

# Service Instructions

Form No. 309044

Rev. B



This manual contains important warnings and information.  
**READ AND KEEP FOR REFERENCE.**

INSTRUCTIONS



This manual contains service instructions only. See manual 309043 for operating instructions.

**MAGNUM**<sup>TM</sup>  
by GRACO

## XR Series Airless Sprayers

### MAGNUM XR5, Model 232740, Series A

0.24 gpm (0.91 lpm) stand-mount sprayer, 25 ft (7.6 m) hose, and SG1 spray gun with reversible spray tip and tip guard

*2800 psi (19 MPa, 193 bar) Maximum Working Pressure*

### MAGNUM XR7, Model 232745, Series A

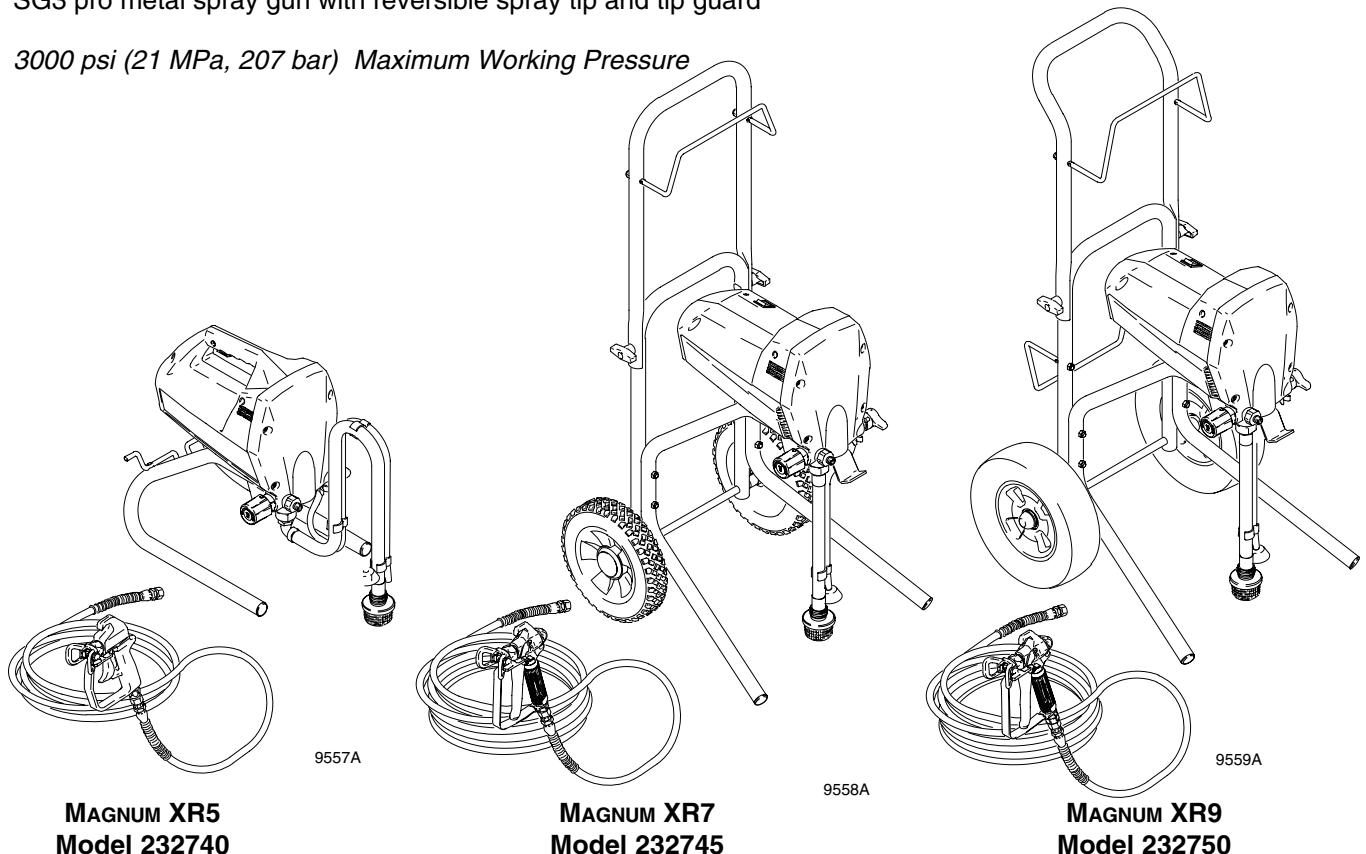
0.31 gpm (1.17 lpm) sprayer on heavy-duty cart, 50 ft (15.2 m) hose, and SG2 metal spray gun with reversible spray tip and tip guard

*3000 psi (21 MPa, 207 bar) Maximum Working Pressure*

### MAGNUM XR9, Model 232750, Series A

0.38 gpm (1.44 lpm) sprayer on heavy-duty deluxe cart, 50 ft (15.2 m) hose, and SG3 pro metal spray gun with reversible spray tip and tip guard

*3000 psi (21 MPa, 207 bar) Maximum Working Pressure*



**MAGNUM XR5**  
**Model 232740**

**MAGNUM XR7**  
**Model 232745**

**MAGNUM XR9**  
**Model 232750**



GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441

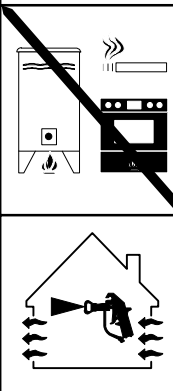
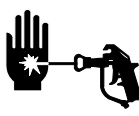
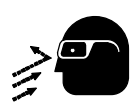
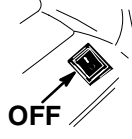
©COPYRIGHT 2000, GRACO INC.

Graco Inc. is registered to I.S. EN ISO 9001

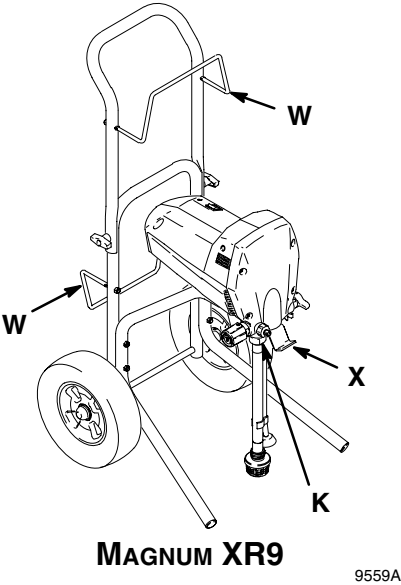
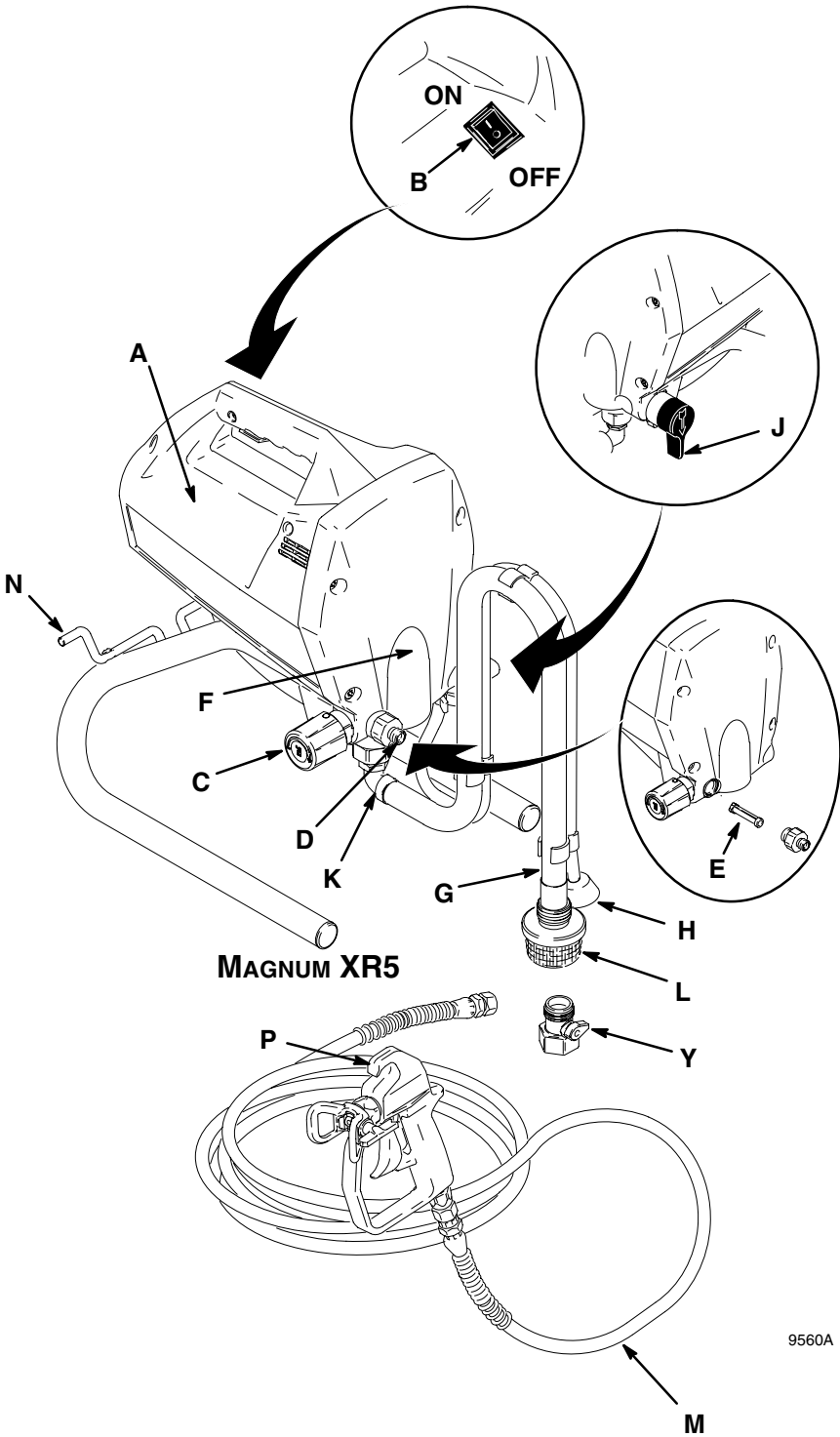
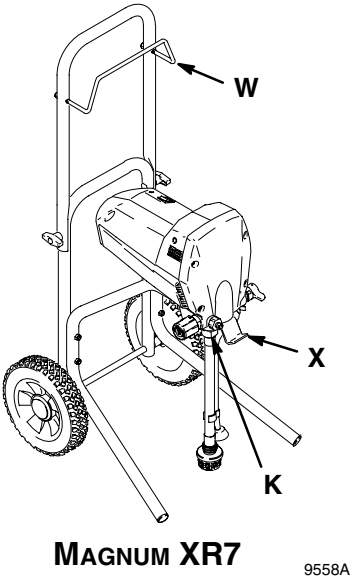
# Table of Contents

|                                             |    |
|---------------------------------------------|----|
| Warnings .....                              | 3  |
| Component Identification and Function ..... | 4  |
| Pressure Relief Procedure .....             | 6  |
| Grounding and Electrical Requirements ..... | 6  |
| General Repair Information .....            | 7  |
| Basic Troubleshooting .....                 | 8  |
| Advanced Troubleshooting .....              | 10 |
| List of Kits .....                          | 15 |
| Motor Diagnostics .....                     | 16 |
| Control Board Diagnostics .....             | 16 |
| Control Board Kit .....                     | 17 |
| Motor Kit .....                             | 18 |
| Pump Service                                |    |
| Packing Module Kit .....                    | 20 |
| Pressure Control Switch Kit .....           | 22 |
| Inlet Valve Kit .....                       | 23 |
| Outlet Valve Kit .....                      | 23 |
| Pump Replacement Kit .....                  | 25 |
| Gear/Yoke Kit .....                         | 27 |
| Spray–Prime/Drain Valve Kit .....           | 28 |
| Technical Data .....                        | 29 |
| Parts                                       |    |
| Model 232740 XR5 Magnum Sprayer .....       | 30 |
| Model 232745 XR7 Magnum Sprayer .....       | 32 |
| Model 232750 XR9 Magnum Sprayer .....       | 34 |
| Limited Warranty .....                      | 36 |

# Warnings

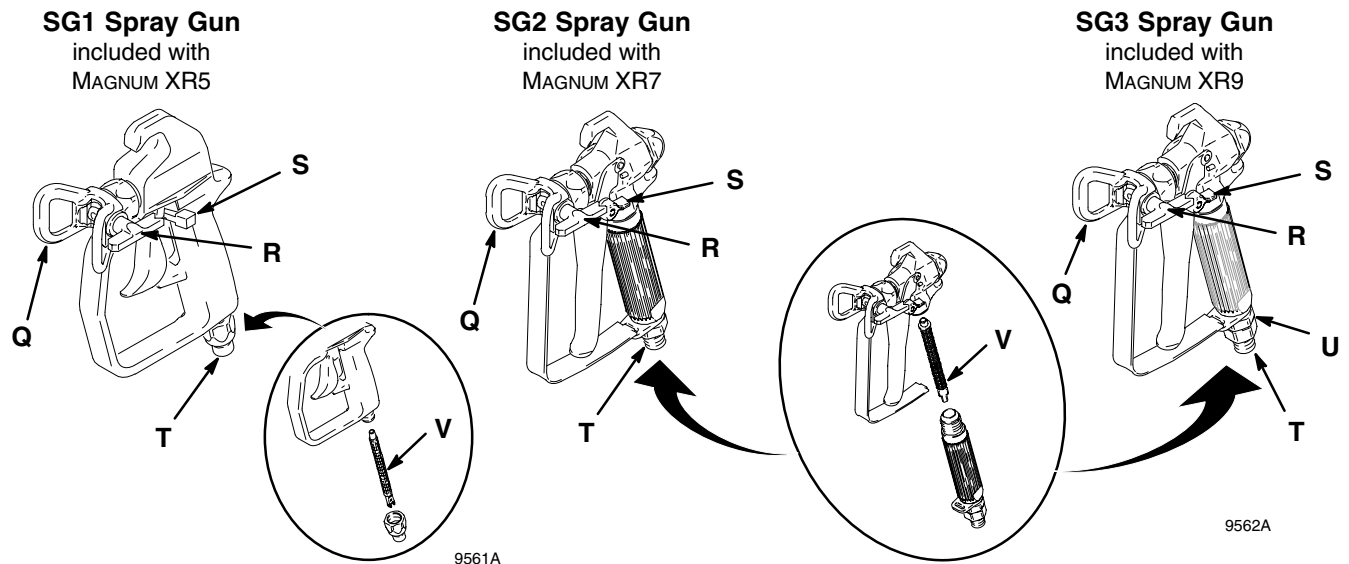
|  <b>WARNING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                   |  <b>WARNING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <p><b>FIRE AND EXPLOSION HAZARD</b><br/>A fire and explosion hazard exists any time you spray or flush flammable fluids.</p> <p><b>To help prevent fire or explosion when spraying flammable fluids</b></p> <ul style="list-style-type: none"> <li>• Be sure sprayer is adequately grounded through electrical outlet by               <ul style="list-style-type: none"> <li>– Using only grounded electrical outlets.</li> <li>– Using only 3-wire extension cords.</li> <li>– Making sure ground prongs are intact on sprayer and extension cords.</li> </ul> </li> <li>• The motor in this sprayer is a source of sparks. Keep sprayer in a well-ventilated area, at least 20 feet (6 meters) away from spray gun when spraying or flushing.</li> <li>• Do not use plastic drop cloths when spraying or flushing flammable fluids.</li> <li>• Avoid all ignition sources such as static electricity from plastic drop cloths, open flames such as pilot lights, hot objects such as cigarettes, and arcs from connecting or disconnecting power cords and turning light switches off or on.</li> <li>• Tape wall switches to prevent them from being turned off or on.</li> <li>• Do not smoke in spray area.</li> <li>• Use only MAGNUM or Graco airless paint hoses.</li> <li>• Use outdoors or in a well-ventilated area.</li> </ul> | <br>                                                                                            | <p><b>EQUIPMENT MISUSE HAZARD</b><br/>Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment such as this sprayer and spray gun. Such use could result in a chemical reaction, with the possibility of explosion.</p>                                                                                                                                                                                                                                                                                                   |    |
| <p><b>FLUID INJECTION HAZARD</b><br/>If high-pressure fluid pierces your skin, the injury might look like “just a cut,” but it is a serious wound. Get immediate medical attention.</p> <p><b>To help prevent injection</b></p> <ul style="list-style-type: none"> <li>• Always put gun trigger safety in SAFETY ON position when not spraying.</li> <li>• Always shut off power and relieve pressure when you stop spraying and before you service or clean sprayer, remove parts, or repair leaks. See <b>Pressure Relief Procedure</b> on page 6.</li> <li>• Never allow children to use this equipment.</li> <li>• Keep clear of spray tip, and never point spray gun at yourself or anyone else.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <br><br> | <p><b>TOXIC FLUID HAZARD</b><br/>Hazardous fluid or toxic fumes can cause serious injury or death if splashed in the eyes or on the skin, inhaled, or swallowed.</p> <p><b>To help prevent injury or death from toxic fluids</b></p> <ul style="list-style-type: none"> <li>• Know specific hazards of fluid you are using; store hazardous fluid in approved tub; dispose of hazardous fluid according to all local, state, and national guidelines.</li> <li>• Always wear protective eyewear, gloves, clothing, and respirator as recommended by fluid and solvent manufacturer.</li> </ul>                                     |    |
| <p><b>FLUID SPLASHBACK HAZARD</b><br/>To avoid splashback of fluid while spraying, make sure the spray gun is assembled with the correct gasket for the fluid being sprayed. See <i>Operating Instructions</i> manual.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                | <p><b>PRESSURIZED EQUIPMENT HAZARD</b><br/>MAGNUM sprayers are capable of producing up to 3000 psi (21 MPa, 207 bar) maximum working pressure. To avoid component rupture and injury, do not operate sprayer with components rated less than pressure of sprayer.</p> <p>This sprayer is equipped with a drain/prime valve that automatically relieves overpressure in the event of a fault. This automatic overpressure relief may cause splashing of fluid. Correct the fault before you resume spraying.</p> <p><b>NOTE:</b> Inadequate flushing and/or dried paint in drain system may prevent proper overpressure relief.</p> |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                   | <p><b>STARTUP HAZARD AFTER THERMAL OVERLOAD</b><br/>The motor has a thermal overload switch to shut down the motor if it overheats. To reduce the risk of serious injury from the motor restarting unexpectedly when it cools, always turn the Power switch (B) OFF if the motor shuts down.</p>                                                                                                                                                                                                                                                                                                                                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                   | <p><b>ELECTRIC SHOCK HAZARD</b><br/>The spray gun, hose, and sprayer are grounded through the electrical cord of the sprayer.</p> <p><b>To help prevent electric shock</b></p> <ul style="list-style-type: none"> <li>• Use only grounded electrical outlets.</li> <li>• Only use 3-wire extension cords.</li> <li>• Make sure ground prongs are intact on sprayer and extension cords.</li> <li>• Keep electrical connections and inside of enclosures dry.</li> </ul>                                                                                                                                                            |  |

# Component Identification and Function



# Component Identification and Function

|          |                                           |                                                                                                                                                                                                                                                                                        |
|----------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A</b> | Electric motor (inside of enclosures)     | Provides mechanical power to pump                                                                                                                                                                                                                                                      |
| <b>B</b> | Power switch                              | For manually turning on/off electrical power to motor ("I" is ON / "O" is OFF)                                                                                                                                                                                                         |
| <b>C</b> | Pressure Control knob                     | For manually increasing (turn clockwise) and decreasing (turn counter-clockwise) fluid pressure in pump, hose, and spray gun                                                                                                                                                           |
| <b>D</b> | Pump fluid outlet fitting                 | Threaded connection for paint hose                                                                                                                                                                                                                                                     |
| <b>E</b> | InstaClean™ fluid filter                  | <ul style="list-style-type: none"> <li>Filters fluid coming out of pump to reduce tip plugging and improve finish</li> <li>Self cleans during pressure relief</li> </ul>                                                                                                               |
| <b>F</b> | Power-Piston™ pump (behind cover)         | Pumps and pressurizes fluid and delivers it to paint hose                                                                                                                                                                                                                              |
| <b>G</b> | Suction tube                              | Draws fluid from paint pail into pump                                                                                                                                                                                                                                                  |
| <b>H</b> | Drain tube (with diffuser)                | Drains fluid in system during priming and pressure relief                                                                                                                                                                                                                              |
| <b>J</b> | Spray–Prime/Drain valve control           | <ul style="list-style-type: none"> <li>Directs pressurized fluid to paint hose in SPRAY position (pointing forward)</li> <li>Directs fluid to drain tube in PRIME/DRAIN position (pointing down)</li> <li>Automatically relieves system pressure in overpressure situations</li> </ul> |
| <b>K</b> | Fluid inlet connection                    | Where suction tube connects to pump                                                                                                                                                                                                                                                    |
| <b>L</b> | Inlet screen                              | Prevents debris from entering pump                                                                                                                                                                                                                                                     |
| <b>M</b> | Paint hose                                | For transporting high-pressure fluid from pump to spray gun                                                                                                                                                                                                                            |
| <b>N</b> | Cord wrap bracket                         | For stowing electrical cord (MAGNUM XR5 only)                                                                                                                                                                                                                                          |
| <b>P</b> | Airless spray gun                         | Manually-controlled, hand-held on/off device for fluid being sprayed                                                                                                                                                                                                                   |
| <b>Q</b> | Spray gun tip guard                       | Reduces risk of fluid injection injury                                                                                                                                                                                                                                                 |
| <b>R</b> | Spray gun reversible spray tip            | <ul style="list-style-type: none"> <li>Atomizes fluid being sprayed, forms spray pattern, and controls fluid flow according to hole size</li> <li>Reverses for unplugging without disassembly</li> </ul>                                                                               |
| <b>S</b> | Spray gun trigger safety lever            | Prevents accidental triggering of spray gun                                                                                                                                                                                                                                            |
| <b>T</b> | Spray gun fluid inlet fitting             | Threaded connection for paint hose                                                                                                                                                                                                                                                     |
| <b>U</b> | Smooth Glide™ swivel (SG3 spray gun only) | Allows spray gun to swivel without twisting paint hose                                                                                                                                                                                                                                 |
| <b>V</b> | Spray gun fluid filter (in handle)        | Filters fluid entering spray gun to reduce tip plugging and improve finish                                                                                                                                                                                                             |
| <b>W</b> | Hose/Cord wrap bracket                    | For stowing paint hose and electrical cord (MAGNUM XR7 and XR9 only)                                                                                                                                                                                                                   |
| <b>X</b> | Pail hanger                               | For transporting pail by its handle (MAGNUM XR7 and XR9 only)                                                                                                                                                                                                                          |
| <b>Y</b> | Power Flush attachment (included)         | For hooking up garden hose to suction tube for power flushing water-base fluids                                                                                                                                                                                                        |



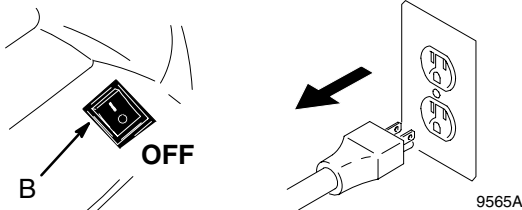
# Pressure Relief Procedure

## WARNING

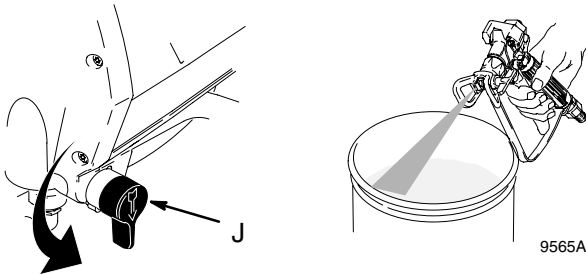


To help prevent injection injuries, follow this procedure when you stop spraying and before you service or clean the sprayer, remove parts, or repair leaks.

1. Turn Power switch (B) to OFF, and unplug sprayer.

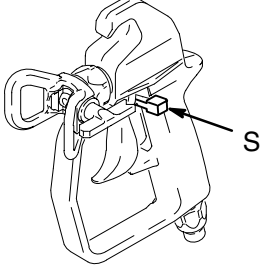


2. Turn Spray–Prime/Drain valve (J) to PRIME/DRAIN to relieve pressure. Trigger gun to relieve pressure that might be in hose.

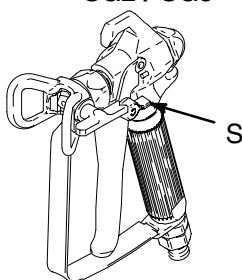


3. Put trigger safety (S) in SAFETY ON position.

SG1



SG2 / SG3



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



9565A

*If you suspect that the spray tip or hose is completely clogged or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen the tip guard retaining nut or hose end coupling to relieve pressure gradually. Then loosen it completely. Then clear the tip or hose obstruction.*

# Grounding and Electrical Requirements

## WARNING



This sprayer requires a 120V AC, 60 Hz, 15A circuit with a grounding receptacle. Never use an outlet that is not grounded. Do not use the sprayer if the electrical cord has a damaged ground prong. Use only an extension cord with an undamaged, 3-prong plug.

Recommended extension cords for use with this sprayer are

- 25 ft (7.6 m) 18 AWG
- 50 ft (15.2 m) 16 AWG
- 100 ft (30.5 m) 14 AWG
- 150 ft (45.7 m) 12 AWG

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

# General Repair Information

## ⚠ WARNING



### **HOT SURFACES HAZARD EXPLOSION HAZARD**

Motor and drive housing may be very hot during operation and could burn skin if touched.



Flammable materials spilled on hot, bare motor could cause fire or explosion. Have enclosures in place during operation to reduce risk of burns, fire, or explosion.

- **Keep all screws, nuts, washers, gaskets, and electrical fittings** that you remove during repair procedures. These parts are not normally provided with replacement assemblies.
- **Test repairs** after problems are corrected.
- **If the sprayer does not operate properly**, review the repair procedure to verify that you did it correctly. See **Troubleshooting** on page 8 and **Advanced Troubleshooting** on page 10.
- **Overspray may build up in the air passages.** Remove any overspray and residue from the air passages and openings in the enclosures whenever you service the sprayer.

**Do not operate the sprayer without the enclosure**, and replace if damaged. Enclosures direct cooling air around the motor to prevent overheating. They also reduce the risk of burns, fire or explosion. Read the following **WARNING**.

## ⚠ WARNING



### **ELECTRIC SHOCK HAZARD MOVING PARTS HAZARD**

To reduce risk of serious injury, including electric shock, do not touch moving or electrical 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.



## ⚠ CAUTION

**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 enclosures allow for air cooling of the mechanical parts and electronics inside. If water gets into 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 the sprayer when it is not in use in cold weather. Freezing fluids can seriously damage the sprayer. Store the sprayer with mineral spirits/paint thinner or Graco Pump Armor to protect equipment during storage.

# Basic Troubleshooting

The following troubleshooting guidelines from the *Operating Instructions* manual are included here as preemptive measures against **Advanced Troubleshooting** on page 10.

| 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 (C) clockwise to increase pressure setting.                                                                                                                            |
|                                                                                                | Motor or control is damaged.                                 | See <b>Motor Does Not Operate</b> on page 10.                                                                                                                                                     |
|                                                                                                | Electrical outlet is not providing power.                    | <ul style="list-style-type: none"> <li>Try a different outlet, or plug in something that you know is working to test outlet.</li> <li>Reset building circuit breaker, or replace fuse.</li> </ul> |
|                                                                                                | Extension cord is damaged.                                   | Replace extension cord. See <b>Grounding and Electrical Requirements</b> on page 6.                                                                                                               |
|                                                                                                | Sprayer electrical cord is damaged.                          | Check for broken insulation or wires. Replace electrical cord if damaged.                                                                                                                         |
| Pump does not prime.                                                                           | Paint is frozen or hardened in pump.                         | See <b>Motor Does Not Operate</b> on page 10.                                                                                                                                                     |
|                                                                                                | Spray–Prime/Drain valve is in SPRAY position.                | Turn Spray–Prime/Drain valve (J) to PRIME/DRAIN position (pointing down).                                                                                                                         |
|                                                                                                | Inlet screen is clogged, or suction tube is not immersed.    | Clean debris off inlet screen (L), and make sure suction tube (G) is at bottom of paint pail.                                                                                                     |
|                                                                                                | Balls in check valve are stuck, or check valves are damaged. | Clean or replace check valves. See <b>Pump Service</b> on page 23.                                                                                                                                |
| Spray gun stopped spraying.                                                                    | Suction tube is leaking.                                     | Tighten suction tube connection (K). Inspect for other cracks or vacuum leaks.                                                                                                                    |
|                                                                                                | Spray tip is plugged.                                        | Unplug spray tip.                                                                                                                                                                                 |
| Pump cycles but does not build up pressure.                                                    | Pump is not primed.                                          | Prime pump.                                                                                                                                                                                       |
|                                                                                                | Inlet screen is clogged, or suction tube is not immersed.    | Clean debris off inlet screen (L), and make sure suction tube (G) is at bottom of paint pail.                                                                                                     |
|                                                                                                | Paint pail is empty.                                         | Refill paint pail, and reprime sprayer.                                                                                                                                                           |
|                                                                                                | Suction tube is leaking.                                     | Tighten suction tube connection (K). Inspect for other cracks or vacuum leaks.                                                                                                                    |
|                                                                                                | Pump check valves are dirty or damaged.                      | Clean or replace check valves. See <b>Pump Service</b> on page 23.                                                                                                                                |
|                                                                                                | Spray–Prime/Drain valve is worn or obstructed with debris    | Check Spray–Prime/Drain valve for debris trapped on seat and worn parts. Torque to 185 in-lb (21 N•m). Replace if parts are worn.<br>See <b>Spray–Prime/Drain Valve Kit</b> on page 28.           |
| Pump cycles, but paint only dribbles or spurts when spray gun is triggered.                    | Pressure is set too low.                                     | Slowly turn Pressure Control knob (C) clockwise to Increase pressure setting to check if sprayer develops more pressure.                                                                          |
|                                                                                                | Spray tip is plugged.                                        | Unplug spray tip.                                                                                                                                                                                 |
|                                                                                                | InstaClean fluid filter is clogged.                          | Clean or replace InstaClean fluid filter (E).                                                                                                                                                     |
|                                                                                                | Spray gun fluid filter is clogged.                           | Clean or replace spray gun fluid filter (V).                                                                                                                                                      |
| Spray pattern is inconsistent or is leaving stripes.                                           | Pressure is set too low.                                     | Turn Pressure Control knob (C) clockwise to increase pressure.                                                                                                                                    |
|                                                                                                | Spray tip is worn beyond capability of sprayer.              | Replace spray tip.                                                                                                                                                                                |

# Basic Troubleshooting

| PROBLEM                                                                                                                                                                                                                                                     | CAUSE                                                                                                                      | SOLUTION                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Pressure is set at maximum, but cannot achieve a good spray pattern.                                                                                                                                                                                        | Spray tip is too big for sprayer.                                                                                          | Select a smaller spray tip.                                                                                       |
|                                                                                                                                                                                                                                                             | Spray tip is worn beyond capability of sprayer.                                                                            | Replace spray tip.                                                                                                |
|                                                                                                                                                                                                                                                             | Extension cord is too long or not a heavy enough gauge.                                                                    | Replace extension cord. See <b>Grounding and Electrical Requirements</b> on page 6.                               |
|                                                                                                                                                                                                                                                             | Spray gun fluid filter is clogged.                                                                                         | Clean or replace spray gun fluid filter (V).                                                                      |
|                                                                                                                                                                                                                                                             | InstaClean fluid filter is clogged.                                                                                        | Clean or replace InstaClean fluid filter (E).                                                                     |
|                                                                                                                                                                                                                                                             | Inlet screen is clogged.                                                                                                   | Clean debris off inlet screen (L).                                                                                |
|                                                                                                                                                                                                                                                             | Pump valves are worn.                                                                                                      | See <b>Output is Low or Fluctuating</b> on page 13.                                                               |
| Motor is hot and runs intermittently.<br><b>NOTE:</b> This is a thermal overload condition. Motor automatically shuts off due to excessive heat.<br>See <b>Startup Hazard After Thermal Overload</b> on page 3. Damage can occur if cause is not corrected. | Vent holes in enclosures 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. See <b>Grounding and Electrical Requirements</b> on page 6.                               |
|                                                                                                                                                                                                                                                             | Unregulated electrical generator being used has excessive voltage.                                                         | Use electrical generator with a proper voltage regulator. Sprayer requires a 120V AC, 60 Hz, 1500-Watt generator. |
|                                                                                                                                                                                                                                                             | Sprayer was operated at high pressure with very small tip, which causes frequent motor starts and excessive heat build up. | Decrease pressure setting or increase tip size.                                                                   |
| Building circuit breaker opens after sprayer operates for 5 to 10 minutes.<br><b>OR</b><br>Building circuit breaker opens as soon as sprayer is plugged into outlet, and sprayer is turned on.                                                              | Too many appliances are plugged in on same circuit.                                                                        | Free up circuit (unplug things), or use a less busy circuit.                                                      |
|                                                                                                                                                                                                                                                             | Sprayer electrical cord is damaged.                                                                                        | Check for broken insulation or wires. Replace electrical cord if damaged.                                         |
| Fan pattern varies dramatically while spraying<br><b>OR</b><br>Sprayer does not turn on promptly when resuming spraying.                                                                                                                                    | Pressure control switch is worn and causing excessive pressure variation.                                                  | See <b>Pressure Control Switch Kit</b> on page 22.                                                                |
| Cannot trigger spray gun.                                                                                                                                                                                                                                   | Spray gun trigger safety lever is in SAFETY ON position.                                                                   | Rotate trigger safety lever (S) to SAFETY OFF position.                                                           |
| Spray comes out of spray gun in two thick streams.                                                                                                                                                                                                          | Reversible spray tip is in UNPLUG position.                                                                                | Rotate arrow-shaped handle on spray tip so it points forward in SPRAY position.                                   |
| Paint is coming out of pressure control switch.                                                                                                                                                                                                             | Pressure control switch is worn.                                                                                           | See <b>Pressure Control Switch Kit</b> on page 22.                                                                |
| Spray-Prime/Drain valve actuates automatically, relieving pressure through drain tube.                                                                                                                                                                      | System is overpressurizing.                                                                                                | See <b>Excessive Pressure is Building Up</b> on page 15.                                                          |
| Paint leaks down outside of pump.                                                                                                                                                                                                                           | Pump packings are worn.                                                                                                    | Replace pump packings. See <b>Pump Service</b> on page 20.                                                        |

# Advanced Troubleshooting



See **Electric Shock Hazard** on page 7.



See **Pressure Relief Procedure** on page 6.

**NOTE:** See **Basic Troubleshooting** on page 8 for the problems that are more easily remedied.

## General Problem: Motor Does Not Operate

| SPECIFIC PROBLEM                                                       | CAUSE                                                                                                                    | SOLUTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power switch is on and sprayer is plugged in, but pump does not cycle. | See <b>Basic Troubleshooting</b> page 8.                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Basic Mechanical Problems                                              | Paint is frozen or hardened in pump.                                                                                     | <b>Unplug sprayer from electrical outlet.</b><br><b>NOTE: If frozen, do not try to start sprayer until completely thawed,</b> or damage to motor, control board, and/or drivetrain may occur.<br>Make sure power switch (B) is OFF. Place sprayer in warm area for several hours, then plug in and turn on. Slowly increase pressure setting to see if motor starts.<br>If paint hardened in sprayer, replace pump packings and remove all residue from valves.<br>See <b>Pump Service</b> on page 20. |
|                                                                        | Motor is damaged.                                                                                                        | Remove gear, and try to rotate motor shaft by hand. See <b>Motor Diagnostics</b> on page 16.<br>Replace motor if shaft will not turn.<br>See <b>Motor Kit</b> on page 18.                                                                                                                                                                                                                                                                                                                              |
|                                                                        | Yoke is broken, because pump is locked up by dried paint or worn packings.                                               | Repair as necessary.<br>See <b>Gear/Yoke Kit</b> on page 27.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Basic Electrical Problems                                              | Motor is overheated.                                                                                                     | Allow to cool for 30 minutes. Retry.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                        | Electrical outlet is damaged.                                                                                            | Reset building circuit breaker or replace building fuse. Try another outlet.<br>Check electric supply with volt meter. Meter must read 85 to 130V AC. If voltage is too high, do not plug sprayer in until outlet is corrected.                                                                                                                                                                                                                                                                        |
|                                                                        | Control board leads are improperly fastened or improperly mated.                                                         | Replace any loose terminals. Make sure all leads and harnesses are firmly connected.<br>Check pressure control harness connection on front side of drive housing.<br>Clean control board terminals. Securely reconnect leads.                                                                                                                                                                                                                                                                          |
|                                                                        | Motor brushes are worn.<br><b>NOTE:</b> Brushes do not wear at the same rate on both sides of motor. Check both brushes. | Check length of brushes. Brush length must be 0.25 in. (6.4 mm) minimum. Replace motor if brushes are worn.<br>See <b>Motor Kit</b> on page 18.                                                                                                                                                                                                                                                                                                                                                        |
|                                                                        | Motor armature commutator is damaged.                                                                                    | Check for burn spots, gouges and extreme roughness. Have motor shop resurface commutator if possible, or replace motor.<br>See <b>Motor Kit</b> on page 18.                                                                                                                                                                                                                                                                                                                                            |

# Advanced Troubleshooting

## General Problem: Motor Does Not Operate (continued)

| SPECIFIC PROBLEM                                                                                                                                                                                                               | CAUSE                                                                                                                                                                                              | SOLUTION                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic Electrical Problems<br>(Continued)                                                                                                                                                                                       | Motor armature is shorting.                                                                                                                                                                        | Check for shorts using armature tester (growler), or perform spin test (see <b>Motor Diagnostics</b> on page 16). Replace motor if shorts are evident.<br>See <b>Motor Kit</b> on page 18.                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                | Control board is damaged.<br><b>CAUTION:</b> Do not perform control board diagnostics until you have determined that the armature is good. A bad motor armature can burn out a good control board. | See <b>Control Board Diagnostics</b> on page 16, and replace control board if damaged.<br>See <b>Control Board Kit</b> on page 17.                                                                                                                                                                                                                                                                     |
| Sprayer Wiring Problems<br><b>NOTE:</b> Remove right enclosure mounting screws, and pull right enclosure away from drive housing. <b>Take care to not pull on the leads from the electrical cord and the Power switch (B).</b> | Sprayer electrical cord is damaged.                                                                                                                                                                | Unplug sprayer electrical cord. Disconnect black electrical cord wire at Power switch (B), and unplug in-line connection of white electrical cord wire. Plug in electrical cord, and test voltage between black and white electrical cord wires. Meter must read 85 to 130V AC.<br>Replace electrical cord if no voltage.                                                                              |
|                                                                                                                                                                                                                                | Sprayer power switch (B) is damaged.                                                                                                                                                               | Unplug sprayer electrical cord. Disconnect black control board wire at Power switch (B), and unplug in-line connection of white electrical cord wire. Plug in electrical cord, turn Power switch ON, and test voltage between open terminal of Power switch and white electrical cord wire. Meter must read 85 to 130V AC.<br>Replace Power switch (B) if no voltage.                                  |
|                                                                                                                                                                                                                                | Thermal overload cutoff switch is damaged.<br>See <b>Startup Hazard After Thermal Overload</b> on page 3.                                                                                          | Unplug sprayer electrical cord. Remove motor harness from control card, and check for continuity between yellow leads of motor harness. If thermal relief switch is open (no continuity), allow motor to cool. If switch remains open after motor cools, replace motor (see <b>Motor Kit</b> on page 18).<br>If thermal relief switch closes after motor cools, find and correct cause of overheating. |
|                                                                                                                                                                                                                                | Terminals are damaged or loose.                                                                                                                                                                    | Replace any damaged terminals, and make sure all terminal connections are tight.                                                                                                                                                                                                                                                                                                                       |

# Advanced Troubleshooting

## General Problem: Circuit Breaker is Tripping

| SPECIFIC PROBLEM                                                                                                                                                                                                                                                                                               | CAUSE                                                                                                                                                                                              | SOLUTION                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Building circuit breaker opens as soon as sprayer is turned on.                                                                                                                                                                                                                                                | Sprayer electrical wiring is pinched, or insulation is damaged.<br>Wires between pressure control switch and control board are pinched.                                                            | Repair or replace any damaged wiring or terminals. Securely reconnect all wires.                                                                                                                                                                                                                                          |
|                                                                                                                                                                                                                                                                                                                | Motor armature is shorting.                                                                                                                                                                        | Check for shorts using armature tester (growler), or perform spin test (see <b>Motor Diagnostics</b> on page 16). Replace motor if shorts are evident.<br>See <b>Motor Kit</b> on page 18.                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                | Control board is damaged.<br><b>CAUTION:</b> Do not perform control board diagnostics until you have determined that the armature is good. A bad motor armature can burn out a good control board. | See <b>Control Board Diagnostics</b> on page 16, and replace control board if damaged.<br>See <b>Control Board Kit</b> on page 17.                                                                                                                                                                                        |
| Building circuit breaker opens as soon as sprayer is plugged into outlet, and sprayer is NOT turned on.<br><b>NOTE:</b> Remove right enclosure mounting screws, and pull right enclosure away from drive housing. <b>Take care to not pull on the leads from the electrical cord and the Power switch (B).</b> | Sprayer electrical cord is damaged.                                                                                                                                                                | Unplug sprayer electrical cord. Disconnect black electrical cord wire at Power switch (B), and unplug in-line connection of white electrical cord wire. Plug in electrical cord, and test voltage between black and white electrical cord wires. Meter must read 85 to 130V AC.<br>Replace electrical cord if no voltage. |
|                                                                                                                                                                                                                                                                                                                | Sprayer Power switch (B) is damaged.                                                                                                                                                               | Unplug sprayer electrical cord, and disconnect wires from Power switch (B). Check resistance of switch with ohmmeter. Reading must be infinity with Power switch OFF, and zero with Power switch ON.<br>Replace Power switch if damaged.                                                                                  |
|                                                                                                                                                                                                                                                                                                                | See also "Basic Electrical Problems" on page 10 and "Sprayer Wiring Problems" on page 11.                                                                                                          |                                                                                                                                                                                                                                                                                                                           |

## General Problem: Motor Operation is Erratic

| SPECIFIC PROBLEM                                                                                                                                                                                                                                            | CAUSE                                                                                     | SOLUTION                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sprayer quits after running for 5 to 10 minutes.                                                                                                                                                                                                            | Electrical outlet is damaged or supplying the wrong voltage.                              | Reset building circuit breaker or replace building fuse. Try another outlet.<br>Check electric supply with volt meter. Meter must read 85 to 130V AC. If voltage is too high, do not use outlet until corrected. |
|                                                                                                                                                                                                                                                             | See also "Basic Electrical Problems" on page 10 and "Sprayer Wiring Problems" on page 11. |                                                                                                                                                                                                                  |
| Motor is hot and runs intermittently.<br><b>NOTE:</b> This is a thermal overload condition. Motor automatically shuts off due to excessive heat.<br>See <b>Startup Hazard After Thermal Overload</b> on page 3. Damage can occur if cause is not corrected. | See <b>Basic Troubleshooting</b> page 9.                                                  |                                                                                                                                                                                                                  |

# Advanced Troubleshooting

## General Problem: Output is Low or Fluctuating

| SPECIFIC PROBLEM                           | CAUSE                                                                                                                                                                                              | SOLUTION                                                                                                                                                                                                                                                                   |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pump cycles, but output is low or surging. | See <b>Basic Troubleshooting</b> page 8.                                                                                                                                                           |                                                                                                                                                                                                                                                                            |
|                                            | Pump valves are worn.                                                                                                                                                                              | Check for worn pump valves as follows:<br>Prime sprayer with paint. Trigger spray gun momentarily. When spray gun trigger is released, pump should cycle momentarily and stop. If pump continues to cycle, pump valves may be worn.<br><b>See Pump Service</b> on page 23. |
|                                            | Spray–Prime/Drain valve is leaking.                                                                                                                                                                | Check Spray–Prime/Drain valve for debris trapped on seat and for worn parts. Torque to 185 in-lb (21 N•m). Replace if parts are worn.<br><b>See Spray–Prime/Drain Valve Kit</b> on page 28.                                                                                |
|                                            | Voltage from electrical outlet is too low. Low voltages reduce sprayer performance.                                                                                                                | Check voltage of outlet. Meter must read 85 to 130V AC.<br><br>Reset building circuit breaker or replace building fuse.<br><br>Repair electrical outlet or try another outlet.                                                                                             |
|                                            | Extension cord is too long or not a heavy enough gauge.                                                                                                                                            | Replace extension cord.<br><b>See Grounding and Electrical Requirements</b> on page 6.                                                                                                                                                                                     |
|                                            | Leads from motor to control board are damaged, loose, or overheated.                                                                                                                               | Be sure terminals are centered and firmly connected. Inspect wiring insulation and terminals for signs of overheating, and replace any loose terminals or damaged wiring. Securely reconnect terminals.                                                                    |
|                                            | Motor brushes are worn.<br><b>NOTE:</b> Brushes do not wear at the same rate on both sides of motor. Check both brushes.                                                                           | Check length of brushes. Brush length must be 0.25 in. (6.4 mm) minimum. Replace motor if brushes are worn.<br><b>See Motor Kit</b> on page 18.                                                                                                                            |
|                                            | Motor brush springs are broken.                                                                                                                                                                    | Replace motor if springs are broken.<br><b>See Motor Kit</b> on page 18.                                                                                                                                                                                                   |
|                                            | 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 switch.<br><b>See Pressure Control Switch Kit</b> on page 22.                                                                                                                                                                                     |
|                                            | Motor armature is shorting.                                                                                                                                                                        | Check for shorts using armature tester (growler), or perform spin test (see <b>Motor Diagnostics</b> on page 16). Replace motor if shorts are evident.<br><b>See Motor Kit</b> on page 18.                                                                                 |
|                                            | Control board is damaged.<br><b>CAUTION:</b> Do not perform control board diagnostics until you have determined that the armature is good. A bad motor armature can burn out a good control board. | <b>See Control Board Diagnostics</b> on page 16, and replace control board if damaged.<br><b>See Control Board Kit</b> on page 17.                                                                                                                                         |

# Advanced Troubleshooting

## General Problem: Output is Low or Fluctuating (continued)

| SPECIFIC PROBLEM                                                  | CAUSE                                                                                                                                                                                              | SOLUTION                                                                                                                                                                                                |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Motor runs and pump cycles, but pressure does not build up.       | Intake valve ball or outlet valve ball is not seating properly.                                                                                                                                    | Remove and clean valves, and check balls and seats for nicks; replace if necessary. Strain paint before spraying to remove particles that could clog pump.<br>See <b>Pump Service</b> on page 23.       |
|                                                                   | Pump packings are worn or damaged.                                                                                                                                                                 | Check for leaking around throat packing nut. Replace pump packings if there are leaks.<br>See <b>Pump Service</b> on page 20.                                                                           |
|                                                                   | Spray–Prime/Drain valve is leaking.                                                                                                                                                                | Check Spray–Prime/Drain valve for debris trapped on seat and for worn parts. Torque to 185 in-lb (21 N•m). Replace if parts are worn.<br>See <b>Spray–Prime/Drain Valve Kit</b> on page 28.             |
| Spray pattern has variations, or pressure fluctuates excessively. | Leads from motor to control board are damaged, loose, or overheated.                                                                                                                               | Be sure terminals are centered and firmly connected. Inspect wiring insulation and terminals for signs of overheating, and replace any loose terminals or damaged wiring. Securely reconnect terminals. |
|                                                                   | Pressure control switch leads are pinched between pump and drive housing or between front cover and drive housing.                                                                                 | Make sure pressure control harness is routed behind pump, through retention clip, and connected to control board connector at back of drive housing (connected with tab to the right).                  |
|                                                                   | Control board is damaged.<br><b>CAUTION:</b> Do not perform control board diagnostics until you have determined that the armature is good. A bad motor armature can burn out a good control board. | See <b>Control Board Diagnostics</b> on page 16, and replace control board if damaged.<br>See <b>Control Board Kit</b> on page 17.                                                                      |
|                                                                   | Pressure control switch is damaged.                                                                                                                                                                | Replace pressure control switch.<br>See <b>Pressure Control Switch Kit</b> on page 22.                                                                                                                  |

## General Problem: There is No Output

| SPECIFIC PROBLEM                                                       | CAUSE                                                                    | SOLUTION                                                                                                      |
|------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Power switch is on and sprayer is plugged in, but pump does not cycle. | See <b>Basic Troubleshooting</b> page 8.                                 |                                                                                                               |
| Motor runs, but pump does not cycle.                                   | Gear and/or yoke are damaged.                                            | Replace gear and yoke.<br>See <b>Gear/Yoke Kit</b> on page 27.                                                |
| Motor does not run.                                                    | Water or paint entered pressure control switch or shorted control board. | Clean out and/or dry out, and retry. Replace if necessary. See <b>Pressure Control Switch Kit</b> on page 22. |

# Advanced Troubleshooting

## General Problem: Excessive Pressure is Building Up

| SPECIFIC PROBLEM                                                                       | CAUSE                                                                    | SOLUTION                                                                                                                           |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Spray–Prime/Drain valve actuates automatically, relieving pressure through drain tube. | Pressure control switch is worn.                                         | Replace pressure control switch.<br>See <b>Pressure Control Switch Kit</b> on page 22.                                             |
|                                                                                        | Water or paint entered pressure control switch or shorted control board. | Clean out and/or dry out, and retry. Replace if necessary. See <b>Pressure Control Switch Kit</b> on page 22.                      |
|                                                                                        | Control board has failed.                                                | See <b>Control Board Diagnostics</b> on page 16, and replace control board if damaged.<br>See <b>Control Board Kit</b> on page 17. |

## List of Kits

| Kit Number | Kit Description                                                                                                                                                                                                        |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 235014     | Spray–Prime/Drain Valve                                                                                                                                                                                                |
| 243082     | Inlet Strainer (for inlet of suction tube)                                                                                                                                                                             |
| 243090     | XR Pump Repair (pump packing module)                                                                                                                                                                                   |
| 243093     | XR Pump Inlet Valve Module                                                                                                                                                                                             |
| 243094     | XR Pump Outlet Valve Module                                                                                                                                                                                            |
| 243095     | Pump Rod                                                                                                                                                                                                               |
| 243096     | Drain Tube Diffuser                                                                                                                                                                                                    |
| 243227     | XR5 Pressure Control Switch                                                                                                                                                                                            |
| 243521     | XR7/XR9 Pressure Control Switch                                                                                                                                                                                        |
| 243228     | XR5/XR7 Control Board                                                                                                                                                                                                  |
| 243229     | XR9 Control Board                                                                                                                                                                                                      |
| 243231     | Fan/Shroud/Brace                                                                                                                                                                                                       |
| 243230     | Gear/Yoke/Guides                                                                                                                                                                                                       |
| 243232     | XR5 Enclosure (includes both sides, labels, and screws)                                                                                                                                                                |
| 243234     | XR7/XR9 Enclosure (includes both sides, labels, and screws)                                                                                                                                                            |
| 243236     | XR Motor/Drive Housing                                                                                                                                                                                                 |
| 243237     | Front Cover/Bearing                                                                                                                                                                                                    |
| 243533     | XR Pump Replacement (complete pump*)<br>* Does not include XR5 Pressure Control Switch 243227 or XR7/XR9 Pressure Control Switch 243521. Re-use pressure control switch from pump being replaced, or order separately. |

# Motor Diagnostics

See Service Drawing on page 18.

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



See **Electric Shock Hazard** on page 7.



See **Pressure Relief Procedure** on page 6.

## Setup

1. **Unplug electrical cord, and relieve pressure.**
2. Remove right enclosure, and disconnect motor harness from control board.
3. Remove fan brace.
4. Remove the four cover screws and front cover.
5. Remove yoke and guide rods, and remove gear.

## Armature Short Circuit Test (Spin Test)

Quickly turn motor fan by hand. If there are no electrical shorts, fan coasts two or three revolutions before stopping. If fan does not spin freely, armature is shorted. Replace motor. See **Motor Kit** on page 18.

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

1. Connect red and black motor leads together with test lead. Turn motor fan by hand at about two revolutions per second.
2. If there is uneven resistance or no resistance, replace motor. See **Motor Kit** on page 18.

# Control Board Diagnostics

See Service Drawing on page 18.

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



See **Electric Shock Hazard** on page 7.



See **Pressure Relief Procedure** on page 6.

1. **Unplug electrical cord, and relieve pressure.**
2. Remove the four cover screws and front cover.
3. Remove yoke and guide rods, and remove gear.
4. Remove pressure control harness from control board. **Using fingernail or tip of small, flat-blade screwdriver, press tab on right side connector to release.**

5. Attach to the control board a harness from a pressure switch that you know is functioning correctly.

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

6. Turn pressure control adjustment knob one turn clockwise (increase pressure setting).
7. Plug electrical cord into 120V AC receptacle, and turn Power switch (B) ON.
  - If motor runs, replace pressure switch.
  - If motor does not run, replace control board and repeat test. See **Control Board Kit** on page 17.

# Control Board Kit

XR5/XR7 Control Board Replacement Kit 243228

XR9 Control Board Replacement Kit 243229

If **Control Board Diagnostics** (page 16) indicate a damaged control board, replace the control board as follows:



See **Electric Shock Hazard** on page 7.

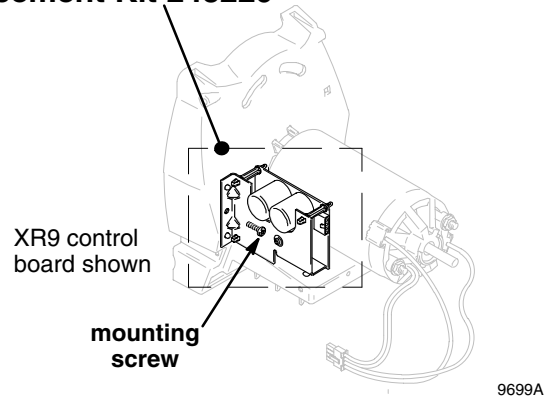


See **Pressure Relief Procedure** on page 6.

## Disassembly

See **Service Drawing** on page 18.

1. **Unplug electrical cord, and relieve pressure.**
2. Remove right enclosure mounting screws, and pull right enclosure away from drive housing. **Take care to not pull on the leads from the electrical cord and the Power switch (B).**
3. Disconnect motor harness and electrical cord and Power switch leads from control board.
4. Remove screw that mounts control board, and pull control board 2 in. (50 mm) back from drive housing.
5. Disconnect pressure control harness from control board connector. **Using fingernail or tip of small, flat-blade screwdriver, press tab on right side of connector to release.**

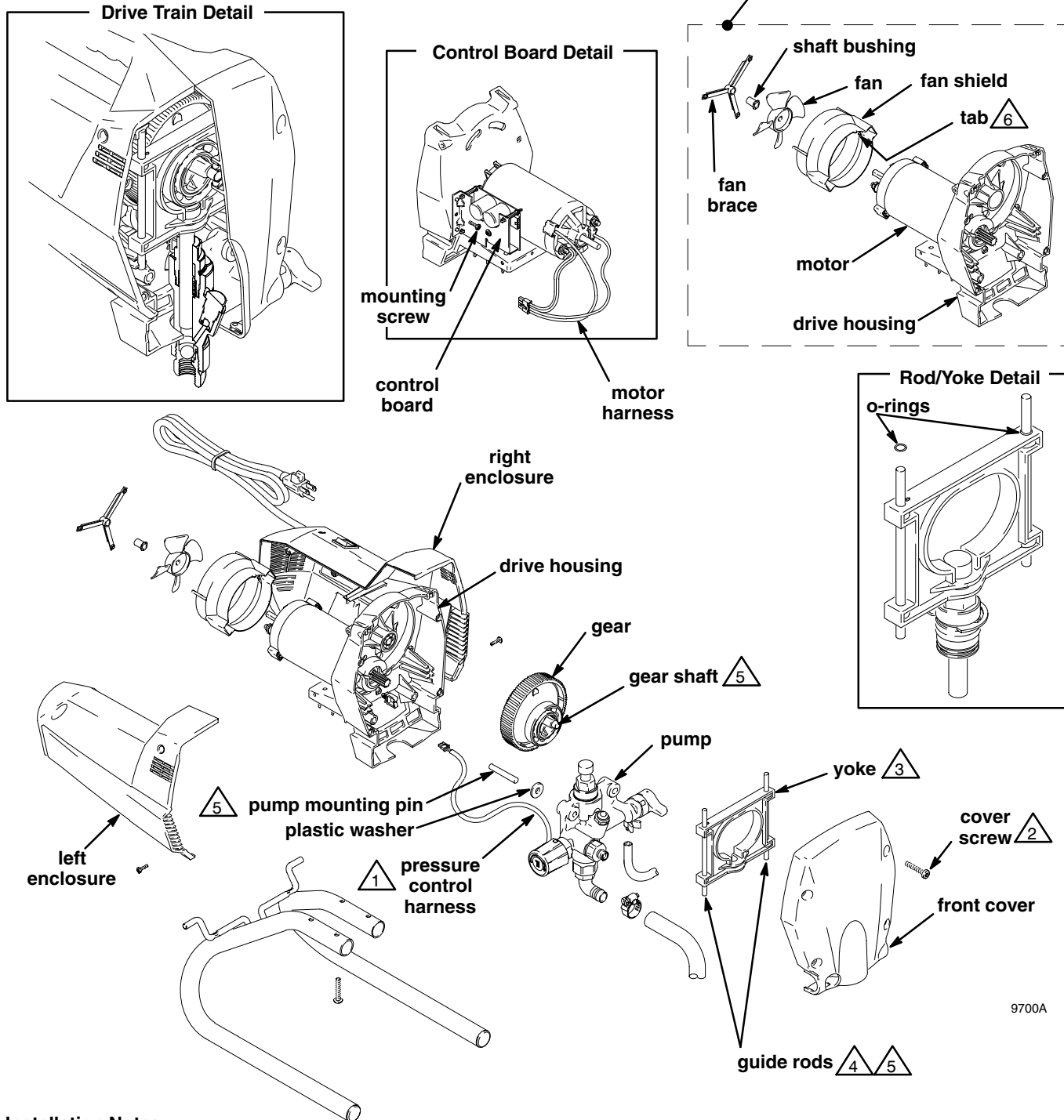


## Installation

1. Connect pressure control harness to new control board connector.
2. Install new control board on drive housing, and tighten control board mounting screw.
3. Connect electrical cord and Power switch leads and motor harness to control board.
4. Replace right enclosure, and tighten enclosure mounting screws.

# Motor Kit

## XR Motor/Drive Housing Replacement Kit 243236



### Installation Notes

To prevent misalignment, assemble sprayer tipped onto back of enclosure.

- 1 Take care to not pinch harness between pump and any part of drive housing or between front cover and drive housing.
- 2 For best cover alignment, tighten lower two cover screws first, then top two. Torque screws to 70 to 80 in-lb (8 to 9 N•m).
- 3 For yoke installation, eccentric bearing on gear must touch top of pump rod. Turn gear to move eccentric bearing to proper height.
- 4 If yoke guide rods drop out of position during assembly, damage will occur when cover is tightened. Always check position of guide rods before tightening cover.
- 5 Apply light coat of grease.
- 6 Orient tab and "TOP" to top of fan shield.

# Motor Kit

## XR Motor/Drive Housing Replacement Kit 243236

If **Motor Diagnostics** (page 16) reveal a damaged motor, or if either of the motor brushes are shorter than 1/4 in. (6.4 mm), or if the motor shaft cannot turn, replace the motor as follows:

### Disassembly



See **Electric Shock Hazard** on page 7.



See **Pressure Relief Procedure** on page 6.

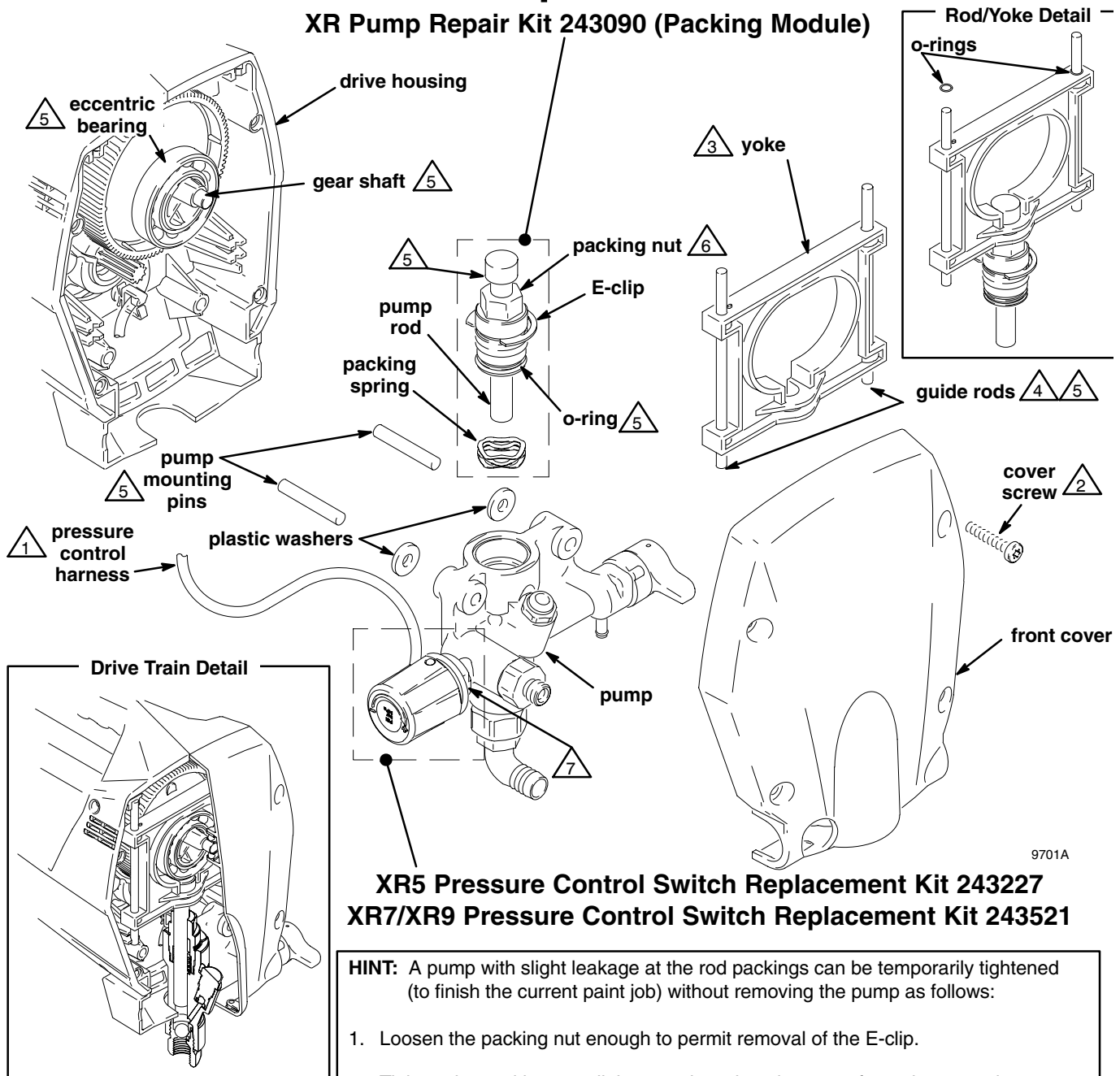
1. **Unplug electrical cord, and relieve pressure.**
2. Remove the four cover screws and front cover.
3. Remove yoke and guide rods.
4. Disconnect pressure control harness from control board connector at back of drive housing. **Using fingernail or tip of small, flat-blade screwdriver, press tab on right side of connector to release.**
5. Remove pump and the two mounting pins from drive housing.
6. Remove gear.
7. Remove enclosure mounting screws from both side enclosures. Fully remove left enclosure from sprayer. Pull right enclosure away from drive housing. **Take care to not pull on the leads from the electrical cord and the Power switch (B).**
8. Disconnect motor harness from back of control board.
9. Remove screw that mounts control board, and remove control board from drive housing.
10. Carefully pull 3-legged fan brace from pegs on fan shield. Use rag or glove to protect your fingers, and pull fan off motor shaft.
11. Pull fan shield from motor. **Note how the motor leads are routed through the arches and slots of the fan shield.**
12. Remove stand (XR5) or cart (XR7 or XR9) legs from drive housing.

### Installation

- Read all **Installation Notes** in service drawing on facing page.
  - To prevent misalignment, assemble sprayer tipped onto back of enclosure.
1. Install stand (XR5) or cart (XR7 or XR9) legs on new drive housing.
  2. Carefully route the motor leads as you observed them in Step 11 of **Disassembly** (yellow wires above black wire).
  3. Install new fan shield on new motor. Orient tab and "TOP" to top of fan shield.
  4. Install new fan on motor shaft.
  5. Install shaft bushing on new motor shaft, and install new 3-legged fan brace in pegs on fan shield.
  6. Install control board on new drive housing, and tighten control board mounting screw. See **Control Board Detail** on facing page.
  7. Plug new motor harness into back of control board.
  8. Reinstall enclosures on sprayer, and install and tighten enclosure mounting screws.
  9. Install gear in new drive housing so teeth engage with drive pinion of motor.
  10. Route pressure control harness behind pump through retention clip, and connect to control board connector at back of drive housing (connect with tab to the right).
  11. Install pump on mounting pins. **Make sure the plastic washers are between the drive housing and the pump.**
  12. Install yoke with rod cap in slot of yoke, as shown in **Rod/Yoke Detail** on facing page.
  13. Check final assembly against **Drive Train Detail** on facing page.
  14. Install front cover and cover screws.

# Pump Service

## XR Pump Repair Kit 243090 (Packing Module)



## XR5 Pressure Control Switch Replacement Kit 243227 XR7/XR9 Pressure Control Switch Replacement Kit 243521

**HINT:** A pump with slight leakage at the rod packings can be temporarily tightened (to finish the current paint job) without removing the pump as follows:

1. Loosen the packing nut enough to permit removal of the E-clip.
2. Tighten the packing nut all the way down into the pump for a short-term increase in the sealing effect of the rod packings.
3. Repack the pump (XR Pump Repair Kit 243090) as soon as possible, because paint leakage can get onto the gear and shorten its life.

### Installation Notes

To prevent misalignment, assemble sprayer tipped onto back of enclosure.

1. Take care to not pinch harness between pump and any part of drive housing or between front cover and drive housing.
2. For best cover alignment, tighten lower two cover screws first, then top two. Torque screws to 70 to 80 in-lb (8 to 9 N•m).
3. For yoke installation, eccentric bearing on gear must touch top of pump rod. Turn gear to move eccentric bearing to proper height.
4. If yoke guide rods drop out of position during assembly, damage will occur when cover is tightened. Always check position of guide rods before tightening cover.
5. Apply light coat of grease.
6. Torque to 120 to 150 in-lb (14 to 17 N•m).
7. Apply one or two drops of thread locking adhesive (included in Kits 243227 and 243521) to threads of pressure control switch. Torque to 180 to 210 in-lb (20 to 24 N•m).

# Pump Service

## XR Pump Repair Kit 243090 (Packing Module)

### CAUTION

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

When the pump packings wear, paint begins to leak down the outside of the pump. Replace the pump packings at the first sign of leaking, or additional damage could occur. Install the pump repair kit as follows:

#### Disassembly



See **Electric Shock Hazard** on page 7.



See **Pressure Relief Procedure** on page 6.

1. **Unplug electrical cord, and relieve pressure.**
2. Remove the four cover screws and front cover.
3. Remove yoke and guide rods.
4. Disconnect pressure control harness from control board connector at back of drive housing. **Using fingernail or tip of small, flat-blade screwdriver, press tab on right side of connector to release.**
5. Remove pump from drive housing.
6. Place pump on workbench or in vise.
7. Remove any dried paint from around existing packing module.
8. Unscrew pump packing module from top of pump, remove packing spring and any fragments from recess in pump, and clean out all residue.

#### Installation

- Read all **Installation Notes** in service drawing on facing page.
  - To prevent misalignment, assemble sprayer tipped onto back of enclosure.
1. Position new rod in new packing module so top of rod is 1.5 in. (38 mm) from top of packing nut. **Take care that the packings or male adapter do not fall out of the packing module.**
  2. Place new packing spring into recess in pump, guide pump rod through spring and into pump, and tighten pump packing module until E-clip is against top of pump. Torque packing nut to 120 to 150 in-lb (14 to 17 N•m). Remove pump from vise.
  3. Route pressure control harness through retention clip, and connect to control board connector at back of drive housing (connect with tab to the right).
  4. Install pump on mounting pins. **Make sure the plastic washers are between the drive housing and the pump.**
  5. Install yoke with rod cap in slot of yoke, as shown in **Rod/Yoke Detail** on facing page.
  6. Check final assembly against **Drive Train Detail** on facing page.
  7. Install front cover and cover screws.
  8. To break in new parts, prime system with water or solvent, then run sprayer with Spray/Prime–Drain valve in PRIME position for 1 to 2 minutes.

# Pressure Control Switch Kit

**XR5 Pressure Control Switch Replacement Kit 243227, 2800 psi (19 MPa, 193 bar)**

**XR7/XR9 Pressure Control Switch Replacement Kit 243521, 3000 psi (21 MPa, 207 bar)**

If the sprayer stall pressure is too low (motor stops before correct pressure is reached), or excessive variation develops, the pressure control switch may need to be replaced. Replace the pressure control switch as follows:

## **Disassembly**

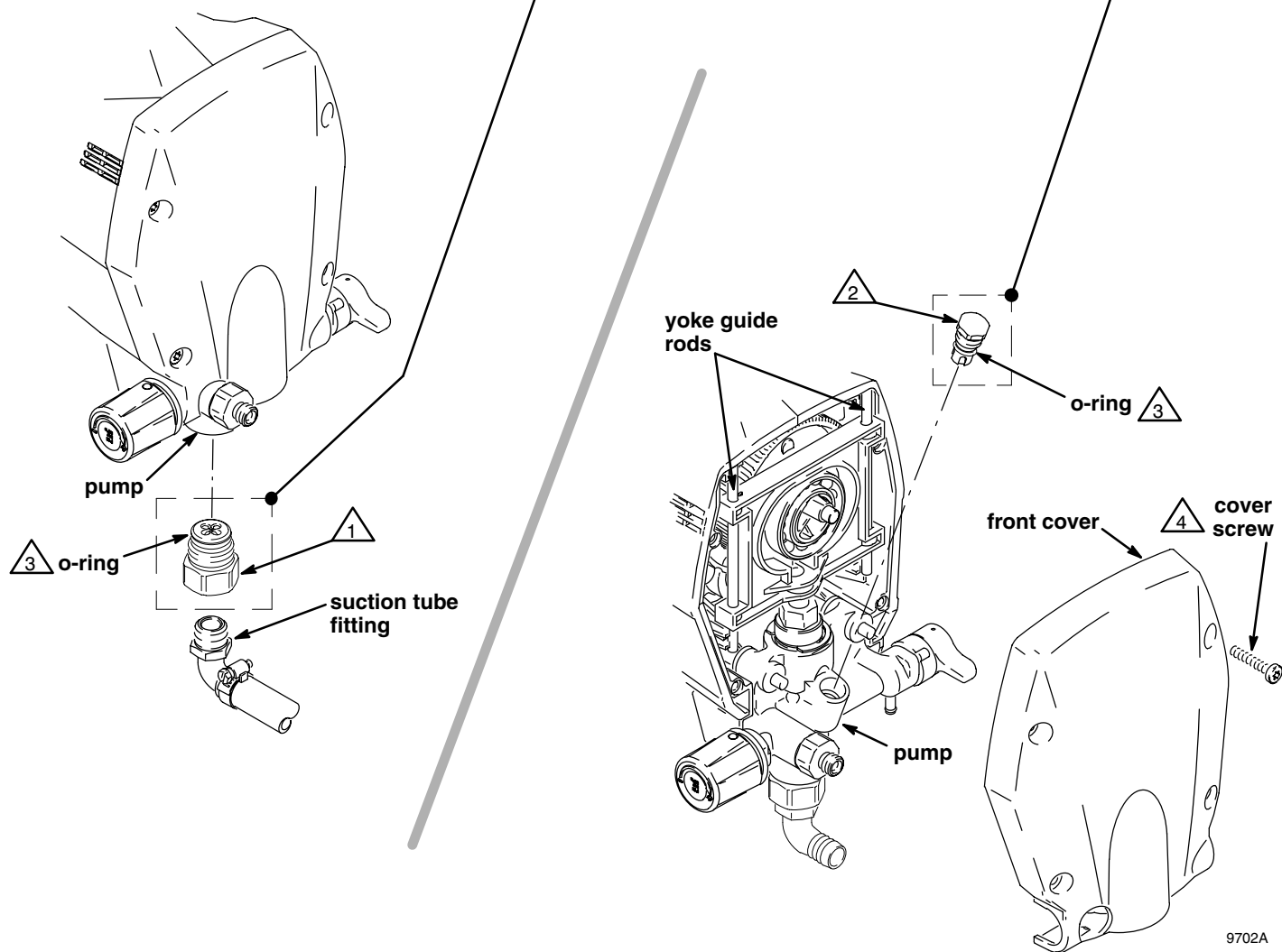
1. Do Steps 1 through 6 above in **Disassembly**.
2. Unscrew pressure control switch from pump.

## **Installation**

1. Apply one or two drops of thread locking adhesive (included in Kits 243227 and 243521) to threads of pressure control switch.
2. Screw new pressure control switch into pump, and torque to 180 to 210 in-lb (20 to 24 N•m). **Do not overtighten, or damage could occur.**
3. Do Steps 3 through 7 above in **Installation**.

# Pump Service

XR Inlet Valve Replacement Kit 243093 / XR Outlet Valve Replacement Kit 243094



## Installation Notes

- △1 Torque to 400 to 450 in-lb (45 to 51 N•m).
- △2 Torque to 320 to 380 in-lb (36 to 43 N•m).
- △3 Apply light coat of grease or oil to o-ring and threads.
- △4 For best cover alignment, tighten lower two cover screws first, then top two. Torque screws to 70 to 80 in-lb (8 to 9 N•m).

9702A

# Pump Service

## XR Inlet Valve Replacement Kit 243093 / XR Outlet Valve Replacement Kit 243094

### CAUTION

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

If the sprayer continues to cycle (motor and pump run) when the spray gun trigger is released, or if performance is poor even with new spray tips and clean filters, the pump inlet or outlet valve may be obstructed or worn.

If a pump valve is worn, replace it as follows:

#### XR Inlet Valve Replacement Kit 243093

Read all **Installation Notes** in service drawing on facing page.

1. Flush sprayer thoroughly.



See **Pressure Relief Procedure** on page 6.

2. **Relieve pressure.**
3. Remove suction tube fitting from pump inlet valve.
4. Clean all dried residue from around inlet valve.
5. Unscrew pump inlet valve from pump.
6. Apply thin coating of grease or oil to o-ring and threads on new pump inlet valve.
7. Thread new pump inlet valve into pump, and torque to 400 to 450 in-lb (45 to 51 N•m).
8. Reassemble suction tube fitting to pump inlet valve.

#### XR Outlet Valve Replacement Kit 243094

Read all **Installation Notes** in service drawing on facing page.

1. Flush sprayer thoroughly.

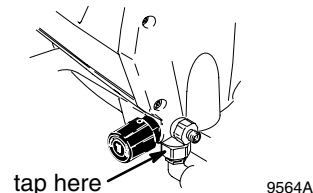


See **Pressure Relief Procedure** on page 6.

2. **Relieve the pressure.**
3. Remove cover screws and front cover.
4. Clean all dried residue from around pump outlet valve.
5. Unscrew pump outlet valve from pump.
6. Apply thin coating of grease or oil to o-ring and threads on new pump outlet valve.
7. Thread new pump outlet valve into pump, and torque to 320 to 380 in-lb (36 to 43 N•m).
8. Verify that yoke guide rods are seated properly.
9. Install front cover and cover screws.

**HINT:** Inadequate flushing of paint can cause the inlet valve check balls to stick to the seat. If the pump does not prime after 30 seconds of cycling, try tapping the inlet valve with a small wrench to jar the balls loose.

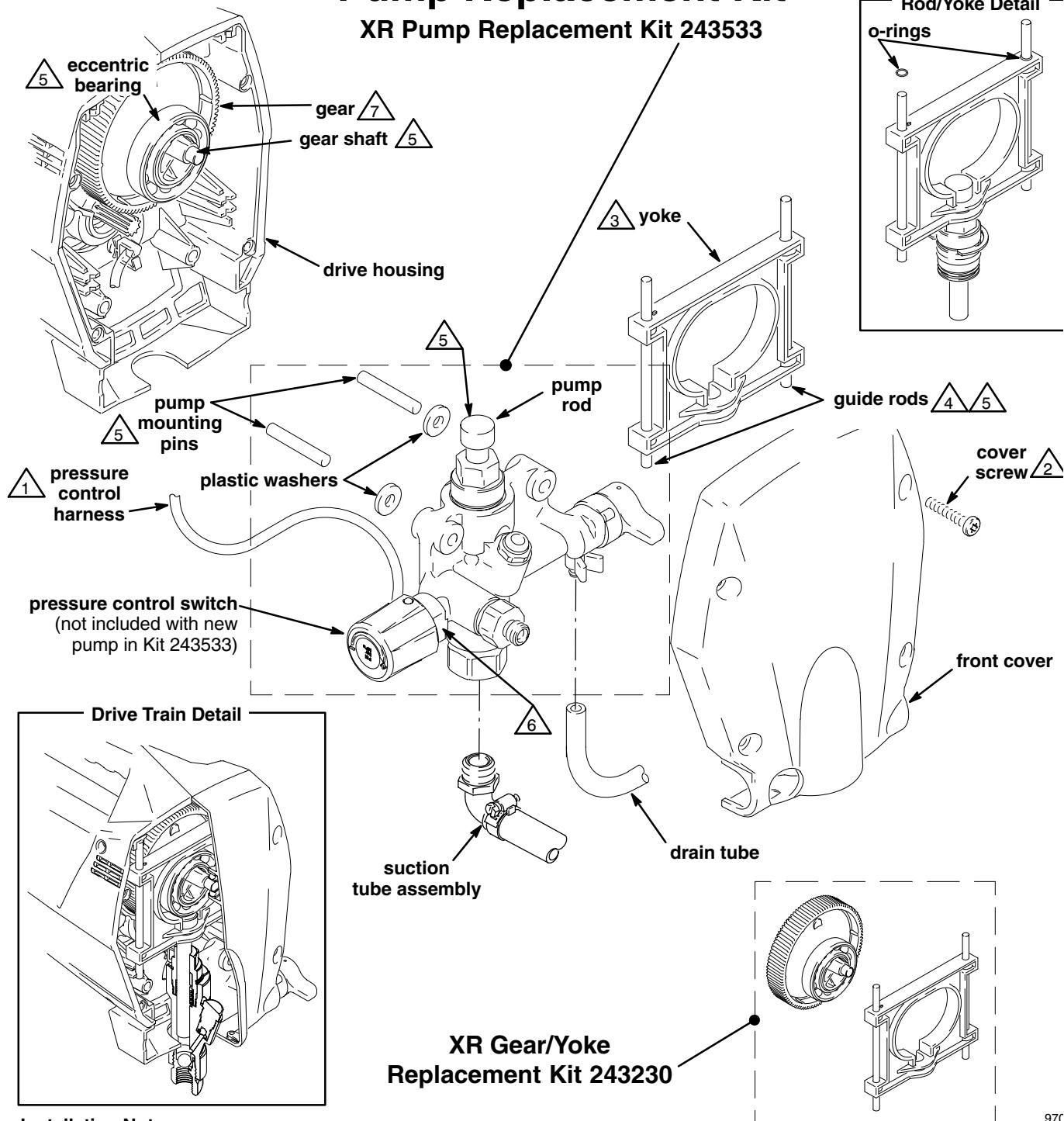
**NOTE:** Excessive shock can fracture or cause other damage to the pump.



To be certain about whether the inlet valve ball is sticking, you can unscrew the inlet valve from the pump and check it. MAGNUM XR7 and XR9 sprayers allow for inlet valve removal without removing the suction tube.

# Pump Replacement Kit

## XR Pump Replacement Kit 243533



## XR Gear/Yoke Replacement Kit 243230

### Installation Notes

To prevent misalignment, assemble sprayer tipped onto back of enclosure.

- 1 Take care to not pinch harness between pump and any part of drive housing or between front cover and drive housing.
- 2 For best cover alignment, tighten lower two cover screws first, then top two. Torque screws to 70 to 80 in-lb (8 to 9 N•m).
- 3 For yoke installation, eccentric bearing on gear must touch top of pump rod. Turn gear to move eccentric bearing to proper height.
- 4 If yoke guide rods drop out of position during assembly, damage will occur when cover is tightened. Always check position of guide rods before tightening cover.
- 5 Apply light coat of grease.
- 6 Apply one or two drops of thread locking adhesive (included in Kit 245533) to threads of pressure control switch. Torque to 180 to 210 in-lb (20 to 24 N•m).
- 7 Use applicator brush to spread entire contents of grease packet (included with kit 243533) into gear teeth. Grease must be worked into roots of gear teeth to ensure long life.

97C

# Pump Replacement Kit

## XR Pump Replacement Kit 243533

### CAUTION

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

Replace the pump as follows:

#### Disassembly

1. Thoroughly flush pump.



See **Electric Shock Hazard** on page 7.



See **Pressure Relief Procedure** on page 6.

2. **Unplug electrical cord, and relieve pressure.**
3. Remove suction tube assembly and drain tube.
4. Remove the four cover screws and front cover.
5. Remove yoke and guide rods.
6. Disconnect pressure control harness from control board connector at back of drive housing. **Using fingernail or tip of small, flat-blade screwdriver, press tab on right side of connector to release.**
7. Remove pump and the two mounting pins from drive housing.
8. Place pump on workbench or in vise.
9. Remove pressure control switch from pump.

#### Installation

- Read all **Installation Notes** in service drawing on facing page.
  - To prevent misalignment, assemble sprayer tipped onto back of enclosure.
1. Apply one or two drops of thread locking adhesive (included in Kit 243533) to threads of pressure control switch.
  2. Screw pressure control switch into new pump, and torque to 180 to 210 in-lb (20 to 24 N•m). **Do not overtighten, or damage could occur.**
  3. Remove gear, and use applicator brush to spread entire contents of grease packet (included with Kit 243533) into gear teeth. Grease must be worked into roots of gear teeth to ensure long life. Reinstall gear.
  4. Route pressure control harness behind pump through retention clip, and connect to control board connector at back of drive housing (connect with tab to the right).
  5. Install pump on mounting pins. **Make sure the plastic washers are between drive the housing and the pump.**
  6. Install yoke with rod cap in slot of yoke, as shown in **Rod/Yoke Detail** on facing page.
  7. Check final assembly against **Drive Train Detail** on facing page.
  8. Install front cover and cover screws.

# Gear/Yoke Kit

## XR Gear/Yoke Replacement Kit 243230

Replace the gear/yoke assembly as follows:

### Disassembly



See **Pressure Relief Procedure** on page 6.

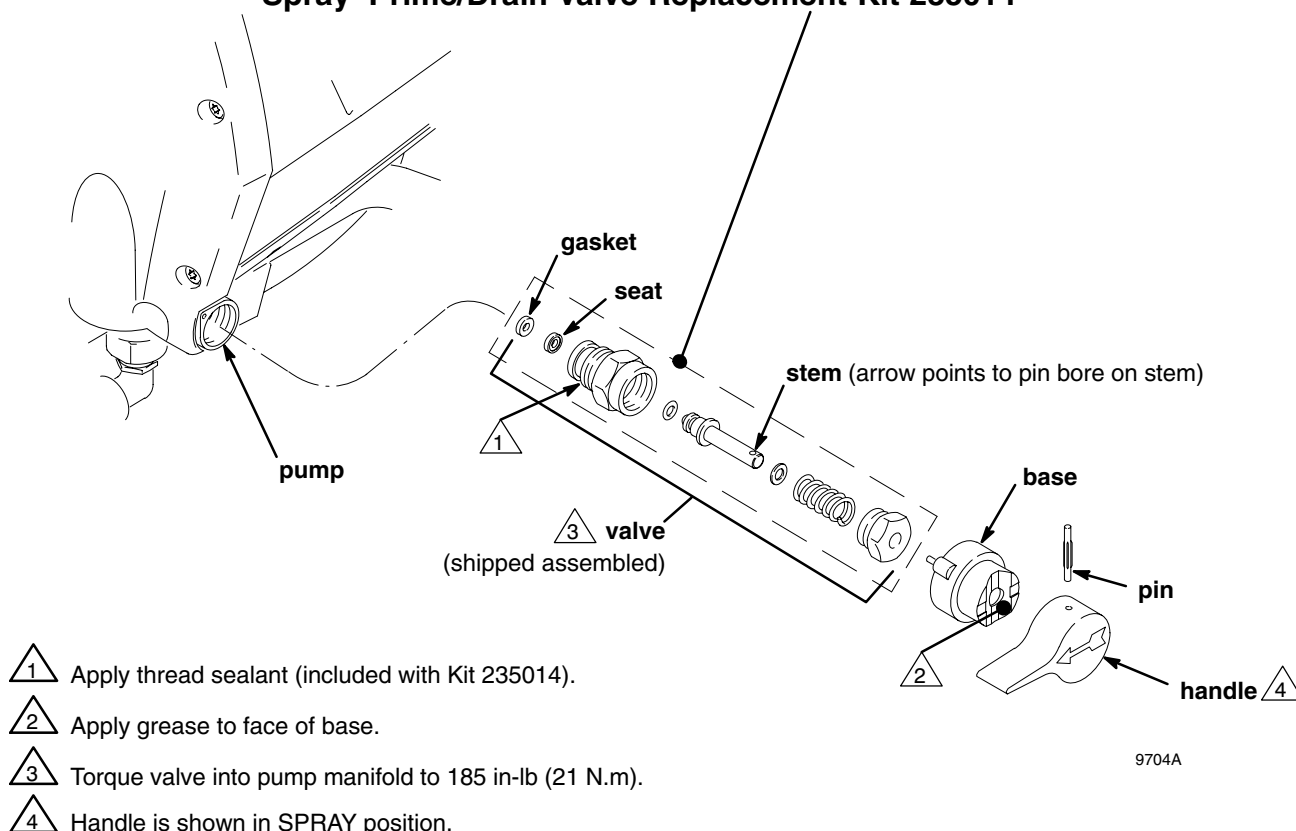
1. **Relieve the pressure.**
2. Remove the four cover screws and front cover.
3. Remove yoke and guide rods.
4. Carefully slide pump forward 3/8 in. (10 mm) on its mounting pins, and remove gear. **You do not have to remove the pump to remove the gear.**

### Installation

- Read all **Installation Notes** in service drawing on facing page.
  - For easier parts placement, tip sprayer backwards during installation.
1. Remove gear, and use applicator brush to spread entire contents of grease packet (included with Kit 243230) into gear teeth of new gear. Grease must be worked into roots of gear teeth to ensure long life. Reinstall gear.
  2. Carefully position new gear in drive housing, and slide pump back into place.
  3. Do Steps 6 through 8 in **Installation** above.

# Spray–Prime/Drain Valve Kit

## Spray–Prime/Drain Valve Replacement Kit 235014



- 1 Apply thread sealant (included with Kit 235014).
- 2 Apply grease to face of base.
- 3 Torque valve into pump manifold to 185 in-lb (21 N.m).
- 4 Handle is shown in SPRAY position.

If the sprayer cannot build up pressure, the Spray–Prime/Drain valve may be leaking because of trapped debris or because it needs to be retorqued to 185 in-lb (21 N.m).

The Spray–Prime/Drain valve may also be worn. If worn, replace as follows:

### Disassembly



See **Pressure Relief Procedure** on page 6.

1. **Relieve the pressure.**
2. Turn handle to SPRAY position, drive out pin, and remove handle.
3. Remove base.
4. Unscrew valve. Gasket and seat will stay in valve.

### Installation

1. Apply small amount of thread sealant (included with Kit 235014) onto valve threads. Torque valve into pump to 185 in-lb (21 N.m).
2. Lightly grease face of base, and install base. Turn stem so pin bore is vertical.
3. Install handle, and drive pin through pin bore on handle and stem.

# Technical Data

|                                                                                                           | MAGNUM XR5                                                                                                                                                           | MAGNUM XR7                                                                                                                    | MAGNUM XR9                                                                                                              |
|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Working pressure range                                                                                    | 0 to 2800 psi<br>(0 to 19 MPa, 0 to 193 bar)                                                                                                                         | 0 to 3000 psi<br>(0 to 21 MPa, 0 to 207 bar)                                                                                  | 0 to 3000 psi<br>(0 to 21 MPa, 0 to 207 bar)                                                                            |
| Electric motor (open-frame, permanent magnet DC)                                                          | 5.8 Amp                                                                                                                                                              | 5.8 Amp                                                                                                                       | 4.9 Amp                                                                                                                 |
| Operating horsepower                                                                                      | 5/8                                                                                                                                                                  | 3/4                                                                                                                           | 7/8                                                                                                                     |
| Maximum delivery (with tip)                                                                               | 0.24 gpm (0.91 lpm)                                                                                                                                                  | 0.31 gpm (1.17 lpm)                                                                                                           | 0.38 gpm (1.44 lpm)                                                                                                     |
| Paint hose                                                                                                | 25 ft (7.6 m) x 1/4 in.                                                                                                                                              | 50 ft (15.2 m) x 1/4 in.                                                                                                      | 50 ft (15.2 m) x 1/4 in.                                                                                                |
| 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                                                                                      | 23 lb (10 kg)                                                                                                                                                        | 33 lb (15 kg)                                                                                                                 | 36 lb (16 kg)                                                                                                           |
| Weight, sprayer, hose, & gun                                                                              | 26 lb (12 kg)                                                                                                                                                        | 38 lb (17 kg)                                                                                                                 | 41 lb (19 kg)                                                                                                           |
| Dimensions                                                                                                | 13.75 in. (34.9 cm) L<br>11 in. (27.9 cm) W<br>17 in. (43.2 cm) H                                                                                                    | 19.5 in. (49.5 cm) L<br>17.25 in. (43.8 cm) W<br>40.75 in. (103.5 cm) H<br><i>Height with folded handle is 26 in. (66 cm)</i> | 19.5 in. (49.5 cm) L<br>19 in. (48.3 cm) W<br>40 in. (101.6 cm) H<br><i>Height with folded handle is 26 in. (66 cm)</i> |
| Electrical cord<br>See <b>Grounding and Electrical Requirements</b> on page 6 for extension cord lengths. | 16 AWG, 3 wire, 6 ft (1.8 m)                                                                                                                                         | 16 AWG, 3 wire, 6 ft (1.8 m)                                                                                                  | 16 AWG, 3 wire, 10 ft (3 m)                                                                                             |
| Pump inlet fitting                                                                                        | 3/4 in. internal thread (standard garden hose thread)                                                                                                                |                                                                                                                               |                                                                                                                         |
| Fluid outlet fitting                                                                                      | 1/4 npsm external thread                                                                                                                                             |                                                                                                                               |                                                                                                                         |
| Inlet screen on suction tube                                                                              | 14 mesh (1300 micron)                                                                                                                                                |                                                                                                                               |                                                                                                                         |
| Wetted parts, pump & hose                                                                                 | stainless steel, brass, leather, ultra-high molecular weight polyethylene (UHMWPE), carbide, nylon, PVC, zinc-aluminum alloy                                         |                                                                                                                               |                                                                                                                         |
| Wetted parts, spray gun                                                                                   | SG1: aluminum, brass, carbide, nylon, plated steel, stainless steel, UHMWPE<br>SG2/SG3: aluminum, brass, carbide, nylon, plated steel, stainless steel, UHMWPE, zinc |                                                                                                                               |                                                                                                                         |
| Generator requirement                                                                                     | 1500 Watt minimum                                                                                                                                                    |                                                                                                                               |                                                                                                                         |
| Electrical power requirement                                                                              | 120V AC, 60 Hz, 1 phase, 15A                                                                                                                                         |                                                                                                                               |                                                                                                                         |
| Storage temperature range †<br>*                                                                          | -30° to 160° F (-35° to 71° C)                                                                                                                                       |                                                                                                                               |                                                                                                                         |
| Operating temperature range **                                                                            | 40° to 115° F (4° to 46° C)                                                                                                                                          |                                                                                                                               |                                                                                                                         |

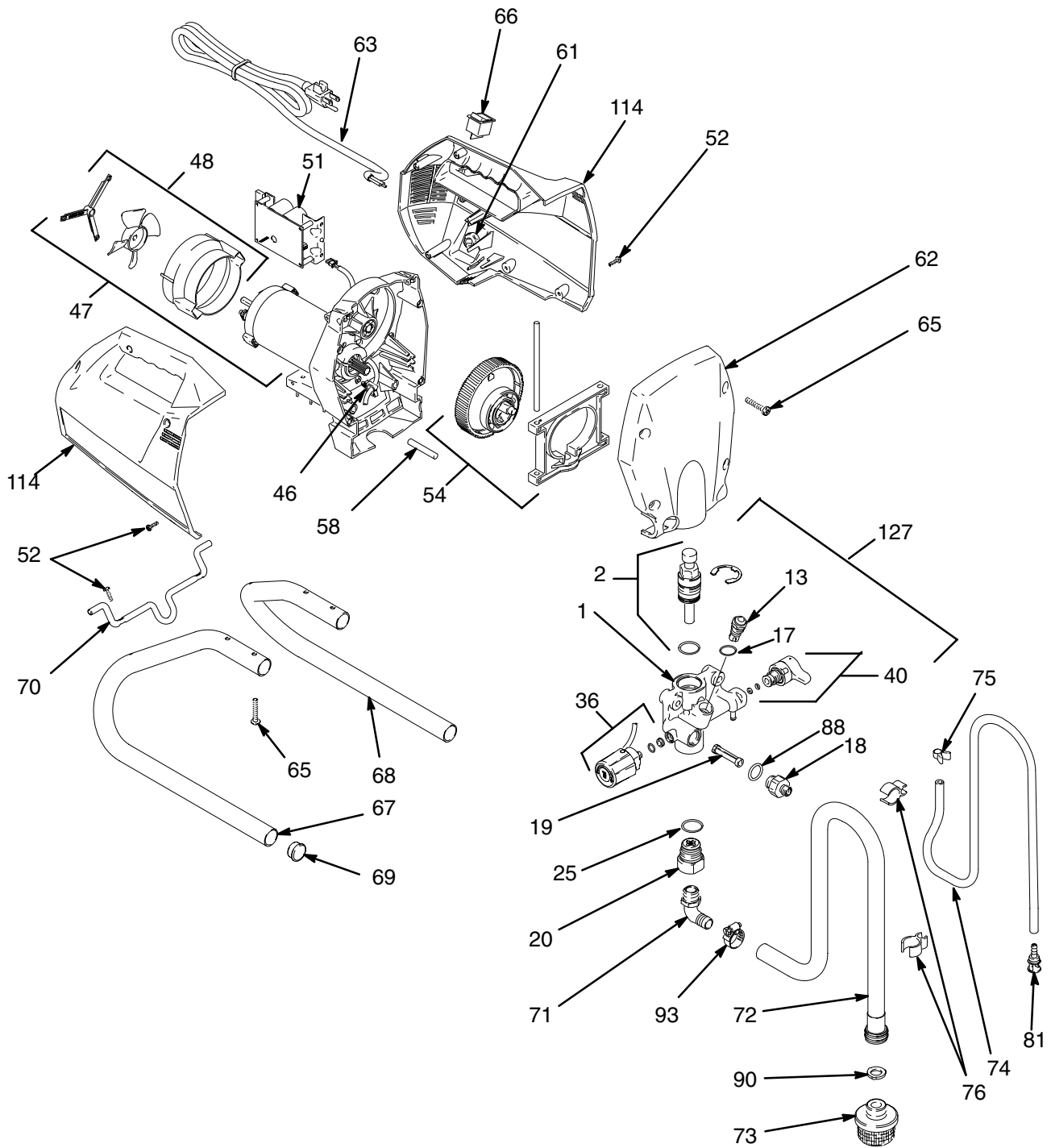
† Damage to plastic parts may result if impact occurs in low-temperature conditions.

\* When pump is stored with non-freezing fluid.

\*\* Changes in paint viscosity at very low or very high temperatures may affect sprayer performance.

# Parts

## Model 232740 XR5 Sprayer



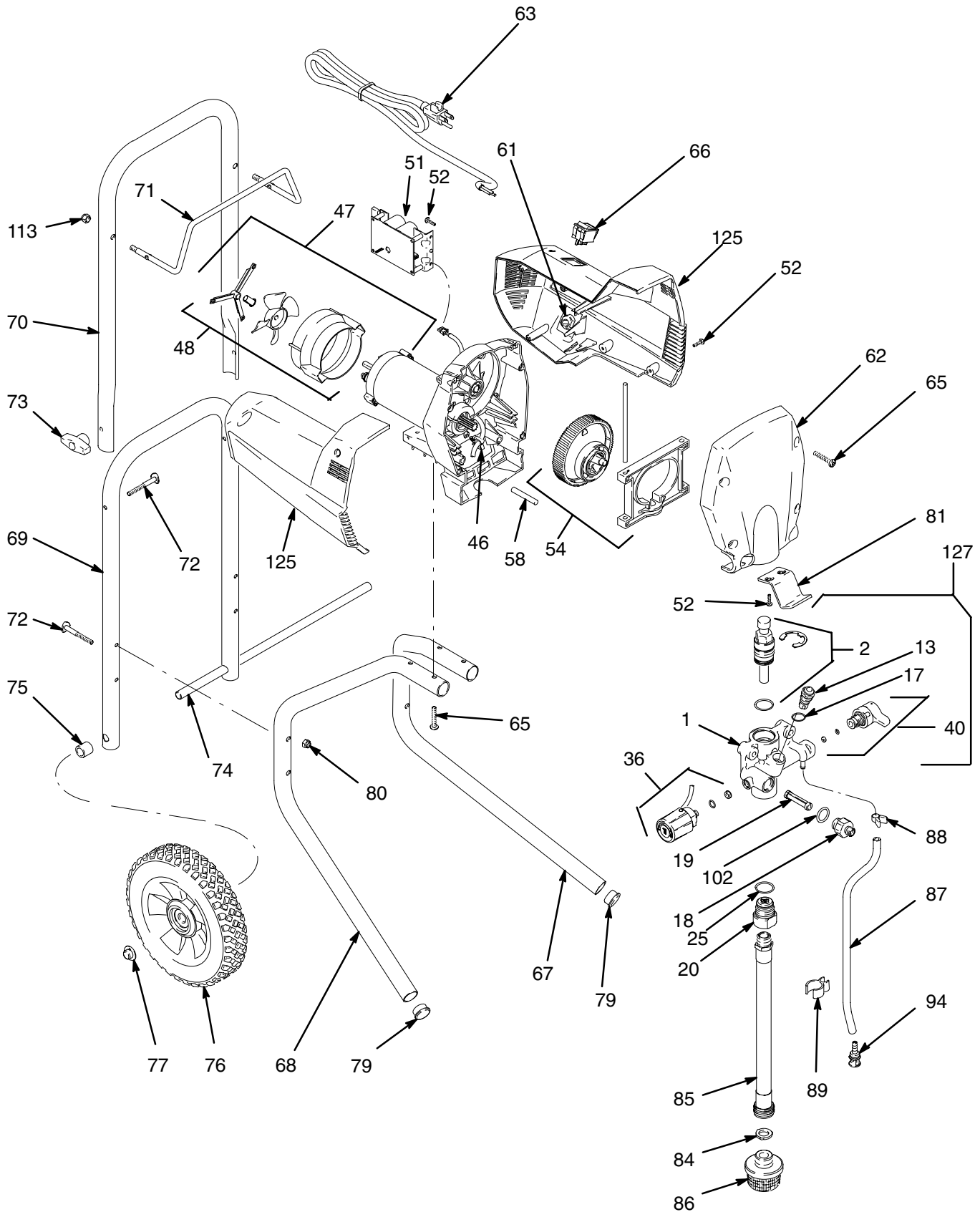
# Parts

## Model 232740 XR5 Sprayer

| Ref.<br>No. | Part No. | Description                      | Qty. | Ref.<br>No. | Part No. | Description                                                                                        | Qty. |
|-------------|----------|----------------------------------|------|-------------|----------|----------------------------------------------------------------------------------------------------|------|
| 1           | 195126   | PUMP, housing                    | 1    | 63          | 195110   | CORD, power                                                                                        | 1    |
| 2           | 243090   | PUMP, repair kit                 | 1    | 65          | 115478   | SCREW, torx/slt pan hd, 1/4"                                                                       | 8    |
| 13          | 243094   | VALVE, outlet kit (includes #17) | 1    | 66          | 115499   | SWITCH, rocker                                                                                     | 1    |
| 17          | 103338   | PACKING, o-ring                  | 1    | 67          | 195431   | LEG, left                                                                                          | 1    |
| 18          | 195947   | FILTER, adapter                  | 1    | 68          | 195430   | LEG, right                                                                                         | 1    |
| 19          | 195083   | PUMP, filter, element            | 1    | 69          | 105521   | PLUG                                                                                               | 2    |
| 20          | 243093   | VALVE, inlet kit (includes #25)  | 1    | 70          | 195432   | HANGER, cord                                                                                       | 1    |
| 25          | 103413   | PACKING, o-ring, inlet valve     | 1    | 71          | 115628   | FITTING, elbow                                                                                     | 1    |
| 36          | 243227   | PRESSURE SWITCH repair kit       | 1    | 72          | 195750   | TUBE, suction, (includes #90)                                                                      | 1    |
| 40          | 235014   | VALVE, repair kit                | 1    | 73          | 243082   | STRAINER                                                                                           | 1    |
| 46          | 114687   | CLIP, retainer                   | 1    | 74          | 195084   | TUBE, drain                                                                                        | 1    |
| 47          | 243236   | MOTOR, repair kit                | 1    | 75          | 115489   | CLAMP, drain tube                                                                                  | 2    |
|             |          | (includes fan kit #48)           | 1    | 76          | 195400   | CLIP, spring                                                                                       | 3    |
| 48          | 243231   | FAN and SHIELD kit               | 1    | 81          | 243096   | DEFLECTOR, barbed                                                                                  | 1    |
| 51          | 243228   | CONTROL BOARD, XR5               | 1    | 88          | 115719   | FILTER, adapter                                                                                    | 1    |
| 52          | 115477   | SCREW, machine                   | 10   | 90          | 115099   | WASHER, inlet strainer                                                                             | 1    |
| 54          | 243230   | YOKE, GEAR, GUIDE repair kit     | 1    | 93          | 102473   | CLAMP, hose                                                                                        | 1    |
| 58          | 194507   | DOWEL, pin 5/16                  | 2    | 114         | 243232   | ENCLOSURE, (includes label and screws)                                                             | 1    |
| 61          | 115642   | BUSHING, strain relief           | 1    |             |          |                                                                                                    |      |
| 62          | 243237   | COVER with label                 | 1    | 127         | 243533   | PUMP, replacement (includes #1, 2, 13, 17, 18, 19, 20, 40. Item #36 must be purchased separately.) | 1    |

# Parts

## Model 232745 XR7 Sprayer



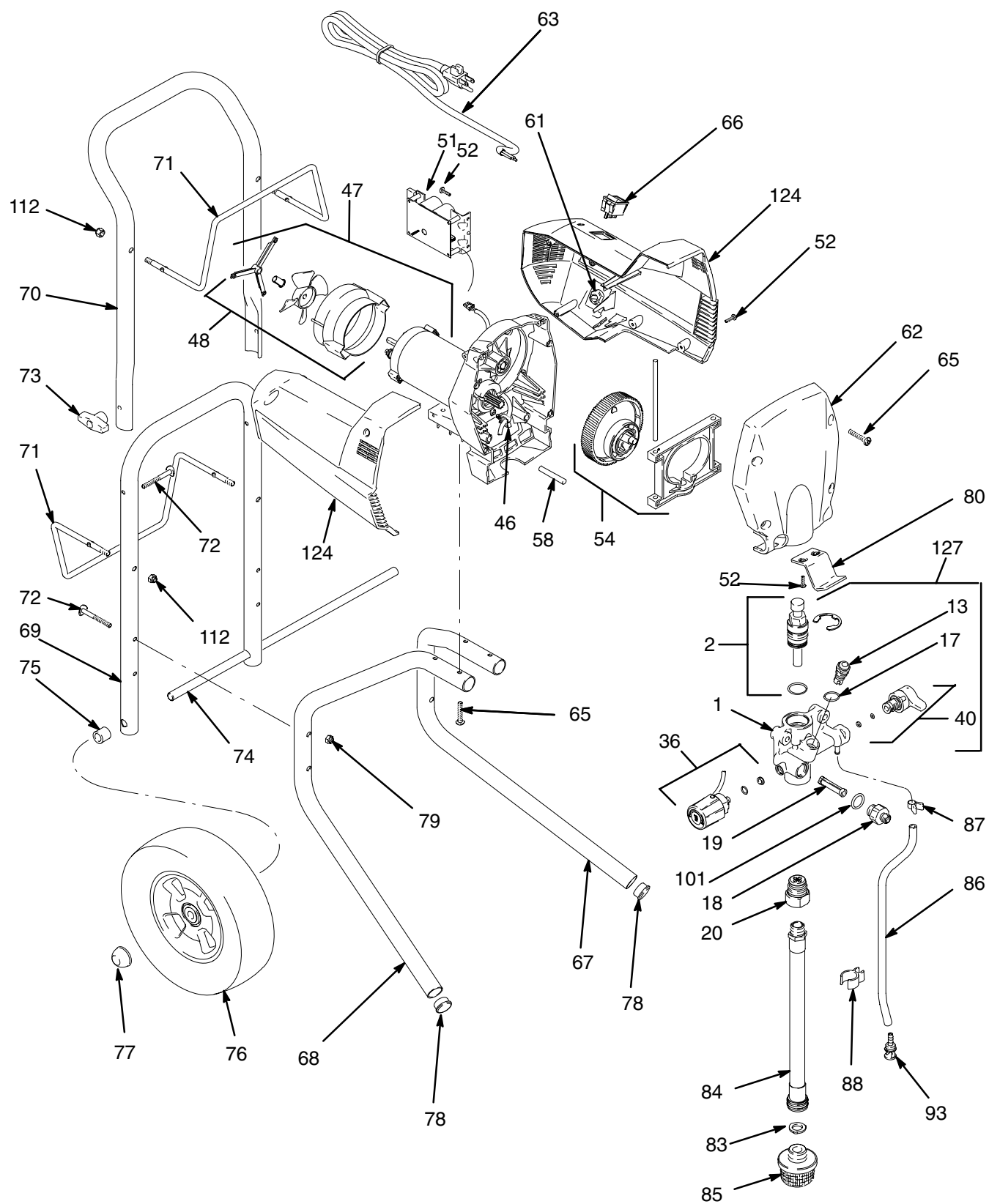
# Parts

## Model 232745 XR7 Sprayer

| Ref.<br>No. | Part No. | Description                      | Qty. | Ref.<br>No. | Part No. | Description                                                                                            | Qty. |
|-------------|----------|----------------------------------|------|-------------|----------|--------------------------------------------------------------------------------------------------------|------|
| 1           | 195126   | PUMP, housing                    | 1    | 68          | 195434   | SUPPORT, left                                                                                          | 1    |
| 2           | 243090   | PUMP repair kit                  | 1    | 69          | 195436   | FRAME, cart                                                                                            | 1    |
| 13          | 243094   | VALVE, outlet kit (includes #17) | 1    | 70          | 195435   | HANDLE, cart                                                                                           | 1    |
| 17          | 103338   | PACKING, o-ring                  | 1    | 71          | 195440   | HOSE RACK                                                                                              | 1    |
| 18          | 195947   | FILTER, adapter                  | 1    | 72          | 115097   | SCREW, curved head                                                                                     | 2    |
| 19          | 195083   | PUMP, filter, element            | 1    | 73          | 115480   | KNOB, t-handle                                                                                         | 2    |
| 20          | 243093   | VALVE, inlet kit (includes #25)  | 1    | 74          | 197285   | AXLE                                                                                                   | 1    |
| 25          | 103413   | PACKING, o-ring, inlet valve     | 1    | 75          | 195367   | SPACER                                                                                                 | 2    |
| 36          | 243521   | PRESSURE SWITCH, repair kit      | 1    | 76          | 115095   | WHEEL, 9"                                                                                              | 2    |
| 40          | 235014   | VALVE, repair kit                | 1    | 77          | 112612   | CAP                                                                                                    | 2    |
| 46          | 114687   | CLIP, retainer                   | 1    | 79          | 105221   | PLUG                                                                                                   | 2    |
| 47          | 243236   | MOTOR, repair kit (includes #48) | 1    | 80          | 102040   | NUT, lock                                                                                              | 4    |
| 48          | 243231   | FAN and SHIELD kit               | 1    | 81          | 195105   | HANGAR, pail                                                                                           | 1    |
| 51          | 243228   | CONTROL BOARD, XR7               | 1    | 84          | 115099   | WASHER, inlet strainer                                                                                 | 1    |
| 52          | 115477   | SCREW, thread forming, #8        | 11   | 85          | 195883   | TUBE, suction includes washer                                                                          | 1    |
| 54          | 243230   | GEAR, YOKE, GUIDE repair kit     | 1    | 86          | 243082   | STRAINER                                                                                               | 1    |
| 58          | 194507   | DOWEL, pin 5/16                  | 2    | 87          | 195108   | TUBE, drain                                                                                            | 1    |
| 61          | 111348   | BUSHING, strain relief           | 1    | 88          | 115489   | CLAMP, drain tube                                                                                      | 2    |
| 62          | 243237   | COVER with label                 | 1    | 89          | 195400   | CLIP, spring                                                                                           | 1    |
| 63          | 115603   | CORD SET                         | 1    | 94          | 243096   | DEFLECTOR, barbed                                                                                      | 1    |
| 65          | 115478   | SCREW, torx/slt pan hd, 1/4"     | 8    | 102         | 115719   | PACKING, o-ring, filter adapter                                                                        | 1    |
| 66          | 115499   | SWITCH, rocker                   | 1    | 113         | 115651   | NUT, acorn                                                                                             | 2    |
| 67          | 195433   | SUPPORT, right                   | 1    | 125         | 243234   | ENCLOSURE, with label and screws                                                                       | 1    |
|             |          |                                  |      | 127         | 243533   | PUMP, replacement (includes 1, 2, 13<br>17, 18, 19, 20, 40. Item #36 must<br>be purchased separately.) | 1    |

# Parts

## Model 232750 XR9 Sprayer



# Parts

## Model 232750 XR9 Sprayer

| Ref.<br>No. | Part No. | Description                      | Qty. | Ref.<br>No. | Part No. | Description                                                                                      | Qty. |
|-------------|----------|----------------------------------|------|-------------|----------|--------------------------------------------------------------------------------------------------|------|
| 1           | 195126   | PUMP, housing                    | 1    | 67          | 195433   | SUPPORT, right                                                                                   | 1    |
| 2           | 243090   | PUMP repair kit                  | 1    | 68          | 195434   | SUPPORT, left                                                                                    | 1    |
| 13          | 243094   | VALVE, outlet kit (includes #17) | 1    | 69          | 195439   | FRAME, cart                                                                                      | 1    |
| 17          | 103338   | PACKING, o-ring, outlet valve    | 1    | 70          | 195438   | HANDLE, cart                                                                                     | 1    |
| 18          | 195947   | FILTER, adapter                  | 1    | 71          | 195440   | HOSE RACK                                                                                        | 2    |
| 19          | 195083   | PUMP, filter, element            | 1    | 72          | 115097   | SCREW, curved head                                                                               | 6    |
| 20          | 243093   | VALVE, inlet kit                 | 1    | 73          | 115480   | KNOB, t-handle                                                                                   | 2    |
| 25          | 103413   | PACKING, o-ring, inlet valve     | 1    | 74          | 195366   | AXLE                                                                                             | 1    |
| 36          | 243521   | PRESSURE SWITCH repair kit       | 1    | 75          | 195367   | SPACER                                                                                           | 2    |
| 40          | 224806   | VALVE, repair kit                | 1    | 76          | 115094   | WHEEL, 10"                                                                                       | 2    |
| 46          | 114687   | CLIP, retainer                   | 1    | 77          | 112612   | CAP                                                                                              | 2    |
| 47          | 243236   | MOTOR, repair kit                | 1    | 78          | 105221   | PLUG                                                                                             | 2    |
| 48          | 243231   | FAN and SHIELD kit               | 1    | 80          | 195105   | HANGAR, pail                                                                                     | 1    |
| 51          | 243229   | CONTROL BOARD XR9                | 1    | 83          | 115099   | WASHER, inlet strainer                                                                           | 1    |
| 52          | 115477   | SCREW, thread forming, #8        | 11   | 84          | 195883   | TUBE, suction, includes washer #83                                                               | 1    |
| 54          | 243230   | GEAR, YOKE, GUIDE repair kit     | 1    | 85          | 243082   | STRAINER                                                                                         | 1    |
| 58          | 194507   | DOWEL, pin 5/16                  | 2    | 86          | 195108   | TUBE, drain                                                                                      | 1    |
| 61          | 111348   | BUSHING, strain relief           | 1    | 87          | 115489   | CLAMP, drain tube                                                                                | 1    |
| 62          | 243237   | COVER with label                 | 1    | 88          | 195400   | CLIP, spring                                                                                     | 1    |
| 63          | 115604   | CORD SET, stow with grip         | 1    | 93          | 243096   | DEFLECTOR, barbed                                                                                | 1    |
| 65          | 115478   | SCREW, torx/slt, 1/4"            | 8    | 101         | 115719   | PACKING, o-ring, filter, adapter                                                                 | 1    |
| 66          | 115499   | SWITCH, rocker                   | 1    | 112         | 115651   | NUT, hex, 5/16"                                                                                  | 4    |
|             |          |                                  |      | 124         | 243234   | ENCLOSURE with label and screws                                                                  | 1    |
|             |          |                                  |      | 127         | 243533   | PUMP, replacement (includes 1, 2, 13, 17, 18, 19, 20,40. Item #36 must be purchased separately.) | 1    |

# Limited Warranty

Graco Inc. warrants to the original retail purchaser (other than for purposes of resale or rental) all equipment manufactured by Graco and bearing its name to be free from defects in material and workmanship if operated in accordance with Graco's printed recommendations and instructions. This warranty applies for one year from the date of purchase.

This warranty does not cover and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by improper use, accidents, user negligence, use of non-Graco component parts or service or repair performed by anyone other than a Graco authorized service center.

IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM THE DATE OF ORIGINAL PURCHASE.

GRACO SHALL NOT IN ANY EVENT BE LIABLE FOR ANY INCIDENTAL, INDIRECT, OR CONSEQUENTIAL LOSS, DAMAGE OR EXPENSE OF ANY KIND, WHETHER FROM BREACH OF THIS WARRANTY OR ANY OTHER REASON. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

To make a claim under this warranty, return the product with proof of purchase, transportation prepaid, to any Authorized Graco Service Center. Graco's Authorized Service Center, at its option, will either repair or replace the product and return it to you, postage prepaid. A listing of Authorized Graco Service Centers is enclosed with this product. You may also find the nearest Authorized Graco Service Center by calling 1-888-541-9788 or by visiting our website at [www.graco.com](http://www.graco.com).

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

*All written and visual data contained in this document reflect the latest product information available at the time of publication.  
Graco reserves the right to make changes at any time without notice.*

**GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441**  
**[www.graco.com](http://www.graco.com)**

PRINTED IN USA 309044 01/2000 Revised 11/2000