Active Technology

OWNERS MANUAL
AND
INSTALLATION INSTRUCTIONS

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Table of Contents

ActiBrake - Part of a System

ActiBrake is part of a trailer braking system. For this system to be complete, you also need the following components:

- In-cab brake controller
- A reliable, fully charged 12 volt breakaway battery
- Breakaway switch
- 7-way trailer connector - wiring harness paired with a matching tow vehicle connector, properly wired to the tow vehicle
- A reliable, fully charged 12 volt battery in your tow vehicle
- Properly rated wires and wire connectors
- The proper size hydraulic lines free from obstructions, kinks or pinch-points
- Quality hydraulic disc or drum trailer brakes

You Should Know...

ActiBrake is available in three models:

Drum Brake - for hydraulic 10 & 12 inch drum brakes (model # AB-1-8)

Disc Brake - for hydraulic disc brakes up to and including 8,000 lb. axles (model # AB-1-14)

Heavy Duty - for all hydraulic brakes on 10,000 lb. axles and above (model # AB-1-16HD)

Brake Controllers

Your trailer braking system is like a chain. It is only as good as its weakest link. This is especially true regarding in-cab brake controllers. There are many marginal brake controllers on the market, and ActiBrake will only apply the level of braking indicated by the brake controller's "blue wire" signal. Therefore, we urge you not to economize on a brake controller because it will only diminish the overall performance of ActiBrake and your trailer braking system in general. See page 10 for a list of approved brake controllers. **Important:** Unlike electric drum brakes, the ActiBrake does not receive its power through the “blue wire”. The power to the ActiBrake is provided through a +12 volt (normally black) wire from the tow vehicle connector.

Wire connections

A common cause for trailer brake system problems is improper wire connections. You must use the properly rated wire connectors (such as the crimp-type, heat shrink connectors enclosed in the ActiBrake shipping box, or any high quality, sealed connector) or sealed solder connection to ensure a reliable and lasting wire connection. Never use twist type connectors, tap splice connectors, electrical tape over a twisted connection or other such methods as they will eventually fail and create a wide array of operational problems. See page 6 for more information about proper wire connections.

ActiBrake was designed, manufactured and tested to meet the J1455 SAE standard with the goal of creating the most robust, reliable trailer brake actuator available.

Installing and Testing ActiBrake

There are 8 Major Steps

Step #1
Mounting the ActiBrake on the trailer.

Step #2
Installing the hydraulic brake lines on the trailer.

Step #3
Connecting the hydraulic brake line to the ActiBrake and filling the reservoir.

Step #4
Electrical Installation of the ActiBrake

Step #5
Checking the breakaway system.

Step #6
Bleeding the brake system.

Step #7
Complete system test to ensure everything is functioning properly.

Step #8
Setting the in-cab controller to establish the correct level of trailer braking.

This Owners Manual and Installation Instruction outline the correct procedures for conducting each of the 8 steps listed above.

Important!

Follow these instructions carefully when installing and using the ActiBrake.

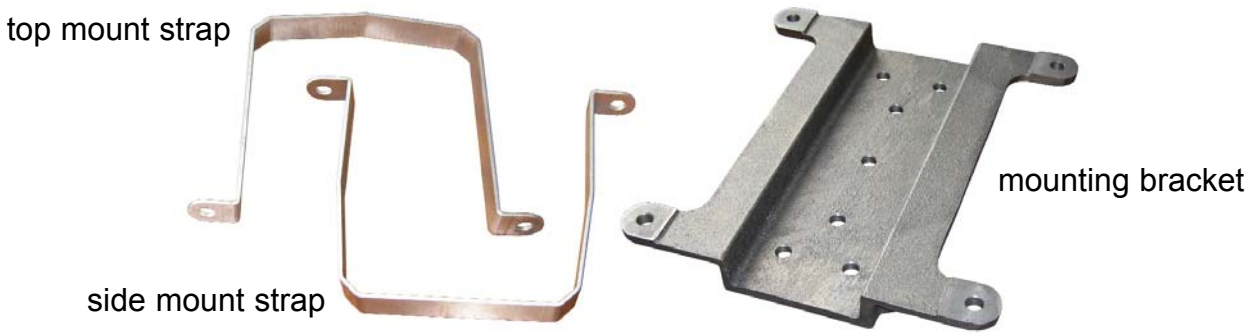
Before You Mount the ActiBrake!

Ensure the selected location is accessible for service and for brake line and wiring installation. The ActiBrake is sealed and designed to be water-tight to a depth of 1 foot for up to 5 minutes per submersion occurrence. However, it is best to mount the unit in a location in which it will not be submerged or that will reduce the risk of submersion.

Mounting the ActiBrake to the Trailer

The ActiBrake unit must be mounted upright in a location you desire, with consideration for accessibility for service, brake line and wiring installation and protection of the unit from damage. The unit should be mounted close to the front of the trailer to reduce the effect of voltage drop through long spans of wire and junction boxes. SEE THE TABLE BELOW for more information on voltage drop.

The ActiBrake should be mounted using 2 mounting straps (sold separately) which fit over the rubber-lined mounting strap slots on the unit. There are two types of straps; top mount or side mount. Four 5/16-18 bolts (not included) are placed through the holes in the feet of each mounting strap. The straps can be bolted to any flat surface on the trailer or they can be mounted to a factory formed bracket (sold separately). This bracket may be bolted or welded to any suitable surface (either horizontally or vertically) and thereby form the base of the mounting system.



Voltage Drop Over Distance

Voltage Drop Calculation: Wire length x resistance x pump current = voltage drop*

Resistance Values

8ga	0.00237
10ga	0.0037
12ga	0.00585
14ga	0.00902
16ga	0.0151
18ga	0.0222

At 50 feet, the voltage drop on 10ga wire would be approximately 5V at 25 amps. (50 x .0037 x 25) = 5.0

*This does not include connectors (0.008 ohm), splices (welded 0.003 ohms), or any other device in the circuit path such as fuses and diodes.

Installation of Hydraulic Lines

The ActiBrake unit has a brass 1/8th NPTF male fitting with #3 (3/16) female inverted flare tube seat adapter,*(for 1/8" brake line). DO NOT use Teflon pipe tape or other type of thread dope when connecting brake tubing or hose. When installing steel tubing, use care to avoid sharp kinks or bends, which can restrict brake fluid flow causing poor brake response. Double flare the ends of the steel tubing to ensure tight leak proof connections. All steel hydraulic lines should be anchored at two foot intervals to prevent vibration and chafing. Rubber hydraulic hose should be used at points where flexing may occur. Be sure hydraulic hose is positioned so it does not rub against any surface during trailering. Anchor ends of tubing to minimize stress.

* Model AB-1-16-HD utilizes a brass 1/8" NPTF male fitting with #4 (1/4") female inverted flare tube seat adapter, (for 3/16" brake line).

Filling Reservoir

After all brake lines have been installed, connected, and properly tightened, fill the reservoir with **NEW, CLEAN, "DOT 3" or "DOT 4"** Brake Fluid. Never re-use brake fluid that has been salvaged or removed from another unit. Contaminated or dirty fluid can cause system failure and/or premature wear on the system components. **DO NOT OVER FILL** the reservoir. The fluid level should be approximately 3/4 inch from the top of the filler tube.

Warning!

Use only new, clean, DOT 3 or DOT 4 brake fluid from a sealed container. Do not fill with previously used fluid. Used fluid may absorb water or other impurities which may cause corrosion and/or poor brake performance. This may result in physical injury and/or property damage!

Warning!

Failure to follow these instructions may cause the system to malfunction, which may result in physical injury and/or property damage, and may cause irreparable damage to the ActiBrake, which will void the warranty.

Important!

The Number One Installation Problem
is Improper Wiring of ActiBrake...
Follow the Set-up, wiring, testing procedures outlined in the following pages of this manual.

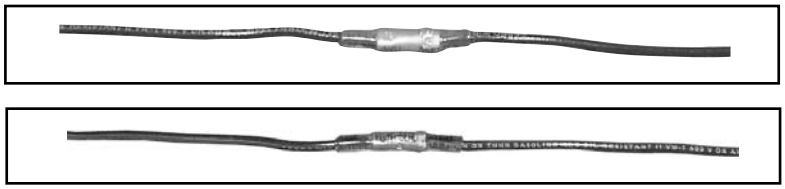
Proper Wire Connectors


12 Gauge (yellow)


16 Gauge (blue)

These crimp-type, heat shrink connectors are enclosed in your ActiBrake shipping box.

This is the *Right* way of making wire connections.

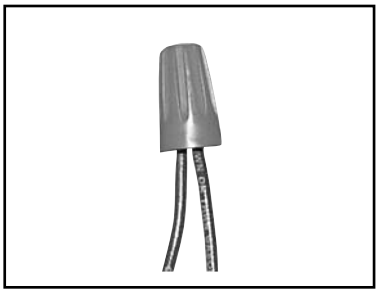


Use a standard crimp tool to crimp the wires in the connector, then use a heat gun to shrink the plastic ends of the connector to seal them.

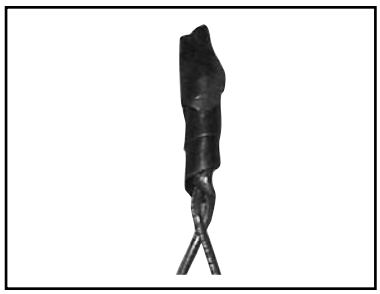
One Loose or Poorly Joined Wire Can Disable Your Entire Brake System

Taking shortcuts when connecting any wires on your trailer only increases the likelihood that some part of your electrical system will fail. Whatever type of connector you decide to use, make sure it is durable and is sealed against exposure to water and corrosive elements.

This is the *Wrong* way of making wire connections.



Twist type connectors may vibrate loose which will create a short in the wiring system.



Using just electrical tape is not sufficient. The wires may become corroded or vibrate loose creating a short.

Electrical Installation and System Tests

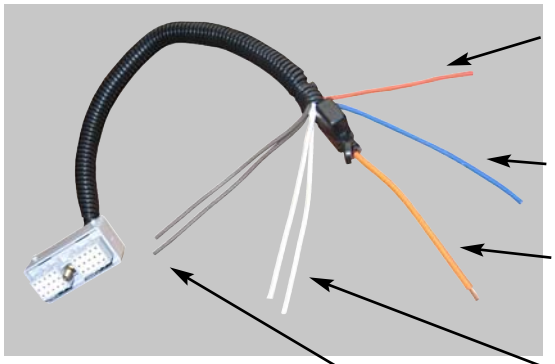
If you are installing the ActiBrake, carefully follow the installation and test procedures outlined in this manual.


Warning!

It is essential that you follow all set-up, wiring and test procedures to ensure that your ActiBrake is properly installed and tested. Failure to follow these procedures may damage the ActiBrake, and may result in physical injury and/or property damage.

Electrical Connections

There are seven wires exiting the ActiBrake wire harness:



Orange Wire - Breakaway Switch - 16 ga.

Blue Wire - Brake Controller Signal - 14 ga.

Orange Wire - 12 Volts Positive -
12 Gauge with 30 amp fuse holder

2 White Wires - Ground - 14 ga.

2 Brown Wires - Breakaway Battery 12 Volts Positive - 14 ga.

Tighten the harness connector using a 1/4" socket. Do Not overtighten.

Warning!

Do not connect these wires by color but by function! Failure to follow these instructions may damage the ActiBrake unit and will void your warranty.

NOTE: Unlike electric drum brakes, the ActiBrake requires +12 volts from the tow vehicle through the tow vehicle's connector (normally black wire). The ActiBrake will not function properly without this +12 volt source. A 30 amp blade type fuse is included in the 12 volt supply wire on the ActiBrake wiring harness (available at most automotive supply stores). This fuse protects against possible damage caused by mistakenly wiring the ActiBrake with reversed polarity.

ActiBrake Wires and Wire Connections

The wires on the ActiBrake system wiring harness are approximately 18 inches long to allow for flexibility when mounting the unit, however, extensions may be required to connect unit to the trailer's electrical wiring. When making connections to the trailer's wiring harness, the desired termination is a solder joint. If the connection is not soldered, use the appropriate size and type of "crimp-type" heat-shrink connector, using the manufacturer's recommended crimping tools in accordance with their crimping instructions. It is **EXTREMELY IMPORTANT** to connect the wires from the ActiBrake to the appropriate wire in the trailer's wiring harness, which corresponds precisely with their designated function.

ActiBrake Wiring Installation

It is very important to exactly follow these wiring instructions:

Step 1:

a) Ensure that the white wire on the ActiBrake is connected to bare metal on the trailer frame.

b) Ensure that the white wire from the ActiBrake is connected to the negative terminal of the breakaway battery.

c) Finally, connect the white wire of the ActiBrake to the (normally white) tow vehicle battery ground wire (via the trailer connector). All three ground connections are essential for the ActiBrake to function properly.

Note: The ground wire from the in-cab controller must be connected to the same grounding point used for the tow vehicle battery ground wire.

ActiBrake Wiring Installation (continued)

Step 2: a) Connect the brown wires from the ActiBrake to 12 volts positive terminal on the breakaway battery.
b) Connect 12 volts positive from the breakaway battery to one side (hot) of the breakaway switch. **Do not** connect the brown wire from the ActiBrake to the **12 ga. orange wire** from the ActiBrake.

Step 3: Connect the 16 gauge orange wire from the ActiBrake to the opposite side (cold) of the breakaway switch.

Step 4: Connect the blue wire input from the in-cab controller (via the trailer connector) to the blue wire on the ActiBrake.

Step 5: Connect 12 volts positive from the tow vehicle (via the trailer connector) to the **12 ga. orange wire** on the ActiBrake. Unlike electric drum brakes, the ActiBrake does not receive it's power through the blue wire, the electronics only monitor the signal sent on the blue wire to determine the amount of braking force to apply to the trailer brakes. The power to the ActiBrake is provided through the +12 volt (normally black) wire from the tow vehicle connector.

Step 6: When the installation is complete, with the towing vehicle ignition switch on, operate the unit from the tow vehicle using the MANUAL OVERRIDE on the in-cab brake controller. The ActiBrake's operation should follow that of the controller's manual override.

It is critical that you verify that your breakaway system functions properly!

Breakaway Protection

A breakaway system (sold separately), is required to supply power to the ActiBrake system in the event the trailer becomes uncoupled from the towing vehicle. A breakaway kit consists of a switch, battery and battery case. A cable attached to the breakaway switch must be attached to the towing vehicle during use. (See Breakaway Kit Manufacturer's instructions) In the event of unplanned uncoupling, the breakaway cable must cause the breakaway switch to close, thus activating the trailer's brakes.

Warning!

Failure to maintain adequate charge in the breakaway battery will result in the breakaway system not functioning properly. This may result in physical injury and/or property damage in the event of a breakaway!

Breakaway Battery - Surge Protection

The ActiBrake unit is equipped with a surge protection circuit, which prevents a surge charge from damaging the breakaway battery.

ActiBrake Breakaway System Test

Step 1 Ensure the ActiBrake reservoir is filled with brake fluid according to the instructions on page 4 of this manual.

Step 2 Ensure that the trailer is NOT connected to the towing vehicle via the trailer electrical connector.

Step 3 Pull the pin from the breakaway system. The ActiBrake should turn full-on immediately and run at full pressure for 20 seconds. After 20 seconds, the ActiBrake should continue to operate but at a lower pressure utilizing the the “Extend’a Life” mode (see page 11 for more information).

Step 4 Once you have verified that the breakaway system functions, replace the pin into the breakaway switch.

Bleeding the Brake Lines

It is essential to bleed all air from the brake lines prior to operation of the system. First, install a length of clear bleeder hose on the first wheel cylinder bleed screw or caliper bleed screw to be bled. If you have a multiple axle trailer, bleed the brake farthest from the ActiBrake first. Place the loose end of the bleeder hose into a clear container so that the end of the tube is completely submerged in brake fluid to observe air bubbles being removed from the system during the bleeding process. When the system is pressurized, loosen the bleeder screw located on the selected wheel cylinder (drum brakes) or the caliper (disc brakes) one full turn, opening the system to the atmosphere through the passage in the screw.

Bleeding is complete when bubbles no longer are observed. At that point, **with the ActiBrake still pumping fluid**, close the bleeder screw securely. Repeat bleeding process for all wheel cylinders or disc brake calipers. **Periodically check and re-fill the ActiBrake reservoir as needed during the bleeding process.**

The method for pressurizing the system during the bleed process:

DO NOT BLEED THE BRAKES WITH THE ACTIBRAKE BRAKE FLUID RESERVOIR CAP ON THE UNIT. The bladder on this cap may be damaged if the cap remains on the unit during bleeding.

If the ActiBrake is completely installed according to the procedures outlined in this manual and THE TRAILER IS NOT CONNECTED TO THE TOWING VEHICLE, it is possible to pull the pin from the breakaway switch. This will turn the ActiBrake full-on for 20 seconds and thereafter the unit will continue to run continuously at approximately 300 psi.

Please be aware that the AcitBrake will pump a large volume of brake fluid in a short period of time. Therefore, it is important to closely monitor the brake fluid level and re-fill the reservoir as needed. IF THE BRAKE FLUID FALLS BELOW THE PUMP INLET (which is located at approximately 3/4 inch from the bottom of the tank) THE PUMP WILL CREATE A BUBBLY FROTH WHICH WILL ENTER THE BRAKE LINES. IF THIS HAPPENS, IT MAY TAKE UP TO 8 HOURS BEFORE THE BRAKE LINES CAN BE SUCCESSFULLY RE-BLED.

It is recommended that the entire brake system be re-bled after the first 100 miles of road travel. It is not uncommon for air pockets to remain in the system after the brake system has been bled. This air will normally work its way to the brakes during a short period of use. Re-bleeding the brakes should completely resolve this issue.

Bleeding the brake lines is essential to the satisfactory operation of your brake system...it must be done properly!


Warning!

Failure to properly fill the ActiBrake and bleed the brake system may result in poor braking performance or braking failure, which may result in physical injury and/or property damage!

Important: Brake fluid can cause damage to painted surfaces. Clean up any spills on painted surfaces immediately.

General Operation

Load Capacity of Trailer Brakes

The brakes installed on the trailer determine the brake capacity of the trailer, not the ActiBrake. Refer to the owner's manual from the trailer manufacturer and the towing vehicle owner's manual to determine maximum towing capacity. See page 1 for the three versions of the ActiBrake.

Coupling

When coupling the trailer to the towing vehicle, always ensure the two vehicles are properly coupled and latched, including the safety chains and breakaway switch cable, all in accordance with the vehicle manufacturer's instructions and trailer manufacturer's instructions. **All coupling devices and procedures must conform to State and Federal regulations.**

Trailer Connector - Vehicle Connector

A towing vehicle equipped with an in-cab controller can be electrically connected to the ActiBrake installed on a trailer using a conventional seven pin trailer connector-vehicle connector. However, the pins of the vehicle connector and the pins of the trailer connector must be wired exactly the same according to the function of each wire -- NOT JUST BY WIRE COLOR. If the functionality of the mating pins in the trailer connector and the vehicle connector do not correspond by the function of the attached wires, the ActiBrake will not operate. It is **IMPERATIVE** that these connections are correct. ***See Page 6 of this manual for complete details.***

After properly coupling the trailer to the towing vehicle, plug-in the trailer connector to the mating connector of the towing vehicle.

General Operation (cont.)

There are <u>two checks</u> to ensure proper connection has been made.

The **first check** is visual, as many in-cab brake controllers have an indicator light or a lighted display, refer to the controller manufacturer's instructions for details. If there is a problem with the connection, SEE your in-cab brake controller manual for complete details on verification of wiring continuity.

The **second check** requires using the manual override lever on the in-cab controller. Position a second person near the ActIBrake. With the ignition switch turned on, the vehicle stationary and in Park (or not in gear with the parking brake engaged), move the manual override lever of the brake controller. The person near the ActiBrake will hear the motor engage if the tow vehicle and trailer are properly connected. If the ActiBrake does not function, immediately discontinue operation and correct the condition that is causing the ActiBrake not to function.

Important:

See the Trouble Shooting section of this manual, pages 13 & 14 if the ActiBrake does not operate.

Determining and Setting Proper Trailer Braking Force

Become Familiar with Braking of the Coupled Tow Vehicle and Trailer.

After the system installation has been verified, the operator should take the trailer to an empty parking lot to become familiar with the operation of the braking action of the combined tow vehicle-trailer. Each driver has different driving habits, and each vehicle has unique braking characteristics. Each potential driver of the coupled tow vehicle and trailer should take some time to familiarize themselves with the response and handling of the trailer using various settings on the in-cab controller. Each driver must be familiar with the operation of the in-cab brake controller and understand how to make adjustments to achieve the most desirable braking force (see brake controller manufacturer's instructions).

Brake Controller Signal Determines Trailer Brake Pressure

Trailer braking pressure is controlled by the use of an in-cab brake controller. This allows the driver to select the desired brake performance for the trailer, from the driver's position in the towing vehicle. Increasing or decreasing the "gain" setting of the in-cab brake controller, will increase or decrease the level of brake force generated by the ActiBrake unit. Refer to brake controller manufacturer's manual for instructions to properly adjust the controller settings.

Approved In-Cab Brake Controllers

The inertia based brake controllers which Active Technology approves for use with the ActiBrake are: Hayes Genesis, Hayes Energize XPC, Hayes Endeavor, Hayes Energize III and Tekonsha Prodigy. The ActiBrake may work with other controllers, but the operation of the ActiBrake and trailer braking performance may NOT be optimized. (A BRAKE SYSTEMS OPERTIONAL QUALITY CAN BE NO BETTER THAN THE OPERTIONAL QUALITY OF THE IN-CAB CONTROLLER!)

NOTE: Active Technology does not endorse the use of time-based in-cab controllers. The output of a time-based controller is not proportional to the deceleration of the towing vehicle. Therefore, when linked to a time-based in-cab controller, the ActiBrake will not generate brake pressure proportional to that of the tow vehicle deceleration.

Settings and Use of In-Cab Controllers

The settings of the in-cab controller are set by the driver. When properly set, the braking force of the trailer will provide sufficient braking so the brakes of the towing vehicle are not required to provide any braking force for the trailer. Variations in the controller settings may be required for different road conditions and for changes in trailer load. It is essential to maintain sufficient braking on the trailer on wet or slippery road surfaces. More braking with the trailer may help prevent the possibility of a jack-knife situation or prevent the trailer from swaying or pushing the towing vehicle. The in-cab brake controller allows for manual activation of the trailer brakes independent of the tow vehicle, by using the manual override feature of the controller.

Warning!

It is essential that each driver read and fully understand the in-cab brake controller operating manual provided by the manufacturer of the in-cab brake controller. Failure to fully understand the use and operation of the in-cab brake controller by each driver may cause loss of vehicle control. This may result in physical injury and/or property damage!

DO NOT RIDE YOUR BRAKE PEDAL!

This will cause constant pressure from the ActiBrake unit to the trailer brakes, resulting in premature wear and overheating. This may also cause damage to the ActiBrake unit or cause damage to the internal components of the system, as well as damage to your hydraulic brakes.

Extend'A-Life Feature

In the event you are required to be **stopped** with the tow vehicle brake pedal depressed for an extended period (and if the brake controller installed in your tow vehicle continues to send a signal when your vehicle has stopped), the ActiBrake unit's "Extend'A Life" feature is activated. This Extend'A Life feature reduces brake line pressure after 20 seconds of constant braking signal from the brake controller (and thereby reduces the wear on your actuator) and keeps your brake lines pressurized until the brake pedal in the towing vehicle is released.

Replacement Parts

The internal components of the ActiBrake unit are not intended to be serviced in the field. The unit is sealed at the factory for water tight integrity. ***The ActiBrake warranty will be voided if the seal is broken.*** See your dealer for replacement breakaway switches, batteries, filler cap or other items for your brake system. If the ActiBrake unit requires repairs covered by warranty, follow the instructions outlined in the warranty on Page 15 of this manual.

Service and Maintenance

Visual System Check

Periodically check the complete braking system, including the brake lines and hoses, wiring and vehicle-trailer connector plugs for damage, corrosion or leaks. Ensure brake lines and wires are secured so they do not hang down, drag or get caught when the trailer is in motion. Inspect friction pads for excessive wear.

Make Sure The Breakaway Battery Is Fully Charged

Always check the breakaway battery to verify it is fully charged when coupling your trailer for use. There is only one sure way to verify that your breakaway battery is fully charged: Use a voltmeter to check the voltage of your breakaway battery during current draw. To do this, pull the breakaway switch pin out of the breakaway switch assembly to activate the ActiBrake unit, while simultaneously placing the positive probe of voltmeter to the positive terminal of the breakaway battery and the negative probe of the voltmeter to the negative terminal of the breakaway battery. If the reading of the voltmeter is less than 12 volts, charge the battery per the manufacturer's recommendation.

SEE the operation manual of your voltmeter to ensure proper setup and usage of your voltmeter.

Warning!

Failure to maintain proper charge in the breakaway battery will result in the breakaway system not functioning properly. This may result in physical injury and/or property damage in the event of a breakaway!

Charge Battery When Necessary

If battery's charge is low, or if the trailer has been parked for a prolonged period, charge the battery per the manufacturer's recommendation. Use the procedure outlined above to determine if the breakaway battery is fully charged. Always follow battery manufacturer's maintenance instructions.

Warning!

Testing the battery in the manner outlined above confirms that the battery is charged. However, it does NOT confirm the brakes are functioning properly. Regular inspection, adjustment, and maintenance of the braking system is necessary to ensure proper brake operation.

Check Brake Fluid Level

Verify brake fluid level before each use. Fluid level should be 3/4 inch below the filler tube. Use care to prevent contamination of the fluid with dirt, water, or other foreign material when removing the filler cap, checking the fluid level, or when adding fluid to the reservoir.

Brake Fluid Contamination

The ActiBrake reservoir is sealed to prevent contamination of the fluid during normal operation. Should the fluid in the reservoir become contaminated, the ActiBrake and brake system should be flushed. This procedure should ONLY be performed by a qualified mechanic or technician. After the system has been flushed, the reservoir must be re-filled with new "DOT 3" or "DOT 4" brake fluid and the brake lines bled as outlined of Page 8 of this manual.

Warning!

The use of contaminated brake fluid may cause the ActiBrake system to malfunction, which may result in physical injury and/or property damage!

Trouble Shooting

Problem	*Diagnostic Procedure(s)*
LED or brake controller display does NOT light when brake pedal is applied.	“Open Circuit" indicated between the trailer and the tow vehicle. - Inspect circuit connections per instructions outlined in this manual.
ActiBrake takes too long to reach full pressure.	Bleed the brake lines, check brake fluid level and check all electrical connections. Check voltage at ActiBrake connections WHILE the ActiBrake is running (a minimum of +12 volts is required for the ActiBrake to function properly). Make sure the tow vehicle is delivering AT LEAST +12 volts. Full pressure is only achieved if a 100% signal from the blue wire is applied.
ActiBrake does not run when breakaway switch is pulled.	1) Verify ALL electrical connections are correct and complete, especially ground to trailer frame AND the breakaway battery ground. 2) Make sure the correct gauge wire has been used for installation (SEE electrical connections on Page 6 for gauge sizes.) 3) Charge breakaway battery and retest. See Page 12. 4) Connect white wire from ActiBrake to a test battery ground. Connect brown and orange wires directly to +12VDC test battery. If the ActiBrake runs, replace the breakaway switch and/or breakaway battery as needed.
ActiBrake does not operate using the manual over-ride lever of the in-cab brake controller.	1) Verify that ALL electrical connections are correct and complete on the trailer AND the towing vehicle. The ground wire from the controller MUST be attached to the same ground point as the tow vehicle battery and the tow vehicle connector. 2) Make sure the correct wire gauge has been used for installation (SEE electrical connections on Page 6 for gauge sizes.) Verify 30 amp fuse in wiring harness from ActiBrake is not blown. 3) Inspect the trailer and tow vehicle connectors. Replace corroded or damaged connectors. Ensure all wires inside the connector are secure 4) Verify trailer connector is securely attached to the tow vehicle connector. 5) Ensure that brake controller is installed correctly per manufacturer’s instructions. 6) Run “blue wire” from brake controller directly to ActiBrake. If the ActiBrake operates when the manual over-ride level is depressed, check wiring between the brake controller and ActiBrake. 7) Connect voltmeter to blue wire and ground. With proper brake controller gain adjustment, the voltage should vary from zero to near full battery voltage when manual lever is moved. If voltage is low, contact your brake controller supplier. The Prodigy Controller requires the trailer to be connected to the tow vehicle in order to obtain near full battery voltage when the manual lever is moved.

Trouble Shooting
Continued...

Problem	*Diagnostic Procedure(s)*
ActiBrake operates, but the Extend'A Life feature does not activate after 20 seconds.	1) Verify that the blue wire of ActiBrake is NOT connected to 12 volts positive. It should be connected to the blue wire of the brake controller. 2) ActiBrake is sensing erratic blue wire signal from the in-cab controller. Verify the functionality of the in-cab controller and, if necessary replace it. It is best to use a top quality inertia based controller.
Excessive trailer braking.	1) Reduce gain setting on in-cab controller. 2) Blue wire to ActiBrake is connected to brake light circuit 3) Poor Ground - verify controller ground and tow vehicle ground are connected at the same grounding point as the negative terminal of the tow vehicle battery. 4) Verify proper ground through tow vehicle and trailer connector 5) Wrong ActiBrake model number installed for trailer configuration
Insufficient trailer braking.	1) Increase gain setting on in-cab controller. 2) Verify that brake lines have been properly bled and each brake is properly adjusted. 3) Verify the functionality of the in-cab controller according the manufacturer's instructions. DO NOT use a time-based brake controller. 4) Make certain the in-cab controller generates approximately 12VDC from the blue wire to ground when the manual over-ride lever is fully engaged. 5) Replace the in-cab controller if it is not functioning properly. 6) Poor Ground - verify controller ground and tow vehicle ground are connected at the same grounding point as the negative terminal of the tow vehicle battery. 7) Wrong ActiBrake model number installed for trailer configuration 8) Make sure the tow vehicle is delivering AT LEAST +12 volts when the ActiBrake is running.
ActiBrake abruptly applies full braking force.	1) Inspect the breakaway switch to make certain the circuit remains held open when the pin is in place. 2) Check electrical connections to the breakaway switch and breakaway battery to make certain there are no exposed wires in contact with one another. 3) Replace the breakaway switch if there is any doubt about its reliability or if you have any question that it is functioning properly. 4) Blue wire to ActiBrake is connected to brake light circuit 5) Poor Ground - verify controller ground and tow vehicle ground are connected at the same grounding point as the negative terminal of the tow vehicle battery. 6) Pendulum type brake controller is not properly leveled. Adjust leveling per controller manufacturer recommendations.

Limited Warranty

Your ActiBrake unit is warranted to be free from defects in materials and workmanship for 18 months from the date of manufacture or 1 year from the date of retail sale, whichever occurs first, provided the unit has been properly installed, used and maintained.

If the Product Registration Card for the ActiBrake unit is returned to Active Technology within 10 days of retail purchase, the warranty will be extended by a period of an additional 6 months. Proof of purchase is required to be sent in with the warranty card to verify the 10 day period.

You are eligible for the warranty if you are the original end-use purchaser and if the ActiBrake unit has been used only on the original vehicle on which it was installed.

This warranty does not apply to loss or damage caused by misapplication, misuse, abuse or modification. Removing the plastic cover of the ActiBrake, for any reason, voids the warranty. It also does not apply to failure to follow the operating instructions, or to observe the cautions and warnings as they pertain to installation and wiring, application, operation, inspections or maintenance specified in this manual, the wiring procedures poster or any specification sheet pertaining to the ActiBrake unit. Further, freight or freight damage not approved by Active Technology, is not covered by this warranty.

Active Technology's liability is expressly limited, at Active Technology's discretion, to repair or replace any warrantable product. Active Technology reserves the right to request the product be returned intact, freight prepaid, prior to processing any claim for warranty. Warranty claim application must be received by Active Technology within 30 days of the discovery of the alleged defect, or within 30 days of the expiration of the warranty, whichever is earlier. Claims not made within these guidelines shall be deemed to be INVALID.

Active Technology shall not be liable for loss of use of the unit, or any other incidental or consequential costs, expenses or damages incurred.

Some states do not allow the exclusion or limitation of implied warranties, incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights. You may have other rights, which vary from state to state.

To request the processing of a warranty claim or authorization to return your ActiBrake, contact Active Technology at the address or phone number shown below.

Active Technology
7600 Sand Drive
Fort Worth, TX 76118
817-595-9710

Product must be returned, shipping prepaid, to the factory upon receipt of return authorization. The following information must accompany all warranty requests: **1)** Name, address and telephone number of the purchaser; **2)** proof of purchase (including date of purchase); **3)** serial number of the unit; **4)** name and address of dealer where unit was purchased; and **5)** a description of the alleged defect.

These terms and conditions represent the entire ActiBrake Warranty. No terms or conditions, additions, or modifications otherwise altering the provisions stated herein, shall bind Active Technology unless stated in writing and signed by an authorized Active Technology representative.