

Kinetix[®] Electrostatic Spray Gun Manual Airless

Customer Product Manual

Part 334598-05

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Section 1

Safety

Introduction

Read and follow these safety instructions. Task- and equipment-specific warnings, cautions, and instructions are included in equipment documentation where appropriate.

Make sure all equipment documentation, including these instructions, is accessible to persons operating or servicing equipment.

Qualified Personnel

Equipment owners are responsible for making sure that Nordson equipment is installed, operated, and serviced by qualified personnel. Qualified personnel are those employees or contractors who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks.

Intended Use

Use of Nordson equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property.

Some examples of unintended use of equipment include

- using incompatible materials
- making unauthorized modifications
- removing or bypassing safety guards or interlocks
- using incompatible or damaged parts
- using unapproved auxiliary equipment
- operating equipment in excess of maximum ratings

Regulations and Approvals

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for Nordson equipment will be voided if instructions for installation, operation, and service are not followed.

Personal Safety

To prevent injury follow these instructions.

- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors, or covers are intact and automatic interlocks are operating properly. Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement.
- Relieve (bleed off) hydraulic and pneumatic pressure before adjusting or servicing pressurized systems or components. Disconnect, lock out, and tag switches before servicing electrical equipment.
- While operating manual spray guns, make sure you are grounded. Wear electrically conductive gloves or a grounding strap connected to the gun handle or other true earth ground. Do not wear or carry metallic objects such as jewelry or tools.
- If you receive even a slight electrical shock, shut down all electrical or electrostatic equipment immediately. Do not restart the equipment until the problem has been identified and corrected.
- Obtain and read Material Safety Data Sheets (MSDS) for all materials used. Follow the manufacturer's instructions for safe handling and use of materials, and use recommended personal protection devices.
- Make sure the spray area is adequately ventilated.
- To prevent injury, be aware of less-obvious dangers in the workplace that often cannot be completely eliminated, such as hot surfaces, sharp edges, energized electrical circuits, and moving parts that cannot be enclosed or otherwise guarded for practical reasons.

High-Pressure Fluids

High-pressure fluids, unless they are safely contained, are extremely hazardous. Always relieve fluid pressure before adjusting or servicing high pressure equipment. A jet of high-pressure fluid can cut like a knife and cause serious bodily injury, amputation, or death. Fluids penetrating the skin can also cause toxic poisoning.

If you suffer a fluid injection injury, seek medical care immediately. If possible, provide a copy of the MSDS for the injected fluid to the health care provider.

The National Spray Equipment Manufacturers Association has created a wallet card that you should carry when you are operating high-pressure spray equipment. These cards are supplied with your equipment. The following is the text of this card:



WARNING: Any injury caused by high pressure liquid can be serious. If you are injured or even suspect an injury:

- Go to an emergency room immediately.
- Tell the doctor that you suspect an injection injury.
- Show him this card
- Tell him what kind of material you were spraying

MEDICAL ALERT—AIRLESS SPRAY WOUNDS: NOTE TO PHYSICIAN

Injection in the skin is a serious traumatic injury. It is important to treat the injury surgically as soon as possible. Do not delay treatment to research toxicity. Toxicity is a concern with some exotic coatings injected directly into the bloodstream.

Consultation with a plastic surgeon or a reconstructive hand surgeon may be advisable.

The seriousness of the wound depends on where the injury is on the body, whether the substance hit something on its way in and deflected causing more damage, and many other variables including skin microflora residing in the paint or gun which are blasted into the wound. If the injected paint contains acrylic latex and titanium dioxide that damage the tissue's resistance to infection, bacterial growth will flourish. The treatment that doctors recommend for an injection injury to the hand includes immediate decompression of the closed vascular compartments of the hand to release the underlying tissue distended by the injected paint, judicious wound debridement, and immediate antibiotic treatment.

Fire Safety

To avoid a fire or explosion, follow these instructions.

- Ground all conductive equipment. Use only grounded air and fluid hoses. Check equipment and workpiece grounding devices regularly. Resistance to ground must not exceed one megohm.
- Shut down all equipment immediately if you notice static sparking or arcing. Do not restart the equipment until the cause has been identified and corrected.
- Do not smoke, weld, grind, or use open flames where flammable materials are being used or stored.
- Do not heat materials to temperatures above those recommended by the manufacturer. Make sure heat monitoring and limiting devices are working properly.

Fire Safety *(contd)*

- Provide adequate ventilation to prevent dangerous concentrations of volatile particles or vapors. Refer to local codes or your material MSDS for guidance.
- Do not disconnect live electrical circuits when working with flammable materials. Shut off power at a disconnect switch first to prevent sparking.
- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located. If a fire starts in a spray booth, immediately shut off the spray system and exhaust fans.
- Shut off electrostatic power and ground the charging system before adjusting, cleaning, or repairing electrostatic equipment.
- Clean, maintain, test, and repair equipment according to the instructions in your equipment documentation.
- Use only replacement parts that are designed for use with original equipment. Contact your Nordson representative for parts information and advice.

Halogenated Hydrocarbon Solvent Hazards

Do not use halogenated hydrocarbon solvents in a pressurized system that contains aluminum components. Under pressure, these solvents can react with aluminum and explode, causing injury, death, or property damage. Halogenated hydrocarbon solvents contain one or more of the following elements:

<u>Element</u>	<u>Symbol</u>	<u>Prefix</u>
Fluorine	F	“Fluoro-”
Chlorine	Cl	“Chloro-”
Bromine	Br	“Bromo-”
Iodine	I	“Iodo-”

Check your material MSDS or contact your material supplier for more information. If you must use halogenated hydrocarbon solvents, contact your Nordson representative for information about compatible Nordson components.

Action in the Event of a Malfunction

If a system or any equipment in a system malfunctions, shut off the system immediately and perform the following steps:

- Disconnect and lock out system electrical power. Close hydraulic and pneumatic shutoff valves and relieve pressures.
- Identify the reason for the malfunction and correct it before restarting the system.





Disposal

Dispose of equipment and materials used in operation and servicing according to local codes.

Safety Label

Table 1-1 contains the text of the safety label on this equipment. The safety label is provided to help you operate and maintain your equipment safely. See Figure 2-1 on page 2-1 for the location of the safety label.

Table 1-1 Safety Label

Symbol	Description
	WARNING: Allow only qualified personnel to use this equipment. Observe and follow all safety instructions for this equipment.
	WARNING: Risk of explosion or fire. Fire, open flames, and smoking prohibited.
	WARNING: Do not point the spray gun at any part of your body or at anyone else. Do not operate the fluid delivery system if any component is leaking. Failure to observe this warning could result in an injection injury.
	WARNING: Risk of electrical shock. Disconnect and lockout input power to equipment before servicing. Failure to observe this warning may result in personal injury or death.

Section 2

Description

Introduction

See Figure 2-1.

The Kinetix airless manual electrostatic high-pressure spray gun electrostatically charges and sprays liquid coatings. The spray gun is powered by a gun control unit and has a user-replaceable internal voltage multiplier.

The spray gun is non-circulating and can be used with heated and unheated non-circulating spray systems.

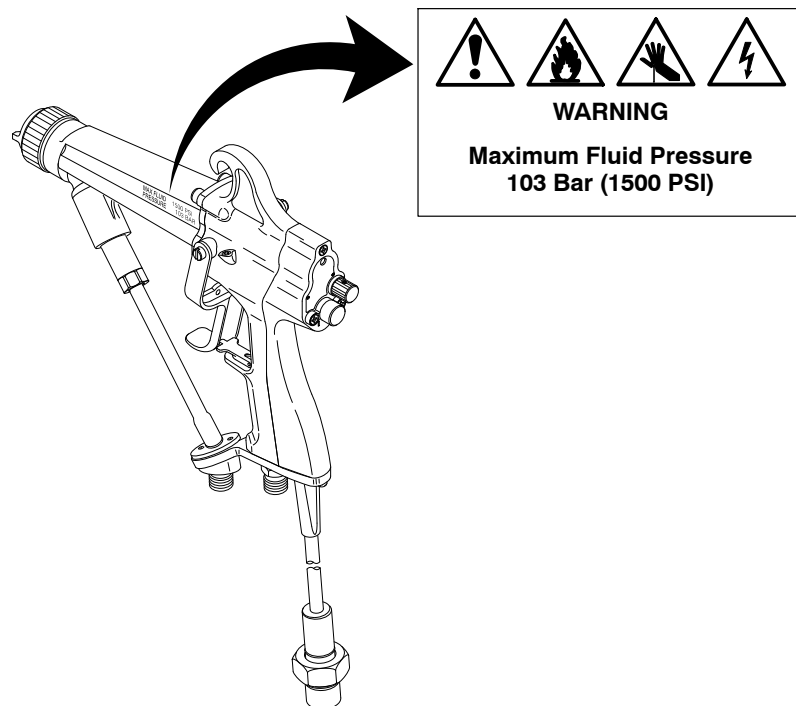


Figure 2-1 Kinetix Airless Manual Electrostatic Spray Gun

Note: Refer to *Safety Label* on page 1-5 for a description of the warning labels on the spray gun extension.

Airless Description

The spray gun sprays coating materials at high pressures of up to 103 bar (1500 psi). Atomization is achieved by forcing the coating material through a very small nozzle orifice. This process yields better transfer efficiencies and allows the spray gun to apply large quantities of coating materials very quickly.

Features

- adjustable air-assist air pressure and fluid flow rate
- easy disassembly for cleaning and repair
- low trigger force to reduce operator fatigue

Options

Options include a variety of Nordson Cross-Cut[®] and dome nozzles; restrictors; fluid hoses; and fittings.

Coating Materials

The spray guns are compatible with a wide variety of coating materials including

- general solvent-based
- metallics
- high-solids
- multi-component

NOTE: The seals in the spray gun are compatible with most coatings. If the coating material you use damages the seals, contact your Nordson Corporation representative for compatible replacements.

Theory of Operation

See Figure 2-2.

Electrostatic Charge

The gun control unit delivers low-voltage dc power through a cable (8) to the multiplier (3), which is housed in the spray gun extension (4). The multiplier generates high voltage (93 kV) that creates an electrostatic field. The electrostatic field produces a corona discharge around the electrode (1). The LED voltage indicator (5) lights when the electrostatics are turned on.

The kV on/off switch (6) can turn the electrostatic power off at the spray gun to reduce the Faraday cage effects.

Resistors within the multiplier limit the output current at safe levels. The corona around the electrode electrostatically charges the coating material. As the charged coating material is sprayed it is attracted to the grounded object to be coated.

Fluid Flow

Fluid enters the spray gun through a fluid supply hose (10) attached to the extension and flows to the fluid tip (2). The ball tip (14) opens as the trigger (12) is pulled, allowing fluid to flow to the nozzle. The packing cartridge (13) prevents fluid from flowing into the spray gun body and handle (7).

Air Flow

Activation (trigger) air (9) enters the spray gun through an inlet in the handle. This air triggers an airflow switch in the multiplier, which turns on the electrostatics. When the air valve is opened, the air passes over a heat sink to help cool the multiplier before it exits through a muffler in the side of the spray gun body.

The spray gun includes a trigger lock (11) to prevent accidental triggering of the spray gun and possible injection injuries.

Airless spray guns can be fitted with a variety of restrictors and nozzles. Restrictors are pre-atomization devices that do not normally reduce flow, but aid in atomization and tend to reduce the pattern width. If a restrictor is used, the nozzle gasket is removed and replaced with a restrictor.

Theory of Operation *(contd)*

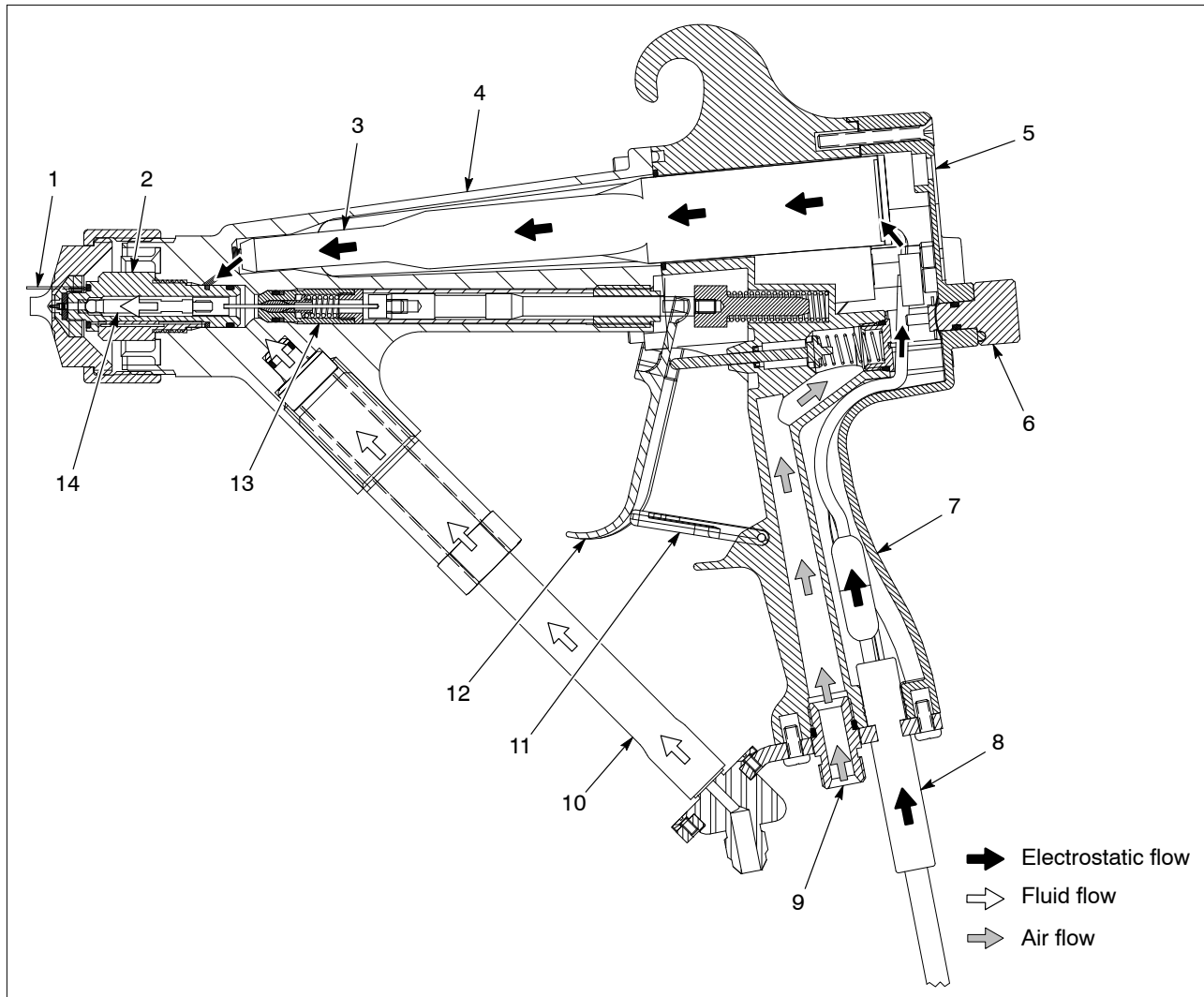


Figure 2-2 Spray Gun Components and Operation

- | | | |
|--------------------------|-----------------------------|-----------------------|
| 1. Electrode | 6. kV actuator switch | 11. Trigger lock |
| 2. Fluid tip | 7. Handle | 12. Trigger |
| 3. Multiplier | 8. Electrostatic cable | 13. Packing cartridge |
| 4. Extension | 9. Activation (trigger) air | 14. Ball tip |
| 5. LED voltage indicator | 10. Fluid supply hose | |

Section 3

Installation



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Preparation



CAUTION: Do not overtighten parts. Failure to observe this caution will result in equipment damage.

NOTE: Nozzles, gaskets or gaskets with restrictors, the electrode, and the PTFE retaining washer are not shipped with the spray gun and must be ordered separately based on your application.

NOTE: A gasket or gasket with restrictor and the PTFE retaining washer are required. For assistance in selecting the appropriate nozzle and restrictor for your application, contact your Nordson Corporation representative.

Before installation,

- make sure you have the appropriate nozzle, gasket or gasket with restrictor, electrode, and PTFE retaining washer for your application.
- make sure you have high-pressure fluid hoses of the correct length, ID, and materials.



WARNING: Risk of fire and/or electrical shock if the spray gun and system components are not properly grounded.

- make sure the system is properly grounded.

NOTE: Inadequately grounded parts will lose electrostatic attraction efficiency when sprayed.

- remove the spray gun, brushes, and combination tool from the box.

Typical Airless System



WARNING: Install an approved pressure relief device set at 103 bar (1500 psi) in the fluid line to the spray gun. The fluid supply hose must have a minimum pressure rating of 103 bar (1500 psi). Failure to observe this warning could result in equipment damage or personal injury.

Figure 3-1 shows the components of a typical airless system. Some of the components shown are optional. Make sure your system contains self-relieving shutoff valves for the fluid supply.

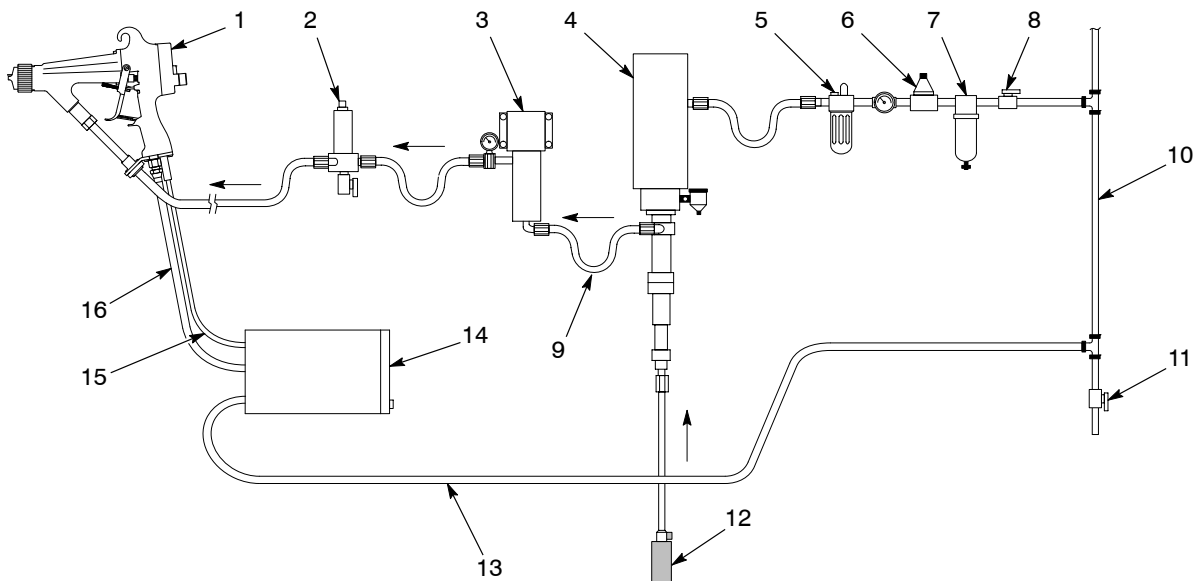


Figure 3-1 Typical Airless System

- | | | |
|-------------------------|---------------------------------|-------------------------------------|
| 1. Spray gun | 7. Air filter | 12. Siphon screen |
| 2. Fluid filter | 8. Self-relieving shutoff valve | 13. Air supply line (to controller) |
| 3. Heater (as required) | 9. Fluid supply line | 14. Control unit |
| 4. Pump | 10. Drain rod | 15. Gun cable |
| 5. Air lubricator | 11. Drain valve | 16. Air supply line (to spray gun) |
| 6. Air regulator | | |

Air and Fluid Hose Connections

Spray gun fittings accept standard Nordson hoses.

Air Hose

The air hoses supplying air to the spray gun should be no longer than 7.62 m (25 ft).

Limit the number of restrictions in the air supply lines and hose to provide maximum air flow.

1. Clean the air hose fittings with a clean, dry cloth.
2. Connect the trigger air hose between the 1/4-in. tube fitting in the spray gun handle and the air supply outlet.

Fluid Hose



WARNING: The fluid hose must be a grounding-type hose with continuity between fittings. Without a ground, a static charge could build up in the spray gun, resulting in shocks to the operator or sparking that could cause a fire. Resistance checks, from hose fitting to hose fitting, should be a part of your regular maintenance procedures.

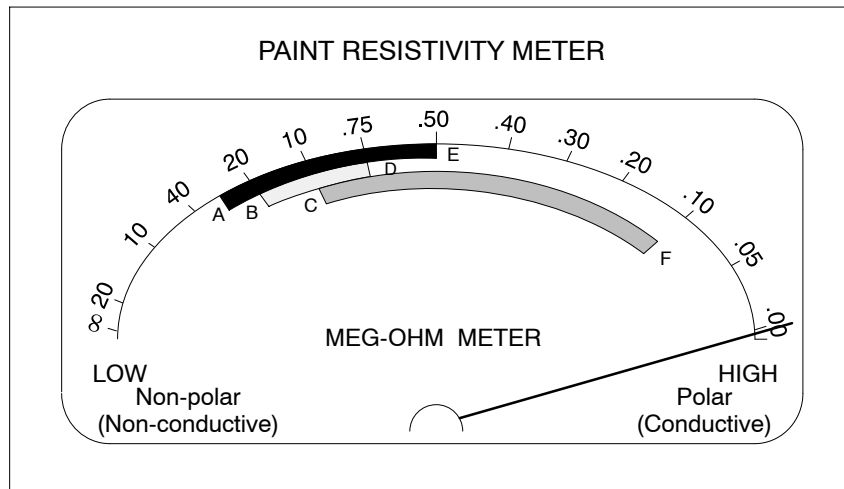
As coating materials become more conductive (lower resistivity) more current will bleed back through the fluid column in the fluid hose to the grounded fitting. With a very conductive material like water, all of the current will bleed to the ground and the spray gun would essentially be shorted.

A certain level of conductivity is required for electrostatics to be practical. Coating materials with resistivities of 0.75–2.0 MΩ usually work well. The transfer efficiency and wrap could be reduced as coating resistivities fall below 0.10 MΩ.

Figure 3-2 identifies the optimum coating resistivities for electrostatics of 0.75–2.0 MΩ.

Figure 3-3 charts the rapid increase of current bleeding through the fluid column to ground as coating resistivity decreases.

Fluid Hose (contd)



Legend:

- Best range for airspray electrostatic 0.5–3.0 range — A to E scale.
- Best range for airless and air-assisted airless electrostatic 0.75–2.0 range — B to D scale.
- Best range for rotary 0.10–1.0 range — C to F scale.

NOTE: Readings outside these ranges are often acceptable.

Figure 3-2 Resistivity Range for Coatings

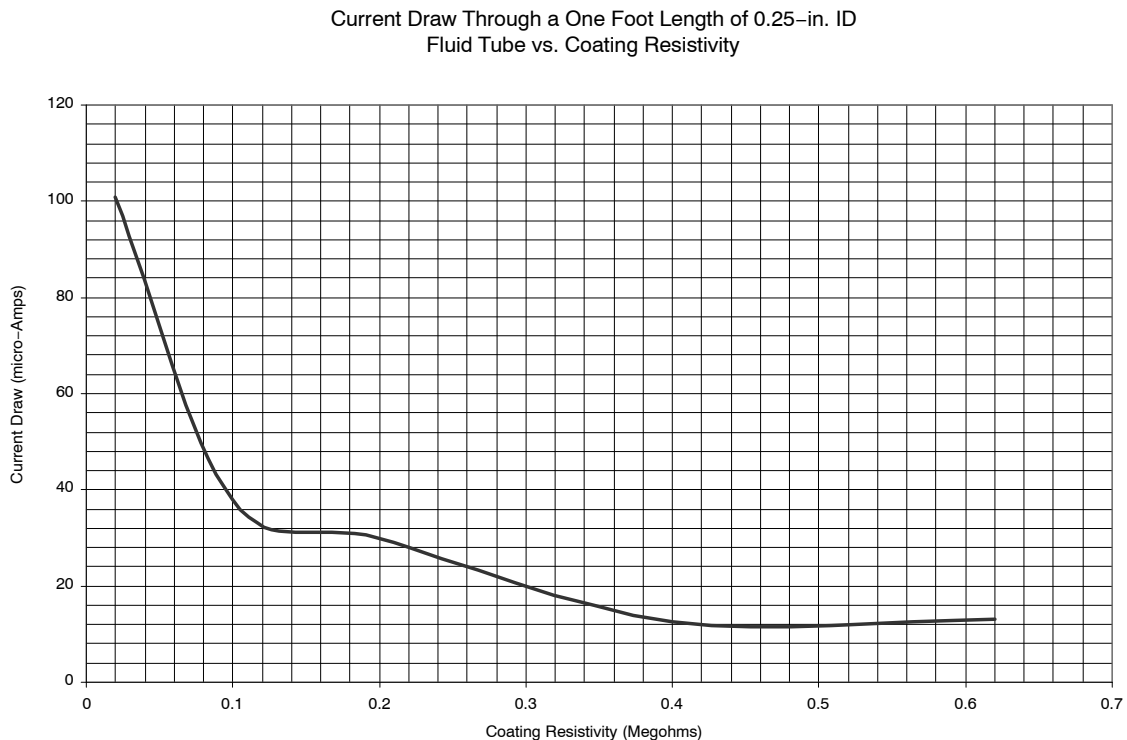


Figure 3-3 Current Draw through a One Foot Length of 0.25-in. ID Fluid Tube

Fluid Hose Connection

1. Clean the fluid hose fittings with a clean, dry cloth.
2. Connect the fluid hose(s) between the fluid delivery system outlet and the fluid fitting that terminates at the ground bracket.

NOTE: The standard fluid hose will work well for most coating materials. The effectiveness of the electrostatics may diminish when coating resistivities fall below 25 megohms/cm. The optional 25-ft long fluid hose will improve the electrostatic charge by isolating the fluid column.

Gun Cable



WARNING: Ground all electrically conductive equipment. Ungrounded conductive equipment can store a static charge, which could ignite a fire or cause an explosion if a hot spark is discharged. Wear shoes with conductive soles such as leather, or use grounding straps to maintain a connection to ground when working with or around electrostatic equipment.

NOTE: Refer to the gun control unit manual for more information.

See Figure 3-4. Connect the gun cable (4) to the POWER OUTPUT or GUN OUTPUT receptacle (2) on the back of the gun control unit (1).

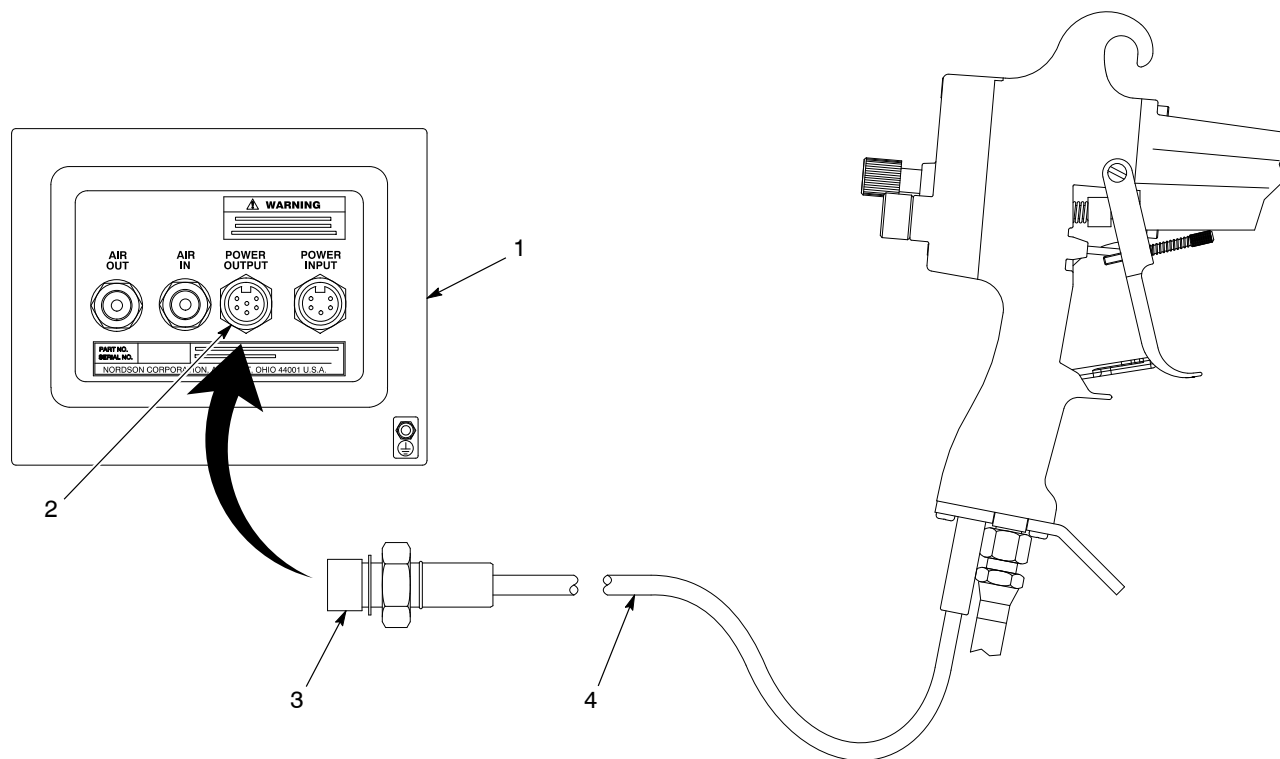


Figure 3-4 Gun Cable Installation

- | | | |
|---------------------|--------------------|--------------|
| 1. Control unit | 3. Cable connector | 4. Gun cable |
| 2. Cable receptacle | | |

Securing the Hoses and Cables

Gun Cable

- Protect the end of the gun cable so that no contaminants, oils, particles, or solvents are carried by it into the gun control unit receptacle.
- Do not tie the cable to the machine members in areas where the cable must move or stretch.
- Do not bend the cable around a radius of less than 15.24 cm (6 in.) at stationary points and 20.3 cm (8 in.) at flexing points.
- Do not allow the cable to become abraded around sharp corners such as booth edges.
- Do not walk on the cable or run over it with heavy objects.
- Do not use cable ties. Use hook and loop tape to secure the cable.
- Bundle the cable with the air and fluid hoses.

Air and Fluid Hoses

- Bundle the air and fluid hose together with hook and loop tape, spiral-cut tubing, or similar devices. If you secure the hoses to a stationary object at any point between the fluid delivery system, make sure the hoses can flex without strain.
- If desired, cover the spray gun, hoses, and other equipment in the spray area with a grounded conductive wrapping to keep them clean.

Nozzle and Gasket with Restrictor Installation

See Figure 3-5.



WARNING: Shut off the gun control unit and ground the spray gun electrode to remove any residual charge. Failure to observe this warning could result in personal injury.



WARNING: Make sure the trigger lock is engaged, shut off the fluid-delivery system, and relieve the fluid pressure in the system. Failure to observe this warning could result in an injection injury.

NOTE: Restrictors are devices that help atomize fluids. They do not normally reduce the fluid flow but tend to reduce pattern widths.

1. Turn off the gun control unit and ground the spray gun electrode to remove any residual charge.
2. Point the spray gun into the booth or waste container and activate the spray gun to relieve residual pressure. Lock the trigger to prevent inadvertent activation of the spray gun.

3. Unscrew the retaining ring (6). Remove the retaining ring and airless cap (5) assembly.
4. Make sure the gasket or gasket with restrictor (3) is installed in the nozzle (4).

NOTE: If you are using a gasket with restrictor, the restrictor will already be installed in the gasket. Make sure the gasket with restrictor is installed in the nozzle with the flush surface toward the nozzle.

5. Install the PTFE retaining washer (2) behind the gasket to hold it in place. The end of the fluid tip (1) can be used to help seat the gasket and washer.

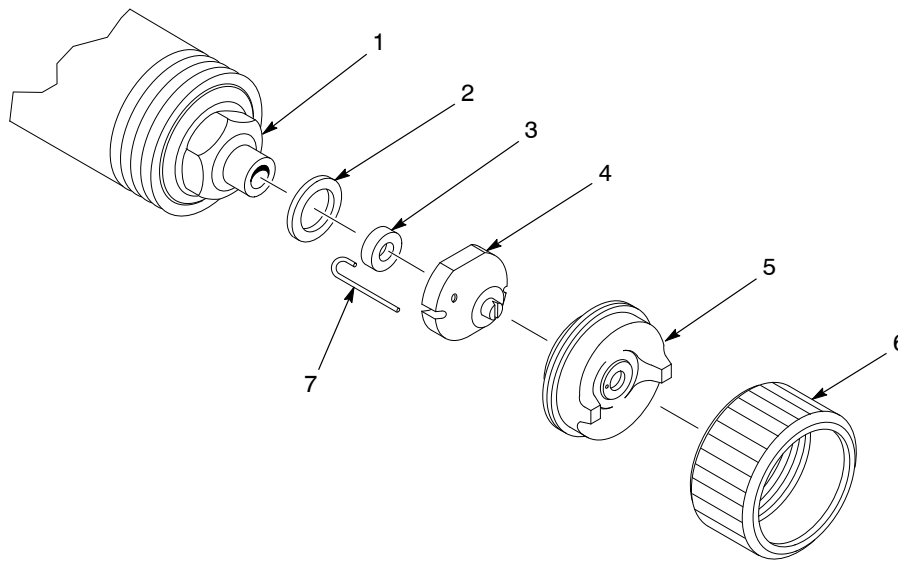


Figure 3-5 Nozzle and Gasket with Restrictor Installation

- | | | |
|-------------------------------------|----------------|-------------------|
| 1. Fluid tip | 4. Nozzle | 6. Retaining ring |
| 2. PTFE retaining washer | 5. Airless cap | 7. Electrode |
| 3. Gasket or gasket with restrictor | | |

6. Align the slot in the nozzle with the tab in the airless cap. Make sure to line up the holes for the electrode (7).
7. Insert the electrode through the nozzle and airless cap making sure the short leg of the electrode is inserted into the second hole in the back of the nozzle.
8. Make sure the airless cap rests in the groove in the bottom of the retaining ring and that it rotates freely.
9. Screw the retaining ring and cap assembly onto the extension. Hold the cap in the desired position and tighten the retaining ring until it is snug.

NOTE: The cap screws into the retaining ring and rests in a groove in the ring that lets it rotate freely. Do not overtighten the cap.

Section 4

Operation



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Introduction



WARNING: This equipment can be dangerous unless it is used in accordance with the rules laid down in this manual.



WARNING: Do not exceed the maximum fluid pressure rating of 103 bar (1500 psi). Failure to follow this warning may result in death or personal injury.



WARNING: While operating manual spray guns, make sure you are grounded. Wear electrically conductive gloves or a grounding strap connected to the gun handle or other true earth ground. Do not wear or carry metallic objects such as jewelry or tools.



WARNING: High-pressure fluids are extremely hazardous. Do not point the spray gun at any part of your body or at anyone else. Do not operate the fluid-delivery system if any component is leaking. Failure to observe this warning could result in an injection injury. Refer to *High Pressure Fluids* on page 1-3 for more information.



WARNING: The spray gun includes a trigger lock. Engage the trigger lock to prevent accidental triggering of the gun and possible injection injuries. Failure to observe this warning may result in injury.

NOTE: Read this entire section before performing any procedures.

Introduction *(contd)*

Before operating the spray gun, make sure that

- the fluid tip, nozzle, gasket or gasket with restrictor, electrode, and PTFE retaining washer are correctly installed and the cap is installed and securely held with the retaining ring.
- all fluid connections are secure and leak-free. The fluid hose is grounded.
- fluid delivery components are correctly installed. All conductive system components and flammable material containers are securely connected to a true earth ground.
- the operator station and spray area are clean and free of debris.

Daily Startup



WARNING: Never operate the spray gun with a worn or damaged trigger lock. Failure to observe this warning may result in injury.

NOTE: When starting a new spray system for the first time, flush the fluid delivery system, hose, and spray gun with a solvent compatible with the coating material to be used. Remove the cap from the spray gun before flushing solvent through the spray gun. Flushing will remove contaminants from the system.

1. Turn on the air supply shutoff valve. Adjust the air pressure to 1.03 bar (15 psi) minimum. This air supply pressure is required to activate the air flow switch.

NOTE: If kV is erratic, check the kV indicator. If the kV voltage indicator is flickering or is off, increase the air pressure.

2. Lock the trigger and turn on the gun control unit.
3. Pressurize the system with fluid. Refer to your pump manual for startup and operating instructions. Do not exceed 103 bar (1500 psi).
4. Turn on the fluid heater(s), if used. Refer to your heater manual for operating instructions. Do not exceed 82 °C (180 °F).
5. Turn on the spray booth exhaust fans.
6. Check the fluid-delivery system for leaks.

7. Point the spray gun into the booth, unlock the trigger, and trigger the spray gun to start spraying.

NOTE: Triggering the spray gun should produce atomized spray and turn on the voltage multiplier. The red kV indicator should illuminate on the back of the spray gun. Adjust the fluid pressure to obtain the desired atomization and spray pattern. Refer to *Spray Pattern and Atomization Adjustments* in this section.

8. Use a Nordson kV meter to read the kV output. Use this information and the values from *Electrostatic Troubleshooting* as a baseline when troubleshooting the electrostatic system.

NOTE: Refer to *Electrostatic Troubleshooting* on page 6-4 for more information.

Spray Pattern and Atomization Adjustments

Obtaining the correct spray pattern, coating material atomization, and transfer efficiency for your application requires a combination of operator experience and experimentation. To obtain the best results, perform the following tasks.



WARNING: Shut off the power supply. Ground the spray gun's electrode to remove any residual charge. Failure to observe this warning could result in personal injury.



WARNING: Shut off the fluid-delivery system and relieve system fluid pressure before removing nozzles or restrictors. Failure to observe the warning could result in an injection injury.

Adjust the coating material atomization by increasing or decreasing the fluid pressure. If these adjustments do not improve the atomization, install a gasket with restrictor. If the gasket with restrictor does not improve atomization, change the nozzle, restrictor, or coating material viscosity.

Shutdown



WARNING: Shut off the power supply. Ground the spray gun's electrode to remove any residual charge. Failure to observe this warning could result in personal injury.



WARNING: Before installing or changing nozzles or restrictors, shut off the fluid-delivery system and relieve the fluid pressure in the system. Failure to observe this warning could result in an injection injury.

Short-Term

For short-term breaks in production, no shutdown procedures are necessary. Lock the trigger air and wipe the cap and fluid tip with a clean cloth dampened with a compatible solvent.

Long-Term

1. Shut off the power supply.
2. Shut off the fluid-delivery system.
3. Trigger the spray gun into a waste container to relieve system fluid and air pressures.
4. Remove the nozzle, gasket or gasket with restrictor, electrode, and PTFE retaining washer.
5. Flush the fluid-delivery system, fluid hose(s), and spray gun with a compatible solvent.

Refer to the *Maintenance* section for recommended flushing and cleaning procedures.

Multi-Component Coatings



CAUTION: Leaving the coating material in the spray gun longer than the indicated pot-life may clog the spray gun and require disassembly and replacement of major spray gun components.

Refer to the coating material pot-life information to determine the proper shutdown procedures.

Section 5

Maintenance



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Introduction

The spray gun requires very little routine maintenance beyond cleaning. For best results, keep the spray gun as clean as practical.

NOTE: Three spray gun covers are provided with each spray gun. Keeping the spray gun clean can minimize wrapback and improve transfer efficiency.

Daily



WARNING: Shut off the gun control unit and ground the spray gun electrode to remove any residual charge. Failure to observe this warning could result in personal injury.



WARNING: Shut off the fluid-delivery system and relieve the fluid pressure in the system. Failure to observe this warning could result in an injection injury.

Perform the following procedure at the end of each work shift:

1. Shut down the fluid-delivery system and relieve all fluid and air pressures.
2. Trigger the spray gun into the booth or a grounded waste container to relieve any residual pressure. Lock the trigger.
3. Turn off the gun control unit and ground the spray gun electrode to remove any residual charge.



WARNING: Before changing nozzles or restrictors, shut down the system and relieve all fluid and air pressures. Failure to observe this warning could result in injury.

Daily *(contd)*



CAUTION: Use a non-conductive solvent compatible with your coating material. Cleaning with conductive solvents can result in carbon tracking and loss of kV.



CAUTION: Use only a Nordson cleaning brush to clean the fluid tip and cap. Using metal tools will damage the fluid tip and airless air cap, causing faulty spray patterns.



CAUTION: Avoid cleaning the spray gun with pressurized solvents. Spraying with pressurized solvents can force the solvent into spray gun cavities, potentially damaging spray gun components.

4. Clean the nozzle and restrictor, if used.
 - a. Remove the retaining ring and airless air cap.
 - b. Remove the nozzle, PTFE retaining washer, and gasket or gasket with restrictor, if used. Soak the nozzle and restrictor in a compatible solvent to loosen any cured coating material. Use an ultrasonic cleaner if necessary.
 - c. Clean the nozzle and restrictor with a nozzle cleaning brush.
 - d. Examine the nozzle and restrictor orifices with a magnifying lens. If the orifices are clogged, use a broach or probe to clean them. Insert the broach or probe against the direction of flow. Do not use a twisting or sawing motion to clean the orifices.
 - e. Blow out the orifices with an OSHA-approved blowgun, against the direction of fluid flow.

5. Clean the fluid tip and extension with a soft-bristled brush and a compatible solvent.

NOTE: Pointing the spray gun down at a slight angle will prevent solvents from entering the air passages and possibly damaging the air seals. Most air seals are not universally compatible with all solvents and can be damaged.

6. Clean the spray gun extension frequently with a clean cloth dampened with solvent. Do not soak the spray gun in solvent.

NOTE: Take special care when cleaning the spray gun with solvents. Using excessive amounts of solvent can allow solvent to leak into the spray gun and damage the multiplier. If the gun requires extensive cleaning, remove the multiplier. Refer to *Multiplier Replacement* on page 7-12.

7. Dry the fluid tip, cap, and spray gun with low-pressure air from an OSHA-approved blowgun.

Periodically

Periodically perform the following maintenance procedures on the spray gun. The frequency of these procedures will vary depending on the application and coating material being used.



WARNING: Shut off the gun control unit and ground the spray gun electrode to remove any residual charge. Failure to observe this warning could result in personal injury.



WARNING: Shut off the fluid-delivery system and relieve the fluid pressure in the system. Failure to observe this warning could result in an injection injury.



CAUTION: Use a non-conductive solvent compatible with your coating material. Cleaning with conductive solvents can result in carbon tracking and loss of kV.



CAUTION: Avoid cleaning the spray gun with pressurized solvents. Spraying with pressurized solvents can force the solvent into spray gun cavities, potentially damaging spray gun components.

System Flushing

1. Relieve system fluid pressure.
2. Turn off the gun control unit and ground the spray gun electrode to remove any residual charge.
3. Point the spray gun down into a grounded waste container. Trigger the spray gun to drain the spray gun and hose(s). Lock the trigger.
4. Remove the retaining ring, air cap, nozzle, PTFE retaining washer, and gasket or gasket with restrictor.
5. Turn on the solvent supply and adjust it to the lowest possible pressure.
6. Unlock the trigger and trigger the spray gun into a suitably grounded container. Allow solvent to flow until it runs clear.
7. Turn off the solvent supply and relieve the pressure. Disconnect the fluid hose(s).
8. Inspect the air exhaust muffler to make sure that it is clean and permits the free flow of air. If air does not flow freely, remove the muffler and clean it with solvent.

Spray Gun Cleaning

NOTE: Trigger the spray gun to pull the ball tip off of the seat before removing the fluid tip. This will prevent damage to the ball tip and the seat.



CAUTION: Do not clean the multiplier or the gun cable with solvent. Failure to observe this caution could result in equipment damage.

Routine Cleaning

1. Remove the fluid tip.
2. Disconnect the air hose and fluid hose(s).



CAUTION: Use a non-conductive solvent compatible with your coating material. Cleaning with conductive solvents can result in carbon tracking and loss of kV.



CAUTION: Use only a Nordson cleaning brush to clean the fluid tip and cap. Using metal tools will damage the fluid tip and airless air cap, causing faulty spray patterns.

3. Point the spray gun down and clean the front of the spray gun with a soft-bristled brush dampened with a compatible cleaning solvent.

NOTE: Pointing the spray gun down at a slight angle will prevent solvents from entering the air passages and possibly damaging the air seals. Most air seals are not universally compatible with all solvents and can be damaged.

4. Dampen a soft cloth with a compatible cleaning solvent. Point the spray gun downward and clean the exterior.

NOTE: Take special care when cleaning the spray gun with solvents. Using excessive amounts of solvent can allow solvent to leak into the spray gun and damage the multiplier. If the gun requires extensive cleaning, remove the multiplier. Refer to *Multiplier Replacement* on page 7-12.

5. Clean the fluid tip, cap, and retaining ring with a soft-bristled brush and a compatible solvent. Remove the O-rings and back-up ring and soak the fluid tip in solvent if necessary.
6. Install the retaining ring, airless air cap, nozzle, PTFE retaining washer, gasket or gasket with restrictor, and fluid tip. Pull on the trigger to retract the ball tip before installing the fluid tip.
7. Install the trigger air hose and fluid hose(s).

Extensive Cleaning



CAUTION: Never soak or vigorously clean the spray gun with the multiplier installed.

For more extensive cleaning, disassemble the spray gun and clean each part. Once disassembled, the extension and handle can be soaked in solvent and scrubbed. Remove all the seals before soaking any parts in solvent.

Electrostatic System Checks

Use a Nordson non-loading kV meter to perform checks on the electrostatic system, and a megohmmeter to check the resistance values on the spray gun. These checks ensure that the operator, electrostatic spray gun, electrostatic power supply, and all conductive material within the spray area are connected to a true earth ground. Proper grounding is essential for efficient operation and prevention of a buildup and subsequent discharge of an electrostatic charge that could ignite combustible material within the spray area.

Make sure the electrostatic equipment has and maintains the proper resistance values. Proper resistance values are important to maintain the equipment within designed current outputs. The resistance values may vary over a period of time due to several conditions; for example, a buildup of residue in the spray area and degradation of electrical components that have been exposed to high voltages may occur.

Section 6

Troubleshooting



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Introduction



WARNING: Shut off the gun control unit and ground the spray gun electrode to remove any residual charge. Failure to observe this warning could result in personal injury.

These procedures cover only the most common problems that you may encounter. If you cannot solve the problem with the information given here, contact your local Nordson representative for help.

This section contains troubleshooting procedures for

- common spray gun problems;
- spray pattern and film-build faults; and
- electrostatics.

When multiple causes exist for a problem, they are listed in order of importance.

Common Problems

Problem	Possible Cause	Corrective Action
1. Spray gun spitting	Dirty or worn ball tip or fluid tip	Clean or replace the ball tip and fluid tip.
	Air bubbles in fluid stream	Bleed air from the fluid delivery system. Check for leaks in the fluid delivery system or excessive agitation in the fluid reservoir.
	Fluid pressure too low	Increase the fluid pressure.
2. Fluid leaking around the nozzle or retaining ring	Worn or damaged nozzle gasket or gasket with restrictor	Replace the nozzle gasket or gasket with restrictor.
	Worn or damaged air piston or other air seals	Replace the piston O-rings or other seals.
3. Fluid leaking from rear of extension	Worn or damaged packing cartridge O-ring	Replace the O-ring and back-up ring.
	Worn or damaged packing cartridge	Replace the packing cartridge (packing cartridge cannot be repaired).
4. Low or erratic fluid flow	Fluid delivery system malfunction	Check the fluid delivery system (air and fluid).
	Blockage within spray gun, fluid hose, or fluid system	Flush the system. If necessary, repair or replace clogged or damaged components.
	Low fluid pressure	WARNING: Do not exceed the maximum fluid pressure rating of 103 bar (1500 psi). Failure to observe this warning may result in death or personal injury. Slowly increase the fluid pressure until the desired fluid flow is obtained.
	Fluid too viscous	Lower the viscosity by adding solvent or increasing the fluid temperature.
5. Coarse spray	Fluid too viscous	Lower the viscosity by adding solvent or increasing fluid temperature.
	Solvent evaporates too quickly	Use slower evaporating solvent. Contact your material supplier.
	Clogged or damaged nozzle, restrictor, or fluid tip	Clean and inspect the nozzle, restrictor, and fluid tip. Replace them if they are damaged.
	Gun control unit is off	Turn on the gun control unit.
6. Excessive bounce back	Fluid pressures too high	Reduce the fluid pressures.
7. Dry spray	Spray gun held too far away from substrate	Move the spray gun closer to the substrate.

Spray Pattern/Film Build Troubleshooting

Figure 6-1 illustrates common spray pattern and film build faults.

Problem	Possible Cause	Corrective Action
1. Fluttering or spitting (1)	Air in fluid line	Check for air leaks in the system.
	Fluid pressure too low	Increase the fluid pressure.
2. Irregular pattern (2)	Partially clogged nozzle orifice	Remove the nozzle and clean.
	Worn or damaged nozzle	Replace the nozzle.
3. Tails in pattern (3)	Fluid pressure too low	Increase the fluid pressure.



Figure 6-1 Common Spray Pattern Faults

1. Fluttering or spitting

2. Irregular pattern

3. Tails in pattern

Electrostatic Troubleshooting

Problem	Possible Cause	Corrective Action
1. Loss of wrap, poor transfer efficiency	Low electrostatic voltage	Increase the voltage.
	Resistor or multiplier failure	Check the multiplier/tip resistor assembly with a megohmmeter for 277–340 megohms at 500 volts. If the reading is out of range, check the resistor tip separately. The tip resistor should measure 33.3–36.8 megohms. Refer to <i>Multiplier Continuity and Resistance Check</i> on page 6-5.
	Poorly grounded parts	Check the conveyor chain, rollers, and part hangers for paint buildup. The resistance between the parts and the ground must be 1 megohm or less. 500 ohms or less is recommended for best results.
2. No kV output from spray gun	KV on/off switch in off position	Check the position of the kV on/off switch. Switch to the on position if necessary.
	Damaged gun cable	Check the continuity of the cable wires, from pin to pin. Replace the cable if any opens or shorts are found. Refer to <i>Gun Cable Continuity Check</i> on page 6-6.
	Malfunctioning voltage multiplier	Check the continuity and resistance of the multiplier with a megohmmeter for 277–340 megohms at 500 volts. No burn throughs or arc tracks should be visible on any parts. Refer to <i>Multiplier Continuity and Resistance Check</i> on page 6-5.
	Failed tip resistor	Check the resistor with a megohmmeter for 33.3–36.8 megohms at 500 volts.
	Malfunctioning gun control unit	Check for 21 Vdc between cable end connectors. Refer to <i>Gun Cable Continuity Check</i> on page 6-6.
	Insufficient air flow to activate the electrostatics	Increase the air pressure.
	Clogged or dirty muffler	Clean or replace the muffler.
	Air pressure too low	Increase the air pressure.
Continued...		

Problem	Possible Cause	Corrective Action
3. %kV reading on controller incorrect	Input voltage switch is not in correct position	If the input voltage is 120 V, the switch in the controller must be set to the 120 V position. Refer to the <i>Kinetix Manual Gun Power Supply</i> manual for more information.
4. Electrostatics will not shut off when trigger is released	Air leak in air hose	Check the air hose and fittings for leaks. Tighten the fittings or replace the hose.
	Air valve seat worn or damaged	Remove the air valve and inspect the sealing surface. Replace the air valve if worn or damaged.

Multiplier Continuity and Resistance Check

See Figure 6-2.

The multiplier should measure 277–340 megohms at 500 volts.

1. Connect the earth ground probe (common end) of the megohmmeter to the contact spring (2).
2. Connect the other probe of the megohmmeter to one of the three pins (1) on the end of the multiplier.

NOTE: The polarity of the voltage multiplier requires that the megohmmeter be connected correctly to obtain a good reading.

If the multiplier does not measure correctly, replace the multiplier. Refer to *Multiplier Replacement* on page 7-12.

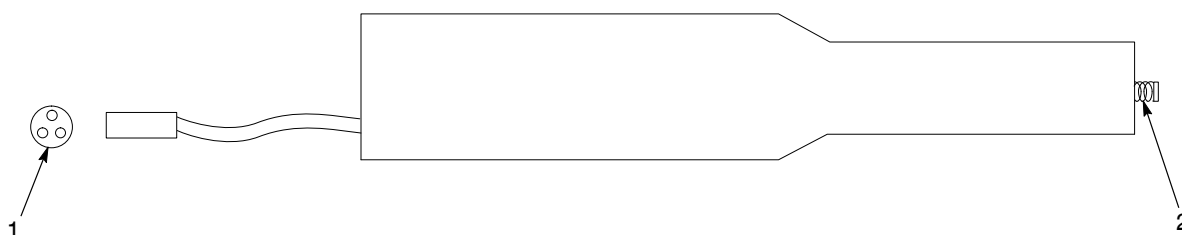


Figure 6-2 Multiplier Continuity and Resistance Check

1. Pins

2. Contact spring

Gun Cable Continuity Check

See Figure 6-3.

Use an ohmmeter to check the cable continuity at the connector terminals listed in Table 6-1.

NOTE: If the continuity check fails make sure the kV on/off switch is in the on position.

Table 6-1 Spray Gun Cable Continuity Check

Control Unit Connector	Spray Gun Connector	Position
1	—	Open
2	2	Closed
3	3	Closed
4	1	Closed
5	—	Open
6	Bracket	Closed

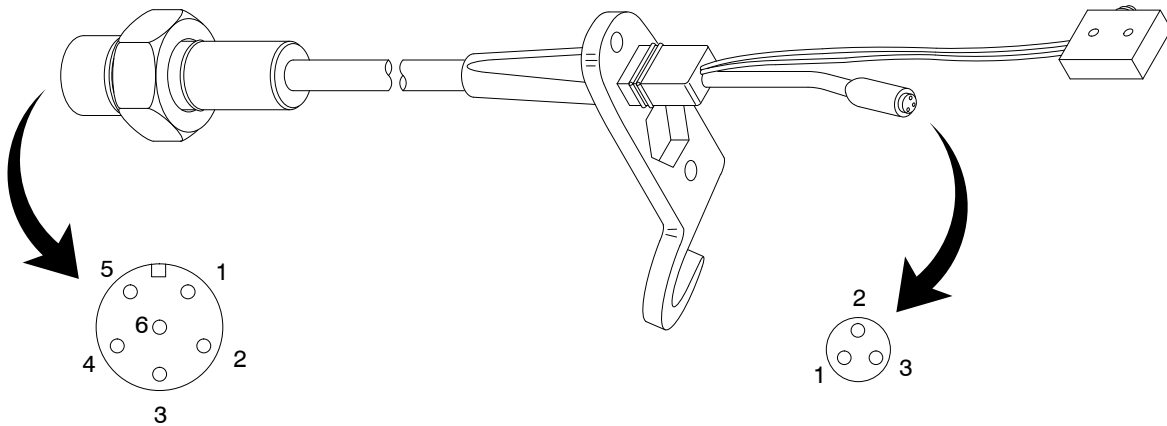


Figure 6-3 Gun Cable Continuity Check

Section 7

Repair



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.



WARNING: Shut off the power supply. Ground the spray gun's electrode to remove any residual charge. Failure to observe this warning could result in personal injury.



WARNING: Shut down the system and relieve all fluid and air pressures before performing these procedures. Failure to observe this warning could result in injection injury.



WARNING: Use only Nordson replacement parts to repair the spray gun. Deviating from the repair instructions, using unauthorized parts, or making unauthorized modifications can result in personal injury or death and/or the loss of approvals by agencies such as Factory Mutual Research Corporation (FM) or the Canadian Standards Association (CSA).



CAUTION: Do not overtighten threaded parts. Failure to observe this caution will result in equipment damage.

NOTE: Tighten all fittings until snug or to the specified torques. Because the spray gun uses O-ring seals, further tightening provides no benefit and could damage plastic threads.

NOTE: The numeric callouts in this section match the item numbers in the spray gun parts list. Refer to the *Parts* section for complete part descriptions and ordering information. Items in the repair section that are not listed in the spray gun part lists are identified with alphabetic callouts.

Tools/Supplies Required

Before beginning any of the repair tasks described in this section, make sure you have the following tools and supplies:

- See Figure 7-1: Combination tool provided with your spray gun
- $\frac{5}{32}$ -in. hex wrench
- Small flat-blade screwdriver
- Phillips-head screwdriver
- Service kits and replacement parts
- Removeable threadlocking adhesive
- Dielectric grease
- PTFE grease lubricant (MagnaLube® G) or equivalent PTFE-based lubricant

NOTE: Refer to the *Parts* section for service kits and replacement parts.

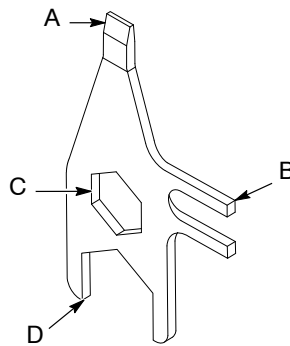


Figure 7-1 Combination Tool

- | | |
|---------------------------|-------------------|
| A. Screwdriver | C. Fluid tip tool |
| B. Packing cartridge tool | D. Hose tool |

Nozzle, Restrictor, and Fluid Tip Replacement

See Figure 7-2.

1. Turn off the gun control unit and ground the spray gun electrode to remove any residual charge.
2. Flush the fluid-delivery system, hoses, and spray gun.
3. Turn off the fluid-delivery system. Relieve system fluid pressures. Point the spray gun into the booth or grounded container and activate it to relieve any residual pressure.
4. Disconnect the fluid hose from the spray gun. Move the spray gun to a clean, dry, flat surface.

5. Unscrew the retaining ring (1) and airless air cap (2) assembly from the extension.
6. Remove the nozzle (A), PTFE retaining washer (D), electrode (C), and gasket (B) or gasket with restrictor, if used. Do not lose the gasket. Clean the nozzle and restrictor as described on page 5-2.
7. Pull the trigger all the way back to retract the ball tip (15). Place the hex on the combination tool over the hex on the fluid tip (3) and unscrew it from the extension.
8. Make sure the O-ring (6) and conductive back-up ring (4) are installed on the new fluid tip, with the O-ring toward the rear of the fluid tip. Lubricate the O-ring with O-ring grease.



CAUTION: Do not overtighten threaded parts. Failure to observe this caution will result in equipment damage.

9. Pull the trigger all the way back to retract the ball tip. Screw the new fluid tip in the extension. Tighten the fluid tip snugly.
10. Install the nozzle, electrode, PTFE retaining washer, and gasket or gasket with restrictor and then securely hand tighten the retaining ring and airless air cap assembly onto the extension.

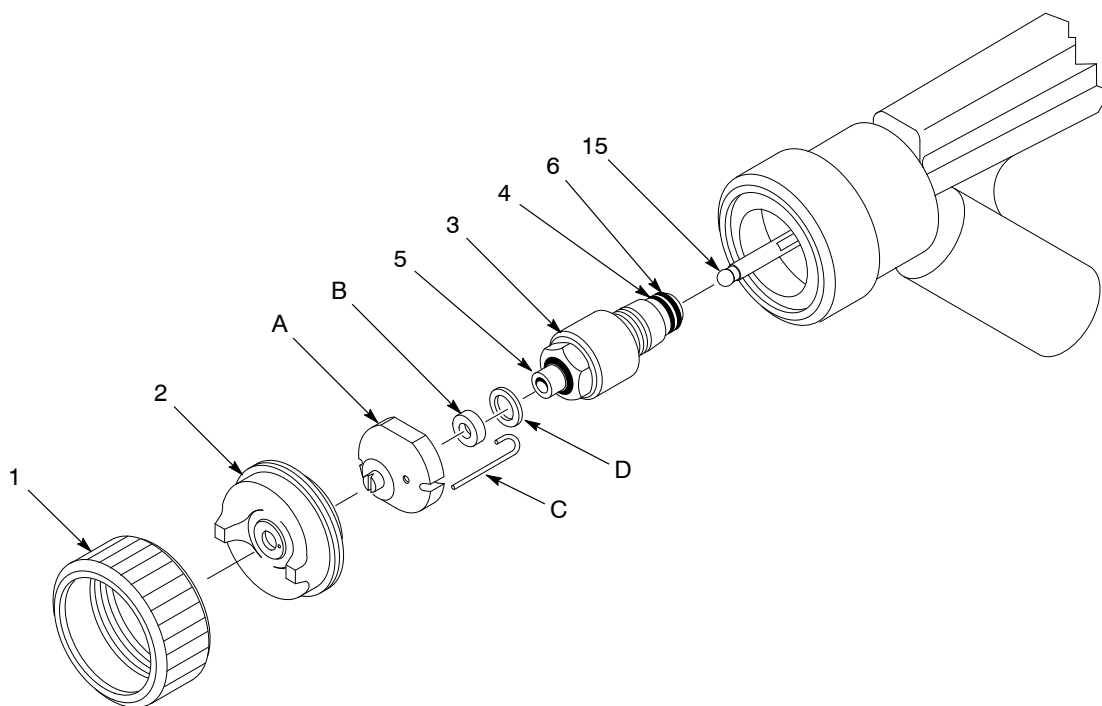


Figure 7-2 Nozzle, Restrictor, and Fluid Tip Replacement

- | | | |
|----------------------------|--------------------|-------------------------------------|
| 1. Retaining ring | 5. Conductive ring | B. Gasket or gasket with restrictor |
| 2. Airless air cap | 6. O-ring | C. Electrode |
| 3. Fluid tip | 15. Ball tip | D. PTFE retaining washer |
| 4. Conductive back-up ring | A. Nozzle | |

Trigger Lock Replacement

See Figure 7-3.



WARNING: Never operate the spray gun with a worn or damaged trigger lock. Failure to observe this warning could result in an injection injury.

1. Drive the pin (27) out of the trigger lock (26) and handle (19) with a small dowel pin.
2. Hold the new trigger lock in place and drive the new pin through the lock and handle holes. The pin should be approximately flush with the trigger lock surfaces.

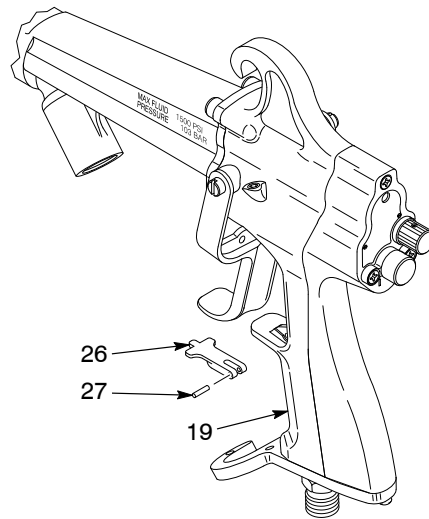


Figure 7-3 Trigger Lock Replacement

- | | |
|------------------|---------|
| 19. Handle | 27. Pin |
| 26. Trigger lock | |

Air Inlet Fitting Replacement

1. See Figure 7-4. Remove the screws (30, 41) to remove the back cover (45) from the handle and ground bracket (A).
2. Remove the two screws (52) that attach the fluid hose fitting (D) to the ground bracket. Remove the fluid hose from the ground bracket.
3. Slowly pull the back cover away from the handle so you do not disconnect the cable connector (B) from the multiplier connector (C) or pull on the kV actuator switch wires.

NOTE: The cable will be secured in ribbed slots in the back of the spray gun's handle.

4. Unscrew the old air inlet fitting (31) from the handle base and replace it with the new air inlet fitting. Tighten the fitting finger tight.

5. Install the bracket over the fitting hex. Tighten or loosen the air inlet fitting slightly to align the fitting with the hex in the bracket.

NOTE: Make sure the cable is snapped into the ribbed slots in the back of the handle.



CAUTION: Be careful not to pinch the cables between the handle and the back cover as the back cover is tightened.

6. Secure the bracket to the handle and back cover using the two screws (30).
7. Secure the fluid hose within the ground bracket (A) with the two screws (52).
8. Install the back cover using the three screws (41).

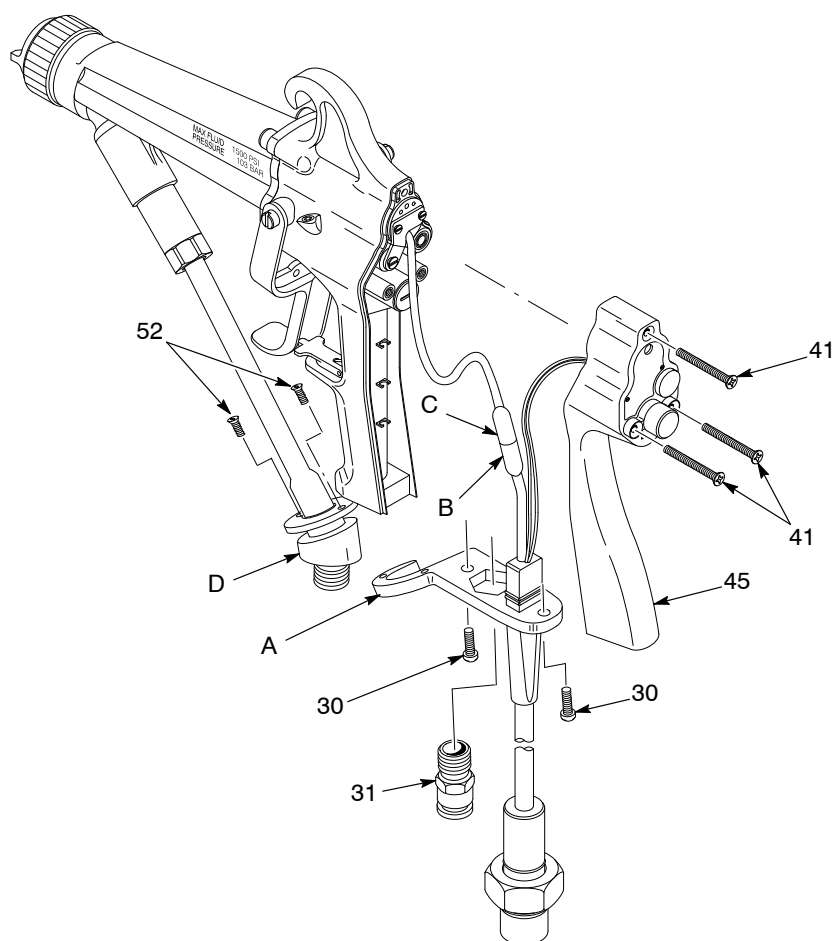


Figure 7-4 Air Inlet Fitting Replacement

- | | |
|--------------------------------------|-------------------------|
| 30. Screws | A. Ground bracket |
| 31. Air inlet fitting/male connector | B. Cable connector |
| 41. Screws | C. Multiplier connector |
| 45. Back cover | D. Fluid hose fitting |
| 52. Screws | |

Ball Tip and Packing Cartridge Replacement



CAUTION: If the packing cartridge leaks, it is important to thoroughly clean the packing cartridge bore in the extension with a compatible non-conductive solvent to remove any residual coating material. Failure to do so may result in loss of kV.



CAUTION: Do not overtighten threaded parts. Failure to observe this caution may result in equipment damage.

The Kinetix spray gun is shipped with the standard gold packing cartridge. This durable packing cartridge is appropriate for most coating materials. Use the optional PTFE packing cartridge with harsh chemical solvents such as MEK.

The only serviceable parts of the packing cartridge are the external O-ring and back-up ring. If replacing the O-ring and back-up ring does not stop the packing cartridge from leaking, you must replace the packing cartridge.

The ball tip is not a component of the packing cartridge. You must order the the ball tip separately.

Preparation

1. Turn off the gun control unit and ground the spray gun electrode to remove any residual charge.
2. Flush the fluid-delivery system, hoses, and spray gun.
3. Turn off the fluid-delivery system. Relieve system fluid pressures.
4. Point the spray gun into the booth or grounded container and activate it to relieve any residual pressure.
5. Disconnect the fluid hose from the spray gun. Move the spray gun to a clean, dry, flat surface.

Spray Gun Disassembly

See Figure 7-5.

1. Remove the nozzle, restrictor, PTFE retaining washer, electrode, gasket or gasket with restrictor, and fluid tip as described in *Nozzle, Restrictor, and Fluid Tip Replacement* on page 7-2.
2. Remove the two screws (52) that attach the fluid hose fitting (B) to the ground bracket (A). Remove the fluid hose from the ground bracket.
3. Remove the two pivot screws (28) and the trigger (29).
4. Using a $\frac{5}{32}$ -in. hex wrench, remove the four socket head screws (8) to remove the extension (7) from the handle (19). Do not lose the two face-seal O-rings (38) or the large face-seal O-ring (9) installed in the handle.

NOTE: Hold onto the extension as you remove it from the handle. The packing cartridge spring will push the extension away from the handle.

- Carefully slide the extension off of the multiplier (10). Do not lose the packing cartridge/fluid return spring (25).

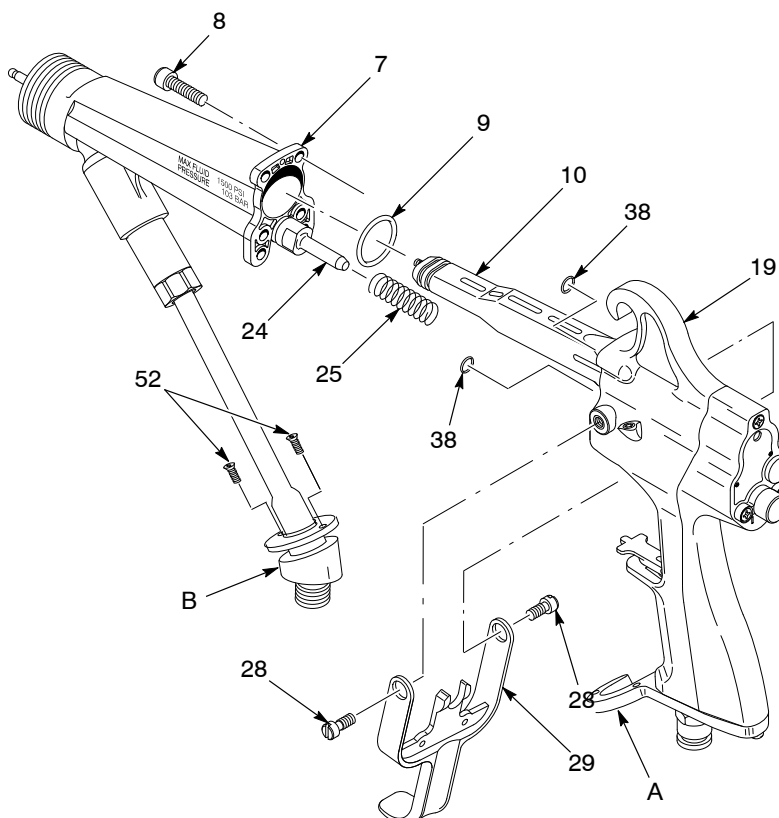


Figure 7-5 Spray Gun Disassembly

- | | | |
|---------------------------|---|-----------------------|
| 7. Extension | 24. Puller | 38. Face-seal O-rings |
| 8. Socket-head screws | 25. Packing cartridge/fluid return spring | 52. Screws |
| 9. Large face seal O-ring | 28. Pivot screws | A. Ground bracket |
| 10. Multiplier | 29. Trigger | B. Fluid hose fitting |
| 19. Handle | | |

Ball Tip and Packing Cartridge Removal

See Figure 7-6.

- Hold the the puller (24) by its flats and unscrew it from the pull shaft (20).
- Push the pull shaft forward and unscrew the packing cartridge retainer (23) with the combination tool.
- Pull the puller out of the back of the extension to remove the puller, packing cartridge (18), and sleeve retainer (22). Do not bend the connecting wire (A).

Ball Tip and Packing Cartridge Removal (contd)

4. Remove the sleeve retainer from the puller and unscrew the pull shaft from the packing cartridge.
5. Clean the extension fluid bores with a round, soft-bristled brush and a compatible non-conductive solvent. For thorough cleaning, remove the fluid fittings from the extension.
6. Inspect the packing cartridge. Replace the O-ring (16) and back-up ring (17) if they are damaged. If the packing cartridge is damaged, replace it with a new one.

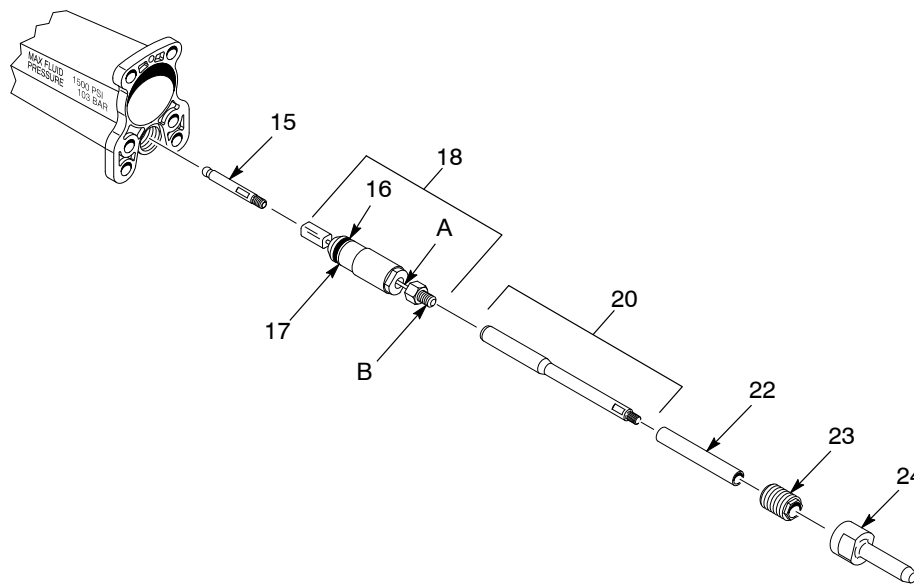


Figure 7-6 Ball Tip and Packing Cartridge Replacement

- | | | |
|-----------------------|--------------------------------|--------------------|
| 15. Ball tip | 20. Pull shaft | 24. Puller |
| 16. O-ring | 22. Sleeve retainer | A. Connecting wire |
| 17. Back-up ring | 23. Packing cartridge retainer | B. Puller fitting |
| 18. Packing cartridge | | |

7. Lubricate the packing cartridge O-ring and back-up ring with MagnaLube G or an equivalent PTFE-based lubricant.
8. Generously lubricate both ends of the packing cartridge wire with MagnaLube G or an equivalent PTFE-based lubricant. Push and pull the wire 40–50 times to work the lubricant into the packing cartridge.
9. If the ball tip (15) is damaged, replace it as follows:
 - a. Hold the ball tip fitting with a wrench and unscrew the ball tip.

NOTE: A removable threadlocking adhesive can be applied to the threads of the new ball tip if there are problems with the ball tip backing out.

 - b. Screw the new ball tip into the ball tip fitting. Hand-tighten the ball tip until it is bottomed against the fitting. Wipe off excess adhesive.

Ball Tip and Packing Cartridge Installation

See Figure 7-6.

NOTE: Make sure all residual coating material has been removed from all parts before installing.

1. Apply a removable threadlocking adhesive to the threads of the packing cartridge puller fitting (B).
2. Screw the pull shaft (20) onto the packing cartridge (18).
3. Apply a liberal amount of dielectric grease to the puller fitting and the pull shaft then insert the packing cartridge assembly and pull shaft into the extension from the back.
4. Apply a liberal amount of dielectric grease to the outside of the sleeve retainer (22) then slide the sleeve retainer over the pull shaft and push it down into the fluid bore.
5. Generously lubricate the end of the pull shaft and the inside of the packing cartridge retainer (23) with MagnaLube G or an equivalent PTFE-based lubricant.
6. Apply a thin coating of dielectric grease to the threads of the packing cartridge retainer then screw the packing cartridge retainer into the extension.
7. Push the pull shaft forward and tighten the packing cartridge retainer with the combination tool hand-tight.
8. Wipe off excess dielectric grease.
9. Apply a removable threadlocking adhesive to the threads of the pull shaft and screw the puller onto the pull shaft.

Spray Gun Assembly

See Figure 7-5.

1. Make sure that the multiplier (10) is clean and well lubricated with dielectric grease. Grease the front $\frac{1}{3}$ of the multiplier and its contact spring if necessary.
2. Generously lubricate the outside diameter of the puller (24) and the packing cartridge /fluid return spring (25) with MagnaLube G or an equivalent PTFE-based lubricant.
3. Generously lubricate the inside of the fluid return spring bore in the handle with MagnaLube G or an equivalent PTFE-based lubricant.
4. Insert the packing cartridge/fluid return spring and the end of the puller into the handle trigger bore and mate together the handle (19) and the extension (7).
5. Secure the extension to the handle with the four socket-head screws (8). Tighten the screws to 1.36–1.58 N•m (12–14 in.-lb).

Spray Gun Assembly (contd)

6. Insert the pivot screws (28) through the holes in the trigger (29) and into the greased insert in the handle. Make sure the trigger forks engage the pull shaft. Tighten the screws to 0.9–1.13 N•m (8–10 in.-lb).

NOTE: Pull the trigger and make sure it presses the air valve stem into the handle and pulls the ball tip into the spray gun.

7. Install the retaining ring, air cap, nozzle, PTFE retaining washer, electrode, gasket or gasket with restrictor, and fluid tip as described in *Nozzle, Restrictor, and Fluid Tip Replacement* on page 7-2.
8. Secure the fluid hose within the ground bracket (A) with the two screws (52).

Air Valve Replacement



CAUTION: A worn or damaged air valve could result in an air leak that triggers on the electrostatics. Replace a worn or damaged air valve immediately.

Back Cover Removal

1. See Figure 7-7. Remove the two screws (52) that attach the fluid hose fitting (D) to the ground bracket (A). Remove the fluid hose from the ground bracket.
2. Remove the screws (30, 41) to remove the back cover (45) from the handle and ground bracket.
3. Slowly pull the back cover away from the handle so you do not disconnect the cable connector (B) from the multiplier connector (C) or pull on the kV actuator switch wires.

NOTE: The cable is secured in ribbed slots in the back of the handle.

Air Valve Removal

1. See Figure 7-7. Remove the air valve plug (48) with the combination tool. Inspect the O-ring (49). Replace it if it is damaged.
2. Remove the spring (50) from the handle. Do not lose the spring.

NOTE: The air valve stem may come out with the spring. If it does not, push it out from the trigger side of the handle. Do not use any tools to force the stem; you may damage the U-cup seal or stem bore.

3. Inspect the air valve stem (51). Replace the air valve stem if the elastomeric seat is damaged or the stem is worn or damaged.

NOTE: If there is no damage to the air valve stem, and air does not leak from the stem bore when the trigger is pulled, you should not have to replace the U-cup seal.

4. If necessary, remove and replace the U-cup seal (36):
 - a. Use a small pick to pull the U-cup seal out of the handle.
 - b. Install a new U-cup seal on the air valve stem with the U facing outward. Carefully insert the stem into the stem bore and seat the U-cup into the recess surrounding the stem bore.
 - c. Remove the air valve stem. Use the blunt end of a dowel with a larger diameter than the inside diameter of the U-cup seal to press the seal into the bore. Make sure the end of the dowel does not have sharp edges.

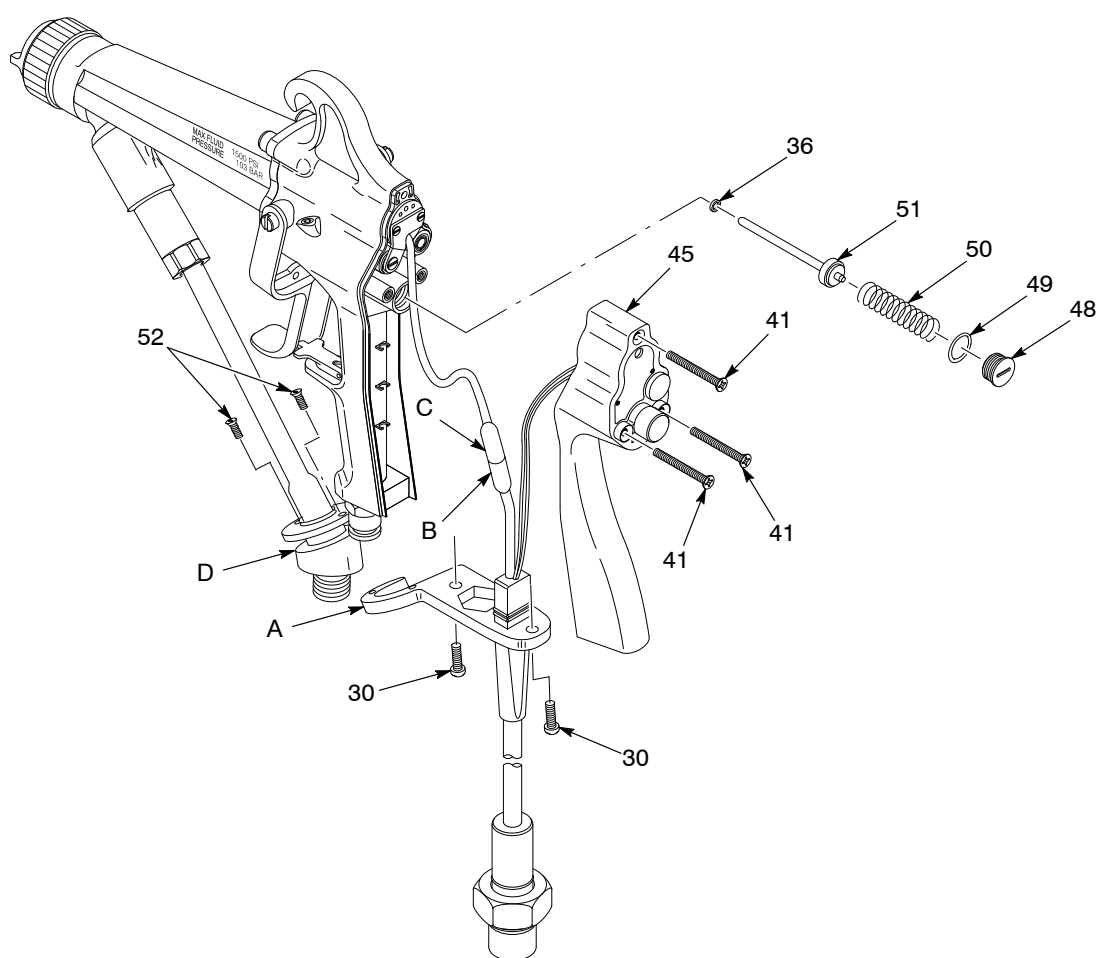


Figure 7-7 Air Valve Replacement

- | | | |
|--------------------|--------------------|-------------------------|
| 30. Screws | 49. O-ring | A. Ground bracket |
| 36. U-cup seal | 50. Spring | B. Cable connector |
| 41. Screws | 51. Air valve stem | C. Multiplier connector |
| 45. Back cover | | D. Fluid hose fitting |
| 48. Air valve plug | 52. Screws | |

Air Valve Installation

See Figure 7-7.

1. If the spring comes off the air valve stem, snap it back on. The spring must be attached to the air valve stem or the spray gun will not work properly.
2. Insert the air valve stem through the U-cup seal and through the stem bore.
3. Push the air valve stem back and forth through the U-cup several times with your fingers. Pull the spring and air valve stem back out of the bore. If the U-cup seal comes out with the valve stem, install and seat it.
4. Lubricate the air valve plug O-ring and insert it into the handle until it is snug.

NOTE: Make sure the cable is snapped into the ribbed slots in the back of the handle.



CAUTION: Be careful not to pinch the cable between the handle and the back cover as the back cover is tightened.

5. Secure the ground bracket (A) to the handle and back cover using the two screws (30).
6. Secure the fluid hose fitting (D) within the ground bracket with the two screws (52).
7. Install the back cover (45) using the three screws (41).

Multiplier Replacement

Multiplier Removal

See Figure 7-8.

1. Turn off the gun control unit and ground the spray gun electrode to remove any residual charge.
2. Turn off the fluid-delivery system and relieve the fluid pressure.
3. Remove the two screws that attach the fluid hose fitting to the ground bracket (A). Remove the fluid hose from the ground bracket.
4. Remove the screws (30, 41) to remove the back cover (45) from the handle and the ground bracket.
5. Slowly pull the back cover away from the handle (19) and disconnect the cable connector (B) from the multiplier connector (C).

NOTE: The cable will be secured in ribbed slots in the back of the handle.

6. Remove the screws (13) securing the heat sink bracket (12) to the handle.



CAUTION: Do not pull the multiplier out of the spray gun handle by its wires.

7. Pull the multiplier (10) out of the spray gun handle.

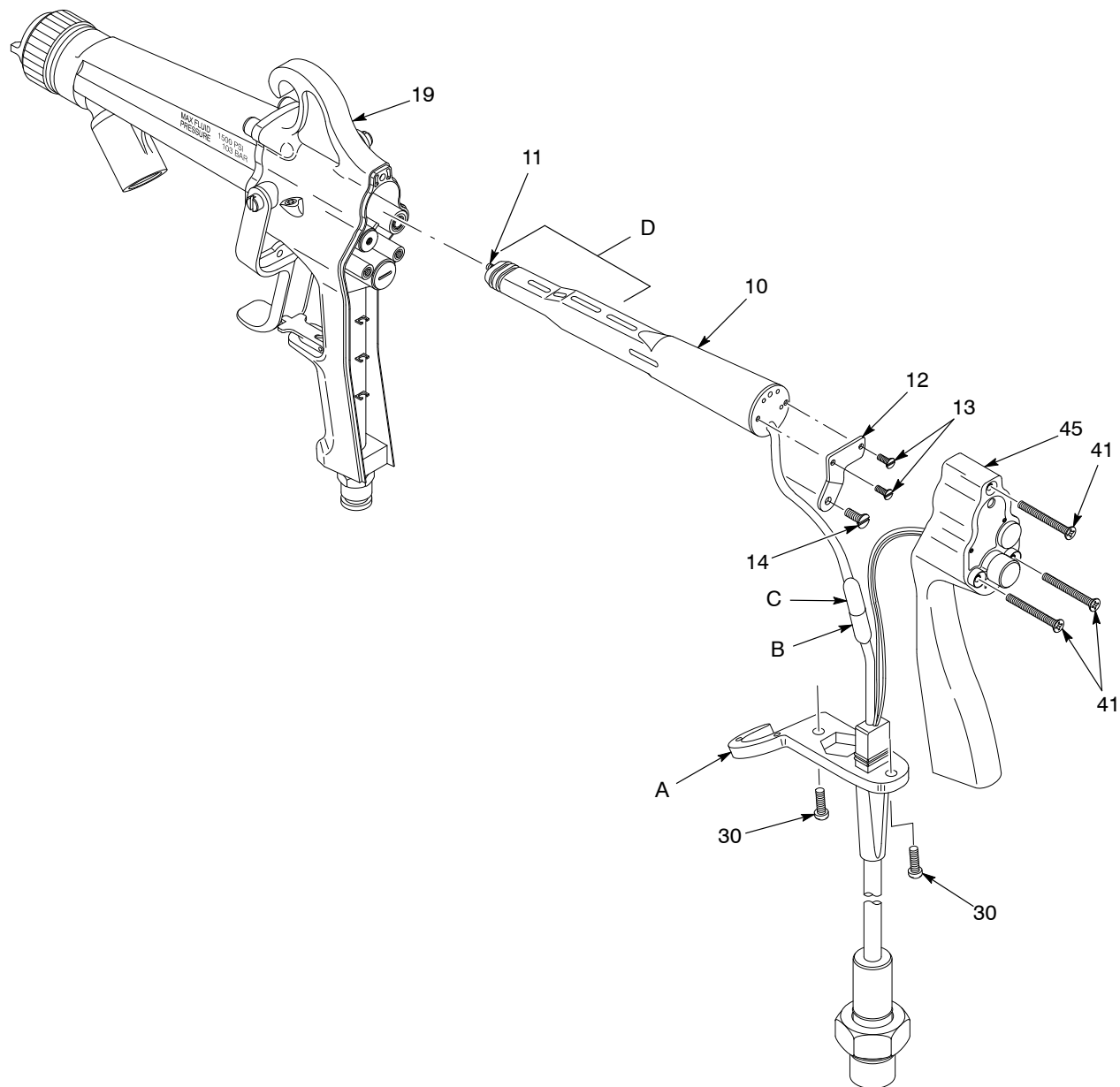


Figure 7-8 Multiplier Replacement

- 10. Multiplier
- 11. Contact spring
- 12. Heat sink bracket
- 13. Screws
- 14. Screw

- 19. Handle
- 30. Screws
- 41. Screws
- 45. Back cover

- A. Ground bracket
- B. Cable connector
- C. Multiplier connector
- D. Dielectric grease

Multiplier Installation

See Figure 7-8.

1. Remove the following items from the old multiplier and install them on the new multiplier:
 - screws (13),
 - heat sink bracket (12)
2. Check the continuity of the new multiplier. Refer to *Multiplier Continuity and Resistance Check* on page 6-5.
3. Make sure that the contact spring (11) is in place and apply a liberal amount of dielectric grease (D) to the front $\frac{1}{3}$ of the new multiplier (10) and the contact spring.
4. Push the new multiplier through the handle (19) and into the extension.
5. Attach the heat sink bracket (12) to the handle using the screws (13).
6. Connect the cable connector (B) to the multiplier connector (C).
7. Snap the cable into the ribbed slots in the back of the handle.



CAUTION: Be careful not to pinch the cable between the handle and the back cover as the back cover is tightened.

8. Secure the bracket to the handle and back cover using the two screws (30).
9. Secure the back cover (45) with the screws (41). Tighten the screws to 0.9–1.13 N•m (8–10 in.-lb).
10. Secure the fluid hose within the ground bracket (A) with the two screws.

Gun Cable Replacement

See Figure 7-9.

Cable Removal

1. Turn off the gun control unit and ground the spray gun electrode to remove any residual charge.
2. Remove the two screws (52) that attach the fluid hose fitting (D) to the ground bracket (A). Remove the fluid hose from the ground bracket.
3. Remove the screws (30, 41) to remove the back cover (45) from the handle and the ground bracket.
4. Slowly pull the back cover away from the handle and disconnect the cable connector (B) from the multiplier connector (C).

NOTE: The cable is secured in ribbed slots in the back of the handle.

5. Remove the screws (35) and washers (34) securing the actuator switch (33).

NOTE: Be careful not to lose the washers or bend the actuator switch.

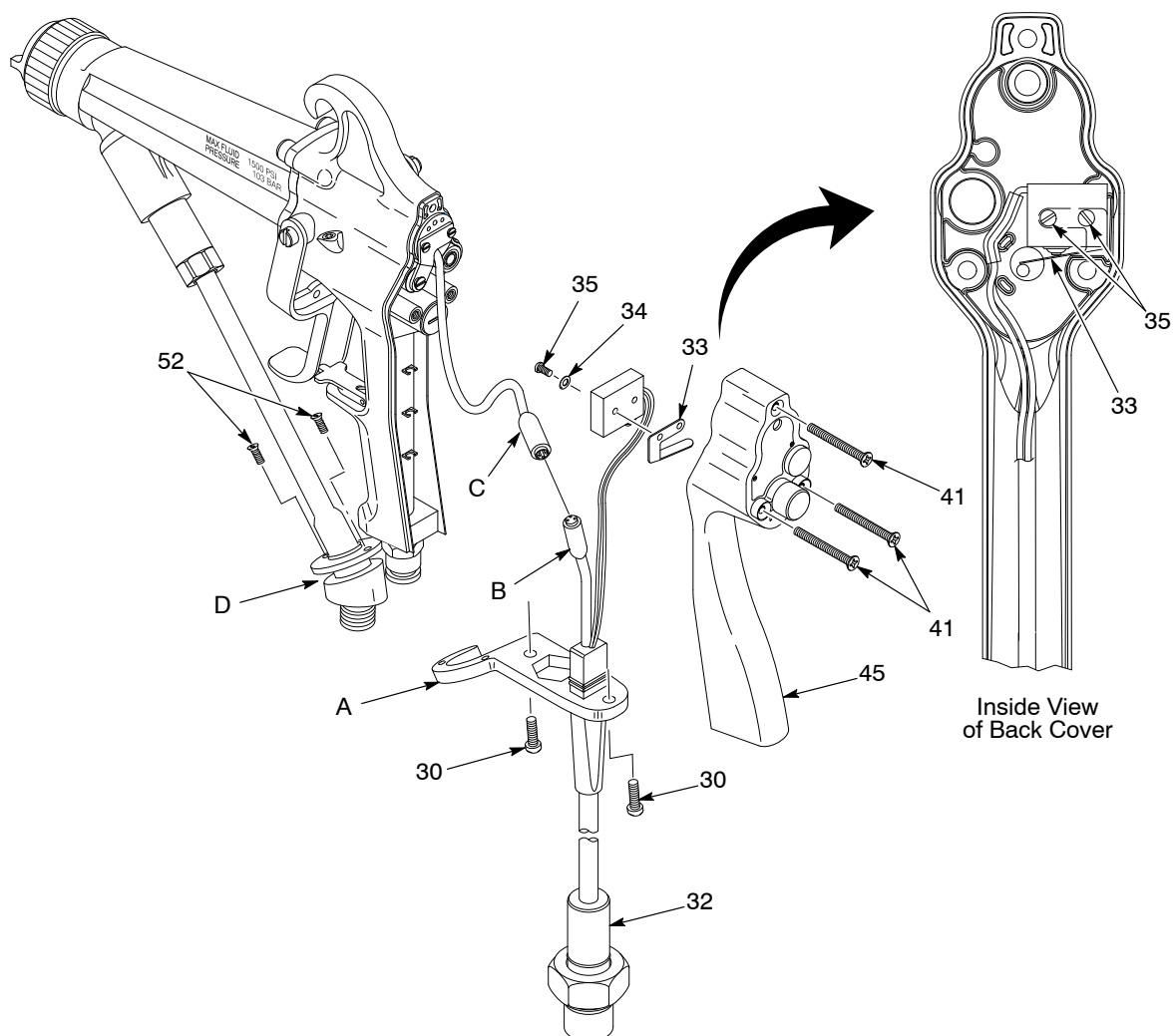


Figure 7-9 Gun Cable Replacement

- | | | |
|-------------------------|----------------|-------------------------|
| 30. Screws | 35. Screws | A. Ground Bracket |
| 32. Electrostatic cable | 41. Screws | B. Cable connector |
| 33. Actuator switch | 45. Back cover | C. Multiplier connector |
| 34. Washers | 52. Screws | D. Fluid hose fitting |

Cable Installation

See Figure 7-9.

1. Secure the actuator switch (33) to the back cover (45) with its screws (35) and washers (34).

NOTE: The actuator switch should be placed as shown in Figure 7-9. The wires should be to the left of the switch and the actuator clip should be placed behind the switch so that its arm extends along the bottom of the switch from the right.

2. Connect the cable connector (B) to the multiplier connector (C).

NOTE: Make sure the cable is snapped into the ribbed slots in the back of the handle.



CAUTION: Be careful not to pinch the cable between the handle and the back cover as the back cover is tightened.

3. Secure the ground bracket (A) to the handle and back cover using the two screws (30).
4. Secure the back cover using the screws (41). Tighten the screws to 0.9–1.13 N•m (8–10 in.-lb).
5. Secure the fluid hose fitting within the ground bracket (A) with the two screws (52).

Fluid Supply Hose Replacement

See Figure 7-10.

Fluid Hose Removal

1. Turn off the gun control unit and ground the spray gun electrode to remove any residual charge.
2. Turn off the fluid-delivery system and relieve the fluid pressure.
3. Remove the two screws (52) that attach the fluid hose fitting (B) to the ground bracket (A). Remove the fluid hose from the ground bracket.
4. Loosen the hose retaining nut (C) at the extension fluid inlet boss (D), and unscrew it completely.
5. Pull the hose assembly out of the extension.

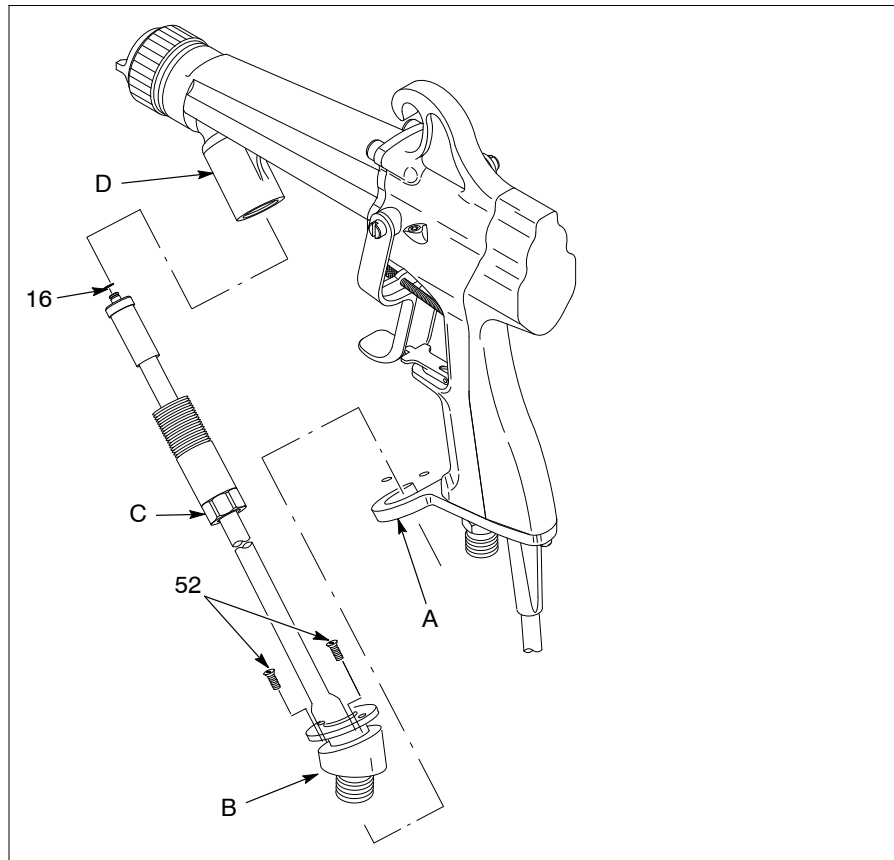


Figure 7-10 Fluid Supply Hose Replacement

- | | |
|-------------------|-------------------------------|
| 16. O-ring | B. Fluid hose fitting |
| 52. Screws | C. Retaining nut |
| A. Ground bracket | D. Extension fluid inlet boss |

Fluid Hose Installation

1. Clean the hose fittings.
2. Inspect the O-ring (16) on the end fitting. Replace if necessary.
3. Lubricate the O-ring with O-ring grease.
4. Push the end fitting into the extension fluid inlet boss (D).
5. Screw the retaining nut (C) into the extension. Do not overtighten.
6. Install the fluid hose into the ground bracket (A).
7. Secure the fluid hose within the ground bracket with the two screws (52).

Service Illustration and Notes

Use Figure 7-11 and Table 7-1 as a quick reference when repairing the spray gun.

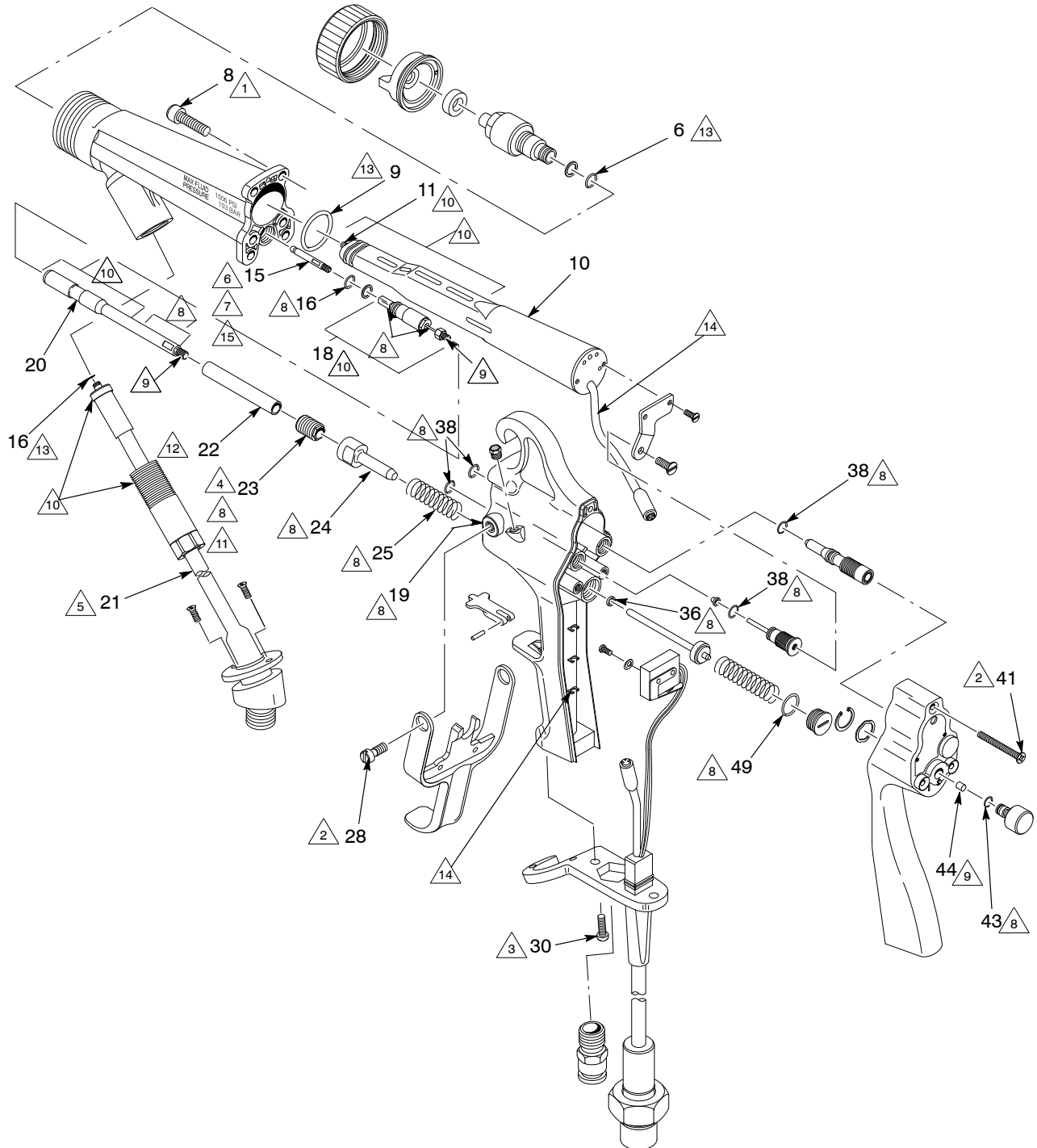

















Figure 7-11 Spray Gun Service Notes

Table 7-1 Spray Gun Service Notes

Note	Item	Description
	8	Tighten to 2.27–2.83 N•m (20–25 in.-lb).
	28, 41	Tighten to 0.9–1.13 N•m (8–10 in.-lb).
	30	Tighten to 1.36–1.70 N•m (12–15 in.-lb).
	23	Tighten hand tight.
	21	Tighten the retaining nut into the extension inlet $\frac{1}{4}$ turn past hand tight.
	15	Trigger the spray gun to pull the ball tip back before removing or installing a fluid tip.
	15	Tighten finger tight.
	16, 36, 38, 43, 49, 53, 56, 18 (wire at both ends) 19 (inside the fluid return bore) 20 (end of pull shaft), 23 (inside of packing cartridge retainer) 24 (the small outside diameter)	Generously apply MagnaLube G (PTFE-filled lubricant) to these parts.
	18, 20, 44	Apply threadlocking adhesive to the threads of these items.
	10, 11, 18, 20, 21	Apply a liberal coat of dielectric grease to these areas.
	23	Apply a thin coat of dielectric grease to the threads of this item.
	22	Apply a thin coat of dielectric grease to the outside of this item.
	6, 9, 16	Apply dielectric grease to these O-rings.
	10, 19	Make sure the cable is snapped into the ribbed slots in the back of the handle.
	15	A removable threadlocking adhesive can be applied to the threads of the ball tip if there are problems with the ball tip backing out.

Section 8

Parts

Introduction

To order parts, call the Nordson Finishing Customer Support Center at (800) 433-9319 or contact your local Nordson representative.

Using the Illustrated Parts List

Numbers in the Item column correspond to numbers that identify parts in illustrations following each parts list. The code NS (not shown) indicates that a listed part is not illustrated. A dash (—) is used when the part number applies to all parts in the illustration.

The number in the Part column is the Nordson Corporation part number. A series of dashes in this column (- - - -) means the part cannot be ordered separately.

The Description column gives the part name, as well as its dimensions and other characteristics when appropriate. Indentions show the relationships between assemblies, subassemblies, and parts.

- If you order the assembly, items 1 and 2 will be included.
- If you order item 1, item 2 will be included.
- If you order item 2, you will receive item 2 only.

The number in the Quantity column is the quantity required per unit, assembly, or subassembly. The code AR (As Required) is used if the part number is a bulk item ordered in quantities or if the quantity per assembly depends on the product version or model.

Letters in the Note column refer to notes at the end of each parts list. Notes contain important information about usage and ordering. Special attention should be given to notes.

Item	Part	Description	Quantity	Note
—	0000000	Assembly	1	
1	000000	• Subassembly	2	A
2	000000	• • Part	1	

Kinetix Airless Manual Electrostatic Spray Gun

NOTE: Before ordering parts for your spray gun, review the appropriate procedure in the *Repair* section to make sure you are ordering the correct parts, lubricant, and adhesives to complete the procedure.

See Figure 8-1.

Item	Part	Description	Quantity	Note
—	336717	SPRAY GUN, Kinetix, airless, manual, electrostatic, 50 ft	1	
1	325547	• RING, retaining, air cap	1	
2	336558	• CAP, airless, electrostatic	1	
3	-----	• TIP, fluid, high pressure, Kinetix	1	A
4	336569	• BACKUP RING, conductive, 0.39-in. ID x 0.045-in. thick, cut	1	A, B
5	-----	• RING, conductive, high pressure, tip	1	A
6	336678	• O-RING, Perlast®, 0.375 x 0.50 x 0.063 in.	1	A, B
7	336643	• EXTENSION, machined, electrostatic	1	
8	325752	• SCREW, socket, #10–24 x 0.625 in., stainless steel, A-286	4	
9	940231	• O-RING, Viton, 1.063 x 1.188 x 0.063 in.	1	C
10	336505	• MULTIPLIER, 93 kV, Kinetix	1	
11	336383	• • SPRING ASSEMBLY, contact		
12	336375	• BRACKET, heat sink, manual, electrostatic	1	
13	981522	• SCREW, pan, #4–40 x 0.125 in., slot, zinc	2	
14	982763	• MACHINE SCREW, pan, 8–32 x 0.375 in., steel, zinc	1	
15	336636	• KIT, ball tip assembly	1	D
16	336677	• O-RING, Perlast, 0.25 x 0.375 x 0.063 in.	2	B, C, E
17	105527	• SERVICE KIT, ring, backup, quantity 4	1	E
18	-----	• CARTRIDGE ASSEMBLY, packing, electrostatic	1	E
19	336380	• HANDLE, machined, Kinetix	1	
20	336638	• SHAFT WITH STUD, packing cartridge, Kinetix	1	
21	-----	• HOSE, Kinetix, high pressure, standard, 1/4 in., manual, 1 ft	1	F
22	325748	• RETAINER, sleeve, packing cartridge	1	
23	325749	• RETAINER, packing cartridge, electrostatic	1	
24	325751	• PULLER SHAFT, trigger, electrostatic	1	
25	325537	• SPRING, fluid return, high pressure	1	

NOTE A: Included in fluid tip service kit 336650. Refer to *Fluid Tip* on page 8-6.

B: Included in Perlast fluid seal service kit 336679. Refer to *Perlast Fluid Seal* on page 8-6.

C: Included in air seal service kit 336634. Refer to *Air Seal* on page 8-7.

D: The optional ball tip kit 336637 may improve performance in some applications. Contact your Nordson representative for more information.

E: Included in packing cartridge service kit 1089861. Refer to *Packing Cartridge* on page 8-7.

F: Refer to *Hoses and Tubing* on page 8-8.

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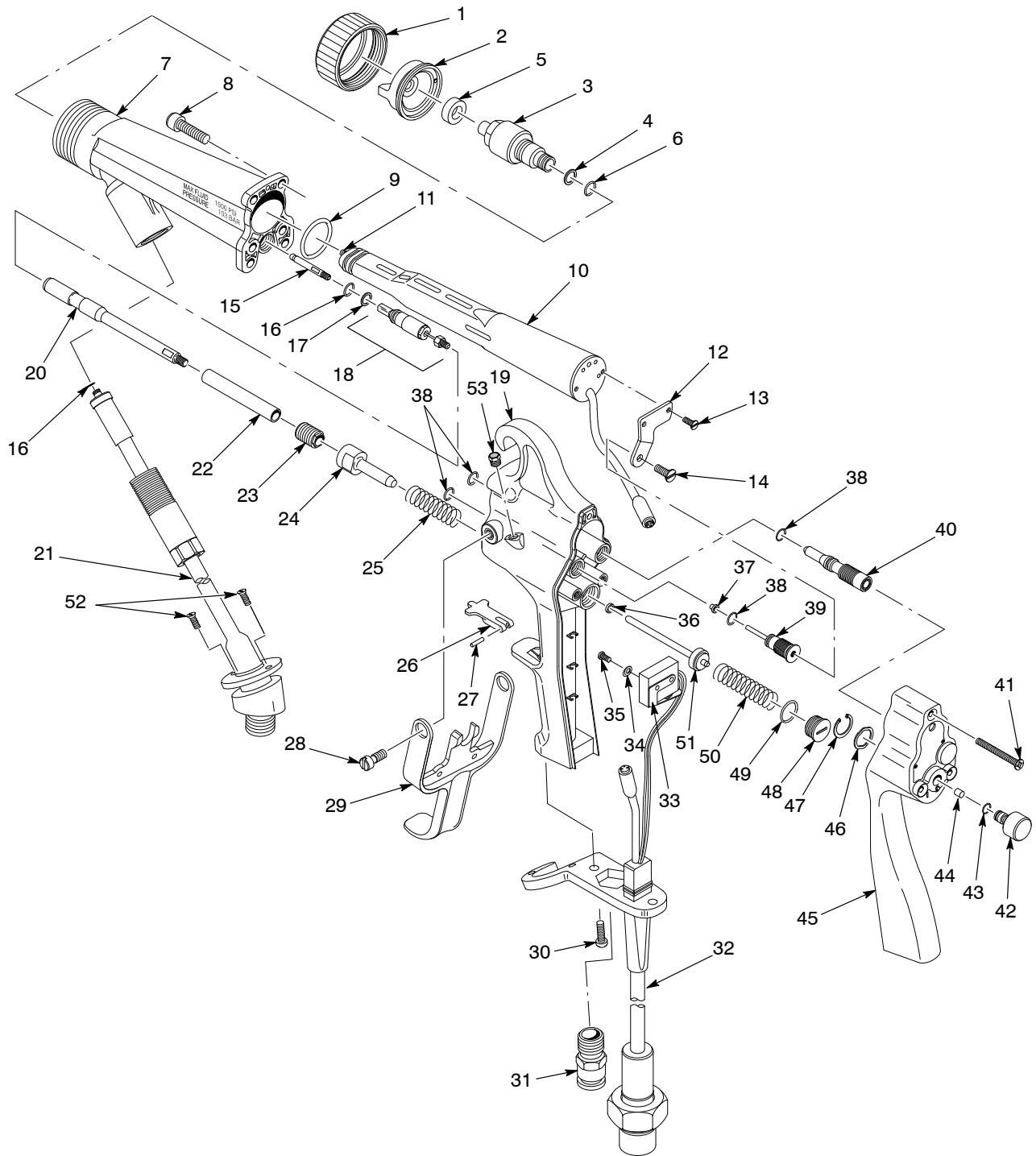


Figure 8-1 Kinetix Airless Manual Electrostatic Spray Gun

Kinetix Airless Manual Electrostatic Spray Gun *(contd)*

See Figure 8-1.

Item	Part	Description	Quantity	Note
26	-----	• LOCK, trigger, Kinetix	1	G
27	985438	• PIN, dowel, 0.094 x 0.438 in.	1	G
28	246526	• SCREW, pivot, trigger/handle	2	
29	336365	• TRIGGER, Kinetix	1	
30	325754	• SCREW, cross recess, pan, #8-32 x 0.375 in., stainless steel, A-286	2	
31	971265	• CONNECTOR, male, 1/4-in. tube x 1/4-in. NPT	1	
32	336462	• CABLE, Kinetix, manual, 50 ft, 5 conductor	1	
33	132336	• ACTUATOR SWITCH	1	
34	983113	• LOCK WASHER, split, 2, steel, zinc	2	
35	981915	• SCREW, pan head, #2-56 x 0.375 in., slotted, zinc	2	
36	955076	• SEAL, 1/8 x 1/4 x 1/16 in., PTFE	1	H
37	-----	• PLUG, air, adjust, airless, electrostatic, gun	1	
38	940110	• O-RING, hotpaint, 0.313 x 0.438 x 0.063 in.	4	C
39	336376	• HEAT SINK, electrostatic	1	
40	336335	• PLUG, air adjust, airless, electrostatic	1	
41	325760	• SCREW, cross recess, flat, #8-32 x 1.375 in., #18-8 stainless steel	3	
42	336377	• KNOB, on/off, switch, electrostatic	1	
43	940090	• O-RING, Viton, 0.208-in. ID x 0.07-in. wide, brown	1	C
44	336378	• PIN, knob, on/off, electrostatic	1	
45	336421	• COVER, electrostatic, airless, molded	1	
46	325755	• WASHER, curved spring, 0.49 x 0.331 in.	1	
47	986030	• RETAINING RING, external, 31, basic	1	
48	1090742	• PLUG, valve, air trigger, 0.688 in. dia. head	1	
49	940140	• O-RING, hotpaint, 0.50 x 0.625 x 0.063 in.	1	C
50	325499	• SPRING, air valve	1	H
51	325523	• STEM, air valve, trigger assembly	1	H
52	346725	• MACHINE SCREW, flathead, recessed, 4-40, 0.25 in., stainless steel	2	
53	336437	• MUFFLER, 1/16-in. NPT	1	
NS	901905	• BRUSH (wooden toothbrush type)	1	
NS	247066	• BRUSH	1	
NS	336642	• WRENCH, Kinetix, combination tool	1	
NS	227584	• KIT, cover, 12 pack	1	
NS	227583	• • BAG, cover	12	

NOTE C: Included in air seal service kit 336634. Refer to *Air Seal* on page 8-7.

G: Included in trigger lock service kit 336631. Refer to *Electrostatic Trigger Lock* on page 8-7.

H: Included in air valve service kit 325657. Refer to *Air Valve* on page 8-6.

NS: Not Shown

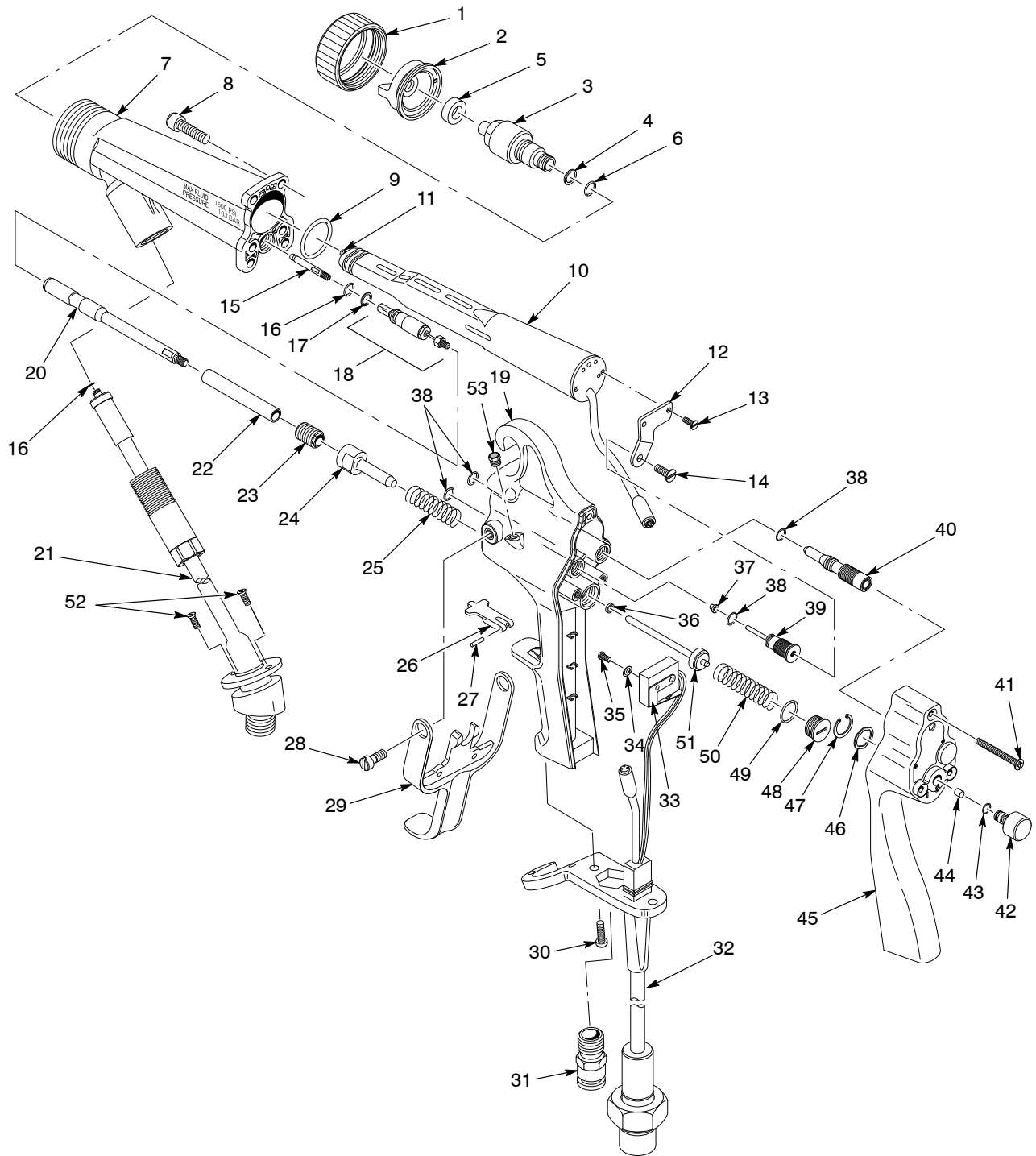


Figure 8-1 Kinetix Airless Manual Electrostatic Spray Gun

Adhesives, Sealants, and Lubricants

Use these adhesives, sealants, and lubricants when repairing your unit.
Refer to the *Repair* section in this manual for application instructions.

Part	Description	Quantity
900464	ADHESIVE, threadlocking (Loctite Removable 242)	1
900349	PTFE-FILLED LUBRICANT, O-ring, (MagnaLube) , 0.75-oz tube	1
900481	ADHESIVE, pipe/thread/hydraulic sealant	1
247658	DIELECTRIC GREASE APPLICATOR, 10 cc, 12 count	1

Recommended Kits

See Figure 8-1.

Perlast Fluid Seal

Item	Part	Description	Quantity	Note
—	336679	FLUID SEAL KIT, Perlast, gun, Kinetix	1	
4	336569	<ul style="list-style-type: none"> BACKUP RING, conductive, 0.39-in. ID x 0.045-in. thick, cut 	1	A
6	336678	<ul style="list-style-type: none"> O-RING, Perlast, 0.375 x 0.50 x 0.063 in. 	1	A
16	336677	<ul style="list-style-type: none"> O-RING, Perlast, 0.25 x 0.375 x 0.063 in. 	2	B
NOTE A: Used on the fluid tips.				
B: Used on the packing cartridge and fluid hose.				

Fluid Tip

Item	Part	Description	Quantity	Note
—	336560	FLUID TIP, high pressure, Kinetix	1	
3	-----	<ul style="list-style-type: none"> TIP, fluid, high pressure, electrostatic 	1	
4	336569	<ul style="list-style-type: none"> BACKUP RING, conductive, 0.39-in. ID x 0.045-in. thick, cut 	1	
5	-----	<ul style="list-style-type: none"> RING, conductive, 0.39-in. ID x 0.045 in. thick, cut 	1	
6	336678	<ul style="list-style-type: none"> O-RING, Perlast, 0.375 x 0.50 x 0.063 in. 	1	

Air Valve

Item	Part	Description	Quantity	Note
—	325657	AIR VALVE KIT	1	
36	955076	<ul style="list-style-type: none"> SEAL, $\frac{1}{8} \times \frac{1}{4} \times \frac{1}{16}$ in., PTFE 	1	
50	325499	<ul style="list-style-type: none"> SPRING, air valve 	1	
51	325523	<ul style="list-style-type: none"> STEM, air valve, trigger assembly 	1	

Air Seal

Item	Part	Description	Quantity	Note
—	336634	Kit, air seal, hotpaint, electrostatic	1	
9	940231	• O-RING, Viton, 1.063 x 1.188 x 0.063 in.	1	
38	940110	• O-RING, hotpaint, 0.313 x 0.438 x 0.063 in.	4	
43	940090	• O-RING, Viton, 0.208-in. ID x 0.07-in. wide, brown	1	
49	940140	• O-RING, hotpaint, 0.50 x 0.625 x 0.063 in.	1	
NS	940130	• O-RING, hotpaint, 0.438 x 0.563 x 0.063 in.	1	A
NS	336512	• O-RING, PTFE, 0.313 x 0.438 x 0.063 in., special	1	A

NOTE A: This O-ring is not used with this spray gun.

NS: Not Shown

Packing Cartridge

NOTE: The Kinetix spray gun is shipped with the gold packing cartridge, which is appropriate for most coating materials. Use the optional PTFE packing cartridge 1089862 with harsh chemical solvents such as MEK.

Item	Part	Description	Quantity	Note
—	1089861	PACKING CARTRIDGE KIT, gold, Kinetix	1	
16	336677	• O-RING, Perlast, 0.25 x 0.375 x 0.063 in.	1	
17	-----	• BACKUP RING, single, $\frac{1}{4} \times \frac{3}{8}$ in.	1	
18	-----	• CARTRIDGE ASSEMBLY, packing	1	

Trigger Lock

Item	Part	Description	Quantity	Note
—	336631	TRIGGER LOCK KIT, electrostatic	1	
26	-----	• LOCK, trigger, Kinetix	1	
27	985438	• PIN, dowel, 0.094 x 0.438 in., alloy steel, hardened and ground	1	

Optional Hotpaint Fluid Seal

The standard fluid seal O-rings for all Kinetix products provide solvent resistance. If a particular application does not require solvent resistance then the hotpaint seal kit can be used instead. These O-rings should not be used with highly polar solvents like Acetone and MEK, Chlorinated Hydrocarbons and Nitro Hydrocarbons unless they will be replaced regularly.

Part	Description	Quantity	Note
336633	HOTPAINT FLUID SEAL KIT, electrostatic	1	
336569	• BACKUP RING, conductive, 0.39-in. ID x 0.045-in. thick, cut	1	A
940120	• O-RING, hotpaint, 0.375 x 0.50 x 0.063 in.	1	A
940100	• O-RING, hotpaint, 0.25 x 0.375 x 0.063 in.	2	B
NOTE A: Used on the fluid tips. B: Used on the packing cartridge and fluid hose.			

Optional PTFE Packing Cartridge

NOTE: The PTFE packing cartridge is available for use with harsh chemical solvents such as MEK.

Part	Description	Note
1089862	KIT, cartridge, packing, Kinetix, electrostatic, PTFE	
-----	• CARTRIDGE ASSEMBLY, packing, electrostatic	
-----	• BACKUP RING, single, $\frac{1}{4} \times \frac{3}{8}$ in.	
336677	• O-RING, Perlast, 0.25 x 0.375 x 0.063 in.	

Hoses and Tubing

Hoses and tubing are optional and must be ordered separately.

Part	Description	Quantity	Note
336337	HOSE KIT, Kinetix, high pressure, standard, manual, electrostatic, 1-ft length, 0.25-in. ID	1	A
900509	TUBING, air, polyethylene, 0.25-in. OD x 0.04-in. wall	AR	B
900556	TUBING, air, nylon, 0.25-in. OD x 0.035-in. wall	AR	B
NOTE A: Any high-pressure hose can be added to this hose to increase the length. Refer to the <i>High-Pressure Fluid Hoses</i> instruction sheet for ordering information. B: Order tubing in one-foot increments. AR: As Required			

Recommended Spare Parts

Keep the following parts in inventory to avoid unplanned downtime.
Quantities listed support a single spray gun. Adjust order quantities based on the number of spray guns in service.

Part	Description	Quantity	Note
336679	PERLAST FLUID SEAL KIT, Perlast, gun, Kinetix	1	A
336633	HOTPAINT FLUID SEAL KIT, electrostatic	1	A
336634	AIR SEAL KIT, hotpaint, electrostatic	1	
325657	AIR VALVE KIT	1	
1089861	PACKING CARTRIDGE KIT, gold, Kinetix	1	B
1089862	PACKING CARTRIDGE KIT, PTFE, Kinetix	1	B
336631	TRIGGER LOCK KIT, electrostatic	1	
336560	FLUID TIP KIT, high-pressure, Kinetix	1	
122481	GASKET, NES, 10 pack	1	
336675	SEAL WASHER KIT, high-pressure gun, 12 pack	1	
336676	SEAL WASHER KIT, high-pressure gun, 100 pack	1	
336462	CABLE, Kinetix, manual, 50 ft, 5 conductor, standard		
336466	CABLE, Kinetix manual 100 ft., 5 conductor, optional		
336384	ELECTRODE, high pressure, electrostatic	6	
336505	MULTIPLIER KIT, 93 kV, Kinetix	1	
336643	EXTENSION KIT, Kinetix, high pressure	1	
336642	WRENCH, Kinetix, combination tool	1	
227584	KIT, cover, 12 pack	1	
227583	• BAG, cover	12	
247658	DIELECTRIC GREASE APPLICATOR, 10 cc, 12 count	1	
-----	NOZZLE	1	
-----	RESTRICTOR	1	
1043239	PARTS POSTER, Kinetix Manual Airless Electrostatic Spray Gun	1	
NOTE A: Fluid seal kit 336679 is standard, fluid seal kit 336633 is optional.			
B: The Kinetix spray gun is shipped with the standard gold packing cartridge. This durable packing cartridge is appropriate for most coating materials. Use the optional PTFE packing cartridge with harsh chemical solvents such as MEK.			

Section 9

Specifications

Dimensions

Dimensions	Metric (cm)	English (in.)
Height	22.28	8.77
Length	30.48	12.0
Width	5.58	2.20
NOTE: The spray gun dimensions include the fluid and air fittings.		

Weight

Weight	Metric (g)	English (oz)
Airless manual spray gun	837	29.5
NOTE: The spray gun weight includes the fluid and air fittings.		

Operating Pressures

Operating Pressures	Metric	English
Maximum air input pressure	6.9 bar	100 psi
Maximum fluid input pressure	103 bar	1500 psi
Maximum fluid temperature	82 °C	180 °F
NOTE: Supply air must be particulate free (5 microns maximum) and oil free. Use coalescing-type air filters.		

Standard Fitting Sizes

Spray Gun Standard Fitting Sizes	
Activation (trigger) air	1/4-in. tube
Fluid fitting	1/2-20 JIC, male

Gun Electrostatics

Maximum voltage: 93 kV

Maximum output rating current: 122 microamps

NOTE: Current draw greater than 50 μA may affect spray pattern, transfer efficiency and finish. If the conductivity of your material causes excessive current draw, changing to the longer hose may be necessary.

Conductivity Range

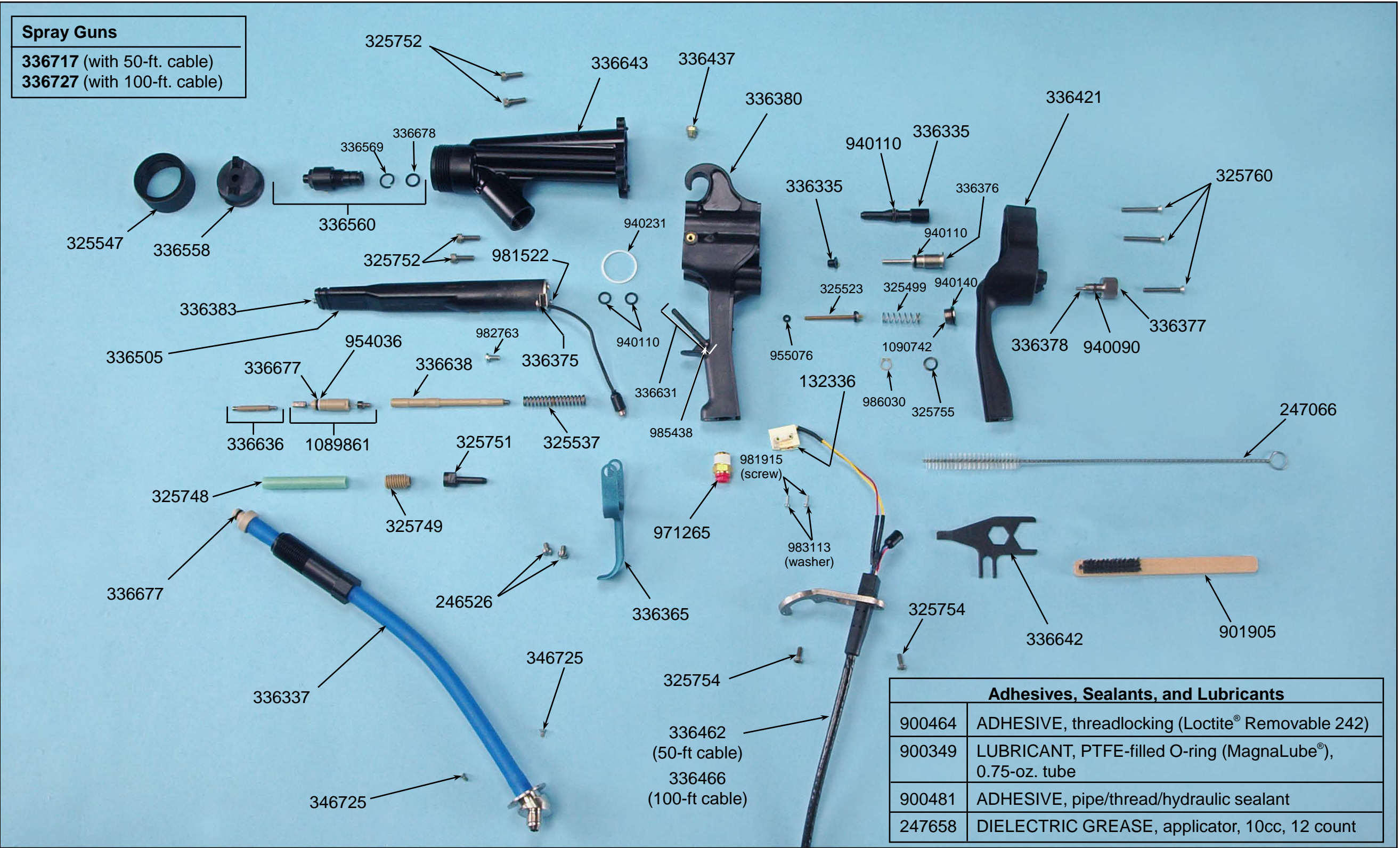
For optimum electrostatics coating resistivity the conductivity range should be greater than 25 megohms/cm.

Approvals

This spray gun has met the requirements for FM approval.

Kinetix® Manual Airless Electrostatic Spray Gun

For more information on this spray gun refer to manual 334598 at <http://emanuals.nordson.com/finishing/>



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www.nordson.com/liquid

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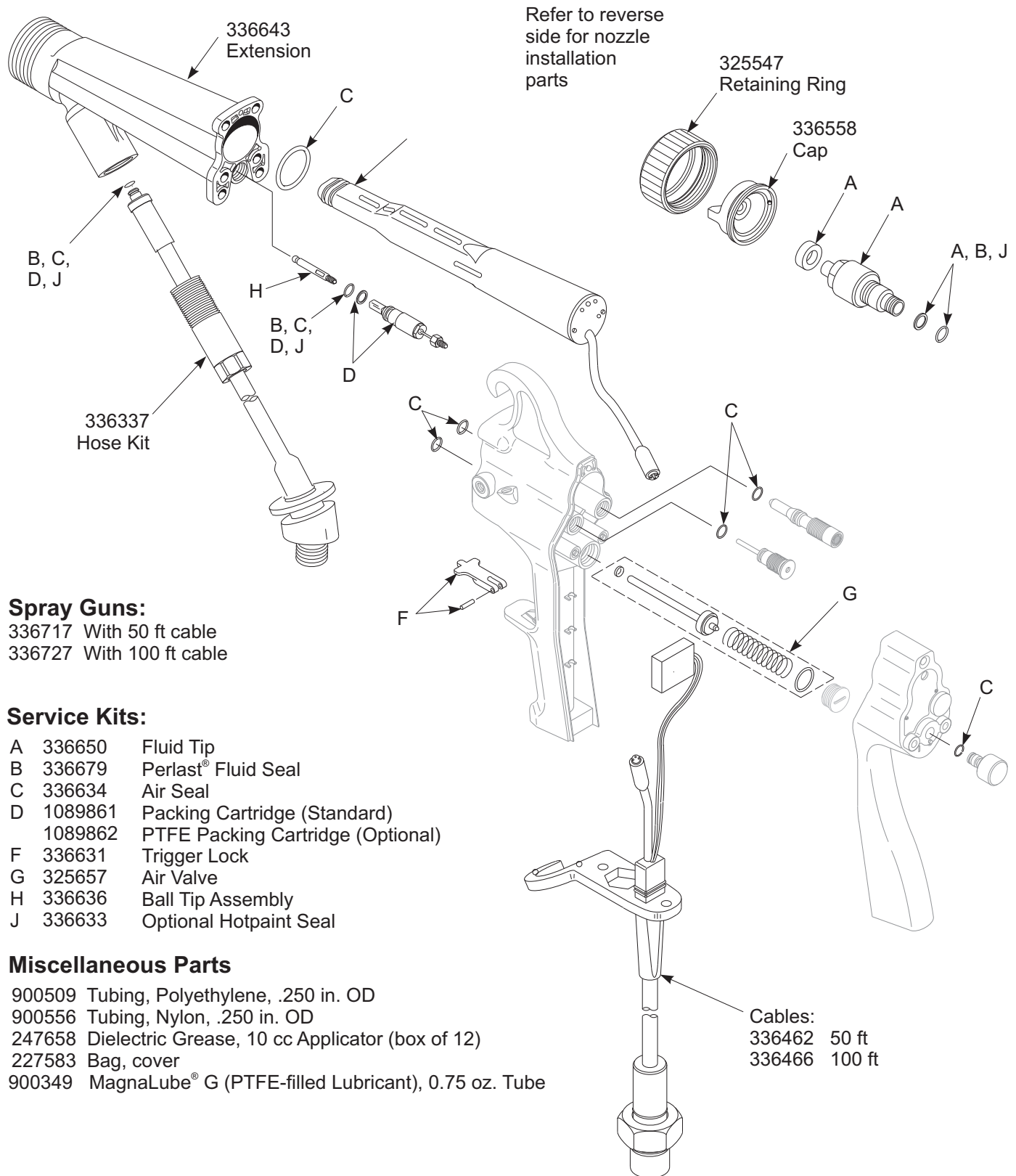
Asia/Australia/Latin America

Amherst, Ohio
Telephone: 440.985.4000
24-hour message service: 440.985.4797
Email: intcustomerservice@nordson.com

Kinetix® Airless Manual Spray Gun

Service Kits and Parts

Refer to Kinetix Gun Manual 334598 for complete service and parts information.
For parts and technical support call (800) 433-9319.



Kinetix® Airless Manual Spray Gun

Nozzle Installation Parts

Possible Combinations:

Nozzle and Restrictor

Must use retaining washer
(restrictors include gaskets)

Nozzle without Restrictor

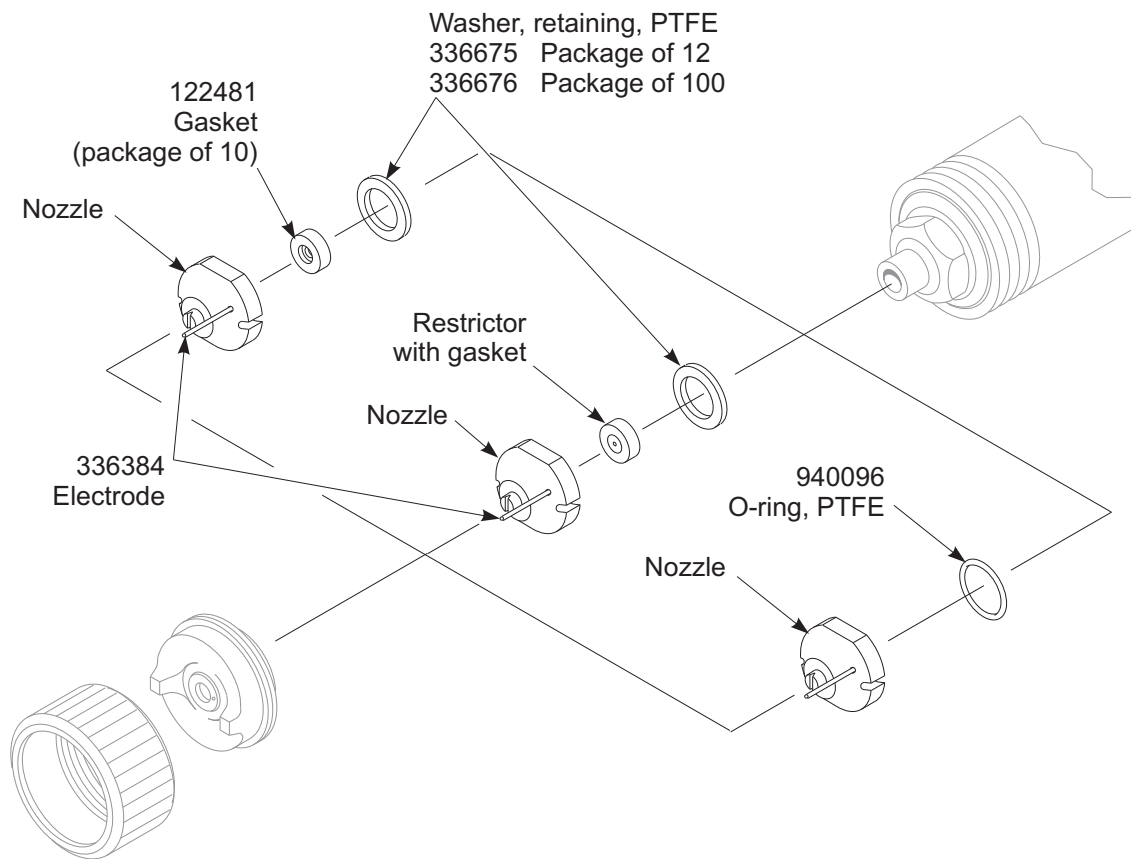
Use gasket and retaining washer
(gasket and washer packages listed above)

Nozzle without Restrictor

Use O-ring 940096

Refer to the **Kinetix Ordering Book**
or the **Nordson® Nozzle Catalog**
for Nozzles and Restrictors

The nozzle catalog is available on-line at
<http://emanuals.nordson.com/finishing>.



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