30015 & 30022V8Z, VZZ

36021 & 36026V5Z, V7Z

42026 & 42030V6Z

MilTouch™
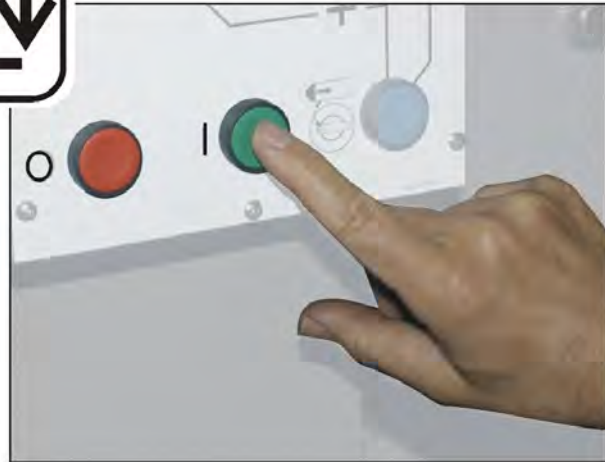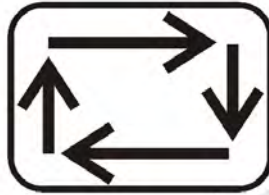
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English 1

Operator Guide

Rigid Console MilTouch™ Washer-extractor

Contents

Figures

Tables

1 Preface

1.1 About This Operator Guide and This MilTouch™ Washer-extractor

This operator guide applies to the following machine model(s):

- 30022V8Z
- 30015V8Z
- 30022VZZ
- 30015VZZ
- 36021V5Z
- 36021V7Z
- 36026V5Z
- 36026V7Z
- 42026V6Z
- 42030V6Z

This operator guide explains routine operation. It is for the operator and for supervisory personnel responsible for operator training. The machine must be fully commissioned and ready before you attempt to operate it. A separate controller reference manual is available from Milnor for use by technicians involved in the commissioning, programming, and servicing of the machine.

WARNING: **Careless use** — can cause death or serious injury and property damage.

▶ Read the machine manuals before you install, operate, service, or clean the machine.

▶ Do not attempt to service the machine or reach into normally-guarded areas unless you are a qualified service technician.

This MilTouch™ industrial washer-extractor has one or more physical switches and buttons (electromechanical controls), as well as a touch-sensitive display screen with virtual controls. Use the electromechanical controls to apply power, unlock the door, stop the machine immediately (if necessary), and load and unload the machine. Use the touch-actuated controls on the MilTouch™ display screen to select, run, and monitor formulas.

2 Controls

2.1 Physical Controls

The following figure shows how the control panel appears on 30022V8Z, 30015V8Z, 30022VZZ, and 30015VZZ machines.

Figure 1. Control Panel

Legend
A . . . **Master power** switch
B . . . **Door unlock** button
C . . . USB port
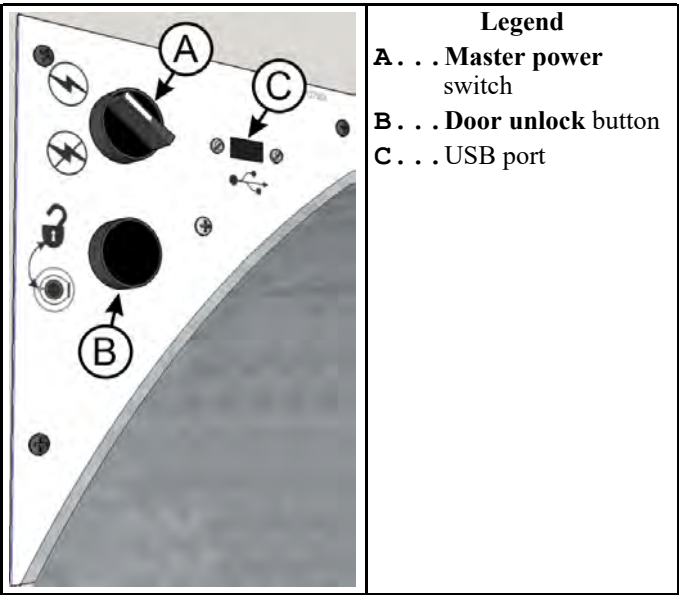
The following figure shows how the control panel appears on 36021V5Z, 36021V7Z, 36026V5Z, 36026V7Z, 42026V6Z, and 42030V6Z machines.

Figure 2. Control Panel

Legend
A . . . **Door unlock** button
B . . . **Master power** switch
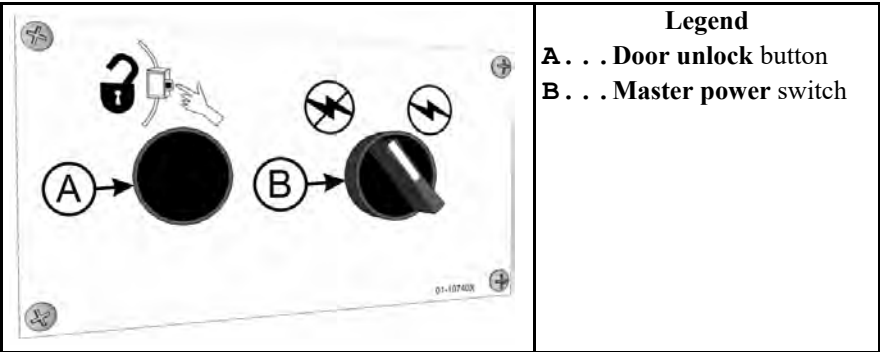
Master power switch ($\oslash$ / $\odot$) — This switch energizes and removes power from the control system.

$\oslash$ Remove power from the control system.

$\odot$ Energize the control system.

Door unlock button ($\textcircled{\tiny{?}}$) — This button frees the door latch so the door can be unlatched and opened. This button is only active when the machine is idle and the water in the machine is below door level.

Touchscreen for the MilTouch™ controller — This is a touch-sensitive display screen that you use for most machine functions.

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2.2 Emergency Stop Switch (locking push button)
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One or more **emergency stop** switches (pictured below) may be provided on the device. When pressed, any **emergency stop** switch removes power from the machine controls, stops the machine, and locks in the depressed (switch actuated, machine stopped) position. When safe to do so, turn the button clockwise to unlock the switch. To resume operation, perform the device's normal startup procedure.

Figure 3.   Emergency Stop Switch
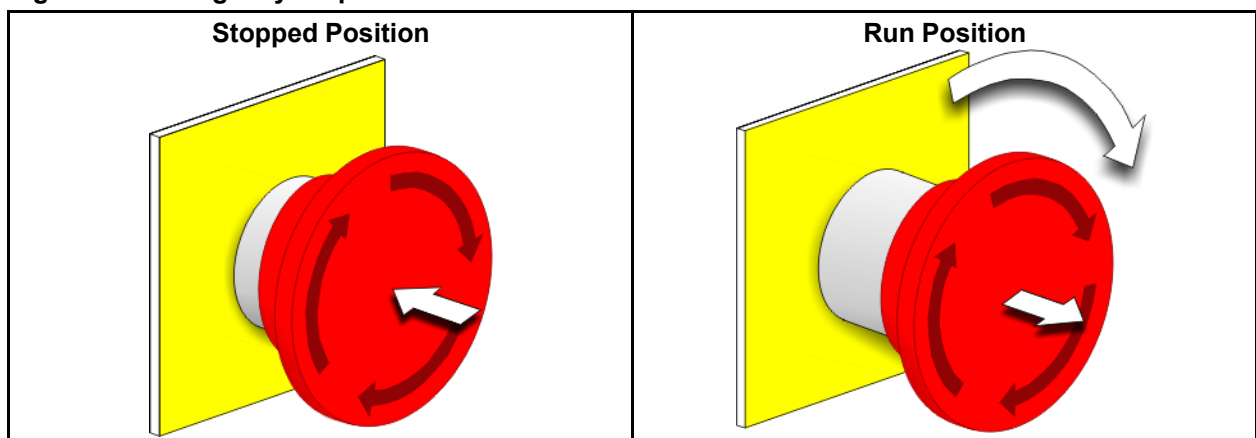
NOTICE: Press the **emergency stop** switch immediately in an emergency situation.

Display or Action	**Explanation**
$\bigcirc$	This symbol represents the **emergency stop** switch in Milnor® documents other than electrical wiring diagrams.

2.3 How to Use the MilTouch™ Controller

The Milnor® MilTouch™ washer-extractor controller uses a touch-sensitive display screen to operate the machine. All the functions and information you need to process goods appear on this screen.

> ⚠️ **CAUTION:** **Excessive pressure** — can damage the display screen.
>
> ▸ Do not push hard on the glass.
>
> ▸ Use only a finger to touch the glass. Do not touch the screen with a tool.

Turn the **master switch** on (⊙) to apply power to the control system. The **Home** display appears on the touchscreen.

2.3.1 The Home Display

The display pictured in the following figure, subsequently referred to as the **Home** display, is used to access all the other displays. Buttons labelled with an asterisk (*) are not used during routine operation. For additional information on those buttons and the displays they access, see the separate controller reference manual.

From the **Home** display, and with a load of goods in the machine, you can select and run wash formulas.

If your machine is part of a Mildata® network, you can also run formulas programmed into the Mildata® computer remotely from the **Home** display.

Figure 4.   The Home Display

Legend	
F#.	The wash formula numbers
Fn.	The wash formula names
M.	Run a formula from the Mildata® computer
P.	Turn machine power OFF
S.	Run a formula
Sc.	Scroll between pages
Se.	Search for a formula
***C.**	Access the **Configuration** display
***D.**	Access the **Diagnostics** displays
***Dc.**	Display the dealer contact information
***Dt.**	Access the **Data Transfer** display
***L.**	Access the **Data Log** displays
***V.**	The version data
***Vd.**	View the version details for your controller software
***W.**	Access the **Wash Formula Maintenance** display

2.3.2 About the Start Button

On machines without any optional features, the selected formula immediately starts when you press the start button ( ) on the **Home** display.

If your machine has optional features— such as a barcode scanner, load cells, or liquor ratio control, the displays that allow you to use these features (ex. the **Barcode** display, the **Weighing System** display, **Load Weight** window, etc.) appear when you touch . This manual refers to these displays as "feature displays." The formula starts when you finish using all the feature displays and touch . If your machine has multiple features, you may have to progress through several feature displays (and press several times) before the selected formula starts.

If your machine is configured to run remote formulas from the Mildata® computer, the button is used instead of the button to start a formula from the **Home** display. However, the feature displays will still use the button.

> **NOTE:**   The availability of the aforementioned features varies by machine model.

3 Normal Operation

3.1 Safety and Best Practice When Loading and Unloading

If you are responsible to load and unload the machine:

* Put safety first.
* Use correct load sizes.

3.1.1 Loading and Unloading Safety

Loading and unloading activities have associated risks that are addressed by safety placards on the machine. Before you use your Milnor® washer-extractor for the first time, read the safety placards. If there is anything you do not understand, get clarification from your supervisor or laundry management.

There can also be other risks associated with the type of laundry facility and the allied (non-Milnor®) equipment you use, such as laundry carts, sling systems, chemicals and chemical systems. Milnor® advises you to obtain and read the safety literature provided for your facility and for all equipment you use.

Examples of possible risks related to the type of laundry facility or to allied equipment are:

* goods handling:
  – sharp objects such as scalpels and syringes left in OR gowns
  – biological contamination in patient gowns and diapers
  – just processed goods that are hot to the touch
  – poisonous or flammable chemicals in the soiled goods
* laundry carts of the wrong size that cause unnecessary effort in loading or unloading
* laundering chemicals:
  – leaks in supply lines
  – skin or eye irritation from contact with spilled chemicals or chemical containers

3.1.2 Load Size Best Practice

For your machine, there is a correct load size for each type of goods you process.

load size   the dry weight (in pounds or kilograms) of a load of goods. Specific goods types can require specific load sizes and these can vary significantly.

capacity   the load size rating for a washer-extractor, as stated in the specifications shown on the product brochure. This rating does not reflect factors such as goods type and soil content.

You will get the best performance from your machine if you use the correct load sizes. Under-loading can make it difficult for the machine to distribute (balance) the goods before extraction. This can cause excessive recycles (when the machine repeatedly tries to distribute the goods). Occasional small loads may be necessary, but keep these to a minimum. Over-loading can put increased stress on machine components and reduce wash quality.

⚠️ **CAUTION:** **Incorrect load sizes** — can cause premature machine wear, excessive recycles (which extends formula time), and poor wash quality.
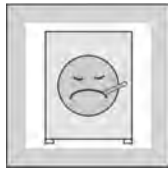
> ▶ Use a chart of goods types and load sizes from your supervisor or laundry management.

> ▶ Minimize the number of small loads.

> ▶ Use a scale to determine when a load is the correct size.

▶ On a divided-cylinder machine, put approximately the same weight of goods in each pocket.

When your machine was purchased, your Milnor® dealer worked with your laundry personnel to determine the optimum machine for your needs. This took into account factors such as the types of goods to be washed and the expected soil content of the goods, which can cause the correct load size to vary greatly among goods types. For example, the more bulky the goods, the smaller the permissible load size. The correct load sizes will be what was previously determined when the machine was purchased. If you do not already have a chart of the goods types to be processed and their correct load sizes, request one from your supervisor or laundry management.

3.1.2.1 Weighing Goods

Build loads of the correct size for the best performance from your machine. The most accurate method to build loads of the correct size is to weigh each load as you assemble it.

You can weigh the goods using a separate laundry scale, weighing-type load conveyor, etc. If your machine is connected to a Mildata® network and configured to pass weight data, be sure to record the weight of each load so that you can enter it into the **Remote Formula** window (Figure 8: Remote Formula Window, page 13) before you run a formula.

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3.2 Apply control power.

Set the **master power** switch (⊘ / ↺) to ↺. Control power must be on to use the electromechanical controls and the touchscreen controller.

3.3 Open the door (turn-knob).

To open the door:

1. Press and release the **door unlock** button (⊖).

2. Turn the knob clockwise to unlatch the door.

3. Pull the door open.

Figure 5.   Door with a Turn-Knob

3.3.1 Open the door (push-plate).

Older machine models may be equipped with a push-plate mechanism instead of a turn-knob.

Figure 6.   Door with a Push-Plate

To open the door:

1. Press and release the **door unlock** button (⊖). The door latch unlocks.

2. Push the plate on the door latch mechanism with sufficient force that the door unlatches.

3. Pull the door open.

3.4 Scan the barcodes on the goods (optional barcode scanner).

If your machine is equipped with a barcode scanner, you can scan barcodes on goods (such as uniforms) to track the goods with your MilTouch™ controller. You can also generate cumulative reports of a machine's barcode production history, which list which barcodes were processed, when, and by whom. See the separate reference guide for more information on barcode production reports.

To scan goods:

1. On the **Home** display, select the formula for your goods type.

2. Touch ▶. The **Barcode** display appears, as shown in the following figure.

NOTE: If your machine is configured to run Mildata® formula, touch instead.

Figure 7. Barcode Display

	Legend
A...	Go back to the previous display.
B...	Scroll between pages to view more scanned barcodes.
C...	Return to the **Home** display.
D...	Barcode entry box. Scanned barcodes appear here before you add them to the list (item E).
E...	Scanned barcode numbers in the batch.
F...	Briefly describe why the item is being processed. This information will appear in barcode production reports.
G...	Start the formula.
H...	Add a scanned barcode from the barcode entry box (item D) to the list (item E).
I...	Delete the selected barcode from the list.
J...	Enter the operator's initials. This information will appear in barcode production reports.

3. Touch the barcode entry box at the top of the display (item D in the figure) so that a cursor appears inside.

4. Use your barcode scanner to scan a barcode.

   The scanned barcode number appears in the barcode entry box.

5. Touch to add the scanned barcode from the barcode entry box to the list of barcodes in the batch.

6. Repeat steps 3 through 5 until you have scanned the barcodes on all the goods.

7. If desired, briefly describe why each item is being processed. This information will appear in barcode production reports.

   a. Touch the barcode number for the item you want to describe. The barcode number turns green, and the "Description" button next to it becomes enabled.

   b. Touch the "Description" button. The **Barcode Description** window (not shown) appears.

   c. In the **Barcode Description** window, use the keypad to enter a description.

   d. Touch to save the description and close the **Barcode Description** window.

8. Enter the operator's initials. This information will appear in barcode production reports. The operator's initials may or may not be required depending on your machine's configuration settings.

   a. Touch the button labelled "Operator" in the bottom right corner of the display (item J in Figure 7). The **Operator Initial** window (not shown) appears.

   b. In the **Operator Initial** window, use the keypad to enter the operator's initials (up to 3 characters).

   c. Touch to confirm your entry and close the **Operator Initial** window.

3.5 Load the cylinder.

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Load the cylinder according to your chart of the goods types to be processed and their correct load sizes.

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3.6 Close the door.

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To close the door, swing the door closed with sufficient force that it latches.

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3.7 Start the wash formula.

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There are two main ways to run wash formulas:

• Run a formula from the machine's local memory

• Run a formula remotely from the Mildata® computer's programmer application

3.7.1 To Run a Wash Formula Locally

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1. Select the formula for your goods type, if you have not done so already.

   a. Use and on the **Home** display to scroll between pages and locate the formula for your goods type, or use to search for the wash formula based on its formula number.

   b. Touch the button that displays the wash formula name. The button text turns green to show that the formula is selected.

2. Touch from the **Home** display, or from a feature display if you used one (such as the **Weighing System** display or **Barcode** display), to start the formula.

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The **Run** display appears and the door to the washer-extractor locks.

3.7.2 To Run a Wash Formula from the Mildata® Computer

NOTE: When you enable your controller to run Mildata® formulas, the local formulas become unavailable.

1. On the **Home** display, touch [icon] .

   NOTE: If you used an optional feature such as a barcode scanner or load cells,

   instead touch [icon] from the feature display (such as the **Weighing System** display, **Barcode** display, etc.).

2. The **Remote Formula** window (Figure 8) appears. In the **Remote Formula** window:

   a. Enter the formula number for your goods type.

   b. Enter the load data. The available fields correspond to the Mildata® configuration decisions.

   c. Touch [icon] to run the remote Mildata® formula on this machine.

   The **Run** display appears and the door to the washer-extractor locks.

Figure 8. Remote Formula Window

3.7.2.1 About the Mildata® Product and Production Data

The Mildata® product allows a commercial laundry to associate customer data with each load of goods processed and automatically accumulate production data for analysis.

You can configure the machine to pass the following production data:

Address identifies the machine address on the Mildata® network.

Formula identifies the wash formula that will be used to process the load. Goods Code can be used instead.

Work Order identifies the wash formula and other batch data bundled together in a pre-set code. No other batch data is necessary if this code is used.

Goods Code identifies the wash formula based on the goods-type in the machine. Formula can be used instead.

Customer identifies the customer (commercial laundry) or department (institutional laundry) the batch belongs to.

Employee   identifies the employee who processed the batch. This information can be used to generate a report of which batches or how many batches each employee processed.

Weight   the dry, soiled weight of a batch, as measured by a weighing device, such as a weighing type load conveyor.

Pieces   the number of pieces in the batch.

Lot   identifies an individual batch with a unique number assigned by the user.

Group   identifies the group number if this machine is part of a group of machines that will use the same formulas

With the Mildata® product, it is also possible to run remote formulas. If you download the Mil-Touch™ programmer application to your Mildata® computer, you can run the formulas your specialist develops on the Mildata® computer's Programmer Application remotely from your MilTouch™ machine controller. See the reference manual for more information on the Mil-Touch™ Programmer Application.

NOTE: The Mildata® product is a laundry management tool with capabilities not explained here. Contact Customer Service/Technical Support using the contact information in Section 4.3 : How to Contact Milnor®, page 29 for more information.

3.8 Monitor the wash formula.

3.8.1 The Run Display

The **Run** display appears when you run a formula.

From the **Run** display, you can monitor the wash formula progress and the machine status. You can also change the water temperature and level, the formula time, the drain type, and the basket speed for the formula in progress.

Three types of information are given on the **Run** display. These types are grouped into three areas of the display, as shown in Figure 9 .

Figure 9.   The Three Information Areas of the Run Display

Legend

A.   **Names and Timers** area
B.   **Machine Status** area
C.   **Manual Control and Diagnostics** area

3.8.1.1 The Names and Timers Area (A)

This area displays the running formula's name and number, the current step number, the total time in the formula, and the time remaining in the formula and the current step.

Figure 10.   The Names and the Timers Area

Legend

`F#`..Formula number
`Fn`..Formula name
`Fr`..Remaining formula time
`Ft`..Total formula time
`S#`..Step number
`Sr`..Remaining step time
`St`..Total step time

3.8.1.2 The Machine Status Area (B)

This area displays the current and desired water level and temperature for the step in progress, the current cylinder motion, and the current state of each valve.

Figure 11. The Machine Status Area

	Legend
C . . .	Chemical signals and chemical flush valve. Numbers 1–8 indicate a chemical is being injected. F indicates a chemical flush is occurring.
Cm . .	Cylinder motion
Cs . .	Cylinder speed, in rotations per minute. Displays "RS" during Rin-Save® extract deceleration.
D . . .	Date and time
Dr . .	Drain indicators
Lc . .	Current level (percentage)
Ld . .	Desired level
M . . .	Current machine status area
P . . .	Formula progress bar
S . . .	Steam and cooldown indicators
Sn . .	Step name
Tc . .	Current temperature
Td . .	Desired temperature
W . . .	Water valve indicators

3.8.1.2.1 How to Monitor Automatic Liquid-Chemical Injections

If your machine controls a pumped chemical system, the controller automatically injects chemicals from the pump system while the formula runs.

You can monitor automatic liquid-chemical injections in the **Machine Status** area. As the controller injects a chemical into the machine, the chemical's valve number illuminates, as shown in Figure 12 , until the programmed injection time expires.

Figure 12. Chemicals from Valves 1 and 2 Injecting

3.8.1.3 Manual Control and Diagnostics Area (C)

Use these buttons as explained in the following figure.

Figure 13.   Standard Controls

	Legend
	C. Cancel the formula (see Section 4.1.4) M. Actuate manual controls (Section 4.1.3) D. Run diagnostics (see reference manual)

3.8.2 Respond to the end of the cycle.

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The operator signal will sound when the cycle ends.

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3.9 Open the door and unload the cylinder.

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Open the door as described previously. Follow the safety guidelines outlined in Section 3.1 : Safety and Best Practice When Loading and Unloading, page 8 when you unload the cylinder.

4 Troubleshooting

4.1 Operator Intervention

When a formula starts, the machine processes the goods automatically during normal operation.

However, it can be necessary for the operator to intervene to:

- add a chemical

- correct an error

- make a manual change to a wash formula, or cancel the formula

In most cases, the operator signal will sound when it is time for the operator to intervene.

4.1.1 Chemical Supplies Intervention

The operator should receive instruction from the chemical supplier for the type of chemical system provided. This can be:

Pumped chemical system   a system that injects liquid chemicals into the machine when called for by the formula. The only intervention normally required is to ensure that the chemical containers that supply the chemicals to the system remain at a safe level.

Optional 5-compartment supply injector   a system in which the operator places a measured amount of chemical in each compartment before the start of each wash cycle. Each compartment is dedicated to a type of chemical (detergent, bleach, sour, softener, etc.). When the formula calls for a given chemical, the compartment for that chemical is injected with water to flush the chemical into the machine.

Although not common, it can be necessary to manually add a chemical that is not provided by the pumped chemical system, or to reload a supply injector compartment with a different chemical while a formula is in progress. In this case, the formula can be programmed to turn on the operator signal when operator intervention is required.

When the machine desires a chemical injection, the step timer pauses, the operator signal sounds, and a dialog box (shown in Figure 14) appears on the controller.

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Figure 14. Chemical Injection Dialog Box
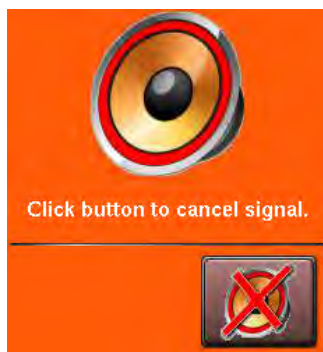
Add the chemical according to the chemical suppliers instructions, then touch to cancel the operator signal and resume the formula.

4.1.2 Error Intervention

The operator signal sounds if an error occurs. See for a list of possible error conditions. Contact a service technician or check the separate controller reference manual if you cannot correct the error.

4.1.3 Formula Intervention

Formula intervention allows you to manually alter a wash formula in production (while it runs). You can adjust the:

- step timer
- water valves
- drain and reuse valves
- steam and cooldown controls
- cylinder speed
- bath temperature and level

The changes you make while in formula intervention mode do not alter the programming of the formula (the step decisions). Formulas proceed normally in formula intervention mode aside from the changes you make.

Chemical suppliers and service technicians can use formula intervention to test formulas and confirm proper operation of the machine components. For example, a service technician may want to turn the steam valve on to confirm proper operation.

Operators might also use formula intervention if it is necessary to make a temporary, or one-time change to a wash formula. For example, the operator may want to stop the timer to slowly add a chemical through the soap chute.

Touch ![icon] on the **Run** display to start formula intervention. Controls in the **Names and Timers** area and the **Machine Status** area of the **Run** display become active so that you can change the formula in progress. Green boxes on the display identify the formula control areas, or the settings that can be changed, as shown in Figure 15 .

NOTE: A password may be required to use formula intervention.

In formula intervention mode, touch a box to display the pop-up controls for that setting. The pop-up controls available correspond with your machine's equipment and your configuration decisions.

Figure 15. Formula Control Areas

Legend

C.	Cylinder speed controls
Ca.	Cancel the formula
D.	Drain and reuse controls
E.	End formula intervention
H/C.	Heat and cool (steam and cooldown) controls
Lw.	Bath level controls
St.	Step timer controls
Tw.	Bath temperature controls
W.	Water valve controls

NOTICE: The MilTouch™ controller prevents the activation of certain controls when their activation would be inappropriate. For example, the controls for the water valves are not available when the bath water is at its maximum level.

Modify Step Timer — Touch the box identified by item St on Figure 15 .

Figure 16. Pop-up Controls for Step Timer
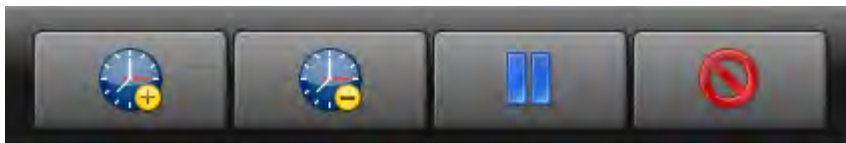
![icon] Add 1 minute to the remaining step time.

![icon] Subtract 1 minute from the remaining step time. If there is less than 1 minute remaining on the step timer, the timer is reduced to 00:00 and the controller moves on to the next phase in the current step, or the next step if there are no more phases.

Pause the current step timer. The formula will remain on the current step, which prevents formula resumption, until this button is touched again.

NOTE: Outputs that the controller actuates during a step remain actuated even when the step timer is paused (unless the actuation of the output is inappropriate). For example, if the cylinder is turning when you touch [icon], the cylinder will continue to turn even while the step timer is paused.
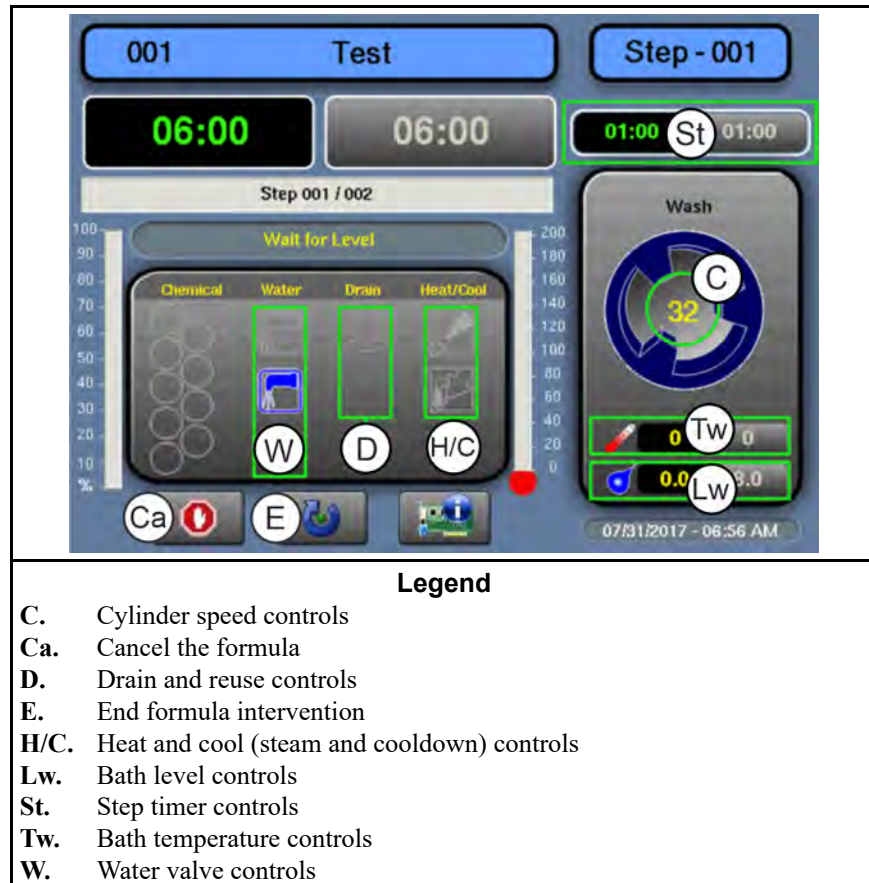
Close the window.

Modify Water Valves — Touch the box labeled "Water" on the display.

Figure 17.   Pop-up Controls for Water Valves

Open the hot water inlet valve. If the hot water inlet valve is open, touch to close it.

Open the cold water inlet valve. If the cold water inlet valve is open, touch to close it.

Open the 3rd water inlet valve. If the 3rd water inlet valve is open, touch to close it.

Close the window.

Modify Drain Valves — Touch the box labelled "Drain" on the display.

Figure 18.   Pop-up Controls for Drain Valves

Open the drain valve to the sewer. If the drain valve to the sewer is open, touch to close it.

Open a secondary drain valve to a reuse tank. If the secondary drain valve is open, touch to close it.

Close the window.

Modify Steam and Cooldown — Touch the box labelled "Heat/Cool" on the display.

Figure 19. Pop-up Controls for Steam and Cooldown Valves
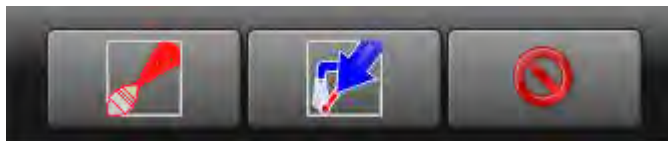
Inject steam to raise or maintain the bath temperature. If the steam inlet valve is open, touch to close it.

Inject cool water to gradually lower the bath temperature (perform a cooldown). If the cooldown inlet valve is open, touch to close it.

Close the window.

Modify Cylinder Speed — Touch the box identified by item C on Figure 15 .

Figure 20. Pop-up Controls for Cylinder Speed

Increase the rotation speed of the cylinder by 1 RPM.

Decrease the rotation speed of the cylinder by 1 RPM.

Close the window.

Modify Water Temperature — Touch the box identified by item Tw on Figure 15 .

Figure 21. Pop-up Controls for Water Temperature

Increase the desired bath temperature by 1 degree (Celsius or Fahrenheit).

Decrease the desired bath water temperature by 1 degree (Celsius or Fahrenheit).

Close the window.

Modify Water Level — Touch the box identified by item Lw on Figure 15 .

Figure 22.   Pop-up Controls for Water Level

Increase the desired bath water level by 1 unit (centimeters or inches).

Decrease the desired bath water level by 1 unit (centimeters or inches).

Close the window.

When you are finished making changes to the wash formula, touch to end formula intervention.

4.1.4 To Cancel a Formula

1. Touch on the **Run** display to cancel a formula.

2. A dialog box appears (Figure 23) that prompts you to confirm your decision. On the dialog box, touch

   to cancel the formula.

3. The controller disables all outputs, drains the bath water through the normally-open drain valve (usually the drain valve to the sewer), unlocks the door to the washer-extractor, and returns to the **Home** display.

Figure 23.   Resume or Cancel the Formula
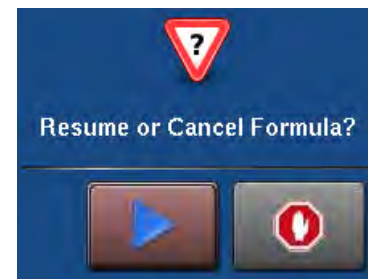
4.2 Errors

If your machine encounters an error while it runs a formula, the formula halts, the operator signal sounds, and an error code dialog box (Figure 24) appears on the **Run** display.

See the next section for a list of all the error codes and the possible causes/solutions.

Figure 24.   Sample Error Code Dialog Box

4.2.1 MilTouch™ Error Messages

The following are error messages the controller can issue, possible causes, and solutions. Operation stops and cannot be resumed until the cause of the error is corrected. This can require a maintenance or chemical technician.

Door Opened — The controller cannot confirm that the door to the washer-extractor is closed. If this occurs while a formula is in progress, the controller turns off all outputs, cancels the wash formula, and returns to the **Home** display.

> **The Door Opened:** Close the door.

> **Electrical failure:** If the door is not open, electrical troubleshooting is required.

Too Long to Fill — The water in the machine did not reach the specified level within the configured **Fill Error Time**. The controller closes all water valves and turns off all chemical injections. The **Fill Error** timer resets after you correct the error.

> **Fill Time Configured too Short:** Do a check of the configured fill time in your machine's configuration decisions. It may be necessary to increase the fill time.

> **Low Water Pressure:** Do a check of the water pressure and volume to the machine.

> **Water Valve Malfunctioned:** Use the electrical schematic manual to do a check of the water valves and the circuits that control the valves.

Too Long to Drain — The water in the machine did not drop to the specified level within the allotted drain time. The controller issues an error but the drain remains open. If a slow drain caused the error, the error clears and the formula resumes when the transducer senses that the water level has dropped to the desired level.

> **Drain Blocked:** The drain pipe from the machine to the sewer may be blocked. Check the drain pipe and remove any obstruction.

> **Transducer Tube Blocked:** The tube from the shell to the pressure transducer (Figure 25) may be blocked. Check the tube and remove lint or other obstructions.
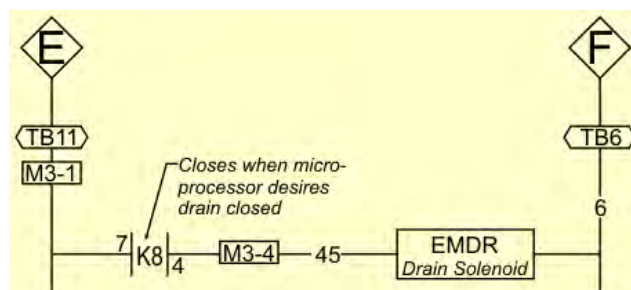
Pellerin Milnor Corporation

Drain Valve Malfunctioned: The drain valve or drain valve solenoid may have malfunctioned. Electrical troubleshooting is required (see Figure 26).

Figure 25. Transducer Tube
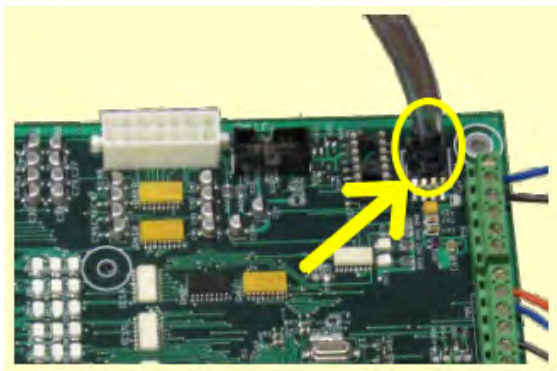
Figure 26. Schematic of Typical Drain Circuit

Too Long to Steam — The temperature in the machine did not reach the specified temperature within the configured **Steam Error** time. The controller issues an error but the steam valve remains open. If the temperature probe senses that the machine has reached its target temperature, the error clears and the formula resumes.

Low Steam Pressure: Do a check of the steam pressure from the boiler to the machine.

Steam Time Configured too Short: Do a check of the configured steam time in your machine's configuration decisions. This value represents the time required to apply steam to cold water at high level to achieve the hottest temperature used.

Steam Valve Malfunctioned: Use formula intervention to turn the steam valve on to confirm proper operation.

Too Long to Cool — The temperature in the machine did not drop to the specified temperature within the configured **Cooldown Error** time. The controller issues an error but continues to perform the cooldown. If the temperature probe senses that the machine has dropped to its target temperature, the error clears and the formula resumes.

Cooldown Time Configured too Short: Do a check of the configured cooldown time in your machine's configuration decisions. It may be necessary to increase the cooldown error time.

Low Water Pressure: Do a check of the cold water pressure and volume to the machine.

Cooldown Valve Malfunctioned: Do a check of the cooldown valve for proper operation.

Temperature Circuit Malfunctioned: Do a check of the temperature probe and the analog-to-digital board for proper operation.

Check Temperature Probe — The temperature probe detected a temperature below 32° F (0° C) or above 230°F (110°C). The controller turns off all outputs, cancels the wash formula, and returns to the **Home** display.

The Probe is Disconnected: Electrical troubleshooting is required. Check for an open circuit.

The Probe Malfunctioned: If the probe connections are found good, disconnect the probe and measure the resistance between the leads. The resistance between the leads should be between 2K and 35K Ohms. The resistance between either lead and the ground should be infinite.

Level Still Made — The water level in the cylinder is at or above the configured low water level at the start of the formula, before the first bath step. The controller issues an error but the drain remains open. If a slow drain caused the error, the error clears when the transducer senses that the water level in the cylinder is less than the configured low water level.

Drain Blocked: Do a check that the drain valve and drain outlet are clear of debris.

Transducer Tube Blocked: The tube from the shell to the pressure transducer may be blocked. Check the tube and remove lint or other obstructions.

Drain Valve Malfunctioned: The drain valve or drain valve solenoid may have malfunctioned. Electrical troubleshooting is required.

Serial Communication Failure — A peripheral board in the control box has lost communication with the processor board. The controller stops cylinder rotation and waits for serial communication to resume. This error dialog box closes when serial communication resumes.

Board Failure: A peripheral board in the control box cannot communicate with the processor board. Electrical troubleshooting is required.

Failed Speed Sensor — The controller cannot verify that the cylinder is turning. If the speed sensor fails at extract speed, the machine cancels the extract sequence and coasts for the default coast time. The default coast time must expire before the door will unlock.

Speed Sensor Failure: The cylinder speed sensor has stopped working. Electrical troubleshooting is required.

Inverter Tripped — The inverter that controls the motor had an error. The controller turns off all outputs, cancels the wash formula, and returns to the **Home** display.

Inverter error: The machine controller cannot tell about the specific error. See the inverter manual for details. The inverter manual was shipped in an electric box on your machine or with the packet of documentation inside the machine cylinder.

External Fault Error — This message is triggered by a device external to the MilTouch™ machine. This error usually originates with the chemical supply system.

Loadcell Comm Failure — This error can occur on machines with the optional weighing system (load cells). The controller issues this error when it cannot receive data, or receives an unexpected data stream from the load cell controller.

Level Too Low — After the machine fills to the configured minimum (low) water level, the controller turns off all outputs and signals this error if the water level drops below half of the minimum water level and remains below half of the minimum water level for 30 continuous seconds.

4.2.2 Error Correction

Touch ![help icon] (in the error code dialog box, Figure 24: Sample Error Code Dialog Box, page 24) to view the **Error Causes/Solutions** display (shown in the following figure).

The **Error Causes/Solutions** display gives a list of possible causes for the error. Touch one of the error causes in the list for an explanation of how to correct it.

Some errors do not have additional details on how to solve them.

Figure 27. Error Causes/Solutions Display

Legend

`B...` Return to the list of possible error causes

`Cl..` A list of possible error causes

`C...` Touch to view the solution for this cause

`E...` The error description

`R...` Return to the **Run** display

`S...` A possible solution to the error

`Sc..` Scroll pages if there is more than one page.
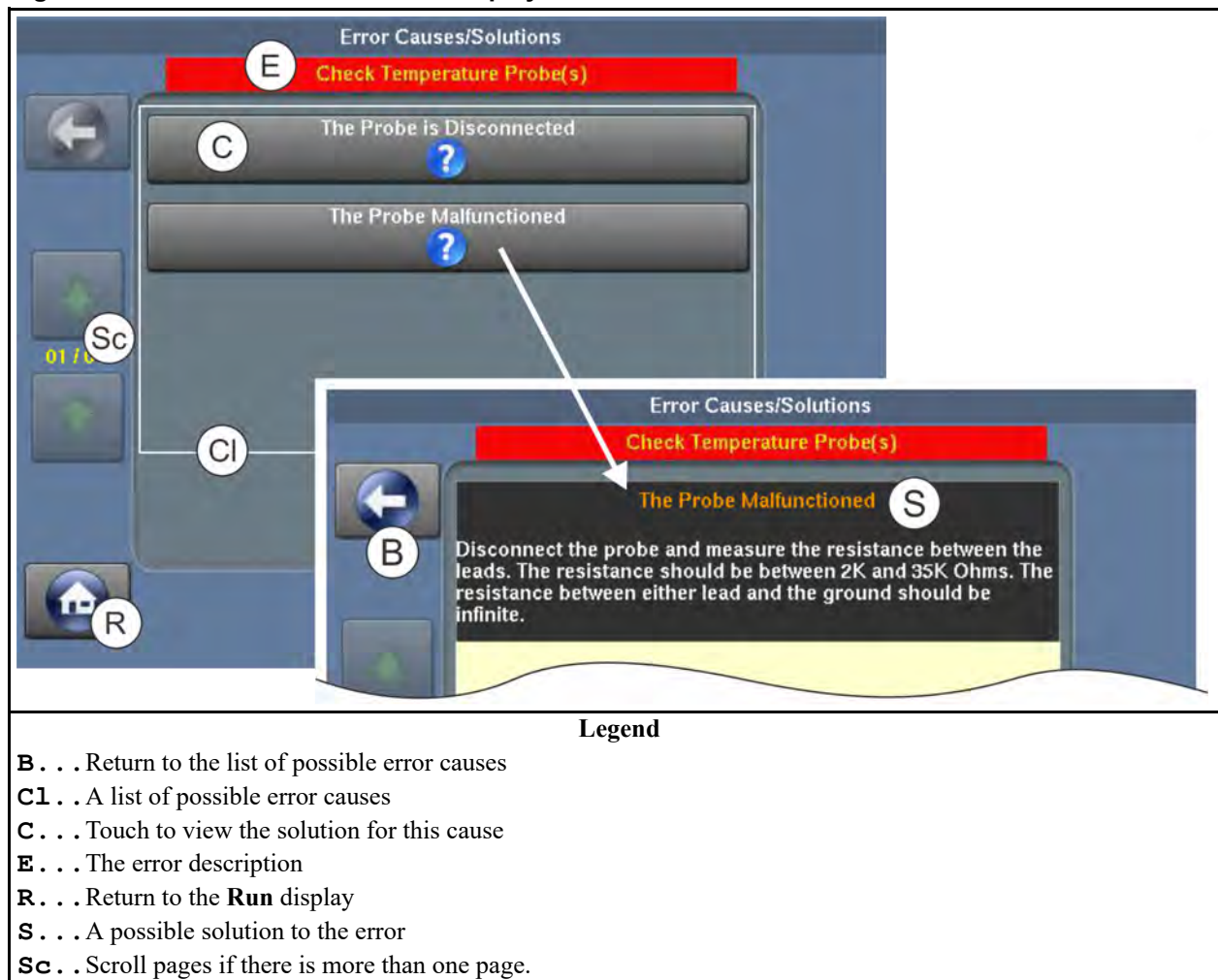
WARNING: **High voltage and/or moving parts** — are present inside the machine when troubleshooting.

▶ Qualified technicians only

▶ Use care to avoid contact with live or moving parts

▶ Keep bystanders away.

1. Follow the instructions on the **Error Causes/Solutions** display for how to correct the error.

2. Touch [icon] to return to the **Run** display.

3. In the error code dialog box, touch [icon] to silence the operator signal, close the error code dialog box, and resume the wash formula at the current step. Some error code dialog boxes close automatically when you resolve the error.

4.3 How to Contact Milnor®

BNUUUT01.C01 0000123012 B.2 B.3 E.3 1/2/20 2:14 PM Released

Your authorized Milnor® dealer can assist you with your Milnor® machine and knows about the local conditions that may be pertinent to the installation, use, or maintenance of the machine. Contact your dealer first. For assistance from the Milnor® factory, refer to Table 1 for contact information.

Table 1.   Pellerin Milnor® Corporation Contact Information

Purpose	Department	Telephone	FAX	E-mail/Web site
Order or ask about replacement parts	Parts	504–712–7775 or 800–299–1500	504–469–9777	parts@milnor.com
Get advice on installing, servicing, or using	Customer Service/ Technical Support	504–712–7780	504–469–9777	service@milnor.com www.milnor.com (Customer Service)
Learn about, request, or enroll in Milnor® service seminars	Training	504–712–7716	504–469–9777	training@milnor.com
Determine warranty eligibility or claim status	Warranty Administration	504–712–7735	504–469–9777	service@milnor.com (Attention: Warranty)
Ask about, comment on, or report an error in equipment manuals	Technical Publications	504–712–7636	504–469–1849	techpub@milnor.com
European contacts	Milnor® International	+ 32 2 720 5822	—	milnor@milnor.be
Ask about the shipping weight of your machine before it arrives at your facility	Logistics Department	504–712–7686	504–471–0273	—

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