

Odyssey™ Congratulations on your purchase of the Odyssey™ trailer brake control, the newest, brightest and most forward thinking brake control available for trailer towing. Whenever the tow vehicle brakes are applied, the Odyssey™ senses the vehicle's rate of deceleration and applies the appropriate amount of brake power to the trailer for a smooth seamless stop. The easy-to-read digital display communicates the power being sent to the brakes, as well as a full range of diagnostic functions. The easy-to-set Instant Manual Calibration function adjusts the unit for mounting position with the press of a button. The Odyssey™ brake control can be mounted in any position, making it easily and comfortably accessible from the driver's position of most any tow vehicle. The unit is designed to be mounted in a variety of positions, at any angle above or below the dash. Push-button selection of 4 Load Settings makes it easy to adjust for a wide range of trailer weight and axle configuration. Unlike older accelerometer-base controllers with "automatic calibration", the Odyssey™ now avoids mis-calibration during engine braking. With the easy push of a button, you adjust the Odyssey™ for mounting position.

FEATURES

- The Odyssey™ Brake Control is polarity protected. If the positive (+) and negative (-) power leads are reversed, the unit isolates itself from the power input and protects itself from a short circuit.
- When applying the trailer brakes by utilizing the manual slider alone, the Odyssey™ will supply power to the trailers brake lights.
- To protect your trailer's braking system, the Odyssey™ Brake Control, when fully stopped with the brake pedal applied (i.e. Railroad crossings or other traffic standstills), will reduce it's output power to the trailer brakes. This helps to protect the trailer brake magnets from overheating and the possibility of glazing the trailer brakes.
- The Odyssey™ Brake Control is designed to operate equally well in forward and reverse (backing) based on the deceleration of the vehicle and trailer.
- The Odyssey™ Brake Control will support most trailers with electronically activated hydraulic braking systems.

CONTROLS / COMPONENTS

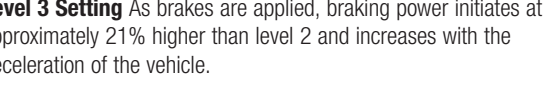
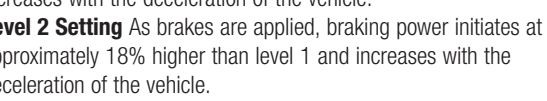
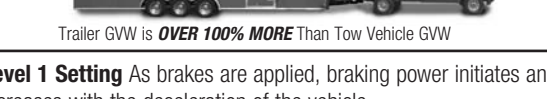
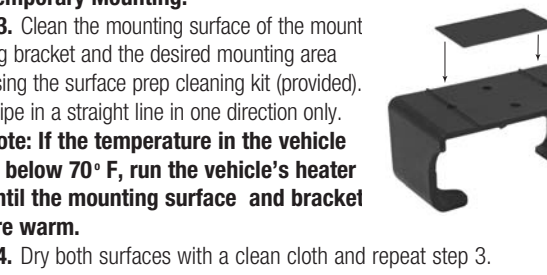
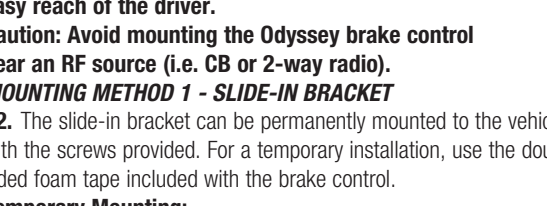
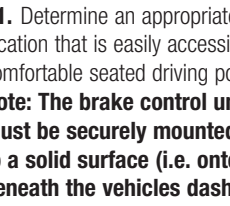
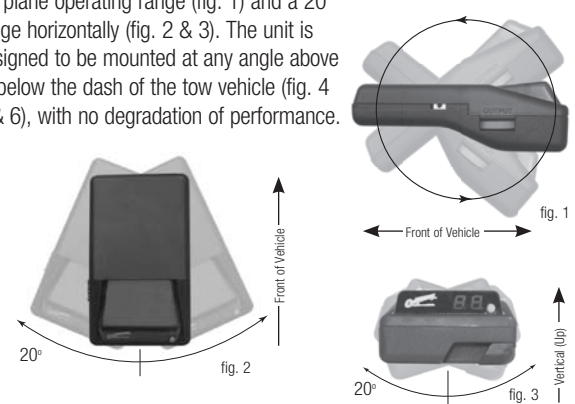
- LED Display
- Output Setting Knob
- Manual Activation Lever
- Load Range Selector / Calibration Button
- Mounting Groove
- Harness Connector



MOUNTING

Note: Read all instructions thoroughly before beginning.

The Odyssey™ brake control can be mounted in an unlimited number of positions, making it easily and comfortably accessible from the driver's position of most any tow vehicle. The Odyssey™ has an unlimited vertical plane operating range (fig. 1) and a 20° range horizontally (fig. 2 & 3). The unit is designed to be mounted at any angle above or below the dash of the tow vehicle (fig. 4 & 5 & 6), with no degradation of performance.



5. Wipe both surfaces with the alcohol swab and allow to dry.

6. Peel away the White adhesive liner and firmly press the exposed tape surface to the mounting bracket (fig. 7).

7. Remove the Red adhesive liner and carefully position the bracket in the desired location (fig. 8). Press bracket firmly into place.

Important: Ensure that the front of the bracket is mounted facing the driver (Fig. 9). The foam tape contains a strong adhesive that is not easily repositioned once installed. Take care to position the bracket correctly when installing using this method of attachment.

NOTE: For maximum effectiveness, warm the adhesive surface with a hair dryer.

8. To ensure a proper bond, the adhesive requires time to cure. For best adhesion, do not insert the brake control unit into the bracket or allow the bracket to support weight for 72 hours.

9. Once the adhesive has cured, align the slots along the sides of the Odyssey™ with the ridges in the slide-in bracket. Slide the brake control into the bracket from the front until it snaps securely into place (fig. 10).

Permanent Mounting: 10. Place the mounting bracket into the desired position on the vehicle and mark the location of the bracket mounting slots.

11. Using a 1/8" drill bit, drill the holes marked in step 2 into the mounting surface.

Caution: Ensure that the area directly behind the mounting surface is clear of obstructions that may be damaged while drilling.

12. Using a screwdriver or 1/4" nut driver, secure the bracket to the vehicle with the two 1/4" self tapping screws (provided). Take care not to strip the hoies by over-tightening the screws (fig. 11).

13. Align the slots along the sides of the Odyssey with the ridges in the slide-in bracket. Slide the brake control into the bracket from the front until it snaps securely into place (fig. 10).

MOUNTING METHOD 2 - TRADITIONAL BRACKET (OPTIONAL)

2. Place the mounting bracket into the desired position on the vehicle and mark the location of the bracket mounting slots.

3. Using a 1/8" drill bit, drill the holes marked in step 2 into the mounting surface.

Caution: Ensure that the area directly behind the mounting surface is clear of obstructions that may be damaged while drilling.

4. Using a screwdriver or 1/4" nut driver, secure the bracket to the vehicle with the two 1/4" self tapping screws (provided). Take care not to strip the holes by over-tightening the screws (fig. 12).

5. Mount the Odyssey™ brake control into the bracket using the two 6-32 x 3/4" machine screws (provided) (fig. 13).

Caution: Do not use longer screws than those provided. Unit MUST be securely mounted.

WIRING

Note: Read all instructions thoroughly before beginning.

The use of proper gauge wire is critical when installing the Odyssey™ brake control. Lesser gauge wire may result in less than desirable braking operation. Black and Blue wire gauges are as follows:

- 1 - 2 Axle Trailers: 12 Gauge Wire Minimum
- 3 - 4 Axle Trailers: 10 Gauge Wire Minimum

Caution: Improper connection of a trailer break-away kit may cause damage to the trailer brake system and/or the brake control.

FOR TOW VEHICLES EQUIPPED WITH ORIGINAL EQUIPMENT FACTORY TRAILER TOW PACKAGES:

As vehicle wiring differs by manufacturer, use of a pre-wired brake control harness is recommended. Valley offers a wide range of custom harnesses designed to mate directly between the tow vehicle's factory brake control plug and the Odyssey™'s connector.

Note: As wire colors differ by manufacturer, the vehicle harness wire colors may differ from those on the brake control pigtail. If a factory supplied harness must be used, refer to the following chart, the tow vehicle's owners manual and the instructions supplied with the original equipment factory connector for correct brake control wiring.

Caution: Ensure the tow vehicles brake control power circuit (+) is capable of delivering the required amount of current needed for the trailers braking system (Refer to the tow vehicle and trailer owners manuals). If the brake control power circuit (+) does not meet the demand, wire directly to the battery (steps 1 - 15 following).

ORIGINAL EQUIPMENT FACTORY BRAKE CONTROL CONNECTOR PIGTAIL			
Factory Pigtail Wire Color	Brake Control Wire Color	Function	
CHEVROLET			
Red	Connect To	Black	12 Volt Positive (+)
Light Blue	Connect To	Red	Stop Light Ground (-)
Black	Connect To	White	Trailer Brakes
Dark Blue	Connect To	Blue	Trailer Brakes
DODGE			
White with Red Stripe	Connect To	Black	12 Volt Positive (+)
Blue with White Stripe	Connect To	Red	Stop Light Ground (-)
Green with Black Stripe	Connect To	White	Trailer Brakes
Blue	Connect To	Blue	Trailer Brakes
DODGE (Optional)			
Red with Black Stripe	Connect To	Black	12 Volt Positive (+)
White with Tan Stripe	Connect To	Red	Stop Light Ground (-)
Black	Connect To	White	Trailer Brakes
Brown	Connect To	Blue	Trailer Brakes
FORD			
Red	Connect To	Black	12 Volt Positive (+)
Light Green	Connect To	Red	Stop Light Ground (-)
White	Connect To	White	Trailer Brakes
Dark Blue	Connect To	Blue	Trailer Brakes
Brown	Connect To	Not Used	
FORD (Optional)			
Red	Connect To	Black	12 Volt Positive (+)
White	Connect To	Red	Stop Light Ground (-)
Blue	Connect To	White	Trailer Brakes
Brown	Connect To	Blue	Trailer Brakes
HONDA			
Blue	Connect To	Black	12 Volt Positive (+)
White with Black Stripe	Connect To	Red	Stop Light Ground (-)
Black	Connect To	White	Trailer Brakes
Brown with White Stripe	Connect To	Blue	Trailer Brakes
ISSUE			
Red	Connect To	Black	12 Volt Positive (+)
Red with Green Stripe	Connect To	Red	Stop Light Ground (-)
Black	Connect To	White	Trailer Brakes
Brown with Light Blue Stripe	Connect To	Blue	Trailer Brakes
Not Used	Connect To	Not Used	
ISSUE			
Black with Green Stripe	Connect To	Black	12 Volt Positive (+)
Green with White Stripe	Connect To	Red	Stop Light Ground (-)
Brown	Connect To	White	Trailer Brakes
Red	Connect To	Blue	Trailer Brakes
Green	Connect To	Not Used	

FOR TOW VEHICLES NOT EQUIPPED WITH ORIGINAL EQUIPMENT FACTORY TRAILER TOW PACKAGES: The brake control must be spliced into the vehicle's existing wiring harness. Use Valley harness 30520 to connect the Odyssey™ in the following manner:

- Read all instructions thoroughly before beginning.
- Soldered connections are favorable when wiring the Odyssey™ brake control, however crimp-style connectors are acceptable in making these connections.
- Mount a 30 amp automotive style circuit breaker near the tow vehicle's positive (+) battery terminal. Using a length of 10 ga. stranded wire, strip 3/8" of insulation from one end and attach a 3/8" 12 ga. crimp-style ring terminal. Strip 3/4" from the opposite end and attach a #10 12 ga. crimp style ring terminal. Connect this lead to the circuit breaker terminal labeled "BATT". The opposite end will mount to the vehicle's positive (+) battery terminal during step 14.
- Caution: Do not attach to the vehicle's positive (+) battery terminal at this time.**
- Feed a length of 10 ga. stranded duplex wire (white & black) from the brake control to the vehicles brake compartment.
- Caution: When passing wire through sheet metal, always utilize an existing grommet, add a grommet or use silicone rubber to insulate the wire from the hole.**
- Attach a 3/8" 12 ga. ring terminal to the White wire, and a #10 12 ga. ring terminal to the Black wire in the same manner as step 2.
- Attach the Black wire to the circuit breaker terminal labeled "ALX".
- Attach the White wire to the vehicles Negative (-) battery post.
- From the driver's area, attach the wiring harness's Black wire to the opposite end of the Black wire attached to the "ALX" side of the circuit breaker using a yellow 10/12 ga. butt connector or by soldering the leads together.
- Attach wiring harness's White wire to the opposite end of the White

wire leading to the vehicles negative (-) battery terminal using a yellow 10/12 ga. butt connector or by soldering the leads together.

10A. For 1989-1991 Ford E & F-Series Trucks & Vans with anti-lock brakes: (All other vehicles continue to Step 9B) Locate the crescent shaped turn signal harness connector (fig. 14) located on the steering column under the dash. The connector will have two rows of wires. A row of four wires and a row of seven wires. Attach wiring harness's Red wire to the light green wire (second in the row of seven) with a 14 ga. wire tap.

Caution: Do not connect to the Red wire with the Green Strip as serious damage may occur.

10B. For All Other Vehicles: Locate the stop light switch on the back side of the vehicles brake pedal. Determine which side of the switch is the "cold" or switched side by probing the terminals of the switch with a test light or current meter. The cold terminal will only indicate power when the brake pedal is depressed. Connect the wiring harness's Red wire to the cold side of the stop light switch with a 14 ga. wire tap.

11. Feed a length of 10 ga. Blue stranded wire from the brake control mounting area to the trailer connector at the rear of the vehicle.

Caution: When passing wire through sheet metal, always utilize an existing grommet, add a grommet or use silicone rubber to insulate the wire from the hole.

12. Attach the wiring harness's Blue wire to the Blue 10 Ga. wire using a 10/12 ga. butt connector.

13. At the rear of the vehicle, attach the Blue wire to the vehicle's trailer connector brake terminal (see the connector wiring diagram for the correct terminal location).

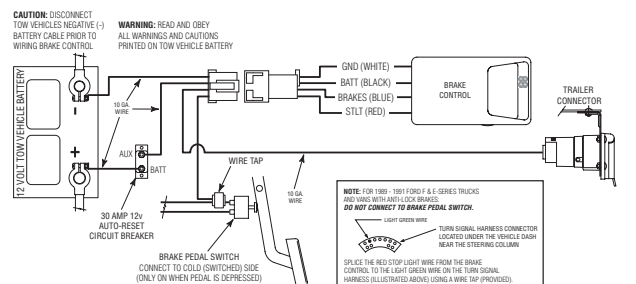
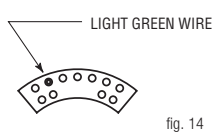
Note: Ensure the trailer connector ground (-) terminal is wired in a manner sufficient to support the trailer's amperage draw.

Refer to the connector manufacturer's installation instructions for additional details.

14. Connect the wire from the "BATT" side of the circuit breaker to the vehicle's positive (+) battery terminal.

Note: The Black "Battery" wire must be connected directly to the tow vehicle's positive (+) battery terminal via a self-resetting 30 amp circuit breaker. Do not attempt to connect this wire to the vehicle's fuse panel or other accessory wiring. Failure to connect directly to the vehicle battery may damage vehicle wiring and cause trailer brake failure.

15. Plug the brake control harness into the brake control's mating connector.



MANUAL CALIBRATION

When you first install the Odyssey™ brake control and apply the brakes for the first time, the display on the unit will flash "CL", indicating that the brake control needs to be calibrated to its current mounting position. To calibrate with the tow vehicle approximately level and brakes NOT applied, simply press and hold the Load Range Selector / Calibration Button for a few seconds until a steady "CL" appears.

If the unit's mounting angle has changed or if "CL" flashes at any point, then re-calibration is required. Without pressing the brake pedal, press and HOLD the Calibration Button until the "CL" appears, while on a level surface. Recalibration of the Odyssey™ brake control will not affect the current load setting. Once calibrated, using the procedure above, the load level setting may be viewed by tapping the button.

Note: To prevent accidental or false calibration, the calibration mode is locked out and unavailable when the brakes are engaged.

SETUP

Once the wiring is complete, the Odyssey™'s LED display will indicate one the following, illustrating the brake controls activity:

- Power Conservation Mode - No Motion or Activity for 55 minutes or Longer. The Odyssey™ will come instantly to full power mode as the brake pedal is depressed.



- No Trailer Connected - Odyssey™ is Receiving Power and is Active.
- Trailer is Connected - Odyssey™ is Receiving Power and is Active.
- Manual Lever Applied - No Trailer Connected (Applies to Manual Lever Only)
- Manual Activation Lever or Vehicle Brakes Applied - Trailer is Connected (Output Reading is Based on Output Intensity Setting and Position of Manual Lever, if Applied)

LOAD RANGE SETTING

The Load Range should be set prior to adjusting the Output Power setting. This function has been designed to provide for a more aggressive output setting to the trailer brakes based upon the total trailer weight (see chart at right). Load Range is available in four levels - L1, L2, L3 and L4. Simply pressing the Load Range Selector will cycle between the levels in a rotation (see Controls/Components on page 3 for Load Range Selector Position).



Each incremental setting increases the sensitivity of the units internal sensor, increasing the trailer brake contribution to the overall stopping power of the vehicle/trailer combination.

LOAD RANGE SETTING GUIDELINES

Trailer GVW is LESS Than Tow Vehicle GVW	L1	L2		
Trailer GVW is APPROXIMATELY EQUAL To Tow Vehicle GVW		L2		
Trailer GVW is UP TO 50% MORE Than Tow Vehicle GVW	L2	L3		
Trailer GVW is UP TO 75% MORE Than Tow Vehicle GVW	L3	L4		
Trailer GVW is OVER 100% MORE Than Tow Vehicle GVW			L4	
	Do Not Exceed Gross Combined Weight Rating (GCWR)			L4

Level 1 Setting As brakes are applied, braking power initiates and increases with the deceleration of the vehicle.

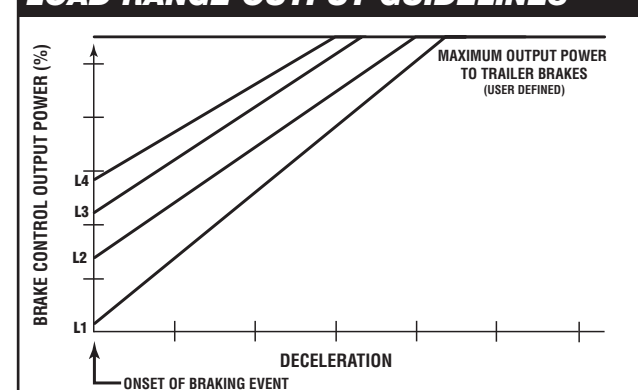
Level 2 Setting As brakes are applied, braking power initiates at approximately 18% higher than level 1 and increases with the deceleration of the vehicle.

Level 3 Setting As brakes are applied, braking power initiates at approximately 21% higher than level 2 and increases with the deceleration of the vehicle.

Level 4 Setting As brakes are applied, braking power initiates at approximately 15% higher than level 3 and increases with the deceleration of the vehicle.

Caution: Increasing the Load Range setting should NOT be utilized as an option to adjusting or repairing trailer brakes. Load Range settings should be based on the driver's individual preferences and the overall condition of the trailer brakes. Refer to the charts above for recommended baseline load settings based on standard vehicle and trailer combinations.

LOAD RANGE OUTPUT GUIDELINES



OUTPUT SETTING

Once the desired Load Range has been determined and set, the power output range must be adjusted for the individual trailer being towed.

- Connect the desired trailer to the tow vehicle.
- Start the tow vehicle to ensure sufficient battery power is being supplied to the brake control. While parked, with foot OFF the brake pedal, slide the Manual Activation Lever completely to the left and rotate the Output Setting Knob until the LED display indicates 5.0.
- Release the Manual Activation Lever and drive the vehicle and trailer forward on a dry level surface at 25 mph. Ensure that ample distance is available for safe braking and fully apply the brake control Manual Activation Lever.

Caution: On some vehicles, manual operation of trailer brakes will not override the tow vehicle's cruise control operation.

TROUBLESHOOTING

In addition to indicating output power and Load Range settings, the Odyssey™ is capable of communicating operating errors via its LED display.

Trailer Brakes Lock Up: Reduce power to the trailer brakes by rotating the Output Setting Knob counter-clockwise.

OUTPUT SETTING (Continued)

If Trailer Braking was Insufficient: Increase power to the trailer brakes by rotating the Output Setting Knob clockwise.

4. Continue to repeat step 3 until the desired power output has been achieved. The brake control output should be just below the point where the trailer wheels lock up, yet there is sufficient force to allow for maximum brake force.

5. Perform additional low speed stops (25 mph) utilizing the tow vehicles brake pedal to ensure smooth combination braking between the tow vehicle and the trailer.

Caution: Increasing the power output setting should NOT be utilized as an option to adjusting or repairing trailer brakes.

NOTE: In certain situations trailer brakes may not be capable of locking up. This situation can be associated with brake wear, overall trailer weight, trailer length and/or wire gauge. If the trailer brakes will not lock up during the setup procedures, it is recommended that all components of the braking system are checked to ensure safe towing.

Caution: On some vehicles, manual operation of trailer brakes will not override the tow vehicle's cruise control operation.

TESTING

1. Rotate the Output Setting Knob clockwise toward the rear of the unit.

2. Move the Manual Activation Lever to the left. The unit's LED display should indicate **OC**.

3. Lay control flat on bench, then, press and hold Calibration Button until "CL" appears.

Note: It is normal for the Odyssey™ to flash **OC** for a few moments after the circuit is disconnected.

Trailer brake circuit may be lost or intermittent. Check the trailer connector for a secure dry connection.

Note: It is normal for the Odyssey™ to flash **OC** for a few moments after the circuit is disconnected.

BENCH TESTING

The Odyssey™ can be bench tested should correct operation be suspect. Remove the unit from the tow vehicle and wire to a 12 volt automotive battery and #1156 automotive bulb as illustrated in figure 8.

Wiring

- Attach the unit's Blue wire to one side of a standard #1156 12 volt automotive bulb by using a socket or by soldering the wire to the bulb.
- Attach a length of 16 ga. or larger wire to the other side of the #1156 bulb.
- Attach the White wire to the Negative (-) battery terminal.
- Attach the Black wire to the Positive (+) battery terminal.

Note: Do not attach the unit's Red wire or the bulb to the battery at this time.

Caution: Do NOT touch the brake control's RED wire to Ground (-) as this will destroy the unit.

Testing

- Rotate the Output Setting Knob clockwise toward the rear of the unit.
- Move the Manual Activation Lever to the left. The unit's LED display should indicate **OC**.
- Lay control flat on bench, then, press and hold Calibration Button until "CL" appears.

Caution: Do NOT touch the brake control's RED wire to Ground (-) as this will destroy the unit.

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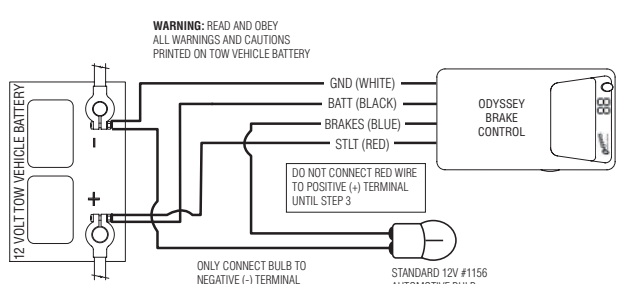
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4. Connect the bulb to the Negative (-) battery terminal as illustrated in fig. 8. Move the Manual Activation Lever to the left. The LED display should increase from approximately 05 to 99.

5. Release the Manual Activation Lever. The LED display should now display only decimal points.

6. Repeatedly Press the Load Range Selector. The LED display should read L1 through L4. Adjust the load setting to L4.

7. With the unit positioned horizontally, attach the Red wire to the Positive (+) battery terminal. The unit's LED display will indicate an output reading. The reading may fluctuate for approximately 5 seconds.

8. Tilt the front of the unit up to an approximately 45° angle. The LED display should increase to 99 and the bulb should glow brightly.

9. Retaining the unit at a 45° angle, slowly rotate the Output Adjustment Knob counterclockwise toward the front. The LED display should smoothly decrease from 99 to approximately 05. Note: The light bulb intensity will not decrease until the Manual Activation Lever is cycled.

10. If the Odyssey™ brake control does not function as described in the steps above, return the unit to an authorized distributor for service or replacement.

SERVICE & SUPPORT

• For questions regarding installation and usage, call (800) 423-6726.

Valley INDUSTRIES



INSTALLATION INSTRUCTIONS

For Installation in Vehicles with a Factory Tow Package, a Valley Brake Control Wiring Harness is recommended

- Tools Required:**
- Drill with 1/8" Bit
 - 1/4" Nut Driver
 - Phillips Screwdriver
 - Wiring Connector
 - Crimping Tool
 - Wire Cuts/Stripper
 - End Wrenches
 - Probe Style Test Light
- Additional Material Required for Vehicles Without a Factory Tow Pkg:**
- 30520 Valley Brake Control Wiring Adapter
 - 37194 Valley Brake Control Wiring Kit
 - or
 - 30' 12 Ga. (or Heavier) Wire
 - 30 Amp 12v Auto-Reset Circuit Breaker
 - 10/12 Ga. #10 Ring Terminal
 - 10/12 Ga. 3/8" Ring Terminal
 - 10/12 Ga. Butt Connectors
 - 14/16 Ga. Wire Tap
 - 4" Cable Ties