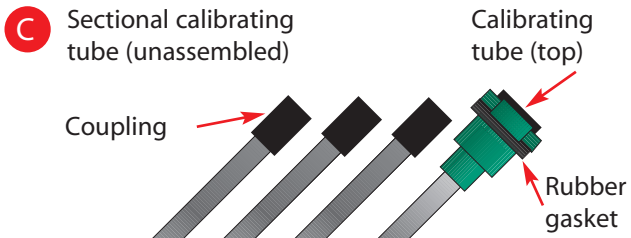
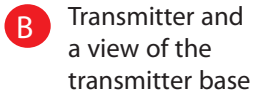
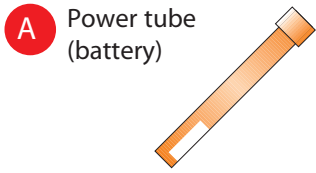


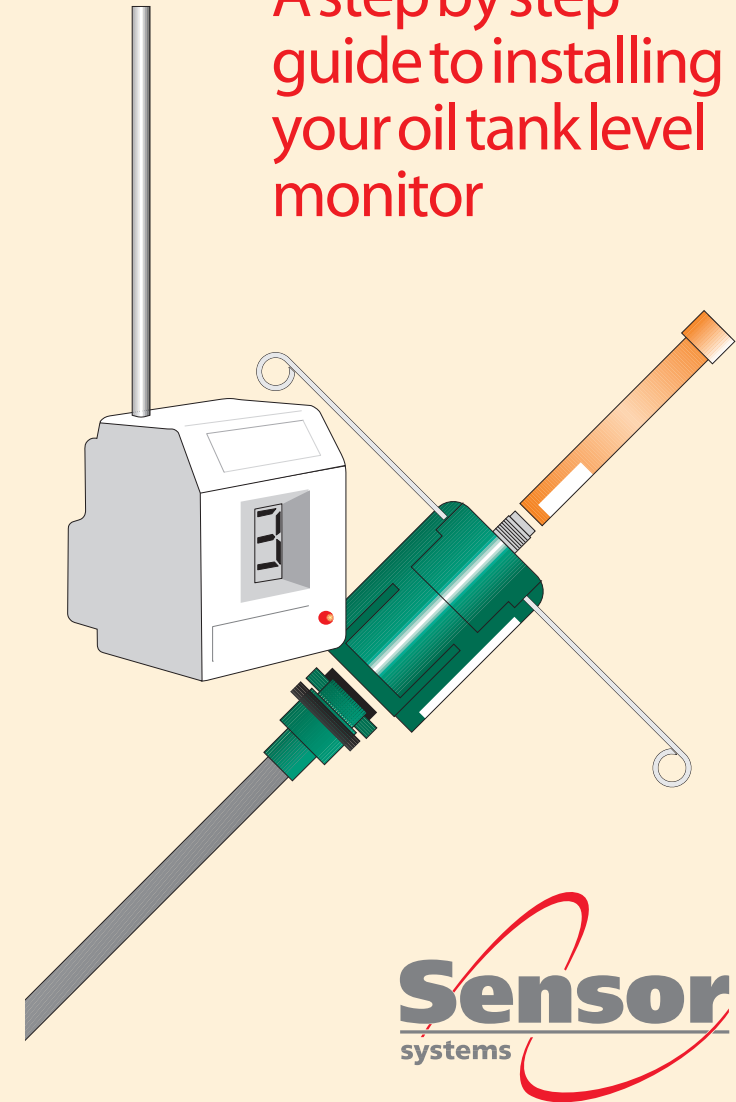
Components



Niveau Watchman

INSTALLATION INSTRUCTIONS

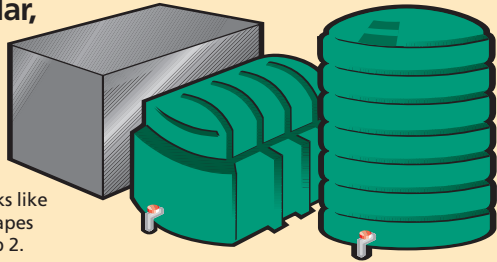
A step by step guide to installing your oil tank level monitor



Step 1. Identify the shape of your tank

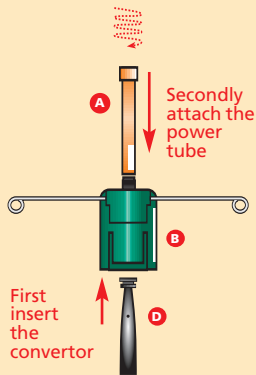
Rectangular, vertical or cubic shaped tanks

If your steel or plastic tank looks like one of these shapes move on to Step 2.



For horizontal cylindrical tanks

If your tank is shaped like a horizontal cylinder you must first use the cylindrical converter supplied.



First push the cylindrical converter (D) onto the base of the transmitter (B) and then screw the power tube (A) onto the thread at the opposite end of the transmitter.

NOTE: Hand tighten only!

A number of sounds will be heard and then after 25 seconds you will hear **two beeps**. Immediately remove the power tube (A) and then remove the cylindrical converter (D) from the transmitter (B).

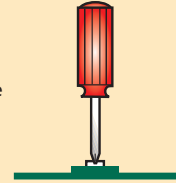
Your transmitter has now been converted to read a cylindrical shaped tank.

Step 2. Tank preparation

Please note – it is important to keep all items dry during installation

Pre-drilled tanks

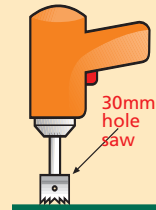
There may already be a 30mm pre-drilled opening in the tank top and possibly a tube fitted – if so, remove the cover and dispose of the tube.



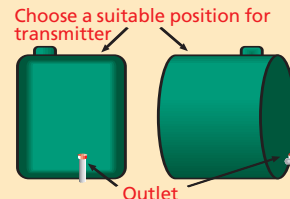
OR

Undrilled tanks

Where drilling is required choose a position on top of the tank surface where the calibrating tube (C) and transmitter (B) will be fitted. This must be on a surface that is **at the same level and no higher** than any opening at the top of the tank (filling point etc). Take care not to choose an area on which water could gather i.e. a dent/depression or a position directly above any restricted area inside the tank.



Drill a hole in the place that you have selected on the tank's top surface using a 30mm hole-saw.



Step 3. Tube assembly and trimming

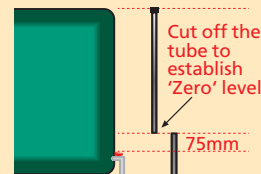
Assemble the calibrating tube (C) by firmly inserting the sections into each other until they click together. Make it up to approximately the height of your tank*.



NOTE: Make sure that each tube is properly 'clipped' together and will not separate.

The final tube must have no coupling section at the bottom.

Once assembled hold the tube so that the top is level with the top surface of the tank and cut the bottom off the tube at the point where you want the Watchman Niveau to show Zero. This should be roughly 10% (at least three inches or 75mm) up from the outlet pipe where the oil leaves the tank.



* Notes for calibrating the height of your tank

When the fluid level in your tank drops below the end of the calibrating tube (C) this will register Zero on your Watchman Niveau. The shorter the tube is cut the more reserve there will be in the tank when at Zero.

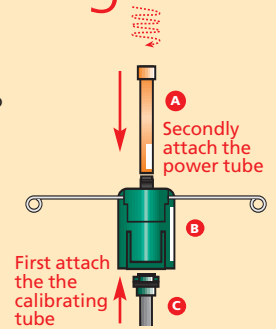
If when you assemble the calibrating tube (C) it's too short for your tank's height / diameter, please contact Sensor Systems to obtain additional longer sections.

Step 4. Calibrating

Take the calibrating tube (C), which you have trimmed to length and push it into the transmitter base (B). Hold the tube in a horizontal position to ensure there is no obstruction. Then screw the power tube (A) onto the transmitter (B).

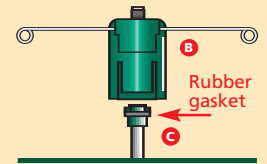
You will hear a number of sounds and after 25 seconds you will hear **three beeps**. The Watchman Niveau has now been calibrated for your tank's size.

Immediately remove the power tube (A) from the transmitter (B).

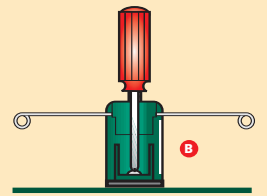


Step 5. Fitting

After calibration lower the calibrating tube (C) into the hole in the tank. Make sure that you keep the rubber gasket in place – this provides a seal between the tank and the tube. Make sure that the top of the tube is properly located into the 30 mm hole.



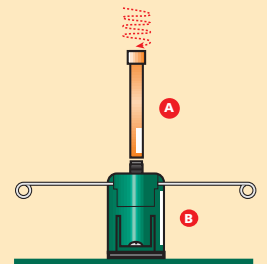
Fit the transmitter (B) onto the top of the tube and push it down firmly. Use the correct type of screws depending on whether the tank is steel or plastic to tighten the transmitter down fully onto the tube.



Plug the Watchman Display (E) into a mains electrical socket and switch it on. The Watchman

display will show the serial number of the unit in single digits and then an 'r'. Make a note of this number and enter this, along with the other information requested, on the Guarantee card for return to Sensor Systems Watchman Ltd.

Lastly, fit the power tube (A) onto the thread on the top of the transmitter (B). **NOTE:** Hand-tighten only! Finally view the display (E) – this will change from the 'r' to the level in the tank within a few minutes.



Level displays

Your Watchman Niveau displays the level in your tank in $\frac{1}{10}$ of its usable volume, ignoring a small area in the top of the tank, to allow for room for expansion in hot weather.

F Full

9 from $\frac{9}{10}$ to Full

8 from $\frac{8}{10}$ to $\frac{9}{10}$

7 from $\frac{7}{10}$ to $\frac{8}{10}$

6 from $\frac{6}{10}$ to $\frac{7}{10}$

5 from $\frac{5}{10}$ to $\frac{6}{10}$

4 from $\frac{4}{10}$ to $\frac{5}{10}$

3 from $\frac{3}{10}$ to $\frac{4}{10}$

2 from $\frac{2}{10}$ to $\frac{3}{10}$

1 from $\frac{1}{10}$ to $\frac{2}{10}$

0 from $\frac{1}{10}$ to Run out!

Other displays

Red light flashing once every 3 seconds with the " r " Display

Red light flashing once every second with the fluid levels 1 and 0

Fluid level together with "Bat Low"

Fluid level digit flashing – the level is more than 24 hours old and may no longer be valid!

C means "Connection Fault"

Reason

Display has not heard from the transmitter since the display was last plugged in and switched on

Indicates that your tank is low 1 is from $\frac{2}{10}$ down to $\frac{1}{10}$, 0 is from $\frac{1}{10}$ to Run Out!

You will soon need a new Power Tube battery*. As long as your level display is not flashing it is valid

Display has not heard from the tank transmitter for over 24 hours – may be due to a flat Power Tube Battery*

This indicates that damage may have occurred to your Watchman transmitter and it has an internal fault. A replacement product will be required, please contact Sensor Systems

* Please call Sensor Systems to locate your nearest power tube stockist

Watchman *Niveau* User Instructions

Operation

On start-up the transmitter will transmit the level every 6 seconds for 10¹/₂ minutes and then, in normal operation, will update the level once every hour or within 15 minutes of a level change. If the Watchman display has not heard from its transmitter for more than 24 hours the number displayed will flash to indicate that it is older than 24 hours and may not now be valid.

How to change Power Tube battery or reboot your system

- 1 Switch your Watchman Niveau display off and on again you will see the serial number displayed followed by 'r' standing for rest or reset
- 2 Unscrew and remove the Power Tube from your transmitter, wait for 2 minutes and then screw on your new Power Tube (if replacing). The action of fitting the Power Tube to the transmitter will reboot the system
- 3 Within a few minutes your Watchman Niveau will display your tank level

Remember to dispose of your old power tube thoughtfully and in accordance with local regulations. The power tube contains alkaline cells and must not be exposed to excessive heat or put in a fire.



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Telephone + 44 (0) 2380 231 007

Watchman Niveau User Version 1 February 2004