Repair

# Magnum LTS 15, LTS 17, and ProLTS 19 Airless Sprayer

332695A

EN

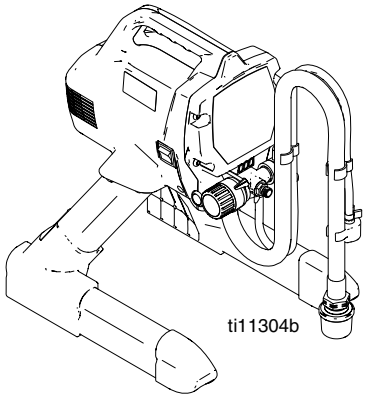
***- For portable spray applications of architectural paints and coatings -***

**Models 16W120, 16W121, 16W122**

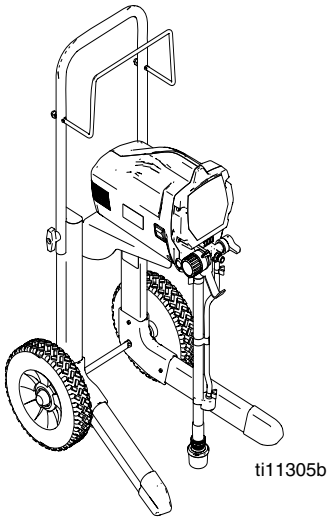
**IMPORTANT SAFETY INSTRUCTIONS**
Read all warnings and instructions in this manual. Save these instructions.

See page 3 for model series information including dispense rate, recommended hose length, guns, and maximum working pressure.

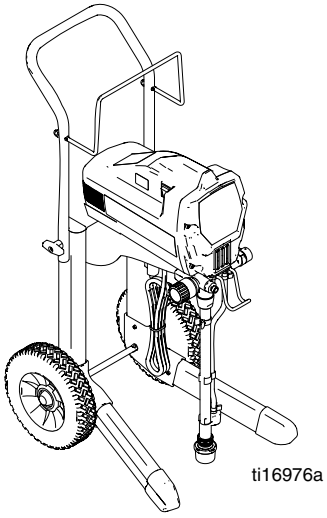
**LTS 15 and LTS 17 ONLY:** Use water-based or mineral spirit-type materials only. Do not use materials having flash points lower than 100° F (38° C). This includes, but is not limited to, acetone, xylene, toluene, or naptha. For more information about your material, request MSDS from distributor or retailer.




**Magnum LTS 15**
**Model: 16W120**
**Series A**




**Magnum LTS 17**
**Model: 16W121**
**Series A**




**Magnum ProLTS 19**
**Model: 16W122**
**Series A**

# Table of Contents

# Specifications

This equipment is not intended for use with flammable or combustible materials used in places such as cabinet shops or other “factory”, or fixed locations. If you intend to use this equipment in this type of application, you must comply with NFPA 33 and OSHA requirements for the use of flammable and combustible materials.

| Model Name | Series | Maximum Dispense Rate lpm (gpm) | Hose Length and Diameter | Gun Model | Maximum Working Pressure | | |
|---|---|---|---|---|---|---|---|
| | | | | | bar | MPa | PSI |
| **Magnum LTS 15** | A | 1.02 lpm (0.27 gpm) | 6.4 mm x 7.5 m (1/4 in. x 25 ft) | SG2 | 207 | 21 | 3000 |
| **Magnum LTS 17** | A | 1.17 lpm (0.31 gpm) | 6.4 mm x 7.5 m (1/4 in. x 25 ft) | SG2 | 207 | 21 | 3000 |
| **Magnum ProLTS 19** | A | 1.44 lpm (0.38 gpm) | 6.4 mm x 15 m (1/4 in. x 50 ft) | SG3 | 207 | 21 | 3000 |

# Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

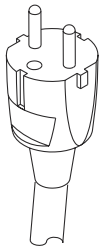
## ⚠WARNING

**GROUNDING**

This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

- Improper installation of the grounding plug is able to result in a risk of electric shock.
- When repair or replacement of the cord or plug is required, do not connect the grounding wire to either flat blade terminal.
- The wire with insulation having an outer surface that is green with or without yellow stripes is the grounding wire.
- Check with a qualified electrician or serviceman when the grounding instructions are not completely understood, or when in doubt as to whether the product is properly grounded.
- Do not modify the plug provided; if it does not fit the outlet, have the proper outlet installed by a qualified electrician.
- This product is for use on a nominal 230V circuit and has a grounding plug similar to the plugs illustrated in the figure below.

230V

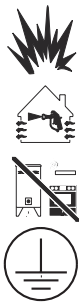


- Only connect the product to an outlet having the same configuration as the plug.
- Do not use an adapter with this product.

Extension Cords:

- Use only a 3-wire extension cord that has a grounding plug and a grounding receptacle that accepts the plug on the product.
- Make sure your extension cord is not damaged. If an extension cord is necessary, use 12 AWG (2.5 $mm^2$) minimum to carry the current that the product draws.
- An undersized cord results in a drop in line voltage and loss of power and overheating.

# ⚠WARNING



**FIRE AND EXPLOSION HAZARD**

Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:

- Do not spray flammable or combustible materials near an open flame or sources of ignition such as cigarettes, motors, and electrical equipment. **For LTS 15 and LTS 17 models:** only use water-based or mineral spirit-type materials with a flash point greater than 100° F (38° C).
- Do not spray combustible materials near an open flame or sources of ignition such as cigarettes, motors, and electrical equipment.
- Paint or solvent flowing through the equipment is able to result in static electricity. Static electricity creates a risk of fire or explosion in the presence of paint or solvent fumes. All parts of the spray system, including the pump, hose assembly, spray gun, and objects in and around the spray area shall be properly grounded to protect against static discharge and sparks. Use Graco conductive or grounded high-pressure airless paint sprayer hoses.
- Verify that all containers and collection systems are grounded to prevent static discharge. Do not use pail liners unless they are antistatic or conductive.
- Connect to a grounded outlet and use grounded extensions cords. Do not use a 3-to-2 adapter.
- Do not use a paint or a solvent containing halogenated hydrocarbons.
- Keep spray area well-ventilated. Keep a good supply of fresh air moving through the area. Keep pump assembly in a well ventilated area. Do not spray pump assembly.
- Do not smoke in the spray area.
- Do not operate light switches, engines, or similar spark producing products in the spray area.
- Keep area clean and free of paint or solvent containers, rags, and other flammable materials.
- Know the contents of the paints and solvents being sprayed. Read all Material Safety Data Sheets (MSDS) and container labels provided with the paints and solvents. Follow the paint and solvents manufacturer's safety instructions.
- Fire extinguisher equipment shall be present and working.
- Sprayer generates sparks. When combustible materials are used in or near the sprayer or for flushing or cleaning, keep sprayer at least 20 feet (6 m) away from explosive vapors.


**SKIN INJECTION HAZARD**

High-pressure spray is able to inject toxins into the body and cause serious bodily injury. In the event that injection occurs, **get immediate surgical treatment.**

- Do not aim the gun at, or spray any person or animal.
- Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body.
- Always use the nozzle tip guard. Do not spray without nozzle tip guard in place.
- Use Graco nozzle tips.
- Use caution when cleaning and changing nozzle tips. In the case where the nozzle tip clogs while spraying, follow the **Pressure Relief Procedure** for turning off the unit and relieving the pressure before removing the nozzle tip to clean.
- Do not leave the unit energized or under pressure while unattended. When the unit is not in use, turn off the unit and follow the **Pressure Relief Procedure** for turning off the unit.
- Check hoses and parts for signs of damage. Replace any damaged hoses or parts.
- This system is capable of producing 3000 psi. Use Graco replacement parts or accessories that are rated a minimum of 3000 psi.
- Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly.
- Verify that all connections are secure before operating the unit.
- Know how to stop the unit and bleed pressure quickly. Be thoroughly familiar with the controls.

# ⚠WARNING


**EQUIPMENT MISUSE HAZARD**

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.


**ELECTRIC SHOCK HAZARD**

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power cord before servicing equipment.
- Connect only to grounded electrical outlets.
- Use only 3-wire extension cords.
- Ensure ground prongs are intact on power and extension cords.
- Do not expose to rain. Store indoors.

**PRESSURIZED ALUMINUM PARTS HAZARD**

Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.

- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.

**BURN HAZARD**

Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.


**MOVING PARTS HAZARD**

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.

# ⚠WARNING

**TOXIC FLUID OR FUMES HAZARD**

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read MSDSs to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

**PERSONAL PROTECTIVE EQUIPMENT**

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

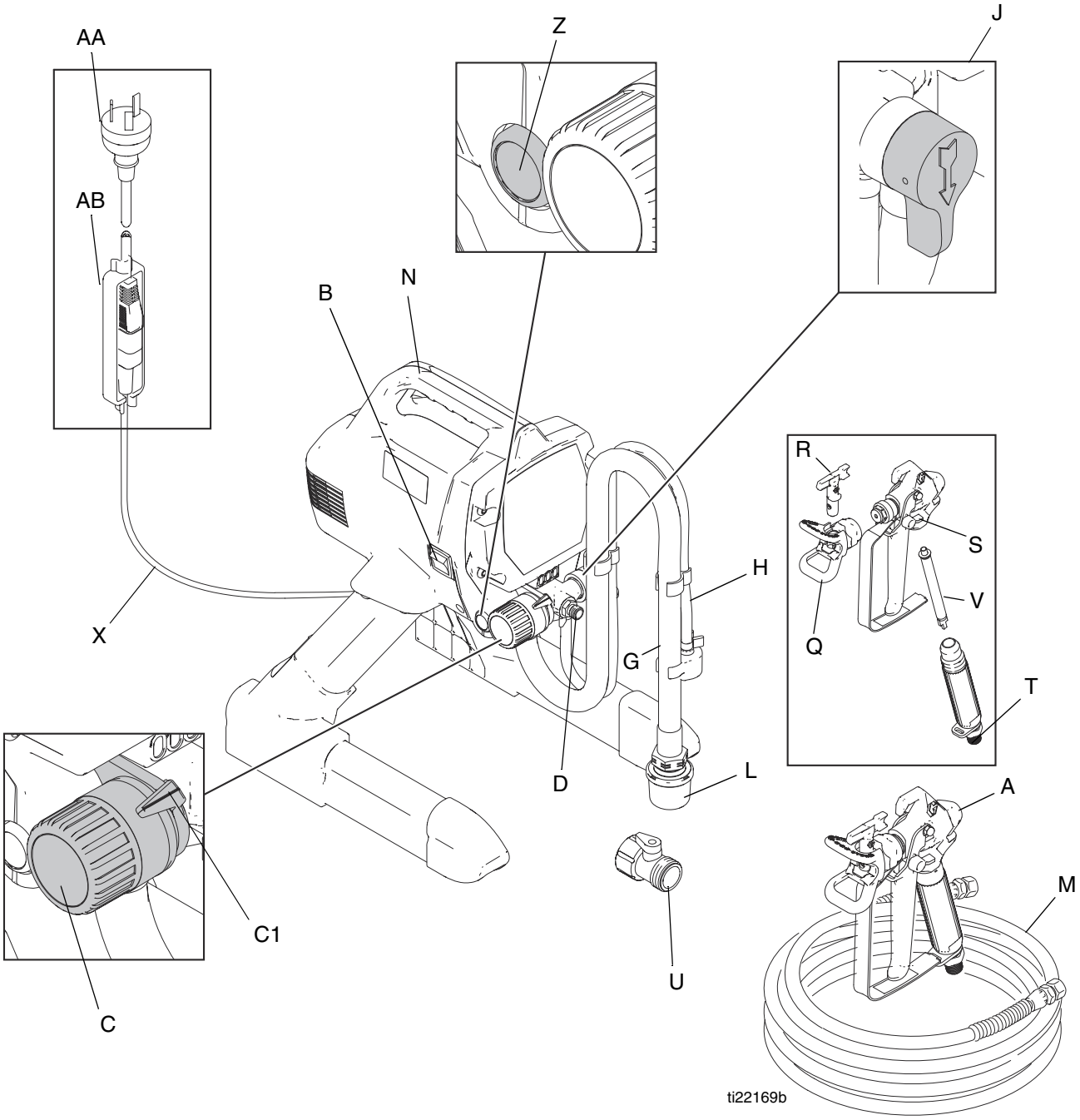
**CALIFORNIA PROPOSITION 65**

This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

# Component Identification LTS 15

| | | |
|---|---|---|
| A | Airless spray gun | Dispenses fluid. |
| B | Power switch | Turns sprayer ON and OFF. |
| C | Pressure control knob | Increases (clockwise) and decreases (counter-clockwise) fluid pressure in pump, hose, and spray gun. |
| C1 | Setting Indicator | To select function, align symbol on pressure control knob with setting indicator, page 13. |
| D | Pump fluid outlet fitting | Threaded connection for paint hose. |
| G | Suction tube | Draws fluid from paint pail into pump. |
| H | Prime tube (with diffuser) | Drains fluid in system during priming and pressure relief. |
| J | Prime/Spray valve | • PRIME position directs fluid to prime tube.<br>• SPRAY position directs pressurized fluid to paint hose.<br>• Automatically relieves system pressure in overpressure situations. |
| L | Inlet screen | Prevents debris from entering pump. |
| M | Paint hose | Transports high-pressure fluid from pump to spray gun. |
| N | Handle | Used to help transport sprayer. |
| Q | Tip guard | Reduces risk of fluid injection injury. |
| R | Reversible spray tip | • Atomizes fluid being sprayed, forms spray pattern and controls fluid flow according to hole size.<br>• Reverse unclogs plugged tips without disassembly. |
| S | Gun trigger safety lever (page 13) | Prevents accidental triggering of spray gun. |
| T | Gun fluid inlet fitting | Threaded connection for paint hose. |
| U | Power Flush attachment | Connects garden hose to suction tube for power flushing water-based fluids. |
| V | Gun fluid filter | Filters fluid entering spray gun to reduce tip clogs. |
| X | Power cord | Supplies sprayer with electricity |
| Z | Pump priming button | Manually taps inlet ball to loosen if stuck. |
| AA | Plug Adapter | Adapts power cord to Australian electrical outlet. |
| AB | Plug Adapter Retainer | Retains plug adapter to power cord. |

# Component Identification LTS 15

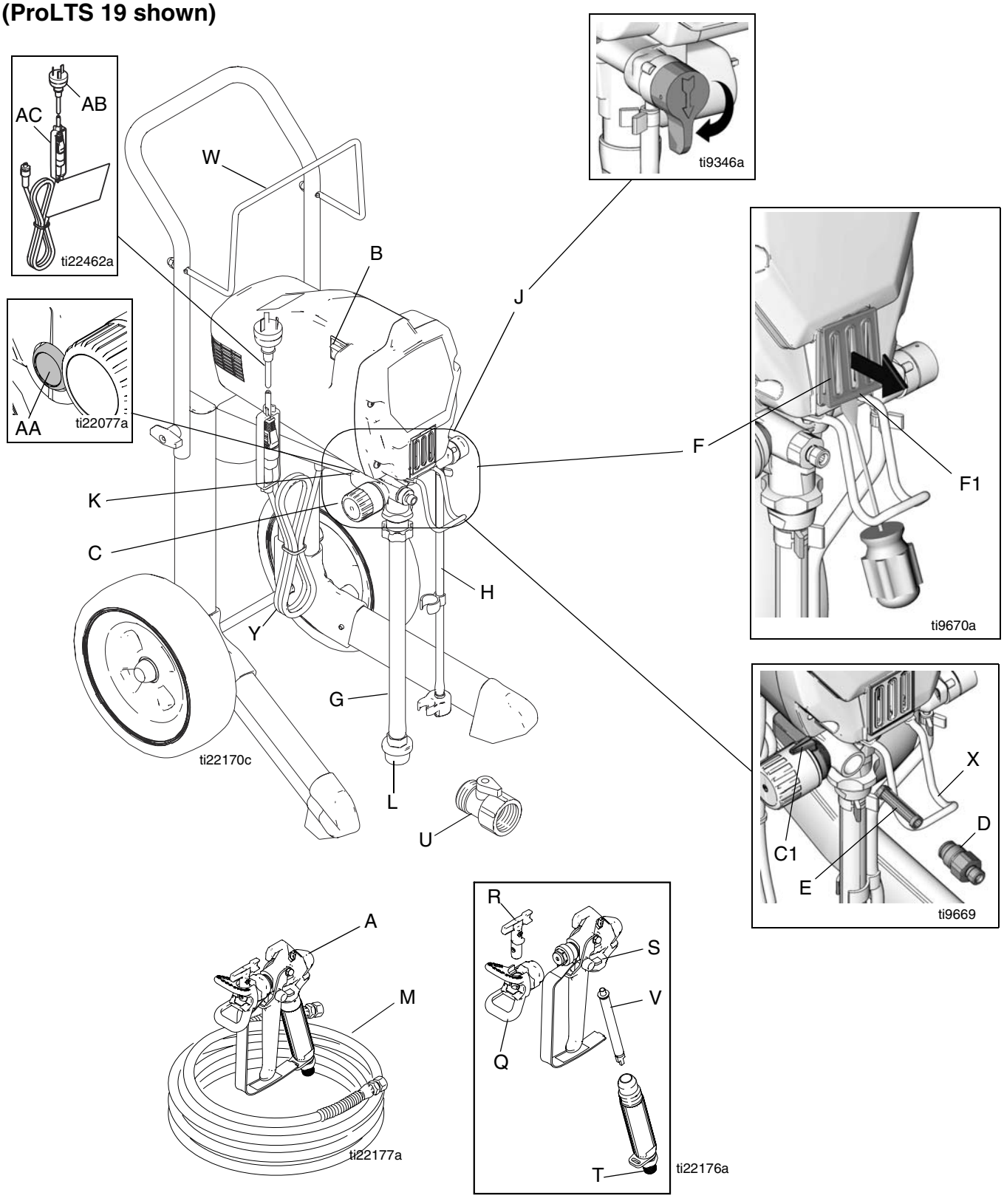


# Component Identification LTS 17 and ProLTS 19

| | | |
|---|---|---|
| A | Airless spray gun | Dispenses fluid. |
| B | Power switch | Turns sprayer ON and OFF. |
| C | Pressure control knob | Increases (clockwise) and decreases (counter-clockwise) fluid pressure in pump, hose, and spray gun. |
| C1 | Setting Indicator | To select function, align symbol on pressure control knob with setting indicator, page 13. |
| D | Pump fluid outlet fitting | Threaded connection for paint hose. |
| E | InstaClean™ fluid filter **(ProLTS 19 Sprayer Only)** | • Filters fluid coming out of pump to reduce tip plugging and improve finish.<br>• Self cleans only during pressure relief. |
| F | Power-Piston™ Pump, (Not shown. Behind Easy Access door) **(ProLTS 19 Sprayer Only)** | Pumps and pressurizes fluid and delivers it to paint hose. |
| F1 | Easy Access door **(ProLTS 19 Sprayer Only)** | Easy Access door permits quick access to outlet valve. To remove door, insert flat blade of screwdriver into slot on the bottom of the door (as shown on page, 11). |
| G | Suction tube | Draws fluid from paint pail into pump. |
| H | Prime tube (with diffuser) | Drains fluid in system during priming and pressure relief. |
| J | Prime/Spray valve | • PRIME position directs fluid to prime tube.<br>• SPRAY position directs pressurized fluid to paint hose.<br>• Automatically relieves system pressure in overpressure situations. |
| K | Ball Knocker **(ProLTS 19 Sprayer Only)** | Automatically taps the inlet ball when you turn the sprayer on. |
| L | Inlet screen | Prevents debris from entering pump. |
| M | Paint hose | Transports high-pressure fluid from pump to spray gun. |
| Q | Tip guard | Reduces risk of fluid injection injury. |
| R | Reversible spray tip | • Atomizes fluid being sprayed, forms spray pattern and controls fluid flow according to hole size.<br>• Reverse unclogs plugged tips without disassembly. |
| S | Gun trigger safety lever (page 13) | Prevents accidental triggering of spray gun. |
| T | Gun fluid inlet fitting | Threaded connection for paint hose. |
| U | Power Flush attachment | Connects garden hose to suction tube for power flushing water-based fluids. |
| V | Gun fluid filter | Filters fluid entering spray gun to reduce tip clogs. |
| W | Hose wrap Rack | Stows paint hose. |
| X | Pail hanger | For transporting pail by its handle. |
| Y | Power Cord | Supplies sprayer with electricity. |
| Z | Plug Adapter | Adapts power cord to Australia electrical. |
| AA | Pump Priming Button **(LTS 17 Sprayer Only)** | Manually taps inlet ball to loosen if stuck. |
| AB | Cord Adapter Retainer | Retains cord adapter to power cord. |
| AC | Plug Adapter Retainer | Retains plug adapter to power cord. |

# Component Identification LTS 17 and ProLTS 19

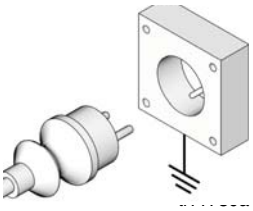
## (ProLTS 19 shown)



# Grounding and Electrical Requirements

**Sprayer** must be grounded. Grounding reduces the risk of static and electric shock by providing an escape wire for electrical current due to static build up or in the event of a short circuit.

- The 240 VAC sprayers require a 220-240 VAC, 50/60 Hz, 10A circuit with a grounding receptacle.



- Never use an outlet that is not grounded or an adapter.
- Do not use the sprayer if the electrical cord has a damaged ground prong.
- Only use an extension cord with an undamaged 3-prong plug.

  Recommended extension cords for use with this sprayer:
  - 15 m (49.2 ft) 1.0 $mm^2$
  - 30 m (98.4 ft) 1.5 $mm^2$
  - 50 m (164.0 ft) 2.5 $mm^2$

**Spray gun:** ground through connection to a properly grounded fluid hose and pump.

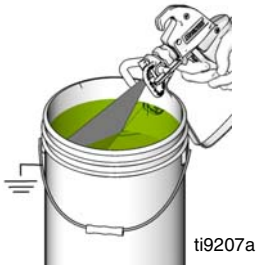
**NOTE:** Smaller gauge or longer extension cords may reduce sprayer performance.

**Fluid supply container**: follow local code.

**Solvent pails used when flushing**: follow local code. Use only conductive metal pails, placed on a grounded surface such as concrete. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity.

**Grounding the metal pail**: connect a ground wire to the pail by clamping one end to pail and other end to ground such as a water pipe.

**Maintaining grounding continuity**: when flushing or relieving pressure hold metal part of the spray gun firmly to the side of a grounded metal pail, then trigger the gun.




## Thermal Overload

Motor has a thermal overload switch to shut itself down if overheated. If unit overheats, allow approximately 45 minutes for unit to cool. Once cool, switch will close and unit will restart.

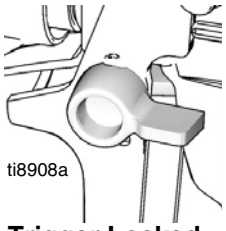
To reduce risk of injury from motor starting unexpectedly when it cools, always turn power switch OFF if motor shuts down.

# Operation

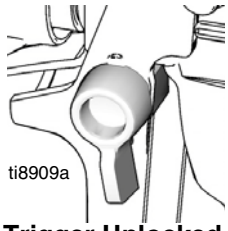
See **Operation** manual for basic information on sprayer setup, flushing, and storage.

## Trigger Lock

Always engage the trigger lock when you stop spraying to prevent the gun from being triggered accidentally by hand or if dropped or bumped.



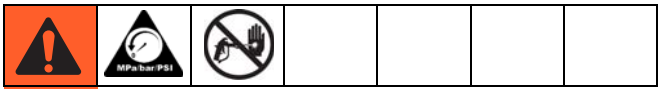

**Trigger Locked**



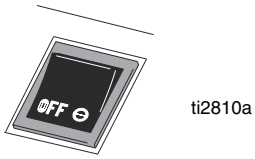

**Trigger Unlocked**

## Pressure Relief Procedure

Follow this **Pressure Relief Procedure** whenever you stop spraying and before cleaning, checking, servicing, or transporting equipment.




1. Turn power switch OFF and unplug power cord.

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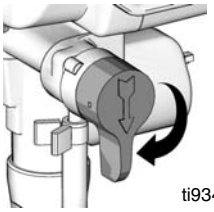
2. Move Prime/Spray valve to PRIME to relieve pressure.



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3. Hold gun firmly to side of pail. Trigger the gun to relieve pressure.

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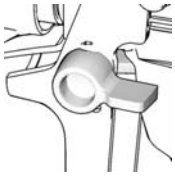
4. Engage trigger lock.



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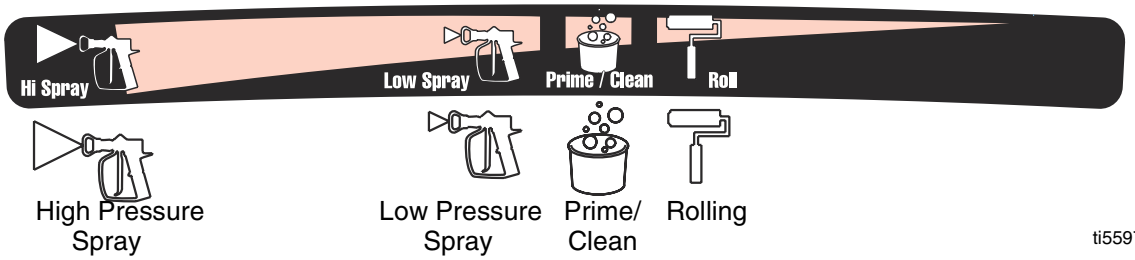
**NOTE:** Leave Prime/Spray valve in the PRIME position until you are ready to spray again.

If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Clear hose or tip obstruction. See Unclogging Spray Tip in the **Operation** manual.

## Pressure Control Knob Settings

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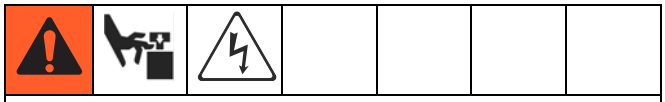
**NOTE:** To select function, align symbol on pressure control knob with setting indicator on sprayer.

# General Repair Information

Flammable materials spilled on hot, bare, motor could cause fire or explosion. To reduce risk of burns, fire or explosion, do not operate sprayer with cover removed.

- Keep all screws, nuts, washers, gaskets, and electrical fittings removed during repair procedures. These parts usually are not provided with replacement kits.
- Test repairs after problems are corrected.
- If sprayer does not operate properly, review repair procedure to verify you did it correctly. See **Basic Troubleshooting**, page 15 and **Advanced Troubleshooting**, page 20.
- Overspray may build up in the air passages. Remove any overspray and residue from air passages and openings in the enclosures whenever you service sprayer.
- Do not operate the sprayer without the cover in place. Replace if damaged. Covers direct cooling air around motor to prevent overheating.



To reduce risk of serious injury, including electric shock:

- Do not touch moving or electric parts with fingers or tools while testing repair.
- Unplug sprayer when power is not required for testing.
- Install all covers, gaskets, screws and washers before you operate sprayer.

***NOTICE***

- Do not run sprayer dry for more than 30 seconds. Doing so could damage pump packings.
- Protect the internal drive parts of this sprayer from water. Openings in the cover allow for air cooling of the mechanical parts and electronics inside. If water gets in these openings, the sprayer could malfunction or be permanently damaged.
- Prevent pump corrosion and damage from freezing. Never leave water or water-base paint in sprayer when its not in use in cold weather. Freezing fluids can seriously damage sprayer. Store sprayer with Pump Armor to protect sprayer during storage.

# Basic Troubleshooting


Check everything in this Basic Troubleshooting table before you bring the sprayer to a Graco/MAGNUM authorized service center.

| Problem | Cause | Solution |
|---|---|---|
| Power switch is on and sprayer is plugged in, but motor does not run, and pump does not cycle. | Pressure is set at zero pressure. | Turn pressure control knob clockwise to increase pressure setting. |
| | Motor or control is damaged. | Take sprayer to Graco/MAGNUM authorized service center. |
| | Electric outlet is not providing power. | • Try a different outlet or plug in something that you know is working to test outlet.<br>• Reset building circuit breaker or replace fuse. |
| | Extension cord is damaged. | Replace extension cord. Read **Grounding and Electrical Requirements**, page 12. |
| | Sprayer power cord is damaged. | Check for broken insulation or wires. Replace power cord if damaged. |
| | Paint and/or water is frozen or hardened in pump. | Unplug sprayer from outlet. If frozen do NOT try to start sprayer until it is completely thawed or you may damage the motor, control board and/or drivetrain.<br><br>Make sure power switch is OFF. Place sprayer in a warm area for several hours. Then plug in power cord and turn sprayer ON. Slowly increase pressure setting to see if motor will start.<br><br>If paint is hardened in sprayer, pump packings, valves, drivetrain or pressure switch may need to be replaced. Take sprayer to Graco/MAGNUM authorized service center. |

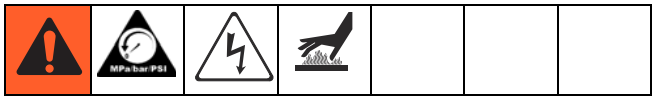
| Problem | Cause | Solution |
|---|---|---|
| Pump does not prime. | Prime/Spray Valve is in SPRAY position. | Move Prime/Spray Valve to PRIME position. |
| | Inlet screen is clogged or suction tube is not immersed in fluid. | Clean debris off inlet screen and make sure suction tube is immersed in fluid. |
| | Pump was not primed with flushing fluid. | Remove suction tube from paint. Prime pump with water or solvent-based flushing fluid, see **Operation** manual. |
| | Inlet valve check ball is stuck. | Remove suction tube and place a pencil into the inlet section to dislodge the ball, press pump priming button, or Power Flush sprayer. See **Operation** manual. |
| | | **ProLTS 19:** AutoPrime may need replacement. Turn power switch ON and listen for “tap” in pump. If you do not hear “tap”, AutoPrime is damaged. Take sprayer to Graco/MAGNUM authorized service center. |
| | Inlet valve check ball or seat is dirty or worn. | Remove inlet fitting. Clean or replace ball and seat. |
| | Outlet valve check ball is stuck or worn. | **ProLTS 19:** Insert screw driver in slot and remove Easy-Access™ door, page 11. Unscrew outlet valve with a 3/4 in. socket. Remove and clean assembly. Replace if worn.<br><br>**LTS 15 and LTS 17:** Remove outlet fitting and clean outlet check ball. Replace if worn. |
| | Suction tube is leaking. | Tighten suction tube connection. Inspect for cracks or vacuum leaks. |
| | Pump does not prime with fluid. | Remove suction tube from paint. Prime pump with water or solvent-based flushing fluid. |
| | Fluids are viscous or sticky. | Some fluids may prime faster if the Power Switch is momentarily turned off so the pump can slow and stop. Repeat several times if necessary. |

| Problem | Cause | Solution |
|---|---|---|
| Pump cycles but does not build up pressure. | Pump is not primed. | Prime pump. |
| | Inlet screen is clogged. | Clean debris off inlet screen and make sure suction tube is immersed in fluid. |
| | Suction tube is not immersed in paint. | Make sure suction tube is immersed in paint. |
| | Suction tube is leaking. | Tighten suction tube connection. Inspect for cracks or vacuum leaks. If cracked or damaged, replace suction tube. |
| | Prime/Spray Valve is worn or obstructed with debris. | Take sprayer to Graco/MAGNUM authorized service center. |
| | Pump check ball is stuck. | Read ***Pump does not prime*** section in **Basic Troubleshooting**, page 15. |
| Pump cycles, but paint only dribbles or spurts when spray gun is triggered. | Pressure is set too low. | Slowly turn Pressure Control Knob clockwise to increase pressure setting which will turn motor on to build pressure. |
| | Spray tip is clogged. | Unclog spray tip, see **Operation** manual. |
| | InstaClean™ fluid filter is clogged. | Clean or replace InstaClean™ fluid filter, see **Operation** manual. |
| | Spray gun fluid filter is clogged. | Clean or replace gun fluid filter, see **Operation** manual. |
| | Spray tip is too large or worn. | Replace tip. |

| Problem | Cause | Solution |
|---|---|---|
| Pressure is set at maximum but cannot achieve a good spray pattern. | Reversible spray tip is in UNCLOG position. | Rotate arrow-shaped handle on spray tip so it points forward in SPRAY position, see **Operation** manual. |
| | Spray tip is too large for sprayer. | Select smaller spray tip. |
| | Spray tip is worn beyond capability of sprayer. | Replace spray tip. |
| | Extension cord is too long or not heavy enough gauge. | Replace extension cord. See **Grounding and Electrical Requirements**, page 12. |
| | Spray gun fluid filter is clogged. | Clean or replace spray gun fluid filter, see **Operation** manual. |
| | InstaClean™ fluid filter is clogged. | Clean or replace InstaClean™ fluid filter, see **Operation** manual. |
| | Inlet screen is clogged. | Clean debris off inlet screen. |
| | Pump valves are worn, or debris is clogging valve. | Check for worn pump valves.<br>a. Prime sprayer with paint.<br>b. Trigger gun momentarily. When trigger is released, pump should cycle momentarily and stop. If pump continues to cycle, pump valves may be worn.<br>c. Remove valves and check for debris. |
| | Material is too thick. | Thin material. |
| | Hose is too long (if extra section is added). | Remove section of hose. |
| Spray gun stopped spraying. | Suction tube is leaking. | Tighten suction tube connection. Inspect for cracks or vacuum leaks. |
| | Spray tip is clogged. | Unclog spray tip, see **Operation** manual. |
| When paint is sprayed, it runs down the wall or sags. | Coat is going on too thick. | Move gun faster. |
| | | Choose a tip with smaller hole size. |
| | | Choose tip with wider fan. |
| | | Make sure gun is far enough from surface. |
| When paint is sprayed, coverage is inadequate. | Coat is going on too thin. | Move gun slower. |
| | | Choose tip with larger hole size. |
| | | Choose tip with narrower fan. |
| | | Make sure gun is close enough to surface. |

| Problem | Cause | Solution |
|---|---|---|
| Fan pattern varies dramatically while spraying.<br>OR<br>Sprayer does not turn on promptly when resuming spraying. | Pressure control switch is worn and causing excessive pressure variation. | Take sprayer to Graco/MAGNUM authorized service center. |
| Cannot trigger spray gun. | Spray gun trigger lock is locked. | Rotate trigger safety lever to unlock trigger lock, page 13. |
| Paint is coming out of pressure control switch. | Pressure control switch is worn. | Take sprayer to Graco/MAGNUM authorized service center. |
| Prime/Spray valve actuates automatically relieving pressure through prime tube. | System is over pressurizing. | Take sprayer to Graco/MAGNUM authorized service center. |
| Paint leaks down outside of pump. | Pump packings are worn. | **ProLTS 19:** Replace pump packings.<br>**LTS 15 and LTS 17:** Replace pump. |
| Motor is hot and runs intermittently. Motor automatically shuts off due to excessive heat. Damage can occur if cause is not corrected.<br>See **Thermal Overload**, page 12. | Vent holes in enclosure are plugged or sprayer is covered. | Keep vent holes clear of obstructions and overspray and keep sprayer open to air. |
| | Extension cord is too long or not a heavy enough gauge. | Replace extension cord. Read **Grounding and Electric Requirements**, page 12. |
| | Unregulated electrical generator being used has excessive voltage. | Use electrical generator with a proper voltage regulator. Sprayer requires 220-240 VAC, 50/60 Hz. |

# Advanced Troubleshooting



See **Basic Troubleshooting** first, page 15 for problems that are more easily remedied.

## Motor Does Not Operate

| Specific Problem | Cause | Solution |
|---|---|---|
| Basic mechanical problems. | Paint is frozen or hardened in pump. | See **Basic Troubleshooting**, page 15. |
| | Gears are damaged. | Remove motor enclosure and rotate motor fan to check for bad gears. If gears bind or slip, remove pump cover and replace failed gears. See **List of Kits**, page 30. |
| | **ProLTS 19:** Yoke is broken because pump is locked up due to dried paint or worn packings. | Repair or replace using **Gear/Yoke Kit**. See **List of Kits**, page 30. |
| | | Replace pump packings on **ProLTS 19** sprayers. See **List of Kits**, page 30. |

| Specific Problem | Cause | Solution |
|---|---|---|
| Basic electrical problems. | Motor overheated. | Allow motor to cool for 45 minutes. Retry. |
| | Electrical outlet is damaged. | Reset building circuit breaker or replace fuse. Try another outlet.<br><br>Check electric supply with volt meter. Meter must read 220/240 VAC. If voltage is too high, do not plug sprayer in until outlet is corrected. |
| | Control board leads are improperly fastened, improperly mated, or corroded. | Replace any loose terminals. Make sure all leads and harnesses are firmly connected.<br><br>**ProLTS 19:** Check pressure control harness connection on front side of drive housing.<br><br>Clean control board terminals. Securely reconnect leads. |
| | Motor brushes are worn. | Check length of BOTH brushes (brushes do not wear evenly on both sides of the motor). Brush length must be 0.25 in. (6.4mm). If brushes are worn replace motor using **Motor Kit**. See **List of Kits,** page 30. |
| | Motor armature commutator damaged. | Check for burn spots, gouges and extreme roughness. If damaged or if shorts are evident, replace motor using **Motor Kit**. See **List of Kits**, page 30. |
| | Fuse is blown. | Find cause for blown fuse before replacing. Turn the motor fan to check for a locked gear or pump. Use a continuity meter to check for a short to ground caused by a pinched wire.<br><br>**ProLTS 19:** Replace the fuse with correct fuse kit. See **List of Kits**, page 30.<br><br>**LTS 15 and LTS 17:** The fuse is not replaceable. Replace control board. See **List of Kits**, page 30. |
| | Motor armature shorting. | Check for shorts. See **Motor Diagnostics**, page 27. If shorts are evident, use **Motor Kit** to replace motor. See **List of Kits**, page 30. |
| | Motor armature open circuit. | Check motor leads for continuity. If open circuit, check brushes. Use **Motor Kit** to replace motor. See **List of Kits**, page 30. |
| | Control board damaged.<br><br>**CAUTION:** Do not perform control board diagnostics until you have determined the armature is good. A damaged armature can burn out a good control board. | See **Control Board Diagnostics**, page 29. Replace control board if damaged using **Control Board Kit.** See **List of Kits,** 30. |

| Specific Problem | Cause | Solution |
|---|---|---|
| Sprayer wiring problems.<br><br>**NOTE:** Remove enclosure mounting screws and pull enclosure away from drive housing. Take care not to pull on leads from electrical cord and power switch. | Sprayer power cord damaged. | 1. Unplug sprayer power cord.<br>2. Disconnect brown and blue power cord wires at EMI filter.<br>3. Plug in power cord.<br>4. Test voltage between brown and blue wires of power cord. Meter must read 220-240 VAC.<br>5. Replace power cord if no voltage. |
| | Sprayer power switch damaged. | 1. Unplug sprayer power cord.<br>2. Disconnect both wires from power switch.<br>3. Check for continuity between switch terminals.<br>4. Toggle switch ON and OFF. There should be continuity in the ON position only.<br>5. Replace power switch if no continuity in ON position. |
| | **ProLTS 19 diagnosis only:** Motor thermal overload cutoff switch damaged.<br><br>**WARNING:** See **Thermal Overload** on page 12. | 1. Unplug sprayer power cord.<br>2. Remove motor harness from control board.<br>3. Check for continuity between yellow leads or motor harness.<br>4. If thermal relief switch is open (no continuity) allow motor to cool.<br>5. If switch remains open after motor cools, replace motor using **Motor Kit.** See **List of Kits**, page 30.<br>6. If thermal relief switch closes after motor cools, find correct cause of overheating. |

## Circuit Breaker is Tripping

| Specific Problem | Cause | Solution |
|---|---|---|
| Building circuit breaker opens as soon as sprayer is turned on.<br><br>**NOTE:** Remove enclosure mounting screws and pull enclosure away from drive housing. Take care not to pull on leads from electrical cord and power switch. | Sprayer electrical wiring is pinched or insulation is damaged. | Repair or replace any damaged wiring or terminals. Securely reconnect wires. |
| | Wires between pressure control switch and control board are pinched. | |
| | Motor armature is shorting. | Check for shorts. See **Motor Diagnostics**, page 27. If shorts are evident, replace motor using **Motor Kit**. See **List of Kits**, page 30. |
| | Control board is damaged.<br><br>**CAUTION:** Do not perform control board diagnostics until you have determined the armature is good. A bad motor armature can burn out a good motor control board. | See **Control Board Diagnostics**, page 29. Replace control board if damaged using **Control Board Kit**. **See List of Kits**, page 30. |
| Building circuit breaker opens as soon as sprayer is plugged into outlet and sprayer is NOT turned on.<br><br>**NOTE:** Remove enclosure mounting screws and pull enclosure away from drive housing. Take care not to pull on leads from electrical cord and power switch. | Sprayer power cord damaged. | 1. Unplug sprayer power cord.<br>2. Disconnect brown and blue power cord wires from EMI filter.<br>3. Plug in power cord.<br>4. Test voltage between brown and blue wires of power cord. Meter must read 224-240 VAC.<br>5. Replace power cord if no voltage. |
| | Sprayer power switch damaged. | 1. Unplug sprayer power cord.<br>2. Disconnect both wires from power switch.<br>3. Check for continuity between switch terminals.<br>4. Toggle switch ON and OFF. There should be continuity in the ON position only.<br>5. Replace power switch if no continuity in ON position. |

## Erratic Motor Operation

| Specific Problem | Cause | Solution |
|---|---|---|
| Sprayer quits after running for 5 to 10 minutes. | Building circuit is overloaded. | Remove other loads from building circuit or find another circuit that has less load. See **Grounding and Electrical Requirements**, page 12. |
| | Electrical outlet supplying wrong voltage. | Try another outlet. Check electric supply with volt meter. Meter must read 220-240 VAC. If voltage is too high, do not use outlet until corrected. |
| | Also see *Basic Electrical Problems* and *Sprayer Wiring Problems*, pages 21 - 22. | |
| | Motor is overheating.<br><br>Warning: See **Thermal Overload**, page 12. | After motor cools, operate sprayer and determine if motor stops when trigger on gun is released. If sprayer runs continuously, replace **Pressure Control**. See **List of Kits**, page 30.<br><br>Relieve pressure and remove motor enclosure. Turn motor fan by hand to check for binding gears or seized pump. See **List of Kits**, page 30. |

## Low or Fluctuating Output

| Specific Problem | Cause | Solution |
|---|---|---|
| Pump cycles, but output is low or surging. | See **Basic Troubleshooting**, page 15. | |
| | Worn or obstructed inlet and outlet valves. | Check for worn pump valves as follows:<br>Prime sprayer with paint. Turn the Prime/Spray valve to SPRAY position. Turn pressure control fully clockwise.<br>Trigger spray gun briefly.<br>When spray gun trigger is released pump should cycle momentarily and stop.<br>If pump continues to cycle, pump valves may be worn or obstructed.<br>For replacement inlet and outlet valve kits, see **List of Kits**, page 30. |
| | Prime/Spray valve is leaking out drain line when Prime/Spray valve is in SPRAY position. | Check Prime/Spray valve for debris trapped on seat and for worn parts. Torque to 130 - 180 in-lb (15.8 - 18.1 N•m). Replace if parts are worn using **Prime/Spray Valve Kit**. See **List of Kits**, page 30. |
| | Voltage from electrical outlet is too low. Low voltages reduce sprayer performance. | Check voltage of outlet. Meter must read 220-240 VAC. |
| | Extension cord is too long or not heavy enough gauge. | Replace extension cord.<br>See **Grounding and Electrical Requirements**, page 12. |
| | Leads from motor or pressure switch to control board are damaged, loose, pinched, or overheated. | Be sure terminals are centered and firmly connected. Inspect for pinched wiring and wiring insulation and terminals for signs of overheating. Replace any loose terminals or damaged wiring. Securely reconnect terminals. |
| | Motor brushes are worn. | Check length of BOTH brushes (brushes do not wear evenly on both sides of the motor). Brush length must be 0.25 in. (6.4mm). If brushes are worn, replace motor using **Motor Kit**. See **List of Kits,** page 30. |
| | Motor brush springs are broken. | If springs are broken, replace motor using **Motor Kit**. See **List of Kits**, page 30. |
| | Motor brushes are binding in brush holders. | Clean brush holders. Remove carbon dust with small cleaning brush. |
| | Motor stops before sprayer reaches correct pressure (stall pressure is too low). | Replace pressure control using **Pressure Control Switch Kit**, page 28. |
| | Control board is damaged.<br>**CAUTION:** Do not perform control board diagnostics until you have determined the armature is good. A damaged armature can burn out a good control board. | See **Control Board Diagnostics**, page 29. If damaged, replace control board using **Control Board Kit**. See **List of Kits**, page 30. |

| Specific Problem | Cause | Solution |
|---|---|---|
| Motor runs and pump cycles, but pressure does not build up. | Intake valve or outlet valve is not seating properly. | Remove and clean inlet valves and outlet valves. Replace if necessary. See **List of Kits**, page 30. |
| | Pump packings are worn or damaged. | Check for leaking around pump.<br><br>**ProLTS 19:** Replace pump packings. See **List of Kits**, page 30.<br><br>**LTS 15 and LTS 17:** Replace complete pump. See **List of Kits**, page 30. |

## Excessive Pressure Build Up

| Specific Problem | Cause | Solution |
|---|---|---|
| Prime/Spray Valve actuates automatically, relieving pressure through drain tube. | Pressure control switch has pinched wires or switch is worn. | Replace pressure control switch using **Pressure Control Switch Kit**, page 28. |
| | Water or paint entered pressure control switch or shorted control board. | Use **Pressure Control Switch Kit**, to replace switch. See **List of Kits**, page 30. |
| | Control board failed. | See **Control Board Diagnostics**, page 29. Replace damaged control board using **Control Board Kit.** See **List of Kits**, page 30. |

# Motor Diagnostics

## LTS 15 and LTS 17

Motor Diagnostics reveal a damaged motor or if motor brushes are shorter than 1/4 in. (6.4 mm) replace the motor using **Motor Kit**. See **List of Kits**, page 30.

### Setup

1. Unplug power cord and **Relieve Pressure.** See **Pressure Relief Procedure,** page 13.
2. Remove enclosure and disconnect two motor leads. See **Wiring Diagram**, page 44 and 44.
3. Remove motor fan cover by gently prying up on retention tabs on sides of motor. Motor shaft should spin easily when turning fan. If motor shaft does not turn easily, there is a problem with pump, gears, or motor. See **Basic Troubleshooting**, page 15.
4. Inspect motor windings for evidence of overheating. If windings appear burnt and motor smells, replace motor.
5. Use ohmmeter to measure resistance across two motor leads. Resistance of motor should fall within range of 4.0 to 10.0 ohms. If motor falls outside resistance range or is open circuit, replace motor.
6. Use ohmmeter to measure resistance of motor leads to motor laminations. If resistance is not open circuit, replace motor.
7. Inspect length of both brushes by looking at brush torsion spring. If spring is not bottomed out in slot for brush spring, brush length is acceptable. If brushes are worn out, replace motor.

## ProLTS 19

Check for electrical continuity in motor armature, windings and brush as follows:

If Motor Diagnostics reveal a damaged motor or if motor brushes are shorter than 1/4 in. (6.4 mm) or if the motor shaft cannot turn, replace the motor using **Motor Kit**. See **List of Kits**, page 30.

### Setup

1. **Relieve Pressure.** See **Pressure Relief Procedure,** page 13.
2. Unplug electric cord.
3. Remove enclosure and disconnect motor leads from control card.
4. Remove fan brace.
5. Remove four screws and front cover.
6. Remove yoke and guide rods.
7. Remove gear.

## Armature Short Circuit Spin Test

Quickly turn motor fan by hand. There should not be electrical shorts and fan should coast two or three revolutions before stopping. If fan does not spin freely, armature is shorted. Replace motor using **Motor Kit**. See **List of Kits**, page 30.

### Armature, Brushes and Motor Wiring Open Circuit Test (Continuity)

1. Connect a test lead to each of the red and black motor leads.
2. Turn motor fan by hand, about two revolutions per second.
3. If there is an uneven resistance or no resistance measured across the test leads, replace motor using **Motor Kit**. See **List of Kits**, page 30.

# Pressure Control Switch Diagnostics

1. Unplug power cord and **Relieve Pressure.** See **Pressure Relief Procedure**, page 13.
2. If paint is leaking from pressure control switch between pressure control knob and base, replace pressure control switch.
3. **ProLTS 19:** Remove front cover, yoke, and pins. Disconnect pressure control switch connector from control board.

   **LTS 15 and LTS 17:** Remove enclosure and disconnect pressure control switch connector from control board. Use finger to support control board when removing pressure control switch connector.
4. Use ohmmeter to check for no continuity between sprayer ground and both pressure control terminals in connector. If either pressure control switch lead is shorted to ground, pressure control switch wires have been pinched to ground during assembly and pressure control switch needs to be replaced.
5. Use ohmmeter to measure across two terminals in pressure control connector. No continuity should exist when pressure control knob is at lowest pressure setting (full counter-clockwise). Replace pressure control switch if continuity exists.
6. Use ohmmeter to measure across two terminals in pressure control connector. Continuity or closed circuit should exist when pressure control knob is set at maximum pressure (full clockwise). Replace pressure control switch if no continuity exists.

# Pump Diagnostics

***NOTICE***

When repairing or cleaning the pump, never submerge pump in water or allow fluid to enter pressure control.

When pump packings wear, paint begins to leak down the outside of the pump. At the first sign of leakage, replace the pump or additional damage to the drive train could occur.

1. **LTS 15 and LTS 17:** Replace pump using **Pump Replacement (Complete)**. See **List of Kits**, page 30.

   **ProLTS 19:** Replace pump using **Pump Repair Kit**. See **List of Kits**, page 30.
2. If there is no paint leakage (see **Advanced Troubleshooting**, page 20). Pump may not be defective.

# Control Board Diagnostics

## ProLTS 19

**NOTE:** Check for motor problems before replacing control board. A damaged motor may burn out a good control board.

Check for a damaged control board or pressure control switch as follows:

1. **Relieve Pressure** (see **Pressure Relief Procedure**, page 13).
2. Unplug electrical cord.
3. Remove four cover screws and front cover. Remove motor enclosure.
4. Remove yoke and guide rods.
5. Remove gear.
6. Remove pressure control harness from control board. Using tip of small, flat blade screwdriver, press tab on right side connector to release.
7. Attach harness from a pressure control switch you know is functioning correctly to control board.

   **NOTE:** Pressure control switch does not have to be installed in pump.

8. Turn pressure control adjustment knob (C) +to maximum pressure setting.
9. Plug electrical cord into 240 VAC receptacle.
10. Turn power switch (B) ON.
    - If motor runs, replace failed pressure switch. **Pressure Control Switch Kit**. See **List of Kits**, page 30.
    - If motor does not run, replace control board repeat test. **Control Board Kit**. See **List of Kits**, page 30.

## LTS 15 and LTS 17

**NOTE:** Check for motor problems before replacing control board. A damaged motor may burn out a good control board.

1. Unplug electrical cord and **relieve pressure** (see **Pressure Relief Procedure**, page 13).
2. Remove enclosure and check all control board connectors for proper installation (see **Wiring Diagram**, page 44).
3. Check fuse on control board. If fuse is blown, determine the cause before replacing control board (see **Advanced Troubleshooting**, page 20).

# List of Kits

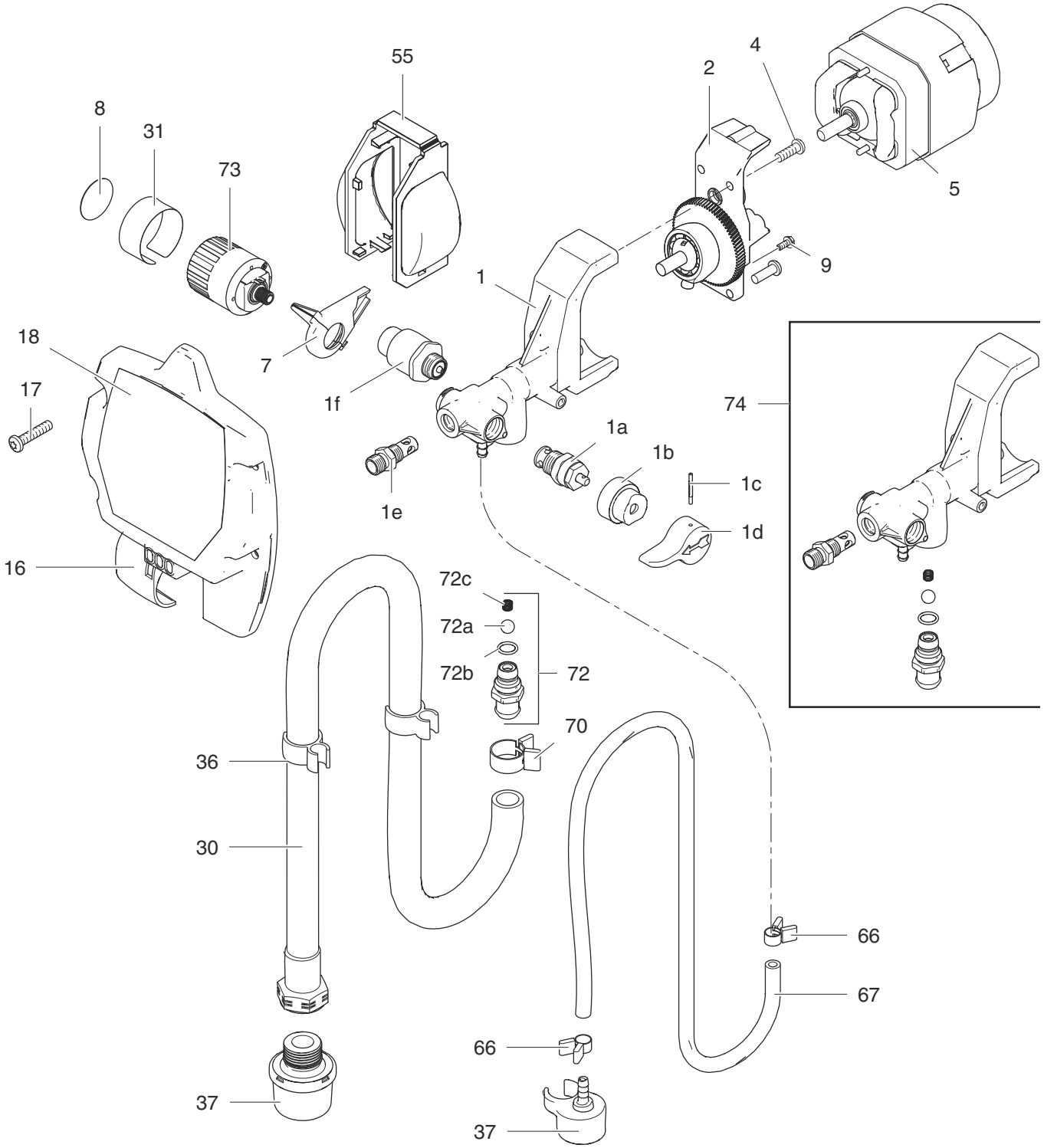
| Kit Number | Models | Kit Description |
|---|---|---|
| 16G223 | LTS 15 and LTS 17 | Control Board Kit |
| 16W944 | ProLTS 19 | Control Board Kit |
| 122893 | ProLTS 19 | Fuse |
| 16W949 | LTS 15 | Enclosure Kit |
| 16W950 | LTS 17 | Enclosure Kit |
| 16W942 | ProLTS 19 | Enclosure Kit |
| 16W952 | LTS 15 and LTS 17 | Front Cover |
| 16W945 | ProLTS 19 | Front Cover |
| 247339 | LTS 15 and LTS 17 | Hose, 6.4mm x 7.5m, 6.4mm x 6.4mm fitting |
| 247340 | ProLTS 19 | Hose 6.4mm x 15m, 6.4mm x 6.4mm fitting |
| 257566 | LTS 15 and LTS 17 | Inlet Strainer |
| 245673 | ProLTS 19 | Inlet Strainer |
| 24K633 | LTS 15 | Left Leg |
| 24K632 | LTS 15 | Right Leg |
| 262014 | LTS 17 and ProLTS 19 | Left Leg |
| 262012 | LTS 17 and ProLTS 19 | Right Leg |
| 16X876 | LTS 15 and LTS 17 | Power Cord |
| 16X877 | ProLTS 19 | Power Cord |
| 289107 | ProLTS 19 | AutoPrime |
| 246286 | LTS 15, LTS 17, and ProLTS 19 | Pressure Control 3000 psi |
| 16E844 | LTS 15 and LTS 17 | Pump Inlet |
| 288699 | ProLTS 19 | Pump Inlet |
| 16E845 | LTS 15 and LTS 17 | Pump Outlet |
| 243094 | ProLTS 19 | Pump Outlet |
| 288747 | ProLTS 19 | Filter Kit (InstaClean™) |
| 16F047 | LTS 15 and LTS 17 | Pump |
| 288818 | ProLTS 19 | Pump |
| 243011 | LTS 15 and LTS 17 | SG2 Gun |
| 243012 | ProLTS 19 | SG3 Gun |
| 197607 | LTS 15 | Suction Tube |
| 16D951 | LTS 17 | Suction Tube |
| 16H348 | ProLTS 19 | Suction Tube |
| 244035 | LTS 15, LTS 17, and ProLTS 19 | Drain Tube Diffuser |
| 235014 | LTS 15, LTS 17, and ProLTS 19 | Drain Valve |
| 16G228 | LTS 15 and LTS 17 | Motor |
| 256938 | ProLTS 19 | Motor |
| 16E778 | LTS 15 and LTS 17 | Gear/Drive |
| 289102 | ProLTS 19 | Gear/Drive |
| 16G227 | LTS 15 and LTS 17 | Pump (Complete) |
| 16X569 | ProLTS 19 | Pump (Complete) |
| 256212 | ProLTS 19 | Lacquer Conversion Kit |

# Notes

# Parts

## Magnum LTS 15 Pump

### Model 16W120



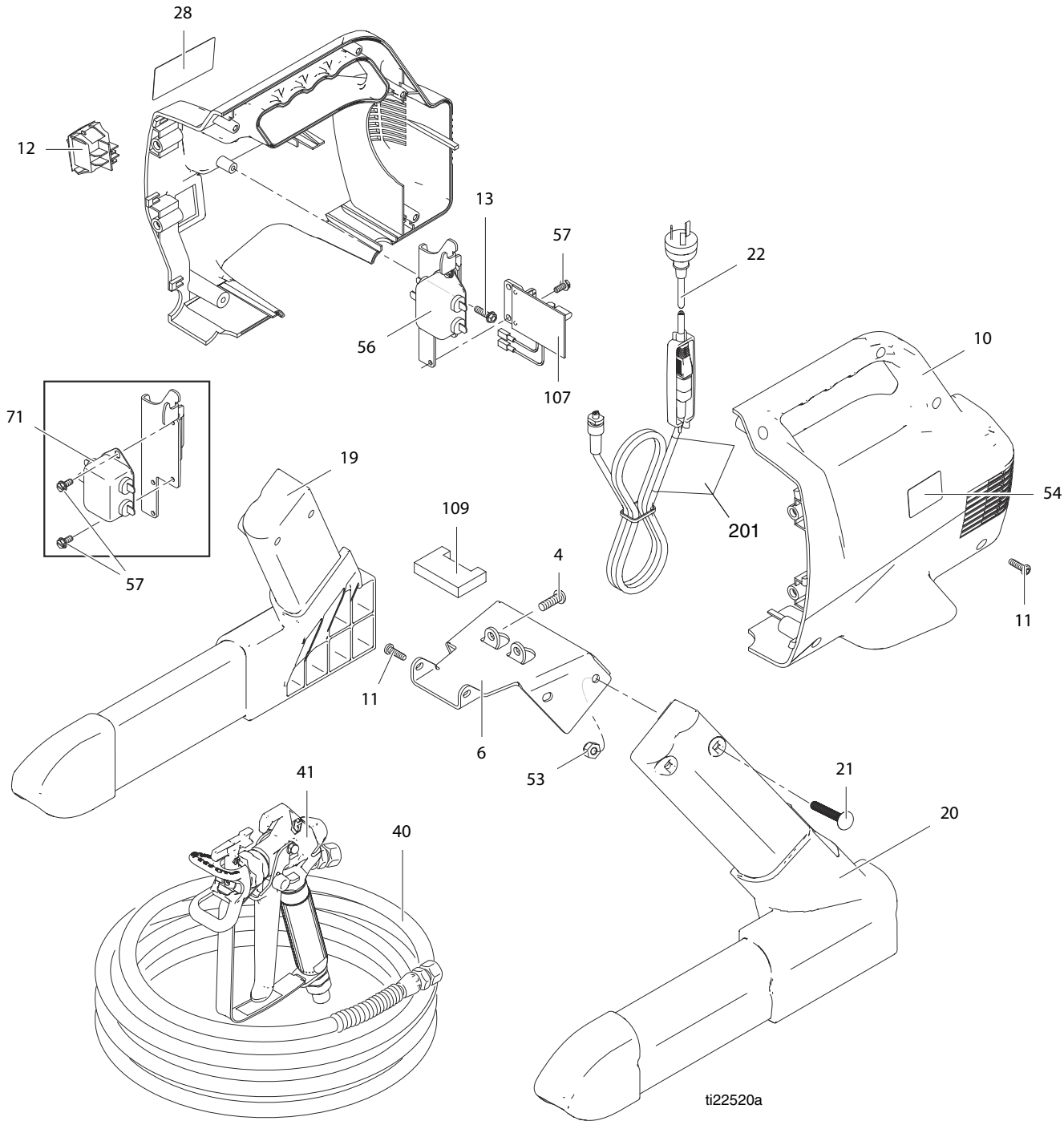
# Parts List

## Magnum LTS 15 Model 16W120

| Ref. | Part | Description | Qty. |
|---|---|---|---|
| 1 | 16G227 | KIT, repair, pump, complete (includes 1a, 1b, 1c, 1d, 1e, 1f, 72) | 1 |
| 1a | 235014 | KIT, replacement, valve, drain | 1 |
| 1b | 24E578 | BASE, valve | 1 |
| 1c | 111600 | PIN, grooved | 1 |
| 1d | 187625 | HANDLE, valve, drain | 1 |
| 1e | 16E845 | KIT, repair, outlet valve | 1 |
| 1f | 16F621 | MODULE, ball knocker | 1 |
| 2 | 16E778 | KIT, repair, drive (includes 4) | 1 |
| 4 | 112689 | SCREW, button hd | 4 |
| 5 | 16G228 | KIT, repair, motor | 1 |
| 7 | 15Y296 | COVER, wire | 1 |
| 8 | 15A464 | LABEL, control | 1 |
| 9 | 115498 | SCREW, mach, slot hex wash hd | 1 |
| 16 | 16W952 | KIT, repair, cover (includes 17, 18) | 1 |
| 17 | 120724 | SCREW | 4 |
| 18 | 15U408 | LABEL, LTS 15, front | 1 |
| 30 | 197607 | TUBE, suction set | 1 |
| 31 | 16F635 | LABEL, control, Magnum | 1 |
| 36 | 195400 | CLIP, spring | 2 |
| 37 | 195697 | STRAINER | 1 |
| 38 | 244035 | DEFLECTOR, barbed | 1 |
| 55 | 16W319 | COVER, gear | 1 |
| 66 | 115489 | CLAMP, drain tube | 2 |
| 67 | 195084 | TUBE, drain | 1 |
| 70 | 116295 | CLAMP, tube | 1 |
| 72 | 16E844 | KIT, repair, inlet valve (includes 72a, 72b, 72c) | 1 |
| 72a | 124249 | BALL | 1 |
| 72b | 103338 | PACKING, o-ring | 1 |
| 72c | 123849 | SPRING, compression | 1 |
| 73 | 246286 | KIT, repair, pressure control (includes 8, 31) | 1 |
| 74 | 16F047 | KIT, repair, pump (includes 1e, 72) | 1 |

# Magnum LTS 15 Frame

## Model 16W120



# Parts List

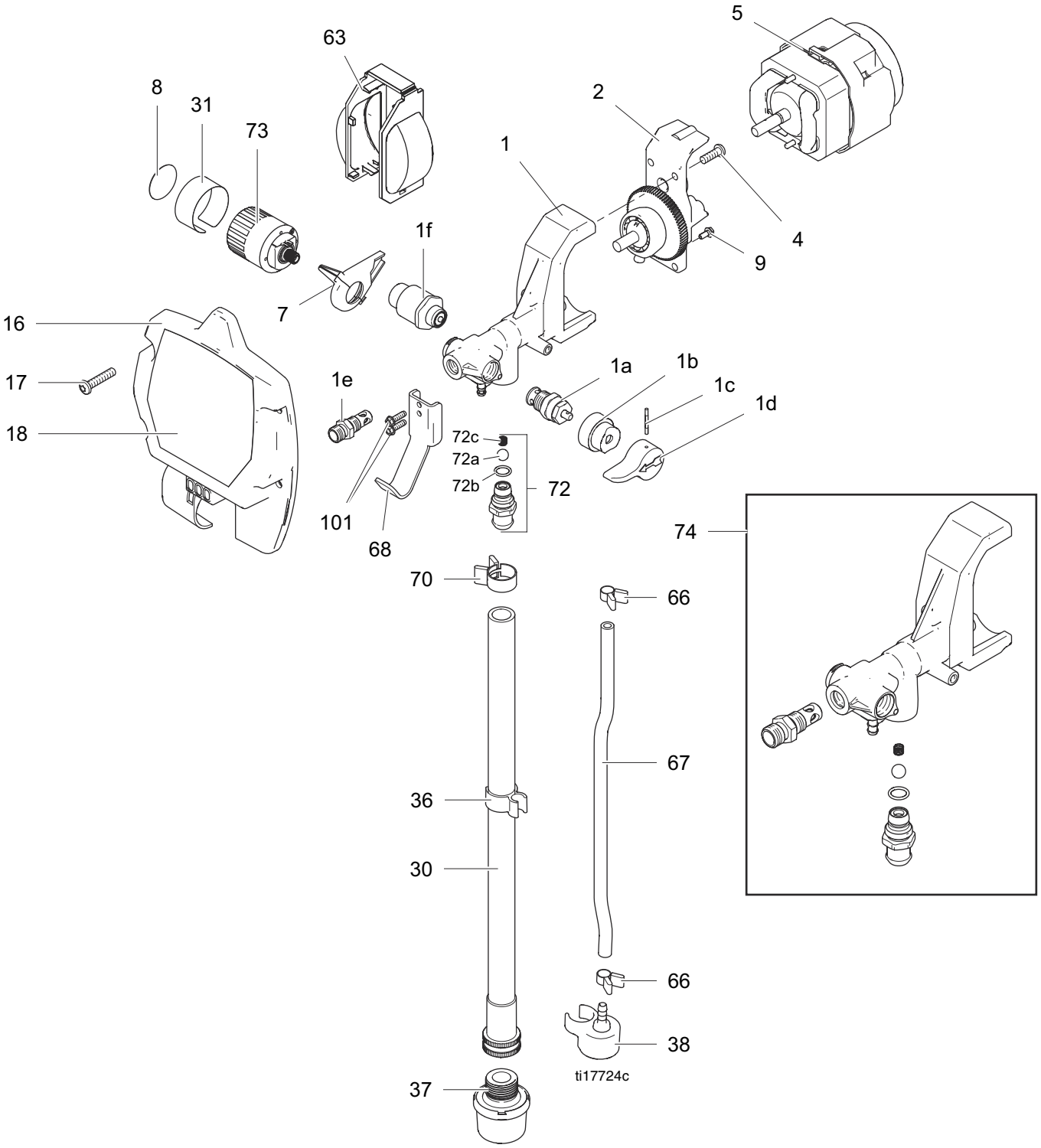
## Magnum LTS 15 Model 16W120

| Ref. | Part | Description | Qty. |
|---|---|---|---|
| 4 | 112689 | SCREW, button HD | 4 |
| 6 | 16D682 | FRAME | 1 |
| 10 | 16W949 | KIT, repair, enclosure, LTS 15 | 1 |
| 11 | 115477 | SCREW, mach, torx pan hd | 6 |
| 12 | 118899 | SWITCH, rocker,spdt | 1 |
| 13 | 16X731 | SCREW, plastite, #8 hex wash hd | 1 |
| 17 | 120724 | SCREW (not shown) | 4 |
| 19 | 24K632 | KIT, repair, leg, right (includes 21, 53) | 1 |
| 20 | 24K633 | KIT, repair, leg, left (includes 21, 53) | 1 |
| 21 | 125116 | BOLT, carriage | 4 |
| 22 | 16X876 | KIT, repair, cordset | 1 |
| 28▲ | 195792 | LABEL, warning | 1 |
| 40 | 247339 | HOSE, cpld, 1/4 in. x 25 ft | 1 |
| 41 | 243011 | GUN, spray, SG2 | 1 |
| 53 | 102040 | NUT, lock, hex | 4 |
| 54 | 16D576 | LABEL, made in USA | 1 |
| 56 | 16W318 | FILTER, EMI bracket assy | 1 |
| 57 | 115492 | SCREW, mach, slot hex wash hd | 2 |
| 71 | 16W227 | FILTER, EMI | 1 |
| 107 | 16G223 | HOUSING, seat valve | 1 |
| 109 | 127063 | FOAM, pad | 1 |
| 201▲ | 16T398 | LABEL, safety, warning | 1 |
| ▲ | 179960 | SIGN, warning (not shown) | 1 |

▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

# Magnum LTS 17 Pump

## Model 16W121



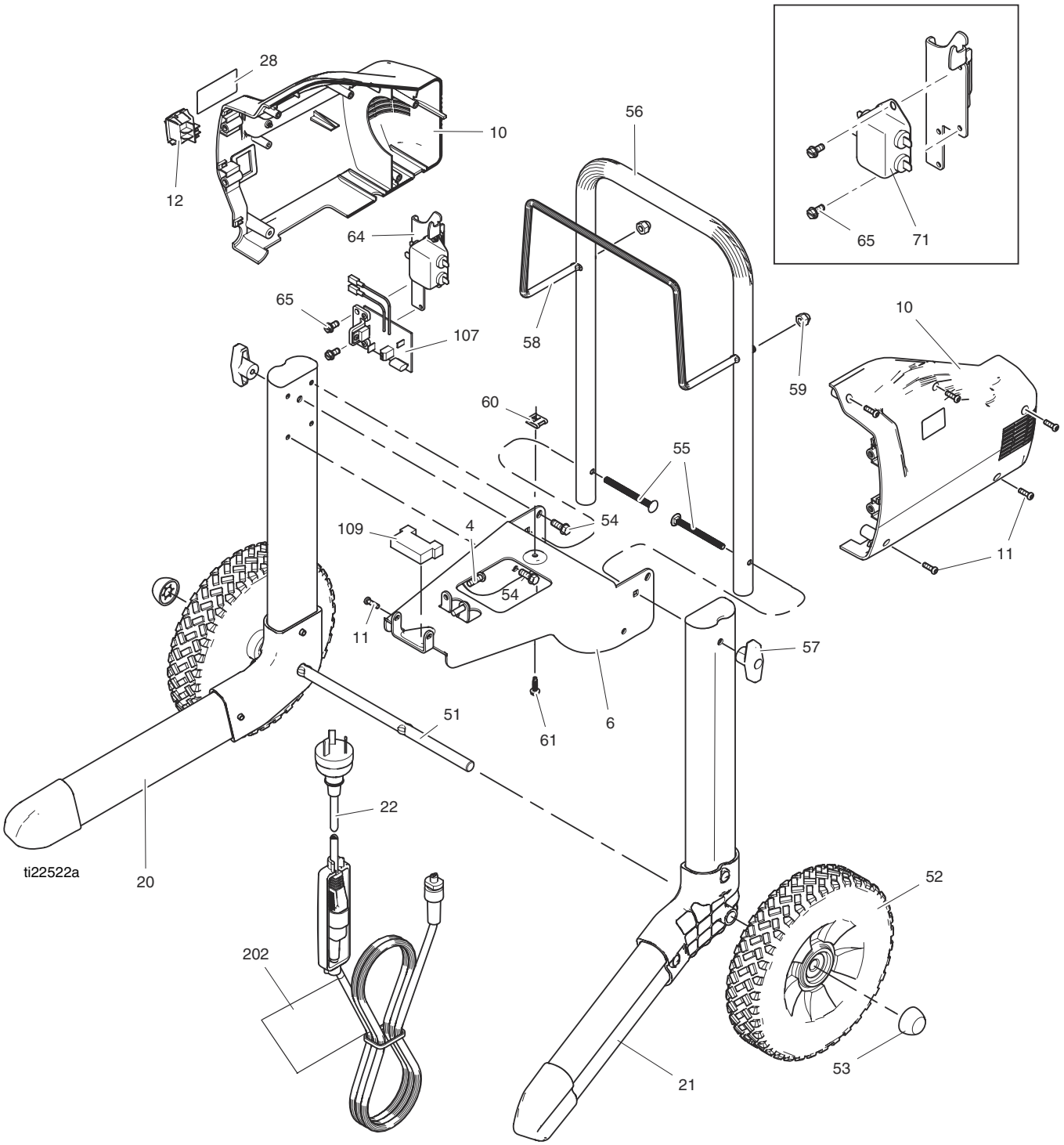
# Parts List

## Magnum LTS 17 Model 16W121

| Ref. | Part | Description | Qty. |
|---|---|---|---|
| 1 | 16G227 | KIT, repair, pump, complete (includes 1a, 1b, 1c, 1d, 1e, 1f, 72) | 1 |
| 1a | 235014 | KIT, replacement, valve, drain | 1 |
| 1b | 24E578 | BASE, valve | 1 |
| 1c | 111600 | PIN, grooved | 1 |
| 1d | 187625 | HANDLE, valve, drain | 1 |
| 1e | 16E845 | KIT, repair, outlet valve | 1 |
| 1f | 16F621 | MODULE, ball knocker | 1 |
| 2 | 16E778 | KIT, repair, drive (includes 4) | 1 |
| 4 | 112689 | SCREW, button HD | 4 |
| 5 | 16G228 | KIT, repair, motor | 1 |
| 7 | 15Y296 | COVER, wire | 1 |
| 8 | 15A464 | LABEL, control | 1 |
| 9 | 115498 | SCREW, mach, slot hex wash head | 1 |
| 16 | 16W952 | KIT, repair, cover (includes 17, 18) | 1 |
| 17 | 120724 | SCREW | 4 |
| 18 | 15U409 | LABEL, LTS 17 | 1 |
| 30 | 16D951 | TUBE, suction | 1 |
| 31 | 16F635 | LABEL, control, magnum | 1 |
| 36 | 195400 | CLIP, spring | 1 |
| 37 | 195697 | STRAINER | 1 |
| 38 | 244035 | DEFLECTOR, barbed | 1 |
| 63 | 16W319 | COVER, gear | 1 |
| 66 | 115489 | CLAMP, drain tube | 2 |
| 67 | 195108 | TUBE, drain | 1 |
| 68 | 16D907 | HANGER, pail | 1 |
| 70 | 116295 | CLAMP, tube | 1 |
| 72 | 16E844 | KIT, repair, inlet valve (includes 72a, 72b, 72c) | 1 |
| 72a | 124249 | BALL | 1 |
| 72b | 103338 | PACKING, o-ring | 1 |
| 72c | 123849 | SPRING, compression | 1 |
| 73 | 246286 | KIT, repair, pressure control (includes 8, 31) | 1 |
| 74 | 16F047 | KIT, repair, pump (includes 1e, 72) | 1 |
| 101 | 16X731 | SCREW, plastite, #8, wash hd | 2 |

# Magnum LTS 17 Frame

## Model 16W121



# Parts List

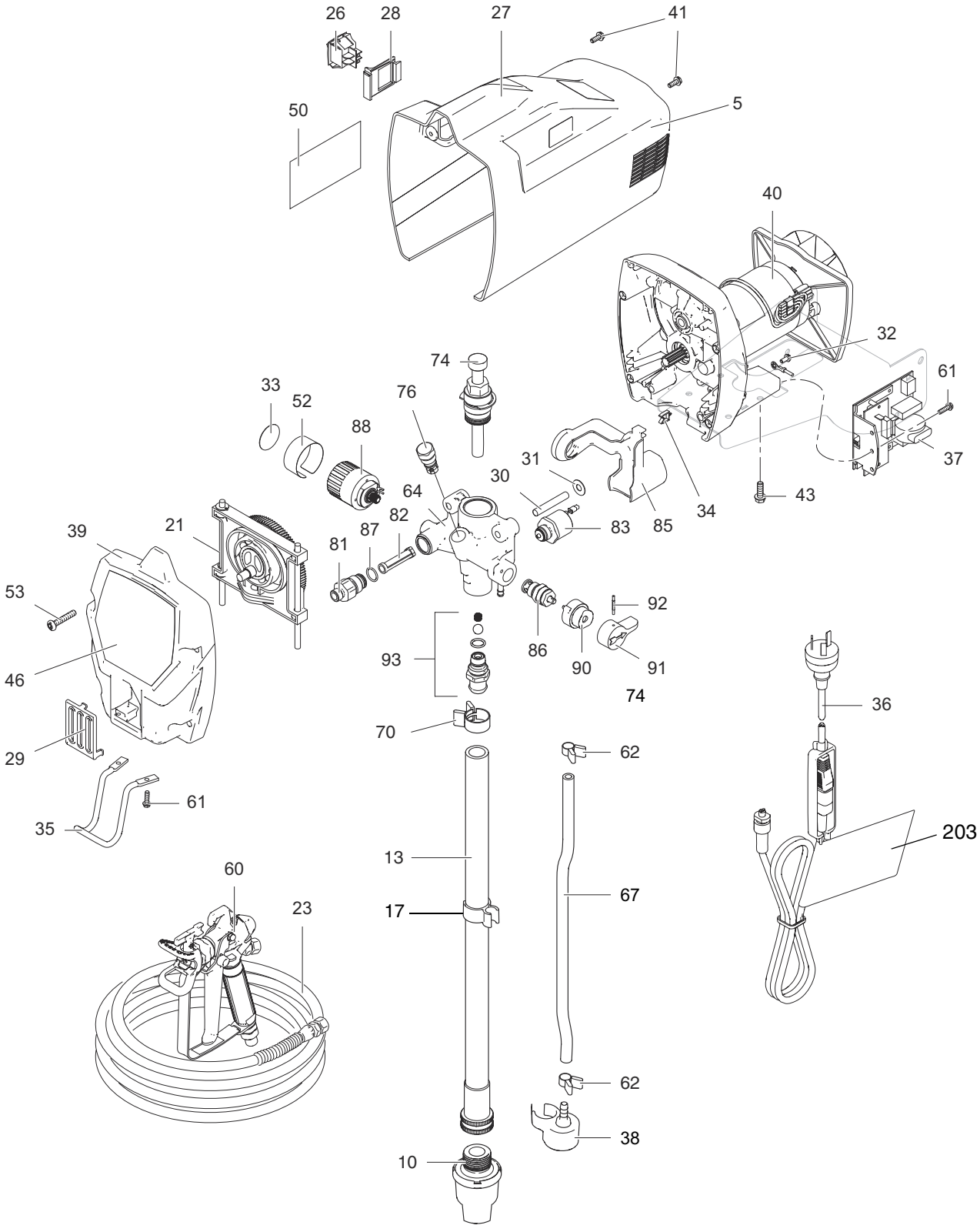
## Magnum LTS 17 Model 16W121

| Ref. | Part | Description | Qty. |
|---|---|---|---|
| 4 | 112689 | SCREW, button hd | 4 |
| 6 | 16D683 | FRAME | 1 |
| 10 | 16W950 | KIT, repair, enclosure, LTS 17 (includes 11, 17, 28, 62) | 1 |
| 11 | 115477 | SCREW, mach, torx pan hd | 6 |
| 12 | 118899 | SWITCH, rocker, spdt | 1 |
| 17 | 120724 | SCREW (not shown) | 4 |
| 20 | 262014 | KIT, leg, right (includes 54) | 1 |
| 21 | 262012 | KIT, leg, left (includes 54) | 1 |
| 22 | 16X876 | KIT, repair, cordset | 1 |
| 28▲ | 195792 | LABEL, warning | 1 |
| 40 | 247339 | HOSE, cpld, 1/4 in. x 25 ft | 1 |
| 41 | 243011 | GUN, spray, SG2 | 1 |
| 51 | 15R602 | AXLE, cart | 1 |
| 52 | 115095 | WHEEL, 9 in. | 2 |
| 53 | 112612 | CAP, hub | 2 |
| 54 | 260212 | SCREW, hex washer hd, thd form | 4 |
| 55 | 120788 | SCREW, carriage | 2 |
| 56 | 16H354 | HANDLE, cart | 1 |
| 57 | 115480 | KNOB, t-handle | 2 |
| 58 | 16H350 | RACK, hose | 1 |
| 59 | 120689 | NUT, hex, acorn, 5/16-18, nickel | 2 |
| 60 | 121481 | NUT, u-type, tinnerman | 1 |
| 61 | 120093 | SCREW, self drilling | 1 |
| 62 | 16D576 | LABEL, made in USA | 1 |
| 64 | 16W318 | FILTER, emi bracket assy | 1 |
| 65 | 115492 | SCREW, mach, slot hex wash hd | 2 |
| 71 | 16W227 | FILTER, EMI | 1 |
| 100 | 16X731 | SCREW, plastite, #8 hex wash hd | 1 |
| 107 | 16G223 | KIT, repair, control board (includes 65) | 1 |
| 109 | 127064 | FOAM, pad | 1 |
| 202▲ | 16T398 | LABEL, safety, warning | 1 |
| ▲ | 179960 | SIGN, warning (not shown) | 1 |

▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

# Magnum ProLTS 19 Pump

## Model 16W122



# Parts List

## Magnum ProLTS 19 Model 16W122

| Ref. | Part | Description | Qty. |
|---|---|---|---|
| 5 | 16D576 | LABEL,made in USA | 1 |
| 10 | 195697 | STRAINER | 1 |
| 13 | 16H348 | TUBE, suction, intake | 1 |
| 16 | 195108 | TUBE, drain | 1 |
| 17 | 195400 | CLIP, spring | 1 |
| 18 | 244035 | DEFLECTOR, barbed | 1 |
| 21 | 289102 | KIT, repair, gear and yoke | 2 |
| 23 | 247340 | HOSE, cpld,1/4 in. x 50 ft | 1 |
| 26 | 118899 | SWITCH, rocker, spdt | 1 |
| 27 | 16W996 | KIT, repair, enclosure, ProLTS 19 (includes 5, 41, 50) | 1 |
| 28 | 15X737 | BRACKET, switch | 1 |
| 29 | 15J809 | COVER, pump outlet | 1 |
| 30 | 194507 | PIN, dowel, 5/16 | 2 |
| 31 | 196001 | WASHER | 2 |
| 32 | 115498 | SCREW, mach, slot hex wash hd | 1 |
| 33 | 15A464 | LABEL, control | 1 |
| 34 | 119275 | CLIP, wire | 1 |
| 35 | 15J790 | HOOK, pail | 1 |
| 36 | 16X877 | KIT, repair, cordset (includes 32) | 1 |
| 37 | 16W944 | KIT, repair, control (includes 61) | 1 |
| 38 | 244035 | DEFLECTOR, barbed | 1 |
| 39 | 16W945 | KIT, repair, cover (includes 29, 30, 31, 46, 53) | 1 |
| 40 | 256938 | KIT, repair, motor | 1 |
| 41 | 118444 | SCREW, mach, slot hex wash hd | 2 |
| 43 | 260212 | SCREW, hex washer hd, thd form | 4 |
| 46 | 15U411 | LABEL, ProLTS 19, front | 1 |
| 50▲ | 195792 | LABEL, warning | 1 |
| 52 | 16F635 | LABEL | 1 |
| 53 | 115478 | SCREW, mach, torx/slt pan hd | 4 |
| 60 | 243012 | GUN, spray, SG3 | 1 |
| 61 | 121939 | SCREW, plastite, #8 hex wash hd | 3 |
| 62 | 115489 | CLAMP, drain tube | 2 |
| 64 | 16X569 | KIT, repair, pump, complete (includes 74, 76, 81, 82, 86, 87, 90, 91, 93) | 1 |
| 67 | 195108 | TUBE, drain | 1 |
| 70 | 116295 | CLAMP, tube | 1 |
| 74 | 288818 | KIT, repair, pump | 1 |
| 76 | 243094 | KIT, repair, outlet, valve | 1 |
| 81 | 195947 | ADAPTER, filter | 1 |
| 82 | 288747 | KIT, filter, pump | 1 |
| 83 | 289107 | KIT, repair, autoprime | 1 |
| 85 | 15J802 | COVER, solenoid | 1 |
| 86 | 235014 | KIT, replacement, valve, drain | 1 |
| 87 | 115719 | PACKING, o-ring, 015, viton | 1 |
| 88 | 246286 | KIT, repair, pressure control (includes 33, 52) | 1 |
| 90 | 224807 | BASE, valve | 1 |
| 91 | 187625 | HANDLE, valve, drain | 1 |
| 92 | 111600 | PIN, grooved | 1 |
| 93 | 288699 | KIT, repair, inlet, valve | 1 |
| 203▲ | 16T398 | LABEL, safety, warning | 1 |
| ▲ | 179960 | SIGN, warning (not shown) | |

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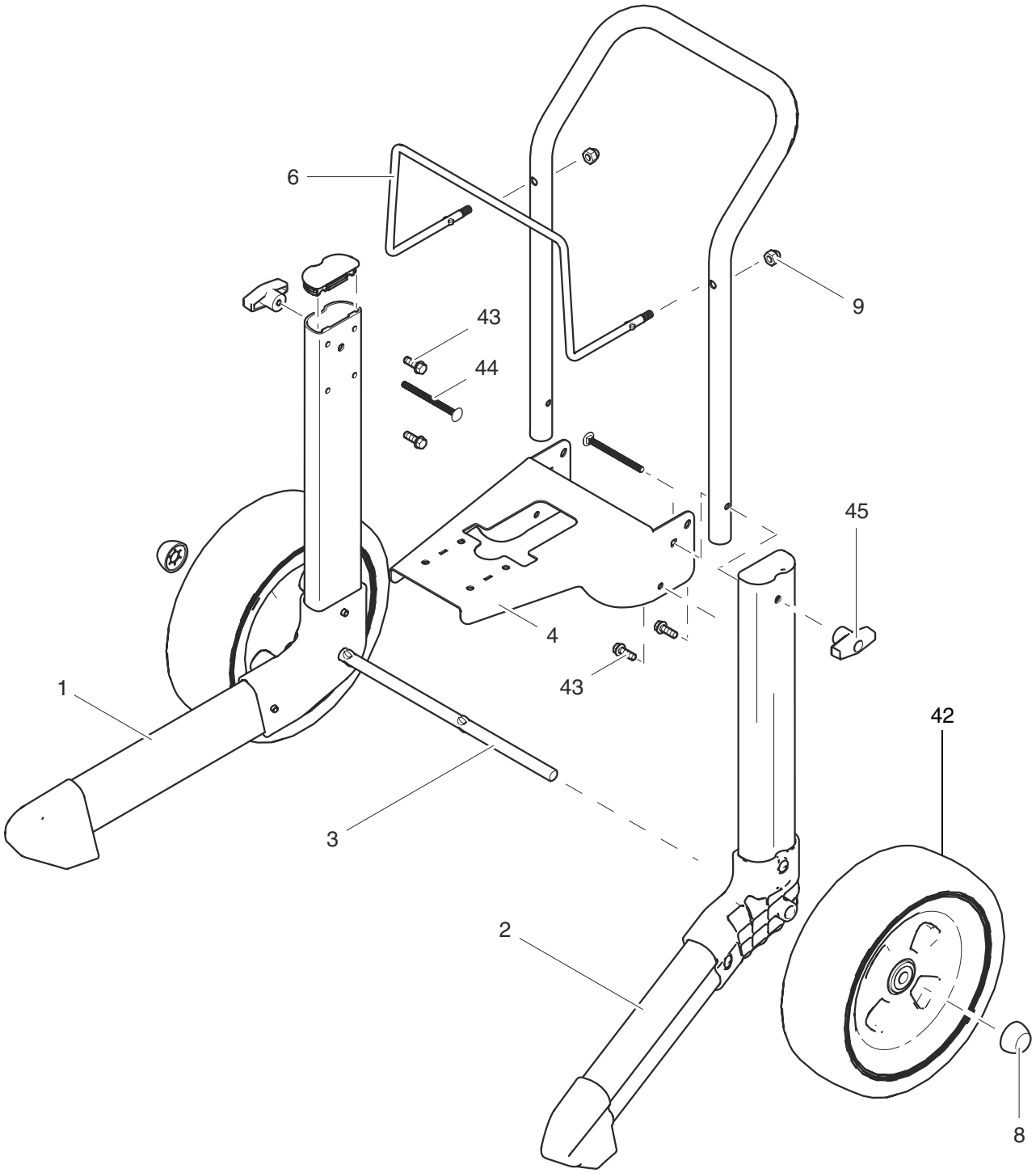
# Magnum ProLTS 19 Frame

## Model 16W122



# Parts List

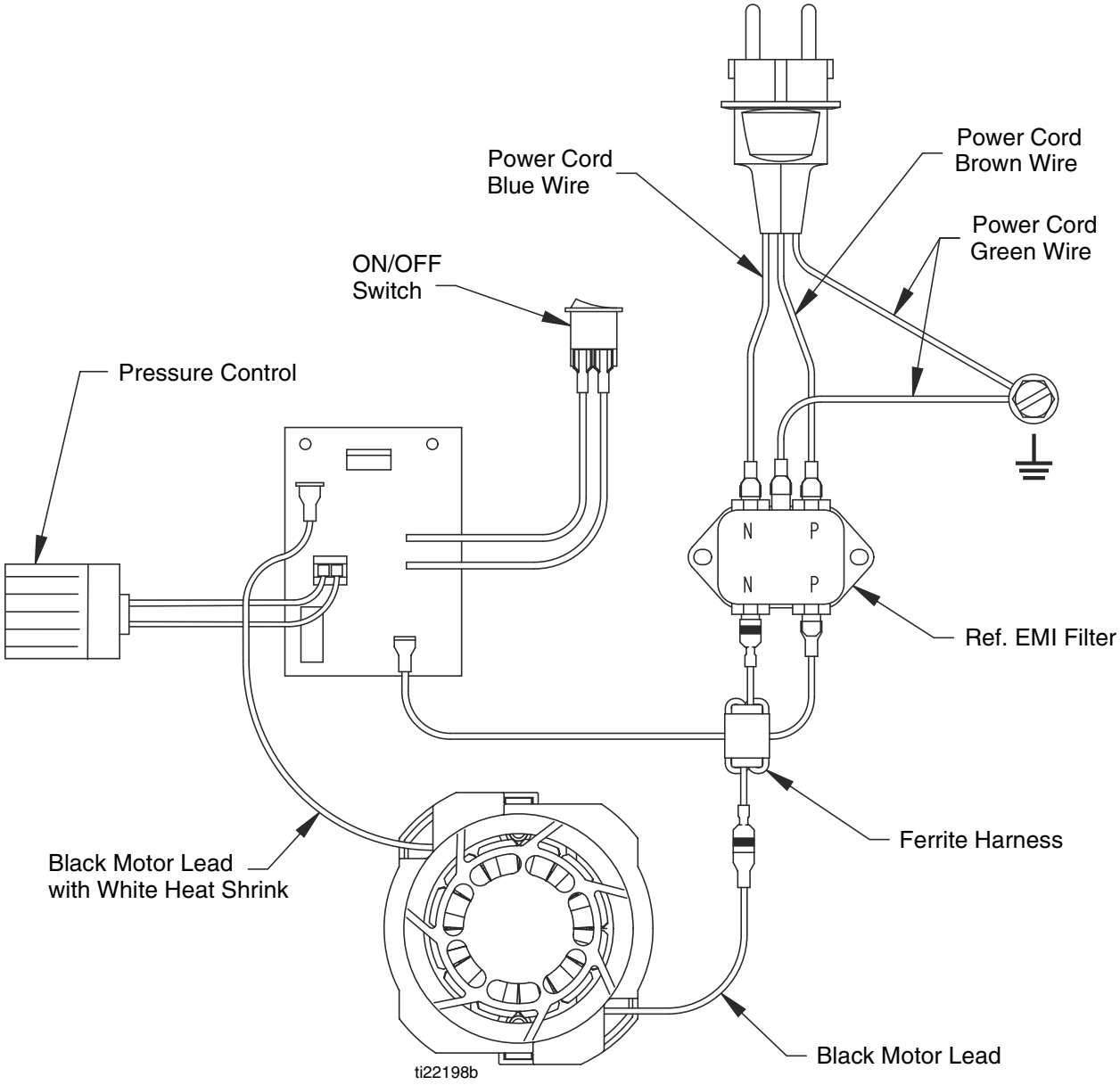
## Magnum ProLTS 19 Model 16W122

| Ref. | Part | Description | Qty. |
|---|---|---|---|
| 1 | 262014 | KIT, repair, right leg (includes 43) | 1 |
| 2 | 262012 | KIT, repair, left leg (includes 43) | 1 |
| 3 | 15R602 | AXLE, cart | 1 |
| 4 | 16W200 | SHELF, motor | 1 |
| 6 | 257326 | RACK, hose | 1 |
| 7 | 256993 | HANDLE, painted | 1 |
| 8 | 112612 | CAP, hub | 2 |
| 9 | 120689 | NUT, hex, acorn, 5/16-18, nickel | 2 |
| 42 | 115095 | WHEEL, 9 in. | 2 |
| 43 | 260212 | SCREW, hex washer, hd, thd form | 4 |
| 44 | 120788 | SCREW, carriage | 2 |
| 45 | 115480 | KNOB, t-handle | 2 |

# Wiring Diagrams

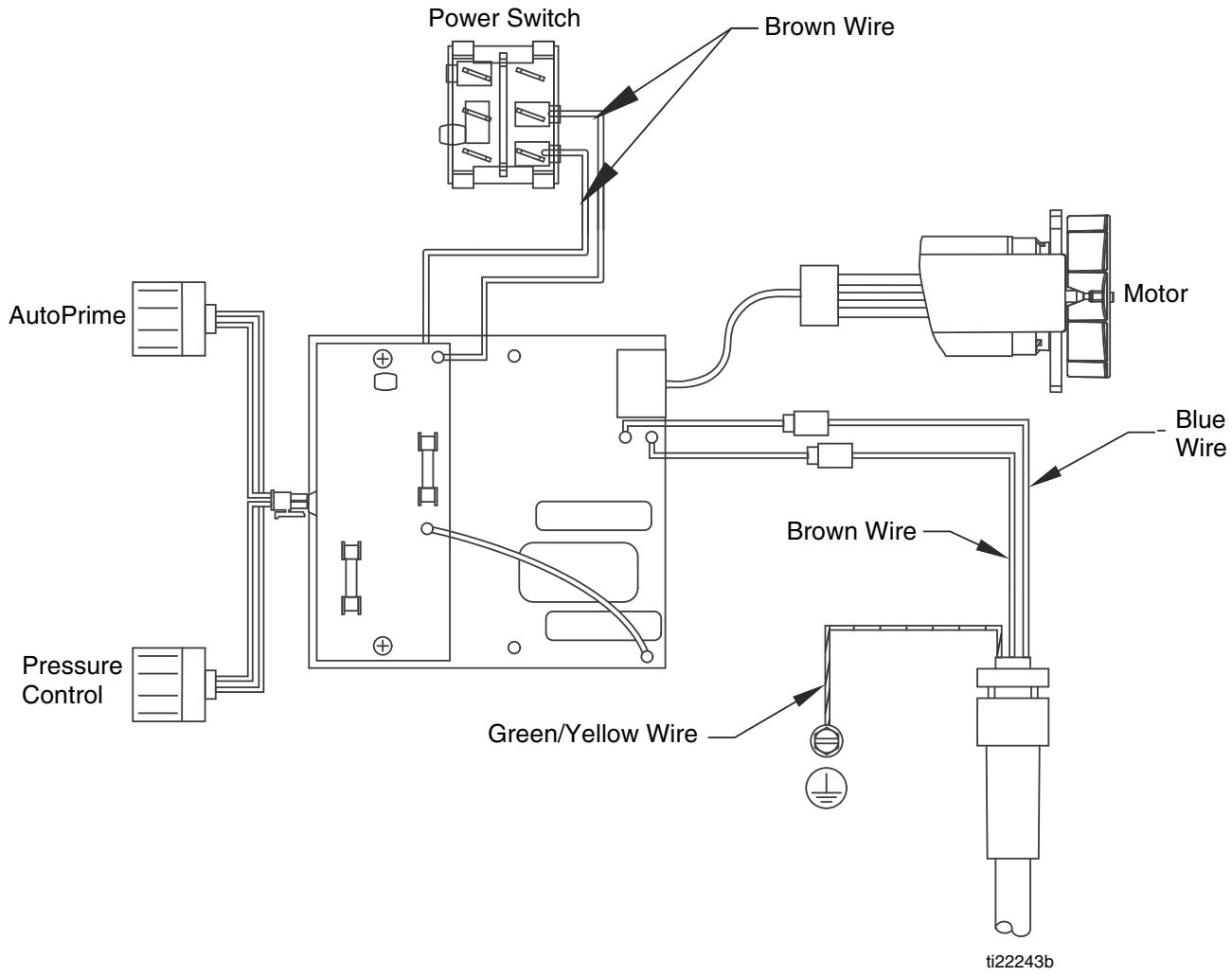
## Magnum LTS 15 and LTS 17

### Models 16W120 and 16W121



# Magnum ProLTS 19

## Model 16W122



# Technical Data

| | LTS 15 | LTS 17 | ProLTS 19 |
|---|---|---|---|
| Working pressure range | 0-207 BAR, 0-21 Mpa (0-3000 psi) | | |
| Electric Motor | 4.5A (open frame, universal) | | 6.5A (open frame, permanent magnet DC) |
| Operating horsepower | 1/2 | 5/8 | 7/8 |
| Maximum delivery (with tip) | 1.02 lpm (.27 gpm) | 1.17 lpm (.31 gpm) | 1.44 lpm (.38 gpm) |
| Paint hose | 6.4mm X 7.5 m (1/4 in. x 25 ft) | 6.4mm X 15 m (1/4 in. x 50 ft) | |
| Maximum tip hole size | 0.015 in (0.38 mm) | 0.017 in (0.43 mm) | 0.019 in (0.48 mm) |
| Weight, Sprayer only | 5.4 kg (12 lb) | 10.6 kg (23.3 lb) | 15 kg (33.0 lb) |
| Weight, sprayer, hose, & gun | 6.9 kg (15.2 lb) | 12.1 kg (26.5 lb) | 17.1 kg (37.7 lb) |
| Dimensions (Upright): | | | |
| Length | 36.8 cm (14.5 in) | 49.0 cm (19.3 in) | 54 cm (21.3 in) |
| Width | 31.5 cm (12.4 in) | 38.9 cm (15.3 in) | 38.9 cm (15.3 in) |
| Height | 45.5 cm (17.9 in) | 94.0 cm (37.0 in) | 93.2 cm (36.7 in) |
| Dimensions (Folded): | | | |
| Length | N/A | 49.0 cm (19.3 in) | 54 cm (21.3 in) |
| Width | N/A | 38.9 cm (15.3 in) | 38.9 cm (15.3 in) |
| Height | N/A | 74.2 cm (29.2 in) | 75.7 cm (29.8 in) |
| Power cord | 1.0 $mm^2$, 3-wire, 1.8 m (6 ft) | | |
| Fluid inlet fitting | 1/4 npsm external thread | | |
| Fluid outlet fitting | 3/4 in. internally threaded (standard garden hose) | | 7/8 - 14 UNF external thread |
| Inlet screen (on suction tube) | 1190 micron (16 mesh) | | 1680 micron (12 mesh) |
| Generator requirement | 1500 Watt minimum | | |
| Wetted parts, pump and hose | stainless steel, zinc plated carbon steel, brass, ultra-high molecular weight polyethylene (UHMWPE), Carbide, Nylon, Aluminum, PVC, polypropylene, fluroelastomer | | stainless steel, zinc plated carbon steel, brass, leather, ultra-high molecular weight polyethylene (UHMWPE), Carbide, Nylon, Aluminum, PVC, polypropylene, fluroelastomer |
| Wetted parts, gun | aluminum, brass, carbide, nylon, ultra-high molecular weight polyethylene (UHMWPE), zinc | | |
| Electrical power requirement | 220-240V AC 50/60 Hz, I phase, 10A | | |
| Storage temperature range◆❖ | -35° to 71° C (-30° to 160° F) | | |
| Operating temperature range✔ | 4° to 46° C (40° to 115° F) | | |

◆ When pump is stored with non-freezing fluid. Pump damage will occur if water or latex paint freezes in pump.
❖ Damage to plastic parts may result if impact occurs in low temperature conditions.
✔ Changes in paint viscosity at very low or very high temperatures can affect sprayer performance.

# Notes

# Graco Standard Warranty

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