Assembly Procedure

Pegasus+ – Battery and SIM Card Assembly in the control unit and battery assembly in the Solenoid unit

This document details the assembly and connection of the battery and SIM card into the Pegasus + control box

Observe precautions for handling electrostatic devices at all times.
Observe any personal protective equipment requirements at all times.

IMPORTANT SAFETY INFORMATION

This product contains Lithium Thionyl Chloride (Li-$SOCL_2$) batteries.
To ensure safe handling of the product:

- Do not drop or abuse the product or packs
- Do not attempt to open, disassemble or service the battery pack
- Do not crush, puncture, incinerate or short circuit contacts
- Do not expose to direct sunlight or temperatures above the operating temperature range of the product.
- Store in secure, well-ventilated, dry and cool conditions
- Under no circumstances should the battery be recharged
- Dispose of in accordance with local regulations
- Do not dispose of in fire or water
- Do not carry or lift this product by the cable
- Replace only with a designated HWM battery pack

Failure to follow these instructions can result in serious injury

WEEE and the Battery Directive

Waste Electrical and Electronic Equipment.
HWM-Water Ltd is a registered producer of Electrical and Electronic Equipment in the United Kingdom (registration number WEE/AE0049TZ). Our products fall under category 9 (Monitoring and Control Instruments) of The Waste Electrical and Electronic Equipment (WEEE) Regulations. We take all environmental issues seriously and fully comply with the requirements for collection, recycling and reporting of waste products.

HWM-Water Ltd is responsible for WEEE from customers in the United Kingdom provided that:
The equipment was produced by HWM-Water Ltd (Palmer Environmental / Radcom Technologies / Radiotech / ASL Holdings Ltd) and supplied on or after 13th August 2005
The equipment was supplied before 13th August 2005 but has been directly replaced by an HWM-Water Ltd product manufactured since 13th August 2005.
HWM-Water products supplied after 13th August 2005 can be identified by the following symbol:

Under HWM-Water Ltd's Terms and Conditions of Sale, customers are responsible for the cost of returning WEEE to HWM-Water Ltd and we are responsible for the costs of recycling and reporting on that waste.
Instructions for returning WEEE:
Ensure that the WEEE meets one of the two conditions above.
The waste will need to be returned in accordance with the regulations for transporting data loggers with undamaged lithium batteries.

a. Pack equipment in strong, rigid outer packaging to protect them from damage.
b. Attach an appropriate Lithium Warning Label to the package.
c. The package must be accompanied by a document (e.g. consignment note) that indicates:
    i. The package contains lithium metal cells;
    ii. The package must be handled with care and that a flammability hazard exists if the package is damaged;
    iii. Special procedures should be followed in the event the package is damaged, to include inspection and repacking if necessary; and
    iiii. A telephone number for additional information.
d. Refer to the ADR/IATA regulations on shipping dangerous goods.

Return the WEEE to HWM-Water Ltd using an appropriate waste carrier.
In accordance with the regulations, customers outside the United Kingdom are responsible for WEEE.

The Battery Directive
As a distributor of batteries HWM-Water Ltd will accept old batteries back from customers for disposal, free of charge, in accordance with the Battery Directive.
PLEASE NOTE: All lithium batteries MUST be packaged and returned in accordance with the relevant regulations for transporting lithium batteries.

A licensed waste carrier must be used for transporting all waste.

For more information on WEEE compliance or the Battery Directive please e-mail CService@hwm-water.com or phone +44 (0)1633 489 479

Removing the Lid

1. Remove 18 off M4 x 12 cap head screws (and retain) using a 3.0mm A/F hexagon drive bit and gently separate the lid from the case ensuring the gasket separates without damage

Figure 1: A photograph illustrating the Pegasus + Control box

Assembling the Battery

2. Ensure the foam strip is located on the inside of the lid (as illustrated in Figure 2).

Figure 2: A photograph illustrating the foam strip assembled to the lid

3. Orientate the battery so the protruding wires are located towards the handle of the lid. Assemble the battery to the lid aligning the holes on the battery with the holes on the lid (as illustrated in Figure3).

Figure 3: A photograph illustrating the battery assembled with the holes of the battery and lid aligned

4. Assemble 8 off M3 x 6 cap head screws with 8 off M3 flat washers and assemble the battery to the lid. Tighten using a torque driver (1Nm) fitted with a 2.5mm A/F hexagon drive bit (as illustrated in Figure 4).

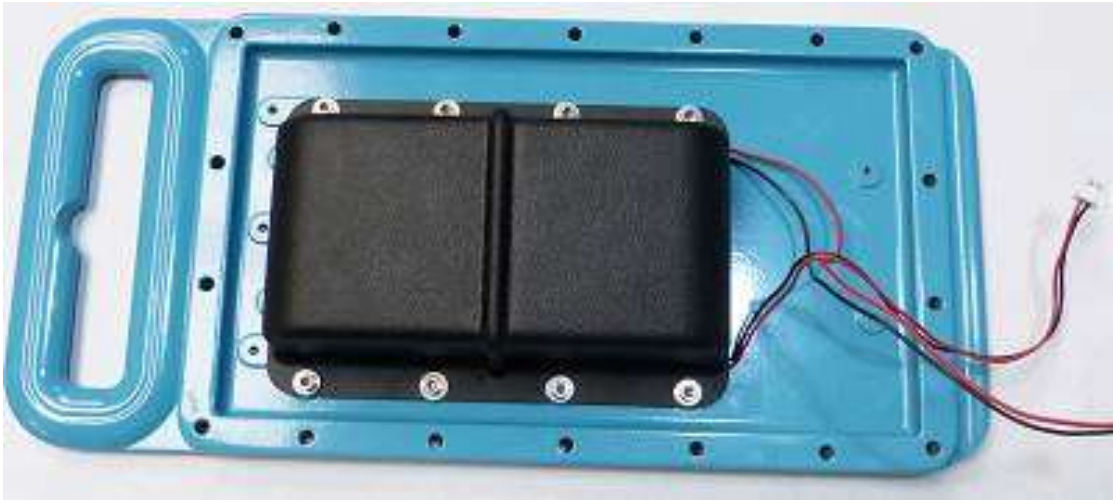


Figure 4: A photograph illustrating an assembled battery with 8 screws and washers

Connecting the Battery

5. Connect the battery lead with red heatshrink to **J20** and the other battery to **J14** of the main PCB. (as illustrated in Figure 5).

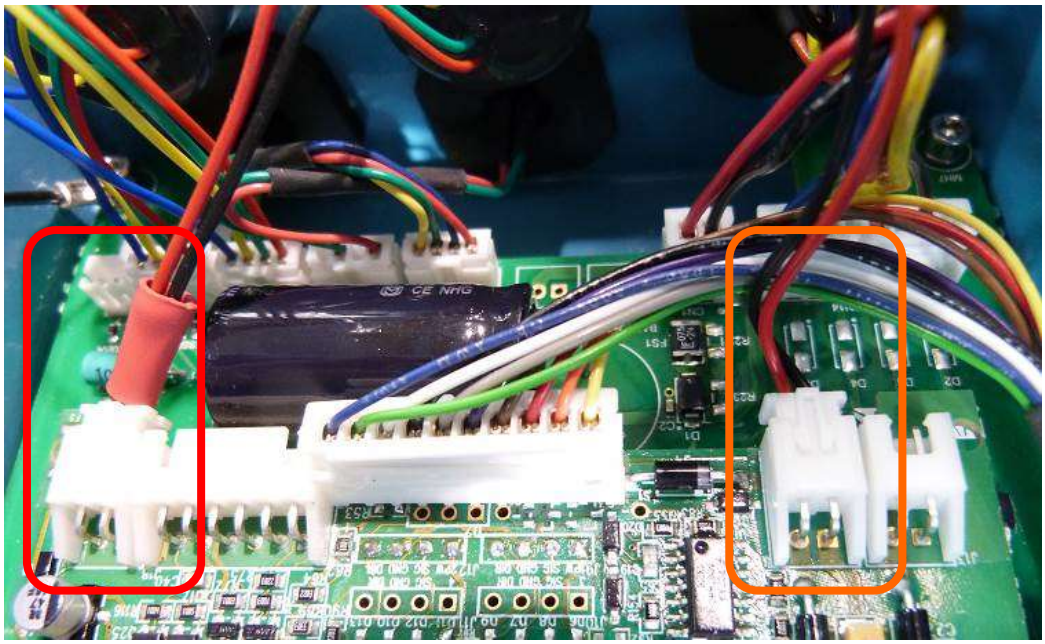


Figure 5: A photograph illustrating the battery connectors mated to J20 and J14 on the PCB

Installing a Sim Card

6. To insert the SIM card, slide the SIM card holder in the direction indicated to unlock it (as illustrated in Figure 6).

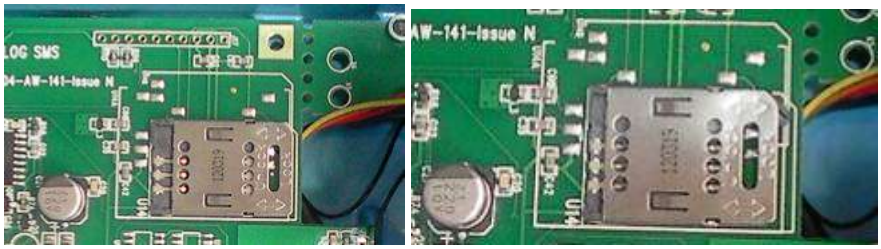


Figure 6: A photograph illustrating a locked sim tray (left) and unlocked Sim tray (right)

7. Pull the metal guard upwards and place the SIM card into the SIM card holder. Ensure that the contact area on the card is facing down on the PCB, and the bevelled corner is facing down in the SIM card holder (as illustrated in Figure 7).

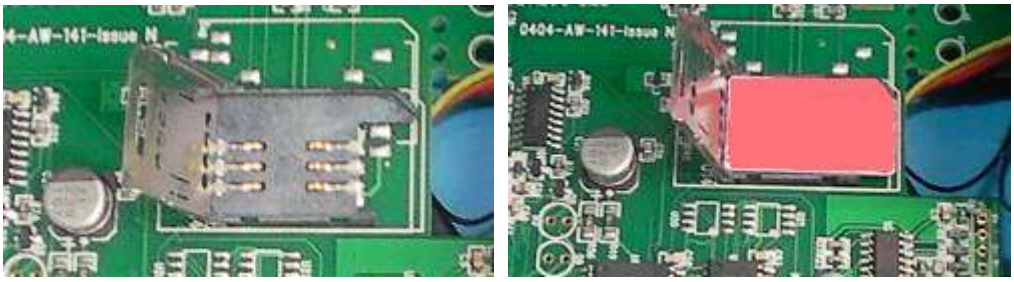


Figure 7: A photograph illustrating an open Sim tray (left) and an open Sim tray with a SIM inserted (right)

8. Lower the SIM card holder, and slide it in the direction indicated to lock it (as illustrated in Figure 8).

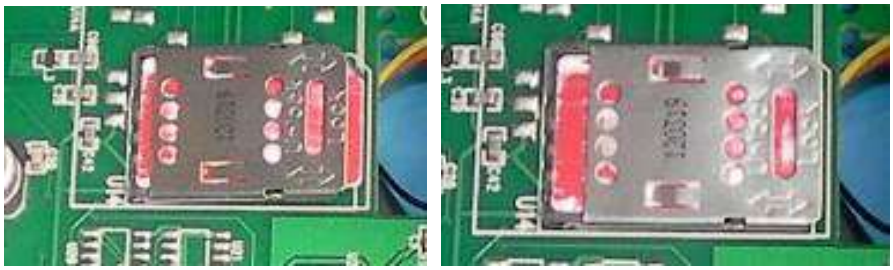


Figure 8: A photograph illustrating a closed sim tray (left) and locked sim tray (right)

Replacing the Lid

9. Align the gasket to the case, and then align the lid ensuring correct orientation of the handle which should be over the 10 way comms connector. Check that no cables are trapped.

10. Remove a silica gel bag from its protective wrapper. Fit the gel bag with 2 double sided foam pads. Apply the silica gel bag to the side of the housing in the location shown.

CARE POINT: Ensure to carry out all the steps as quickly as possible as the gel bag needs to be sealed in the housing as soon as possible.

11. Replace the 18 off M4 x 12 cap head screws and tighten with a torque drive (2Nm) using a torque driver with 3mm hex bit and tightening strictly in the sequence illustrated in Figure 9. **NOTE:-In order to ensure the gasket is correctly compressed it is necessary to follow the tightening sequence twice**

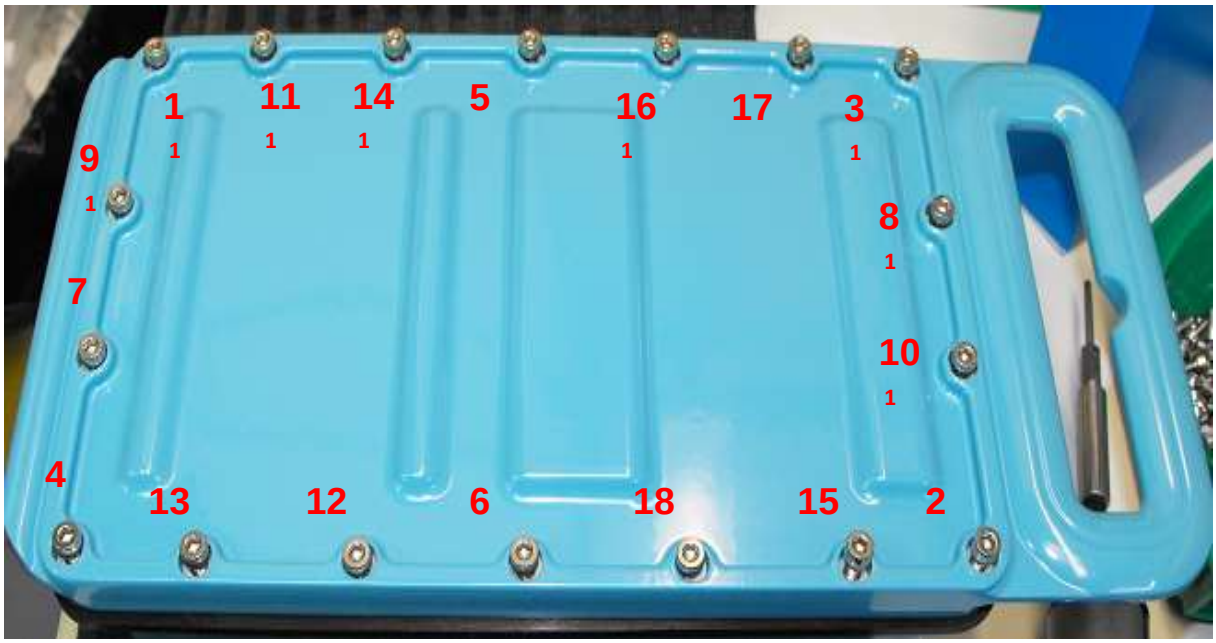


Figure 9: A photograph illustrating the 18 off screws securing the lid and the sequence in which they must be tightened.

Pressure Test

12. Remove the Void label (as illustrated in Figure 10).

Figure 10: A photograph illustrating the void label that requires removal

13. Remove (and retain) the M4 x 16 seal screw (as illustrated in Figure 11) using an appropriate bit.(Alternative screw heads may be used)

Figure 11: A photograph illustrating the pressure screw that needs to be removed and reatined

14. Insert the test adaptor and pressurise to 0.7bar (10psi) for 1 minute and observe for any internal pressure drop (as illustrated in Figure 12).

Figure 12: A photograph illustrating the test adaptor and a pressure gauge

15. After a successful test, replace the M4 x 16 seal screw and tighten to 2 Nm using a torque driver with an appropriate bit (as illustrated in Figure 13).

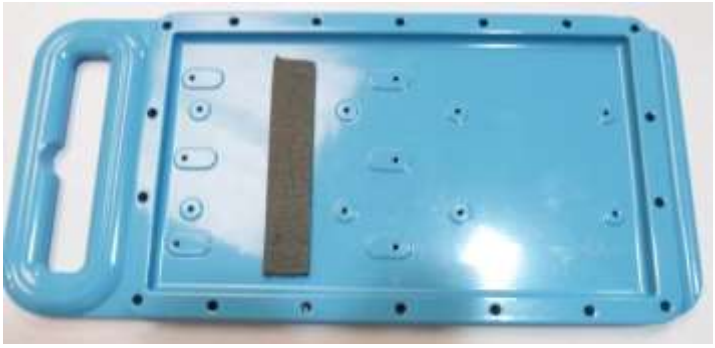
Figure 13: A photograph illustrating the pressure screw assembled

16. Affix a new Void label over the M4 x 16 seal screw (as illustrated in Figure 14).

Figure 14: A photograph illustrating the void label assembled

Solenoid box battery pack assembly

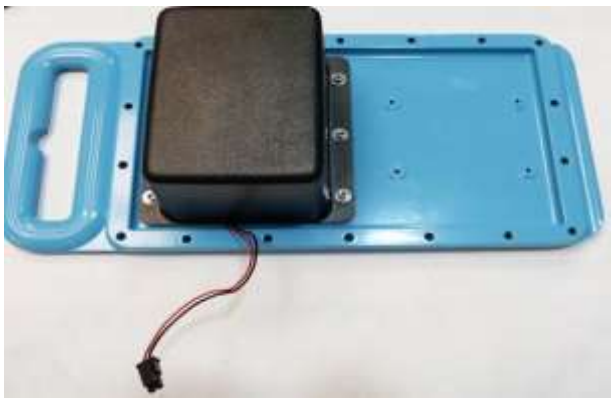
17. As per the control box remove the 18 screws which secure the lid, remove the lid and the gasket. Check the lid has foam tape in the position indicated below:-



18. Place the battery onto the lid so the handle is on the left and the wire from the battery is at the bottom. Roll the battery assembly to left so the lid in the location and orientation shown. Ensure lead is orientated as shown.

    CARE POINT: Ensure the cable is routed as shown. If the cable is routed elsewhere there is a potential to damage the cable.

19. Apply 6 screws each fitted with a washer to secure the battery pack to the lid in the location and orientation shown. Tighten the screws with a torque driver (**1Nm**).

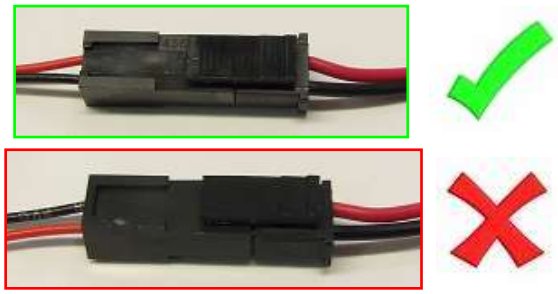


20. Apply a gasket to the housing so the smooth face is facing upwards.

21. Remove a silica gel bag from its protective wrapper. Fold the of the silica gel bag over and secure in place with double sided foam. Apply the silica gel bag to the lid in the location shown.

22. Place the lid next to the housing as shown. Connect the battery to the extension lead from the PCB. Use a double sided sticky pad to secure the battery wire in place as shown.

23. Connect the 2 way connector to the battery extension cable.
CARE POINT: Ensure when mating the cables that the same coloured wire is connected together (RED to RED and BLACK to BLACK).



Replacing the Lid

24. As per the Control box align the gasket to the case, and then align the lid ensuring correct orientation of the handle which should be over the 6 pin connector. Ensure that no cables are trapped.
Replace the 18 off M4 x 12 cap head screws and tighten with a torque drive (2Nm) using a Torque driver with 3mm hex bit and tightening strictly in the sequence illustrated in Figure 9.
NOTE:-In order to ensure the gasket is correctly compressed it is necessary to follow the tightening sequence twice -

Pressure Test

25. Remove the Void label (as illustrated in Figure 10).

Figure 15: A photograph illustrating the void label that requires removal

26. Remove (and retain) the M4 x 16 seal screw (as illustrated in Figure 11) using an appropriate bit.(alternative screw heads may be used)

Figure 16: A photograph illustrating the pressure screw that needs to be removed and retained

27. Insert the test adaptor and pressurise to 0.7bar (10psi) for 1 minute and observe for any Internal pressure drop (as illustrated in Figure 12).

Figure 17: A photograph illustrating the test adaptor and a pressure gauge

28. After a successful test, replace the M4 x 16 seal screw and tighten to 2 Nm using a torque driver with an appropriate bit (as illustrated in Figure 13).

Figure 18: A photograph illustrating the pressure screw assembled

29. Affix a new Void label over the M4 x 16 seal screw (as illustrated in Fig 17)

Figure 19: **A photograph illustrating the void label assembled**

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