
NCM5000 Pump Maintenance Guide

Version 2.2
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Part No. 22200601

for use with:

- PN 22293180 - NCM5000 Jet Pump for MAX Series
- PN 22110513 - NCM5000 Jet Pump for DS Series
- PN 22290043 - NCM5000 Maintenance Kit
- PN 22290042 - NCM5000 Maintenance Tool Kit
- PN 22293252 - NCM5000 Heater Repair Kit



NCM5000 Pump



Gap Setting Tool

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Safety Notices

The described fluid applicator is a resource for use in industrial environments.

This product is manufactured according to currently valid engineering standards and is operationally safe. Hazards may arise if handled improperly by unqualified personnel. It is recommended that operating personnel thoroughly review these operating instructions.

 **CAUTION:** Do not remove or attach the connecting cables when the controller is delivering voltage to the Jet. To avoid damage, turn off the main power switch on the front of the controller before removing or attaching the connecting cables.

 **CAUTION:** Use only the main input power cord supplied with the unit. The power cord supplied with the unit supports 100/120V in the USA. If you plan to use the unit in countries using 220/240V, replace the main power cord with an approved TUV power cord rated for 220/240V. The appropriate power cords can be supplied.

 **CAUTION:** Qualified personnel are persons who, due to their training, expertise and instruction, as well as their knowledge of relevant standards, provisions, accident prevention regulations and operating conditions, have been authorized by the person responsible for safety of the system to perform the required tasks and, in the process, can identify and prevent potential risks (definitions for specialists according to the VDE 105 or ICE 364).

 **SHOCK HAZARD:** There are no user-serviceable components under the cover. Main voltages ranging from 100 to 240 VAC are inside. Disconnect the power cord and contact your supplier if there is any desire to remove the cover.

Pump Maintenance

The following are the recommended steps for maintaining the NCM5000 non-contact jetting pump. Thorough maintenance includes replacing the air cylinder, solenoid, return spring, and exhaust muffler.

Requirements

The following kits, equipment, and tools are used during pump maintenance:

Kits

- NCM5000 Pump Maintenance Tool Kit (22290042M)
- NCM5000 Pump Maintenance Kit (22290043M)

NOTE: Kit contents are illustrated in *KITS: Spare Parts/Setup/Cleaning* (PN 22290036).

Equipment

- NCM5000 Controller (or GPD Global dispense system)

Tools

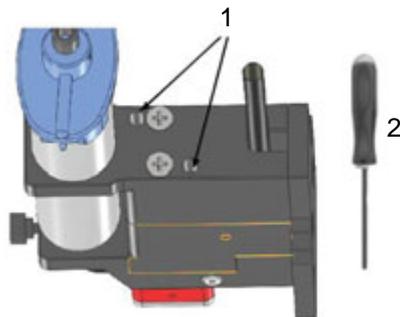
- 3 mm hex driver
- 9/64 hex wrench
- crescent wrench

Disassemble Pump

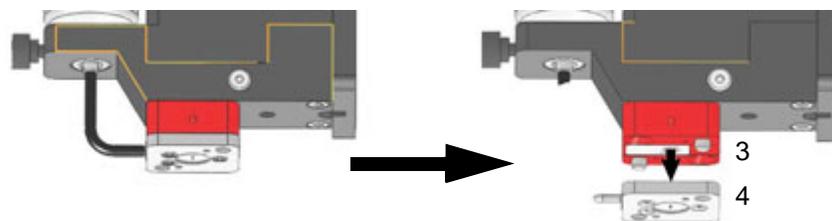
Use this procedure to disassemble the jetting pump and remove parts to be replaced.

Remove Nozzle Plate

1. Loosen the two captive screws (Item 1) located in the indicated holes using a 3 mm hex driver (Item 2).

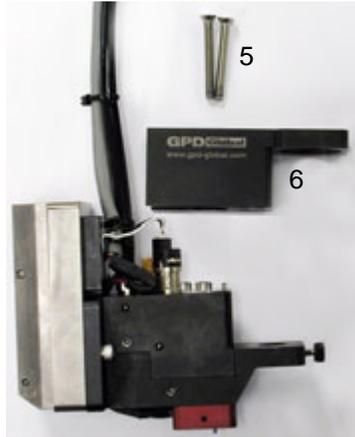


2. Remove the nozzle plate (Item 4) from the heater block (Item 3).



Remove Top Cover

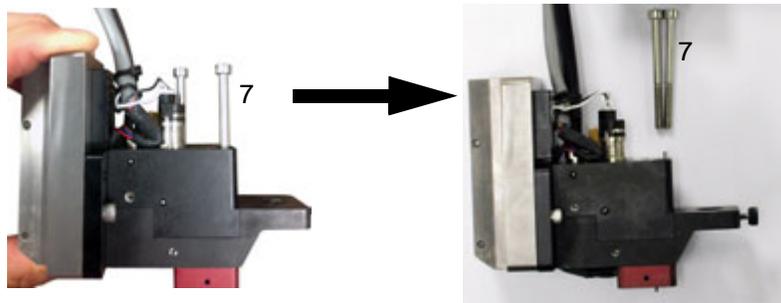
1. Remove and set aside the two screws (Item 5) securing the top cover to pump body.



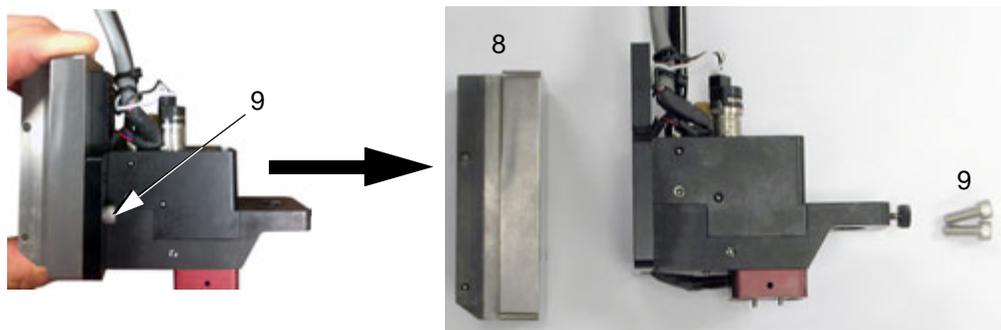
2. Remove the top cover (Item 6).

Remove Mount & Back Plate

1. Remove the two screws (Item 7) from the pump body.

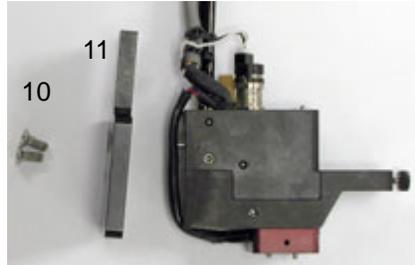


2. Using a 9/64 hex wrench, remove the Taper-Lock™ mount (Item 8) by removing two screws (Item 9).



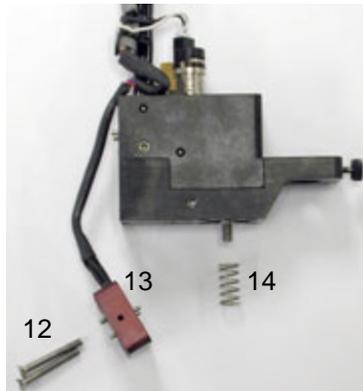
3. Remove and set aside the two screws (Item 10) and the mounting plate (Item 11) without disturbing any wires.

IMPORTANT: Do not disconnect wires.



Remove Heater Block

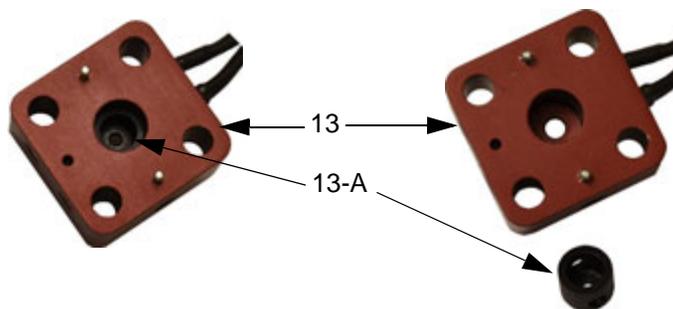
1. Remove and set aside the two screws (Item 12) and the heater block (Item 13).



2. Remove and discard the compression spring (Item 14). For replacement parts, refer to NCM5000 Pump Maintenance Kit (22290043M).

Remove Bushing

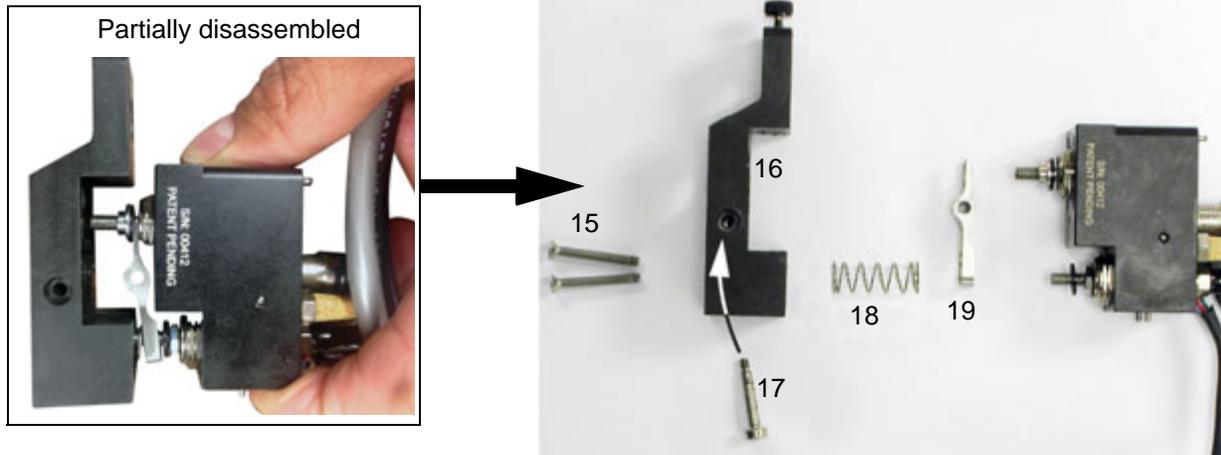
1. Remove the bushing (Item 13-A) from the heater block (Item 13) using a thin probe (paper clip).



2. Discard the bushing (Item 13-A). For replacement part, refer to NCM5000 Pump Maintenance Kit (22290043M).

Remove Base

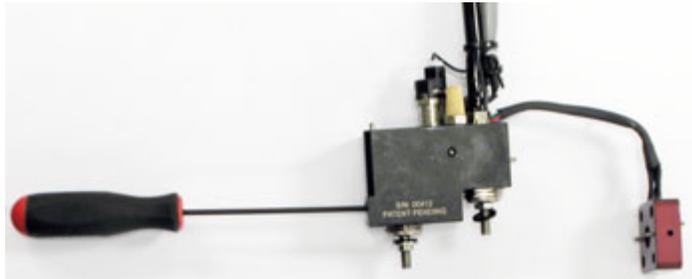
1. Remove and set aside the two screws (Item 15) from the nylon base (Item 16).



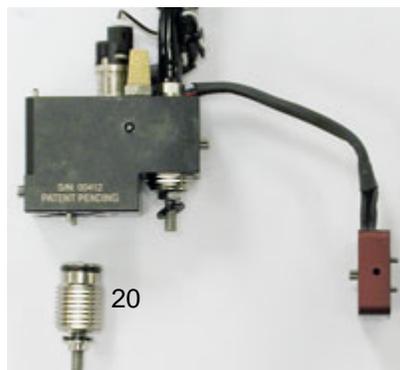
2. Then remove and set aside the shoulder screw (Item 17), the nylon base (Item 16), rocker (Item 19), and compression spring (Item 18).

Remove Air Cylinder

1. Using the kit 5/64 hex driver, loosen the set screw that locks the main drive air cylinder in place.

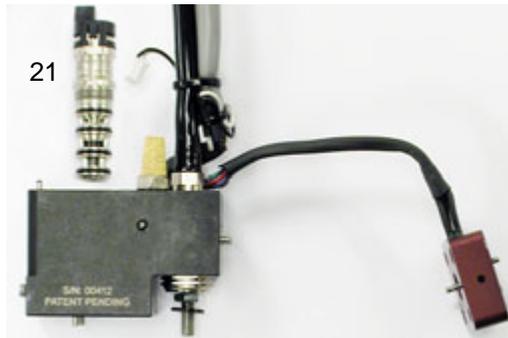


2. Using a crescent wrench, unscrew and discard the main air cylinder (Item 20).



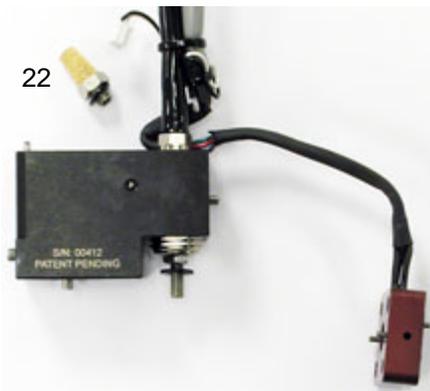
Remove Solenoid

Using the kit solenoid torque tool, unplug, unscrew, and discard the main air solenoid (Item 21).



Remove Exhaust Muffler

Remove and discard the exhaust muffler (Item 22).



Assemble Pump with New Parts

Use this procedure to reassemble the jetting pump **with new parts**.

Install Exhaust Muffler and Solenoid

To install **new** exhaust muffler and **new** solenoid:

1. Apply a small amount of kit Loctite to the exhaust muffler (Item B) and then insert the exhaust muffler into pump body.

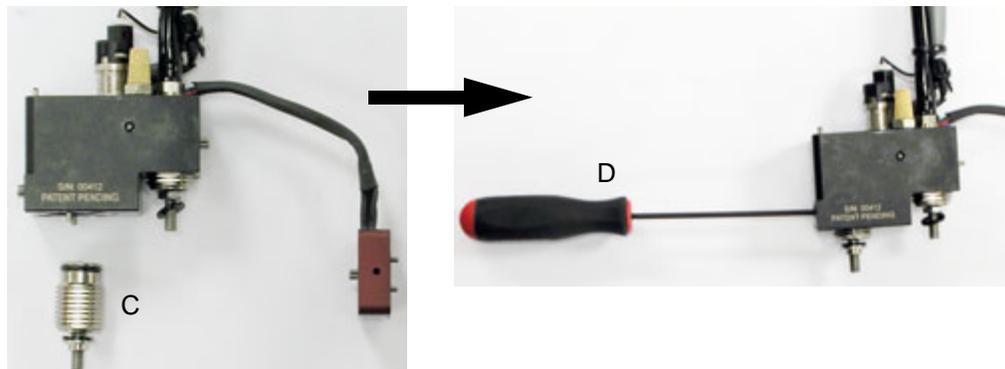


2. Inspect the cylinder bore (for the solenoid) and clean if necessary.
3. Install solenoid (Item A) and torque it to 1.1 nm (9.7 in-lbs) using the kit solenoid torque tool.
4. Reattach the solenoid cable.

Install Air Cylinder

To install new air cylinder:

1. Install a **new** air cylinder (Item C), threading it all the way in.

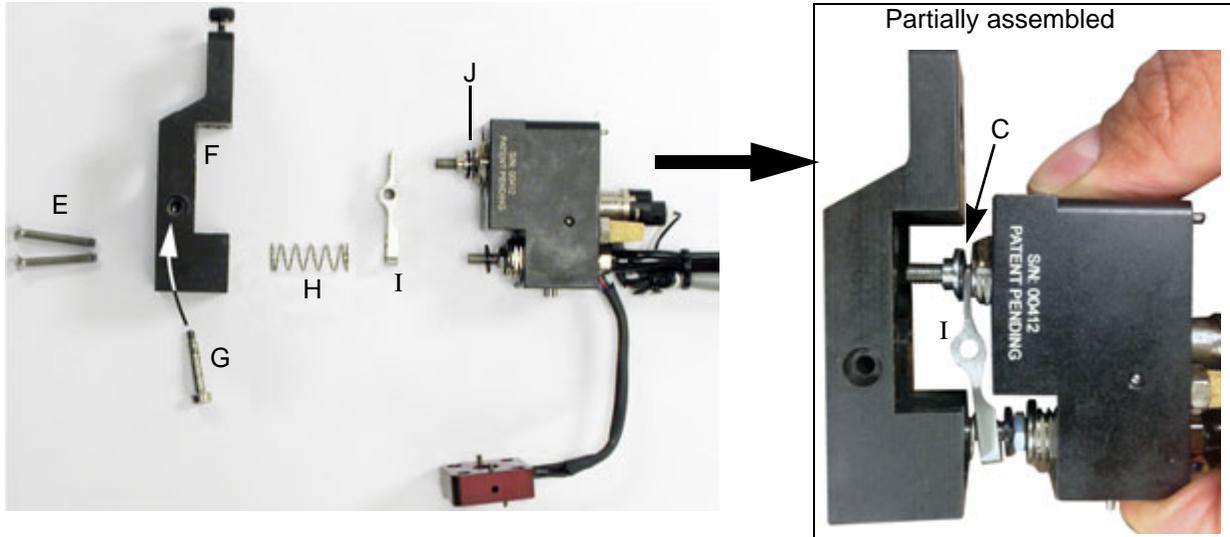


2. Using the kit 5/64 hex driver (Item D), firmly tighten the set screw that locks the air cylinder in place.

Install Base

To assemble the rocker, base, and pump body:

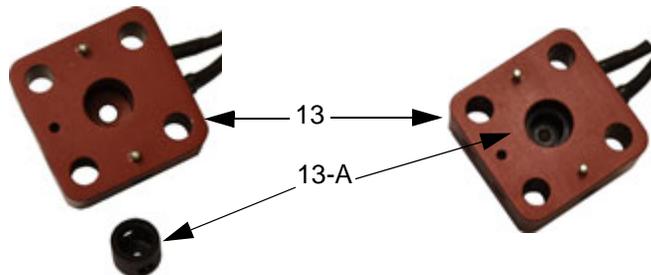
1. Insert the fork of the rocker (Item I) into the air cylinder (Item C) gap.



2. Set the compression spring (Item H) in the nylon base (Item F).
3. Compress the nylon base (Item F) against the pump body.
4. The through hole in the rocker (Item I) must align with the shoulder screw hole in the nylon base (Item F). To achieve this alignment, you may need to manually pull the air cylinder (Item C).
5. When alignment is achieved, insert and tighten the shoulder screw (Item G) in the nylon base.
6. Secure with two screws (Item E).

Install Bushing

1. Insert a new bushing (Item 13-A) into the heater block (Item 13).



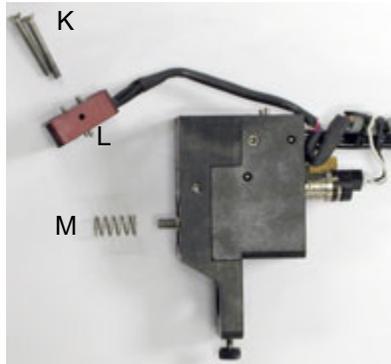
2. Using a small probe (paper clip), align sight holes in bushing with those in heater block.



Install Heater

To install the heater and a **new** compression spring:

1. Install **new** compression spring (Item M) supplied in kit.

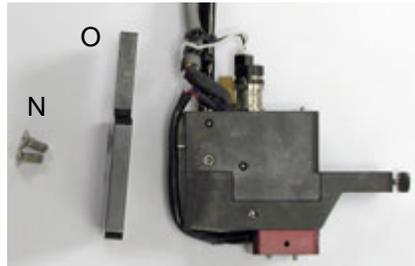


2. Apply a small amount of kit Loctite to both heater block screws (Item K) and reattach heater block (Item L) with screws.

Install Back Plate & Mount

To install the back plate and mount:

1. Locate the screws (Item N) and back plate (Item O) that were set aside.

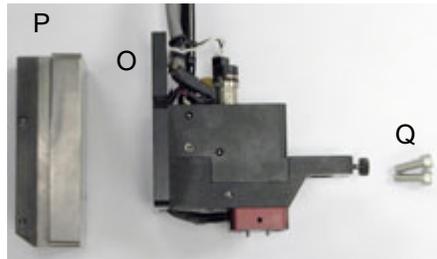


2. Apply kit Loctite to the tips of the screws.
3. Secure back plate to pump body.

NOTE: Do not pinch the cable between the mounting plate and manifold.

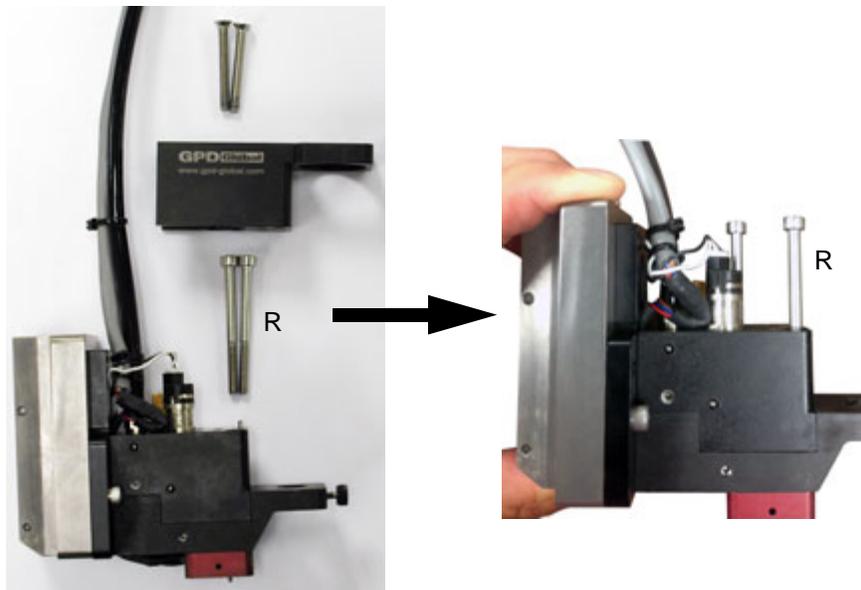
4. Install the Taper-Mount™ and screws:
 - a. Locate the screws (Item Q) and Taper-Mount™ (Item P) that were set aside.
 - b. Apply kit Loctite to the tips of the screws.

- c. Secure the Taper-Mount™ (Item P) to the back plate (Item O) using two screws (Item 16).

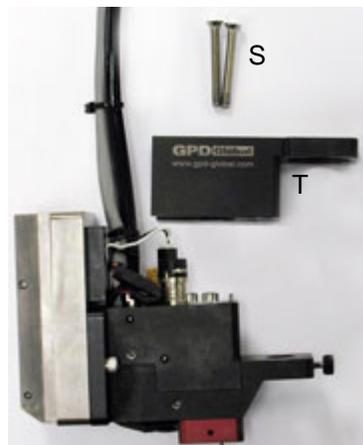


Install Top Cover

1. Insert the two nozzle plate screws (Item R) into the pump body.

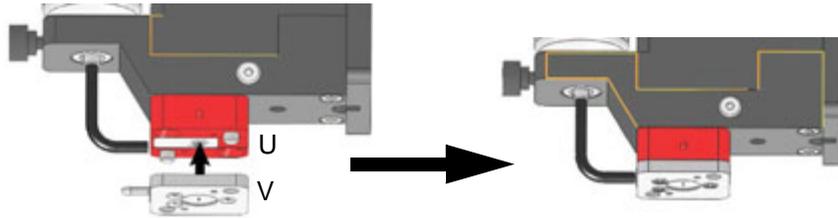


2. Being careful not to pinch any wires, mount the top cover (Item T) to the pump body. Apply kit Loctite to the screw (Item S) tips, and then secure the top cover to the pump body using the screws.

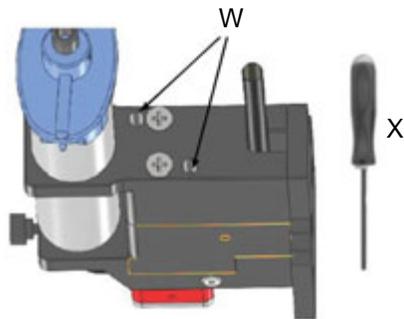


Install Nozzle Plate

1. Position the nozzle plate (Item V) on the heater block (Item U).



2. Secure the nozzle plate to the heater block by inserting a 3 mm hex driver (Item X) into the indicated holes (Item W) and tighten until the nozzle plate is secure.



The pump is now ready for priming

Set Gap

Requirements

The following kit and equipment are used during the following procedure:

- NCM5000 Controller (or GPD Global dispense system)
- NCM5000 Pump Maintenance Tool Kit (22290042M)

NOTE: Kit contents are illustrated in *KITS: Spare Parts/Setup/Cleaning* (PN 22290036).

Identify Components



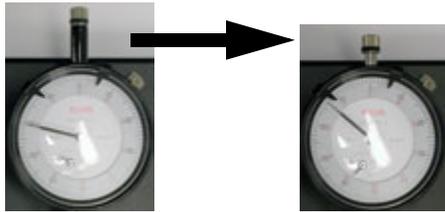
Item	Description
1-3	Gap Setting Tool
1	Gap Tool Tip Protection Tube
2	Dial
3	Zeroing Plate
4	NCM5000 Controller

Zero Gap Setting Tool

1. Ensure the zeroing plate is secure by verifying the two zeroing plate screws are finger tight.



2. While pulling gently on the indicator pin, remove the gap tool tip protection tube. Carefully release the indicator pin against the zeroing plate.



3. Set the dial to zero. A gauge reading of 0.300 will result - see image at right.

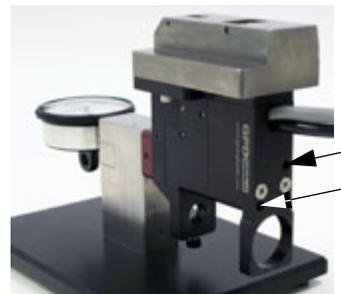


4. Gently pull the indicator pin and slide the gap tool tip protection tube back in place. Gently release the indicator pin.
5. Remove the zeroing plate and set it aside.

Attach Pump

Attach the pump to the tool with the backing plate facing up (see image below left). Secure the pump in place using the 3 mm hex driver *supplied with the NCM5000 pump* to tighten the screws normally used to secure the nozzle plate (see image below right).

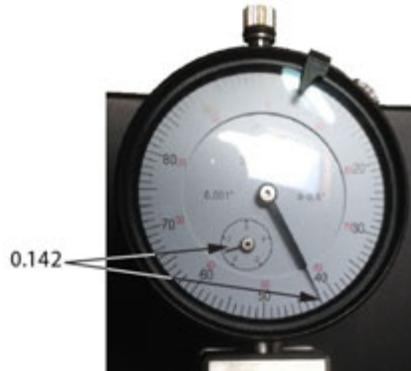
NOTE: If the nozzle plate is in place, remove it per [Remove Nozzle Plate](#) (pg 1) and [Remove Top Cover](#) (pg 2) instructions.



Measure Gap

To adjust the gap to 0.142 inches:

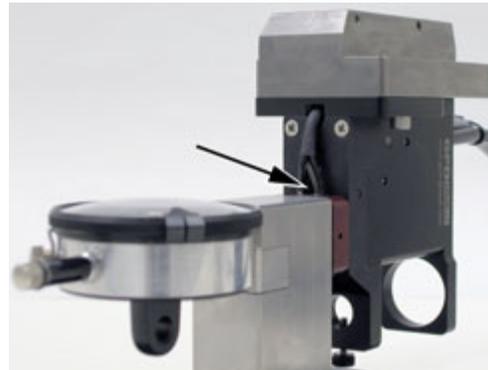
1. Connect the NCM5000 pump to a GPD Global system or NCM5000 controller.
2. Turn on the controller and “OPEN” the pump.
3. Remove the gap tool tip protecting tube and gently release the indicator pin.
 - If the dial reads 0.142”, proceed to [Step 2](#).
 - If the dial does not read 0.142”, adjust the gap per the following step.



Adjust Gap

To adjust the gap:

1. If the dial does not read 0.142”, adjust the gap setting set screw.



2. Gently pull the indicator pin away from the pump, cycle the pump several times, and verify the gap.

NOTE: Do not cycle the pump while the indicator pin is released.

3. Slide the tool tip protecting tube back in place.
4. Remove the pump and use in production.
5. Reinstall the zeroing plate on the gap setting tool.

Heater Block Replacement

Requirements

The following kit, equipment, and tools are used during the following procedure:

Kit

- NCM5000 Heater Repair Kit (22293252M)

NOTE: Kit contents are illustrated in *KITS: Spare Parts/Setup/Cleaning* (PN 22290036).

Equipment

- NCM5000 Controller (or GPD Global dispense system)

Tools

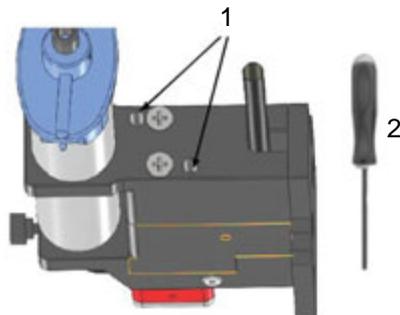
- 3 mm hex driver
- 9/64 hex wrench
- crescent wrench

Replace Heater Block

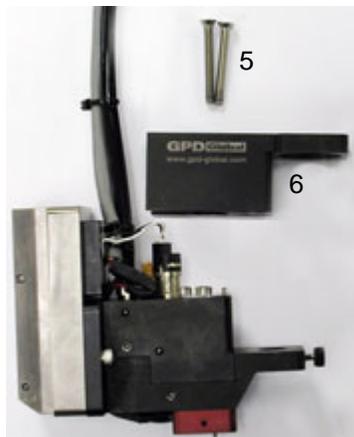
Use this procedure to replace the heater block. After installing parts and reassembling the pump, set the gap.

Remove Top Cover

1. Using a 3 mm hex driver (Item 2), remove and set aside the two captive screws (Item 1) securing the nozzle plate.



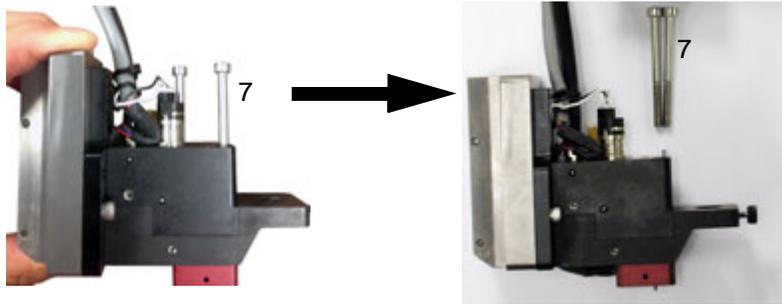
2. Remove and **discard** the two screws (Item 5) securing the top cover to pump body.



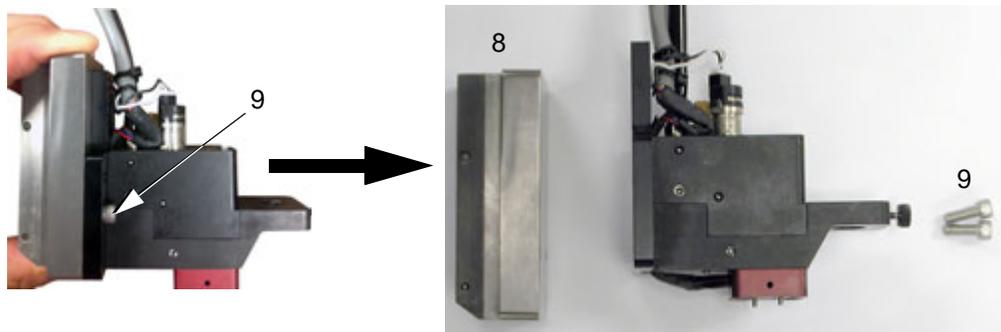
3. Remove the top cover (Item 6).

Remove Mounting Plate

1. Remove and set aside the two screws (Item 7) from the pump body.

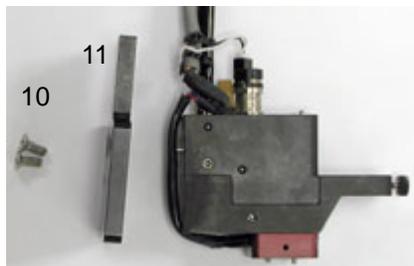


2. Using a 9/64 hex wrench, remove and set aside the Taper-Lock™ mount (Item 8) by removing two screws (Item 9).



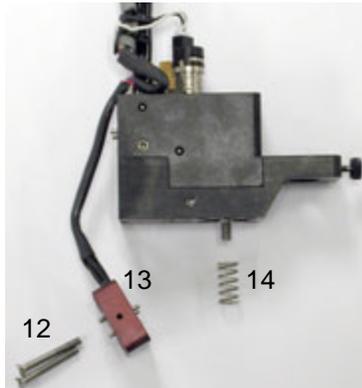
3. Remove and set aside the two screws (Item 10) and the mounting plate (Item 11) without disturbing any wires.

IMPORTANT: Do not disconnect wires.



Remove Old Heater Block

1. Remove and **discard** the two screws (Item 12) securing the heater block (Item 13).



2. Remove and set aside the compression spring (Item 14).
3. Disconnect the jumper, cut the cable ties, and **discard** the heater block (Item 13).

Install New Heater Block

The **new** heater block has an installed bushing and heater bore greased with Rheolube.



1. Verify the heater block sight holes are aligned with the bushing holes.



2. Grease the air cylinder tip - apply a thin coating of Rheolube to the tip of the air cylinder.



3. Locate the jet spring that was set aside and position it on the air cylinder tip.

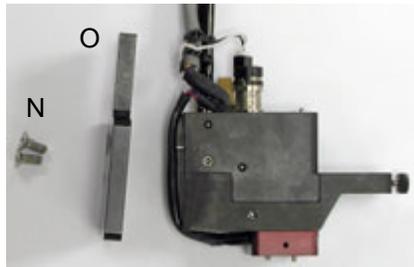


4. Attach the **new** heater block using the **new** screws supplied. The cylinder tip should be visible through the weep holes.



Install Mounting Plate

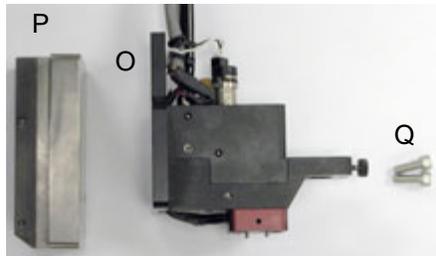
1. Locate the screws (Item N) and back plate (Item O) that were set aside.



2. Apply kit Loctite to the tips of the screws.
3. Secure back plate to pump body.

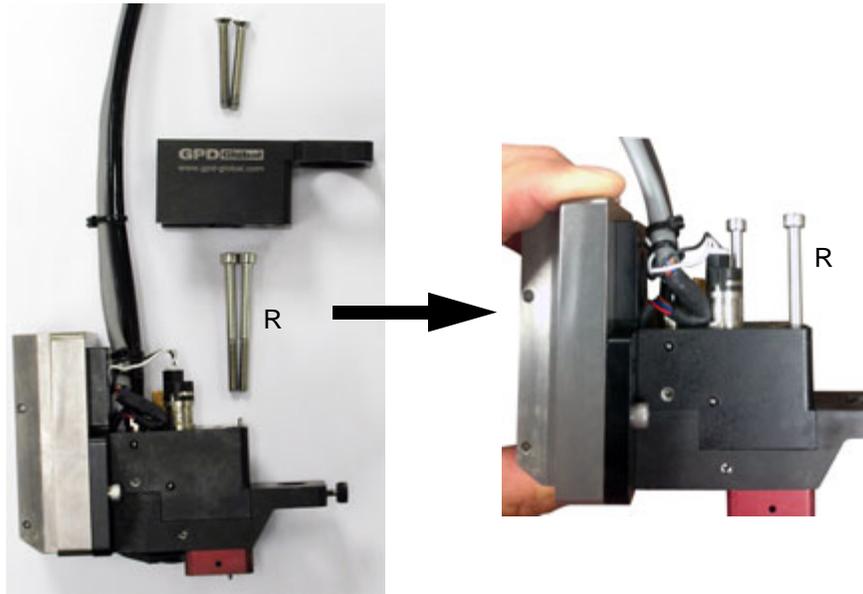
NOTE: Do not pinch the cable between the mounting plate and manifold.

4. Install the Taper-Mount™ and screws:
 - a. Locate the screws (Item Q) and Taper-Mount™ (Item P) that were set aside.
 - b. Apply kit Loctite to the tips of the screws.
 - c. Secure the Taper-Mount™ (Item P) to the back plate (Item O) using two screws (Item 16).

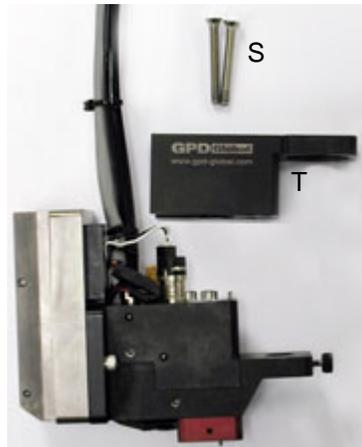


Install New Cover

1. Insert the two **new (longer)** nozzle plate screws (Item R) into the pump body.



2. Being careful not to pinch any wires, mount the **new** top cover (Item T) to the pump body. Apply kit Loctite to the screw (Item S) tips, and then secure the top cover to the pump body using the screws.



Attach Cable Ties

Attach the heater block cable ties and connect the jumper.



Set Gap

Perform the [Set Gap](#) (pg 11) procedure.

Parts List

For consumable, spare, and general part information, refer to this document:

NCM5000 Pump Parts List (PN 22200614)

References: Kits

These kits apply to the NCM5000 Pump Maintenance Guide:

- NCM5000 Pump Maintenance Kit (22290043M)
- NCM5000 Pump Maintenance Tool Kit (22290042M)
- NCM5000 Heater Repair Kit (22293252M)

NOTE: Kit contents are illustrated in *KITS: Spare Parts/Setup/Cleaning* (PN 22290036).