HIVISC Dispensing Gun

Customer Product Manual
Part 107 001B

NORDSON CORPORATION • AMHERST, OHIO • USA

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Notice

Trademarks

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HIVISC Dispensing 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. 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 when working with flammable materials. Shut off power at a disconnect switch first to prevent sparking.
- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located. If a fire starts in a spray booth, immediately shut off the spray system and exhaust fans.
- Shut off electrostatic power and ground the charging system before adjusting, cleaning, or repairing electrostatic equipment.
- Clean, maintain, test, and repair equipment according to the instructions in your equipment documentation.
- Use only replacement parts that are designed for use with original equipment. Contact your Nordson representative for parts information and advice.

Halogenated Hydrocarbon Solvent Hazards

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

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

See Figure 1. The Nordson HIVISC dispensing gun is used with high-viscosity materials. The gun dispenses adhesives, sealants, and other materials and can be used in a wide variety of applications.

Optional pressure transducers at 34-, 69-, 138-, and 207-bar (500-, 1000-, 2000-, or 3000-psi) pressure ratings are available for monitoring material pressure upstream of the nozzle.

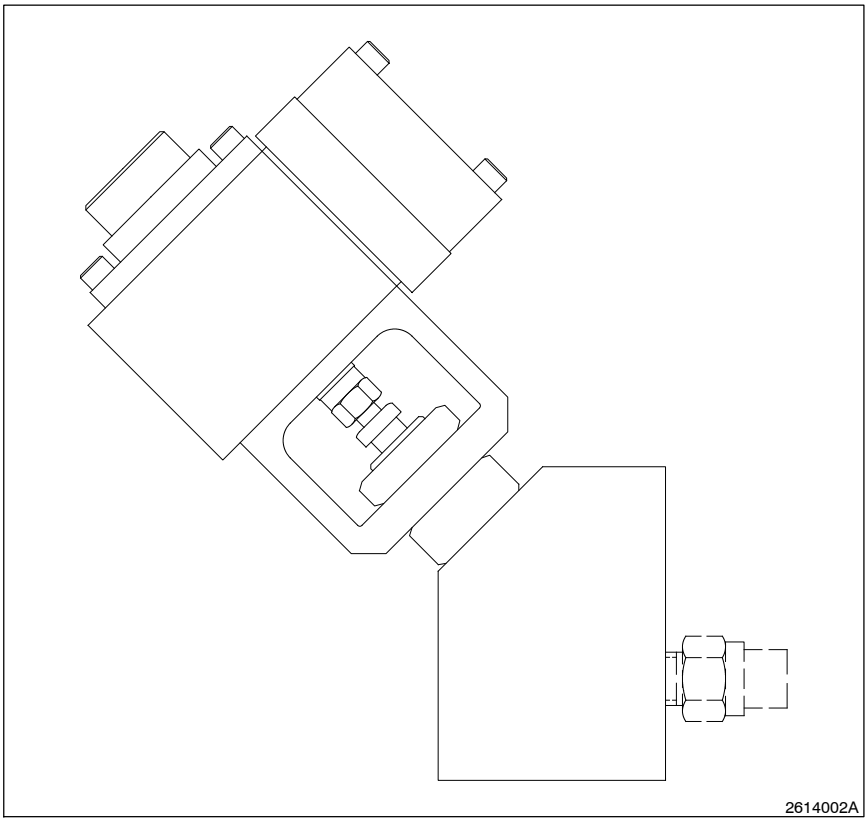

Fig. 1 HIVISC Dispensing Gun

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.

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

Gun Mounting

See Figure 2 for gun mounting dimensions. Make sure the gun body and trimset (7) are aligned properly, then install and tighten the customer-supplied $^{1}/_{4}$-20 mounting bolts in the holes (4).

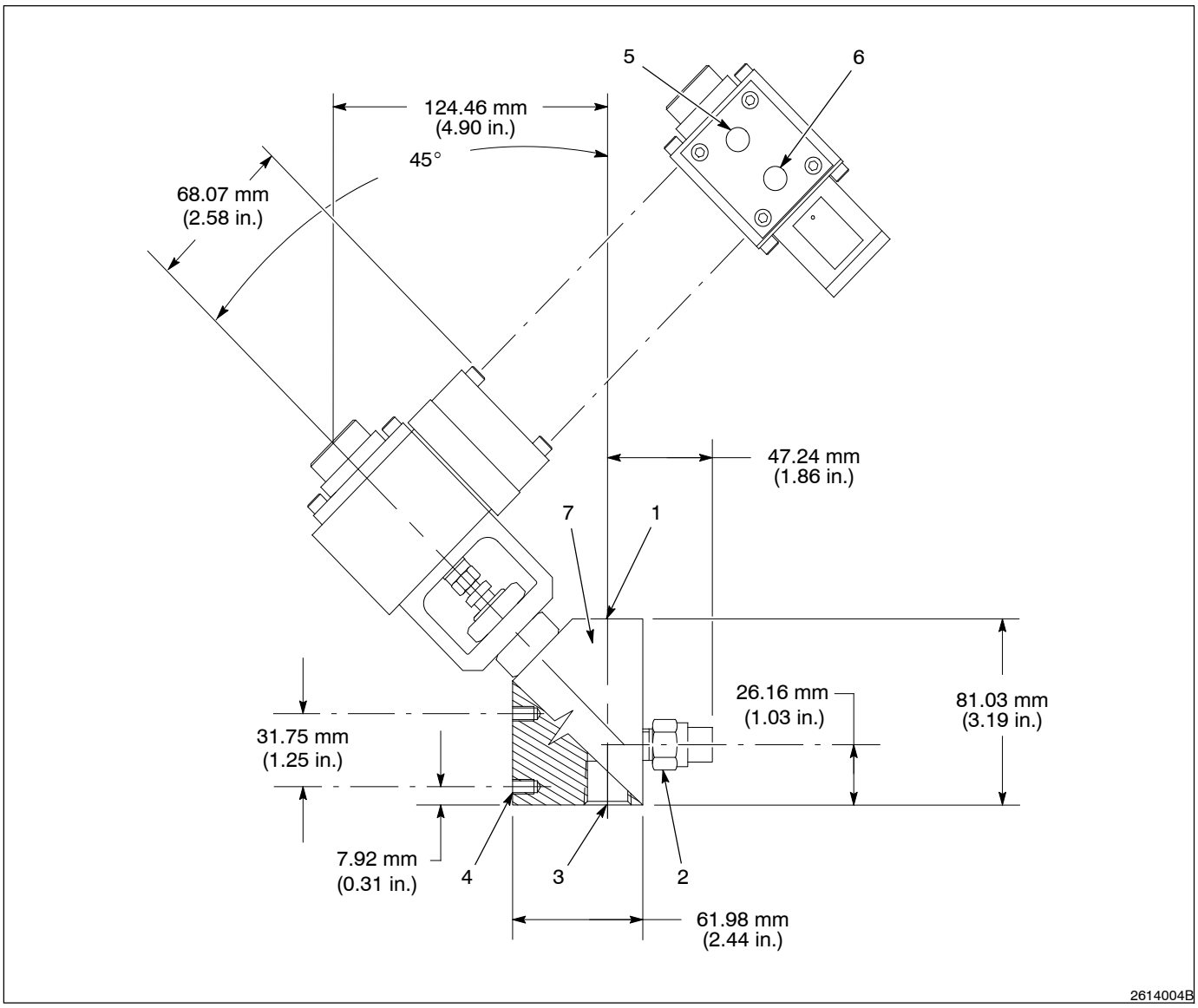

Fig. 2 Gun Mounting Dimensions

1. Inlet port
2. Pressure transducer
3. Outlet port
4. Bolt holes ($^{1}/_{4}$-20)
5. Gun-closed air port
6. Gun-open air port
7. Trimset

Cable Connections

CAUTION: To prevent damage to the gun and/or robot, make sure enough cable slack is maintained to allow the robot wrist and part fixture to move freely.

1. Route the pressure transducer cable along the robot arm to the controller.

2. See Figure 2. Install the pressure transducer cable on the pressure transducer (2).

Supply Air Connection

Use $^1/_4$-inch tubing to install the gun supply air. 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 4.8 bar (70 psi).

NOTE: The gun will not operate properly at a pressure less than 4.8 bar (70 psi).

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 Figure 2. To connect the supply air lines, 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 an elbow at the gun-open air port (6).

Material Supply Hose Connection

To install the material supply hose on a pump/header system, 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.

See Figure 2. Follow these steps to connect the material supply hose:

1. Apply pipe sealant or PTFE tape to the material inlet fitting threads. Install the connector in the inlet port (1) of the trimset (7).

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

Dispensing Nozzle Connection

See Figure 2. Follow these steps to install a nozzle or extension with nozzle on your trimset (7):

1. Apply pipe sealant or PTFE tape to the nozzle threads or extension.
2. Install the nozzle threads or extension in the outlet port (3) of the trimset.
3. If you are installing an extension, align and tighten the nozzle at the end of the extension.

Gun Purging

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

Pressure Transducer Installation

See Figure 2. Follow these procedures to install the pressure transducer (2) in the trimset valve (7):

1. Purge the gun, shut down the material supply, and remove the plug from the pressure transducer port.
2. Apply PTFE tape to the threads of the pressure transducer.
3. Purge the transducer port and quickly perform step 4.
4. Install the pressure transducer in the trimset.
5. Connect the pressure transducer cable to the pressure transducer.

For analog controller applications only, calibrate the pressure transducer.

When to Calibrate the Pressure Transducer

NOTE: If the gun is used with a Nordson digital controller, do not perform the calibration procedure. The digital controller automatically calibrates the pressure transducer.

If the gun is used with a Nordson analog controller, the pressure transducer must be calibrated when you

- install a new gun
- replace the pressure transducer
- tighten the pressure transducer
- replace the pressure transducer cable

Pressure Transducer Calibration

If your system uses the analog controller, refer to the manual shipped with your controller to calibrate the pressure transducer.

4. Operation

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

See Figure 2. The HIVISC dispensing gun operates as follows:

- Initiate material dispensing by activating the gun-open air port (6).
- 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. Observe and 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.

The HIVISC dispensing gun operates most efficiently if you follow a basic preventive maintenance schedule. Use the following chart to schedule maintenance tasks. Perform each task at the specified intervals to prevent inefficient operation and unnecessary downtime.

Table 1 Preventive Maintenance Schedule

	Frequency of Maintenance		
System Component	**Weekly**	**Monthly**	**Quarterly**
Trimset Valve Mounting — Check for loose trimset valve and tighten if necessary.	X		
Material Shelf Life — Check for expired material.	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. Change filter, if necessary.		X	
Cable Condition — Check for loose connectors and damage.		X	
Pressure Transducer — Remove and clean the transducer (if one is used).			X

6. Troubleshooting

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

WARNING: Ensure all power, air pressure, and fluid pressure is removed from the HIVISC 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 on, unless otherwise directed.

Problem	Possible Cause	Corrective Action
1. Gun not dispensing material	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 following steps: a. Shut off air pressure to material supply pump. b. Carefully bleed off residual pressure. Use the in-line pressure relief valve in the material supply line. This valve should be located near material pump. c. Shut off all power to the system. d. Remove the nozzle and clean thoroughly. e. Install the 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.

6. Troubleshooting (contd.)

Problem	Possible Cause	Corrective Action
2. Material leaks from packing around stem	Packings worn	Perform the following: a. Loosen brass packing gland nut until it can be easily turned by hand. b. Tighten packing gland nut finger-tight. c. Using a wrench, tighten packing gland nut $^1/_8$ of a turn. d. If a leak develops, tighten the nut in $^1/_8$-turn increments until the leak stops. To prevent damage to the trimset, do not exceed $^1/_2$-turn total beyond finger-tight.
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.
4. Gun not properly monitoring material pressure	Faulty pressure transducer cable	Perform the following checks: a. Refer to Table 2. Disconnect the cable from the controller and check for continuity. Repair or replace the cable, if necessary. b. Check for proper cable connections at the gun board (or analog controller board). If cables are secure, check feedback for 0 to +5 volts at TP5 of the gun board. On the analog controller board, check TP1 for 0 to -2 volts. Repair or replace cables/connections, if necessary.

Table 1 Pressure Transducer Cable Continuity

Controller End Pin	Transducer End Pin	Wire Color
A	A	Red
B	E	Green
C	F	White
D	D	Black
E	(No Continuity)	Drain
—	B & C	Not Used
—	B & C	Not Used

7. 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.

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. Bleed off the residual pressure in the material supply hose.
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 pressure has been relieved or bled off.

See Figure 2. 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. Disconnect the material supply hose from the material supply inlet port (1).
3. Disconnect the air lines from the gun-open air port (6) and gun-closed air port (5).
4. Remove the two mounting bolts securing the gun to its mounting from their holes (4).
5. Remove the gun from its mounting and move it to a clean workbench.

Removing the Bonnet Assembly

See Figure 3. Follow this procedure to remove the needle and stem (6) and the bonnet (5) from the trimset valve (7) in order to replace them:

1. Purge and bleed all pressures from the gun before performing this procedure.

2. Remove the gun from robot according to the procedure *Removing the Gun from Its Mounting*.

3. If you have installed a pressure transducer, remove the pressure transducer cable.

4. Remove the needle and stem (6) and bonnet (5) from the piston:

   a. Use a $^{1}/_{2}$-inch open-end wrench to grasp the end of the piston rod nut (3) at the bottom of the piston assembly.

   b. Use a Nordson spanner wrench to grasp the jam nut (9). Loosen the seal between the jam nut and the piston nut.

   c. Unscrew the jam nut away from the piston nut. Do not remove the jam nut and do not screw it down to where it meets the bonnet assembly locknut (8).

   d. Use the 1-inch flarenut wrench (shipped with the gun) to loosen and remove the locknut.

   e. Use a $^{13}/_{64}$-inch open-end wrench on the flats of the needle stem (4) to screw the bonnet assembly out of the piston.

NOTE: You may have to use a $^{1}/_{2}$-inch open-end wrench to hold the piston in place while you unscrew the needle stem.

NOTE: Make a note of the trimset valve mounting orientation to the actuator yoke to ensure the correct positioning upon installation.

5. Pull the bonnet (5) and trimset valve (7) assembly out of the yoke (2).

6. Unthread the bonnet from the trimset valve. The needle will remain in the bonnet.

Removing the Bonnet Assembly (contd.)

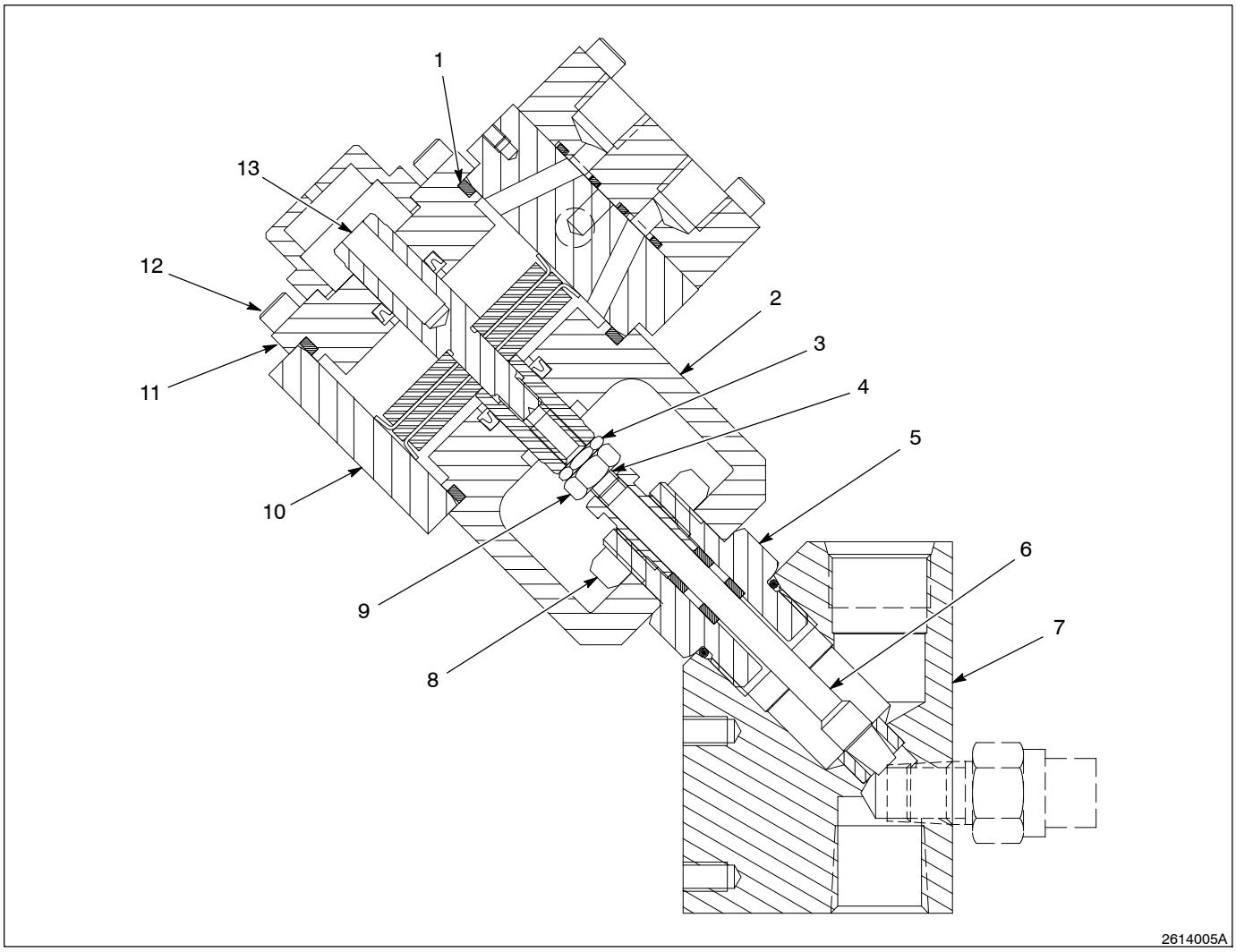

Fig. 3 HIVISC Dispensing Gun (Cutaway View)

1. O-ring
2. Yoke
3. Piston rod nut (end)
4. Needle stem (flats)
5. Bonnet
6. Needle and stem
7. Trimset valve
8. Locknut
9. Jam nut
10. Actuator body
11. Cylinder head
12. Socket head screws
13. Piston

Removing the Piston Assembly

See Figure 3. Follow this procedure to remove the piston assembly (13):

1. Bleed all fluid and air pressure from the gun.
2. Remove the gun from its mounting according to the *Removing the Gun from Its Mounting* procedure.
3. Remove the socket head screws (12) and cylinder head (11) from the actuator body (10).
4. Remove the O-ring (1) from the cylinder head.
5. Remove the needle (6) and bonnet assembly (5) from the piston:
   a. Use a $^{1}/_{2}$-inch open-end wrench to grasp the end of the piston rod nut (3).
   b. Use a Nordson spanner wrench to grasp the jam nut (9). Loosen the seal between the jam nut and the piston rod nut.
   c. Unscrew the jam nut away from the piston rod nut. Do not remove the jam nut and do not screw it down to where it meets the bonnet assembly locknut (8).
   d. Use the 1-inch flarenut wrench (shipped with the gun) to loosen and remove the locknut.
   e. Use a $^{13}/_{64}$-inch open-end wrench on the flats of the needle stem (4) to screw the bonnet assembly out of the piston.
6. Once the piston and the needle stem have been separated, carefully push the piston assembly up through the actuator body (10).

Installing the Piston Assembly

See Figure 3. Follow this procedure to install a new piston assembly (13) into the HIVISC dispensing gun:

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

1. Lubricate a new O-ring (1) with PTFE grease and install the new O-ring into the cylinder head (11).
2. Install a new piston assembly (13) using the piston assembly fixture that comes with each new piston assembly.

Installing the Piston Assembly *(contd.)*

3. Hold the piston assembly fixture against the opening of the piston assembly bore and push the piston assembly until it enters the bore.
4. Push the piston assembly until it fully seats against the bonnet assembly (5) valve stem .
5. Screw the needle and stem (6) back into the piston.
6. Screw the jam nut (9) until it is finger tight. Tighten with the Nordson spanner wrench about $^1/_4$ turn.
7. Apply anti-seize compound to the socket head screws (12). Install the cylinder head (11) and secure it with the screws. Tighten the screws to 0.45–0.68 N•m (4–6 in.-lb).
8. Attach the gun to the robot or other mounting using the *Gun Mounting* procedure.

Installing the Bonnet Assembly

See Figure 3. Follow this procedure to install a new bonnet assembly into the trimset valve:

NOTE: Always use the new O-rings and packings included with the new bonnet assembly when reassembling the gun.

1. See Figure 3. Lubricate the inside of the trimset valve (7) with PTFE grease before installing the bonnet assembly (5).
2. Lubricate the O-ring on the bonnet assembly and thread the new bonnet assembly into the trimset.
3. Install the yoke (2) over the bonnet and trimset assembly.
4. Align the actuator body (10) and the trimset valve in the same orientation as noted in the *Removing the Bonnet Assembly* procedure.
5. Fully seat the needle and stem (6) with the bonnet assembly attached against the needle stem flats (4).
6. Use the 1-inch flarenut wrench to tighten the locknut (8) to fix the bonnet and trimset assembly into the yoke. Tighten the locknut $^1/_4$ turn past finger tight.

7. Use a $^{13}/_{64}$ open-end wrench to screw the bonnet stem into the piston assembly.

8. Tighten the jam nut up (9) toward the piston nut as far as it will thread (to finger tight). Using the Nordson spanner wrench, tighten $^{1}/_{4}$ turn past finger tight.

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

10. Purge the gun before using.

Returning the Gun to Operation

Follow this procedure to reinstall the gun on the robot or other mounting and return it to operation:

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

2. See Figure 2. Connect the material supply hose to the material inlet port (1).

3. Connect the air supply lines to the gun-open air port (6) and gun-closed air port (5) on the gun body.

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

5. 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 Gun See Figure 4.

Item	Part	Description	Quantity	Note
—	174 435	Gun, HIVISC, CE20	1	
1	117 287	• Nut, lock, bulkhead, $^3/_4$-16, steel	1	
—	225 785	• Service kit, cylinder with manifold	1	
2	130 782	• • Body, actuator, Hi-Flo	1	
3	952 102	• • Packing, U-cup, 0.125 x 0.500	2	
4	130 775	• • Head, cylinder, Hi-Flo	1	
5	981 132	• • Screw, socket, 10-32 x 0.625, zinc	4	
6	- - - - - -	• • Piston, HIVISC, CE20	1	A
7	130 772	• • Cover, bobbin	1	
8	981 505	• • Screw, socket, 6-32 x 0.375, bl	4	
9	981 129	• • Screw, socket, 10-32 x 1.000, zinc	4	
10	174 441	• • Manifold, HIVISC, CE20	1	
11	941 332	• • O-ring, Viton, blk, 1.812 x 2.000	2	
12	940 121	• • O-ring, Viton, 0.364 ID x 0.070 w, br	2	
13	973 402	• • Plug, pipe, socket, flush, $^1/_8$, zinc	2	
14	130 781	• • Yoke, Hi-Flo	1	
NS	900 349	• • Lubricant, TFE grease, 0.75 oz tube	AR	
15	132 791	• Valve, trimset, co-extrude, 20 vohms	1	
16	- - - - - -	• • Bonnet, Hi-Flo	1	B
NS	136 150	• Wrench, 1 inch flarenut	1	

NOTE A: Refer to *Seal and Piston Kit* for replacement part information.
B: Refer to Hi-Flo Service Bonnet for replacement part information.
AR: As Required
NS: Not Shown

HIVISC Gun *(contd.)*

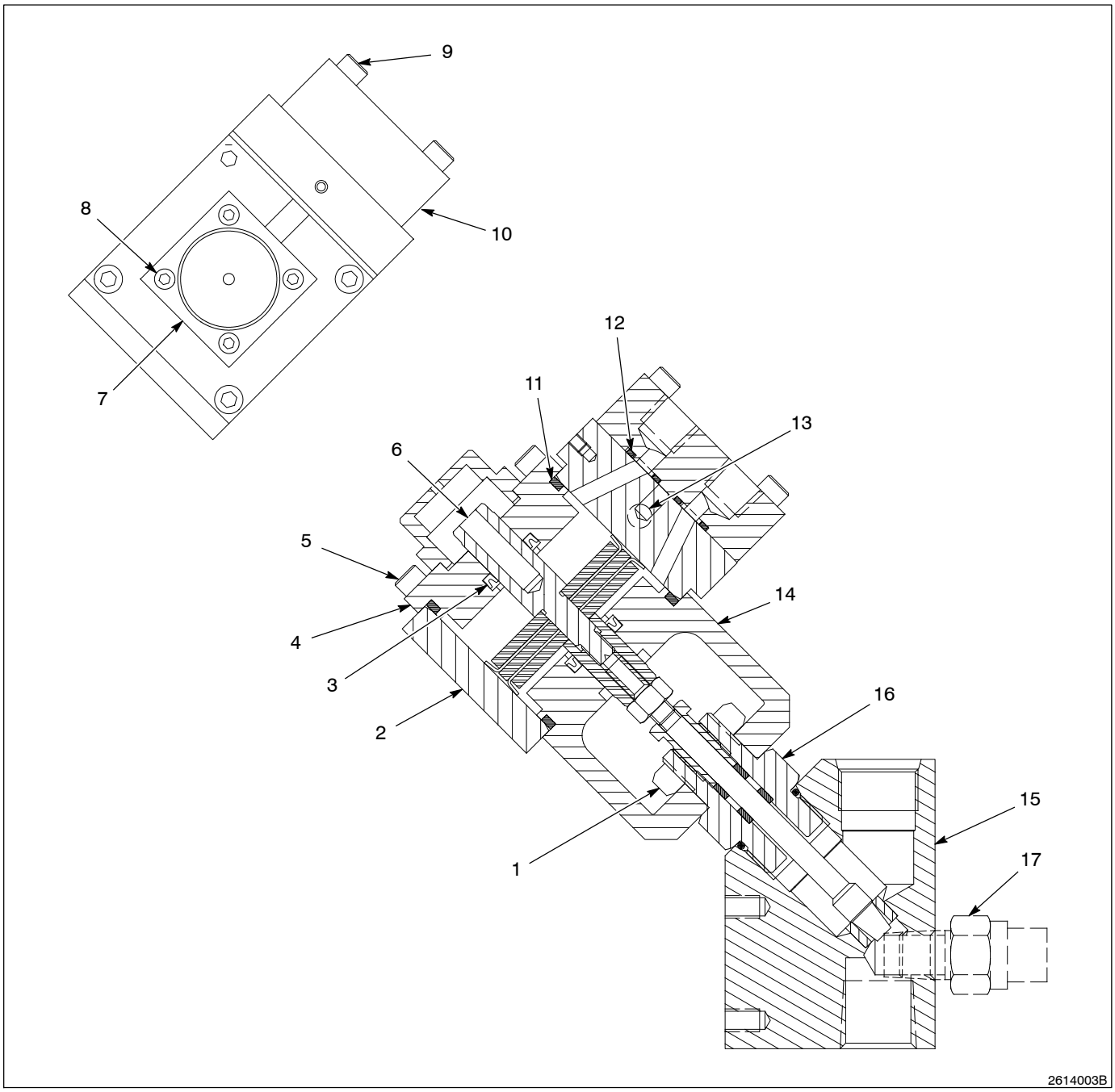

Fig. 4 HIVISC Dispensing Gun

Hi-Flo Service Bonnet

See Figure 4.

Item	Part	Description	Quantity	Note
16	132 937	Bonnet, Hi-Flo, service	1	
NS	- - - - - -	• Packing, center, Hi-Flo	1	
NS	900 349	• Lubricant, TFE grease, 0.75 oz tube	AR	
NS	- - - - - -	• Packing, ends, Hi-Flo	2	
NS	- - - - - -	• Screw, gland, Hi-Flo	1	
NS	- - - - - -	• Bonnet, Hi-Flo	1	
NS	945 025	• O-ring, Viton, $^5/_8$ tube	1	

AR: As Required
NS: Not Shown

Optional Polypak Bonnet

Item	Part	Description	Quantity	Note
NS	179 828	Bonnet, Hi-Flo, 20 vohm, polypak	1	A

NOTE A: The bonnet assembly includes a $^5/_8$ tube Viton O-ring, part 945 025. Order new O-rings, as needed, when disassembling the gun and reusing the bonnet.
NS: Not Shown

Seal and Piston Kit

See Figure 4.

Item	Part	Description	Quantity	Note
—	175 604	Seal kit, and piston, CE20	1	
NS	- - - - - -	• Rod, nut, piston, Hi-Flo, replace parts	1	
NS	- - - - - -	• Disk, piston, outer	2	
NS	- - - - - -	• Disk, piston, inner	1	
NS	- - - - - -	• Seal, piston	2	
NS	- - - - - -	• Rod, piston, Hi-Flo, replace parts	1	
NS	900 419	• Adhesive, retaining, cylindrical	AR	
NS	- - - - - -	• Fixture, piston, insert, Hi-Flo	1	
3	952 102	• Packing, U-cup, 0.125 x 0.500	2	
11	941 332	• O-ring, Viton, blk, 1.812 x 2.000	2	
12	940 121	• O-ring, Viton, 0.364 ID x 0.070 w, br	2	

AR: As Required
NS: Not Shown

Optional Pressure Transducers

See Figure 4.

Item	Part	Description	Quantity	Note
17	324 224	Transducer, pressure, 500 psi	AR	A
17	100 305	Transducer, pressure, 1000 psi	AR	A
17	324 216	Transducer, pressure, 2000 psi	AR	A
17	142 439	Transducer, pressure, 3000 psi	AR	A

NOTE A: Order one pressure transducer per gun.
AR: As Required