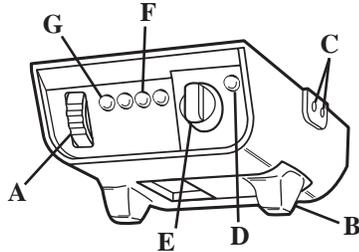


Instructions for Sentinel® Brake Control

Electronic Brake Control For 2, 4, 6 and 8 brake applications

READ THIS FIRST:

Read and follow all instructions carefully before installing or operating the brake control. Keep these instructions with the brake control for future reference.



Components of the Brake Control

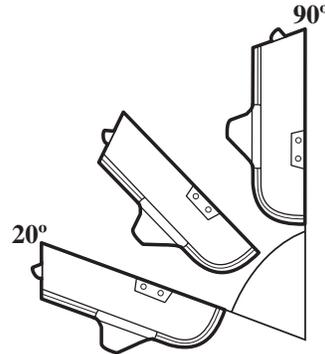
- A. Power Knob
- B. Manual Slide Knob
- C. Bracket Mounting Holes
- D. Bi-Colored Level Indicator Light
- E. Level Knob
- F. Red Power Display Lights
- G. Green Diagnostic Light

Important Facts to Remember

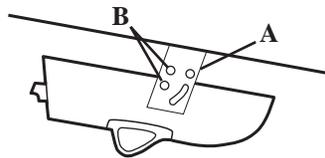
1. Do not mount or activate RF generating items (cell phones, two way radios) near (less than 12") the brake control.
2. **CAUTION** Reversing the connection to a breakaway battery on the trailer will destroy the brake control.
3. **CAUTION** Disconnect trailer plug from the tow vehicle prior to testing a breakaway switch, or you may destroy the Brake Control.
4. **WARNING** The level adjustment is CRITICAL. The level adjustment determines whether automatic braking response is delayed or aggressive.
5. This brake control is activated by inertia. It senses deceleration and generates an output that reflects the inertia sensed. In a stationary state, the brake control will not apply the trailer brakes unless the Manual Slide Knob is actuated.
6. **WARNING** The Gross Combined Weight Rating (GCWR) must never exceed the vehicle manufacturers recommendation.
7. **CAUTION** This control is not designed for use with electric-hydraulic trailer brake systems.
8. For Technical Assistance and Warranty Information call: 1-888-785-5832 or www.tekonsha.com.

Installation Guide

WARNING The Brake Control must be mounted from 20 degrees to 90 degrees nose up. Failure to install brake control within these constraints may cause your control to become inoperable.



Traditional Bracket Mount



- A. Mounting Bracket
 - B. #6 x 3/8" Screws
1. **CAUTION** Drilling or use of longer screws may damage unit.
 2. Securely mount *bracket* to a solid surface.
 3. Insert supplied #6 x 3/8" screws on each side into the mounting holes.
 4. Adjust control to desired position and tighten screws until snug.

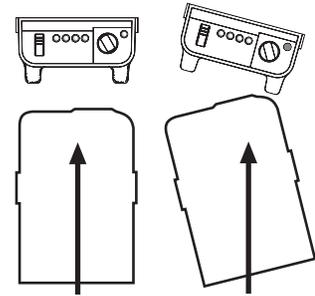
Before Wiring the Brake Control

An optional blinking GREEN Diagnostic Light versus a constant GREEN light to monitor positive trailer connection is a set up option. This option was made available for people who may have difficulty distinguishing between red and green lights. To activate this option:

1. Engage manual slide knob and hold.
 2. Connect power to the brake control.
- The GREEN diagnostic light will now blink at a rate of once every eight (8) seconds when the trailer is connected. Troubleshooting diagnostics will also cause this light to blink at a much faster rate – refer to Troubleshooting Chart.

NOTE:

1. Front of the Sentinel must be horizontal, *see below*.
2. The Sentinel must be parallel to direction of travel, *see below*.



Leveling the Sensor

After the brake control has been securely mounted the level adjustment must be set.

NOTE:

1. **WARNING** This brake control is activated by inertia and requires the level to be set properly, or the braking response will be too harsh or ineffective.
 2. To properly level the sensor, the tow vehicle must be parked on a level surface, it is not necessary to connect a trailer to level sensor.
 3. Due to the fine tuning ability of the inertia level adjustment, the level knob can be turned up to ten complete rotations from stop to stop.
1. Set power knob to maximum by fully rotating upward until three bars show on knob.
 2. Depress tow vehicle's brake pedal and hold.
 3. Rotate the Level Knob counter-clockwise until the Bi-Colored Level Indicator Light starts to change colors from RED to GREEN.
 4. **Slowly** rotate the Level Knob clockwise until RED color just shows, and then **carefully** turn the Level Knob back counter-clockwise until the solid GREEN color is just visible.
 5. **Once** the brake control has been leveled such that the Bi-Colored Level Indicator Light shows GREEN, release the foot pedal.

NOTE:

When the brake control is leveled properly there will be very little current flowing through the brake magnets in a static state with the foot pedal depressed. The brake magnets will hum when there is current flowing through them. Anytime the Bi-Colored Light shows any color other than GREEN, there is current flowing through the brake magnets.

Adjusting the Power to the Trailer Brakes

Once the control has been installed and properly leveled, it is necessary to set the power needed to stop the trailer during a braking event.

1. Connect trailer to tow vehicle.

Instructions for Sentinel® Brake Control (Continued)

2. Set Power Knob to mid position (2 bars showing).
3. Drive tow vehicle and trailer on a dry level paved surface at 25 mph and apply *manual slide knob*.
 - ✓ If trailer brakes lock up:
 - ❑ Turn power down using power knob. (Rotate *power knob* down.)
 - ✓ If braking was not sufficient:
 - ❑ Turn power up using *power knob*. (Rotate power up.)
4. Repeat Step (3) until power has been set to a point just below wheel lock up or at a sufficient force as to achieve maximum braking power.
5. Using the brake pedal, make a few low speed stops to check the Power and Level adjustments. The automatic response (brake pedal) is initiated and terminated via the stoplight switch. When the brake pedal is released, trailer braking will cease.

Fine Tuning

Now that the Power has been set, it is time to fine tune the level setting for the majority of the stopping that you will be doing.

1. Make several slow (25 MPH) stops as if coming up to a stop sign and take notice of how the trailer brakes respond:
 - ✓ **Brakes Grab Too Much**
 - ❑ You have an Aggressive Setting: To correct this condition rotate level knob counter clockwise.
 - ✓ **Trailer Tending to Push Tow Vehicle**
 - ❑ You have a Delayed Setting: To correct this condition rotate level knob clockwise.
2. Repeat until desired trailer braking is achieved.
3. When the Manual Slide Knob or Brake Pedal is activated, Bi-Colored Level Indicator Light shows:
 - ✓ CLEAR – you have a delayed setting.
 - ✓ GREEN – you have a typical setting.
 - ✓ RED – you have an aggressive setting.

NOTE:

1. Always warm the trailer's brakes before setting the power. Warm trailer brakes tend to be more responsive than cold brakes. To warm trailer brakes, drive a short distance (1/4 mile) at 45 MPH with manual lever engaged enough to cause trailer braking at a low level.
2. ⚠ **WARNING** The power should never be set high enough to cause trailer brakes to lock up. Skidding trailer wheels can cause loss of directional stability of trailer and tow vehicle.
3. The power may need to be adjusted for different load weights and road conditions.
4. Not all trailer brakes will lock up due to various conditions. However, inability to lock up the brakes generally indicates the need for an inspection to determine the cause.
5. When the powerknob is set correctly you should feel unified braking between the trailer and tow vehicle.
6. When in doubt of the proper setting procedures review the above steps starting at LEVELING THE SENSOR through FINE TUNING or consult your tow card included with your brake control.

Normal Operation

Light Code	Condition
Dim GREEN diagnostic light.	Trailer connected, system is working.
GREEN diagnostic light, glowing dim to bright.	Start of braking action.
RED lights begin to glow.	Increased current to trailer brakes.
GREEN diagnostic light flashes at 8 second interval.	Trailer connected, system is working. (Optional Set-Up)

Troubleshooting Chart

Situation	Probable Cause
GREEN diagnostic light flashes at 3 times per second.	<ol style="list-style-type: none"> 1. Direct short or excessive current request. 2. Use of some test lights or non-Tekonsha testers can cause this problem. 3. Low battery voltage on tow vehicle.
All lights flash rapidly with Manual Slide Knob or Brake Pedal activated.	<ol style="list-style-type: none"> 1. Direct short, excessive current request or poor ground connection to tow vehicle's battery. (TRAILER BRAKES ARE INOPERABLE.)
No GREEN diagnostic light.	<ol style="list-style-type: none"> 1. Trailer not connected to tow vehicle. 2. Trailer connected with open circuit on brake line. 3. Trailer connector corroded. 4. Loss of trailer brake magnet ground. 5. Loss of Brake Control ground (WHITE wire).
Bi-Colored Level Indicator light is OFF with Manual Slide Knob activated.	<ol style="list-style-type: none"> 1. Power Knob is set at minimum.
Bi-Colored Level Indicator light is OFF with Brake Pedal activated.	<ol style="list-style-type: none"> 1. Power Knob is set at minimum. 2. Level not set properly. 3. Brake Control is mounted out of range, nose too far down. Less than 20°.
Braking with foot pedal is delayed.	<ol style="list-style-type: none"> 1. Level adjustment is set delayed, rotate clockwise until bi-color light is just turning RED.
Braking with foot pedal is aggressive.	<ol style="list-style-type: none"> 1. Level adjustment is set aggressive, rotate counter-clockwise until bi-color light is just turning GREEN.

Appendix A: Trailer Brake Adjustment**

Brakes should be adjusted after the first 200 miles of operation when the brake shoes and drums have "seated" and at 3000 mile intervals, or as use and performance requires. The brakes should be adjusted in the following manner:

1. Jack up trailer and secure on adequate capacity jack stands. Follow trailer manufacturers recommendations for lifting and supporting the unit. Check that the wheel and drum rotate freely.
- ⚠ **WARNING** Do not lift or support trailer on any part of the axle or the suspension system.
2. Remove the adjusting hole cover from the adjusting slot on the bottom of the brake backing plate.
3. With a screwdriver or standard adjusting tool, rotate the starwheel of the adjuster assembly to expand the brake shoes. Adjust the brake shoes out until the pressure of the linings against the drum makes the wheel very difficult to turn.

Note: With drop spindle axles, a modified adjusting tool with about an 80 degree angle should be used.

4. Then rotate the starwheel in the opposite direction until the wheel turns freely with a slight lining drag.
 5. Replace the adjusting hole cover and lower the wheel to the ground.
 6. Repeat the above procedure on all brakes.
- ⚠ **WARNING** Never crawl under your trailer unless it is resting on properly placed jack stands.

Follow the trailer manufacturers recommendations for lifting and supporting the unit. Do not lift or place supports on any part of the suspension system.

**Note: Trailer Brake Adjustment procedures courtesy Dexter Axle.