



Electronic Service Manuals

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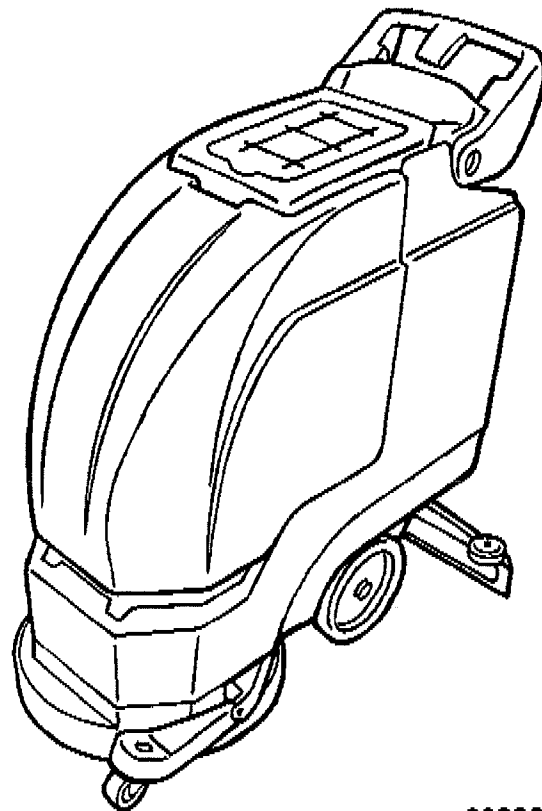


Speed ScrubTM 1701 Plus

Battery Automatic Scrubber
Fregadora Automática Batería

Model No.:
608336
608337 – Pac
609245 – Can. Pac

Operator and Parts Manual
Manual de Operación y de Piezas



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608362
Rev. 03 (02-04)

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.

Use the illustrated Parts Lists to order parts. 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 parts and service center, distributor or from any of the manufacturer's subsidiaries.

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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OPERATION

SAFETY PRECAUTIONS

This machine is intended for commercial use. It is designed exclusively to scrub hard floors in an indoor environment and is not constructed for any other use. Use only recommended pads, brushes and commercially available floor cleaners intended for machine application.

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

The following warning alert symbol and the "FOR SAFETY" heading 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.

Failure to follow these warnings may result in: personal injury, electrocution, electrical shock, fire or explosion.

 **WARNING:** Do Not Use Flammable Liquids Or Operate Machine In Or Near Flammable Liquids, Vapors Or Combustible Dusts.

This machine is not equipped with explosion proof motors. The electric motors will spark upon start up and during operation which could cause a flash fire or explosion if machine is used in an area where flammable vapors/liquids or combustible dusts are present.

 **WARNING:** Do Not Pick Up Flammable Materials Or Reactive Metals.

 **WARNING:** Keep Sparks And Open Flame Away. Keep Battery Hood Open When Charging.

 **WARNING:** Disconnect Battery Cables Before Servicing Machine.

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

FOR SAFETY:

1. Do not operate machine:
 - With flammable liquids or near flammable vapors as an explosion or flash fire may occur.
 - Unless trained and authorized.
 - Unless operation manual is read and understood.
 - If not in proper operating condition.
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.
 - Wear non-slip shoes.
 - Use care when reversing machine.
 - Report machine damage or faulty operation immediately.
 - Never allow children to play on or around.
 - 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.
 - Wear eye and ear protection when using pressurized air or water.
 - Disconnect battery connections before working on machine.
 - Wear protective gloves and safety glasses when handling batteries or battery cables.
 - Avoid contact with battery acid.
 - Use manufacturer supplied or approved replacement parts.
 - All repairs must be performed by a qualified service person.
 - Do not modify the machine from its original design.

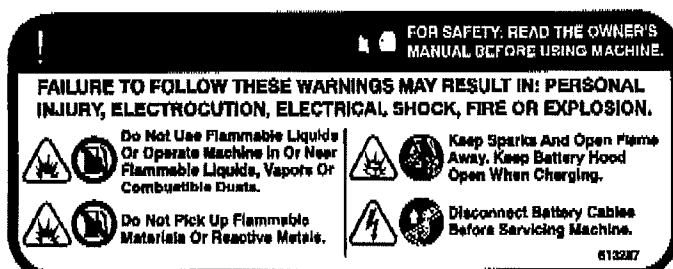
6. When transporting machine:

- Turn machine off.
- Get assistance when lifting machine.
- Do not lift machine when batteries are installed.
- Use a recommended ramp when loading/unloading into/off truck or trailer.
- Use tie-down straps to secure machine to truck or trailer.

SAFETY LABELS

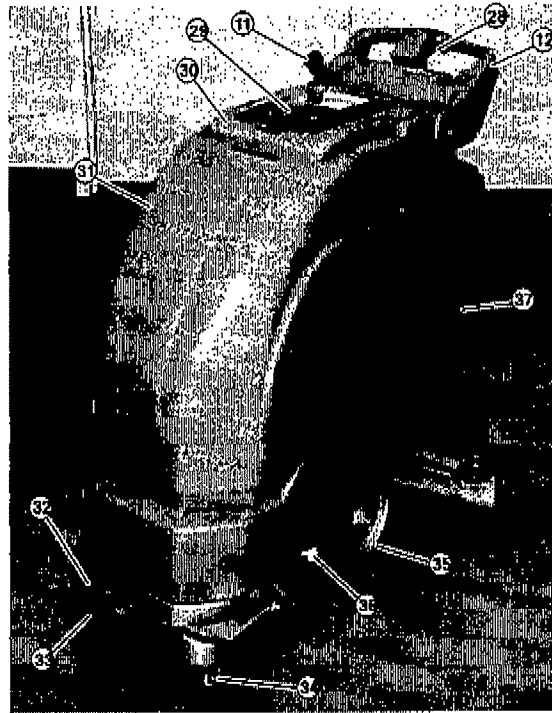
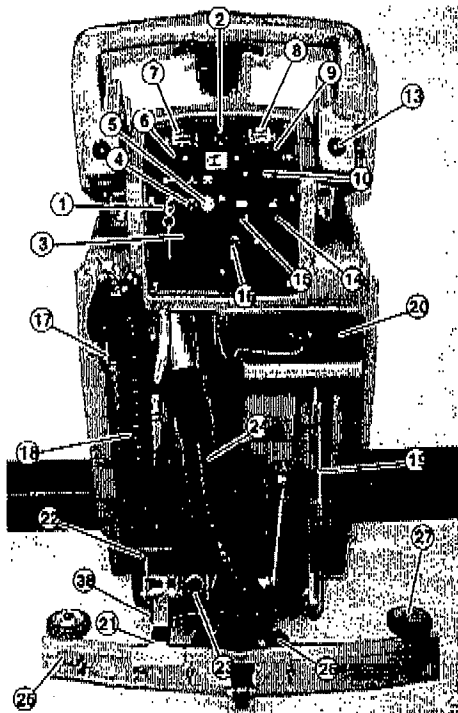
The safety labels appear on the machine in the locations indicated. Replace labels if they become damaged or illegible.

WARNING LABEL – LOCATED ON THE RECOVERY TANK COVER.



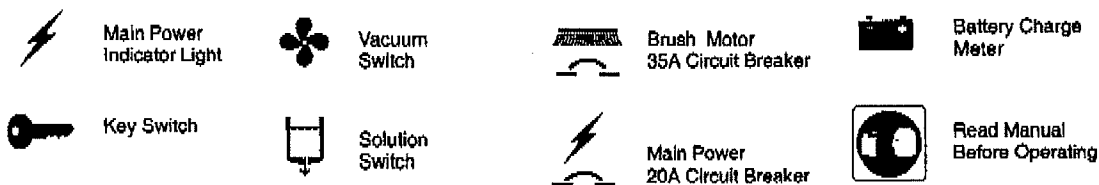
OPERATION

MACHINE COMPONENTS



- | | | |
|--|---|---|
| 1. Key Switch | 14. Wand Kit ON/OFF Switch (Opt.) | 28. Brush Trigger |
| 2. Power ON/OFF Indicator Light | 15. ES ON/OFF Switch (ES™ Model) | 29. Recovery Tank Lid |
| 3. Hour Meter (Opt.) | 16. Pump On Light (ES™ Model) | 30. Recovery Tank |
| 4. Main Circuit Breaker | 17. Charger Plug | 31. Battery Compartment Hood |
| 5. Brush Circuit Breaker | 18. Recovery Tank Drain Hose | 32. Scrub Head |
| 6. Brush Release Button | 19. Solution Tank Drain Hose With Level Indicator | 33. Scrub Head Skirt |
| 7. Brush Pressure Meter | 20. Solution Fill Port Cover | 34. Transport Caster |
| 8. Battery Meter | 21. Scrub Head Lift Pedal | 35. Main Wheels |
| 9. Vacuum ON/OFF Switch | 22. Scrub Head Release Lift Pedal | 36. Wand Kit Solution Hose Coupler (Opt.) |
| 10. Solution ON/OFF Switch | 23. Solution Flow Adjustment Knob | 37. Solution Tank |
| 11. Squeegee Lift Knob | 24. Squeegee Vacuum Hose | 38. Pad Pressure Adjustment Knob |
| 12. Control Handle | 25. Squeegee Assembly | |
| 13. Control Handle Height Adjustment Knobs | 26. Squeegee Thumb Knobs | |
| | 27. Wall Rollers | |

CONTROL PANEL SYMBOLS



MACHINE INSTALLATION

UNCRATING MACHINE

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

Check Machine Contents to ensure package is complete. Contact distributor for missing items.

Machine Contents:

- 1 – Battery Cable #602871
- 1 – Wire Asm. #6X24" Black #603208
- 2 – 12VDC 130AH Batteries #130869 (included with machine PAC)
- 1 – Battery Charger, 24V/15A 120V #603553 (included with machine PAC)

To uncrate your machine, remove shipping straps and carefully lift or make a ramp to remove machine from pallet. Do not roll machine off pallet, damage may result.

FOR SAFETY: Get assistance when lifting machine. Do not lift machine when batteries are installed.

Raise scrub head to transport position before maneuvering machine. Step down firmly on scrub head lift pedal to raise (Figure 1).

NOTE: To prevent scrub head skirt damage, always keep machine in transport position when pad driver is not installed.



FIG. 1

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

ATTENTION: To prevent possible machine damage, install batteries AFTER removing machine from shipping pallet.

Squeegee assembly is packaged with machine.

Batteries, battery charger, brush, pad driver and pads must be purchased separately. Consult an authorized distributor for specific pads and brushes.

ATTENTION: The use of supplies other than those recommended by manufacturer may cause damage.

INSTALLING BATTERIES

⚠ WARNING: Keep Sparks And Open Flame Away. Keep Battery Hood Open When Charging.

FOR SAFETY: When servicing machine, wear protective gloves and safety glasses 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 178mm (7 in.) W x 330mm (13 in.) L x 254mm (10 in.) H.

1. Park machine on a level surface, turn off all switches, and remove key.
2. Remove battery hood to access battery compartment. Then remove metal battery tray and loose battery cable from compartment.
3. Disconnect vacuum hose from recovery tank snout. Carefully install bottom battery into compartment with battery posts positioned towards rear of machine (Figure 2).

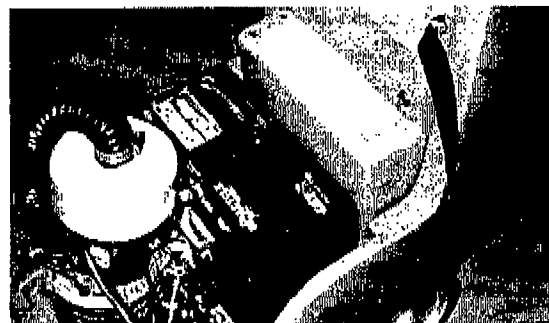


FIG. 2

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

4. Connect red battery cable coming from machine to positive (+) post of bottom battery. Then connect black jumper cable to negative (-) post (Figure 4).

OPERATION

5. After connecting cables to bottom battery, carefully hang metal battery tray on studs located above bottom battery. Place top battery into tray with posts positioned towards rear of machine. Secure top battery with strap (Figure 3).

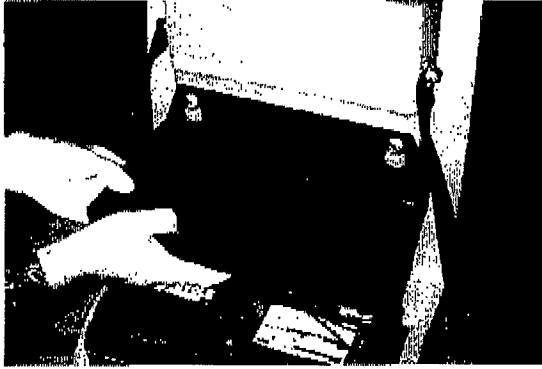


FIG. 3

6. Connect black battery cable coming from machine to negative (-) post of top battery. Then connect opposite end of black jumper cable to positive (+) post (Figure 4).

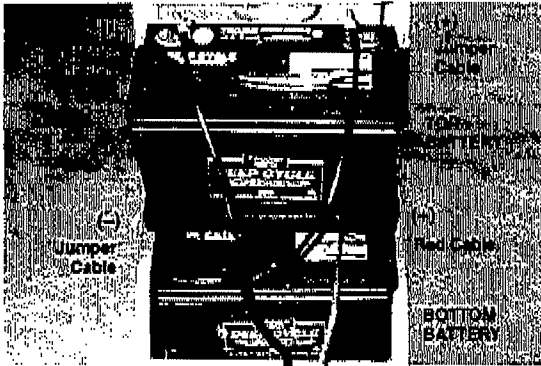


FIG. 4

7. Reconnect vacuum hose to recovery tank snout as shown (Figure 5).

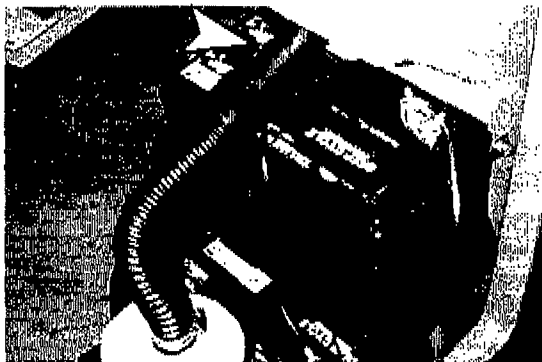


FIG. 5

8. After batteries are properly installed, turn on key and vacuum switch and check battery meter charge level. Charge if necessary (See BATTERY CHARGING) (Figure 6).

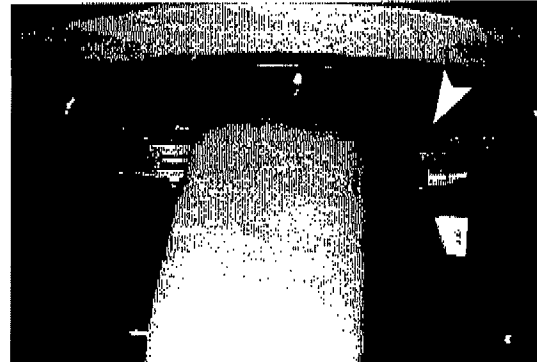


FIG. 6

MACHINE SETUP

ATTACHING SQUEEGEE ASSEMBLY

1. Turn key to the off position.

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

2. Raise squeegee mount bracket by moving squeegee lift knob to the left (Figure 7).

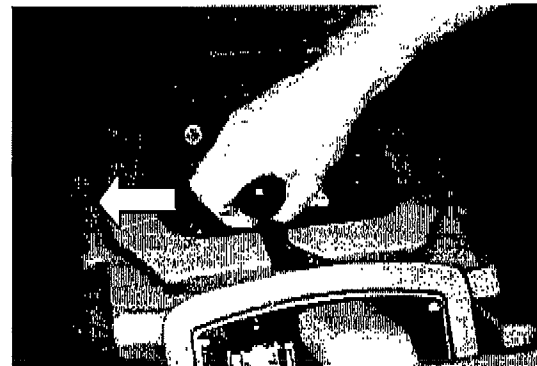


FIG. 7

3. Loosen two thumb knobs on squeegee assembly and slide squeegee into slots on squeegee mount bracket (Figure 8).

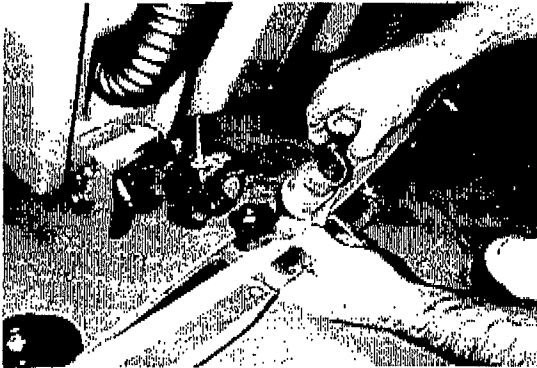


FIG. 8

4. Tighten thumb knobs securely.
5. Connect vacuum hose from machine to squeegee assembly (Figure 9).

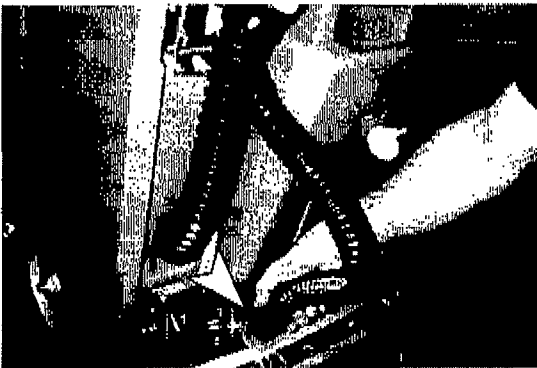


FIG. 9

INSTALLING PAD DRIVER OR BRUSH

1. Select a recommended pad or brush that best meets your cleaning needs.

NOTE: Consult an authorized distributor for pad/brush recommendations.

2. Attach pad to pad driver before mounting driver to motor hub. Secure pad with plastic centerlock ring (Figure 10).

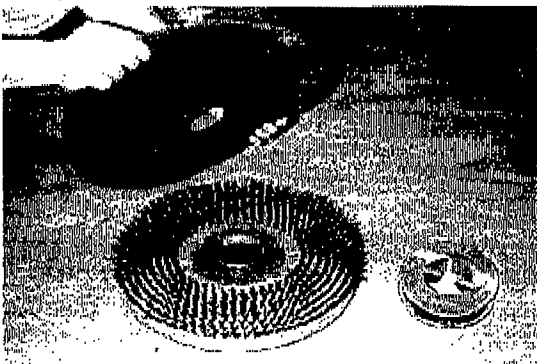


FIG. 10

3. Turn key switch on (Figure 11).

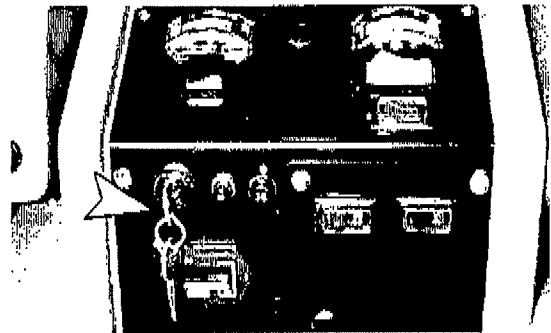


FIG. 11

4. Place the pad driver/brush on the floor in front of the scrub head (Figure 12).

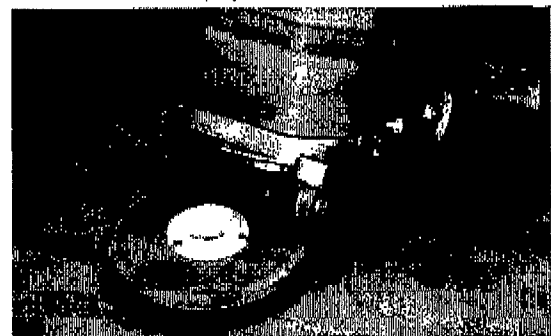


FIG. 12

5. Tilt the machine back on its rear wheels and center the scrub head down over the pad driver/brush (Figure 12).
6. **IMPORTANT STEP:** Release the brush lift pedal from the transport position (Figure 13). Align the motor hub down inside the pad driver/brush.



FIG. 13

7. Pull the triggers to engage the pad driver/brush. **Make sure the front wheel is in the UP position** (Figure 14).

NOTE: When a pad driver/brush is not installed, make sure to keep the machine in transport position to prevent skirt damage.

OPERATION

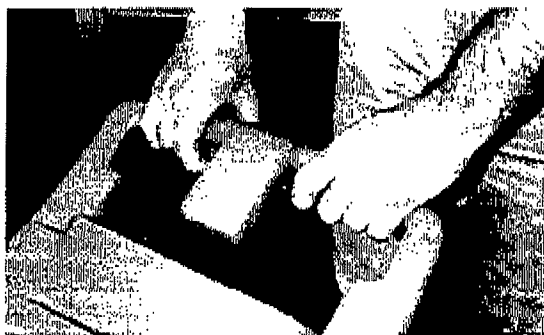


FIG. 14

NOTE: Before installing pad driver or brush make sure mounting surface is clean. A clean surface will ease pad driver removal later.

REMOVING PAD DRIVER OR BRUSH

1. Raise scrub head to transport position. Step down firmly on scrub head lift pedal to raise (Figure 15).



FIG. 15

2. Turn key switch on.
3. Tilt machine back on its rear wheels.
4. While pressing the "brush release button", pull and release the brush trigger quickly. The pad driver/brush will automatically spin off motor hub. If it doesn't release, repeat step (Figure 16).

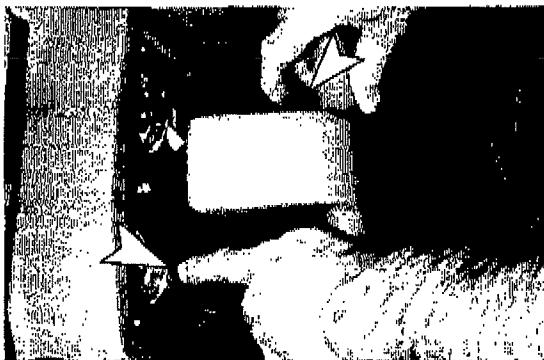


FIG. 16

NOTE: To prevent scrub head skirt damage, always keep machine in transport position when pad driver or brush is not installed.

FILLING SOLUTION TANK

1. Transport machine to filling station. Raise squeegee and scrub head when transporting.
2. Turn off key switch.
3. Remove solution tank fill port cover.
4. Fill solution tank with 28L (7.5 gal) of clean water, 60°C (140°F) maximum temperature. To fill with bucket, use a bucket with a spout (Figure 17).

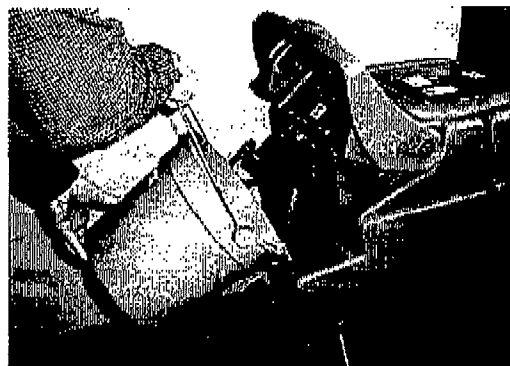


FIG. 17

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

5. Add cleaning chemical. See proper dilution ratio instructions on chemical container.
6. Replace solution tank fill port cover.

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

ATTENTION: Use only recommended detergents. Machine damage due to improper detergent usage will void the manufacturer's warranty. Contact your Sales Representative for detergent recommendations.

WARNING: Do Not Use Flammable Liquids Or Operate Machine In Or Near Flammable Liquids, Vapors Or Combustible Dusts.

7. If machine is equipped with ES™ (Extended Scrub) Option, the recovery tank can be partially filled to extend scrub time.
 - a. Remove recovery tank lid and fill tank with 13L (3.5 gal) of clean water, 60°C (140°F) maximum temperature. Close lid.
 - b. Make sure ES™ switch is turned on when operating machine (Figure 18).

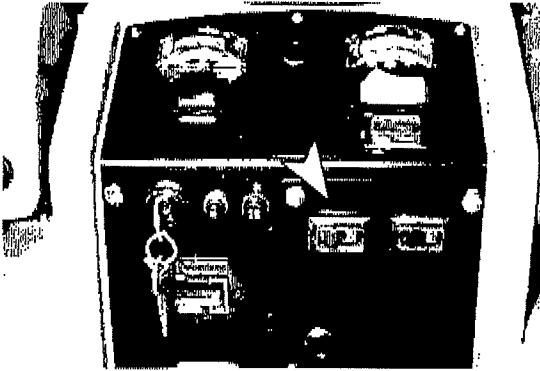


FIG. 18

- c. The ES™ light will glow when the ES™ pump is recycling.

ADJUSTING CONTROL HANDLE HEIGHT

The control handle has three height settings to accommodate a comfortable operating height.

1. Locate two control handle height adjustments knobs on handle (Figure 19).
2. Pull both knobs and raise or lower handle, release knobs to lock (Figure 19).



FIG. 19

MACHINE OPERATION

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

PRE-OPERATION

- Sweep and dust mop floor to remove particles and other debris.
- Check battery meter charge level to ensure batteries are fully charged (See BATTERY CHARGING).
- Check condition of pad or brush.

- Check condition of squeegee blades.

OPERATING MACHINE

1. Release brush lift pedal from transport position by stepping down on scrub head release pedal (Figure 20).



FIG. 20

2. Lower squeegee assembly by moving squeegee lift knob to the right (Figure 21).

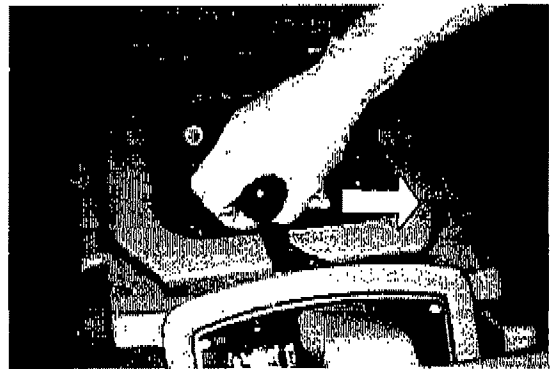


FIG. 21

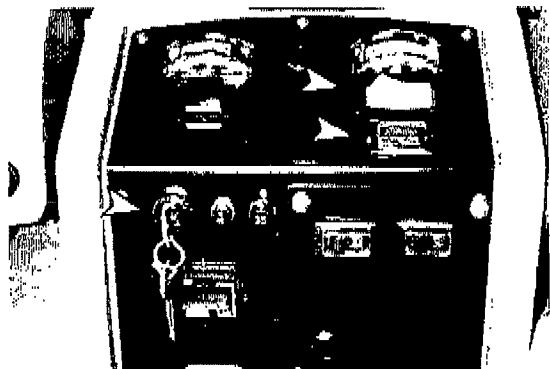


FIG. 22

NOTE: The solution flow and brush will not start until brush triggers are pulled.

4. Pull brush triggers and begin walking with machine. The brush will propel the machine forward allowing little effort maneuvering the machine (Figure 23).

OPERATION

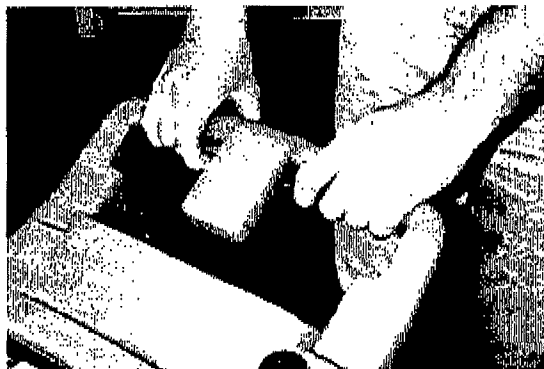


FIG. 23

NOTE: On rough surfaces it may be necessary to reduce brush pressure.

5. Check the brush meter pressure when scrubbing. Only operate machine in green zone. Never operate machine in red zone (Figure 24).

NOTE: If brush pressure adjustment is required, see **MACHINE ADJUSTMENTS**.



FIG. 24

ATTENTION: Do not operate machine with pad pressure meter in red zone, circuit breakers will trip and floor damage may occur.

6. To operate machine in reverse, simply pull the machine backwards while pulling triggers.
7. To stop scrubbing, release brush triggers, turn off all switches, and raise scrub head and squeegee.

OPERATING ES™ (OPTION)

ES™ Option extends scrubbing time by reusing recovered water. The recovered water is filtered and recycled back into the solution tank for reuse.

1. Fill recovery tank with 13L (3.5 gal) when filling solution tank for operation.

⚠ WARNING: Do Not Use Flammable Liquids Or Operate Machine In Or Near Flammable Liquids, Vapors Or Combustible Dusts.

2. Turn on ES™ switch. During operation the ES™ pump will automatically start recycling when ES™ pump on light turns on (Figure 25).

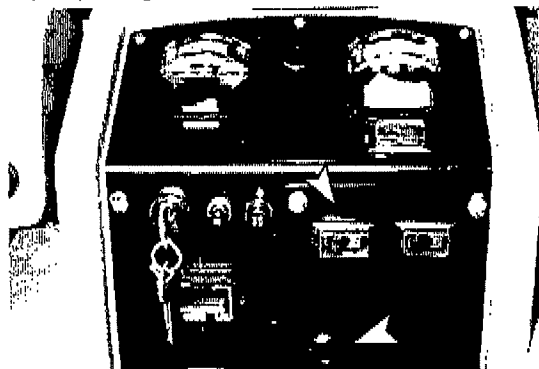


FIG. 25

3. When finished scrubbing, drain and rinse solution tank and clean ES™ filter (See **DRAINING TANKS**).

WHILE OPERATING MACHINE

FOR SAFETY: When using machine, go slow on inclines and slippery surfaces.

1. Observe amount of solution flow on floor. If solution flow adjustment is needed, see **MACHINE ADJUSTMENTS**.
2. Periodically check for foam buildup in recovery tank (look through clear lid). If excessive foam is developing, 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; not covered by warranty. Foam will not activate float shut-off screen.

3. Always operate with caution when scrubbing around walls or obstacles.
4. If squeegee leaves streaks, raise and wipe blades with a cloth. Pre-sweep area to prevent streaking. If squeegee adjustment is necessary, see **MACHINE ADJUSTMENTS**.
5. Overlap each pass by 50mm (2 in).
6. Change or turn over pads when dirty.
7. Stay clear of floor obstructions, such as electrical plates or grates, they will destroy pads.
8. During brief stops, you do not have to turn off any switches, the brushes and solution flow will automatically stop when triggers are released.
9. Periodically check battery meter discharge level. When needle drops to the red zone, recharge batteries.

ATTENTION: Do not operate machine with battery meter in red zone, battery damage will result.

⚠ WARNING: Do Not Pick Up Flammable Materials Or Reactive Metals.

10. On last scrubbing pass, turn off solution switch just prior to stopping machine. This will allow total recovery pick up.
11. When solution tank runs dry, drain recovery tank (See DRAINING TANKS).

OPERATING ACCESSORY TOOLS (OPTIONAL)

1. Attach accessory solution hose to quick coupler.
2. Disconnect squeegee hose from inlet tube and replace with accessory vacuum hose.
3. Connect hoses to wand.
4. Turn on key, wand pump and vacuum switches (Figure 26).

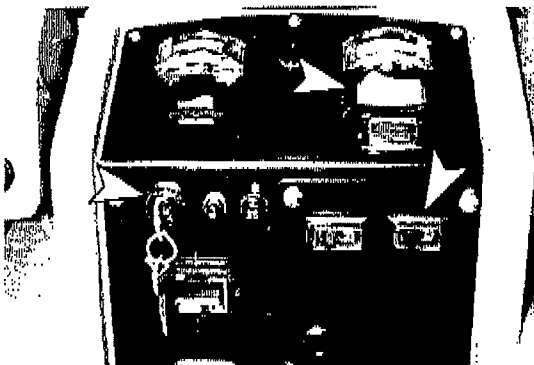


FIG. 26

5. Operate accessory tool as normal.

⚠ WARNING: Do Not Pick Up Flammable Materials Or Reactive Metals.

CIRCUIT BREAKERS

The machine is equipped with two circuit breakers to protect machine from damage. The Main (20amp) and Brush (35amp) circuit breakers.

If a circuit breakers should trip during operation, determine cause, allow motor to cool and then manually reset breaker (See TROUBLE SHOOTING).

Brush motor circuit breakers will trip due to excessive overload on pad. Reduce pad pressure or replace pad if breaker trips. Circuit breakers are located on control console (Figure 27).

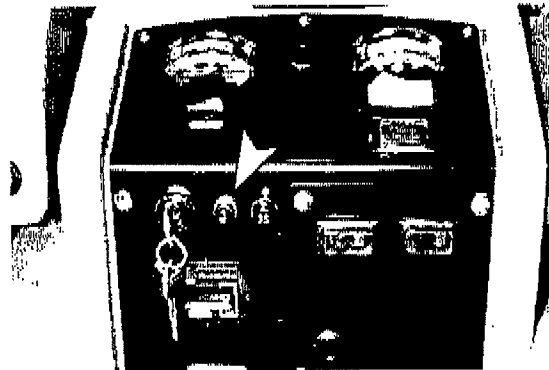


FIG. 27

MACHINE ADJUSTMENTS

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

ADJUSTING SOLUTION FLOW

To increase or decrease the maximum solution flow, turn adjustment knob. Adjustment knob is located near brush lift pedal (Figure 28).

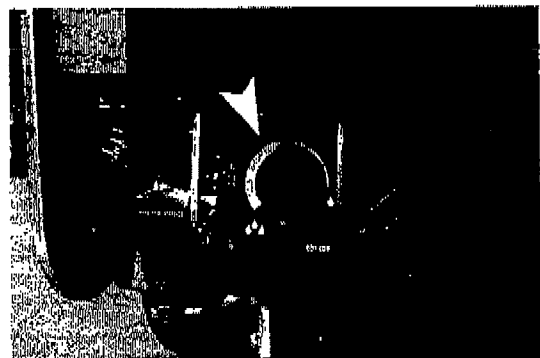


FIG. 28

OPERATION

ADJUSTING PAD PRESSURE

NOTE: On rough surfaces it may be necessary to reduce brush pressure.

To adjust pad pressure, turn adjustment knob clockwise to decrease or counterclockwise to increase pad pressure. Adjustment knob is located below brush lift pedal (Figure 29).

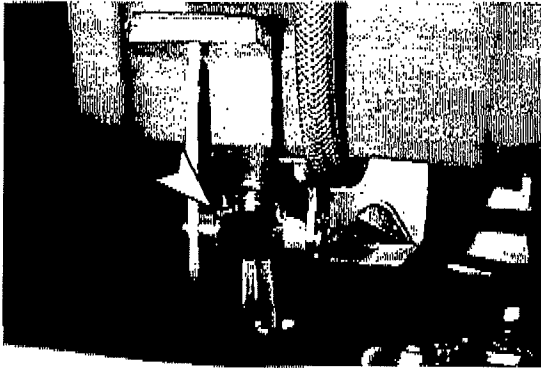


FIG. 29

ADJUSTING SQUEEGEE LIFT CABLE

To adjust squeegee lift cable, loosen lock nuts and turn adjustment stem on squeegee cable. Retighten lock nuts after adjusting (Figure 30).

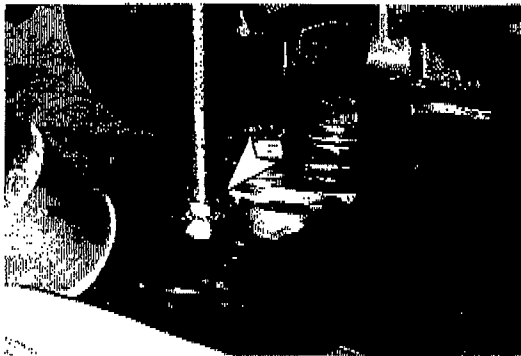


FIG. 30

DRAINING TANKS

When to drain recovery tank:

- After each use.
- Between solution tank fill ups.
- When solution flow stops during operation.
- When ball float screen is activated.
- When squeegee starts trailing water.

NOTE: If using the ES™ recycling system, be certain to drain and rinse both tanks after each use.

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

DRAINING RECOVERY TANK

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

1. Push machine to floor drain and turn off all switches. Remove left side drain hose from holder, position hose over drain, twist loose, and remove drain hose cap (Figure 31).

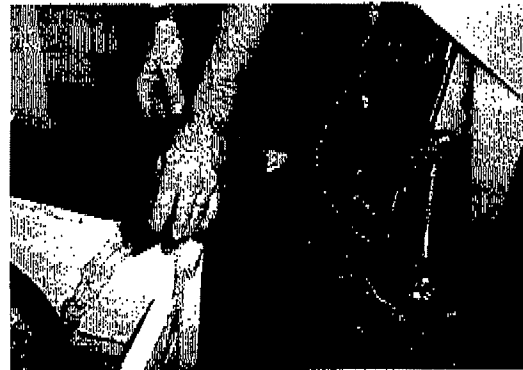


FIG. 31

NOTE: If using a bucket to drain machine, do not use same bucket for filling solution tank. This will prevent possible solution line clogs.

2. Open clear recovery tank lid and rinse tank, ball float screen and ES™ filter if equipped. Remove and rinse ball float screen and ES™ filter if they are excessively dirty. Replace screen and filter securely.
3. Replace drain hose plug securely when empty.

DRAINING SOLUTION TANK

To drain unused cleaning solution or recycled solution from solution tank, follow steps below:

1. Remove clear drain hose from hose barb, position hose over drain (Figure 32).

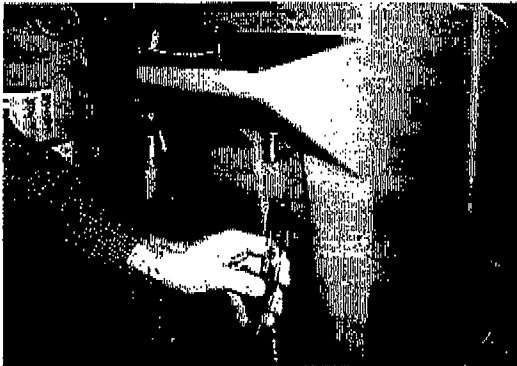


FIG. 32

2. Rinse out solution tank and solution flow system with clean water to prevent clogging due to chemical buildup.
3. Replace drain hose securely on hose barb when empty.

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 the 24V charger supplied with the machine. Only use a 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 let batteries set in a discharge condition for lengthy periods.

⚠ WARNING: Keep Sparks And Open Flame Away. Keep Battery Hood Open When Charging.

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

1. Transport machine to a flat, dry surface in a well-ventilated area for charging.
2. Turn off all switches and key.

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

3. Remove battery compartment hood.
4. Before charging, check the fluid level (A) in each battery cell. If the battery plates (B) are exposed, add just enough distilled water to cover plates. DO NOT OVERFILL. Overfilled batteries can overflow during charging due to fluid expansion. Replace cell caps before charging (Figure 33).

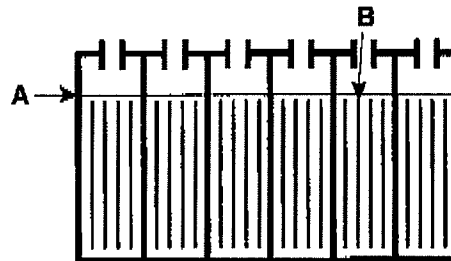


FIG. 33

5. With charger's power supply cord unplugged, connect charger to machine (Figure 34).

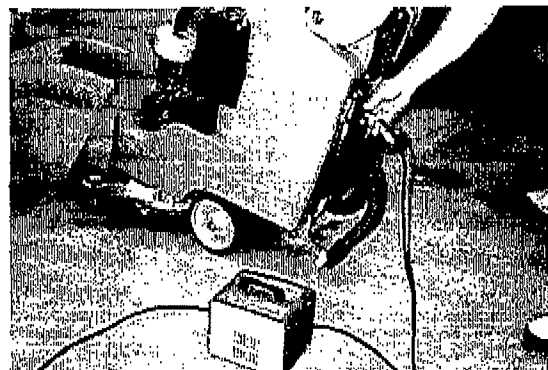


FIG. 34

NOTE: Once charger is connected to machine, machine becomes inoperable.

6. Plug charger's power supply cord into a grounded wall outlet (Figure 35).

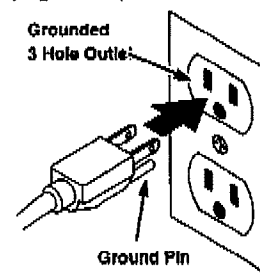


FIG. 35

OPERATION

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

⚠ WARNING: Keep Sparks And Open Flame Away. Keep Battery Hood Open When Charging.

7. The charger will automatically begin charging and shut off when fully charged.
8. After charger has turned off, unplug charger from machine then disconnect charger from wall outlet.
9. After charging, recheck the battery fluid level (A) in each battery cell. The level should be 1 cm (3/8 in) from the bottom of sight tubes (B). Add distilled water if needed. **DO NOT OVERFILL** (Figure 36).

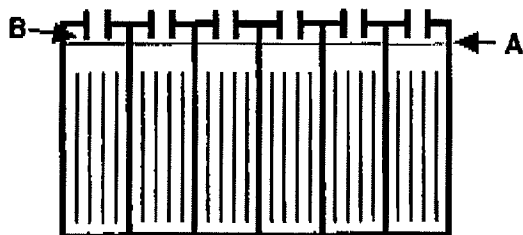


FIG. 36

MACHINE MAINTENANCE

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

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

⚠ WARNING: Disconnect Battery Cables Before Servicing Machine.

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

NOTE: If equipped with optional hour meter, record machine hours when service was performed.

DAILY MAINTENANCE (Every 4 Hours of Operation)

1. Remove and clean pad or brush. Never use soiled pads when cleaning. Replace pad when it becomes worn or loaded with residue.
2. Drain and rinse both tanks thoroughly.
3. Open clear lid, remove and clean the ball float screen. Replace screen securely (Figure 37).



FIG. 37

4. Open clear lid, remove and clean ES™ filter, if equipped. Replace filter securely.
5. Raise squeegee and wipe it off with a dry cloth. Store squeegee in the up position to prevent squeegee damage.
6. Clean machine housing with a nonabrasive, nonsolvent cleaner.
7. Recharge batteries if needed.

WEEKLY MAINTENANCE (Every 20 Hours of Operation)

1. Flush out tanks and solution lines. Pour 750mL (24 oz) of an acetic acid solution with 11.3L (3 gal) of hot water into solution tank. Over a floor drain, activate solution flow briefly to fill solution line. Shut off power and let machine set over night. Rinse with clean water afterwards.
2. Remove inline strainer filter and rinse out. Before removing filter, be certain solution tank is empty. Filter is located under machine at rear (Figure 38).

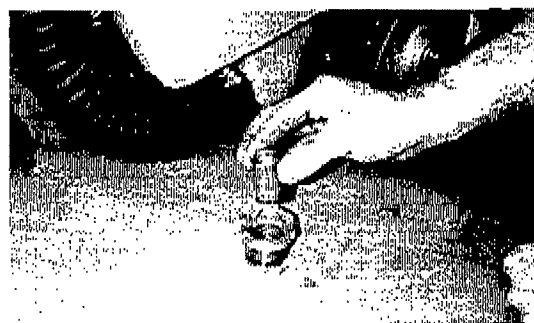


FIG. 38

3. Check fluid level in battery cells (See BATTERY MAINTENANCE).
4. Clean battery tops to prevent corrosion (See BATTERY MAINTENANCE).
5. Check for loose or corroded battery cables.

MONTHLY MAINTENANCE
(Every 80 Hours of Operation)

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

QUARTERLY MAINTENANCE
(Every 250 Hours of Operation)

Check motor(s) for carbon brush wear, replace brushes if worn to a length of 10mm (0.39 in) or less.

Contact your Authorized Service Center for carbon brush inspection.

FOR SAFETY: When servicing machine all repairs must be performed by a qualified service person.

BATTERY MAINTENANCE

⚠ WARNING: Keep Sparks And Open Flame Away. Keep Battery Hood Open When Charging.

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

1. Always follow proper charging instructions (See BATTERY CHARGING).
2. Check fluid level (A) in each battery cell. The fluid level should be 1 cm (3/8 in.) from the bottom of sight tubes after charging. Add distilled water if needed. **DO NOT OVERFILL.** Overfilled batteries can overflow during charging due to fluid expansion (Figure 39).

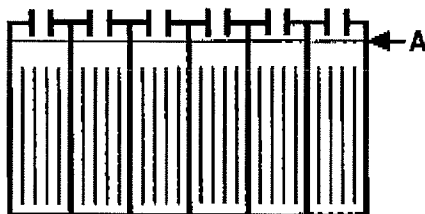


FIG. 39

3. After charging batteries, measure the specific gravity in each battery cell using a hydrometer (Figure 40). This will determine the charge level and condition of the batteries. If one or more of the battery cells test lower than the other battery cell (0.050 or more), the cell is damaged, shortened, or is about to fail.

NOTE: Do not take reading immediately after adding distilled water. The water and acid must be thoroughly mixed in order for accurate reading.

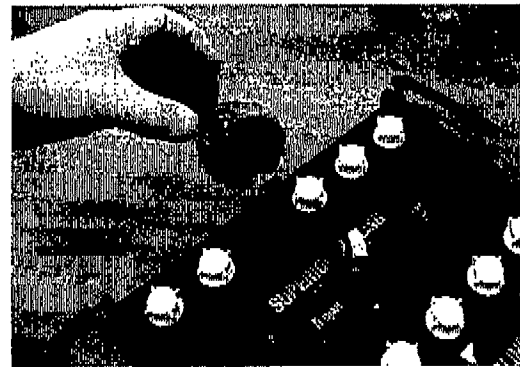


FIG. 40

SPECIFIC GRAVITY at 27°C (80°F)	BATTERY CHARGE
1.265	100% CHARGED
1.223	75% CHARGED
1.185	50% CHARGED
1.148	25% CHARGED
1.110	DISCHARGED

NOTE: Add or subtract 0.004 gravity reading for each 6° C (10° F) above or below 27° C (80° F).

4. Keep battery tops and terminals clean and dry.
 - a. Mix a strong solution of baking soda and water (Figure 41).

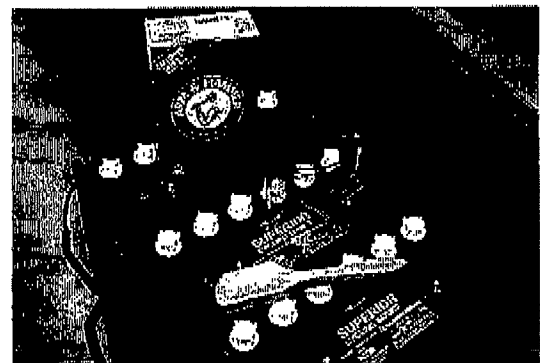


FIG. 41

- 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.
5. Check for loose or worn cables. Replace if worn.

OPERATION

TRANSPORTING MACHINE

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

FOR SAFETY: When using machine, go slow on inclines and slippery surfaces.

1. Remove squeegee from machine and raise scrub head. Leave pad or brush installed.
2. Load machine using a recommended loading ramp.
3. Position front of machine up against front of trailer or truck. Once machine is positioned, lower brush head.
4. Place a block behind the wheels.
5. Place tie-down straps over top of machine and secure straps to floor. It may be necessary to install tie-down brackets to the floor of your trailer or truck.

FOR SAFETY: When transporting machine, use a recommended ramp when loading/unloading into/off truck or trailer, use tie-down straps to secure machine to truck or trailer.

STORING MACHINE

1. Before storing machine, be certain to rinse tanks and drain machine of all water.
2. Store machine in a dry area with squeegee removed and scrub head in the raised position.
3. Remove recovery tank lid to promote air circulation.

ATTENTION: If storing machine in freezing temperatures, be certain to drain machine of all water. Damage due to freezing temperatures is not covered by warranty.

⚠ WARNING: Do Not Use Outdoors. Do Not Expose To Rain. Store Indoors.

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	ARM., STANDPIPE	1
2	100813	*FLOAT, SHUTOFF	1
3	230187	NIPPLE	1
4	101714	*GASKET	1
5	210240	NUT, FLANGED	1

TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
No power, nothing runs.	Faulty key switch.	Contact Service Center.
	Batteries need charging.	See BATTERY CHARGING.
	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 run.	Faulty brush trigger switch.	Contact Service Center.
	Brush triggers not pulled.	Pull brush triggers.
	Brush circuit breaker has tripped.	Clean or replace pad and reset brush circuit breaker button.
	Faulty brush motor or wiring.	Contact Service Center.
	Worn carbon brushes.	Contact Service Center.
	Faulty brush solenoid.	Contact Service Center.

TROUBLE SHOOTING – continued

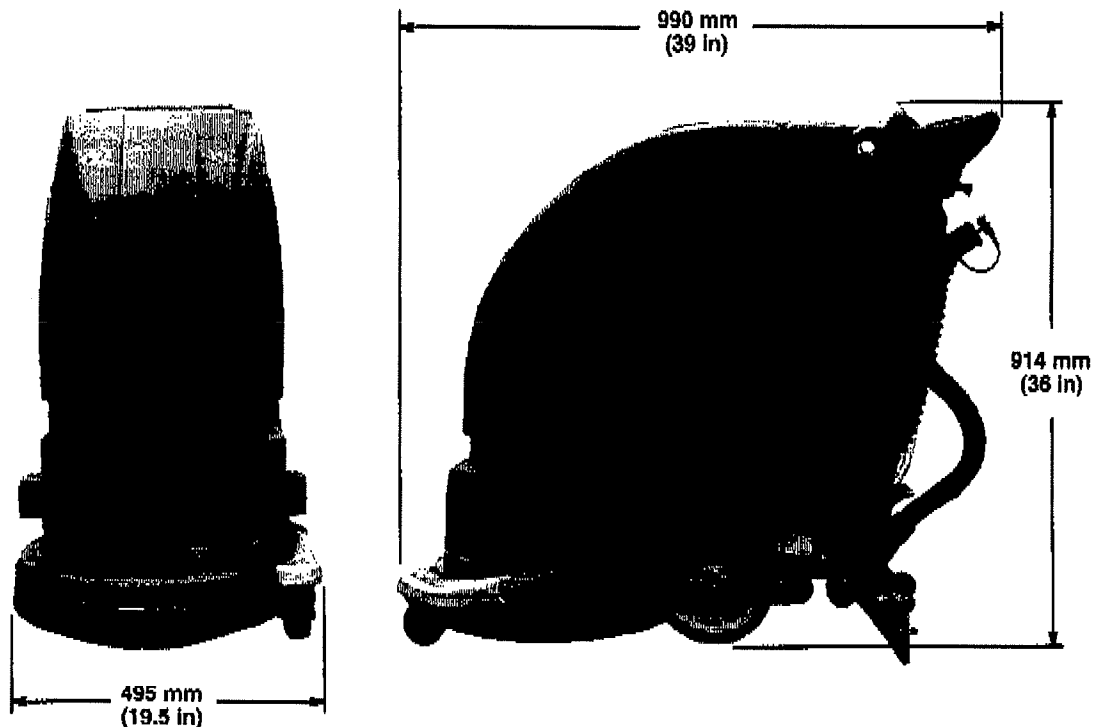
Vacuum motor does not run.	Faulty vacuum switch.	Contact Service Center.
	Main circuit breaker has tripped.	Remove obstruction and reset circuit breaker button.
	Faulty vacuum motor or wiring.	Contact Service Center.
	Worn carbon brushes.	Contact Service Center.
Little or no solution flow.	Solution switch is not activated.	Turn on solution switch.
	Solution line or solution tank filter is clogged.	Remove hose and blow compressed air through it. Flush solution tank after each use.
	Solution valve or solenoid is clogged.	Remove valve or solenoid and clean. Do not scratch inside of valve.
	Faulty solution switch or solenoid.	Contact Service Center.
	Solution flow adjustment knob needs adjusting.	Turn solution flow adjustment knob to desired setting.
	ES™ Option: ES™ filter is clogged.	Remove and clean ES™ filter.
	ES™ Option: Faulty ES™ pump.	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.	Repair or replace battery charger.
Poor water pick up.	Recovery tank is full and ball float has been activated.	Empty recovery tank.
	Ball float screen inside recovery tank is clogged.	Remove screen and clean.
	Clogged squeegee.	Clean squeegee.
	Worn squeegee blades.	Replace squeegee blades.
	Loose squeegee thumbscrews.	Tighten thumbscrews.
	Vacuum hose connections are loose or hose has a hole.	Push hose cuffs firmly on connections. Replace hose if damaged.
	Clogged vacuum hose.	Remove clogged debris.
	Recovery tank inlet hole is obstructed.	Empty recovery tank and tilt tank sideways to access inlet hole, remove obstruction.
	Defective tank gasket.	Replace gasket.
	Loose drain hose plug.	Tighten drain plug.
	Recovery tank lid not in place.	Properly position lid.
	Loose vacuum motor.	Contact Service Center.
	Battery charge level is low.	Charge batteries. Do not run machine when battery meter is in the red zone.

OPERATION

SPECIFICATIONS

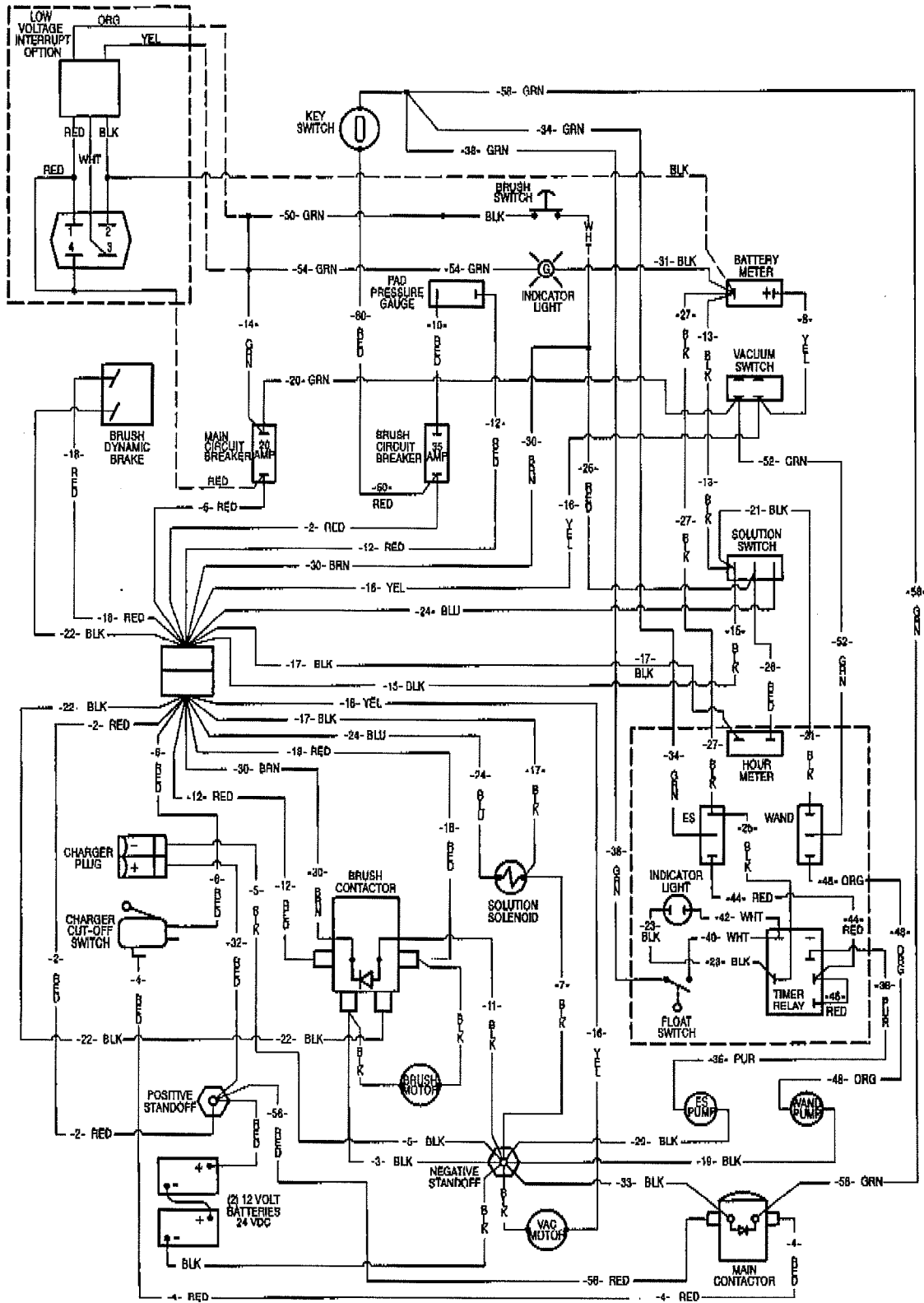
MODEL	Speed Scrub™ 1701 Plus
LENGTH	990 mm (39 in)
WIDTH	495 mm (19.5 in)
HEIGHT	914 mm (36 in)
WEIGHT	71Kg (158 lbs), 131Kg (290 lbs) with batteries
RECOVERY TANK CAPACITY	28.5L (7.5 gal)
SOLUTION TANK CAPACITY	28.5L (7.5 gal)
ES OPTION SOLUTION FILL CAPACITY	42.5L (11.25 gal)
DRIVE SYSTEM	Brush driven
CLEANING RATE	1375m ² per hour (14,800 sq. ft.)
CLEANING PATH WIDTH	430 mm (17 in)
PAD DIAMETER	430 mm (17 in)
PAD PRESSURE	Variable 30–44Kg/65–95lbs
SQUEEGEE WIDTH	670 mm (26.5 in)
TOTAL POWER CONSUMPTION	35A nominal
BRUSH MOTOR	.75 h.p., 165 rpm, 24V, 33A
VACUUM MOTOR	.75 h.p., 2–stage 5.7", 24V, 15A, 560W
WATER LIFT	1140 mm (45 in)
BATTERIES	2–12V, 130AH
RUN TIME PER CHARGE	Up to 3 hours
DECIBEL RATING AT OPERATOR'S EAR, INDOORS ON TILE.	69.5dB(A)

MACHINE DIMENSIONS



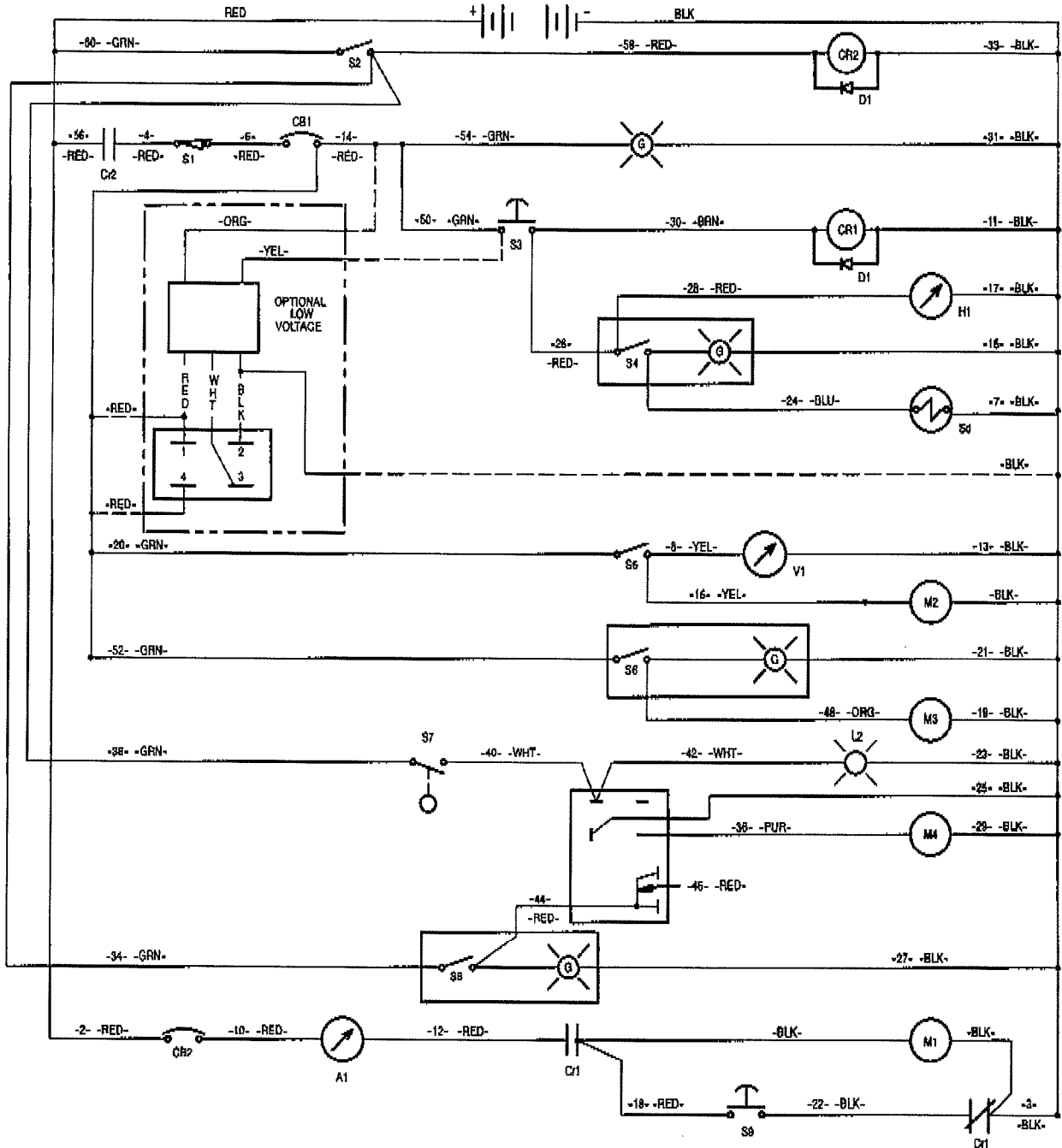
ELECTRICAL DIAGRAMS DIAGRAMAS ELECTRICAS

WIRING DIAGRAM DIAGRAMA DE CABLEADO



ELECTRICAL DIAGRAMS DIAGRAMAS ELECTRICAS

LADDER DIAGRAM DIAGRAMA ESCALONADO



REF LEGEND

- RED= Red
- BLK= Black
- GRN= Green
- WHT= White
- ORG= Orange
- BLU= Blue
- BRN= Brown
- PUR= Purple
- YEL= Yellow
- A1= Ammeter
- CR1 = Contactor Coil
- CR2 = Contactor Coil

REF LEGEND

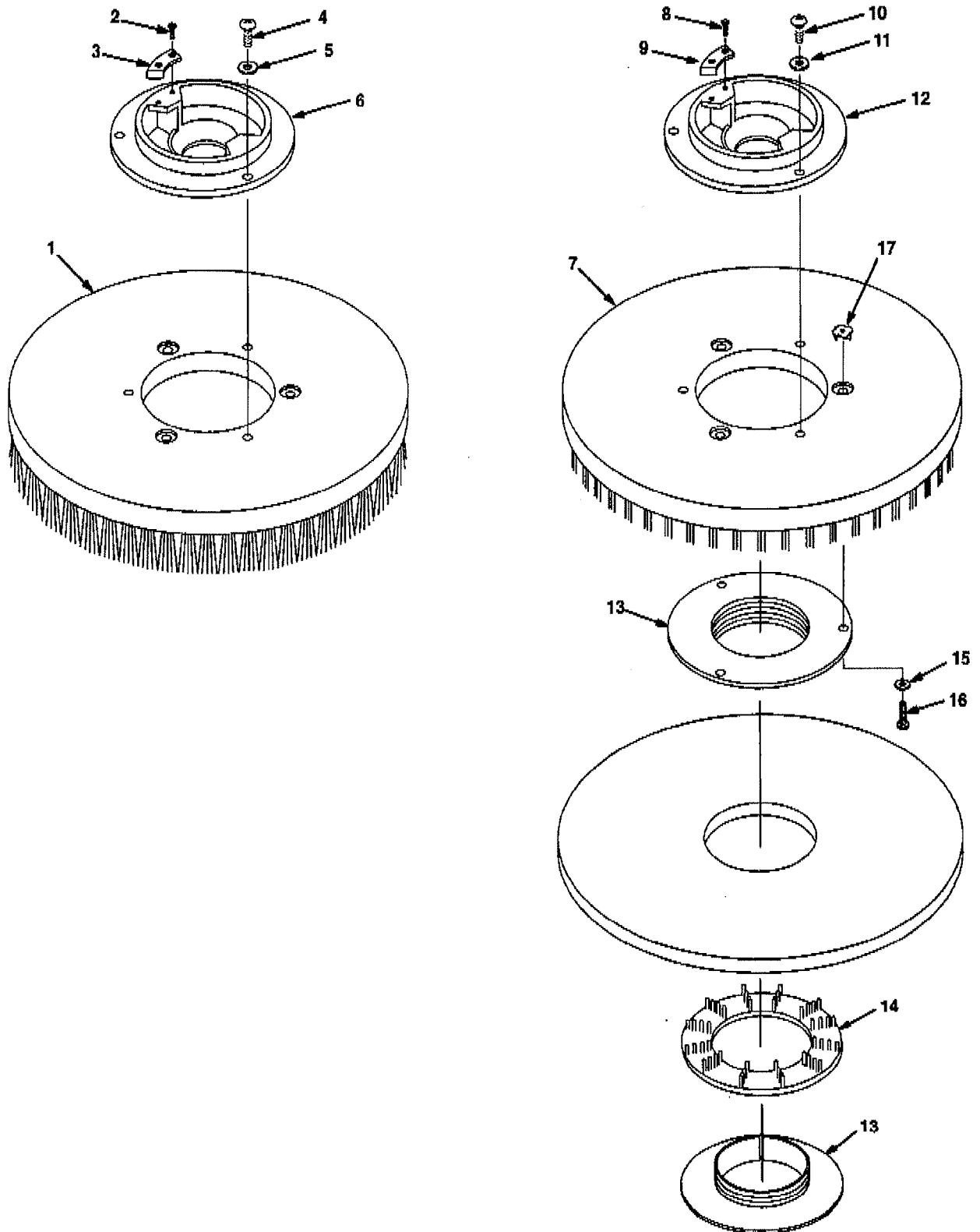
- cr1= Contactor Relay
- CB1 = Circuit Bkr. Main 20A
- CB2 = Breaker, Circuit 35A
- D1= Diode
- H1= Hourmeter
- L1= Light, Indicator
- L2= Light, Full Tank
- M1= Motor, Brush
- M2= Motor, Vacuum
- M3= Motor, Wand
- M4= Motor, Recycle
- S1= Switch, Chg Cut-off

REF LEGEND

- S2= Switch, Key
- S3= Switch, Brush
- S4= Switch, Solution
- S5= Switch, Vacuum
- S6= Switch, Wand
- S7= Switch, Float
- S8= Switch, Recycle
- S9= Switch, Brush Off
- Sd= Valve, Solenoid
- T1= Relay, Timer
- V1= Voltmeter

PARTS LIST
LISTA DE PIEZAS

REPLACEMENT BRUSHES AND PAD DRIVER GROUP
SUSTITUCIÓN DEL CONJUNTO DEL IMPULSOR DE LA ALMOHADILLA Y CEPILLOS



**REPLACEMENT BRUSHES AND PAD DRIVER GROUP
SUSTITUCIÓN DEL CONJUNTO DEL IMPULSOR DE LA ALMOHADILLA Y CEPILLOS**

REF	PART #	DESCRIPTION	QTY
▽ 1	370000	●ASM., BRUSH 17" NYLON SCRUB	1
	370002	●ASM., BRUSH 17" GRIT STRIP	1
	370007	●ASM., BRUSH 17" POLY SCRUB	1
▲ 2	370052	SCREW, FLT #06 X 0.31	4
▲ 3	603438	PLATE, WEAR	2
▲ 4	32746	SCREW, PAN M6 X 1.0 X 35	3
▲ 5	01684	WASHER, FLAT 0.25	3
▲ 6	601453	●PLATE, CLUTCH	1

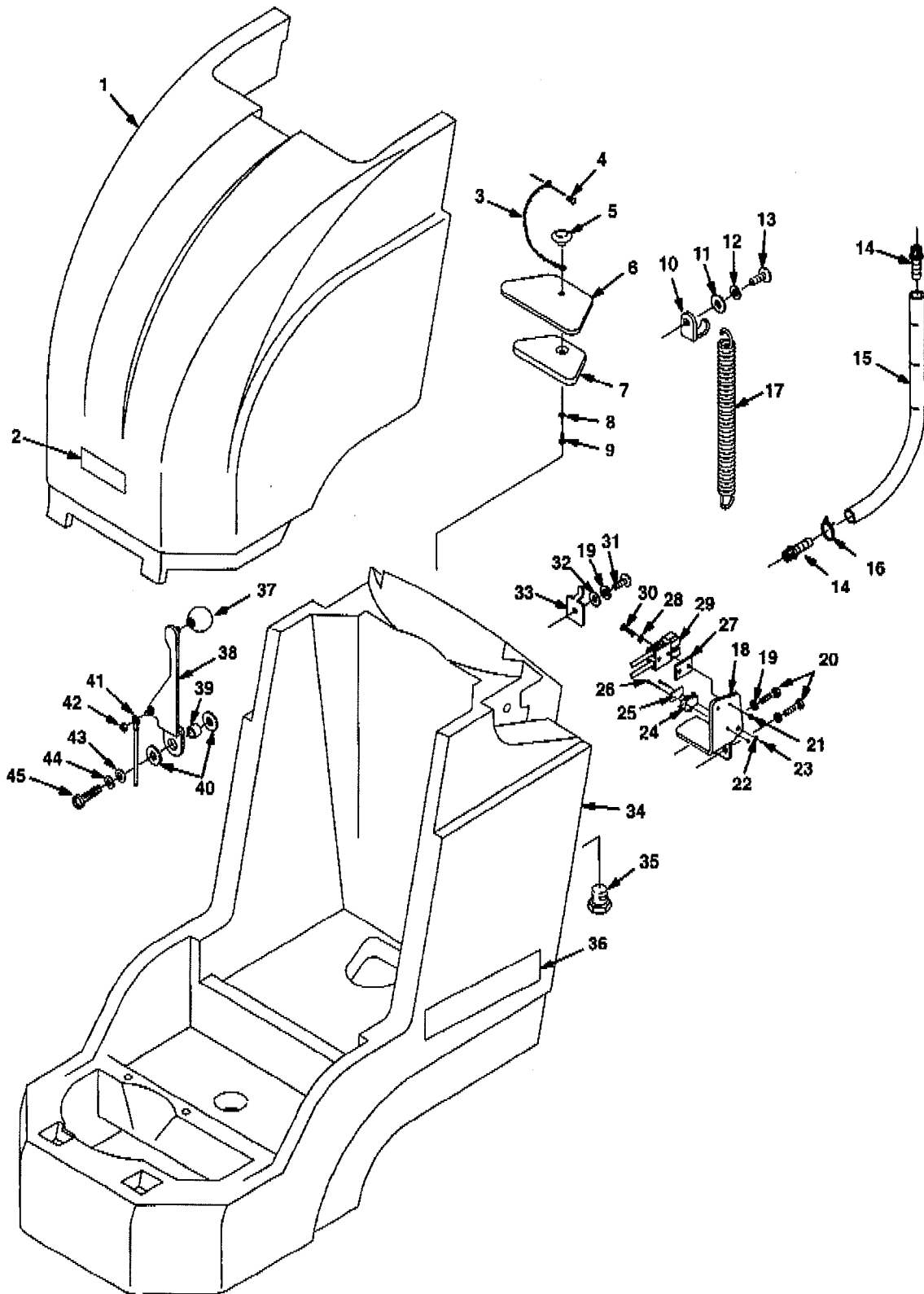
REF	PART #	DESCRIPTION	QTY
▽ 7	606227	●ASM., PAD DRIVER 17"	1
▲ 8	370052	SCREW, FLT #06 X 0.31	4
▲ 9	603438	PLATE, WEAR	2
▲ 10	32746	SCREW, PAN M6 X 1.0 X 35	3
▲ 11	01684	WASHER, FLAT 0.25	3
▲ 12	601453	●PLATE, CLUTCH	1
▲ 13	603991	●PAD HOLDER	1
▲ 14	32505	WASHER, BRUSH PAD 5.65D	1
▲ 15	41579	WASHER, FLAT #08	3
▲ 16	04403	SCREW, PAN M4X0.7X25 NY	3
▲ 17	10908	NUT, T M4 X 0.7	3

▽ ASSEMBLY / CONJUNTO

▲ INCLUDED IN ASSEMBLY / INCLUIDO EN EL CONJUNTO

● RECOMMENDED STOCK ITEMS / ARTICULOS RECOMENDADOS PARA MANTENER EN EXISTENCIA

SOLUTION TANK GROUP
GRUPE DEL DEPÓSITO DE DISOLUCIÓN



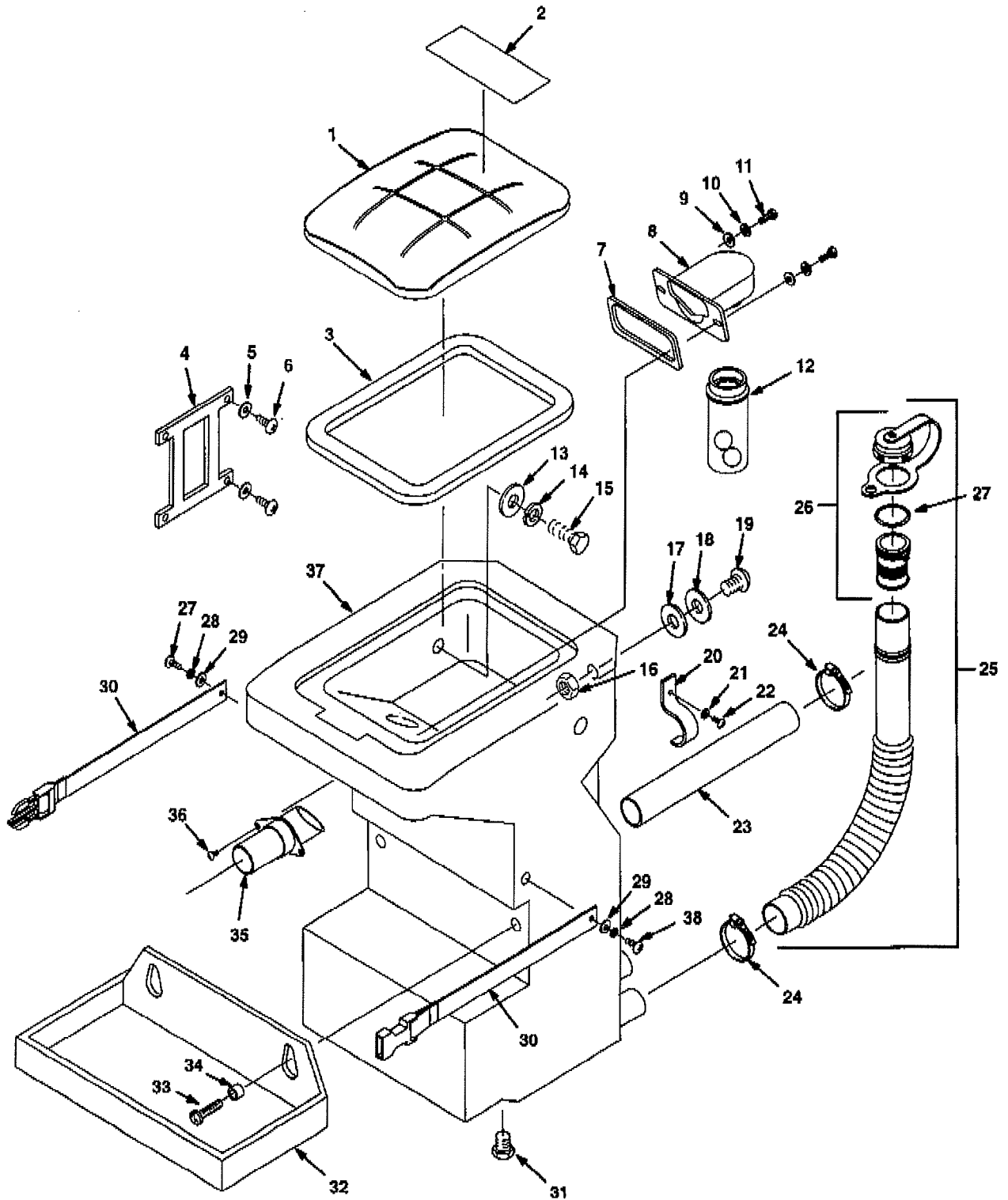
SOLUTION TANK GROUP
GRUPE DEL DEPÓSITO DE DISOLUCIÓN

REF	PART	DESCRIPTION	QTY
1	608358	COVER, BATTERY. GREEN	1
2	608188	DECAL, NOBLES 7.06" OVAL	1
3	230513	CHAIN ASSEMBLY	1
4	140825	SCREW, #6X1/2 PANPHL SHTMTL	1
5	578301	KNOB, FILL COVER	1
6	610108	COVER, REAR FILL BLACK	1
7	610109	GASKET, REAR FILL COVER	1
8	140018	WASHER, LOCK INT #10	1
9	578201000	SCREW 10-32X.5 PAN PHL	1
10	610204	BRACKET, SPRING	1
11	140027	WASHER, FLAT 0.31	1
12	140015	WASHER, LOCK SPLIT 0.31	1
13	15875	SCREW, HEX M8X1.25X16	1
14	14884	FITTING, BRS STR BMO8/PM08	2
15	610256	HOSE, DRAIN W/LEVEL INDICATOR	1
16	607778	CLAMP, HOSE .73-.77 WIRE BLK	1
17	140423	SPRING, BRUSH PRESSURE	1
18	601486	BRACKET, CHARGE PLUG	1
19	140016	WASHER, LOCK 0.25	3
20	608322	SCREW, TRS M6X1.0X16 PHL	2
21	140539	NUT, 6-32 KEP	2
22	200301012	WASHER, M3 FLAT	1
23	579211	NUT, HEX M3 HEXLCK	2
24	600437	*SWITCH, SNAP ACTN 250VAC 16A	1

REF	PART	DESCRIPTION	QTY
25	601359	PLATE, SWITCH BACKING	1
26	578403000	SCREW, M3X.5X20 PAN PHL	2
27	603331	SPACER, CHARGER PLUG	1
28	140019	WASHER, LOCK EXT #6	2
29	605387	*CONNECTOR, RED 50A WO/CONTACTS	1
30	140829	SCREW, 6-32X1 PAN PHL	2
31	363503	SCREW, PAN M6X1.0X12	1
32	140000	WASHER, FLAT 1/4	1
33	601460	CLIP, DRAIN HOSE	1
34	610094	TANK, SOLUTION GREEN	1
35	630148	PLUG, 3/8" NPT NYLON	1
36	608361	DECAL, SPEED SCRUB 1701 PLUS	2
37	601425	KNOB, BALL	1
38	601426	LEVER, SQUEEGEE	1
39	601427	SLEEVE, 0.625D 0.320B 0.33L STL	1
40	601437	WASHER, .821 X 1.25 X .06 NY	2
41	601428	CABLE, SQUEEGEE	1
42	601476	NUT, 1/4-20 LOCK TWO WAY	1
43	140055	WASHER, .343 X 1.25 X 0.31	1
44	140015	WASHER, LOCK SPLIT 0.31	1
45	630425	SCREW, PAN M6X20MM PHL	1

• RECOMMENDED STOCK ITEMS / ARTICULOS RECOMENDADOS PARA
MANTENER EN EXISTENCIA

RECOVERY TANK GROUP
CONJUNTO DESPOSITO RECUPERAR



RECOVERY TANK GROUP
CONJUNTO DESPOSITO RECUPERAR

REF	PART#	DESCRIPTION	QTY
▽ 1	613716	●ASM., LID & LABEL	1
▲ 2	613287	LABEL, WARNING SCRUB 6X2.25	1
▲ 3	630367	●GASKET, REC. TANK	1
4	630056	STRAP, TANK COVER	1
5	1009168	WASHER, FLAT 0.174X0.75X0.04	4
6	3701.6	SCREW, PAN #8X3/8 PHL SHTMTL	4
7	630255	GASKET, FLOAT MOUNT	1
8	630053	MOUNT, FLOAT CAGE	1
9	140000	WASHER, FLAT 1/4	2
10	140016	WASHER, LOCK 0.25	2
11	600385	SCREW, PAN M06X1.0X20 PHL	2
12	630052	●FLOAT, SHUT-OFF (2) BALL	1
13	140027	WASHER, FLAT 0.31	2
14	140015	WASHER, LOCK SPLIT 0.31	2
15	09010	SCREW, M08X1.25X25MM	2
16	603418	NUT, 5/8-11 HEX NYLON	1
17	605147	WASHER, RUBBER 1.50D	1
18	601437	WASHER, NYLON	1
19	609709	SCREW, 5/8-11X1" BTTSOCHD	1

REF	PART#	DESCRIPTION	QTY
20	601462	CLAMP, 1-1/4 CONDUIT	1
21	140016	WASHER, LOCK 0.25	1
22	363503	SCREW, PAN M6X1.0X12	1
23	240177	TUBE, BASE INLET	1
24	614157	CLAMP, HOSE 27MM TO 51MM	3
▽ 25	1010481	●ASM., DRAIN HOSE	1
▲ 26	1008639	●ASM., CAP, DRAIN HOSE	1
▲ 27	1008637	●O-RING	1
28	140015	WASHER, LOCK SPLIT 0.31	2
29	140027	WASHER, FLAT 0.31	2
30	601431	STRAP, BATTERY	1
31	630147	FITTING, PLSTC PM12 HEX	1
32	601430	TRAY, BATTERY	1
33	601438	SCREW, TRS .38-16X0.62 PHL	2
34	601439	SPACER, .39X.58X.18	2
35	160485	●ADAPTER, HOSE	1
36	200070382	SCREW, FIL M05X0.8X10 PHL	2
37	608356	TANK, RECOVERY, GREEN	1
38	15675	SCREW, HEX M08X1.25X16	2

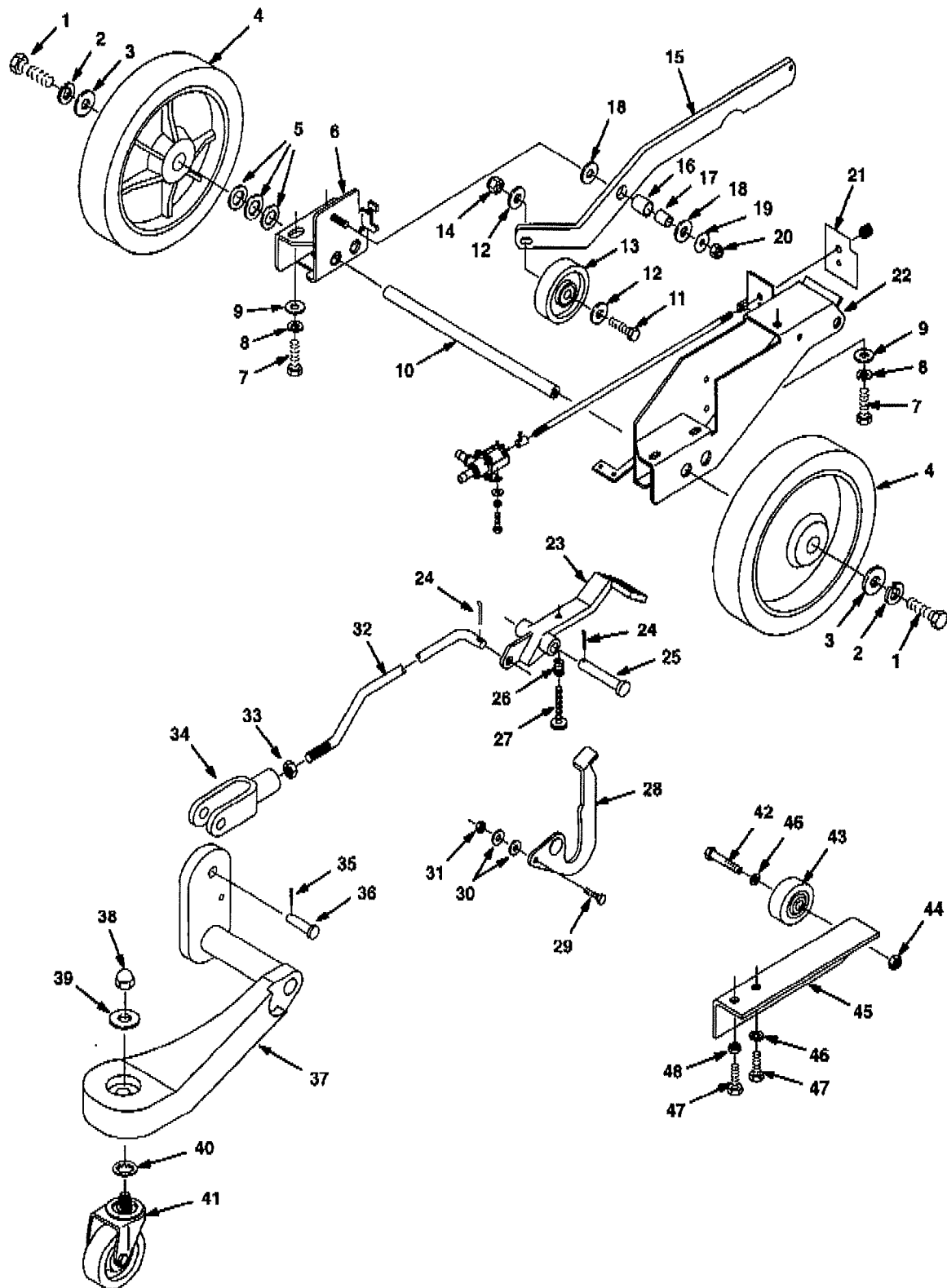
▽ ASSEMBLY / CONJUNTO

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● RECOMMENDED STOCK ITEMS / ARTICULOS RECOMENDADOS PARA
MANTENER EN EXISTENCIA

PARTS LIST
LISTA DE PIEZAS

WHEEL GROUP
CONJUNTO DE LA RUEDA



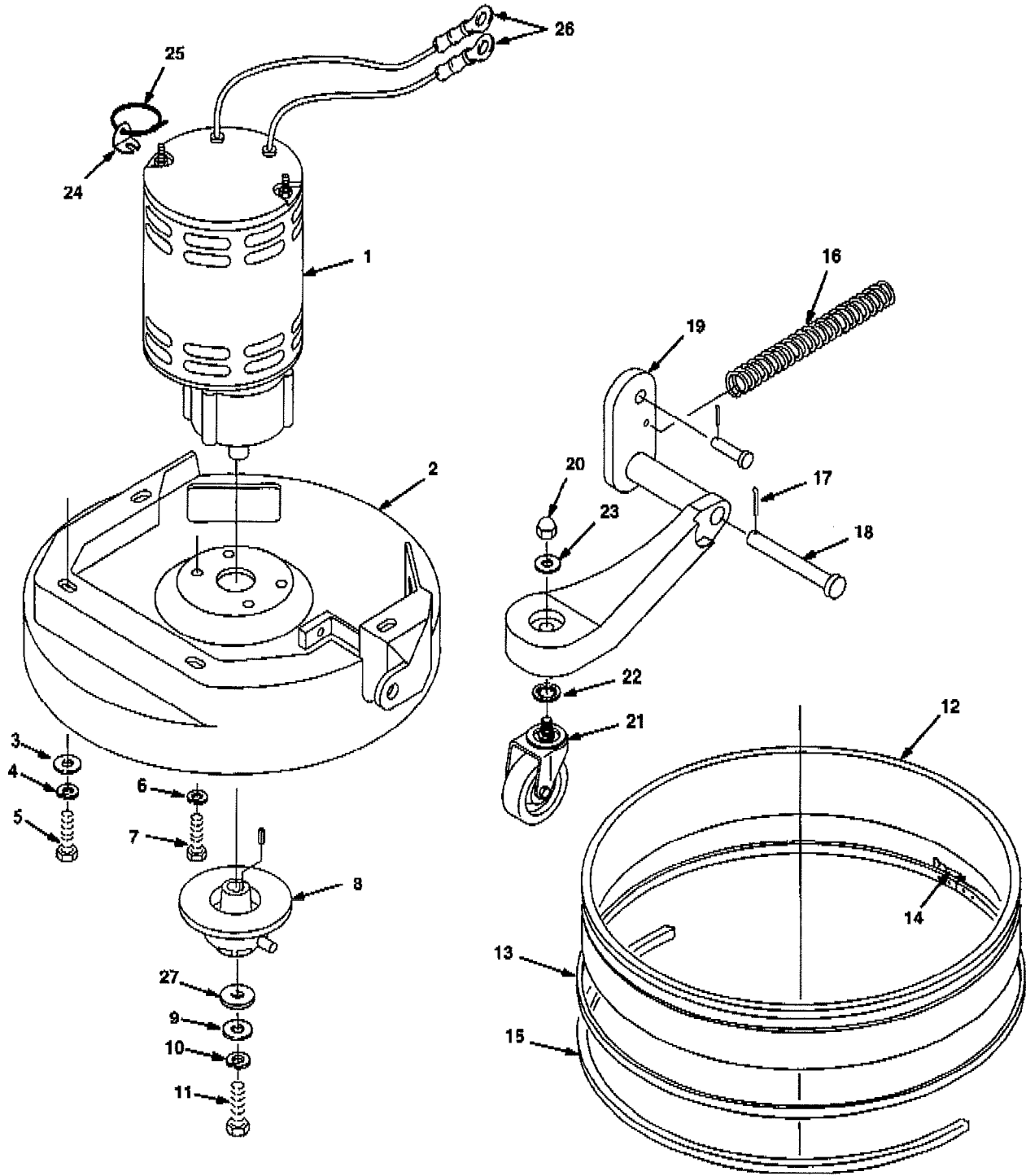
WHEEL GROUP
CONJUNTO DE LA RUEDA

REF	PART #	DESCRIPTION	QTY
1	02994	SCREW, HEX .38-16X0.75	2
2	140017	WASHER, LOCK SPLIT 0.38	2
3	140028	WASHER, FLAT 0.42B 1.00D .05	2
4	1012021	WHEEL, 8.0D 1.50W POLY	2
5	140047	WASHER, 1.246X.754X.062	3
6	1011518	MOUNT, WELDMENT AXLE	1
7	1011584	SCREW, M8X1.25X25 NY PATCH	5
8	140015	WASHER, LOCK SPLIT 0.31	5
9	140028	WASHER, FLAT 0.42B 1.00D .05	5
10	601448	AXLE, .75D X 15.20	1
11	140256	SCREW, .38-16X2.50	1
12	140028	WASHER, FLAT 0.42B 1.00D .05	2
13	613974	WHEEL KIT, 4" WHEEL AND BUSHING	1
14	59156	NUT, HEX LOCK .38-16 NL	1
15	601458	MOUNT, WHEEL BRUSH	1
16	630188	BEARING, .50"IDX.25LG JOURNAL	1
17	630189	SLEEVE, 0.496D 0.318B 0.21L STL	1
18	630447	WASHER, M12.7 X 25.4 X .8 NY	2
19	140055	WASHER, FLAT	1
20	200160017	NUT, HEX LOCK M8 X 1.25 NL	1
21	601491	DECAL, SOLUTION CONTROL	1
22	1011934	MOUNT, AXLE PEDAL	1
23	601444	PEDAL, HEAD LIFT	1
24	140630	PIN, COTTER .094 X 0.75	2

REF	PART #	DESCRIPTION	QTY
25	601471	PIN, CLEVIS 0.50D X 2.50L	1
26	578140000	SPRING, COMPR 16.8D 1.2W 25.4L	1
27	603145	KNOB, 5/16-18F 1"DIA	1
28	601445	PEDAL, LATCH RELEASE	1
29	16931	SCREW, M8X1.25X20MM	1
30	32491	WASHER, FLAT 0.31	2
31	08709	NUT, HEX LOCK M8 X 1.25NL	1
32	601442	ROD, CASTER MOUNT	1
33	20171	NUT, HEX JAM .38-24	1
34	578085000	YOKE, ADJUSTMENT	1
35	612254000	PIN, HAIRPIN .38" DIA SHAFT	1
36	140608	PIN, CLEVIS 3/8 DIA X 1-1/4	1
37	606537	MOUNT, CASTER	1
38	3058	NUT, 1/2-13 CPACRN BRS	1
39	3148.816	WASHER, 0.52B 0.88D .06 STL	1
40	140029	WASHER, 9/16 INT. TOOTH	1
41	601443	CASTER, SWIVEL	1
42	630478	SCREW, SHLD .38D X 1.00 .31-18	2
43	630477	WHEEL, 2.0D 0.38W POLY GRAY	2
44	601108000	NUT, 5/16-18 HXLCK THIN NY	2
45	604323	BRACKET, STOP	2
46	140015	WASHER, LOCK SPLIT 0.31	4
47	09010	SCREW, HEX, M8X1.25X25	4
48	200101017	NUT, HEX M8X1.25 HXJM	2

• RECOMMENDED STOCK ITEMS / ARTICULOS RECOMENDADOS PARA
MANTENER EN EXISTENCIA

SCRUB HEAD GROUP
GRUPO DEL CABEZAL DE FREGADO DE DISCO



SCRUB HEAD GROUP
GRUPO DEL CABEZAL DE FREGADO DE DISCO

REF	PART #	DESCRIPTION	QTY
▽ 1	601499	●MOTOR, ELE .75HP 165RPM 24V	1
▲	603638	●BRUSH, CARBON 1PC	4
▲	630609	GEARBOX ASSY	1
▲	140632	KEY, .25 X .25 X 1.00L	1
2	601440	HEAD CASTING	1
3	140028	WASHER, FLAT 0.42B 1.00D .05	4
4	140015	WASHER, LOCK SPLIT 0.31	4
5	1011584	SCREW, M8X1.25X25MM W/PATCH	4
6	140017	WASHER, LOCK SPLIT 0.38	4
7	140202	SCREW, HEX .38-16 X 1.00	4
8	611846	HUB, BRUSH DRIVE	1
9	069764631	WASHER, FLAT M8.4 X 25.4 X 4.8	1
10	140015	WASHER, LOCK SPLIT 0.31	1
11	140219	SCREW, HEX .31-18 X 1.00	1
12	601493	●SKIRT, SPLASH GUARD	1

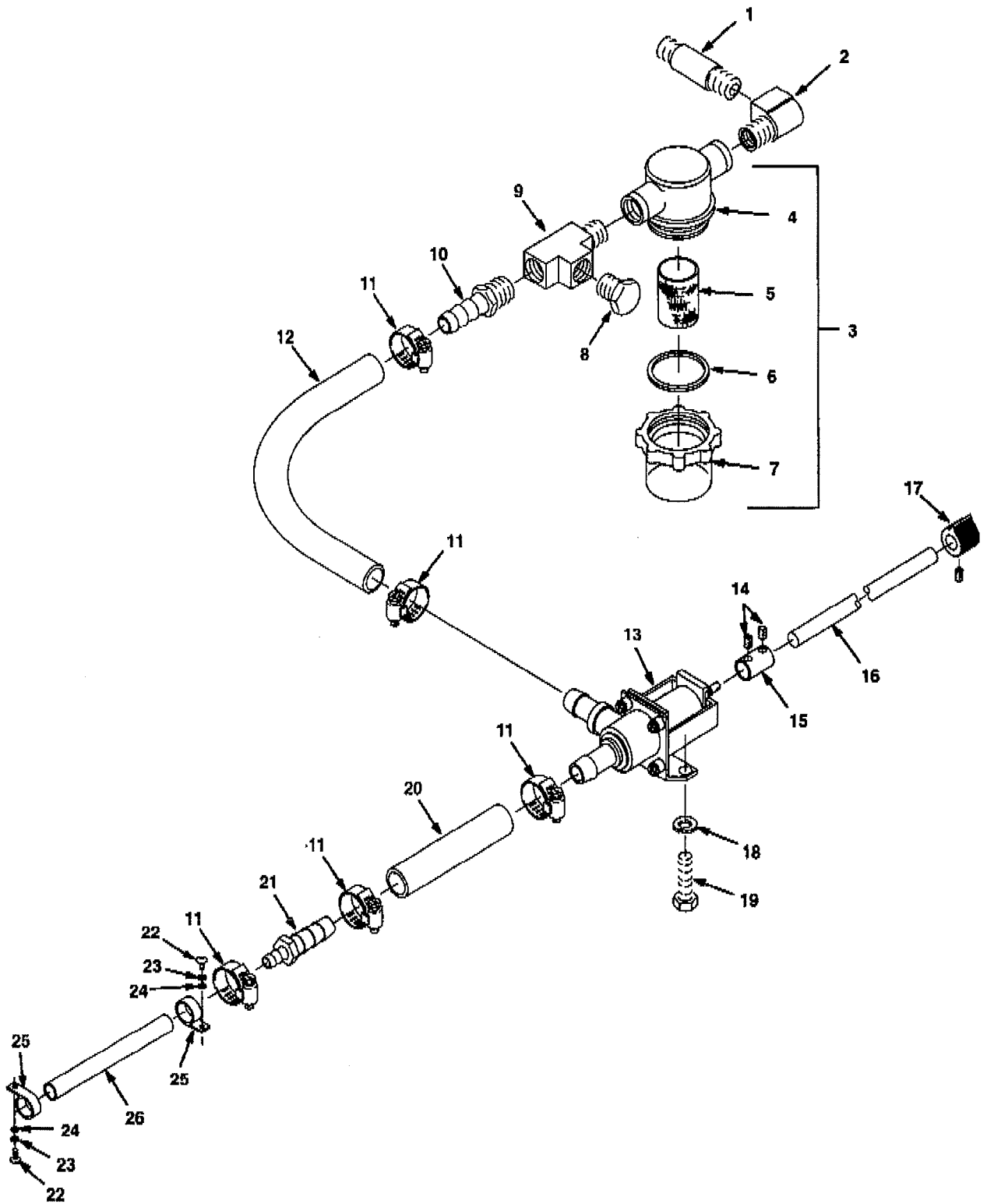
REF	PART #	DESCRIPTION	QTY
▽ 13	614113	KIT, REPLACEMENT BAND 56"	1
▲ 14	602044000	FASTENER, ADJUSTING, SKIRT	1
15	604744	BUMPER, EXTRUSION 30"	1
16	603148	SPRING, EXT .75 X 4.00 X .085WD	1
17	612254000	PIN, HAIRPIN .38" DIA SHAFT	1
18	069764083	PIN, CLEVIS 1/2 DIA X 5-1/4	1
19	606537	MOUNT, CASTER	1
20	3058	NUT, 1/2-13 CPACRN BRS	1
21	601443	CASTER, SWIVEL	1
22	140029	WASHER, 9/16 INT	1
23	3148.816	WASHER, FLAT 0.52B 0.88D .06	1
24	608943	BRACKET, WIRE TIE	1
25	130041	WIRE TIE	1
26	130111	TERMINAL, RING 5/16 12-10 VI YL	2
27	140047	WASHER, 1.246 X .754 X .062	1

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■ RECOMMENDED STOCK ITEMS / ARTICULOS RECOMENDADOS PARA
MANTENER EN EXISTENCIA

PLUMBING GROUP
GRUPO DE TUBERÍAS



PLUMBING GROUP
GRUPO DE TUBERÍAS

REF	PART #	DESCRIPTION	QTY
1	601489	FITTING, BRS STR PM06X2.0 NIP	1
2	150420	FITTING, 3/8M X 3/8F ELB 90°	1
▽ 3	1005302	●FILTER, INLINE 80 MESH	1
▲ 4	613993	BODY, TOP FILTER	1
▲ 5	1005304	SCREEN, FILTER 80 MESH	1
▲ 6	613992	GASKET, FILTER	1
▲ 7	613991	BOWL, CLEAR FILTER	1
8	630146	PLUG, 3/8 NPT NYLON	1
9	601483	FITTING, 3/8M X 3/8F TEE STR	1
10	14884	FITTING, BRS STR BM08/PM08	1
11	54333	CLAMP, HOSE WORM 0.31-0.88D	5
12	613518	TUBING, 1/2IDX3/4ODX0.87 VINYL	1
13	630022	●VALVE, SOLENOID 24VDC	1

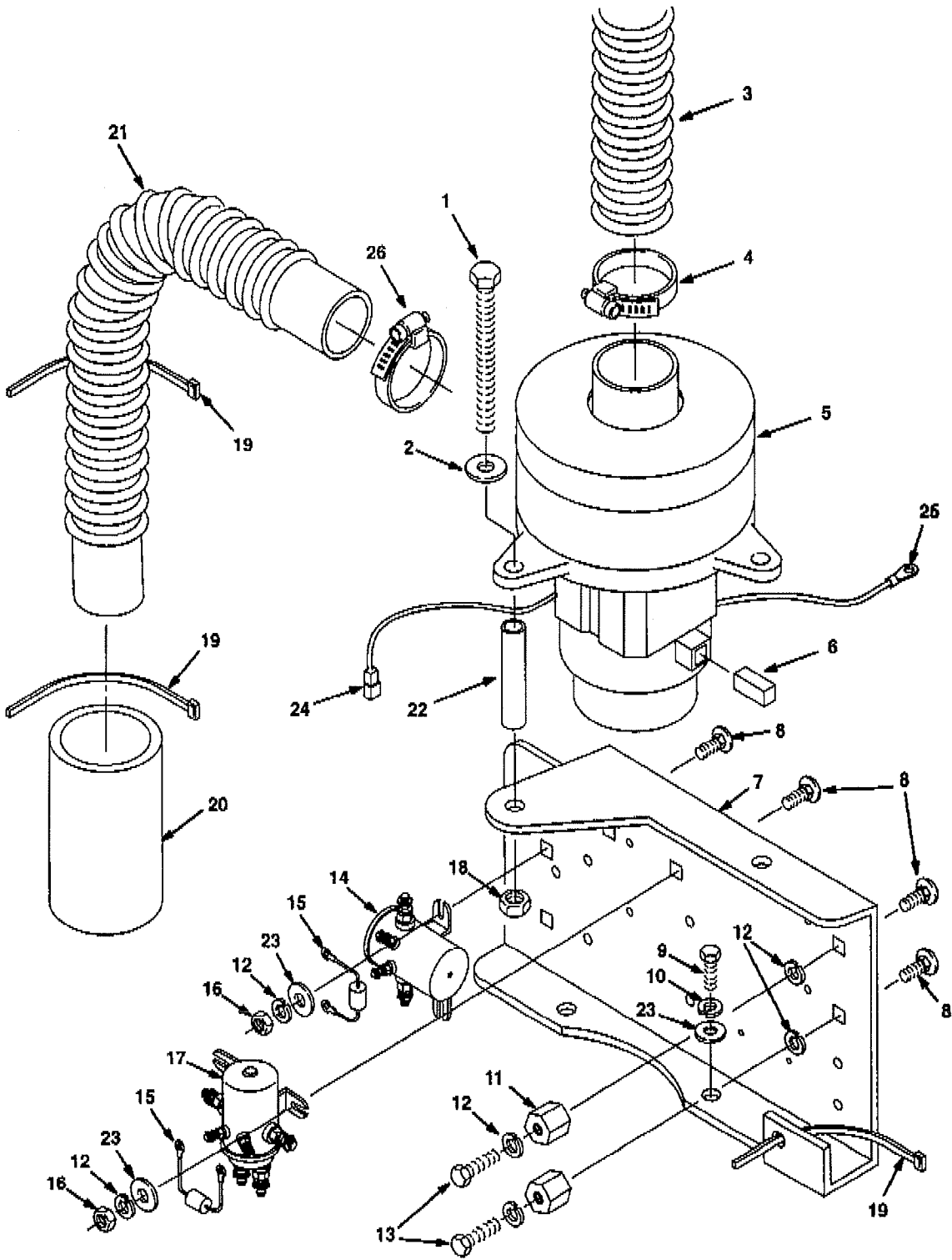
REF	PART #	DESCRIPTION	QTY
14	069762095	SCREW, 10-24X1/4 SKSET	2
15	601472	COUPLING	1
16	601473	ROD, WATER VALVE	1
17	626121	KNOB, WATER VALVE	1
18	140016	WASHER, LOCK 0.25	2
19	15878	SCREW, HEX M6X1.0X16	2
20	069760725	TUBING, 1/2IDX3/4ODX0.25' VINYL	1
21	630164	FITTING, PLSTC STR BM08/BM04	1
22	579259	SCREW, PAN M04X0.7X12	2
23	140023	WASHER, LOCK INT #8	2
24	200301014	WASHER, M4.3X10.1X1 FLT	2
25	140328	CLAMP, CABLE 3/8ID BLACK NY	2
26	578569	HOSE, 1/4 ID X 4.00"	1

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MANTENER EN EXISTENCIA

VACUUM MOTOR GROUP
CONJUNTO DEL MOTOR DE ASPIRACIÓN



VACUUM MOTOR GROUP
CONJUNTO DEL MOTOR DE ASPIRACIÓN

REF	PART.#	DESCRIPTION	QTY	
1	630432	SCREW, HEX M06 X 1.0 X 50	2	
2	140000	WASHER, FLAT 1/4	2	
3	160426	●HOSE, VAC 1-1/2X15" W/CUFF	1	
4	614157	CLAMP, HOSE 27MM TO 51MM	1	
▽	5	601468	●MOTOR, VAC 24V 2-STG	1
▲	6	190163	●CARBON BRUSH (2/PK)	1
7	801463	BRACKET, VAC MOTOR	1	
8	069767164	BOLT, CARRIAGE .25-20X.50	6	
9	15678	SCREW, HEX M6X1.0X16	2	
10	140016	WASHER, LOCK 0.25	2	
11	578427	STANDOFF, TERMINAL	2	
12	140016	WASHER, LOCK 0.25	8	
13	140259	SCREW, HEX 1/4-20X.62	2	
14	805905	●SOLENOID, 24VDC 125A (MAIN)	1	
15	606404	●DIODE, ASM W/RING TERMINALS	2	
16	32520	NUT, HEX JAM .25-20	4	

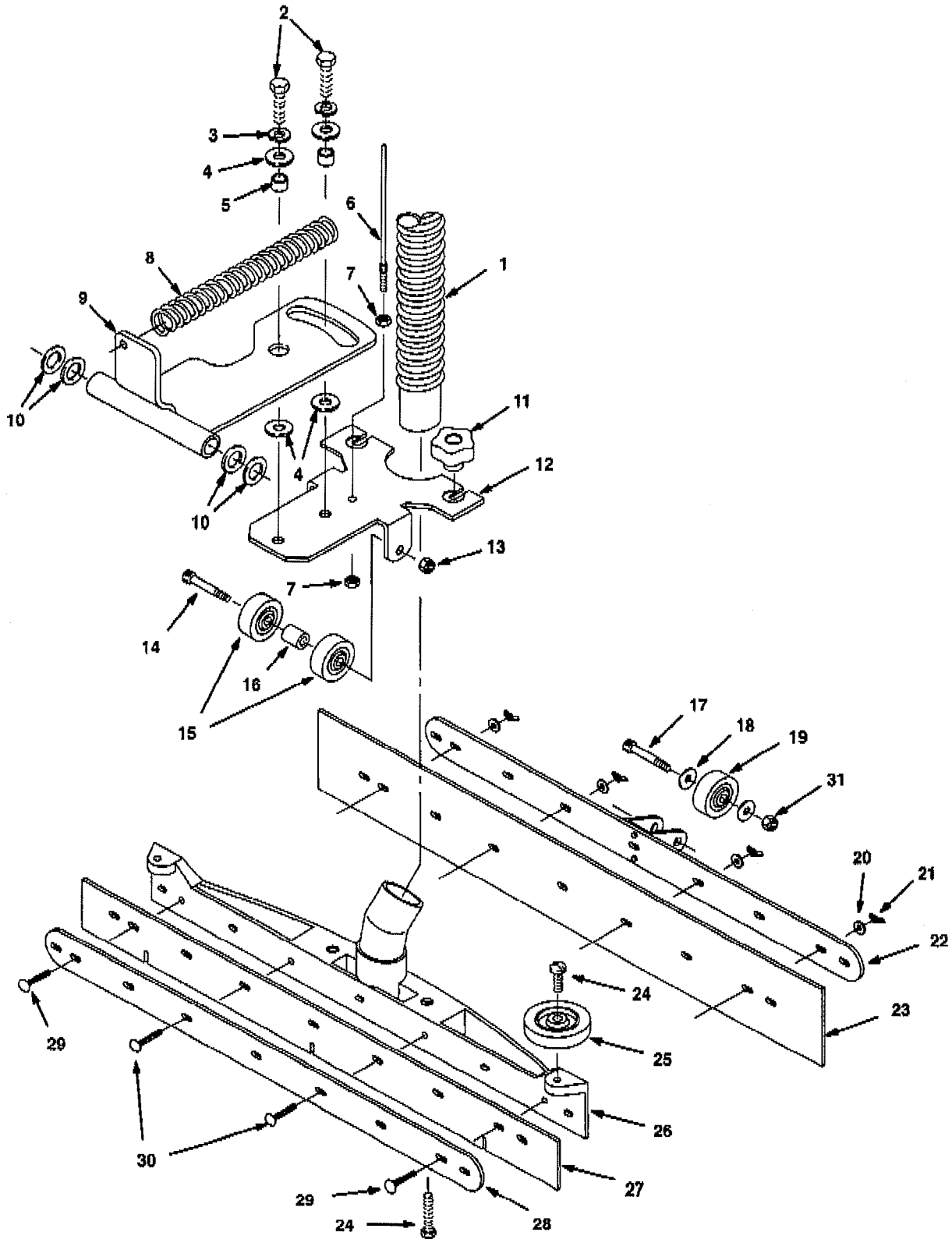
REF	PART.#	DESCRIPTION	QTY
17	610742	●SOLENOID, 24VDC (BRUSH)	1
18	08712	NUT, HEX LOCK M6 X 1.0 NL	2
19	130041	TIE, WIRE 11-1/2 X .19 NY	3
20	600009	MUFFLER, VAC EXHAUST	1
21	160459	●HOSE, VAC 1-1/2X16" BLACK	1
22	019686096	SPACER, 6.4 X 12.7 X 28	2
23	140000	WASHER, FLAT 1/4	6
24	130096	TERMINAL, BLADE MAL .25	1
25	281001014	TERMINAL, RING 1/4 10-12	1
26	140308	CLAMP, HOSE 1-5/16 TO 2-1/4	1

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● RECOMMENDED STOCK ITEMS / ARTICULOS RECOMENDADOS PARA MANTENER EN EXISTENCIA

SQUEEGEE GROUP
CONJUNTO PALETA



SQUEEGEE GROUP
CONJUNTO PALETA

REF	PART #	DESCRIPTION	QTY
1	160617	●HOSE, VAC 1-1/2"X24" W/CUFFS	1
2	140237	SCREW, HEX .50-13X1.00	2
3	140024	WASHER, LOCK 0.50	2
4	140045	WASHER, 0.518 1.25D .06 FLT	4
5	140139	SLEEVE, 0.625D 0.50B 0.25L	2
6	601428	CABLE, SQUEEGEE	1
7	601476	NUT, 1/4-20 LOCK TWO-WAY	2
8	603149	SPRING, EXT .65 X 5.00 X .069	1
9	601452	BRACKET, SQ. PIVOT	1
10	140047	WASHER, FLAT 1.246 X .754 X .062	4
11	1011094	●KNOB, RND 1.50IN DIA 5 EAR	2
12	601451	BRACKET, SQUEEGEE MOUNT	1
13	601108000	NUT, 5/16-18 HXLCK THIN NY	1
14	603144	BOLT, SHLD .38D X 3.00	1
15	630477	●WHEEL, 2.0D 0.36W POLY GRAY	2
16	603368	SPACER, .39 X .75 X .75 NY	1
▽	605856	ASM., SQUEEGEE GUM RUBBER	1
▲	600187	BOLT, SHLD .38D X 1.25, .31-18	1
▲	140028	WASHER, FLAT .38	2
▲	630477	●WHEEL, 2.0D 0.36W POLY GRAY	1

REF	PART #	DESCRIPTION	QTY
▲	20	140000 WASHER, FLAT 1/4	4
▲	21	140536 NUT, WING .25-20	4
▲	22	601457 STRIP, REAR RETAINER	1
▲	23	601455 ●BLADE, SQ. REAR GUM	1
		601486 ●BLADE, SQ. REAR LINATEX (OPTION)	1
		601488 ●BLADE, SQ. REAR URETHANE (OPTION)	1
▲	24	140799 SCREW, TRS 5/16-18X1.50 PHL	4
▲	25	630450 ●WHEEL, RBR 3"X.88" W/BUSHING	2
▲	26	601450 CASTING, SQUEEGEE	1
▲	27	601454 ●BLADE, SQ. FRONT GUM	1
		601485 ●BLADE, SQ. FRONT LINATEX (OPTION)	1
		601487 ●BLADE, SQ. FRONT URETHANE (OPTION)	1
▲	28	601456 STRIP, FRONT RETAINER	1
▲	29	612184000 BOLT, CARRIAGE .25-20X1.5	2
▲	30	612186000 BOLT, CARRIAGE .25-20X2.5	2
▲	31	601108000 NUT, 5/16-18 HXLCK THIN NY	1

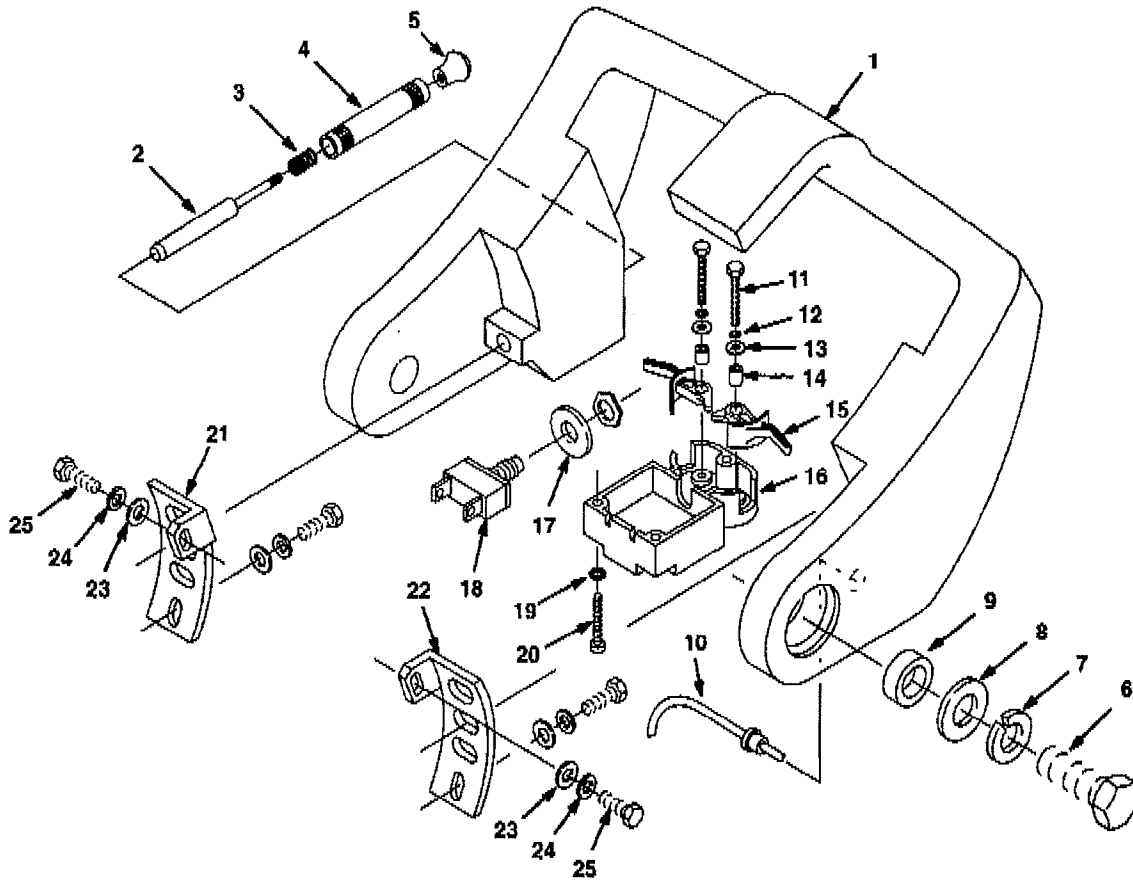
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● RECOMMENDED STOCK ITEMS / ARTICULOS RECOMENDADOS PARA MANTENER EN EXISTENCIA

PARTS LIST
LISTA DE PIEZAS

CONTROL HANDLE GROUP
MANIJA GRUPO



REF.	PART #	DESCRIPTION	QTY.
1	613358	HANDLE, GREEN	1
2	601422	PIN, HANDLE LATCH	2
3	601470	SPRING, CMPR 12.2D 1.0W 25.4L	2
4	601421	TUBE, HANDLE LATCH	2
5	601424	KNOB, LATCH	2
6	601435	SCREW, HXHD M12X30MM	2
7	140024	WASHER, LOCK	2
8	140045	WASHER, FLAT	2
9	1002725	SPACER, 0.875OD 6.504ID 0.62L	2
10	607109	CORD, 18/2 SVTX27 3/8 SJT	1
▽	611469	ASM., TRIGGER CONTROL BOX	1
▲ 11	069764190	SCREW, HEX M03X0.5X16	2
▲ 12	200662012	WASHER, LOCK	2

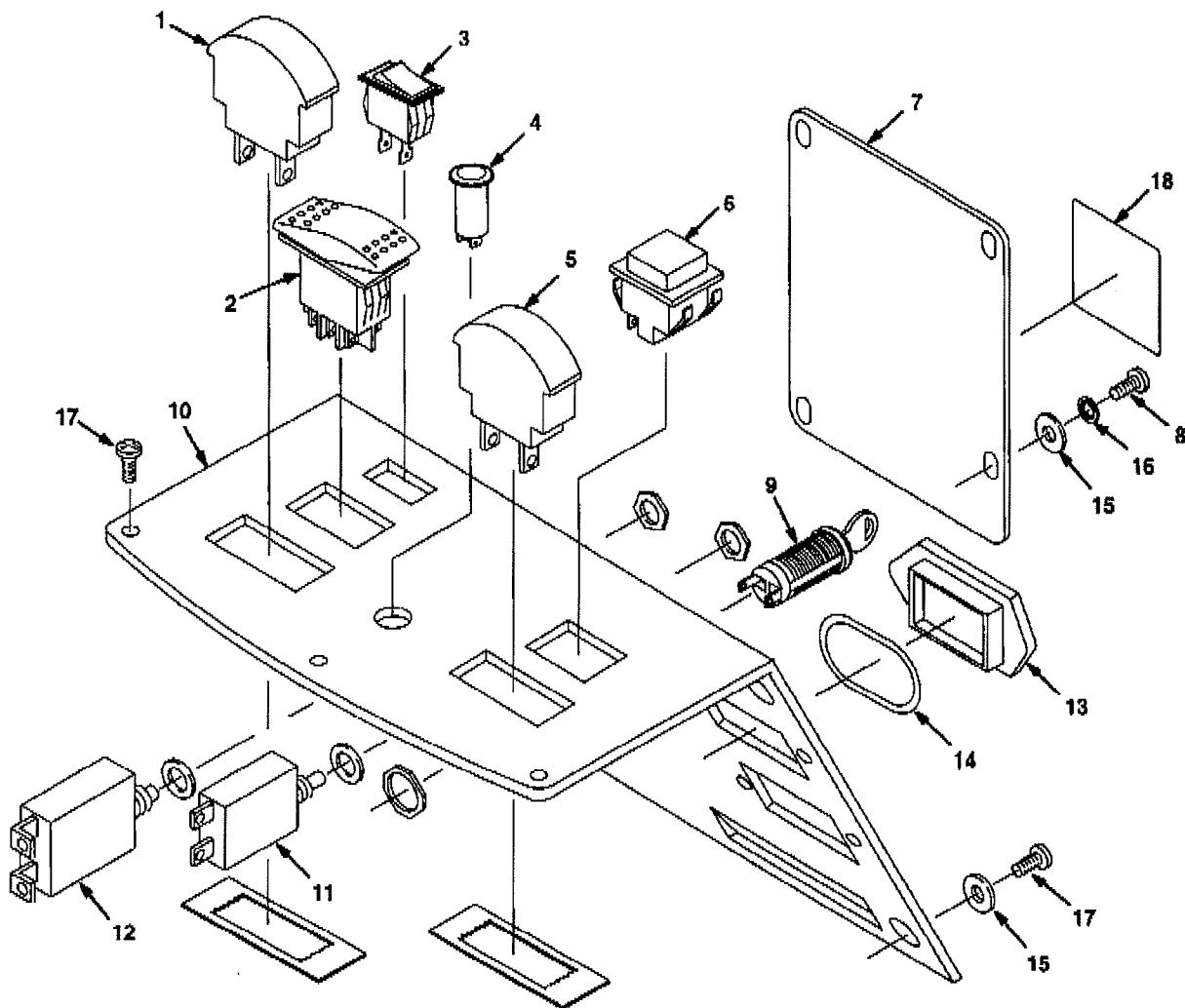
REF.	PART #	DESCRIPTION	QTY.
▲ 13	578186000	WASHER, FLAT	2
▲ 14	578082000	SPACER	2
▲ 15	578002000	ARM, TRIGGER	2
▲ 16	601429	CONSOLE, TRIGGER	1
▲ 17	578430	WASHER, FLAT	1
▲ 18	130712	●SWITCH, PULSE	1
19	140061	WASHER, #8 EXT	3
20	578193000	SCREW, PAN M04X0.7X25 PHL	3
21	601423	BRACKET, LATCH RIGHT	1
22	601465	BRACKET, LATCH LEFT	1
23	140027	WASHER, FLAT	4
24	140015	WASHER, LOCK	4
25	630425	SCREW, M8X20MM	4

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● RECOMMENDED STOCK ITEMS / ARTICULOS RECOMENDADOS PARA MANTENER EN EXISTENCIA

CONTROL CONSOLE GROUP
CONJUNTO CONSOLA DE CONTROLES



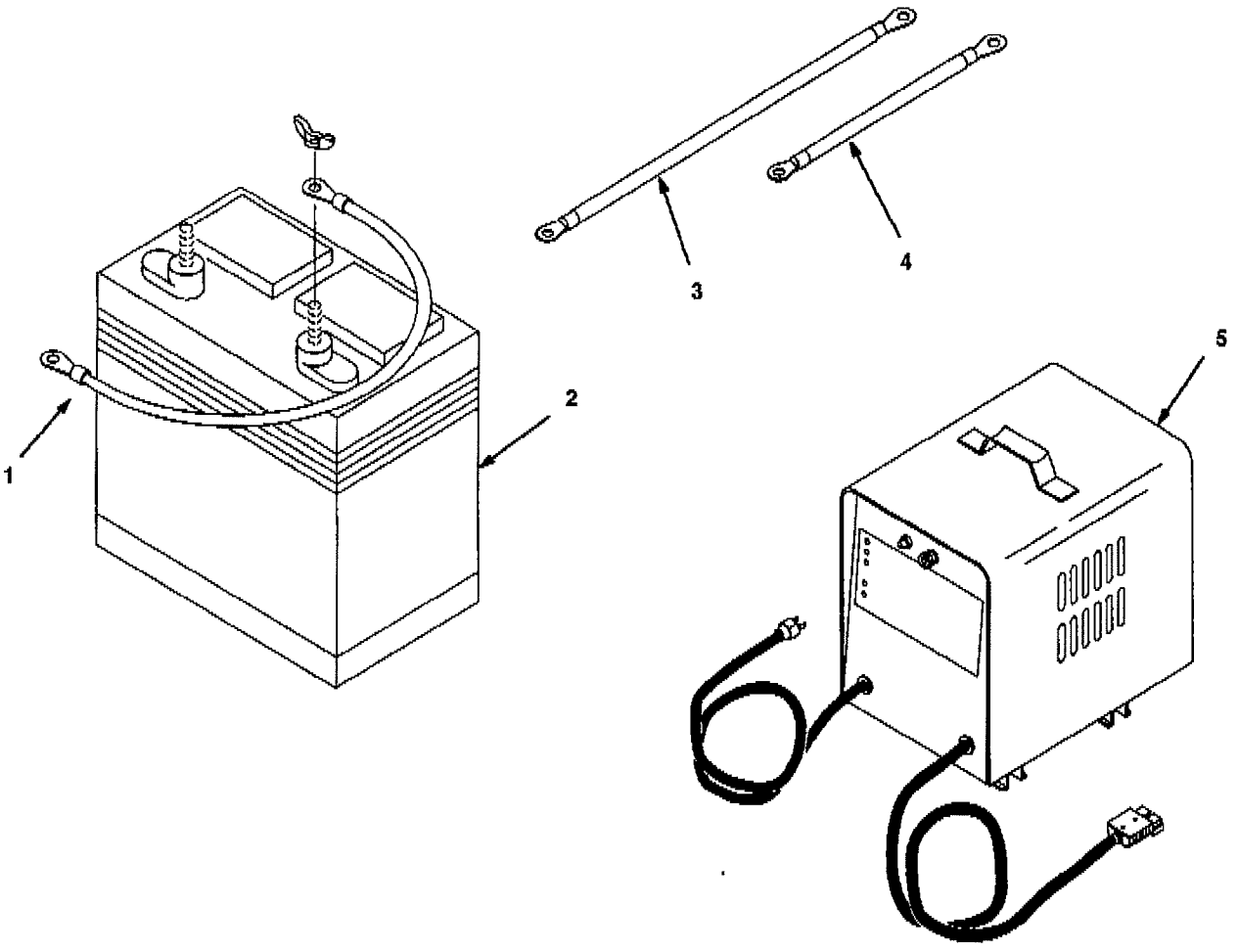
REF.	PART.#	DESCRIPTION	QTY.
1	130015	●METER, BATTERY VOLTAGE	1
2	608605	●SWITCH, ROCKER 250VAC 10A	1
3	630419	●SWITCH, ROCKER 28VDC SPST	1
4	130738	●LIGHT, INDICATOR GREEN VDC	1
5	603212	●GAUGE, BRUSH PRESSURE	1
6	130441	●SWITCH, PUSH MOMENTARY	1
7	601415	PANEL, COVER	1
8	578141000	SCREW, PAN M5X0.8X10 PHL	2
9	607475	●SWITCH, KEYLOCK 12AMP	1
	607821	●KEY, REPLACEMENT STEEL	1

REF.	PART.#	DESCRIPTION	QTY.
10	610723	PANEL, CONSOLE BLACK	1
11	130752	●BREAKER, CIRCUIT 20AMP	1
12	602951	●BREAKER, CIRCUIT 35AMP	1
13	609969	PLUG, HOUR METER	2
14	605823	O-RING, .926ID X .996	2
15	140011	WASHER, FLAT 0.18	6
16	140018	WASHER, LOCK INT #10	2
17	1008324	SCREW, PAN PHL 10X1/2 BLK	7
18	606105	LABEL, HAZARD DO NOT SPRAY	1
N/S	608942	HARNES, WIRE MAIN	1

● RECOMMENDED STOCK ITEMS / ARTICULOS RECOMENDADOS PARA MANTENER EN EXISTENCIA

PARTS LIST
LISTA DE PIEZAS

BATTERY AND CHARGER GROUP
CONJUNTO DE BATERÍA Y CARGADOR



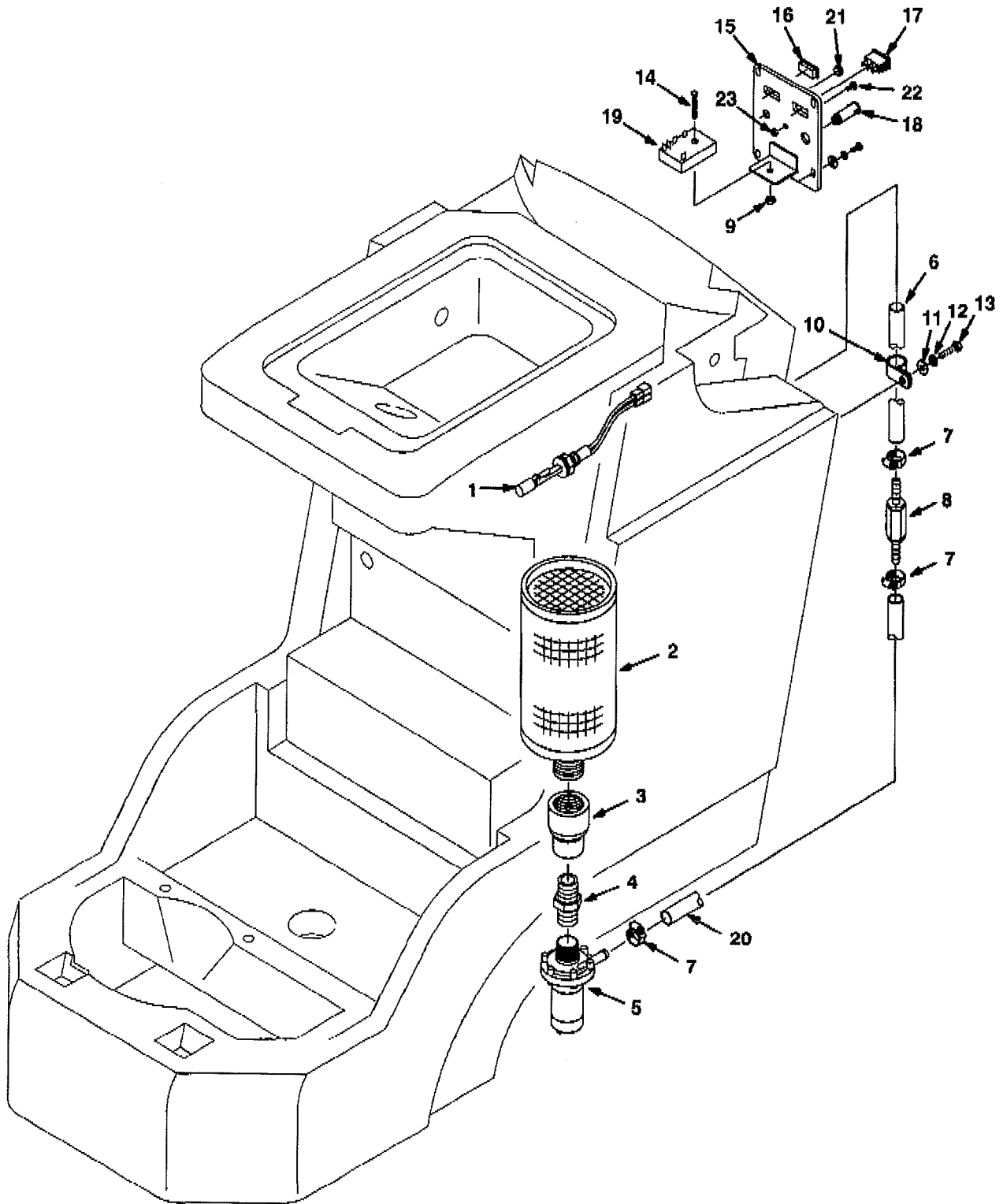
BATTERY AND CHARGER GROUP
CONJUNTO DE BATERÍA Y CARGADOR

REF	PART#	DESCRIPTION	QTY
1	602871	●CABLE, BATTERY 6 BLK X 24"	1
2	130869	BATTERY, 12VDC 130AH (WET)	2
	600594	BATTERY, 12VDC 130AH (DAMP)	2

REF	PART#	DESCRIPTION	QTY
3	603208	●WIRE ASM., #6 X 24" BLK	1
4	603207	●WIRE ASM., #6 X 12" RED	1
5	603559	CHARGER, BATTERY 24V 15AMP	1

● RECOMMENDED STOCK ITEMS / ARTICULOS RECOMENDADOS PARA
MANTENER EN EXISTENCIA

ES™ (EXTENDED SCRUB) KIT
CONJUNTO DEL SISTEMA ES™



ES™ (EXTENDED SCRUB) KIT
CONJUNTO DEL SISTEMA ES™

REF	PART #	DESCRIPTION	QTY
	603171	•KIT, ES™ & WAND PUMP	1
▽	603172	•KIT, EXTENDED SCRUB (ES™)	1
▲ 1	603166	•SENSOR, LIQUID LEVEL 28VDC	1
▲ 2	578445	•FILTER, SCREEN 100 MESH	1
▲ 3	601484	FITTING, 3/4FX1" F REDUCER PVC	1
▲ 4	630385	FITTING, PLSTC STR PM12/PM12	1
▲ 5	630136	•PUMP, SOL. 24VDC	1
▲ 6	606363	HOSE, 3/8ID X 5/8OD X 13"	1
▲ 7	54333	CLAMP, HOSE WORM 0.33-0.88D	3
▲ 8	210044	•VALVE, CHECK	1
▲ 9	09739	NUT, HEX LOCK M5X0.8 NL	1
▲ 10	140318	CLAMP, CABLE INSULATED 1/2ID	1
▲ 11	140000	WASHER, FLAT 0.25B	1

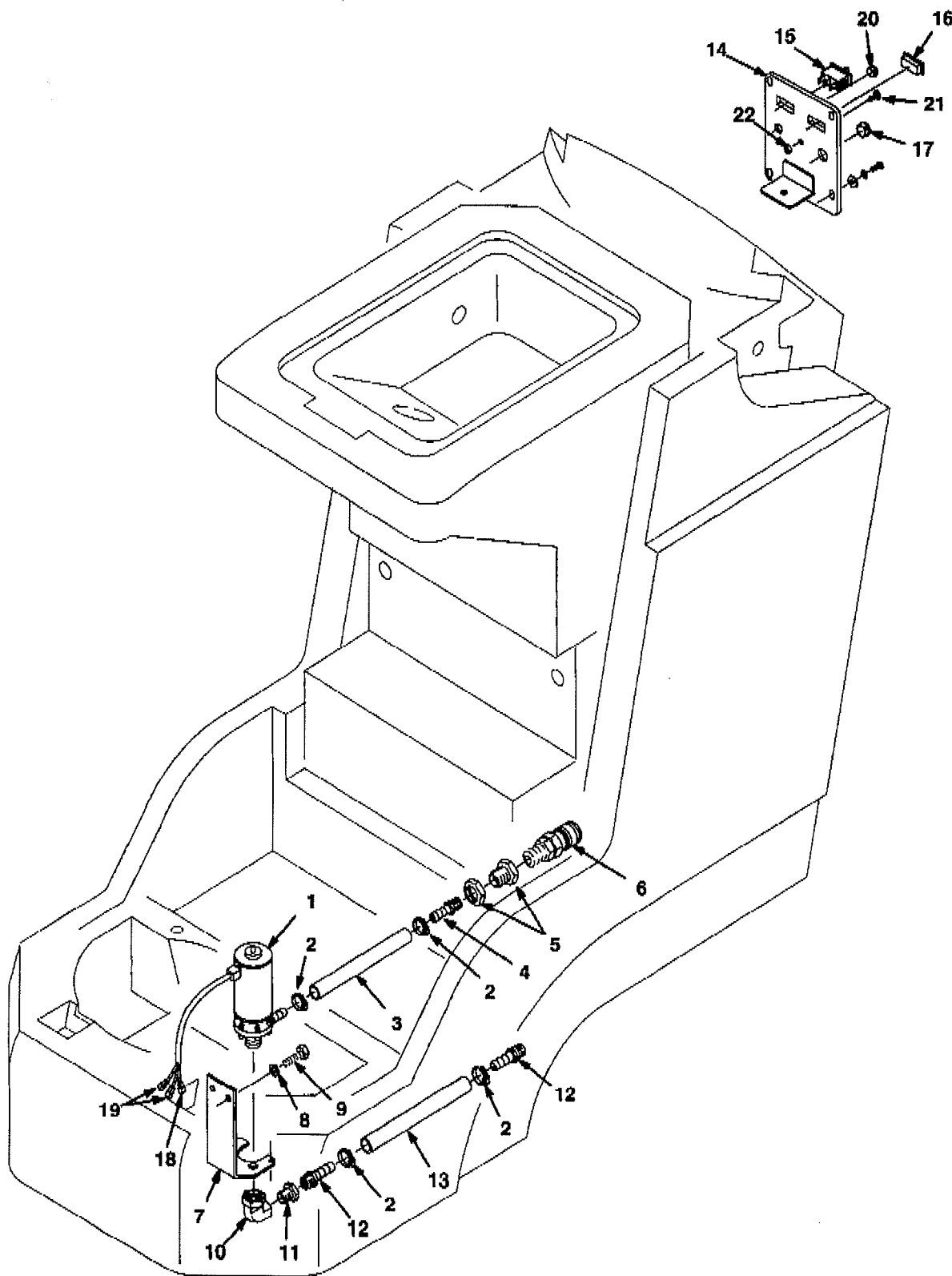
REF	PART #	DESCRIPTION	QTY
12	140016	WASHER, LOCK 0.25	1
13	608322	SCREW, TRS M6X1.0X16 PHL	1
▲ 14	578008000	SCREW, PAN M5X0.8X30 PHL	1
▲ 15	601416	PANEL, ACCESSORY ES/WAND	1
▲ 16	582150	BUTTON, PLUG ACCESSORY	1
▲ 17	630419	•SWITCH, ROCKER 28VDC SPST	1
▲ 18	130738	LIGHT, INDICATOR VDC GREEN	1
▲ 19	630145	•TIMER	1
▲ 20	606317	HOSE, 3/8ID X 5/8OD X 18"	1
▲ 21	130164	PLUG, DOME 3/8 HOLE BLACK	1
▲ 22	579259	SCREW, PAN M4X0.7X12 PHL	1
▲ 23	02850	NUT, HEX LOCK M4X0.7 NL	1

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MANTENER EN EXISTENCIA

WAND PUMP KIT
CONJUNTO DE LA BOMBA DEL TUBO



**WAND PUMP KIT
CONJUNTO DE LA BOMBA DEL TUBO**

REF	PART.#	DESCRIPTION	QTY.
	603171	•KIT, ES™ & WAND PUMP	1
∇	603173	•KIT, WAND PUMP	1
▲ 1	630136	•PUMP, SOL 24VDC	1
▲ 2	54333	CLAMP, HOSE WORM 0.33-0.88D	4
▲ 3	575501000	HOSE, 3/8ID X 5/8OD X 8"	1
▲ 4	150516	FITTING, BRS STR 04PM/06BM	1
▲ 5	150300	FITTING, BRS STR PF04/PM04	1
▲ 6	608292	QUICK CONN., FML 3/8"X1/4"NPT	1
▲ 7	601479	BRACKET, WAND PUMP	1
▲ 8	140016	WASHER, LOCK	2
▲ 9	200031433	SCREW, HEX M6 X 1.0 X 12	2
▲ 10	630251	FITTING, PIPE E90 PF12/PF12	1

REF	PART.#	DESCRIPTION	QTY.
▲ 11	630252	FITTING, BRS PM12/PF06 BUSHING	1
▲ 12	150538	FITTING, PLSTC STR PM06/BM06	2
▲ 13	606325	HOSE, 3/8ID X 5/8OD X 24"	1
▲ 14	601416	PANEL, ACCESSORY ES/WAND	1
▲ 15	630419	•SWITCH, ROCKER 28VDC SPST	1
▲ 16	582150	BUTTON, PLUG, ASSY SWITCH	1
▲ 17	069764626	PLUG, HOLE	1
18	130125	RING, TERMINAL	1
19	130133	TERMINAL, MALE DISCONNECT	2
▲ 20	130164	PLUG, DOME 3/8" HOLE BLACK	1
▲ 21	579259	SCREW, PAN M04 X 0.7 X 12 PHL	1
▲ 22	02850	NUT, HEX LOCK M4 X 0.7 NL	1

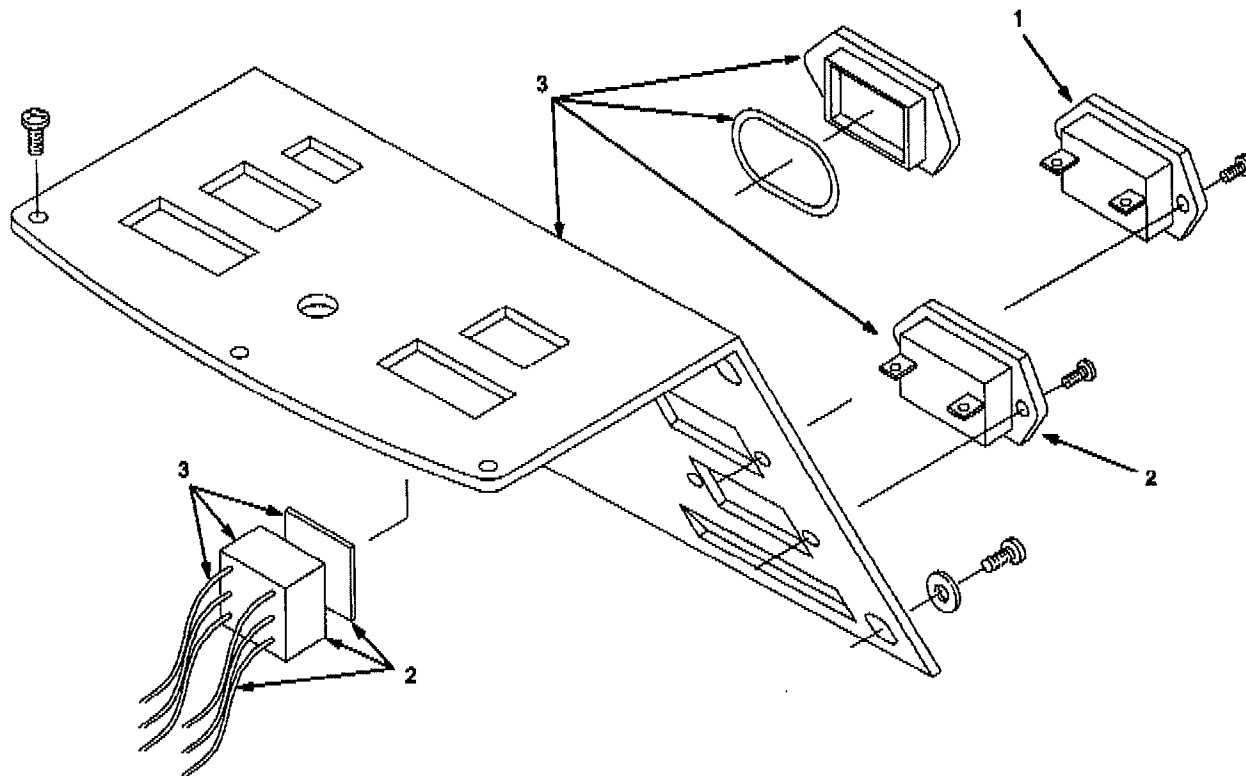
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• RECOMMENDED STOCK ITEMS / ARTICULOS RECOMENDADOS PARA
MANTENER EN EXISTENCIA

**OPTIONS
OPCIONES**

**HOUR METER AND LOW VOLTAGE INTERRUPTER KITS
CONTADOR DE HORAS Y CONJUNTO DEL INTERRUPTOR DE BAJO VOLTAJE**



REF.	PART #	DESCRIPTION	QTY.
1	603174	•KIT, HOUR METER	1
V 2	610725	•KIT, LOW VOLTAGE INTERRUPTER	1
▲	603076	•GAUGE, BATTERY 24V	1
▲	603314	•ASM., RELAY 24V	1
▲	610848	ASM., WIRE #18 X 6"	1
▲	610849	ASM., WIRE #18 X 8.5"	1
▲	130040	WIRE TIE NYLON	1

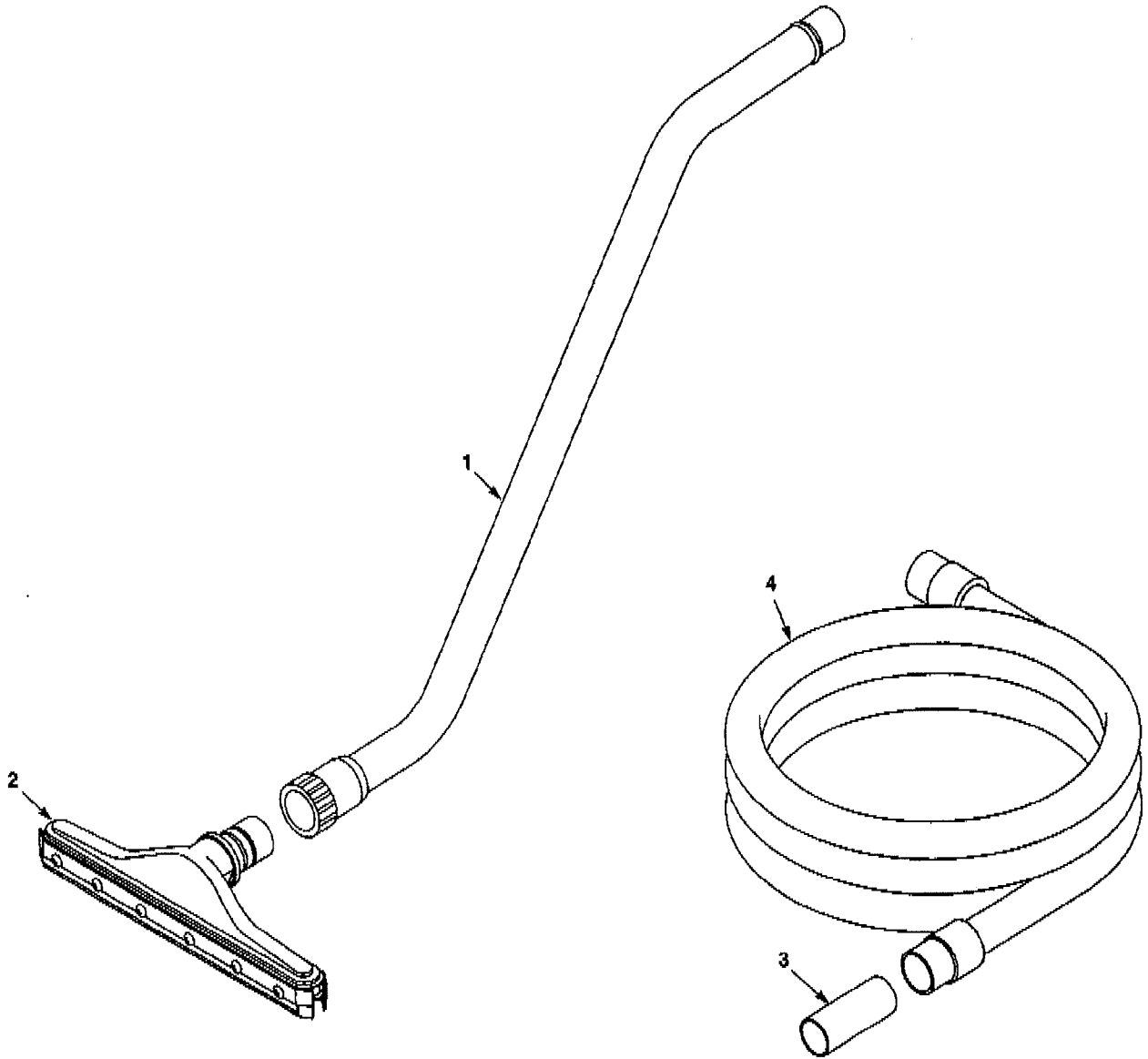
▽ ASSEMBLY / CONJUNTO

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● RECOMMENDED STOCK ITEMS / ARTICULOS RECOMENDADOS PARA MANTENER EN EXISTENCIA

REF.	PART #	DESCRIPTION	QTY.
▽ 3	610724	•KIT, LOW VOLTAGE INTERRUPTER (FOR MACHINES MANUFACTURED BEFORE AUG. 2000)	1
▲	603076	•GAUGE, BATTERY 24V	1
▲	603314	•ASM., RELAY 24V	1
▲	610848	ASM., WIRE #18 X 6"	1
▲	610849	ASM., WIRE #18 X 8.5"	1
▲	130040	WIRE TIE NYLON	1
▲	609969	PLUG, HOUR METER	1
▲	605823	•O-RING	1
▲	610723	PANEL, CONSOLE BLACK	1

WET PICK-UP TOOL KIT
KIT DE HERRAMIENTA MOJADO



REF	PART #	DESCRIPTION	QTY
▽	190928	•KIT, WET PICK-UP TOOL	1
▲▽ 1	6108.1	•WAND, TWO BEND ALUMINUM	1
▲	605257	•RING, LOCK BRASS	1
▲	600828	•NUT, WAND COUPLING	1
▲▽ 2	13840	•TOOL, SQUEEGEE PUSH/PULL 14" (355MM)	1
▲	605137	•BLADES, REPLACEMENT (SET/4)	1

REF	PART #	DESCRIPTION	QTY
▲ 3	160451	•CONNECTOR, 1-1/2 VAC HOSE	1
▲ 4	160481	•HOSE, VAC 1-1/2X10' (3M)	1

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MANTENER EN EXISTENCIA

DELUXE POWER WAND GROUP
GRUPO DEL TUBO ELÉCTRICO DELUXE

REF.	PART #	DESCRIPTION	QTY.
▽	578905000	•ASM., DELUXE POWER WAND	1
▲ 1	578060000	WAND, DOUBLE BEND	1
▲ 2	578077000	BRACKET, VALVE MOUNTING	1
▲ 3	578061000	ADAPTER, HEAD/WAND	2
▲ 4	578214000	FITTING, 1/8MX1/4H ELBOW 90 NY	1
▲ 5	579112	FITTING, SPRAY NOZZLE ADPTR	1
▲ 6	579198	RIVET, POP	2
▲ 7	578068000	•FITTING, TIP 75° 1/8K-JET BRŠ	1
▲ 8	578073000	•BRUSH, DECK, POLYPRO BLOCK 4 ROWS NTRL CRIMP POLYSTAR	1
▲ 9	578063000	HEAD, WAND	1
▲ 10	578078000	RETAINER, SQUEEGEE	2
▲ 11	578074000	•BLADE, SQUEEGEE	2
▲ 12	578124000	BRACKET, AXLE 1 HOLE	1
▲ 13	578439	NUT, M6X1.0 THUMB	1
▲ 14	613732	SPRING, CONICAL COMP 15MM	1
▲ 15	578143000	SCREW, SET M6X1.0X40 CUPPT	1
▲ 16	578126000	AXLE, WAND	1
▲ 17	578125000	•WHEEL, RUBBER 41.3D 19.1W	2
▲ 18	578123000	BRACKET, AXLE 3 HOLE	1
▲ 19	578155000	WELDMENT, HANDLE WAND	1

REF.	PART #	DESCRIPTION	QTY.
▲ 20	578154000	BRACKET, HANDLE	1
▲ 21	578091000	•FITTING, 1/4M QD CPLR PLUG BR	1
▲ 22	578164000	GROMMET, 0.38ID, 0.62GD, .06GW	1
▲ 23	578821000	•HOSE, SOLUTION 1/4"ID	1
▲ 24	578161000	CLAMP, HOSE 8-11MM EAR	1
▲ 25	578094000	FITTING, 1/4HX1/4NPT BARB	1
▲ 26	578064000	•VALVE, WATER CONTROL	1
▲ 27	150208	FITTING, 1/8M PLUG BRŠ ŠKHD	1
▲ 28	20399	BOLT, CARRIAGE .25-20 X 0.75	2
▲ 29	200304017	WASHER, FLAT M6.4 X 13 X 1.6	2
▲ 30	41169	NUT, HEX LOCK .25-20 NL	2
▲ 31	07785	NUT, HEX STD M6 X 1.0	1
▲ 32	578141000	SCREW, PAN M5 X 8.0 X 10 PHL	4
▲ 33	140018	WASHER, LOCK INT #10	8
▲ 34	578144000	SCREW, PAN M5 X 8.0 X 16 PHL	4
▲ 35	578566	SCREW, 4 X 30 FLTPHL	2
▲ 36	140288	NUT, M4 X .7 NYLOCK	2
▲ 37	140885	SCREW, TRS .25-20 X 0.50 PHL	2
38	65682	•BRUSH, SCRUB ABRASIVE NTRL NYLON 80GRIT (OPTIONAL)	1

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POWER WAND GROUP
GRUPO DEL TUBO ELÉCTRICO

REF	PART #	DESCRIPTION	QTY
▽	579908	•WAND ASM., POWER	1
▲ 1	578091000	•FITTING, BRS, QDC, PM04 PLUG	1
▲ 2	578160000	CLAMP, HOSE, 11-13MM EAR	4
▲ 3	613536	•HOSE, 1/4ID X .400M	1
▲ 4	579107	•VALVE, WATER FLOW CNTRL	1
▲ 5	150525	FITTING, BRS, STR, PM02/BM04	2
▲ 6	613537	•HOSE, 1/4ID X 1.083M	1
▲ 7	579112	FITTING, SPRAY NOZZLE ADPTR	1
▲ 8	579198	RIVET, POP	2
▲ 9	579137	•FITTING, TIP, 9508 1/8V-JET BRS	1
▲ 10	579113	SWIVEL, WAND ATTACHMENT	1
▲ 11	579132	RING, ATTACHMENT	1

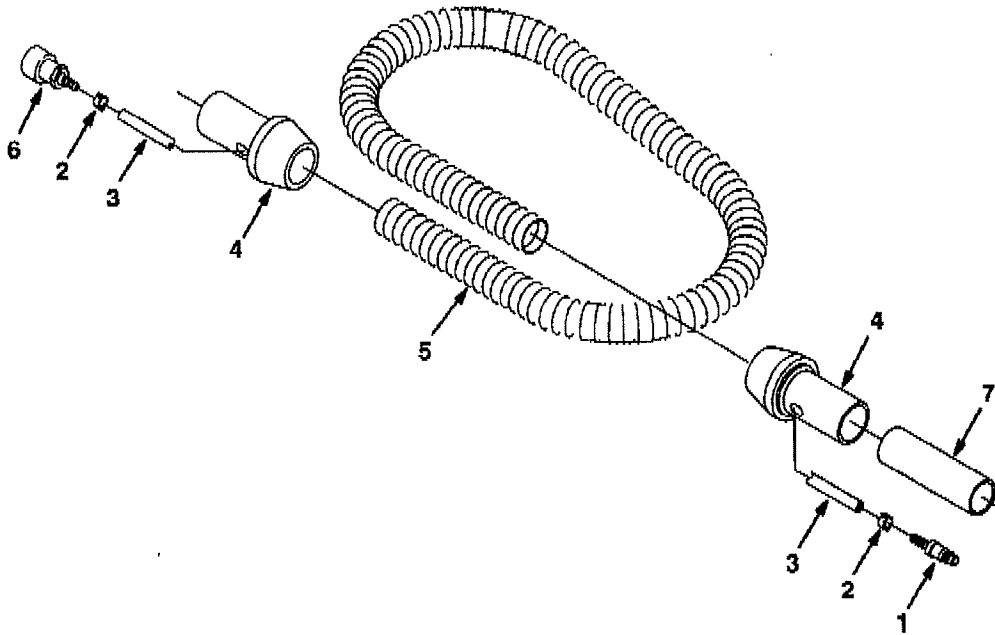
REF	PART #	DESCRIPTION	QTY
▲ 12	579135	SCREW, SELF TD UNITED	10
▲ 13	579103	RETAINER, WAND BLADE	2
▲ 14	579239	•BLADE, SQUEEGEE, FRONT	1
▲ 15	579230	•BLADE, SQUEEGEE, REAR	1
▲ 16	579147	SCREW, #6X1-1/2 PANHD SLFPG	2
▲ 17	579101	HEAD, WAND	1
▲ 18	579102	•BRUSH, WAND TWO ROW	1
▲ 19	579187	CLIP, SPRING	1
▲ 20	150208	FITTING, BRS, STR, PM02 PLUG	1
▲ 21	579109	WAND, SINGLE BEND	1
▲ 22	150510	FITTING, BRS, STR, PF04/BM04	1

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POWER WAND HOSE GROUP
CONJUNTO DE LA MANGUERA DEL TUBO ELÉCTRICO



REF	PART.#	DESCRIPTION	QTY.
▽	578903000	•HOSE ASM., POWER WAND	1
▲ 1	578318000	•FITTING, 3/8M X 1/4H QC	1
▲ 2	140325	CLAMP, HOSE 1/2 EAR	2
▲ 3	578820000	HOSE, .25ID, .44OD, 4.0M LG	1
▲ 4	578072000	•CUFF, SWIVEL, 1-1/2 BLACK	2

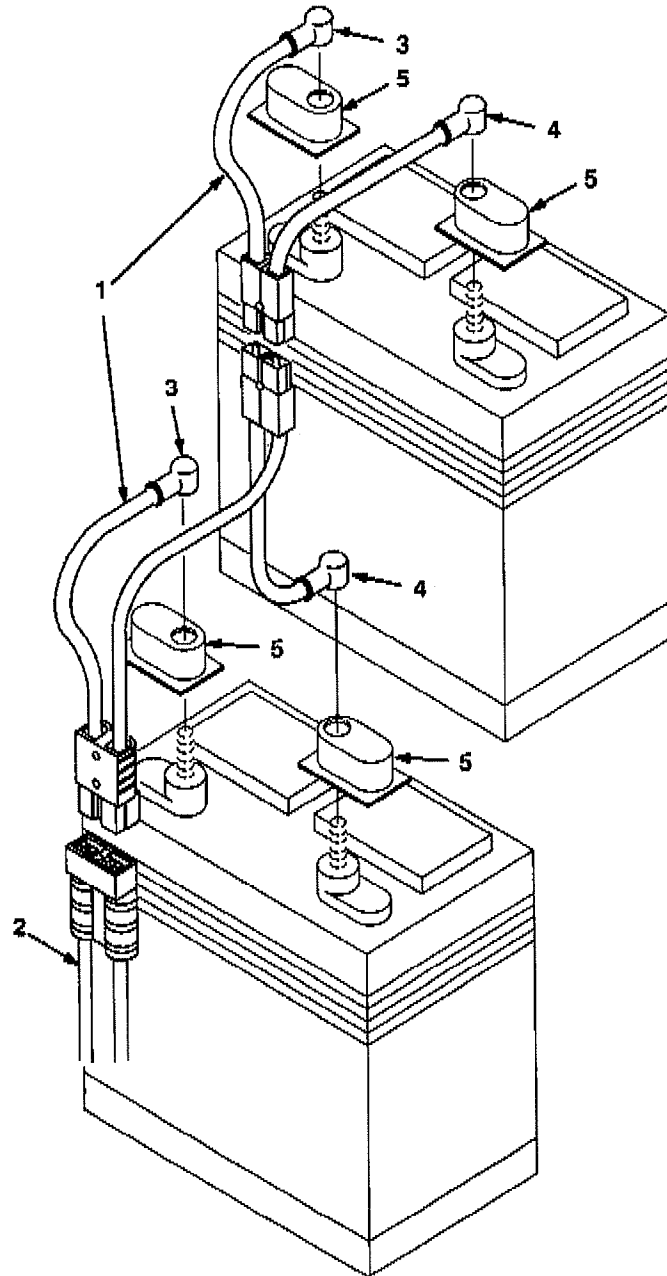
REF	PART.#	DESCRIPTION	QTY.
▲ 5	578276000	HOSE, VAC 1-1/2 X 10' GRAY	1
▲ 6	578071000	•CONNECTOR, QUICK FEMALE	1
▲ 7	231031	TUBE, 1.50"DIA X 5.0"LG	1

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QUICK CHANGE BATTERY KIT
KIT DE CAMBIO INMEDIATO DE BATERÍA



REF.	PART #	DESCRIPTION	QTY.
▽	604341	•KIT, QUICK CHANGE BATTERY	1
▲ 1	603210	•ASM., CABLE W/RED CONNECT QUICK CHANGE	2
▲ 2	603209	ASM., CABLE W/RED CONNECT QUICK CHANGE	1

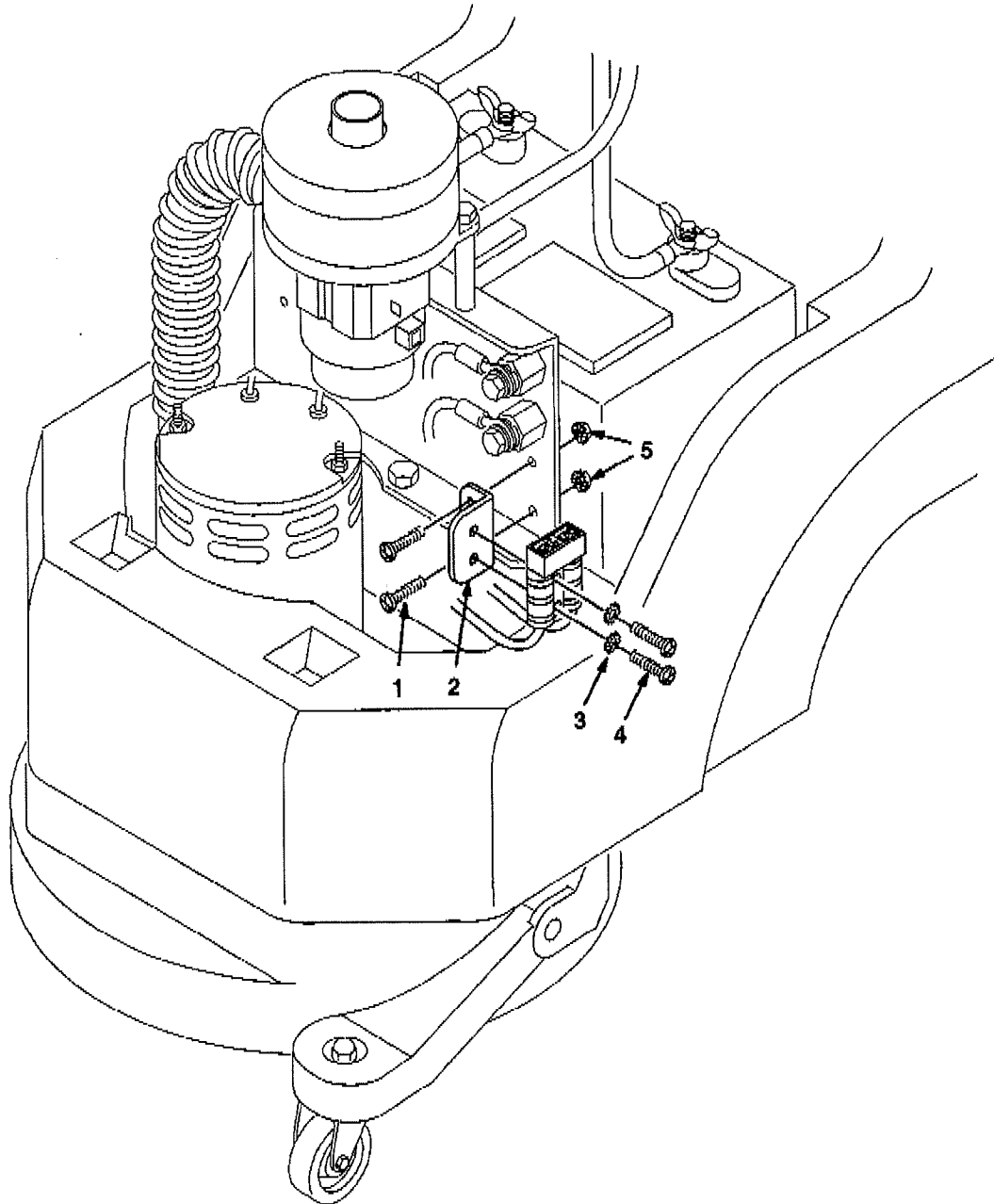
REF.	PART #	DESCRIPTION	QTY.
▲ 3	611221	•BOOT, BATTERY CABLE BLACK	4
▲ 4	611222	•BOOT, BATTERY CABLE RED	4
▲ 5	45962	•CAP, BATTERY PLSTC	8

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BATTERY CONNECTOR MOUNT KIT
KIT DE MONTAJE DE LOS CONECTORES DE LA BATERÍA



REF.	PART #	DESCRIPTION	QTY.
▽	606689	•KIT, BATTERY CONNECTOR MOUNT	1
▲ 1	140887	SCREW, 10-24X .38 PAN PHL	2
▲ 2	606688	BRACKET, BATTERY CONNECTOR	1

REF.	PART #	DESCRIPTION	QTY.
▲ 3	140019	WASHER, LOCK EXT #06	2
▲ 4	2728.12	SCREW, 6-32 X .75 PAN PHL	2
▲ 5	140519	NUT, KEP 10-24	2

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