

APPLICATION GUIDE

OPTIMA YELLOWTOP® Charging Information

The following charging methods are recommended to ensure a long battery life. Always use a voltage-regulated charger, with voltage limits set as described below.

YELLOWTOP Type: D51 & D51R - D35 – DS46B24R - D75/25 - D34 – D34/78 - D27F

These batteries are dual-purpose. They are designed for engine start and cyclic applications and for use in vehicles with large accessory loads.

Recommended charging information:

- Alternator:
 - 13.65 to 15.0 volts, no amperage limit.
- Battery Charger:
 - 13.8 to 15.0 volts, 10 amps maximum, approximately for six to twelve hours.
- Cyclic Applications:
 - 14.7 volts, no current limit as long as battery temperature remains below 125°F (51.7°C). When current falls below one amp, finish with two-amp constant current for one hour.
- Rapid Recharge:
 - Maximum voltage 15.6 volts (regulated), no current limit as long as battery temperature remains below 125°F (51.7°C). Charge until current drops below one amp.
- Float Charge:
 - 13.2 to 13.8 volts, one amp maximum current, time indefinite (at lower voltage).
 - Strictly adhere to all limits.

Recommended Battery Voltage

Fully charged, engine not running, starting batteries (all REDTOP® or BLUETOP® 34M) should measure about 12.6 volts to 12.8 volts. Deep-cycle batteries, including all YELLOWTOP® and dual-purpose BLUETOP batteries, should measure approximately 13.0 to 13.2 volts. Voltage measurements of the battery when the engine is running are the output of your alternator. This measurement

should be about 13.3 to 15.0 volts, which may differ due to temperature. At average operating temperatures of 50° to 80°F, your alternator output voltage should be about 14 volts to 14.8 volts.

If you don't have a multimeter, you can test the output of your alternator by starting the car and turning on the headlights. If they are dim, it indicates the lights are running off the battery and that little or no power is being produced by the alternator. If the lights get brighter as you rev the engine, it means the alternator is producing some current, but may not be producing enough at idle to keep the battery properly charged. If the lights have normal brightness and don't change intensity as the engine is revved, your charging system is probably functioning normally.

If this checks out, you should determine whether or not the battery is holding a charge, or if something on the vehicle is discharging the battery.

[There are three likely scenarios to explain the problems you're having:](#)

1. A high parasitic draw (key-off load). This can quickly discharge a battery and decrease its service life. This may be caused by a trunk light, cigarette lighter, clock/radio, alarm system or any other electrical device. Current drain on the battery can be checked with an ammeter. With the ignition off, disconnect one of the battery cables. Connect one ammeter lead to the battery and the other to the cable. The normal current drain on most vehicles should be about 25 milliamps or less. If the key-off drain exceeds 100 milliamps, there's an electrical problem that requires further diagnosis. If you don't want to take your car to a mechanic, the easiest way to isolate the problem is to pull one fuse at a time from the fuse panel until the ammeter reading drops.

2. A problem with your battery is causing it to not hold a charge. To check this, remove the battery from the vehicle, charge it to the full voltage, wait 12 to 24 hours, then measure its voltage. Another faster, but less-preferable way to do this is to turn on the high-beam headlights for 15 seconds, turn them off, wait five to 10 minutes, then check the voltage. If you measure the voltage of the battery the next day, week or even a month later, the voltage should be close to the max voltages listed above. If the voltage holds when it is not installed in your vehicle but drops when it is in your vehicle, see #1 above.

3. The battery was somehow discharged, and your maintenance charger is not able to properly charge your deeply discharged battery. Please see the directions for charging a deeply discharged battery.

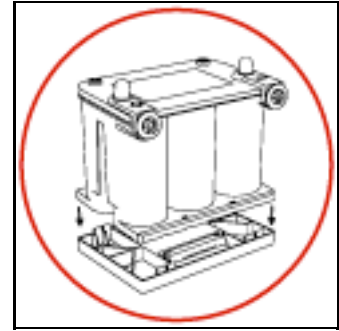
Hold Down and Height Adapters

OPTIMA® GROUP 75/25

The OPTIMA 75/25 battery may be shipped with a height adapter installed. It may be needed in one of 2 ways for installation:

1. In vehicles with a top holddown where more height is required, it should be used in its original position.

2. In some Ford, Lincoln, and Mercury installations (replacing a group 65 battery) the bottom holddown of the battery must be made wider. For these installations, remove the adapter and detach the two strip adapters which are located inside. Snap these strips into the openings on either side of the battery base and discard the remainder. If the adapter is not needed for installation, it may be discarded.

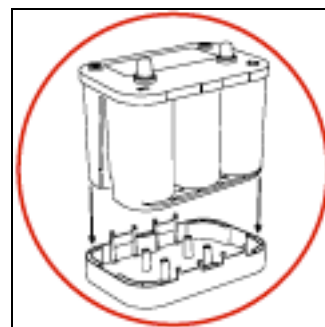
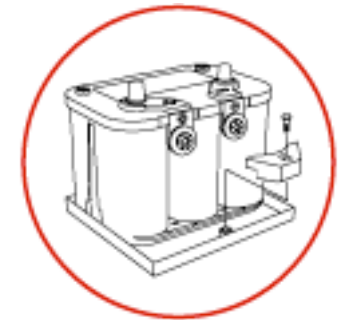


OPTIMA GROUP 34/78

The wing adapters available for the OPTIMA 34/78 may be needed for some Ford, Lincoln, or Mercury applications (replacing a group 65). Attach these wing adapters by snapping into the openings on either side of the battery base.

OPTIMA GROUP 34/78

The optional puck adapter is required for most GM installations where the side terminals are used. Position the puck against the center cylinder of the battery and bolt to the battery tray as shown.



OPTIMA GROUP 34/78

The optional red or yellow height adapters may be used for installations where a group 24 is required. Place the battery securely on top of the adapter until the clips snap into place.

Optima Group 75/25/35

The wing adapters are attached to the ends of the battery to provide a hold down area for DIN H5 applications. Attach the wing adapters by snapping them into the openings on either end of the battery.

