QuickTest

Dairy Vacuum & Pulsator Tester

USER MANUAL

Part No. DR51-0023-08

innovAg

FCC Compliance Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Declaration of Conformity

Standards to which Conformity is Declared:

- EN55011:1998
- EN50082-1:1997
- EN 61000-4-2
- EN 61000-4-3

Manufacturer's Name: InnovAg Pty. Ltd.

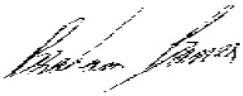
Manufacturer's Address: 37/328 Reserve Road, Cheltenham
Victoria 3192, Australia

Type of Equipment: Pulsation Tester/ Vacuum Gauge

Brand Name: QuickTest

Model Number: DR40-0079

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directives and Standards.



Braham Basser Date: 30 October 2001
Director
InnovAg Pty. Ltd

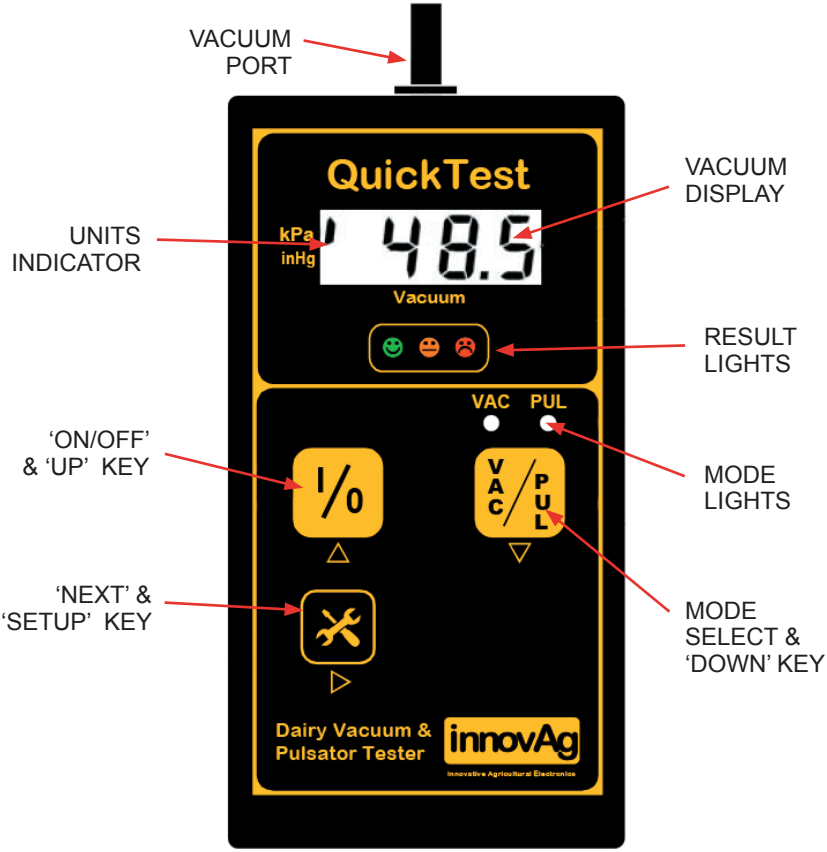
Contents

1. What is a QuickTest?

QuickTest is a small, light, hand-held instrument for testing vacuum supplies and pulsators in dairies. It uses the same high-accuracy analysis as its ‘big brother’ DairyTest Professional, used by milking machine technicians. The way it shows the results, however, is very different. QuickTest uses an easy-to-understand ‘traffic light’ system. It is specifically designed for farmers or milkhands to perform a fast, accurate check of their milking machine’s performance in-between full tests by qualified technicians.

2. The Front Panel

QuickTest performs an accurate check of your milking machine's performance. Like other basic digital vacuum gauges, it shows the vacuum reading on a large display. Unlike basic gauges, QuickTest also analyses the vacuum supply's performance. A simple RED - YELLOW - GREEN 'traffic light' display shows at a glance the vacuum line status, without having to interpret complex graphs or scores of data. Quicktest is also an accurate pulsation tester. Results are shown in the same easy-to-use format as its vacuum mode.



Low-Battery Indication

If the remaining battery capacity is getting low the current Mode light (VAC/PUL) will flash. Replace/charge the batteries.

3. Vacuum – Setting up

Before you can check vacuum supplies, Quicktest needs to be set with the type of test you want it to perform, and the required measurement units (kPa or inHg).

Length of sampling

This is the length of time QuickTest will sample the vacuum line each update. For most uses (eg. checking your milkline or airline vacuum) the 10 second (L=10) setting is correct. If you're checking vacuum in the cluster (usually only done by vets, technicians, etc.) the faster 1 second (L=1) setting is required.

Vacuum units

QuickTest can display vacuum in either kiloPascals (kPa) or inches-of-mercury units (inHg) as required. The Units Indicator on the left hand side of the display will appear next to those currently set.

Changing/checking the setting.

1. Make sure the QuickTest is turned ON and in Vacuum mode.

2. Press and hold the Settings key for about 3 seconds to enter setup mode. All the Result lights will go on and the display will show **L=10** or **L=1.**

3. Press either the Up or Down key to change between 1 and 10 second sampling.

4. Press the Forward key to move to units setting. The display should show **U=PA** (kPa) or **U=in** (inHg).

5. Press the Up or Down key to change between kPa and inHg.

6. Press the Forward key to move to save the changes and return to normal operation.

Auto exit

QuickTest will automatically exit Setup mode after 1 minute if you don't press any keys.

Saved settings

Settings are kept until changed by you. They do not reset when the unit is turned off or the batteries run flat.

4. Checking Vacuum

When set to Vacuum mode (VAC) QuickTest will display the average vacuum level on the digital display. International standards state that vacuum fluctuations (sags) on the line should not be more than 2kPa (0.6 inHg). QuickTest will analyse the stability of the vacuum supply and show the status on its result lights.

Doing a test:

1. Connect the tubing to QuickTest and the point to be measured.
2. Make sure QuickTest is in Vacuum mode and you've set the required sampling time (see previous page).

This table gives some examples of possible displays:

DISPLAY	RESULT	DESCRIPTION
0.0		No vacuum on the port
48.4		Average vacuum is 48.4kPa and stabliity is 'Good'.
48.4		Average vacuum is 48.4kPa but stability is 'Reasonable'
48.4		Average vacuum is 48.4kPa but stability is 'Poor'
– –. –		Under-range. Vacuum is too low (pressure is too high).
– – – .		Over-range. Vacuum is too high to measure

Blinking Lights

When in 10 second sampling mode the result lights will blink off for a short while every 10 seconds to tell you when the display has been updated.

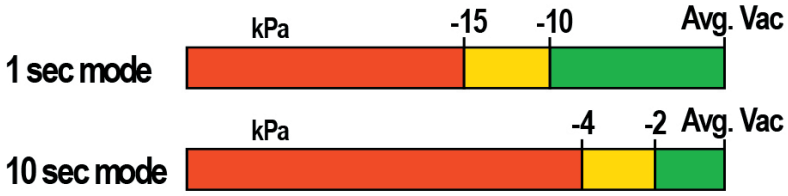
Auto-power OFF

If there is no vacuum on the port and you don't push any keys the unit will automatically turn OFF after 10 minutes to save battery life.

What is it measuring?

The average vacuum is measured over a rolling 30 second period. Fluctuations longer than 100ms (0.1s) are recorded in each sample period (1 or 10 sec).

This diagram shows how the result lights are set from the size of the worst fluctuation.



5. Pulsators – Setting up

Before you can check your pulsators, QuickTest needs to have two parameters set: Rate and Ratio. You may need to ask your milking machine technician which values are correct for your dairy.

Rate (C).

The number of times the pulsators operate each minute. Most dairies will use 60 CPM (C=60). Check to make sure you know the required value before you try to test them.

QuickTest's Rate can be set anywhere from 40 to 80 CPM.

Pulsator Ratio (P).

Pulsators have a variable amount of ON time to OFF time, called the Ratio. Most dairies will operate on or near 60:40 (P=60).

QuickTest's Ratio can be set anywhere from 40:60 (P=40) to 70:30 (P=70).

Changing/checking the settings.

1. Make sure QuickTest is turned ON and in Pulsator mode.

2. Press and hold the Settings key for about 3 seconds to enter setup mode. All the Result lights will go on and the display will show C=60 (the 60 may be different).

3. Press either the Up or Down key to set the required Rate. Holding down either key will make the digits move quickly in that direction.

4. Press the Forward key to move to Pulsator Ratio setting. The display should show P=60 (the 60 may be different).

5. Press either the Up or Down key to set the required Pulsator Ratio. Holding down either key will make the digits move qucikly in that direction.

6. Press the Forward key to move to save the changes and return to normal operation.

Auto Exit

QuickTest will automatically exit Setup mode after 1 minute if you don't press any keys.

Saved Settings

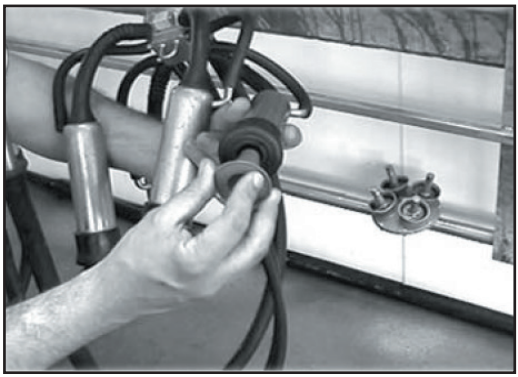
Settings are kept until changed by you. They do not reset when the unit is turned off or the batteries run flat.

6. Checking Pulsation

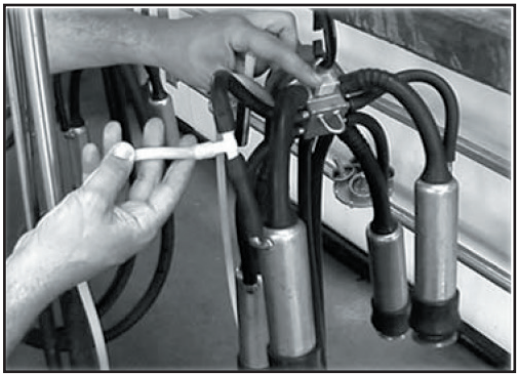
When set to Pulsator mode (PUL), the digital display will show the maximum vacuum level of the pulsation wave. QuickTest will analyse all important pulsation parameters and show the status on its Result lights.

Doing a test

1. Place the red teat cup plugs in all four cups.



2. Connect the tubing to QuickTest and the ‘T’ piece into the short pulse tuber of one teat cup.



3. Make sure QuickTest is in Pulsator mode and you've set the required Rate and Ratio values (see previous page).

This table gives some examples of possible displays.

DISPLAY	RESULT	DESCRIPTION
_ _. _		No vacuum on the port
46.7		Maximum vacuum is 46.7kPa and pulsation is 'Good'.
46.7		Maximum vacuum is 46.7kPa but pulsation is 'Reasonable'
46.7		Maximum vacuum is 46.7kPa and pulsation is 'Poor'
_ _. _		Constant vacuum on the port. No pulsation.
_ _ _ .		Over-range. Vacuum is too high to measure.
[_ _ _ _]		Just entered Pulsator mode and waiting for data.

Auto Power Off

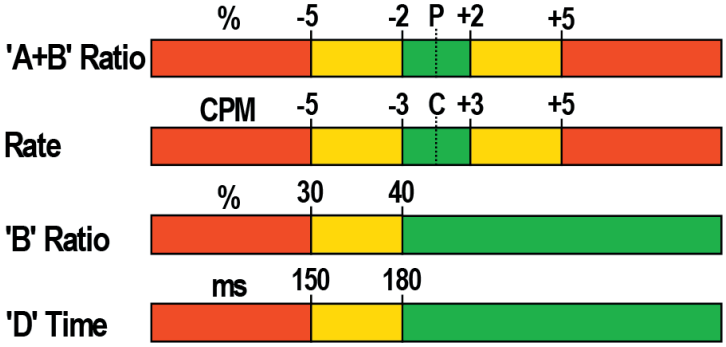
If there is no vacuum on the port and you don't push any keys QuickTest will automatically turn OFF after 10 minutes to save battery life.

What is it measuring?

QuickTest checks the four pulsation parameters:

Pulsation Ratio (A+B%), Rate (CPM), ‘B’ phase (B%) and ‘Time on atmospheric pressure (‘D’ time).

The diagram below shows how the result lights are set for each parameter. The ‘worst’ reading takes priority.



7. Specifications

Pulsation:

Rate Range:	40 to 500 CPM.
Rate accuracy:	± 2%.
Ratio accuracy:	± 2% of calculated value.
Time (ms) accuracy:	± 2%.
Sample rate:	300 samples/sec.

Pressure:

Range:	+10 to -80 kPa at 1 atm.
Accuracy:	± 0.5 kPa
Repeatability:	± 0.3 kPa
Resolution:	0.1 kPa

General:

Operating Temperature:	5 to 40°C
Storage Temperature:	0 to 60°C
Automatic turn-off time:	10 minutes after last key press if no vacuum on port.
Batteries:	Two ‘AA’ alkaline or NiCd/NiMH rechargeable cells.

*Specifications are subject to change without notice.

innovAg

InnovAg Pty Ltd

37/328 Reserve Road
Cheltenham Victoria 3192, Australia
FreeCall (within Australia) 1800 061 167
+61 3 9583 2832 sales@innovag.com
www.innovag.com

A.C.N. 073 191 376