WESTIN™
TOWING PRODUCTS

#65-75813

W8 PROPORTIONAL ELECTRONIC TRAILER BRAKE CONTROL

FOR 2, 4, 6 & 8 BRAKE SYSTEMS

INSTALLATION AND USER GUIDE:

READ AND FOLLOW GUIDE CAREFULLY.

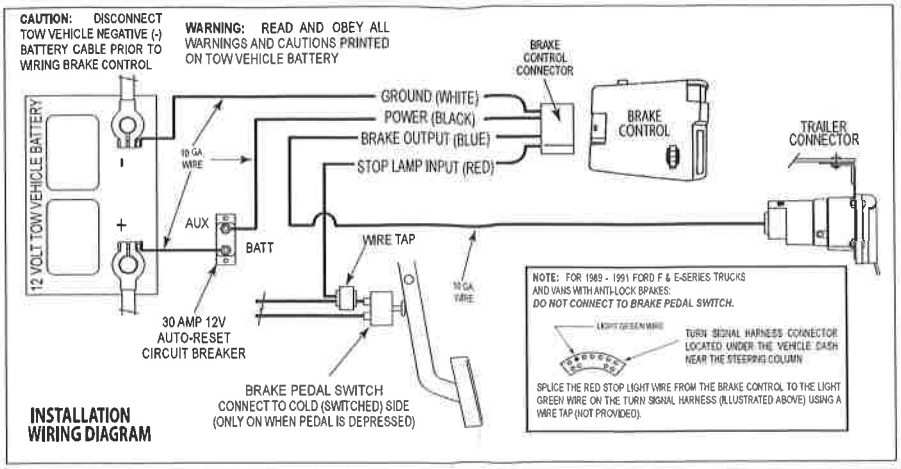
KEEP INSTRUCTIONS WITH YOUR UNIT FOR FUTURE REFERENCES

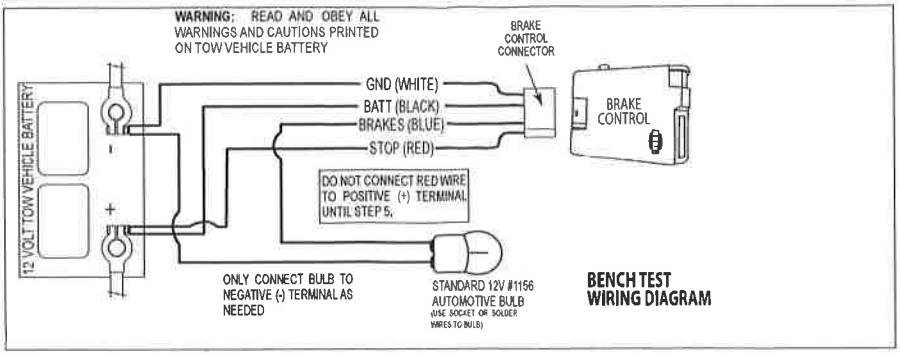
KIT INCLUDES:
(1) BRAKE CONTROL UNIT
(1) UNIVERSAL BRAKE CONTROL HARNESS
(2) INSTALLATION SCREWS (1) BRACKET

ACCESSORIES REQUIRED FOR VEHICLE WITH 7-WAY TOW PACKAGE:
VEHICLE SPECIFIC BRAKE CONTROL HARNESS

ACCESSORIES REQUIRED FOR VEHICLE WITHOUT 7-WAY TOW PACKAGE:
30 AMP AUTO-RESET CIRCUIT BREAKER
CABLE TIES
10 GAUGE WIRE OR OEM HARNESS
10 GAUGE RING/BUTT CONNECTORS

TOOLS REQUIRED:
SCREW DRIVER — ELECTRIC CIRCUIT TESTER
WIRE CRIMP TOOL — WIRE CUTTER
ASSORTED END WRENCHES — DRILL W/ 1/8" BIT





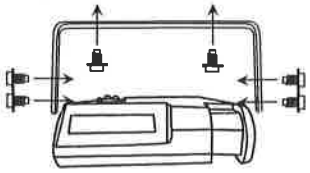
ELECTRIC TRAILER BRAKE CONTROL

INSTALLATION INSTRUCTIONS

Read instructions thoroughly before beginning

MOUNTING

1. Mount the brake control unit under the dash on to something firm. Check before drilling into the dash for wire or modules.
2. Mark the location by using the mounting bracket as a template.
3. Using a 1/8" bit, drill holes in the marked locations.
4. With a screwdriver or a 1/4" nut driver, secure the bracket in place using (2) self tapping screws (provided). Be careful not to strip the holes by over-tightening.
5. Mount the brake control unit in the bracket using the other (2) self-tapping screws as shown in the illustration below.



WIRING

NOTE: TO AVOID THE HASSLE OF HARDWIRING THE BRAKE CONTROLLER. BRAKE CONTROL HARNESSES ARE AVAILABLE FOR ALL BRAKE CONTROLLERS MAKING INSTALLATION A SNAP. HARNESSES ARE AVAILABLE THROUGH ALL DEALER RESOURCES. ASK SPECIFICALLY FOR THE HARNESS TO MATCH YOUR VEHICLE.

WARNING: **Do not connect the black "Battery" wire to the fuse panel ot tie into accessory wirlng. Connecting to existing wiring may damage vehicle wiring and cause trailer brake failures.**

FOR TOW VEHICLES EQUIPPED WITH FACTORY TRAILER TOWING PACKAGES: Wire per tow vehicle manufacturer's instructions.

NOTE: Make sure that the tow vehicle's Brake Control Battery Feed circuit is capable of carrying enough current to supply trailer brake requirements (check tow vehicle manufacturer's instructions and trailer brake manufacturer's information). If the circuit does not meet the trailer's requirements, wire directly to the battery per steps 1 through 9.

Minimum wire gauges are as follows:
1 - 2 Axle Trailer: 12 Gauge Wire Minimum
3 - 4 Axle Trailer: 10 Gauge Wire Minimum

1. Disconnect the tow vehicle's negative (-) battery cable.
2. Mount a 30 Amp automotive circuit breaker as close to the positive (+) battery terminal as possible. Using 10 Ga. stranded wire, connect a circuit between the (+) positive terminal and the "BATT" side of the circuit breaker using 10 Ga. Ring Terminals
NOTE: When passing wire through sheet metal, add a grommet (if possible always use an existing grommet) or use silicone rubber to insulate the wire from the hole.
3. Feed three 10 Ga. stranded wires (Black, Blue & White) from the Brake Control location to tow vehicle's battery area.
4. Connect the Black wire to the "AUX" side of the circuit breaker with a 10 Ga. ring terminal.
5. Connect the White wire to the (-) negative batter post with a 10 Ga. ring terminal.
6. Run the Blue wire back to the trailer connector. Connect the Blue wire to the "Brake" terminal of the trailer connector.
IMPORTANT: ***Recheck*** your connections for all functions. A brake control that is not properly grounded may operate Internittently or not at all.
7. For tow vehicles other than 189-91 Ford E and F series trucks and vans:
Determine whichside of the stoplight switch is the cold side. To determine the cold side, probe ther terminals of the switch with a test light until one is found that is only ON when the brake pedal is depressed.
Using a wire tap (not supplied), splice the brake control's red "STOPLIGHT" wire to the side of the stoplight switch as determined above.
For 1989-91 Ford E and F series trucks and vans with anti-lock brakes:
Find the crescent shaped connector located on the steering coloumn (turn signal harness). The connectorhas two rows of wires, one row that has four wires (inside row) the other has seven. The wire needed is the light green wire second from the row of seven wires (see wiring diagram above). Using the wire tap (not supplied), splice the brake control's red "STOPLIGHT" wire to the light green wire.
8. Before connecting the remaining wires consult the bench test instructions. If you wish to test your unit do so before you connect the remaining wires. After the test is completed, connect the remaining wires by matching the colors and by using 10 Ga. butt connectors. Example: connect the White 10 Ga. wire, ran to the battery to the White wire on the brake control harness.
Note: Some of the Wires are a smaller gauge than the 10 GA. butt connectors for a good connection strip extra wire and fold the wire onto itself to ensure a solid crimp.
9. Secure all loose wires with cable ties so that they will not be damaged and reconnect battery. See vehicle's owners manual for special re-connection instructions.

BENCH TEST INSTRUCTIONS

1. Wire as shown above
Lay the unit flat before powering up. Set the Output Control to maximum (+) [turn the thumb wheel completely clockwise] and set the Load Level Control (Sync) to the minimum (-) [slide the side switch toward the back of the unit].
Note: Make sure that the RED wire is not shorted to the "-" battery terminal or the white "Battery" wire as this will destroy the unit.
2. Connect the light bulb to the Negative (-) battery terminal and the Blue wire as illustrated above.
3. Move the Manual Activation Lever to the left. The LCD display should increase from approximately **05** to **99** and the light bulb illumination should increase in intensity in conjuction with the LCD reading.
4. Release the Manual Activation Lever. The LCD should now be blank and the light bulb should go out.
5. Attach the Red wire to the positive (+) battery terminal. and slowly tilt the unit up by about 45 degree. The LCD display should slowly increase from **05** to between **40 - 50**. The light bulb illumination should increase in intensity in conjuction with the LCD reading.
6. Slowly rotate the Output Control counter-clockwise. The LCD display should smoothly decrease to **05**. The light bulb intensity should decrease in conjuction with the LCD display.
7. Rotate the Output Control to maximum (+) and adjust the Load Level Control to the forward position. the LCD display should increase to **99**.
8. Defective Unit
If the Brake Control Unit does not functionas described, return it for service or replacement.

LCD DISPLAY

Once the wiring is complete, the LCD display will communicate the brake control activity:

1. Power Conservation Mode - The trailer is connected but there is no brake activity. The W8 will activate when the Tow Vehicle's brake pedal is pushed or the manual activation control is pushed. <Blank>

2. Manual Control Lever or Vehicle Brakes are Applied but No Trailer Connected - W8 is recieving power and is active. NO TRL

LCD DISPLAY - continued

3. Manual Control Lever or Vehicle Brakes Applied - Trailer is connected (output value is based on Output (Gain) setting, Load Level (Sync) setting and the position of the manual control, if applied).

05 to 99XXXX

4. Load Level (Sync) Adjustment - Load Level Control is being adjusted.

1 SYNC to 9 SYNC

5. Output (Gain) Adjustment - Output Control thumbwheel is rotated to display the desire output setting, adjustable in 1 increments.

05 POW to 99 POW

6. Auto Calibrate Mode - Trailer got connected electrically and now is undergoing calibration

CAL

7. Trailer Disconnection - Trailer brake circuit may be lost or inetrmittent. Check Trailer connector for a secure dry connection.
NOTE: It is normal for W8 Brake Control to flash DISCON after the trailer is intentionally disconnected.

DISCON <Blinking>

8. Short Circuit Situation - The trailer brake circuit may be shorted to ground (Blue Wire). Check for improper wiring. The unit will reset itself once the situation is corrected.

OVLOAD <Blinking>

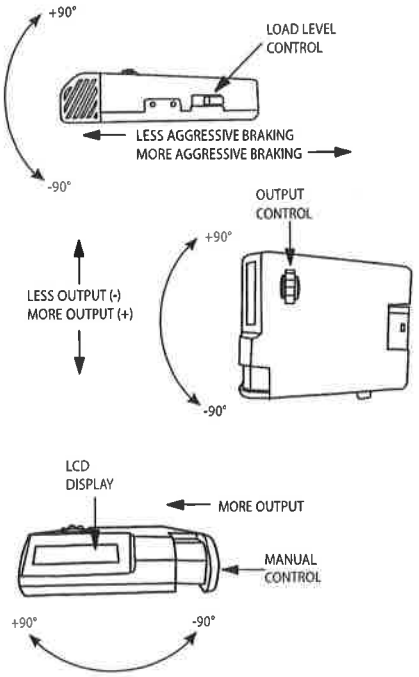
CONTROLS & SETUP

To Adjust the Output Control to maximum (+), turn the thumb wheel completely clockwise. To adjust the Output Control to minimum (-), turn the thumb wheel completely counter-clockwise.
To adjust the Load Level Control to minimum (-), slide the Side switch toward the back of the unit. To adjust the Sync control to maximum (+), slide the Ramp Time Setting toward the front of the unit.
1. Prior to towing, the Output Power must be adjusted for the individual trailer being towed, connect the trailer in a flat level ground. The unit will immediately go into Calibration Mode.
2. Adjust the Output Control t the midway position an adjust the Sync Control to the rear of the controller.
3. In an open and controlled area, release the brake pedal and drive forward on a dry level surface at approximately 20 MPH. Ensure that ample distance is available for safe braking and slowly apply the brake control's Manual Control until the trailer brakes fully engage and stop the trailer.
If Trailer Brakes Lock Up:
Reduce the Output Control until desired braking is achieved.
If Trailer Brakes was Insufficient:
Increase the Output Control until desired braking is achieved.
4. After the desired braking is achieved. The brake control should just be below the point where the trailer wheels lock up, yet there is sufficient force to allow maximum brake force.
5. Once the Output power level has been established, adjust the Sync control by performing slow speed stops at 20 MPH utilizing the tow vehicle's brake pedal to ensure smooth combination braking between the tow vehicle and the trailer.
If Trailer Brakes are Lagging the Vehicle:
Move the Load Level Control forward (toward the front of the brake control) to increase the aggressiveness of the trailer brake appication.
If Trailer Brakes are Overly Aggressive:
Move the Load Level Control rearward (toward the back of the brake control) to decrease the aggressiveness of the trailer brake application.
6. Once the desired Load LEvel has been established, it may be necessary to re-adjust the Power Output Settings.
Caution: Increasing the power output setting or ramp time setting should NOT be utilized as an option to adjusting or repairing trailer brakes.
NOTE: If any problems occur during Setup refer to the Trouble-shooting Section of these instructions.

MANUAL CONTROL

The Manual Control is located on the front of the Brake Control Unit at the right side.
The Manual Control only applies trailer brakes and is used during initial setup and in situations to reduce speed slowly.
When the Manual Control is pushed to the left, the control begins to apply trailer brakes. The further to the left it is pushed, the harder the brakes are applied until the maximum-set by the Output Control is reached.
The Manual Control activates the tow vehicle and trailer stoplights.

CONTROLS AND MOUNTING ORIENTATION



USAGE TIPS

Light pressure on the brake pedal will activate the trailer's brakes with no effect on the tow vehicle's brakes. This is useful for gradual slowing on steep grades and before stops.
Periodic adjustment of the Sync and Outptu Controls may be necessary to correct for the changing road conditions, trailer loading, brake wear, and /or driver preference.
On some vehicles, operating the Brake Control's Manual control will not disengage "Cruise Control".
When Towing (in most applications) with Hazard Flashers ON, the led display will flash with the Hazard Flashers. If the Brake Controlis set aggressively, pulsing may be felt in the trailer brakes.
Installation of a Pulse Preventer will isolate the brake control from the flashers and eliminate the flash/pulse situation.

TROUBLESHOOTING GUIDE WITHOUT TRAILER CONNECTED

CONDITION	DISPLAY READS	POSSIBLE CAUSE	POTENTIAL SOLUTION
Display does not light up when brake pedal or manual control is applied.	<Blank>	No Power to Control, No Ground Connection, Reversed Black and White Wire, Bad Circuit Breaker.	Check and repair connections. See "Wiring" section of this manual.
Display does not light up when brake pedal is applied, but does light up when manual override is applied.	<Blank> Brake Pedal Pressed; NO TRL Manual Control Pressed	No connection or incorrect connection at Stop Lamp switch on Brake Pedal. Or blown out fuse in the stop lamp circuit.	Check and repair connections. See "Wiring" section of this manual. Check vehicle Stop Lamp Circuit
Display lights up immediately after applying battery power only and does not go out.	NO TRL	Red wire from Brake Control connected to the wrong side of the stoplight switch or to wrong switch (Cruise Control).	Check and repair connections. See "Wiring" section of this manual.
Display shows power output when brake pedal or manual control is applied.	99 POW Variable Value	Brake Control Blue Wire miswired.	
Display shows OVLOAD when brake pedal or manual control is applied.	OVLOAD Blinking	Short in Brake Output (Blue Wire) Circuit.	Locate and correct short.

TROUBLESHOOTING GUIDE WITH TRAILER CONNECTED

CONDITION	DISPLAY READS	POSSIBLE CAUSE	POTENTIAL SOLUTION
Display does not light up when brake pedal or manual control is applied	<Blank>	No Power to Control, No Ground Connection, Reversed Black and White Wire, Bad Circuit Breaker.	Check and repair connections. See "Wiring" section of this manual.
Display does not light up when brake pedal is applied, but does light up when manual override is applied.	<Blank> Brake Pedal Pressed; 99 POW Manual Control Pressed	No connection or incorrect connection at Stop Lamp switch on Brake Pedal. Or blown out fuse in the stop lamp circuit.	Check and repair connections. See "Wiring" section of this manual. Check vehicle Stop Lamp Circuit
Display lights up immediately after applying battery power only and does not go out.	99 POW Variable Value	Red wire from Brake Control connected to the wrong side of the stoplight switch or to wrong switch (Cruise Control).	Check and repair connections. See "Wiring" section of this manual.
Weak or no trailer brake output when brake pedal or manual control is applied.	NO TRL	No connection between brake control and trailer brakes (Blue wire miswired). Miswired Trailer Connector.	Confirm connection to trailer connector. Confirm connector terminal position. Check trailer brake wiring.
	OVLOAD Blinking	Short or Overload on trailer brakes	Troubleshoot trailer brake wiring circuit per brake manufacturer's instruction.
Trailer Brake always On.	<Blank>	Miswired Trailer Connector.	Inspect and correct trailer connector positions.