

# Handbook EC20 Platometer

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## MOBILE DEVICE REQUIREMENTS

Your EC20 platemeter operates in conjunction with your mobile phone or tablet, using the Jenquip EC20 Pasture App.

Your mobile device will need the following features:

- Android software v4.3 or higher, or Apple iOS v9 or higher
- Jenquip EC20 Pasture App installed
- Bluetooth to connect the phone to the platemeter
- A cellular or Wi-Fi connection if you want to send files from the app to a PC.

## SUPPORTED DEVICES:

- iPhone/iPad devices supporting the minimum operating system version. To see a full list of compatible device models visit the Apple App Store.
- Android devices supporting the minimum operating system version. To see a full list of compatible device models visit Google Play.

## PC REQUIREMENTS:

- Windows 10 and above - if using the pc software.

**To install the app for android and iOS visit  
[www.jenquipec20app.co.nz](http://www.jenquipec20app.co.nz)  
Access help/support videos available on the website.**

## Introduction

Congratulations on the purchase of your EC20 platemeter. This meter is a highly engineered precision device for measuring the average height of pasture relative to density of the pasture. This is directly relative to the quantity of dry matter present (Kilograms of dry matter.) (kgDM/ha)

Operating the EC20 platemeter is a simple learning process, and you will soon find it to be an invaluable tool in your farming operation for day-to-day feeding decisions and long-term feed budgeting.

## What is a Platemeter?

A platemeter is a tool to help the farmer make strategic farm management, feed budgeting and livestock decisions by identifying how much pasture is available to feed livestock. It compliments good on-farm management and industry standard advice around livestock feeding practices.

Your EC20 Platemeter is a highly engineered precision device for measuring the average height of pasture relative to density of the pasture. This is directly relative to the quantity of dry matter present (kilograms of dry matter - kg DM/ha)

The platemeter (equipped with Bluetooth) is accurate and robust for measuring pasture cover in grass paddocks. It is straightforward to use and simple to understand and comes complete with an Android or Apple iOS app for easy use and data management. The app displays pasture covers and can download paddock information and upload covers to 3rd party platforms.

## Safety

Read and understand all the instructions before using the platemeter. A copy of this user guide can be downloaded from [www.jenquip.nz](http://www.jenquip.nz).

Your platemeter is designed only for measuring pastures. Use it for no other purpose (e.g. it is not a walking stick.) This platemeter has been manufactured using quality materials and techniques, however, if faults do occur, have them corrected before you use the platemeter.



Be careful around electric fences. Parts of the platemeter will conduct electricity!

Store the plate correctly. Be careful that the wind does not blow the plate away. It is not to be thrown.



Water blasting or submerging the unit will void the warranty.

## Assembly Instructions

The platemeter is supplied in three parts:

### The plate

The plate sits on top of the pasture to establish average height and density. The area-to-weight ratio of the plate has been carefully calibrated.

### The rod with meter

The grooved rod allows pasture to be measured in 0.5 cm intervals (clicks). The rod includes the electronic meter.

### The handle

Attach top handle to the rod. Ensure that the rod does not fall through the counter as this will damage the gear and void warranty.

### Hardware/Software requirements:

There are two software applications that can be used to work with data from your EC20 platemeter:

- **Jenquip EC20 Pasture app** for installation on your Android or Apple mobile device.
- **Jenquip Pasture Management Software** for installation on your Windows PC.

The desktop software is included with all platemeter models but it is not required for EC20 users if you are using the pasture app as it performs the same functions (except it doesn't provide the reports.)

## Use of the Jenquip Pasture Management Software

EC20 platemeter users can also make use of the *Jenquip Pasture Management software*. This is a simple to use computer program supplied with your platemeter on a USB stick. From there you can install it onto your Windows PC.

This software can be used to upload farm walk data from the platemeter (via a CSV file). It takes the information from your farm walk and produces ready to use reports. You also have the option to export the data for use in other pasture systems, further analyse in Microsoft Excel or run any of the suite of reports. Some users may find this more convenient to use than the Jenquip EC20 Pasture app, in addition to providing access to the reports.

**\* It is important that the paddock names/numbers are the same, otherwise the pc software will not be able to download the csv file.**

## Handle assembly 400mm Rod Extension only

Screw top handle onto the top of the grooved rod where it comes out of the counter.



Grooved Rod Extension (for the 400mm model)

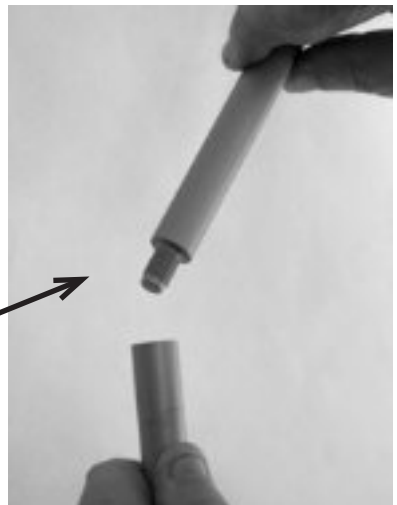
Turn upside down and slip off the O ring.



Put 4 drops of thread locker into the female end.

Screw threaded rod extension into grooved rod and do up firmly by hand, wiping off any excess thread locker that may have leaked out with a dry cloth. Do not use tools as this will damage the grooved rod.

**Refer to page 4 of this manual for zero calibration before use.**



## How does a platemeter work?

Default equation

The default equation applied:

**(Available pasture = total pasture needed, less the residual (grass left after grazing))**

Each click is counted and an industry standard formula applied to produce an average kg DM/ha.

The equation can be adapted to suit the geographical location and farming practices of individual farmers. Farmers will take advice from farm advisors, or nutritionists to fine-tune their platemeter equation.

The calculation is done on the **Jenquip EC20 Pasture app** on your mobile device.

### The RPM Equation Changing “clicks” to kg DM/ha

Average compressed pasture height x 140 + 500 = kg DM/ha



Readings from RPM

x the multiplier + the adder = kg DM/ha

\* The equation of “average compressed height x 140 x 500” is the best fit for most situations and makes the data produced the easiest to understand (winter formula). Multiplier range is from 115 (when grass is growing the fastest) to 185 (used in very dry conditions of slow growth.)

For details on this and how to change the formula, please visit:  
***[jenquipEC20app.co.nz](http://jenquipEC20app.co.nz)***

## Maintenance of your platemeter

Your platemeter has been developed over a number of years to be simple, effective and reliable. However a little maintenance will ensure many years of trouble-free use.

**Before Use:** After assembling the plate onto the counter, move the plate up and down a few times to ensure no binding occurs. If its movement is restricted the reason must be found and rectified before the meter is used.

**After Use:** Remove the plate and wash it clean. Wash/wipe and dry the area around the bottom of the meter. Move the counter so that all dirt and accumulated grass can be washed away. Do not wash the counter, wipe down only.

## Operating the electronic counter

### Switching the unit on and off

The platemeter is switched on and off using the black switch at the back of the unit. Off is in the 'down' position. When the unit is switched off no lights are displayed on the counter.

Rubber Bung

On/off switch



## Operation

To turn the unit off, hold down the power switch for one second, until the tune signals the unit is off.

If left on, the unit will turn off automatically after 15 minutes if no "plonking" action has occurred.

### Use of the platemeter battery

The platemeter consumes about 10 to 20 mA when switched on (depending on the battery voltage and whether it is beeping.)

This could be used to estimate run times on rechargeable NiMH battery packs.

The Battery status LED shows green for the first half of the battery life. As the battery becomes weaker, the LED will gradually change to orange, and then red when it reaches 6V.

From 6V to 5V the LED will slowly flash red indicating there is approximately one hour of the life left. Below 5V, the unit will play a tune and turn off.

**\*** A good quality alkaline battery should last approximately 28 hours or longer.

## Testing to see if zero calibration is required:

Platemeters usually do not need to be calibrated straight out of the box. But if you are having issues, this is how to test and see if a calibration is required.

Make sure that the potentiometer (Pot) Zero Calibration reading on the platemeter is correct.

To do this you can perform a sample reading. The platemeter should beep as you lift it off the pasture, registering the reading.

The Bluetooth link does not need to be active to do this. If the Jenquip EC20 Pasture app is connected (via your mobile device).

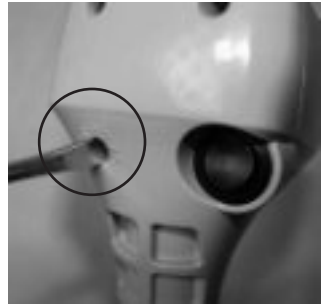
If there is no beep and you continue to perform three sample readings in a row, this means that the potentiometer has not returned to “Zero” between each reading. No data is sent to the device in this condition.

Every 20 seconds the warning alarm will be heard until the platemeter is turned off, or a screwdriver is used to zero out the potentiometer.

## Performing a zero calibration procedure

To zero out the potentiometer:

1. Locate the zero adjustment screw (beside the On/Off switch)
2. Remove the protective rubber bung by levering it out gently using a flat-bladed screwdriver.
3. Insert the flat-bladed screwdriver into the slot. Turn anti-clockwise gently until the potentiometer stops turning.
4. Replace the rubber bung.



**! Do not force or over tighten the potentiometer. This may damage the platemeter and void the warranty.**

If the EC20 does not beep with a plonk action the Android App may have “Paused” the paddock data collection. When the “Resume” button is pressed on the phone, the EC20 will continue to collect new data for the paddock.



***The Bluetooth module is set to its lowest power level so that battery life is conserved. The phone should be kept within four meters of the EC20 to ensure the wireless link is preserved.***

## Using Your Platemeter

**Technique:** practice the technique of an uninterrupted slow walking pace, taking care not to “roll” the meter. (This is where the plate is not square to the ground and it will provide a false HIGH reading.) The meter should also be lowered consistently—not gently but not forced into the ground either.

**Farm Walk:** the more regularly you take readings the better. Astute farmers will take readings weekly, sometimes more often during critical times of the year and less frequently during times of static conditions. The more samples taken per paddock the less margin of error. We recommend 20 to 40 samples per paddock but if you have bad conditions i.e. pugged paddocks, then more samples should be taken.

Most paddocks will have areas of good growth and areas of poor growth. If recently grazed, the pasture may be clumpy. Ensure that your walk includes representative samples of both areas. Avoid tracks, stock camp sites and other uncharacteristic areas.

Take samples every three paces or so, rather than choosing by eye the spot to sample. This removes operator preference for long or short patches. Be consistent. Plan the same walk every time, although it can be done in reverse. this allows for each walk to be compared with another.

## Fault Finding

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NOTE: Most problems are due to the counter being out of calibration (see following points as to why. If in doubt it is worth zero calibrating just to make sure it is correct.

### ***The counter does not “beep” when taking a reading***

If it doesn't beep this means the counter does not know where the bottom is - therefore does not record the “plonk”.

#### ***Check***

The cog is worn

#### ***Resolution***

Replace. Request a spare cog from your service agent.

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Potentiometer damaged. The Potentiometer is the shaft part that drives the cog. **NB: Under no circumstances should you apply CRC or a light oil to the potentiometer. It is a dry bearing and any lubricant will render the potentiometer useless).**

Send to your service agent for repair.

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### **Platometer not running freely (low results):**

#### ***Check***

Metal shaft is bent

#### ***Resolution***

Straighten or request a replacement part from your service agent

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Grass or soil build-up inside case

Clean the platometer

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Flutes on steel shaft have become filled with grass or soil

Clean the platometer

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### **Bluetooth is not connecting**

Ensure you are connecting the Bluetooth via the app, not the Bluetooth settings in the phone.

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**I can't see the text in the app in some areas.**

Turn the phone's dark mode off on the phone.

## Fault Finding

<b>Check</b>	<b>Resolution</b>
<b>I am trying to plonk but nothing is coming up on the screen</b>	Ensure location turned on in the phone and set to “always” in the location settings in the phone
<b>I can't open the files/reports that were sent from the app.</b>	They come off as a zip file and will need to be unzipped before being used. Free zip programmes can be found online to download.
<b>Why has only half my walk exported?</b>	It is important that you do the walk in one go or the second walk will override the first - so if doing in parts, export it out in the reports before doing the second walk.
<b>When I tap the screen to connect the platometer it doesn't connect.</b>	It is important once you have selected the paddock and it takes you to the next screen that you click on the “EC20 platometer” wording that is under “ensure the GPS is turned on”.