

Pressure Controller



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Unpacking

Initial inspection should include checking for physical damage during shipping and obvious external damage to the product.

Package contents are defined by your packing list. Each Order is configured according to customer specifications. In your inspection, make certain that the contents of your shipment match the documentation provided by your packing list.

Place unit on a flat, smooth surface and use leveling feet (supplied) and a bubble level to ensure that the unit is level side-to-side and back-to-front.

Installation and Equipment Setup

Electrical Connections

The HM-5240 is equipped with an internal digital switching power supply, which allows it to be used with most power configurations throughout the world. The unit is supplied with an IEC electrical cord with a standard 110V plug.

The HM-5240 arrives ready for operation. Attach the supplied IEC electrical cord to the machine and plug into a standard wall receptacle for use in the United States. For locations other than the U.S., replace the supplied electrical cord with an IEC cord that has the correct plug for your application. The supplied cord can also be used by cutting the standard plug from the cord and attaching the correct plug.

Power Switch

The Power Switch is located above the electrical cord inlet. The Fuse Compartment is located between the electrical cord inlet and the Power Switch. The HM-5240 uses a 8.5 amp fuse. To begin operation, attach the supplied electrical cord, plug it in and press the Power Switch.

Fuse Compartment



Fig. 1 Power Switch

Instrumentation Connections and Setup

HM-5240 Rear Instrumentation Panel



Above is a photo of the rear instrumentation panel of the HM-5240.

Network (1)

Ethernet input for connecting machine to a local area network (LAN) and/or the internet.

USB Power (2)

The USB Power port is used for powering a wireless access appliance for those who want to use a wireless LAN setup.

Instrument Inputs (3)

The back panel features four (4) inputs for connecting instrumentation to the machine. Each input represents a separate channel. Channel 1 has been assigned to Cell Pressure and is pre-calibrated. Channel 2 has been assigned to Back Pressure and is pre-calibrated. Channel 3 has been assigned to Pore Pressure and is pre-calibrated. And, Channel 4 has been assigned to Volume and is pre-calibrated. Instrumentation is clearly marked for what channel it is assigned to.

Below are photos of an instrumentation input and the instrumentation plug. Install the plugs into the inputs by lining up the guide at the bottom of the plug with the slot at the bottom of the input.



Instrumentation Input



Instrumentation Plug

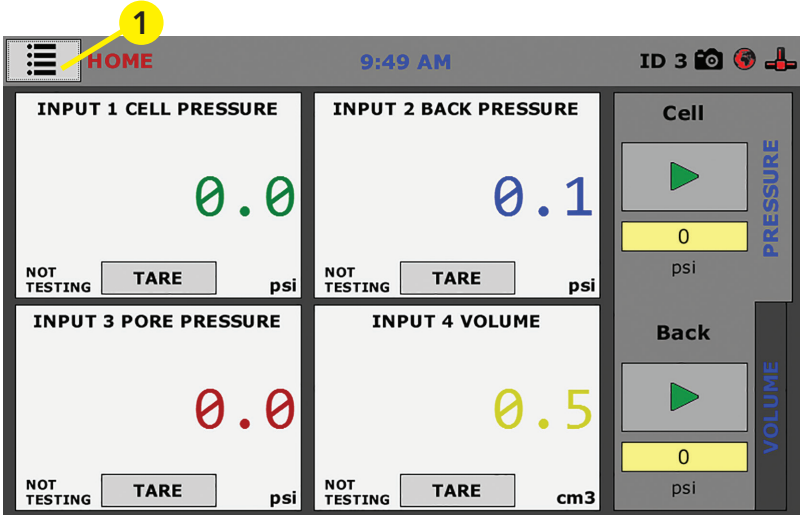
Once you have installed the instrumentation into the correct inputs, your rear panel should look like the photo on the previous page.

Initial Set Up

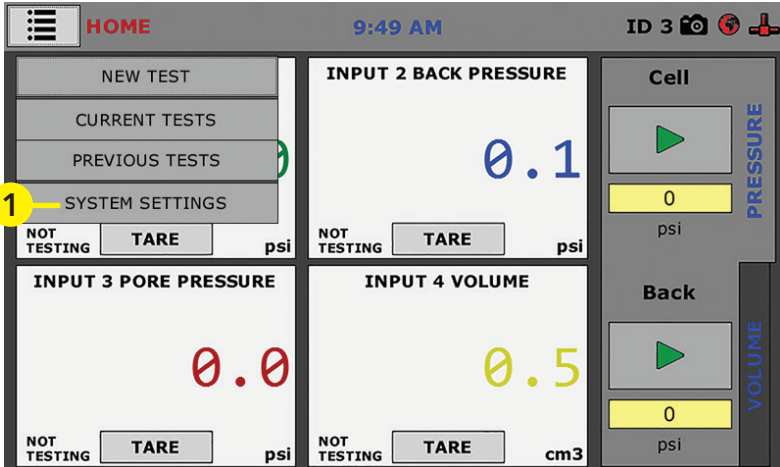
Remember, your HM-5240 Pressure Controller includes all the necessary instrumentation, which is already calibrated and assigned to an Input and will not need calibration, however you should confirm that the instrumentation has been set up and calibrated, that you have plugged them into the correct channel, and that you check with your QC/QA program to set up a frequency of calibration schedule.

DO NOT RECALIBRATE!

When your HM-5420 is first turned on, the screen below will appear.

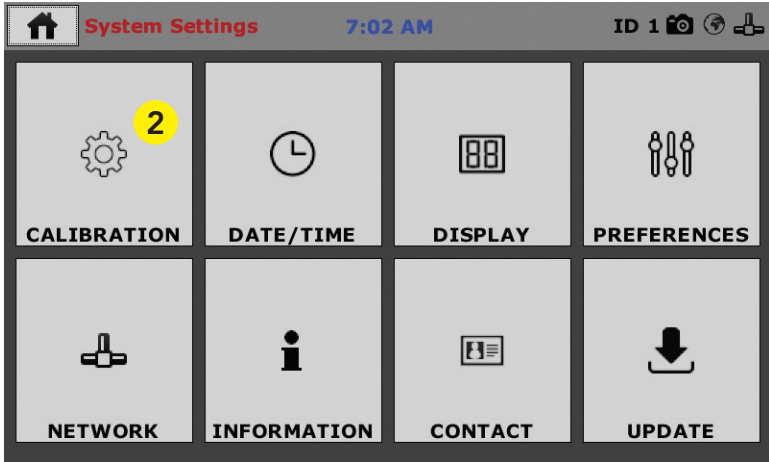


From this screen, to confirm your machine instrumentation has been calibrated, navigate to the Calibration section by clicking the Menu icon in the top left corner of the screen (1). When you click on this button, you will see a drop-down menu appear, see below.

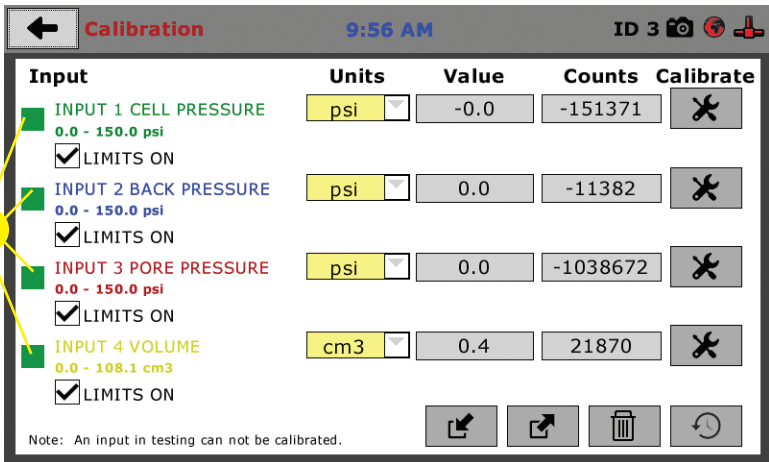


Navigate to the bottom of this drop-down menu and click on System Settings (1). You will see the following screen.

Initial Set Up — Calibration



Click on the Calibration tab in the top left corner (2). You will see the following screen.

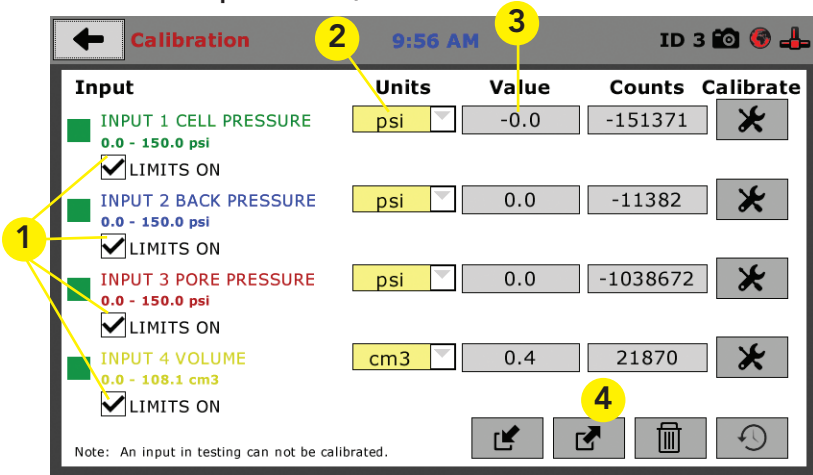


Calibration Input Screen

The Calibration Input Screen (above) is used to monitor and calibrate instrumentation and assign them to specific channels of the HM-5240. The Calibration Input Screen provides a summary of the calibration status of each channel. At this time, verify the calibration information.

A green box at the left of a channel indicates that the channel has instrumentation assigned to it and that it is calibrated and ready for use (1).

Calibration Input Screen, cont.



Each channel has a “Limits On” check box (1). Use the Limits On to keep the machine from exceeding the sensor limits of the instrumentation. By selecting this option, before the test can exceed the limits of the sensors, all tests will stop running and the motor will stop to avoid damaging connected instrumentation.

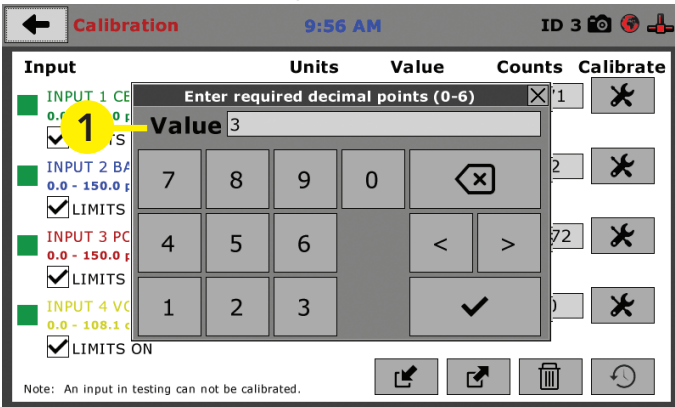
Note: An input cannot be calibrated during testing.

Units (2)

In this field, a calibrated instrument will display the units that were chosen for use at the time of calibration. This field can also be used to automatically toggle conversion of units between lb.-in. and SI units if the need arises.

Value (3)

This field displays the current calibration value. This value should 1 decimal point accuracy for pressure in psi (kpa) and 3 decimal point accuracy for volume in cm³ (1) below. If the instrument is not calibrated, the unit will read “N/A.”



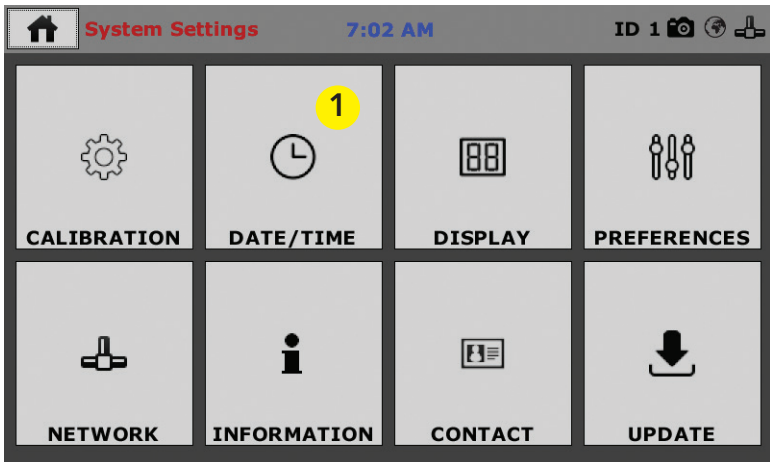
For the HM-5240, the value for vertical displacement is used to indicate changes in volume. This is measured by a 1.0" (25mm) LSCT and a 100cc chamber.

Export Calibration via USB (4)

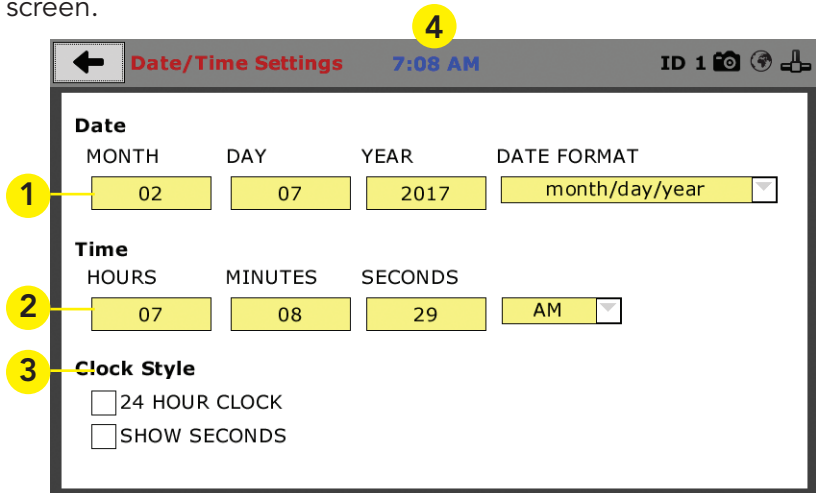
Press this button to select calibrations to export via USB. It is a good practice to export all your calibrations to a thumb drive. In case of a problem this practice allows you to recover your calibration data quickly.

Initial Set Up — Date and Time

To set up Date and Time settings, return to the System Settings screen and click on the Date/Time Panel. (1)



Click on the Date/Time tab (1). You will see the following screen.



Date (1)

Set the month, day, year, and date display format.

Time (2)

Set the hours, minutes, seconds, and am/pm.

Clock Style (3)

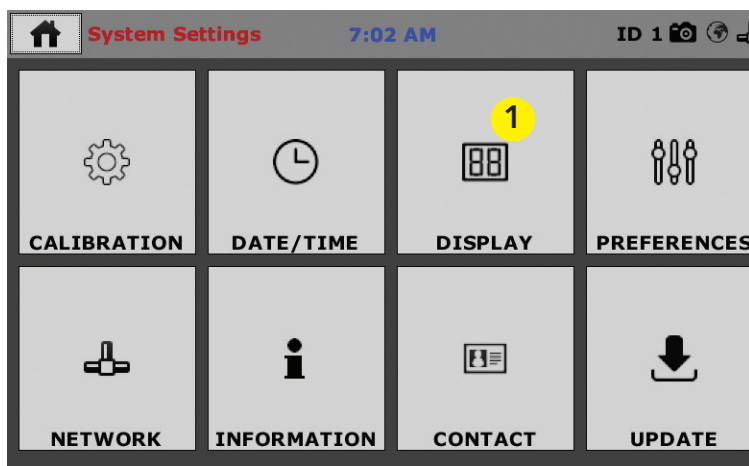
Select a clock view, either a 24-hour or 12-hour clock, as well as the option to show seconds or not.

Clock (4)

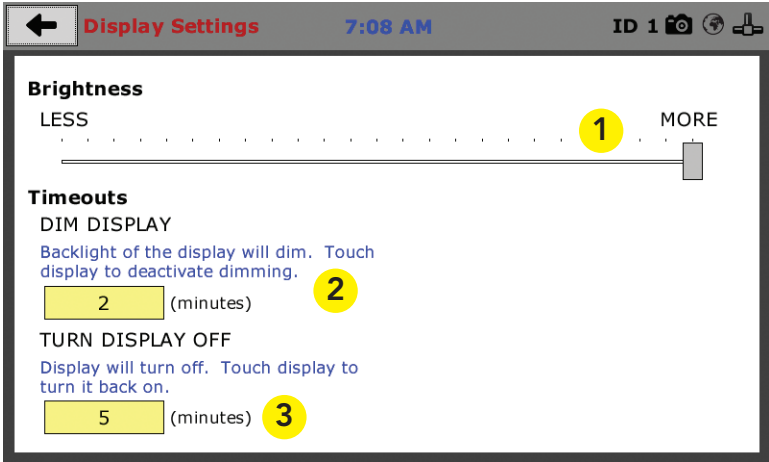
The current time is displayed and is located on every controller screen. Clicking on the time from any screen, you will be taken to the Date/Time Settings Screen.

Initial Set Up — Display

To set up Display settings, return to the System Settings screen and click on the Display Panel. **(1)**



Click on the Display tab **(1)**. You will see the following screen.



Brightness (1)

Slide the gray bar to the left or right to adjust brightness.

Dim Display (2)

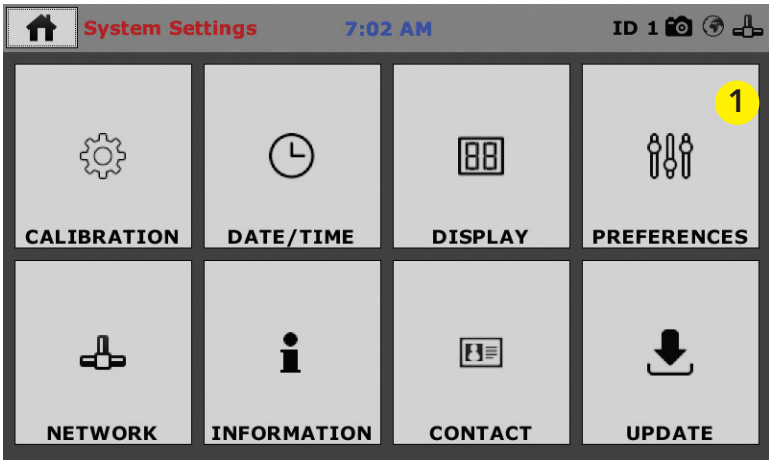
The backlight of the display will automatically dim to save power. Click the yellow box to change the number of minutes before the display goes dim. After the time has elapsed, touch the display to deactivate dimming.

Turn Display Off (3)

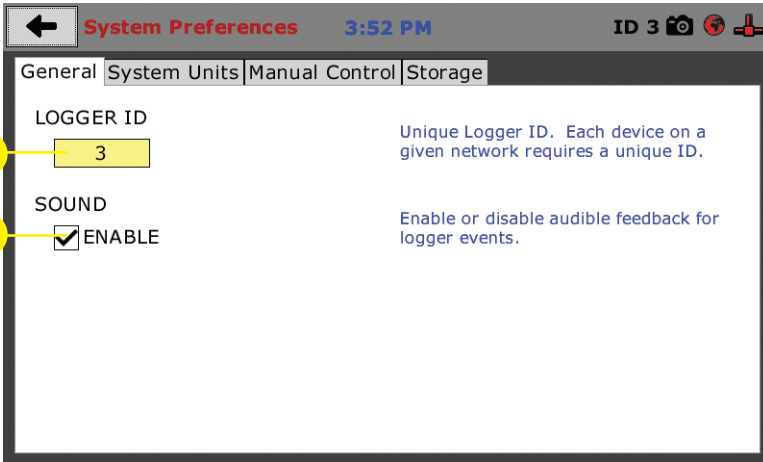
The display will automatically turn off to save power. Click the yellow box to change the number of minutes before the display powers off.

Initial Set Up — Preferences

This screen is accessed by clicking on the “Preferences” button. (1)



Click on the Preferences tab (1). You will see the following screen.



Preferences – General Tab

The Preferences panel is comprised of four (4) tabs and defaults to the General tab, see above.

Logger ID (1)

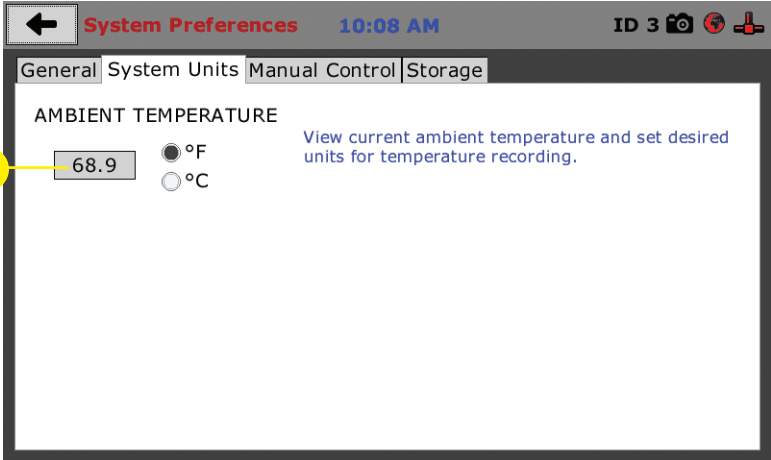
Each machine that is connected to your network requires a unique Logger ID. These numbers can be assigned any number between 1-245. In most cases, if you are setting up a new machine it has been given the Logger ID 1. This would show in the Logger ID field. (1). If this number conflicts with another machine's Logger ID, one of the machines will have to be changed to another Logger ID.

Sound (2)

Checking this box enables or disables audio feedback for logger events.

Preferences – System Units Tab

This screen (see next page) is accessed by clicking on the "System Units" Tab under System Preferences.

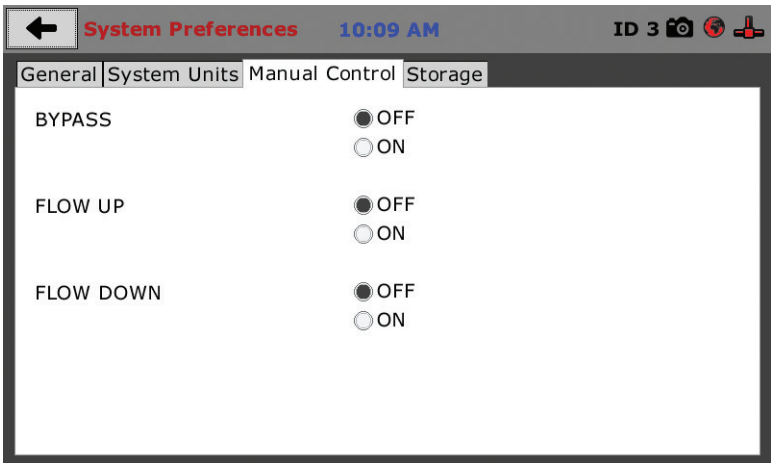


Ambient Temperature (1)

This field displays the current ambient temperature and allows you to select desired units (Fahrenheit or Celsius) for temperature recording.

Manual Control

This screen is accessed by clicking on the Manual Control Tab under System Preferences.



Bypass (1)

This option allows you to bypass the volume change apparatus

Flow Up (2)

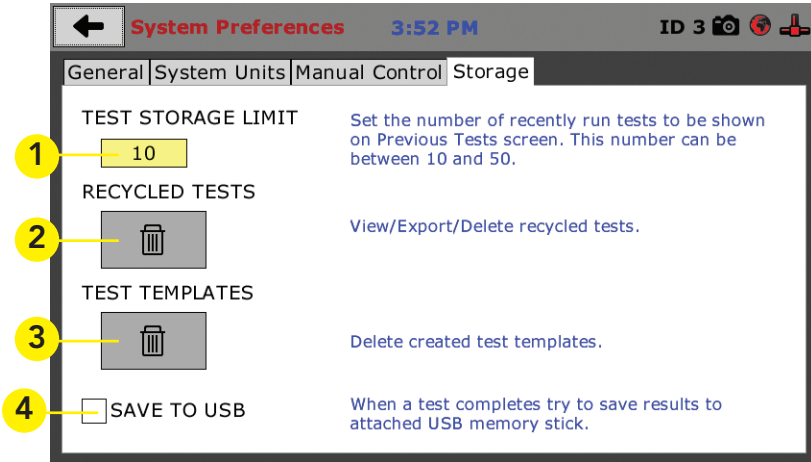
This option allows you to use the volume change apparatus in the up direction.

Flow Down (3)

This option allows you to use the volume change apparatus in the down direction.

Preferences – Storage Tab

This screen is accessed by clicking on the Storage Tab under System Preferences.



Test Storage Limit (1)

This field allows you to set the number of previously run tests to be available on the "Previous Tests" screen. This number can be between 10-50.

Recycled Tests (2)

This refers to previously run tests that are not displayed in the "Previous Tests" window. These tests are not deleted; they are recycled for later use. Select this button to view/export/delete recycled tests.

Test Templates (3)

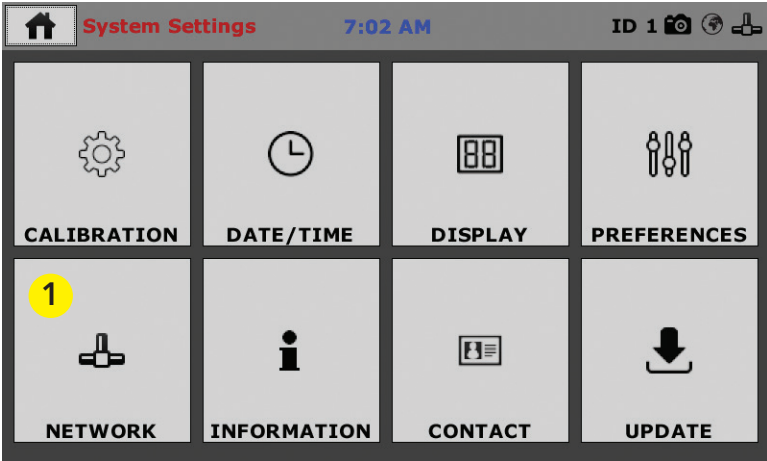
Select this button to delete test templates that have been created, but are no longer desired.

Save to USB Check Box (4)

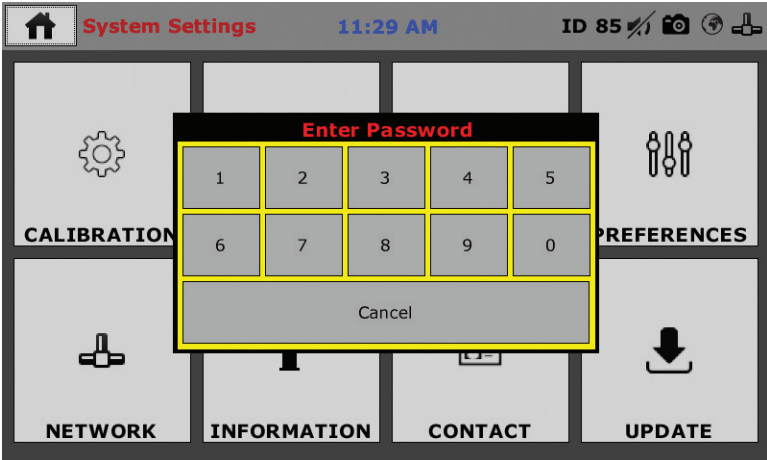
Checking this Box saves the results of a test to USB thumb drive inserted into the front USB slot on the machine.

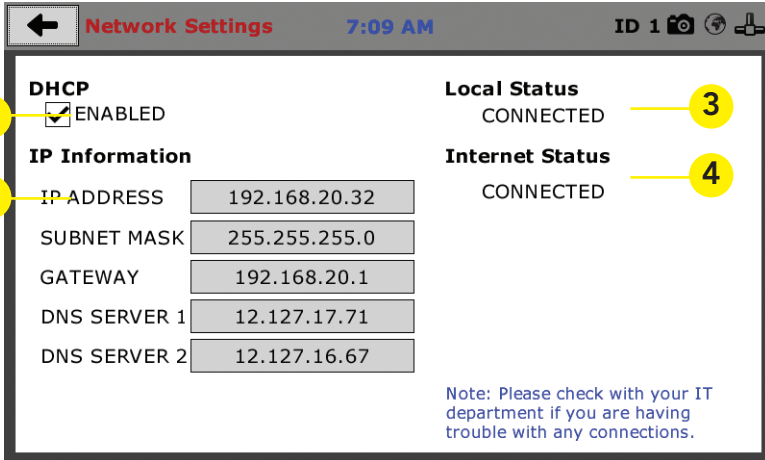
Initial Set Up — Network

To set up Network settings, return to the System Settings screen and click on the Network panel. (1)



A password is required to access the Network Settings. That password is: **27604**.





Network Settings Screen

The screen above is the Network Settings screen, it provides information on your IP information and network status.

DHCP (1)

Check this box to enable/disable the Dynamic Host Configuration Protocol (DHCP). If enabled, your machine will pick up IP information from your router. If disabled, you will need to manually enter the network information for a static IP, please consult your network administrator for this.

IP Information (2)

This information will be filled in automatically if the DHCP is checked, otherwise you will have to manually supply this information. The IP address must be unique for each machine.

Local Status (3)

This indicates the status of the local network connection, Connected or Disconnected.

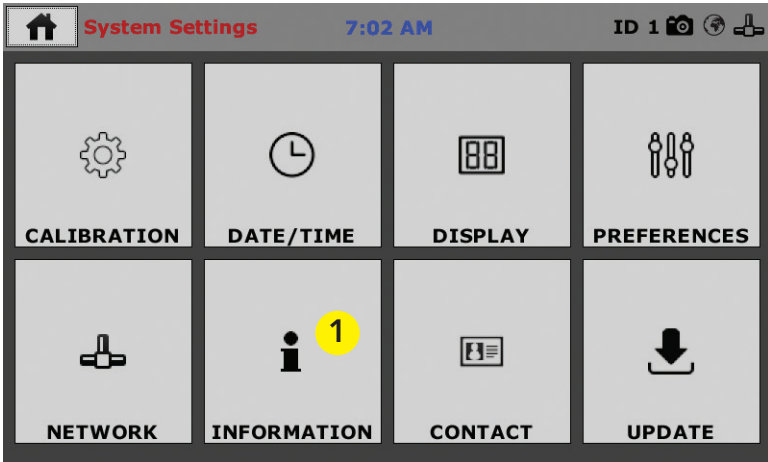
Internet Status (4)

This indicates the status of your Internet connection, Connected or Disconnected.

Note: If you are experiencing issues with any connections, please contact your IT department for assistance.

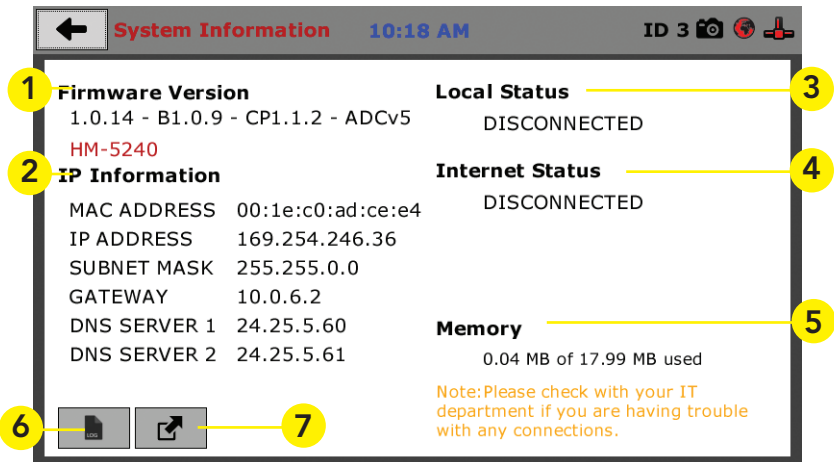
Initial Set Up — Information

Clicking on this panel provides a view of the current status of the machine. (1)



System Information

Below is a view of the System Information screen. It provides a current status of the machine.



Firmware Version (1)

The current version of the machine firmware is shown here. If you contact product support, you will need to supply this information.

IP Information (2)

This information will be filled in automatically if DHCP is checked, otherwise you will have to manually supply this information. The IP address must be unique for each machine.

Local Status (3)

This indicates the status of the local network connection, Connected or Disconnected.

Internet Status (4)

This indicates the status of your Internet connection, Connected or Disconnected.

Memory (5)

This indicates the current status of how much available memory is being used by the machine

Factory Screen (6)

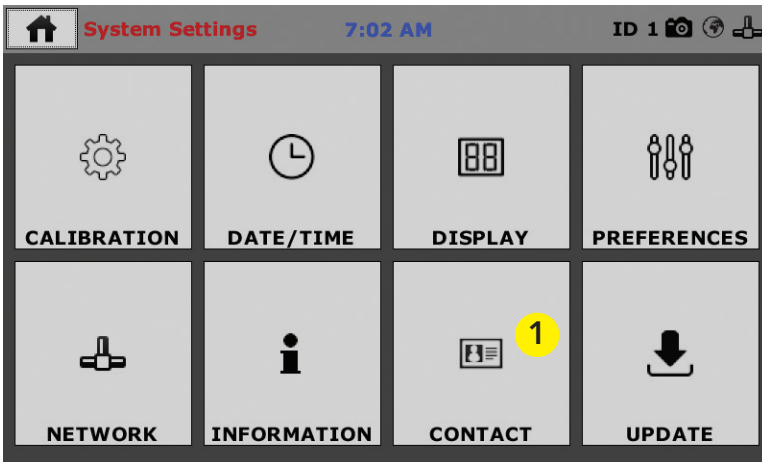
This is for Humboldt use only.

Export Log File (7)

This button exports a log file from the machine to a USB thumb drive. Be sure to insert a thumb drive before exporting the file or you will receive an error. This file can be helpful in trouble shooting by Humboldt Support.

Initial Set Up —Contact

Clicking on this panel provides contact information for Humboldt Support and Service(1)

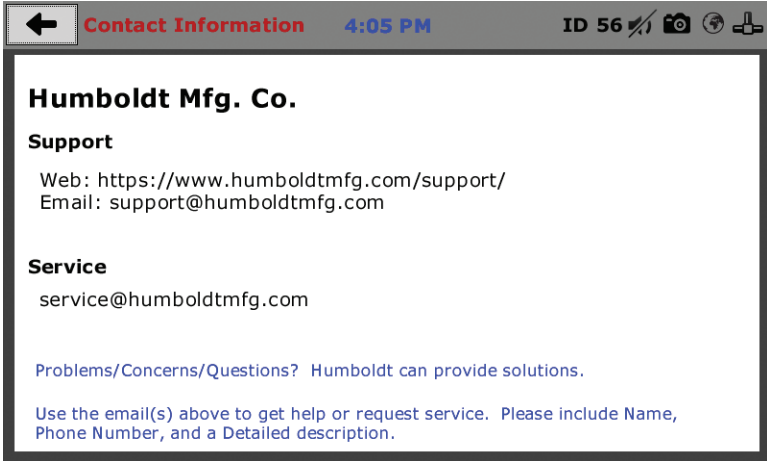


Contact Information

Below is a view of the Contact Information screen showing contact information for Humboldt Support and Service.

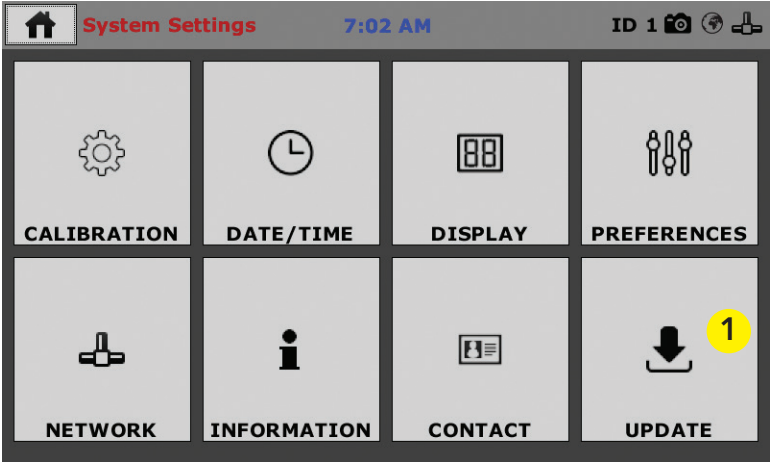
For quickest response go to this link on our website: <https://www.humboldtmfg.com/support> and fill in the support form. This will provide us with the necessary information to assist you and you will be added to the next position in the support cue.

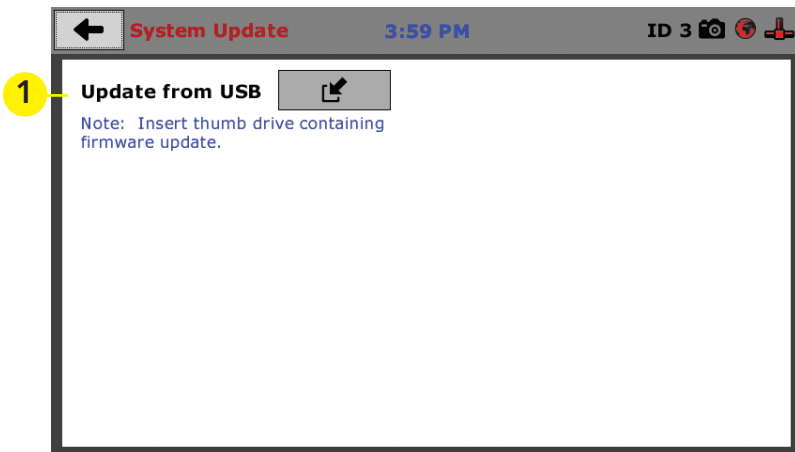
You can also email Humboldt Support at support@humboldtmfg.com or Humboldt Service at service@humboldtmfg.com. Please include contact information and a detailed description of your reason for contact.



Initial Set Up — Update

Clicking on this panel provides information on checking for Updates, performing updates and an update history for the machine. (1)



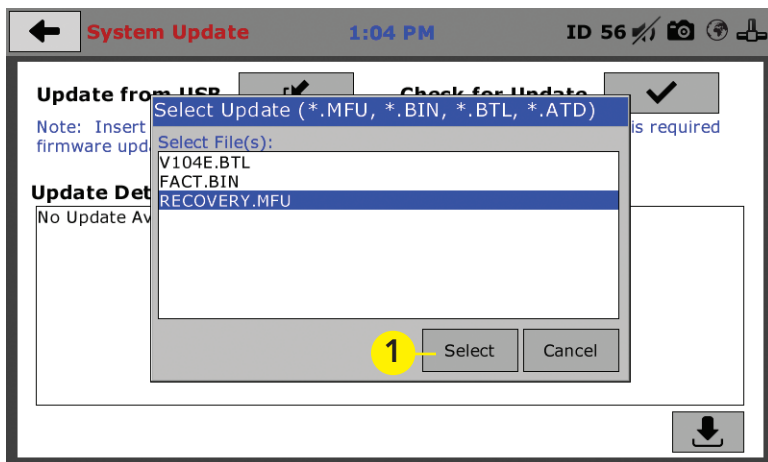


Update from USB (1)

If your HM-5240 is not connected to the internet, Software updates for your machine can be downloaded from the Humboldt website Support Area using a computer. To access the Software Update area, go to: <https://www.humboldtmgf.com/support/software.php>.

Once on this page, click on the Elite Series Firmware tab. You will see a list of Humboldt Elite Series machines. Click on the HM-5240 Current Version link and the firmware update will begin to download to your computer. Once the download is complete. Load the file onto a USB thumb drive and insert the thumb drive into the USB port on the front of the HM-5240. With the USB thumb drive inserted into the USB port, click on Update from USB (1).

A window will open and you will see a list of Updates. Select a file to use for your update and click the Select button.



The update process will begin. This may take several minutes. Your HM-5240 may reboot several times during the update, do not turn off or reset machine during this process.

Operation from a Computer and NEXT Software

This manual covers the setup and operation of the HM-5240.3F Pressure Controller in Stand-alone Mode only. For information on operating your load frame with Humboldt's NEXT Software and a computer, please refer to the Humboldt NEXT software manual.



Equipment Setup

Installation and Equipment Setup

Electrical Connections

The HM-5240 is equipped with an internal digital switching power supply, which allows it to be used with most power configurations throughout the world. The unit is supplied with an IEC electrical cord with a standard 110V plug.

The HM-5240 arrives ready for operation. Attach the supplied IEC electrical cord to the machine and plug into a standard wall receptacle for use in the United States. For locations other than the U.S., replace the supplied electrical cord with an IEC cord that has the correct plug for your application. The supplied cord can also be used by cutting the standard plug from the cord and attaching the correct plug.

Power Switch

The Power Switch is located above the electrical cord inlet. The Fuse Compartment is located between the electrical cord inlet and the Power Switch. The HM-5240 uses a 8.5 amp fuse. To begin operation, attach the supplied electrical cord, plug it in and press the Power Switch.

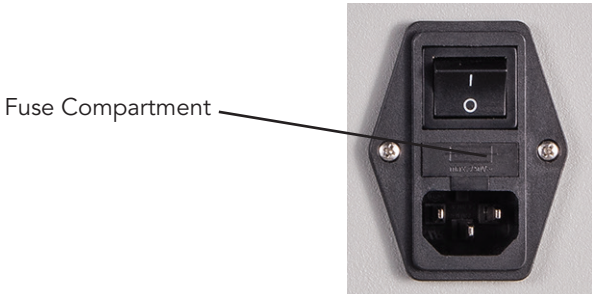


Fig. 1 Power Switch

Instrumentation Connections and Setup

HM-5240 Rear Instrumentation Panel



Above is a photo of the rear instrumentation panel of the HM-5240.

Network (1)

Ethernet input for connecting machine to a local area network (LAN) and/or the internet.

USB Power (2)

The USB Power port is used for powering a wireless access appliance for those who want to use a wireless LAN setup.

Instrument Inputs (3)

The back panel features four (4) inputs for connecting instrumentation to the machine. Each input represents a separate channel. Channel 1 has been assigned to Cell Pressure and is pre-calibrated. Channel 2 has been assigned to Back Pressure and is pre-calibrated. Channel 3 has been assigned to Pore Pressure and is pre-calibrated. And, Channel 4 has been assigned to Volume and is pre-calibrated. Instrumentation is clearly marked for what channel it is assigned to.

Below are photos of an instrumentation input and the instrumentation plug. Install the plugs into the inputs by lining up the guide at the bottom of the plug with the slot at the bottom of the input.



Instrumentation Input



Instrumentation Plug

Once you have installed the instrumentation into the correct inputs, your rear panel should look like the photo on the previous page.

Initial Set Up

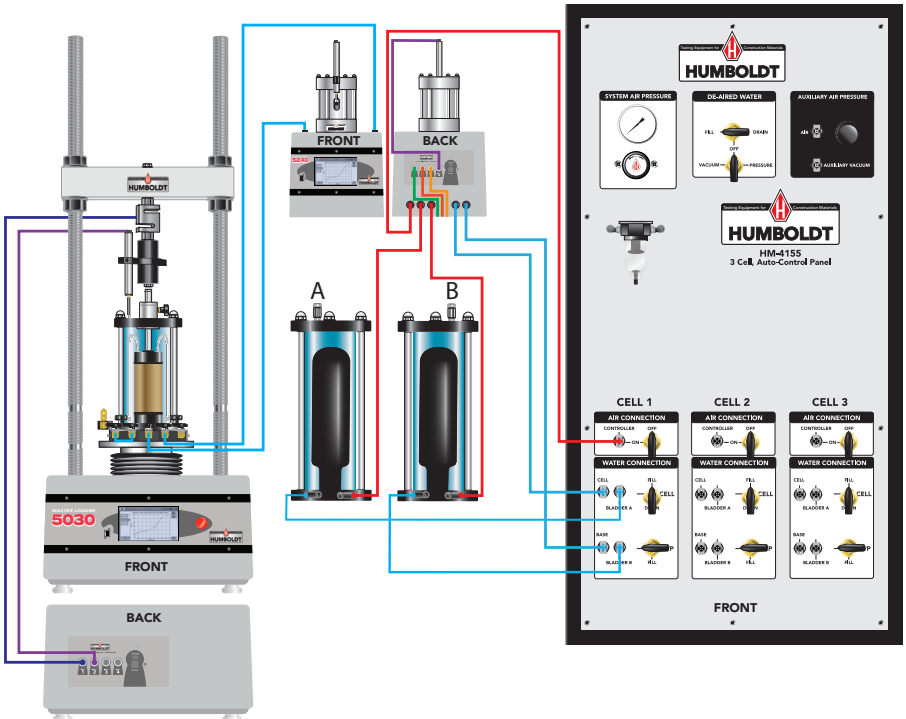
Remember, your HM-5240 Pressure Controller includes all the necessary instrumentation, which is already calibrated and assigned to an Input and will not need calibration, however you should confirm that the instrumentation has been set up and calibrated, that you have plugged them into the correct channel, and that you check with your QC/QA program to set up a frequency of calibration schedule.

Instrumentation Connections and Setup

HM-5240 Rear Instrumentation Panel

HM-5240 Hookup Overview

Below is a drawing that illustrates the installation of the HM-5240.



HM-5240 Hookup

Below is a photo of the back panel showing the lower inputs to the HM-5240.



Air input (1)

To begin setup of your HM-5240, measure a length of 0.25" tubing and insert one end into the Air Input (1) on the HM-5240. Insert the tubing until you feel it seat into place. Take the other end of the tubing and attach a HM-4150.72 Quick Valve Coupling. Once this is completed, insert the coupling into the port labeled Controller in the Air Connection section of Cell 1 on the Auto-Control Panel (See drawing).

Bladder A (2)

Measure a length of 0.25" tubing and insert one end into the Bladder A Input **(2)** on the HM-5240. Insert the tubing until you feel it seat into place. Take the other end of the tubing, add a HM-4150.72 Quick Valve Coupling and insert it into the Left-side port of Bladder A. The Right-side port of Bladder A would then use 0.25" tubing to attach to the Bladder A port of the Water Connection Section of Cell 1 on the Auto-Control Panel. (See drawing).

Bladder B (3)

Measure a length of 0.25" tubing and insert one end into the Bladder B Input **(3)** on the HM-5240. Insert the tubing until you feel it seat into place. Take the other end of the tubing, add a HM-4150.72 Quick Valve Coupling and insert it into the Left-side port of Bladder B. The Right-side port of Bladder B would then use 0.25" tubing to attach to the Bladder B port of the Water Connection Section of Cell 1 on the Auto-Control Panel. (See drawing).

Cell (4)

Measure a length of 0.25" tubing and insert one end into the Cell Input **(4)** on the HM-5240. Insert the tubing until you feel it seat into place. Take the other end of the tubing, add a HM-4150.72 Quick Valve Coupling and insert it into the Cell port of the Water Connection section for Cell 1 on the Auto-Control Panel. (See drawing).

Base (5)

Measure a length of 0.125" tubing and insert one end into the Base Input **(5)** on the HM-5240. Insert the tubing until you feel it seat into place. Take the other end of the tubing and attach a HM-4150.78 Reducer Coupling to it. Measure a length of 0.25" tubing and insert one end into the HM-4150.78 Reducer Coupling and on the other add a HM-4150.72 Quick Valve Coupling and insert the coupling into the Base port of the Water Connection section for Cell 1 on the Auto-Control Panel. (See drawing).

Chamber Hookups (1) (2)

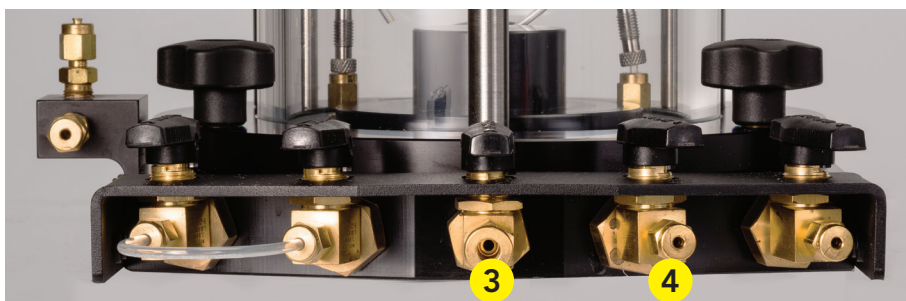
Once these hookups are complete, move to the top of the HM-5240 and insert the two small tubes found there into their respective connections. These tubes should be marked Lower **(1)** and Upper **(2)**, take them and insert them into the corresponding labeled connections. If you need to remove these after they have been inserted, press down on the white collar while pulling up on the tubing and the tubing should come out. (See photo on next page)



Cell Hookups (3) (4)

To connect the HM-5240 Controller to a Triaxial Cell, while looking at the controller from behind, Measure a length of 0.25" tubing and insert one end into the Cell Valve Input (3) on the Right-side of the HM-5240. On the other side of the tubing install a HM-4197.25 ferrule and attach the tubing to the Triaxial Cell's Cell Valve (3). (See photo below)

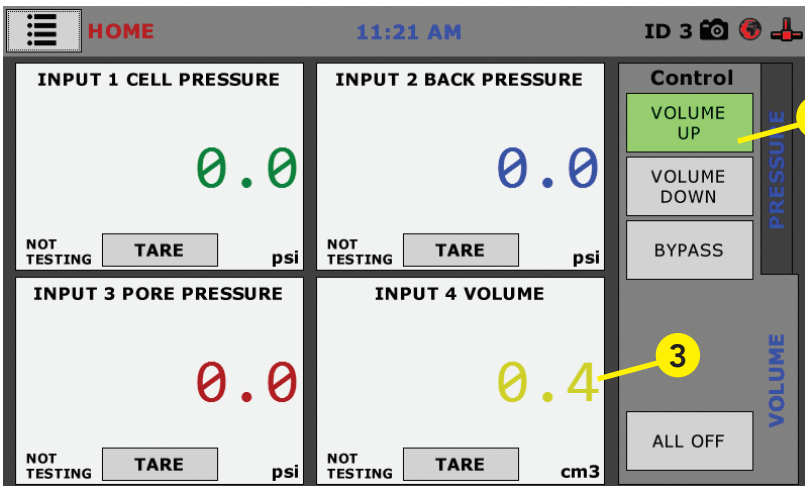
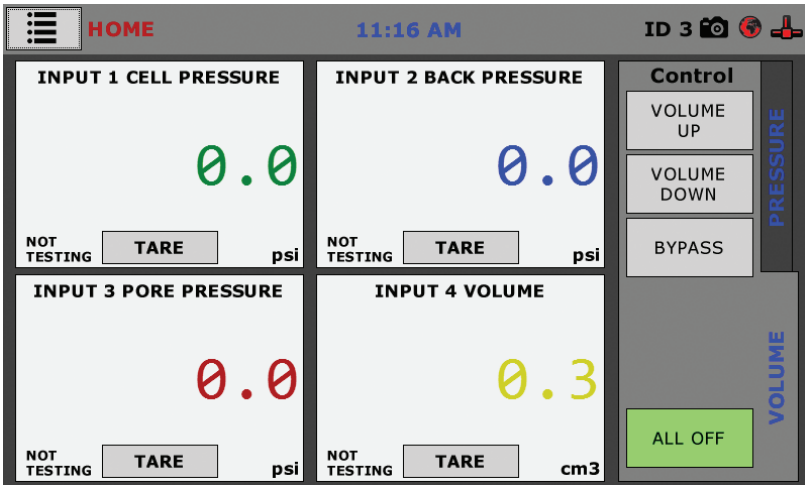
To Connect the HM-5240 to the Base Valve of the Triaxial Cell, Measure a length of 0.125" tubing and insert one end into the Base Valve Input (4) on the Left-side of the HM-5240. On the other side of the tubing install a HM-4197.12 ferrule and attach the tubing to the Triaxial Cell's Base Valve (4). (See photo below)



Priming the Volume Chambers

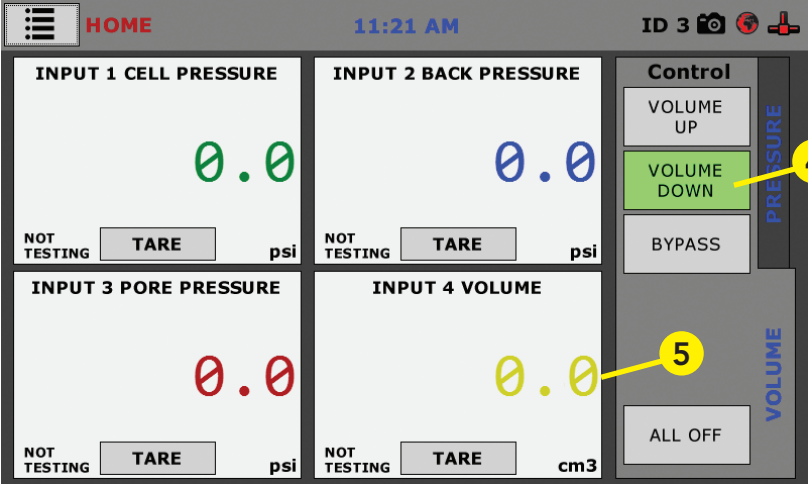
The volume chambers for the HM-5240 are shipped empty and you will have to prime them before operation. To do this, add tubing to the Top Valve of the Triaxial Cell. Place the tubing end into a drain or bucket.

If it isn't already, turn on the HM-5240. Turn the water connection base valve on the HM-4155 or the HM-4154 distribution panels to the fill direction. Click on the Volume Tab on your HM-5240. You should see the following window.



Select the Volume Up Tab (2). The HM-5240 will begin to fill the Upper Chamber. Water should be coming out of the Base Tube into the drain or bucket. Monitor Input 4 Volume (3) until the number no longer increases, turn the V.C. part of the HM-5240 upside down and vent until water flows from the vent and then place back.

At this point, Click on the Volume Down Tab (4), see below. Water will continue to exit the Base Tube into the drain or bucket. Monitor Input 4 Volume (5) until the number reads "0" and vent until water flows from the vent.



Repeat this process a total of three (3) times. This is only necessary at the initial startup and does not have to be repeated every test.

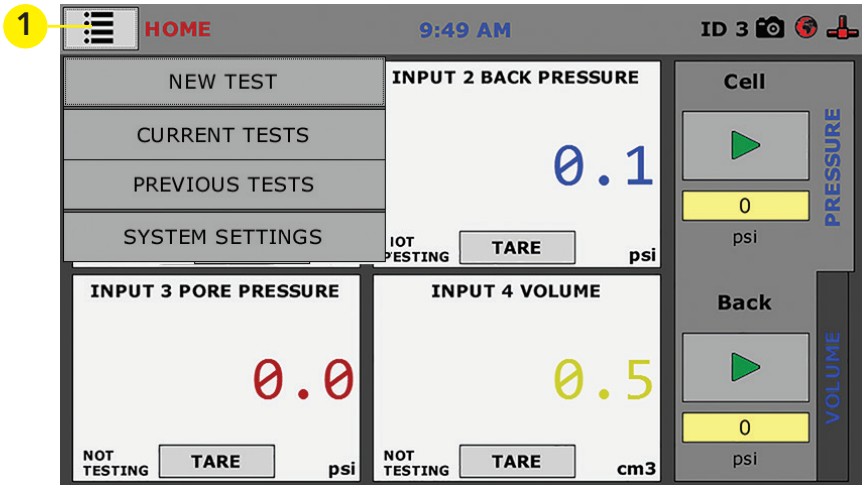


Test Setup

Prior to beginning a new test setup using the HM-5240 be sure to do the following:

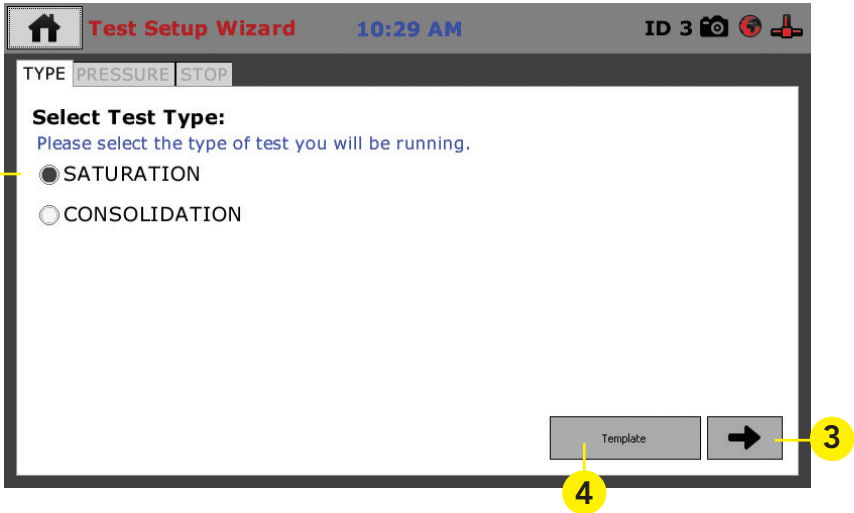
- Setup your specimen in a Triaxial Cell
- Fill the Triaxial Cell with water
- Purge the drainage lines of air.

To begin a new test, Click on the Menu icon in the top left corner of the screen **(1)**. When you click on this button, you will see a drop-down menu appear, see below. Click on NEW TEST **(1)**.



Test Setup Wizard – Select Test Type — Saturation

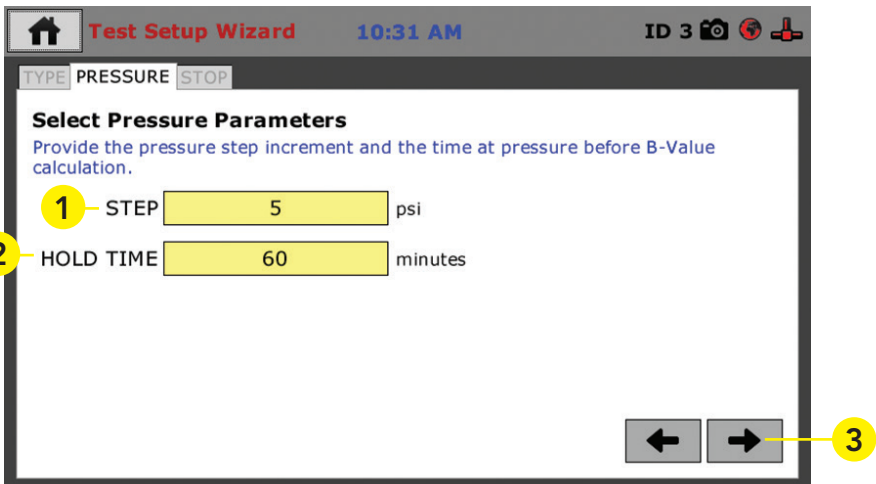
Clicking on NEW TEST **(1)** above brings up the Test Setup Wizard. On the first screen of the Test Setup Wizard, you can select the type of test you want to perform — Saturation or Consolidation **(2)**. Here we have chosen Saturation, to continue click on the arrow button in the bottom right-hand corner **(3)**.



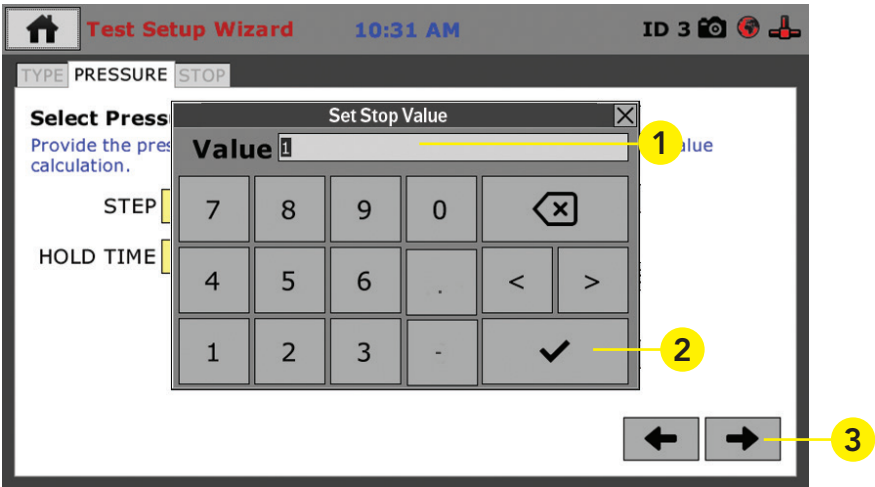
Template (4)

If you are just beginning to use your new machine, there will be no templates, which have been saved, so at this point, clicking on the template button will provide no templates to choose from. To create templates, you essentially save a completed test as a template. Once you have completed some tests and save them as templates, they will then show up when you press the template button. This can allow you to quickly repeat tests with the same parameters, as well as a fast way to create new tests by choosing a template and then changing some of the parameters.

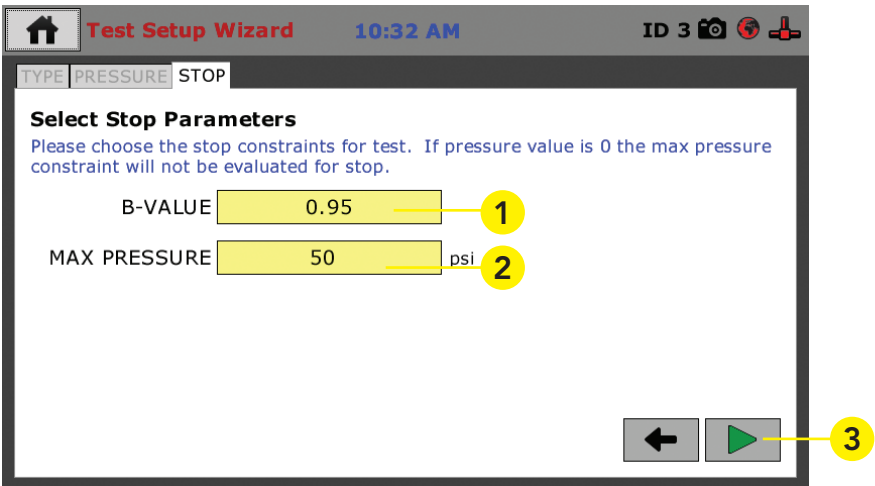
Test Setup Wizard – Select Pressure Parameters



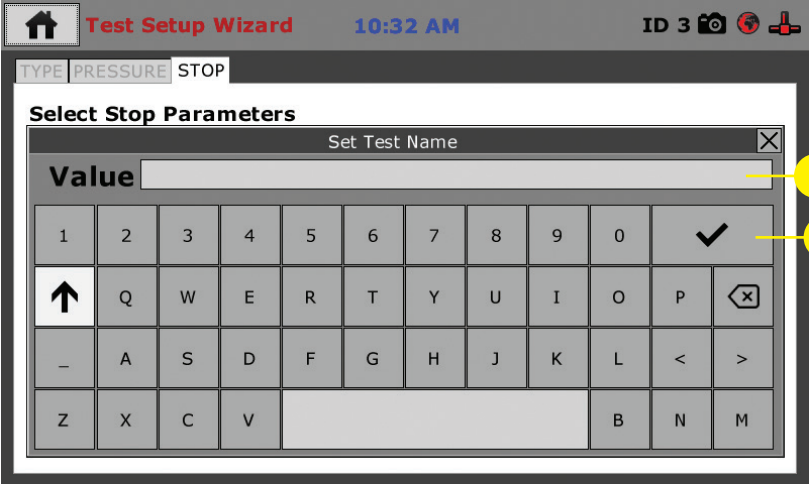
In the previous screen, we chose Saturation for the Test Type, so the value in the above screen is Pressure Parameters for a Saturation test. Click on the Step psi field (1) and a pop-up menu will appear. See below



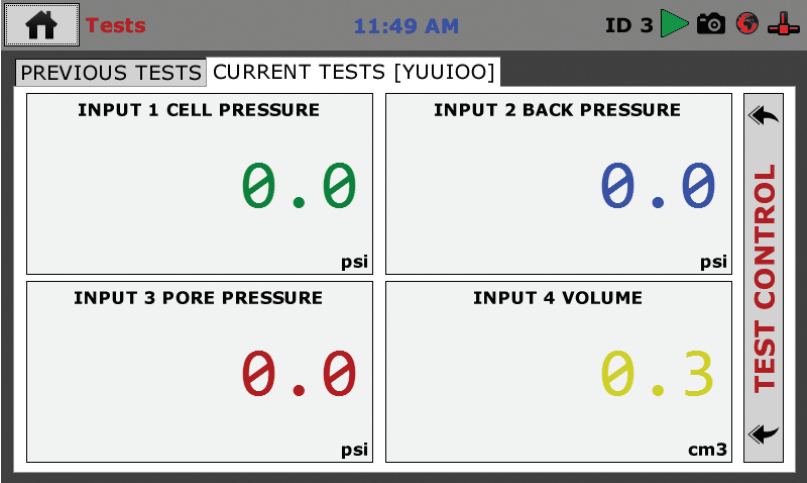
Use this menu to type in the psi value you want to use for each Step of the test (1). Click the check mark (2) in the lower right-hand corner of this pop-up menu to choose the value and you will be returned to the screen above. Do the same for the Hold Time (minutes) (2). To continue, press the Right Arrow in the lower, right-hand corner of the screen (3).



Now set the Stop Parameters for the Test. Select the B-Value (1) you wish to use for the test and the Max Pressure (2) you'd like to use for the Stop Value. If you set the Max Pressure to "0", the Max Pressure constraint will not be evaluated for Stop. Once these parameters are set you are ready to Start the Test, press the Green Arrow in the lower, right-hand corner of the screen (3).

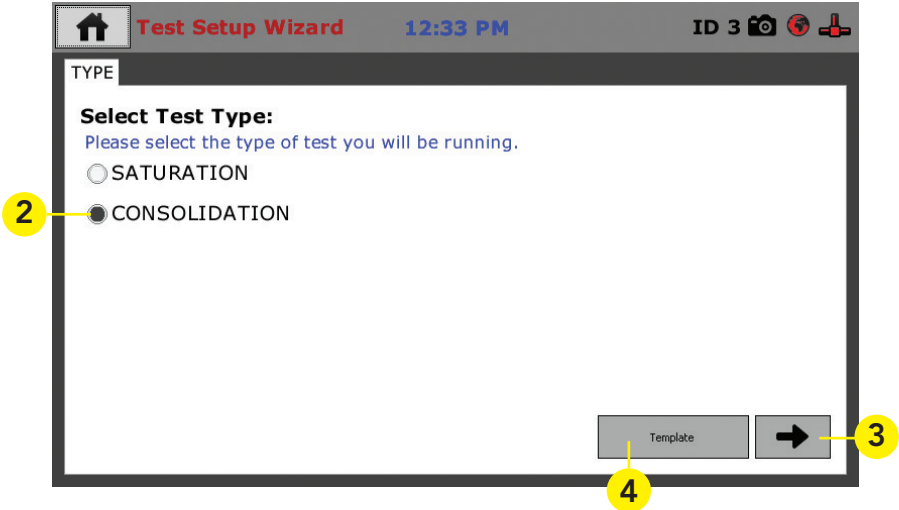


In the Value Field (1) give your test a name. When finished, click on the check mark key (2) to save. Once saved, you will see the following screen, showing the test you just saved. The test will begin to run automatically, depending upon what you set your Start Parameters to. See screen below.



Test Setup Wizard – Select Test Type — Consolidation

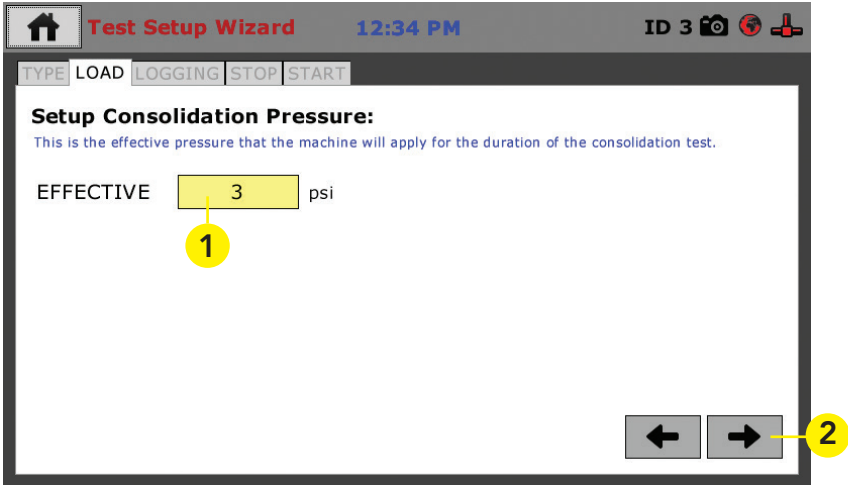
On the first screen of the Test Setup Wizard, you can select the type of test you want to perform — Saturation or Consolidation (2). Here we have chosen Consolidation, to continue, click on the arrow button in the bottom right-hand corner (3).



Template (4)

If you are just beginning to use your new machine, there will be no templates, which have been saved, so at this point, clicking on the template button will provide no templates to choose from. To create templates, you essentially save a completed test as a template. Once you have completed some tests and save them as templates, they will then show up when you press the template button. This can allow you to quickly repeat tests with the same parameters, as well as a fast way to create new tests by choosing a template and then changing some of the parameters.

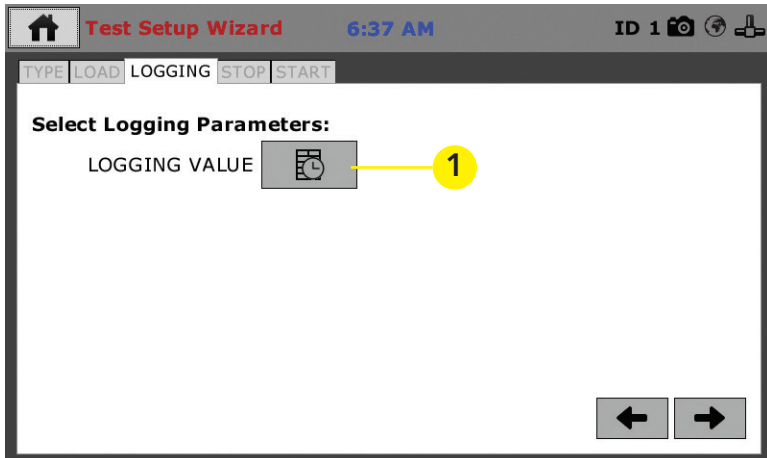
Test Setup Wizard – Setup Target Load



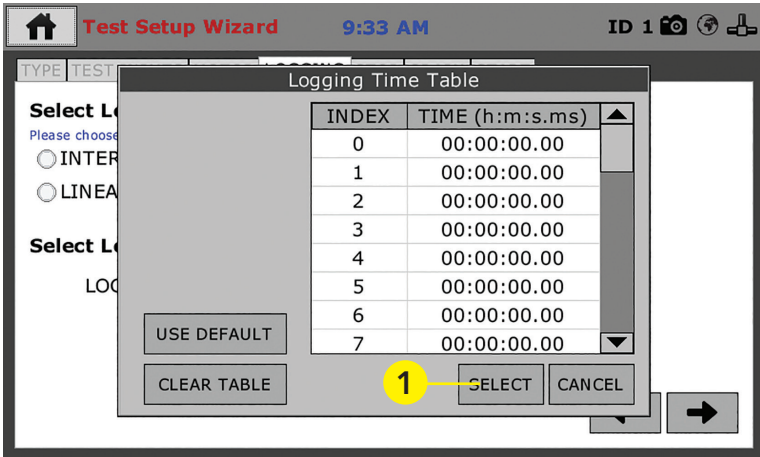
In the previous screen, we chose Consolidation for the Test Type, so the value in the above screen is the Effective Pressure the machine will apply during a Consolidation test. Click on the Effective psi field (1) and a pop-up menu will appear. Use this menu to type in the value you want to use for the Effective Pressure. Click the check mark in the lower right-hand corner of this pop-up menu to choose the value and you will be returned to the screen above. To continue, press the Right Arrow in the lower, right-hand corner of the screen (2).

Test Setup Wizard – Select Logging Values

Click on the Logging Value Icon (1).

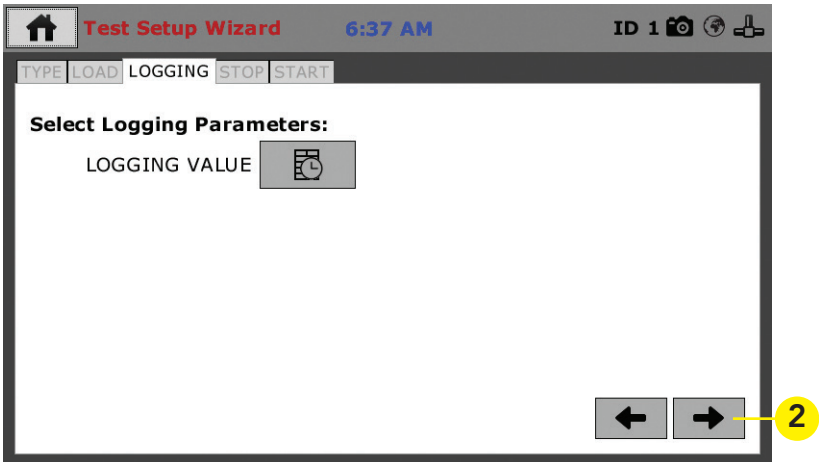


A new pop-up window will appear entitled Logging Time Table, see below.



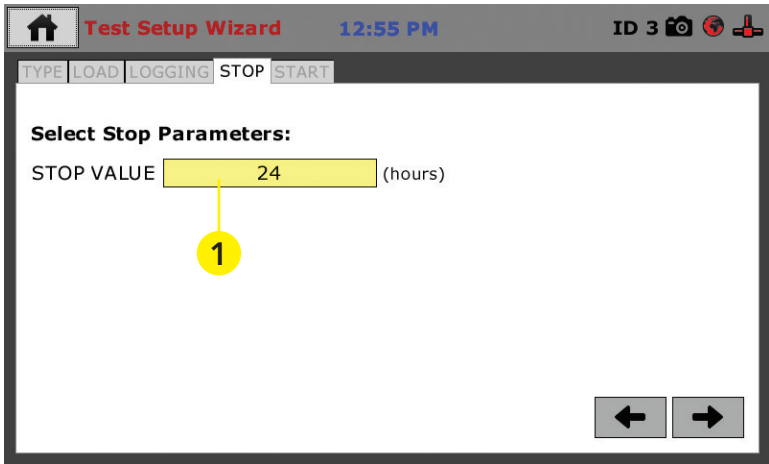
Above is a blank LOGGING TIME TABLE. In order for the logging table to function, you will need to fill in the table with values from either an ASTM standard or your own values. Once you have completed the table for all inputs, Click the SELECT Button (1) in the lower right-hand side of the window to save the table.

To continue the Test Setup process, click the Arrow (2) in the lower, right-hand corner of the window.



Test Setup Wizard – Stop Condition

To set the Stop Condition for the test, click on the yellow field (1) next to Stop Value.

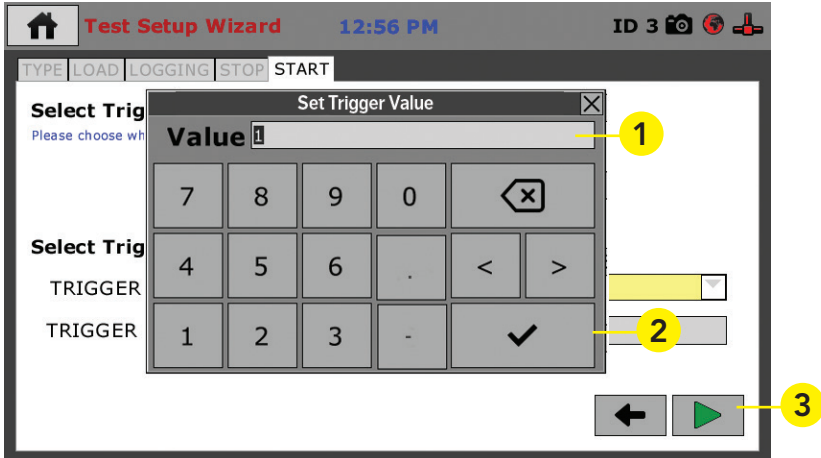
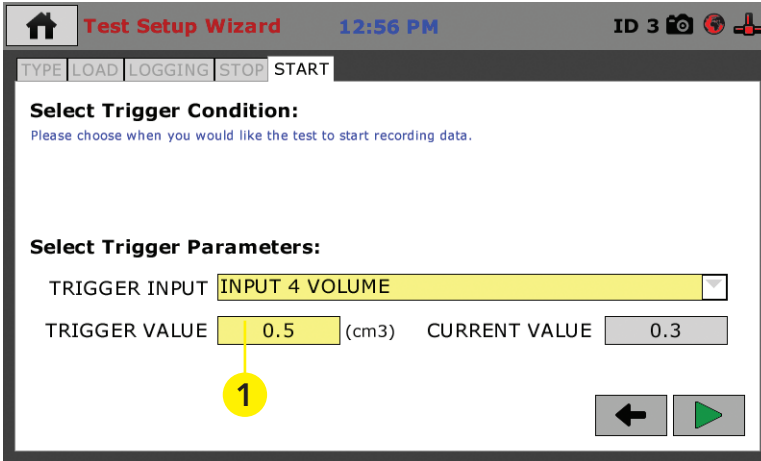


See below, Click the Check Mark (2) in the lower right-hand corner to save the value. Click the Arrow (3) in the lower, right-hand corner of the window to continue the Test Setup process.

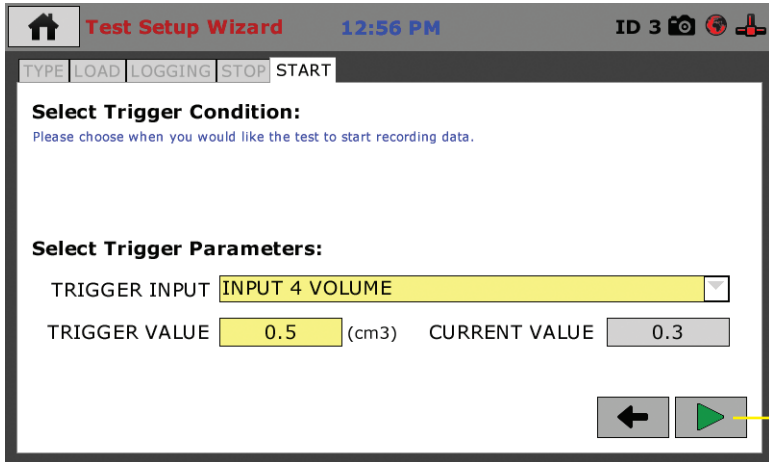


Test Setup Wizard – Start

You should now see the Start Screen (below). You will need to set the Trigger Input Value for the Volume reading. Click on the Trigger Value field (1) and an input screen will popup.

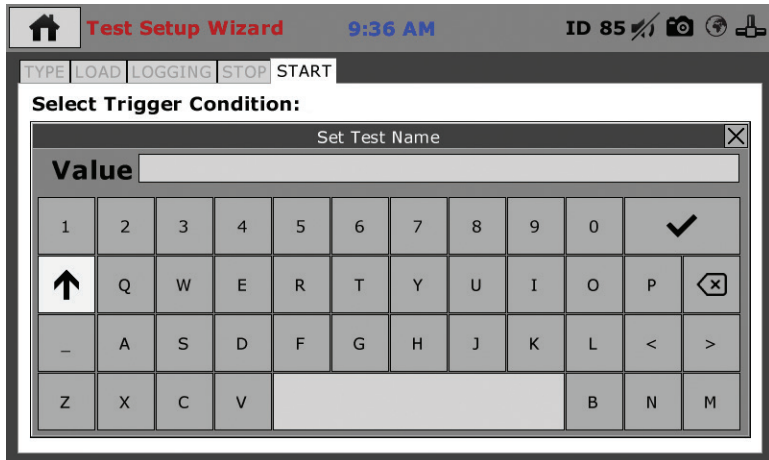


Insert the desired value in the Value field (1), using the keyboard. Click the Check Mark (2) in the lower right-hand corner to save the value. Click the Arrow (3) in the lower, right-hand corner of the window to continue the Test Setup process.

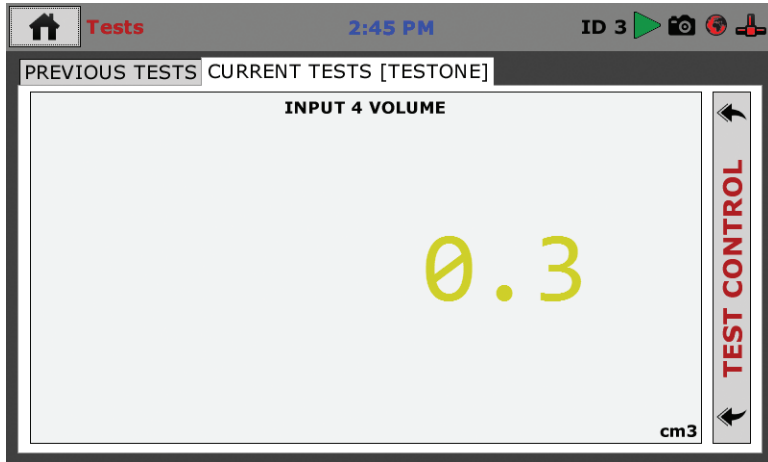


You are now setup to run your test. Proceed with your test by pressing the Green Arrow (5) in the bottom, right-hand corner of the screen.

When you press the Green Arrow (5) in the bottom, right-hand corner of the screen. You will see the following screen.

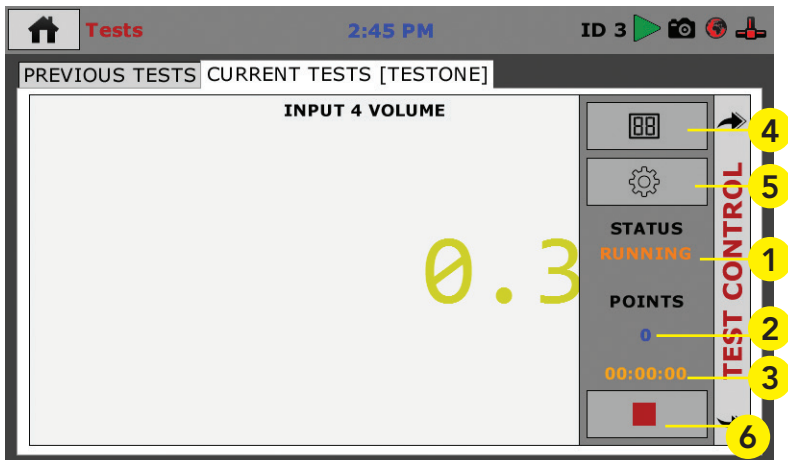


In the Value Field (1) give you test a name. When finished, click on the check mark key (2) to save. Once saved, you will see the following screen, showing the test you just saved. The test will begin to run automatically, depending upon what you set your Start Parameters to. See screen below.



Tests — Current Tests Tab

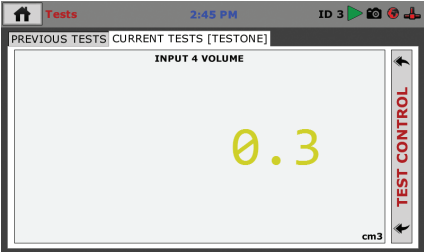
On the screen below, the Green Arrow (1) in the screen header indicates that a test is currently running. The name of the test (2) is shown in the current tab. To access different views, control or stop the current test, click on the Test Control tab (3) at the right of the screen. Clicking on this tab opens the Test Control panel, see screen below. You can monitor your test from this window, which allows you to view the Volume Value during the test. For additional information, click on the Test Control bar (1) on the right of the window (4), which will reveal the additional panel shown below.



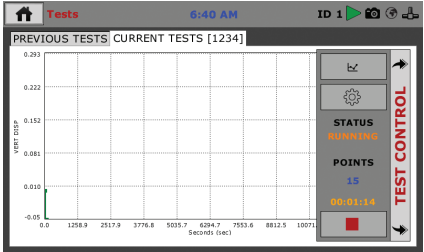
From this new panel you are given the Current Status of your test, in this case, Running (1). You can also see the number of points currently read (2) and the current duration of the test (3).

In addition, by clicking on the Test View button (4) you can toggle through three different views of the current test. These views are:

Selection View



Graph View



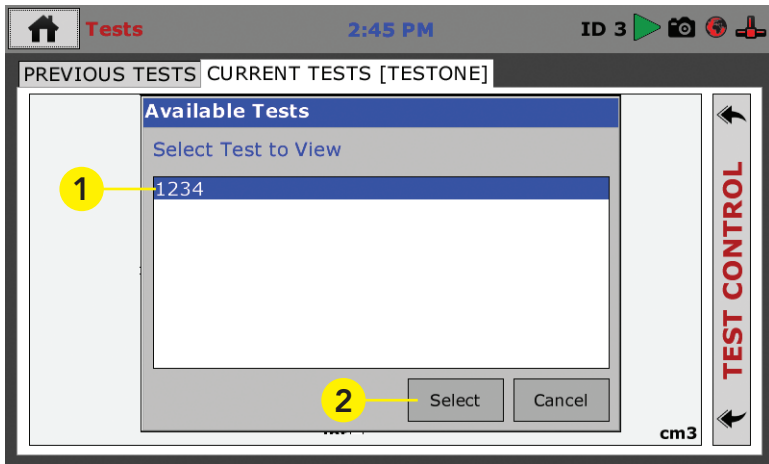
Tabulation View

The screenshot shows a table titled 'CURRENT TESTS [1234]'. The table has columns for INDEX, TIME, INPUT 1, INPUT 2, INPUT 3, and INPUT 4. The data rows are as follows:

INDEX	TIME	INPUT 1	INPUT 2	INPUT 3	INPUT 4
0	00:00:00	-	-	0.0000	0.0
1	00:00:05	-	-	-0.0629	205.0
2	00:00:10	-	-	-0.0629	202.4
3	00:00:15	-	-	-0.0629	202.3
6	00:00:30	-	-	-0.0630	206.6
10	00:00:50	-	-	-0.0630	204.3

On the right, the 'TEST CONTROL' panel shows 'STATUS RUNNING', 'POINTS 11', and a timer '00:00:54'.

By clicking on the Test selection button (5) when you also have the Current Tests tab selected, you can view all currently running tests.



Choosing a test from the list of currently running tests (1) and Clicking Select (2) allows you to monitor that test in all views. This allows you to view the status of all your running tests one at a time.

To Stop a test, click on the Red Square (6) at the bottom of the Test Control Panel. When you click on the Stop Button, a popup menu will appear asking if you are sure you'd like to stop the test, if you are, click the Stop button.

Operation from a Computer and NEXT Software

This manual covers the setup and operation of the HM-5240.3F Pressure Controller in Stand-alone Mode only. For information on operating your load frame with Humboldt's NEXT Software and a computer, please refer to the Humboldt NEXT software manual.

HM-5240.3F Specifications

The HM-5240.3F is a fully-automated pneumatic pressure controller, which is highly accurate up to 150psi (1000kpa) in pressure and 100cc (100ml) in volume. It is designed specifically for geotechnical laboratory triaxial testing (UU, CU and CD) and provides control and monitoring of cell pressure, back pressure, pore water measurement and volume change when used with our Elite Series load frames.

The HM-5240 provides four (4) integral and independent data acquisition channels, which can be utilized in stand-alone configuration or accessed through a LAN-networked computer using Humboldt's NEXTsoftware. The unit is built with durable high-quality components and features the use of two electronic regulators to ensure smooth and reliable operation of pressures, as well as precise results.

In stand-alone mode, this pressure controller provides a 7" (178mm) touch-screen controller. This new waterproof, touch screen provides colorful, at-a-glance monitoring of testing functions without the use of a computer. Operator could see all the data in several formats at the controller while the test is running. Then can be viewed simultaneously or downloaded later to a computer in the lab, in the next room or at a different location, while also providing report generation capabilities from within Humboldt's NEXT software or our enhanced test- specific modules.

Specifications	
Maximum Pressure	150psi (1000kpa)
Volume Capacity	100cc (100ml)
Voltage	110-220V 50/60Hz - 5.0 amps
Dimension (L x W x H)	13" x 11.5" x 22" (330 x 292 x 559mm)

General Warnings

Safety Warnings

Operators should take care to operate this machine under maximum load restrictions. The machine is programmed at the factory to provide safety shutdown if the upper or lower maximum travel is exceeded, as well as if the upper instrument calibration is exceeded.

Electrical Warnings

Typically, there is no reason for the operator to open the machine. However, if the customer's engineers attempt to change settings to the circuit board connected to the back panel, the machine must first be unplugged. Unplugging the internal connection to the back panel circuit board while the machine is under power will result in permanent damage to the circuit board.

Important Notice

The information contained herein is supplied without representation or warranty of any kind. Humboldt Mfg. Co. therefore assumes no responsibility and shall have no liability, consequential or otherwise, of any kind arising from the use of the described equipment contained in this manual.

Updated Products

The manufacturer reserves the right to change or modify product design or construction without prior notice and without incurring any obligation to make such changes and modifications on products previously or subsequently sold.

Fitness for Application

The manufacturer makes no recommendations or claims regarding fitness for applications other than the specific tests as defined in this User Guide.

Unpacking

Initial inspection should include checking for physical damage during shipping and obvious external damage to the product.

Package contents are defined by your packing list. Each Loader is configured according to customer specifications. In your inspection, make certain that the contents of your shipment match the documentation provided by your packing list.

Place unit on a flat, smooth surface and use leveling feet (supplied) and a bubble level to ensure that the unit is level side-to-side and back-to-front.

Warranty

Humboldt Mfg. Co. warrants its products to be free from defects in material or workmanship. The exclusive remedy for this warranty is Humboldt Mfg. Co., factory replacement of any part or parts of such product, for the warranty of this product please refer to Humboldt Mfg. Co. catalog on Terms and Conditions of Sale. The purchaser is responsible for the transportation charges. Humboldt Mfg. Co. shall not be responsible under this warranty if the goods have been improperly maintained, installed, operated or the goods have been altered or modified so as to adversely affect the operation, use performance or durability or so as to change their intended use. The Humboldt Mfg. Co. liability under the warranty contained in this clause is limited to the repair or replacement of defective goods and making good, defective workmanship.

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