



Nordson Corporation

OPERATOR'S CARD

P/N 108636B

EP Pumping System

Safety



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

To operate this equipment safely,

- follow the instructions in this operator's card and the referenced manuals.
- obtain and read the Material Safety Data Sheets for all materials used.

Initial Startup

When starting a new EP pumping system, flush the system with solvent to purge the system of contaminants. Perform the *Start up the pump* and *Purge air from the system* tasks in the *Daily Operation* chart using a solvent compatible with the coating material to be sprayed.



CAUTION: Make sure your coating materials and solvents are compatible with the fluid diaphragms and seals in the EP pumping system. Some coating materials and solvents can damage the diaphragms and seals. Your Nordson representative can provide you with information on compatible materials.

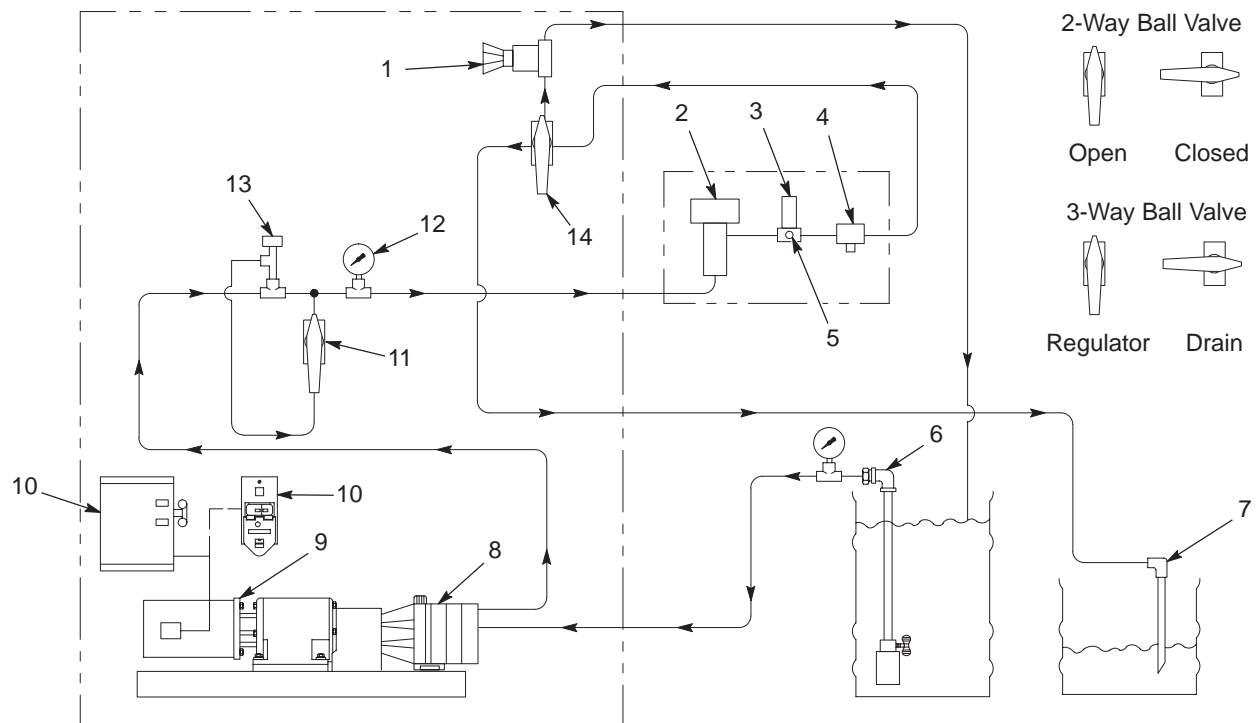
Daily Operation

Step	Task	Procedure
1	Start up the pump	<ol style="list-style-type: none">See Figure 1. Turn the knob on the back pressure regulator (1) fully counterclockwise.Open the 2-way priming ball valve (11) (arrow up).Turn the 3-way ball valve (14) to the DRAIN-OFF (arrow right) position.Place the drain-off rod (7) into a waste container.Insert the siphon rod and strainer (6) into the coating material. If pressure fed, adjust pressure to 3.45 bar (50 psi), maximum.Turn the motor switch (10) on. The motor (9) should begin to rotate the pump (8). Once the system is primed, fluid should flow from the drain-off rod.

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Daily Operation *(contd)*

Step	Task	Procedure
2	Purge air from the system	<ol style="list-style-type: none"> See Figure 1. Watch the fluid flow from the drain-off rod (7). When the fluid is free of air bubbles, proceed. Close the 2-way priming ball valve (11) (arrow right). Watch the fluid flow from the drain-off rod. When the fluid is free of air bubbles, proceed. Turn the 3-way ball valve to the REGULATOR (arrow up) position. Open the 2-way priming valve (arrow up) to purge the remaining air from the system. Watch the fluid flow from the drain-off rod. When the fluid is free of air bubbles, proceed. Close the 2-way priming ball valve (arrow right). Trigger the applicators to purge air from them. If the pump is operating roughly, repeat steps 2d-2f. Air in the system will cause the pump to cavitate. <p>If the pump continues to operate roughly, repeat steps 1b-1f, then steps 2a-2f.</p>
3	Set the system fluid pressure	<p>NOTE: The pressure relief valve (13) is factory set to open at 89 bar (1300 psi). System fluid pressure is shown on the gauge (12).</p> <ol style="list-style-type: none"> See Figure 1. Turn the back pressure regulator (1) knob clockwise until the pressure relief valve opens or the system pressure reaches 93 bar (1350 psi). If the pressure relief valve does not open at 89 bar, adjust it as described in <i>Pressure Relief Valve Adjustment</i> procedure in the <i>EP Pumping System</i> manual. <p>WARNING: Do not operate the system if the pressure relief valve is not working or is not properly adjusted. Failure to observe this warning could result in equipment damage or personal injury.</p> <ol style="list-style-type: none"> Adjust the back pressure regulator to the desired system pressure.
4	Set the fluid temperature	<p>CAUTION: Start the pump and circulate fluid through the system before turning on the heaters. Operating heaters without circulating fluid through them can result in heater plugging and heat limiter failure.</p> <ol style="list-style-type: none"> See Figure 1. If used, turn the heater(s) (2) on. Refer to the heater manual for operating procedures. Allow 12-15 min to heat the fluid in the system to operating temperature. Check the thermometer (5) on the filter (3). If the reading is not within 5° of the desired temperature, adjust the heater thermostat. Refer to the heater manual for adjustment procedures. Actuate the applicators (4) to purge any remaining air or contaminants in the system. Start the spray operation.



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Figure 1 Pump Operation

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|----------------------------|---|------------------------------|
| 1. Back pressure regulator | 6. Siphon rod and strainer | 11. 2-way priming ball valve |
| 2. Heater | 7. Drain-off rod | 12. Gauge |
| 3. Filter | 8. Pump | 13. Pressure relief valve |
| 4. Applicator | 9. Motor | 14. 3-way ball valve |
| 5. Thermometer | 10. Motor switch (US and European versions) | |

Changing Coating Materials

See Figure 1. Use the tasks in the *Daily Operation* chart as required when changing materials.

If the new coating material is not compatible with the old material, flush the system two times with solvent:

- First solvent flush—Use a solvent that is compatible with the old material.
 - Second solvent flush—Use a solvent that is compatible with the new material.
1. If used, turn the heaters (2) off 12-15 minutes before shutdown. Refer to the heater manual for procedures.
 2. Turn the back pressure regulator knob (1) fully counterclockwise to de-pressurize the system.
 3. Turn the motor switch (10) off.
 4. If used, shut off the pressure feed.
 5. Actuate the applicators (4) to purge the old material.
 6. Supply the system with solvent or new coating material.
 7. Flush the system if required.
 8. Start the pump, purge all air from the system, and set pressure and temperature as necessary.

Shutdown



CAUTION: To prevent coating material failure and damage to the system, do not operate the pump at a high rpm for long periods of time without actuating the applicators.

Short-Term Shutdown

NOTE: Material can be left in the system for about four days.

1. See [Figure 1](#). If used, turn off the heater(s) (2) 12-15 minutes before shutdown. Refer to the heater manual for procedures.
2. Turn the back pressure regulator (1) knob counterclockwise to de-pressurize the system.
3. Turn the motor switch (10) off.
4. If used, shut off the pressure feed.

Long-Term Shutdown



CAUTION: To prevent damage to the fluid diaphragms and seals, consult a Nordson representative for types of solvents that can be left in the system for long periods of time.

1. See [Figure 1](#). If used, turn off the heater(s) (2) 12-15 min prior to shutdown. Refer to the heater manual for procedures.
2. Flush the system with a solvent compatible with the coating material by performing the *Start up the pump*, *Purge air from the system*, and *Set the fluid pressure* tasks in the *Daily Operation* chart.
3. Actuate the applicators (4) to purge the coating material.
4. Turn the back pressure regulator (1) knob counterclockwise to de-pressurize the system.
5. Turn the motor switch (10) off.
6. Remove and clean the applicator nozzles.

Daily Maintenance

Part or Material	Procedure
High-pressure filters	<ol style="list-style-type: none">1. Clean daily or per shift unless experience indicates otherwise.2. Inspect the filter screens for ruptures or distortion.3. Replace the filter screens if necessary.
Pump oil	<ol style="list-style-type: none">1. Check the pump oil; add Nordson EP1 oil as necessary.2. If the oil appears contaminated, refer to the <i>Troubleshooting</i> section in the <i>EP Pumping System</i> manual.
Fittings and hoses	Check the fittings, hose connections, and hoses for leaks.
Vacuum gauge on supply line	Check the vacuum gauge on the supply line. The maximum vacuum allowed is 0.238 bar (7 in. Hg). If the vacuum pressure exceeds 0.238 bar (7 in. Hg), clean the supply strainer or inline filter.
Coating material	Check coating material supply. Add coating material as necessary. Do not allow the pump to starve or draw in air.
Applicator nozzles	Clean the applicator nozzles once per shift or as necessary. Refer to your <i>General Information — Airless Nozzles</i> manual, for nozzle cleaning instructions.

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