HIVISC CE20 Gun

Customer Product Manual
Part 237 391A

NORDSON CORPORATION • AMHERST, OHIO • USA

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Notice

Trademarks

Table of Contents

1. Safety 1
   - Qualified Personnel 1
   - Intended Use 1
   - Regulations and Approvals 1
   - Personal Safety 2
     - High-Pressure Fluids 3
   - Fire Safety 4
     - Halogenated Hydrocarbon Solvent Hazards 5
   - Action in the Event of a Malfunction 5
   - Disposal 5

2. Description 6
3. Installation 8
   - Mounting Dimensions 8
   - Gun Mounting 12
   - Supply Air Connection 14
     - Specifications 14
     - Supply Lines 14
   - Material Supply Hose Connection 14
   - Gun Purging 15
   - Dispensing Nozzles 15
   - Pressure Transducers 15

4. Operation 15
5. Maintenance 16
6. Troubleshooting 17

7. Repair 18
Clearing a Blocked Nozzle 18
Removing the Gun from Its Mounting 19
Removing the Bonnet Assembly 19
Installing the Bonnet Assembly 21
Removing the Piston Assembly 22
Installing the Piston Assembly 22
Restoring Gun Operation 23
8. Parts 24
Using the Illustrated Parts List 24
HIVISC CE20 Unheated Guns 25
HIVISC CE20 Heated Guns 28
Optional Pressure Transducer Cover 29
Heater Kits 29

HIVISC CE20 Gun

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:

Element	Symbol	Prefix
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 Nordson HIVISC CE20 dispensing gun is used to dispense adhesives, sealants, and other high viscosity materials. The gun can be used in a variety of applications, depending on the material to be dispensed and other variables in a given application system.

See Figure 1. The Nordson HIVISC CE20 dispensing gun is available in the following models:

- Basic gun (1)
- Gun with temperature conditioning manifold (2)
- Gun with 120 V heater with nickel RTD (3)
- Gun with 240 V heater with nickel RTD (3)
- Gun with 240 V heater with a platinum RTD (3)

Optional pressure transducers with various pressure ratings and bubble detect components are available for monitoring material pressure upstream of the nozzle. Contact your Nordson representative for more information about these optional components.

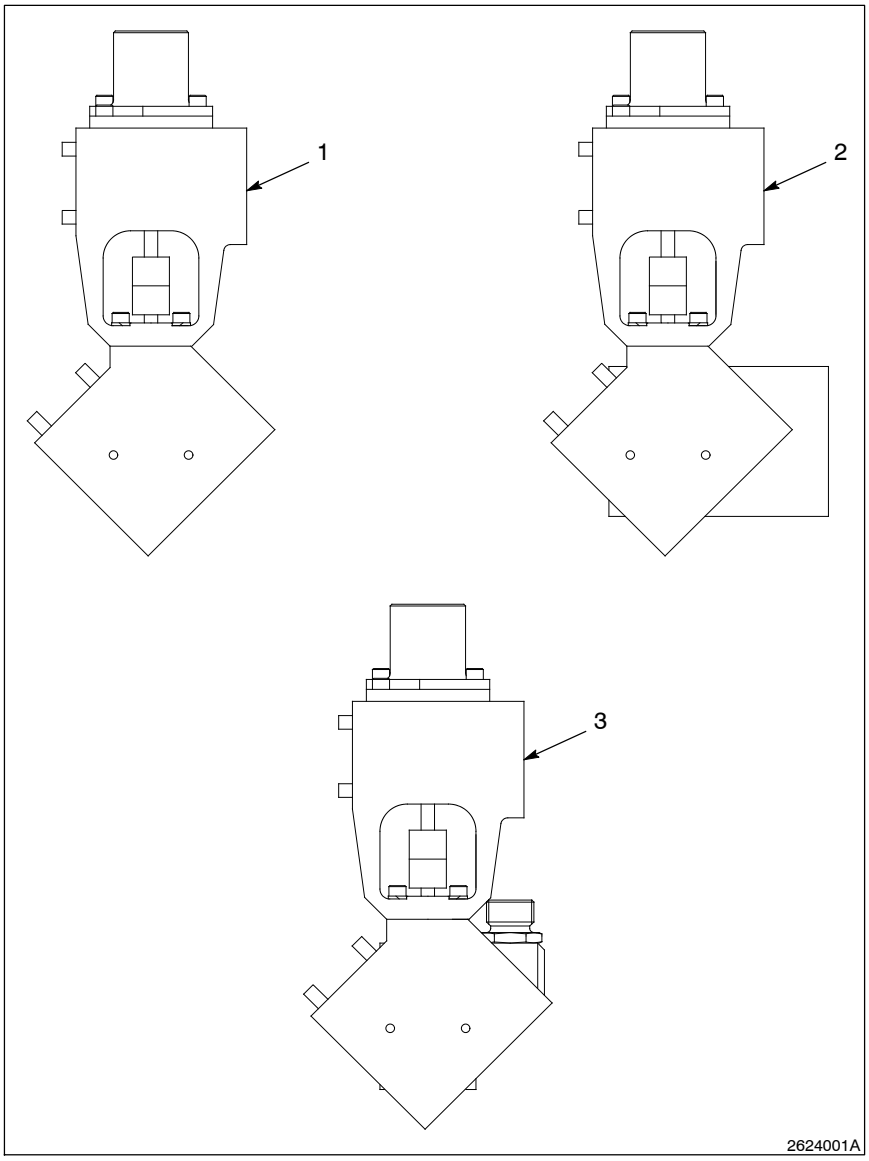

Fig. 1 HIVISC CE20 Dispensing Guns (Basic, Temperature Conditioned, and Heated)

1. HIVISC CE20 basic gun
2. HIVISC CE20 gun with temperature conditioning manifold
3. HIVISC CE20 gun with heater (heater view typical)

3. Installation

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

Because the HIVISC CE20 dispensing gun can be used for a wide variety of applications, mounting configurations vary greatly. Consult your Nordson representative for specific information on your application, if necessary.

CAUTION: Route the cables, air line, and material supply hose to avoid contact with workpieces and damage from robot movement.

Most applications for the HIVISC CE20 gun require a precise mounting of the gun on a robot arm. Consider the clearances necessary for cables, air lines, and material supply hoses and their fittings when calculating the robot and gun path.

Mounting Dimensions

See Figures 2 through 4 for the mounting dimensions specific to your model of HIVISC CE20 gun. Figure 2 shows the mounting dimensions of the basic gun. Figure 3 shows the mounting dimensions of the temperature conditioned gun. Figure 4 shows the mounting dimensions of the heated gun.

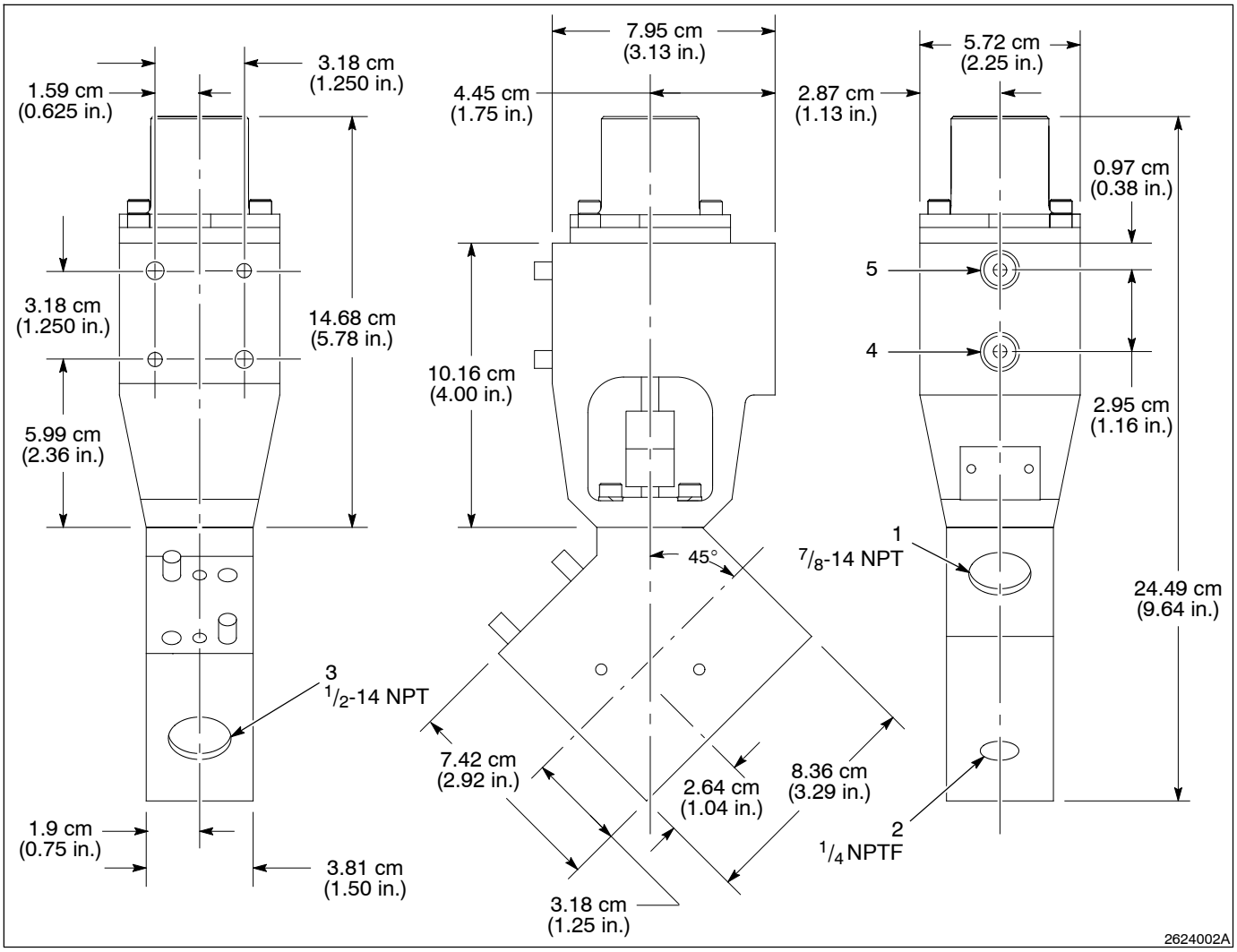

Fig. 2 HIVISC CE20 Basic Gun Dimensions

1. Material inlet port ($^7/_8$-14 SAE straight thread)
2. Pressure transducer port ($^1/_4$ NPTF)
3. Material outlet port ($^1/_2$-14 NPT)
4. Gun-open air port ($^1/_4$ NPT)
5. Gun-closed air port ($^1/_4$ NPT)

Mounting Dimensions *(contd)*

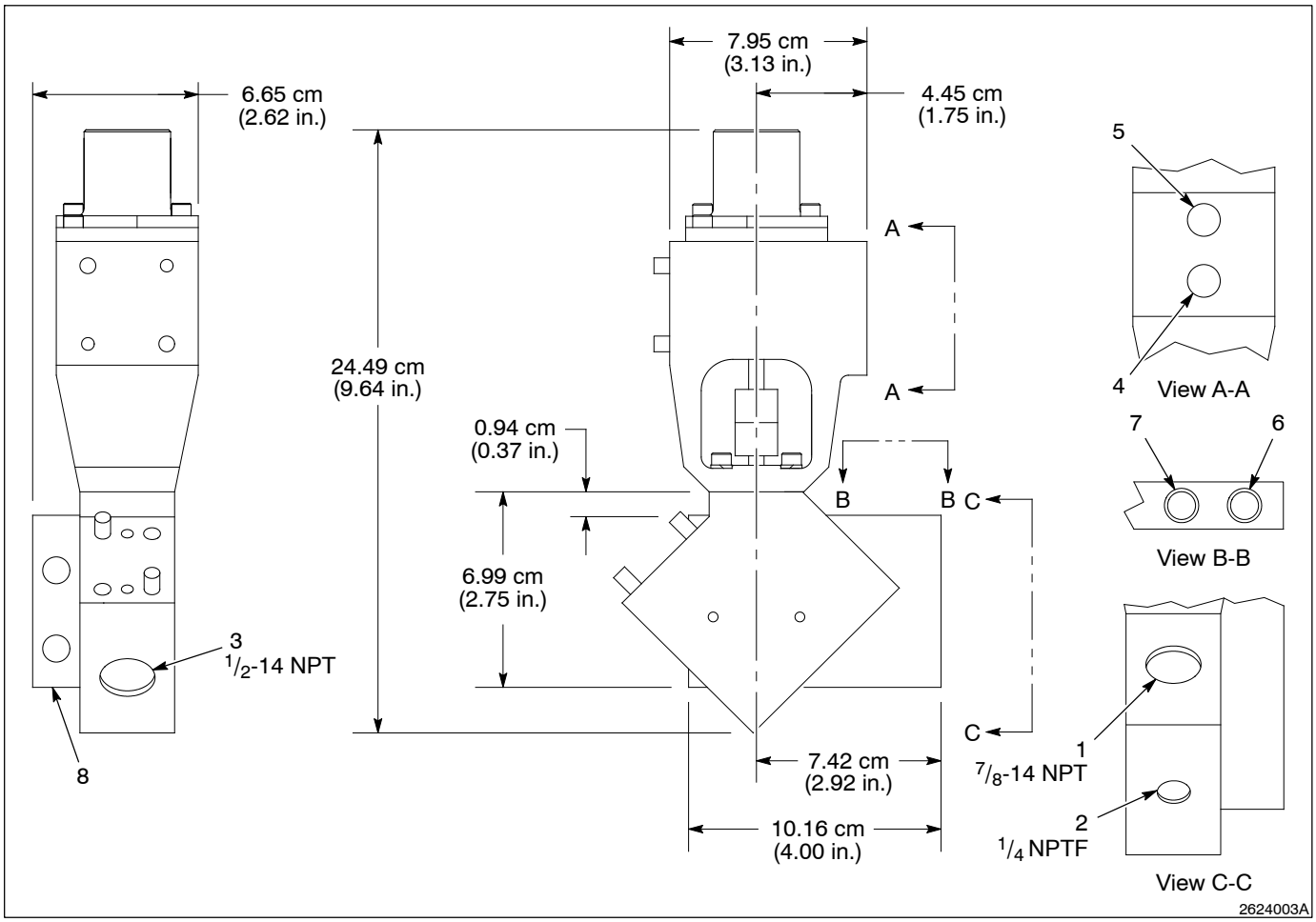

Fig. 3 HIVISC CE20 Temperature Conditioned Gun Dimensions

1. Material inlet port ($^{7}/_{8}$-14 SAE straight thread)
2. Pressure transducer port ($^{1}/_{4}$ NPTF)
3. Material outlet port ($^{1}/_{2}$-14 NPT)
4. Gun-open air port ($^{1}/_{4}$ NPT)
5. Gun-closed air port ($^{1}/_{4}$ NPT)
6. Coolant inlet port ($^{1}/_{4}$ NPT)
7. Coolant outlet port ($^{1}/_{4}$ NPT)
8. Temperature conditioning manifold

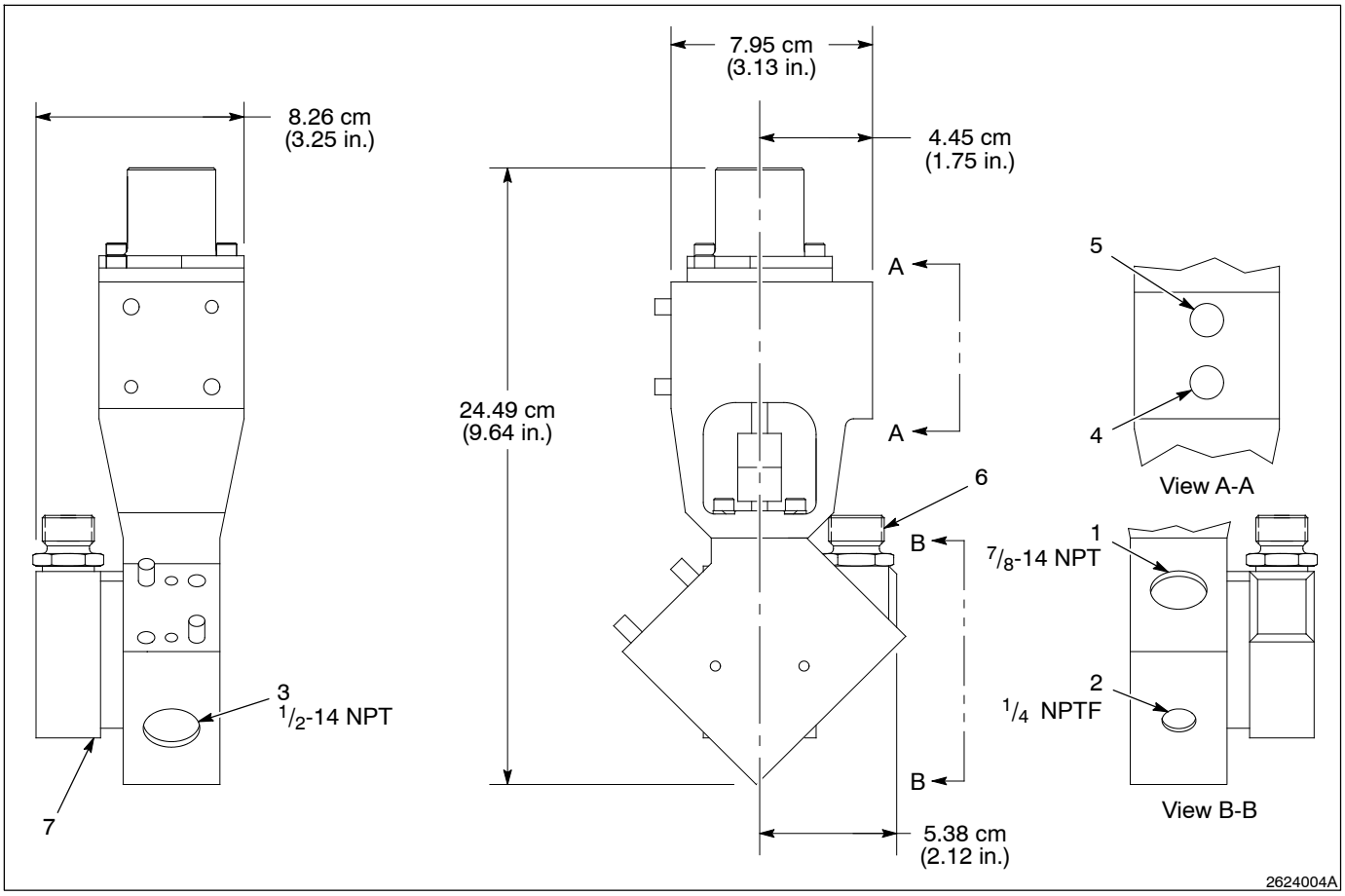

Fig. 4 HIVISC CE20 Heated Gun Dimensions

1. Material inlet port ($^{7}/_{8}$-14 SAE straight thread)
2. Pressure transducer port ($^{1}/_{4}$ NPTF)
3. Material outlet port ($^{1}/_{2}$-14 NPT)
4. Gun-open air port ($^{1}/_{4}$ NPT)
5. Gun-closed air port ($^{1}/_{4}$ NPT)
6. Heater cable connection
7. Heater block

Gun Mounting

See Figure 5. Mounting the gun to a robot arm requires the use of a customer-supplied end-of-arm tooling that has been specifically designed for the application. The design of the end-of-arm tooling must include provisions for accepting two $^1/_4$-20 threaded mounting bolts (2) and two $^1/_4$-in. dowel pins (1).

Follow these procedures to mount your HIVISC CE20 gun in the standard gun mounting position (actuator frame mount).

1. Mount the gun to the adapter using two customer-supplied $^1/_4$-20 threaded mounting bolts (2).

2. Two $^1/_4$-in. dowel pins (1) are shipped with the gun to prevent any movement of the gun with respect to the adapter and robot head. Make sure that the gun and adapter are properly aligned; then insert the dowel pins.

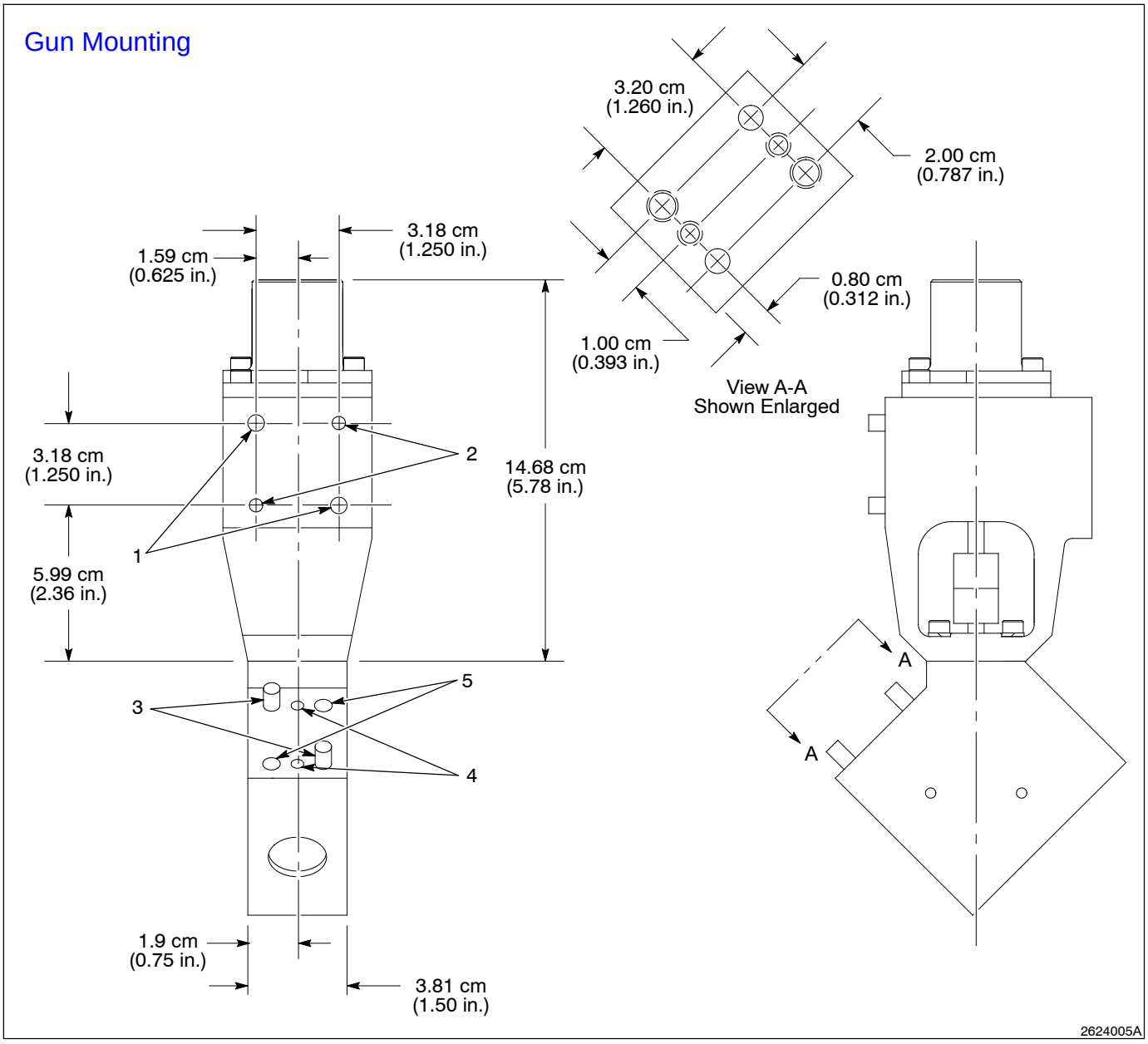

Fig. 5 Basic View for Mounting a HIVISC CE20 Gun

1. Dowel pins ($^1/_4$-in.)
2. Mounting bolts ($^1/_4$-20)
3. Dowel pins (optional mounting) (M6 x 16)
4. Mounting bolts (optional mounting) ($^1/_4$-20)
5. Mounting bolts (optional mounting) (M8 x 1.25)

Supply Air Connection

The following information is provided to help you install the supply air to the HIVISC CE20 gun.

Specifications

Supply air to the gun solenoid must be taken from an oil-free, shop air outlet that will maintain a minimum pressure of at least 4.1 bar (60 psi). The maximum air pressure to the gun is 8.6 bar (125 psi).

NOTE: The gun will not operate properly at a pressure less than 4.1 bar (60 psi).

Supply Lines

NOTE: Route the gun supply air lines so that they are free and clear of any movement around the wrist and arm of the robot, as well as of any workpiece tooling.

See Figures 2 through 4. To install the gun supply air tubing ($^1/_4$-in.), follow these steps:

1. Connect an air line from the gun-closed solenoid to an elbow at the gun-closed air port (5).

2. Connect an air line from the gun-open solenoid to a customer-supplied elbow at the gun-open air port (4).

Material Supply Hose Connection

To install the material supply hose from the pump/header system to the gun, you must use the adapters and reducers specified by Nordson Corporation for your application. Contact your Nordson representative for a listing of available adapters, reducers, and fitting kits. The maximum fluid pressure for the gun is 344.8 bar (5000 psi).

Follow these steps to connect the material supply hose:

1. Apply pipe sealant or PTFE tape to the threads of the material inlet fitting.

2. See Figures 2 through 4. Install the material inlet fitting in the material inlet port (1) of the gun body.

3. Connect the material supply hose from the pump/header system to the material inlet fitting.

Gun Purging

After you install the gun, you must purge it to remove air trapped in the system which may cause inaccurate transducer readings.

Dispensing Nozzles

Contact your Nordson representative for assistance in selecting and installing the appropriate nozzle for your application.

Pressure Transducers

See Figures 2 through 4. A pressure transducer port (2) is located on all HIVISC CE20 guns. Various pressure transducers are available for use with these guns. Contact your Nordson representative for assistance in selecting and installing the appropriate pressure transducer for your application.

4. Operation

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

See Figures 2 through 4. The HIVISC CE20 gun operates as follows:

- Initiate material dispensing by activating the gun-open air port (4).
- Stop dispensing by turning off the air through the gun-open air port.
- For air-assisted closure, activate the gun-closed air port (5).

After the gun has been installed, purge it to remove air from the material hose and nozzle. Place a material waste container under the gun and purge it until material flows freely from the nozzle.

5. Maintenance

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

WARNING: Do not loosen any hydraulic/pneumatic fitting or connection without first relieving system hydraulic/pneumatic pressure.

WARNING: System or material pressurized. Relieve pressure. Failure to observe may result in equipment damage, serious personal injury, or death.

Refer to Table 1, which lists a basic maintenance schedule. The HIVISC CE20 dispensing gun operates most efficiently if you follow the recommended preventive maintenance. Each task must be performed at the specified intervals to prevent inefficient operation and unnecessary downtime.

Table 1 Basic Maintenance Schedule

	Frequency of Maintenance		
System Component	**Weekly**	**Monthly**	**Quarterly**
Valve Mounting — Check for loose valve and tighten if necessary.	X		
Material Shelf Life — Check material expiration date.	X		
Bonnet Condition — Check for leaking bonnet.	X		
Filter/Regulator — Check regulator setting and adjust, if necessary.	X		
Air Supply — Check tubing and connectors.	X		
Pneumatic/Regulator — Clean and drain filter.		X	
Cable Condition — Check for loose and damaged connectors.		X	
Pressure Transducer — Remove and clean the transducer (if one is used).			X
Pneumatic/Regulator — Change filter, if necessary.			X

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

WARNING: Ensure all power, air pressure, and fluid pressure is removed from the HIVISC CE20 gun before performing any troubleshooting procedures.

WARNING: Remove input air supply to the material pump. Refer to pump manual for procedures. To avoid injury, do not troubleshoot with the pump turned on, unless directed otherwise.

Problem	Possible Cause	Corrective Action
1. No material dispensed	No material supply pressure to gun	Ensure pump air motor is on. Increase air motor pneumatic pressure as required. (If system uses a booster pump, ensure motor is on. Increase motor torque as required.)
	Blockage at nozzle — Controller may indicate FULL CLOSED and/or OVERPRESSURE	Perform the steps listed in *Clearing a Blocked Nozzle*.
	Blockage upstream from gun	Start at the pump and work toward the gun. Shut down system and relieve hydraulic pressure. Disconnect the material supply hoses at each junction. Power up the system and carefully check for flow. Make sure to shut off power/pressure after each check before the next disconnection. Material pressure must be available at the gun.
2. Material leaks from packing around stem	Lipseal failed	Replace the bonnet assembly.

Continued on next page

6. Troubleshooting (contd)

Problem	Possible Cause	Corrective Action
3. Insufficient material pressure at gun for application requirements — Controller indicates gun FULL OPEN	Not enough pressure at pump or pump output insufficient	Perform the following steps: a. Increase system hydraulic pressure until it reaches the maximum rating of the component with the lowest pressure rating. b. If step (a) has not corrected the problem, contact your Nordson representative for additional guidance and recommendations.

7. Repair

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

WARNING: System or material pressurized. Relieve pressure. Failure to observe may result in equipment damage, serious personal injury, or death.

Clearing a Blocked Nozzle

Follow this procedure to clear a blocked nozzle:

1. Shut off the air pressure to the material supply pump.
2. Carefully bleed off the residual pressure in the material supply line. Use the in-line pressure relief valve in the material supply line. This valve should be located near the material pump.
3. Shut off and lock out all power to the system.
4. Remove the nozzle. Clean the nozzle thoroughly with an appropriate solvent.
5. Reinstall the nozzle.

Removing the Gun from Its Mounting

WARNING: To prevent injury to personnel and/or damage to equipment, ensure all power to the controller and gun has been shut off and locked out and that all pneumatic and material pressures have been relieved or bled off.

WARNING: If a heated gun is being used, allow the system to cool down before disconnecting or removing any components from the gun. Failure to observe this warning may result in serious injury to personnel and/or damage to equipment.

Follow this procedure to remove the gun from its mounting:

1. Shut off the material supply pump and relieve the pressure from the gun and hose.
2. See Figures 2 through 4. Disconnect the material supply hose from the material supply inlet (1).
3. Disconnect the air lines from the gun-open air port (4) and gun-closed air port (5).
4. See Figure 4. For heated gun control applications, disconnect the heater cable from the heater connection (6).
5. See Figure 3. For temperature conditioning applications, disconnect the inlet (6) and outlet (7) coolant hoses from the temperature conditioning manifold (8).
6. See Figure 5. Remove the two mounting bolts (2) and two dowel pins (1) securing the gun to the robot arm or other mounting. Remove the gun from its mounting and move it to a clean workbench.

Removing the Bonnet Assembly

Follow this procedure to remove the bonnet assembly from the trimset valve:

1. Remove the gun from the robot according to the procedure *Removing the Gun from Its Mounting*.
2. See Figure 6. Loosen but do not remove the two lower coupling set screws (8). Separate the bonnet assembly (5) valve stem from the coupling (9).
3. See Figure 4. For guns with heaters, remove the heater block (7) and its attaching hardware from the trimset valve.

Removing the Bonnet Assembly (contd)

4. See Figure 3. For guns with temperature conditioning manifolds, remove the temperature conditioning manifold (8) and its attaching hardware from the trimset valve.

5. See Figure 6. Remove the socket head screws (7) securing the trimset valve (6) to the actuator (3).

NOTE: Note the trimset valve mounting orientation to the actuator to ensure the correct positioning upon installation.

6. Separate the trimset valve and the actuator.

7. Carefully pull the bonnet assembly from the trimset valve.

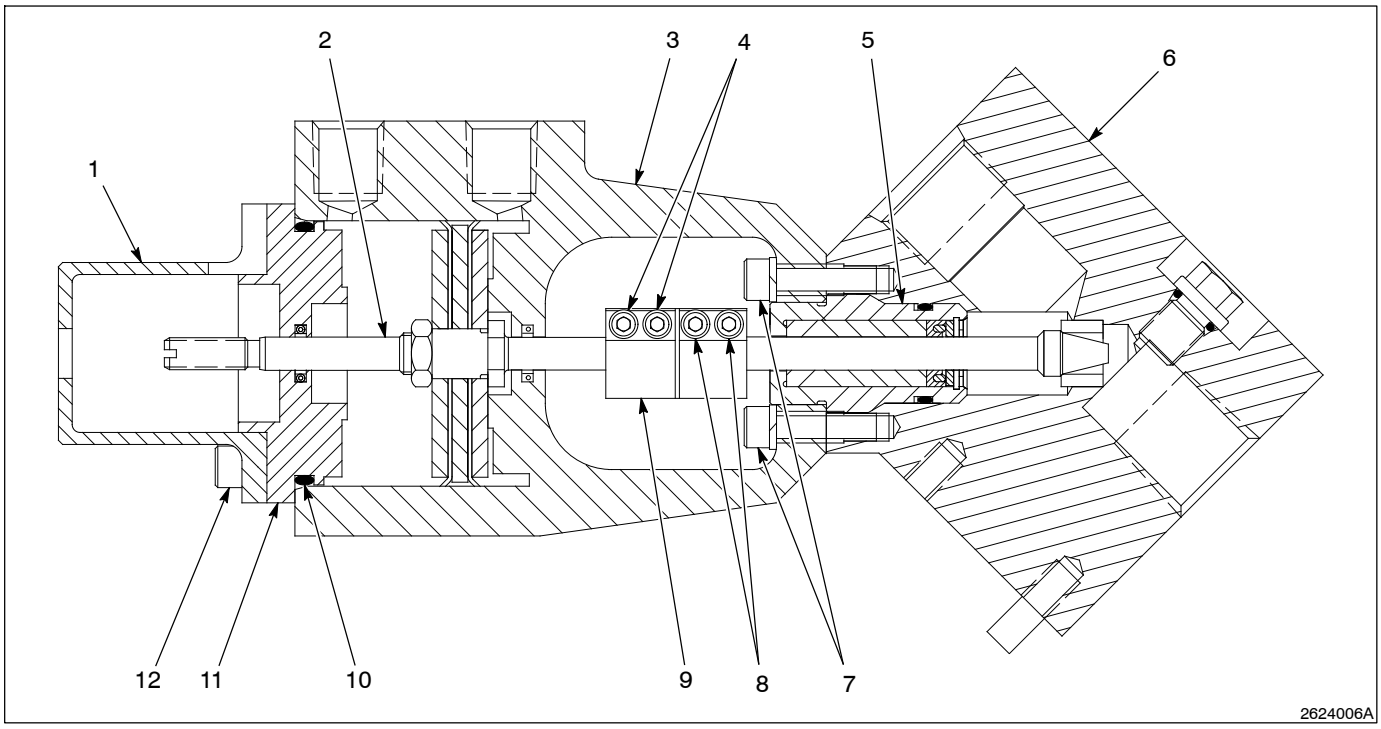

Fig. 6 HIVISC CE20 Gun (Cutaway View)

1. Bobbin cover
2. Piston assembly
3. Actuator
4. Upper coupling set screws
5. Bonnet assembly
6. Trimset valve
7. Socket head screws
8. Lower coupling set screws
9. Coupling
10. O-ring
11. Cylinder head
12. Socket head screws

Installing the Bonnet Assembly

Follow this procedure to install the bonnet assembly into the trimset valve.

NOTE: Always use new O-rings and packings when reassembling the gun.

1. See Figure 6. Loosen the upper coupling set screws (4) and firmly seat the coupling (9) against the piston assembly (2) rod. Tighten the upper coupling set screws that hold the piston assembly rod in place to a tightness of 1.1 N•m (10 in.-lb).

2. Lubricate the O-ring and backup ring on the bonnet assembly (5) and lubricate the inside of the trimset valve (6) with PTFE grease. Install the new bonnet assembly into the trimset.

3. Align the actuator (3) and the trimset valve in the same orientation as noted in the *Removing the Bonnet Assembly* procedure.

4. Apply anti-seize compound to the socket head screws (7). Install the screws and tighten to 5.2 N•m (46 in.-lb).

5. Fully seat the bonnet assembly valve stem against the piston assembly rod in the coupling.

6. Tighten the lower coupling set screws (8) that hold the bonnet assembly valve stem in place to a tightness of 1.1 N•m (10 in.-lb).

7. See Figure 4. If using a gun with a heater, install the heater block (7) using its attaching hardware.

8. See Figure 3. If using a gun with a temperature conditioning manifold, install the manifold (8) using its attaching hardware.

9. Attach the gun to the robot or other mounting using the *Mounting the Gun* procedure.

10. Purge the gun before using.

Removing the Piston Assembly

Follow this procedure to remove the piston assembly:

1. Remove the gun from its mounting according to the *Removing the Gun from Its Mounting* procedure.
2. See Figure 6. Remove the socket head screws (12) and bobbin cover (1) from the actuator (3).
3. Remove the cylinder head (11) from the piston assembly (2) rod.
4. Remove the O-ring (10) from the cylinder head.
5. Loosen but do not remove the upper coupling set screws (4). Separate the piston assembly rod from the coupling (9).
6. Carefully pull the piston assembly from the actuator.

Installing the Piston Assembly

Follow this procedure to install the piston assembly:

NOTE: Always use new O-rings and packings when reassembling the gun.

1. See Figure 6. Lubricate a new O-ring (10) with PTFE grease.
2. Install the new O-ring into the cylinder head (11).
3. Install a new piston assembly (2) using the piston assembly fixture provided with each new piston assembly.
4. Hold the piston assembly fixture against the opening of the piston assembly bore and push the piston assembly until it enters the bore.
5. Push the piston assembly until it fully seats against the bonnet assembly (5) valve stem in the coupling (9).
6. Tighten the upper coupling set screws (4) to a tightness of 1.1 N•m (10 in.-lb).
7. Install the cylinder head onto the piston assembly rod.
8. Apply anti-seize compound to the socket head screws (12). Install the bobbin cover (1). Secure the bobbin cover and the cylinder head with the screws. Tighten the screws to 5.2 N•m (46 in.-lb).
9. Follow the *Mounting the Gun* procedure to attach the gun to the robot or other mounting.

Restoring Gun Operation

To restore gun operation, follow this procedure to reinstall the gun on the robot or other mounting:

1. Install the gun to its mounting following the *Gun Mounting* procedures in *Installation*.

2. See Figures 2 through 4. Connect the material supply hose to the material inlet fitting (2).

3. See Figure 7. If you are using high pressure fluid swivels, remove the swivel lock (8) and screw (12), tighten the fluid swivel, and reinstall and tighten the swivel lock.

4. See Figures 2 through 4. Connect the air supply lines to both the gun-open air port (4) and the gun-closed air port (5) on the gun body.

5. See Figure 4. For heated gun applications, install the heater cable to the heater connection (6).

6. See Figure 3. For temperature conditioning applications, install the inlet (6) and outlet (7) coolant hoses to the temperature conditioning manifold (8).

7. Turn on the material supply pump and check the hoses and fittings for leaks.

8. Purge the gun to remove trapped air from the hoses and gun.

8. 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.

HIVISC CE20 Unheated Guns

See Figures 7 and 8.

Item	Part	Part	Description	Quantity	Note
—	220 356		Gun, HIVISC, CE20	1	
—		295 760	Gun, HIVISC, CE20, with temperature conditioning	1	
1	973 410	973 410	• Plug, pipe, socket, standard, $^1/_4$, zinc	1	A
2	220 357	220 357	• Module, trimset, co-extrude	1	
3	220 360	220 360	• • Bonnet, Hi-Flo, lipseal, 20/200 polymyte	1	
4	- - - - - -	- - - - - -	• Pin, dowel, M6 x 16 mm, H&G	2	
5	220 354	220 354	• Coupling, shaft, Hi-Flo	1	
6	982 023	982 023	• Screw, socket, M3 x 8	4	B
7	156 208	156 208	• Key, locking swivel	1	
9		170 524	• Manifold, Pro-Flo II, temperature conditioning	1	
10	296 327	296 327	• Actuator, CE20, gun	1	
11	982 372	982 372	• • Screw, socket, M5 x 12, bl	3	C
12	- - - - - -	- - - - - -	• • Frame, actuator, CE20 gun	1	C
13	- - - - - -	- - - - - -	• • Cover, bobbin	1	C
14	982 028	982 028	• • Screw, socket, M5 x 20	6 or 8	C, D, E
15	941 332	941 332	• • O-ring, Viton, black, 1.812 x 2.000	1	A, C
16	163 468	163 468	• • Piston assembly, Pro-Flo Hi-Flo	1	C
17	- - - - - -	- - - - - -	• • Head, cylinder, Hi-Flo	1	C
NS	900 349	900 349	• • Lubricant, TFE grease, 0.75-oz tube	1	C
NS	900 341	900 341	• • Lubricant, Never-Seez, 16-oz can	1	C
NS	900 424	900 424	• Compound, threadlocking, VC-3	AR	

NOTE A: Apply PTFE grease, part 900 349, to the O-rings and seals when you replace them.

B: Apply threadlocking compound, part 900 424, to the coupling screws when assembling the coupling.

C: These parts are included in the Actuator Kit, part 296 327.

D: The HIVISC CE20 gun with temperature conditioning manifold, part 295 760, uses a quantity of 8 of these screws. All other gun models listed use a quantity of 6 of these screws.

E: Apply Never-Seez lubricant, part 900 341, to the screws used to assemble the manifold to the gun.

AR: As Required

NS: Not Shown

HIVISC CE20 Unheated Guns

(contd)

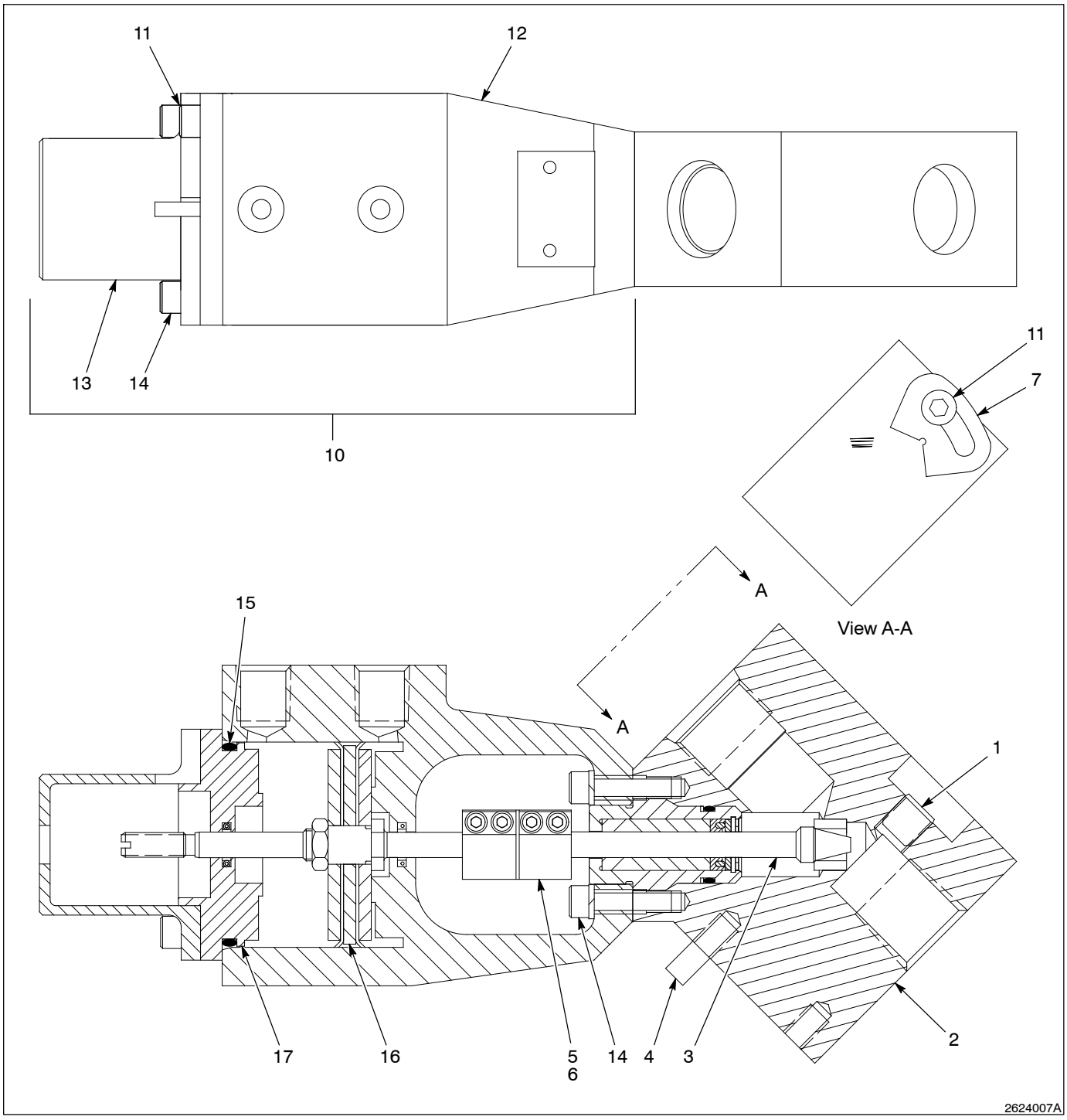

Fig. 7 HIVISC CE20 Basic Guns

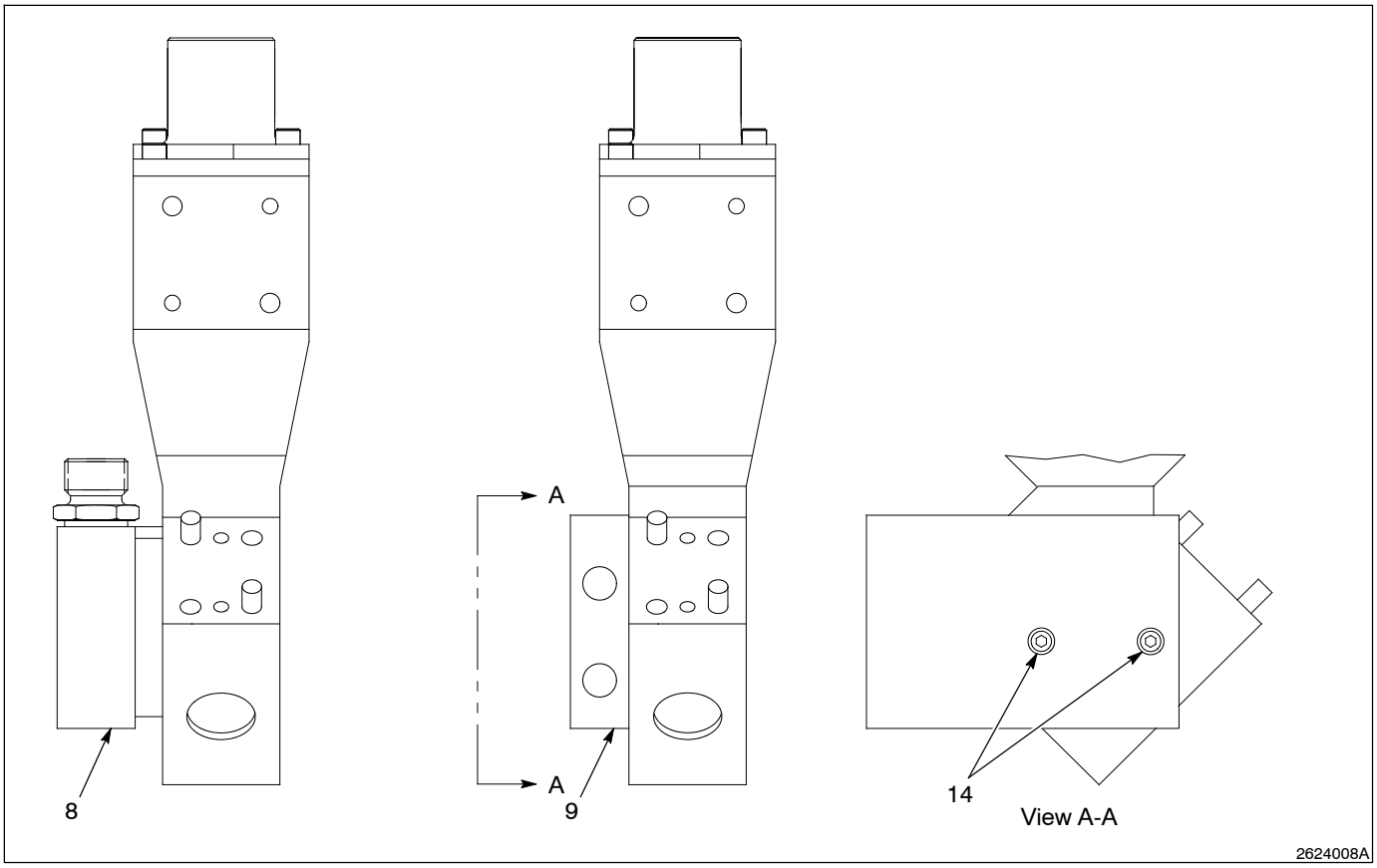

Fig. 8 HIVISC CE20 Temperature Conditioned and Heated Guns

HIVISC CE20 Heated Guns

See Figures 7 and 8.

Item	Part	Part	Part	Description	Quantity	Note
—	295 761			Gun, HIVISC, CE20, 120 V	1	
—		295 762		Gun, HIVISC, CE20, 240 V	1	
—			308 549	Gun, HIVISC, CE20, 240 V, platinum RTD	1	
1	973 410	973 410	973 410	• Plug, pipe, socket, standard, $^1/_4$, zinc	1	A
2	306 373	306 373	306 373	• Module, trimset, co-extrude, PEEK	1	
3	304 055	304 055	304 055	• • Bonnet, Hi-Flo, lipseal, 20/200 peek	1	
4	- - - - - -	- - - - - -	- - - - - -	• Pin, dowel, M6 x 16 mm, H&G	2	
5	220 354	220 354	220 354	• Coupling, shaft, Hi-Flo	1	
6	982 023	982 023	982 023	• Screw, socket, M3 x 8	4	B
7	156 208	156 208	156 208	• Key, locking swivel	1	
8	281 619			• Heater kit, 120 V, Pro-Flo	1	C
8		282 819		• Heater kit, Pro-Flo, 240 V	1	C
8			282 818	• Heater kit, Pro-Flo, 240 V, pt 100	1	C
10	296 327	296 327	296 327	• Actuator, CE20, gun	1	
11	982 372	982 372	982 372	• • Screw, socket, M5 x 12	3	D
12	- - - - - -	- - - - - -	- - - - - -	• • Frame, actuator, CE20 gun	1	D
13	- - - - - -	- - - - - -	- - - - - -	• • Cover, bobbin	1	D
14	982 028	982 028	982 028	• • Screw, socket, M5 x 20	6	D, E
15	941 332	941 332	941 332	• • O-ring, Viton, black, 1.812 x 2.000	1	A, D
16	163 468	163 468	163 468	• • Piston assembly, Pro-Flo Hi-Flo	1	D
17	- - - - - -	- - - - - -	- - - - - -	• • Head, cylinder, Hi-Flo	1	D
NS	900 349	900 349	900 349	• • Lubricant, TFE grease, 0.75-oz tube	1	D
NS	900 341	900 341	900 341	• • Lubricant, Never-Seez, 16-oz can	1	D
NS	900 424	900 424	900 424	• Compound, threadlocking, VC-3	AR	

NOTE A: Apply PTFE grease, part 900 349, to the O-rings and seals when you replace them.

B: Apply threadlocking compound, part 900 424, to the coupling screws when assembling the coupling.

C: Refer to *Heater Kits* parts lists later in this section for more detailed parts information.

D: These parts are included in the Actuator Kit, part 296 327.

E: Apply Never-Seez lubricant, part 900 341, to the screws used to assemble the manifold to the gun.

AR: As Required

NS: Not Shown

Optional Pressure Transducer Cover

Contact your Nordson representative to determine if this transducer cover is appropriate for your application.

Part	Description	Quantity
327 350	Cover, transducer, pressure	AR
AR: As Required		

Heater Kits

See Figure 9.

Item	Part	Part	Part	Description	Quantity	Note
—	281 619			Heater kit, 120 V, Pro-Flo	1	
—		282 819		Heater kit, 240 V, Pro-Flo	1	
—			282 818	Heater kit, 240 V, Pro-Flo, pt 100	1	
1	- - - - - -			• Receptacle, input, hi temp, 5-wire	1	
1		- - - - - -	- - - - - -	• Cable, input, 6-soc, hi temp, 12-in. long	1	
2	- - - - - -	- - - - - -	- - - - - -	• Heater, body	1	
3	- - - - - -	- - - - - -	- - - - - -	• Body, housing & insulator	1	
4	860 539	860 539	860 539	• Screw, flat, slotted, M5 x 40 long	2	
5	933 056	933 056	933 056	• Connector, wire, porcelain	4 or 5	A
6	938 161	938 161	938 161	• Heater, cartridge, 0.375 d, 1.28 l, 150 w, 120 V	2	
7	939 523	939 523		• Sensor, temp, gun	1	
7			140 305	• Sensor, RTD, 100 ohm, platinum, 10-in. lead	1	
8	- - - - - -	- - - - - -	- - - - - -	• Terminal, ring tong, non, 22-18, 4	1	
9	983 526	983 526	983 526	• Lockwasher, e, split, #4, steel, zinc	1	
10	981 014	981 014	981 014	• Screw, pan, 4-40 x 0.250, steel, zinc	1	
11	982 454	982 454	982 454	• Screw, button head, M3 x 10	2	
NOTE A: The 120 V heater, part 281 619, uses 4 porcelain wire connectors. The 240 V heaters, parts 282 818 and 282 819, uses 5 porcelain wire connectors.						

Heater Kits *(contd)*

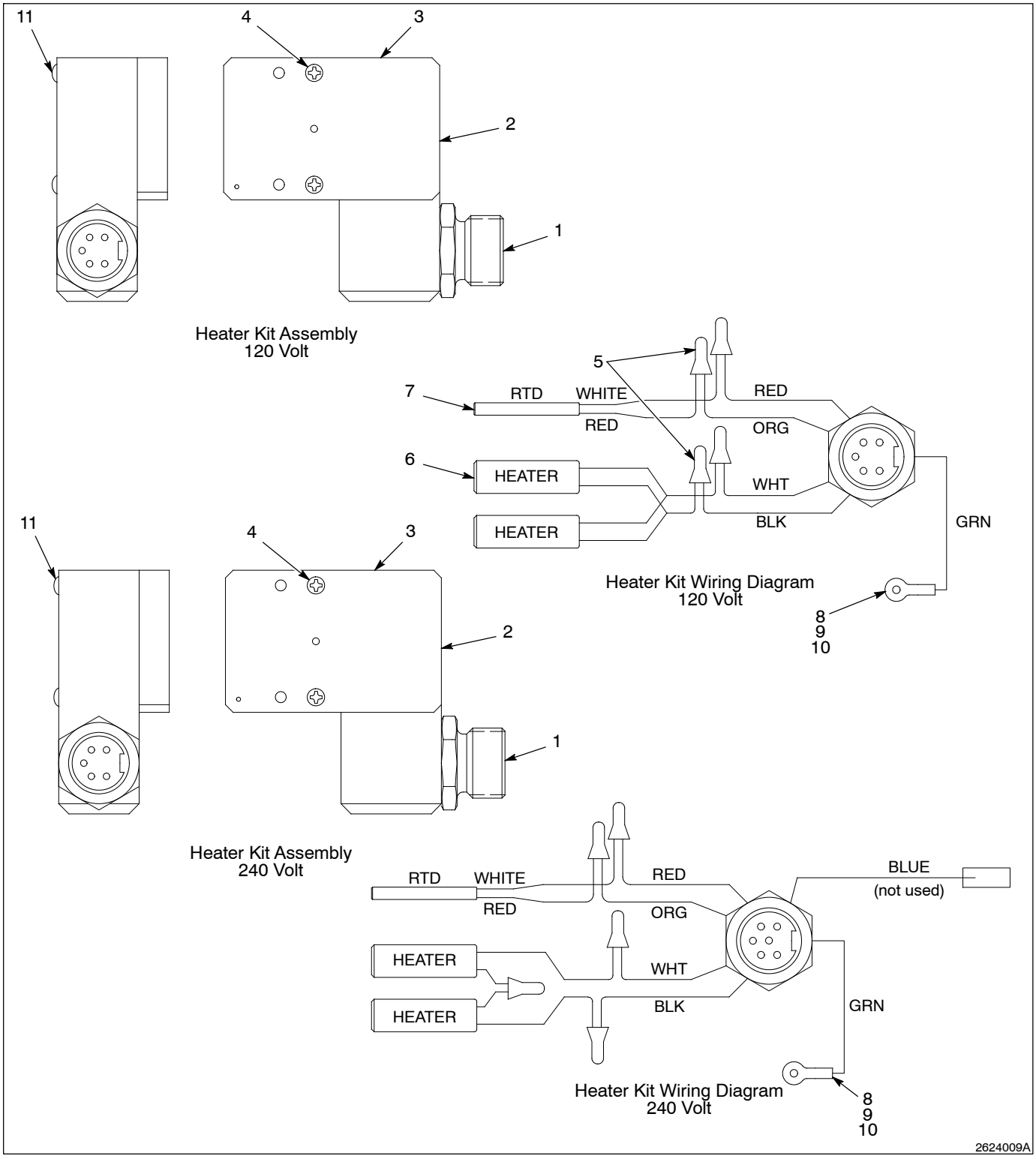

Fig. 9 Heater Kit