

Installation Instructions for WBID

WARNING: Use extreme caution when working with batteries. The possibility of shock, fire, and explosion exists. Batteries produce explosive gases. Keep sparks, flame, and cigarettes away. Ventilate when working in an enclosed area. Always shield eyes when working near batteries. Facemask and gloves are recommended during WBID installation

WARNING: Do not lay tools on top of the battery as they may conduct electricity.

These instructions cover mechanical and electrical installation of the AMETEK WBID. The following tools will be required for the installation:

- Portable power drill
- 3/16” drill bit with suitable stop to limit drill depth to 1/2”
- #2 philips screwdriver
- Diagonal cutting pliers (side cutters)
- Wood or rubber mallet
- Sanchem NO-OX-ID A conductive corrosion inhibitor

If you are installing accessories, you will need additional tools; see the instructions included with the accessories for details.

Installation:

1. Carefully unpack the WBID from its shipping carton, and neatly lay out the parts. But, do not remove the protective heat shrink from the cluster of 3 wires. Check the parts against the following material list:
 - a. WBID Module
 - b. Qty 5: 6-32 1/4” screws
 - c. Qty 2: 6-32 3/4” screws
 - d. Qty 7: #6 flat washer
 - e. Qty 7: Brass inserts
 - f. Qty 8: Wire ties
2. Move the battery to a clean, well lit area.
3. The battery must be clean and free of corrosion for proper operation of the WBID.

WARNING: Drilling can cause sparks that can ignite flammable gas. Please use caution with batteries that have recently been under charge or in areas with flammable gas or material.

4. Using a 3/16” drill and a suitable stop to limit the depth of the hole to 1/2”, drill 7 holes for the provided inserts as shown in Figure 1.
 - a. In the center of the battery negative post
 - b. In the center of the battery positive post
 - c. Positive post of the cell closest to the negative battery terminal (most negative cell)
 - d. Negative post of the second cell from the negative terminal
 - e. Positive post of the second cell from the negative terminal

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- f. 2 holes in the intercell connector where the module is to be mounted. Typically, this will be toward the center of the battery as that gives the module maximum mechanical protection. Use the module as a template for drilling the holes, and try to keep them approximately centered on the intercell connector. When drilling the intercell, be careful to limit the depth so as not to damage a cell cover.

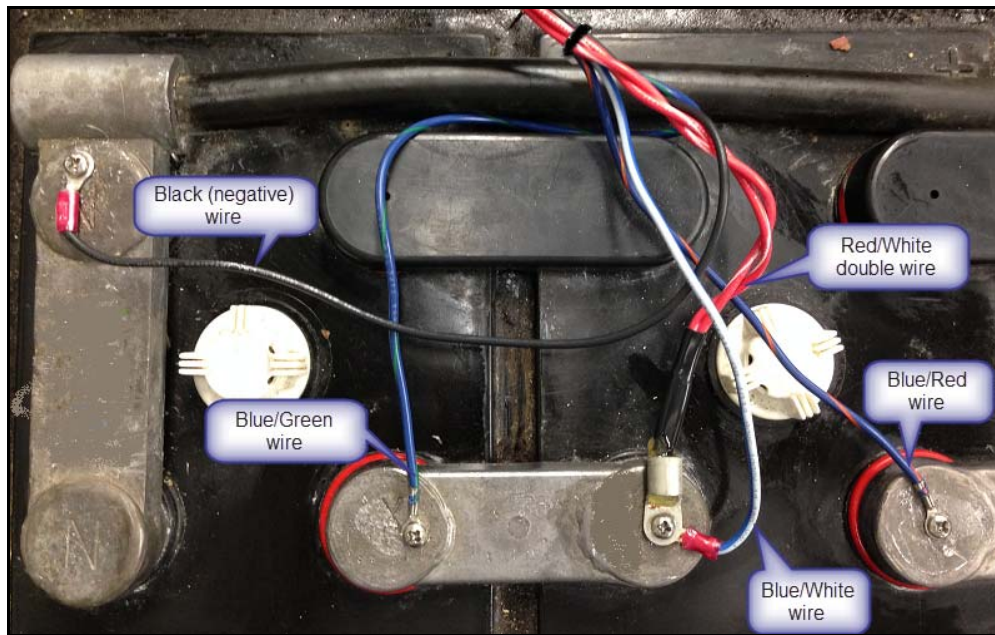


Figure 1: Battery Terminals (WBID Lead Connections)

5. Place an insert into each one of the 7 holes and tap it gently with a wooden or rubber mallet until it is flush with the surface as shown in Figure 2.

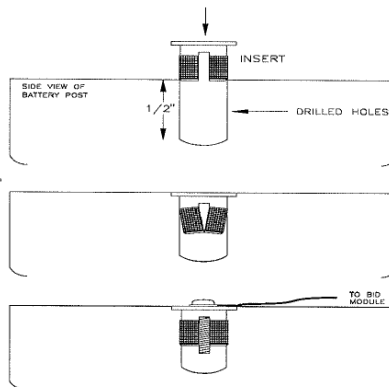


Figure 2: Place Inserts in Holes

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- Attach the WBID to the intercell connector using the two holes drilled in step 4f and the two 6-32 x 3/4" machine screws with two of the #6 flat washers as shown in Figure 3.

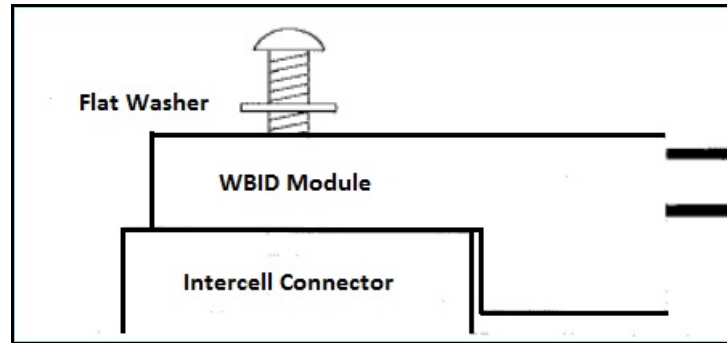


Figure 3: Attach WBID to Intercell Connector

- Apply silicone dielectric grease or NO-OX-ID (Sanchem Inc.) type corrosion inhibitor on all 5 inserts prior to connecting the harness to the battery.
- Loosely route the red and black WBID power leads to the positive and negative battery terminals, respectively. **Do not connect them yet.**

Note: The 3 wires (blue/green, blue/white, and blue/red) that have their terminals in heat shrink should be routed to the general vicinity of their final connections, and then the heat shrink should be removed. Once the heat shrink has been removed, be very careful to prevent the ring terminals from contacting any metal on the battery other than their intended final connection point.

- Loosely route blue/green WBID lead to the positive post of the most negative battery cell.
- Loosely route blue/white WBID lead to the negative post of the second cell from the negative terminal.
- Loosely route red/white temperature probe to the negative post of the second cell from the negative terminal.
- Loosely route blue/red WBID lead to the positive post of the second cell from the negative terminal.
- Plan the electrical installation of any optional devices. The WBID includes a cluster of six color coded wires (Green, Yellow, Blue, White, Brown and Orange) that form its accessory ports. Select which of the wires will be connected to which of the sensors and make a note of it. The sensors and indicators will have their own installation instructions.
- Using a 6-32 x 1/4" machine screw and provided washer, connect the black power lead to battery negative.

NOTE: Double check the following two connections: verify ~2V from the black WBID lead to the planned connections for the blue/green and blue/white WBID leads.

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15. Using a 6-32 x 1/4" machine screw and provided washer, connect the blue/green lead to the positive post of the most negative cell.
16. Using a 6-32 x 1/4" machine screw and provided washer, connect the blue/white lead and red/white temperature probe to the negative post of the second cell from the negative terminal.

NOTE: Double check the following connection: verify ~4V from the black WBID lead to the planned connection for the blue/red WBID lead.

17. Using a 6-32 x 1/4" machine screw and provided washer, connect the blue/red lead to the positive post of the second cell from the negative terminal.
18. If you are installing accessories, make the connections to the accessory leads now. As you do, note what devices you have connected to what wires on the table below. Later, when you've tied down all of the wires and need to do WBID configuration on your computer, it will be much easier to reference the table than to dig through all of those wires.

Multi-function Setup

Color	Connected to
Green	
Yellow	
Blue	
White	
Brown	
Orange	

19. Using a 6-32 x 1/4" machine screw and provided washer, connect the red power lead to the positive battery terminal.
20. Verify that the green LED on the WBID flashes 10 times a second, indicating that the module is operating. It typically takes 30 seconds to a minute for the rapidly flashing green to appear.
21. **Coat all exposed metal connections/screw heads with the same grease used in step 7.**
22. Replace the terminal covers. Modify the intercell cover as needed, and replace it as well. Tie down all wiring with the provided wire ties. If for any reason other wire ties are used, make sure they are the polypropylene type. Nylon ties rapidly deteriorate when exposed to acid.
23. If the battery has a cover, verify that it closes with no interference. If no cover, verify that the battery goes into the truck with no issues.
24. See the WBID user manual included with the Datalink software for configuration and operating instructions.

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