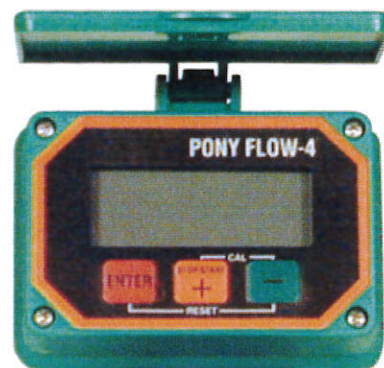


# This sheet applies to the 9volt Pony Flow 4 only

**Identification** - The Pony Flow 4 is pictured here. This is the "RAPID CHECK" version of the PONYFLOW. Rapid check means that the turbine can be removed from the flow meter body by undoing the red nut; this makes inspection of the turbine easier.

## Display

The Pony Flow 4 has two lines of display - for showing flow rate and volume at the same time. The display is also used for showing calibration functions. A low battery warning is displayed when the battery needs replacing.



## To use the flow meter

Touching any of the three buttons, or a flow past the turbine, will switch it on. **A period of about 5 minutes inactivity will switch it off.**

## To Measure Flow Rate

Whenever the meter is switched on it will measure flow rate.

## To Measure Volume

When the word "STOP" is displayed the total volume measured will not change.

Press the Stop/Start button and the "STOP" message will flash - in this flashing mode the flow will be added to the volume readout.

## To Reset the Total Volume

to reset the total to zero - the meter must be in the STOP mode (STOP not flashing) - then press the two "reset" buttons at the same time - the red and green buttons.

Note - if the STOP is flashing it is not possible to reset the total to zero.

## Cumulative Totals

If you do not reset the total to zero, then next time you measure volume it will add to the total. So if you want to measure only the flow on this use, reset the total to zero first.

## Function Menus

To enter the calibration menu, and to change the meter settings press the two "CAL" keys (the + and the - keys) simultaneously for 5 seconds.

The first menu displayed will be "Unit". Use the + key to move from lpm to US gall per minute, to m<sup>3</sup>/hr. Press the enter key to confirm. Press enter again to move to the next menu.

Second menu - here you can choose the decimal point of the calibration constant - you can choose whole units, 0.1 or 0.01. Press the enter key to move to the next menu.

Third menu - the calibration constant is displayed and can be changed with the + or - keys. Fourth Menu - the decimal point for the total. Choose whole units, 0.1 or 0.01. Press enter and the display will return to the main display screen.

## CALIBRATION - Why Calibrate the Flow meter.

Every flow meter has slightly different flow characteristics.

For this reason the manufacturer tests each individual flow meter and attaches a tag that gives the calibration constant for the particular meter. The testing and calibration is with water at 20 degrees C.

If you are not measuring water - if you are measuring a liquid of different viscosity - you will need to change the calibration constant or the reading will not be correct.

If you lose the tag with the record of the calibration constant, then a good starting point for calibration is: for a 2" Ponyflow a constant of 100 for a 1.1/2" Ponyflow a constant of 170.

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These instructions tell you how to change the calibration constant so that it is accurate with liquids of different viscosity.

With correct calibration the meter will be accurate to +/- 1%.

### Calibration

If you are using the meter to measure water then use the calibration constant Supplied with the meter - the calibration constant is hand written on the serial No. Tag.

If you change from measuring water to a different viscosity liquid you will need to re-calibrate.

To do this you will need to do some physical testing. This is done by filling say a 205 litre drum (something of known volume) and see what the flow meter reads. (It does not have to be a 205-litre container - just a vessel of known volume). For example if the flow meter reads 199 and you know it should be 205 you will need to reduce the calibration constant by that proportion.

Similarly if the flow meter reading was say 211 (and you know it should be 205) you will need to increase the constant. For the examples given above the calculation would be like this:

	Actual (Known Volume)	Reading on flow meter	Starting Constant in flow meter	Calculation	Constant should be
Example 1	205	199	100	$199/205 \times 100 = 97$	97
Example 2	205	211	100	$211/205 \times 100 = 103$	103

Put simply - divide the reading on the flow meter by the known volume multiplied by the constant. We recommend that you take note of the calibration constant for different liquids so you can key in the constant (for different liquids) without having to go through the calibration process each time.

### Maintenance and warranty

The display section is water resistant but not waterproof - Immersion and pressure washing are risky

- water can enter the display via the battery chamber and in particular through the battery lead hole.

Water on the circuit board will result in failure of the display. Like all LCD screen prolonged exposure to direct sunlight will cause the display to become faint, closing the lid when not in use will prevent the screen from degrading.

In general terms the warranty covers defects in manufacture and materials and does not cover misuse, water entering the display section, damage by chemicals, accidental damage, battery corrosion, erosion of the turbine or meter by flow of abrasive materials, consequential loss, labour or freight.

Date of purchase is irrelevant if the meter has been misused.

To extend the service life of the meter we recommend the following: -

- rinse the flow meter with clean water after use with chemicals. - Remove the 9v display from the meter before washing - it unscrews from the "rapid check" area - without undoing the red nut. Do not over tighten the display when re-installing - there is a small risk of damaging the meter with the sensor pin.

- Do not attempt to seal the two halves of the display with silicon sealer - there is a seal between the two halves of the display housing and there are also o'ring seals under the 4 screws that hold the "clamshell" together. It is a good idea to seal the hole where the battery leads pass through.

- Do not use thread seal tape under the red rapid check retainer nut - it has an o'ring seal. If over time there is a leak in this area replace the o'ring.

- Remove the battery at the end of the season - do not allow a flat battery to stay in the battery holder area - the leaking acid will damage the wiring and an expanding battery may distort the housing.

- Periodically remove the rapid check section and inspect the turbine for cleanliness and free running