



# INSTRUCTIONS

-J00597

REV. 05-25-2004

Kit Numbers 66006-70 and 66007-84

## HARLEY-DAVIDSON 12 VOLT BATTERIES

### General

This instruction sheet provides service information for **DRY-CHARGED** batteries.

There are no Service Parts available with this product.

#### **WARNING**

The rider's safety depends upon the correct installation of this kit. Use the appropriate service manual procedures. If the procedure is not within your capabilities or you do not have the correct tools, have a Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00333a)

#### NOTE

This instruction sheet references Service Manual instructions. A Service Manual for your motorcycle is available from your Harley-Davidson dealer.

#### **WARNING**

Engine exhaust from this product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. (00004b)

#### **WARNING**

Do not run motorcycle in a closed garage or confined area. Inhaling motorcycle exhaust, which contains poisonous carbon monoxide gas, could result in death or serious injury. (00005a)

#### **CAUTION**

Batteries, battery posts, terminals and related accessories contain lead and lead compounds, and other chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling. (00019c)

#### **WARNING**

Batteries contain sulfuric acid, which could cause severe burns to eyes and skin. Wear a protective face shield, rubberized gloves and protective clothing when working with batteries. **KEEP BATTERIES AWAY FROM CHILDREN.** (00063a)

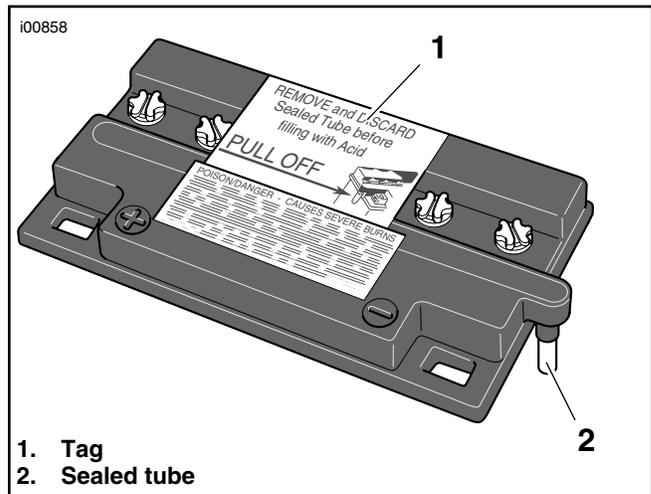


Figure 1. Reminder Tag/Sealed Shipping Tube

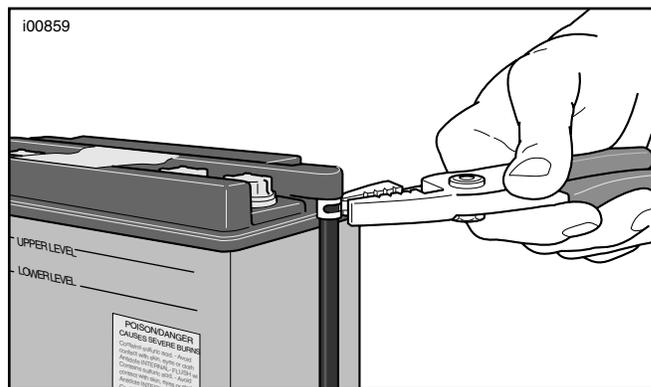


Figure 2. Vent Tube Clamp  
(only smooth vent elbow requires clamp)

### **DANGER - EXPLOSIVE GASES**

Cigarettes, flames, or sparks could cause battery to explode. Always shield eyes and face from battery. Do not charge without proper instruction and training. Securely connect cables to the proper terminals. Check vent tube to avoid any crimping or obstruction of the tube.

### **KEEP FILLING PLUGS TIGHT AND LEVEL**

### **POISON - CAUSES SEVERE BURNS**

Contains sulfuric acid. Avoid contact with skin, eyes and clothing. In event of accident, flush with water and call a physician immediately.

### **KEEP OUT OF REACH OF CHILDREN**

Figure 3. Battery Warning Label

## Activate Battery

1. Place battery on a level surface.

### CAUTION

Do not perform battery activation/charging with the battery installed on the motorcycle. If electrolyte is accidentally spilled, it could severely damage the motorcycle.

2. See Figure 1. Remove reminder tag and short sealed tube from battery vent elbow.

### WARNING

A sealed tube which is left in place could cause a build-up of internal gas pressure. Internal gas pressure can cause a battery to explode causing death or serious injury.

3. Verify that battery vent elbow is dry and clean and install long vent tube as follows:
  - a. See Figure 2. On models with a smooth vent elbow, clamp long vent tube to elbow of battery. Rotate prongs of clamp toward side of battery.
  - b. On models with a barbed vent elbow, install long vent tube over elbow of battery.
  - c. Place other end of long vent tube in a suitable container to collect any electrolyte which might overflow through vent tube.
4. Remove all battery cell filler caps.

### WARNING

Never remove warning label attached to top of battery. Failure to read and understand all precautions contained in warning, could result in death or serious injury. (00064a)

### ANTIDOTE

**EXTERNAL:** Flush with water.

**INTERNAL:** Drink large quantities of milk or water followed by milk of magnesia, vegetable oil or beaten eggs. Call doctor immediately.

**EYES:** Flush eyes with water and get immediate medical attention.

5. Carefully fill each cell of battery with **electrolyte** (diluted sulfuric acid) of 1.265 specific gravity. Fill to indicated upper level. Let battery stand for 1/2 hour.

### NOTES

- DO NOT ACTIVATE BATTERY WITH WATER OR ANY LIQUID OTHER THAN DILUTED SULFURIC ACID.
  - Electrolyte should be at room temperature (approximately 70° F/21° C) before filling.
6. After 1/2 hour, gently tap battery to dislodge air bubbles from cell plates. If electrolyte level has fallen during standing, refill battery with **electrolyte** to upper level.
  7. Install filler caps.

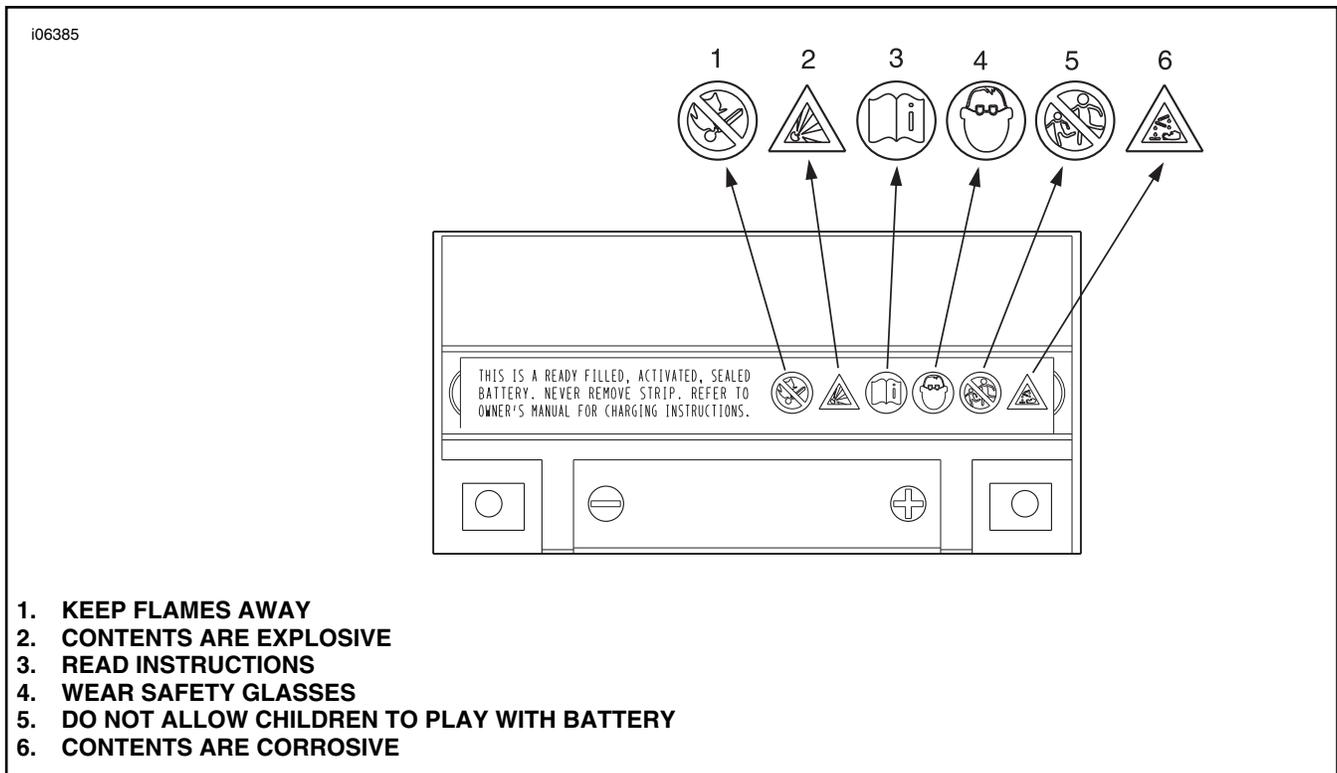


Figure 3. Battery Warning Label

## Charge Battery

### Safety Precautions

Never charge a battery without first reviewing the manufacturer's instructions for the charger. In addition to the manufacturer's instructions, follow these safety precautions:

#### **⚠ WARNING**

- Always wear proper eye, face and hand protection.
- Always charge batteries in a well-ventilated area.
- Turn the charger OFF before connecting the leads to the battery to avoid dangerous sparks.
- Never try to charge a visibly damaged or frozen battery.
- Connect the charger leads to the battery; red positive (+) lead to the positive (+) terminal and black negative (-) lead to the negative (-) terminal. If the battery is still in the vehicle, connect the negative lead to the chassis ground. Be sure that the ignition and all electrical accessories are turned off.
- Make sure that the charger leads to the battery are not broken, frayed or loose.
- If the battery becomes hot, or if violent gassing or spewing of electrolyte occurs, turn off the charger temporarily.
- Always turn the charger "OFF" before removing charger leads from the battery to avoid dangerous sparks.

Failure to adhere to these precautions, could result in death or serious injury.

#### **⚠ WARNING**

Explosive hydrogen gas, which escapes during charging, could cause death or serious injury. Charge battery in a well-ventilated area. Keep open flames, electrical sparks and smoking materials away from battery at all times. KEEP BATTERIES AWAY FROM CHILDREN. (00065a)

#### **⚠ WARNING**

Unplug or turn OFF battery charger before connecting charger cables to battery. Connecting cables with charger ON can cause a spark and battery explosion, which could result in death or serious injury. (00066a)

#### **CAUTION**

If battery gets hotter than 110° F (43° C) during charging, discontinue charging and let battery cool. If battery releases an excessive amount of gas during charging, decrease charging rate.

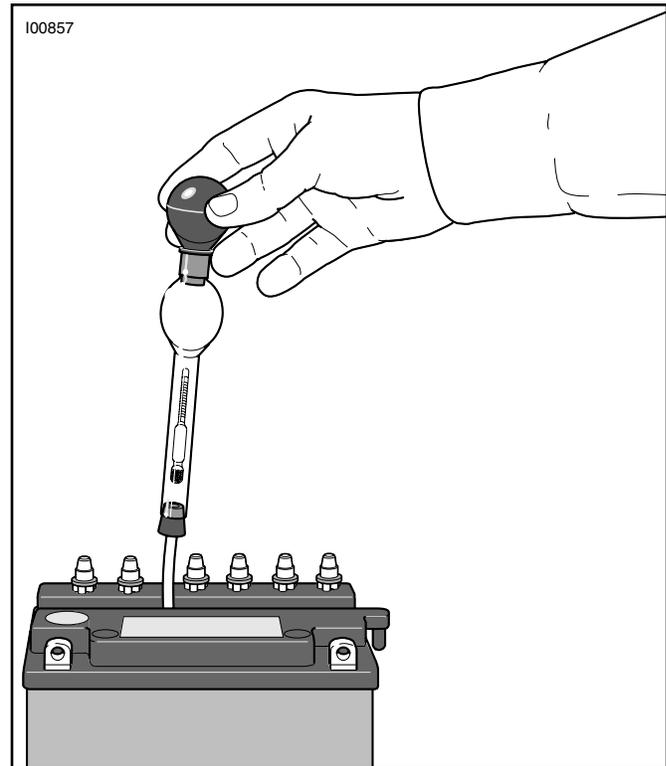


Figure 4. Measuring Specific Gravity of Electrolyte with Hydrometer

#### **NOTES**

- A trickle charger or CHRISTIE charger with a 1 amp charging rate (or less) may be used. However, it will take at least 24 hours for the 100% initial charge with these types of chargers.
- The recommended alternative is a variable/tapered rate charger with a maximum charging rate of 2 to 8 amps. With this type of charger, the initial charging rate should be the maximum charging rate for the particular charger (ie. 2 to 8 amps). However, over a period of time, possibly as little as 1 to 2 hours, the charging rate will taper off to near 0 amps. At this point, the battery has probably attained a charging voltage of 14 volts or greater. Continue charging the battery for at least the remainder of the 12 hours total charge time, even though the battery electrolyte has probably attained its proper specific gravity. This additional charging time is necessary to "set" the cell plates in a low-maintenance battery.

## Charge Battery

### Procedure

#### CAUTION

Remove battery from motorcycle before charging. electrolyte leakage will damage motorcycle parts. (00213a)

1. Follow instructions in applicable Service Manual to remove the battery from the motorcycle.
2. Place the battery on a level service.
3. Refer to Table 1. Set battery charger to the recommended charging rate.

Table 1. Recommended Charging Rates

Battery Part No.	Volt	Capacity (AMP-hr.)	Bench Charge Max. Rate
66006-70	12	7.5	1 AMP
66007-84	12	32	3 AMP

#### WARNING

Unplug or turn OFF battery charger before connecting charger cables to battery. Connecting cables with charger ON can cause a spark and battery explosion, resulting in death or serious injury. (00066a)

#### CAUTION

Do not reverse the charger connections described in the following steps or the charging system of the motorcycle could be damaged. (00214a)

4. Connect the red battery charger lead to the positive (+) battery terminal.
5. Connect the black charger lead to the negative (-) terminal of the battery.
6. See Figure 4. Charge battery until specific gravity of electrolyte increases to 1.260 - 1.270 at 80° F (27° C). Measure with HYDROMETER (Part No. HD-96910-35).

#### NOTES

- Cell variance must not exceed 0.010 specific gravity.
- If recommended charging time has elapsed but specific gravity is still below 1.270 at 80° F (27° C), continue charging until desired specific gravity is attained.
- When using a syringe hydrometer, read electrolyte level at bottom of meniscus (curved upper surface of fluid).

- Specific gravity changes with temperature differences. When the temperature increases, specific gravity of a typical fluid decreases, and vice versa. If electrolyte temperature in battery is not 80° F (27° C), use the following formula to compute temperature-corrected specific gravity:

- ▼ For each 10° F (5.5° C) **above** 80° F (27° C), add 0.004 to actual specific gravity reading.
- ▼ For each 10° F (5.5° C) **below** 80° F (27° C), subtract 0.004 from actual specific gravity reading.

#### For example:

Electrolyte temperature	100° F (38° C)
Hydrometer reading	1.272
Adjustment for temperature	<u>+ 0.008</u>
Corrected specific gravity	1.280

7. After initial charge, gently tap battery to dislodge air bubbles from cell plates.

#### NOTE

If electrolyte level has fallen, refill battery with **distilled** water to the upper level and charge an additional 1 - 2 hours.

8. After the battery is fully charged, disconnect the black lead to the negative (-) terminal of the battery.
9. Disconnect the red charger lead from the (+) terminal of the battery.
10. Install all battery filler caps.
11. Wash off any acid spillage from battery using water. Wipe battery dry.
12. Mark charge date on battery.

### Install Battery

1. Using a wire brush or sandpaper, clean battery terminals and cable connectors to remove oxidation.
2. Follow instructions in the appropriate Service Manual to install the fully charged battery with vent tube onto motorcycle.
3. Follow the Service Manual instructions to secure battery to battery tray using original mounting hardware.

#### WARNING

Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00069a)

#### CAUTION

Connect cables to correct terminals of battery; otherwise, serious damage to motorcycle electrical system may occur.

- Connect positive cable to positive (+) battery terminal.

**NOTE**

Be sure to install a spacer (if required) between each cable terminal and battery terminal.

- After positive cable has been connected to positive terminal, connect negative cable to negative (-) battery terminal.
- Apply light coat of Harley-Davidson Electrical Contact Lubricant (Part No. 99861-02) to both terminals.

**CAUTION**

Route battery vent tube on the vehicle side opposite the secondary drive belt/chain, or tube may be damaged by rubbing against belt/chain.

**WARNING**

Route battery vent tube away from ends of mufflers, or sparks from mufflers could cause battery to explode, which may cause death or serious injury.

**CAUTION**

Battery vent tube has a small slit near each end of tube. The slit near battery vent elbow provides a pressure release for battery gases should bottom of tube become obstructed (internal gas pressure can cause a battery to explode). You may trim off bottom end of tube after tube is properly routed; however, always make sure that end with remaining slit is attached to battery vent elbow.

- Route battery vent tube per Service Manual, making sure that it does not become kinked or obstructed, that it does not chafe or touch any moving parts, and that its outlet is directed away from any metal component.
- Following the Service Manual, install motorcycle seat and any other components.

**WARNING**

After installing seat, pull upward on front of seat to be sure it is locked in position. If seat is loose, it could shift position during vehicle operation, resulting in loss of control of vehicle and death or serious injury. (00070a)

**Store and Maintain Battery**

Check battery electrolyte level after the first 500 miles. Thereafter, check battery electrolyte level after every 500 miles or every week on conventional batteries and after every 5,000 miles or once a month on low-maintenance batteries. Check and clean battery terminals each time you check the electrolyte level.

If motorcycle will not be operated for several months, such as during the winter season, remove the battery from the motorcycle and charge the battery until the correct specific gravity is obtained. Refer to the Service Manual for detailed instructions.

If the battery is stored at temperatures below 60° F (16° C), charge the battery every month (according to Service Manual instructions). If stored in a warm area, above 60° F (16° C), charge battery more frequently than once a month.

**WARNING**

Store batteries where they cannot be reached by children, to protect children from death or serious injury.

**CAUTION**

The electrolyte in a discharged battery will freeze if exposed to freezing temperatures. Freezing may crack battery case and buckle battery plates.

Table 2. State of Charge

State of Charge	Voltage	Charge Period
100%	13.0V	None
75%	12.8 V	3-5 hours
50%	12.5 V	4-7 hours
25%	12.2 V	10 hours