Model CA-1
Automatic Airless
Electrostatic Spray Gun

Customer Product Manual
Part 104 327C

NORDSON CORPORATION • AMHERST, OHIO • USA

Nordson Corporation welcomes requests for information, comments and inquiries about its products.

Address all correspondence to

Nordson Corporation
555 Jackson Street
Amherst, OH 44001

Notice

Trademarks

Table of Contents

Model CA-1 Automatic Airless Electrostatic Spray Gun

1. Safety

This section contains general safety instructions for using your Nordson equipment. Task- and equipment-specific warnings are included in other sections of this manual where appropriate. Note all warnings and follow all instructions carefully. Failure to do so may result in personal injury, death, or property damage.

To use this equipment safely,

- read and become familiar with the general safety instructions provided in this section of the manual before installing, operating, maintaining, or repairing this equipment.
- read and carefully follow the instructions given throughout this manual for performing specific tasks and working with specific equipment.
- store this manual within easy reach of personnel installing, operating, maintaining, or repairing this equipment.
- follow all applicable safety procedures required by your company, industry standards, and government or other regulatory agencies. Refer to the National Fire Protection Association (NFPA) standard 33 and to federal, state, regulatory agency, and local codes for rules and regulations covering installation and operation of spray systems.
- obtain and read Material Safety Data Sheets (MSDS) for all materials used.

Safety Symbols

Become familiar with the safety symbols presented in this section. These symbols will alert you to safety hazards and conditions that may result in personal injury, death, or property and equipment damage.

WARNING: Failure to observe this warning may result in personal injury, death, or equipment damage.

Safety Symbols *(contd)*

WARNING: Risk of electrical shock. Failure to observe this warning may result in personal injury, death, or equipment damage.

WARNING: Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage.

WARNING: Risk of explosion or fire. Fire, open flames, and smoking prohibited.

WARNING: Wear protective clothing, safety goggles, and approved respiratory protection. Failure to observe may result in serious injury.

WARNING: Hot! Risk of burns. Wear heat-protective clothing, safety goggles with side shields and/or heat-protective gloves depending on the symbol shown.

WARNING: System or material pressurized. Relieve pressure. Failure to observe this warning may result in serious injury or death.

WARNING: Injection. Do not point this device at yourself or other personnel. Failure to observe this warning may result in serious injury or death.

Safety Symbols (contd)

CAUTION: Failure to observe may result in equipment damage.

CAUTION: Hot surface. Failure to observe may result in burns.

Qualified Personnel

Qualified personnel is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance, and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations, and have been trained to safely install, operate, maintain, and repair the equipment. It is the responsibility of the company operating this equipment to see that its personnel meet these requirements.

Intended Use

WARNING: Use of this equipment in ways other than described in this manual may result in personal injury, death, or property and equipment damage. Use this equipment only as described in this manual.

Nordson Corporation cannot be responsible for injuries or damages resulting from nonstandard, unintended applications of its equipment. This equipment is designed and intended only for the purpose described in this manual. Uses not described in this manual are considered unintended uses and may result in serious personal injury, death, or property damage. Unintended uses may result from taking the following actions:

- making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine Nordson replacement parts
- failing to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards
- using materials or auxiliary equipment that are inappropriate or incompatible with your Nordson equipment
- allowing unqualified personnel to perform any task

Installation

Read the installation section of all system component manuals before installing your Nordson equipment. A thorough understanding of system components and their requirements will help you to install this equipment safely and efficiently.

WARNING: Failure to follow these safety procedures can result in personal injury or death.

- Allow only qualified personnel to install Nordson equipment.
- Use only approved equipment. Using unapproved equipment in an approved system may void agency approvals.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Follow all instructions for installing components and accessories.
- Install all electrical, pneumatic, gas, and hydraulic connections to local code.
- Install locking, manual, shutoff valves in the air supply lines to the system. This allows you to relieve air pressure and lock out the pneumatic system before undertaking maintenance and repairs.
- Install a locking disconnect switch or breaker in the service line ahead of any electrical equipment.
- Use only electrical wire of sufficient gauge and insulation to handle the rated current demand. All wiring must meet local codes.
- 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.
- Route electrical wiring, electrostatic cables, and air hoses and tubing along a protected path. Make sure they will not be damaged. Do not bend electrostatic cables around a radius of less than 6 in. (152 mm).
- Install safety interlocks and approved, fast-acting fire detection systems. These shut down the spray system and any flammable liquid supply if a ventilation or electrical problem occurs, a fire is detected, or other emergency situation develops.

Installation (contd)

- Make sure the spray area floor is conductive to ground and that the operator's platform is grounded.
- Use only designated lifting points or lugs to lift and move heavy equipment. Always balance and block loads when lifting to prevent shifting. Lifting devices must be inspected, certified, and rated for a greater weight than the equipment being lifted.
- Do not use unapproved fluid hoses. Solvents may cause them to deteriorate rapidly which may allow flammable or pressurized material to escape.
- Protect components from damage, wear, and harsh environmental conditions.
- Allow ample room for maintenance, material supply container drop-off and loading, panel accessibility, and cover removal.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning.

Operation

Only qualified personnel, physically capable of operating the equipment and with no impairments to their judgement or reaction times, should operate this equipment.

Read all component manuals before operating this equipment. A thorough understanding of system components and their operation will help you operate the system safely and efficiently.

- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks, locked-out electrical disconnects, or pneumatic valves.

***Operation** (contd)*

- Know where *EMERGENCY STOP* buttons, shutoff valves, and fire extinguishers are located. Make sure they work. If a component malfunctions, shut down and lock out the equipment immediately.
- Before operating, make sure all conductive equipment, objects being sprayed, and fluid containers are connected to a true earth ground.
- Never operate equipment with a known malfunction or leak.
- Never point handguns or applicator nozzles at yourself or other persons.
- Never touch exposed electrical connections on equipment while the power is ON.
- Do not operate the equipment at pressures higher than the rated maximum working pressure of any component in the system.
- Shut off moving equipment before taking measurements or inspecting workpieces.
- Know the pinch points, temperatures, pressures, and material composition for all equipment that you are working with. Recognize potential hazards associated with these and exercise appropriate caution.
- 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.
- Do not wear or carry metallic objects (jewelry or tools) while working with or around electrostatic equipment. Ungrounded metal can store a static charge and cause harmful shocks.
- Maintain skin-to-metal contact between your hand and the gun handle to prevent shocks while operating manual electrostatic spray guns. If wearing gloves, cut away the palm or fingers.
- Shut off electrostatic power supplies and ground gun electrodes before making adjustments to powder spray guns.
- If you notice electrical arcing in a spray area, shut down the system immediately. An arc can cause a fire or explosion.
- Keep parts of the body or loose clothing away from rotating parts. Remove personal jewelry and cover or tie back long hair.

Operation *(contd)*

- Wear National Institute of Occupational Safety and Health (NIOSH) approved respirators while operating spray equipment and when performing maintenance and cleaning tasks.
- Wear eye protection when operating spray equipment.
- Wear gloves and protective clothing to protect your skin from materials.
- Keep paint pumps, pressure pots, and containers of flammable coating materials or solvents far enough away from spray booths to prevent their inclusion in a booth fire.
- Do not smoke in the spray area. A lit cigarette could ignite a fire or cause an explosion.
- Treat all high-pressure fittings and hoses as if they could leak. High-pressure compressed air can be injected under the skin and cause serious injury or death.
- Do not use materials that will corrode the equipment.
- Do not attempt to operate electrical equipment if standing water is present.
- Wash exposed skin frequently with soap and water, especially before eating or drinking. Do not use solvents to remove coating materials from your skin.

Less-Obvious Dangers

Operators should also be aware of less-obvious dangers in the workplace that often cannot be completely eliminated:

- exposed surfaces on the equipment which may be hot or have sharp edges and cannot be practically safeguarded
- electrical equipment which may remain energized after the equipment has been shut off
- vapors and materials which may cause allergic reactions or other health problems
- automatic hydraulic, pneumatic equipment, or mechanical parts that may move without warning
- unguarded, moving mechanical assemblies

Action in the Event of a System or Component Malfunction

Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.

- Disconnect and lock out electrical power. Close and lock out hydraulic and pneumatic shutoff valves and relieve pressures.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component according to instructions provided in its manual.

Maintenance and Repair

Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks. Only persons who are properly trained and familiar with Nordson equipment are permitted to service this equipment.

- Always wear appropriate protective clothing and use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in your equipment manuals.
- Do not service or adjust any equipment unless another person trained in first aid and CPR is present.
- Disconnect, lock out, and tag electrical power at a disconnect or breaker in the service line ahead of electrical equipment before servicing.
- Relieve air and fluid pressures before servicing equipment. Follow the specific instructions in this manual.
- Use only genuine Nordson replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.

WARNING: Note the flash point of the cleaning solvent used. Only use controlled methods and equipment, such as temperature-controlled or explosion-protected heaters, to heat cleaning solvent. Observe explosion-prevention regulations and follow applicable safety instructions.

- Refer to the MSDS before using solvents to clean this equipment. The MSDS will provide use, storage, and disposal information about the solvent. Read this information carefully and follow instructions.

Maintenance and Repair
(contd)

- Never use an open flame to clean the unit or components of the unit.
- Do not store flammable materials in the spray area or room. Keep paint pumps, pressure pots, and containers of flammable coating materials or solvents far enough away from spray booths to prevent their inclusion in a booth fire. If a fire or explosion occurs, flammable materials in the area will increase the chances and the extent of personal injuries and property damage.
- Make sure that the room where you are working is sufficiently ventilated. Avoid breathing vapors over prolonged periods of time.
- Check interlock systems periodically to ensure their effectiveness.

WARNING: Operating faulty or electrostatic equipment is hazardous and can cause electrocution, fire, or explosion. Make resistance checks part of your periodic maintenance program.

- Check all ground connections periodically with a megohm meter. Resistance to ground must not exceed one megohm. If sparks or arcing occur, shut down the system immediately.
- Connect all disconnected equipment ground cables and wires after servicing the equipment. Ground all conductive equipment.

WARNING: Service lines connected to panel disconnect switches will still be energized unless power is shut off at another disconnect ahead of the panel. Make sure the power is off before servicing. Wait 5 minutes for capacitors to discharge after shutting off the electrical power.

- Turn off the electrostatic power supply and ground the gun electrode before adjusting or cleaning the nozzles, fluid tips, or air caps.
- If a *power on* test is required, perform the test carefully and then shut off and lock out power as soon as the test is over.
- Never troubleshoot the power supply without first disconnecting all external power supplies and discharging the high-voltage capacitors with an insulated screwdriver.
- Ground electrodes and electrostatic cable ends before touching them.

Maintenance and Repair
(contd)

- Do not attempt to service electrical equipment if there is standing water present. Do not service electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with electrical equipment.
- Keep high-voltage connection points clean and insulated with dielectric grease or oil.
- Do not attempt to service a moving piece of equipment. Shut off the equipment and lock out power. Secure equipment to prevent uncontrolled movement.

Material and Solvent Precautions

WARNING: Hot! Risk of burns. Wear heat-protective clothing, eye protection with side shields and/or heat-protective gloves.

Heated materials may cause severe burns on contact. Remember that some materials, even solid materials, may retain heat for some time. If you are burned by a heated material, immediately cool the affected skin with lots of cool, clean water. Do not try to remove hot, melted material from the skin. Seek immediate medical attention.

High-pressure fluids, unless they are safely contained, are extremely hazardous. A jet of high-pressure fluid can act like a knife or needle, penetrate skin and muscle, and inject itself into your body. Injected fluids can cause toxic poisoning.

Do not treat an injection injury as minor. Seek medical care immediately. Inform the medical staff at the hospital that you have an injection injury and identify the fluid that was injected. If possible, give the doctor copies of the MSDS for the injected fluid and for any additives, such as solvents, that are in the injected fluid.

Also, Nordson recommends that you carry a National Safety Equipment Manufacturers Association (NSEMA) wallet card to give to emergency medical staff in the event of an injection injury. These cards are supplied with the equipment. Additional cards are available free from Nordson Corporation.

Material and Solvent Precautions *(contd)*

WARNING: Injection hazard. Do not go near a known leak in a hose or fitting, and stay clear of all spray nozzles or orifices. Do not point an applicator at yourself or other personnel. The high-pressure fluid stream can penetrate skin and inject fluid into the body causing serious injury or death.

To prevent an injection injury, take some basic safety precautions when operating your equipment.

- Always handle spray applicators carefully. Do not point a pressurized gun at yourself or other personnel.
- Never place hands, fingers, or other parts of your body directly over a spray nozzle or in front of a leak in a high-pressure system.
- Never *back-flush* the nozzles. Blocking a nozzle causes the high-pressure fluid to reverse direction and can lead to an injection injury.
- Always relieve system pressure before servicing equipment. Trigger all applicators and bleed off system pressure.

Halogenated hydrocarbon solvents can cause an explosion when used with aluminum components in a pressurized fluid pumping system (pumps, heaters, filters, valves, spray guns, and tanks). The explosion could cause serious bodily injury, death, or substantial property damage. No available stabilizers will prevent this violent reaction from happening.

WARNING: Never use halogenated hydrocarbon solvents to clean aluminum parts or to flush any system. Cleaning agents, coatings and paints, or adhesives may contain halogenated hydrocarbon solvents. Obtain and read the MSDS for each material and solvent being used.

- Use nonhalogenated solvents.
- Contact your solvent supplier to determine whether your existing materials and solvents contain halogenated hydrocarbons or to obtain a suitable, nonhalogenated hydrocarbon solvent for cleaning and flushing your system.

Material and Solvent Precautions (contd)

- See Table1. Check the labels on your solvent containers. Halogenated hydrocarbon solvents can be recognized if any of the following elements are listed in the name of the product or as an ingredient:

Element	Symbol	Prefix
Flourine	F	"Flouro-"
Chlorine	Cl	"Chloro-"
Bromine	Br	"Bromo-"
Iodine	I	"Iodo-"

If you are now using halogenated hydrocarbon solvents in pressurized systems with aluminum components, perform the following steps:

- Pump the system empty, shut off the pumps, and relieve the system pressure.
- Disassemble and inspect the system components. Replace any damaged or corroded parts.
- Thoroughly clean all noncorroded parts with nonhalogenated hydrocarbon.
- Contact your coatings, solvent, or adhesive supplier for a nonhalogenated solvent to thoroughly flush the entire system before operating it.
- If you must continue to use halogenated hydrocarbon solvents, consult your Nordson representative about compatible Nordson components.

Material and Solvent Precautions (contd)

Table 1 Solvents Containing Halogenated Fluids

Chlorinated Solvents	Iodinated Solvents	Brominated Solvents	Fluorocarbon Solvents
Carbon Tetrachloride	Ethyl Iodide	Ethylene Dibromide	Dichlorofluoromethane
Chloroform	Methyl Iodide	Methyl Bromide	Trichlorofluoromethane
Ethylene Dichloride	N-butyl Iodide	Methylene Chlorobromide	Freon
Methylene Chloride	Propyl Iodide		
1-1-1 Trichloroethane			
Monochlorobenzene			
Orthodichlorobenzene			
Perchloroethylene			
Trichloroethylene			

Disposal

Dispose of equipment and materials used in operation and cleaning according to your local regulations.

Safety Labels

Table 2 contains the text of the safety labels on, or shipped with, the Model CA-1 gun. Figure 1 shows the location of the Model CA-1 gun label that is described in the table as item 1. Familiarize yourself with the safety labels; they will help you safely operate and maintain your equipment.

Table 2 Safety Labels

Item	Part	Description
1.	241 162	**WARNING:** High voltage. Read manual before using. All conductive objects in area must be grounded.
—	600 001	**WARNING:** The following procedures MUST be followed when working with this electrostatic spray equipment. Failure to follow these instructions may result in a fire and/or serious personal injury. Display this warning on the spray booth. 1. NO SMOKING. Keep open flames, hot surfaces, and sparks from torches or grinding away from booth. 2. Turn the electrostatic power unit OFF when the spray gun is not in use. 3. Appropriate control interlocks and fire suppression apparatus must be installed and operative. 4. Ground the power unit, the spray booth, work hangers, conveyor rollers, channels, and all other conductive objects within approximately 3 m (10 ft) of the electrostatic spay gun. THE FLOOR MUST BE CONDUCTIVE AND GROUNDED. 5. Examine all equipment at the beginning of each work period and repair or replace any damaged, loose, or missing parts. 6. Maintain grounding of all work pieces. Work hangers, conveyor rollers, channels, etc. MUST BE CLEAN. Electrical sparks from discharge of static accumulation are capable of igniting fires. If any sparking is seen around the workpiece, conveyors, or other metal objects in the area, immediately shut down the process and correct grounding before continuing process. 7. Operator must be grounded to prevent shocks from static electricity. Floor surface must be conductive. Footwear and gloves must be static dissipative in accordance with ANSI Z41-1991. 8. Before cleaning the nozzle or performing any work on the electrostatic spray gun, turn off the power unit and ground the nozzle. The nozzle MUST BE REMOVED for cleaning. Use a non-flammable solvent in a non-conductive container, i.e. glass container.

Continued on next page

Safety Labels *(contd)*

Item	Part	Description
		9. NEVER use or store flammable solvents in the spray area. 10. Make no modification to this electrostatic equipment or its fluid feed system without written permission from Nordson Corporation, 555 Jackson Street, Amherst, OH, 44001, U.S.A. 11. When providing an air supply to an electrostatic waterborne hand spray gun, the air hose must be electrically conductive in nature. Continuity between end fittings must be 1 megohm or less. 12. Refer to: Instruction manuals; appropriate federal, state, and local regulations; and to ANSI/NFPA 33 for further guidance and requirements for safe operations. If you have questions concerning this electrostatic spray equipment, call (216) 988-9411, and ask to speak with the Liquid Systems Group Technical Service Department. Nordson Corporation, Amherst, OH, 44001, U.S.A.

Safety Label Location

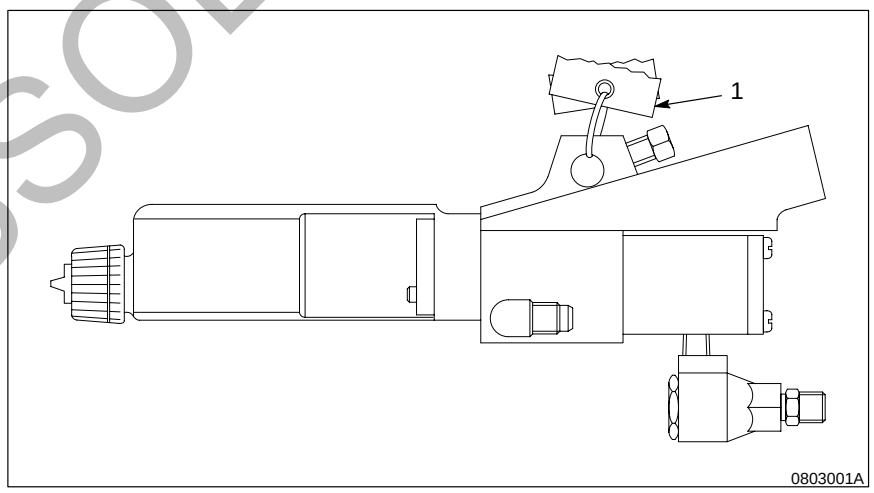

Fig. 1 Model CA-1 gun safety label location

1. Safety label

2. Description

See Figure 2. The Model CA-1 Automatic Airless Electrostatic Spray Gun is part of an airless coating system. The gun body (1) is available in aluminum (standard) or stainless steel. The gun extension (2) is a non-conductive engineering plastic. The Model CA-1 guns can spray at fluid pressures up to 103.4 bar (1500 psi).

The Model CA-1 gun uses an electrostatic power supply to provide the electrostatic charge to the sprayed coating. The electrostatic charge reaches the gun through an electrostatic cable. The electrostatic cable is a high-resistance cable, which drops the effective voltage before carrying the current from the electrostatic power unit to the gun. You can purchase the cable in 8-, 12-, and 16-meter lengths (25-ft, 37-ft, or 50-ft, respectively).

Model CA-1 spray guns are designed for use with the EPU-8 or EPS8 electrostatic power supply and IFC-100 cable. These components, when used together, have the approval of Factory Mutual (FM) and the Canadian Standards Association (CSA). Substitution of any unauthorized power supply or cable can cause loss of approval from these agencies. You must order the IFC-100 electrostatic cable and the EPU-8 or EPS8 power supply as separate parts. Refer to the ordering information in the *Parts* section of this manual.

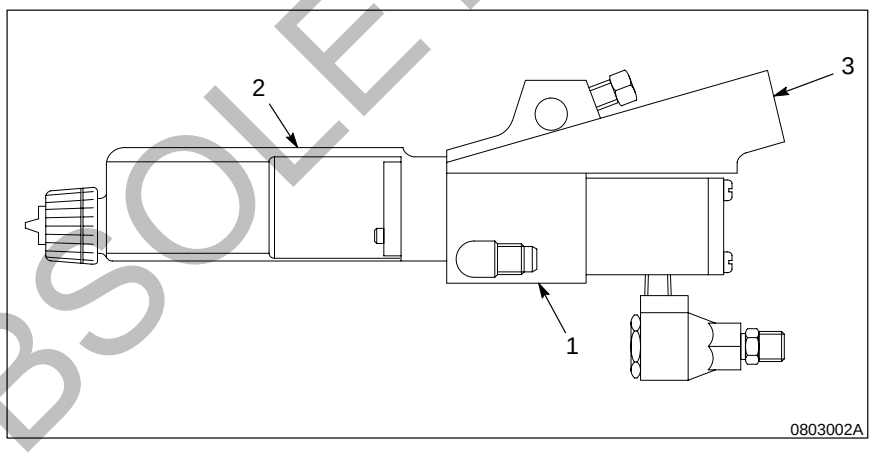

Fig. 2 Model CA-1 gun

1. Gun body
2. Gun extension
3. Electrostatic cable inlet

2. Description (contd.)

See Figure 3. Pressurized coating material, which is heated and filtered, enters the gun (1) at the coating material inlet (3). When air enters the trigger air inlet (2), the gun sprays the coating material and the power supply starts, passing an electrostatic charge to the coating material. When the trigger releases in a non-circulating system, the gun stops spraying the coating material. When the trigger releases in a circulating system, the coating material passes through the gun, through a circulation valve, and back to the pump. The operator can also drain the coating into a waste bucket.

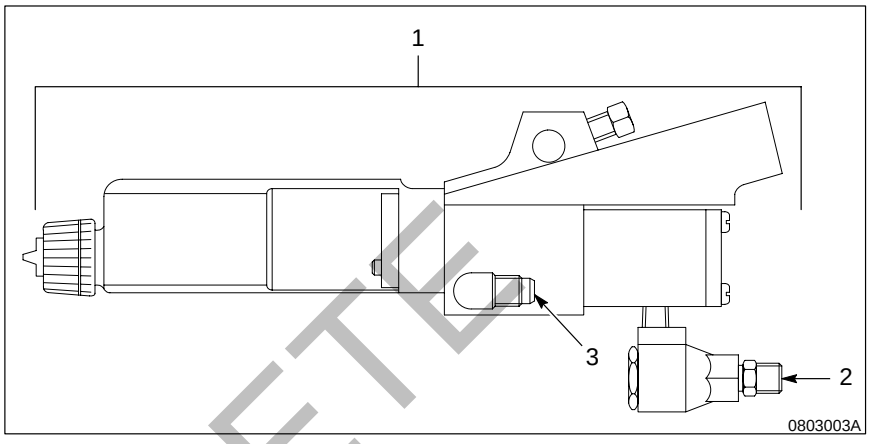

Fig. 3 Model CA-1 operation

1. Gun
2. Trigger air inlet
3. Coating material inlet

The specifications for the Model CA-1 gun are as follows:

Specification	Metric	U.S.
Length	30.4 cm	12.0 in.
Height	10.2 cm	4.0 in.
Weight	1.0 kg	36 oz
Output voltage	76 kV (± 3 V)	76 kV (± 3 V)
Maximum output current	170 µA	170 µA
Gun actuating air	3.0–4.8 bar	50–70 psi
Maximum fluid input pressure	103.4 bar	1500 psi
Air input	Clean, dry air; 99% of 0.1 micron contaminants removed	

3. Installation

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

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

WARNING: Use only the EPU-8 or the EPS8 electrostatic power supply and IFC-100 cable with the CA-1 gun. Do not substitute any unauthorized power supply or cable. Use of unauthorized cables or power supplies can cause destruction of property, electrocution, explosion, fire, or death.

WARNING: Before installing the Model CA-1 gun, relieve all pressure and turn off the electrical power to the system. Failure to observe this warning can result in serious personal injury or death.

WARNING: Before you start the electrostatic system, ground all electrically conductive objects near the spray area (workpieces, hangers, conveyors, paint supplies, fire extinguishers, spray equipment, waste containers, and especially the operators) to a true earth ground. Ground operators by maintaining skin-to-gun contact, wearing leather-soled shoes, and walking on a clean, conductive steel or concrete floor. If objects are not grounded, an electrical charge can accumulate and discharge a spark, creating a fire hazard.

WARNING: Do not remove the nozzle during operation or with the hydraulic pressure turned on. Removing the nozzle while under pressure can cause coating material to inject into your skin. If you need to remove the nozzle, allow only personnel trained in maintenance of the gun and nozzle to remove the nozzle using the nozzle tool. Refer to the *Repair* section for information on using the nozzle tool.

NOTE: Inadequately grounded work pieces lose efficiency for electrostatic attraction when sprayed, and can create arcs between the part and ground.

NOTE: An external solenoid valve controls the on/off actuation of the gun and the air input to the gun. To minimize pneumatic delay, position the external solenoid as near to the gun as practical.

Installing the Gun

See Figure 4 and install your Model CA-1 gun as follows:

1. Install the power supply according to the power supply manual.

NOTE: A small brass tag is soldered to one end of the electrostatic cable. Install this end in the well of the power supply.

NOTE: If you are installing a previously installed cable, use the Cable Cleaning Service Kit to thoroughly clean the electrostatic cable before installation. Do not touch the cable ends after cleaning. Apply dielectric grease to the resistor before assembling.

2. Fill the power supply cable well with insulating oil.

3. Insert the tagged end of the electrostatic cable into the well of the power supply and tighten the power cable fitting.

4. Wipe up any oil spilled during installation.

5. Make sure that the electrostatic cable inlet (1) is filled with dielectric grease, and then install the end of the electrostatic cable into the cable inlet on the gun body (2).

WARNING: Make sure that the cable does not turn while you tighten the cable retaining nut, otherwise, cable damage and a shock hazard can occur.

6. Carefully tighten the cable retaining nut into the gun body. Do not overtighten or allow the cable to turn.

7. Use the nozzle tool to install the correct nozzle and turbulence plate or restrictors; the nozzle seats against the tip resistor in the gun. Refer to the *Repair* section for information on the nozzle tool.

8. Attach the fluid hoses to the fluid inlets (3) on the gun.

9. Using the mounting holes (4), mount the gun on an electrically conductive, 1.27-cm ($^1/_2$-in.) rod.

10. Establish a protected path for the cable between the gun and the power supply. Anchor the cable and the air and fluid hoses so any strain is applied only to the hoses. This makes sure that cable damage will not occur by striking other objects or by severe flexing.

NOTE: Refer to the *Electrostatic Cable Care and Installation* manual for specific information concerning your electrostatic cable.

Installing the Gun *(contd)*

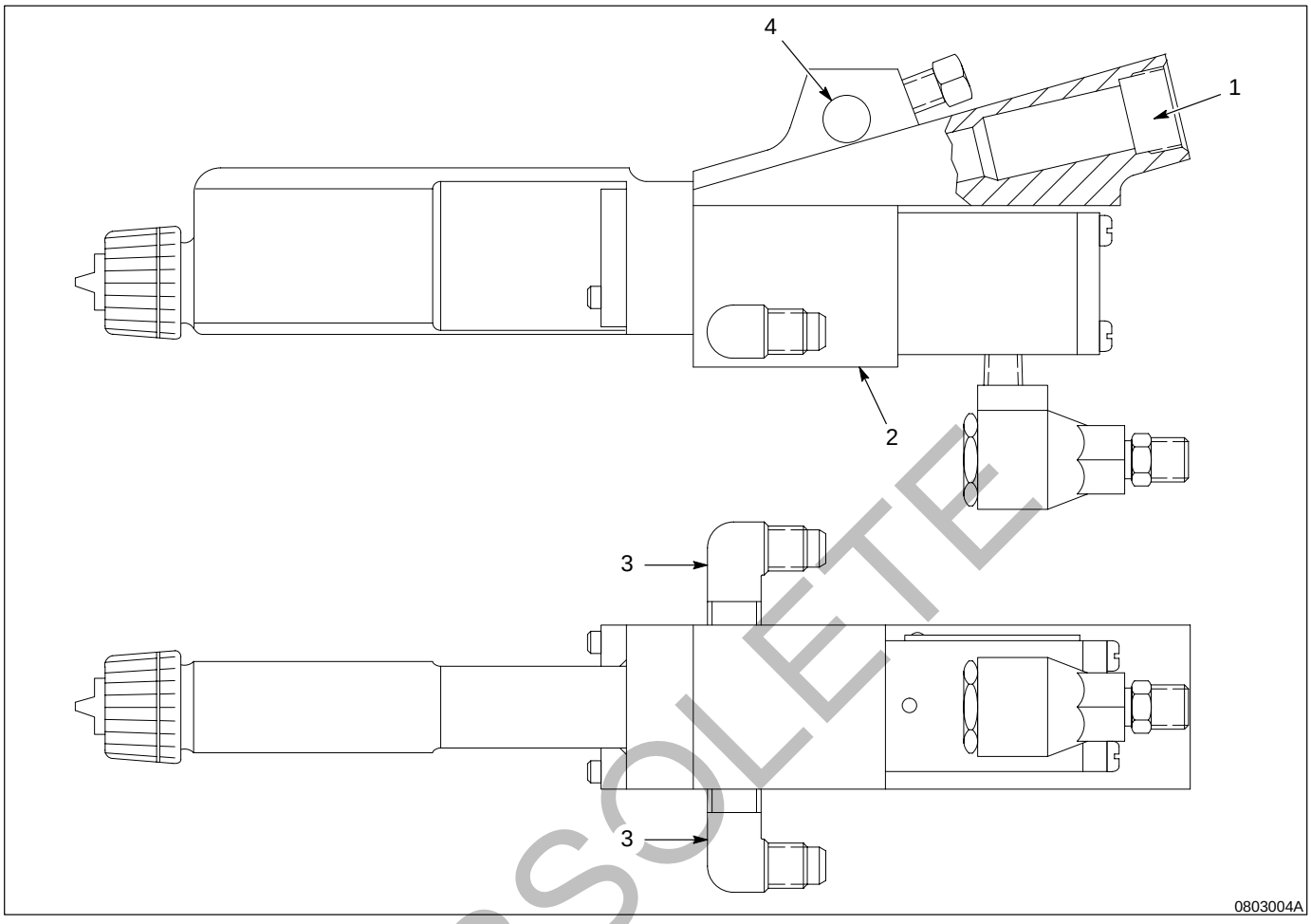

Fig. 4 Installing the model CA-1 gun

1. Electrostatic cable inlet
2. Gun body
3. Fluid inlets
4. Mounting hole

4. Maintenance

WARNING: If you remove the electrostatic cable during maintenance of the gun, refer to the *Installation* section for correct installation steps. Incorrect installation or use of electrostatic power systems or cables other than the EPU-8 or the EPS8 electrostatic power supply or the IFC-100 cable can cause destruction of property, electrocution, explosion, fire, or death.

WARNING: Early cable failure is usually due to the presence of air in the cable/resistor bore, which allows the presence of a corona when applying electrostatic power. This corona causes rapid degradation of cable and gun components that can result in a loss of operating safety by creating an ignition hazard.

The electrostatic cable is the high voltage link between the power supply and the Model CA-1 gun. Because it conducts high voltage, it is subject to electrical break down such as burn through or carbon tracking if it is not correctly maintained.

WARNING: Do not soak or clean the outside of the cable with ketones or other active solvents, including lacquer thinner; they will damage the outer cover and cause electrical breakdown.

If you remove the cable from the gun, clean the end of the cable and cable guide hole with the Cable Cleaning Service Kit. Do not touch the cable ends after cleaning. Apply dielectric grease to the resistor before assembling. Refer to the *Parts* section for kit ordering information.

Rough usage of the cable can cause premature cable failure. Rough usage includes excessive whipping of a loose cable on an automatic spray machine, bending the cable around a small radius, walking on or driving over the cable, or stretching the cable.

For complete information about the electrostatic power supply, refer to the manual that accompanied your unit. Also refer to the *Electrostatic System Checks* manual for more information about maintenance of the electrostatic system.

CAUTION: Do not allow coating material to build up around the gun extension or nozzle. This type of buildup can provide a path to ground, causing poor coating transfer and premature failure of the gun.

Keep the gun as clean as practical. At the end of each work shift, use solvent to flush the hydraulic supply lines from the coating delivery system to the gun. Also flush the nozzles and restrictors.

5. Troubleshooting

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

CAUTION: Perform all resistance readings with the electrical power source turned off. Using an ohmmeter with the power turned on can cause instrument damage.

For complete information about electrostatic problems, refer to the *Electrostatic System Checks* manual.

NOTE: To troubleshoot the power supply, refer to your power supply manual.

This section contains troubleshooting procedures that cover only the most common problems. If you cannot solve a problem using these troubleshooting procedures, contact your Nordson Corporation representative for further assistance.

This troubleshooting procedure is designed to help you troubleshoot the Model CA-1 gun. Note that any problem can have a number of reasons for occurring; therefore, check all possible causes for any given problem.

Troubleshooting Mechanical Problems

Table 3 provides troubleshooting procedures for correcting mechanical problems. If multiple causes exist, the table lists those problems in the order of importance.

Table 3 Mechanical Problems with the Model CA-1 Gun

Problem	Possible Cause	Corrective Action
1. Spitting or incorrect gun activation or deactivation	Extension assembly worn	Replace extension assembly.
	Defective power supply	Disconnect the IFC-100 electrostatic cable from the power supply. Refer to the power supply manual for troubleshooting.

Troubleshooting Mechanical Problems (contd)

Problem	Possible Cause	Corrective Action
2. Fluid leaking around nozzle or packing cartridge	Worn or dirty air cylinder O-rings	Replace air cylinder and clean O-rings.
	Dirt or nicks on mating surfaces	Clean nozzle and extension assembly mating surfaces.
	Damaged conductive seal washer	Replace washer.
	Worn packing cartridge	Replace packing cartridge.
	Damaged O-ring around packing cartridge	Replace O-ring.
3. Loss of wrap — Red lamp on power supply ON	Poorly grounded workpieces	Clean hooks, hangers, conveyor rollers, and channels.
	Dirt on outside of gun	Clean gun with mild solvent and dry with lint-free cloth.
	Dirt on ends of electrostatic cable, current limiting resistor, or inside of extension assembly	Clean cable with Cable Cleaning Service Kit.
	Damaged current limiting resistor	Measure resistor continuity. Replace resistor if reading is higher than 180Ω or lower than 170Ω.
	Defective cable	Measure voltage output with Nordson hand-held kV meter.
	Defective power supply	Measure voltage output with Nordson hand-held kV meter.
	Defective resistor insulating tube in extension assembly	Check insulating tube for burn through. If signs of arcing or burning are evident, replace insulating tube.
	Coating material polarity altered	Make sure coating materials are as specified by the coating supplier or by initial test.

Troubleshooting Mechanical Problems (contd)

Problem	Possible Cause	Corrective Action
4. Loss of wrap — Red lamp on power supply OFF	Defective power supply	Disconnect electrostatic cable from power supply. Refer to power supply manual.
	Defective resistor insulating tube in extension assembly	Check for burn through. Replace resistor insulating tube if signs of arcing or burning are found.
	Coating material polarity altered	Make sure coating materials are as specified by the coating manufacturer or by initial test.
	Conductive seal washer either missing or insulated with coating materials	Clean or replace washer.

6. Repair

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

CAUTION: Follow the disassembly and assembly steps in order. Performing these steps out of sequence can cause damage to the internal parts of the gun.

CAUTION: Do not overtighten the hose fittings on the gun. Overtightening can damage or strip the threads in the head of the gun.

Applying Dielectric Grease

Follow these instructions to apply dielectric grease to the cable bore of the gun.

CAUTION: After disassembling the gun or removing the cable from the gun, always apply dielectric grease into the cable bore of the gun. If you do not apply dielectric grease, the resistor cable or gun extension can prematurely fail due to arcing or high-voltage, corona burn-through.

1. Shut off the fluid supply unit.
2. Relieve the internal hydraulic pressure in the spraying system by doing one of the following:
   - Slowly open the valve on the filter or drain-off hose on the fluid supply system or
   - Trigger the gun until the fluid stops flowing from the nozzle.
3. Point the gun in a safe direction and actuate the gun to make sure that the hydraulic pressure is relieved.
4. Close the valve on the filter or drain-off hose.
5. Remove the electrostatic cable and work through the end of the gun.
6. See Figure 5. Clean as much dielectric grease (1) from the insulating tube (4) as possible. Use a round brush to clean the grease from the tube.

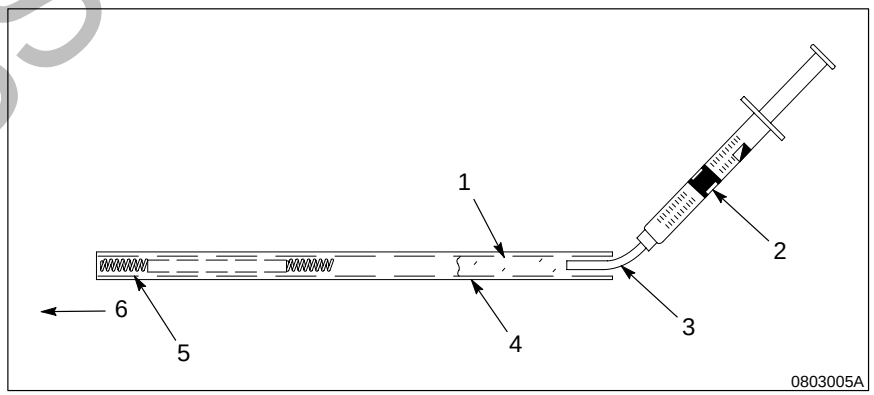

Fig. 5 Applying the dielectric grease to the Model CA-1 gun

1. Dielectric grease
2. Syringe
3. Flexible tube
4. Insulating tube
5. Resistor and spring
6. End inserted into extension (high-voltage bore)

Applying Dielectric Grease
(contd)

7. Warm a syringe (2) of dielectric grease (1) to about 37–43 ◦C (98–110 ◦F) by holding it in your hands or running the syringe under warm water.

8. Insert the flexible tube (3) on the end of the syringe (2) into the insulating tube (4) inside the cable adapter.

NOTE: The end of the cable acts as a piston in the insulating tube (4), pushing the dielectric grease (1) around the resistor and spring (5), and around the exterior of the tube. This totally covers the high-voltage contact points inside the gun with dielectric grease.

9. Apply about 8.0 cc of warmed dielectric grease from the syringe (2) into the insulating tube (4).

10. Install the electrostatic cable end on the gun. If you apply too much grease in the cable bore, you will not be able to install the cable completely into the gun. If this happens, remove the cable, and then remove some of the grease with a clean, dry cloth. Try to install the cable again.

11. Tighten the cable connecting nut.

Replacing the Extension Resistor Service Kit and Cable

See Figure 6. Use this procedure to install a new electrostatic cable and service resistor kit, or to replace the resistor kit and continue to use the existing electrostatic cable.

WARNING: Remove all air pockets from the insulating tube during this procedure. Air pockets can cause components to breakdown electrically, which can cause personal injury or equipment damage.

NOTE: The resistor service kit contains a new resistor (2) and insulating tube (4). Nordson Corporation ships a resistor kit with each new cable. When replacing a cable, also replace the resistor kit, since a damaged resistor often causes cable failure.

1. Disassemble the gun. Refer to *Disassembling the Gun* in this section.

2. Clean the old dielectric grease from the high-voltage bore with a clean cloth and a round brush.

Replacing the Extension Resistor Service Kit and Cable (contd)

3. Install the resistor service kit into the high-voltage bore of the gun:

NOTE: The service resistor kit ships with the resistor (2) and dielectric grease (3) installed in the insulating tube (4). The resistor is factory-installed, spring-end (5) first, into the insulating tube.

   a. Remove the plastic caps (1) from each end of the insulating tube (4).

   b. Install the resistor end (6) of the insulating tube (4) into the high-voltage bore of the extension. (The end of the insulating tube containing the dielectric grease (3) should go into the bore last.) The insulating tube will protrude from the end of the gun about 10.16 cm (4.0 in.).

4. Assemble the gun. Refer to *Assembling the Gun* in this section.

5. Install the electrostatic cable on the gun.

NOTE: The end of the cable acts as a piston in the insulating tube, pushing the dielectric grease around the resistor and spring, and around the exterior of the tube. This totally covers the high-voltage contact points inside the gun with dielectric grease.

6. Tighten the cable connecting nut.

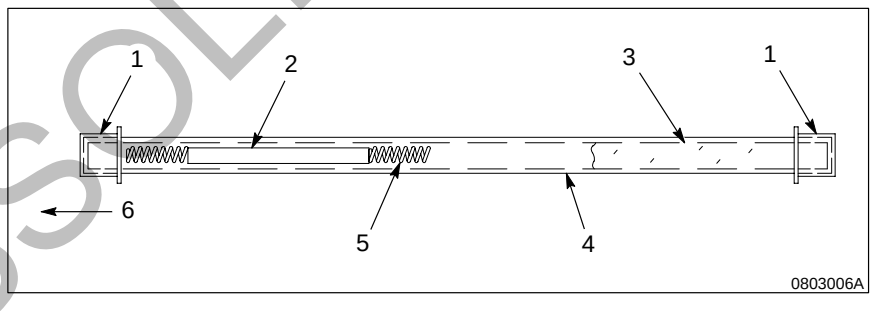

Fig. 6 Resistor service kit

1. Caps
2. Resistor
3. Dielectric grease
4. Insulating tube
5. Spring
6. End inserted into extension (high-voltage bore)

Replacing the Resistor Only

Use this procedure to install a new resistor only, and continue to use the existing electrostatic cable.

WARNING: Remove all air pockets from the insulating tube during this procedure. Air pockets can cause components to breakdown electrically, which can cause personal injury or equipment damage.

1. Disassemble the gun. Refer to *Disassembling the Gun* in this section.
2. Clean the old dielectric grease from the high-voltage bore with a clean cloth and a round brush. Clean as much grease out of the bore as possible.

NOTE: Do not handle the resistor with your bare hands. Salts and oils from your skin can conduct electricity and can cause arcing along the resistor. Arcing can destroy the extension and the resistor. Handle the resistor using a piece of plastic or a clean, dry cloth.

3. See Figure 6. Install the resistor (2), spring-end (5) first, into the insulating tube (4).
4. Install the greased insulating tube (4), resistor-end (6) first, into the high-voltage bore. (The end of the insulating tube containing the dielectric grease (3) should go into the bore last.)
5. Assemble the gun. Refer to the *Assembling the Gun* in this section.
6. Install the electrostatic cable on the gun. Refer to the *Installation* section for cable installation instructions.

NOTE: The end of the cable acts as a piston in the insulating tube, pushing the dielectric grease around the resistor and spring, and around the exterior of the tube. This totally covers the high-voltage contact points inside the gun with dielectric grease.

7. Tighten the cable connecting nut.

Disassembling the Gun

See Figure 9 in the *Parts* section to locate the parts referenced in this procedure. After disassembling the gun to replace the resistor service kit and electrostatic cable, continue with the disassembly steps provided here to further disassemble and clean the gun.

1. Make sure that you have done the following to prepare the CA-1 gun for safe disassembly:
   a. Shut off the fluid supply unit.
   b. Relieve the internal hydraulic pressure in the spraying system by slowly opening the valve on the filter or drain-off hose on the fluid supply system.
   c. Point the gun in a safe direction and actuate the gun to make sure that the hydraulic pressure is relieved.
   d. Close the valve on the filter or drain-off hose.
2. See Figure 9. Remove the mounting screw (32), and then remove the gun from its mounting rod.
3. Remove the electrostatic cable retaining nut from the gun body (31).
4. See Figure 7 and use the nozzle tool (1) to remove the nozzle retaining nut (2) and the turbulence plate or restrictor.
5. See Figure 9. Remove the exhaust valve (10) from the air cylinder (8).
6. Remove the screws (1) and then remove the end plate (2).
7. Using an allen wrench, rotate the screw (3) to remove the air piston (6) from the cartridge guide (34).
8. Remove the air cylinder (8) and air piston (6).
9. Remove the two screws (33), and then remove the cartridge guide (34) from the gun body (31).

Disassembling the Gun *(contd)*

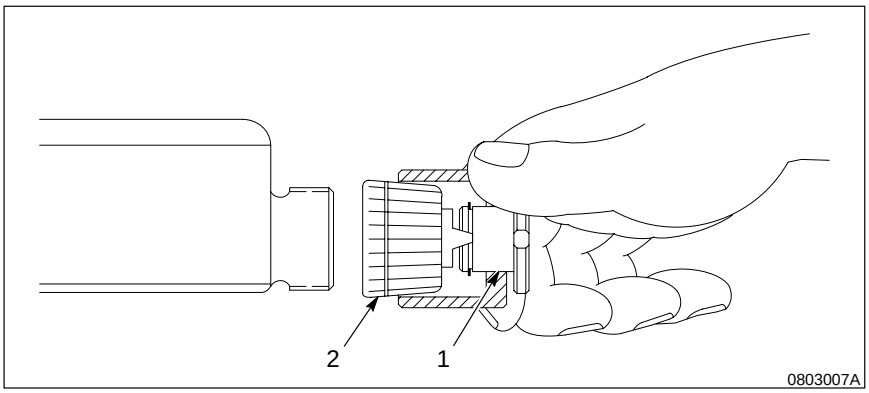

Fig. 7 Using the nozzle tool

1. Nozzle tool
2. Nozzle retaining nut

10. Remove the screws with washers (22, 26), and then remove the gun extension (16).

11. Push the needle assembly (18) and the packing cartridge (36) out through the front end of the gun body (31).

12. Unscrew the needle assembly (18) from the packing cartridge (36).

13. Carefully pull the seat retainer (21) to remove it from the gun extension (16).

14. Carefully pull the insulating tube (15) to remove it from the gun extension (16).

15. Use tweezers to pull the tip resistor (17) from the gun extension (16).

16. Push the resistor (14) spring (13), and screw (12) from the insulating tube (15).

NOTE: Always apply dielectric grease into the high-voltage bore of the gun after disassembling or repairing the gun, or after removing the cable from the gun. Refer to *Applying Dielectric Grease* in this section.

Cleaning the Nozzle and Resistor

Use the following steps to clean the gun nozzle and restrictor:

1. Perform steps 1 through 4 of *Disassembling the Gun* in this section to remove the nozzle and the turbulence plate or resistor, and then soak the nozzle and resistor in solvent.

CAUTION: Use only a Nordson cleaning brush or a nylon bristle brush to clean the nozzle tip; other brushes can damage the nozzle.

2. Use a cleaning brush to clean the nozzle tip. If the nozzle tip is clogged, clean the tip with the nylon bristle brush.

3. See Figure 7. Use the nozzle tool (1) to install the nozzle (2) on the gun.

CAUTION: Ream the cable guide bore and needle guide bore of the gun extension only by hand. The seat at the bottom of the needle guide bore is very brittle; metal or hard tools can crack or chip the guide bore.

4. See Figure 8. In the gun extension (1), clean the cable guide bore (2) and needle guide bore (3) with the nylon bristle brush and solvent. If coating material is hardened in the needle guide bore, use a $^{13}/_{64}$-inch hand reamer to clean it.

5. Wash and blow out the needle guide bore (3) after reaming.

6. Use the Cable Cleaning Service Kit to clean the cable guide bore (2) before installing the cable on the gun. Refer to the *Parts* section for information on ordering the cleaning kit.

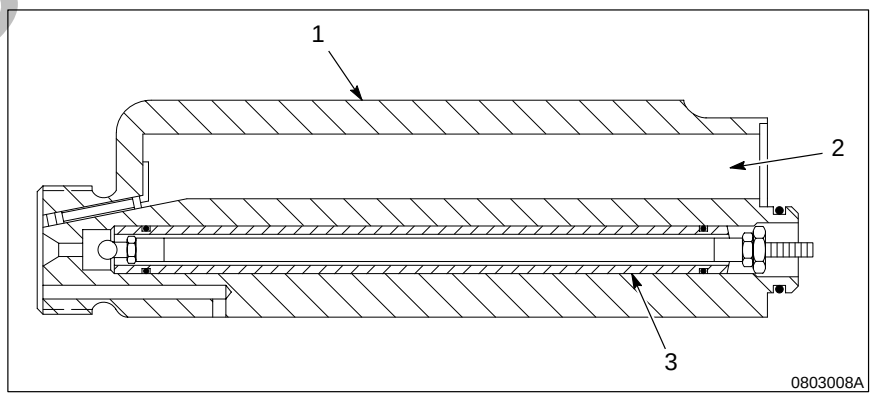

Fig. 8 Cleaning the guide bores

1. Gun extension
2. Cable guide bore
3. Needle guide bore

Assembling the Gun

Perform the following steps to assemble the Model C-1 gun.

1. Replace any worn or damaged gun parts.

2. Perform cleaning procedures for the gun.

3. Assemble the gun using the reverse order of *Disassembling the Gun* in this section.

NOTE: During gun assembly, do not kink the insulating tube by pressing too hard when you replace the gun extension. Apply even pressure to the extension while you screw it onto the gun body to ease the insulating tube into the high-voltage bore without kinking it.

NOTE: If you have trouble installing the electrostatic cable, refer to the *Installation* section for assembly instructions.

4. See Figure 9. Use the following steps if you have trouble installing the air piston (6) to the cartridge guide (34)

   a. Assemble all gun parts except for the air cylinder (8), air piston (6), end plate (2), and four screws (1).

   b. Push the air piston (6) into the air cylinder (8).

   c. Position the air cylinder (8) and the air piston (6) on the gun body (31).

   d. Using an allen wrench, rotate the screw (3) to align the flat of the air piston (6) with the flat of the cartridge guide (34).

   e. Using a small screwdriver, push the spacer spring (4) into the small depression at the top of the packing cartridge (36).

   f. Push the air cylinder (8) and air piston (6) forward until the end of the air piston (6) slides past the cartridge guide (34) and snaps into place.

   g. Install the air cylinder (8) on the gun body (31) with the end plate (2), and the four screws (1).

5. After you assemble the gun, perform the following steps to the place the gun into operation:

   a. With the electrostatic power supply turned off, test the spray to check for correct operation and for leaks.

   b. If necessary, correct any leaks.

   c. Turn all power on and return the system to operation.

7. Parts

To order parts, call the Nordson Customer Service Center or your local Nordson representative. Use this five-column parts list, and the accompanying illustration, to describe and locate parts correctly.

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 six-digit 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.

Item	Part	Description	Quantity	Note
—	000 000	Assembly	1	
1	000 000	• Subassembly	2	A
2	000 000	• • Part	1	

- 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.

Model CA-1 Gun Parts

See Figure 9.

Item	Part	Description	Quantity	Note
—	246 822	Gun, Model CA 1, automatic, airless, circ., electrostatic	1	
—	247 086	Gun, Model CA 1, automatic, airless, circ., electrostatic, stainless steel	1	
1	981 157	• Screw, fillister head, 10-32 x 2.750, steel, zinc	4	
2	240 732	• Plate, end	1	
3	240 746	• Screw, take-up spring	1	
4	240 733	• Spring, helical compression	1	
5	941 210	• O-ring, Viton, 1.063 x 1.250 x 0.094	1	A
6	240 743	• Piston, air	1	
7	940 131	• O ring, Viton, 0.438 x 0.563 x 0.063	1	A
8	152 628	• Cylinder, air	1	
9	973 000	• Nipple, steel, sched. 40, $^1/_8$, 0.75	1	
10	901 262	• Valve, exhaust	1	
11	972 552	• Connector, male	1	
12	981 022	• Screw, fillister head, 6-32 x 0.375, steel, zinc	1	B
13	156 077	• Spring, compression, 0.875 x 0.300 OD x 0.035	1	B
14	935 000	• Resistor, 75 megohm	1	B
15	- - - - - -	• Tube, insulating	1	B
16	246 750	• Extension, assembly	1	
17	247 212	• • Tip resistor, with O-ring	1	B
18	156 155	• • Needle, assembly	1	
19	940 150	• • O-ring, hotpaint, 0.563 x 0.688 x 0.063	2	A, B
20	940 080	• • O-ring, hotpaint, 0.188 x 0.313 x 0.063	2	A
21	156 241	• • Retainer, seat	1	

NOTE A: Sold as part of Seal Service Kit, part 106 210.
B: Sold as part of Tip Resistor with O-Ring Service Kit, part 106 354.

Continued on next page

Model CA-1 Gun Parts *(contd)*

Item	Part	Description	Quantity	Note
22	247 119	• Screw, socket head with washer, right-handed	1	
23	247 117	• • Screw, socket head, 10-24 x 1.250	1	
24	986 018	• • Ring, retaining, extension, 18, basic	1	
25	246 879	• • Washer, extension, electrostatic gun, right-handed	1	
26	247 118	• Screw, socket head, with washer, left-handed	1	
27	247 117	• • Screw, socket head, 10-24 x 1.250	1	
28	246 876	• • Washer, extension, electrostatic gun, left-handed	1	
29	986 018	• • Ring, retaining, extension, 18, basic	1	
30	156 247	• Nut, retaining, nozzle	1	
31	247 035	• Body, gun, CA-1	1	
31	247 088	• Body, gun, CA-1, stainless steel	1	C, D
32	981 405	• Screw, square head, $^{3}/_{8}$-16 x 0.750, cup, zinc	1	
33	981 102	• Screw, socket head, 10-24, x 0.375, bl	2	
34	152 626	• Guide, cartridge	1	
35	972 176	• Connector, elbow, male, 37, $^{1}/_{2}$-20 x $^{1}/_{4}$ NPT, steel	2	E
35	972 177	• Connector, elbow, male, 37, $^{1}/_{2}$-20 x $^{1}/_{4}$ NPT, stainless steel	2	D
36	152 359	• Cartridge, packing	1	
36	247 089	• Cartridge, packing, stainless steel	1	
37	940 128	• • O-ring, Viton, blk, 0.375 x 0.500	1	A
NS	981 800	• Screw, drive, round, 0 x 0.125, zinc	1	
NS	106 402	• Kit, Service	1	
NS	247 953	• • Tool, removal, nut/nozzle	1	
NS	901 905	• • Brush, cleaning	1	
NS	901 907	• • Brush, bristle, nylon	1	
NS	901 939	• • Tool, screwdriver, hex, ball	1	

NOTE A: Sold as part of Seal Service Kit, part 106 210.
C: Use pipe sealant, part 900 481, for stainless steel to stainless steel threads.
D: Use this part only on stainless steel gun, part 247 086.
E: Use this part only on the gun body of the standard CA-1 gun, part 246 822.
NS: Not Shown

Model CA-1 Gun Parts *(contd)*

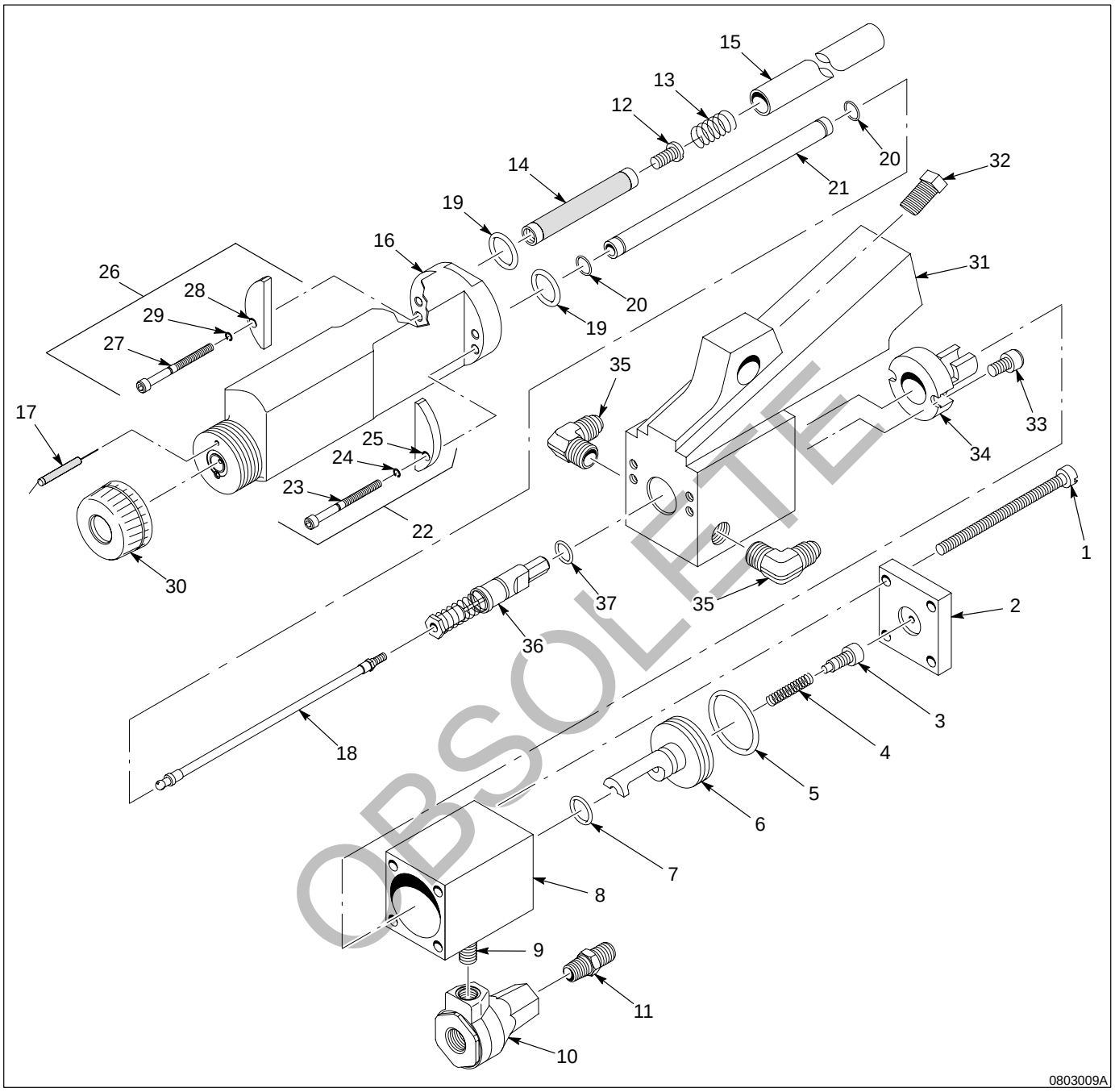

Fig. 9 Model CA-1 gun (exploded view)

Recommended Spare Parts

See Figure 9.

Item	Part	Description	Quantity	Note
16	246 750	Extension, assembly	1	
17	247 212	Resistor, tip with O-ring	1	
30	156 247	Nut, retaining nozzle	1	
36	152 359	Cartridge, packing, standard	1	
36	247 089	Cartridge, packing, stainless steel	1	
NS	245 733	Applicator, dielectric grease, carton of 12	1	
NS	106 354	Service kit, tip resistor with O-ring	1	
NS	106 210	Service kit, seal	1	

NS: Not Shown

Tip Resistor with O-Ring Service Kit

See Figure 9.

Item	Part	Description	Quantity	Note
—	106 354	Service kit, tip resistor with O-ring	1	
12	981 022	• Screw, fillister head, 6-32 x 0.375, steel, zinc	1	
13	156 077	• Spring, compression, 0.875 x 0.300 OD x 0.035	1	
14	935 000	• Resistor, 75 megohm	1	
15	- - - - - -	• Tube, insulating	1	
17	247 212	• Resistor, tip with O-ring	1	
19	940 150	• O-ring, hotpaint, 0.563 x 0.688 x 0.063	2	
NS	940 180	• O-ring, 0.75 x 0.875 x 0.063	1	A

NOTE A: Used at electrostatic cable opening at the base of the gun body.
NS: Not Shown

Seal Service Kit

See Figure 9.

Item	Part	Description	Quantity	Note
—	106 210	Service kit, seal	1	
5	941 210	• O-ring, Viton, 1.063 x 1.250 x 0.094	1	
7	940 131	• O-ring, Viton, 0.438 x 0.563 x 0.063	1	
19	940 150	• O-ring, hotpaint, 0.563 x 0.688 x 0.063	2	
20	940 080	• O-ring, hotpaint, 0.188 x 0.313 x 0.063	4	
37	940 128	• O-ring, Viton, blk, 0.375 x 0.500	1	
NS	940 180	• O-ring, 0.750 x 0.875 x 0.063	1	A

NOTE A: Used at electrostatic cable opening at the base of the gun body.
NS: Not Shown

Cable Cleaning Service Kit

See Figure 9.

Item	Part	Description	Quantity	Note
—	106 455	Service kit, cable cleaning	1	
NS	- - - - - -	• Solvent, contact/circuit board	1	
NS	- - - - - -	• Brush	1	

NS: Not Shown

Optional Model CA-1 Parts

Only use Nordson Corporation parts. The Model CA-1 gun can use the optional parts listed below:

Part	Description	Quantity	Note
245 305	Cable, electrostatic, single outlet, 8-meter (25-ft), with resistor	1	
245 306	Cable, electrostatic, single outlet, 12-meter (37-ft), with resistor	1	
245 307	Cable, electrostatic, single outlet, 16-meter (50-ft), with resistor	1	
295 069	Power supply, EPU-8 120–240 Vac, $^{50}/_{60}$ Hz	1	
295 128	Power supply, EPU-8 100–200 Vac, $^{50}/_{60}$ Hz	1	
295 244	Power supply, EPU-8 120–240 Vac, $^{50}/_{60}$ Hz	1	
229 912	Power Supply, EPS8, with current limiter	1	
229 913	Power supply, EPS8, with current limiter, 100–200 Vac	1	
229 914	Power supply, EPS8	1	
247 953	Tool, removal, nut/nozzle	1	

DECLARATION of CONFORMITY

PRODUCT:

EPS8 Electrostatic Power Supply used with the CA-1 Automatic Airless Applicator

EPS9 Electrostatic Power Supply used with:
AN-9 Automatic Air-Spray Applicator
AN-10 Automatic Air-Spray Applicator
CA-10 Automatic Airless Applicator

APPLICABLE DIRECTIVES:

89/392/EEC (Machinery)
73/23/EEC (Low Voltage Directive)
89/336/EEC (Electromagnetic Compatibility Directive)

STANDARDS USED TO VERIFY COMPLIANCE:

prEN50176	EN50081
EN292	EN50082
EN50014	EN55014
EN50020	IEC801
EN50050	EN60204

PRINCIPLES:

This product has been manufactured according to good engineering practice.

The product specified conforms to the directive and standards described above.

CERTIFICATIONS:
ISO 9001 - DNV No. QSC3277
EMC - TUV Rheinland V9674067 & V9674068
Factory Mutual Certified
Canadian Standards Association Certified

Lou Koch
Factory Manager

Woodie Francis
Engineering Manager

Date: 10 February 97