

TROUBLE SHOOTING GUIDE

PROBLEM	LIGHT	POSSIBLE CAUSES	SOLUTION
TRAILER BRAKING IS DELAYED	ON	INCORRECT SYNC ADJUSTMENT	ADJUST TO MORE AGGRESSIVE POSITION
TRAILER BRAKES COME ON TOO FAST	ON	INCORRECT SYNC ADJUSTMENT	ADJUST TO LESS AGGRESSIVE POSITION
TRAILER BRAKES ARE WEAK	ON	INCORRECT OUTPUT ADJUSTMENT	ADJUST FOR MORE OUTPUT
TRAILER BRAKES COME ON TOO HARD	ON	INCORRECT OUTPUT ADJUSTMENT	ADJUST FOR LESS OUTPUT
NO TRAILER BRAKES - PEDAL OR MANUAL OPERATION	OFF	NO POWER TO UNIT THRU BLACK "BATTERY +" WIRE OUTPUT ADJUSTED TOO LOW	CHECK CONNECTIONS AT: BATTERY, CIRCUIT BREAKER, BRAKE CONTROL RE-ADJUST (SEE SET UP)
NO TRAILER BRAKES - PEDAL OR MANUAL OPERATION	ON (BRIGHT)	NO CONNECTION TO TRAILER BRAKES THRU BLUE "BRAKE" WIRE TRAILER OR TRAILER BRAKES NOT GROUNDED	CHECK TRAILER CONNECTOR CONTACTS CHECK WIRE CONNECTIONS (SEE WIRING) CHECK TRAILER AND BRAKE GROUNDS
NO TRAILER BRAKES USING BRAKE PEDAL MANUAL OPERATION WORKS	OFF (PEDAL) ON (MANUAL)	NO CONNECTION AT STOPLIGHT SWITCH THRU RED "STOPLIGHT" WIRE	CHECK STOPLIGHT CONNECTION (SEE WIRING STEP 8)
TRAILER BRAKES LOCKED ON WHEN CONNECTED TO CONTROL	ON	RED "STOPLIGHT" WIRE CONNECTED TO WRONG SIDE OF STOPLIGHT SWITCH OR TO BATTERY + BREAK-AWAY SWITCH ACTIVATED	CHECK CONNECTION (SEE WIRING STEP 8) CHECK SWITCH AND CORRECT
TRAILER BRAKES SEEM TO BE WORKING	DIM OR FLICKERS	FAULTY WHITE "GROUND" WIRE CONNECTION	CHECK CONNECTIONS
WEAK OR INCONSTANT TRAILER BRAKES	DIM OR FLICKERS	SHORT IN BLUE "BRAKE" WIRE CIRCUIT SHORT IN TRAILER BRAKE CIRCUIT	LOCATE SHORT & CORRECT LOCATE SHORT & REPAIR
BRAKE CONTROL OVERHEATS, SMELLS HOT, LOW OR NO BRAKE OUTPUT	DIM	BLACK "BATTERY +" WIRE & WHITE "GROUND" WIRE CONNECTIONS REVERSED	BRAKE CONTROL UNIT DESTROYED CORRECT WIRING & REPLACE UNIT

Note: A standard voltmeter will not show true output voltage.

Periodic adjustment of the Sync and Output controls may be necessary to correct for 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."

TOWING PRODUCTS

INSTRUCTIONS FOR THE INSTALLATION AND OPERATION OF

ELECTRONIC TRAILER BRAKE CONTROL FOR 2 AND 4 BRAKE SYSTEMS

IMPORTANT: READ AND FOLLOW THESE INSTRUCTIONS CAREFULLY. KEEP THESE INSTRUCTIONS IN YOUR TOW VEHICLE FOR FUTURE REFERENCE.

THIS PACKAGE INCLUDES:

- (1) Brake Control Unit
- (1) Mounting Bracket
- (4) Mounting Screws
- (1) Wire Tap Connector
- (1) Warranty Card



TOOLS REQUIRED:

- Assorted end wrenches
- Drill with 3mm bit
- Wire connector crimp tool
- Probe type circuit tester
- Wire cutter/stripper
- Screwdriver

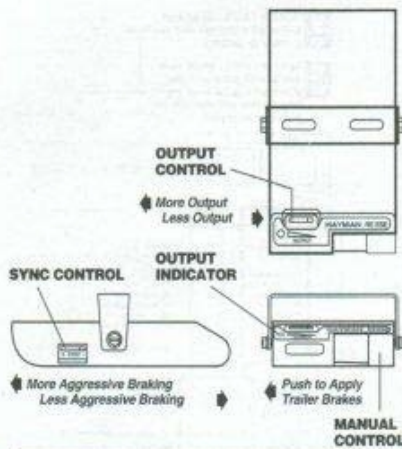
MATERIAL REQUIRED:

- 4mm, or larger wire
- 20 Amp auto-reset circuit breaker or 20 Amp Ceramic Fuse
- Assorted ring terminals
- & bolt connectors
- 100mm. cable ties (6-10)



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CONTROLS

OUTPUT CONTROL

The output control is located on the front of the brake control unit at the top left side.

The output control establishes the maximum amount of power available to the trailer brakes.

As the setting is moved to the left more power will be available to the brakes when the brake pedal is pressed or the manual control is used.

The output control would be adjusted when trailer load changes, when different trailers are used or to adjust for a change in road conditions.

SYNC CONTROL

The sync control is located on the left side of the brake control unit, forward of the mounting bracket. The sync control adjusts brake aggressiveness or the time it takes to reach the full output set by the output control when the brake pedal is pressed.

The sync adjustment has no effect on the manual control.

The brakes become more aggressive as the switch is moved toward the front of the tow vehicle.

The sync control would be adjusted for individual driver preference or changing road conditions.

MANUAL CONTROL

The manual control is located on the front of the brake control unit at the right side.

The manual control only applies the trailer brakes and would be used in situations when it is desirable to reduce speed slowly.

When the manual control is pushed to the left the control begins to apply the 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 and the output indicator on the control unit.

OUTPUT INDICATOR

The red indicator light on the front of the control unit will glow when brakes are applied either by the brake pedal or the manual control (with or without a trailer attached). The indicator will start dim and glow brighter as output increases.

The indicator light will also help confirm proper installation.

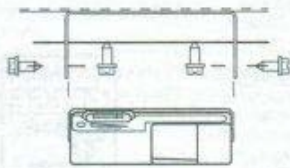
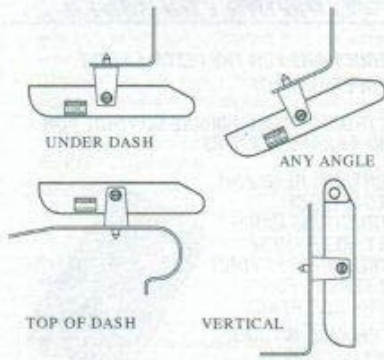
SET UP

1. With a trailer connected, set the sync control in the lowest position (all the way right) and the output control in the highest position (all the way left). Starting with the sync control in the lowest position (all the way right) adjust the sync control forward slowly and stop. If no trailer braking adjust the output control slightly to the left. If this process until firm trailer brakes are felt, trailer brakes lock-up or jerk adjust the sync control back to the right slightly.
 2. Move the sync control back (toward the driver) about 3mm of the distance between + and -.
 3. Test drive making several stops. Adjust the sync control until stops are smooth and firm. If adjustment of the output control may all desirable.
- Setting the brake control too aggressive could cause brake pulsing when towed with hazard flashers on. If such settings are necessary, a pulse preventor can be used.**
4. Have someone watch the stoplights while the manual control is activated to make sure the stoplights on both the tow vehicle and trailer are working.

Note: If any problems occur during set up refer to the Trouble shooting section of these instructions.

USAGE TIPS

Light pressure on the brake pedal will activate trailer's brakes with little or no effect on the tow vehicle's brakes. This is useful for gradual slow steep downhill grades or before stops.



IMPORTANT!
Make sure area behind panel
is clear before drilling!

Use bracket as template to mark hole locations.

Drill two 3mm diameter holes and mount bracket
with screws provided.

Mount brake control to bracket using the remaining
two screws.

MOUNTING

- Determine a suitable mounting location.
 - The unit must be mounted securely to a solid surface.
 - The unit must be easily reached by the driver.
 - The area behind the mounting location must be clear so nothing will be damaged when drilling.
- Hold the mounting bracket in the position selected and mark hole locations through the slots in the bracket.
- Using a 3mm dia. bit, drill holes in the marked locations.
- With a screwdriver or a 6mm nut driver, secure the bracket in place using (2) self tapping screws (provided). Be careful not to strip the holes by over-tightening.
- Mount the brake control unit in the bracket using the other (2) self tapping screws as shown in the illustration.

WIRING

WARNING: Do not connect the black "BATTERY" wire to the fuse panel or tie into accessory wiring. Connecting to existing wiring may damage vehicle wiring and cause trailer brake failure.

Do not reverse black "BATTERY" wire and white "GROUND" wire connections. Even a momentary misconnection can damage the brake control unit.

FOR TOW VEHICLES EQUIPPED WITH FACTORY TRAILER TOWING PACKAGES eg. XF Falcon Vehicles:

Wire per tow vehicle manufacturer's instructions.

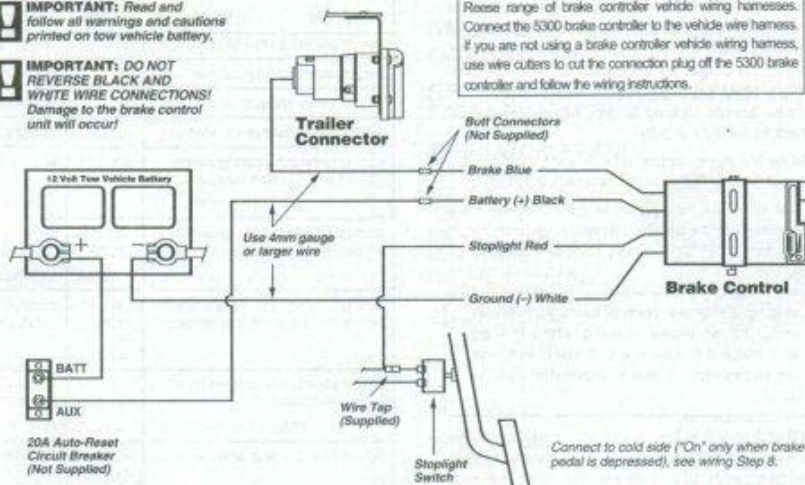
FOR TOW VEHICLES WITHOUT FACTORY TRAILER TOWING PACKAGES:

- Disconnect the tow vehicle's negative (-) battery cable.
- Mount a 20 Amp auto-reset circuit breaker or 20 Amp Ceramic Fuse as close to the positive (+) battery terminal as possible. Using 4mm or larger stranded wire

This Electronic Brake Control is for Use on 12-Volt Negative Ground Systems Only

IMPORTANT: Read and follow all warnings and cautions printed on tow vehicle battery.

IMPORTANT: DO NOT REVERSE BLACK AND WHITE WIRE CONNECTIONS!
Damage to the brake control unit will occur!



and crimp type ring terminals connect the "BATT" side of the circuit breaker to the positive battery terminal.

- Feed two, different colored, 4mm or larger stranded wires from the brake control location to the tow vehicle battery area.
- Connect one of the wires (noting the color) to the "AUX" side of the circuit breaker with a ring terminal.
- Connect the other wire to the negative battery cable with a ring terminal.

- Attach the control's black "BATTERY +" wire to the wire connected to the "AUX" terminal of the circuit breaker using a butt connector. Make sure that the connection is made to the correct wire (color).
- Connect the control's white "GROUND -" wire to the wire leading to the negative side of the battery with another butt connector.

WARNING: A brake control that is not properly grounded may operate intermittently or not at all. Make sure all connections are solid.

Determine which side of the stoplight switch is the cold side. To determine the cold side probe the terminals of the switch with a test light until one is found that is only on when the brake pedal is depressed.

Using the wire tap provided, splice the brake control's red "STOPLIGHT" wire to the wire attached to the cold side of the stoplight switch as determined above.

Secure all loose wires with cable ties so that they will not be damaged and reconnect battery. See vehicle's owners manual for special reconnection instructions.

BENCH TEST INSTRUCTIONS

Wire as shown at right. Set Output control to maximum and the Sync control to minimum.

Test brake pedal activation:

While watching the test bulb, hold the red wire on the positive (+) battery terminal.

The bulb should start dim and slowly get brighter.

The red output indicator on the brake control should glow brightly.

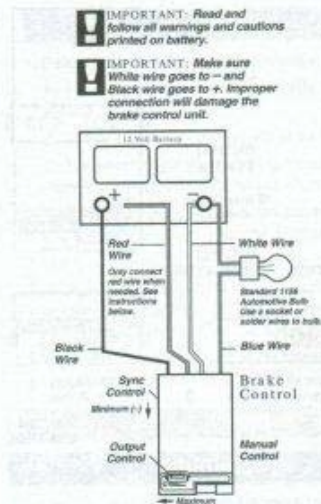
Disconnect the red wire.

Adjust the Sync control to maximum (+).

While watching the test bulb, hold the red wire on the positive (+) battery terminal.

The bulb should light brightly with no delay.

With the red wire still on the battery terminal, slide the output control back and forth. The test bulb should change from bright to dim with the movement of the output control. Disconnect the red wire.



3. Test manual activation:

Set the output control to maximum.

While watching the test bulb, slowly activate the manual control.

The test bulb should start dim and get brighter as the manual control is pushed.

While holding the manual control all the way on, slide the output control back and forth.

The test bulb should change from bright to dim with the movement of the output control.

4. If the brake control does not function as described above, return it for service or replacement.