Dear Service Agents,

From time to time you may have FWII returned to you where the customer reports recurring intermittent faults or flashing zero on the trolley. These codes are usually indications of a cut out rather than an actual fault with the controller or handle board.

Please find attached our updated guidance on the fault codes that can be displayed and some further guidance on identifying other faults which may occur.

In most cases when a fault occurs the fault screen can be activated and this will give a fault code as listed on the attached, however some consumers will not know how to access this screen and of course bring the trolley back to you to simply say it’s intermittent or goes to flashing zero now and again.

In these cases we suggest that you check the basics (guidance attached), if you then cannot find a fault explain to your customer that there is no obvious fault and hand them a copy of the Trouble Shooting Guide (copies enclosed).

Explain to them that if the fault occurs again then when the fault happens do not disconnect the battery simply press and hold down all three buttons at the same time until the fault list comes up on the screen, this will tell them using the Trouble Shooting Guide why the fault occurred, it will also enable them to return to you and let you know what fault code they have seen so that you can follow our diagnostic guide.

We have included the Trouble Shooting Guide in all production for the past couple of months but of course customers don’t always read the literature.

Should you require further copies of the Trouble Shooting Guide then they can be printed off on the Service Agent Portal or let us know and we can send you some more.

When returning a defective controller please identify the fault code, once you have checked that it is a ‘permanent’ fault.

Thank you again for your continued support.


FWII FAULT DIAGNOSIS

If a FWII trolley is reported as flashing zero, it has entered a fault diagnostic mode. THIS IS NOT A FAULT IN ITSELF.

Depress all three buttons (up, down and centre) at the same time for around 5 seconds, the screen will then change to display ‘Fault List’ at the top and a code which can be interpreted from the list below. In many cases disconnecting and re-connecting the power will reset the trolley and remove the fault code.

<table>
<thead>
<tr>
<th>FAULT CODE DISPLAYED</th>
<th>LIKELY FAULT</th>
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<tbody>
<tr>
<td>OCP</td>
<td>Over current protection, current higher that 42A for more than 15 seconds, for example the trolley has been pulling a heavy load up a very steep slope. Disconnect and re-connect the battery and the problem should disappear. If the problem persists, check the motor functions and replace the controller if required.</td>
</tr>
<tr>
<td>SHORTC</td>
<td>Short circuit protection over 60A, check cabling, connections, heat shrinks are in place, motor and controller for signs of water ingress or shorting. Replace the controller if the problem persists.</td>
</tr>
<tr>
<td>OTPL</td>
<td>Low Temperature Protection trolley cuts out at approximately -10C. If this fault persists at normal temperatures, check and if necessary replace the controller.</td>
</tr>
<tr>
<td>OTHP</td>
<td>Over Temperature Protection trolley cuts out at approximately +60C. If this fault persists at normal temperatures, check and if necessary replace the controller.</td>
</tr>
</tbody>
</table>
| TX                   | 1. Check handle wire connections at handle board – loose black or green wire gives a TX fault.  
2. Check handle wire for crushing or damage anywhere along its’ length. NB Controller can be damaged by touching red wire to blue or green.  
3. Disconnect handle wire from controller. Controller must always be disconnected from handle wire before removing wires from handle PCB. Use test handle to diagnose if the fault is in the handle or the controller.  
4. Replace controller or handle wire as necessary. |
| RX | 1. Check handle wire connections at handle board – loose black or green wire gives a TX fault. 
2. Check handle wire for crushing or damage anywhere along its’ length. NB Controller can be damaged by touching red wire to blue or green. 
3. Disconnect handle wire from controller. Controller must always be disconnected from handle wire before removing wires from handle PCB. Use test handle to diagnose if the fault is in the handle or the controller. 
4. Replace controller or handle wire as necessary. |
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<td>STALL</td>
<td>The motor has been stalled for example by running the trolley into a tree root or rabbit hole and stopping the wheels. Clear any obstruction from the wheels, disconnect and reconnect the battery and the trolley should re-start normally.</td>
</tr>
<tr>
<td>CLOCK</td>
<td>A clock fault will not cause flashing zero but can come up on the fault list when investigating another fault. Fault with clock battery in handle or handle PCB. Usually indicates the clock battery is dead, incorrectly fitted or missing. E.g. when locating the battery one set of contacts has been damaged or not located correctly on top and underneath the battery as in a watch battery fitting. Clock will not keep time if battery is missing or incorrectly fitted.</td>
</tr>
<tr>
<td>BATVOLT</td>
<td>Battery undercharged – Below 9.5V for Lead Acid or 11.5V for Lithium. Could indicate trolley has been set up for lithium and is running on lead acid. Go into the set up Menu and change as required. See Point 4 below</td>
</tr>
<tr>
<td>BATVOLTH</td>
<td>Battery overcharged - over 15.5V for Lead Acid or 17.5V for Lithium. Could indicate that the trolley is set up for Lead acid and is running on Lithium. Go into the set up Menu and change as required. NB If trolley is used and Total Distance (top left) has reverted to 0 then this indicates that settings are being ‘lost’ and requires a replacement of the handle board -See Point 4 below</td>
</tr>
</tbody>
</table>

Most of these codes reset themselves once the battery is removed and replaced so you may get a consumer who reports the fault but you don’t see a fault code. In such cases we recommend you explain the fault diagnosis system to the consumer, give them the consumer guide with fault codes if they don’t already have a copy, and ask them to report the fault code if it happens again.
OTHER FAULTS

1. Screen problems

If the screen flickers, is unclear or is not illuminated;

- Check the ribbon cable is inserted into the connector properly
- Check the ribbon cable is not damaged or torn
- If the ribbon cable is intact and connected properly, replace the screen PCB

2. EBS Function does not operate
3.

Power up the trolley and press the down arrow until the trolley reaches -3.

- If the trolley will not go past 0, go into the set up screen and change the Gearbox setting from S Box to LSD

If the EBS function goes to -3 but the brake does not operate;

- Check the motor is connected to the controller
- Check the gearbox is intact
- Check the controller function

4. Lack of Drive

- Check the motor is connected to the controller
- Check the gearbox is intact – loss of drive due to gearbox failure is usually accompanied by a loud noise
- Check the motor operates
- Check the controller function
- Check the scroll pins are in place and the wheels are engaged with the clutches

5. Trolley keeps reverting to its’ factory settings

This is most easily identified by Total Distance (top left) reverting to 0 (or Lithium trolley settings reverting to Lead Acid resulting in BATVOLTH)

Defective handle PCB. Replace.
6. **Trolley does not complete 18 holes**

Power up trolley and check display. Battery charge should show between 4 and 5 solid blocks. If there are not 4 to 5 solid blocks the trolley may not complete 18 holes. **NOTE**: If a full 12-14 hour charge on the battery does not produce 4-5 blocks on the battery charge indicator then the battery may be faulty. Check that the trolley is set up for the correct battery and check the battery run time.

7. **Trolley shuts off or is intermittent – particularly over rough terrain**

Check all power connections;

Check the battery top is screwed tightly on to the battery

Check the T connector for damage

On a lithium trolley, check the battery tray contacts for damage. Deformed contacts can lead to intermittent contact with the battery and cause a variety of faults. Check battery fits snugly and that contacts are not fouled by dirt and that dirt is not keeping the battery from sitting down in the battery tray.

Check all handle wire connections to handle PCB by gently tugging each of the wires in turn.
**1 SYMPTOMS** | **CAUSE** | **REMEDIES**
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a. Trolley is dead, display does not come up when on/off button is pressed. | Dead battery | Put your battery back on charger for 24 hours and retry the trolley.
Faulty connection | Re-connect battery.
Blown fuse (polarity protection) | Change the fuse on the controller.
On/off button | Take trolley to service agent.
b. When you press on/off button, speed shows zero, trolley will not work. | Faulty connection | Re-connect battery.
Incorrect programming | Go to set up menu (see owners manual) and make sure the correct battery has been selected.
Electrical fault | Refer to fault code guide.
c. None of the distances show on the main screen. | Motor fault | Take trolley to service agent.
d. EBS braking is not working | Incorrect gearbox type | Go to gearbox menu (see gearbox setting) and make sure correct gearbox has been selected.
e. The distance measure on my trolley does not match my GPS. | Free wheeling of the trolley | The measured distance on the trolley is approximate, also any time the trolley is allowed to free wheel, this will cause the distance to be out.

**2 STEP** | **How to access the Programme Menu**
---|---
a. 1 Without the battery connected press and hold the on/off button.
2 While still holding the on/off button connect the battery.
3 Keep holding the on/off button until the programme menu comes up on the display.
4 The menu gives you access to change the clock, metres/yards and battery type.
5 Enter any of the options, using the arrow buttons to highlight the one required then press on/off button to select the option.

**2 STEP** | **How to access the Gearbox Menu**
---|---
b. 1 Without the battery connected, press and hold the up and down arrows.
2 While still holding the buttons connect the battery.
3 Keep holding until the gearbox menu comes up on the display.
4 Standard is for the normal FWII, and LSD is the Brake model.
5 If you need to change the gearbox type then press the on/off button, and then select the correct type with the arrow buttons.
6 Press the on/off button to confirm.
7 Remove battery and the setting will be saved.

**3 FAULT CODE** | **FAULT** | **ACTION**
---|---|---
OCP | Over current trip | Trolley has cut out to prevent excessive current draw. Disconnect and reconnect battery then re-start trolley.
STALL | Trolley has been stalled | Disconnect and reconnect battery then re-start trolley.
SHORTC | Motor output short circuit | Return to service agent.
OTPL | Trolley has switched off due to extreme cold (-10C) | Disconnect battery and leave to warm up. Trolley can be re-started once it has warmed up.
OTPH | Trolley has tripped out due to extreme heat (50C +) | Disconnect battery and leave to cool. Trolley will re-start once it has cooled down.
RX | Controller failure | Return to service agent.
TX | Controller failure | Return to service agent.
CLOCK | Clock battery has failed | Return to service agent for replacement.
BATVOLTH | Battery voltage is too high | Check programme settings. This is usually a sign that a Lithium trolley has been set to Lead acid.
BATVOLTL | Battery voltage is too low | Fully charge your battery and retry the trolley. If the problem persists return to service agent.

If at anytime you have a problem with your FWII, you can at the time of the fault with the trolley access a fault code menu. If you note down the code you see this will help if the trolley needs to be returned to the service agent.

To access the fault code menu.
While the trolley is showing signs of a fault, press and hold all three buttons until the fault list comes up in the display. Depending on the code which is shown in the display, see below for the appropriate action.

For full details please visit [www.powakaddy.com](http://www.powakaddy.com)