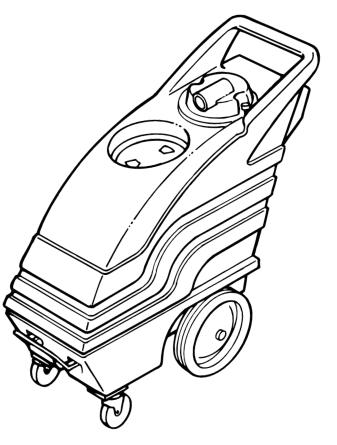


# 1100

**Portable Carpet Extractor** 

#### Model No.: 607721 607729 – Pac

**Operator and Parts Manual** 



TENNANT COMPANY Commercial Products 12875 RANSOM STREET HOLLAND MI 49424 U.S.A.

FAX: 1-800-678-4240 CUSTOMER SERVICE: 1-800-982-7658 607722 Rev. 00 (11-99) 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 care 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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#### SAFETY PRECAUTIONS

This machine is suited to clean carpet and upholstery in an indoor environment and is not constructed for any other use. Use only recommended accessory tools and cleaning solutions.

All operators must read, understand and exercise the following Important Safety Instructions.

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

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

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

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

#### FOR SAFETY:

- 1. Do not operate machine:
  - Unless trained and authorized.
  - Unless operator manual is read and understood.
  - In flammable or explosive areas unless designed for use in those areas.
  - With damaged cord or plug.
  - If not in proper operating condition.
  - In outdoor areas.
  - In standing water.
  - With the use of additional extension cords. Only use manufacturer 's extension cord supplied with machine which has proper capacity and is grounded.
- 2. Before operating machine:
  - Make sure all safety devices are in place and operate properly.
- 3. When using machine:
  - Do not run machine over cord.
  - Do not pull machine by plug or cord.
  - Do not pull cord around sharp edges or corners.
  - Do not unplug by pulling on cord.
  - Do not stretch cord.
  - Do not handle plug with wet hands.
  - Keep cord away from heated surfaces.
  - Report machine damage or faulty operation immediately.
  - Follow mixing and handling instructions on chemical containers.

- 4. Before leaving or servicing machine:
  - Turn off machine.
  - Unplug cord from wall outlet.
- 5. When servicing machine:
  - Unplug cord from wall outlet.
  - Avoid moving parts. Do not wear loose jackets, shirts, or sleeves.
  - Use manufacturer supplied or approved replacement parts.

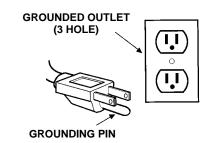
WARNING: Hazardous Voltage. Shock or electrocution can result. Always unplug machine before servicing.

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

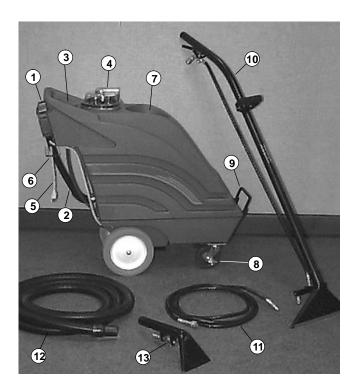
WARNING: Flammable materials or reactive metals can cause an explosion or fire. Do not pick up.

#### **GROUNDING INSTRUCTIONS**

Machine must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electrical current to reduce the risk of electrical shock. This machine is equipped with a cord having an equipment–grounding conductor and grounding plug. The plug must be plugged into an appropriate outlet that is properly installed in accordance with all local codes and ordinances. Do not remove ground pin; if missing, replace plug before use.



#### MACHINE COMPONENTS



- 1. ON/OFF Switch
- 2. Drain Hose
- 3. Solution Hose Connector
- 4. Recovery Dome/ Vacuum Hose Connection
- 5. Power Cord
- 6. Cord Store Hook

- 7. Solution Tank Lid
- 8. Lockable Casters
- 9. Lift Handle/Hose Guide
- 10. Floor Tool
- 11. 4.6m (15 ft) Solution Hose
- 12. 4.6m (15 ft) Vacuum Hose
  - 13. Optional 127mm (5 in) Hand Tool

#### **MACHINE SETUP**

#### **PRE-OPERATION**

- 1. Vacuum the floor to remove particles and other debris.
- 2. Inspect power cord for damage.

#### FILL SOLUTION BLADDER

 Unscrew and remove flat clear lid. Fill solution bladder with 38 liters (10 gal) of hot water, 60°C (140°F) maximum (*Figure 1*).



FIG. 1.

2. Add recommended cleaning agent to proper dilution ratio.

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

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

3. After filling solution bladder, replace lid and tighten securely.

**NOTE:** Suction in recovery tank will overexpand solution bladder if lid is not secure.

ATTENTION: If using powered chemicals, do not mix chemicals in solution bladder. Mix powdered chemicals thoroughly in a bucket before pouring into machine. Powders are unlikely to dissolve completely and can clog solution pump system.

ATTENTION: Use separate buckets to fill and empty extractor. Use a clean bucket to fill machine, and empty dirty water into a separate bucket. Dirty water in solution bladder will clog solution pump system.

4. Connect vacuum hose to recovery dome and solution hose to quick coupler located in front of handle (*Figure 2*).

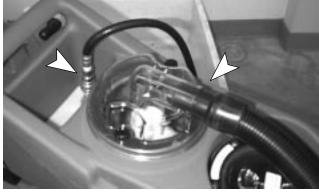


FIG. 2.

5. Route hoses through front lift handle (Figure 3).

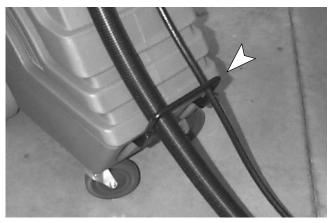
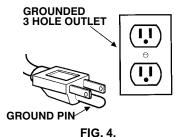


FIG. 3.

**NOTE:** Routing hoses through handle will allow easy machine mobility while operating cleaning tool.

- 6. Attach recommended cleaning tool to opposite end of hoses.
- 7. If desired, lock front casters to keep machine from moving.
- 8. Plug extension power cord into machine and then plug into a grounded wall outlet (*Figure 4*).



FOR SAFETY: Do not operate machine with the use of additional extension cords. Only use manufacturer's extension cord supplied with machine which has proper capacity and is grounded.

#### **MACHINE OPERATION**

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

#### FLOOR TOOL OPERATION

- 1. Activate ON/OFF switch to "ON".
- 2. Place floor tool so bottom of stainless steel shoes are parallel to floor. Squeeze trigger and apply downward pressure on floor tool head and slowly pull tool backwards using both hands. Release trigger 150 mm (6 in) from end of stroke (*Figure 5*).



FIG. 5.

3. Push floor tool forward over same path with trigger released when returning for next stroke. Continue this pull and push method with a slight overlap of each stroke.

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

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

ATTENTION: Do not allow water or foam to enter float shut-off screen in recovery tank. Screen will not stop foam intake and vacuum motor damage will result *(not covered by warranty)*. If foam develops, remove dome and pour 29.6 ml (1 oz) of anti-foam solution into recovery tank.

#### HAND TOOL OPERATION

**NOTE:** This machine cleans most synthetic upholstery very well. Fabrics like Herculon and synthetic velvets will clean with excellent results. Extraction in not recommended for most cottons, silks, wools or natural fiber velvets. Check cleaning instructions sewn in furniture by manufacturer for further instructions. Extra caution should be taken with furniture that has been reupholstered. Any material under new upholstery may bleed and discolor new fabric.

- 1. Vacuum upholstery before cleaning.
- 2. Test fabric for colorfastness: Pour a small amount of cleaning solution on a white cloth and hold damp portion of cloth against an area of upholstery which is hidden from view. Hold cloth in place for one minute. If color does not transfer to cloth it should be safe to clean. However, always use your best judgement.
- 3. Activate ON/OFF switch to "ON".

4. Place hand tool on furniture and squeeze trigger while applying a downward pressure on hand tool head and slowly pull tool backwards. Release trigger just shy from end of stroke (*Figure 6*).



FIG. 6.

**NOTE:** Be careful not to over wet upholstery. Overlap strokes to avoid streaking. Repeat stroke using only vacuum to get fabric as dry as possible.

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

ATTENTION: Do not allow water or foam to enter float shut–off screen in recovery tank.

#### AFTER CLEANING

- 1. When finished cleaning, turn off switch, unplug power cord and drain and rinse out recovery tank.
- 2. Disconnect solution and vacuum hoses and extension cords from machine. Neatly coil hoses and cord after each use.

ATTENTION: Relieve water pressure from tool before disconnecting hose. Squeeze trigger for five seconds *after* turning off switches.

#### DRAINING RECOVERY TANK

**NOTE:** When solution bladder becomes empty while cleaning, recovery tank must be emptied.

1. Turn switch off and disconnect power cord.

## FOR SAFETY: When servicing machine, unplug cord from wall outlet.

2. Remove drain hose from holder, position a discharge bucket under drain hose and twist off drain hose knob (*Figure 7*).



FIG. 7.

**NOTE:** Do not use same bucket for filling clean water bladder!

- 3. Replace drain hose knob tightly before cleaning again.
- 4. After final draining, remove recovery dome and rinse both tank and dome thoroughly to prevent odor buildup.

#### MAINTENANCE

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

WARNING: Hazardous Voltage. Shock or electrocution can result. Always unplug machine before servicing.

#### INTERNAL COMPONENTS SERVICE

For internal component service, machine is designed to hinge open. Make sure the tanks are empty before opening. Follow instructions below:

- 1. Remove two hex-head bolts at front lift handle, using a 9/16" wrench.
- 2. Hinge tank backwards away from chassis (*Figure 8*).



FIG. 8.

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

- 1. Clean machine with a non-abrasive, non-solvent cleaner.
- 2. Rinse-out tanks and recovery dome thoroughly.
- 3. Remove any lint buildup from float shut–off screen located in recovery tank. (*Figure 9*)



FIG. 9.

- 4. Remove and rinse bladder tank screen.
- 5. Check power cord for damage replace if necessary. Coil cord neatly after each use.

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

1. Flush pump system with an acetic acid solution to dissolve normal alkaline chemical buildup.

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

- Mix 473 ml (16 oz) of an acetic acid solution in clean water bladder with 7.5 L (2 gal) of hot water, 60°C (140°F) maximum.
- b. Spray solution into a bucket .

- c. Turn on switch.
- d. Press trigger on tool until acetic acid solution begins to spray through tips.
- e. Allow solution to remain in system for up to 6 hours in above freezing temperatures.
- f. Later, spray out solution into a bucket. Then run 11 L (3 gal) of clean water through system to flush out impurities.
- 2. Inspect vacuum hose for holes and loose cuffs.
- 3. Inspect power cord grip for damage. Replace if damaged.

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

- 1. Lubricate wheels and casters with water resistant oil.
- 2. Inspect machine for water leaks.
- 3. Inspect machine for loose screws.

#### **EVERY 250 OF HOURS OF OPERATION**

Check vacuum motor for carbon brush wear. Replace brushes when worn to a length of 10 mm (0.38 in) or less.

#### **STORING MACHINE**

- 1. Before storing machine, be certain to flush tanks and drain machine of all water.
- 2. Store machine in a dry area in the upright position.
- 3. Remove recovery dome to promote air circulation.

#### ATTENTION: Do not expose to rain. Store indoors.

ATTENTION: Do not allow machine to freeze with water in pump system, damage may occur. Damage due to freezing temperatures is not covered by warranty.

## STORING MACHINE IN FREEZING TEMPERATURES

- 1. Drain tanks thoroughly.
- 2. Pour 1 L (32 oz) undiluted antifreeze into solution bladder.
- 3. Place a bucket under spray jets to catch spray.
- 4. Turn on machine.
- 5. Squeeze trigger on tool for 30 seconds.
- 6. Allow antifreeze to remain in system.

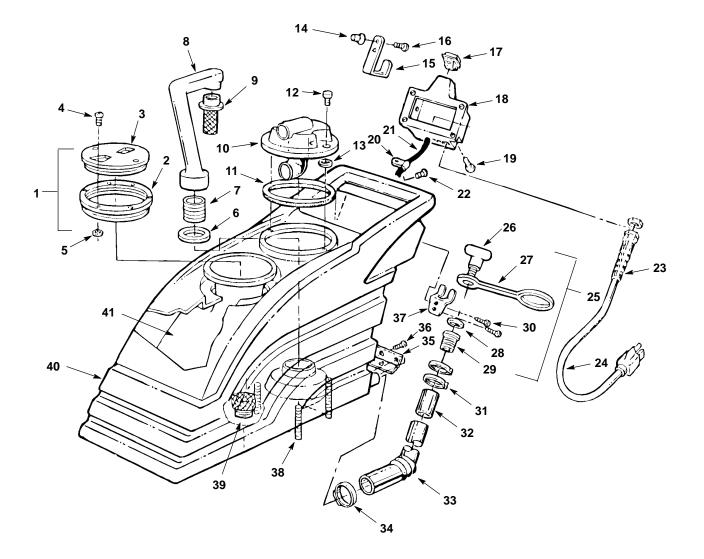
#### **TROUBLE SHOOTING**

| PROBLEM                         | CAUSE                                     | SOLUTION   |
|---------------------------------|---|--|
| No power.                       | Faulty ON/OFF switch                      | Contact Service Center.  |
|                                 | Faulty wiring.                            | Contact Service Center.  |
|                                 | Faulty power cord.                        | Replace power cord.  |
| Solution pump will not operate. | Pump overheated.                          | Determine cause and let pump cool for 20 minutes.                  |
|                                 | Faulty switch.                            | Contact Service Center.  |
|                                 | Loose or broken wiring.                   | Contact Service Center.  |
|                                 | Faulty solution pump.                     | Contact Service Center.  |
|                                 | Faulty ON/OFF switch.                     | Contact Service Center.  |
| Poor or no vacuum suction.      | Vacuum thermal overload tripped.          | Check air flow for obstruction, wait 20 minutes for motor to cool. |
|                                 | Faulty ON/OFF switch.                     | Contact Service Center.  |
|                                 | Drain hose cap open or loose.             | Cap drain hose securely.   |
|                                 | Lint clogging ball float screen.          | Remove recovery dome and clean lint off screen.                    |
|                                 | Air leakage around dome.                  | Tighten recovery dome knobs.                                       |
|                                 | Vacuum hose connections are loose.        | Secure connections.  |
|                                 | Damaged vacuum hose or cuffs are loose.   | Replace hose or secure cuffs to hose.                              |
|                                 | Defective vacuum motor.                   | Contact Service Center.  |
|                                 | Worn carbon brushes.                      | Replace brushes or call for service.                               |
| Uneven or no spray from tool.   | Dirty or plugged spray tips.              | Clean or replace tips.   |
|                                 | Improper spray tip size or spray angle.   | Replace with proper tips.  |
|                                 | Worn spray tips.                          | Replace spray tips.  |
|                                 | Loose or broken wiring.                   | Contact Service Center.  |
| Leaking floor tool.             | Quick coupler on floor tool faulty.       | Replace quick coupler.   |
|                                 | Flow control valve leaking.               | Install valve rebuild kit or contact Service Center.               |
|                                 | Hose split or fittings loose.             | Replace hose and tighten fittings.                                 |
|                                 | Quick coupler and plug not fully engaged. | Reconnect quick coupler.   |
|                                 | Valve stem worn.                          | Replace or contact Service Center.                                 |

#### SPECIFICATIONS

| Model   | 1100  |
|---|---|
| LENGTH  | 1070 mm (42 in)   |
| WIDTH   | 330 mm (13 in)  |
| HEIGHT  | 860 mm (34 in)  |
| MACHINE WEIGHT                                      | 36Kg (80lbs)  |
| SOLUTION BLADDER – RECOVERY TANK CAPACITY           | 38 ltr (10 gal) – 55 ltr (14.5 gal)   |
| SOLUTION PUMP                                       | 120 volt, 100 psi, 1 amp  |
| SOLUTION FLOW RATE                                  | Floor Tool/3 tips = 3.8 ltr (1 gal) per minute<br>127 mm (5 in) Hand Tool/1 tip = 1 ltr (32oz) per minute |
| VACUUM MOTOR  | 120 volt, 3-stage, 1.66 hp, 13 amp,1560 watts   |
| SEALED WATER LIFT                                   | 3.5m (137 in)   |
| DECIBEL RATING AT OPERATOR'S EAR, INDOORS ON CARPET | 80dB(A)   |

#### **RECOVERY/SOLUTION TANK GROUP**



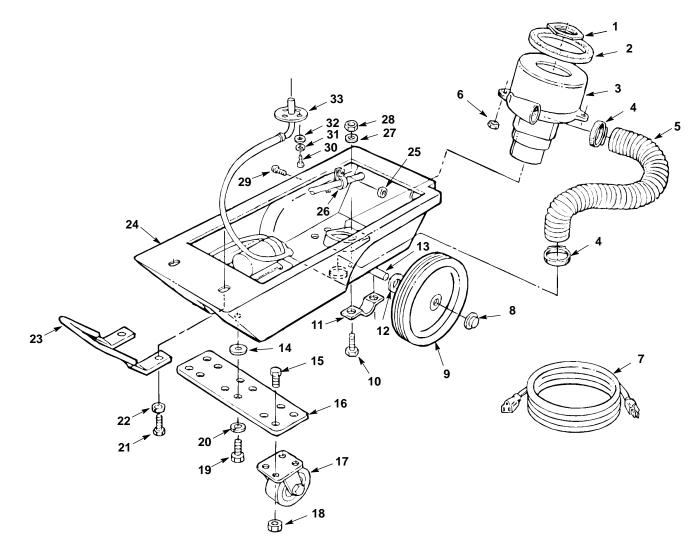
#### **RECOVERY/SOLUTION TANK GROUP**

| Ref. | Part No.  | Description             | Qty. |
|------|-----------|-------------------------|------|
| ∇1.  | 100103    | ASM., LID, ASSEMBLY     | 1    |
| ▲2.  | 100109    | LID, OUTER RING         | 1    |
| ▲3.  | 100105    | LID, CENTER             | 1    |
| 4.   | 140900    | SCREW, 10–24 X 3/4      | 6    |
| 5.   | 140000    | WASHER, FLAT            | 6    |
| 6.   | 101714    | GASKET, AIR CHAMBER     | 1    |
| 7.   | 230187    | NIPPLE                  | 1    |
| 8.   | 602448    | STANDPIPE               | 1    |
| 9.   | 180613    | FLOAT, SHUT–OFF         | 1    |
| ⊽10. | 700684    | ASM., DOME              | 1    |
| ▲11. | 100042    | GASKET, RECOVERY DOME   | 1    |
| ▲12. | 240217    | KNOB, RECOVERY DOME     | 2    |
| ▲13. | 140037    | WASHER, NYL             | 2    |
| 14.  | 140637    | NUT, WELL 10–32         | 2    |
| 15.  | 230755.BK | BRACKET, CORD           | 1    |
| 16.  | 140877    | SCREW, 10–32X1–1/4      | 2    |
| 17.  | 602669    | SWITCH (120V)           | 1    |
| 18.  | 607728    | SWITCHBOX, (1100)       | 1    |
| 19.  | 140885    | SCREW, 1/4–20 X 1/2     | 4    |
| 20.  | 140328    | CLAMP, NYLON            | 2    |
| 21.  | 130249    | CORD, 14/4X48"          | 1    |
| 22.  | 140900    | SCREW, 10–24X3/4        | 2    |
| 23.  | 130166    | CORD GRIP (120V)        | 1    |
| 24.  | 130227    | CORD, 16/3 X 18" (120V) | 2    |
| ∇25. | 701061    | ASM, DRAIN HOSE STOPPER | 1    |
| ▲26  | 230831    | KNOB, DRAIN HOSE        | 1    |
| ▲27. | 230882    | STRAP, RUBBER           | 1    |
| ▲28. | 140056    | WASHER                  | 1    |
| ▲29. | 140955    | PLUG                    | 1    |
| 30.  | 140826    | SCREW, #6 X 3/4         | 2    |
| 31.  | 140072    | CLAMP, EAR 1–9/16"      | 2    |
| 32.  | 140921    | SLEEVE, DRAIN HOSE      | 1    |
| 33.  | 160416    | HOSE, DRAIN             | 1    |
| 34.  | 140307    | CLAMP, HOSE             | 1    |
| 35.  | 230390    | HINGE, TANK             | 1    |
| 36.  | 140885    | SCREW, 1/4–20X1/2       | 1    |
| 37.  | 230696.BK | BRACKET, DRAIN HOSE     | 1    |
| 38.  | 140227    | STUD                    | 3    |
| 39.  | 180628    | SCREEN, TANK            | 1    |
| 40.  | 607725    | TANK, RECOVERY, TEAL    | 1    |
| 41.  | 602715    | BLADDER, SOLUTION       |      |

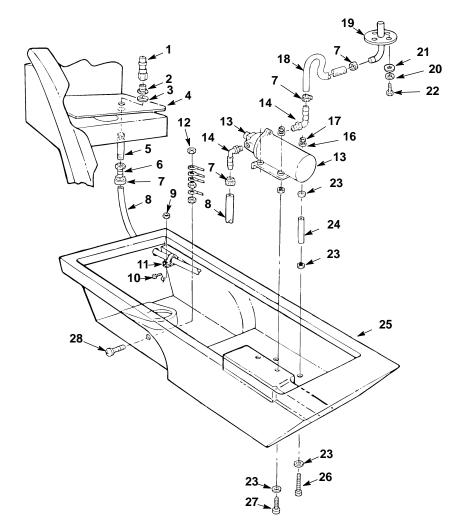
#### DECAL LIST

| Ref. | Part No. | Description                   | Qty. |
|------|----------|-------------------------------|------|
| N/S  | 608130   | DECAL, SIDE "1100"            | 2    |
| N/S  | 120619   | DECAL, WARNING, EXTRACTORS    | 1    |
| N/S  | 120906   | DECAL, IMPORTANT-DRAIN        | 1    |
| N/S  | 120907   | DECAL, IMPORTANT-ALWAYS CLOSE | 1    |
| N/S  | 120399   | DECAL, DO NOT ALLOW FOAM      | 1    |
| N/S  | 120210   | DECAL, TENNANT LOGO           | 1    |

#### MAIN CHASSIS GROUP



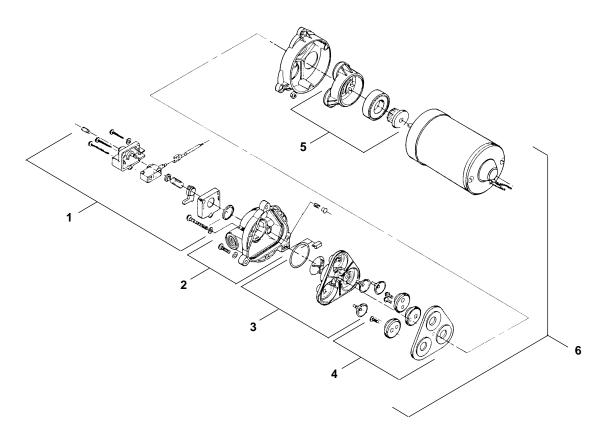
|                      |  | MAIN CHASSIS GROUP  |                       |
|----------------------|--|---|-----------------------|
| Ref.                 | Part No.                                       | Description   | Qty.                  |
| 1.<br>2.<br>3.<br>4. | 210240<br>100118<br>130996<br>602741<br>140308 | NUT<br>GASKET, VAC MOTOR<br>MOTOR, VAC 5.7/3 STAGE (120V)<br>CARBON BRUSHES (2/PK)<br>CLAMP, HOSE | 1<br>1<br>1<br>2<br>2 |
| 5.                   | 160441   | HOSE, EXHAUST   | 2FT                   |
| 6.                   | 140501   | NUT, LOCK   | 3                     |
| 7.                   | 130694   | CORD  | 1                     |
| 8.                   | 103019   | CAP, HUB  | 2                     |
| 9.                   | 103059   | WHEEL   | 2                     |
| 10.                  | 140259   | SCREW, 1/4–20X5/8   | 4                     |
| 11.                  | 230746   | BRACKET, AXLE   | 2                     |
| 12.                  | 140008   | WASHER, FLAT  | 2                     |
| 13.                  | 230739   | AXLE  | 1                     |
| 14.                  | 25732  | WASHER, FLAT  | 4                     |
| 15.                  | 140226   | SCREW, 5/16–18X5/8  | 8                     |
| 16.                  | 231034   | PLATE   | 1                     |
| 17.                  | 103004   | CASTER  | 2                     |
| 18.                  | 140546   | NUT   | 8                     |
| 19.                  | 140223   | SCREW, 5/16–18X3/4  | 4                     |
| 20.                  | 140015   | WASHER, LOCK  | 4                     |
| 21.                  | 140232   | SCREW, 3/8–16X1/4   | 2                     |
| 22.                  | 140017   | WASHER, LOCK  | 2                     |
| 23.                  | 231026.BK                                      | BRACKET, HANDLE   | 1                     |
| 24.                  | 607723   | CHASSIS, TEAL   | 1                     |
| 25.                  | 140552   | NUT   | 1                     |
| 26                   | 140916   | CLAMP   | 1                     |
| 27.                  | 140000   | WASHER, FLAT  | 4                     |
| 28.                  | 140501   | NUT   | 4                     |
| 29.                  | 140900   | SCREW, 10–24X3/4  | 1                     |
| 30.                  | 140889   | SCREW, 1/4–20X3/4   | 4                     |
| 31.                  | 140016   | WASHER, LOCK  | 4                     |
| 32.                  | 140000   | WASHER, FLAT  | 4                     |
| 33.                  | 600451   | PLATE, BLADDER  | 1                     |



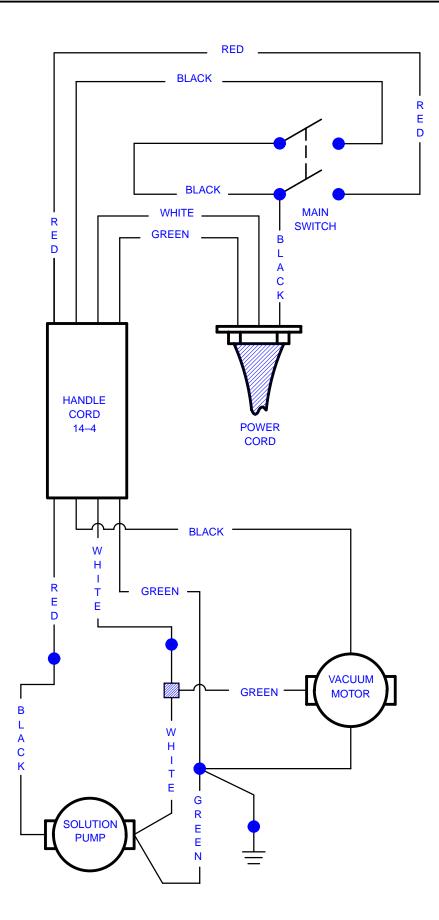
| 1.         150933         PLUG, QCK COUP - SER 60           2.         150000         ADAPTER, 1/4F X 1/4M           3.         140008         WASHER, FLAT, 1/2           4.         230489         PLATE           5.         150600         NIPPLE           6.         150511         HOSE BARB, 1/4FX3/8H           7.         140305         CLAMP           8.         160207         HOSE 3/8 LP           9.         140552         NUT, LOCK NYL.           10.         140891         SCREW, 10 - 24X5/8           11.         140323         CLAMP, NYLON           12.         140519         NUT, KEP 10 - 24           13.         180103         PUMP, 100 PSI - 120V           14.         150425         ELBOW, 3/8M X 1/2H 90°           15.         140519         NUT, KEP 10 - 24           16.         140012         WASHER, FLAT 3/16"           17.         140519         NUT, KEP 10-24           18.         160207         HOSE, 3/8 LP GRAY           19.         600451         PLATE, BLADDER           20.         140016         WASHER, FLAT 3/16"           21.         140000         WASHER, FLAT 3/16 | Qty.        | scription        | Part No. | Ref.    |
|---|-------------|------------------|----------|---------|
| 4.       230489       PLATE         5.       150600       NIPPLE         6.       150511       HOSE BARB, 1/4FX3/8H         7.       140305       CLAMP         8.       160207       HOSE, 3/8 LP         9.       140552       NUT, LOCK NYL.         10.       140891       SCREW, 10–24X5/8         11.       140323       CLAMP, NYLON         12.       140519       NUT, KEP 10 – 24         13.       180103       PUMP, 100 PSI – 120V         14.       150425       ELBOW, 3/8M X 1/2H 90°         15.       140519       NUT, KEP 10–24         16.       140012       WASHER, FLAT 3/16"         17.       140519       NUT, KEP 10–24         18.       160207       HOSE, 3/8 LP GRAY         19.       600451       PLATE, BLADDER         20.       140016       WASHER, LOCK 1/4"         21.       140000       WASHER, FLAT         22.       140889       SCREW, MCH 1/4–20X3/4         23.       140011       WASHER, FLAT 3/16         24.       140917       SPACER, NYLON         25.       607723       CHASSIS, TEAL         26.       140354  | 1           |                  |          |         |
| 4.       230489       PLATE         5.       150600       NIPPLE         6.       150511       HOSE BARB, 1/4FX3/8H         7.       140305       CLAMP         8.       160207       HOSE, 3/8 LP         9.       140552       NUT, LOCK NYL.         10.       140891       SCREW, 10–24X5/8         11.       140323       CLAMP, NYLON         12.       140519       NUT, KEP 10 – 24         13.       180103       PUMP, 100 PSI – 120V         14.       150425       ELBOW, 3/8M X 1/2H 90°         15.       140519       NUT, KEP 10–24         16.       140012       WASHER, FLAT 3/16"         17.       140519       NUT, KEP 10–24         18.       160207       HOSE, 3/8 LP GRAY         19.       600451       PLATE, BLADDER         20.       140016       WASHER, LOCK 1/4"         21.       140000       WASHER, FLAT         22.       140889       SCREW, MCH 1/4–20X3/4         23.       140011       WASHER, FLAT 3/16         24.       140917       SPACER, NYLON         25.       607723       CHASSIS, TEAL         26.       140354  | 1           |                  |          | 2.      |
| 5.         150600         NIPPLE           6.         150511         HOSE BARB, 1/4FX3/8H           7.         140305         CLAMP           8.         160207         HOSE, 3/8 LP           9.         140552         NUT, LOCK NYL.           10.         140891         SCREW, 10-24X5/8           11.         140323         CLAMP, NYLON           12.         140519         NUT, KEP 10 - 24           13.         180103         PUMP, 100 PSI - 120V           14.         150425         ELBOW, 3/8M X 1/2H 90°           15.         140519         NUT, KEP 10-24           16.         140012         WASHER, FLAT 3/16"           17.         140519         NUT, KEP 10-24           18.         160207         HOSE, 3/8 LP GRAY           19.         600451         PLATE, BLADDER           20.         140016         WASHER, FLAT           21.         140000         WASHER, FLAT           22.         14089         SCREW, MCH 1/4-20X3/4           23.         140011         WASHER, FLAT           24.         140917         SPACER, NYLON           25.         607723         CHASSIS, TEAL           26.<   | 1           |                  |          | 3.      |
| 6.         150511         HOSE BARB, 1/4FX3/8H           7.         140305         CLAMP           8.         160207         HOSE, 3/8 LP           9.         140552         NUT, LOCK NYL.           10.         140891         SCREW, 10–24X5/8           11.         140323         CLAMP, NYLON           12.         140519         NUT, KEP 10 – 24           13.         180103         PUMP, 100 PSI – 120V           14.         150425         ELBOW, 3/8M X 1/2H 90°           15.         140519         NUT, KEP 10–24           16.         140012         WASHER, FLAT 3/16"           17.         140519         NUT, KEP 10–24           18.         160207         HOSE, 3/8 LP GRAY           19.         600451         PLATE, BLADDER           20.         140016         WASHER, FLAT           21.         140000         WASHER, FLAT           22.         140889         SCREW, MCH 1/4–20X3/4           23.         140011         WASHER, FLAT 3/16           24.         140917         SPACER, NYLON           25.         607723         CHASSIS, TEAL           26.         140354         SCREW, 10–24X3"  | 1           |                  |          | 4.      |
| 10.         140891         SCREW, 10–24X5/8           11.         140323         CLAMP, NYLON           12.         140519         NUT, KEP 10 – 24           13.         180103         PUMP, 100 PSI – 120V           14.         150425         ELBOW, 3/8M X 1/2H 90°           15.         140519         NUT, KEP 10–24           16.         140012         WASHER, FLAT 3/16"           17.         140519         NUT, KEP 10–24           18.         160207         HOSE, 3/8 LP GRAY           19.         600451         PLATE, BLADDER           20.         140016         WASHER, FLAT           21.         140000         WASHER, FLAT           22.         140889         SCREW, MCH 1/4-20X3/4           23.         140011         WASHER, FLAT 3/16           24.         140917         SPACER, NYLON           25.         607723         CHASSIS, TEAL           26.         140354         SCREW, 10–24X3"   | I           |                  |          |         |
| 10.       140891       SCREW, 10–24X5/8         11.       140323       CLAMP, NYLON         12.       140519       NUT, KEP 10 – 24         13.       180103       PUMP, 100 PSI – 120V         14.       150425       ELBOW, 3/8M X 1/2H 90°         15.       140519       NUT, KEP 10–24         16.       140012       WASHER, FLAT 3/16"         17.       140519       NUT, KEP 10–24         18.       160207       HOSE, 3/8 LP GRAY         19.       600451       PLATE, BLADDER         20.       140016       WASHER, FLAT         21.       140889       SCREW, MCH 1/4-20X3/4         23.       140011       WASHER, FLAT 3/16         24.       140917       SPACER, NYLON         25.       607723       CHASSIS, TEAL         26.       140354       SCREW, 10–24X3"   | 1           |                  |          | 6.      |
| 10.       140891       SCREW, 10–24X5/8         11.       140323       CLAMP, NYLON         12.       140519       NUT, KEP 10 – 24         13.       180103       PUMP, 100 PSI – 120V         14.       150425       ELBOW, 3/8M X 1/2H 90°         15.       140519       NUT, KEP 10–24         16.       140012       WASHER, FLAT 3/16"         17.       140519       NUT, KEP 10–24         18.       160207       HOSE, 3/8 LP GRAY         19.       600451       PLATE, BLADDER         20.       140016       WASHER, FLAT         21.       140889       SCREW, MCH 1/4-20X3/4         23.       140011       WASHER, FLAT 3/16         24.       140917       SPACER, NYLON         25.       607723       CHASSIS, TEAL         26.       140354       SCREW, 10–24X3"   | 4<br>3.3FT  |                  |          | 7.      |
| 10.         140891         SCREW, 10–24X5/8           11.         140323         CLAMP, NYLON           12.         140519         NUT, KEP 10 – 24           13.         180103         PUMP, 100 PSI – 120V           14.         150425         ELBOW, 3/8M X 1/2H 90°           15.         140519         NUT, KEP 10–24           16.         140012         WASHER, FLAT 3/16"           17.         140519         NUT, KEP 10–24           18.         160207         HOSE, 3/8 LP GRAY           19.         600451         PLATE, BLADDER           20.         140016         WASHER, FLAT           21.         140000         WASHER, FLAT           22.         140889         SCREW, MCH 1/4-20X3/4           23.         140011         WASHER, FLAT 3/16           24.         140917         SPACER, NYLON           25.         607723         CHASSIS, TEAL           26.         140354         SCREW, 10–24X3"   | 3.3F I<br>1 |                  |          | 0.<br>0 |
| 11.       140323       CLAMP, NYLON         12.       140519       NUT, KEP 10 – 24         13.       180103       PUMP, 100 PSI – 120V         14.       150425       ELBOW, 3/8M X 1/2H 90°         15.       140519       NUT, KEP 10–24         16.       140012       WASHER, FLAT 3/16"         17.       140519       NUT, KEP 10–24         18.       160207       HOSE, 3/8 LP GRAY         19.       600451       PLATE, BLADDER         20.       140016       WASHER, FLAT         21.       140000       WASHER, FLAT         22.       140889       SCREW, MCH 1/4–20X3/4         23.       140011       WASHER, FLAT 3/16         24.       140917       SPACER, NYLON         25.       607723       CHASSIS, TEAL         26.       140354       SCREW, 10–24X3"   | 1           |                  |          | 10      |
| 12.       140519       NUT, KÉP 10 – 24         13.       180103       PUMP, 100 PSI – 120V         14.       150425       ELBOW, 3/8M X 1/2H 90°         15.       140519       NUT, KEP 10–24         16.       140012       WASHER, FLAT 3/16"         17.       140519       NUT, KEP 10–24         18.       160207       HOSE, 3/8 LP GRAY         19.       600451       PLATE, BLADDER         20.       140016       WASHER, FLAT         21.       140889       SCREW, MCH 1/4.         22.       140889       SCREW, MCH 1/4-20X3/4         23.       140011       WASHER, FLAT 3/16         24.       140917       SPACER, NYLON         25.       607723       CHASSIS, TEAL         26.       140354       SCREW, 10–24X3"  |             |                  |          |         |
| 13.       180103       PUMP, 100 PSI – 120V         14.       150425       ELBOW, 3/8M X 1/2H 90°         15.       140519       NUT, KEP 10–24         16.       140012       WASHER, FLAT 3/16"         17.       140519       NUT, KEP 10–24         18.       160207       HOSE, 3/8 LP GRAY         19.       600451       PLATE, BLADDER         20.       140016       WASHER, FLAT         22.       140089       SCREW, MCH 1/4-20X3/4         23.       140011       WASHER, FLAT 3/16         24.       140917       SPACER, NYLON         25.       607723       CHASSIS, TEAL         26.       140354       SCREW, 10–24X3"   | ر<br>د      |                  |          |         |
| 14.       150425       ELBOW, 3/8M X 1/2H 90°         15.       140519       NUT, KEP 10–24         16.       140012       WASHER, FLAT 3/16"         17.       140519       NUT, KEP 10–24         18.       160207       HOSE, 3/8 LP GRAY         19.       600451       PLATE, BLADDER         20.       140016       WASHER, FLAT         21.       140000       WASHER, FLAT         22.       140889       SCREW, MCH 1/4–20X3/4         23.       140011       WASHER, FLAT         24.       140917       SPACER, NYLON         25.       607723       CHASSIS, TEAL         26.       140354       SCREW, 10–24X3"  | 1           |                  |          |         |
| 15.         140519         NUT, KÉP 10–24           16.         140012         WASHER, FLAT 3/16"           17.         140519         NUT, KEP 10–24           18.         160207         HOSE, 3/8 LP GRAY           19.         600451         PLATE, BLADDER           20.         140016         WASHER, FLAT           21.         140000         WASHER, FLAT           22.         140889         SCREW, MCH 1/4–20X3/4           23.         140011         WASHER, FLAT 3/16           24.         140917         SPACER, NYLON           25.         607723         CHASSIS, TEAL           26.         140354         SCREW, 10–24X3"   | 2           |                  |          |         |
| 17.       140519       NUT, KEP 10–24         18.       160207       HOSE, 3/8 LP GRAY         19.       600451       PLATE, BLADDER         20.       140016       WASHER, LOCK 1/4"         21.       140000       WASHER, FLAT         22.       140889       SCREW, MCH 1/4–20X3/4         23.       140011       WASHER, FLAT 3/16         24.       140917       SPACER, NYLON         25.       607723       CHASSIS, TEAL         26.       140354       SCREW, 10–24X3"  | 2           |                  |          |         |
| 17.       140519       NUT, KEP 10–24         18.       160207       HOSE, 3/8 LP GRAY         19.       600451       PLATE, BLADDER         20.       140016       WASHER, LOCK 1/4"         21.       140000       WASHER, FLAT         22.       140889       SCREW, MCH 1/4–20X3/4         23.       140011       WASHER, FLAT 3/16         24.       140917       SPACER, NYLON         25.       607723       CHASSIS, TEAL         26.       140354       SCREW, 10–24X3"  | 8           | iHER, FLAT 3/16" | 140012   | 16.     |
| 19.         600451         PLATÉ, BLADDER           20.         140016         WASHER, LOCK 1/4"           21.         140000         WASHER, FLAT           22.         140889         SCREW, MCH 1/4–20X3/4           23.         140011         WASHER, FLAT 3/16           24.         140917         SPACER, NYLON           25.         607723         CHASSIS, TEAL           26.         140354         SCREW, 10–24X3"   | 4           | , KEP 10–24      | 140519   | 17.     |
| 20.         140016         WASHÉR, LOCK 1/4"           21.         140000         WASHER, FLAT           22.         140889         SCREW, MCH 1/4–20X3/4           23.         140011         WASHER, FLAT 3/16           24.         140917         SPACER, NYLON           25.         607723         CHASSIS, TEAL           26.         140354         SCREW, 10–24X3"   | 2.5FT       |                  |          |         |
| 21.       140000       WASHER, FLAT         22.       14089       SCREW, MCH 1/4–20X3/4         23.       140011       WASHER, FLAT 3/16         24.       140917       SPACER, NYLON         25.       607723       CHASSIS, TEAL         26.       140354       SCREW, 10–24X3"   | 1           |                  |          |         |
| 22.         140889         SCREW, MCH 1/4–20X3/4           23.         140011         WASHER, FLAT 3/16           24.         140917         SPACER, NYLON           25.         607723         CHASSIS, TEAL           26.         140354         SCREW, 10–24X3"  | 4           | HER, LOCK 1/4"   | 140016   | 20.     |
| 23.         140011         WASHER, FLAT 3/16           24.         140917         SPACER, NYLON           25.         607723         CHASSIS, TEAL           26.         140354         SCREW, 10–24X3"   | 4           |                  |          |         |
| 24.         140917         SPACER, NYLON           25.         607723         CHASSIS, TEAL           26.         140354         SCREW, 10–24X3"  | 4           |                  |          |         |
| 25.         607723         CHASSIS, TEAL           26.         140354         SCREW, 10–24X3"   | 10<br>2     |                  |          |         |
| 26. 140354 SCREW, 10–24X3"  | 2           |                  |          |         |
|   |             |                  |          |         |
| 27. 140899 SCREW. 10–24X1–1/4   | 2           |                  |          |         |
|   | 2           |                  |          |         |
| 28. 6032.6 SCREW  | 4           | EVV              | 6032.6   | 28.     |

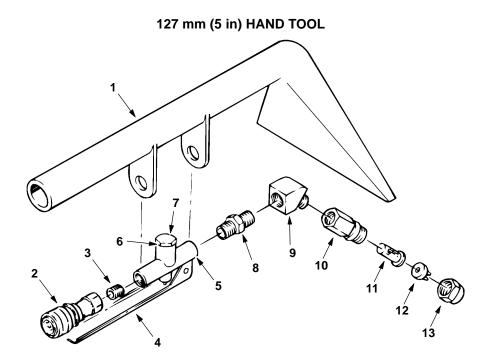
#### PUMP SYSTEM GROUP

#### PUMP BREAKDOWN



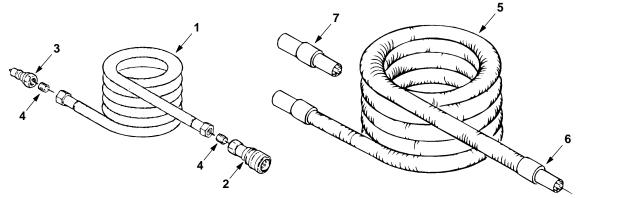
| Ref. | Part No. | Description                  | Qty. |
|------|----------|------------------------------|------|
| 1.   | 190129   | KIT, PRESSURE SWITCH         | 1    |
| 1.   | 190172   | KIT, PRESSURE SWITCH (VITON) | 1    |
| 2.   | 190134   | KIT, DIAPHRAGM ONLY          | 1    |
|      | 190128   | KIT, UPPER PUMP HOUSING      | 1    |
|      | 190124   | KIT, CHECK VALVE ONLY        | 1    |
| 3.   | 190171   | KIT, VALVE (VITON)           | 1    |
| 4.   | 190131   | KIT, SERVICE                 |      |
| 5.   | 190130   | KIT, LOWER PUMP HOUSING      | 1    |
| 6.   | 180103   | PUMP, 100 PSI                | 1    |



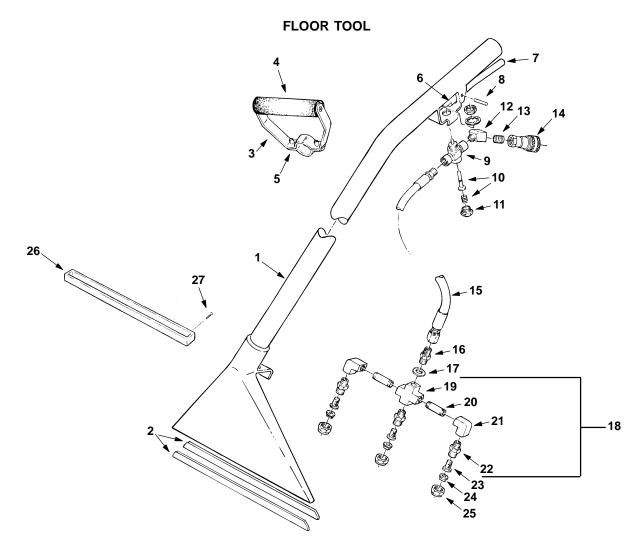


| Ref.                       | Part No.  | Description   | Qty.                       |
|----------------------------|---|---|----------------------------|
| 1.<br>2.<br>3.<br>4.<br>5. | 200505<br>200431.BK<br>150913<br>150615<br>200905<br>210210 | TOOL, HAND (COMPLETE)<br>TOOL, HAND<br>COUPLER, QUICK (SER. 60)<br>NIPPLE, CLOSE<br>TRIGGER, HAND TOOL<br>VALVE, FLOW CONTROL | 1<br>1<br>1<br>1<br>1<br>1 |
| 6.                         | 190600  | VALVE PIN & SPRING (NOT SHOWN)  | 1                          |
| 7.                         | N/A   | CAP, VALVE  | 1                          |
| 8.                         | 150606  | NIPPLE, HEX 1/4   | 1                          |
| 9.                         | 150403  | ELBOW, ST 1/4 45°   | 1                          |
| 10.                        | 200992  | BODY, SPRAY 1/4F  | 1                          |
| 11.                        | 200996  | SCREEN, SPRAY NOZZLE  | 1                          |
| 12.                        | 200965  | TIP, SPRAY #8002  | 1                          |
| 13.                        | 200994  | CAP, SPRAY BODY   | 1                          |

#### SOLUTION AND VACUUM HOSES



| Ref. | Part No. | Description                   | Qty. |
|------|----------|-------------------------------|------|
| 1.   | 160185   | HOSE, SOLUTION 15'            | 1    |
| 1.   | 160186   | HOSE, SOLUTION 25'            | 1    |
| 2.   | 150913   | COUPLER, QUICK SER. 60        |      |
| 3.   | 150933   | PLUG, QUICK COUPLER           | 1 2  |
| 4.   | 150615   | NIPPLE                        |      |
| 5.   | 160400   | HOSE, VACUUM 15' W/ CUFFS     | 1    |
| 5.   | 160401   | HOSE, VACUUM 25' W/ CUFFS     | 1    |
| 6.   | 160430   | CUFF, HOSE 1–1/2"             | 2    |
| 7.   | 160451   | CONNECTOR, VACUUM HOSE 1–1/2" | 1    |



| Ref.  | Part No.   | Description   | Qty.  |
|---|--|---|---|
| 1.<br>2.<br>3.<br>4.  | 600048<br>200403.BK<br>200939<br>200927<br>200912                      | FLOOR TOOL W/ S.S. SHOES (COMPLETE)<br>TOOL, FLOOR<br>SHOES, S/S, FLOOR TOOL<br>GRIP, ADJUSTABLE (COMPLETE)<br>FOAM, GRIP     | 1<br>1<br>2<br>1<br>1                               |
| 5.<br>6.<br>7.<br>8.  | 140259<br>200902<br>200809<br>140605<br>1405202–970                    | SCREW, 1/4X3/4<br>TRIGGER, FLOOR TOOL<br>SLEEVE, TRIGGER<br>PIN<br>NUT, PUSH (NOT SHOWN)                                      | 2<br>1<br>1<br>1<br>2                               |
| 9.<br>10.<br>11.<br>12.<br>13.  | 210150<br>190603<br>N/A<br>150403<br>150615                            | VALVE, FLOW CONTROL<br>KIT, VALVE PIN & SPRING<br>CAP, HEX, VALVE<br>ELBOW, 1/4–45°<br>NIPPLE, CLOSE 1/4                      | 1<br>1<br>1<br>1<br>1                               |
| 14.<br>15.<br>16.<br>17.<br>⊽18.<br>▲19.  | 150913<br>160170<br>150606<br>140058<br>700062<br>150700               | COUPLER, QUICK SER. 60<br>HOSE, SOLUTION, LP<br>NIPPLE, HEX 1/4"<br>WASHER<br>ASM., SPRAY BAR<br>CROSS                        | 1<br>1<br>1<br>1<br>1<br>1                          |
| <ul> <li>▲20.</li> <li>▲21.</li> <li>▲22.</li> <li>23.</li> <li>24.</li> <li>25.</li> <li>26.</li> <li>27.</li> </ul> | 150600<br>150401<br>200993<br>200966<br>200964<br>200994<br>N/A<br>N/A | NIPPLE<br>ELBOW, 90° 1/4FX1/4F<br>SPRAY BODY<br>SCREEN, SPRAY BODY<br>TIP<br>CAP, SPRAY BODY<br>PLATE, GLIDE<br>END FASTENERS | 2<br>2<br>3<br>3<br>3<br>3<br>3<br>3<br>3<br>3<br>3 |