

OWNER'S MANUAL

20" Scrubber 20



READ and UNDERSTAND this material before operating or servicing this equipment. Failure to understand how to safely operate this tool could result in an accident causing injury or death.

Discount Equipment

Discount-Equipment.com is your online resource for commercial and industrial quality parts and equipment sales.

Locations:

Florida (West Palm Beach): [561-964-4949](tel:561-964-4949)

Outside Florida TOLL FREE: [877-690-3101](tel:877-690-3101)

Need parts? Check out our website at www.discount-equipment.com

Can't find what you need?

Click on this link: <http://www.discount-equipment.com/category/5443-parts/> and fill out the request form.

Please have the machine model and serial number available in order to help us get you the correct parts. One of our experienced staff members will get back to you with a quote for the right part that your machine needs.

We sell worldwide for the brands: Genie, Terex, JLG, MultiQuip, Mayco, Toro/Stone, Diamond Products, Magnum, Airman, Mustang, Power Blanket, Nifty Lift, Atlas Copco, Chicago Pneumatic, Allmand Brothers, Essick, Miller Spreader, Skyjack, Lull, Skytrak, Tsurumi, Husquvarna/Target, Whiteman-Concrete/Mortar, Stow-Concrete/Mortar, Baldor, Wacker, Sakai, Snorkel, Upright, Mi-T-M, Sullair, Neal, Basic, Dynapac, MBW, Weber, Bartell, Bennar Newman, Haulotte, Ditch Runner, Blaw-Knox, Himoina, Best, Buddy, Crown, Edco, Wyco, Bomag, Laymor, Terremite, Barreto, EZ Trench, Takeuchi, Basic, Bil-Jax, Curtis, Gehl, Heli, Honda, ICS/PowerGrit, Puckett, Waldon, ASV, IHI, Partner, Imer, Clipper, MMD, Koshin, Rice, Gorman Rupp, CH&E, Cat Pumps, Comet, General Pump, Giant, AMida, Coleman, NAC, Gradall, Square Shooter, Kent, Stanley, Tamco, Toku, Hatz, Kohler, Robin, Wisconsin, Northrock, Oztec, Toker TK, Rol-Air, Small Line, Wanco, Yanmar

INTRODUCTION

The Scrubber 20 Automatic Scrubber is designed to scrub floors in an indoor environment and is not recommended for any other use. All operators must read and understand this manual before operating the Scrubber 20.

SCRUBBER SPECIFICATIONS

| | |
|----------------------------|---|
| L 44" W 23" H 35" Wt. 325# | |
| Solution tank capacity | 12 gal. |
| Recovery tank capacity | 15 gal. |
| Cleaning path | 20" |
| Pad/brush diameter | 20" |
| Squeegee width | 30" |
| Brush Motor | ¾ hp, 220 RPM |
| Vacuum Motor | ½ hp, 2 stage, 24volt |
| Scrubbing pressure | 65# |
| Batteries | 2 - 130 amp/hour, 12volt Deep cycle, lead/acid |

RECOMMENDED SAFETY PROCEDURES

1. The Scrubber 20 should only be operated by fully qualified maintenance personnel.
 - a. Do not operate, maintain, or service this scrubber unless you are trained and authorized.
 - b. Do not operate unless this manual is read and understood.
 - c. Do not service or operate this scrubber if it is not in proper operating condition.
2. Never attempt to ride on or otherwise attach any type of rider platform to this scrubber.
3. Extreme caution should be used whenever a ramp is used to load or unload this scrubber. Never attempt to make turns on the ramp.
4. Do not park or leave the scrubber unattended prior to loading or unloading.
5. Never operate this scrubber with the dash panel removed. Always operate this scrubber with the brush cover, battery cover, and all side panels in the correct position.
6. Remove all loose objects from floor before operating. Loose objects may become dangerous projectiles when they come in contact with revolving brushes/pads.
7. Keep scrubber moving along floor to avoid burning or damage to floor surface.
8. Never use flammable or explosive cleaning

solutions such as gasoline, kerosene, solvents, thinners, etc. in the solution tank in an attempt to remove grease, oil, tar, etc. from floors. Never operate scrubber where flammable liquids or gases are present.

9. Always turn the master switch to the "OFF" position whenever the scrubber is not in use. Never leave scrubber parked on an uneven floor. Always store scrubber safely.
10. When charging the scrubber, always disconnect the AC plug before connecting or disconnecting the DC plug.



WARNING!

11. BATTERIES ARE DANGEROUS

- a. **BATTERIES EMIT EXPLOSIVE GASES.** Always charge them in a well ventilated area, keep hood open, wear eye protection and face shield. Never smoke or use flame or sparks around the batteries.
- b. **HAZARDOUS VOLTAGE!** Severe shock or electrocution can result. Always unplug power-cord or disconnect batteries before servicing machine.
- c. **BATTERY ACID CAN CAUSE BURNS.** Wear protective gloves when working with them. Do not store them outside or let water, chemicals, or any liquid come in contact with them or the electrical system of the scrubber. Damage will occur.

CHARGING BATTERIES

1. Charger Specifications
 - a. Output voltage - 24 volts
 - b. Output current - 10 to 20 amps
 - c. Automatic shutoff circuit
2. For deep cycle battery charging, life expectancy of a battery is based on the number of charges it receives. To get the most life from your battery, recharge when the meter drops into the red zone.
 - a. Do not continue to run the scrubber after meter has gone into the red zone.
 - b. Do not let batteries sit uncharged for long periods of time.
 - c. Make sure that you recharge the batteries in a well-ventilated area.

- d. Batteries emit explosive gases. Keep away from sparks and flame.
3. Gel batteries are maintenance free and levels do not need to be checked. Lead batteries must have fluid checked every 10 charges. If fluid is low, fill with distilled water to top of plates.
 4. Make sure all switches are in the "OFF" position.
 5. Open recovery tank to access batteries.
 6. Plug charger into receptacle near battery compartment.
 7. Plug charger into grounded wall outlet AFTER connecting charger to scrubber. Charger will automatically begin charging and will shut off automatically when batteries are fully charged.
 8. Do not use an adapter or remove grounded blade on plug.
 9. After charger has turned off, first unplug it from the wall outlet, then from the scrubber.

BRUSH/PAD DRIVE ASSEMBLY

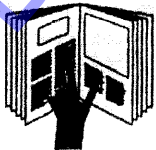
1. Lower brush head by stepping down on top pedal; push pedal forward to lower.
2. Position squeegee so that it is centered behind the scrubber.
3. Tilt scrubber back onto squeegee to access motor hub for installation. Do not leave the scrubber tilted back any longer than necessary to avoid damaging squeegee blades.
4. Pad installation:
 - a. Remove plastic centerlok from pad driver.
 - b. Center pad on a pad driver and re-attach centerlok.
 - c. Be sure to attach pad to pad driver before installing driver to motor hub.

DRAINING AND FILLING THE TANKS

1. Before draining either tank, make sure all switches are at the "OFF" position.
2. When moving the scrubber to either fill or drain, make sure brushes and squeegee are in the "UP" position.
3. Draining the Recovery Tank:
 - a. Remove drain hose from holder. To completely drain, open tank sideways.
 - b. Unscrew clear lid on recovery tank and use hose to rinse out tank.
 - c. Make sure to rinse out thoroughly after each use. This will prevent odors or mildew from forming.
 - d. Replace drain hose. Close tank.
4. The Recovery Tank must be drained every time before refilling. If it is not drained before solution tank is refilled, foam or water will enter the vacuum standpipe and damage will occur. This damage is not covered by warranty.
5. Draining the Solution Tank:
 - a. Pull hose off bracket at back of the machine and drain into a bucket or floor drain.
 - b. Flush solution tank with clean water after each use. This will prevent chemical buildup.
 - c. Drain rinse water out through hose drain.
 - d. Open solution flow lever to clean out solution flow system.
 - e. Reconnect hose to bracket. Make sure it is tightly connected.
6. Filling Solution Tank:
 - a. Make sure solution flow is completely shut off.



WARNING!



A person who has not read and does not understand all operating instructions is not qualified to operate this tool.

Failure to read and understand safety instructions may result in injury or death.



WARNING!



Disconnect power before working

Electric shock may occur

PG. 4 Scrubber 20

- b. Fill the tank with up to 14 gallons of water and chemical solution.
- c. Use indicator at rear of scrubber to check amount of fluid in tank.
- d. Do not fill with boiling water. Temperature must not exceed 140 F.
- e. Make sure to use non-foaming detergents and dilute according to the manufacturer's instructions. If using powdered cleaners, dissolve thoroughly before adding to solution tank. Use only nonflammable chemicals.

STORING THE SCRUBBER 20

1. Store in a dry area in the upright position.
2. Flush both tanks with clean water and drain completely.
3. Remove cover lid to promote air circulation.
4. Raise pad/brush assembly and squeegee off floor to prevent squeegee damage and promote drying.
5. If storing machine in freezing temperatures, be sure to drain it of all water. Damage to your scrubber due to extreme temperature is not covered under the warranty.

OPERATING INSTRUCTIONS

Please read the Recommended Safety Procedures on pg. 2 before operating the Scrubber 20.

1. Lower squeegee by releasing squeegee lift lever from the "LOCK" position.
2. Step down on brush lift foot pedal to lower brush head and push pedal forward to release.
3. Turn vacuum switch to "ON" position.
4. Turn solution control knob counter clockwise slightly to activate flow. The further the lever is turned, the faster the flow of solution. Open completely for maximum flow.
5. Turn brush switch to "ON" position. Do not let the scrubber stay in one position for more than a few seconds after brush rotation has started. Damage to floor will result!
6. Begin scrubbing floor by pushing machine forward. Adjust solution flow accordingly. Be sure to keep hands and feet clear of rotating brush/pad driver.

Helpful hints:

1. While scrubbing, periodically check the recovery tank. If foam buildup is heavy, use a defoamer to prevent damage.
2. If more scrubbing pressure is needed, pull brush lever upwards.
3. If squeegee is leaving streaks, lift squeegee to the "UP" position and wipe blades with clean, dry cloth.
4. Before stopping or turning, shut off solution flow to prevent excess solution on the scrub path.
5. If you are stopping for more than five seconds, shut off brushes/pads to prevent floor damage.
6. Frequently check battery meter for charge level. When it drops to the red zone, a recharge is necessary. Do not continue to operate machine after the needle drops into the red zone. Battery damage will occur.

RECOMMENDED MAINTENANCE SCHEDULE



WARNING!

Before attempting any maintenance or repair on the scrubber, make sure that it is on a level surface, that all switches are on the "OFF" position, and disconnect batteries and/or battery charger. This will prevent any accidental electrical problems. All maintenance must be performed by authorized personnel.

DAILY

1. Remove and clean pad or brush. Never use overly soiled pads/brushes when scrubbing a floor.
2. Remove and clean lint from ball float shutoff screen (located in recovery tank).
3. Drain and rinse both tanks. Remove any clogging debris in vacuum intake hole in recovery tank.
4. Raise squeegee and wipe with clean, damp cloth to remove any soil. Store squeegee in the "UP" position to prevent damage.
5. Clean machine housing with nonabrasive, non-solvent cleanser.
6. Recharge batteries if necessary.

WEEKLY

1. Flush tanks and solution lines with vinegar solution (1 qt. Vinegar, 3 gals. Water).
2. Rinse with clean water.
3. Clean battery tops to prevent corrosion.
4. Check for loose or corroded battery cables.
5. Check fluid level in batteries (lead acid batteries only).

MONTHLY

1. Lubricate axle and caster grease fittings with water-resistant grease.
2. Lubricate all linkage pivot points with silicone spray, then coat with a water-resistant grease to maintain smooth operation.
3. Check scrubber for water leaks and loose nuts or bolts.

EVERY 250 HOURS

1. Check brush motor for carbon brush wear. Replace when down to 3/8" or less.

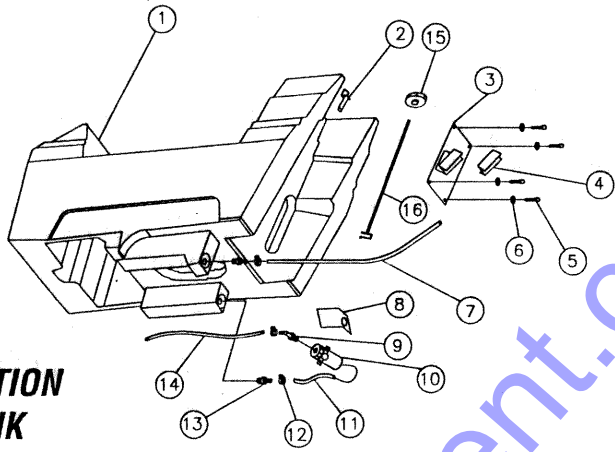
2. Check vacuum motor for carbon brush wear. Replace when down to 3/8" or less.

BATTERY MAINTENANCE

Before any battery maintenance is done, make sure batteries and charger are disconnected and unplugged from wall outlet.

1. Keep battery tops and posts clean and dry. To dissolve corrosion, mix a solution of baking soda and water. Brush solution carefully over battery tops and posts. Do not allow solution to enter battery cells.
2. After drying tops and posts, use a wire brush to clean terminal posts and cable connections.
3. Thoroughly apply a coating of grease to posts to help maintain a good connection and prevent further corrosion.
4. Check for worn or loose cables and replace if necessary.
5. Check fluid level in batteries every 10 charges (lead acid batteries only).

SOLUTION TANK

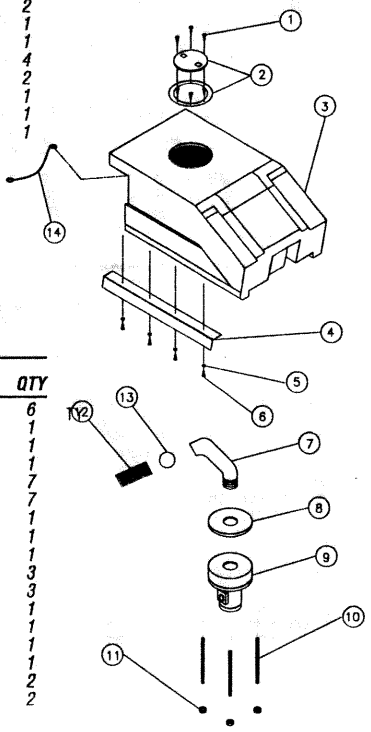


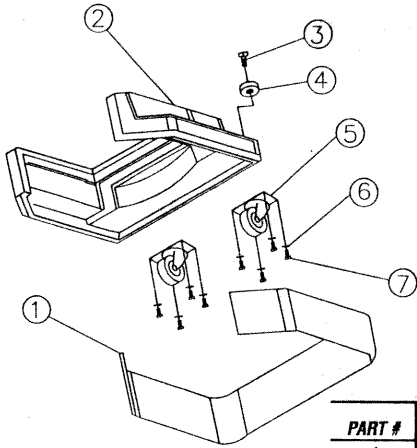
PARTS LIST

| PART # | DESCRIPTION | PART # | QTY |
|--------|----------------------------|--------------|-----|
| 1 | SOLUTION TANK | 108-AS-1 | 1 |
| 2 | DRAIN HOSE BRACKET | 288-030-1000 | 1 |
| 3 | MOTOR LIFT ADJUST. BRKT. | 288-030-700 | 1 |
| 4 | FOOT LEVER ADJUST. BRKT. | 283-030-105 | 1 |
| 5 | 3/8 - 16*3/4" BOLT | 164-10111 | 4 |
| 6 | 5/16 USS FLAT WASHER | 164-20156 | 4 |
| 7 | DRAIN HOSE (SOLUTION TANK) | 216-0212 | 1 |
| 8 | BRACKET (SOLUTION VALVE) | 283-030-115 | 1 |
| 9 | VALVE FITTING | 166-EL1412 | 2 |
| 10 | SOLUTION VALVE | 030-20-117 | 1 |
| 11 | HOSE | 216-0212 | 1 |
| 12 | HOSE CLAMP | 233-62P08 | 4 |
| 13 | TANK FITTING | 166-030 | 2 |
| 14 | SOLUTION HOSE | 216-0212 | 1 |
| 15 | SOLUTION CONTROL KNOB | 030-20-103 | 1 |
| 16 | SOLUTION CONTROL ROD | 288-030-100 | 1 |

VACUUM TANK
PARTS LIST

| PART # | DESCRIPTION | PART # | QTY |
|-----------|--------------------------|------------|-----|
| 1 | SCREW | S2-97 | 6 |
| 2 | 4" LID | S2-04 | 1 |
| 3 | RECOVERY TANK | 108-AS-2 | 1 |
| 4 | HINGE | 030-20H | 1 |
| 5 | WASHER | 164-20153 | 7 |
| 6 | 1/4 - 20*1/2" BOLT | 164-10003 | 7 |
| 7 | OVERFLOW ASSEMBLY | 030-20-119 | 1 |
| 8 | VACUUM MOTOR GASKET | S2-20 | 1 |
| 9 | VACUUM MOTOR | 030-VACM | 1 |
| 10 | 1/4 - 20 STUD | 164-254 | 3 |
| 11 | 1/4 - 20 LOK NUT | 164-22831 | 3 |
| 12 | FLOAT SCREEN | 030-20-112 | 1 |
| 13 | FLOAT BALL | 030-20-111 | 1 |
| 14 | SUPPORT CABLE | 030-20-116 | 1 |
| not shown | RECOVERY TANK DRAIN HOSE | 030-20-121 | 1 |
| not shown | SQUEEGEE VAC HOSE | S2-47 | 2 |
| not shown | HOSE CUFFS | S2-47-CUFF | 2 |



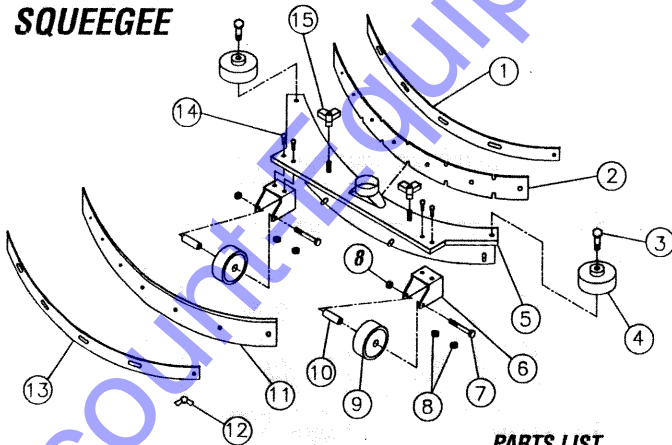


SHROUD

PARTS LIST

| PART # | DESCRIPTION | PART # | QTY |
|--------|----------------------|----------------|-----|
| 1 | SPLASH SKIRT | 030-20-118 | 1 |
| 2 | BRUSH SHROUD | 108-AS-20 | 1 |
| 3 | 1 3/4" SHOULDER BOLT | 196-70212 | 2 |
| 4 | POLY WHEEL | 156-PB03041-08 | 2 |
| 5 | SWIVEL GASTER | 156-030 | 2 |
| 6 | FLAT WASHER | 164-20153 | 8 |
| 7 | 1/4 - 20*1/2" BOLT | 164-10003 | 8 |

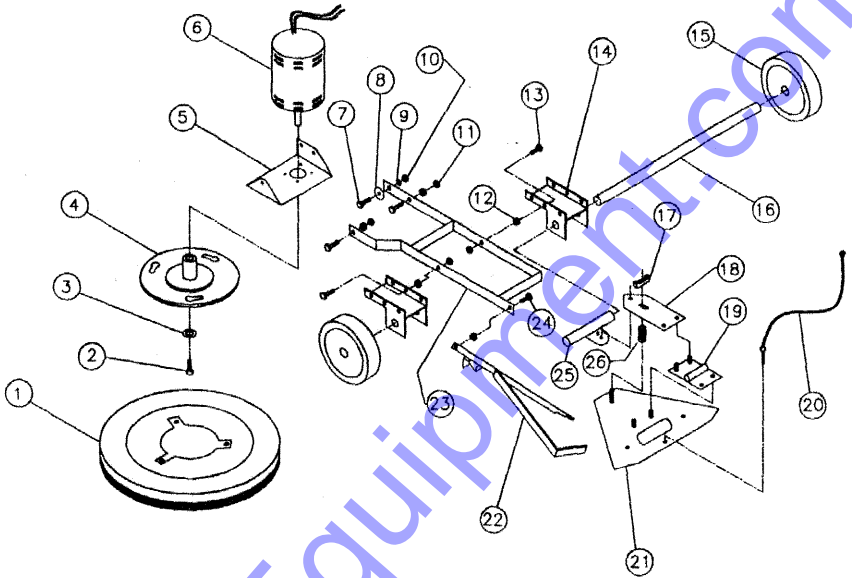
SQUEEGEE



PARTS LIST

| PART # | DESCRIPTION | PART # | QTY |
|--------|--------------------------|-----------------|-----|
| 1 | FRONT SUPPORT | 283-030-235 | 1 |
| 2 | SQUEEGEE BLADE (FRONT) | 030-20-SRF | 1 |
| 3 | SHOULDER BOLT | 196-70212 | 2 |
| 4 | POLY WHEEL | 156-PB-03041-08 | 2 |
| 5 | SQUEEGEE (WELDED ASSBLY) | 288-030-200 | 1 |
| 6 | WHEEL BRACKET | 288-030-221 | 2 |
| 7 | WHEEL BOLT | 164-1129087 | 2 |
| 8 | WHEEL & BRACKET NUT | 164-1137015 | 6 |
| 9 | WHEEL | 156-030-1 | 2 |
| 10 | WHEEL BUSHING | 030-20-99 | 2 |
| 11 | SQUEEGEE BLADE (REAR) | 030-20-SRR | 1 |
| 12 | WING NUT | 625-6477K58 | 16 |
| 13 | REAR SUPPORT | 283-030-240 | 1 |
| 14 | WHEEL BRACKET BOLT | 164-1129061 | 4 |
| 15 | SQUEEGEE KNOB | 030-20-104 | 2 |

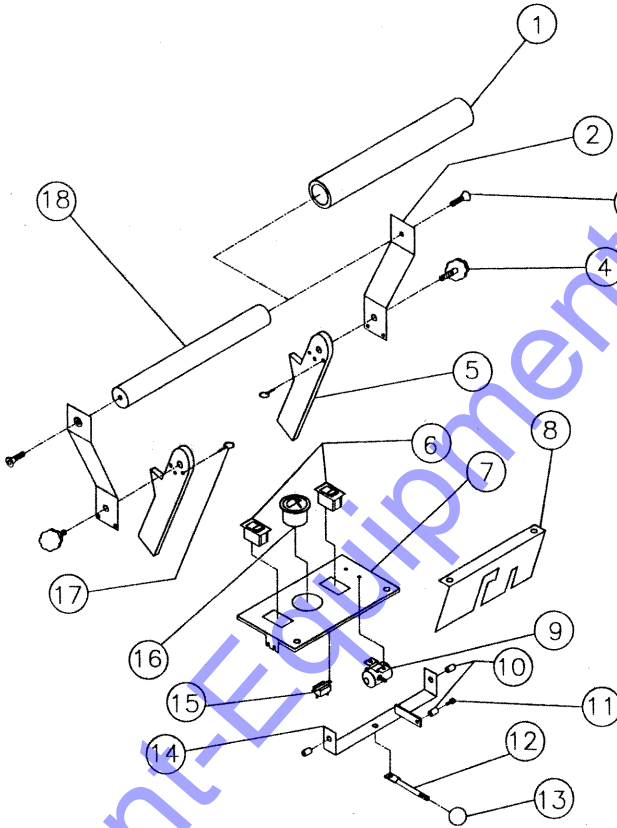
DRIVE ASSEMBLY



DRIVE ASSEMBLY PARTS LIST

| PART # | DESCRIPTION | PART # | QTY |
|--------|---------------------------|-----------------|-----|
| 1 | 20" PAD DRIVER | 030-20-262 | 1 |
| 2 | 5/16 - 18*3/4" BOLT | 164-10059 | 1 |
| 3 | 1/4" FLAT WASHER | 164-20155 | 1 |
| 4 | MOTER BRUSH ADAPTER | 288-030-800 | 1 |
| 5 | MOTOR SWIVEL PLATE | 283-030-130 | 1 |
| 6 | BRUSH MOTOR | 030-BRUSHM | 1 |
| 7 | 5/16 - 18*1" BOLT | 164-10063 | 1 |
| 8 | 5/16" FENDER WASHER | 164-20207 | 1 |
| 9 | 5/16" USS FLAT WASHER | 164-20156 | 1 |
| 10 | 5/16 - 18 STOVER LOK NUT | 164-22833 | 1 |
| 11 | 1/2 - 13 STOVER LOK NUT | 164-22836 | 4 |
| 12 | CHASSIS BUSHING | 030-20-100 | 5 |
| 13 | 1/2 - 13*1" BOLT | 164-12011 | 4 |
| 14 | CHASSIS MOUNT BRACKET | 288-030-500 | 2 |
| 15 | 8" WHEEL | 156-XA-08251-12 | 2 |
| 16 | AXLE | 283-030-280 | 1 |
| 17 | KNOB | 625-6477K58 | 1 |
| 18 | SQUEEGEE PIVOT BRACKET | 283-030-250 | 1 |
| 19 | SQUEEGEE PIVOT HINGE | 030-20-106 | 1 |
| 20 | SQUEEGEE LIFT CABLE | 030-20-115 | 1 |
| 21 | SQUEEGEE MOUNT PLATE | 283-030-245 | 1 |
| 22 | MOTOR LIFT FOOT BRACKET | 288-030-600 | 1 |
| 23 | PIVOT CHASSIS | 288-030-400 | 1 |
| 24 | 3/8 - 16*3/4" BOLT | 164-10111 | 1 |
| 25 | AXLE/SQUEEGEE PIVOT BRKT. | 288-030-900 | 1 |
| 26 | SQUEEGEE ADJ. SPRING | 030-20-105 | 1 |

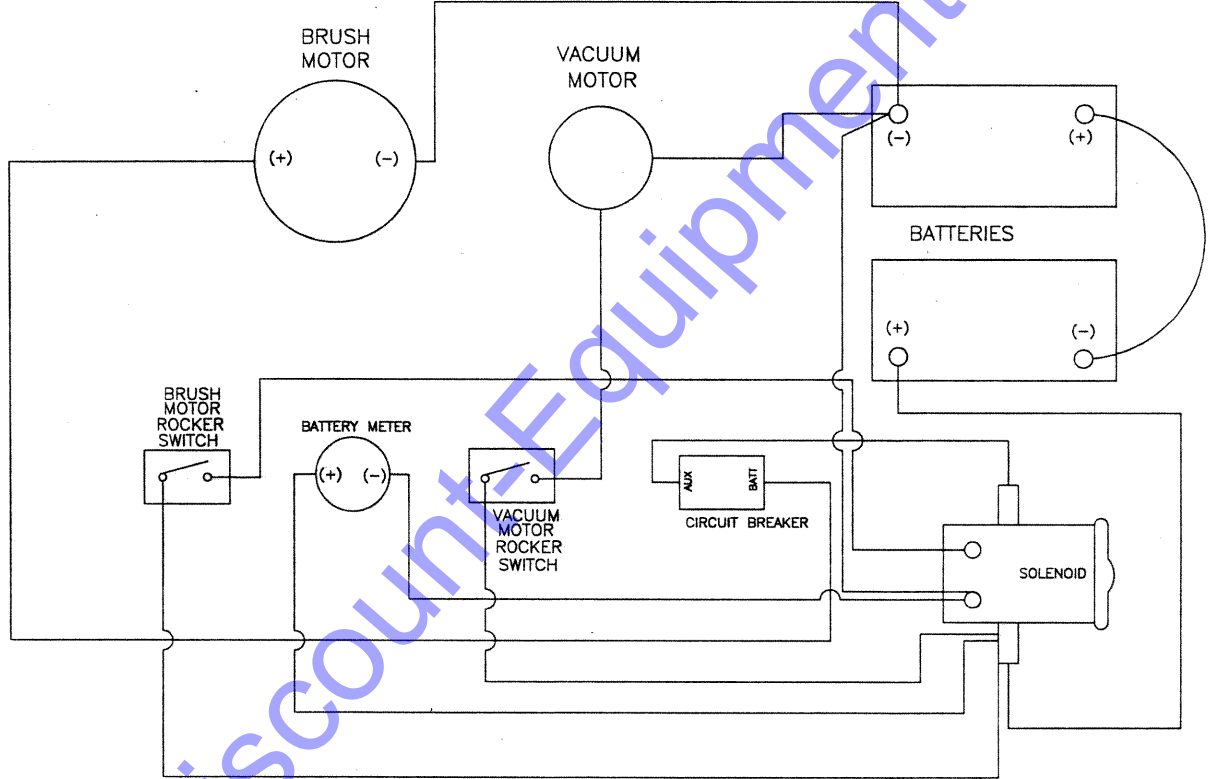
CONTROL PANEL



CONTROL PANEL PARTS LIST

| PART # | DESCRIPTION | PART # | QTY |
|--------|---------------------------|-----------------|-----|
| 1 | HANDLE GRIP (FOAM) | 030-GRIP | 1 |
| 2 | HANDLE ADJUSTMENT BRKT. | 283-030-125 | 2 |
| 3 | HANDLE BOLT | 164-132DA23020P | 2 |
| 4 | HANDLE ADJUSTMENT KNOB | 030-20-114 | 2 |
| 5 | HANDLE BASE BRACKET | 283-030-120 | 2 |
| 6 | ROCKER SWITCH | 030-20-108 | 2 |
| 7 | CONTROL PANEL PLATE | 283-030-275 | 1 |
| 8 | COVER PLATE | 283-030-270 | 1 |
| 9 | SOLENOID | 153-030 | 1 |
| 10 | BUSHING | 030-20-101 | 3 |
| 11 | BOLT | 164-10007 | 1 |
| 12 | SQUEEGEE LIFT ARM | 288-030-300 | 1 |
| 13 | SQUEEGEE LIFT KNOB | 030-20-102 | 1 |
| 14 | SQUEEGEE LIFT BRACKET | 288-03-1100 | 1 |
| 15 | CIRCUIT BREAKER | 030-20-109 | 1 |
| 16 | BATTERY CONDITION METER | 153-314 | 1 |
| 17 | HANDLE ADJUSTMENT PIN | 030-20-107 | 2 |
| 18 | HANDLE BAR (NO FOAM GRIP) | 2880030-1300 | 1 |

WIRING DIAGRAM



TROUBLESHOOTING

| PROBLEM | SYMPTOM | SOLUTION |
|-----------------------------------|--|---|
| <i>no power, nothing runs</i> | <i>Batteries need charging Batteries faulty Loose battery cable Batteries not connected properly</i> | <i>Charge the batteries Replace batteries Tighten cable connection</i> |
| <i>brush motor does not run</i> | <i>Faulty brush switch Machine circuit breaker has tripped. Faulty wiring Faulty brush motor Carbon brushes worn Faulty solenoid</i> | <i>Contact service center Allow motor to cool down, breaker will automatically reset. Contact service center Contact service center Replace if worn to 3/8 or less Contact service center</i> |
| <i>vacuum motor does not run</i> | <i>Faulty vacuum switch Faulty wiring Faulty vacuum motor Carbon brushes worn</i> | <i>Contact service center Contact service center Contact service center Replace if worn to 3/8 or less</i> |
| <i>Short run time</i> | <i>Batteries not fully charged Bad cell in one or more batteries Batteries need maintenance Faulty charger</i> | <i>Charge batteries Replace battery See "Battery Maintenance" Replace charger</i> |
| <i>Little or no solution flow</i> | <i>Solution flow lever is not activated Solution line is clogged Solution valve is clogged Solution flow adjustment knob needs adjusting</i> | <i>Push flow lever forward Remove hose and blow compressed air through it. Then flush with clean water Remove valve and clean. Do not scratch or damage inside Turn knob down to increase flow</i> |
| <i>Poor squeegee pickup</i> | <i>Recovery tank is full Ball float shutoff screen is clogged Squeegee is clogged with debris Squeegee blades are worn Squeegee thumbscrews are loose Vacuum hose connections are loose Vacuum hose is worn or has a hole Vacuum is clogged with debris Tank gasket is defective Recovery tank water inlet is plugged Recovery tank lid is loose Vacuum motor is loose Battery charge is low</i> | <i>Empty tank Remove screen and clean Clean squeegee Replace blades Tighten screws Push hose firmly onto connections Replace Remove debris Replace gasket Empty recovery tank and tilt sideways to remove clogged debris Tighten lid Tighten down vacuum motor Do not over-tighten! Do not run scrubber if meter is in the red zone</i> |

Discount Equipment

Discount-Equipment.com is your online resource for commercial and industrial quality parts and equipment sales.

Locations:

Florida (West Palm Beach): [561-964-4949](tel:561-964-4949)

Outside Florida TOLL FREE: [877-690-3101](tel:877-690-3101)

Need parts? Check out our website at www.discount-equipment.com

Can't find what you need?

Click on this link: <http://www.discount-equipment.com/category/5443-parts/> and fill out the request form.

Please have the machine model and serial number available in order to help us get you the correct parts. One of our experienced staff members will get back to you with a quote for the right part that your machine needs.

We sell worldwide for the brands: Genie, Terex, JLG, MultiQuip, Mayco, Toro/Stone, Diamond Products, Magnum, Airman, Mustang, Power Blanket, Nifty Lift, Atlas Copco, Chicago Pneumatic, Allmand Brothers, Essick, Miller Spreader, Skyjack, Lull, Skytrak, Tsurumi, Husquvarna/Target, Whiteman-Concrete/Mortar, Stow-Concrete/Mortar, Baldor, Wacker, Sakai, Snorkel, Upright, Mi-T-M, Sullair, Neal, Basic, Dynapac, MBW, Weber, Bartell, Bennar Newman, Haulotte, Ditch Runner, Blaw-Knox, Himoina, Best, Buddy, Crown, Edco, Wyco, Bomag, Laymor, Terremite, Barreto, EZ Trench, Takeuchi, Basic, Bil-Jax, Curtis, Gehl, Heli, Honda, ICS/PowerGrit, Puckett, Waldon, ASV, IHI, Partner, Imer, Clipper, MMD, Koshin, Rice, Gorman Rupp, CH&E, Cat Pumps, Comet, General Pump, Giant, AMida, Coleman, NAC, Gradall, Square Shooter, Kent, Stanley, Tamco, Toku, Hatz, Kohler, Robin, Wisconsin, Northrock, Oztec, Toker TK, Rol-Air, Small Line, Wanco, Yanmar