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Installation Instructions for Crossover Delay Models CO-1 & CO-2

NOTE: Model CO-1 units are for use in 12 volt systems only; Model CO-2 units are 12 and 16 volt compatible.

INSTALLATION

- 1) Mount Crossover Delay unit away from heat, vibration and ignition wires. Fasten it with (4) #6 sheet metal screws. It can be mounted in any position, even upside down for overhead locations.
- 2) Wire the unit as shown in the wiring diagram. Use at least 14 gauge wire or larger. Make sure you have a good ground connection. (Grounding to the aluminum interior sheet metal is not reliable.) The "safety switch" is supplied by Dedenbear. The CO-2 has been specifically designed to operate at voltage up to 18 volts. You can now wire your unit directly to the 16 volt terminal if you are using a 16 volt battery.
Run a separate 12 gauge wire from the master "cut-off" switch at the back of the car directly to the CO-2 for power. Be sure to install a 15-amp fuse or circuit breaker to protect the CO-2 should your transbrake solenoid short out.
- 3) The line-lock switch / terminal allows you to lock the front wheel brakes without back-feeding and locking the transbrake during burn-outs.
**If you don't want to connect the line-lock to your delay box, simply don't wire the "line-lock" terminal.
- 4) As a safety device, the Crossover Delay unit has a circuit that cuts off power to the unit once the transbrake has been released. FOR ADDED SAFETY, THE SAFETY (Bypass) SWITCH SHOULD BE SET ON "NO DELAY" ANYTIME THAT THE CAR IS NOT ON THE RACETRACK. The safety switch completely bypasses the Crossover delay box so it can also be used as a backup switch in case you choose not to use the delay box.**
- 5) The safety switch also allows you to "bump" the car into the lights with the transbrake during staging. This means you won't have to wait for the delay to release each time you release the transbrake switch. This is also convenient for "Pro" brakes when you put the trans into reverse gear to back up.
**** NOTE: Safety switch only controls the "Transbrake" terminal. The "Line Lock" terminal will always delay whatever amount delay is programmed into the delay box. A special Double Pole toggle is available from Dedenbear to bypass the Line Lock. (p/n TSWDPRTD)**

OPERATION

IF YOU ARE THE FASTER CAR (leave off the opponent's tree)

- 1) Turn the "LAUNCH" switch to "THEIR TREE". Enter your dial-in E.T. into the push button switch labeled "YOUR E.T." (Example: 9.50 sec. car= 0950). Enter your opponents dial-in E.T. into the push button switch labeled "THEIR E.T." (Example: 11.50 sec. car = 1150). Enter the delay time that you need to prevent red lights into the push button switch labeled "DELAY". Note that the "DELAY" switch is in thousandths (0.001) of a second while the dial-in's are in hundredths (00.01) of a second.
- 2) Use your line lock switch to do your burnout.
- 3) If you have a long delay dialed in or there is a large difference between dial-ins and you stage by using the transbrake, then set the safety (bypass) switch to "No Delay" and "bump" the car into the lights. After you are staged, hold the transbrake switch down and then flip the safety (bypass) switch to "Delay". If you have a short delay and little difference in dial-ins then just leave the safety switch in the "Delay" position and "bump" in using the transbrake switch. If you stage with the foot brakes then leave the safety switch in the "Delay" position, stage the car with the foot brakes and then press the transbrake switch.
- 4) When your opponents top amber light comes on, release the transbrake switch. The crossover reaction time delay unit calculates the difference between the dial-ins and adds it to the delay amount dialed in. It will then hold for the calculated amount of time and release the transbrake. You do not have to make any calculations; the unit does it for you!
- 5) After your run, set the safety switch to "NO DELAY". ALWAYS SET THE SAFETY SWITCH TO "NO DELAY" WHENEVER THE CAR IS NOT ON THE TRACK READY TO MAKE ITS RUN.

IF YOU ARE THE SLOWER CAR (leave off your tree)

- 1) If the dial-ins of both cars are the same or if you are the slower car - set the "LAUNCH" switch to "YOUR TREE". The crossover unit will completely ignore the dial-in settings on the pushbutton switches. You do not have to set the dial-ins to zero!
- 2) Set the "Delay" pushbutton switches to the desired setting. (What-ever you need to leave off your top amber).
- 3) Use the line-lock switch to do your burn-out.
- 4) If you have a long delay dialed in and you stage by using the transbrake, then set the safety (bypass) switch to "No Delay" and "bump" the car into the lights. After you are staged, hold the transbrake switch and flip the safety (bypass) switch to "Delay". If you have a short delay just use the transbrake switch to stage the car.
- 5) When the Christmas Tree light that you are leaving off of turns on in your lane, release the transbrake switch. After the dialed in delay, the transbrake will release and launch the car. ALWAYS SET THE SAFETY SWITCH TO "NO DELAY" WHENEVER THE CAR IS NOT ON THE TRACK READY TO MAKE ITS RUN. REMEMBER if you are the slow car, you must leave on your tree and have the "LAUNCH" switch set to "YOUR TREE". If not your car will launch late or not at all.

TIPS ON SETTING THE DELAY

If you run on a full tree, the time between lights is .500 seconds. Therefore, a perfect light is 500 (500 thousandths. A pro tree is .400 seconds) For example: if you have a 472 light on a full tree, you need to set the time to 0028 (500-472=28 thousandths) if you leave off the last amber or 1028 if you leave off the top amber (1.028 seconds). We recommend adding .01 or .02 seconds as a cushion in case you stage deeper than normal. For a night race, add extra time because you see the lights turn on sooner than in the day. Remove .020-.040 delay when crossing over to compensate for the angle of the bulbs.

CO-1 and CO-2 • Basic Crossover Delay Box Installation

In this installation, the transbrake will be delayed only when the **SAFETY SWITCH** (Bypass Switch) is in the "Delay" mode. Please set the switch to "No Delay" (bypass) at all times except when you are on the track and staging. **THE SAFETY SWITCH PROVIDES ABSOLUTE 0.000 SECONDS DELAY!** It selects whether YOUR BUTTON or the DELAY BOX is supplying all the power to the Transbrake solenoid.

***WARNING:** The optional Line-Lock terminal will always have whatever delay is set on the delay box. Optional double pole toggle is available if you wish to bypass the line-lock delay also. The line lock terminal has the same delay as the transbrake terminal and is diode protected. It will help hold the car on the starting line if your transmission tends to "creep" when staging. If you do not need this, simply don't wire it.

Please install a fuse or circuit breaker (15amp) in the +12v wire to protect the delay box from expensive damage if your transbrake solenoid fails or ever shorts out. Wire the box with at least 14 gauge wire. **The +12v power wire should be at least 12 gauge, and should be run directly to the Master ON-OFF switch at the back of the car.** Do not pick up power at the firewall or switchpanels in the front of the car.

