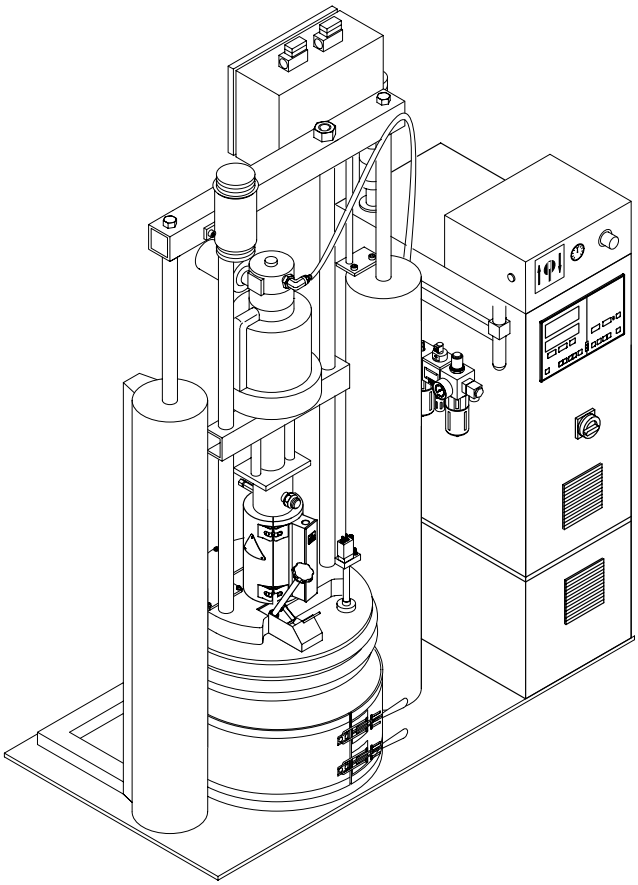
Nordson Corporation

OPERATOR'S CARD

P/N 1040272A

BM 200 Piston Pump Bulk Melter for 200 I Drums



WARNING

- Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.
- Risk of burns. Wear suitable protective clothing when operating this equipment.
- Obtain and read the Material Safety Data Sheets for all materials used.
- Immediately switch off this system in any emergency situation.

RELATED DOCUMENTATION

References to other documents may be necessary to supplement this operator's card. Review the following documentation.

- Bulk Melters BM 200 with Piston Pump for 200 I Drums
- Control System CS 20 for Bulk Melters BM 20 / BM 200
- Week Timer (Optional equipment)

CONSUMABLE ITEMS

Keep the following on hand when operating the bulk melter.

ITEM	PART	APPLICATION
Centoplex HO	285600	Melt platen sealing ring lubricant

Operator Controls

Become familiar with the operator controls before operating the bulk melter.

Pneumatic Unit

See Figure 1.

The pneumatic unit controls melt platen movement. It has a pneumatic switch and two-hand control buttons.

Pneumatic Switch

Use the pneumatic switch (2) to raise and lower the melt platen.

Select . . .	To . . .
Stop	stop melt platen movement.
Lower	lower the melt platen. **NOTE:** The melt platen can only be lowered when there is a drum in the system and the drum clamp is closed.
Raise (Aerate Drum)	raise the melt platen. If the melt platen is inside of the drum, the drum is aerated automatically Refer to *Aerating Drum* for more information.

Pressure Controller and Gauge for Operating Pressure of Cylinders

Operating pressure is applied to the pneumatic cylinders when the melt platen is lowered into and raised out of the drum.

Depending on the material to be processed, the pressure control (4) may need to be set to a different value. The optimum setting may need to be determined by trial and error. The gauge (3) displays the operating pressure.

NOTE: The maximum operating pressure is 7.5 bar (109 psi).

Two-Hand Control

The two-hand control (1) on the pneumatic unit can only be operated by one person using both hands. It is used to lower the melt platen into the drum. When the melt platen enters the drum, the system automatically switches to the regular lowering mode.

1. Set the pneumatic switch (2) to *Lower*.
2. Press both buttons on the two-hand control at the same time (within 0.5 seconds) until the melt platen enters the drum.

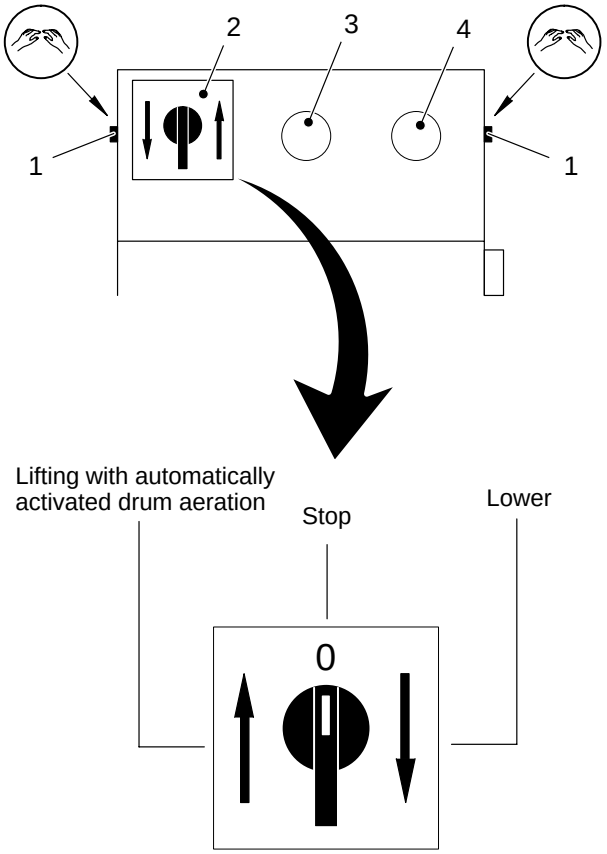


Figure 1 Pneumatic Unit

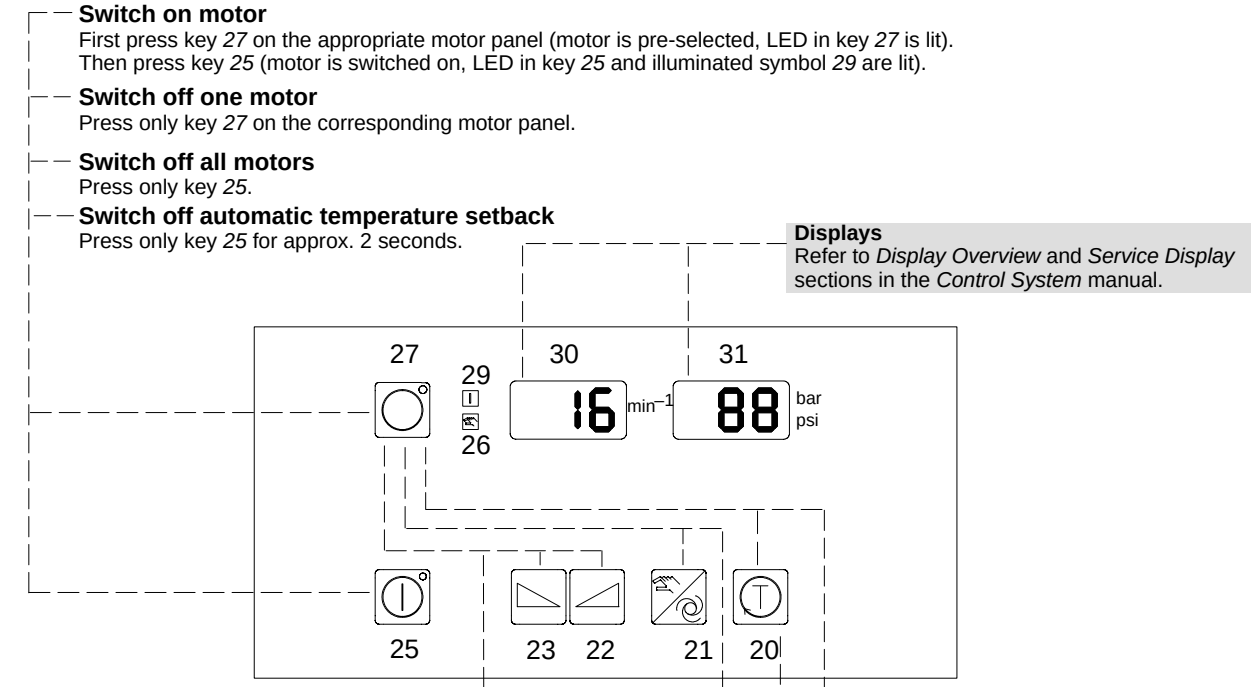
Control System

The control system consists of the motor part and temperature part.

Motor Part

See Figure 2.

NOTE: The information in the shaded areas only apply to gear pumps.



Switch on motor
First press key *27* on the appropriate motor panel (motor is pre-selected, LED in key *27* is lit). Then press key *25* (motor is switched on, LED in key *25* and illuminated symbol *29* are lit).

Switch off one motor
Press only key *27* on the corresponding motor panel.

Switch off all motors
Press only key *25*.

Switch off automatic temperature setback
Press only key *25* for approx. 2 seconds.

Displays
Refer to *Display Overview* and *Service Display* sections in the *Control System* manual.

Setting speed (manual mode)
Press key *27* for approx. 2 seconds (until display *30*, –P– blinks). Then increase value with key *22* or decrease with key *23*.

Pressing once changes the value by 1. Holding the key changes the value faster.

Setting speed (automatic mode)
In automatic mode the motor/pump speed is regulated synchronously to the speed of the parent machine. Adjustment directly affects the parameter *rhi.* Refer to *Display Overview* and *Parameter Overview* sections in the *Control System* manual.

Test
Press and hold key *27* until –P– blinks in display *30***.** Then press *20* for the duration of the test

WARNING: Risk of burns. Hot melt material can flow out of the application head.

In test mode, the motor runs in manual mode at the set speed; in automatic mode at speed *rhi*. Other components may also be triggered. Refer to the wiring diagram to see which components are controlled.

Test displays and indicator beacon (option)
Press key *20*.

Select manual or automatic mode
Press key *27* for approx. 2 seconds (until display *30*, –P– blinks). Then use key *21* to select manual or automatic mode. In manual mode, symbol *26* lights.

Set values and parameters
Refer to *Display Overview* in the *Control System* manual.

1. Press and hold keys *22* and *23* and press key *27* for approx. 2 seconds. Displays *30* and *31* blink.
2. Press key *22* or *23* until the desired parameter appears in display *30*.
3. Press and hold key *27* (display *31*, –P– blinks) and use key *22* to increase value or key *23* to decrease value.

Complete:
Press and hold keys *22* and *23* and press key *27* for approx. 2 seconds.

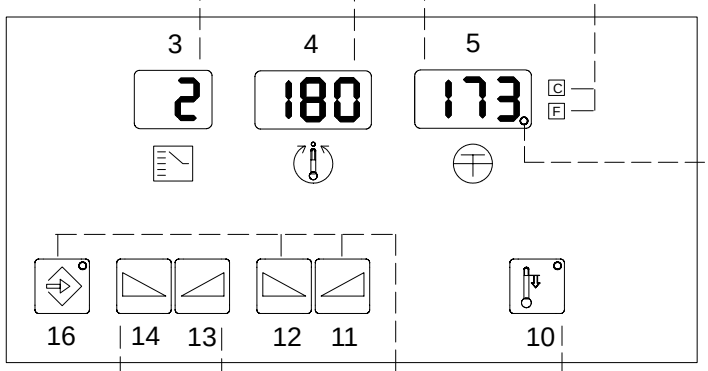
Figure 2 Motor Part

Temperature Part

See Figure 3.

WARNING: The temperature prescribed by the material manufacturer is decisive. Do not exceed the maximum operating temperatures of the system and the heated system components.

NOTE: Nordson Corporation assumes no guarantee and/or liability for damage caused by incorrect temperature settings.



Displays
Refer to *Overview of Displays* and *Diagnosis Program* sections in the *Control System* manual.

˚C / ˚F status display

Decimal point
Lit when the displayed channel is heating.

Switching on/off immediate temperature setback
Switching ON: Press key *10*; *SPL* blinks in display *4* and the LED in the key lights.

Switching OFF: Press key *10* or wait until the setback period has expired. The temperature setback does not automatically end if the setback period is longer than 9.99 hours.

Note: The temperature setback can also be switched on via the *XS 2* interface. When the temperature setback is switched on, *SPL* blinks in displays *4* and *30* (Figure 2). A setback period is ineffective in this case.
Note: The *Automatic Temperature Setback After Motor Standstill* is ended by pressing key *25* (Figure 2) on the motor part. Press key *25* for approx. 2 seconds.

Switching channels / selecting parameters
Press key *13* or *14* until the desired channel appears in display *3*.

When the highest channel that is switched on is exceeded, the following displays/parameters can be called up:

SPL	Temperature setback value
h SPL	Temperature setback period
Lo	Under temperature value
Hi	Over temperature value
OFF	Over temperature shutdown
SE	Service display (sensor type)
˚C / *˚F*	Temperature unit
CLr	Return parameter to factory setting

If no other key is pressed within 120 sec., these displays return to the reference channel or the channel with the lowest number.

Setting temperature setpoint and parameters
Hold down key *16* and increase value with key *11* or decrease with key *12*. Pressing once changes the value by 1, holding the key changes the value faster.
The LED in key *16* is lit when adjustable parameters are shown in displays *3*, *4* and *5*. The following parameters can be adjusted:

Temperature setpoint

SPL	Temperature setback value
h SPL	Temperature setback period
Lo	Under temperature value
Hi	Over temperature value
˚C / *˚F*	Temperature unit
CLr	Return parameter to factory setting

Figure 3 Temperature Part

Initial Startup

NOTE: Special test material was used at the factory to test this system. Residue from this material may be on the melting plate and in the pump. To remove residue, melt and feed several kilograms (pounds) of material before starting production.

1. Ensure that the switch rod is set to the drum height. Refer to the *Adjusting Switch Rod* procedure.
2. Set pneumatic switch to *0/Stop*.
3. Set main power switch to *I/ON*.
4. Set control system.

NOTE: The main power switch must be set to I/ON when using the week timer.

5. If used, set the week timer. Refer to the *Week Timer* manual for procedures.
6. Wait until system is heated and ready for operation. Green indicator beacon (if present) and/or indication lamp of control system is lit.
7. Move melt platen to top position.

NOTE: The melt platen sealing rings must be lubricated before initial startup and every time the drum is replaced. Remove material residue before lubricating.

8. Using Centoplex HO, lubricate the melt platen sealing rings.
9. Insert the drum. Refer to *Replacing Drum* procedure.
10. Preselect motor and switch on.
11. Set the motor stroke frequency on the pressure control to the desired output quantity.
12. If necessary, set the pressure control on the pneumatic unit to the desired setting. Do not exceed 7.5 bar (109 psi).
13. Optimize and record the settings.

Daily Startup

NOTE: Do not operate pumps without material. Before switching on motor, ensure that a drum of material is in the system and that the melt platen has contact with the material.

1. Set main switch to *I/ON*.
2. Wait until system is ready.
3. Check the material drum and replace if necessary. Refer to *Replacing Drum* procedure.
4. Lower melt platen into drum.
5. Pre-select motor.
6. Switch on the motor.

Daily Shutdown

NOTE: The melt platen does not need to be moved out of the drum.

1. Set main switch to *0/OFF* and protect with padlocks if necessary.
2. Set pneumatic switch to *0/Stop*.
3. Conduct daily maintenance.

Emergency Shutdown

WARNING: Immediately switch off the system in any emergency situation.

1. Either set main switch to *0/OFF* or press the optional EMERGENCY OFF button.
2. Set pneumatic switch to *0/Stop*.
3. Correct the fault before turning on the system.

Aerating Drum

WARNING: Risk of burns. When the melt platen leaves the drum, hot material can come out and/or drip from the melt platen. Wear suitable protective clothing.

See Figure 4.

If the melt platen is inside of the drum, the drum must be aerated to support raising. Aerating forces compressed air under the melt platen.

Drum aeration begins automatically when the pneumatic switch is set to *Raise*. Aeration ends when the pneumatic switch is moved to *0/Stop*.

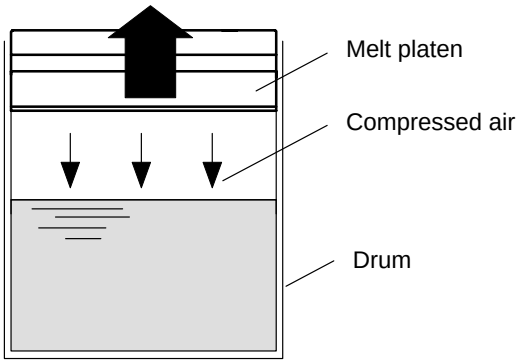


Figure 4 Aerating Drum

Deaerating Drum

WARNING: Risk of burns. Hot material may flow out of the deaeration valve. Wear suitable protective clothing.

See Figure 5.

The drum must always be deaerated when the melt platen is moved into the drum. When the drum is deaerated, the air that is under the melt platen escapes.

See Figure 6.

1. Place a reservoir (3) under the drip pan (2).
2. Verify that the system has reached operating temperature.
3. Open deaeration valve (1) when the upper sealing ring on the melt platen (4) is completely immersed in the drum.
4. Close deaeration valve when the material is free of bubbles.
5. Properly dispose of material according to local regulations.

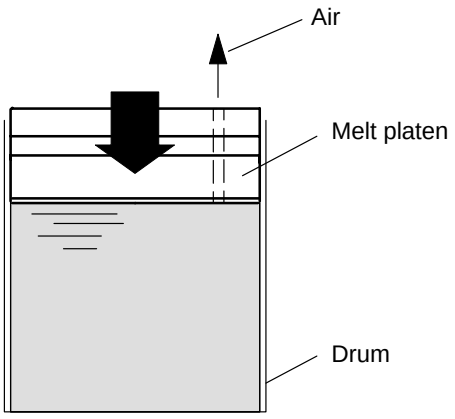


Figure 5 Deaerating Drum

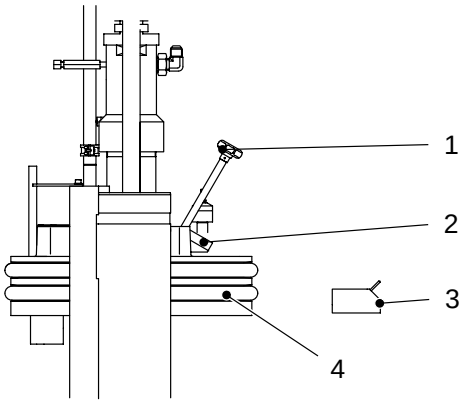


Figure 6 Opening the Deaeration Valve

Deaerating System

WARNING: Risk of burns. Hot material may flow out of the deaeration cock. Wear suitable protective clothing.

The system must be deaerated upon initial startup and every time the drum is changed. The system is equipped with a deaeration cock for this purpose.

NOTE: When the system is deaerated, the drum must be deaerated at the same time. Refer to *Deaerating Drum* for more information.

See Figure 7.

1. Place reservoir (2) under deaeration cock (1). The deaeration valve is located on the back of the piston pump.
2. Open deaeration cock.
3. Set motor/pump to medium output quantity, then switch on.
4. Wait until material flows out free of air.
5. Close deaeration cock.
6. Properly dispose of material according to local regulations.

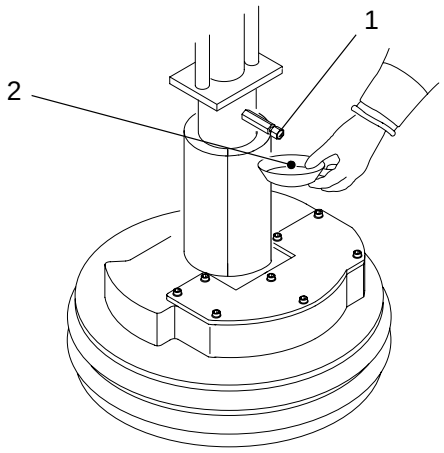


Figure 7 Deaerating the System

Replacing Drum

WARNING: Risk of burns! Hot material can drip from the melting plate. Wear appropriate protective equipment.

Always keep the base plate of the system clean so that the drum is positioned straight. If necessary, move the switch rod to the height of the drum. Refer to *Adjusting Switch Rod* for the procedures.

The following lists the level indications.

Level	Level Indications	
	Standard	**Option**
Drum almost empty	Interface XS2*	Indicator beacon (yellow) flashing
Drum empty	Interface XS2*	Indicator beacon (yellow) lit
* Refer to *Interface XS2* in the *Installation* section of the Bulk Melter manual for more information.		

CAUTION: To prevent damage to the melt platen sealing ring, use only undamaged drums in the system

NOTE: The maximum pressure is 7.5 bar (109 psi).

1. Lift melt platen and aerate while it is still in the drum. Refer to *Aerating Drum* procedure.
2. Set pneumatic switch to *0/Stop*.
3. Replace drum.
4. Close drum clamp.
5. Using Centoplex HO, lubricate the melt platen sealing rings.
6. Lower melt platen.
7. Deaerate drum and system when the upper sealing ring on the melt platen is immersed in the drum. Refer to *Deaerating Drum* procedure.
8. Properly dispose of material according to local regulations.

Adjusting Switch Rod

See Figure 8.

The system is adapted to the drum height by adjusting the switch rod. The switch rod activates the switches (4, 5 and 6) one after the other and thus triggers the following switching functions.

Switching Functions When Lowering

- Switch 4 switches from two-hand lowering mode to normal lowering mode when the upper sealing ring (3) is completely immersed in the drum.
- Switch 5 triggers the drum almost empty indication.
- Switch 6 triggers the drum empty indication.

Switching Functions When Raising

Switch 4 switches pressurization of pneumatic cylinders from admission pressure to operating pressure when the melt platen moves out of the drum.

Adjust Height

Perform the following:

1. Loosen the nut (1).
2. Adjust the switch rod (2) until it activates switch 4 when the upper sealing ring (3) is completely immersed in the drum.
3. Tighten the nut.

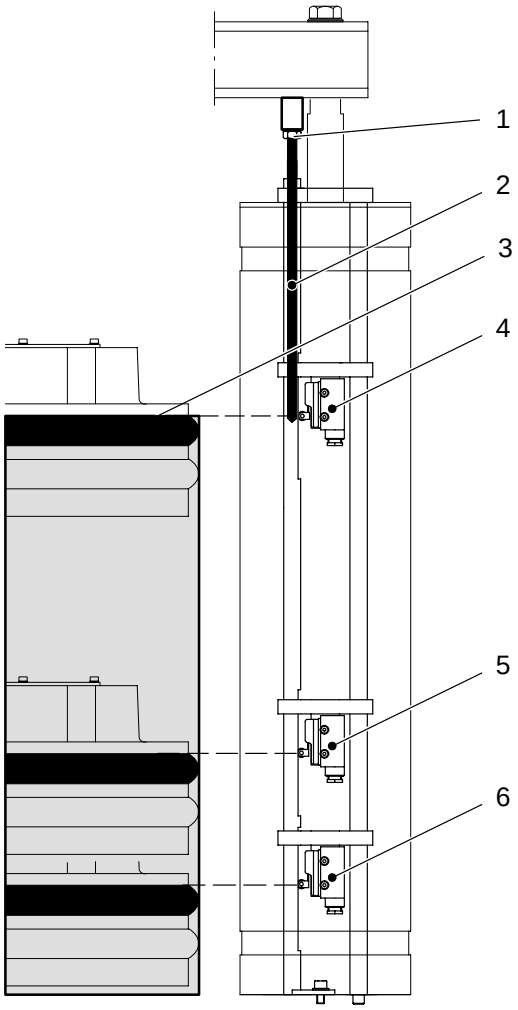


Figure 8 Adjusting Switch Rod

Issued 3/03