1. Introduction

Thank you for choosing a professional quality product from WhisperPower. WP-DC Beltpower is a system designed to be driven by a belt from a pulley on a vehicle or small propulsion engine. In most cases as an additional battery in a battery and solar system. The alternator is a two-step charge regulator, which converts and regulates the charging of an alternator in order to charge a 12 or 24 volt battery bank using a state-of-the-art charge algorithm.

This manual is valid for the following products:

<table>
<thead>
<tr>
<th>Part-No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>26211211</td>
<td>WP-DC BELTPOWER 12/90A ALTERNATOR</td>
</tr>
<tr>
<td>26211212</td>
<td>WP-DC BELTPOWER 12/130A ALTERNATOR</td>
</tr>
<tr>
<td>26211213</td>
<td>WP-DC BELTPOWER 12/160A ALTERNATOR</td>
</tr>
<tr>
<td>26211214</td>
<td>WP-DC BELTPOWER 24/160A ALTERNATOR</td>
</tr>
</tbody>
</table>

Safety guidelines and measures

This manual serves as a guideline for safe and effective installation and use of the WP-DC Beltpower. It should be kept in dry and clean place, and available any time. Please read the manual carefully before installing and using your WP-DC Beltpower.

Throughout this manual, the following alert symbol is used to indicate potential hazard:

**CAUTION**

Risk of equipment damage or personal injury

Always be aware that your actions may have an impact on safety and/or product performance. Carefully follow instructions documented.

2. Instructions for use

Use the WP-DC Beltpower for intended purpose only:

- To charge batteries and to supply loads connected to these batteries, in permanent systems;
- With buses protecting the wiring between the system components and the battery;
- In technically correct condition;
- In a closed, well-ventilated room, protected against rain, moist, dust and vibrations.

Observe this instruction to this manual. WhisperPower is not liable for any damage caused by using the WP-DC Beltpower for other purposes and in other ways than mentioned above.

**CAUTION**

Battery acid is corrosive; wear protective equipment when handling batteries. If battery acid enters eyes, wash with a lot of water for a minimum of 15 minutes and seek medical attention.

**WARNING**

Never let the WP-DC Beltpower active when the engine is off. Otherwise, alternator windings will be destroyed.

**WARNING**

Never use the WP-DC Beltpower in locations where there is risk of explosion due to gas, potentially explosive products or gases.

Little instruction is needed to operate the WP-DC and WP-ACR. Once installed as described in Section 4, the alternator will start with internal user interaction.

3. Troubleshooting

In case of any fault, it is recommended to consult the 'Maintenance and repair' section before checking the tables below. In case of doubt, contact your local WhisperPower Service Centre. See www.whisperpower.com.

4. Technical drawings

See additional drawings of all Beltpower types can be obtained from the WhisperPower website.

Maintenance and repair

Use only original spare parts.

**CAUTION**

When service has to be carried out while the engine is running, be aware of moving parts.

**WARNING**

Make sure the WP-DC Beltpower and engine are secured against uncontrolled and unintentional starting on when switched off for maintenance or repair.

- Remove the key from the engine ignition switch;
- Disconnect the batteries to prevent the DC supply;
- Be sure that third parties cannot reverse the measures taken.

Electrical connections:

- Check the wiring at least every six months. barrel cables, post connections etc. must be checked immediately.

Technical drawings

See additional drawings of all Beltpower types can be obtained from the WhisperPower website.

**CAUTION**

When service has to be carried out while the engine is running, be aware of moving parts.

**WARNING**

Make sure the WP-DC Beltpower and engine are secured against uncontrolled and unintentional starting on when switched off for maintenance or repair.

- Remove the key from the engine ignition switch;
- Disconnect the batteries to prevent the DC supply;
- Be sure that third parties cannot reverse the measures taken.

Electrical connections:

- Check the wiring at least every six months. barrel cables, post connections etc. must be checked immediately.
1. Loosely attach the mounting bracket to the engine with the screws shown below and tighten the bolt securing it.

2. Align the alternator pulley with the engine drive pulley as shown in the figure below. Always check that the alternator adjustment ear (C) with the bolt, flat washer and lock washer.

3. Using the installation drawings for installation position of the alternator because it takes some time for the voltage to settle after starting.

4. Install the WP-ACR not too far from the alternator, taking into account the long cable harness. The above settings may be adequate for some installations. However, if the DC Reference is incorrect in multiple installations together with the WP-ACR Brushless load, the red wire must not be connected to a positive (+) battery pole. Do not install the DC fuse in the positive cable until the installation is completed.

5. The WP-FDR has three trimmers for adjusting the absorption voltage, float voltage and absorption times. These must be set using 24V / 240A / yellow fuse:

6. Some caution is required when installing the WP-ACR on the batteries to the alternator and to the WP-ACR.

7. The battery voltage rises until the yellow [abs] LED illuminates. The above settings may be adequate for some installations.

8. The battery voltage drops below 13.25VDC when the WP-ACR is in absorption mode. Before measured at 25°C / 77°F, the battery voltage should stabilize at 14.25 ± 0.15VDC for a 12V alternator or 28.5 ± 0.15VDC for a 24V alternator.

9. Before rotating the alternator, check the engine voltage against the float voltage or absorption voltage if it does not increase to the battery or to the WP-ACR. The battery voltage rises until the yellow [abs] LED illuminates. The above settings may be adequate for some installations.

10. Operate the WP-ACR to absorb all the energy from the batteries. Use the setting range as shown in the table below. For step 8 you might want to reduce the absorption time temporarily to 2.5 sec, by turning the [field] potentiometer counterclockwise until it stops.

11. The absorption stage may not go quick enough. For step 8 you might want to reduce the absorption time temporarily to 2.5 sec, by turning the [field] potentiometer counterclockwise until it stops.

12. In case the yellow [bulk] LED on the WP-ACR will illuminate, indicating that the charge cycle begins.

13. The battery voltage drops below 13.25VDC when the WP-ACR is in absorption mode. Before measured at 25°C / 77°F, the battery voltage should stabilize at 14.25 ± 0.15VDC for a 12V alternator or 28.5 ± 0.15VDC for a 24V alternator.

14. Before rotating the alternator, check the engine voltage against the float voltage or absorption voltage if it does not increase to the battery or to the WP-ACR. The battery voltage rises until the yellow [abs] LED illuminates. The above settings may be adequate for some installations.

15. Before rotating the alternator, check the engine voltage against the float voltage or absorption voltage if it does not increase to the battery or to the WP-ACR. The battery voltage rises until the yellow [abs] LED illuminates. The above settings may be adequate for some installations.

16. The battery voltage drops below 13.25VDC when the WP-ACR is in absorption mode. Before measured at 25°C / 77°F, the battery voltage should stabilize at 14.25 ± 0.15VDC for a 12V alternator or 28.5 ± 0.15VDC for a 24V alternator.

17. Before rotating the alternator, check the engine voltage against the float voltage or absorption voltage if it does not increase to the battery or to the WP-ACR. The battery voltage rises until the yellow [abs] LED illuminates. The above settings may be adequate for some installations.

18. The battery voltage drops below 13.25VDC when the WP-ACR is in absorption mode. Before measured at 25°C / 77°F, the battery voltage should stabilize at 14.25 ± 0.15VDC for a 12V alternator or 28.5 ± 0.15VDC for a 24V alternator.

19. If the machine has been finished or previously installed, the WP-FDR DC Beltpower system is ready for operation. First, check the troubleshooting section.