INTRODUCTION
The ODYSSEY™ battery ingeniously uses absorbed glass mat (AGM) technology to offer, in one box, the characteristics of two separate batteries. It can deep cycle as well as provide enormous cranking power - it is almost as if a champion long distance runner and a world class sprinter are one and the same person.

These batteries are capable of providing engine cranking pulses in excess of 2250A for 5 seconds as well as 400 charge/discharge cycles to 80% depth of discharge (DOD). A typical starting, lighting and ignition (SLI) battery can do one or the other, but not both. It is either a sprinter or a long distance runner; ODYSSEY batteries will do both — provide short duration high amperage pulse or low rate long duration drains.

WHY USE ODYSSEY BATTERIES?

GUARANTEED LONGER SERVICE LIFE
With an eight to twelve year design life (float) and a three to ten year service life, ODYSSEY saves you time and money because you do not have to replace the battery as often. ODYSSEY is warranted against factory defects for two full years in powersports or three full years in automotive, commercial and heavy-duty marine applications.

SUPERIOR CRANKING AND FAST CHARGE CAPABILITY
The 5 second cranking power of ODYSSEY batteries is double to triple that of equally sized conventional batteries, even when the temperature is as low as -40°C (-40°F). Also, with simple constant voltage charging (alternator or independent charger), there is no limitation on the inrush current, so the user is assured of fast charge recovery.

MOUNTING FLEXIBILITY
The ODYSSEY battery may be installed in any orientation (except inverted) without sacrificing any performance attributes. There is no fear of any acid spillage as ODYSSEY recycles the internal gas during operation or charging. The sealed design of the ODYSSEY battery eliminates the need for an acid vent tube; eliminating the fear of acid burns or damage to expensive chrome or paint.

SUPERIOR VIBRATION RESISTANCE
ODYSSEY batteries are of military grade and have endured rigorous tests that demonstrate their overall ruggedness and exceptional tolerance of mechanical abuse.

READY OUT OF THE BOX
ODYSSEY batteries are shipped fully charged. If ODYSSEY’S voltage is 12.65V or greater simply install the battery in your vehicle and you are ready to go! If below 12.65V, boost charge following the instructions in the ODYSSEY Owner’s Manual and/or Technical Manual. Putting a boost on the battery will not hurt it, even if its voltage reads higher than 12.65V.

WORRY-FREE SHIPPING
Owing to the drycell design, the US Department of Transportation (USDOT) has classified the ODYSSEY battery as a nonspillable, so it may be shipped worry-free by Express Service or by air.

LONGER STORAGE LIFE
Unlike conventional batteries that need to be recharged every six to twelve weeks the ODYSSEY battery, when fully charged, can be stored for up to 2 years at 25°C (77°F). Simply recharge and ODYSSEY is returned to full power. At lower temperatures, storage times will be even longer.

DEEP DISCHARGE RECOVERY
Should ODYSSEY become deeply discharged, simply recharge following instructions in the ODYSSEY Owners Manual.
INSTALLATION
Your ODYSSEY is normally ready to install right out of the box! Measure the battery voltage; if it is 12.65 volts or greater, install; if less, then refer to the charging section.

ANY OF THE FOLLOWING WILL VOID YOUR WARRANTY:
• EXPOSING BATTERY TO GASOLINE OR DIESEL FUEL
• REMOVING THE LABELED COVER
• REMOVING OR DESTROYING THE BATTERY’S DATE CODE

DO NOT SHORT CIRCUIT YOUR ODYSSEY’S TERMINALS!
Remove any metallic items such as watches, bracelets and other personal jewelry to ensure safe installation.

1. Using proper procedures as recommended by the vehicle manufacturer, carefully disconnect the cables from your old battery and remove it from the vehicle. Return the spent battery to the battery dealer for proper recycling.

2. Inspect existing battery cables for corrosion, acid damage or insulation deterioration. Replace if deterioration is present.

3. Position your ODYSSEY in the battery holder and fasten firmly to the vehicle.

4. Connect the positive cable from your ignition to the Positive (+) terminal.

5. Connect the negative cable from your engine or chassis to the Negative (-) terminal.

6. Torque the bolt, screw or nut per the specification noted in table. If you’re using the Accessory Bolt (C), hold the Brass Post (A) with vise grips and counter torque. Do the same with General Motors automotive battery cable installation.

NOTE: This is a valve regulated sealed battery and never needs to have water or electrolyte (acid) added. Warranty will be void if opened!

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<table>
<thead>
<tr>
<th>Model</th>
<th>Pulse Hot Cranking Amps (5 Sec)</th>
<th>CCA</th>
<th>Length (mm)</th>
<th>Width (mm)</th>
<th>Height (mm)</th>
<th>Weight (kg)</th>
<th>Torque Spec In-lbs (Nm Max)</th>
<th>Internal Resistance (mΩ)</th>
<th>Short Circuit Current</th>
<th>Nominal Constant Current Capacity to 1.67Vpc @ 25°C/77°F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20-Hour</td>
</tr>
<tr>
<td>PC310</td>
<td>310</td>
<td>100</td>
<td>5.43 (138.0)</td>
<td>3.39 (86.0)</td>
<td>3.98 (101.0)</td>
<td>5.9 (2.7)</td>
<td>8.9 (1.0)</td>
<td>27.1</td>
<td>455A</td>
<td>8</td>
</tr>
<tr>
<td>PC535</td>
<td>535</td>
<td>200</td>
<td>6.70 (170.2)</td>
<td>3.90 (99.1)</td>
<td>6.125 (155.6)</td>
<td>12.0 (5.4)</td>
<td>40 (4.5)</td>
<td>8</td>
<td>1000A</td>
<td>14.8</td>
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<tr>
<td>PC545</td>
<td>545</td>
<td>185</td>
<td>7.00 (177.8)</td>
<td>3.37 (85.6)</td>
<td>5.17 (131.3)</td>
<td>12.6 (5.7)</td>
<td>50 (5.6)</td>
<td>10</td>
<td>1200A</td>
<td>14</td>
</tr>
<tr>
<td>PC625</td>
<td>625</td>
<td>265</td>
<td>6.70 (170.2)</td>
<td>3.90 (99.1)</td>
<td>6.89 (175.0)</td>
<td>13.2 (6.0)</td>
<td>40 (4.5)</td>
<td>7</td>
<td>1800A</td>
<td>18</td>
</tr>
<tr>
<td>PC680</td>
<td>680</td>
<td>220</td>
<td>7.27 (184.7)</td>
<td>3.11 (79.0)</td>
<td>6.67 (169.4)</td>
<td>15.4 (7.0)</td>
<td>50 (5.6)</td>
<td>7</td>
<td>1800A</td>
<td>17</td>
</tr>
<tr>
<td>PC925</td>
<td>925</td>
<td>380</td>
<td>6.64 (168.6)</td>
<td>7.05 (179.0)</td>
<td>5.04 (128.0)</td>
<td>26.0 (11.8)</td>
<td>60 (6.8)</td>
<td>5</td>
<td>2400A</td>
<td>28</td>
</tr>
<tr>
<td>PC1200</td>
<td>1200</td>
<td>550</td>
<td>7.87 (199.9)</td>
<td>6.66 (169.1)</td>
<td>6.80 (172.7)</td>
<td>38.2 (17.4)</td>
<td>60 (6.8)</td>
<td>4.5</td>
<td>2600A</td>
<td>44</td>
</tr>
<tr>
<td>PC1700</td>
<td>1700</td>
<td>875</td>
<td>13.02 (330.7)</td>
<td>6.62 (168.2)</td>
<td>6.93 (176.0)</td>
<td>60.9 (27.6)</td>
<td>60 (6.8)</td>
<td>3.5</td>
<td>3500A</td>
<td>68</td>
</tr>
<tr>
<td>PC2150</td>
<td>2150</td>
<td>1090</td>
<td>13.00 (330.2)</td>
<td>6.80 (172.7)</td>
<td>9.41 (239.0)</td>
<td>75.0 (34.1)</td>
<td>150 (200) (18.9-22.6)</td>
<td>2.2</td>
<td>5000A</td>
<td>100</td>
</tr>
<tr>
<td>PC2250</td>
<td>2250</td>
<td>1225</td>
<td>11.26 (286.0)</td>
<td>10.59 (269.0)</td>
<td>8.19 (208.0)</td>
<td>86.0 (39.0)</td>
<td>100 (11.0)</td>
<td>2.1</td>
<td>5000A</td>
<td>126</td>
</tr>
</tbody>
</table>

Constant voltage portable charger parameters:
- **A** Standby, per 12V battery: 13.5-13.8V no current limit required
- **B** Cyclic, per 12V battery (16-hour recharge): 14.4-14.8V no current limit required

Typical deep-cycle life at 25°C/77°F at a 5-hour rate 400 cycles at 80% DOD
Typical service life at 25°C/77°F
- Medium to heavy duty usage -5+ years
- Light duty usage -5+ years

Design characteristics:
- Battery type: Sealed dry cell valve regulated lead acid (VRLA) gas recombination technology
- Plate Design: High purity lead/tin grid, starved electrolyte
- Electrolyte/specific gravity: Sulfuric acid: 1.310 ±0.005 at 25°C/77°F; fully charged
- Safety Vent: Self-sealing Bunsen valve per cell
- For 3/8" Stud only

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PULSE DISCHARGE CAPABILITIES

Table 1 shows the 5, 10, 20 and 30-second pulse discharge numbers for these batteries to 7.2V at 25°C (77°F). Sufficient time must be given between successive discharges to allow the terminals to cool down. Also, fully charged batteries will meet these.

<table>
<thead>
<tr>
<th>Battery</th>
<th>Pulse discharge in amps to 7.2V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 sec.</td>
</tr>
<tr>
<td>PC310</td>
<td>310</td>
</tr>
<tr>
<td>PC535</td>
<td>535</td>
</tr>
<tr>
<td>PC545</td>
<td>545</td>
</tr>
<tr>
<td>PC680</td>
<td>680</td>
</tr>
<tr>
<td>PC625</td>
<td>625</td>
</tr>
<tr>
<td>PC925</td>
<td>925</td>
</tr>
<tr>
<td>PC1200</td>
<td>1,200</td>
</tr>
<tr>
<td>PC1700</td>
<td>1,700</td>
</tr>
<tr>
<td>PC2150</td>
<td>2,150</td>
</tr>
<tr>
<td>PC2250</td>
<td>2,250</td>
</tr>
</tbody>
</table>

Table 1: Pulse discharge of ODYSSEY batteries

ODYSSEY STORAGE AND DEEP DISCHARGE RECOVERY

Figure 2 shows the relationship between open circuit voltage (OCV) and state of charge (SOC) for the ODYSSEY battery.

(A) How do I know the state of charge (SOC) of the battery?

As long as the battery has not been charged or discharged for 6 or more hours, Figure 2 can be used to determine the SOC of the ODYSSEY battery. Use a high quality digital voltmeter to measure its open circuit voltage (OCV). The graph shows that a healthy, fully charged ODYSSEY battery will have an OCV of 12.84V or higher at 25°C.

Figure 2: ODYSSEY OCV vs. state of charge

(B) How long can the battery be stored?

Refer to Figure 3 below. At 25°C (77°F), these batteries can be stored for up to 2 years. The lower the temperature, the longer the storage time. The battery must be charged before storage.

Roughly every 10°C (18°F) increase in temperature cuts storage time in half. If the temperature rises to 35°C (95°F) the battery may be stored for only 1 year before a recharge becomes necessary. Figure 3 will apply only if the battery is charged before storage.

Figure 3: ODYSSEY storage time at temperatures
MAINTENANCE

ODYSSEY is very different from standard liquid-acid batteries that are openly vented. ODYSSEY is and operates as a sealed battery, recycling all gases internally. There is no corrosion of the positive terminal or corrosion to the surrounding area. ODYSSEY is shipped fully charged from the factory, but prior to installation, check the battery’s voltage to see if it is 12.65 volts or greater. If not, recharge it using the procedure below.

Never attempt to remove the top decal cover, as it will cause the battery to fail.

CHARGING

The state of charge in an ODYSSEY battery can be determined from the following chart:

<table>
<thead>
<tr>
<th>Voltmeter Reading</th>
<th>State of Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.84 Volts</td>
<td>100%</td>
</tr>
<tr>
<td>12.50 Volts</td>
<td>75%</td>
</tr>
<tr>
<td>12.18 Volts</td>
<td>50%</td>
</tr>
<tr>
<td>11.88 Volts</td>
<td>25%</td>
</tr>
</tbody>
</table>

Powersport Vehicles - have limited charging systems. To get long life from the ODYSSEY battery, it is important that the battery is kept near full charge, approximately 12.8 volts. If there are electrical loads during storage, then the negative battery cable should be disconnected or an independent float charger used. Low power 2.0 amp chargers for storage charge will keep a fully charged battery fully charged but cannot recharge if ODYSSEY becomes discharged.

Racing Vehicles using total loss (no alternator) - standard automotive type chargers are not designed to return 105-108% of the energy removed. They normally boost charge to 80-95% and expect the alternator to complete the charge. Special chargers as listed on www.odysseyfactory.com under “Approved Chargers” specifically designed for ODYSSEY are required for routine deep discharge applications. They provide the 105-108% recharge and then switch to storage charge.

To fully charge a PC2150, 20 amps minimum constant voltage is required with charger voltage within the range of 14.1 V to 14.7V. It is imperative not to exceed 15.0V as this will cause the pressure valves to open and out-gas hydrogen, oxygen and water from inside the battery. This will shorten the life of the battery and cause premature failure. Some portable chargers exceed 15.0V, especially two-wheel garage chargers, so charging voltages should be verified by measuring the charging voltage during the time when the charging amperage is reducing from full output. The deep cycle charging voltage must be within 14.1V minimum to 14.7V maximum.

If a standard automotive charger is used to boost charge a discharged battery because of an accessory left on, it is important to make sure the charging voltage does not exceed 15 volts during charge. A hand held voltmeter can be used to monitor this periodically. The following chart provides recharge times under this type of boost charging to an 80-95% recharge and then allows the vehicle charging system to complete the charge.
WINTER STORAGE

ODYSSEY does not lose its charged energy during cold storage temperatures, so there is no need to trickle or float charge during winter months. To store off-season, measure the battery voltage to make sure it is fully charged, 12.84 volts or greater; recharge if necessary. Disconnect the negative battery cable to prevent any applied electrical load during storage. ODYSSEY cannot freeze down to -40°C or -40°F so it can be left in the vehicle. It can be stored for 2 years or more below 77°F.

A 12V, 3 amp trickle charger can also be left connected to the battery if it is kept in storage for extended periods or if the battery is subject to parasitic loads during storage. Information on two such chargers we recommend, including where to buy them, can be found on our website at www.odysseyfactory.com/odycharg_c.htm.

<table>
<thead>
<tr>
<th>Model</th>
<th>Charge time for 100% discharged battery (11.5 volts)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10-amp charger</td>
</tr>
<tr>
<td>PC310</td>
<td>48 minutes</td>
</tr>
<tr>
<td>PC535</td>
<td>1½ hours</td>
</tr>
<tr>
<td>PC545</td>
<td>2 hours</td>
</tr>
<tr>
<td>PC625</td>
<td>2 hours</td>
</tr>
<tr>
<td>PC680</td>
<td>2 hours</td>
</tr>
<tr>
<td>PC925</td>
<td>2½ hours</td>
</tr>
<tr>
<td>PC1200</td>
<td>4 hours</td>
</tr>
<tr>
<td>PC1700</td>
<td>7 hours</td>
</tr>
<tr>
<td>PC2150</td>
<td>10 hours</td>
</tr>
<tr>
<td>PC2250</td>
<td>12 hours</td>
</tr>
</tbody>
</table>
WARRANTY: LIMITED 2-YEAR AND 3-YEAR FULL REPLACEMENT

EnerSys Energy Products Inc. (seller), warrants its ODYSSEY batteries to be free of defects in material and workmanship. This warranty is effective for 2 years in powersports applications and 3 years in automotive/commercial/industrial applications from the date of purchase with original receipt; 2 and 3 years respectively from manufacturer's shipping date if no original receipt is available; or within 400 cycles to 80% depth of discharge, whichever occurs first. Within the warranty period, the battery will be replaced free of charge if adjustment is necessary due to defect in material or workmanship (not merely discharged). Simply return the battery to any authorized ODYSSEY dealer with the original receipt for a replacement. This warranty may vary from country to country; contact your appropriate sales region for confirmation.

GENERAL PROVISIONS

A. Seller has no obligation under the limited warranty set forth above in the event the battery is damaged or destroyed as a result of:

■ Willful abuse or neglect or if the top decorative cover has been removed.
■ Natural forces such as wind, lightning, hail; damage due to fire, collision, explosion, vandalism, theft, penetration or opening of the battery case in any manner.
■ Overcharging, undercharging, charging or installing in reverse polarity, improper maintenance, allowing the battery to be deeply discharged via a parasitic load or mishandling of the battery such as but not limited to using the terminals for lifting or carrying the battery.
■ Failure to properly install the battery or lack of metal jacket for high temperature or vibration applications.
■ Normal deterioration in the electrical qualities or the acceleration of such deterioration due to conditions that accelerate such deterioration.
■ If the battery is used for any application that requires higher cranking power or a greater reserve rating than the battery is designed to deliver or the battery capacity is less than the battery capacity specified by the vehicle manufacturer or the battery is otherwise used in applications for which it was not designed.

B. To obtain warranty service:

1. Return battery to any authorized ODYSSEY wholesaler or dealer.
2. If the battery is determined to be defective for material or workmanship under terms of the warranty, it will be replaced.

This limited warranty is in lieu of, and seller disclaims and excludes, all other warranties, statutory, express or implied, including, without limitation, any warranty of merchantability or fitness for a particular purpose that would otherwise be in effect for longer than the effective warranty period. Seller's exclusive liability for breach of warranty shall be to replace the battery within the effective warranty period. In no event shall seller be liable for any loss or damages of any kind, whether direct, incidental, consequential, exemplary, special or otherwise nor shall seller be liable for any removal or installation expense, or the loss of time or profits.

Some countries and/or states do not allow limitations on how long an implied warranty lasts or the exclusion or the limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights which may vary from country to country and/or state to state.

Keep your receipt. Receipt is required for longest Warranty Protection.

For your convenience, this space is provided for attaching your original receipt.

Always properly recycle your lead acid battery by returning to an authorized recycling center or automotive dealer.

NEVER PLACE USED BATTERIES IN YOUR REGULAR TRASH!

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