

ACJ-Series Applicator Systems

Customer Product Manual
Part 303 810A



NORDSON CORPORATION • AMHERST, OHIO • USA

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ACJ Series Applicator Systems

1. Safety

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 in the spray area. 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.
- 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 while 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.

2. Description

The ACJ Series applicator systems are typically used in Nordson Century workcells to dispense solder flux on printed circuit boards and other electronic components. This section describes the system components and their functions, and the different applicator versions and options.

System Components and Functions

Figure 1 shows a typical ACJ system with options. A basic system consists of an ACJ-S or ACJ-ST applicator, ACJ-1 controller, and pressure controller. Options include a heater and co-axial air nozzle.

The applicators are electrically operated valves. The ACJ-S has an integral flux reservoir, while the ACJ-ST is supplied from an external flux reservoir. On a signal from the workcell dispense program, the ACJ-1 controller energizes the electromagnetic solenoid in the applicator. The solenoid pulls the valve needle away from the valve seat, allowing flux to flow out of the applicator nozzle. The pressure controller controls the air pressure used to pressurize the flux supply.

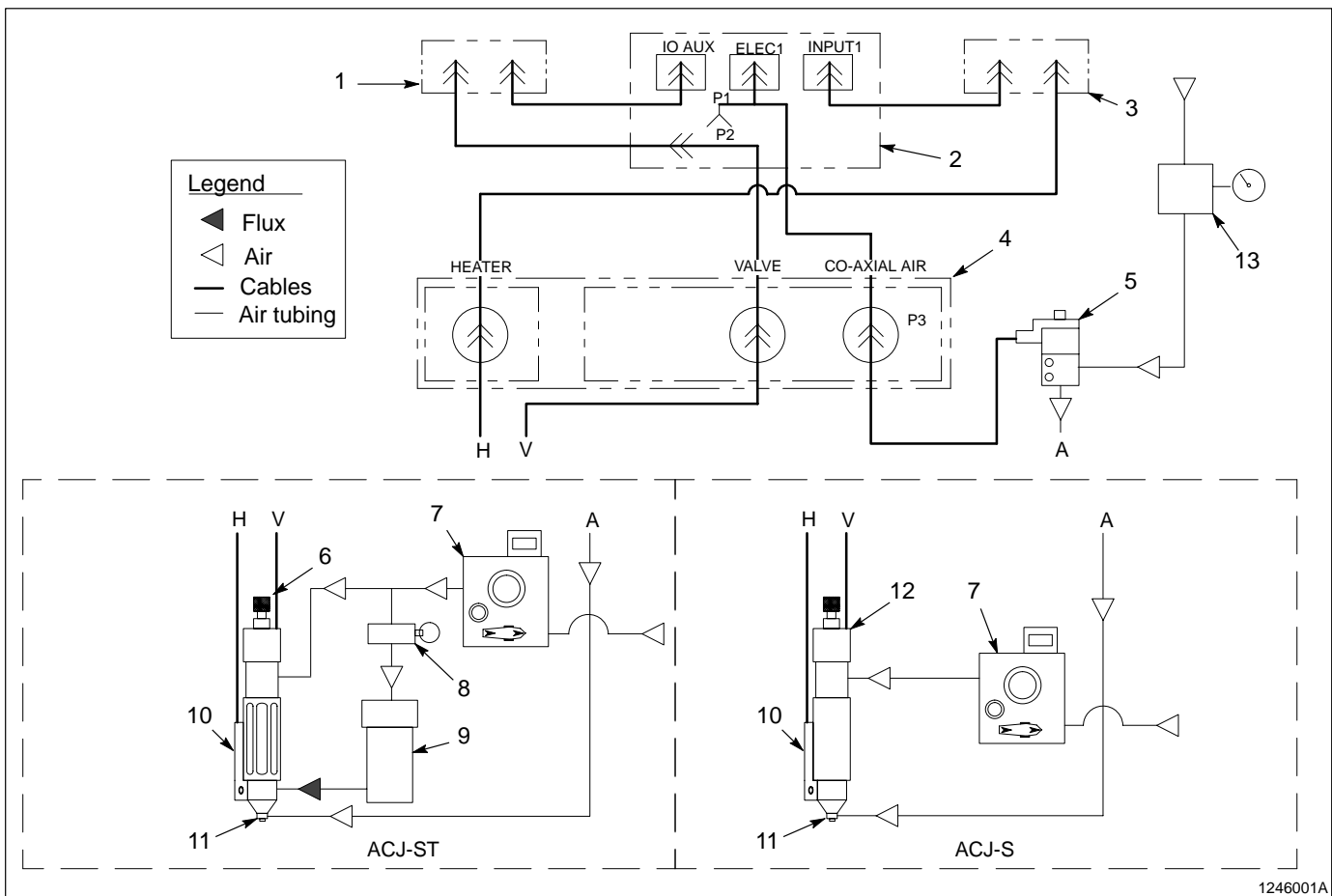


Fig. 1 System Configurations

- | | | |
|-------------------------------------|--------------------------|----------------------------------|
| 1. ACJ-1 controller | 6. ACJ-ST applicator | 10. Heater (option) |
| 2. Workcell | 7. Pressure controller | 11. Co-axial air nozzle (option) |
| 3. Power manager | 8. Pressure relief valve | 12. ACJ-S applicator |
| 4. Workcell bulkhead | 9. External reservoir | 13. Co-axial air regulator |
| 5. Co-axial solenoid valve (option) | | |

Applicators

See Figure 2. Two applicator versions are available.

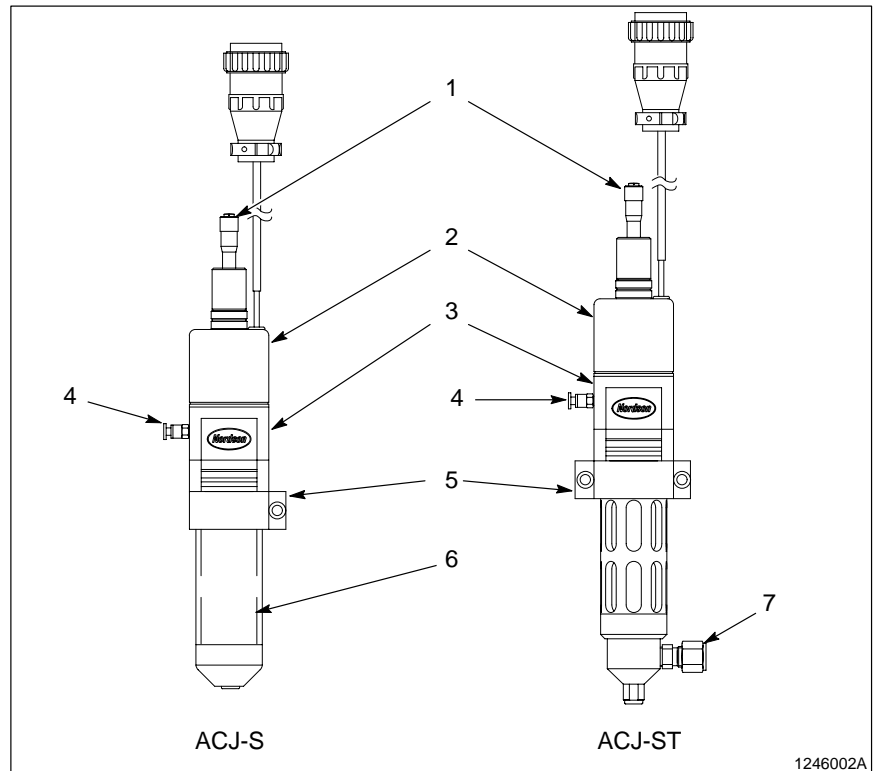


Fig. 2 ACJ-S and ACJ-ST Applicators

- | | |
|----------------------|------------------------|
| 1. Micrometer | 5. Bracket |
| 2. Solenoid | 6. Syringe |
| 3. Body | 7. Fluid inlet fitting |
| 4. Air inlet fitting | |

ACJ-S Applicators

ACJ-S applicators have an integral reservoir (syringe) that holds the flux supply. The syringe is completely sealed and pressurized to ensure a steady flow of material. ACJ-S applicators are available in the following versions:

- with a 10 cc syringe
- with a 30 cc syringe
- with a 30 cc syringe and heater

ACJ-ST Applicators

ACJ-ST applicators are supplied with flux from an external, pressurized reservoir. ACJ-ST applicators are available in the following versions:

- without heater
- with heater

ACJ-1 Controller

See Figure 3. The controller is typically mounted in the cabinet under the workcell coating area. It operates on 120 Vac and outputs 24 Vdc to energize the applicator solenoid for a selected time period.

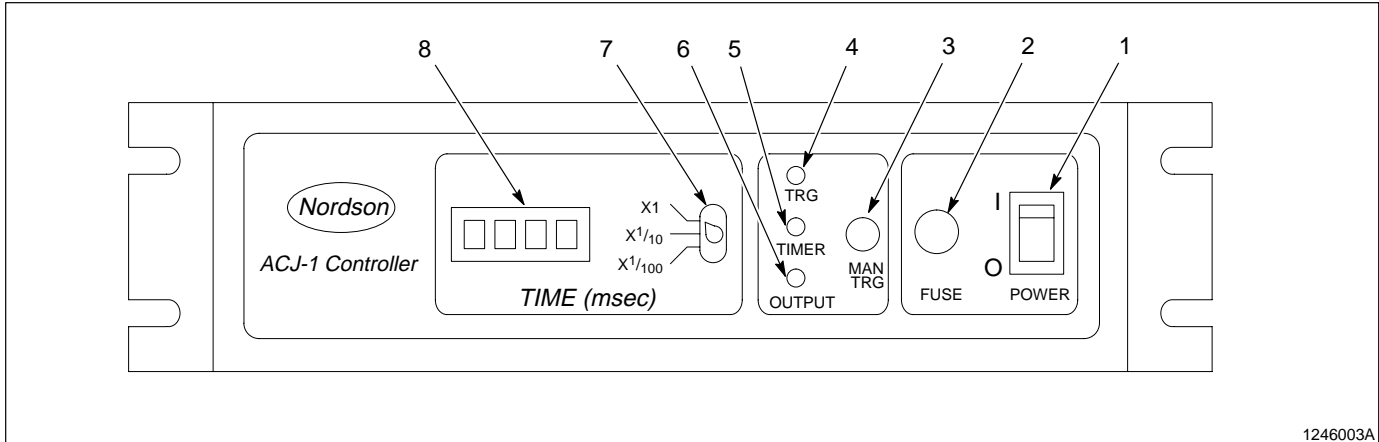


Fig. 3 ACJ-1 Controller

Item	Description	Function
1	Power switch	Turns on the timer, switch lights when power is on.
2	Fuse	Midget 1 amp main fuse.
3	Manual trigger button	Energizes the applicator solenoid for the set time.
4	Trigger indicator lamp	Lights when the timer receives a trigger signal.
5	Timer indicator lamp	Lights while the timer is operating.
6	Output indicator lamp	Lights when the timer energizes the applicator solenoid.
7	Range mode select switch	x1: 0–9999 milliseconds x1/10: 0–999.9 milliseconds x1/100: 0–99.99 milliseconds
8	Timer setting	Sets the dispense time in milliseconds. 5 milliseconds minimum.

Fluid Pressure Controller

See Figure 4. The fluid pressure controller is typically mounted in the workcell coating area. Maximum input air pressure is 7 bar (100 psi).

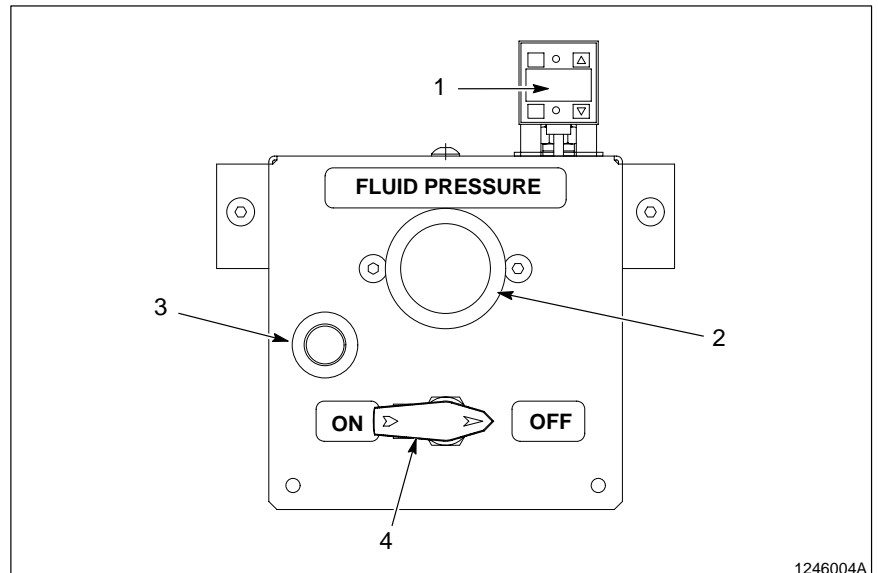


Fig. 4 Pressure Controller

- | | |
|-----------------------------|-------------------------|
| 1. Digital pressure display | 3. Air supply indicator |
| 2. Pressure regulator | 4. Valve |

Options

The following options are available:

- Fluid systems for ACJ-ST applicators
- Co-axial air nozzles
- Heaters
- Fluid nozzles

Optional Fluid Systems for ACJ-ST Applicators

Fluid systems consist of a reservoir, pressure relief valve, 140 micron filter, and the hoses, tubing, and fittings required to install the systems on a Century workcell. The fluid system kits are available with three sizes of reservoirs:

- 17.75 centiliters (6 fluid ounces)
- 59.1 centiliters (20 fluid ounces)
- 3.75 liters (1 gallon)

Optional Co-Axial Air Nozzles

Co-axial air nozzles are installed on the applicator directly on the fluid nozzle. Air flowing from the nozzle helps the dispensed flux spread out on the substrate, providing even coverage. Four sizes of air nozzles are available:

- narrow face, .030-in. orifice
- medium face, .030-in. orifice
- wide face, .030-in. orifice
- medium face, .050-in. orifice

To use a co-axial air nozzle, you must install a co-axial air kit containing a solenoid valve and cordset. Air is supplied to the solenoid valve from a pressure regulator installed in the front panel of the workcell. Refer to the *Parts* section for nozzle and kit part numbers. Contact your Nordson representative for information on ordering and installing a regulator and plumbing.

Optional Heaters

The heater kits include a heater, cable, and electrical connector. The kit connects to a separate temperature controller (power manager), installed in the cabinet under the workcell coating area. Contact your Nordson representative for information on the temperature controller.

NOTE: Heaters cannot be installed on the 10 cc ACJ-S applicator.

The RTD and heater cartridges can be replaced by ordering the kits listed in the *Parts* section.

Optional Fluid Nozzles

Fluid nozzles are available in different sizes and configurations. Contact your Nordson representative for information on fluid nozzles.

3. Operation



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

Refer to your Century workcell manual for system setup and operating procedures.

Startup

1. See [Figure 4](#). Turn the pressure controller valve to the OFF position.
2. Fill the ACJ-S syringe or ACJ-ST reservoir:

ACJ-S Applicators:

- a. Remove the thumbscrew from the applicator bracket.
- b. Remove the applicator from the Z-head.
- c. Rotate the applicator bracket to the right to separate the bracket and syringe from the body. Unless you need to clean the syringe, there is no need to remove the syringe from the bracket. Do not damage or bend the needle.
- d. Fill the syringe with flux.
- e. Install the bracket and syringe over the needle and onto the body. Turn the bracket to the left to lock it onto the body.
- f. Re-install the applicator on the Z-head.

ACJ-ST Applicators:

- a. Pull the pressure relief valve ring. The valve is mounted on the side of the workcell.
 - b. Remove the reservoir cap by turning it counterclockwise.
 - c. Fill the reservoir with flux.
 - d. Replace the cap.
3. Install a nozzle on the applicator if one is not already installed.
 4. See [Figure 3](#). Turn on the ACJ-1 controller power switch and set the desired range and valve opening time.

Startup (contd)

5. See Figure 4. Turn the pressure controller valve to the ON position and set the fluid pressure as desired.
6. If using a co-axial air nozzle, set the desired air pressure. The co-axial air pressure regulator and gauge are typically installed on the workcell front panel.
7. Place a test sheet under the applicator nozzle and run a dispense program. Check the results and adjust the dispense parameters as desired.

Dispensing Adjustments

Dispensing is controlled by the following parameters:

Needle Travel	The micrometer on top of the applicator adjusts needle travel. Rotate the micrometer knob counterclockwise to increase needle travel and the amount of flux dispensed each time the valve is opened.
Dispense Time	Dispense time is set at the ACJ-1 controller. Increase the dispense time to increase the amount of time the valve is open and the amount of flux dispensed.
Fluid Pressure	Fluid pressure is with the pressure regulator on the pressure controller.
Nozzle Size and Type	Contact your Nordson representative for information on available nozzles and applications.
Z-Height	Z-Height is set in your dispense program. Contact your Nordson representative for advice on setting the correct Z-height for your application.
Co-Axial Air Nozzles and Pressures	The pattern width and orifice size of the nozzle and the air pressure will affect the dispense pattern. Contact your Nordson representative for advice on the correct nozzle and pressure to use for your application.

Short-Term Shutdown

1. Shut off the ACJ-1 power switch.
2. Turn the pressure controller valve to the OFF position.

Long-Term Shutdown

If the flux will deteriorate during a long-term shutdown perform the following procedures:

1. If you are using an ACJ-ST applicator, empty the reservoir and fill it with a compatible solvent. Run a purge program and flush the system.
2. Shut off the ACJ-1 controller power switch.
3. Turn the pressure controller valve to the OFF position.
4. Remove the applicator from the Z-head.
5. Disassemble the applicator and clean all wetted parts with a compatible solvent. Replace any worn or damaged parts.

NOTE: The needle and seat are a matched set and must be replaced at the same time. Do not mix them with parts from another applicator or replacement kit.

6. Soak the seat and nozzle in a cleaning solvent compatible with the flux you are using until you are ready to use the applicator again.
7. If you are using an ACJ-ST applicator, empty the reservoir and clean it with a compatible solvent. Remove the screen from the in-line filter and clean it in solvent.

Maintenance

Keep the applicator and fluid system clean and working properly by maintaining your system components.

- Each time you fill the ACJ-S syringe, clean the needle, seat, and nozzle.
- Periodically disassemble the applicator and clean the wetted parts. Replace any worn or damaged parts.
- Do not allow flux or other fluids to contaminate the solenoid coil or other parts in the upper half of the applicator, above the body.
- Flush the ACJ-ST fluid system periodically with a compatible solvent. Clean the reservoir and in-line filter screen.

4. Troubleshooting



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

This section contains troubleshooting procedures that cover the most common problems you may encounter. If you cannot solve the problems with the information given here, contact your local Nordson representative for help.

Troubleshooting Chart

Refer to the *Parts* section for parts information and exploded views of the applicators.

Problem	Possible Cause	Corrective Action
1. No material dispensed	Fluid system air pressure too low Air tubing to reservoir or applicator syringe kinked or damaged Nozzle clogged Micrometer adjustment does not allow needle to lift off seat Solenoid coil shorted or open ACJ-1 controller malfunction	Increase air pressure at pressure controller. Check air tubing, repair or replace as necessary. Remove nozzle and clean. Turn micrometer knob counterclockwise to increase needle travel. Replace coil. Check for 24 Vdc output to applicator when output indicator is lit.
2. Intermittent dispensing	Air tubing to ACJ-S applicator kinking when robot moves Timer setting too short Solenoid coil has intermittent short or open	Rearrange tubing or replace with a longer piece. Minimum time is 4 ms. Set to 4 ms or longer. Replace coil.
3. Wide variance in delivery quality	Micrometer adjustment allows too much needle travel Air pressure to reservoir or syringe unstable Air tubing to ACJ-S applicator kinking when robot moves Solenoid coil has intermittent short or open	Turn micrometer knob clockwise to decrease needle travel. Use a low-pressure regulator if air pressure must be below 1 bar (14 psi). Rearrange tubing or replace with a longer piece. Replace coil.

Problem	Possible Cause	Corrective Action
4. Flux leaking from nozzle, no cut-off	Nozzle not installed properly Damaged nozzle gasket Hardened material preventing needle from seating properly Needle or seat damaged Compression springs weak or broken	Remove nozzle and reinstall. Replace gasket Remove seat, clean seat and needle. Replace needle and seat. Replace springs.
5. Flux leaking between seat and syringe (ACJ-S) or seat adapter (ACJ-ST).	ACJ-S: Seat not threaded into syringe properly, or syringe damaged ACJ-ST: Seat not threaded into seat adapter properly	Remove seat, clean threads, and reinstall. If syringe threads damaged, replace syringe. Remove seat, clean threads, and reinstall.

5. 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.

Applicator Part Numbers

Part	Description	Note
329362	Applicator, ACJ-S, 10 cc	
329 363	Applicator, ACJ-S, 30 cc	
329 365	Applicator, ACJ-S, 30 cc, with heater	
329361	Applicator, ACJ-ST	
329 413	Applicator, ACJ-ST with heater	

Applicator Repair Kits

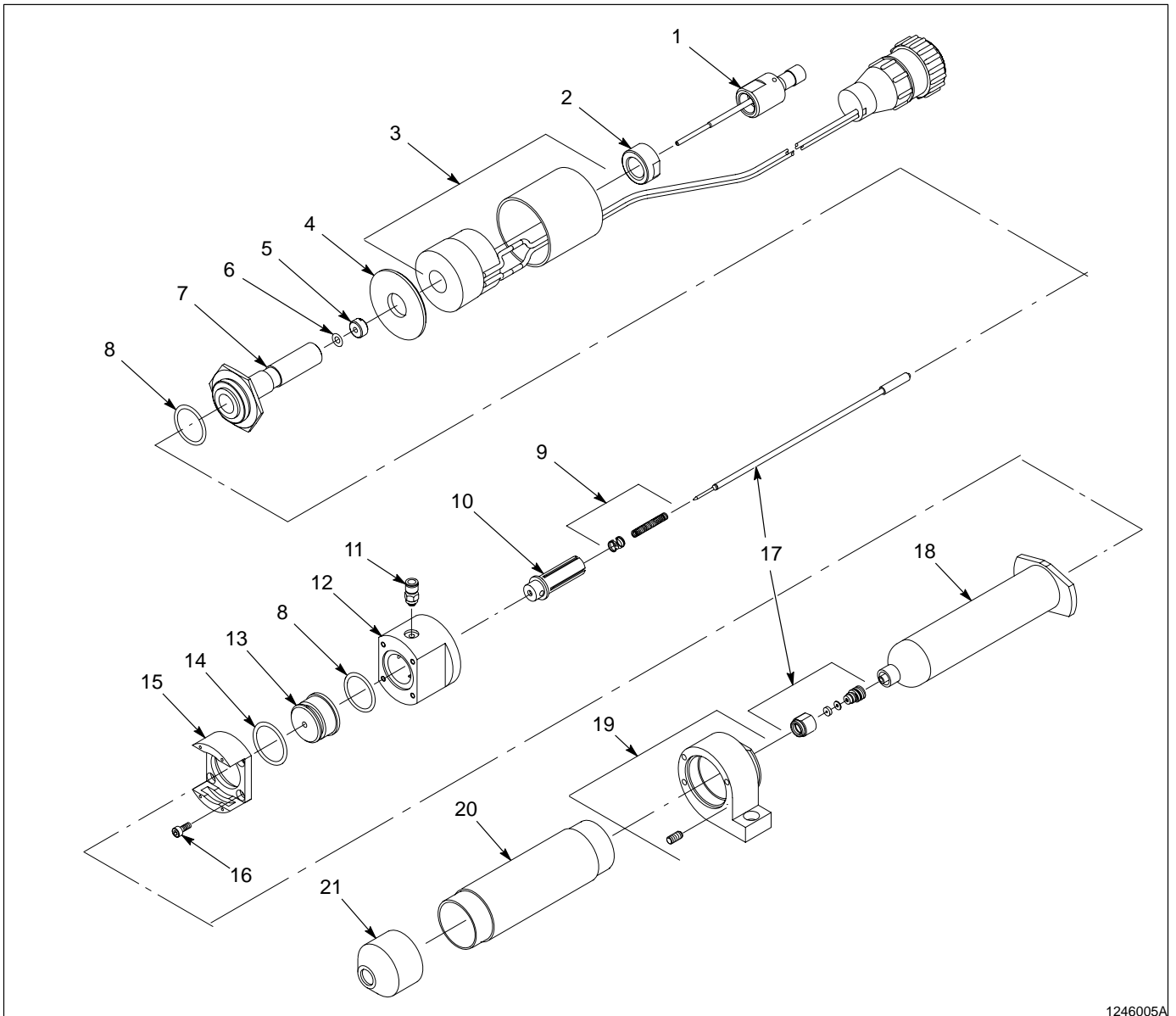
Refer to the applicator parts lists for kit contents.

Part	Description	Note
329 369	Kit, seal, ACJ-ST applicator	
329 370	Kit, seal, ACJ-S 30cc applicator	
322 439	Kit, seal, ACJ-S 10cc applicator	
329 371	Kit, spring, ACJ-ST applicator	A
NOTE A: For all applicators.		

10cc ACJ-S Applicator

See Figure 5.

Item	Part	Description	Quantity	Note
—	329 362	Applicator, ACJ-S, 10 cc	1	
1	995 215	• Adjuster, micro, ACJ	1	
2	995 326	• Nut, housing, ACJ	1	
3	329 374	• Solenoid, ACJ applicator	1	
4	995 325	• Cap, housing, ACJ	1	
5	995 592	• Plug, O-ring, ACJ	1	
6	995 597	• O-ring, ACJ, 3 mm	1	A
7	995 591	• Sleeve, micro-adjust, ACJ	1	
8	940 190	• O-ring, 0.8125 x 0.9375 x 0.063 in.	2	A
9	329 371	• Kit, spring, ACJ-S, ACJ-ST applicator	1	
10	246 072	• Armature	1	
11	972 185	• Connector, male, 0.125 in. tube x #10–32	1	
12	-----	• Body, ACJ-S applicator	1	
13	-----	• Adapter, tube seal, ACJ-S, 10 cc	1	
14	322 438	• O-ring, ACJ-S, 11 mm ID, Kalrez	1	A
15	995 203	• Retainer, female, ACJ	1	
16	321 092	• Screw, socket head, cap, M3 x 8 mm	4	
17	995 301	• Needle and seat, ACJ-S, 10 cc	1	
18	329 378	• Cartridge, 10 cc, ACJ-S	1	
19	-----	• Bracket assembly, syringe body, ACJ-S	1	
20	995 255	• Tube, ACJ-S applicator, 10 cc	1	
21	-----	• Support, syringe bottom, ACJ-S	1	
NOTE A: Included in 322 439 kit, seal, ACJ-S, 10cc applicator.				



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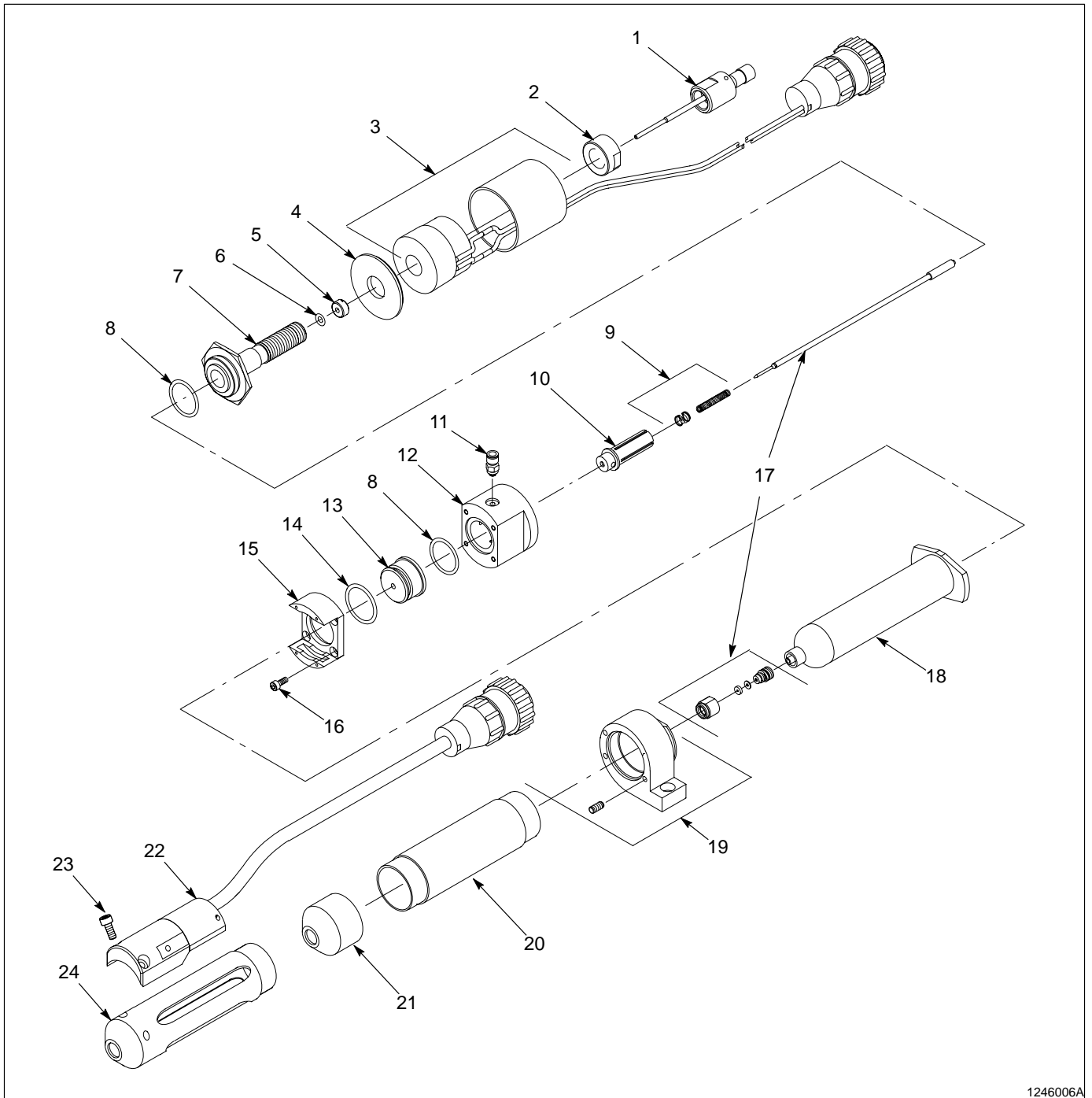
Fig. 5 10cc ACJ-S Applicator Parts

30cc ACJ-S Applicator

See Figure 6. This parts list includes both the 30cc ACJ-S applicator without heater and the 30cc ACJ-S applicator with heater.

Item	Part	Description	Quantity	Note
—	329 363	Applicator, ACJ-S, 30 cc	1	
—	329 365	Applicator, ACJ-S, 30 cc, with heater	1	
1	995 215	• Adjuster, micro, ACJ	1	
2	995 326	• Nut, housing, ACJ	1	
3	329 374	• Solenoid, ACJ applicator	1	
4	995 325	• Cap, housing, ACJ	1	
5	995 592	• Plug, O-ring, ACJ	1	
6	995 597	• O-ring, ACJ, 3 mm	1	A
7	995 591	• Sleeve, micro-adjust, ACJ	1	
8	940 190	• O-ring, 0.8125 x 0.9375 x 0.063 in.	2	A
9	329 371	• Kit, spring, ACJ-S, ACJ-ST applicator	1	
10	246 072	• Armature	1	
11	972 185	• Connector, male, 0.125 in. tube x #10–32	1	
12	-----	• Body, ACJ-S applicator	1	
13	-----	• Adapter, tube seal, ACJ-S, 30 cc	1	
14	329 403	• O-ring, ACJ-S, 18 mm ID, Kalrez	1	A
15	995 203	• Retainer, female, ACJ	1	
16	321 092	• Screw, socket head, cap, M3 x 8 mm	4	
17	995 305	• Needle and seat, ACJ-ST	1	
18	329 379	• Cartridge, 30 cc, ACJ-S	1	
19	-----	• Bracket assembly, syringe body, ACJ-S	1	
20	-----	• Tube, syringe support, ACJ-S, 30 cc	1	B
21	-----	• Support, syringe bottom, ACJ-S	1	B
22	329 415	• Heater, w/cordset, ACJ-ST	1	CD
23	982 059	• Screw, socket head, M4 x 8, black oxide	2	C
24	-----	• Adapter, 30 cc ACJ-S heater	1	C

NOTE A: Included in 329 370 kit, seal, ACJ-S 30cc applicator.
 B: Used only on 329 363 applicator (without heater).
 C: Used only on 329 365 applicator (with heater). Item 24 replaces items 20 and 21 when heater is installed.
 D: To repair, use 329 406 kit, ACJ heater replacement and 329 407 kit, ACJ RTD replacement.



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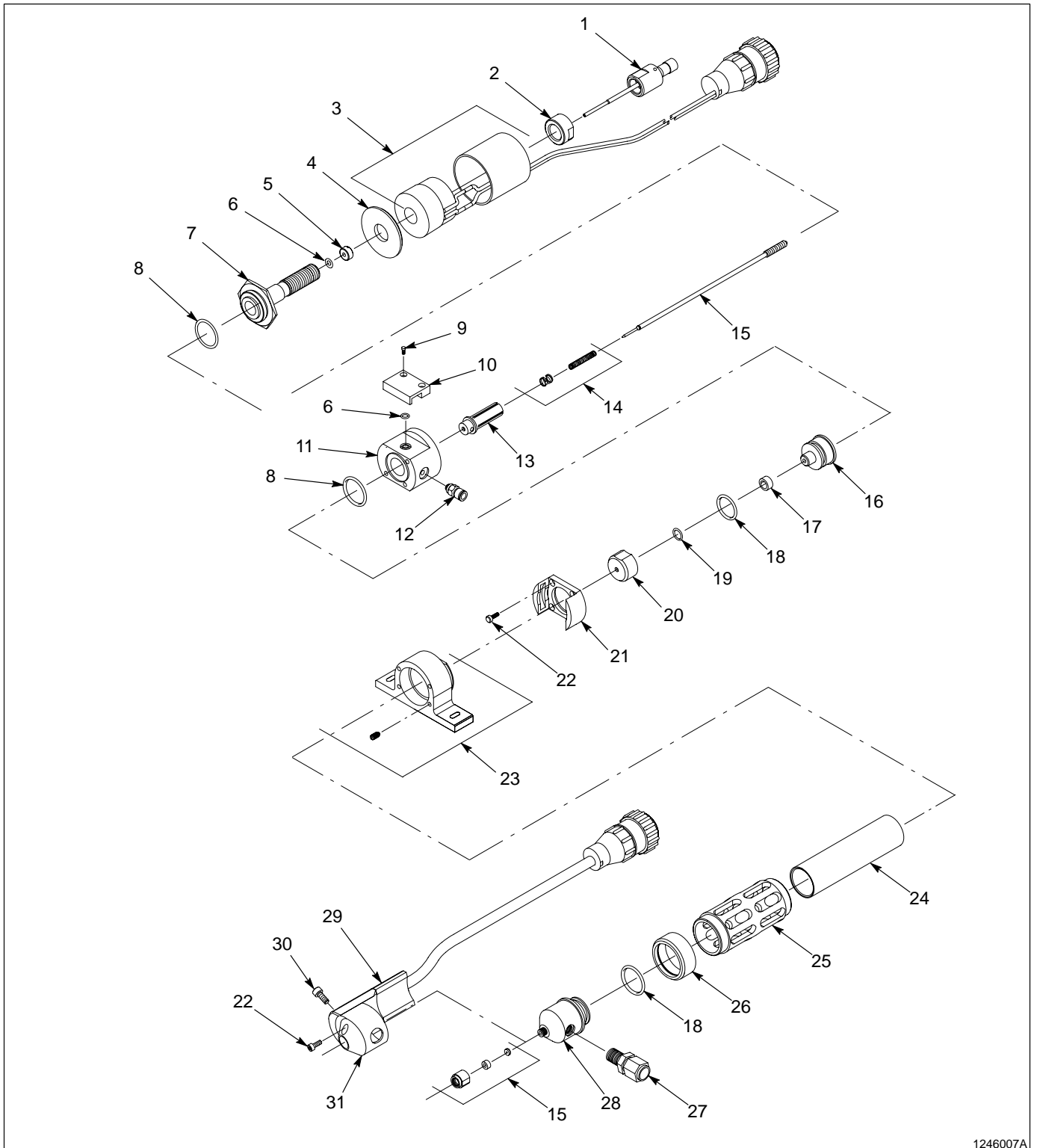
Fig. 6 30cc ACJ-S Applicator Parts

ACJ-ST Applicators

See Figure 7. This parts list covers both the ACJ-ST applicator without heater and the ACJ-ST applicator with heater.

Item	Part	Description	Quantity	Note
—	329 361	Applicator, ACJ-ST	1	
—	329 413	Applicator, ACJ-ST with heater	1	
1	995 215	• Adjuster, micro, ACJ	1	
2	995 326	• Nut, housing, ACJ	1	
3	329 374	• Solenoid, ACJ applicator	1	
4	995 325	• Cap, housing, ACJ	1	
5	995 592	• Plug, O-ring, ACJ	1	
6	995 597	• O-ring, ACJ, 3 mm	2	A
7	995 591	• Sleeve, micro-adjust, ACJ	1	
8	940 190	• O-ring, 0.8125 x 0.9375 x 0.063 in.	2	A
9	321 093	• Screw, socket head, cap, M3 x 14 mm	4	
10	329 401	• Interlock, pneumatic, ACJ-ST	1	
11	-----	• Body, ACJ-ST applicator	1	
12	972 185	• Connector, male, 0.125 in. tube x #10-32	1	
13	246 072	• Armature	1	
14	329 371	• Kit, spring, ACJ-S, ACJ-ST applicator	1	
15	995 305	• Needle and seat, ACJ-ST	1	
16	329 398	• Adapter, tube seal	1	
17	329 392	• U-cup, ACJ-ST	1	A
18	329 403	• O-ring, ACJ-ST, 18 mm ID, Kalrez	2	A
19	329 390	• O-ring, ACJ-ST, 14 mm ID	1	A
20	329 399	• Retainer, seal, ACJ-ST	1	
21	995 203	• Retainer, female, ACJ-ST	1	
22	321 092	• Screw, socket head, cap, M3 x 8 mm	7	B
23	-----	• Bracket assembly, syringe body, ACJ-ST	1	
24	329 418	• Tube, ACJ-ST applicator	1	
25	-----	• Cage, syringe support, ACJ-ST	1	
26	329 373	• Retainer, seat, ACJ-ST	1	
27	971 248	• Connector, 0.25 in. tube x 0.125 in. NPT	1	
28	-----	• Adapter, seat, ACJ-ST	1	
29	329 415	• Heater, with cordset, ACJ-ST	1	C, D
30	982 059	• Screw, socket head, cap, M4 x 10 mm	2	C
31	-----	• Adapter, ACJ-ST heater	1	C

NOTE A: Included in 329 369 kit, seal, ACJ-ST applicator.
 B: Four screws are used on applicators without heaters.
 C: Used only on 329 413 applicator with heater.
 D: To repair, use 329 406 kit, ACJ heater replacement and 329 407 kit, ACJ RTD replacement.



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Fig. 7 ACJ-ST Applicator Parts

System Accessories

System accessories are required for applicator operation. They include the pressure controller, ACJ-1 controller, and cables. The power manager that controls the optional heaters is a component of the Century workcell.

Pressure Controller

See Figure 8.

Item	Part	Description	Quantity	Note
—	-----	Control unit, pneumatic fluid pressure	1	
1	329 376	• Gauge, pressure, digital	1	
2	135 455	• Regulator, 0–60 psi, coat pressure	1	
3	329 375	• Indicator, pneumatic	1	
4	103 899	• Valve, manual, 3-way	1	
5	972 186	• Connector, male, 0.25 in. tube x 0.125 NPT	1	
6	971 266	• Elbow, male, 0.25 in. tube x 0.25 in. NPT	3	
7	900 730	• Tubing, polyurethane, 0.25 OD x 0.040 in.	AR	A
8	-----	• Tee, run, male, 0.125 in., Uni-fit	1	
9	972 119	• Elbow, male, 0.25 in. tube x 0.125 in. NPT	2	
10	972 672	• Union, Y, 0.25 in. tube	1	
NOTE A: Order length required in increments in one foot. AR: As Required				

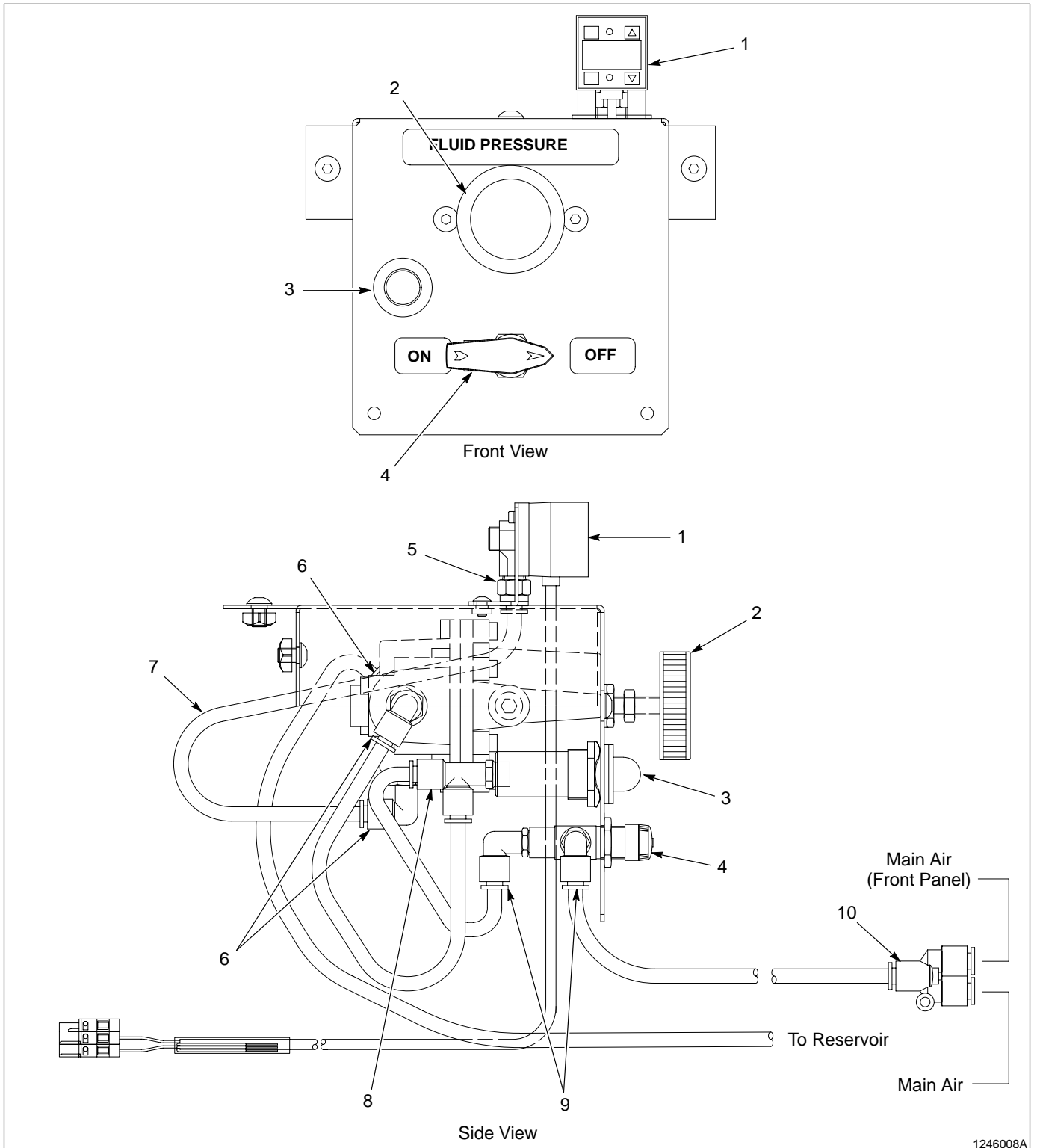


Fig. 8 Pressure Controller Parts

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ACJ-1 Controller and Mounting Brackets

Part	Description	Note
329 393	Kit, controller, ACJ-1, 115V timer	
326 388	Bracket, Century, rack mount	A
326 391	Bracket, rack mount, Century	A

NOTE A: Not included with controller. Order separately.

System Cables

See Figure 9.

Item	Part	Description	Quantity	Note
1	329 405	Cable, ACJ-1 timer to ACJ valve	1	
2	329 381	Cable, robot I/O aux to ACJ-1 timer	1	
3	329 417	Cable	1	
4	329 416	Cable	1	
5	329 382	Cable, remote interface	1	A
6	329 396	Cable, power manager to heater bulkhead	1	A

NOTE A: Included with power manager.

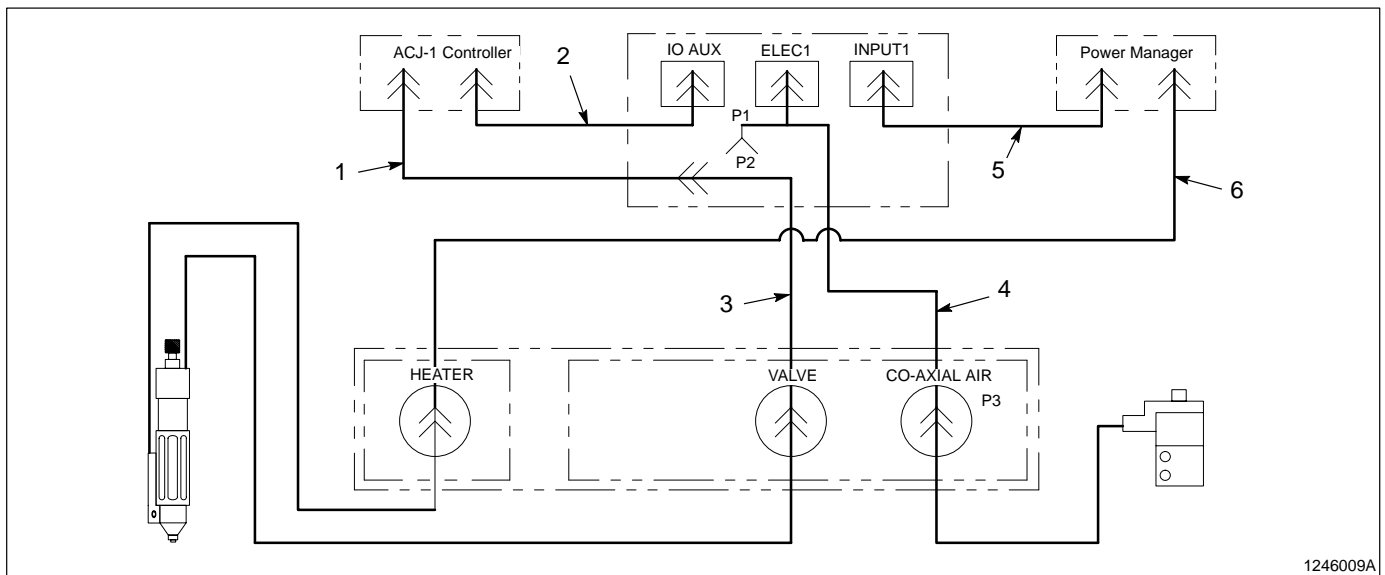


Fig. 9 System Cables

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Options

Options include fluid systems, co-axial air nozzles, and heater kits.

Six- and Twenty-Ounce Fluid System Kits

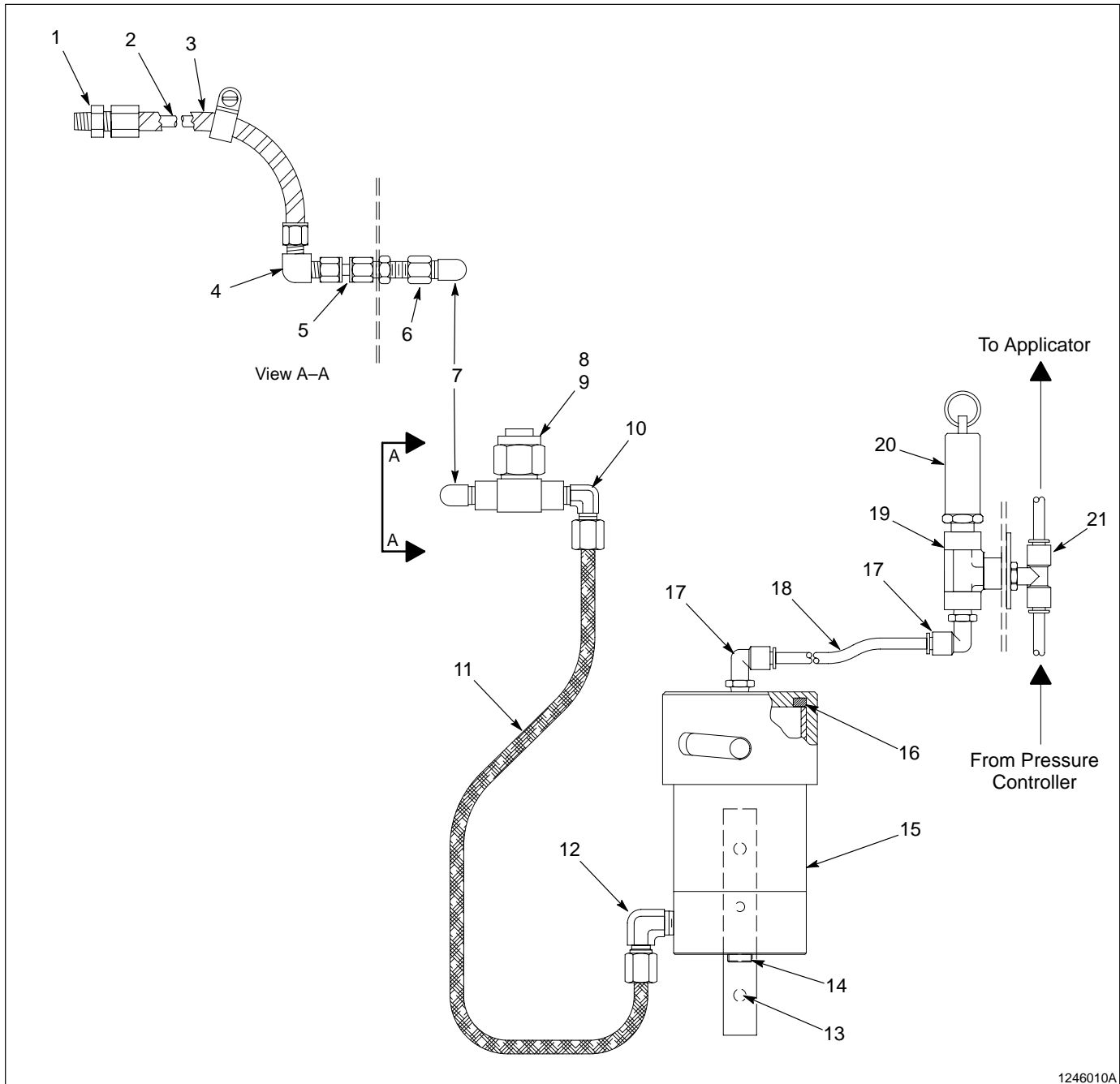
See Figure 10.

Item	Part	Description	Quantity	Note
—	-----	Kit, 6 oz fluid system	1	
—	-----	Kit, 20 oz fluid system	1	
1	971 248	• Connector, 0.25 in. tube x 0.125 NPT	1	
2	310 717	• Tubing, PFA Teflon, 0.25 in. OD x 0.062 in. wall	AR	A
3	900 620	• Tubing, spiral cut, 0.375 in.	AR	A
4	332 826	• Elbow, union	1	
5	332 825	• Connector, port	1	
6	332 824	• Fitting, bulkhead, 0.25 in. tube x 0.125 in. NPT	1	
7	973 614	• Elbow, 0.125 in. NPT x 0.125 in. NPT	1	
8	226 254	• Filter, T-type, 0.125 in. NPT	1	
9	179 498	• Filter element, 140 micron	1	
10	972 217	• Elbow, 1/2-20 JIC x 0.125 in. NPT	1	
11	842 024	• Hose, Teflon, SS braided jacket	1	
12	972 177	• Elbow, 1/2-20 JIC x 0.25 in. NPT	1	
13	981 201	• Screw, socket head, cap, 1/4-20 x 0.5 in.	2	
14	973 415	• Plug, pipe, 0.25 in. NPT		
15	329 387	• Reservoir assembly, 6 oz	1	B
16	226 253	• • Seal, 3.03 in. OD x 2.25 in. ID	1	
15	329 386	• Reservoir assembly, 20 oz	1	B
16	226 253	• • Seal, 3.03 in. OD x 2.25 in. ID	1	
17	972 119	• Elbow, 0.25 in. tube x 0.125 in. NPT	2	
18	900 730	• Tubing, 0.25 in. OD x 0.040 in. wall	AR	A
19	973 260	• Tee, 0.25 in. NPT	1	
20	901 114	• Valve, relief, 0.25 in. NPT, 85 psi	1	
21	971 268	• Tee, branch, 0.25 in. tube x 0.25 in. NPT	1	

NOTE A: Order length required in increments in one foot.

B: Order correct reservoir for your system.

AR: As Required



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Fig. 10 Six- and Twenty-Ounce Fluid System Kits

Co-Axial Air Kit

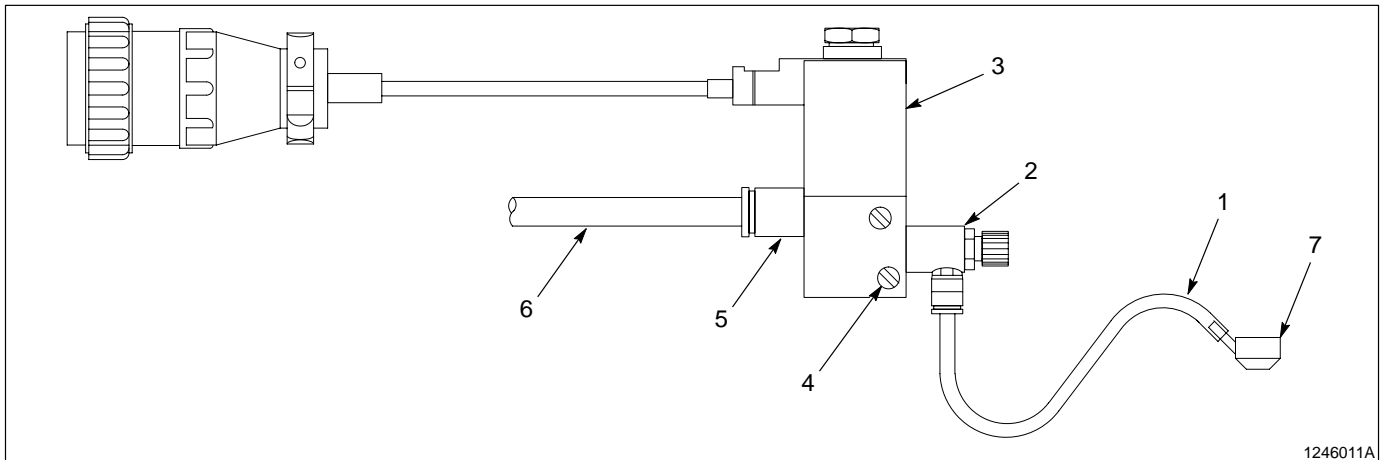
See Figure 11.

Item	Part	Description	Quantity	Note
—	322 360	Kit, co-axial air	1	
1	310 777	• Tubing, polyurethane, 0.125 x 0.032	AR	
2	234 182	• Elbow, flow control, meter out	1	
3	329 412	• Valve assembly, co-axial air solenoid	1	
NS	329 383	• • Solenoid, co-axial air	1	
NS	939 695	• • Pin, connector, 20–24 AWG, gold	2	
NS	939 212	• • Clamp, cable, electrical connector, 4 pin	1	
NS	933 303	• • Plug, electrical connector, 4 pin std	1	
4	981 642	• Screw, panhead, slotted, #4–40 x 0.5 in.	2	
5	971 728	• Connector, 1/4 in. tube x 10–32 male thread	1	
6	322 434	• Tubing, 1/4 in. OD, black	AR	
7	-----	Nozzle, co-axial	1	A

NOTE A: Not included in kit. Order separately.

AR: As Required

NS: Not Shown



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Fig. 11 Co-axial Air Kit

Co-Axial Air Nozzles

These nozzle must be ordered separately. They are not included in the co-axial air kit.

Part	Description	Note
329 410	Co-axial air nozzle, N3 (narrow face, 0.030-in. orifice)	
329 391	Co-axial air nozzle, M3 (medium face, 0.030-in. orifice)	
329 411	Co-axial air nozzle, W3 (wide face, 0.030-in. orifice)	
322 445	Co-axial air nozzle, M5 (medium face, 0.050-in. orifice)	

Heater Kit

See Figure 12.

Item	Part	Description	Quantity	Note
—	329 415	Heater, with cordset, ACJ-ST	1	
1	329 406	• Kit, ACJ heater replacement	1	
2	329 407	• Kit, ACJ RTD replacement	1	
3	939 215	• Clamp, cable, electrical connector, 14/16	1	
4	939 695	• Connector, pin, 20–24 AWG, gold	4	
5	939 216	• Plug, electrical connector, 14 pin, rev	1	

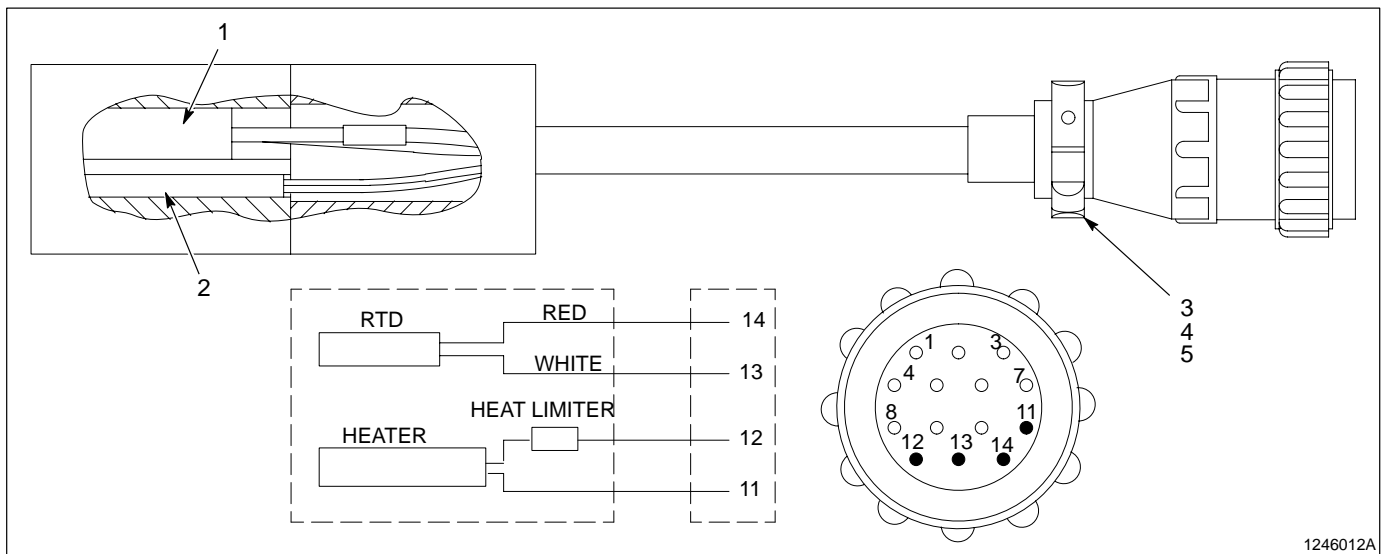


Fig. 12 Heater Kit