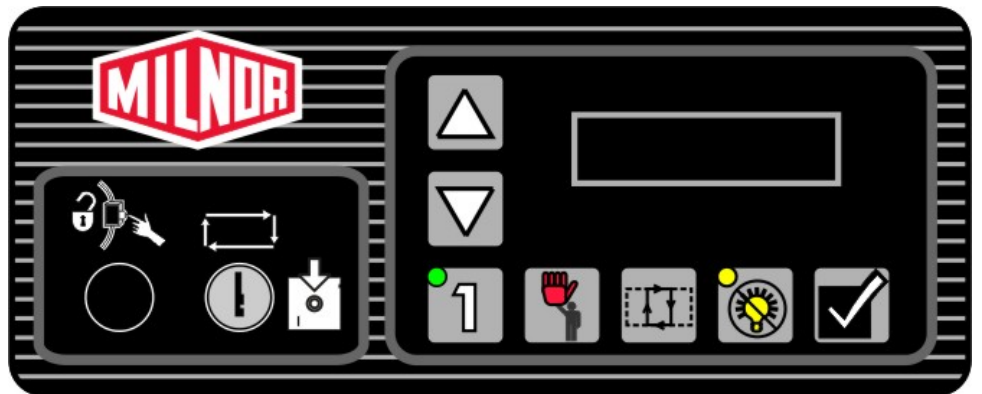
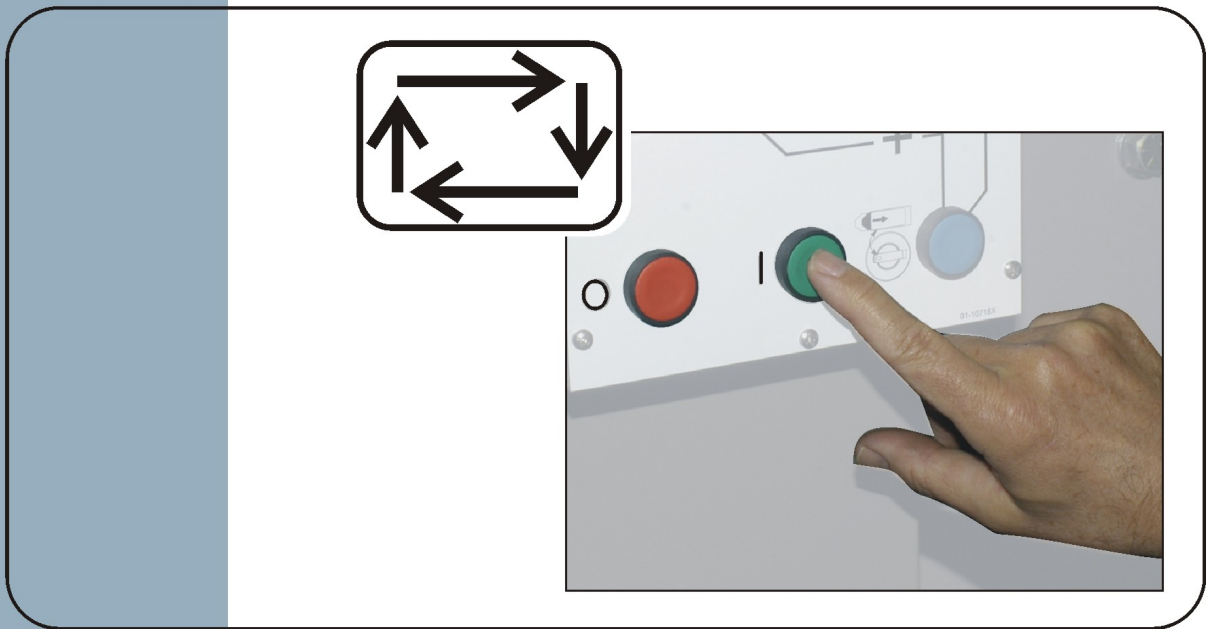


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E-P Plus®, E-P Express®



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1. English

Operator Guide - Washer-extractor Models with E-P Plus®
and E-P Express® Controls

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English

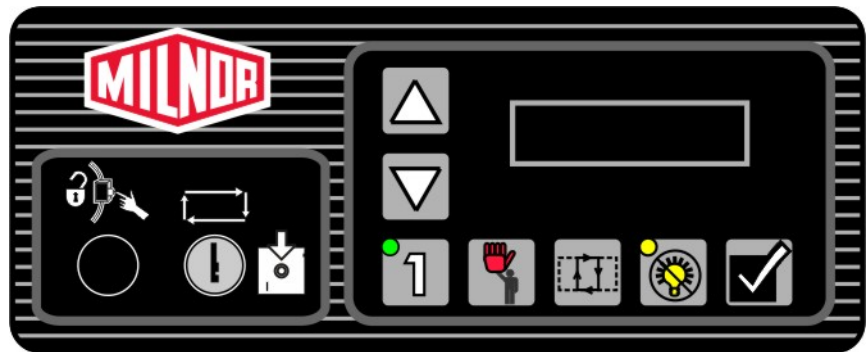
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Operator Guide

Washer-extractor Models with E-P Plus[®] and E-P Express[®] Controls



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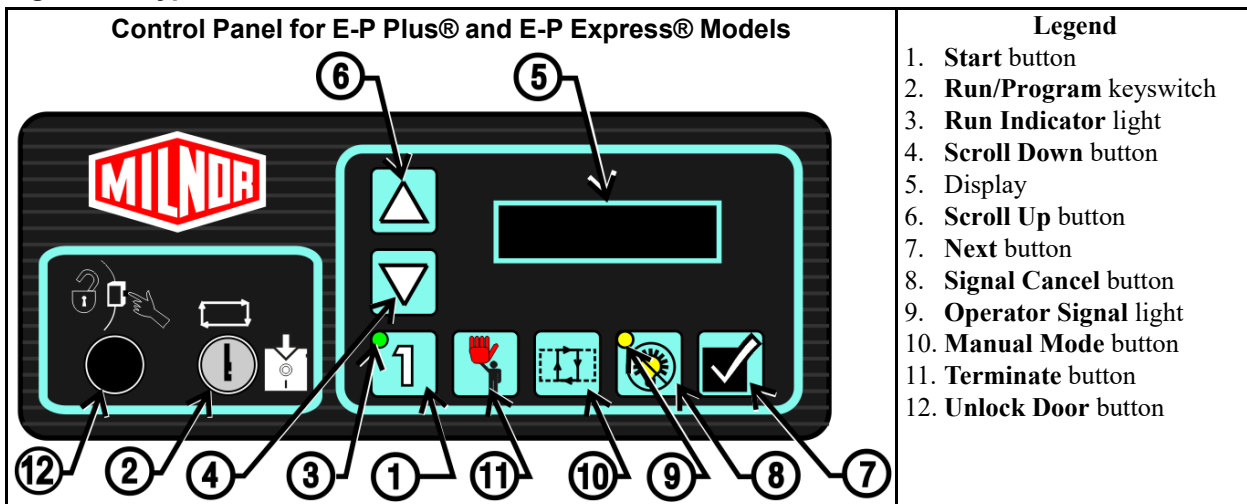
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1 Description of Controls

1.1 Operator Controls on E-P Plus® and E-P Express® Models

This document describes the user controls during normal machine operation. For additional information on other controls shown in [Figure 1, page 2](#), see the reference manual.

Figure 1. Typical Control Panel



Display or Action	Explanation
	When the display says Run Formula , press this button to start the formula.
	During normal operation, the Run/Program keyswitch must be set to . This is the automatic position.
	Use the Scroll Up and Scroll Down buttons to select the desired formula.
	The Next button is not used during normal operation.
	The Signal Cancel button silences the operator signal that sounds when a formula completes normally. Also, if an operator signal is programmed with a chemical injection, add the chemical and press this button to resume operation.
	The Manual button is not used during normal operation.



The **Terminate** button cancels all remaining steps in the current formula and starts the shutdown procedure for the machine. The formula can not be resumed.



The **Unlock Door** button allows you to open the door if all other safety conditions are met.

2 Normal Operation

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BNCJHO05 0000406574 A.6 1/19/22 3:22 PM Released

2.1 Normal Machine Operation

BNCJHO05.C01 0000406573 A.3 A.6 A.1 1/18/22 11:23 AM Released

2.1.1 Start Here for Safety

BNCJHO05.C02 0000406572 A.3 A.6 A.2 1/18/22 4:32 PM Released

This document is designed to remind the person operating this washer-extractor what is required to operate this machine. Do not attempt to operate this machine before a trained operator has explained the details to you.



DANGER: **Multiple Hazards** — Careless operator actions can kill or injure personnel, damage or destroy the machine, damage property, and/or void the warranty.



CAUTION: **Electrocution and Electrical Burn Hazards** — Contact with electric power can kill or seriously injure you. Electric power is present inside the cabinetry unless the main machine power disconnect is off.



- ▶ Do not unlock or open electric box doors.
- ▶ Know the location of the main machine disconnect and use it in an emergency to remove all electric power from the machine.
- ▶ Do not service the machine unless qualified and authorized. You must clearly understand the hazards and how to avoid them.

2.1.2 Check Switch Settings

BNCJHO05.C03 0000406571 A.3 A.6 A.1 1/18/22 2:31 PM Released

Display or Action

Explanation



Check that the **run/program** keyswitch is at



Check that any **emergency stop** switches are in the **out** position.



Check that the master switch, if provided, is at

2.1.3 The Power-up Safety Delay

BNCJHO05.C04 0000406570 A.3 A.6 A.2 1/18/22 4:32 PM Released

Some Milnor® washer extractors do not use a speed sensing device to verify that the basket has stopped rotating. Therefore, when power is first applied to the machine, at least 80 seconds must

elapse before any further operations can be attempted. This provides sufficient time for the basket to coast to a complete stop if power was lost while the machine was in a high speed extract and restored before the basket stopped.

2.1.4 Load the Machine

BNCJHO05.C05 0000406569 A.3 A.6 A.2 1/18/22 4:32 PM Released

Load the machine to the rated capacity and securely close the loading door.

2.1.5 Select and Start a Formula

BNCJHO05.C06 0000406568 A.3 A.6 A.2 1/19/22 9:13 AM Released

Display or Action

```
RUN FORMULA
00 OK TO POWER OFF
```



```
RUN FORMULA
07 FORMULA NUMBER 07
```



```
RUN FORMULA
DOES NOT EXIST
```

Explanation

This is the **Run Formula** display. From this display, you can disconnect power from the machine without risking damage to electronic parts, or you can select a formula to run.

indexes forward/backward through the 30 formulas.

Example display: **Formula 07** selected for running

starts the machine with the selected formula.

indicates that the formula selected for running has not been programmed. This display appears for three seconds.

2.1.6 Monitor Operation

BNCJHO05.C07 0000406666 A.3 A.6 1/19/22 12:30 PM Released

Display or Action

```
23:04 F02S01 02:37
TEMP A168/D170 LEV 1
```

```
23:04 STEP 01 02:37
TEMP A168/D170 SPD 0
```

```
23:04 F02S01 02:37
```

```
TEMP A168/D170 LEV 1
```

Explanation

These two displays alternate during normal operation on some E-P Plus® models. E-P Express® models display other data about the step, but not bath temperature data.

STEP01 is the current step.

EXTRACT indicates that the machine is extracting the goods.

TIMEHALT indicates that the timer is stopped for a chemical injection. The chemical supply equipment must be properly installed for this feature to work.

Temperature in this E-P Plus® machine is measured in degrees Fahrenheit or Celsius, according to machine configuration.

A168 indicates that the current achieved temperature is 168 degrees. Temperature is displayed only if machine is equipped with and configured for temperature control.

D170 indicates that the desired temperature for this step is 170 degrees. Temperature is displayed only if the machine is equipped with and configured for temperature control.

LEV 2 indicates that the bath level achieved is Level 2.

SPD 0 indicates the bath speed for this step.

SPD 0	LEV 2
-------	-------

WAIT FOR LEVEL 2 H indicates that Level 2 is programmed for this step, but is not yet achieved. The H indicates that the hot water valve is open; C indicates cold water, and 3 indicates extra water.

CHEM 03 is displayed when Chemical 03 is being injected. The number for each chemical (up to five may be connected) is displayed as the chemical is injected.

FINAL EXTRACT indicates that the step in progress is the final step of the wash formula.

2.1.7 How to Terminate a Running Formula

BNCJHO05.C08 0000406665 A.3 A.6 A.2 1/19/22 12:30 PM Released

Display or Action



Explanation

Cancels the current formula and returns the machine to the **Run Formula** display (see [Section 2.1.5 : Select and Start a Formula, page 5](#)).

2.1.8 How to Restart after Losing Power

BNCJHO05.C09 0000406664 A.3 A.6 A.2 1/19/22 12:30 PM Released

The control remembers the formula and step it was executing if power fails or if the wall disconnect is turned off while the machine is operating in automatic mode.

Display or Action

PRESS START TO RUN
STEP xx - FORMULA yy



Explanation

On most machine models, this display appears when power is restored. The formula and step which were in progress when power was interrupted are shown.

Resumes the formula at the displayed formula and step. If the outage occurred in a bath step, level and temperature (if commanded) must again be satisfied, even if these were already satisfied before power was lost. Any commanded chemicals will be injected again.

If the outage occurred during the drain part of a bath step, the bath step will be repeated, then followed by the next commanded step.

If the outage occurred during an extract step, the previous bath will be repeated before the extract step begins.

2.1.9 Unload the Machine

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DANGER: Entangle and Sever Hazards — Contact with goods being processed can cause the goods to wrap around your body or limbs and dismember you. The goods are normally isolated by the locked cylinder door.



- ▶ Do not touch goods inside or hanging partially outside the turning cylinder.

When the formula ends or is terminated, the cylinder coasts for 25 seconds if the last step was a bath step. If the last step was an extract, the coast time may be as much as 180 seconds. Do not attempt to open the door early.

Display or Action

UNLOCKING THE DOOR
PLEASE WAIT

WAITING TO UNLOAD
U

Explanation

display during the last 15 seconds of coast, or during the entire coast time if the formula was manually terminated.

At the end of the coast time, the operator alarm sounds.



Silences the operator alarm. The door unlocks so you can unload the machine.

3 Correcting Errors

3.1 Error Messages During Normal Operation

If an error message appears on the bottom line of the display while the machine is running, the timer shown on the top line will stop counting. When the error is corrected, the timer resumes counting down. To troubleshoot most errors, suspend the formula in progress and turn power off. Do not terminate the formula if it is to be resumed after the error is corrected. See the reference manual for more information.

Display or Action

LEVELS STILL MADE

Explanation

The microprocessor is still receiving information that a level is made just before or during an extract step, or immediately before the fill for a bath step. This error is self-clearing when level is lost.

TOO LONG TO FILL

Time to fill to level exceeded 10 minutes. Check the water valves, strainers, supply lines, and water pressure. The machine will continue to fill until level is reached, at which time the error will automatically clear and normal operation will resume.

TOO LONG TO STEAM

E-P Plus® models only. The configured maximum time to steam up to the desired temperature has been exceeded. Check the steam valve, strainer, main steam header and pressure, etc. Steaming will continue until temperature is achieved, when the error will automatically clear and normal operation will resume.

TOO LONG TO COOL

E-P Plus® models only. The configured maximum time to cool down to the desired temperature has been exceeded. Check the cooldown valve and strainer if equipped, cold water pressure, and position of vernier valve on cooldown inlet. Cooldown will continue until the desired temperature is achieved, when the error will automatically clear.

TOO LONG TO DRAIN

The machine did not drain properly in the allotted drain time. This self-correcting error will clear when the water level in the basket is low enough to begin the next operation.

CHECK PROBE

E-P Plus® models only. This error message indicates that the resistance of the temperature probe is outside the specified range. Test the probe by disconnecting the probe leads from the processor board and checking the resistance with an accurate digital ohmmeter. Resistance between the two leads must be between 2K and 35K Ohms. Resistance between each lead and ground must be infinite.

EXTERNAL FAULT



On most machines, this error indicates that the programmed chemical injection failed, usually because the chemical supply system is empty. When chemicals are added and can be injected, this error clears automatically, allowing operation to resume.

On 48040F7J/F7B models, this error indicates that the bearing air pressure is below the minimum required to help protect the bearing from water contamination.


BRAKE PRESS. FAULT

This error appears only on machine models equipped with a cylinder brake. The message indicates that the brake is engaged when it should be disengaged. This is usually because the machine is not receiving sufficient air pressure to open the normally-closed brake. Check the plant compressed air supply.

THREE WIRE DISABLED

The three-wire relay de-energized. This relay provides control circuit power to the machine. Once energized by momentarily depressing the **Start** button () , it is held energized by its own normally open contacts, along with motor overloads, door interlocks, etc. Should any of these contacts open even momentarily, the machine stops and this display appears. This error can only be cleared by depressing the **Start** button () , and only then if the error has been cleared.

INVERTER FAULT

This error message appears if the microprocessor does not receive an input from the inverter within 14 seconds of the beginning of the formula. After 14 seconds without an inverter input, the timer stops, the basket is stationary, and the drain valve opens. To recover, press the **Next** key () .

VIBRATION SW TRIPPED
RECOVERY SEQUENCE

When the vibration switch closes, the timer stops. After 45 to 85 seconds (120 seconds on 42032F7J models), the basket reverses at wash speed as the cylinder fills with water. When low level is achieved, the cylinder reverses for one additional minute at wash speed, then accelerates to extract speed.