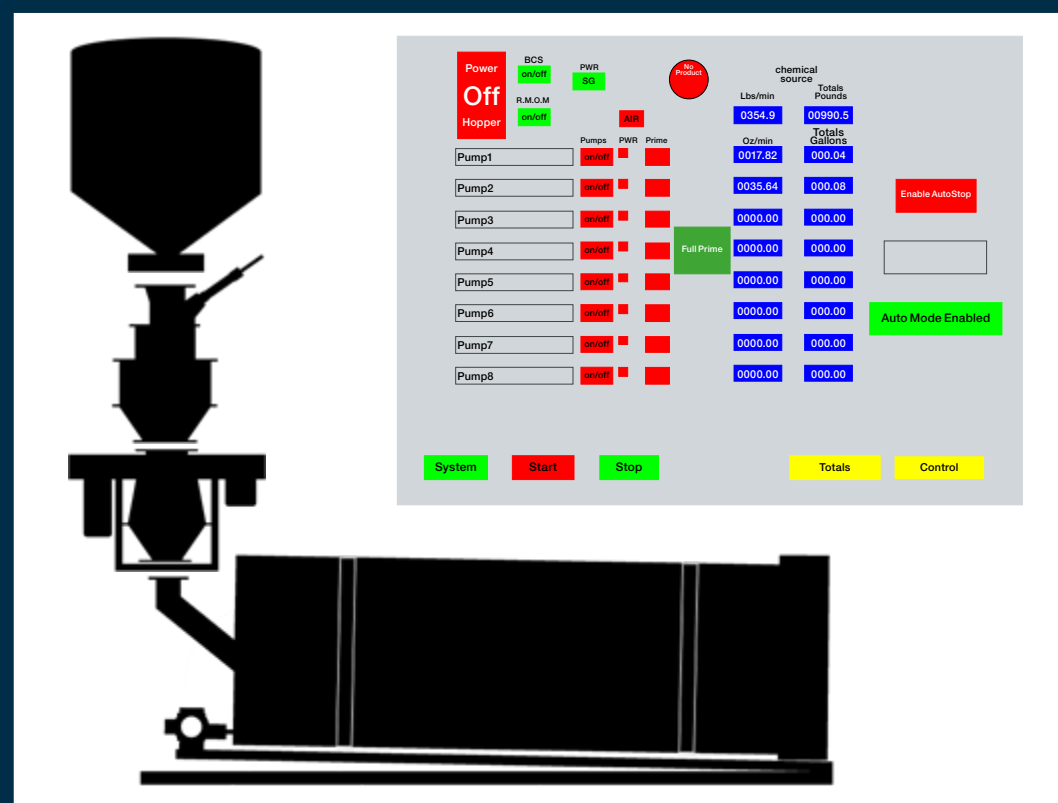


GLCPS HMI OPERATIONS GUIDE





MENU



This is an interactive PDF. Click on an icon tile and navigate to a chapter of interest.



Legal & Safety



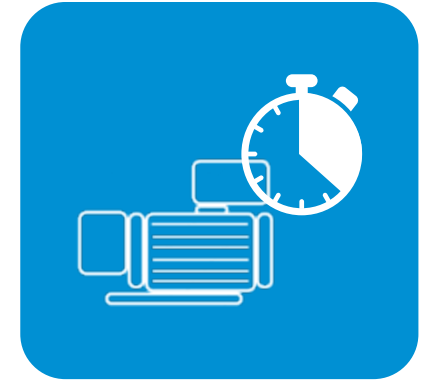
Notes



Initiate HMI



Pump Setup



Pump Calibration
W/Flow Meters



Scale Calibration



Pump Calibration
WO/Flow Meters



Quick Screen



Alarms Screen



Pictograms

Users can advance or go back single pages by using quick navigation links shown below, right.

Users can navigate to the Menu by clicking on the Menu icon shown below, left.





LEGAL & SAFETY

This manual contains technical information regarding Bayer SeedGrowth™ Equipment. Please read and understand these instructions completely before proceeding to install and operate the equipment. Bayer reserves the right to change specifications, models, components, or materials at any time without notice. For additional equipment information contact us at 1.800.634.6738. Please have this manual available when contacting Bayer.

Always use caution and common sense when working with any chemical. Read the product label and SDS carefully and follow their instructions exactly as described.

Optimal operating conditions for this piece of equipment requires an ambient temperature 32° F to +104° F (0° C to +40° C), relative humidity less than 90% (minimum condensation). Make necessary provisions to protect this piece of equipment against excessive dust, particles containing iron, moisture and against corrosive and explosive gases.

Our technical information is based on extensive testing and is, to the best of our current knowledge, true and accurate but given without warranty as the conditions of use and storage are beyond our control. Variables, such as humidity, temperature, change in seed size or variety and viscosity of chemical products can all affect the accuracy of the chemical application and seed coverage. To ensure the desired application rate and optimum seed coverage, check the calibration periodically throughout the day, and make adjustments as needed.

Any person who is involved in the installation or periodic maintenance of this equipment should be suitably skilled or instructed and supervised using a safe system of work. Isolate the treater before removing guards for maintenance.





EXPOSURE CONTROL

Always use caution and common sense when working with chemicals. Read the product label and SDS carefully and follow their instructions exactly as described. The following Personal Protective Equipment (PPE) recommendations and best practices help promote safe use in seed treatment.



Note: Exposure Control signs and labels conform to the requirements of ANSI Z535.4 or ISO 3864.



Wear protective clothing

Wear disposable or reusable coveralls with long sleeves.



Hand protection required

Wear chemical-resistant gloves.



Wear rubber boots

Wear chemical resistant rubber boots.



Labels

Label recommendations and directions for handling must be followed, including treatment procedure (use of sticker) as well as the safety requirements.



Treatment products

Keep products in a locked room that has been approved for crop protection products.



Wear a mask

Wear respiratory protection.



Eye protection required

Wear protective eyewear.



Calibration

Seed treatment equipment must be checked and calibrated regularly to ensure accurate and safe application.



Clean seed

Use well cleaned seed to avoid creation of polluted dust that will contaminate the machine, treating facility, workers, farmers and the environment during sowing.



Cleaning

Use a vacuum to clean machines. Avoid using compressed air for cleaning.



Laundry

Wash soiled reusable clothing separately. Workers must take a shower after each shift.



Empty containers

Non-returnable empty containers must be triple rinsed before they can be disposed. For others the recommendation of the producer must be followed.



Spillage

Spillage must be avoided; it must be thoroughly cleaned up to avoid contaminating the environment and waterways.



Maintenance

Keep machinery clean between treating sessions.





REFERENCE SYMBOLS

Symbols and signal words are used to identify the level of hazard and help avoid personal injury.



Note: Safety signs and labels conform to the requirements of ANSI Z535.4 or ISO 3864.



Shock Hazard

Alerts that dangerous voltage may be present.



Warning

Alerts that a hazard may cause serious injury or death.



Caution

Alerts that a hazard may cause minor or moderate injury.



Hand crush - moving parts

Alerts crushing is possible.



Pinch point

Keep hands away from pinch points.



Rotating shaft

Do not wear loose clothing around turning parts.



Disconnect

Disconnect to de-energize before opening.



Use guards

Keep guards in place. Do not remove during operation.



Lifting

Requires two people to safely lift an item.



Lift points

Requires the use of proper rigging and lifting techniques based on the lift plan.



Center of gravity

Indicates the center of gravity of the machine to help assist when rigging and lifting.



Tools

Required tools for installation and maintenance.



Parts

Required parts for installation and maintenance.



Tip

Calls attention to special information.



Note

Emphasizes general information worthy of attention.



Example

Provides a problem or exercise that illustrates a method or principle.

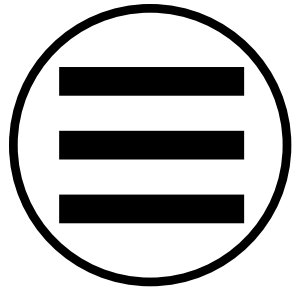




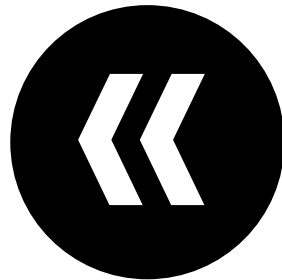
PICTOGRAMS

i

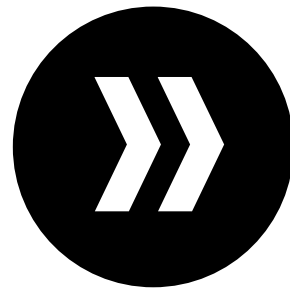
Each Signifier displayed here is specific to this User Manual.



Menu



Previous



Advance



RMOM



Polishing Drum



Calibration



Initiate HMI



Surge Bin



BS Scale



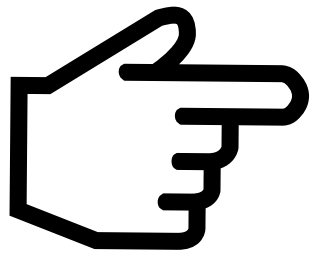
Setup



Alarms



Pump



Hand Cursor



Like



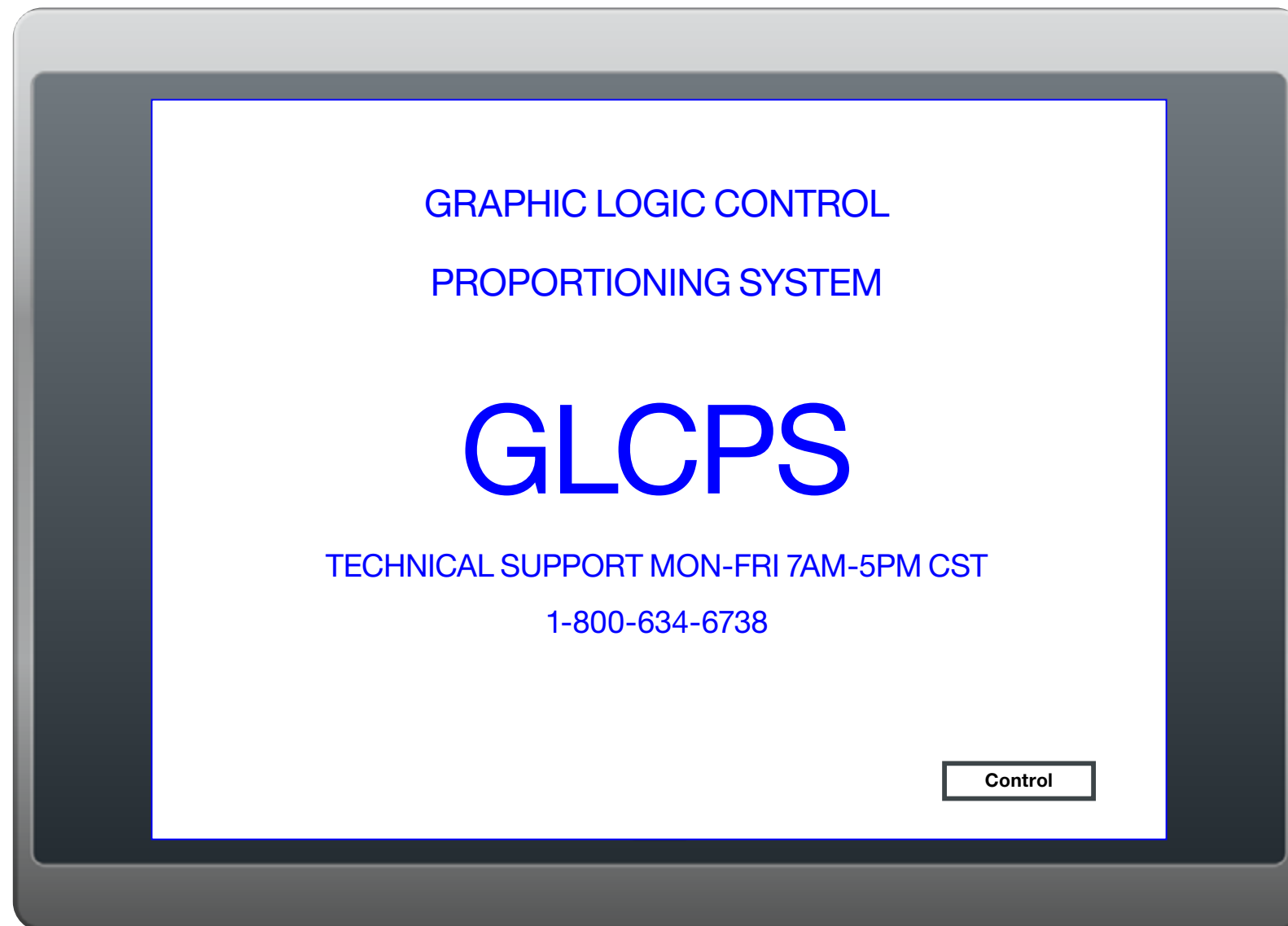


EXPLANATORY NOTES

GLCPS Run Time Application Program

The LCD touch sensitive viewer panel is located on front of the Human Machine Interface (HMI) Control Box. Interactive run time application program screens display on the HMI touch panel, as shown below.

Step 1: Touch the yellow **CURSOR HAND** icon: navigates to the **HOME SCREEN** ↻





INITIATE HMI

PUMPS WITH FLOW METERS -

HOME SCREEN

Step 1: Touch the HMI LCD viewer screen to activate the program: the **HOME SCREEN** will display (as shown RIGHT).

Step 2: Touch the **CONTROL** button icon: navigates to the **CONTROL SELECT SCREEN** ➔

GRAPHIC LOGIC CONTROL
PROPORTIONING SYSTEM

GLCPS

TECHNICAL SUPPORT MON-FRI 7AM-5PM CST
1-800-634-6738

Control

Copyright: Bayer



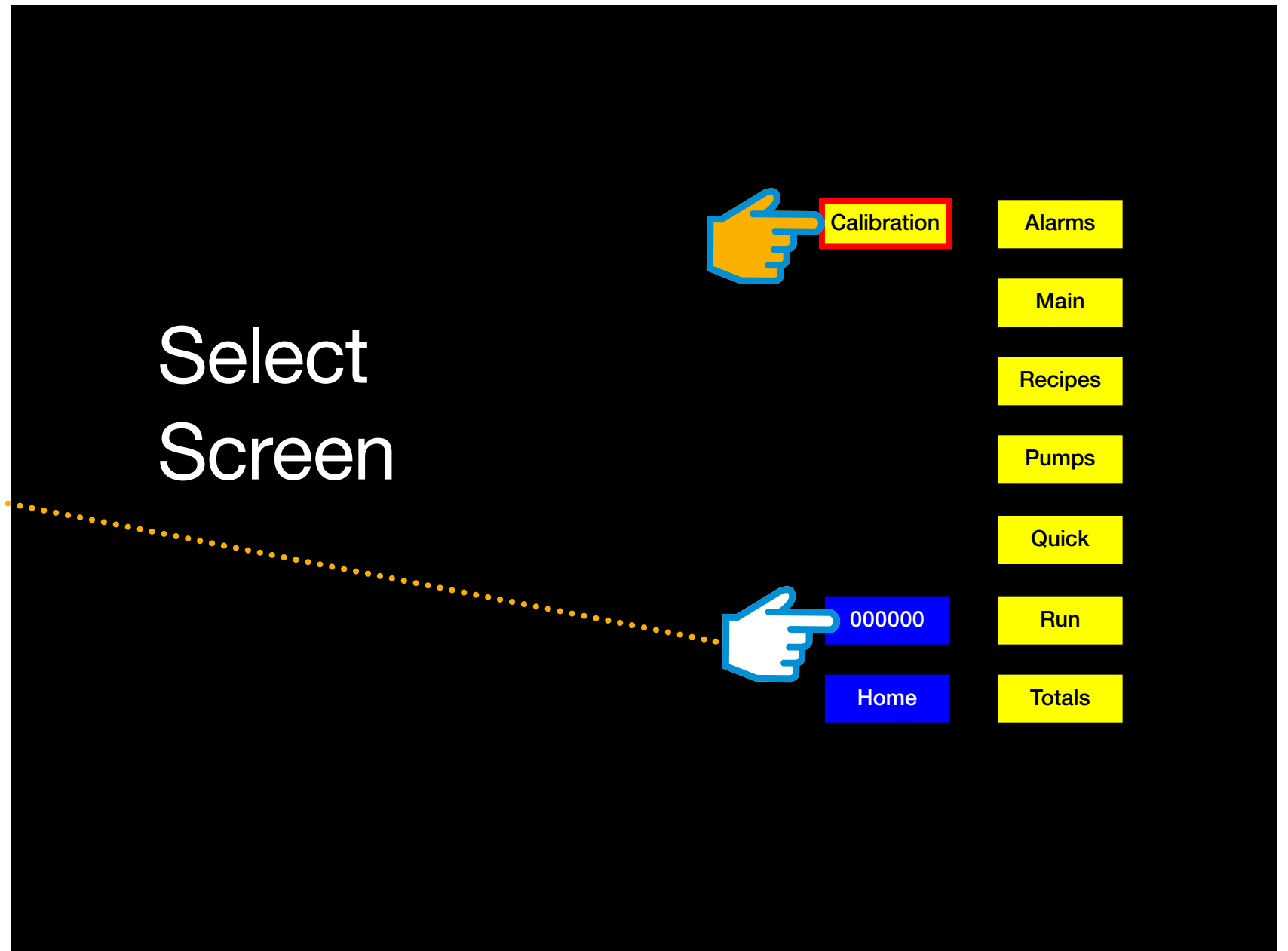
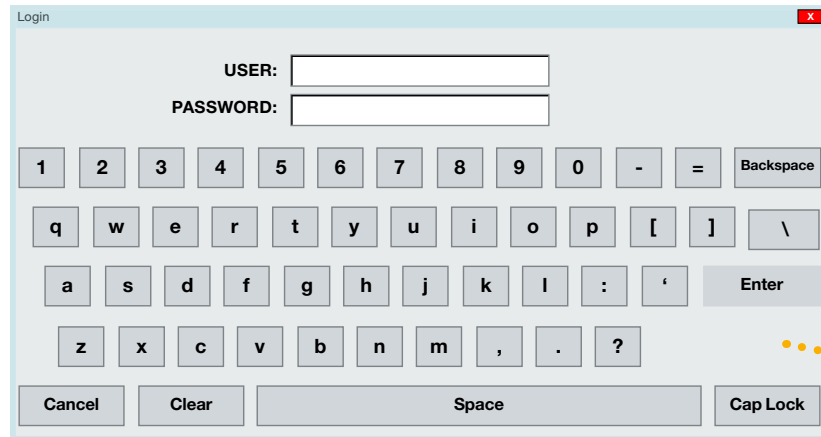


PUMP SETUP

CONTROL SELECT SCREEN

Step 1: Touch the blue **000000** button icon. A pop-up keyboard will appear to enter an approved password.

Step 2: Touch the yellow **Calibration** button icon: navigates to the **CALIBRATION HOME SCREEN** ➔






Note: the yellow **Setup** button icon only displays on the **Calibration Home Screen** when the user is logged in with an approved password for initial setup (see page 6).

Calibration Home Screen

| | | Last Calibration |
|--------|------------|---------------------|
| | Cal Scale | 01\08\2018 1:41:03 |
| Pump 1 | Cal Pump 1 | 01\08\2018 12:01:00 |
| Pump 2 | Cal Pump 2 | 01\08\2018 8:08:00 |
| Pump 3 | Cal Pump 3 | 01\07\2018 7:10:00 |
| Pump 4 | Cal Pump 4 | 01\07\2018 9:08:00 |
| Pump 5 | Cal Pump 5 | 01\07\2018 12:05:00 |
| Pump 6 | Cal Pump 6 | 01\07\2018 1:01:00 |
| Pump 7 | Cal Pump 7 | 01\06\2018 11:03:00 |
| Pump 8 | Cal Pump 8 | 01\06\2018 5:00:00 |

 **Setup** **Calibration Enabled** **Control**

CALIBRATION HOME SCREEN

Step 1: Touch the yellow **Setup** button icon: navigates to the **CALIBRATION SETUP SCREEN** ➔





Note: the **Calibration Setup Screen** is accessible only when the user is logged in with an approved password for initial setup (see page 5).

| | | Flow Meter | |
|----|-------|------------|------------------------|
| P1 | Pump1 | 5 | 1: 505/w 1.6mm element |
| P2 | Pump2 | 5 | 2: 505/w 3.2mm element |
| P3 | Pump3 | 5 | 3: 505/w 4.8mm element |
| P4 | Pump4 | 5 | 4: 505/w 6.4mm element |
| P5 | Pump5 | 5 | 5: I/P-26 |
| P6 | Pump6 | 5 | 6: I/P-73 |
| P7 | Pump7 | 5 | 7: B/T-86 |
| P8 | Pump8 | 5 | 8: 00000.0000 |

Pump Setup Screen
(For setup of pumps prior to Calibration)

WARNING
Pressing any of these eight keys will affect that pump's calibration

P1 P2 P3 P4 P5 P6 P7 P8

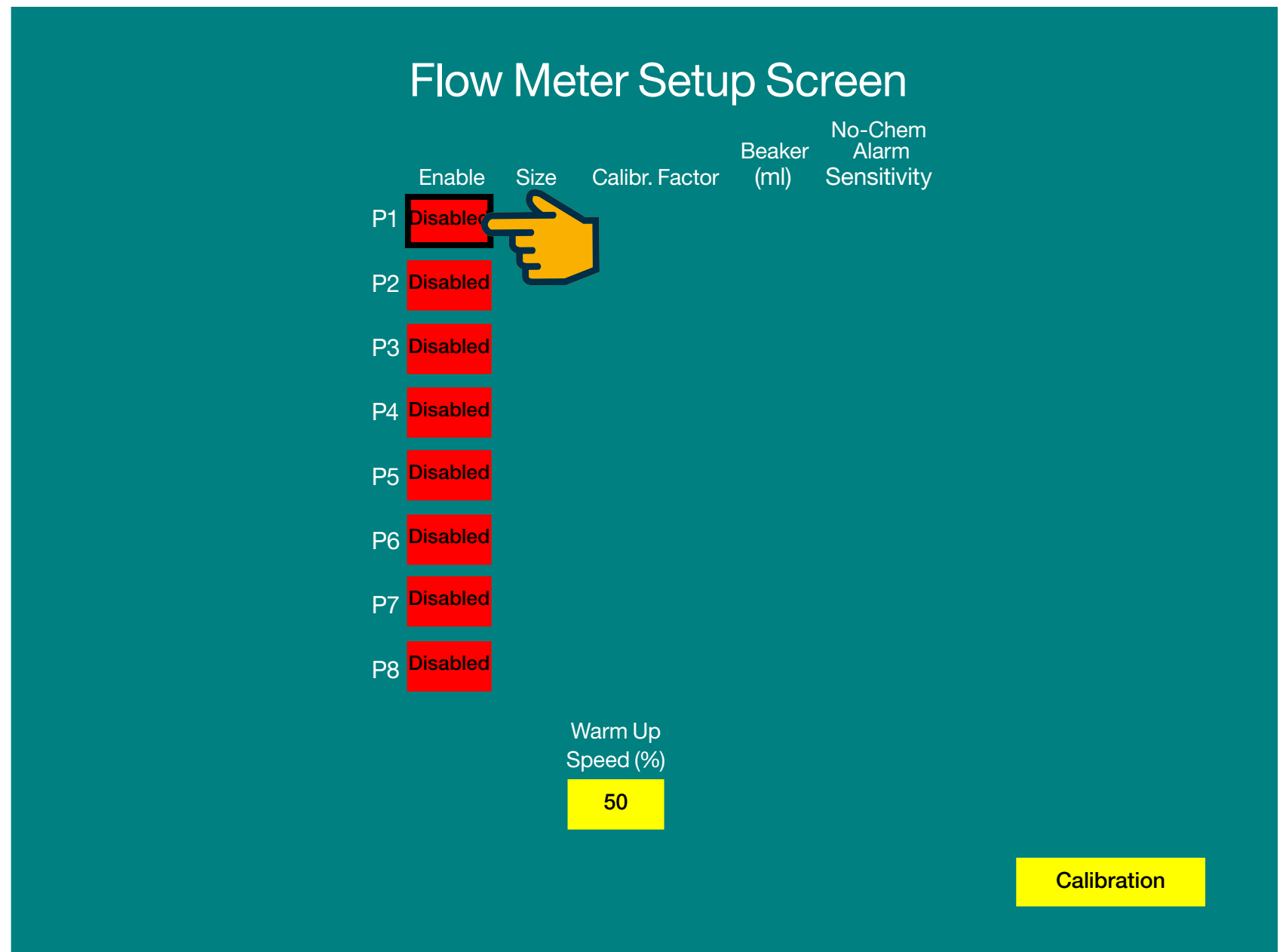
Flow Meter Setup Calibration

CALIBRATION SETUP SCREEN

The **CALIBRATION SETUP SCREEN** displays all of the pumps (1-8) with the Flow Meter disabled, as indicated by the red square next to the yellow number box, as shown above.

Step 1: Touch the yellow **Flow Meter Setup** button icon: navigates to the **FLOW METER SETUP SCREEN** ➔



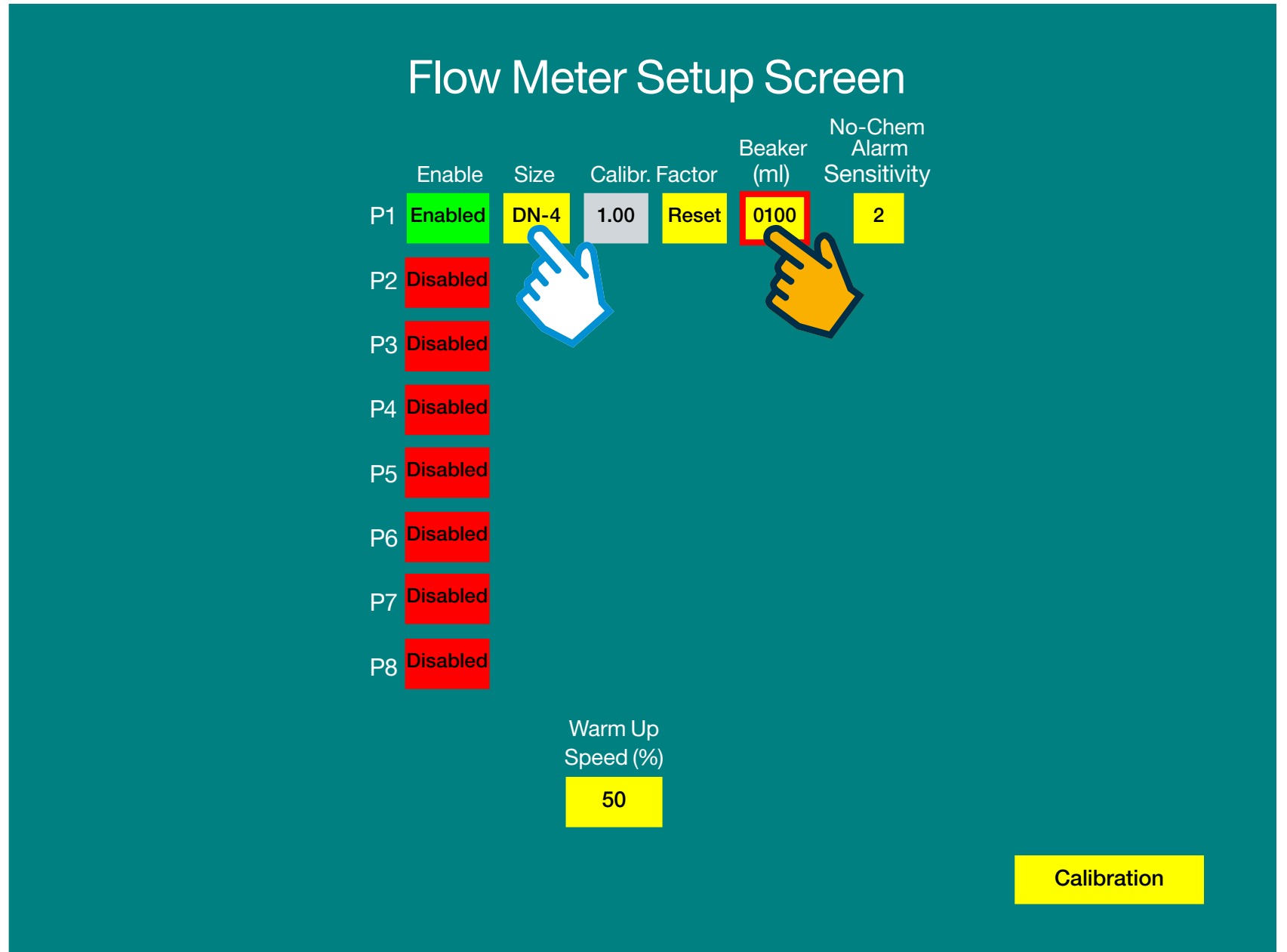
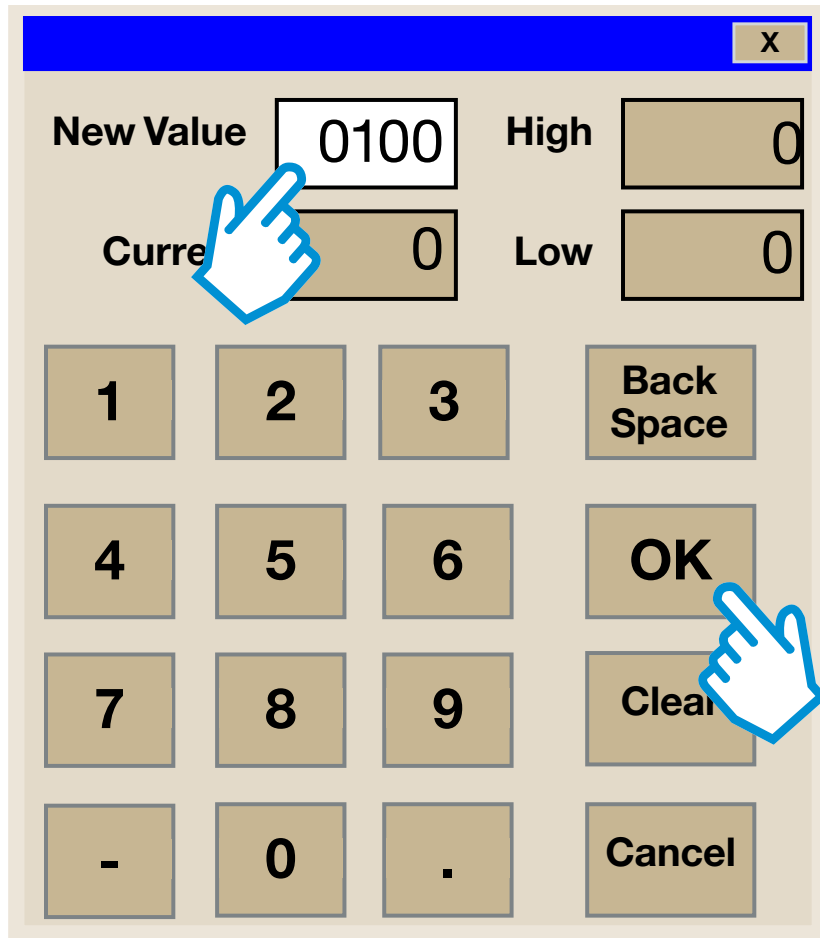


FLOW METER SETUP SCREEN

The **FLOW METER SETUP SCREEN** allows access to enable flow meters for pumps 1-8.

Step 1: Touch the red P1 **Disabled** button icon ➡





FLOW METER SETUP SCREEN

The red P1 **Disabled** button icon now displays green, indicating that the flow meter is now enabled.

Step 1: Touch the yellow **DN-4** button icon to toggle the flow meter size between DN-4 or DN-8.

Step 2: Touch the yellow **Beaker (ml)** button icon to enter the beaker size (either 0100 or 3000) on a pop-up key pad.

Repeat Steps 1 & 2 above for P2 ↻



Flow Meter Setup Screen

| | Enable | Size | Calibr. Factor | | Beaker (ml) | No-Chem Alarm Sensitivity |
|----|----------|------|----------------|-------|-------------|---------------------------|
| P1 | Enabled | DN-4 | 1.00 | Reset | 0100 | 2 |
| P2 | Enabled | DN-4 | 1.00 | Reset | 3000 | 2 |
| P3 | Disabled | | | | | |
| P4 | Disabled | | | | | |
| P5 | Disabled | | | | | |
| P6 | Disabled | | | | | |
| P7 | Disabled | | | | | |
| P8 | Disabled | | | | | |

Warm Up Speed (%)

50



FLOW METER SETUP SCREEN


The **FLOW METER SETUP SCREEN** now displays P1 enabled using a DN-4 flow meter and a 0100 ml beaker and the P2 enabled using a DN-8 flow meter and a 3000 ml beaker.

Step 1: Touch the yellow **Calibration** button icon: navigates to the **CALIBRATION HOME SCREEN** ↻



Calibration Home Screen

| | | Last Calibration |
|--------|------------|---------------------|
| | Cal Scale | 01\08\2018 1:41:03 |
| Pump 1 | Cal Pump 1 | 01\08\2018 12:01:00 |
| Pump 2 | Cal Pump 2 | 01\08\2018 8:08:00 |
| Pump 3 | Cal Pump 3 | 01\07\2018 7:10:00 |
| Pump 4 | Cal Pump 4 | 01\07\2018 9:08:00 |
| Pump 5 | Cal Pump 5 | 01\07\2018 12:05:00 |
| Pump 6 | Cal Pump 6 | 01\07\2018 1:01:00 |
| Pump 7 | Cal Pump 7 | 01\06\2018 11:03:00 |
| Pump 8 | Cal Pump 8 | 01\06\2018 5:00:00 |


Setup

Calibration Enabled

Control

CALIBRATION HOME SCREEN

Step 1: Touch the yellow **Setup** button icon: navigates to the **CALIBRATION SETUP SCREEN** ➡



CALIBRATION SETUP SCREEN

The **CALIBRATION SETUP SCREEN** now displays P1 & P2 enabled with flow meters, as indicated by the green box next to yellow number box, as shown above.

Step 1: Touch the P1 yellow **NUMBER** button icon to enter the desired pump element (as listed on the right of screen, 1-8) on a pop-up key pad.

Step 2: Touch the yellow **P1** button icon to synchronize the pump flow rate to the pump element selected (previous step). Repeat steps 1 & 2 for P2.

Setup of pumps with flow meters is now complete.

Step 3: Touch the yellow **Calibration** button icon: navigates to the **CALIBRATION HOME SCREEN** ↻

The keypad shows the following fields and controls:

- New Value:** Input field containing '1'. A hand icon points to this field.
- High:** Input field containing '0'.
- Current:** Input field containing '0'. A hand icon points to this field.
- Low:** Input field containing '0'.
- Buttons:** A numeric keypad (1-9, 0, ., -), a 'Back Space' button, an 'OK' button (with a hand icon pointing to it), a 'Clear' button, and a 'Cancel' button.

Pump Setup Screen
(For setup of pumps prior to Calibration)

WARNING
Pressing any of these eight keys will affect that pump's calibration

| Pump | Element | Flow Meter | Element Description |
|------|---------|------------|------------------------|
| P1 | Pump1 | 5 | 1: 505/w 1.6mm element |
| P2 | Pump2 | 5 | 2: 505/w 3.2mm element |
| P3 | Pump3 | 5 | 3: 505/w 4.8mm element |
| P4 | Pump4 | 5 | 4: 505/w 6.4mm element |
| P5 | Pump5 | 5 | 5: I/P-26 |
| P6 | Pump6 | 5 | 6: I/P-73 |
| P7 | Pump7 | 5 | 7: B/T-86 |
| P8 | Pump8 | 5 | 8: 00000.0000 |

At the bottom, there are two buttons: 'Flow Meter Setup' and 'Calibration'. A hand icon points to the 'Calibration' button.





PUMP CALIBRATION



Note: calibration examples given are representative only and meant to replicate real-time calibration.

PUMPS WITH FLOW METERS - CALIBRATION HOME SCREEN

The next step will be to calibrate pumps P1 & P2 with flow meters enabled.

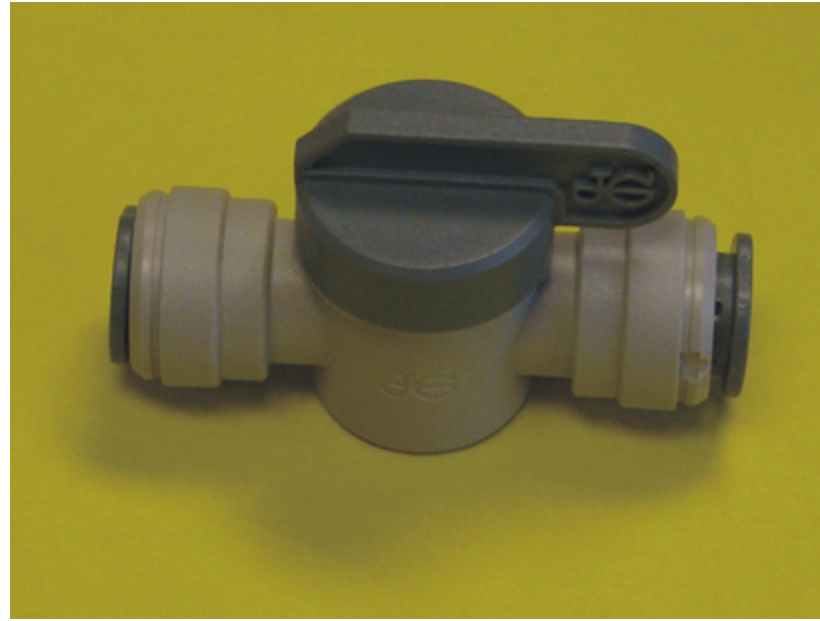
Step 1: Touch the yellow **Cal Pump 2** button icon: navigates to the **CALIBRATE PUMP WITH FM SCREEN** ↻

Calibration Home Screen

| | | Last Calibration |
|--------|------------|---------------------|
| | Cal Scale | 01\08\2018 1:41:03 |
| Pump 1 | Cal Pump 1 | 01\08\2018 12:01:00 |
| Pump 2 | Cal Pump 2 | 01\08\2018 8:08:00 |
| Pump 3 | Cal Pump 3 | 01\07\2018 7:10:00 |
| Pump 4 | Cal Pump 4 | 01\07\2018 9:08:00 |
| Pump 5 | Cal Pump 5 | 01\07\2018 12:05:00 |
| Pump 6 | Cal Pump 6 | 01\07\2018 1:01:00 |
| Pump 7 | Cal Pump 7 | 01\06\2018 11:03:00 |
| Pump 8 | Cal Pump 8 | 01\06\2018 5:00:00 |

Setup Calibration Enabled Control





CALIBRATE PUMP WITH FM SCREEN

Step 1: Turn the plastic calibration Shut-off Valve (located underneath the CBP Tank Calibration Cylinder) to the **LEFT (OPEN FLOW)** position, as shown).



Step 2: Turn the 3-way Valve above the Flow Meter on the CBP Tank to the **RECIRCULATE** position (turn Valve handle **LEFT, DOWN**, as shown) ↻



Pump 2 Flow Rate Calibration

Step1: Pump Warm Up (min)

Step2: Jog Pump: Liquid to Zero on Calibration Beaker (%)

Step3: Set Calibration Pump Speed & Amount (oz/min) (%) Beaker Fill

Step4: Start Pump to Fill Beaker

Step5: Enter Liquid Amount Captured in Beaker (mL) Flowmeter Total (mL)

Beaker Size (mL)

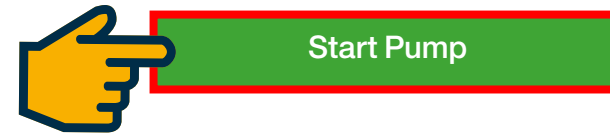
Pump Warm Up

Step 3: Touch the purple **minute** button icon to enter the run time on a pop-up key pad. Set the pump to run for at least one minute.

Step 4: Touch the green **Start** button icon: navigates to the **VERIFICATION SCREEN** ➔



- Please Verify -
Recirculation Valve is in Correct Position



Cancel

VERIFICATION SCREEN

Verify that the P2 calibration shut-off valve is in the recirculate position and the flow meter valve is in the treat position, as shown on page 15!

Step 1: Touch the **START PUMP** button icon: the pump will run for at least one minute ↻





Note: if using a 100ml beaker, jog chemical up to the **10ml** line.

CALIBRATE PUMP WITH FM SCREEN

After the pump starts, the green **Start** button icon displays the percentage of completion - running the pump for the time established on the purple **minute** button icon (2.0 minutes). The pump will stop after running for two minutes.

Step 1: Turn the P2 calibration shut-off valve to the **calibrate** position and the flow meter valve to the **calibrate UP** position, as both shown below ➡



Beaker Size
3000
(mL)

Cancel

Pump 2 Flow Rate Calibration

Step1: Pump Warm Up

2.0
(min)

75%

Step2: Jog Pump: Liquid to Zero on Calibration Beaker

Jog

20
(%)

Step3: Set Calibration Pump Speed & Amount

100.0
(oz/min)

90
(%) Beaker Fill

Step4: Start Pump to Fill Beaker

Start

Step5: Enter Liquid Amount Captured in Beaker

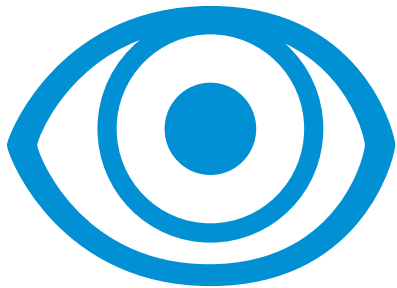
0000
(mL)

0000
Flowmeter Total
(mL)



Jog Pump: Liquid to Zero on Calibration Beaker

Step 1: Touch and hold the yellow **Jog** button icon while looking at the calibration beaker on top of the CBP tank until chemical reaches the Zero mark on the beaker, as shown below. Release the yellow **Jog** button icon when chemical reaches the Zero mark →



Pump 2 Flow Rate Calibration

Step1: Pump Warm Up (min)

Step2: Jog Pump: Liquid to Zero on Calibration Beaker (%)

Step3: Set Calibration Pump Speed & Amount (oz/min) (%) Beaker Fill

Step4: Start Pump to Fill Beaker

Step5: Enter Liquid Amount Captured in Beaker (mL) Flowmeter Total (mL)

Beaker Size (mL)



CALIBRATE PUMP WITH FM SCREEN

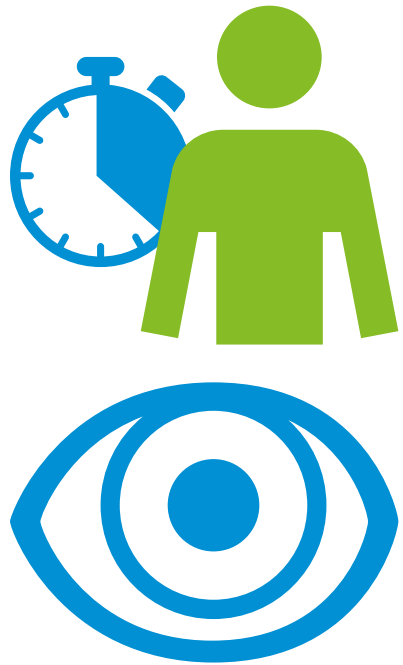
Set Calibration Pump Speed & Amount

This determines how many ounces of chemical are pumped per minute.

Step 1: Touch the purple **OZ/MIN** button and enter a rate (ideally the same as the actual treating rate) on the pop-up key pad.

Start Pump to Fill Beaker

Step 2: Touch the green **Start** button. The calibration beaker will fill with chemical 90%, as indicated on the purple % **beaker fill** button icon, as shown right. Fill the beaker as much as possible for accurate reading.



Pump 2 Flow Rate Calibration

Step1: Pump Warm Up (min)

Step2: Jog Pump: Liquid to Zero on Calibration Beaker (%)

Step3: Set Calibration Pump Speed & Amount (oz/min) (%) **Beaker Fill**

Step4: Start Pump to Fill Beaker

Step5: Enter Liquid Amount Captured in Beaker (mL) Flowmeter Total (mL)

Beaker Size (mL)

| | | | |
|-----------|------------------------------------|------|--------------------------------|
| New Value | <input type="text" value="100.0"/> | High | <input type="text" value="0"/> |
| Current | <input type="text" value="0"/> | Low | <input type="text" value="0"/> |
| 1 | 2 | 3 | Back Space |
| 4 | 5 | 6 | OK |
| 7 | 8 | 9 | Clear |
| - | 0 | . | Cancel |





Note: if using a 100ml beaker, subtract **10** from the total amount of chemical pumped: oz/min rate.

Pump 2 Flow Rate Calibration

| | | |
|---|-------------------|----------------------------|
| Step1: Pump Warm Up | 2.0 (min) | Start |
| Step2: Jog Pump: Liquid to Zero on Calibration Beaker | Jog | 20 (%) |
| Step3: Set Calibration Pump Speed & Amount | 100.0 (oz/min) | 90 (%) Beaker Fill |
| Step4: Start Pump to Fill Beaker | Start | |
| Step5: Enter Liquid Amount Captured in Beaker | 0000 (mL) | 000 meter Total (mL) |

Beaker Size
3000
(mL)

Cancel

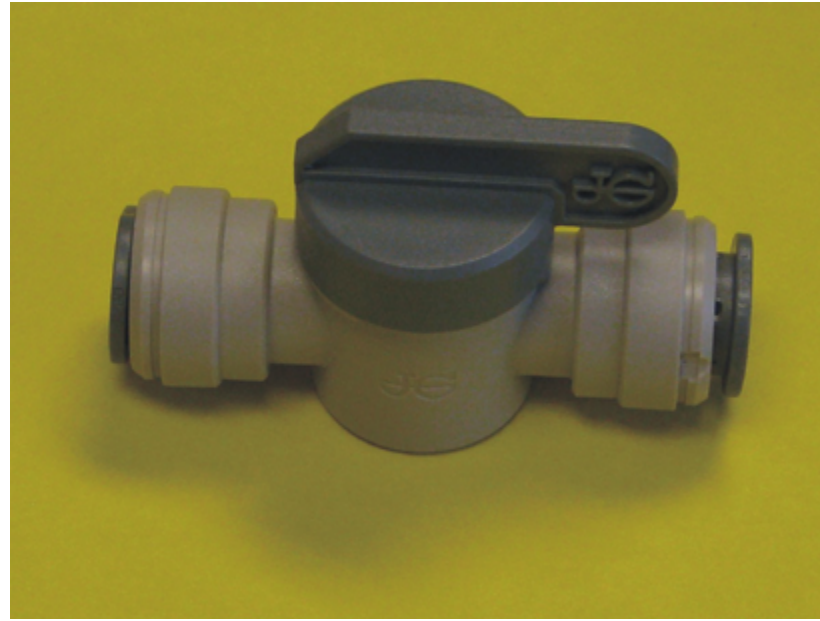
CALIBRATE PUMP WITH FM SCREEN

Step 5: Enter Liquid Amount Captured in Beaker

This is how many ounces of chemical were pumped into the calibration beaker. Look at the calibration beaker to see the total amount of chemical in the calibration beaker.

Step 1: Touch the purple **ML** button and enter the amount on the pop-up key pad ➡





Step 1: Turn the plastic calibration Shut-off Valve (located underneath the CBP Tank Calibration Cylinder) to the **LEFT (OPEN)** position, as shown).



Step 2: Turn the 3-way Valve above the Flow Meter on the CBP Tank to the **TREAT** position (turn Valve handle **LEFT DOWN**, as shown) ⇄



Pump 2 Flow Rate Calibration

Step1: Pump Warm Up (min)

Step2: Jog Pump: Liquid to Zero on Calibration Beaker (%)

Step3: Set Calibration Pump Speed & Amount (oz/min) (%) Beaker Fill

Step4: Start Pump to Fill Beaker

Step5: Enter Liquid Amount Captured in Beaker (mL) Flowmeter Total (mL)

Beaker Size (mL)

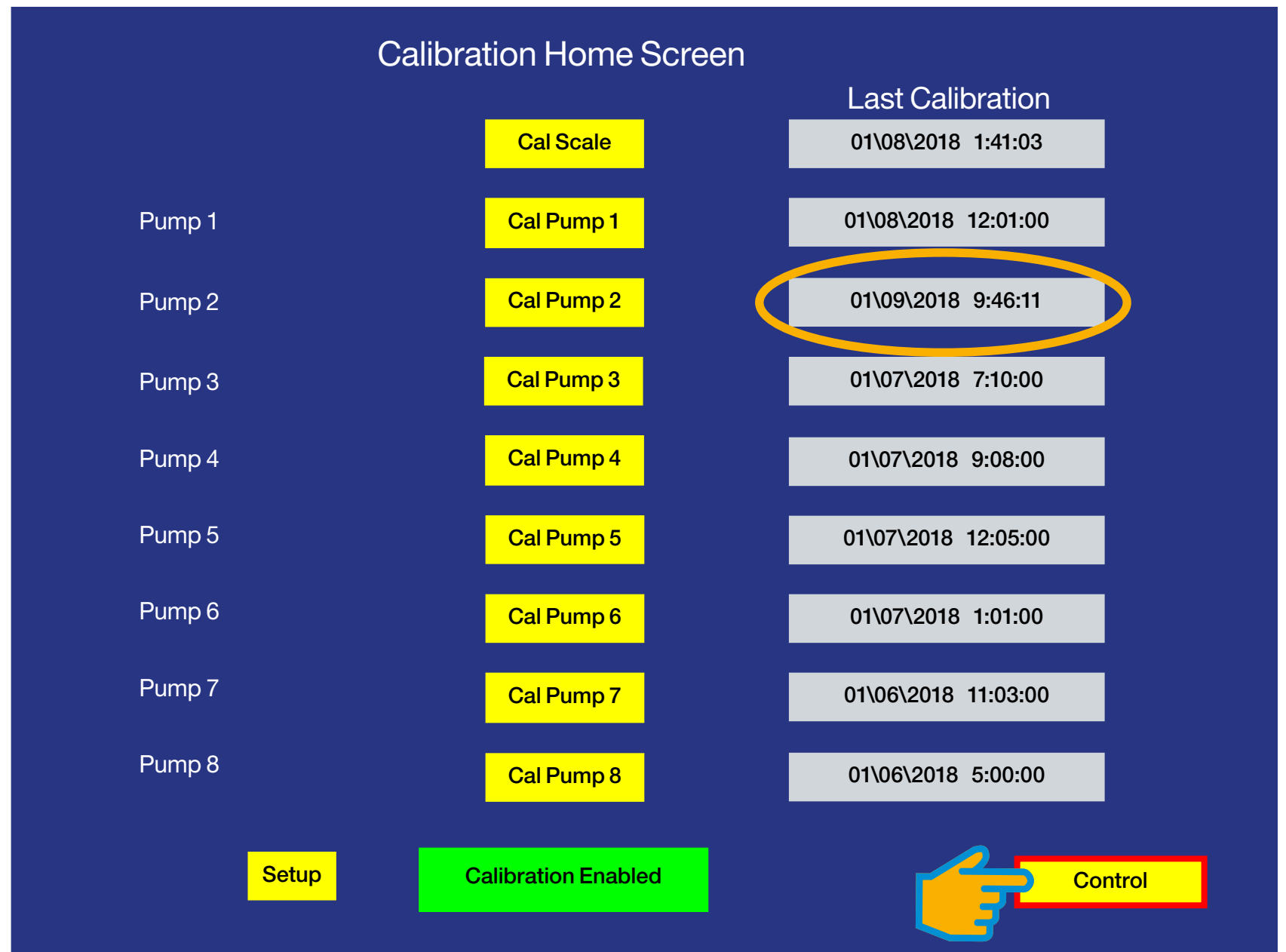


Enter Liquid Amount Captured in Beaker

The purple and gray button icons will then display the total amount of chemical in the calibration beaker. **Calibration of P2 with flow meter is now complete.**

Step 3: Touch the green **Accept** button icon: navigates to the **CALIBRATION HOME SCREEN** ➔





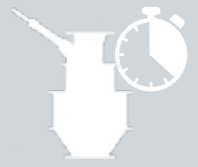
CALIBRATION HOME SCREEN

Observe the Last Calibration date reflects the change. Repeat the calibration process for pumps with flow meters (P1) as shown on pages 14-23.

Proceed to calibrate the BC Scale...

Step 1: Touch the yellow **Control** button icon: navigates to the **CONTROL SELECT SCREEN** ➔





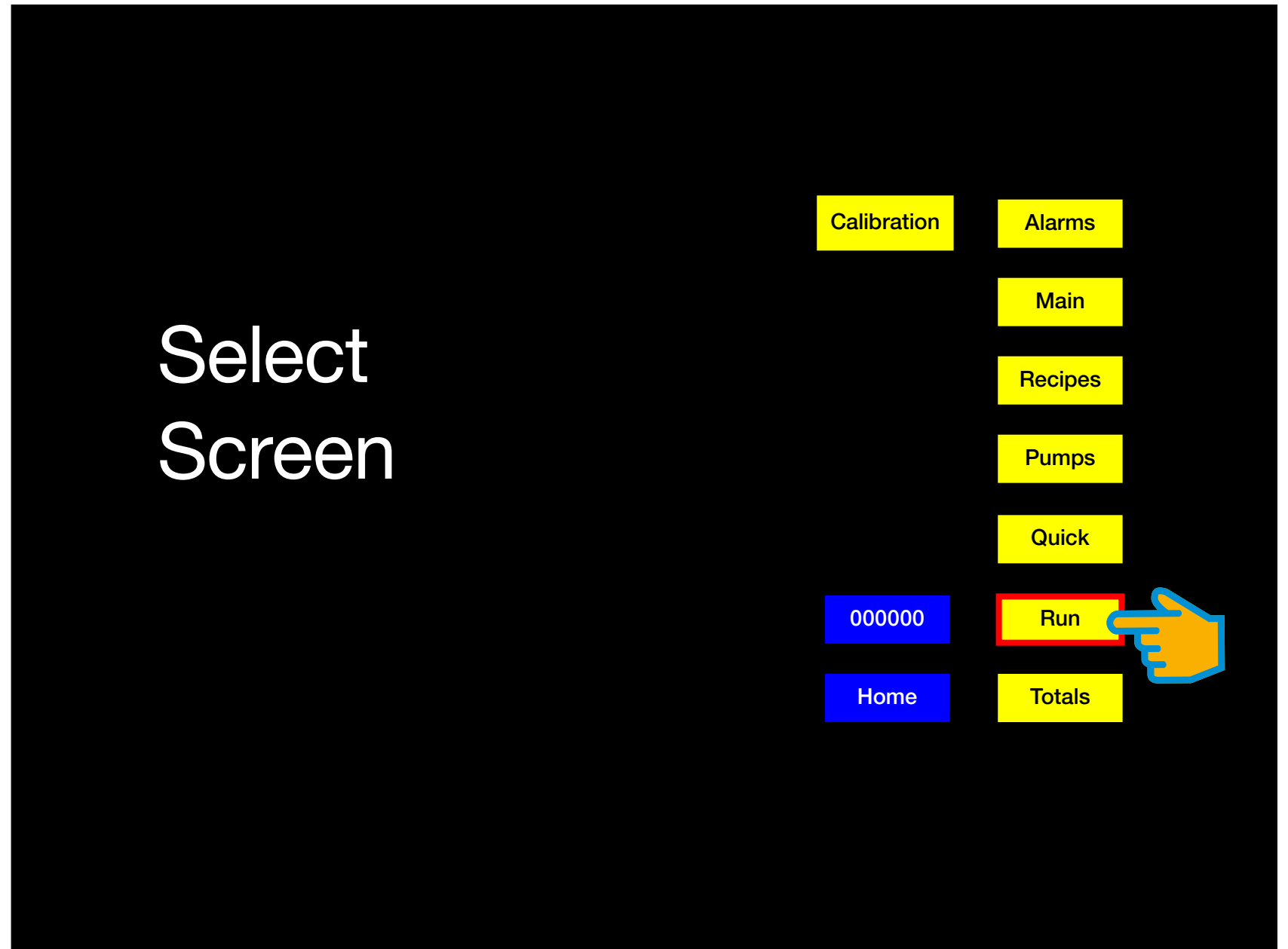
BC SCALE CALIBRATION



Note: calibration examples given are representative only and meant to replicate real-time calibration.

CONTROL SELECT SCREEN

Step 1: Touch the yellow **Run** button icon:
navigates to the **RUN SCREEN** ➔





Note: ensure the Scale is clear of all debris and seed prior to calibration.

The screenshot displays the 'RUN SCREEN' interface. At the top left, a red box indicates 'Power Off Hopper'. Below this are 'BCS on/off' and 'R.M.O.M on/off' buttons. To the right, 'PWR SG' and 'AIR' buttons are visible. A red circle with 'No Product' is present. The 'chemical source' section is circled in yellow, showing 'Lbs/min' at 0354.9 and 'Totals Pounds' at 00990.5. Below this is a table of pumps (Pump1 to Pump8) with 'on/off' buttons, 'PWR' indicators, and 'Prime' buttons. A green 'Full Prime' button is also shown. At the bottom, there are 'System', 'Start', 'Stop', 'Totals', and 'Control' buttons. A hand icon points to the 'Control' button. A green box on the right says 'Auto Mode Enabled'.

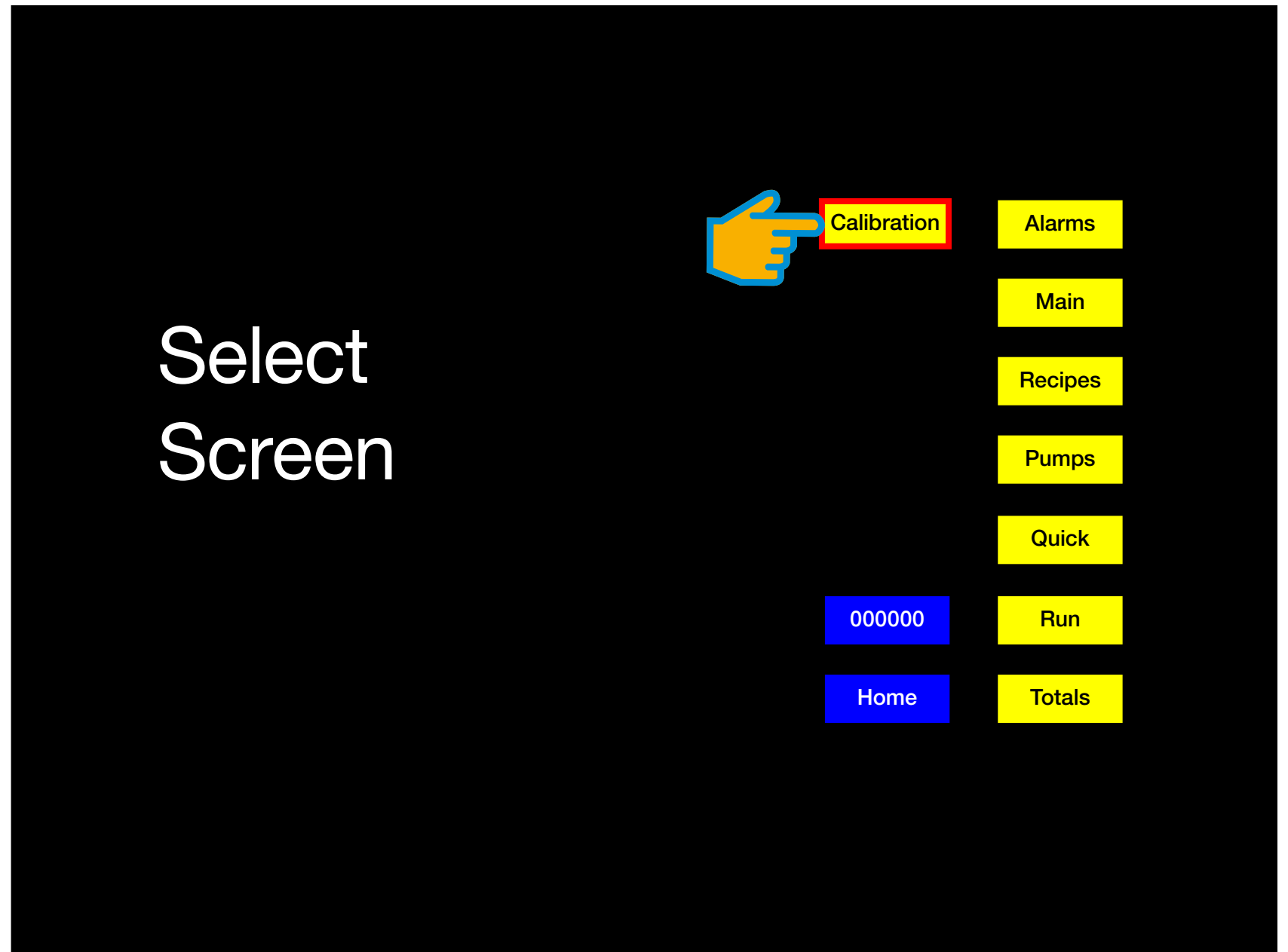
| Pump | on/off | PWR | Prime | Flow (Lbs/min) | Totals (Pounds) |
|-------|--------|-----|-------|----------------|-----------------|
| Pump1 | on/off | | | 0000.00 | 000.00 |
| Pump2 | on/off | | | 0000.00 | 000.00 |
| Pump3 | on/off | | | 0000.00 | 000.00 |
| Pump4 | on/off | | | 0000.00 | 000.00 |
| Pump5 | on/off | | | 0000.00 | 000.00 |
| Pump6 | on/off | | | 0000.00 | 000.00 |
| Pump7 | on/off | | | 0000.00 | 000.00 |
| Pump8 | on/off | | | 0000.00 | 000.00 |

RUN SCREEN

Under **Chemical Source** two blue fields: **Lbs/min & Totals Pounds** both display a numerical value, indicating there is some seed or debris sitting on the scale. These two values need to be refreshed to zero prior to calibration.

Step 1: Touch the yellow **Control** button icon: navigates to the **CONTROL SELECT SCREEN** ➡

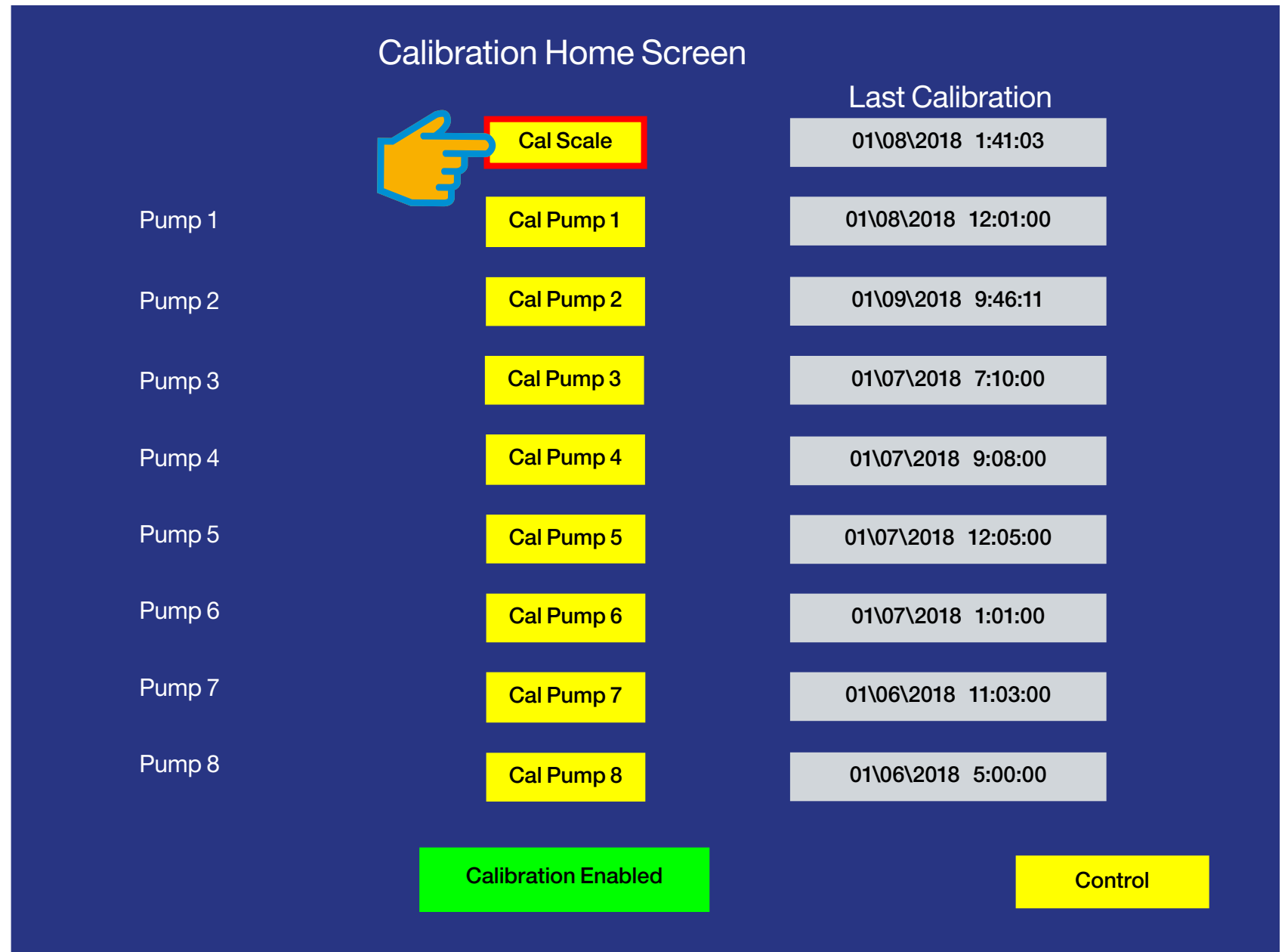




CONTROL SELECT SCREEN

Step 1: Touch the yellow **Calibration** button icon: navigates to the **CALIBRATION HOME SCREEN** ↻

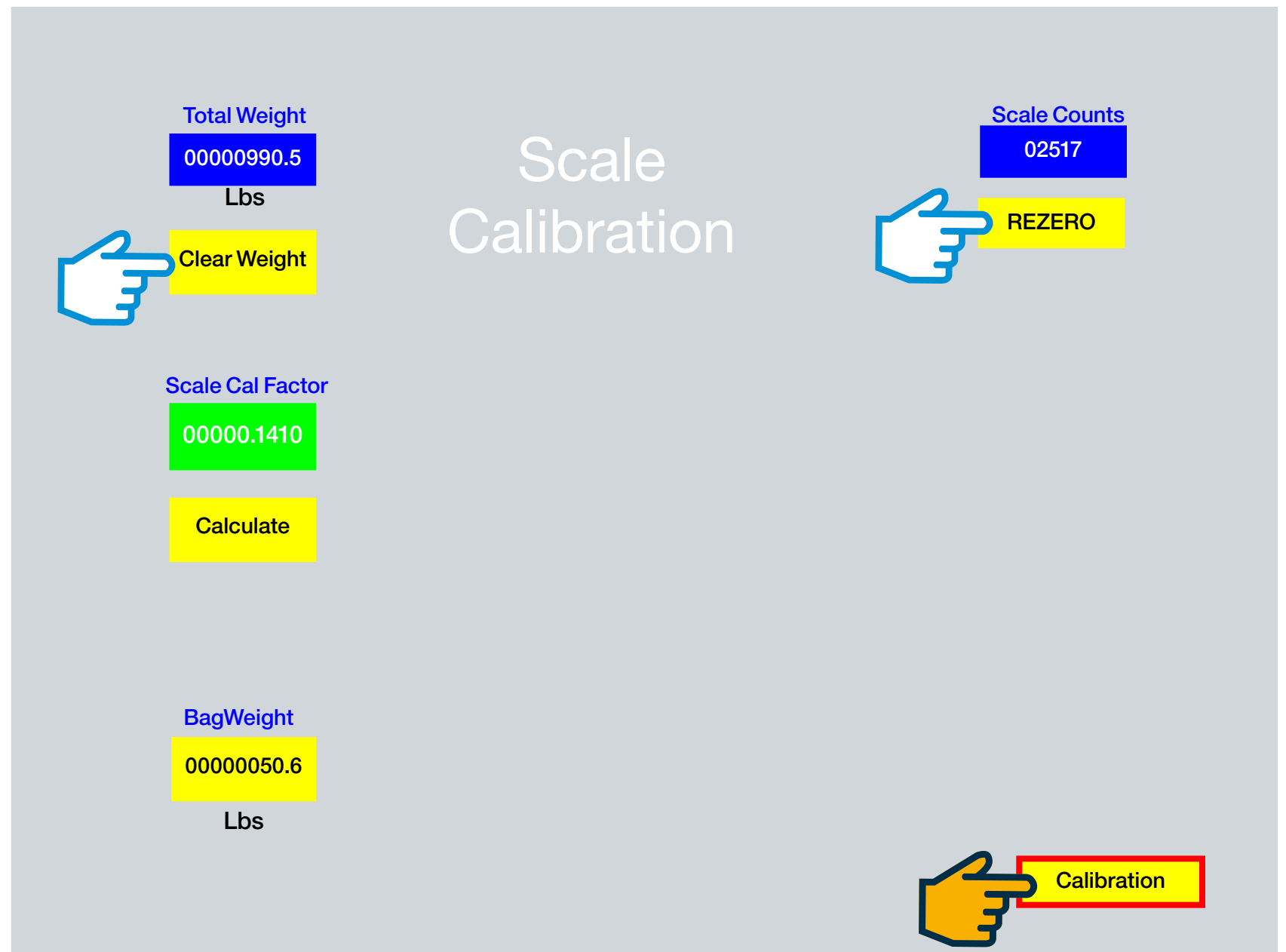




CALIBRATION HOME SCREEN

Step 1: Touch the yellow **Cal Scale** button icon: navigates to the **CALIBRATE SCALE SCREEN** ↻





CALIBRATE SCALE SCREEN

Step 1: Touch the yellow **REZERO** button icon. Numerical value in blue box will display zero.

Step 2: Touch the yellow **Clear Weight** button icon. Numerical value in blue box will display zero.


Step 3: Touch the yellow **Calibration** button icon: navigates to the **CALIBRATION HOME SCREEN** ↻



Calibration Home Screen

| | | Last Calibration |
|--------|------------|---------------------|
| | Cal Scale | 01\08\2018 1:41:03 |
| Pump 1 | Cal Pump 1 | 01\08\2018 12:01:00 |
| Pump 2 | Cal Pump 2 | 01\09\2018 9:46:11 |
| Pump 3 | Cal Pump 3 | 01\07\2018 7:10:00 |
| Pump 4 | Cal Pump 4 | 01\07\2018 9:08:00 |
| Pump 5 | Cal Pump 5 | 01\07\2018 12:05:00 |
| Pump 6 | Cal Pump 6 | 01\07\2018 1:01:00 |
| Pump 7 | Cal Pump 7 | 01\06\2018 11:03:00 |
| Pump 8 | Cal Pump 8 | 01\06\2018 5:00:00 |

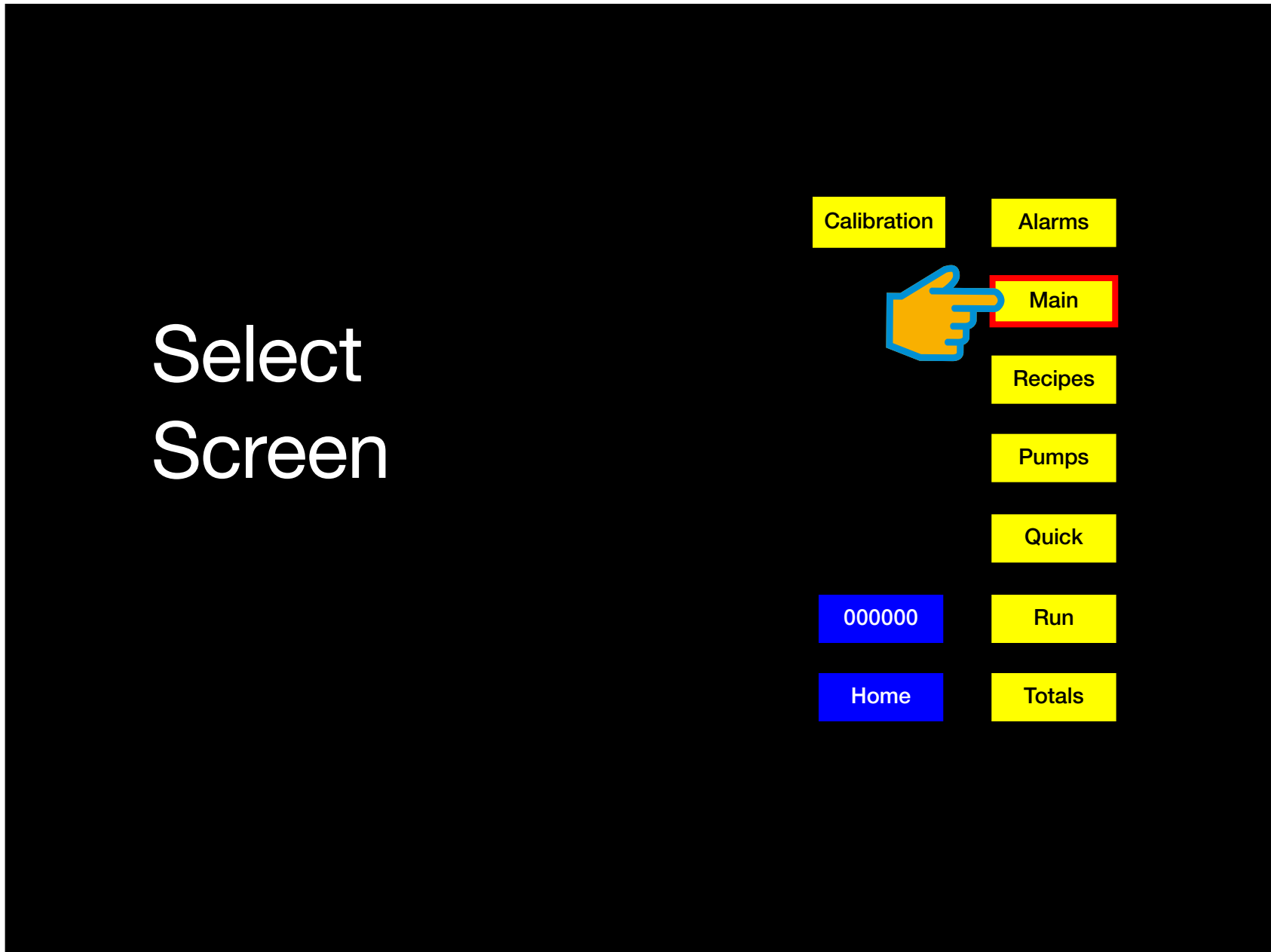
Calibration Enabled


Control

CALIBRATION HOME SCREEN

Step 1: Touch the yellow **Control** button icon: navigates to the **CONTROL SELECT SCREEN** ⇨

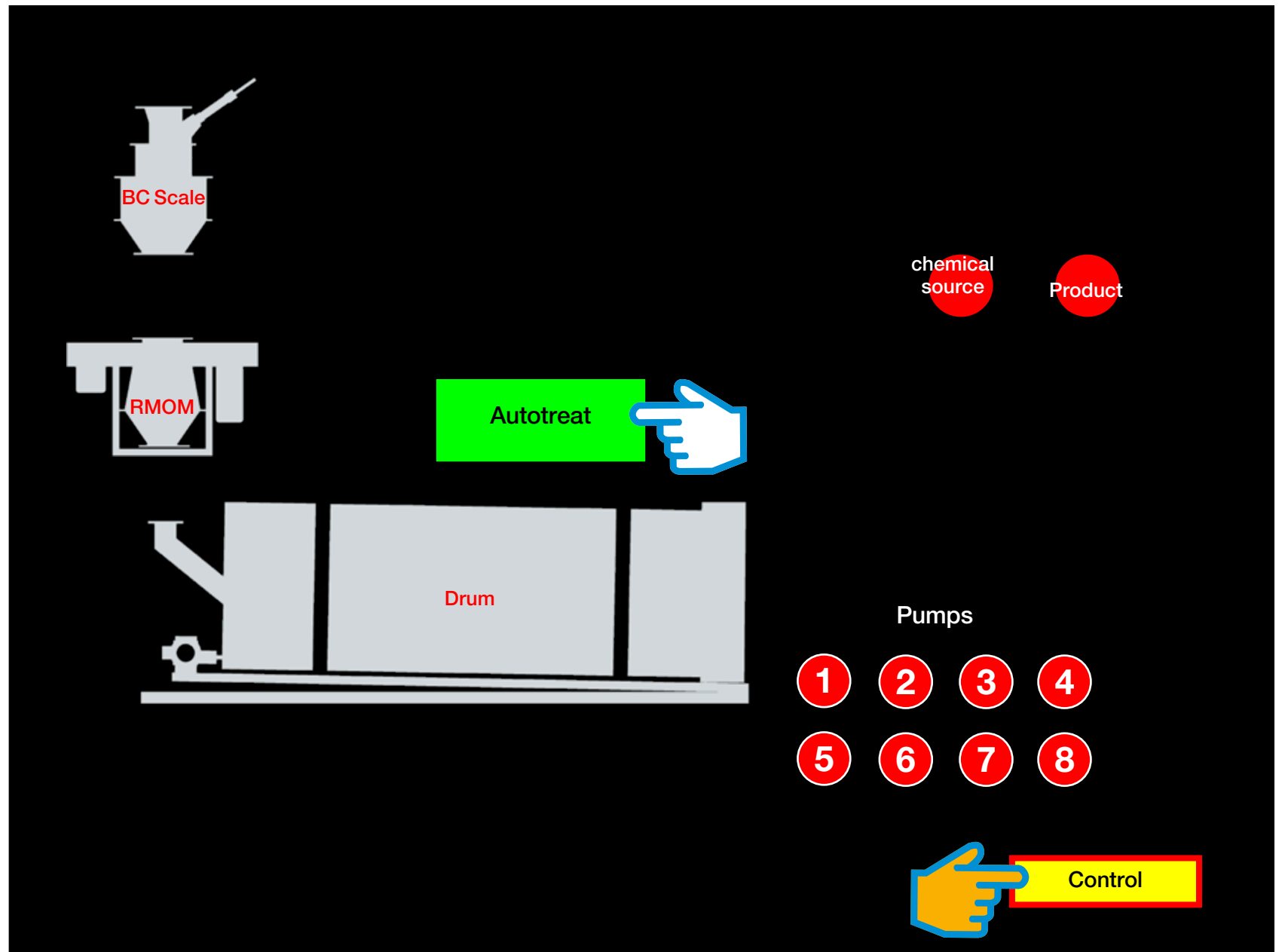




CONTROL SELECT SCREEN

Step 1: Touch the yellow **Main** button icon: navigates to the **MAIN SCREEN** ↻





MAIN SCREEN

Step 1: Touch the green **Autotreat** button icon: changes to red **Notreat** (indicating that the pumps will not run during Scale Calibration).

Step 2: Touch the yellow **Control** button icon: navigates to the **CONTROL SELECT SCREEN** ⇨





CONTROL SELECT SCREEN

Step 1: Touch the yellow **Run** button icon: navigates to the **RUN SCREEN** ➔



RUN SCREEN

Under **Chemical Source** two blue fields: **Lbs/min** & **Totals Pounds** both display a zero numerical value.

The Run screen flashes red **NO TREAT MODE**

Step 1: Touch the red **BCS on/off** button icon (turns green = enabled).

Step 2: Touch the red **RMOM on/off** button icon (turns green = enabled).

Step 3: Touch the red **System** button icon (turns green = enabled). At this point the Scale begin to fill (blue **Lbs/min** numerical value begins to display a numerical value). The known amount of seed is staged above the treater.

Step 4: Touch the red **Start** button icon (turns green = enabled). The red **PWR SG** button icon turns green = enabled the slide gate is open. At this point the Scale begins to fill (blue **Total Pounds** numerical value begins to display a totalized value as if it were treating seed). The green **Stop** button icon turns red.

The system will run seed through the **RMOM** treater without applying chemical.

Allow the treater to totalize until your known amount of seed is done ➡

The screenshot displays the Run Screen interface with the following elements:

- BCS on/off** and **R.M.O.M on/off** buttons (red) with hand icons pointing to them.
- PWR SG** button (red).
- AIR** button (red).
- No Product** indicator (red circle).
- chemical source** section with **Lbs/min** (0000.0) and **Totals Pounds** (00000.0) fields, circled in yellow.
- Pumps** section with **Pump1** through **Pump8** rows, each with **on/off** (red) and **Prime** (red) buttons.
- Full Prime** indicator (green box).
- Enable AutoStop** button (red).
- Auto Mode Enabled** indicator (green box).
- System** (red), **Start** (red), and **Stop** (green) buttons at the bottom, with hand icons pointing to them.
- NO TREAT MODE** indicator (red text).
- Totals** (yellow) and **Control** (yellow) buttons at the bottom right.





Example: the blue Totals Pounds field displays a final total of 372.2 numerical value.

RUN SCREEN

Continue to allow the treater to totalize until the known amount of seed is done.

Step 1: Touch the red **Stop** button icon (turns green). The BC Scale Slide Gate closes and the RMOM stops treating.

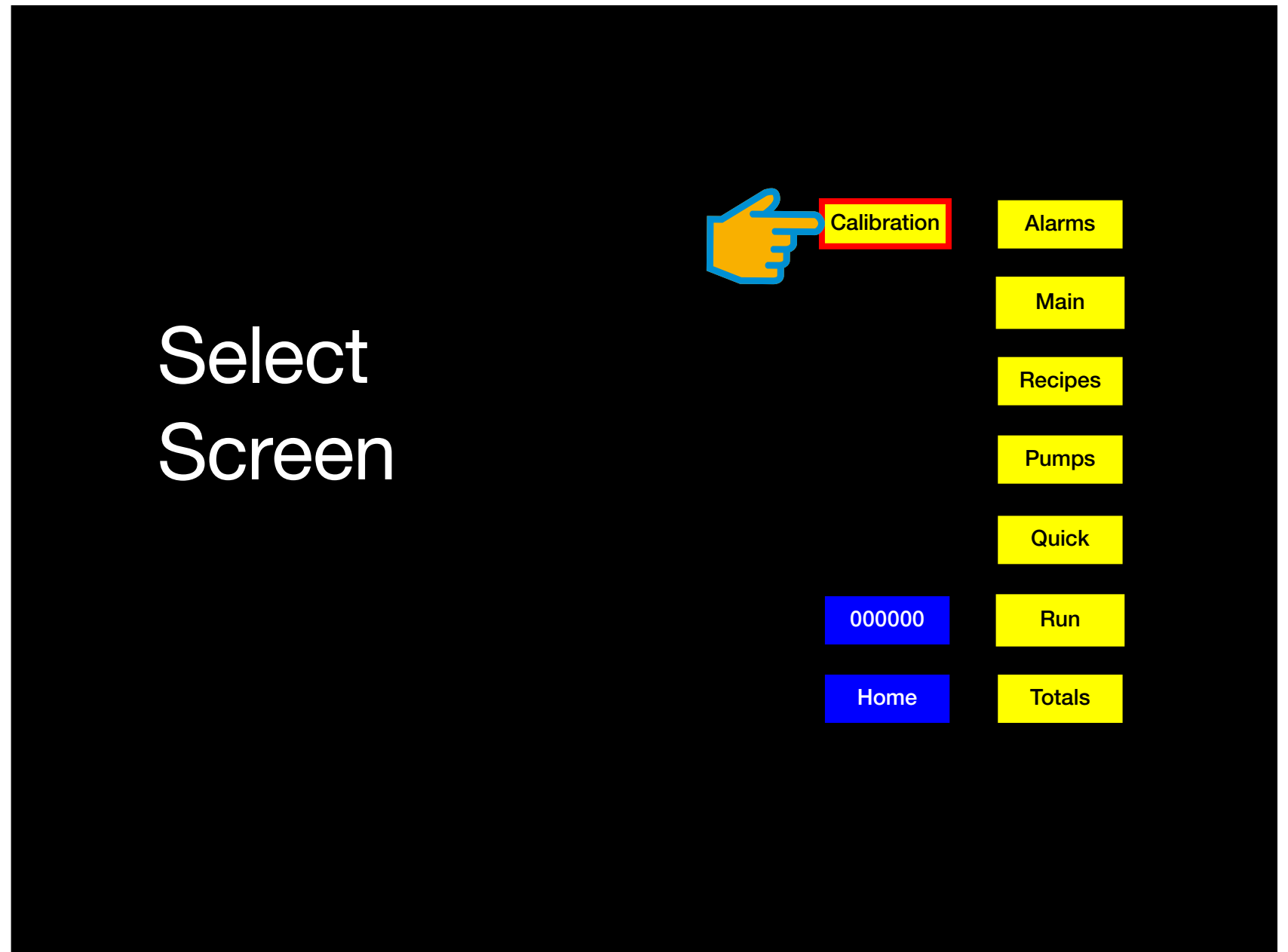
Step 2: Touch the yellow **Control** button icon: navigates to the **CONTROL SELECT SCREEN** ↻

The screenshot displays the RUN SCREEN interface with the following elements:

- System Status:** Power Off Hopper (red box), BCS on/off (green box), PWR SG (green box), R.M.O.M on/off (green box), AIR (red box), No Product (red circle).
- Pump Status Table:**

| Pump | on/off | PWR | Prime | Lbs/min | Oz/min | Totals Pounds | Totals Gallons |
|-------|--------|-----|-------|---------|---------|---------------|----------------|
| Pump1 | on/off | ■ | ■ | 0353.3 | 0000.00 | 00372.2 | 000.00 |
| Pump2 | on/off | ■ | ■ | 0000.00 | 0000.00 | 000.00 | 000.00 |
| Pump3 | on/off | ■ | ■ | 0000.00 | 0000.00 | 000.00 | 000.00 |
| Pump4 | on/off | ■ | ■ | 0000.00 | 0000.00 | 000.00 | 000.00 |
| Pump5 | on/off | ■ | ■ | 0000.00 | 0000.00 | 000.00 | 000.00 |
| Pump6 | on/off | ■ | ■ | 0000.00 | 0000.00 | 000.00 | 000.00 |
| Pump7 | on/off | ■ | ■ | 0000.00 | 0000.00 | 000.00 | 000.00 |
| Pump8 | on/off | ■ | ■ | 0000.00 | 0000.00 | 000.00 | 000.00 |
- Additional Elements:** Full Prime (green box), Enable AutoStop (red button), Auto Mode Enabled (green button), NO TREAT MODE (red text).
- Control Buttons:** System (green), Start (green), Stop (red, with hand icon), Totals (yellow), Control (yellow, with hand icon).

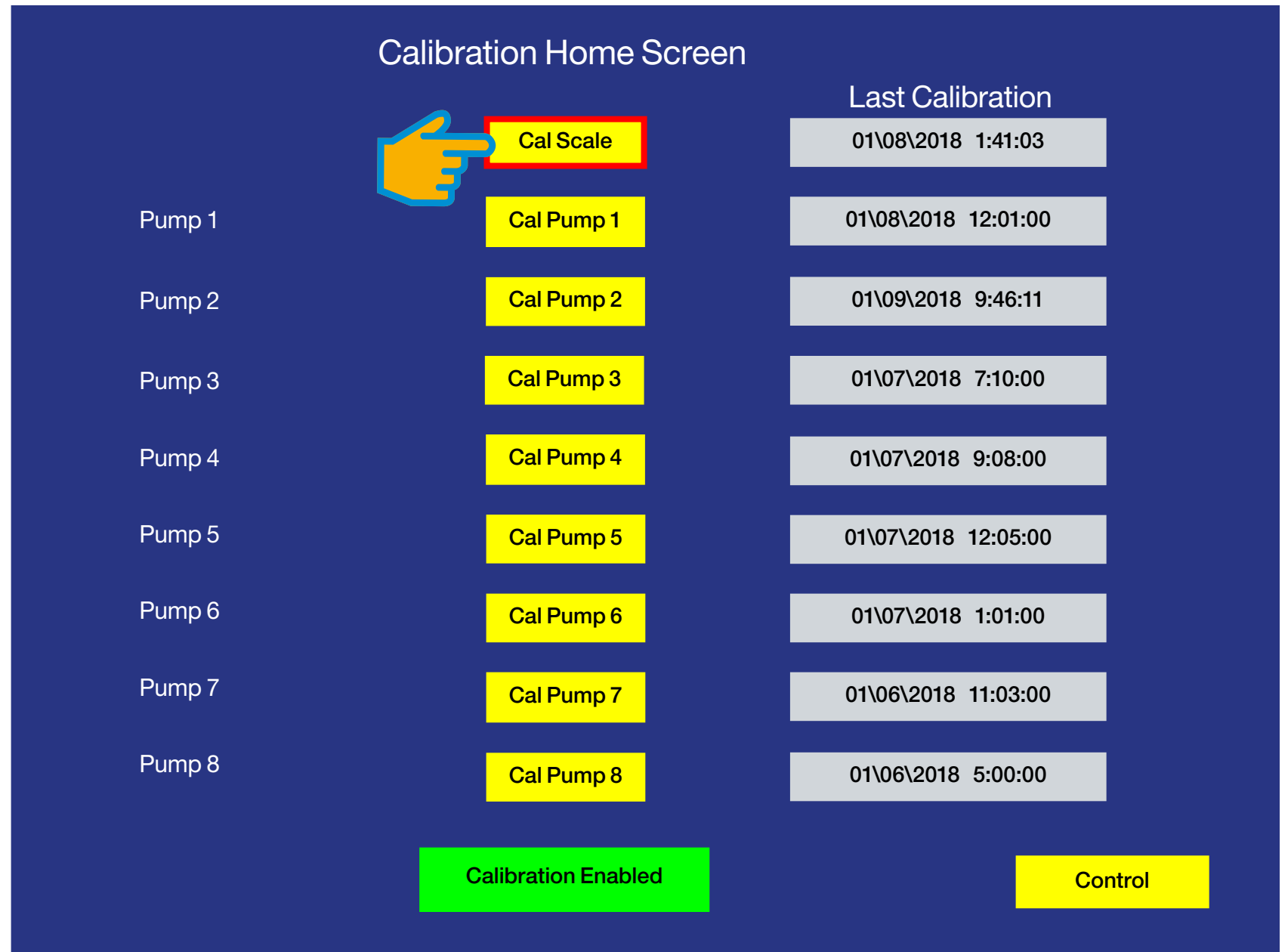




CONTROL SELECT SCREEN

Step 1: Touch the yellow **Calibration** button icon: navigates to the **CALIBRATION HOME SCREEN** ↻





CALIBRATION HOME SCREEN

Step 1: Touch the yellow **Cal Scale** button icon: navigates to the **CALIBRATE SCALE SCREEN** ↻



CALIBRATE SCALE SCREEN

The total seed weight **372.2** now displays in the blue Total Weight field, shown right.

Step 1: Touch the yellow **BagWeight** button icon: navigates to pop-up key pad.

> Enter the known weight (**325lbs** a little less than actual Total Weight of **372lbs**).

New Value High
Current Low
1 2 3 Back Space
4 5 6 OK
7 8 9 Clear
- 0 . Cancel

Total Weight
00000372.2
Lbs
Clear Weight

Scale Calibration

Scale Cal Factor
00000.1410
Save to Recipe
Calculate

BagWeight
00000325.0
Lbs

Scale Counts
02517
REZERO

Calibration

Step 2: Touch the yellow **Calculate** button icon. The green **Scale Cal Factor** field turns red and calculates a new factor.

Step 3: Touch the gray **Save to Recipe** button icon to save the new calibration factor (**00000.1410**) to the current recipe.

> Confirmation pop-up screen appears and counts down to save to recipe. Touch the **OK** button: pop-up closes.

Step 4: Touch the yellow **Calibration** button icon: navigates to the **CALIBRATION HOME SCREEN** ➔



Calibration Home Screen

| | | Last Calibration |
|--------|------------|---------------------|
| | Cal Scale | 01\08\2018 1:41:03 |
| Pump 1 | Cal Pump 1 | 01\08\2018 12:01:00 |
| Pump 2 | Cal Pump 2 | 01\09\2018 9:46:11 |
| Pump 3 | Cal Pump 3 | 01\07\2018 7:10:00 |
| Pump 4 | Cal Pump 4 | 01\07\2018 9:08:00 |
| Pump 5 | Cal Pump 5 | 01\07\2018 12:05:00 |
| Pump 6 | Cal Pump 6 | 01\07\2018 1:01:00 |
| Pump 7 | Cal Pump 7 | 01\06\2018 11:03:00 |
| Pump 8 | Cal Pump 8 | 01\06\2018 5:00:00 |

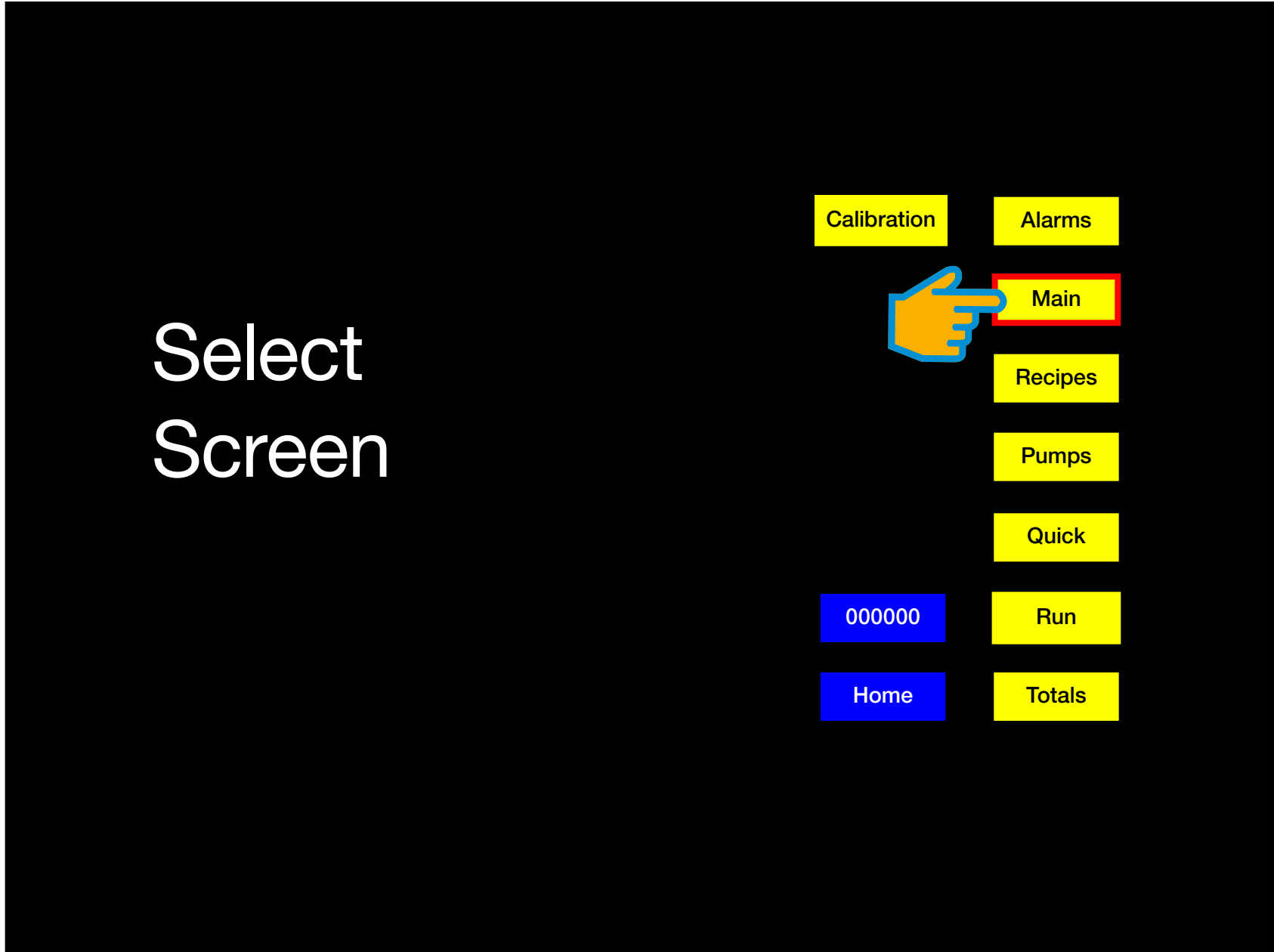
Calibration Enabled

Control

CALIBRATION HOME SCREEN

Step 1: Touch the yellow **Control** button icon: navigates to the **CONTROL SELECT SCREEN** ⇨

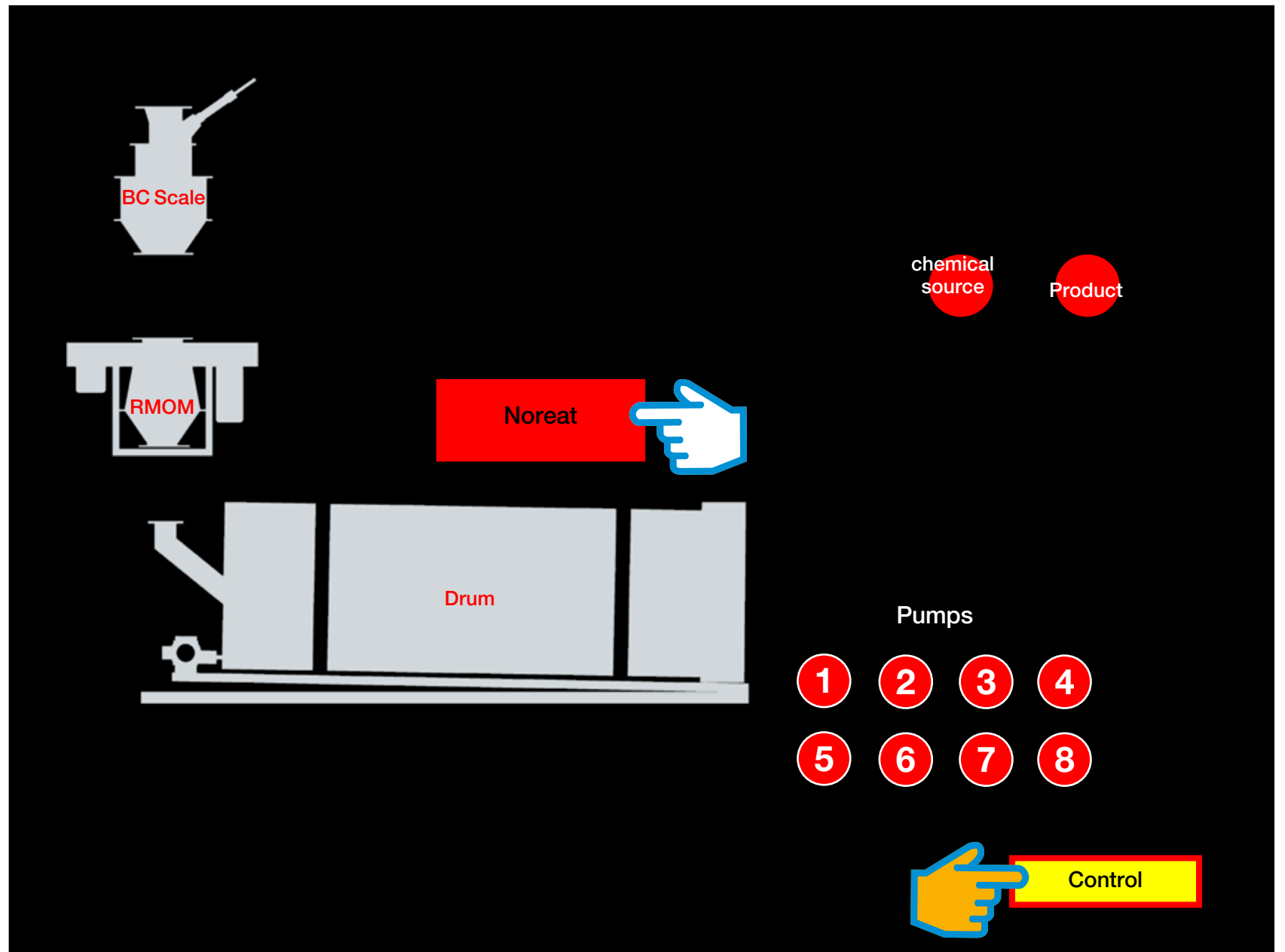




CONTROL SELECT SCREEN

Step 1: Touch the yellow **Main** button icon: navigates to the **MAIN SCREEN** ↻





MAIN SCREEN

Step 1: Touch the red **Notreat** button icon: changes to green **Autotreat**.

End of Scale Calibration.

Proceed to Pump Calibration without Flow Meters...

Step 2: Touch the yellow **Control** button icon: navigates to the **CONTROL SELECT SCREEN** ⇨





PUMP CALIBRATION

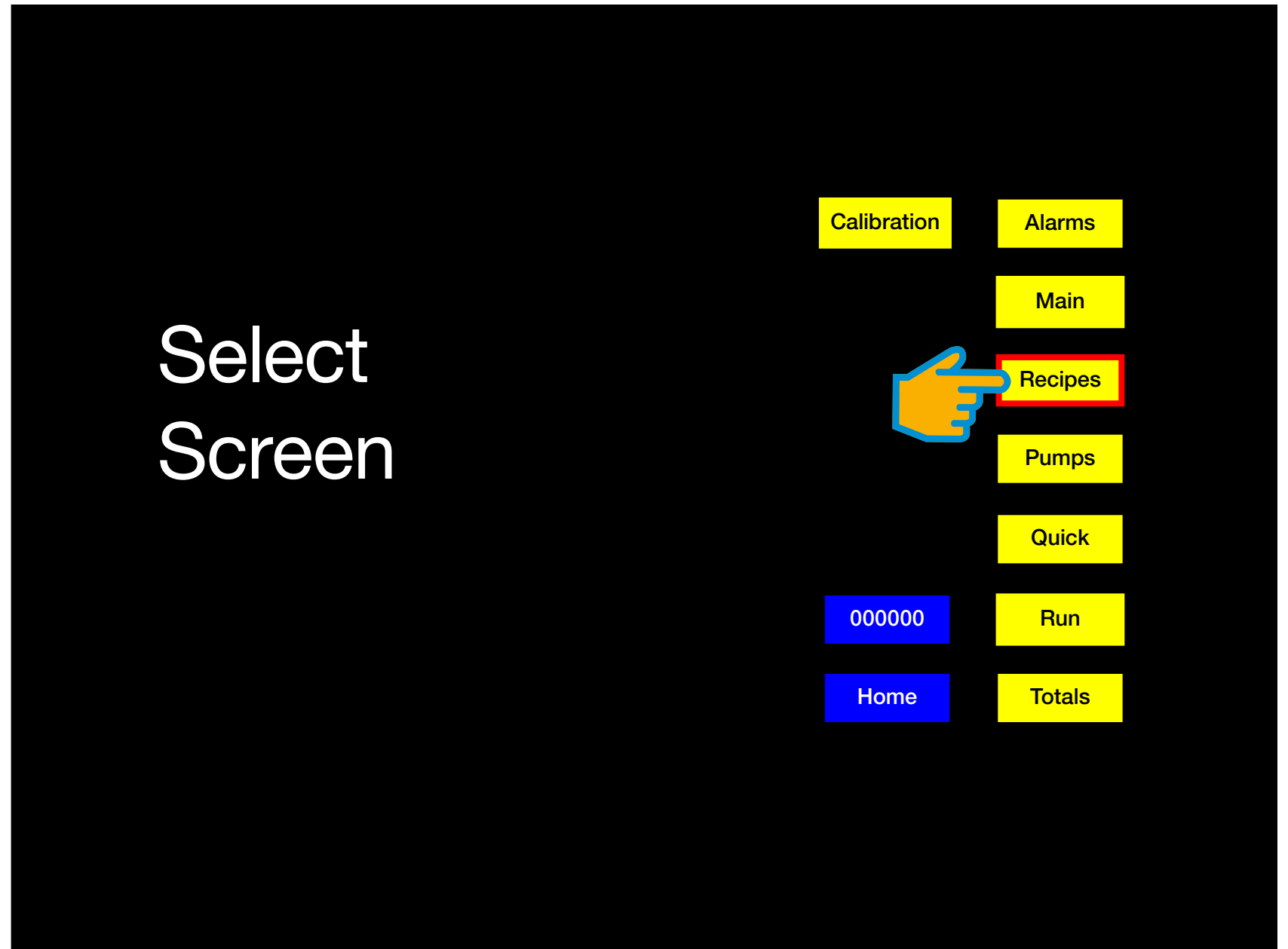


Note: calibration examples given are representative only and meant to replicate real-time calibration.

Pumps without Flow Meters

CONTROL SELECT SCREEN

Step 1: Touch the yellow **Recipes** button icon: navigates to the **RECIPE SCREEN** ↻

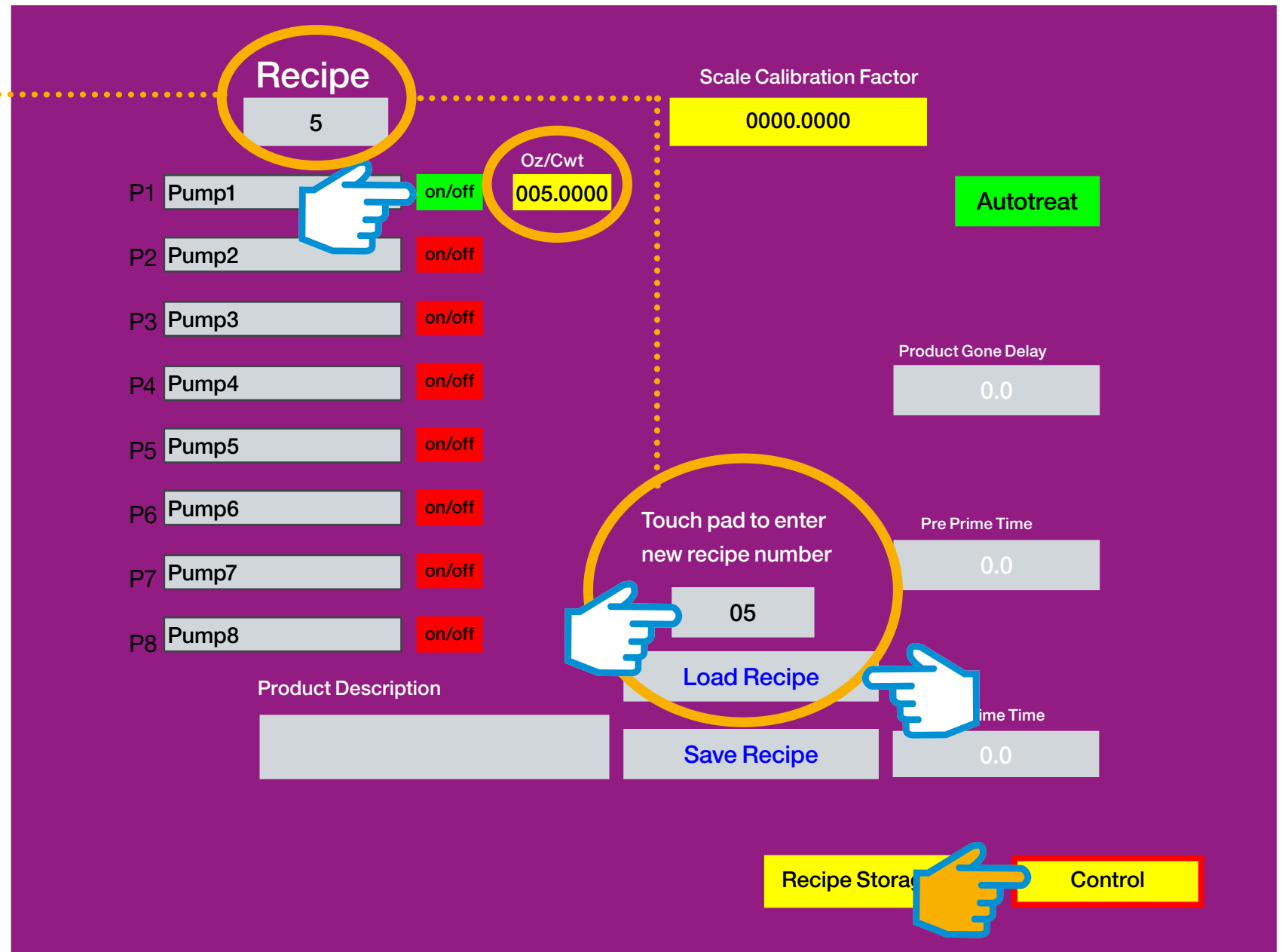
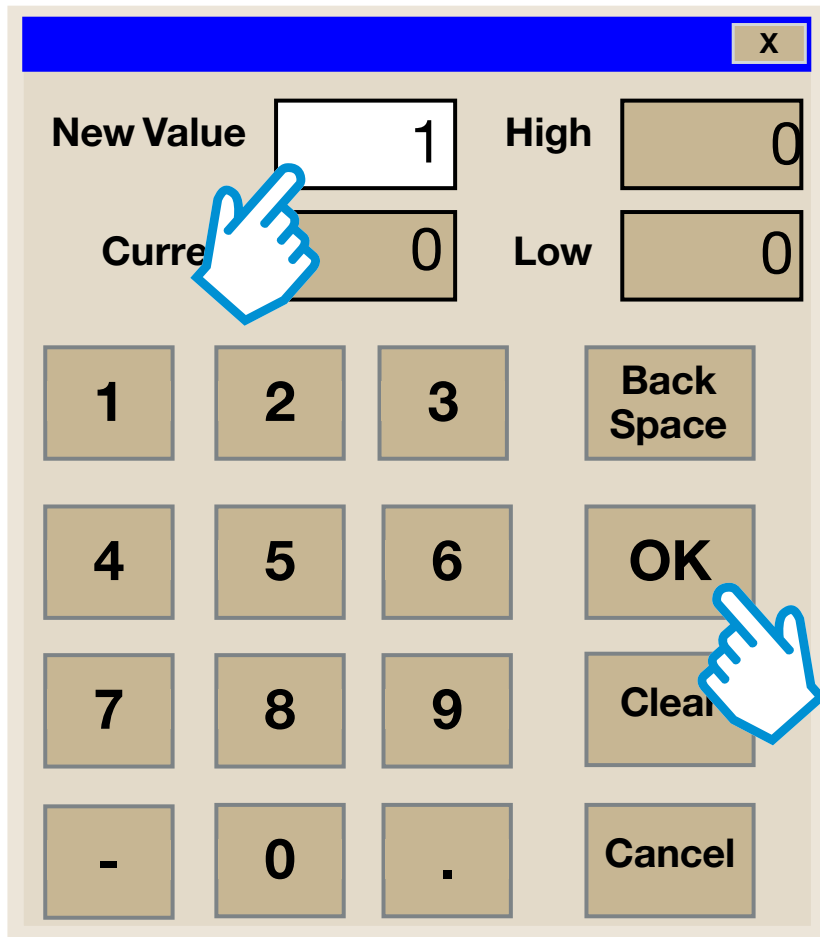


RECIPE SCREEN

Select the correct recipe. The number displayed on the gray box under the word **Recipe** (top left corner of screen) displays **5**. To change the recipe number...

Step 1: Touch the gray **Touch pad** button icon (center screen): enter the new recipe number on the pop-up touch key pad. Touch **OK** to close pop-up.

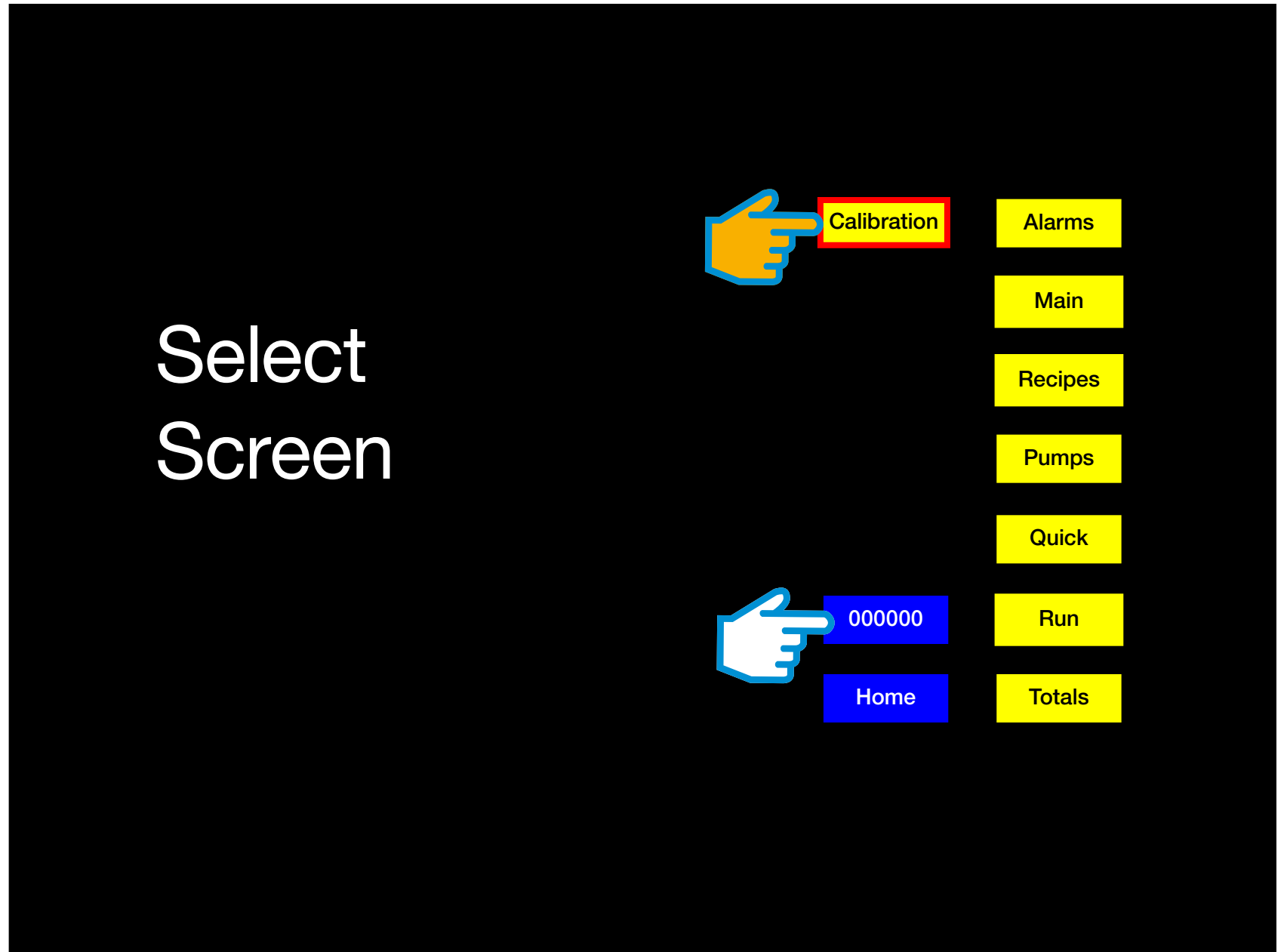
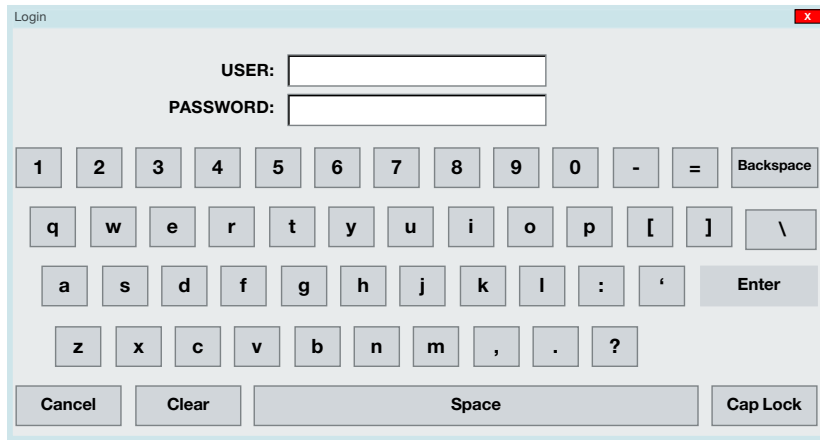
Step 2: Touch the gray **Load Recipe** button icon: the number displayed on the gray box under the word **Recipe** (top left corner of screen) displays the new number **1**.



Step 3: Touch each red pump **on/off** button icon (1-8) to enable each pump used (**on/off** button icon turns green). The Pump **Oz/Cwt** (Set Point value) will display, according to the recipe, on a yellow button icon next to the red/green **on/off** button icon. When finished selecting and enabling the Pumps...

Step 4: Touch the yellow **Control** button icon: navigates to the **CONTROL SELECT SCREEN** ➔





CONTROL SELECT SCREEN

Step 1: Touch the blue **000000** button icon. A pop-up keyboard will appear to enter an approved password.

Step 2: Touch the yellow **Calibration** button icon: navigates to the **CALIBRATION HOME SCREEN** ↻






Note: the yellow **Setup** button icon only displays on the **Calibration Home Screen** when the user is logged in with an approved password for initial setup (see page 6).

Calibration Home Screen

| | | Last Calibration |
|--------|------------|---------------------|
| | Cal Scale | 01\08\2018 1:41:03 |
| Pump 1 | Cal Pump 1 | 01\08\2018 12:01:00 |
| Pump 2 | Cal Pump 2 | 01\08\2018 8:08:00 |
| Pump 3 | Cal Pump 3 | 01\07\2018 7:10:00 |
| Pump 4 | Cal Pump 4 | 01\07\2018 9:08:00 |
| Pump 5 | Cal Pump 5 | 01\07\2018 12:05:00 |
| Pump 6 | Cal Pump 6 | 01\07\2018 1:01:00 |
| Pump 7 | Cal Pump 7 | 01\06\2018 11:03:00 |
| Pump 8 | Cal Pump 8 | 01\06\2018 5:00:00 |

 **Setup** **Calibration Enabled** **Control**

CALIBRATION HOME SCREEN

Step 1: Touch the yellow **Setup** button icon: navigates to the **CALIBRATION SETUP SCREEN** ➔





Note: the **Calibration Setup Screen** is accessible only when the user is logged in with an approved password for initial setup (see page 6).

CALIBRATION SETUP SCREEN

P1 Pump 1 is now enabled (ready to use), indicated by the green box, as shown above.

Step 1: Touch the **Pump 1** yellow **NUMBER** button icon: pop-up key pad appears. Enter the desired pump element number (as listed on the right of screen, 1-8): **5** = I/P-26, which theoretically has a relative value of **00767.8125**. This will be referred to as the Conversion factor later on in the calibration process.

| | | Flow Meter | |
|----|-------|------------|------------------------|
| P1 | Pump1 | 5 | 1: 505/w 1.6mm element |
| P2 | Pump2 | 5 | 2: 505/w 3.2mm element |
| P3 | Pump3 | 5 | 3: 505/w 4.8mm element |
| P4 | Pump4 | 5 | 4: 505/w 6.4mm element |
| P5 | Pump5 | 5 | 5: I/P-26 |
| P6 | Pump6 | 5 | 6: I/P-73 |
| P7 | Pump7 | 5 | 7: B/T-86 |
| P8 | Pump8 | 5 | 8: 00000.0000 |

Pump Setup Screen
(For setup of pumps prior to Calibration)

WARNING
Pressing any of these eight keys will affect that pump's calibration

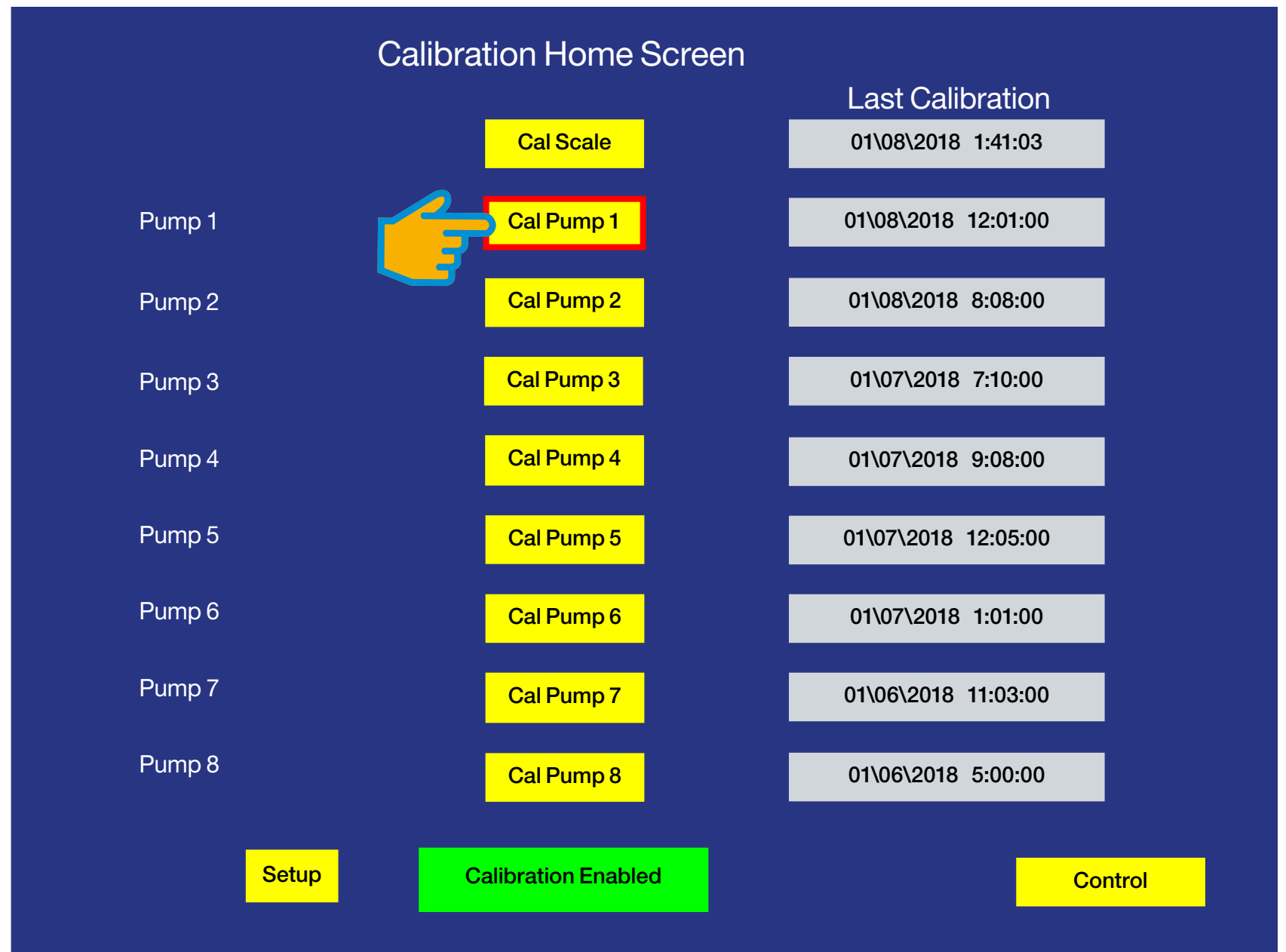
P1 P2 P3 P4 P5 P6 P7 P8

Flow Meter Setup Calibration

Step 2: Touch the yellow **P1** button icon to synchronize the pump flow rate to the pump element selected (previous step).

Step 3: Touch the yellow **Calibration** button icon: navigates to the **CALIBRATION HOME SCREEN** ⇌





CALIBRATION HOME SCREEN

Step 1: Touch the yellow **Cal Pump 1** button icon: navigates to the **PUMP 1 CALIBRATION SCREEN** ↻



PUMP 1 CALIBRATION SCREEN

> The P1 Pump 1 **Setpoint** value has been configured in the recipe to treat **5 ounces per hundred weight (Oz/Cwt)**, as shown right.

> The **Conversion** factor box displays a value of **00767.8125**, as shown above (I/P-26 theoretically has a relative value of **00767.8125**, refer to page 47). This is the optimal value of a new element running water through the I/P-26 Pump.

Step 1: Touch the yellow **Test Weight** button icon: enter a realistic test weight **400**, touch **OK** and pop-up closes.

Step 2: Touch the yellow **Test Time** button icon: enter a realistic test time **120** (seconds = 2 minutes), touch **OK** and pop-up closes.

New Value High
Curre Low
1 2 3 Back Space
4 5 6 OK
7 8 9 Clear
- 0 . Cancel

Pump 1 Calibration Screen

Measured: 0000.00 ounces
Test Time: 120 Seconds
Test Weight: 400 Lbs/min
Setpoint: 005.0000

Total: 0000.00 ounces
Countdown: 000
Conversion: 00767.8125
Reset

Start Rate: 0020.00 Oz/min Calculate

Calibration

Theoretically, running **400lbs/min @ 5oz/cwt** with a **Conversion** factor of **00767.8125** would run the pump **120** seconds (2 minutes) and deliver an output rate of **20/oz/min**. for a total of **40** ounces total.

Step 3: Touch the yellow **Reset** button icon: resets the blue Total box value to zero.


Step 4: Touch the yellow **Calibration** button icon: navigates to the **CALIBRATION HOME SCREEN** ➔



Calibration Home Screen

| | | Last Calibration |
|--------|-------------------|---------------------|
| | Cal Scale | 01\08\2018 1:41:03 |
| Pump 1 | Cal Pump 1 | 01\08\2018 12:01:00 |
| Pump 2 | Cal Pump 2 | 01\08\2018 8:08:00 |
| Pump 3 | Cal Pump 3 | 01\07\2018 7:10:00 |
| Pump 4 | Cal Pump 4 | 01\07\2018 9:08:00 |
| Pump 5 | Cal Pump 5 | 01\07\2018 12:05:00 |
| Pump 6 | Cal Pump 6 | 01\07\2018 1:01:00 |
| Pump 7 | Cal Pump 7 | 01\06\2018 11:03:00 |
| Pump 8 | Cal Pump 8 | 01\06\2018 5:00:00 |

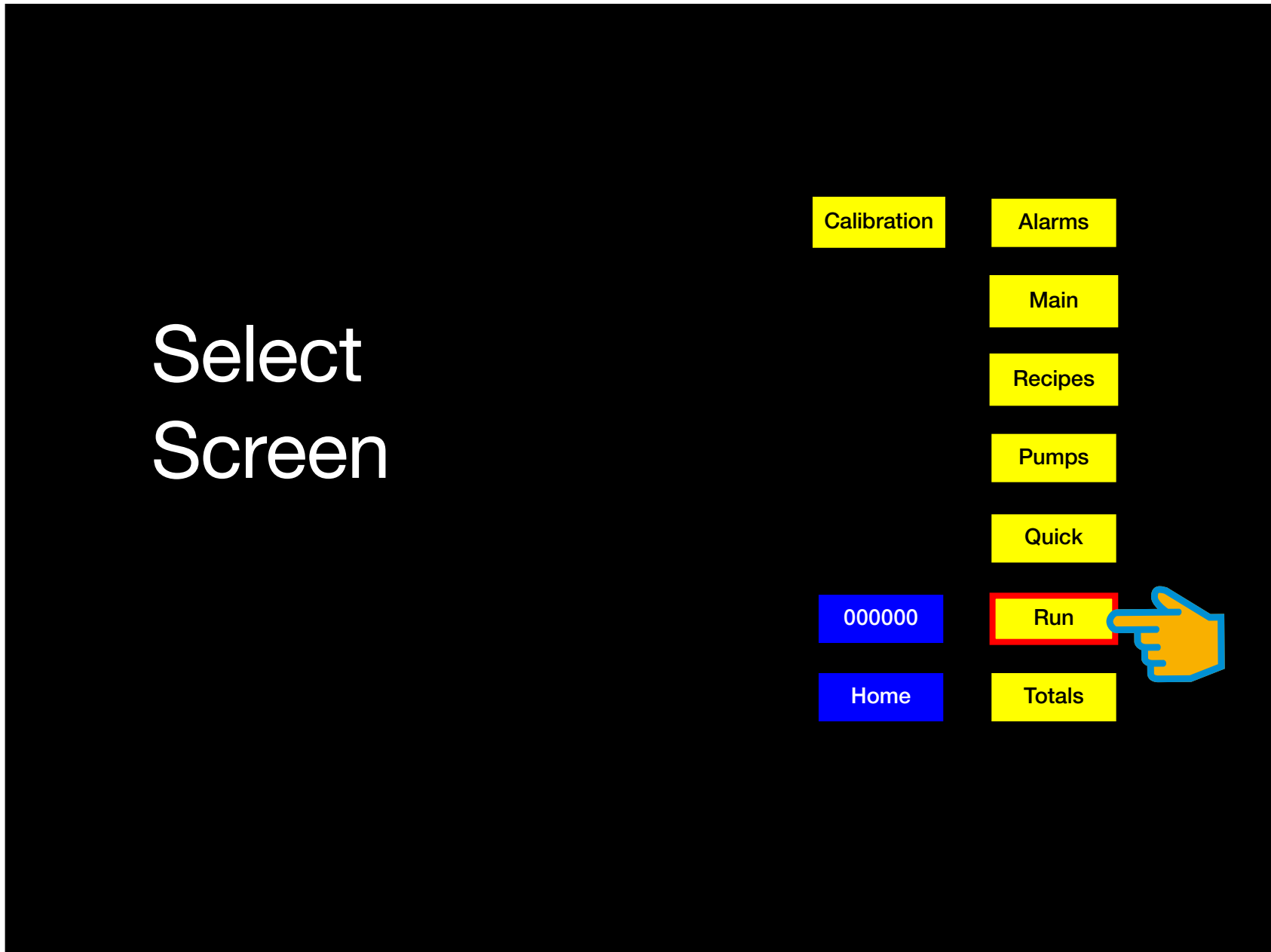
Setup
Calibration Enabled


Control

CALIBRATION HOME SCREEN

Step 1: Touch the yellow **Control** button icon: navigates to the **CONTROL SCREEN** ➔





CONTROL SELECT SCREEN

Step 1: Touch the yellow **Run** button icon: navigates to the **RUN SCREEN** ↻





PUMP PRIME CBP TANKS WITHOUT TOP CALIBRATION

Step 1: Close the Calibration Valve.



Step 2: Open the Bulkhead Valve.

The screenshot displays a control interface for pump priming. At the top left, a red 'Power Off Hopper' button is visible. Status indicators include 'BCS on/off', 'R.M.O.M on/off', 'PWR SG', and 'AIR'. A 'No Product' warning icon is present. The main area features a table of pump controls and flow data:

| Pumps | PWR | Prime | chemical source | Totals Pounds | Totals Gallons |
|-------|--------|----------------|-----------------|---------------|----------------|
| Pump1 | on/off | Prime (Yellow) | Lbs/min: 0354.9 | 00990.5 | 0017.82 |
| Pump2 | on/off | Prime (Red) | Oz/min: 0035.64 | 000.08 | 0000.00 |
| Pump3 | on/off | Prime (Red) | 0000.00 | 000.00 | 0000.00 |
| Pump4 | on/off | Prime (Red) | 0000.00 | 000.00 | 0000.00 |
| Pump5 | on/off | Prime (Red) | 0000.00 | 000.00 | 0000.00 |
| Pump6 | on/off | Prime (Red) | 0000.00 | 000.00 | 0000.00 |
| Pump7 | on/off | Prime (Red) | 0000.00 | 000.00 | 0000.00 |
| Pump8 | on/off | Prime (Red) | 0000.00 | 000.00 | 0000.00 |

Additional controls include 'Full Prime' (green), 'Enable AutoStop' (red), and 'Auto Mode Enabled' (green). Navigation buttons at the bottom are 'System', 'Start', 'Stop', 'Totals', and 'Control'.

RUN SCREEN Pump Prime - CBP Tanks without Top Calibration

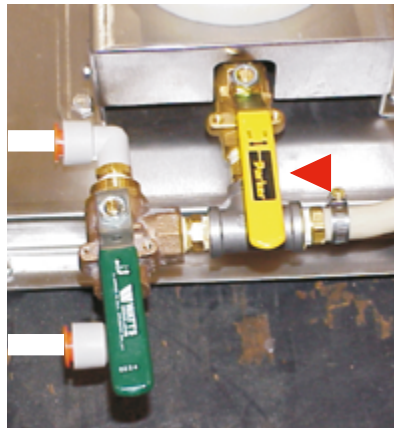
Step 3: Touch and hold the red Pump 1 **Prime** button icon (turns yellow) to manually run the pump, circulating chemical product through the lines for a few minutes (3-5). Release holding the **Prime** button icon to stop running the pump ➡





FILL THE CALIBRATION CYLINDER CBP TANKS WITHOUT TOP CALIBRATION

Step 1: Close the Bulkhead Valve.



Step 2: Open the Calibration Valve.



Step 3: Open the CBP Bulkhead Valve and fill the Graduated Cylinder up to the **TOP** line. Record this number for pump calibration .

Continued ➡





Example:
42 ounces of chemical filled the Calibration Cylinder up to the top line. Record this number for Pump Calibration.



Step 4: Close the CBP Bulkhead Valve.



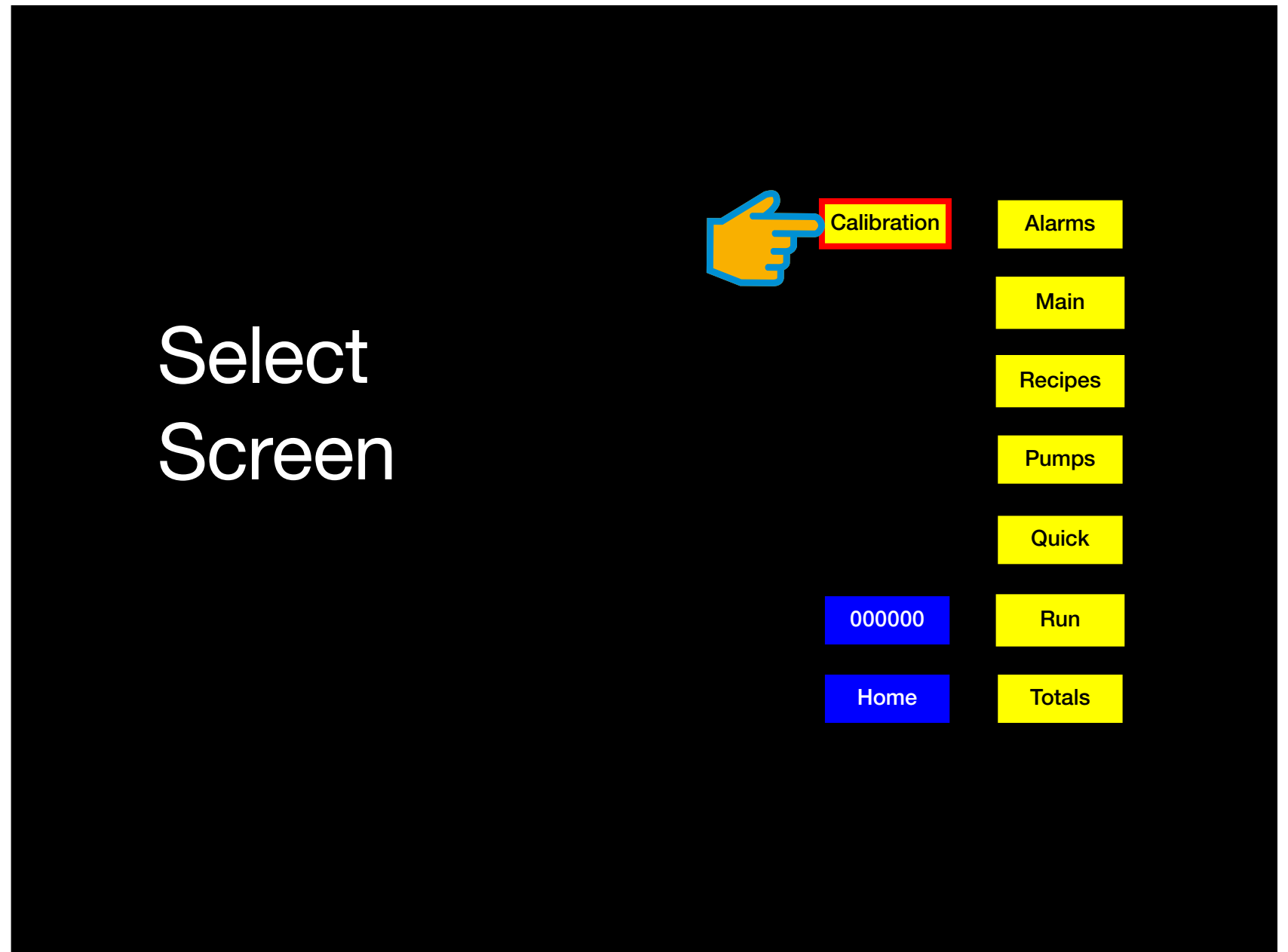
Step 5: Close the Calibration Valve to the Graduated Cylinder. This will return chemical product back into the CBP tank during pump calibration.

| | | | | | | |
|---|-------------------|--------------------------|--------------------------|-------------------|--------------------------|--|
| Power Off Hopper | BCS on/off | PWR SG | | chemical source | | <input type="button" value="Enable AutoStop"/> |
| | R.M.O.M on/off | AIR | | Lbs/min 0354.9 | Totals Pounds 00990.5 | |
| Pump1 | on/off | <input type="checkbox"/> | <input type="checkbox"/> | Oz/min 0017.82 | Totals Gallons 000.04 | <input type="button" value="Auto Mode Enabled"/> |
| Pump2 | on/off | <input type="checkbox"/> | <input type="checkbox"/> | 0035.64 | 000.08 | |
| Pump3 | on/off | <input type="checkbox"/> | <input type="checkbox"/> | 0000.00 | 000.00 | |
| Pump4 | on/off | <input type="checkbox"/> | <input type="checkbox"/> | 0000.00 | 000.00 | |
| Pump5 | on/off | <input type="checkbox"/> | <input type="checkbox"/> | 0000.00 | 000.00 | |
| Pump6 | on/off | <input type="checkbox"/> | <input type="checkbox"/> | 0000.00 | 000.00 | |
| Pump7 | on/off | <input type="checkbox"/> | <input type="checkbox"/> | 0000.00 | 000.00 | |
| Pump8 | on/off | <input type="checkbox"/> | <input type="checkbox"/> | 0000.00 | 000.00 | |

RUN SCREEN Pump Prime - CBP Tanks without Top Calibration

Step 6: Touch the yellow **Control** button icon ➡

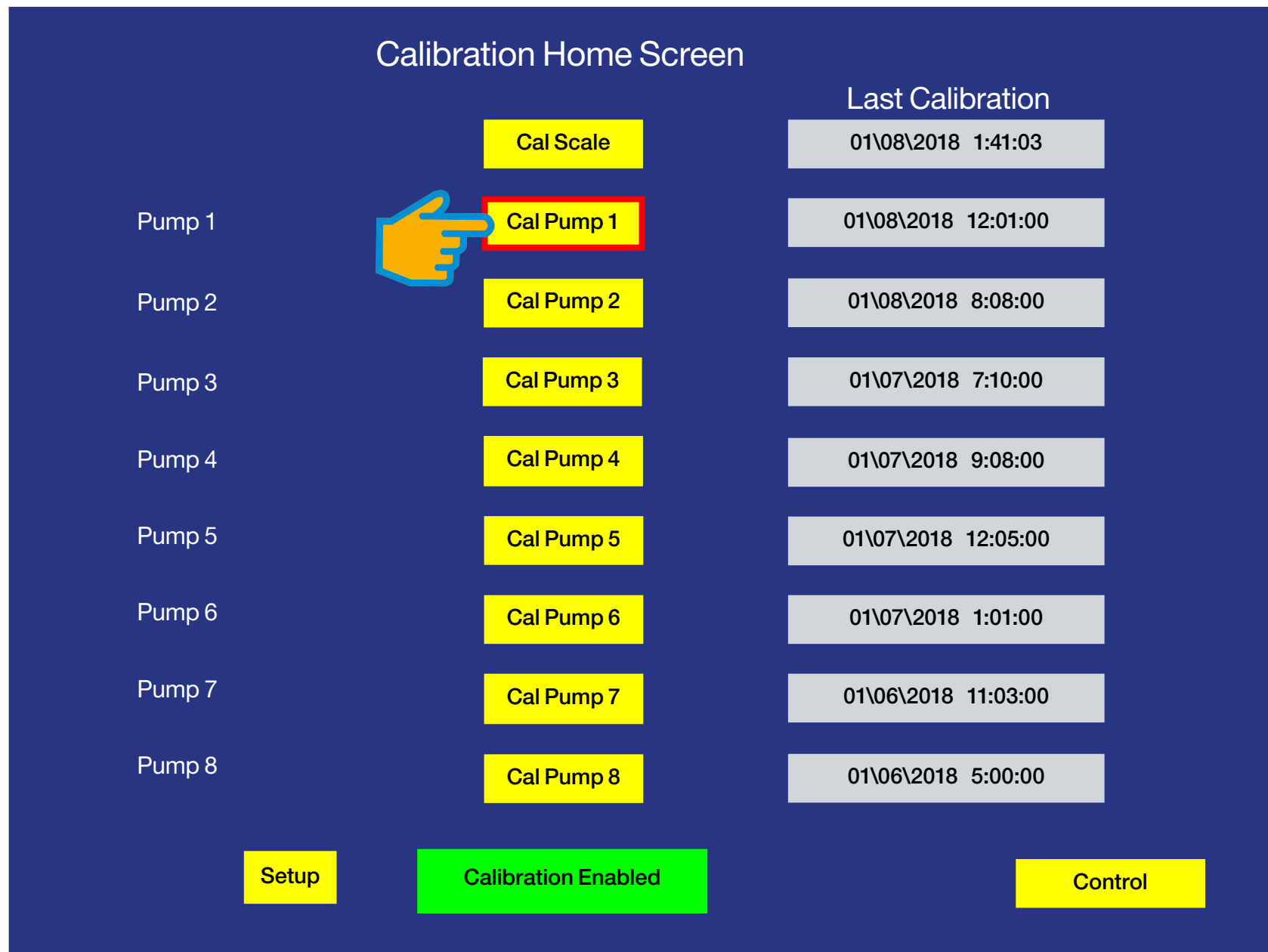




CONTROL SELECT SCREEN

Step 1: Touch the yellow **Calibration** button icon: navigates to the **CALIBRATION HOME SCREEN** ↻





CALIBRATION HOME SCREEN

Step 1: Touch the yellow **Cal Pump 1** button icon: navigates to the **PUMP 1 CALIBRATION SCREEN** ↻





Example:

***42** ounces of chemical filled the Calibration Cylinder up to the top line. Record this number for Pump Calibration.

Pump 1 Calibration Screen

| | | | |
|-------------------|-------------------|----------------|----------|
| Measured | Test Time | Test Weight | Setpoint |
| 0000.00 ounces | 120 Seconds | 400 Lbs/min | 005.0000 |
| Total | Countdown | Conversion | Reset |
| 0040.00 ounces | 000 | 00767.8125 | |
| | Rate | Calculate | |
| | 0020.00 Oz/min | | |

Start

Calibration

PUMP 1 CALIBRATION SCREEN

Step 1: Touch the yellow **Start** button icon (turns green, indicating the pump is running and emptying the graduated Calibration Cylinder).

> The **Countdown** blue box begins at **120-0** seconds and the **Total** blue box increases **0-40*** ounces (theoretically) ↻





Example:

*Theoretically, running **400lbs/min @ 5oz/cwt** with a **Conversion** factor of **00767.8125** would run the pump **120** seconds (2 minutes) and deliver an output rate of **20/oz/min**. for a total of **40** ounces total, refer to page 56.

PUMP 4 CALIBRATION SCREEN

> Once the Pump times out, the **Total** blue box displays the theoretical* value of **41.20** ounces. The actual amount of chemical pumped was **42** ounces (refer to page 56).

Step 1: Touch the yellow **Measured** box icon and enter **42** on the pop-up touch key pad. The **Measured** value is different than **Total** ounces pumped value.

New Value: 42
 Current: 0
 High: 0
 Low: 0

Buttons: 1, 2, 3, Back Space, 4, 5, 6, OK, 7, 8, 9, Clear, -, 0, ., Cancel

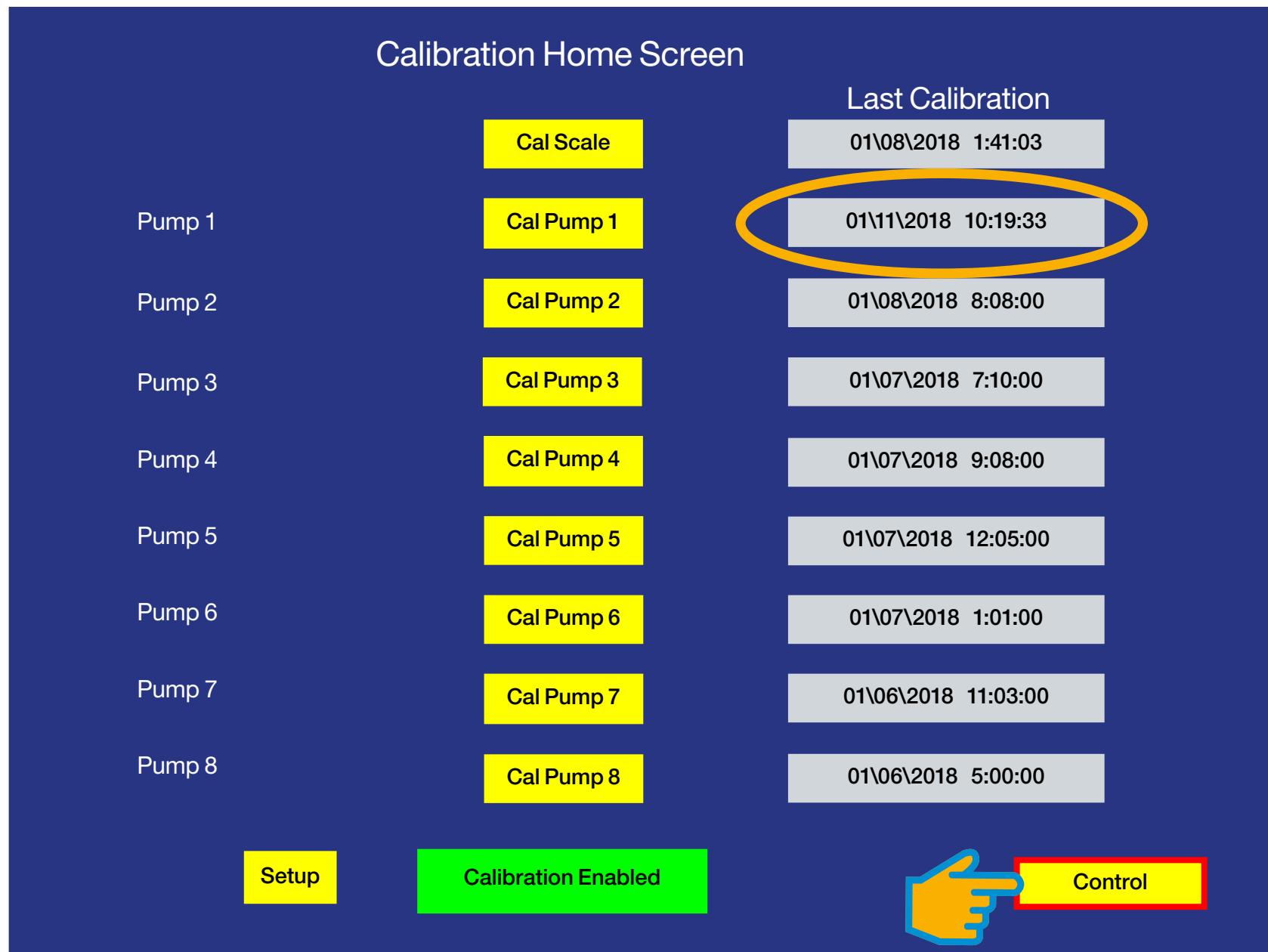
Pump 1 Calibration Screen

| | | | |
|-------------------------------|-----------------------------|-------------------------------|----------------------|
| Measured 0000.00 ounces | Test Time 120 Seconds | Test Weight 400 Lbs/min | Setpoint 005.0000 |
| Total 0041.20 ounces | Countdown 000 | Conversion 00731.2387 | Reset |
| | Start | Rate 0020.00 Oz/min | Calculate |
| | | | Calibration |

Step 2: Touch the yellow **Calculate** button icon: the **Conversion** button icon turns red and the value changes (fine tunes); displays a new value of **00731.2387** (due to wear or a thicker chemical than water was run through the pump).

Step 3: Touch the yellow **Calibration** button icon: navigates to the **CALIBRATION HOME SCREEN** ↻





CALIBRATION HOME SCREEN

Repeat Calibration steps shown on pages 44-58 for Pumps **2-8**, depending how many pumps will be used according to the recipe.

End of Pump Calibration.

Step 1: Touch the yellow **Control** button icon: navigates to **CONTROL SELECT SCREEN** ➔



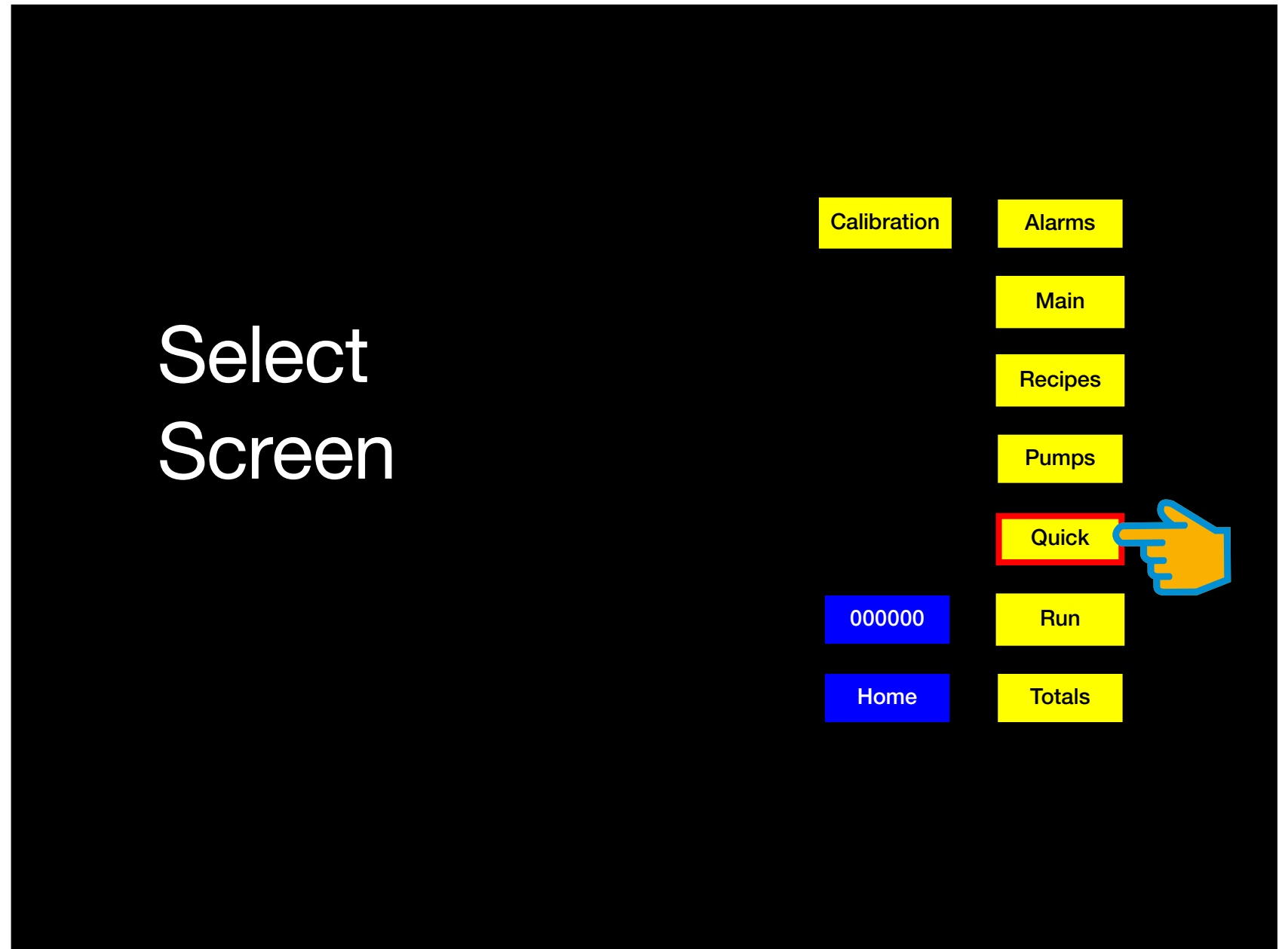


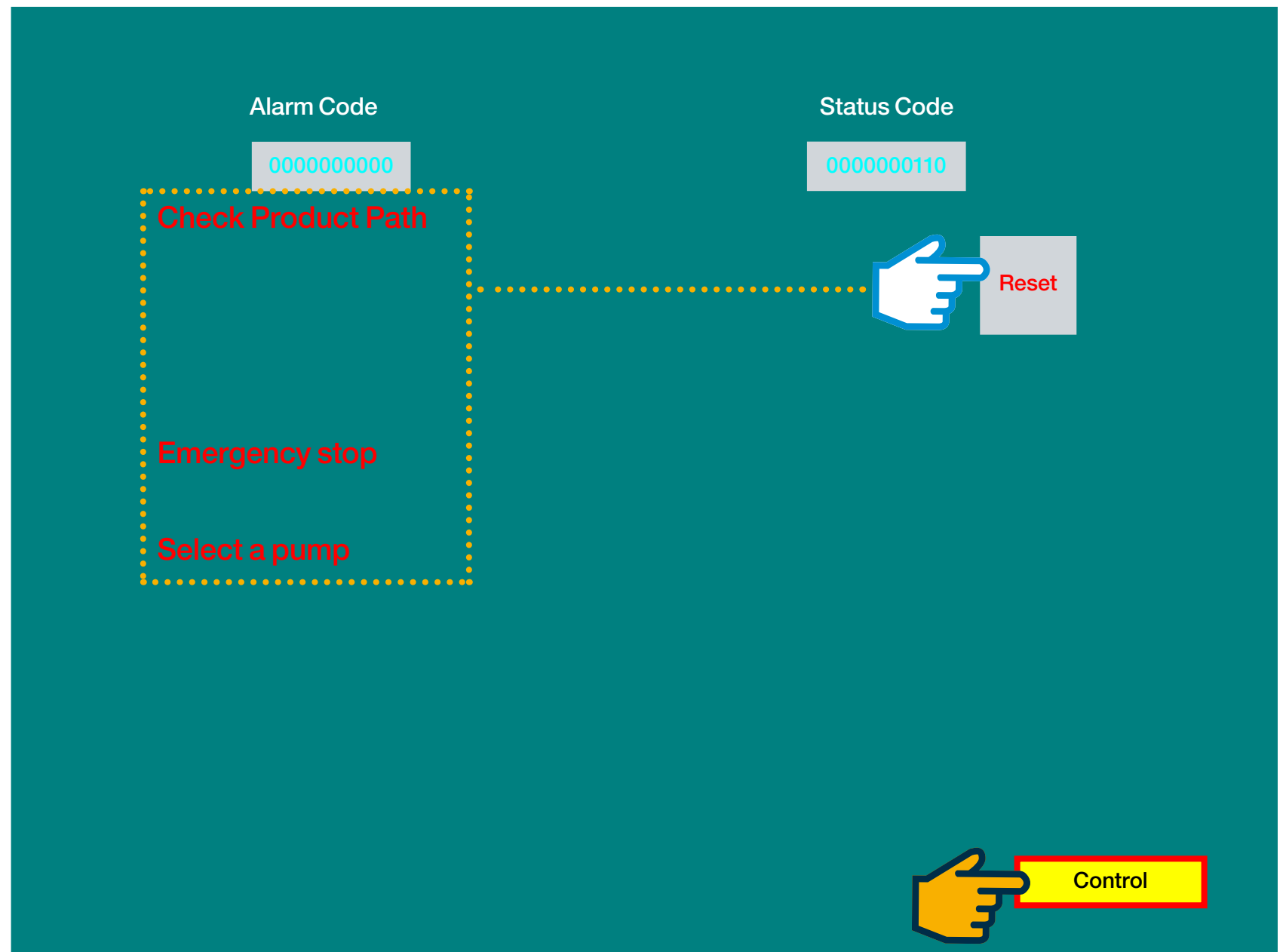
QUIK SCREEN

CONTROL SELECT SCREEN

The following pages explain the purpose and functionality of extra screens in the program.

Step 1: Touch the yellow **Quick** button icon: navigates to **QUIK SCREEN** ➔





QUICK SCREEN

The Quick screen displays each alarm encountered with the system, where users can acknowledge and remove them.

Step 1: Touch the gray **Reset** button icon: removes the alarms listed in red on the left side of the screen.

Step 2: Touch the yellow **Control** button icon: navigates to **CONTROL SELECT SCREEN** ➔

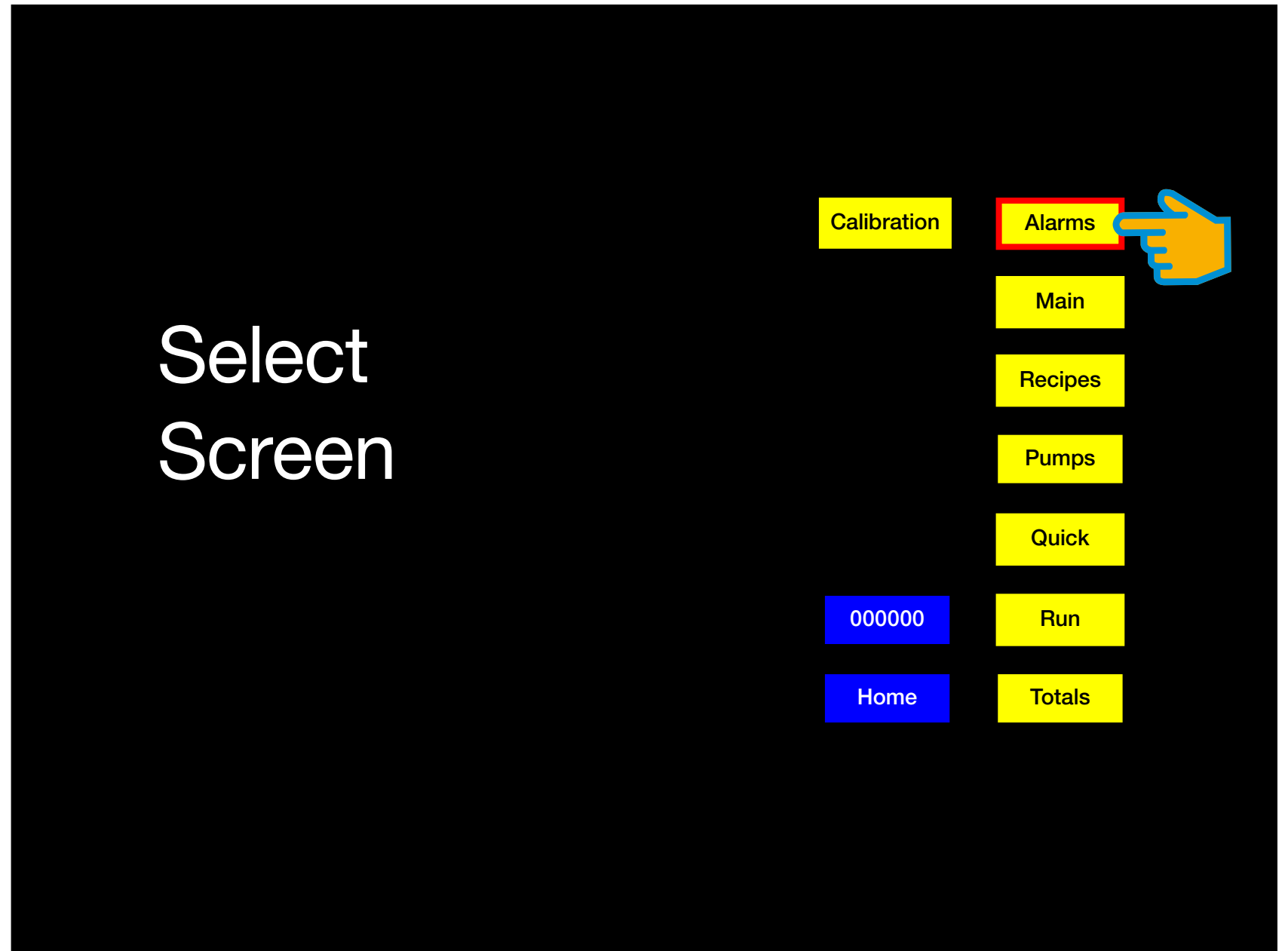




ALARMS SCREEN

CONTROL SELECT SCREEN


Step 1: Touch the yellow **Alarms** button icon: navigates to **ALARMS SCREEN** ➔



Alarms

| | | | |
|----------|----------|----------------|------|
| 1/2/2018 | 9.21:35 | ChemicalLow | TRUE |
| 1/3/2018 | 13.01:11 | NoPumpSelected | TRUE |
| 1/4/2018 | 11.11:11 | EmergencyStop | TRUE |
| 1/5/2018 | 8.31:30 | ChemicalLow | TRUE |
| 1/6/2018 | 7.22:05 | NoPumpSelected | TRUE |
| 1/7/2018 | 13.44:40 | EmergencyStop | TRUE |

Debug Control

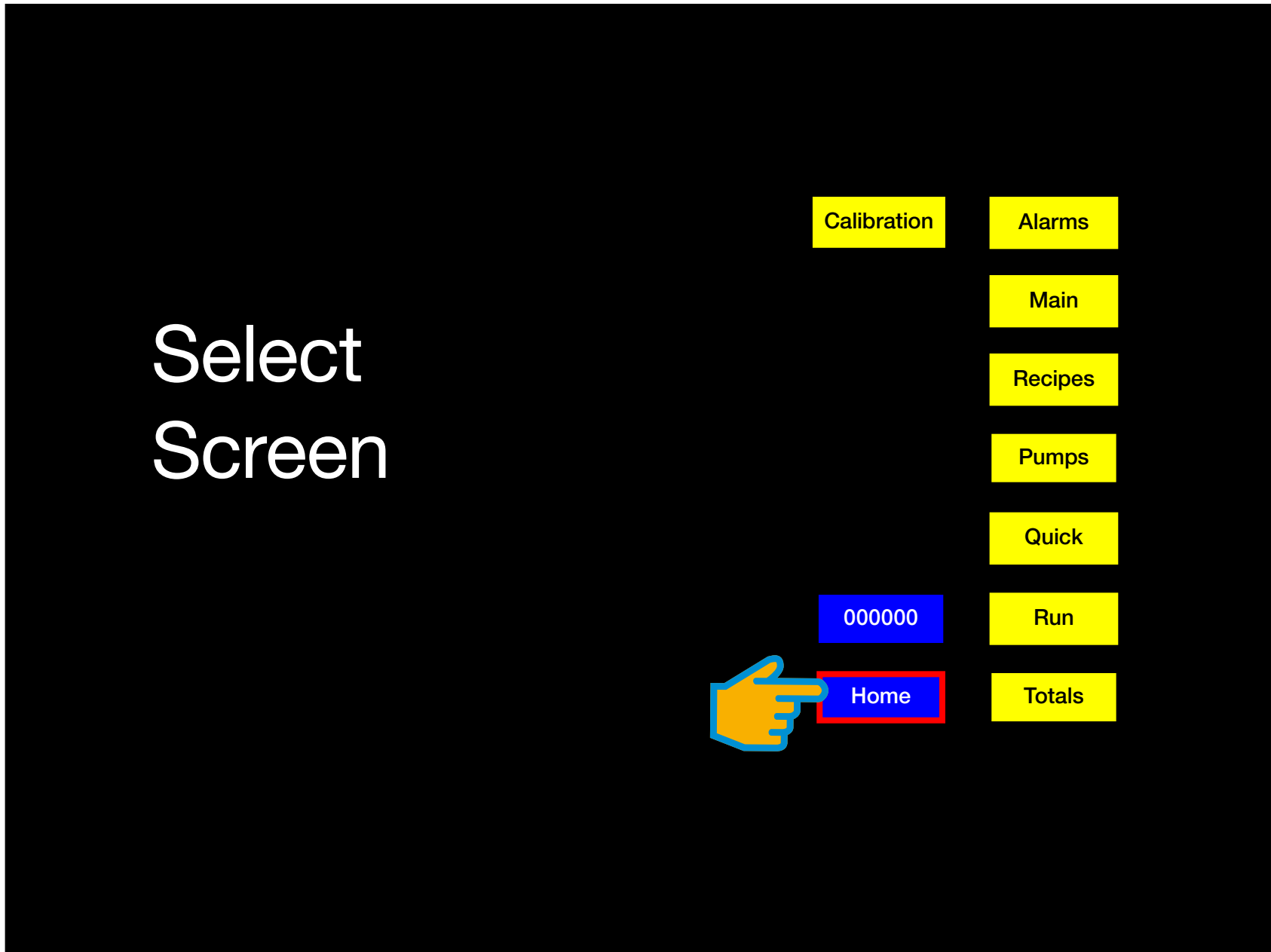


ALARMS SCREEN

The **Alarms** screen is view only, which displays a historical list of all the alarms issued by the system.

Step 1: Touch the yellow **Control** button icon: navigates to **CONTROL SELECT SCREEN** ➔





CONTROL SELECT SCREEN

End of manual.

Step 1: Touch the blue **Home** button icon: navigates to **HOME SCREEN** ➔





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