



CHMS

Chassis Height Measuring System

User Manual

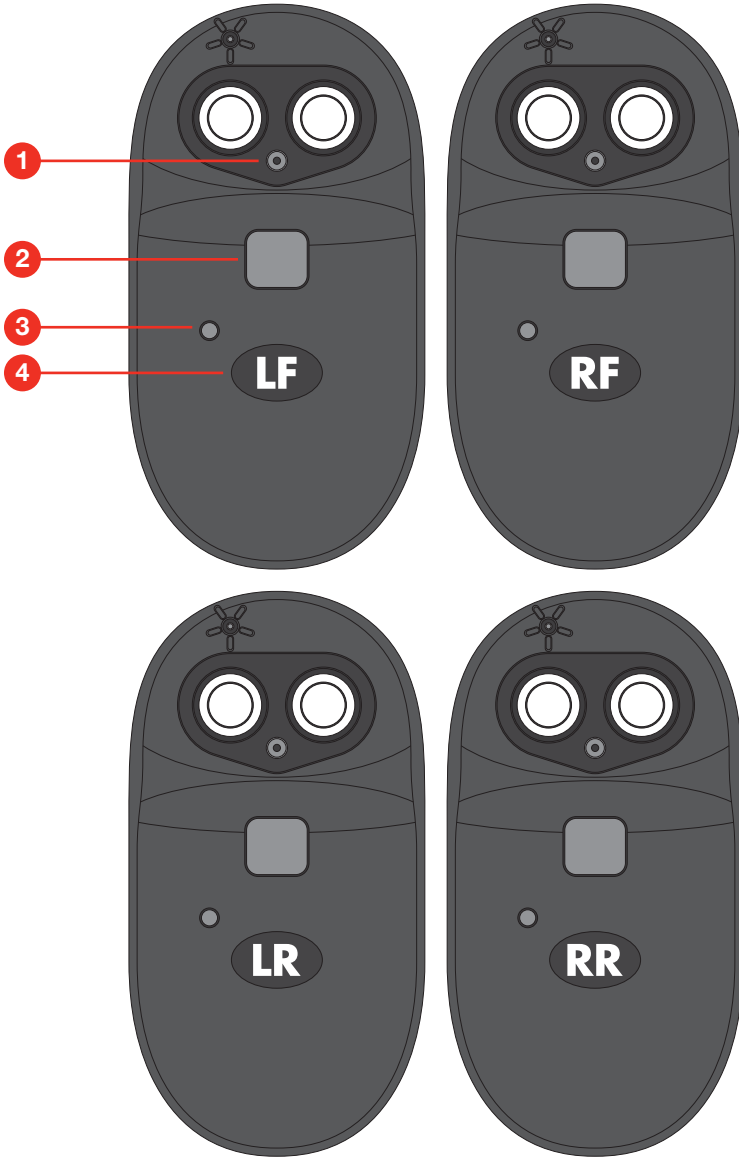
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Chassis Height Measuring System (CHMS) Tablet Diagram



1. Menu
2. Settings
3. Corner Description
4. Zero Value when set
5. Height Measurement including Zero if one is set
6. Scale Weight Input
7. TAKE READING Button
8. Sensor Battery Level
9. Sensor Bluetooth Connection

Chassis Height Measuring System (CHMS) Sensor Diagram



1. Laser Pointer
2. POWER Button
3. LED Indicator
4. Corner Description

1. Turn On Sensors



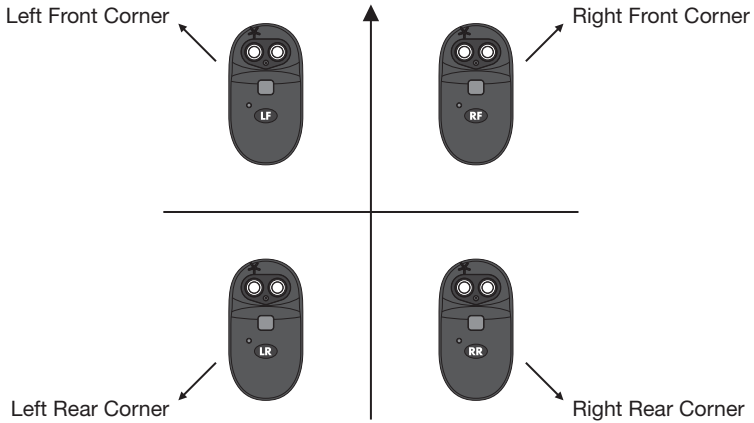
Click the grey POWER button once to turn on each sensor. The LED will flash indicating it is powered on.

2. Open CHMS App



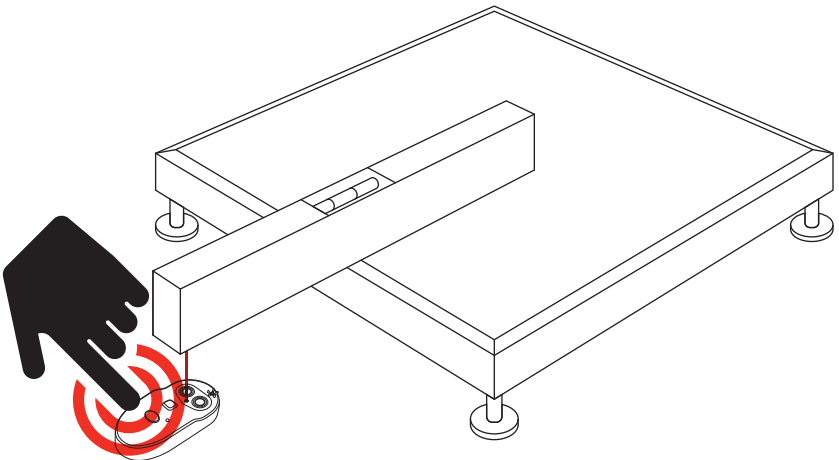
Turn on the tablet, and open the Creative Racing CHMS App that is pre-installed on the tablet.

3. Position Sensors



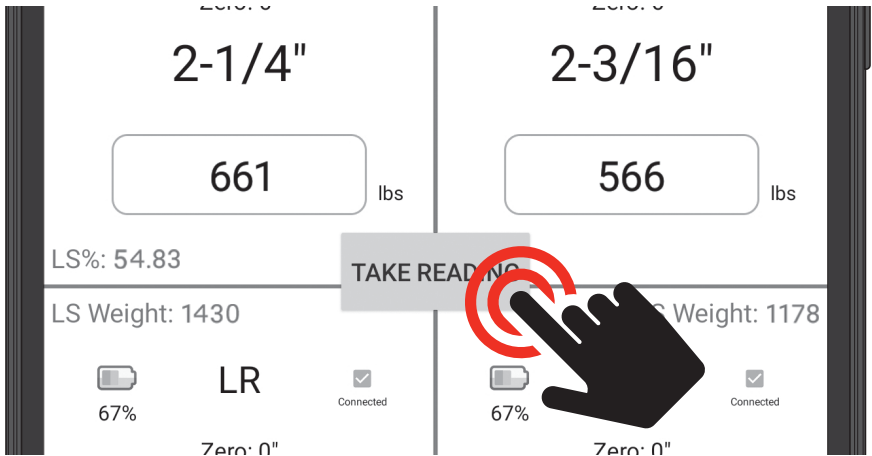
Place the sensors under the chassis where you want to measure.

4. Zero Sensors



If measuring on scales, use a straight edge to zero from the top of the scale pads with three clicks of the grey button. Your system will now measure from the top of your scales to the bottom of your chassis.

5. Measure Ride Heights



Tap TAKE READING on your CHMS tablet and your ride heights will appear.

Using Your Chassis Height Measuring System (CHMS)

This system can be used while the chassis is on scales or on the ground. See the descriptions below for each type of use.

1. For the most accurate results, remove the four sensors from the case and place them on the floor where they will be used.
 - If taken from one temperature extreme to another – from a 150°F trailer to a 70°F air conditioned shop for example – let sit for 10 - 15 minutes so the sensors can adjust to the ambient temperature.
2. Power on the tablet and boot the system.
3. Power on all four sensors by clicking the gray POWER button on each sensor. This button click will be followed by a long LED flash, indicating it is powered on. Once powered on, the LED will flash once every 10 seconds indicating the sensor has power.
4. To power off the sensors, click the gray POWER button five times. This will be followed by five LED flashes indicating the sensor is being powered off. Once powered off, the LED will no longer flash once every 10 seconds. If you do not manually power off the sensors, they will automatically turn off after two hours of inactivity. While powered on, the sensors use almost no power until a reading is taken.
5. Once the tablet and sensors are powered on, tap on the Creative Racing Products CHMS App icon on the tablet.
 - The first time the app is opened it may ask for permissions to run along with an email address for registering your CHMS.
 - Once the App initializes, it will go to the Home screen. This screen will display four gray corners at startup. The corners will then light up, as the corresponding sensors are connected and ready for use.
 - When all four corners light up, you are ready to use your CHMS.
6. Determine whether you will measure chassis height on scales or on the ground, and then follow the corresponding steps to proceed.

Measuring Chassis Height On Scales

1. Level your scale pads or roll-offs, front to back and left to right. The more accurate you level your pads, the more precise your measurements will be.
2. Place your chassis on the scale pads as if you were going to take weights.
3. Place each sensor on the floor under the chassis in its appropriate corner. You can position each sensor by holding the grey POWER button to activate the laser pointer. Locate the laser on the frame rail approximately where you want to measure. Our sensors actually measure 3/8" away from the laser dot toward the two white circles at the front of the sensor.
4. Roll the car off the scales onto the roll-offs.
5. Take a level or straight edge from the top of the scale pad and place it over the top of the two white circles located on the sensor.
6. With the level or straight edge over the sensor, press the gray button three times. The three clicks will be followed by three LED flashes, an audible confirmation from the tablet, along with the zero value on the screen being populated.
 - If you have sensors with magnetic bases, you can now attach the sensor to the underside of the chassis.
7. Repeat the two steps above for each sensor until all four corners are completed.
8. You are now ready to take measurements, by tapping the TAKE READING button in the middle of the screen.

Measuring Chassis Height On Ground

1. Place each sensor on the ground under the chassis in its appropriate corner. You can position each sensor by holding the gray button to activate the laser pointer. Locate the laser on the frame rail approximately where you want to measure. The sensors actually measure $3/8$ " away from the laser dot toward the two white circles located at the front of the sensor.
2. If you have sensors with magnetic bases, you can position the sensors on the bottom of the frame rail with the laser pointing to the ground.
3. You are now ready to take measurements, by tapping the TAKE READING button in the middle of the screen.

Save

Tap the SAVE button to save your setup data and add notes. Notes can also be accessed from the Open and Compare screens. Notes can be modified at any time.

1. Category data has to be entered into the four categories in the Save Reading screen before saving is allowed.
2. The four categories will be used as filters later when opening your data.
3. Click on the SAVE button to save all your data.

Save Zeros

Tap the SAVE ZEROS button to save zero values after setting them, allowing you to skip the zeroing process the next time you set up the chassis.

1. Tap the SAVE ZEROS button to save your zeros once set, and name them for future use. At the start of the App from this point forward, the Zero screen will display and let you pick from your list of saved zeros. This eliminates having to repeat the zero process each time for users who keep their scaling area the same, and there is no limit to how many zeros you can save.
2. You can access the Zeros screen anytime while in the App by tapping the Zeros icon on the bottom right of the screen. You can manage, set, rename, and delete zeros all from this Zeros screen at any time while in the App.

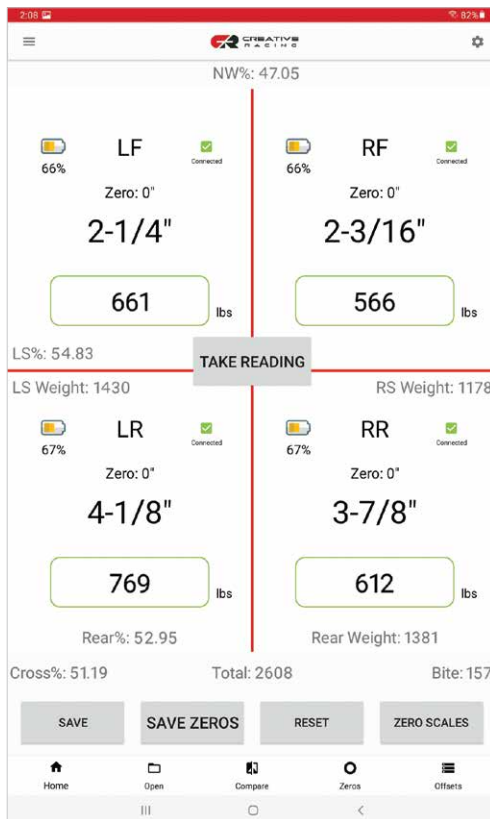
Reset

Tap the RESET button on the bottom right hand corner of the screen to clear zeros, readings, and weights.

Zero Scales

When connected to scales, tap the ZERO SCALES button to zero out your scale pads.

The Home screen is your main working screen where you take chassis height measurements and scale weights. Tap the Home icon (🏠) at any time to return to the Home screen.




This is used to open and view all previously saved data.


1. Tap the Open icon (📁) on the bottom of the screen to view a list of your saved data.
 - Once in the list, the top row, consisting of TRACK, EVENT, CAR, and RACE DATE can be used to easily filter through your saved data.
2. Tap on the row you wish to view to open that record.
 - You can also edit or delete a complete row or record by tapping the Delete icon (✖) or the Edit icon (✎) at the right edge of the row.
 - Once you tap the row you want to view, the saved record displays on screen.
3. Once in the view screen, you can tap the arrow in the upper left hand corner to return to the Open screen, or you can tap any of the icons on the bottom of the screen.
4. When in the view screen, you can also view, modify or create notes attached to this record. Tap the NOTES button to enter the Notes screen and type additional notes as needed. When you are done, tap the UPDATE button to save your changes and return to the previous screen, or press the CANCEL button to return to the previous screen without saving. You can enter notes for any record at any time; and this will only update the notes without affecting the measurements, zeros, or weights for that record as these values are locked after they are saved the first time.

Compare

This is used to compare your current setup to a previously saved setup side-by-side.


1. Tap the Compare icon () on the bottom of the screen to view a list of your saved data.
2. Tap on the row for the record to which you wish to compare your current live setup, and you will be brought to a split screen. Your current live setup is on the left side. You can TAKE READINGS, enter SCALE WEIGHTS, and enter NOTES all from this compare screen.
3. Tap the arrow in the upper left hand corner to return to the list of saved data to pick another record for side-by-side comparison, or pick any of the icons on the bottom of the screen.

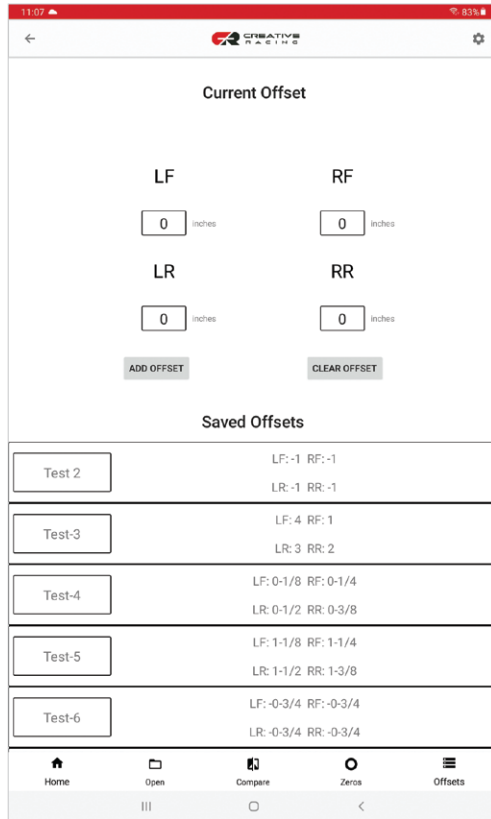
Zeros

The Zeros icon () on the bottom of the Home screen brings you to the Zeros screen where you can manage, set, rename, delete, and clear zeros.

Offsets

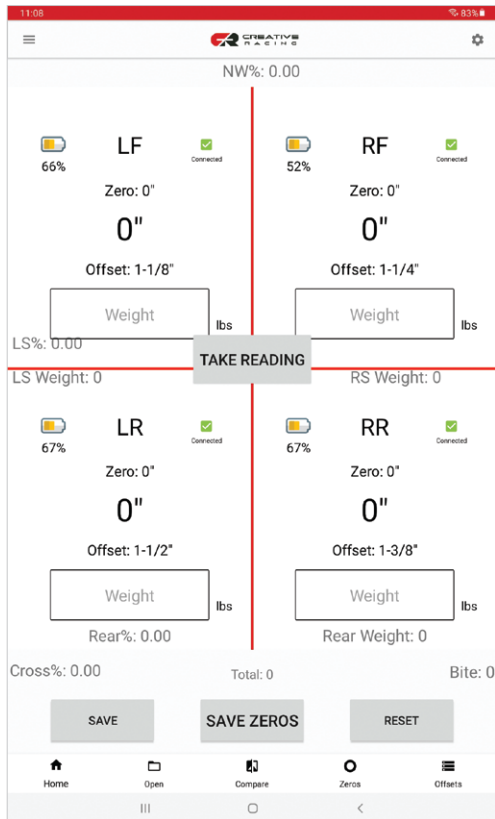
This is used when you need to measure from or to a surface that is offset from the chassis or the surface the tires are sitting on.

1. Tap the Offsets icon () on the bottom of the screen to view a list of your saved data.



2. Offsets can be a positive or a negative number depending on whether you are measuring above or below the chassis or tire surface.
3. For example, if you have a spacer between the sensor and the chassis, placing the sensor **BELOW** the bottom surface of the chassis, then you will enter the height of that spacer for the offset value in that corner (RF, LF, RR, LR) as a **POSITIVE (+)** number. The App then adds this number back to the measurement the sensor takes and reflects a value on screen as if there is no spacer and the sensor is mounted directly to the bottom surface of the chassis. If you mount the sensor **ABOVE** the bottom surface of the frame rail, then you will enter that distance for the offset value into the corresponding corner as a **NEGATIVE (-)** number. The App then subtracts this number from the measurement the sensor takes and reflects a value on screen as if the sensor is mounted directly to the bottom surface of the chassis.

4. Anytime an Offset is applied to a measurement, you will know by the Offset notation beneath the chassis height measurement on the Home screen in any corner it is used.



- Offsets will automatically be saved and synced to the cloud when connected to Wifi.

Settings (⚙️) are located in the upper right hand corner of the Home screen. Under Settings, you will find: Readings Display, Automatic Reading Settings, Profile Settings, and System Settings.

Readings Display (⚙️ > Readings Display). You can change any of these at any point, before or after saving records, and the values on the screen will follow.

- Select measurement units: This allows you to select from Standard or Metric units.
- Display reading as fraction or decimal (for standard units only): This allows you to select from Fraction or Decimal for the height readings on the screen.
- For decimal display, select decimal places (for standard units only): This allows you to change the measurement to be viewed as a two place or three place decimal when in standard units and decimal display only.
- For fractional display, select resolution (for standard units, fractions only): This allows you to set the resolution that the measurements will display. The options are $1/32''$, $1/16''$, and $1/8''$.

Examples when in $1/8''$:

- x.063 to x.1875 will read $1/8''$
- x.188 to x.3125 will read $1/4''$
- x.313 to x.4375 will read $3/8''$
- x.438 to x.5625 will read $1/2''$
- x.563 to x.6875 will read $5/8''$

Examples when in $1/16''$:

- x.0325 to x.0937 will read $1/16''$
- x.0938 to x.156 will read $1/8''$
- x.0157 to x.218 will read $3/16''$
- x.219 to x.281 will read $1/4''$
- x.282 to x.343 will read $5/16''$
- x.344 to x.406 will read $3/8''$
- x.407 to x.469 will read $7/16''$

Examples when in $1/32''$:

- x.031 to x.047 will read $1/32''$
- x.048 to x.078 will read $1/16''$
- x.079 to x.109 will read $3/32''$
- x.110 to x.141 will read $1/8''$
- x.142 to x.172 will read $5/32''$
- x.173 to x.203 will read $3/16''$
- x.204 to x.231 will read $7/32''$
- x.232 to x.266 will read $1/4''$

Automatic Reading Settings (⚙️ > Automatic Reading Settings)

- Enable Auto Reading by checking the box, then you can set the auto reading time interval by selecting Auto Reading Interval.

Profile Settings (⚙️ > Profile Settings)

- Email Address: Enter a valid Email address to register your CHMS

System Settings (⚙️ > System Settings)

- Device System ID (FACTORY USE ONLY): This is the system ID and is used for internal purposes only. This setting can not be changed.

Menu

Menu options (☰) are located in the upper left hand corner of the Home screen.

About (☰ > About)

- This contains system information, company information, and copyright information.

Help (☰ > Help)

- This is where you will find Help and Troubleshooting.

Scale Management (☰ > Scale Management)

- This is where you can pair your wireless Bluetooth scales to read live in the App.

Reset Bluetooth (☰ > Reset Bluetooth)

- This is where you can reset the Bluetooth on the device if necessary.
- When tapped and confirmed, this will disconnect the Bluetooth between the sensors and the device, reset the Bluetooth on the device then reconnect the sensors to the device.

Restore From Backup (☰ > Restore From Backup)

- This will restore your data from the cloud.
- You must have an internet connection for this to work.
- Anytime anything is entered, edited, or saved in the App, it is backed up automatically if or when connected to Wi-Fi.

Export Data (☰ > Export Data)

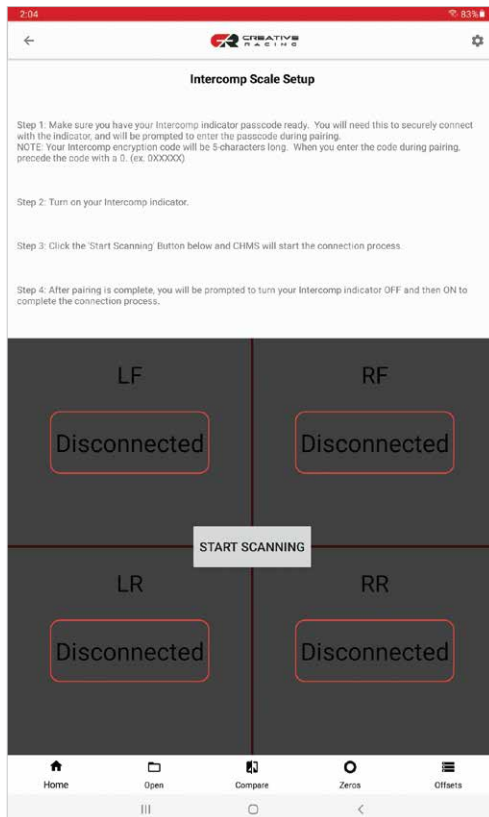
- This is where you can export all saved data by entering an email address to which you can send the file.

Set Encryption Passcode (☰ > Set Encryption Passcode)

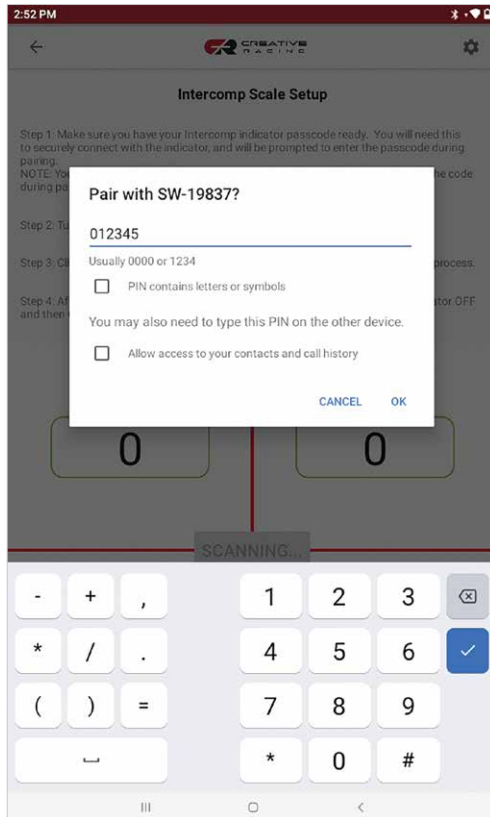
- This is where you can add additional security to your CHMS by setting a password on the sensors. Once a password is set, it will be needed to connect the sensors to any new device for the first time.

Intercomp Bluetooth Wireless Scales

1. Power on your CHMS App.
2. Have your wireless Bluetooth Intercomp scales and indicator box ready and powered off. Locate the RFX sticker on the back of the Intercomp indicator box, and find the Encryption Key. You will need this later in the pairing process.
3. Press the Menu icon (☰) in the upper left hand corner of the screen, and select SCALE MANAGEMENT.
4. Press the INTERCOMP button, and follow the on screen instructions or continue to Step 5 below.
5. Power on the Intercomp Indicator.
6. Press the START SCANNING button in the CHMS App.

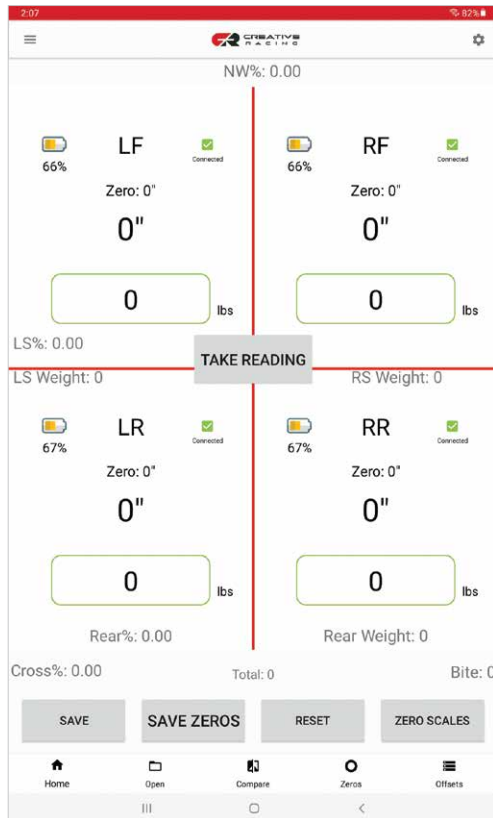


7. Enter the 5-digit Encryption Key, preceded by 0 in the Pairing screen, and press the OK button.



8. Once the scales are successfully paired, turn the Intercomp indicator OFF then back ON, and press the CONFIRM button on the Successful Pairing screen. Pairing is complete.

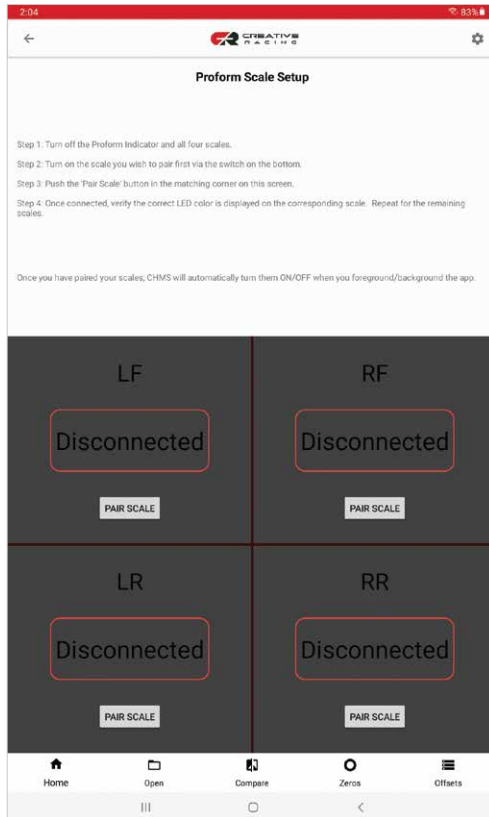
9. You can now power on each of the scale pads, and they will be visible in the CHMS App.



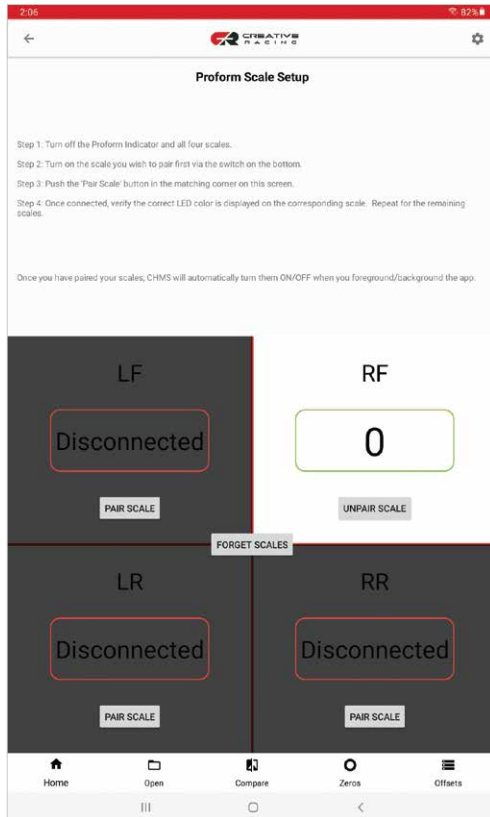
- You only have to pair the Intercomp indicator to the tablet or phone one time. Every time thereafter, just power on the Intercomp scales, indicator, and the CHMS App, and they will connect automatically.
- The Intercomp indicator is what communicates with the tablet/App via Bluetooth, so the indicator MUST be on to receive scale weights in the CHMS App.

PROFORM® Bluetooth Wireless Scales

1. Power on your CHMS App.
2. Have your wireless Bluetooth PROFORM® scales ready and powered off.
3. Press the Menu icon (☰) in the upper left hand corner of the screen, and select SCALE MANAGEMENT.
4. Press the PROFORM® button, and follow the on screen instructions or continue to Step 5 below.
5. Make sure the PROFORM® indicator and all four scale pads are off.
6. Power on the scale pad you wish to pair first.
7. Push the PAIR SCALE button in the matching corner on screen.



8. Once connected, verify the correct LED color is displayed on the corresponding scale. Repeat for the remaining scales.



- Once you have paired your scales, the CHMS will automatically power them on or off when you foreground or background the App.
- You only have to pair the PROFORM® scale pads to the tablet or phone one time. Every time thereafter, just start the CHMS App, and your PROFORM® scale pads will connect automatically.

Issue:

One or more of the sensors will not zero to the tablet even though I triple click the button and the LED blinks three times.

Solution:

- a. Make sure the sensor is powered on (the LED will flash once every 10 seconds).
- b. Reset Bluetooth from the Menu at the top left of the screen.
- c. Reset the sensor (turn off with five clicks, followed by five LED blinks; wait 5 seconds, turn on with one click, followed by a long LED blink).

Issue:

One or more of the corners on the screen is gray with a TRY AGAIN button in the center.

Solution:

- a. Make sure the sensor associated with that corner is powered on (the LED will flash once every 10 seconds).
- b. Tap one of the TRY AGAIN buttons in any corner, and the system will disconnect, reset, and reconnect.

Issue:

One corner is gray with the connected button lit green and checked, and the battery icon is populated, but there is no spinner and no TRY AGAIN button.

Solution:

- a. Make sure the sensor associated with that corner is powered on (the LED will flash once every 10 seconds).
- b. Tap the TAKE READING button, and the App will function properly.





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