INTRODUCTION

These instructions cover how to upgrade a VFF flowmeter with an FPod to a FlowPod. This action should only be carried out with express permission from Litre Meter.

These instructions might assume a basic knowledge of VFF flow meter assembly and service.

Page 2 provides detail on swapping a PBC.

Page 4, 5 and 6 provide detail on sensor replacement and setting.

Basic Components in the upgrade kit:

Bolts, cap, enclosure

Cap O-ring, Hylomar, male union adaptor

New sensor, union nut

M8 sensor connector and cable, white environmental O-ring

Lower union

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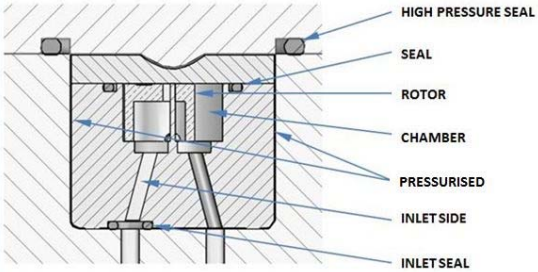
Remove the existing FPod instrument, sensor and cap. Usually undoing the 6 main bolts can accomplish this. Sometimes the cover above the 6 main bolts must be removed first.
Once the cap has been removed the Pressure Balanced Chamber is revealed held in the body.

If the PBC needs to be changed then it can simply be lifted out.
Sometimes, one of the screws can be undone a few turns to help its removal.
The replacement PBC **must** have the PBC seal O ring fitted and is lined up with a location pin – to be flush.



Place the new main cap seal into the groove of the new cap.

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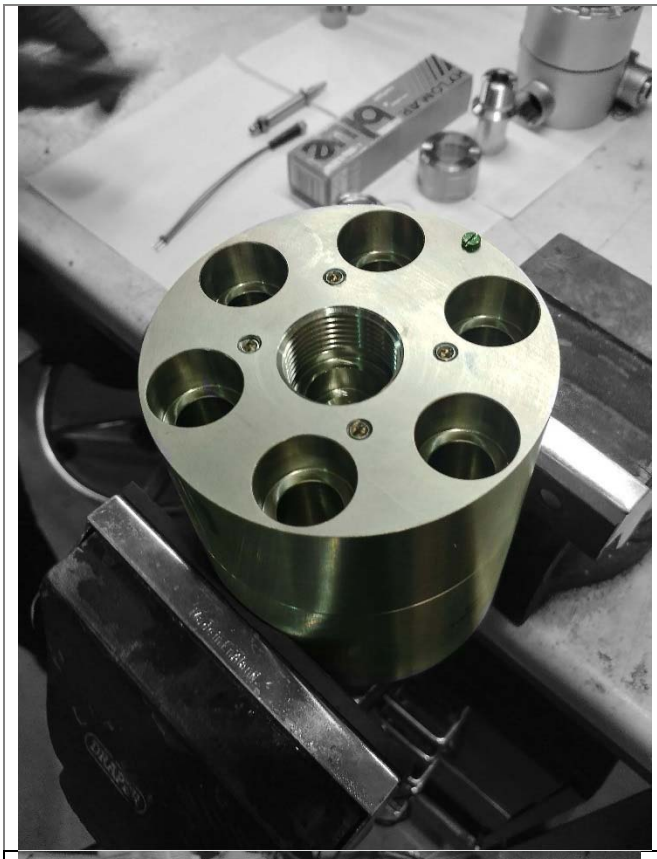	Place the new cap onto the existing body ensuring 1. the dowel pin/locating pin lines up 2. the cap O-ring is securely in place
	Torque the bolts up to the correct torque value – consult the calibration certificate for the correct figure.

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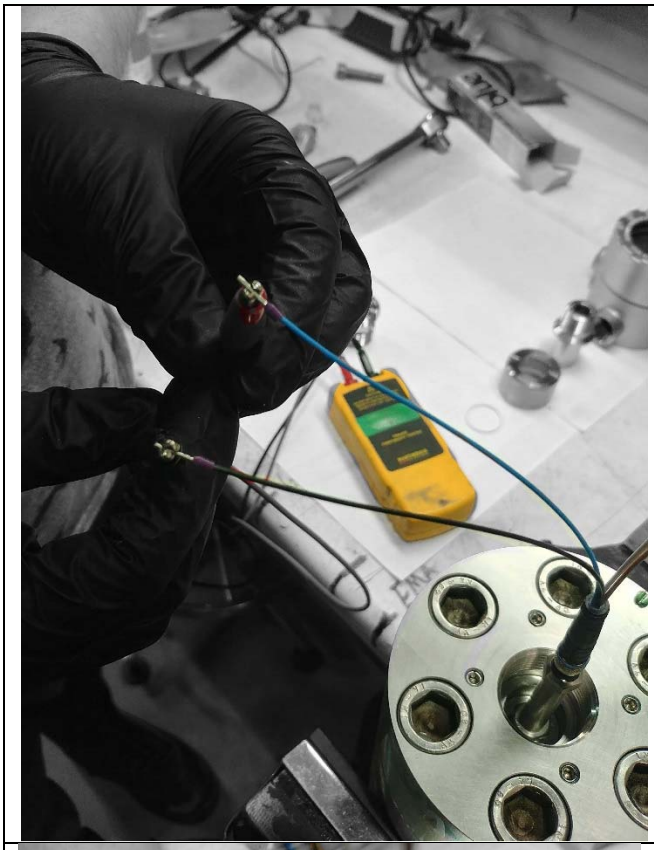
	Screw in the new sensor into the cap making sure the sensor lock nut is already fitted to the sensor thread. The sensor should bottom out. Unwind ¼ of a turn. Before locking the sensor in place, the sensor function needs to be checked.
	Fit the M8 sensor cable.



Connect a multimeter or, better still, a beeper across the black and blue wires. Introduce air or fluid at low velocity to gently turn the rotor inside the flowmeter. There should a clear succession of pulses probably in the region of 1 to 10 Hz. Please do not exceed 10 Hz.

If there is a single tone then the sensor is too near the rotor and needs to be backed off, probably ¼ of a turn at a time and the test repeated.

Conversely, if there is no tone then the sensor is not near enough and needs to be wound in.

Once a satisfactory setting is obtained from the steps above the sensor needs to be locked in place.

We recommend this is carried out before screwing in the lower union which limits access. (next page).

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	Using a suitable tool such as the Litre Meter Sensor Locker, hold the sensor still and then tighten the M8 sensor lock nut. As there may be some sensor movement it is good policy to retest the sensor immediately after setting to ensure nothing has moved.
	Apply Hylomar to the lower union thread shown. This is a non-setting seal specifically required for the Exd leg design. Please do not substitute with a setting version.

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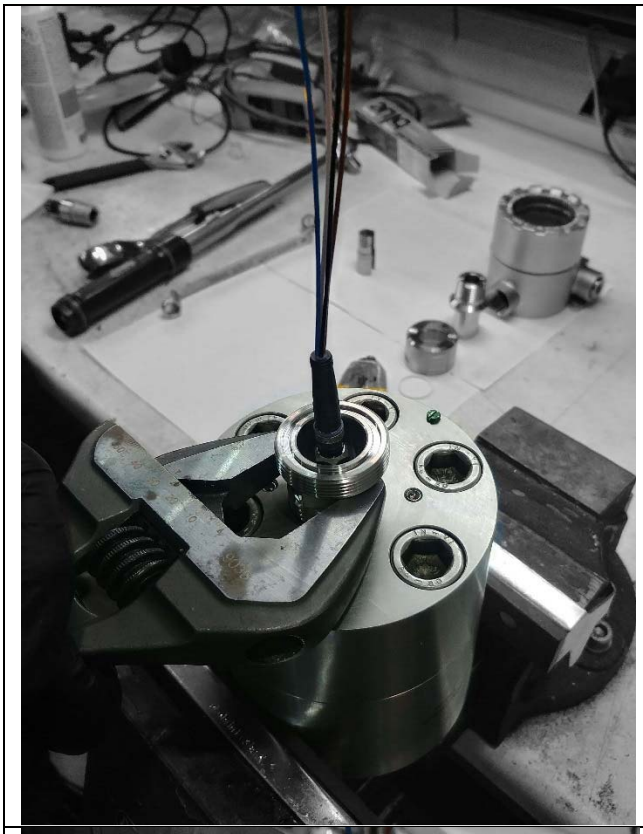	Tighten the lower union into the cap female thread.
	Place the white environmental O-ring into the groove in the lower union.

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	Insert the male union adaptor into the union nut, as shown
	Apply Hylomar, as before, onto the male thread.

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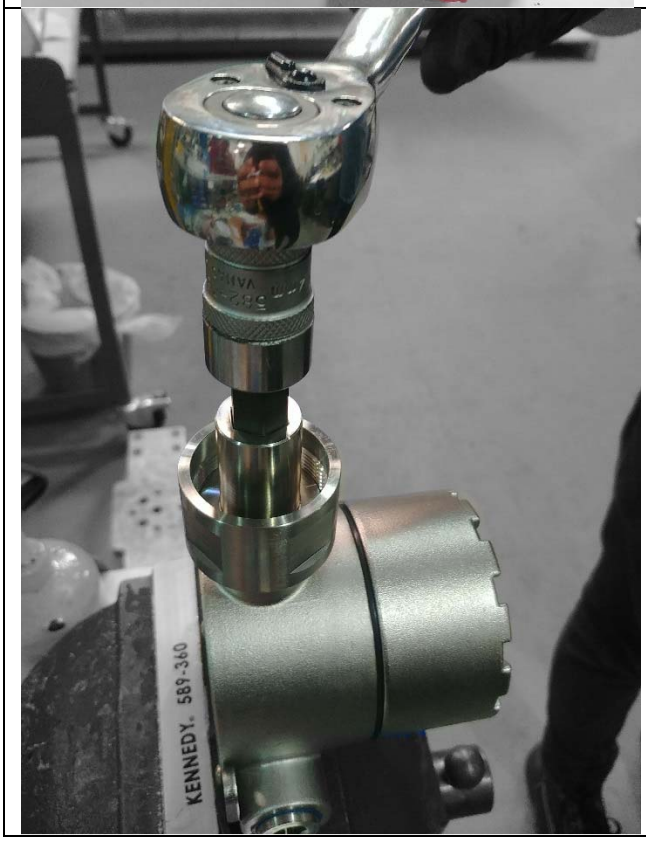
	Screw the upper union into the centre FlowPod connection. (3/4” NPT)
	Tighten the upper union into the FlowPod housing. The union nut is then retained, loose on the male union adaptor. Tighten with the hex drive.

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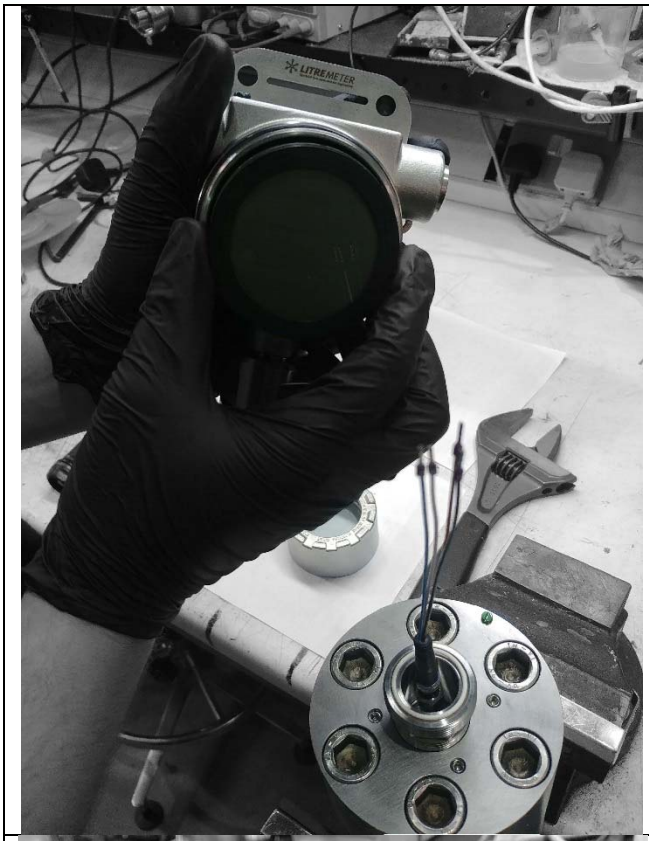
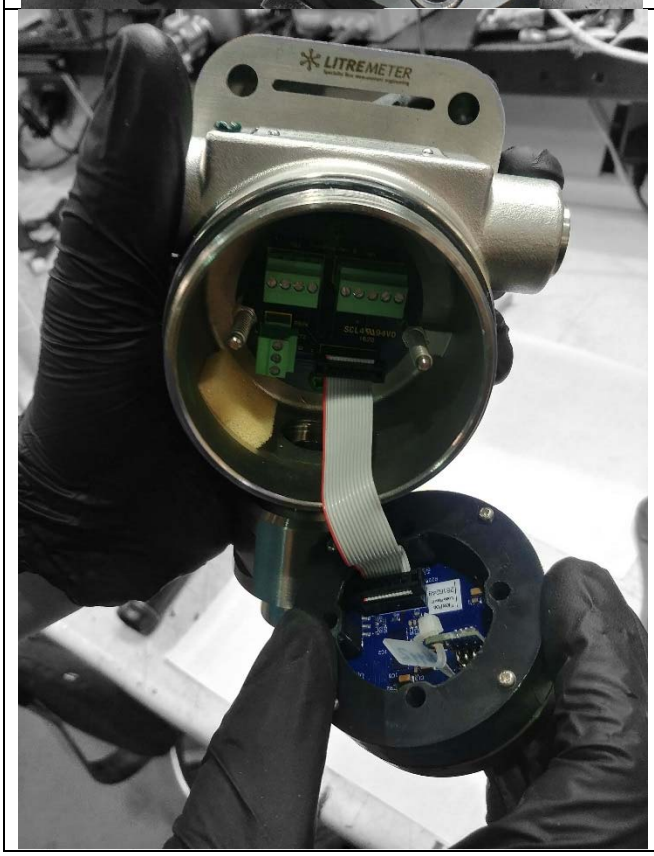
	Unscrew the FlowPod cover/window to reveal the display ‘puck’. The puck is supported on two pillars. Gently extract the puck
	Disconnect the puck at the terminal board (base of the enclosure)

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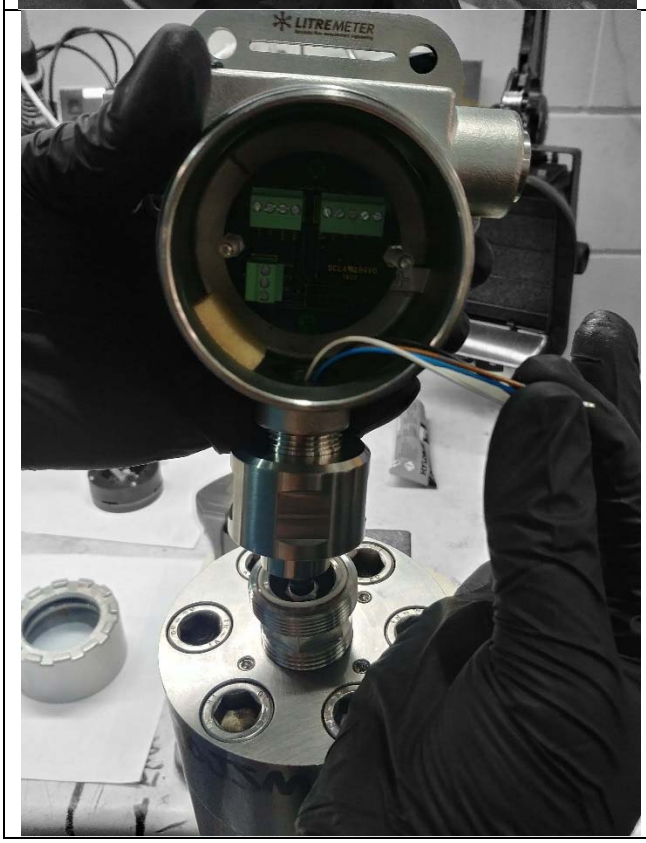
	Feed the sensor wires through the union.
	Don’t connect the sensor wires, yet.

	Bring the two metal parts together and manually spin the union nut onto the lower union.
	Nip the union nut tight. At any time, when it is safe to do so, this can be undone and the FlowPod rotated to provide a 360° setting position, then nipped up again.

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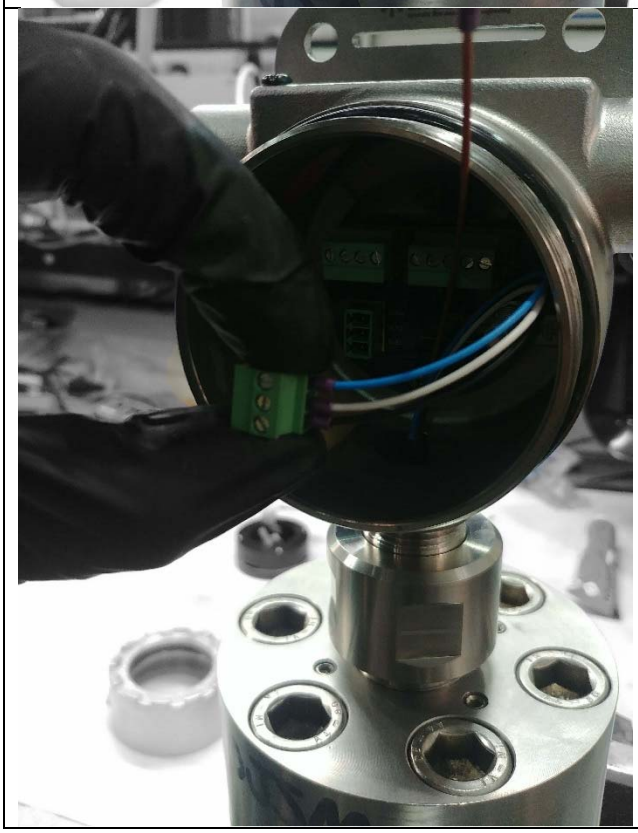
	Taking the 3-way connector out of the terminal board ….
	…connect the sensor wires as shown. Blue White Black

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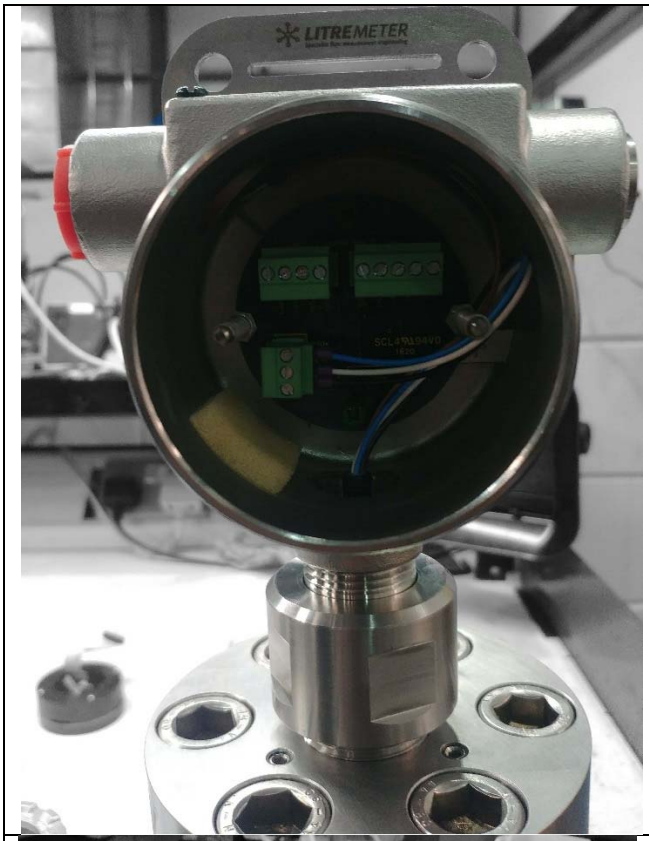	Replace the 3-way connector onto the terminal board
	Reconnect the display puck and replace the display puck on the pillars.

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Screw the FlowPod Cover/window. The FlowPod is now assembled.

To access the terminals for 3rd party wiring

- unscrew the cover
- disconnect the display puck
- remove the relevant terminal block

etc.