

Operation Manual

Nitrachek 404



Nitrachek 404 measures nitrate in
plant
soil
water



The test- strips are pre- tested.
 A sticker on the container shows the lot number that must be displayed on Nitrachek, before starting measuring.
 Range = 5 à 500 mg/ l NO₃ (+/- 10 %)
 Accuracy is higher in the middle of the range (50 – 250 mg/ l)



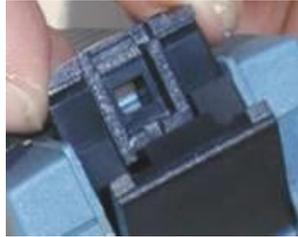
A plastic checker allows test the meter.



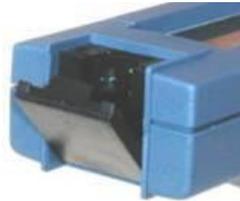
A standard solution, delivered with the strips, allows training and testing the whole procedure.
 Dipping time = 2 s .
 Get rid of a standard solution tube after 10 tests.



Nitrachek description



Hatch, finger, strip carrier



2 diodes and mirror



Sliding switch to switch off the beeper



9 V battery compartment

Battery



Hatch must be closed when battery is changed.

Remove the battery, if the meter is not to be used during several months.

If battery is changed within 30 seconds , datas are kept in memory.

EEE message when battery is flat.

If one actions the hatch when the battery is flat, no more display can happen.

Invert replacement battery polarity during 3 seconds (in this case only) before connecting this new battery the right way.



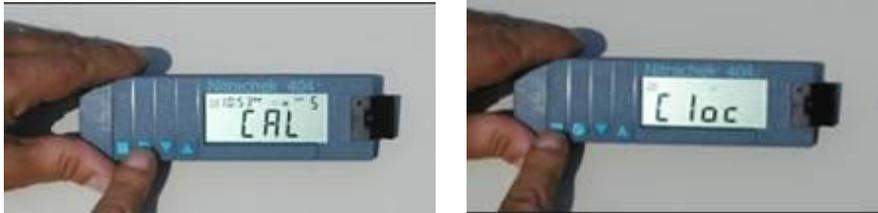
A battery icon is displayed when battery gets weak.

EEE message when battery is flat.

If one actions the hatch when the battery is flat, no more display can happen.

Invert replacement battery polarity during 3 seconds (in this case only) before connecting this new battery the right way.

Clock functions



Adjusting the date :

Open the hatch and wait for CAL
Press round button twice: CLOC is displayed
Press square then round button : year flashes
Arrow button to change year
Round button : day flashes
Arrow button to change day and month
Press square to complete procedure.

Adjusting the time :

Open the hatch and wait for CAL
Press round button twice: CLOC is displayed
Press square button : time flashes
Arrow button to change time
Press square as soon as displayed time is correct
Close hatch.

Do not clap



Yes



No

Enter lot number



Each strip box wears a sticker showing the lot number to be displayed according to room temperature.



To enter or modify the lot number, open the hatch, press an arrow button, to increase or decrease the lot number, displayed in top right corner.



Close the hatch to save the new lot number.



Meter switches off.

Error message / checker



Error message



Test is carried on only on **lot number 5**.



White side first, then grey side



Result should be within the limits printed at the back of the meter

Storage and handling of test strip



Storage < 1 month : dry, 15 °c
Storage > 1 month : 4 – 8 °c

Container is always closed

Container is always closed.



Close container immediatly

Calibration – Dipping



Open the hatch. The display briefly shows 8 8 8 8, then "CAL"
Lot number flashes.

Insert test strip in strip carrier
Pad downwards and facing the
towards the meter body.

Close smoothly the hatch . Sign " ---"
displays.

If calibration is accepted, the meter
beeps twice and displays "GO"
If not, "Err" is displayed



1 st beep : dip the strip

Dipping duration = 2 seconds
exactly

Only when everything is ready, open
the hatch.

Exactly at 1 st beep, dip test strip in
solution.

Dipping lasts for 2 seconds exactly, not
more, not less,
between 1 st bip and 3 rd bip (longer
beep)



3 rd beep : remove



Shake the strip during 3 – 4 seconds to remove any remaining excess solution.



Let the strip react . Do not touch, wipe or dab the test strip.



Within the 10 last seconds of countdown (not before) put the strip on edge (only on edge) on an absorbing paper during 1 second only , to allow capilarity absorption of remaning solution.
This to avoid polluting the strip carrier
Insert test strip in strip carrier



Close smootly the hatch before the end of countdown.
You shouldn' t see the "SHUT" message.
Display " - - -" then result in mg/ l NO3 (or ppm)

Results



If result > 500 mg/ l NO3



If result < 5 mg/ l NO3

3 measures per sample

Calculate the average of 3 measures.

Example : 294 , 278, 300. Average = 290 mg/ l

Check that the 3 measures are within limits of : -and + 10 % of this average.

Verification +/- 10 % : 261 – 319

The 3 measures are in the range 261 - 319.

Average is valid.

If the juice had been diluted 1/ 10, content = 2900 mg/ L NO3.

20 last results
in memory



Day	Time	Memory	Week
TH	9:37 AM	M	Wk 2
		47 ppm	
		Result in mg/ L	

3 results on same sample



Maintenance - cleaning

Manipulate this instrument with care.
Avoid mechanical shocks, high or low temperatures, humidity.
Do not let moisture deteriorate the meter.



**Remove
battery
before
cleaning.**

Determination of the correction factor

1. Choose LOT number 5
2. Make 3 single measurements with calibration solution 100 mg/l NO₃
3. Calculate the average value of the 3 measurements
4. Correction factor KF = 100 : average value

Choose the LOT number according to your correction factor:

KF	LOT Nummer
< 0,83	1
0,83 – 0,87	2
0,88 – 0,92	3
0,93 – 0,97	4
0,98 – 1,02	5
1,03 – 1,07	6
1,08 – 1,12	7
1,13 – 1,17	8
> 1,18	9

How to do a corrected measurement:

- Open the hatch on the right side
- Choose the LOT number according to the table on the right and select it in the device's setting with the ▲▼- buttons.
- Insert test strip in strip carrier and close the hatch.
- When „GO“ appears in the display, open the hatch again. Take the strip and dip it immediately for 2 sec. into the solution to be tested. Shake off remaining solution
- Meanwhile, the device counts down from 60 to 0. Having reached 5 (sec.), insert the test strip again and close the hatch.
- The display now shows the corrected result.

Attention:

If the determined correction factor is lower 0.8 or higher 1.2, it is advisable to choose LOT 5 for measurement and correct the measured value manually (calculator).

Correction factors of such extreme values appear very rarely.