Flammable materials or reactive metals can cause explosion or fire. Do not pick up.**

- To stop machine, release control grips.
- To operate machine in reverse, simply pull reverse switch backwards one speed (Figure 8).



FIG. 8

- After cleaning carpets, allow sufficient time for carpet to dry. Use a carpet blower to reduce drying time.

## WHILE OPERATING MACHINE

- Periodically check for foam buildup in recovery tank (*look through clear lid*). If excessive foam buildup begins to develop, pour a recommended foam control solution into recovery tank.

**ATTENTION: Do not allow foam or water to enter float shut-off screen, vacuum motor damage will result. Foam will not activate float shut-off screen. Vacuum damage due to foam or water is not covered by warranty.**

- Always operate at a slower speed when cleaning around walls or obstacles.
- Always reduce speed to maintain control when turning machine.
- Overlap each pass by 50 mm (2 in).
- Before reaching end of cleaning path, turn off pump switch and continue to drive machine forward to extract solution.
- Periodically check battery meter discharge level. When needle drops to the red zone, recharge batteries.

**ATTENTION: Do not continue to run machine when battery meter needle is in the red zone, battery damage will result.**

- While cleaning, view clear hose gallon marker for remaining cleaning solution. Each mark on hose indicates 19 L (5 gal).
- When solution tank runs dry, turn off pump and vacuum switches, raise brush, and transport machine to draining area (See Draining Tanks).
- If the cleaning path leaves streaks, spray tip cleaning is required (See Weekly Maintenance).

# OPERATION

## CIRCUIT BREAKERS

The machine is equipped with two resettable circuit breakers, Main (15A) and Vacuum/Drive (60A), to protect machine from damage. If a circuit breaker should trip, determine cause and reset breaker by depressing circuit breaker button.

The vacuum/drive circuit breaker (60A) is designed to stop current flow by manually pulling out the circuit breaker button. This allows you to keep the machine stationary while performing specific maintenance procedures. Circuit breakers are located below control console (Figure 9).

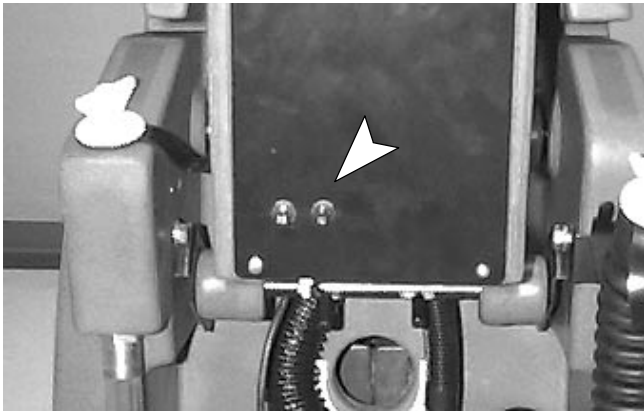


FIG. 9

## OPTIONAL ACCESSORY TOOL SETUP AND OPERATION

Machine is equipped with accessory tool connections. Accessory tool enables you to reach areas that the machine is unable, such as alcoves, stairs and corners (See Options).

1. Vacuum area before cleaning.
2. Fill solution tank and add cleaning chemical (See Filling Solution Tank).

**⚠ WARNING: Flammable materials can cause an explosion or fire. Do not use flammable materials in tank(s).**

3. Disconnect lower vacuum hose at rear of machine and replace with accessory vacuum hose (Figure 10).



FIG. 10

4. Connect solution hose to accessory tool coupler, located at lower rear of machine (Figure 11).

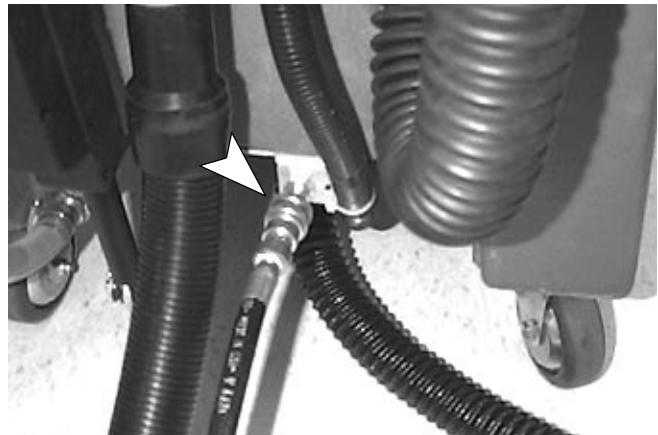


FIG. 11

5. Connect accessory tool to solution hose and vacuum hose (Figure 12).

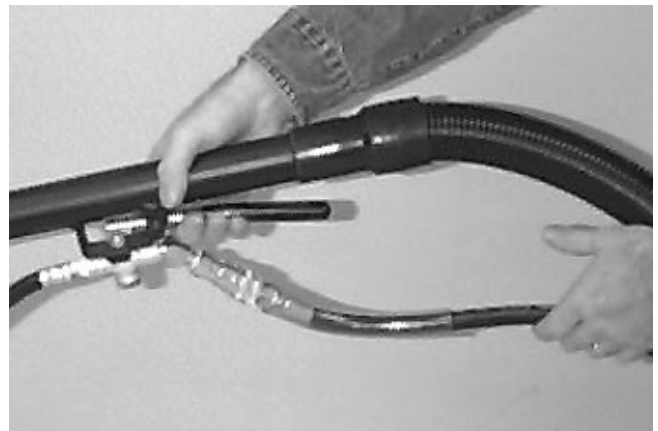


FIG. 12

6. Turn on main, pump and vacuum switches.
7. Take accessory tool and begin cleaning at top of area and work backwards toward machine.

**⚠ WARNING: Flammable materials or reactive metals can cause explosion or fire. Do not pick up.**



- Place accessory tool head on area to be cleaned; squeeze trigger, apply downward pressure on accessory tool head, and slowly pull tool backwards. Release trigger 152 mm (6 in) from end of stroke (Figure 13).



FIG. 13

- When returning for next stroke, push accessory tool forward over same path with trigger released. Continue this pull and push method with a 50 to 102 mm (2 to 4 in) overlap of each stroke.

**NOTE:** For heavily soiled areas, repeat stroke or change angle of stroke.

- Empty recovery tank when solution tank runs dry (See Draining Tanks).

**ATTENTION:** Do not allow foam or water to enter vacuum standpipe, vacuum motor damage will result. Ball float shutoff will not keep foam out of standpipe. Vacuum damage due to foam or water is not covered by warranty.

## DRAINING TANKS

**ATTENTION:** Raise brush/pickup head when transporting machine to floor drain.

**FOR SAFETY:** Before leaving or servicing machine, stop on level surface and turn off machine.

### DRAINING RECOVERY TANK

Always empty recovery tank when refilling solution tank. You may refill solution tank while emptying recovery tank. To drain recovery tank, perform the following steps:

**ATTENTION:** If recovery tank is not emptied between fill-ups, foam or water will enter vacuum standpipe and damage vacuum motor. Float shut-off screen will not keep foam out of standpipe. Vacuum damage due to foam or water is not covered by warranty.

- Remove drain hose from holder, position hose over floor drain and twist off drain hose plug. To completely drain recovery tank, hinge open tank and flip up tank support stand to rest tank on (Figure 14).

**NOTE:** Use different buckets for filling and emptying tank. This will prevent possible solution line clogs.



FIG. 14

- Rinse out recovery tank after each use. This will prevent a foul odor and residue buildup in tank. Unscrew clear lid on recovery tank and rinse out the tank with hose. Be careful not to spray water into float shut-off screen.
- Replace drain hose plug tightly when tank is empty.

### DRAINING SOLUTION TANK

To drain leftover cleaning solution from solution tank, follow steps below:

- Pull clear hose off hose barb at rear of machine and drain solution into floor drain or bucket (Figure 15).



FIG. 15

- Rinse out solution tank and solution system with clean water after each use. This will prevent clogging due to chemical buildup. Use clear hose to drain solution tank when rinsing.
- When reconnecting clear hose to hose barb, be certain hose is completely pushed onto hose barb.

# OPERATION

## BATTERY CHARGING

**NOTE:** *Recharge batteries ONLY after a total of 30 minutes of use or more. This will prolong battery life.*

The following charging instructions are intended for chargers supplied with machine. Only use a battery charger with the following specifications to prevent battery damage.

### CHARGER SPECIFICATIONS:

- OUTPUT VOLTAGE - 24 VOLTS
- OUTPUT CURRENT - 25 AMPS MAXIMUM
- AUTOMATIC SHUTOFF CIRCUIT
- FOR DEEP CYCLE BATTERY CHARGING

**NOTE:** *For optimum machine operation, keep batteries charged at all times. Never leave batteries discharged for lengthy periods.*

**ATTENTION:** Do not continue to run machine when battery meter needle is in the red zone, battery damage will result.

**⚠ WARNING:** Batteries emit hydrogen gas. Explosion or fire can result. Keep sparks and open flame away. Keep battery compartment open when charging.

**FOR SAFETY:** When servicing machine, wear protective gloves when handling batteries or battery cables. Avoid contact with battery acid.

1. Transport machine to a well ventilated area for charging.
2. Turn main switch off.
3. Hinge open recovery tank to access battery compartment. Make sure recovery tank is empty before opening (Figure 16).



FIG. 16

4. Check fluid level (A) in each battery cell before charging. If battery plates (B) are exposed, add just enough distilled water to cover plates by approximately 3 mm (0.13 in). DO NOT OVERFILL. Overfilled batteries can overflow during charging due to fluid expansion. Replace cell caps before charging (Figure 17).

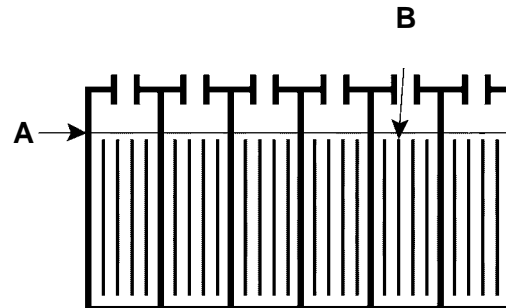


FIG. 17

5. With the charger's power supply cord unplugged, connect the battery charger into the machine as shown. Flip up the hood support stand and rest the hood on the stand to promote ventilation while charging (Figure 18).



FIG. 18

**NOTE:** *As a safety precaution, once the charger is connected to the machine, the machine will become inoperable.*

6. Then plug the charger's power supply cord into a grounded wall outlet (Figure 19).

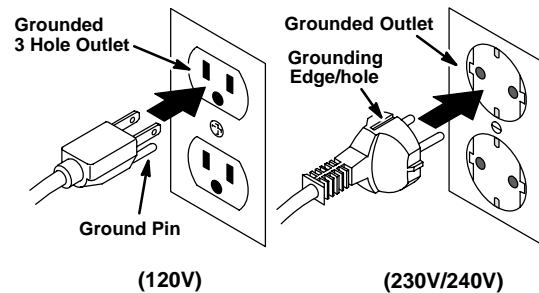


FIG. 19

**FOR SAFETY:** Do not operate charger unless cord is properly grounded.

7. The charger will automatically begin charging and shut off when fully charged.
8. When disconnecting the charger from the machine, always unplug the charger from wall outlet first to prevent charger damage.
9. Recheck battery fluid level (A) after charging. If needed, add distilled water to bring the level 1 cm (3/8 in) from bottom of sight tubes (B). Be certain to replace cell caps securely and to wipe off the top of batteries with a clean cloth (Figure 20).

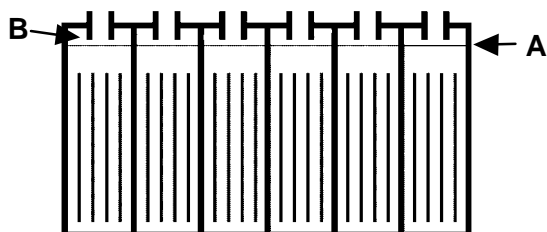


FIG. 20

## MACHINE MAINTENANCE

To keep machine in good working condition, simply follow daily, weekly and monthly maintenance procedures.

**FOR SAFETY: When leaving or servicing machine, stop on level surface and turn off machine.**

**FOR SAFETY: When servicing machine, disconnect battery connections before working on machine.**

**ATTENTION: Contact an Authorized Service Center for machine repairs. Machine repairs performed by other than an authorized person will void your warranty.**

### DAILY MAINTENANCE (Every 4 Hours of Operation)

1. Recharge batteries if discharged below 50%.
2. Remove float shut-off screen and rinse off. Screen is located in recovery tank (Figure 21).



FIG. 21

3. Drain and rinse tanks thoroughly. After draining tanks, hinge recovery tank open and remove any clogging debris in inlet hole if necessary.
4. Clean machine housing with a nonabrasive, nonsolvent cleaner.
5. Inspect brush for entangled debris.

### WEEKLY MAINTENANCE (Every 20 Hours of Operation)

1. Check electrolyte level in battery cells (See Battery Maintenance).
2. Clean battery tops to prevent corrosion (See Battery Maintenance).
3. Check for loose or corroded battery cables.
4. Remove inline strainer filter and rinse out. Make sure solution tank is empty before removing filter. Filter is located under machine at rear (Figure 22).

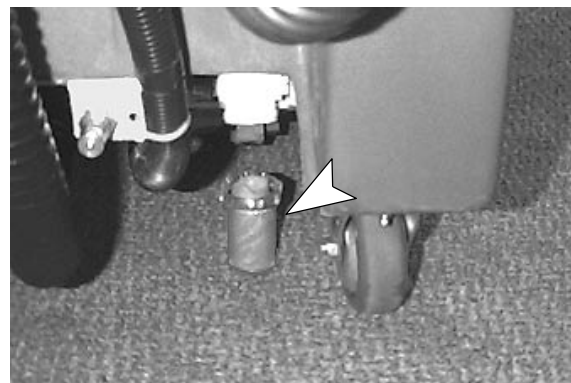


FIG. 22

## OPERATION

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5. Inspect spray tips for proper spray pattern:
  - a. Pull out vacuum/drive circuit breaker button, located at rear of control console.
  - b. Lower brush/pick-up head and remove detachable spray bar from brush base. Do not disconnect bar from quick coupler. Raise brush after removing spray bar (Figure 23).
  - c. Turn on main and pump switches.
  - d. Rotate control grips and observe spray pattern. Pattern should fan out evenly across the width of the spray bar.
  - e. Clean or replace defective twist-out spray tips if necessary (See Weekly Maintenance).

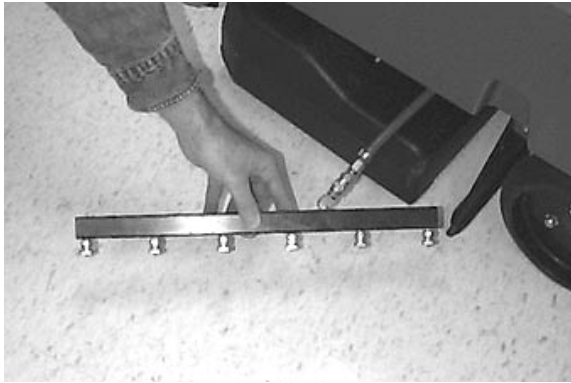


FIG. 23

2. Remove detachable spray bar from brush base. Remove twist-out spray tips from spray bar and soak in 118 ml (4 oz) acetic acid solution for up to 6 hours. After soaking tips, use a small brush to remove excess alkaline and rinse thoroughly. DO NOT use pointed objects to unplug spray tips (Figure 24).



FIG. 24

3. Lubricate caster grease fittings with a water resistant grease.
4. Lubricate all linkage pivot points with silicone spray, then coat with a water resistant grease to maintain a smooth operation.
5. Check machine for water leaks and loose nuts and bolts.

---

### MONTHLY MAINTENANCE (Every 80 Hours of Operation)

1. Flush out tanks and solution lines:
  - a. Pull out the vacuum/drive circuit breaker button, located at rear of control console.
  - b. Pour 750 ml (24 oz) of an acetic acid solution with 11.3 L (3 gal) of hot water into solution tank; do not exceed 60°C (140°F).

**FOR SAFETY: When using machine, follow mixing and handling instructions on chemical containers.**

- c. Turn on the main and pump switches.
- d. Over a floor drain, rotate control grips and hold for one to two minutes.
- e. Shut off power and let machine set overnight to allow acetic acid solution to breakdown alkaline buildup.
- f. Next day, operate pump to disperse remaining acetic acid solution.
- g. Then rinse out solution tank and solution lines with clean water.
- h. Reset drive circuit breaker button when completed.

---

### QUARTERLY MAINTENANCE (Every 250 Hours of Operation)

Check drive and vacuum motors for carbon brush wear, replace brushes if worn to a length of 10 mm (0.38 in) or less. Contact your Authorized Service Center for carbon brush inspection.

---

### BATTERY MAINTENANCE

**⚠ WARNING: Batteries emit hydrogen gas. Explosion or fire can result. Keep sparks and open flame away. Keep battery compartment open when charging.**

**FOR SAFETY: When servicing machine, wear protective gloves when handling batteries and battery cables. Avoid contact with battery acid.**

1. Always follow proper charging instructions (See Battery Charging).

2. After charging, check fluid level (A). Fluid level should be within 3 mm (0.13 in) of full level indicator. Add distilled water if needed. DO NOT OVERFILL. Overfilled batteries can overflow during charging due to fluid expansion (Figure 25).

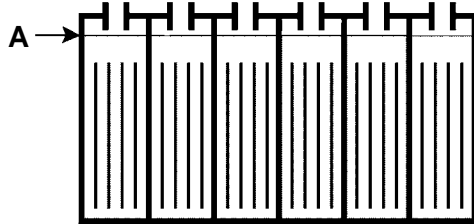


FIG. 25

3. Keep battery tops and terminals clean and dry. To clean batteries:
  - a. Mix a strong solution of baking soda and water (Figure 26).



FIG. 26

- b. Brush solution sparingly over battery tops, terminal and cable connectors.

**NOTE:** Do not allow baking soda solution to enter battery cells.

- c. Use wire brush to clean terminal post and cable connections.
  - d. After cleaning, apply a coating of clear battery post protectant to terminals and cable connections.
4. Check for loose or worn cables. Replace if worn.

## STORING MACHINE

1. Before storing machine, be certain to rinse tanks and drain machine of all water.
2. Store machine in a dry area.
3. Remove recovery lid to promote air circulation.
4. Raise the brush/pickup head off the floor.

5. If storing machine in freezing temperatures, be certain to circulate an undiluted anti-freeze solution throughout the machine.

**ATTENTION:** Do not allow machine to freeze without anti freeze. Damage due to freezing temperatures is not covered by warranty.

**ATTENTION:** Do not expose machine to rain and store indoors.

## TRANSPORTING MACHINE

When transporting the machine by use of trailer or truck, be certain to follow the tie-down procedures below:

1. Load the machine using a recommended loading ramp.
- NOTE:** When lifting the machine, you must remove the batteries.
2. Position the front of the machine up against the front of the trailer or truck bed.
3. Place blocks behind the main wheels.
4. Place tie-down straps over the top of the machine and secure straps to the floor. It may be necessary to install tie-down brackets to the floor of your trailer or truck.

**NOTE:** Do not use control grips to secure machine for transporting.

## RECOMMENDED STOCK ITEMS

Refer to Standard Parts section for recommended stock items. Stock Items are clearly identified with a Bullet preceding the parts description. See example below:

Ref.	Part No.	Description	Qty.
1	701103	ASM.,STANDPIPE	1
2	180613	●FLOAT, SHUTOFF	1
3	230187	NIPPLE	1
4	101714	●GASKET	1
5	210240	NUT, FLANGED	1

# OPERATION

## TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
No power.	Faulty main switch.	Contact Service Center.
	Batteries need charging.	See Charging Batteries.
	Main circuit breaker is pulled out.	Depress main circuit breaker.
	Faulty battery(s).	Replace battery(s).
	Loose battery cable.	Tighten loose cable.
	MAIN circuit breaker has tripped.	Determine cause and reset circuit breaker button.
Brush motor does not operate.	Pump switch is not on.	Turn on pump switch.
	Control grips are not rotated.	Rotate control grips.
	Brush circuit breaker has tripped or is pulled out.	Remove obstruction from brush and reset brush circuit breaker button.
	Faulty brush motor or wiring.	Contact Service Center.
	Carbon brushes worn.	Contact Service Center.
	Loose or broken belt.	Replace, or contact Service Center.
Vacuum motor does not operate.	Faulty vacuum switch.	Contact Service Center.
	Vacuum motor thermal overload activated.	Remove obstruction and wait 20 minutes for motor to cool.
	Faulty vacuum motor or wiring.	Contact Service Center.
	Carbon brushes worn.	Contact Service Center.
Drive motor does not operate.	Drive motor circuit breaker has tripped.	Determine cause and reset breaker.
	Faulty speed control board or connection.	Contact Service Center.
	Faulty solenoid.	Contact Service Center.
	Faulty drive motor.	Contact Service Center.
	Faulty wiring.	Contact Service Center.
	Worn carbon brushes.	Contact Service Center.
Drive motor operates, but not correctly.	Faulty potentiometer or speed control board.	Contact Service Center.
	Loose wire connection.	Contact Service Center.
Uneven or no solution spray.	Twist-out spray tips are plugged.	Remove and clean.
	Control grips are not rotated.	Rotate control grips.
	Solution line or solution tank filter is clogged.	Remove hose and blow compressed air through it. Flush solution tank after each use.
	Inline strainer filter is plugged.	Drain solution tank, remove filter and clean. Located under machine at rear.
	Faulty pump switch.	Contact Service Center.
	Faulty pump or solenoid.	Contact Service Center.
Short run time.	Batteries not fully charged.	Charge batteries.
	Bad cell in one or more batteries.	Replace battery.
	Batteries need maintenance.	See Battery Maintenance.
	Faulty charger.	Replace battery charger.

**TROUBLE SHOOTING –Continued**

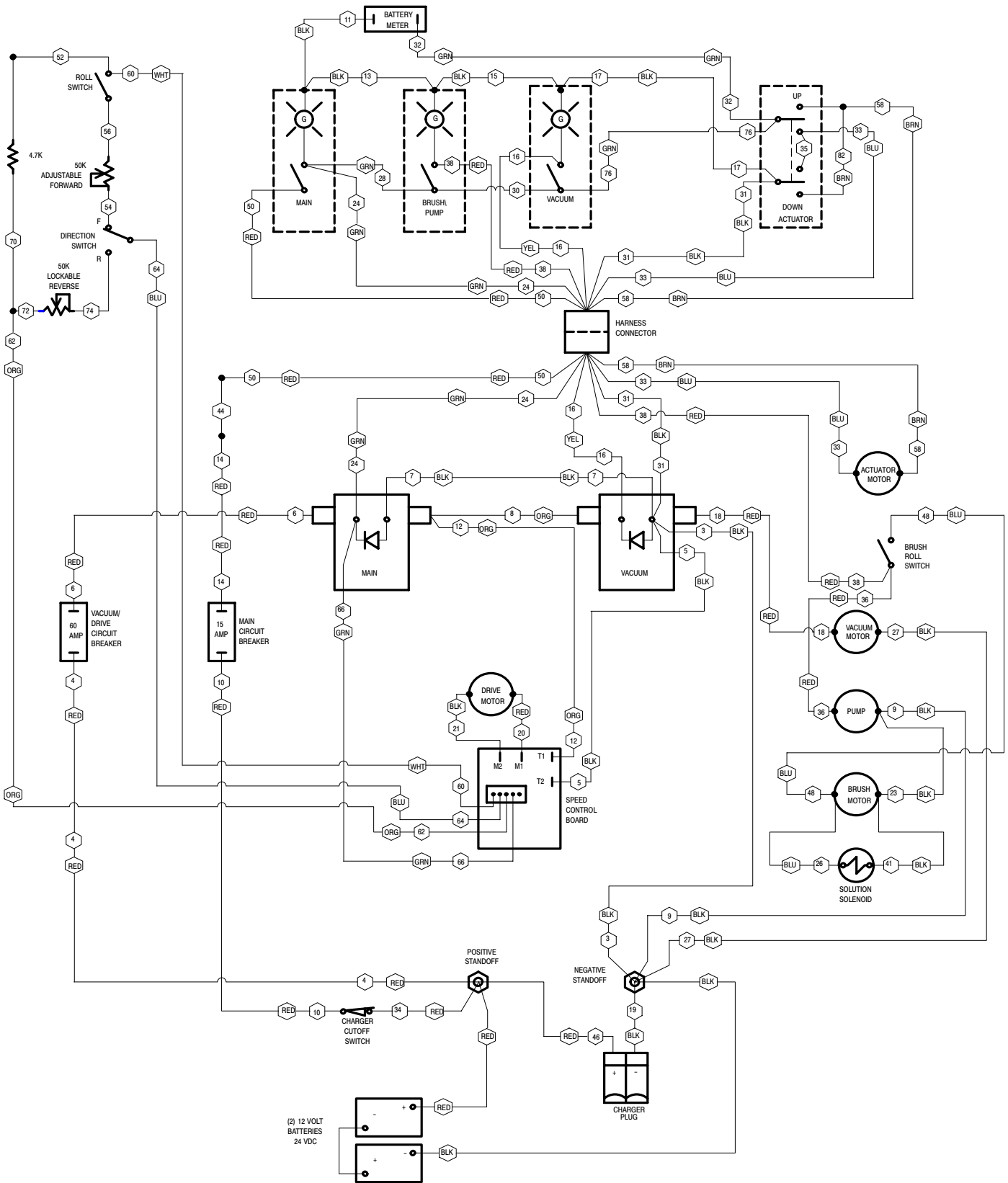
<b>PROBLEM</b>	<b>CAUSE</b>	<b>SOLUTION</b>
Poor vacuum recovery.	Recovery tank is full.	Empty recovery tank.
	Float shut-off screen inside recovery tank is clogged.	Remove screen and clean.
	Pick-up head is clogged with debris.	Remove debris, use coat hanger.
	Pick-up head is not sealed to carpet.	Adjust pick-up head.
	Faulty actuator.	Contact Service Center.
	Vacuum hose connections are loose or hose has a hole.	Push hose cuffs firmly on connections. Replace hose if damaged.
	Vacuum hose is clogged with debris.	Remove clogged debris.
	Recovery tank inlet hole is obstructed.	Empty recovery tank and tilt tank sideways to access inlet hole, remove obstruction.
	Tank gasket is defective.	Replace gasket.
	Drain hose plug is loose.	Tighten drain plug.
	Recovery tank lid is loose.	Tighten lid.
	Vacuum motor is loose.	Contact Service Center.
Battery charge level is low.	Charge batteries. Do not run machine when battery meter is in the red zone.	

**SPECIFICATIONS**

<b>MODEL</b>	<b>1500</b>
LENGTH	1270 mm (50 in)
WIDTH	559 mm (22 in)
HEIGHT	990 mm (39 in)
WEIGHT	170 kg (375 lbs) –w/ batteries 272 kg (600 lbs)
SOL./REC TANK CAPACITY	64 L (17 gal)
SPEED CONTROL	Variable Fwd. / Fixed Reverse.
CLEANING SPEED (MAX)	418.05m <sup>2</sup> (4,500 sq. ft) per hour
CLEANING PATH WIDTH	559 mm (22 in)
PAD PRESSURE	Variable 36–68Kg (80–150 lbs)
SOLUTION PUMP	6.9 bar (100 psi) max., 24V
DRIVE SYSTEM	Transaxle, .2 h.p., 24V
BRUSH MOTOR	.2 h.p., 2000 rpm, 24V, 8A, 192W
VACUUM MOTOR	1 h.p., 2–stage 7.2", 24V, 30A, 720W
WATERLIFT	2057 mm (81 in)
BATTERIES	2–12V, 215AH
RUN TIME PER CHARGE	Up to 4.5 hours
DECIBEL RATING AT OPERATOR'S EAR, INDOORS ON CARPET	75dB(A)

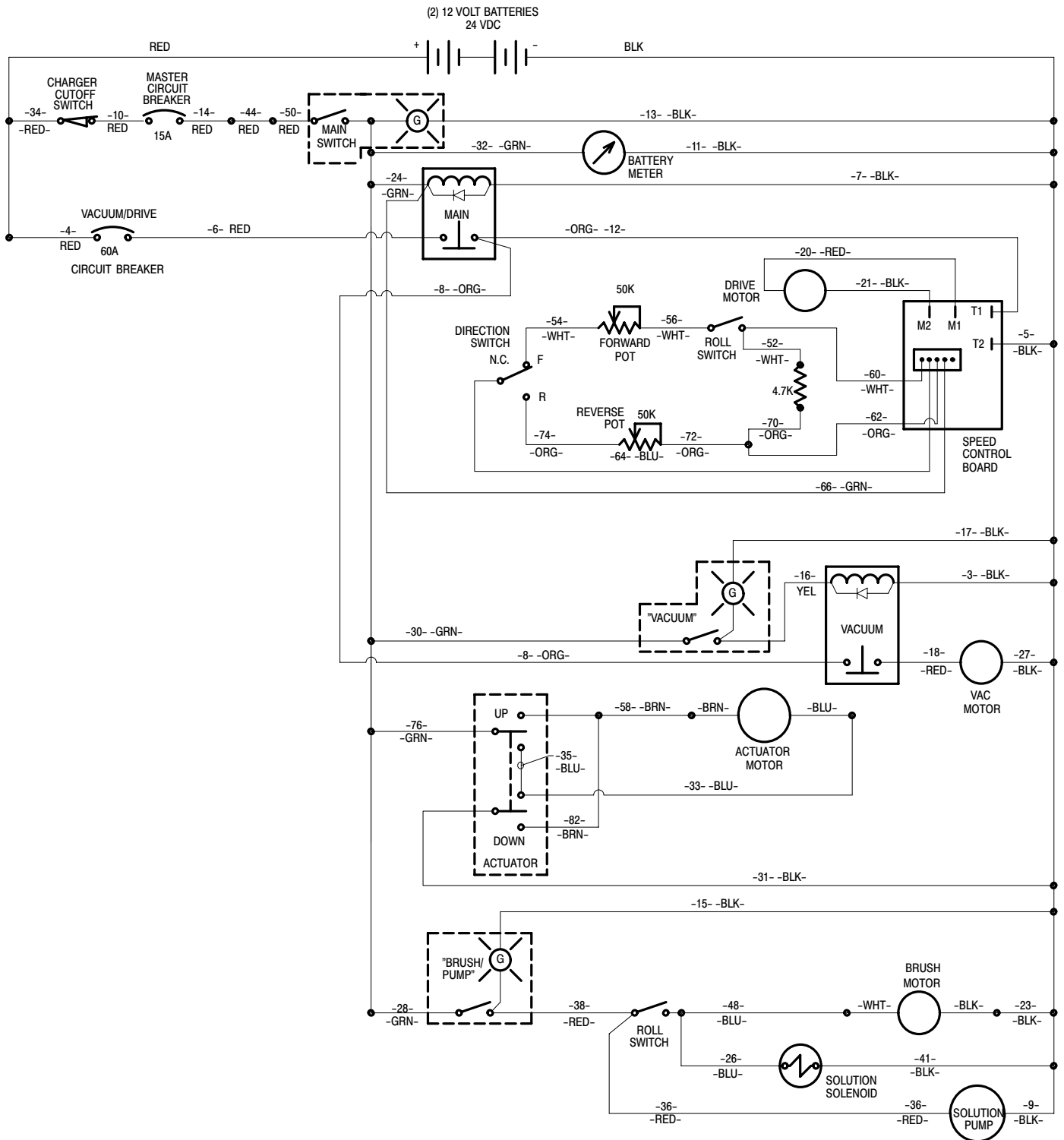
# ELECTRICAL DIAGRAM

## WIRE DIAGRAM

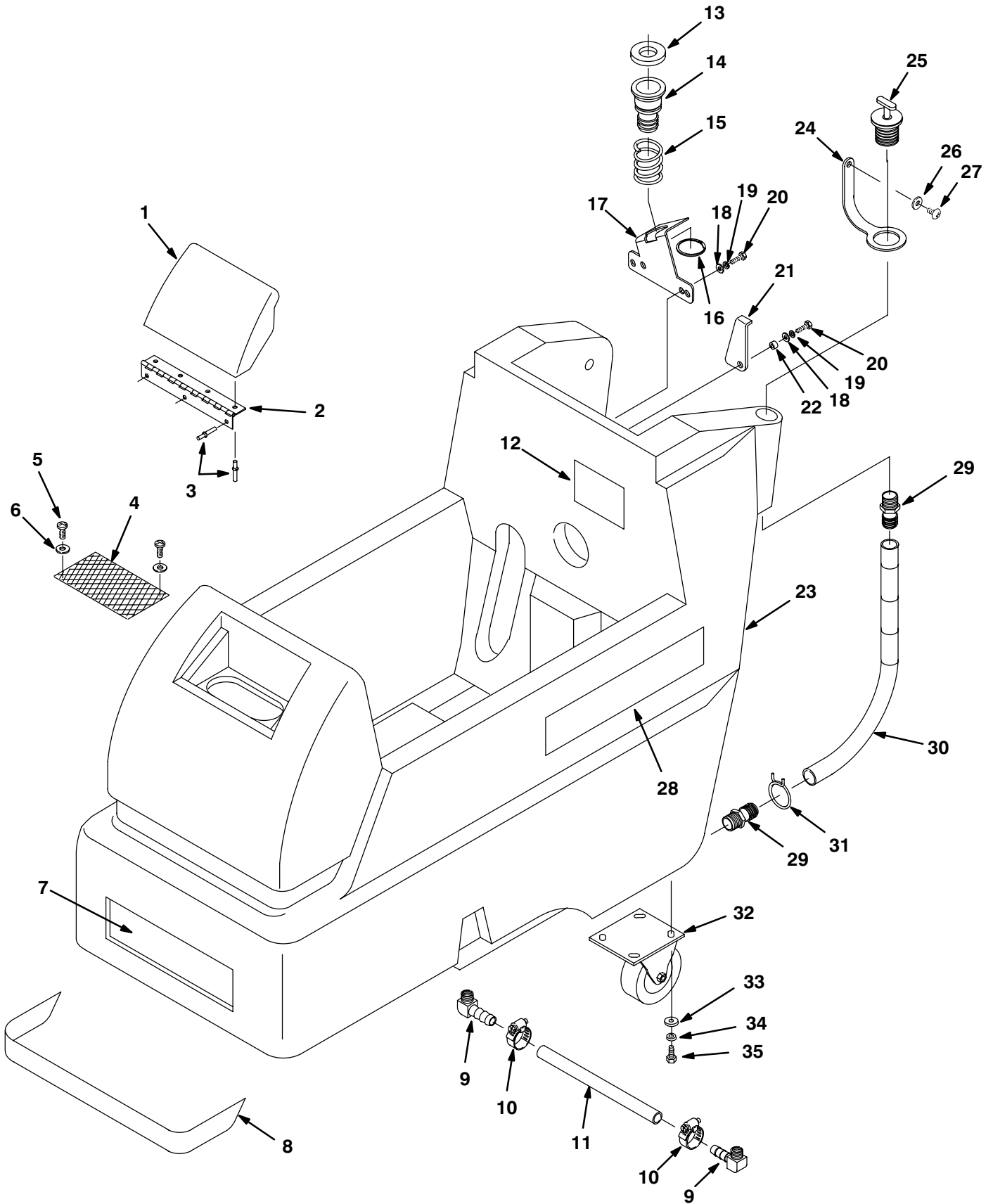




## LADDER DIAGRAM



SOLUTION TANK GROUP



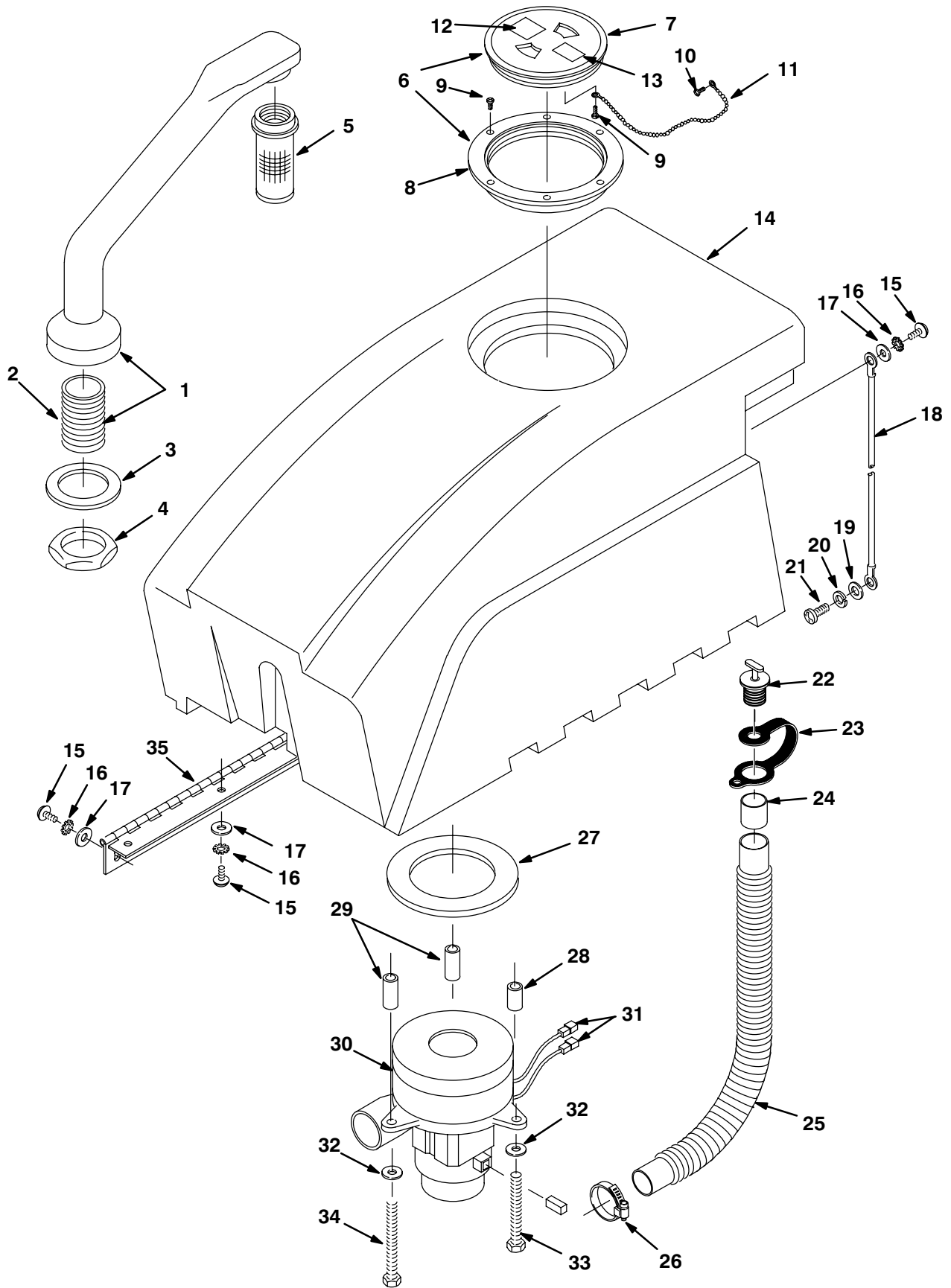
## SOLUTION TANK GROUP

REF	PART #	DESCRIPTION	QTY.
1	612519	COVER, TANK, TEAL	1
2	611068	HINGE, COVER	1
3	140706	RIVET, POP	7
4	602529	SCREEN, FILL	1
5	3701.6	SCREW, #6X3/8	2
6	140032	WASHER, FLAT	2
7	120192	DECAL, "TENNANT"	1
8	600730	DECAL, RECESS	1
9	150419	ELBOW, 1/4M X 3/8H 90°	2
10	140310	CLAMP	2
11	607310	HOSE, 3/8" X 17.5"	1
12	603233	DECAL, BATTERY DIAGRAM	1
13	630010	●GASKET	1
14	630011	TUBE, ADAPTER	1
15	630267	SPRING, COMP	1
16	630016	RING, RETAINING	1
17	608706	BRACKET, VAC TUBE	1
18	140027	WASHER, FLAT	3

REF	PART #	DESCRIPTION	QTY.
19	140015	WASHER, LOCK	3
20	200031488	SCREW, M8X1.25X20MM	3
21	230925	SUPPORT, RECOVERY TANK	1
22	611418	SLEEVE	1
23	607552	TANK, SOLUTION, TEAL	1
24	600476	STRAP, PLUG	1
25	621324	●PLUG, EXPANSION	1
26	140011	WASHER, FLAT	1
27	140350	SCREW, #10X1/2	1
28	608155	DECAL, 1500	2
29	150529	FITTING, 3/4 HOSE BARB	2
30	607983	HOSE, W/LEVEL INDICATORS	1
31	608915	CLAMP, HOSE 2 WIRE	1
32	612056	CASTER 4"	2
33	140036	WASHER, FLAT	8
34	140333	WASHER, LOCK	8
35	140277	SCREW, M10X1.5X20MM	8

● RECOMMENDED STOCK ITEMS

RECOVERY TANK GROUP



## RECOVERY TANK GROUP

REF	PART #	DESCRIPTION	QTY.
▽ 1	701103	ASM.,STANDPIPE	1
▲ 2	606088	NIPPLE	1
3	101714	●GASKET	1
4	210240	NUT, FLANGED	1
5	180613	●FLOAT, SHUTOFF	1
▽ 6	100102	●ASM.,LID CLEAR W/STD HOLE	1
▲ 7	100105	●LID, CENTER CLEAR ONLY	1
▲ 8	100109	●LID, OUTER RING ONLY	1
9	140826	SCREW, #6X3/4	7
10	3701.6	SCREW, #6X3/8	1
11	230513	ASM., CHAIN	1
12	578729	DECAL, READ MANUAL	1
13	120906	DECAL, IMPORTANT DRAIN...	1
14	607554	TANK, RECOVERY, TEAL	1
15	578187000	SCREW, M06X12MM	12
16	140052	WASHER, LOCK	12
17	140000	WASHER, FLAT	12
18	140960	CABLE, SUPPORT	1
19	140027	WASHER, FLAT	1

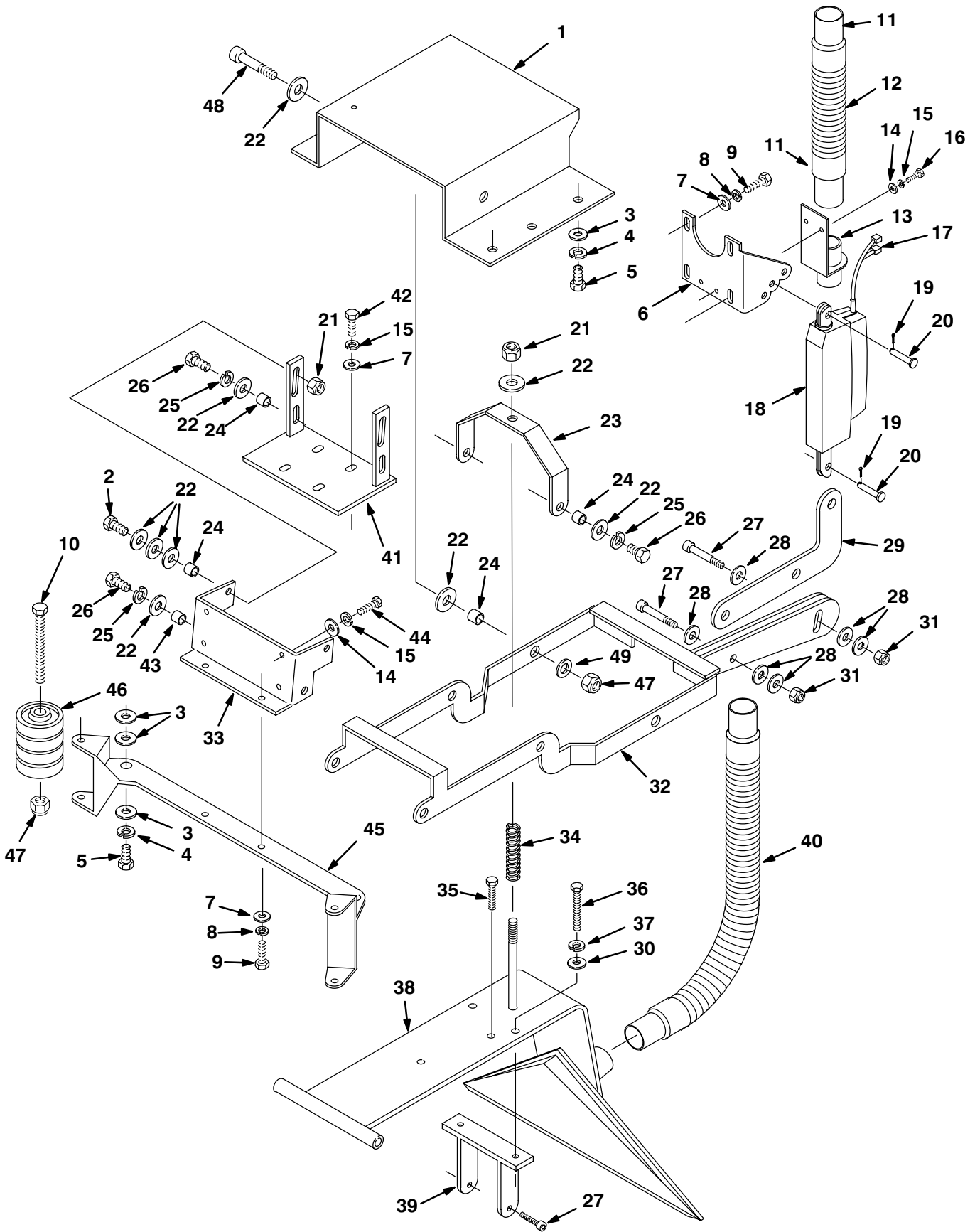
REF	PART #	DESCRIPTION	QTY.
20	140015	WASHER, LOCK	1
21	200031488	SCREW, M08X20MM	1
▽	603217	ASM., DRAIN HOSE	1
▲ 22	621324	PLUG, EXPANSION	1
▲ 23	578441	STRAP	1
▲ 24	630394	SLEEVE	1
▲ 25	630068	HOSE, DRAIN	1
▲ 26	140308	CLAMP	1
27	100001	●GASKET, VAC MOTOR	1
28	019686055	SPACER 6.5X15.8X6.4	1
29	603963	SPACER 6.5X12.7X41.2	2
30	602656	●MOTOR, VAC 7.2 2 STG 24 VDC	1
	604403	CARBON BRUSH, SET OF 2	1
31	130192	TERMINAL, MALE 1/4 #10 12-10	2
32	140000	WASHER, FLAT	3
33	200031441	SCREW M6X1.0X25 HXHDCP	1
34	603962	SCREW M6X1.0X60 HXHDCP	2
35	600311	●HINGE, RECOVERY TANK	1

▽ ASSEMBLY

▲ INCLUDED IN ASSEMBLY

● RECOMMENDED STOCK ITEMS

LIFT GROUP



## LIFT GROUP

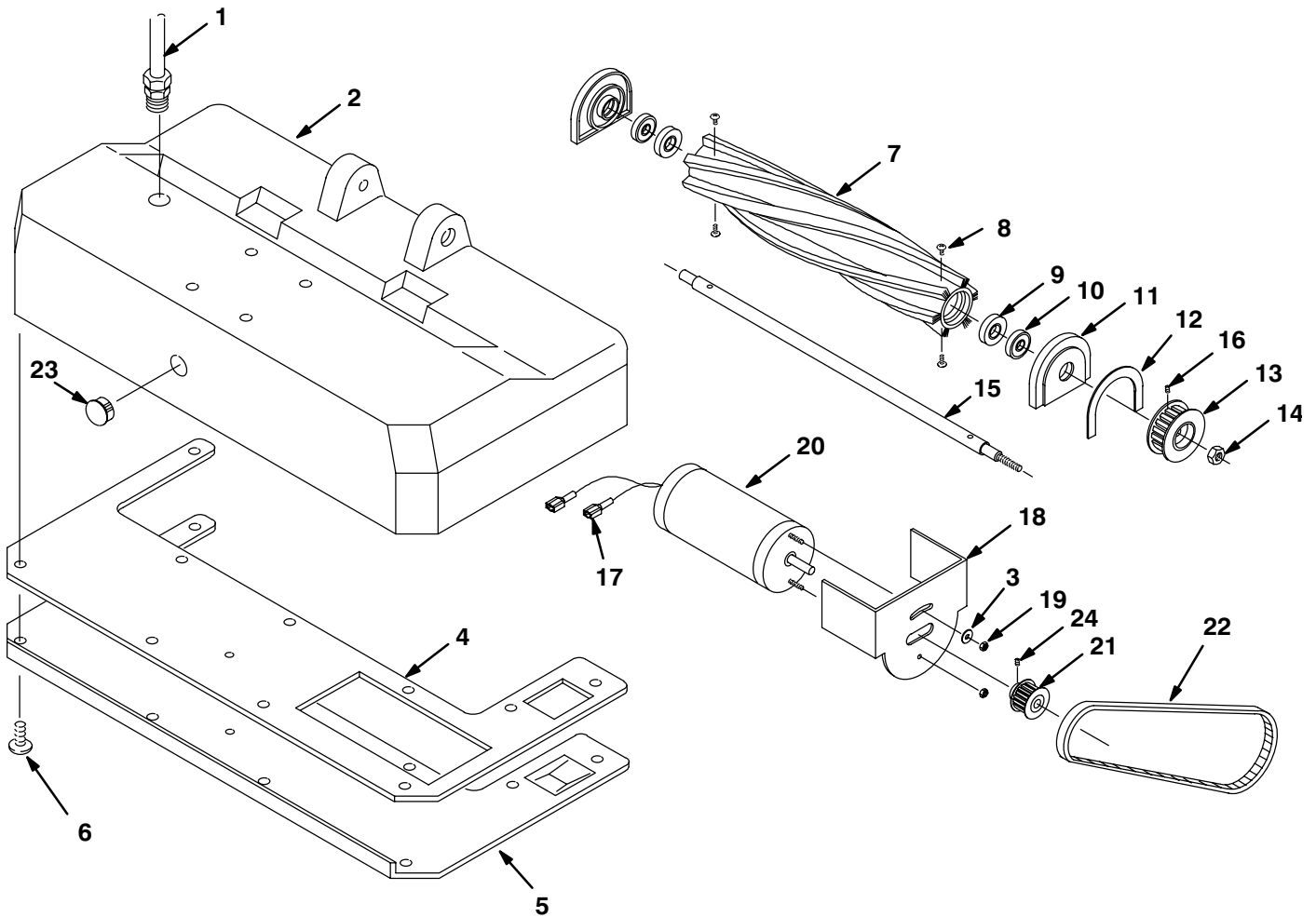
REF	PART #	DESCRIPTION	QTY.
1	612782	PLATE, BASE TRANSAXLE	1
2	140236	SCREW, 1/2-13X1 1/4	2
3	140028	WASHER, FLAT	8
4	140333	WASHER, LOCK	4
5	140277	SCREW, M10X1.5X20MM	4
6	600292	BRACKET, ACTUATOR	1
7	140027	WASHER, FLAT	10
8	140015	WASHER, LOCK	8
9	200031488	SCREW, M08X20MM	8
10	590248	SCREW, 38-16X4.75	2
11	160486	●CUFF, HOSE	1
12	160426	●HOSE, VAC 1.5X15" W/CUFF	1
13	603084	BRACKET, VAC HOSE	1
14	140000	WASHER, FLAT	2
15	140016	WASHER, LOCK	10
16	200031432	SCREW, M06X10MM	2
17	130129	TERMINAL, FM DSCNT 22-18 RED	2
18	600952	●ACTUATOR, 24VDC	1
19	604076	PIN, CLEVIS	2
20	578421	PIN, COTTER	2
21	140516	NUT, NYLOCK	3
22	140045	WASHER, FLAT	17
23	602567	BRACKET, SPRING	1
24	602882	BUSHING	8
25	140024	WASHER, LOCK	6

REF	PART #	DESCRIPTION	QTY.
26	140352	SCREW, M12X1.75X25	6
27	140564	BOLT, SHOULDER 3/8X3/4	4
28	140036	WASHER, FLAT	6
29	603044	PLATE, ACTUATOR LIFT	1
30	140027	WASHER, FLAT	2
31	140546	NUT, NYLOCK	2
32	612781	LIFT BRACKET, EXTRACTOR	1
33	602977	BRACKET, MOUNT CARPET TOOL	1
34	602565	SPRING, CARPET TOOL	1
35	140221	SCREW, 5/16-18X1 1/4	2
36	140220	SCREW, 5/16-18X2 1/2	2
37	140015	WASHER, LOCK	4
38	600306	TOOL, CARPET 22"	1
39	603046	BRACKET, BASE LEVELER	1
40	160613	●HOSE, VAC 1.5X30" W/CUFFS	1
41	600307	BRACKET, MOUNT EXTRACTOR	1
42	140226	SCREW, 5/16-18X5/8	4
43	140139	SLEEVE	2
44	140272	SCREW, M6X1.0X16MM	4
45	603093	BRACKET, BUMPER WHEEL	1
46	630477	WHEEL, 2" GRAY	8
47	140515	NUT, NYLOCK	4
48	36758	BOLT, SHOULDER	2
49	140046	WASHER, 1.00X.392X.090	2

## ● RECOMMENDED STOCK ITEMS

# PARTS LIST

## BRUSH BASE GROUP



REF	PART #	DESCRIPTION	QTY.	
1	603193	CORD, 16/2X33 SJT	1	
2	101106	BASE, 22"	1	
3	200315016	WASHER, FLAT	1	
4	100157	GASKET, BASE PLATE	1	
5	611919	PLATE, BASE	1	
6	140197	SCREW, 10-24X3/8 TRSPHL	11	
▽	700422	●ASM., BRUSH	1	
▲	7	240063	BRUSH, CYLINDER	1
▲	8	140554	SCREW, 1/4-20X3/4	4
▲	9	100049	SEAL, BRUSH BEARING	2
▲	10	140125	BEARING, BRUSH	2
▲	11	230261	BLOCK, BEARING	2
▲	12	100005	GASKET, BEARING BLOCK	1

REF	PART #	DESCRIPTION	QTY.	
▲	13	230408	PULLEY, BRUSH	1
▲	14	140548	NUT 5/16	1
▲	15	230406	SHAFT, BRUSH 22"	1
▲	16	140859	SCREW, SET 1/4-20X1/4	1
17	130096	TERMINAL, MALE DSCNT 16-14	2	
18	230411	BRACKET, BRUSH MOTOR	1	
19	140518	NUT, KEP 10-32	2	
20	602965	●MOTOR, BRUSH DRIVE 24 VDC	1	
21	230410	●PULLEY, MOTOR	1	
22	230409	●BELT, TIMING	1	
23	130154	DOME PLUG	1	
24	140859	SCREW, SET 1/4-20X1/4	1	

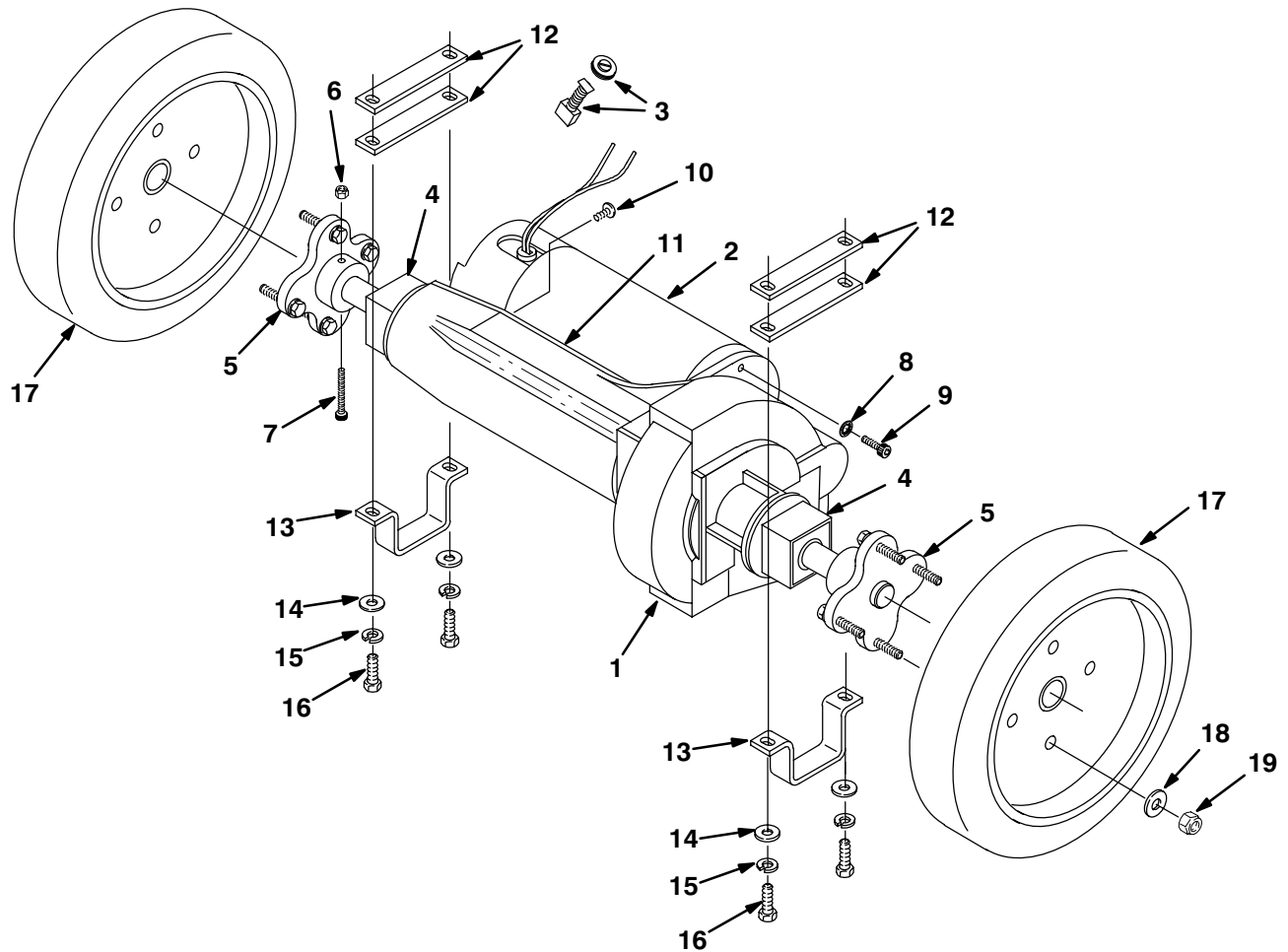
▽ ASSEMBLY

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● RECOMMENDED STOCK ITEMS



DRIVE GROUP



REF	PART #	DESCRIPTION	QTY.
▽ 1	612844	TRANSAXLE, 24V 72RPM	1
▲	612873	BODY, TRANSAXLE ONLY	1
▲	612874	COUPLING, NYLON TRANSAXLE	1
▲	612875	KEY, TRANSAXLE	1
▲ 2	612877	MOTOR, TRANSAXLE	1
▲	612883	●BRUSH, CARBON KIT BRUSHES W/CAPS (2/PK)	1
▲	612880	SLEEVE, TRANSAXLE	2
▲	612879	HUB, WHEEL TRANSAXLE	2
▲	140552	NUT, 10-24 NYLOCK	2
▲	31249	BOLT, SHOULDER .25X1.25	2
▲	32982	WASHER, INT. LOCK	2

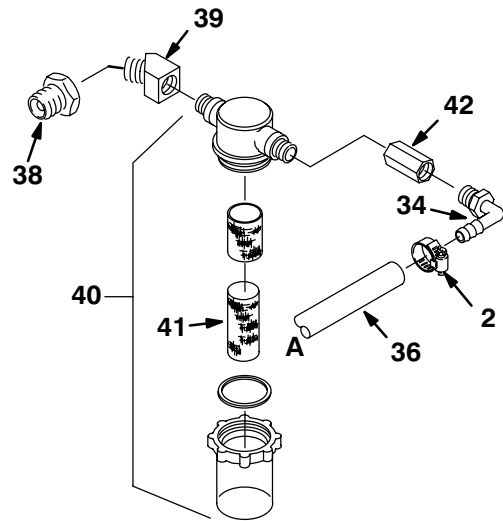
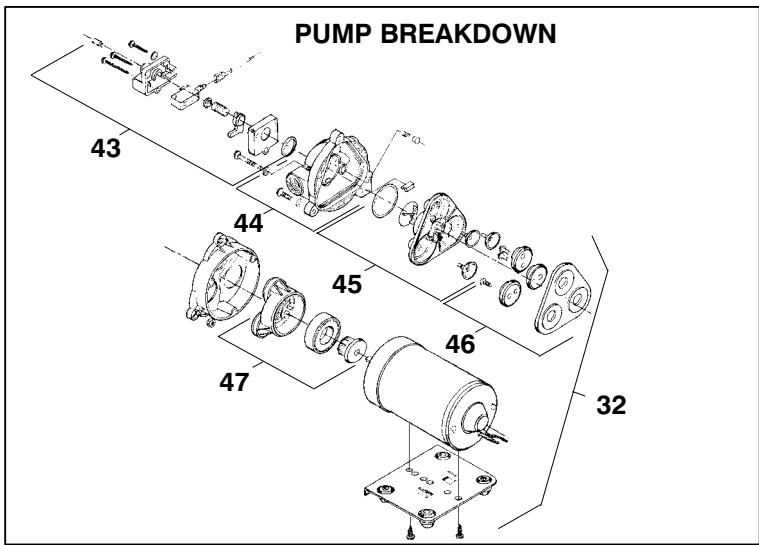
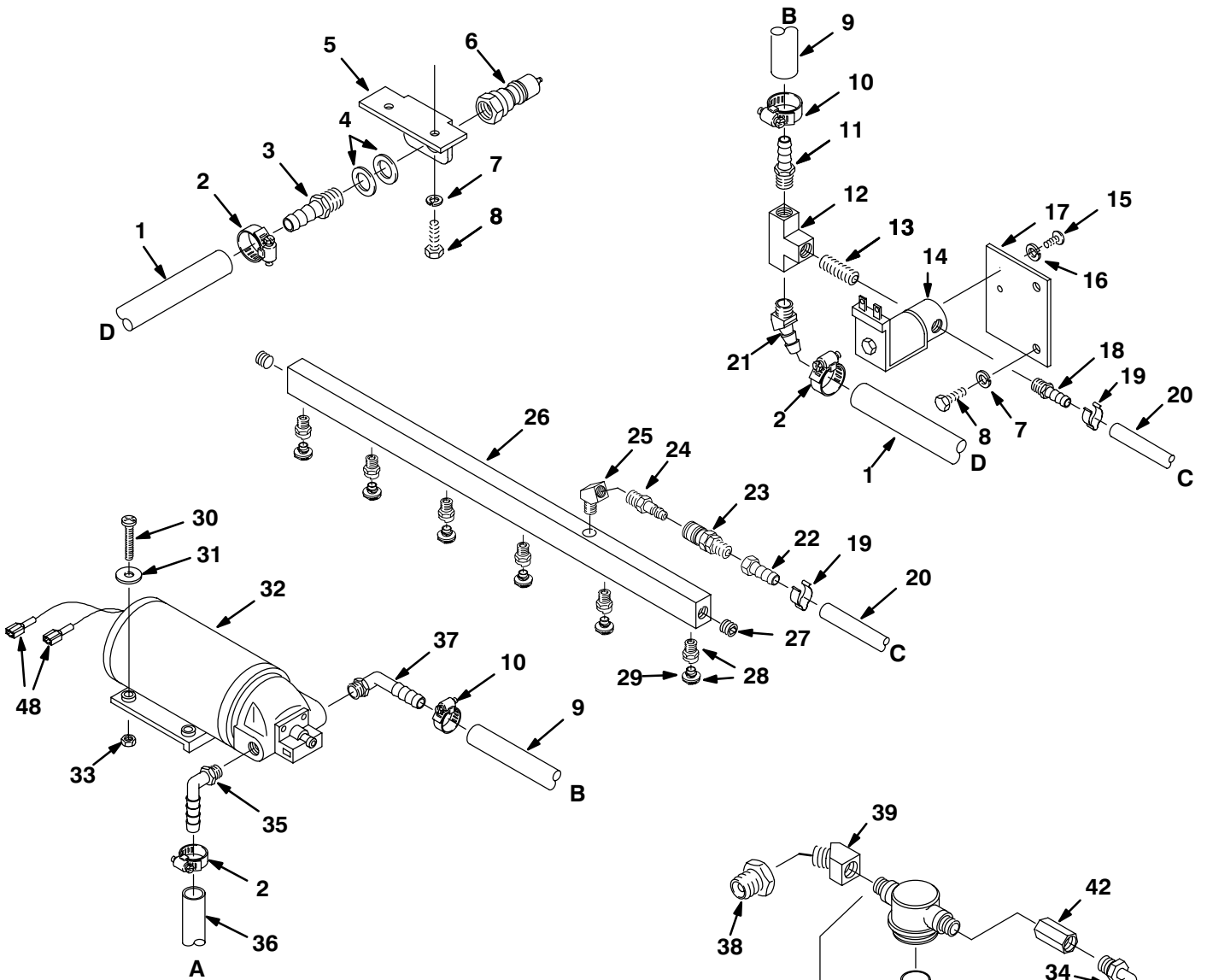
REF	PART #	DESCRIPTION	QTY.
▲ 9	140868	SCREW, SCKT 1/4-20X5/8	2
▲ 10	577031000	SCREW, 8X1/2 PANPHL	2
▲ 11	613082	COVER, TRANSAXLE	1
12	612783	SPACER, AXLE	4
13	612784	BRACKET, TRANSAXLE MTG	2
14	140028	WASHER, 3/8 FLAT	4
15	140333	WASHER, LOCK M10	4
16	612255000	SCREW, M10X35MM	4
17	607452	WHEEL, 8"	2
18	140000	WASHER, FLAT	8
19	140501	NUT, 1/4-20 NYLOCK	8

▽ ASSEMBLY

▲ INCLUDED IN ASSEMBLY

● RECOMMENDED STOCK ITEMS

**PLUMBING GROUP**



## PLUMBING GROUP

REF	PART #	DESCRIPTION	QTY.
1	607704	HOSE, 3/8" X 24.5"	1
2	140310	CLAMP, HOSE	4
3	150516	FITTING, 1/4MX3/8H BARB	1
4	140058	WASHER	2
5	603063	BRACKET, QC MOUNT	1
6	150933	PLUG, QUICK COUPLER	1
7	140016	WASHER, LOCK	4
8	578187000	SCREW, M06X12MM	4
9	607705	HOSE, 1/2" X 24" RED	1
10	630369	CLAMP, HOSE	2
11	150517	FITTING, 1/4MX1/2H BARB	1
12	150706	FITTING, TEE	1
13	150615	NIPPLE, 1/4 CLOSE	1
14	607473	●SOLENOID, WATER 24 VDC	1
15	140801	SCREW, 8-32X3/8	2
16	140023	WASHER, LOCK	2
17	603055	BRACKET, SOLENOID	1
18	150515	FITTING, 4H BARB	1
19	140325	CLAMP	2
20	607706	HOSE, 1/4" X18"	1
21	605394	FITTING, 1/4MX3/8H BARB 45°	1
22	150520	FITTING, 1/8FX1/4H BARB	1
23	150915	COUPLER, QUICK	1
∇	700423	ASM., SPRAY BAR	1
▲	150921	PLUG, QUICK COUPLER	1
▲	150422	FITTING, 1/8MX1/8F ELB STRT 45°	1

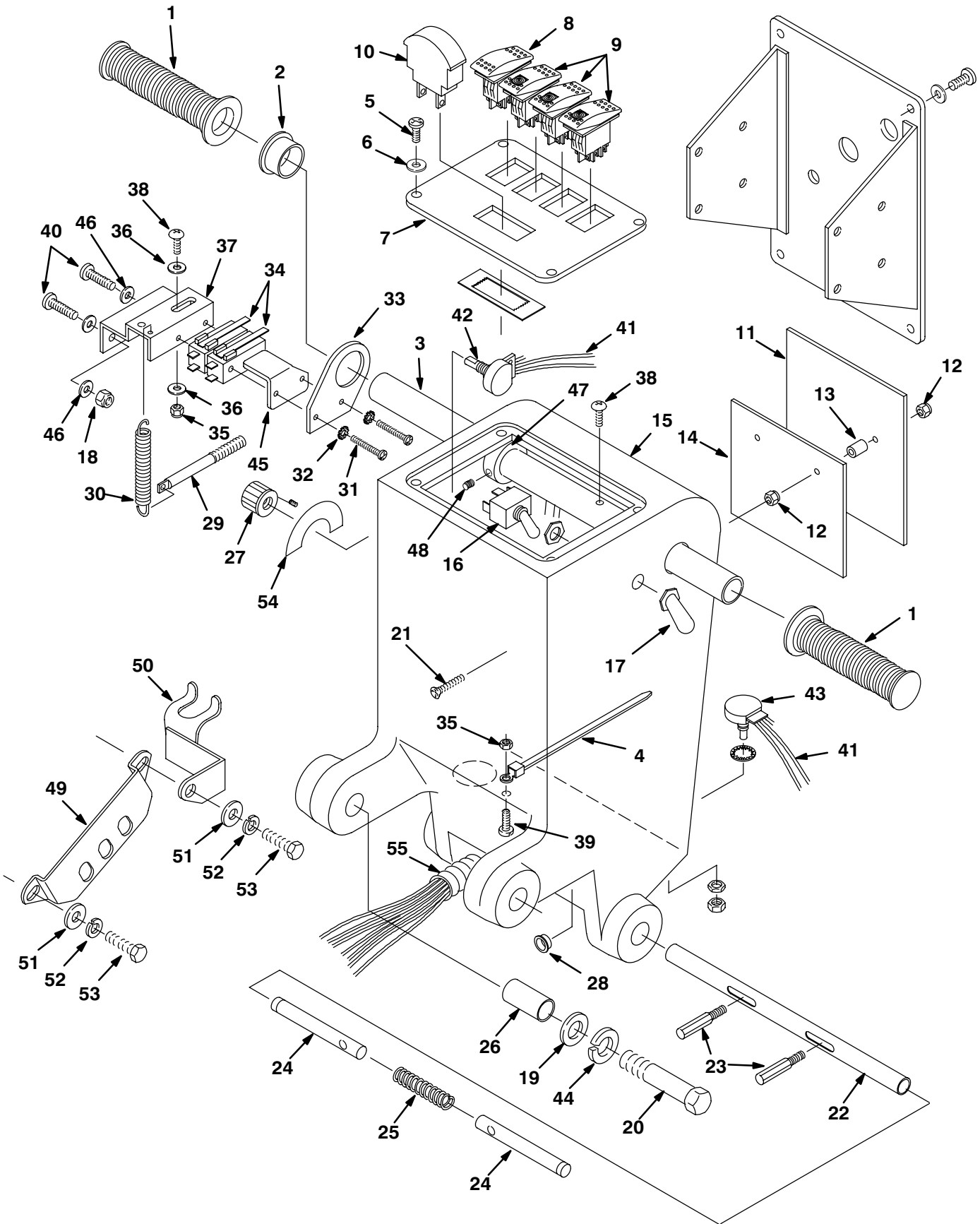
REF	PART #	DESCRIPTION	QTY.	
▲	26	230407	MANIFOLD, SPRAYBAR 22"	1
▲	27	150208	PLUG	2
▲	28	201011	●NOZZLE, TWISTOUT (80015)	6
	29	201013	●TIP, REPLACEMENT (80015)	6
	30	140899	SCREW, 10-24X1 1/4	2
	31	140012	WASHER, FLAT	2
	32	603031	●PUMP, 100 PSI 24 VDC	1
	33	140552	NUT, NYLOCK	2
	34	150415	FITTING, 1/4MX3/8H ELBOW 90°	1
	35	150412	FITTING, 3/8MX3/8H ELBOW 90°	1
	36	607305	TUBING, 3/8" X 30" GRAY VINYL	1
	37	150425	FITTING, 3/8MX1/2H ELBOW 90°	1
	38	150101	FITTING, BUSHING	1
	39	150403	ELBOW, STREET 1/4X45°	1
	40	180619	FILTER, 1/4 NPT CLEAR BOWL	1
	41	180638	●SLEEVE, NYLON FILTER	1
	42	150302	COUPLING, 1/4FX1/4F	1
	43	190129	●KIT, PUMP PRESSURE SWITCH	1
		190172	●KIT, PUMP PRS SWITCH (VITON)	1
		190134	●KIT, PUMP DIAPHRAGM ONLY	1
	44	190128	●KIT, PUMP UPPER HOUSING	1
		190124	●KIT, PUMP CHECK VALVE ONLY	1
	45	190171	●KIT, PUMP VALVE (VITON)	1
	46	190131	●KIT, PUMP SERVICE	1
	47	190130	●KIT, PUMP LOWER HOUSING	1
	48	130096	TERMINAL, MALE .25	2

∇ ASSEMBLY

▲ INCLUDED IN ASSEMBLY

● RECOMMENDED STOCK ITEMS

CONSOLE GROUP



## CONSOLE GROUP

REF	PART #	DESCRIPTION	QTY.
1	200823	GRIP, HANDLE TUBE	2
2	605351	BUSHING	1
3	604402	HANDLE, TUBE	1
4	605321	CABLE TIE	1
5	578141000	SCREW, M5X10MM	4
6	140018	WASHER, LOCK	4
7	602978	PANEL, CONTROL W/SILKSCREEN	1
8	602919	●SWITCH, DPDT ON/ON	1
9	601107	●SWITCH, LIGHTED ROCKER	3
10	606020	METER, BATTERY VOLTAGE 24V	1
11	630104	●SPEED CONTROL, PMB, 55 AMP	1
12	200160014	NUT	4
13	630261	SPACER	2
14	630128	HEAT SINK	1
15	607556	HOUSING, CONTROL, TEAL	1
16	601108	●SWITCH, TOGGLE	1
17	130753	BOOT, SWITCH	1
18	140284	NUT	2
19	140045	WASHER, FLAT	2
20	140351	SCREW, M12X1.75X70MM	2
21	630304	SCREW, M4X35MM	2
22	230715	TUBE, HANDLE ADJUSTMENT	1
23	230649	PIN, HANDLE ADJUSTMENT	2
24	230710	PIN, HANDLE LOCK	2
25	140415	SPRING, LOCK PIN	1
26	140155	BUSHING	2
27	606550	KNOB, SPEED CONTROL	1
28	603007	BUSHING, SNAP	1

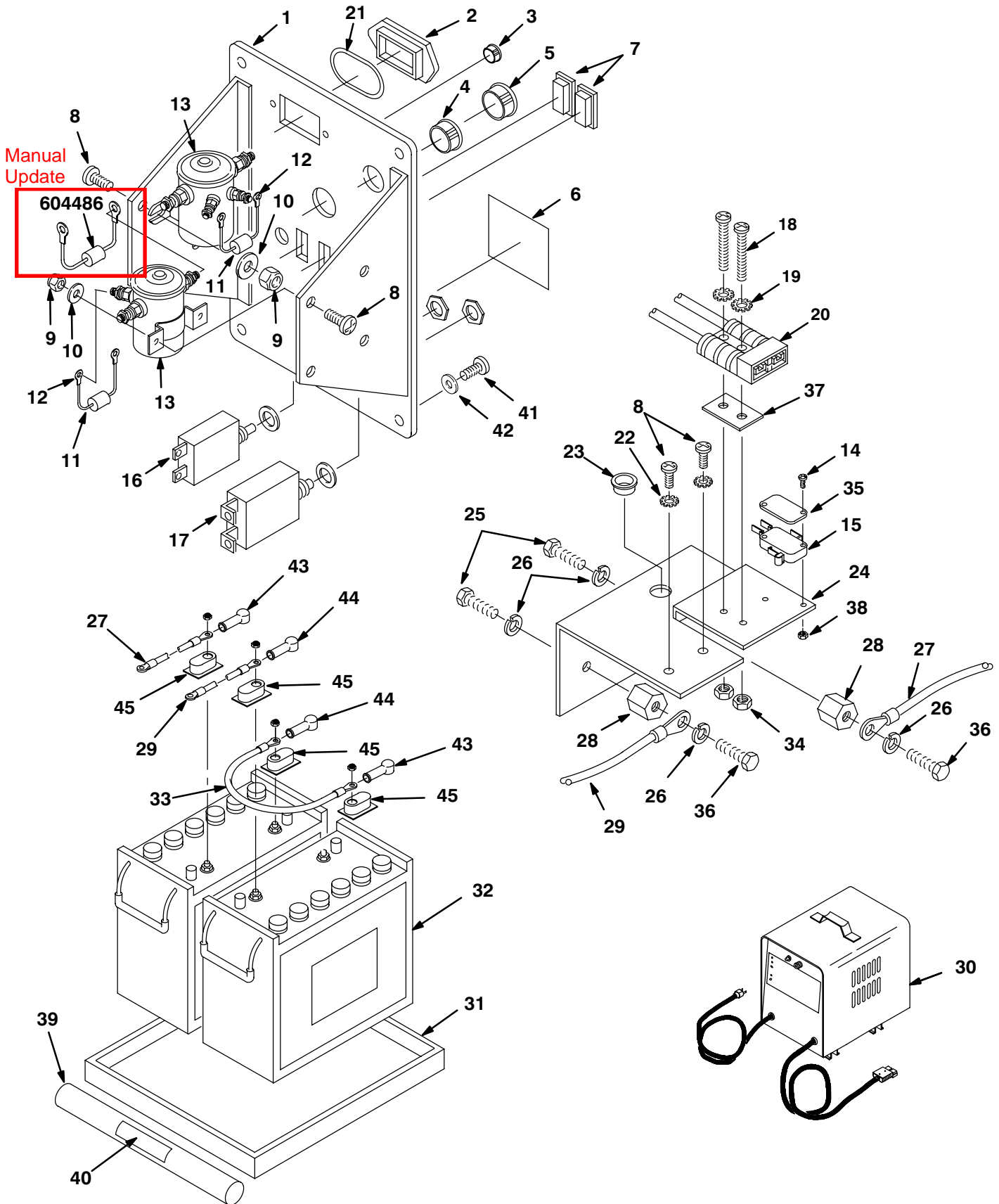
REF	PART #	DESCRIPTION	QTY.
29	602886	PIN, SPRING RETURN	1
30	605812	SPRING, EXPANSION	1
31	140830	SCREW 6-32X1-5/8	2
32	140019	WASHER, LOCK	2
33	27098	BRACKET, SWITCH	1
34	130729	●SWITCH, ROLL	2
35	140552	NUT	2
36	140012	WASHER, 3/16 FLAT	2
37	25671	MOUNT, SWITCH	1
38	140890	SCREW. 10-24X1/2	2
39	140900	SCREW 10-24X3/4	1
40	608322	SCREW, M6X1.0X16MM	2
▽ 41	602873	HARNESS, CONSOLE W/POTS	1
▲ 42	130776	●POTENTIOMETER, 50K	1
▲ 43	130775	●POTENTIOMETER, 50K LOCKABLE	1
44	140024	WASHER, LOCK	2
45	603830	PLATE, GUARD SWITCH	1
46	140000	WASHER, 1/4 FLAT	4
47	605094	COLLAR, HANDLE	2
48	140859	SCREW, 1/4 SK	2
49	230661	PLATE, LOCK CONTROL HOUSING	2
50	611979	WELDMENT, DRAIN HOSE	1
51	140027	WASHER, FLAT	4
52	140015	WASHER, LOCK	4
53	200031488	SCREW, M8X1.25X20MM	4
54	606549	DECAL, SPEED CONTROL	1
55	613092	●HARNESS, WIRE MAIN	1
	604486	ASM., DIODE SPLICED	1

▽ ASSEMBLY

▲ INCLUDED IN ASSEMBLY

● RECOMMENDED STOCK ITEMS

ELECTRICAL / BATTERY GROUP



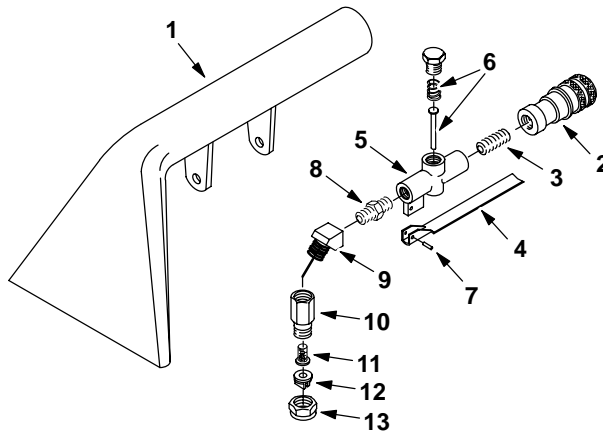
## ELECTRICAL / BATTERY GROUP

REF	PART #	DESCRIPTION	QTY.
1	602559	PANEL, CONTROL HOUSING	1
2	609969	PLUG, HOUR METER	1
3	069764626	PLUG, HOLE 012.7	1
4	130161	PLUG, DOME .875	1
5	130175	PLUG, DOME .750	1
6	630420	DECAL, FLAMMABLE MATERIAL	1
7	582150	PLUG, ACCESSORY SWITCH	2
8	608322	SCREW, M6X1.0X20MM	6
9	140284	NUT	4
10	140000	WASHER, FLAT	4
11	606404	●ASM., DIODE W/RING TERM.	2
12	281001009	RING, TERMINAL #10	4
13	605905	●SOLENOID, 24V	2
14	578403000	SCREW, M3X20MM	2
15	600437	●SWITCH, ROLLER	1
16	603487	●BREAKER, BRSH CIRCUIT 15AMP	1
17	130739	●BREAKER, CIRCUIT 60AMP	1
18	140829	SCRW, 6-32X1	2
19	140019	WASHER, LOCK	2
20	605387	CONNECTOR, 50A WO/CONTACTS	1
21	605823	O RING .926ID X .996OD	1
22	140018	WASHER, #10 INT	2
23	130698	BUSHING, SNAP	1

## ● RECOMMENDED STOCK ITEMS

REF	PART #	DESCRIPTION	QTY.
24	603191	BRACKET, CHGR W/STANDOFF	1
25	140553	SCREW, 1/4-20X1/2	2
26	140016	WASHER, LOCK	4
27	602871	CABLE, BATTERY #6 BLACKX24"	1
28	578427	STANDOFF, TERMINAL	2
29	603192	ASM., WIRE #6X650MM RED	1
30	603235	CHARGER 24DC/20A	1
31	601991	TRAY, BATTERY	1
32	600394	BATTERY, 12V 215A	2
33	130364	CABLE, BATTERY #6 BLACKX15"	1
34	140539	NUT	2
35	601359	PLATE, SWITCH BACKING	1
36	140259	SCREW 1/4-20X5/8 HXHDCP	2
37	603331	SPACER, CHARGER PLUG	1
38	579211	NUT, LOCK	2
39	602592	SUPPORT TUBE BATTERY	1
40	603828	DECAL, BATTERY PLACEMENT	1
41	578141000	SCREW M5X10 PANPHL	4
42	140018	WASHER #10 INT	4
43	611221	BOOT, BATTERY CABLE BLK	2
44	611222	BOOT, BATTERY CABLE RED	2
45	45962	COVER, BATTERY TERMINAL	4

127 mm (5 in) HAND TOOL GROUP



REF	PART #	DESCRIPTION	QTY.
▽	200505	●ASM., HAND TOOL 5"	1
▲ 1	200431.BK	TOOL, HAND	1
▲ 2	150913	FITTING, 1/4F QD FML COUPLER	1
▲ 3	150615	NIPPLE, CLOSE	1
▲ 4	200905	TRIGGER, HAND TOOL	1
▲ 5	210210	●VALVE, FLOW CONTROL	1
▲ 6	190600	VALVE PIN & SPRING	1

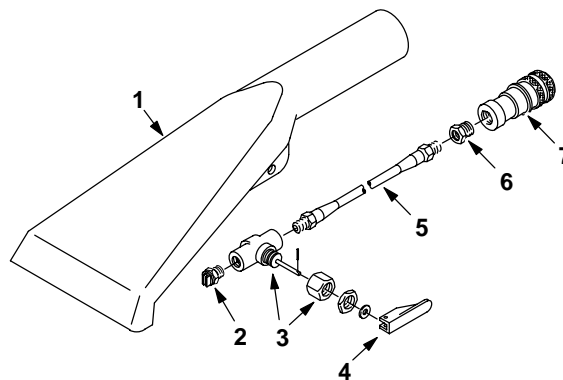
REF	PART #	DESCRIPTION	QTY.
▲ 7	140609	PIN, ROLL 3/16	1
▲ 8	150606	NIPPLE, HEX 1/4	1
▲ 9	150403	ELBOW, ST 1/4 45°	1
▲ 10	200992	BODY, SPRAY 1/4F	1
▲ 11	200996	SCREEN, SPRAY NOZZLE	1
▲ 12	200965	●TIP, SPRAY #8002	1
▲ 13	200994	CAP, SPRAY BODY	1

▽ ASSEMBLY

▲ INCLUDED IN ASSEMBLY

● RECOMMENDED STOCK ITEMS

76 mm (3 in) CREVICE TOOL GROUP



REF	PART #	DESCRIPTION	QTY.
▽	200517	●ASM., CREVICE TOOL SER.60	1
▲ 1	200436.BK	TOOL, CREVICE BLACK	1
▲ 2	200975	●FITTING, TIP #5002 V-JET	1
▲ 3	210014	●VALVE, TOGGLE W/NUT	1

REF	PART #	DESCRIPTION	QTY.
▲ 4	210020	POSITIONER, VALVE HANDLE	1
▲ 5	160106	HOSE, SOLUTION	1
▲ 6	150100	FITTING, 1/4MX1/8F BUSHING	1
▲ 7	150913	FITTING, 1/4F QD FML COUPLER	1

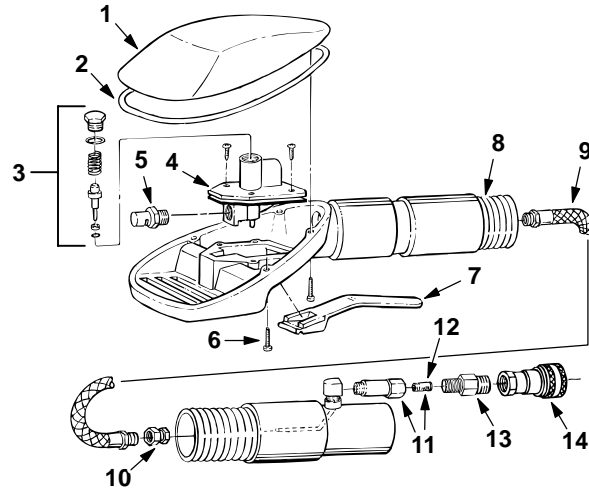
▽ ASSEMBLY

▲ INCLUDED IN ASSEMBLY

● RECOMMENDED STOCK ITEMS



LOW PRESSURE UPHOLSTERY TOOL GROUP



REF	PART #	DESCRIPTION	QTY.
▽	200540	●ASSEMBLY, UPHOLSTERY TOOL	1
▲ 1	200845	COVER	1
▲ 2	200843	GASKET	1
▲ 3	190631	●KIT, VALVE ASM.	1
▲ 4	210226	●VALVE, LP	1
▲ 5	200991	●NOZZLE	1
▲ 6	200838	SCREW	4
▲ 7	200840	TRIGGER	1

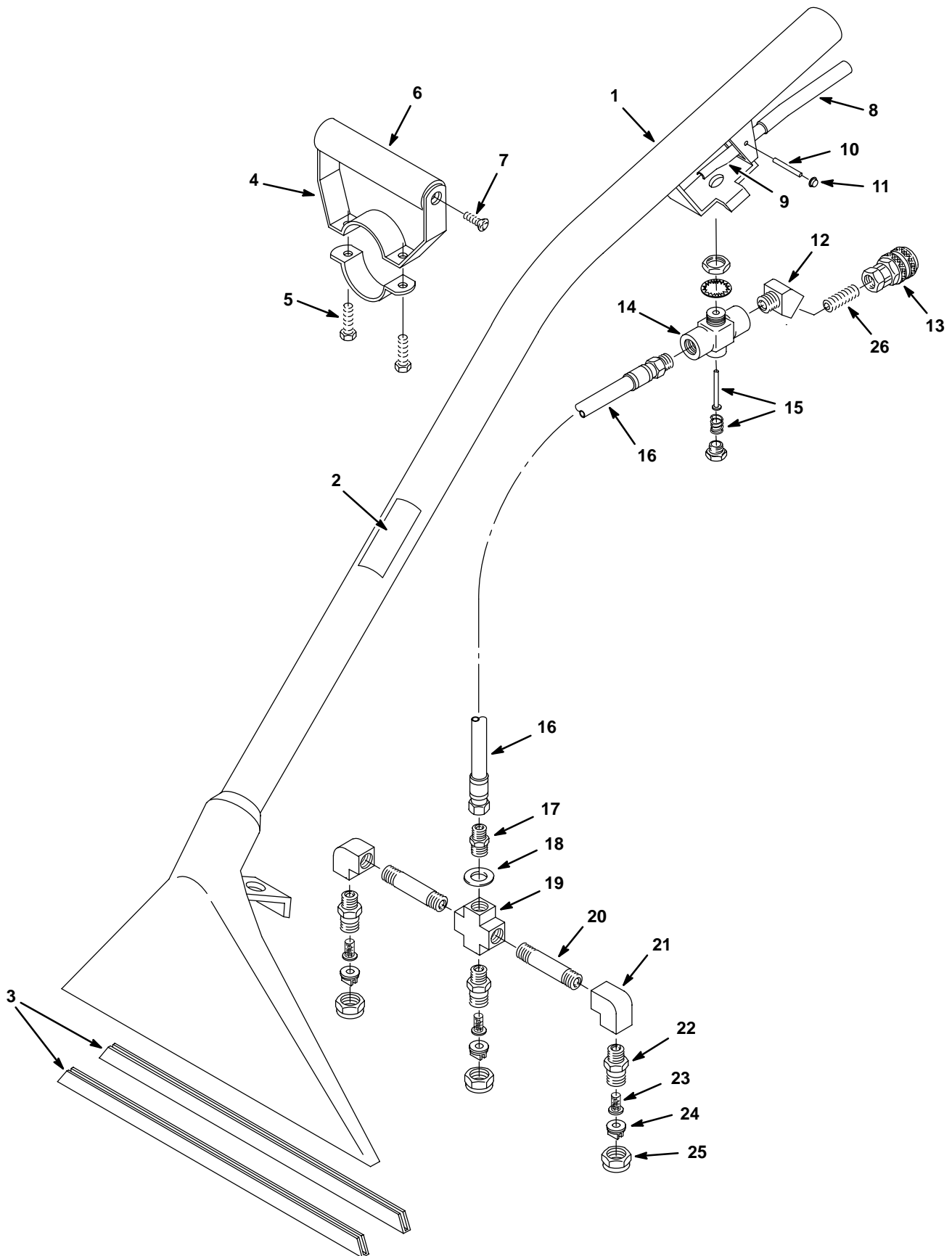
REF	PART #	DESCRIPTION	QTY.
▲ 8	200844	●HOSE, VACUUM	1
▲ 9	200837	●HOSE, SOLUTION	1
▲ 10	200848	FITTING	1
▲ 11	200842	FILTER	1
▲ 12	200841	SCREEN, FILTER	1
▲ 13	150606	FITTING, 1/4MX1/4M	1
▲ 14	150913	●COUPLER	1

▽ ASSEMBLY

▲ INCLUDED IN ASSEMBLY

● RECOMMENDED STOCK ITEMS

330mm (13 in) LOW PRESSURE WAND GROUP



**330mm (13 in) LOW PRESSURE WAND GROUP**

REF	PART #	DESCRIPTION	QTY.
▽	600048	●ASM., WAND LOW PRESSURE	1
▲ 1	200403.BK	TOOL, FLOOR BLACK	1
▲ 2	120846	DECAL, LOW PRESSURE TOOL	1
▲ 3	200939	●SHOE, 330MM (13 IN) FLR TOOL	2
▲▽ 4	200927	GRIP, HAND ADJ. COMPLETE	1
▲ 5	140259	SCREW, 1/4-20X5/8	2
▲ 6	200912	GRIP, HANDLE FOAM	1
▲ 7	140834	SCREW, 1/4-20X5/8	2
▲ 8	200809	SLEEVE, HANDLE	1
▲ 9	200902	HANDLE, VALVE	1
▲ 10	140605	PIN, HANDLE	1
▲ 11	140520	NUT, 1/4 PUSH BLK	2
▲ 12	150403	FITTING, 1/4MX1/4F 45 STR	1
▲ 13	150913	●FITTING, 1/4F QD CPLR SER 60	1

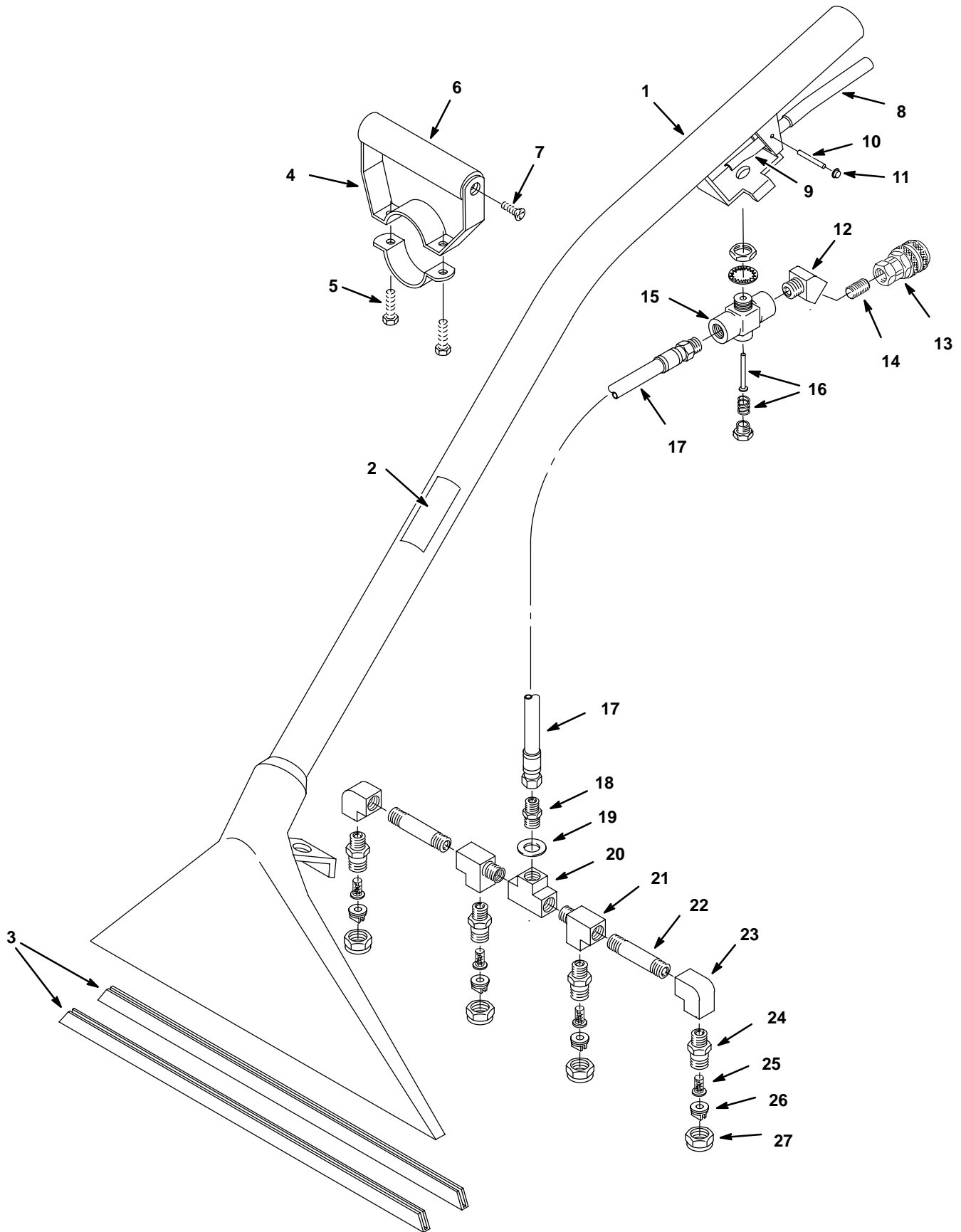
REF	PART #	DESCRIPTION	QTY.
▲▽ 14	210150	●VALVE, FLOW CONTROL	1
▲ 15	190603	●KIT, VALVE PIN AND SPRING	1
▲ 16	160170	ASM, HOSE LOW PRESSURE	1
▲ 17	150606	FITTING, 1/4MX1-3/8HEXNIP	1
▲ 18	140058	WASHER, .543X.875X.062 WAND	1
▲▽	700062	ASM., SPRAYBAR WO/TIPS	1
▲ 19	150700	CROSS, 1/4 FPT	1
▲ 20	150600	FITTING, 1/4MX2" NIPPLE	2
▲ 21	150401	FITTING, 1/4FX1/4F ELBOW 90	2
▲ 22	200993	SPRAY BODY, 1/4" MALE	3
▲ 23	200996	●FILTER, SCREEN 100 MESH	3
▲ 24	200964	●FITTING, TIP 11003 T-JET	3
▲ 25	200994	●CAP, SPRAY BODY	3
▲ 26	150615	FITTING, 1/4MX7/8 CLSNIP	1

▽ ASSEMBLY

▲ INCLUDED IN ASSEMBLY

● RECOMMENDED STOCK ITEMS

406mm (16 in) LOW PRESSURE FLOOR TOOL



**406mm (16 in) LOW PRESSURE FLOOR TOOL**

REF	PART #	DESCRIPTION	QTY.
▽	200503	●ASM., FLOOR TOOL	1
▲ 1	200411.BK	TOOL, FLOOR 406MM (16 IN)	1
▲ 2	120846	DECAL, LOW PRESSURE TOOL	1
▲ 3	200956	●SHOE, 406MM (16 IN) FLR TOOL	2
▲▽ 4	200927	GRIP, HAND ADJ. COMPLETE	1
▲ 5	140259	SCREW, 1/4-20X5/8	2
▲ 6	200912	GRIP, HANDLE FOAM	1
▲ 7	140834	SCREW, 1/4-20X5/8	2
▲ 8	200809	SLEEVE, HANDLE	1
▲ 9	200902	HANDLE, VALVE	1
▲ 10	140605	PIN, HANDLE	1
▲ 11	140520	NUT, 1/4 PUSH BLK	2
▲ 12	150403	FITTING, 1/4MX1/4F 45 STR	1
▲ 13	150913	●COUPLER, SER. 60	1
▲ 14	150615	NIPPLE, CLOSE 1/4	1

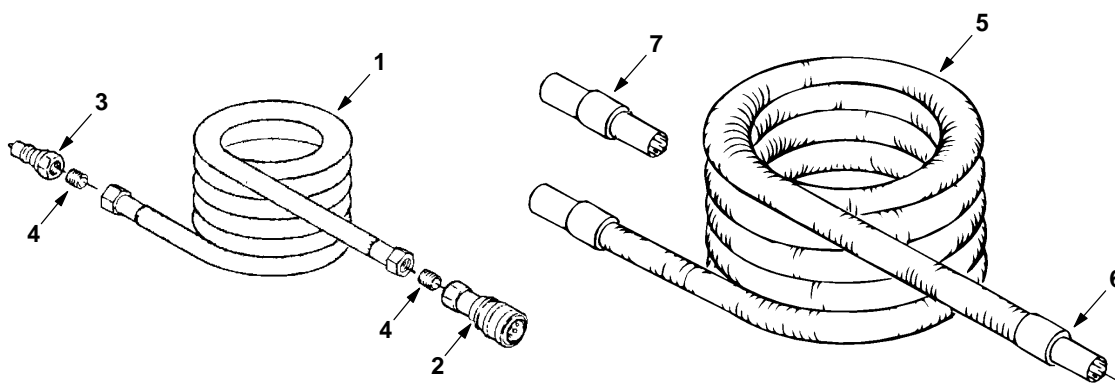
REF	PART #	DESCRIPTION	QTY.
▲▽ 15	210150	●VALVE, FLOW CONTROL	1
▲ 16	190603	●KIT, VALVE PIN AND SPRING	1
▲ 17	160170	ASM, HOSE LOW PRESSURE	1
▲ 18	150606	FITTING, 1/4MX1-3/8HEXNIP	1
▲ 19	140058	WASHER, .543X.875X.062 WAND	1
▲▽	700656	ASM., SPRAYBAR 16" WO/TIPS	1
▲ 20	150706	FITTING, 1/4F TEE	1
▲ 21	150709	FITTING, 1/4F X 1/4F X 1/4M	2
▲ 22	150600	FITTING, 1/4MX2" NIPPLE	2
▲ 23	150401	FITTING, 1/4FX1/4F ELBOW 90	2
▲ 24	200993	SPRAY BODY, 1/4" MALE	4
▲ 25	200996	●FILTER, SCREEN 100 MESH	4
▲ 26	200964	●FITTING, TIP 11003 T-JET	4
▲ 27	200994	●CAP, SPRAY BODY	4

▽ ASSEMBLY

▲ INCLUDED IN ASSEMBLY

● RECOMMENDED STOCK ITEMS

## SOLUTION AND VACUUM HOSES GROUP



REF	PART #	DESCRIPTION	QTY.
▽	600329	●KIT, HOSE, VAC & SOL 4.6M (15')	1
	600330	●KIT, HOSE, VAC & SOL 7.6M (25')	1
	600331	●KIT, HOSE, VAC & SOL 15.2M (50')	1
▲▽ 1	160185	HOSE, SOLUTION 4.6M (15')	1
	160186	HOSE, SOLUTION 7.6M (25')	1
	160187	HOSE, SOLUTION 15.2M (50')	1
▲ 2	150913	●COUPLER, QUICK SER. 60	1
▲ 3	150933	PLUG, QUICK COUPLER	1
▲ 4	150615	NIPPLE	2

REF	PART #	DESCRIPTION	QTY.
▲▽ 5	160400	HOSE, VACUUM 4.6M (15')	1
	160401	HOSE, VACUUM 7.6M (25')	1
	160402	HOSE, VACUUM 15.2M (50')	1
▲ 6	160430	●CUFF, HOSE 1-1/2"	2
7	160451	●CONNECTOR, VAC HOSE 1-1/2"	1

▽ ASSEMBLY

▲ INCLUDED IN ASSEMBLY

● RECOMMENDED STOCK ITEMS