

PRODIGY P2 INSTRUCTIONS

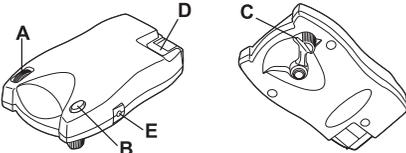
INSTRUCTIONS FOR PRODIGY® P2 BRAKE CONTROL

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 Prodigy P2. Keep these instructions with the Brake Control for future reference.

Components of the Brake Control



- A. Power Knob
- B. Boost Button
- C. Manual Knob
- D. Connector (For Wiring Harness)
- E. Mounting Hole (1 per side)

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. The Prodigy P2 employs an inertial sensor. It senses deceleration and generates an output that is based on deceleration, thus the term "Proportional Braking".
3. The Prodigy P2 will "HOLD" your trailer with 25% of power setting while you are at a standstill with brake pedal applied for longer than 5 seconds.
4. The Prodigy P2 will brake proportionally in reverse. It will apply the appropriate brake voltage based on deceleration.
5. For Technical Assistance and Warranty Information call: 1-888-785-5832 or www.tekonsha.com.
6. **WARNING** The Gross Combined Weight Rating (GCWR) must never exceed the vehicle manufacturers recommendation.

Installation Guide

The Prodigy P2 can be mounted from 0 degrees to 360 degrees vertically in the direction of travel. (See Diagram for **Mounting the Prodigy P2**).

Failure to install the Prodigy P2 within these constraints may cause impaired performance.

Wiring Brake Control

Your Prodigy P2 brake control has a unique connector located at the back of the control. This connector allows you two options to wire your brake control.

Option 1:

Use Pigtail Wiring Harness included. This harness can be installed by following the Generic Wiring Guide.

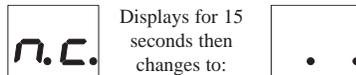
Option 2:

Use a vehicle specific wiring harness. If your vehicle came with a factory tow package that included a 7-way connector, you can purchase a Tekonsha OEM wiring harness with the Prodigy P2 connector on one end and your specific vehicle's connector on the other.

Display Readings after Wiring the Prodigy P2

After successfully wiring your Prodigy P2 you should see the following on the two-digit display:

- Power to Prodigy P2 without trailer connected.



- Power to Prodigy P2 with trailer connected and



- Manual Knob Activated without trailer



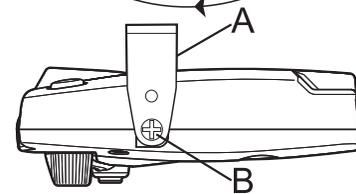
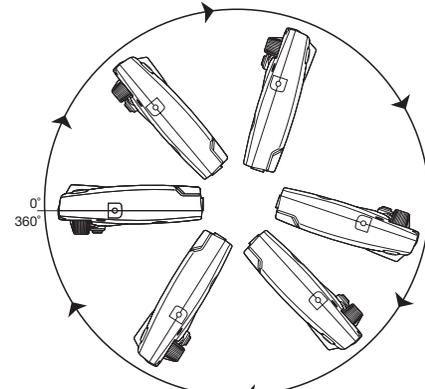
- Manual knob activated (with trailer), 5.4 denotes a hypothetical power output. This value is set using the power knob. Range is 0.0 to 13 volts. This is an indication of voltage output to electric brakes.



- Power to Prodigy P2 but display is in power saving mode (no motion or activity for at least fifteen minutes).



Mounting the Prodigy P2

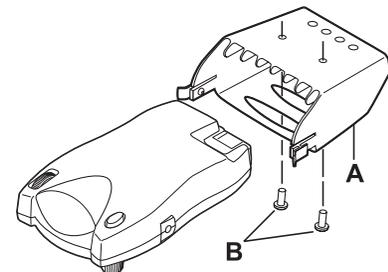


Traditional Bracket Mount

- A. Mounting Bracket
- B. #8 X 3/8" Machine Screw with Internal Tooth Washer

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

Under Dash Pocket Mount



- A. Pocket Mount
- B. #6 X 1/2" Self Tapping Screws

1. Securely mount *Pocket Mount* to a solid surface using supplied #6 X 1/2" Self Tapping Screws.
2. Insert Prodigy P2 Brake control.
3. Plug in connector.

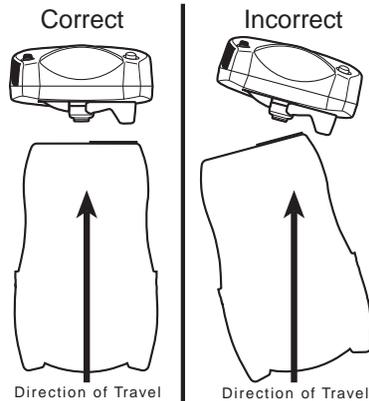
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INSTRUCTIONS FOR PRODIGY® P2 BRAKE CONTROL (CONTINUED)

NOTE:

1. Front of the Prodigy P2 must be horizontal (± 20 degrees), *see below*.
2. The Prodigy P2 must be parallel to direction of travel (± 20 degrees), *see below*.



Automatic Leveling of the Sensor

The Prodigy P2 will automatically acquire the proper level setting. It will also automatically adjust as you travel up or down hills.

Adjusting the Power to the Trailer Brakes (Prior to setting Boost)

Once the control has been securely mounted in the direction of travel, it is necessary to set the power needed to stop the trailer during a braking event.

1. Connect trailer to tow vehicle.
2. With engine running hold manual full left and set Power Knob to indicate approximately 6.0
3. Drive tow vehicle and trailer on a dry level paved surface at 25 mph and fully apply manual knob.
 - ✓ If trailer brakes lock up:
 - ❑ Turn power down using power knob.
 - ✓ If braking was not sufficient:
 - ❑ Turn power up using power knob.
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 setting. Trailer braking is initiated and terminated via the stoplight switch. When the brake pedal is released, trailer braking will cease.

Boost Setting

The boost button was designed to allow a more aggressive setting for your trailer brakes and is available in three levels - [b.1], [b.2], [b.3]. Each incremental boost setting increases the sensitivity of the Prodigy P2's inertial sensor, enhancing the participation of the trailer brakes during a braking event.

The first press on the boost button displays the current setting. Boost is advanced to the next level by continuing to press the boost button.



Five seconds after setting the boost level, the display will show



indicating **Boost On** by the right most decimal.

For example: With the boost off, [b.], during a braking event, the power to the brakes starts out at zero and increases with deceleration. With the boost on level 1,

(Boost Setting continued)

[b.1], during a braking event, the power automatically starts out at approximately 14% of the power setting and increases with deceleration. With the boost on level 2, [b.2], or with the boost on level 3, [b.3], during a braking event, the power automatically starts out at approximately 28% of the power setting and increases with deceleration.

Some cases where you might want to use the boost button:

- You like the trailer braking to 'LEAD' the tow vehicle's braking
- Towing a full vs. empty trailer
- Degraded brake performance (most electric brakes require manual adjustment - see Appendix A or a dealer for adjustment or repair)

NOTE: Boost not intended to be used to take place of trailer brake adjustment or repair.

See the chart below for recommended "Boost" settings (indicated with **X**) for typical Trailer to Vehicle weight relationships.

Select your boost setting based on your towing situation, driving preference and condition of your trailer brakes.

Typical Boost Settings For Optimal Performance (with properly adjusted trailer brakes*)

TRAILER WEIGHT compared to VEHICLE WEIGHT	b.	b.1	b.2	b.3
	BOOST "OFF" ↗ INCREASING BOOST LEVEL ↘			
Trailer weighs LESS than Vehicle	X	X		
Trailer weighs APPROXIMATELY SAME as Vehicle	X	X	X	
Trailer weighs UP TO 25% MORE than Vehicle		X	X	X
Trailer weighs UP TO 40% MORE than Vehicle			X	X
Trailer weighs OVER 40% MORE than Vehicle	⚠ WARNING Do not exceed Gross Combined Weight Rating (GCWR)			X

* Increased Boost setting may be needed if trailer brakes are worn, see Appendix A or a dealer for brake adjustment or repair.

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 power is set correctly you should feel unified braking between the trailer and tow vehicle.

INSTRUCTIONS FOR PRODIGY® P2 BRAKE CONTROL (CONTINUED)

Reverse

When backing a trailer you can cancel “BOOST” and “HOLD” for a period of three minutes. This can be accomplished by pressing the boost button continuously for five seconds with the brake pedal depressed. The display will indicate:



(If “boost” was active, the right hand decimal point will also be on.) After three minutes the “BOOST” and “HOLD” features will automatically return to your previous settings.

NOTE:

Returning to your previous settings prior to three minutes can be accomplished by pressing the boost button.

Electric Over Hydraulic Mode

The Prodigy P2 will support most customer supplied electric over hydraulic braking systems.

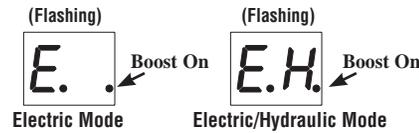
An electric over hydraulic system is a system where the Brake Control’s output is used to drive a customer supplied electric over hydraulic braking system. The customer will determine which electric over hydraulic system is suitable for their application.

The Prodigy P2 can be switched between Electric (E) and Electric over Hydraulic (E/H) modes by

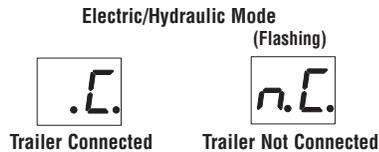
(Electric Over Hydraulic continued)

entering the E-E/H programming mode as follows:

- Enter Reverse Mode by pressing the Boost Button for 5 seconds while the brake pedal is pressed until [.r] displayed.
- While continuing to have the brake pedal pressed, momentarily release the Boost Button for less than one second and then press and continue to hold the boost button down for an additional 5 seconds.
- The display will now change from the boost value to a flashing [E.] or [E.H.]. Depress and release Boost repeatedly to select the desired mode.



- Engage the Manual Knob to accept the mode, or wait 10 seconds for the function to automatically time out and accept the mode. The mode selected will be stored in memory even when disconnected. When in Electric over Hydraulic mode, the display will change to [.C] and [n.C]. The upper-case “C” indicated E/H rather than the lower case “c” for Electric mode.



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.

P/N 120065-006 REV A

Troubleshooting Chart

Display	Situation	Probable Cause
0.9	Flashes 2 times a second or a steady display.	Trailer is connected and Prodigy P2 loses connection to battery ground.
0.L	Flashes 2 times per second.	Prodigy P2 “sees” an overload condition during operation.
5.H	Flashes 2 times per second.	1. Brake wire sees short during idle condition. 2. Use of some test lights or non-Tekonsha testers can cause this problem.
n.C.	Flashes for 15 seconds	1. Trailer not connected to tow vehicle. 2. Trailer connected with open circuit on brake line. 3. Trailer connector disconnected or corroded. 4. Loss of trailer brake magnet ground.
(Blank Display)	No display with manual or pedal activation.	1. Loss of power to Prodigy P2. 2. Loss of ground to Prodigy P2.
	No display until activation	Prodigy P2 is in power-saving mode due to no motion for 15 minutes.
0.0	No braking. Flashes 2 times per second.	Power control set to 0.
P.L.	Power interruption while brake pedal is depressed.	
E.r	Error	Brake Control is inoperative. Call technical service for return.

(Appendix A: Trailer Brake Adjustment continued on next column)

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