platemeters®
pasture measurement made easy

F400

Platemeter User Manual

Welcome ...

Thank you for choosing an F400 Platemeter.

The electronic rising platemeter provides farmers with an easy, accurate and reliable way to measure and record pasture health and share that information.

For further information about
assembling and using your platemeter contact us at:

🌐 **www.platemeters.co.nz** | ✉ **info@platemeters.co.nz** | 📞 **0800 577 505**

f **facebook.com/platemeters**

📍 **Platemeters Limited, 275 Cameron Road, Tauranga 3110, New Zealand**

Contents

1 | **Assembling the Platemeter**

Your Platemeter will come pre-assembled and only requires two steps to be ready for use:

1. Attach the lower handle to the grooved rod by screwing the two parts together.
2. Attach the plastic plate to the bottom of the slide tube by screwing to the thread at the base of the slide tube.

> **Note:** Under no circumstances should you apply any type of oil, or lubrication to the platemeter. It is a dry bearing system and any lubricant may damage the platemeter and may void your warranty.

1.1 Your Platemeter

Upper Handle

Lower Handle

Grooved Rod

Electronic Counter

Slide Tube

Rising Plate
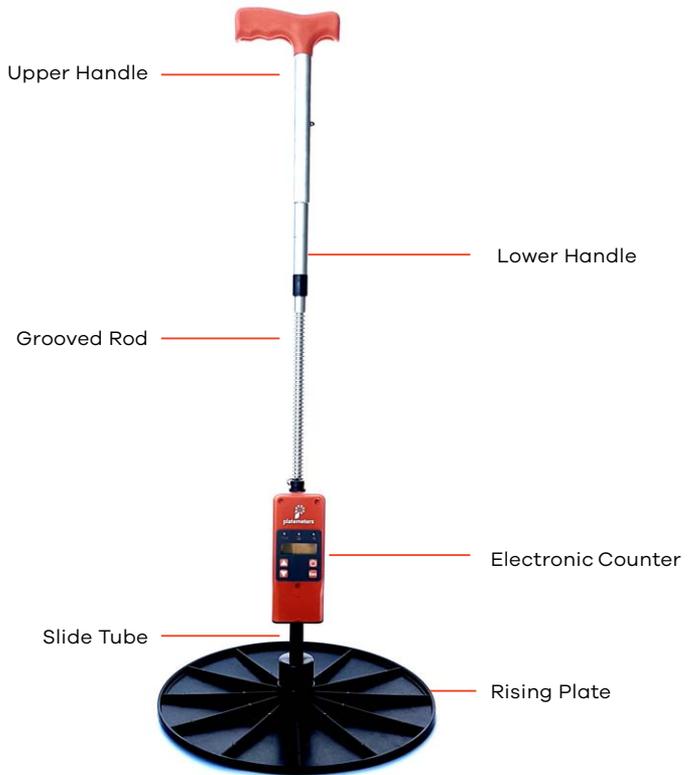
2 | Platemeter Parts

The F400 Platemeter is designed with breakaway components meaning, if damaged in an accident, the parts are cost effective and easy to replace and in most cases the part can be replaced by the user.

If you require a part for your Platemeter, please refer to the below diagram to identify the correct part. If you need to replace or repair components for the potentiometer, membrane or within the counter you'll need to send your Platemeter, or counter to us for assessment.

Electronic Counter   Upper Handle   Lower Handle   Grooved Rod

Slide Tube   USB Charger Cable   Rising Plate   Bracket and Screws

Visit platemeters.co.nz/collections/parts-for-sale to purchase replacement parts and contact us using the details at the bottom of the page if your Platemeter requires servicing or you'd like to send it to us for assessment.

3 | Retrofitting the Platemeter Counter

The Platemeters electronic counter can be attached to most AgHub, Jenquip, Tru-Test, and FarmWorks and other manual plate meters with little to or no modification. To purchase retrofitting kits or counters and view our 'How To' instructional videos visit www.platemeters.co.nz.

Follow the instructions below to attach your platemeter counter. It must be correctly attached and aligned to ensure smooth operation.

1. Remove all existing electronic counters from the shaft.

2. Check that a cog is attached to the small shank on the back of the counter.

3. If the cog isn't attached, heat the cog in a hot cup of water prior to pressing onto the shaft - don't use excessive pressure as this may damage the cog.

4. Lay the counter face down on a flat surface so that the cog is to your left.

5. Turn the cog on the counter anti-clockwise (to the left) until it stops.

6. Hold the Platemeter with the handle to the left. The hole in the slide tube where the cog fits should face toward you.

7. Make sure the grooved rod is fully closed to the bottom end of the black slide tube. If you have difficulty keeping the plate closed, you can put tape around the large washer and the bulb of the slide tube.

8. Place the slide tube with the grooved rod inserted onto the back of the counter, fitting the cog into the slit of the tube, the cog should be situated in the middle of the hole in the slide tube.

9. Place the plastic bracket onto the slide tube, aligning the raised ridge in the bracket with the hole in the slide tube and the screw holes on back of the counter.

10. Place a screw and washer in each side of the bracket and half-tighten; making sure that the cog meets the middle of the grooved rod and tighten the four screws.

11. Check the counter is correctly attached by turning the grooved rod it to make sure it moves easily in all positions. If it sticks then either the slide tube or grooved rod may be damaged, bent or corroded and may need replacing, or it's not correctly aligned.

12. Attach the plastic plate by screwing on to the bulb of the slide tube and place the Platemeter in an upright position on a hard surface to check the plate closes fully.

4 | Caring for your Platemeter

Avoid getting the counter wet

The counter is in a robust case which is splash proof. However, as it's an electronic device avoid getting the counter saturated. Immersion in water will result in the circuitry getting wet and damaged, reducing the life of your Platemeter.

Keep the shaft clean

A build-up of dirt will affect the accuracy of the Platemeter because the shaft will not run smoothly, and more force is required to take a reading.

Clean the shaft with a poly pad or similar

Do not use lubricant as this will build up inside the black outer shaft.

Power Off

Remember to check the counter is switched off between cover walks, and ensure you turn the power off when you have finished your walk. The switch is easily left on which will waste the battery.

5 | Battery Life and Charging

The electronic counter is powered by a single rechargeable battery, which should give 24-26 hours continuous use between charges. It's recommended that you initially charge the battery for 16 hours before use.

A low battery warning is built in to the counter, if this is displayed when switched on you can still take readings, but it's recommended that the battery is recharged before using the platemeter for an extended period of time.

Depending on frequency of use, the battery life of your platemeter will provide several weeks of pasture-walks before needing to be recharged. Whether the platemeter is used daily, weekly, or monthly, the unit should be charged once a month to make sure the battery stays in good condition.

5.1 Recharging the battery

The rechargeable battery should give years of service before needing to be replaced. If it does need replacing, the instructions on how to do this are in Replacing the Rechargeable Battery section.

Attach the Mini USB cable supplied with your Platemeter to the small USB socket on the top of the unit. There may be a plastic screw cap that protects this socket, which needs to be removed first. The battery will take 5 hours to recharge. No damage will occur to the Platemeter if the charger is left on beyond this time.

Connect the larger USB plug on the other end of the USB cable into a USB socket on your computer. The unit will beep and switch ON automatically and the red LED on the front of the unit will light up if the USB cable is connected correctly. When the battery is fully recharged the unit will give 2 long beeps and display 'Charging Complete'. For best results, occasionally allow the F400 to remain on charge overnight. Disconnect the Mini USB cable from the F400 switch the unit 'ON'. There should not be any low battery warning.

CAUTION: Do not use any charger other than the one supplied with the Platemeter. This will void the product warranty.

5.2 Replacing the battery

The battery can be recharged hundreds of times, but eventually the time between charges will shorten and if this happens, a replacement battery should be fitted.
Before you replace the battery make sure the unit is switched off.

- Remove the counter from the black tube and loosen the screw in the middle of the counter back.

- Pull out the battery retainer clip from the bottom of the counter.

- Replace the battery with the same type and specification as the one that came with your counter.
- Press the battery snap firmly onto the new battery and insert back into the battery retainer.

- Replace the battery retainer into the counter taking care not to catch the wires in the side wall of the counter.
- Tighten the central screw on the back and refit to the black tube.

- Charge the battery for at least 16 hours before initial use. Make sure the counter is re-calibrated before you commence your next walk.

Alternatively, you can send the Platemeter us and we'll supply and replace the battery. Please contact us beforehand so we can give you an estimated cost and instructions for packaging the unit.

6 | **Calibrating your Platemeter**

To ensure the Platemeter accurately measures the compressed height of pasture, the counter must be calibrated. This requires setting a base level of zero so measurements can be benchmarked against this. If the counter does not return to zero after each 'plonk' it will not record the measurement and the counter won't beep.

If the counter is removed from the black tube or receives a severe knock it may jump a groove on the steel shaft, which will put the counter out of calibration and it will need to be recalibrated. You'll need a small flat blade screwdriver that will fit into the slot of the silver shaft at the back of the counter.

How to calibrate:
- Switch the unit on by pressing the ENTER key for 1 second. The unit will then beep, and display the version number.
- Scroll through the menu items on the F400 using the UP or DOWN arrow keys until you find 'Calibrate'.
- Pressing the ENTER key will show the current position, making sure that the plate is in the home position.
- You will then need to turn the Potentiometer (blue bit) anti clockwise until it is calibrated. When it goes down to zero it will mean it is calibrated and the F400 will do 2 short beeps and then display 'Calibrated.'

- If a user enters the Calibration menu and it's already at 0, it will double beep and then show Calibrated.
- If a user enters the Calibrate Menu and it is not calibrated it will do 2 Long Beeps (approx 1 second each).
- An alternative method to use if a screwdriver is not available, is to simply press the ENTER key and that will set the offset. So if it's off by 5 points and you press the enter key, the F400 will put an off set of 5 points. However, in order to ensure accuracy in the readings, it is recommended that you calibrate it using a screwdriver.

Test the zero calibration by raising and lowering the plate several times. A beep should sound and the kgDM/ha is displayed on the LCD screen as the plate falls. If it doesn't, repeat the steps above and retest.

If the calibration fails to hold then check the black saddle is screwed down firmly, and the platemeter doesn't twist easily on the steel shaft. Otherwise the potentiometer, which the cog drives may be faulty and will need replacing. This can happen with excessive wear and by dust and dirt getting into the dry bearing of the potentiometer.

Important: Be careful not to over-wind the metal cog fitting and this can damage the unit. Use a firm but gentle amount of force to wind the fitting anti-clockwise.

For more information about calibrating your platemeter and **"How To"** videos visit www.platemeters.co.nz.

7 | Things to do before you start your walk

Ensure the P-Plus software is installed. If P-Plus is not installed, refer to the section below. When P-Plus software is installed on your computer, you'll need to setup your farm by creating:

- a property
- paddocks
- equations
- define the walk order.

- Ensure you are not using the demonstration Farm.
- Start Up / Self-Test – See Section 9.3
- Enter or choose your equation_. See Section 10.1

8 | P-Plus

This section outlines the basic instructions for installing P-Plus on your computer. For more detailed information about using P-Plus, please visit our website www.platemeters.co.nz and select the Help, Manuals and Guides. Alternative help can be found in P-Plus by pressing the F1 key on your keyboard at any point. This will bring up help relative to the P-Plus window you have open at the time.

8.1 Download Link

To download P-Plus visit platemeters.co.nz/pages/p-plus-pasture-software. When you select the link, you will be taken to a drop box page with a blue download button. Click the blue button and select 'Direct Download'.

You can see the status as it downloads, most likely on the toolbar at the bottom of your screen (depending on how your computer is set up) – pplus.exe.

If you select this once it is finished your screen may go black with a message saying "Do you want to allow this app from an unknown publisher to make changes to your device?". Select Yes.

You will then be taken through the installation setup, including agreement to the Terms and Conditions.

Once this is done, you can access P-Plus from the icon on your desktop.

8.1.1 Moving P-Plus and your farm data to a new computer
On the old computer
- You will need a USB memory stick to put the backup on.
- Backup your farm data. Go to Help and Backup for details on how to do this.
- Browse to your USB memory stick so it becomes your selected backup location.
- Backup your farm data. On the new computer
- Install P-Plus and request a new licence by contacting Platemeters (Please refer to section 8.1.3). State it is a replacement computer.
- Make a new farm with the same name as the old computer
- Select Farm and Restore, Use the TOP browse only and browse to the USB Memory stick
- Find the backup file
- Select the backup file and then select OK in Restore
- This will put your farm data into P-Plus
- Check the data is ok
- Wait for new licence key to arrive to activate your P-Plus licence. This may take up to 48 hours.

8.1.2 How to Run P-Plus with the Pasture Cover Module
Once the installation is complete, go to your desktop and double click on your P-Plus Icon to start the program.

Alternatively, from the windows task bar click on the Start menu, select All Programs then from the P-Plus Program Group, select P-Plus.

On opening P-Plus the window in the image below will appear. This is simply a warning window advising the number of days left in the trial licence to evaluate your P-Plus software.

This screen will disappear when you have registered P-Plus correctly.

Please click on OK to close the screen. If you are upgrading from a licenced copy of P-Plus the warning window may not appear.

8.1.3 How to Licence P-Plus Software

1. This screen will automatically appear after OK button is pressed on the 30-day trial period screen.

2. To get this screen to close, please ensure the licence name is completed and click close on top right.

This is an older function of the software and no longer needs to be filled out. Instead of completing this, please email info@platemeters.co.nz with:

- **Your Computer ID** – this can be found on the first screen when you open P-Plus, or navigate to Help, About.
- **The Platemeter ID** – this is a code found on either the top of the counter, or at the bottom, where the battery retainer is.
- **Serial No. and CD Key** – this can be found on the P-Plus CD.
- **Phone number**
- **Farm Name**

8.1.4 Entering Your Licence Key

Once the Licence Details have been received and processed by Platemeters, a P-Plus Licence key will be emailed back to you with some basic instructions on how to activate your licence.

8.1.5 Re – Licensing

P-Plus may need to be re-licensed on a replacement computer or in the event of significant changes being made to your computer. In either case P-Plus may become unlicensed.

This will require the generation and issue of a new licence file. In this case contact Platemeters.

9 | Operating the Electronic Counter

The Electronic Plate Counter is switched On and Off by pressing the ENTER key on the front of the unit for 1 second. When the unit is Off there are no numbers displayed on the LCD screen and all of the LED's should be Off. The 2 Minute Auto-Shut off function means that the Plate Meter will switch itself off if there is no activity for 2 minutes.

9.1 The Front Display Buttons

The six buttons on the front of the unit access the various functions of the F400:

1. Up Arrow - used to scroll up through the main menu functions, paddocks, equations etc.
2. Down Arrow - used to scroll down through main menu functions, paddocks, equations etc. Also used for upgrading the software on the unit.
3. Left Arrow – used to scroll back through options such as equations, units, views etc.
4. Right Arrow – used to scroll through options such as equations, units, views etc.
5. ESC – takes you back to the previous menu. It can also be used to cancel the task.

6. ENTER – Used to switch unit ON and OFF and to accept selections.

When the unit is first switched on the display will show the model number and the version number. The menu options will then be displayed for selection, with Measure being the first option to be displayed.

9.2 Menu Options

There are a number of menu options available for section on the F400.

- **Measure**
  This option allows for paddock and equation selection prior to starting Pasture Walk. Please refer to section 13 Taking Paddock Readings for more information.

- **Temperature**
  This option displays the current temperature in Degrees Celsius, e.g. 20.9 Celsius.

- **Date & Time**
  This option displays the current date and time (24 hour) in the following format:

| HH:MM:SS | DD/MM/YYYY |

- **Battery Level**
  This option displays the Battery Level in Volts.

| % Charged = | Volts = 4.23 |

- **Zero Calibrate**
  This option displays the Calibration status, and allows you to re-calibrate if required. For more details on how to How to Calibrate your Plate Meter refer to section 6.

- **Anti-roll**
  This option displays the Anti-roll status, and allows you to turn the Anti-roll ON/OFF.Having Anti-roll ON means it will wait for a period of time before taking a measurement.

If Anti-roll is ON it will show the following on the screen:

Anti-roll	ON

Having Anti-roll OFF will take measurements like the old Plate Meter, where a measurement is taken at the highest point and there is no wait time.

Anti-roll	OFF

To change Anti-roll status press the ENTER Button while on the Anti-roll Menu, once that is pressed you will see the following:

Anti-roll	ON< >OFF

To turn ON Press the Left Arrow, to turn OFF Press the Right Arrow.

- **Grazing State**
  This option displays the Grazing State, and allows you to turn the Grazing State ON/OFF.

  Having Grazing State ON means you will be prompted to save the Grazing State of each paddock when you save the Paddock Readings. If Grazing State is ON it will show the following on the screen:

Grazing	State is ON

  To change the Grazing State press the ENTER button while on the Grazing State menu, once that is pressed you will see the following:

Grazing	ON< >OFF

  To turn ON Press the Left Arrow, to turn OFF Press the Right Arrow.

- **Equation (Only visible if the F400 has 1 equation programmed)**
  This option displays the Equation used, this option will only show if the F400 has been programmed with 1 equation.

9.3 Startup / Self-test

- Switch On. The unit will beep and display 'F400' and the version of software, followed by the first of the menu options; Measure.
- If the battery is low, the F400 will beep and will then display 'Recharge'.
- If the battery gets down to 3.3 volts, the Red LED will blink twice, the unit will beep and turn off automatically, and no further readings can be taken until the battery has been fully recharged.

10 | Current DairyNZ Equations

When you receive your Plate Meter it will NOT have any data on it. You will have to use your P-Plus Farm Management software to load Paddocks and Equations into your F400.

For your convenience the following are the equations promoted by DairyNZ for dairy pastures since May 2001.

Months	Rising Platemeter Equations Dairy Pastures
Winter (April-Sept)	Platemeter Reading x 140 + 500 (Factory Default)
October	Platemeter Reading x 115 + 850
November	Platemeter Reading x 120 + 1000
December	Platemeter Reading x 140 + 1200
January	Platemeter Reading x 165 + 1250
February	Platemeter Reading x 185 + 1200
March	Platemeter Reading x 170 + 1100

These formulas are in P-Plus already and to use them you will need to upload them to your F400 Platemeter.

Equations may change without notice and are influenced by seasonal differences. If you are unsure of the current equation contact DairyNZ or your local consultant. There are also different equations suited to summer, wet and irrigated pasture that are not recorded here. Sheep and Beef pastures differ in density to dairy pastures and will therefore require different equations.

10.1 Entering Your Own Formula

To enter your own cover equation or one that may have been recommended by a third party such as your consultant, DairyNZ or Meat & Wool, please do the following:

- Connect the Mini USB cable to both the F400 and a spare USB port on your computer.

- Startup P-Plus Farm Management Software on your computer.

- Select the 'Pasture Covers' button from the main tool bar.

- Click on 'New' as if you were creating a 'New' Pasture Cover. If it is the first time you have connected a Plate Meter to your computer, you will be asked for the COM port number that it is connected to

- The Add/Edit Pasture Covers window appears.

- Make sure that the F400 Electronic Platemeter is the selected method. If this is the first time you have selected the F400 as the method, you will be prompted for the COM port number it is attached to using the Mini USB cable.

- Pressing the 'Equations' button at the top of the Add/ Edit Pasture Covers window, allows creation of new equations and editing of existing equations.

- When you have either created or edited an Equation, press the 'Close' button to save.

- The New or Updated Equation can now be transferred to the F400 unit.

- Please refer to section 11, 'Uploading Data & Equations to F400' for detailed instructions on how to do this.

11 | Uploading Data & Equations to F400

-   Connect the Mini USB cable to both the F400 and a spare USB port on your computer. If this is the first time you have connected an F400 Plate Meter to your computer please follow the prompts to install the driver, if the drivers cannot be found automatically by Windows, please select c:\pplus\drivers\ as the location for Windows to check.

-   Startup P-Plus Farm Management Software on your computer if it is not already running.

-   If your farm name is not displayed in the main grey title bar (the screen shot below shows the farm name as [Own Farm]) then from the' Farm' menu, click on 'Select Farm' This will display a list of your farms to choose from. Select the 'Pasture Covers' button from the main tool bar.

-   Click on 'New' as if you were creating a 'New' Pasture Cover.

-   The Add/Edit Pasture Covers window appears.

-   Ensure 'F400 Electronic Plate Meter' is the selected method.

-   From the F400 Communications section, Select 'Upload Paddock Data' then press the

-   'Start' button.

-   You may also be asked to select the COM port which you have connected the Mini USB cable from the F400 to your computer.

-   You will be prompted to confirm if you want to delete all existing data on the F400.

-   Select 'Yes' to confirm.

-   The F400 unit will beep and in addition to the red LED, the green and blue LED's switch on.

- The F400 screen will display the words 'P-Plus Deleting'

- When the data has been deleted from the F400 Plate Meter, the unit beeps and the green LED switches off.

- You will be prompted to select which equations you want to download from P-Plus to the F400 Plate Meter. After selecting the equations to transfer, press 'Select' to begin the transfer.

- If more than one equation was selected, then you will need to select which of the equations you want to transfer to the F400, will be used as the Default Equation.

- When the equations have been transferred, the paddock details will be transferred also.

- When transfers are complete a message saying "Upload Complete" will be displayed on your computer

- You can now use your F400 Plate Meter to perform your Pasture Cover walks

12 | Using the Correct Measuring Technique

Different platemeter measuring techniques can alter pasture covers by as much as 600 kgDM/ha. This can be the difference between thinking there is adequate or even surplus pasture available and all is well, or pasture deficit and urgent action is required.

All pasture measurement techniques require calibration to convert the actual reading to dry matter. The technique that is used when walking around the farm taking the measurements needs to be the same as that used to calibrate the Platemeter. This technique is to place the plate on top of the pasture with no downward force, and then push the shaft to ground level – making sure the plate is vertical when the shaft hits the ground.

Taking measurements by holding the Platemeter 10cm or more above the top of the pasture and plunging the plate onto the pasture will give lower, incorrect readings. This is because the downward force of the plate compresses the pasture more than occurred when the calibrations were down, giving a lower average height and cover readings.

These two techniques are illustrated below:

Incorrect Technique

The Platemeter is held above the pasture and plunged in one movement onto the pasture.

The higher the plate is held and the greater the force applied, the lower the reading will be.
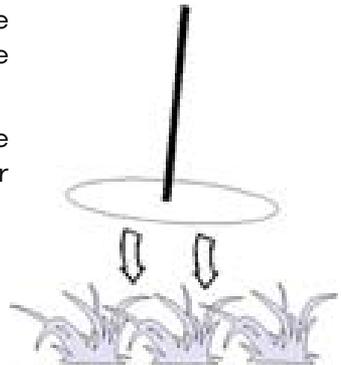
Correct Technique

Place the plate on top of the pasture with as little pressure as possible. Push the shaft down to ground level with the shaft vertical.

When using the correct technique, no differences have been found in the readings between the Platemeter and any of the mechanical Platemeters. However, operators using the incorrect technique will get lower readings with any Platemeter than those using the correct technique.
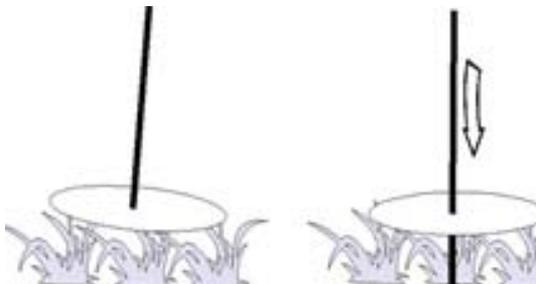
13 | Taking Paddock Readings or the Pasture Walk

IMPORTANT:
Please ensure that you wait for the Platemeter to beep at each plonk before lifting, otherwise the reading will not be recorded.

- Switch the unit on by pressing the ENTER key on the front of the unit for 1 second. The unit will beep and display the version number of the current software.

- 'Measure' is the first option to be displayed on the unit. Press the ENTER key to show the paddock name. Another Paddock can be selected using the UP and DOWN arrow keys on the front of the unit. Press the ENTER key to select paddock. If a paddock has already been measured it will show the Cover next to the paddock number, and by pressing the left and right keys you can view the growth rate and paddock size and the Current Cover.

- The default equation is then displayed for the selected paddock. This can be changed using the UP and DOWN arrow keys. Pressing the RIGHT Arrow key will display the A, B and C values for the equation. Press the ENTER key to select the equation for the paddock you are about to take readings in.

- Walk across the paddock taking readings every few paces. You will hear a beep every time a reading is stored. DO NOT LIFT THE UNIT UNTIL YOU HEAR THE BEEP. The kgDM/ha is immediately recalculated and displayed. The number of samples (plonks) to be taken should range between 20 and 40 per paddock however this will be determined by the variance existing in the cover. This is the recommended number of readings. The Plate Meter will give 3 short beeps when 30 readings have been recorded.

  Plonks need to be taken on a regular basis e.g. every five paces to even out any variations, however avoid stock camp areas, tracks or uncharacteristic areas. The greater the variability the greater the number of plonks you should take.

- The unit will give 2 quick beeps and a warning is displayed if the plate is not returned to 0 height. If it does not return to zero, please refer to section 6 'How to Calibrate your Plate Meter'.

- If there is no activity for 2 minutes the unit will beep and a warning is given that the unit will power OFF in 5 seconds. The F400 remembers the state it was in, so when you switch it back on it will carry on from where you left off.

- If you need to negotiate an obstacle (e.g. fence or creek) switch the unit off so that no readings are taken if the plate moves. On the other side of the obstacle, switch the unit back on and continue taking readings. The F400 remembers the state it was in, so when you switch it back on it will carry on from where you left off.

- Pressing the RIGHT arrow key changes the units, which the average readings are displayed in KGDM to Millimeters to Clicks. LEFT arrow keys then changes the units for the average readings from Clicks to Millimeters to KGDM. Clicks are measured in 0.5cm and will be displayed to one decimal place (i.e. 0.0 or 12.4). Note: 1 click= 0.5cm.

- UP arrow key will display Last Cover in KGDM/Ha, Last height in mm, Last Equation used, Paddock Size in Ha, Application Date, and Application Rate KgN/Ha. Press Esc to return to the current readings. To show Nitrogen Application date and rate you will need P-Plus Map and Paddock.

- When you have completed the paddock, press the ENTER key for the option to save the readings. Use the LEFT arrow key for No and RIGHT arrow key for Yes. Selecting No will show an additional prompt which requires the ENTER key to be pressed to confirm the deletion of the readings.

- If Yes is selected, you will be prompted to save the Grazing State only if the Grazing State has been turned ON prior to the paddock readings being undertaken. The Grazing State options are None; Grazed; Shut-Up; Cropped. The UP and DOW Narrow keys allow you to scroll through these. The ENTER key is used to select the Grazing State.

- Repeat this process until you have completed every paddock.

- Switch the unit off by holding down the ENTER key for 5 seconds.

14 | FAQ's and Trouble Shooting

For any issues that require you to send the Platemeter in for repair, please contact us prior to sending it as we may be able to offer troubleshooting assistance over the phone.

14.1 There is no visual display

Check	Resolution
The Unit is switched on	Switch the toggle switch on back of unit
The battery is not flat	Recharge the battery using Mini USB cable
If battery is not holding charge	Replace the Battery
If you have just changed a battery you may have damaged the battery snap (clip to top of the battery)	Requires service – contact Platemeters

14.2 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	Resolution
The counter can become un-calibrated if it receives a knock and the cog jumps a notch on the metal shaft.	Zero calibrate. See section 6. If the calibration fails to hold then the potentiometer, which the cog drives through the shaft is probably faulty and will need replacing. This can occur with excessive wear often compounded by dust and dirt entering the dry bearing. You will need to send the counter to Platemeters for service and repair

Check	Resolution
Ensure the cog is not slipping on the silver shaft (potentiometer)	Replace the potentiometer and cog. Send to Platemeters for repair.
The cog has wound off.	Replace – Request a spare cog from Platemeters.
Potentiometer damaged. The potentiometer is the silver shaft that drives the cog. NB: Under no circumstances should you apply CRC or light oil to the potentiometer. It is a dry bearing and any lubricant will render the potentiometer useless.	Send to Platemeters for service and repair.
Check the metal shaft is coming right back into the base of the black tube. Ensure there is no grass or soil build-up preventing it from doing so. Also check the large washer at the bottom of the shaft is not catching on the bottom of the plate.	Clean the Platemeter and zero calibrate if required.
Check the cog is running smoothly on the shaft. If the counter is mounted too close to the metal shaft there will be quite a lot of friction when taking a reading. If the counter is mounted too far away from the metal shaft; the cog is liable to jump a notch easily	Re-assemble the Platemeter.

14.3 Cog becoming worn

Check	Resolution
Not aligned correctly on the shaft.	Re-align the cog or replace the cog Order from Platemeters.

14.4 The counter continuously beeps and eventually turns off

Check	Resolution
This is normally due to a low battery. The counter requires a given level of power to operate correctly. If the battery doesn't have sufficient power it may continuously beep to warn you. Remember if you turn the counter off for a few minutes it may recover slightly but the problem will not go away.	Recharge the battery. Battery may be due for replacement.

14.5 Cog not running freely

Check	Resolution
Metal shaft is bent.	Straighten or request a replacement part from Platemeters.
Grass or soil build-up inside the black tube.	Clean the Platemeter.
Flutes on steel shaft have become filled with grass or soil.	Clean the Platemeter.

14.6 Counter Readings do not seem accurate

Check	Resolution
The counter is like a calculator – it does not give false readings under normal circumstances.	Check the equation being used is correct and the calibration has been correctly set (zeroed). See Section 10 Current DairyNZ Equations Current DairyNZ Equations and Section 6 How to Calibrate Your Platemeter.

14.7 Battery retainer falling out

Check	Resolution
The counter screws have not been tightened sufficiently.	Make sure the center screw is re-tightened after the battery is replaced or ensure the battery retainer is properly clicked into place.

14.8 Front panel or membrane problems

Check	Resolution
Buttons not clicking or activating.	First, check that the Platemeter is calibrated – see section 6 How to Calibrate Your Platemeter.

Service – membrane needs replacing. Send to Platemeters for service and repair. |

14.9 How do I change the formula?

See section 10 Current Dairy Equations

If you require assistance with setting up your Platemeter or with installing P-Plus Pasture Covers software, please contact us.

15 | Servicing and Repairs

If a fault develops with your Platemeter, in the first instance call us as we may be able to troubleshoot issues over the phone. Platemeter parts are also available to purchase though our website.

If the Platemeter needs repairing, remove the counter from the shaft and send for servicing to:

Platemeters Limited
275 Cameron Road
Tauranga 3110, New Zealand

A standard service charge including return freight (in NZ) applies to all repairs. If you are outside New Zealand please contact your local distributor, or contact us if you are unsure whe this is.

Thank you.

THANKS AGAIN FOR CHOOSING TO MAKE YOUR PASTURE MANAGEMENT SIMPLE WITH THE F400 PLATEMETER

If you need any further information or support, please contact us.

🌐 **www.platemeters.co.nz** | ✉ **info@platemeters.co.nz** | 📞 **0800 577 505**

ⓕ **facebook.com/platemeters**

📍 **Platemeters Limited, 275 Cameron Road, Tauranga 3110, New Zealand**

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