HAYMAN REESE

ULTIMATE ASSIST

REMOTE MOUNT PROPORTIONAL

BRAKE CONTROLLER

READ THIS FIRST:

Important Safety Information:

⚠ **WARNING** — To prevent Serious INJURY, DEATH or PROPERTY DAMAGE.

- Always read and follow all instructions carefully before installing or operating the ULTIMATE ASSIST Brake Control. Wear safety glasses and use all safety precautions during installation.
- Keep these instructions with the brake control for future reference.
- CHECK periodically that your Brake Control Unit, LED indicator and Manual Knob Control Unit are securely mounted to your vehicle.
- INSPECT and ADJUST your trailer brakes every 5000 km or as use and performance requires.
- BEFORE use, ALWAYS read, understand and follow all warnings and instructions for your vehicle and for your trailer.
- NEVER exceed the lowest rated capacity of either your vehicle, hitch or trailer. Consult the owner's manual for your vehicle and your trailer.
- TEST your BRAKE CONTROL UNIT settings each time a trailer is attached to your vehicle.
- ALWAYS wear your seatbelt.
- SLOW DOWN when towing, NEVER exceed the posted speed limit.

Website: www.haymanreese.com.au			
©2024 Hayman Reese	06100INP	02-09-24	Rev. A

THIS PACKAGE INCLUDES:

(1) Brake Control Unit

(1) Instructions for installation and Operations

COMPONENTS OF THE BRAKE CONTROL UNIT:

A) Brake Control Unit

B) Hayman Reese Universal Brake Control Plug & Play Harness

C) Manual Knob Control Unit

D) Knob Assembly

E) Mounting hardware Kit

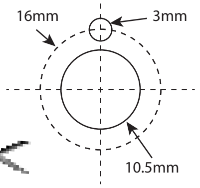
F) Scissors

G) Drill Hole Guide

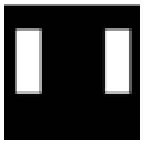
H) Nut

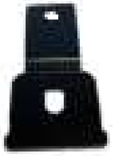
I) Foam pad

J) Universal wire Harness



Note: Measure to ensure outer circle is 16mm before cutting.





REQUIRED TOOLS AND MATERIAL (NOT INCLUDED):

⚠ **WARNING**— If you need additional assistance or do not have the tools required, stop the installation and contact a professional installer.

TOOLS REQUIRED (NOT INCLUDED)

A) Drill

B) Drill Bits: 3mm(LED), 10.5mm(POT)

C) Center Punch

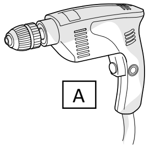
D) Safety Glasses

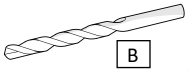
E) Wire Cutters

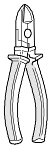
F) Crimp Tool

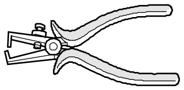
G) Voltage Tester

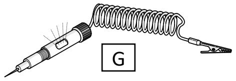
H) Panel removal tools

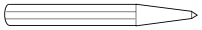


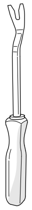












MATERIAL REQUIRED (NOT INCLUDED—See Wiring options 1 or 2)

Wiring legend:

BLACK Wire (Positive Battery)

WHITE Wire (Negative Battery)

RED Wire (Cold side of the stoplight switch)

BLUE Wire (Brake output to trailer)

Automatic reset circuit breaker (20 amp for 1-2 axles, 30 amp for 3 axles)

Assorted ring terminals and Butt Connectors.

MOUNTING LOCATION:

NOTE: The Brake Control Unit & Manual Knob Control Unit are designed to be mounted on or around the vehicle dash panel. Consider the location of both units relative to each other and verify harness routing before drilling any holes.

⚠ **WARNING**— Correct orientation and mounting of the Brake Control Unit is required for proper operation. The units must be securely mounted to a solid surface.

⚠ **WARNING**—To prevent SERIOUS INJURY, DEATH or DAMAGE to the vehicle, make sure the area behind the dash panel is clear before drilling or mounting the bracket with screw.

1. Select a suitable mounting location for the Brake Control Unit & Manual Knob Control Unit. (See Mounting Orientation Considerations)
2. Remove the panel and use the Drill hole Guide to mark the surface for the centers of the control and LED holes.

Note: Measure Drill hole Guide to ensure the box is scaled 1” x 1” before drilling.

NOTE: Test fit units to ensure any removed panels can be reinstalled after installation of the units before drilling any holes.

3. Drill the top hole for the LED using a 3mm drill bit.
4. Drill the bottom hole for the Manual Knob Control Unit using a 10.5mm drill bit.
5. Install the nut and tighten securely. Do not overtighten
6. Using bracket or double sided tape provided secure the Brake Control Unit (See Mounting Orientation Considerations)

NOTE: The Brake Control Unit must be securely mounted to a solid surface. Do not tie wrap.

MOUNTING ORIENTATION CONSIDERATIONS:

⚠ **WARNING**— For proper operation, the Brake Control Unit MUST be mounted with the arrow on the label in the direction of travel. **See Figure B**

Figure B

1. Front of the Brake Control Unit must be horizontal (+/- 20 degrees). **See Figure B**
2. The Brake Control Unit MUST be parallel to Direction of Travel (+/- 20 degrees). **See Figure B**

NOTE: The Ultimate Assist can be mounted out of sight under the dash. It can be mounted at any rotation angle (0 to 360 degrees); as long as the arrow on the label must point in the direction of travel. **See Figure C**

The Ultimate Assist as viewed from the side. **Figure C**

3. Determine mounting location based on direction of travel.

4. Select bracket or foam pad for installation.

Option 1—Bracket

- Slide bracket until locking tab is engaged with the bracket. Using supplied screw, attach unit to desired location.

Option 2—Foam Pad

- Remove tape from one side, firmly attach to unit.
- Remove tape from other side and

Figure C

⚠ **WARNING**— **DRILLING**

- Verify what is behind any surface prior to drilling to avoid damage to the vehicle and/or personal injury. Do not drill into any exposed surfaces.

NOTE: TAPE

- Clean mounting location using a 50-50 mixture of rubbing alcohol and water.
- Knob control should be mounted in an accessible location to the driver at all times.

WIRING OPTIONS:

The Ultimate Assist comes equipped with a Plug & Play Connector exiting at the back of the control.

OPTION 1—Plug & Play

If your vehicle is equipped with a factory tow package, brake control function wires with a connector may exist under the vehicle dash. Consult the vehicle manual or call for the location of the harness. A vehicle-specific plug-and-play harness may be purchased separately. For easy installation, simply plug the vehicle specific connector into the factory tow package harness and plug the other end directly into the Connector Plug & Play Connector on the brake control. Continue to Controls & Indicators.

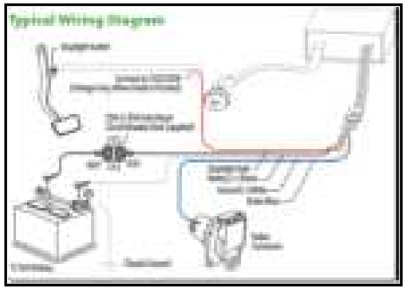
OPTION 2 —Universal Installation

Important Facts to Remember:

⚠ **WARNING**— Reversing BLACK and WHITE wires or improper wiring will damage or destroy brake control.

⚠ **WARNING**— Be sure to solidly connect all four wires or brake control will not function properly.

⚠ **WARNING**— Use of proper gauge wire when installing the brake control is CRITICAL: Smaller gauge wire may result in less than efficient braking.



WIRE INSTALLATION INSTRUCTIONS:

1. The brake control must be installed with a 12 volt negative ground system.
2. Soldering is recommended or crimp-on butt connectors are a suitable substitution.
3. Route all wires as far from the radio antenna as possible to reduce AM interference.
4. Collection of water inside the trailer connector mounted on the tow vehicle will reduce the life of the connector.
5. Remove the Plug & Play Connector on the brake control box and splice the wires to the function wires as shown in Figure D.

Wiring Legend:

BLACK Wire (Positive Battery)
WHITE Wire (Negative Battery)
RED Wire (Cold side of stoplight switch)
BLUE Wire (Brake output to trailer)

⚠ **WARNING**— Inadequate grounding may cause intermittent braking or lack of sufficient voltage to trailer brakes and may result in accidents. The WHITE wire must be connected to a suitable ground location. The negative terminal of the battery is a suitable ground location in the absence of a Trailer Tow Package connection.

6. Connect the BLACK (+) wire through an automatic reset circuit breaker (20 amp for 1-2 axles, 30 amp for 3 axles) to the POSITIVE (+) terminal of the battery. The BLACK wire is the power supply line to the brake control.
7. The RED (stoplight) wire must be connected to the cold side of the brake pedal stoplight switch. Splice down line from the switch; DO NOT disturb the position of the switch.

⚠ **WARNING**— Do not disrupt the vehicle braking circuit. If you are unsure of which wire to use, contact local vehicle dealer, Tekonsha dealer or technical support.

8. The BLUE (brake output) wire must be connected to the trailer connector's brake wire.
9. Plug vehicle specific Plug & Play wire harness (not included) into vehicle Brake Control Harness mating end, or attach universal wire harness and install as show in option #2.
10. Check all connections, secure loose wires and reinstall panels.
11. Test installation (See SET UP).

MANUAL OVERRIDE BUTTON:

The Manual Override button is located on the rotary knob and only applies the trailer brakes. It should be used in situations when it is desirable to reduce speed slowly.

When the Manual Override button is pushed in, the output voltage will ramp up power to the trailer brakes to the maximum power set by the user in about ½ second.

SET UP:

⚠ **WARNING**— Test your Brake Control Unit settings before each use:

- ⚠ The Power Output 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.
- ⚠ Not all trailer brakes will lock up due to various conditions. If your trailer brakes will not lock up, it's important to determine the cause.
- ⚠ Setting the brake control too aggressively could cause brake pulsing when towing with hazard flashers on. If such settings are necessary, a pulse preventer can be installed.

NOTE: The Power Control setting and Boost control may need to be adjusted for different load weights and road conditions. This Brake Control unit is suitable for all trailers with 12V electric brakes and with up to 3 axles.

Connect trailer to your vehicle.

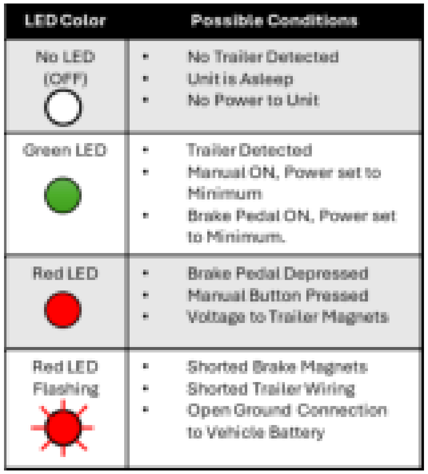
1. ALWAYS warm the trailer brakes before setting the Power Output. To warm trailer brakes, drive a short distance (0.4 km or ¼ mile) at about 70 KM/H (45 MPH) pressing the Manual Override button with the Power Output control at a low setting to allow the trailer brakes to engage at a low level.
2. When the Power Output control is set correctly, you should feel unified braking between the trailer and tow vehicle. Starting with the Power Output control in the lowest position (all the way left), roll forward slowly and stop. If no trailer braking is felt, increase the Power Output control slightly by turning the knob to the right. Repeat this process until you feel firm trailer braking. If the trailer brakes lock-up or jerk, lower the Power Output control by turning slightly to the left.
3. Test drive at about 35 KM/H (20 MPH) and make several stops. Adjust the Power Output control until stops are smooth and firm or at the desired level. Slight adjustments of the Power Output control may also be desirable.

OPERATION CONTROLS AND INDICATORS:

LED Indicator

The LED Indicator will be:

- "Off" when the trailer is not connected, if the unit is asleep, or if there is no power to the unit.
- "Green" when the unit is awake and the trailer is connected.
- "Red" when the trailer brakes are applied either by depressing the vehicle brake pedal or by the manual override button (with or without a trailer attached).
- "Flashing Red" when there is a potential issue that may not allow the brake control to function as intended.



LED Color	Possible Conditions
No LED (OFF) ○	• No Trailer Detected • Unit is Asleep • No Power to Unit
Green LED 🟢	• Trailer Detected • Manual ON, Power set to Minimum • Brake Pedal ON, Power set to Minimum.
Red LED 🔴	• Brake Pedal Depressed • Manual Button Pressed • Voltage to Trailer Magnets
Red LED Flashing 🔴	• Shorted Brake Magnets • Shorted Trailer Wiring • Open Ground Connection to Vehicle Battery

POWER OUTPUT CONTROL:

The Power Output control is located on the rotary knob. It establishes the maximum amount of power available to the trailer brakes. The Power Output control should be adjusted when trailer load changes, when different trailers are used, or when road conditions change.

As the Power Output control is rotated from minimum (-) to maximum (+), more power will be available to the brakes when the brake pedal is pressed or the Manual Override button is used.

APPENDIX A: TRAILER BRAKE ADJUSTMENT

Brakes should be adjusted after the first 4,800km (3,000 miles) of operation when the brake shoes and drums have "seated" at 320km (200 miles) 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 manufacturer's recommendations for lifting and supporting the unit. Check that the wheel and drum rotate freely.
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 star wheel 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. Rotate the star wheel 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**— To prevent SERIOUS INJURY or DEATH: NEVER lift or support your trailer on any part of the axle or the suspension system.

- BEFORE getting under the trailer, ALWAYS block the trailer tires and use jack stands that are properly placed on firm ground and have sufficient capacity for your trailer. DO NOT lift or place supports on any part of the suspension system.
- ALWAYS follow your trailer manufacturer's recommendations for lifting and supporting the unit.

More information https://www.caravansplus.com.au