

OWNER'S MANUAL

Extreme Racing™

Engineered to take you to the red line – and the finish line



EnerSys
Power. Full. Solutions.

ODYSSEY
THE EXTREME BATTERY

WHY USE ODYSSEY® EXTREME RACING™ BATTERIES?

GUARANTEED LONGER SERVICE LIFE

With an eight to twelve year design life (float) and a three to ten year service life, ODYSSEY® Extreme Racing™ batteries save you time and money because you do not have to replace the battery as often. ODYSSEY Extreme Racing batteries are warranted against factory defects for three (3) years.

SUPERIOR CRANKING AND FAST CHARGE CAPABILITY

The 5 second cranking power of ODYSSEY Extreme Racing 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 Extreme Racing battery may be installed in any orientation (except inverted) without sacrificing any performance attributes. There is no fear of any acid spillage as ODYSSEY Extreme Racing batteries recycle the internal gas during operation or charging. The valve regulated design of the ODYSSEY Extreme Racing 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 Extreme Racing batteries are of military grade technology and have endured rigorous tests that demonstrate their overall ruggedness and exceptional tolerance of mechanical abuse.

READY OUT OF THE BOX

ODYSSEY Extreme Racing batteries are shipped fully charged. If the ODYSSEY Extreme Racing battery'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 Extreme Racing battery Owner's Manual and/or Technical Manual. Putting a boost on the battery will not damage 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 Extreme Racing battery as nonspillable, so it may be shipped worry-free by express service or by air.

LONGER STORAGE LIFE

Unlike conventional batteries that require a recharge every six to twelve weeks, the ODYSSEY Extreme Racing battery can be stored for up to two years at 25°C (77°F) from a fully charged state. These batteries can be stored for two years or when the open circuit voltage (OCV) drops to 12.00V, whichever comes first.

DEEP DISCHARGE RECOVERY

Should the ODYSSEY Extreme Racing battery become deeply discharged, simply recharge following instructions in this manual.

INSTALLATION

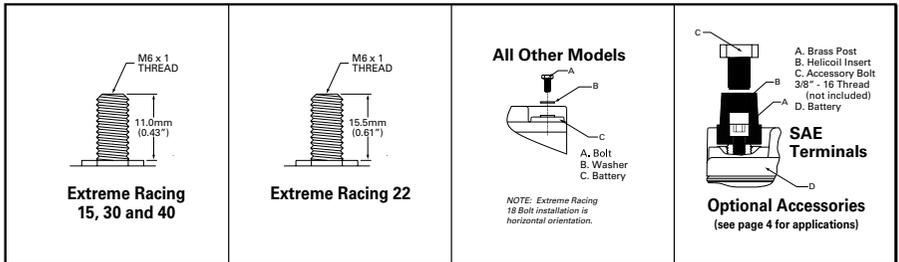
Your ODYSSEY® Extreme Racing™ battery is normally ready to install right out of the box! Measure the battery voltage; if it is 12.65 volts or greater, install; if less, then refer to the charging section.

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® EXTREME RACING™ BATTERY'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 Extreme Racing battery 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!

SPECIAL NOTICE!

- CUSTOM V-TWIN MOTORCYCLE INSTALLATIONS USING ODYSSEY EXTREME RACING 18, 20, 25 AND 35 BATTERIES

If your V-Twin motorcycle is equipped with a standard 32 amp single phase stator/alternator, the appropriate ODYSSEY Extreme Racing battery may run out of charge after about 150 miles of riding. To avoid this situation we strongly recommend the ODYSSEY Ultimizer™ charger model OMAX-6A-1B for existing 32 amp equipped bikes, with the charger being operated continuously during the non-use of the bike and/or installing a 3-phase 40 amp or higher stator/alternator, especially in new bikes.

- Prolonged storage of vehicles with fuel injection computers, alarms, GPS and other electrical devices that require continuous battery power to support active memories; this power drain must be offset with a maintenance-float charger, periodic charging or disconnecting the battery to prevent the establishment of irreversible crystallized sulphation in the battery plate oxide. Failure to address this destroys battery capacity and voids the warranty, as this is not a warranted defect in materials or workmanship.

ODYSSEY® Extreme Racing™ Battery Model	Voltage	PHCA** (5 Sec)	CCA*	Nominal Capacity		Reserve Capacity Minutes	Length inches (mm)	Width inches (mm)	Height inches (mm)	Weight lbs (kg)	Terminal	Torque Specs in-lbs (Nm-max)	Internal Resis- tance (mΩ)	Short Circuit Current
				(20 Hr Rate - Ah)	(10 Hr Rate - Ah)									
Extreme 8	12	310	100	8	7	9	5.43 (138.0)	3.39 (86.0)	3.98 (101.0)	5.9 (2.7)	M4 Receptacle	8.9 (1.0)	27.1	455A
Extreme 15	12	370	156	15	14	25	7.9 (200.0)	3.0 (77.0)	5.5 (140.0)	12.5 (5.7)	M6 Stud	35 (3.9)	13.5	891A
Extreme 18	12	535	200	14	13	21	6.7 (170.2)	3.9 (99.1)	6.18 (157.0)	12.0 (5.4)	M6 Stud	40 (4.5)	8	1000A
Extreme 20††	12	545	185	13	12	18	7.0 (177.8)	3.37 (85.6)	5.17 (131.3)	12.6 (5.7)	M6 Receptacle† or SAE 3/8" Receptacle	50 (5.6)	10	1200A
Extreme 22	12	625	265	18	17	27	6.7 (170.2)	3.9 (99.1)	6.89 (175.0)	13.2 (6.0)	M6 Stud	40 (4.5)	7	1800A
Extreme 25††	12	680	220	16	16	24	7.15 (181.5)	3.00 (76.3)	6.65 (167.8)	15.4 (7.0)	M6 Receptacle† or SAE 3/8" Receptacle	50 (5.6)	7	1800A
Extreme 30	12	950	450	34	32	60	9.8 (250.0)	3.8 (97.0)	6.1 (156.0)	20.0 (9.0)	M6 Stud	35 (3.9)	7.1	1700A
Extreme 35††	12	925	380	28	27	52	6.64 (168.6)	7.05 (179.0)	5.04 (128.0)	26.0 (11.8)	M6 Receptacle† or SAE 3/8" Receptacle	60 (6.8)	5	2400A
Extreme 40	12	1100	500	45	43	87	9.8 (250.0)	3.8 (97.0)	8.1 (206.0)	27.5 (12.5)	M6 Stud	35 (3.9)	5.1	2450A

ODYSSEY® EXTREME RACING™ BATTERY STORAGE AND DEEP DISCHARGE RECOVERY

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

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

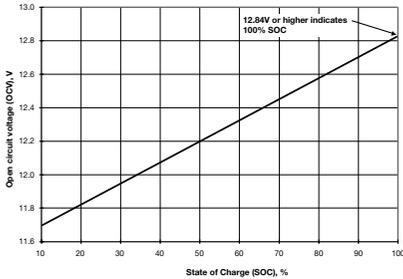


Figure 2: ODYSSEY® Extreme Racing™ Battery OCV vs. SOC

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 Extreme Racing battery. Use a high quality digital voltmeter to measure its OCV. The graph shows that a healthy, fully charged ODYSSEY Extreme Racing battery will have an OCV of 12.84V or higher at 25°C.

(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 fully charged before storage.

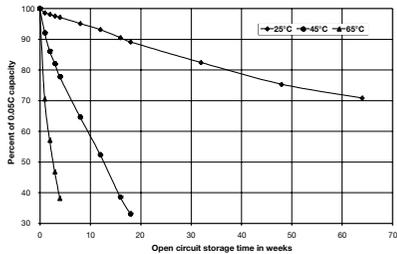


Figure 3: ODYSSEY® Extreme Racing™ Battery storage time at temperatures

MAINTENANCE

ODYSSEY® Extreme Racing™ batteries are very different from standard liquid-acid batteries that are openly vented. The ODYSSEY Extreme Racing battery 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 Extreme Racing batteries are 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.

NOTE: Do not charge in an air tight compartment

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

CHARGING

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

Voltmeter Reading	State of Charge
12.84 Volts or higher	100%
12.50 Volts	75%
12.18 Volts	50%
11.88 Volts	25%

To get long life from the ODYSSEY Extreme Racing 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 that reach final charging voltages of 13.5V to 13.8V for storage charge will keep a fully charged battery fully charged but cannot deep cycle recharge if the ODYSSEY Extreme Racing battery 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. Chargers listed on our website at www.odysseybattery.com are specifically designed for ODYSSEY Extreme Racing batteries that are routinely deeply discharged. They provide the 105-108% recharge and then switch to storage charge.

ODYSSEY Ultimizer™ chargers as listed on www.odysseybattery.com are specifically designed for ODYSSEY Extreme Racing batteries and are required for routine deep discharge applications. They provide 105-108% recharge and then switch to a storage charge.

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 indicates the time needed to bring batteries to 85-90% state of charge when using an automotive charger that puts out 14.5-15.0V. To fully charge the battery, allow an additional 4-8 hours on charge at 14.5-15.0V.

ODYSSEY® Extreme Racing™ Battery Model	Time to get fully discharged battery to 90% charge	
	10-amp charger	20-amp charger
Extreme Racing 8	48 minutes	24 minutes
Extreme Racing 15	1 ½ hours	45 minutes
Extreme Racing 18	2 hours	1 hour
Extreme Racing 20	2 hours	1 hour
Extreme Racing 22	2 ¼ hours	1 ¼ hours
Extreme Racing 25	2 ½ hours	1 ¼ hours
Extreme Racing 30	3 hours	1 ½ hours
Extreme Racing 35	3 ½ hours	1 ¾ hours
Extreme Racing 40	4 hours	2 hours

WINTER STORAGE

The ODYSSEY® Extreme Racing™ battery 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. The ODYSSEY Extreme Racing battery cannot freeze down to -40°C (-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. The trickle charge voltage measured at the battery terminals must be between 13.5V and 13.8V. We recommend using the ODYSSEY® Ultimizer™ charger for your battery. For more information on these chargers, including where to buy them, can be found on our website at www.odysseybattery.com.

WARRANTY:

EnerSys Energy Products Inc. ("Manufacturer") warrants its ODYSSEY® Extreme Racing™ batteries (hereafter referred to as "Battery") to be free of defects in material and workmanship for the Applicable Warranty Period. The Applicable Warranty Period is three (3) years. The Applicable Warranty Period begins from the date of purchase with original receipt, or, if no receipt is available, from Manufacturer's shipping date. Within the Applicable 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 Extreme Racing battery dealer with the original receipt for a replacement. This warranty may vary from country to country; contact your authorized ODYSSEY Extreme Racing battery wholesaler or dealer for the applicable warranty.

GENERAL PROVISIONS:

A. Manufacturer has no obligation under the limited warranty set forth above in the event the Battery is damaged or destroyed as a result of one or more of the following:

- 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. Trickle chargers that do not have a regulated trickle charge voltage between 13.5V and 13.8V (no lower than 13.5V and no higher than 13.8V) will cause early failure of the Battery. Use of such chargers with the Battery will also void the Battery's warranty.
- 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 an 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.
- WARNING - Do NOT use any type of oil, organic solvent, alcohol, detergent, strong acids, strong alkalis, petroleum-based solvent or ammonia solution to clean the jars or covers. These materials may cause permanent damage to the battery jar and cover and will void the warranty.

B. To obtain warranty service:

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

THIS LIMITED WARRANTY IS IN LIEU OF, AND MANUFACTURER DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, STATUTORY, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. MANUFACTURER'S EXCLUSIVE LIABILITY FOR BREACH OF WARRANTY SHALL BE TO REPLACE THE BATTERY WITHIN THE EFFECTIVE WARRANTY PERIOD. IN NO EVENT SHALL MANUFACTURER BE LIABLE FOR ANY LOSS OR DAMAGES OF ANY OTHER KIND, WHETHER DIRECT, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY, SPECIAL OR OTHERWISE. NOR SHALL MANUFACTURER BE LIABLE FOR ANY REMOVAL OR INSTALLATION EXPENSE, OR THE LOSS OF TIME OR PROFITS. Some countries and/or states do not allow limitation on how long an implied warranty lasts or the exclusion or 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 THE BIN!

EnerSys

P.O. Box 14145
Reading, PA 19612-4145, USA
Tel: +1-610-208-1991
+1-800-538-3627
Fax: +1-610-372-8613

Regional Sales

EnerSys Energy Products Inc.
617 North Ridgeview Drive
Warrensburg, MO 64093-9301, USA
Tel: +1-660-429-2165
Fax: +1-660-429-1758

EnerSys Australia Pty Ltd.
54-58 Derby Street
Silverwater, NSW 2128
Australia
Tel: + 61 (0) 2 9739 9999
Fax: + 61 (0) 2 9739 9900

Website: www.odysseybattery.com

© 2008 EnerSys. All rights reserved.

Trademarks and logos are the property of EnerSys and its affiliates, except General Motors®, which is not the property of EnerSys.