SUPER CROSS-OVER CONTROLLER
Model SCC-1 • INSTALLATION & OPERATING MANUAL

PLEASE READ THESE INSTRUCTIONS COMPLETELY TO FULLY UNDERSTAND THE WIRING, PROGRAMMING, OPERATION, AND FUNCTIONS OF THIS BOX.

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- Mounting & Wiring of SCC-1 (Transbrake) (Dual Line Locks) .................. Pg. 2
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BACKLITE LCD DISPLAY
Backlite for nighttime use.
Shows time settings top line,
delay box mode, and run condition

SINGLE DIGIT ADVANCE
Advances a specific digit up by 1
each time it is pressed.

MOVE CURSOR
Moves the cursor to the next digit to the
right. Used with Single Digit Advance

SCROLL UP
Changes setting UP by 1 each time it
is pressed. Scrolls rapidly if held.

SCROLL DOWN
Changes setting DOWN by 1 for each
time it is pressed. Scrolls rapidly if held.

SUPER CROSSOVER CONTROLLER
THEIR E.T. YOUR E.T. DELAY
DEDENBEAR PROD.
MODEL SCC-1
DEDENBEAR Products, Inc.
1917 OAK PARK BLVD. PLEASANT HILL, CA 94523
(925)935-3025 (925)935-3025

TB TS SLC
Model SCC-1

U.S. patents 4,467,219 and 4,324,744

TRANSBRAKE ADJUST
Press to access & adjust any of
the Delay settings.

DELAY BOX MODE (type)
Selects which kind of box you want to use...
Std. Delay, Interface.
Crossover, Twice your tree

THROTTLE STOP ADJUST
Press to access & adjust any of the
Throttle Stop settings.

RESET BUTTON
Cancels Transbrake Lockout,
Cancels Throttle Stop Timer,
Recalls "How Late" time

BACK LIT
PUSHBUTTONS
for easy setting in low
light/night racing
Basic wiring and Mounting of Super Cross-Over Controller box
1. Mount the Super Cross-Over Controller box in a location the driver can reach when strapped in, using 4) 8-32x3/8"L machine screws. Adjust the mounting brackets for best viewing angle.
2. Choose the appropriate wiring diagram for your application and wire exactly as shown. Use at least 14-gauge wire or larger. The Power wire should be 10-gauge and run all the way to the Master On-Off switch at the back of the car. Install an "in-line" 30-amp fuse or circuit breaker to protect the box from expensive damage in case any wires become short circuited.
3. For added safety and convenience, the "Bypass" or "Safety" switch must be installed as shown. This allows the racer to completely "Bypass" the Super Throttle Stop Controller's Delay box and activate the transbrake or line-lock solenoids directly off the button, without delay! This is also used to back up the car in reverse gear when using a "Pro" brake valve body.
(Note: If you do not wish to use the line lock to help hold the car when staging, simply don't wire it to the SCC-1)

Wiring for TRANSBRAKE (with optional Line Lock)

Dual Line Lock wiring for Super Cross-Over Controller box
1. In this situation, the car is equipped with 2) Line lock solenoids; 1) for the front axle, used for burnouts, and 1) for the rear axle to hold the car on the starting line. 2) Buttons are required, 1) used for doing the burnout only, and 1) activates the SCC-1 delay box and locks both the front and rear line lock solenoids to hold the car on the starting line.

Wiring for DUAL LINE LOCK applications
Throttle Stop wiring for Super Cross-Over Controller box

1. In this situation, the car is equipped with 2 throttle stops; 1) linkage type stop for starting line control (SLC) of engine rpm, and 1) baseplate type stop for ET control down track. Wire exactly as shown, use a 30amp fuse in the 10gauge power wire to the SLC. Use 12gauge for the baseplate stop power wire, but install a 8amp "slow-blow" circuit breaker (provided with baseplate stop) in this wire to protect the solenoid. Use 16 or 18gauge wire for the power wire to the linkage stop.

2. The baseplate stop will be wired to the TS terminal and controlled by the 4-stage timer built into the SCC-1. You must tell the SCC-1 you are using a BASE PLATE STYLE stop on the TS terminal. (see bottom of page 8) Use the STOP button to access the 4-stage controller and set each stage. (see page 7).

3. The linkage stop will be wired to the SLC terminal and controlled by the Starting Line Control feature built into the SCC-1. You must tell the SCC-1 on which bulb you want the linkage throttle stop to go Wide-Open-Throttle. You have the choice of TOP BULB or 2-STEP (bottom bulb). (see "SLC" description on page 8)

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Wiring for DOWN TRACK & STARTING LINE Throttle Stop applications

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Wiring for STARTING LINE and DOWN TRACK using a single Linkage Throttle Stop

1. In this situation, the car is equipped with a single "Linkage" type throttle stop. The driver wants to use it BOTH for starting line rev control and for down-track ET control. By simply using a jumper wire between the SLC terminal & TS terminal, the box will do both.

2. Wire exactly as shown. Use a short piece of wire or metal clip to jumper SLC & TS terminals. The Power wire should be 10-12 gauge and run all the way to the Master On-Off switch at the back of the car. Install an "in-line" 20-amp fuse or circuit breaker to protect the box from expensive damage should any wires become short circuited. Use 16-18gauge wire to the linkage stop.

3. Set the TS TYPE to LINKAGE STYLE (see bottom of page 8)

4. Set the SLC (Starting Line Control) for which bulb you want the throttle linkage to go Wide-Open-Throttle. You have the choice of TOP BULB or 2-STEP (bottom bulb). (see "SLC" on page 4)

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NOTE: If you don't want to use the SLC feature, simply don't wire anything to the SLC terminal.
**Description of FEATURES**

**"CROSS COMP"**

**CROSS-OVER COMPENSATION:** This patented convenience feature allows the delay box to automatically subtract a small amount of delay whenever you are "crossing over" on your opponent's top bulb. Due to the indirect angle of the bulbs on the other side of the tree, you end up seeing the bulb late. Normally you would have to subtract this from your top bulb delay time. The more the angle, the more the delay you would have to subtract. The average track will have 0.10 - 0.20 seconds. This is not required on the SCC1, because you can program the box to do it for you, automatically, every time you cross-over!

**SETUP MODE**

**CROSS COMP: .15**

**"TB PAUSE"**

**TRANSBRAKE PAUSE:** This patented safety feature allows you to program a small amount of delay or pause when you apply the brake (0.00 - 0.99). When you press the transbrake button, the delay box would normally start the delay instantly. This could be dangerous if you accidentally tap the button on the return road while the car was in motion! Now you can tell the box to wait a small amount of time when the button is pressed (usually 20 seconds) before the box applies the brake. This way accidental activation is virtually eliminated. **This does not affect the release of the brake or the reaction time**, only the activation or apply time between pressing the button and the brake turning on.

**SETUP MODE**

**TB PAUSE: .20**

**"TB LOCKOUT"**

**TRANSBRAKE LOCKOUT:** This automatic safety feature is available in all 4 delay box modes, and allows you to program the box to "Lock out" the delay box as the car goes down the track. This feature locks out the box's transbrake output for up to 19.99 seconds. After this, the box returns back to race mode. After the car launches, the display will read: "TB LOCKED OUT".

**PRO BRAKE transbrake valve body & dry-hops using the transbrake:** If you must use the transbrake again (for putting a "Pro" brake valvebody into reverse or dry-hops), you can cancel the lockout and return to the "run" mode by simply tapping the "RESET" button once.

**HOW LATE**

**THEIR TREE FIRST**

**BY: .018 SECONDS**

**"S L C"**

**STARTING LINE CONTROL:** This feature allows you to install a "Linkage" type throttle stop to control engine rpm on the starting line. You have the choice of having the throttle close when you press the transbrake button and open when the Cross-Over handicap is done (your TOP BULB), or open when the transbrake solenoid releases (2-STEP).

**SLC START LINE CONTROL: TOP BULB**

**SLC START LINE CONTROL: 2-STEP**

**"LAST CHANCE"**

**EXCLUSIVE!!**

"LAST CHANCE" FEATURE: In "INTERFACE" or "TWICE YOUR TREE", this feature gives the driver a chance to recover if he/she slipped off the button or released early. "Accidental Release Protection" (ARP), only works when the box is in "DELAY" or "CROSSOVER" where the box is looking for only 1 release of the button, but in "INTERFACE" or "TWICE YOUR TREE", the box is looking for 2 hits on the tree. If you released the button too early, and know you will have an early light (red), you can cancel out the delay times and release off the bottom bulb on your tree. By pressing the transbrake button down a third time, the box will cancel the first and second release of the button, and allow you to leave off your bottom bulb. You can even set some delay in the bottom bulb if needed (see BOTTOM BULB DELAY). If the button is released by the "Last Chance" feature, hit the button a third time, the display will read "LAST CHANCE ACTIVATED". By pressing the "RESET" button after the run, you can recall the "How Late" time and the display will show "LAST CHANCE ACTIVATED".

**"ARP" Accidental Release Protection**

"ACCIDENTAL RELEASE PROTECTION" (ARP) Dedenbear delay boxes have always featured ARP. If you accidentally slip off the transbrake button, you press the button back down (before the box releases) and the box will stop, reset, and wait for the proper release of the button. This feature is available in 2 of the delay box types in the SCC-1, Standard Delay and Cross-Over Delay modes. For Interface or Twice you tree modes, see "Last Chance".
### Changing DELAY BOX TYPES (Delay, Interface, Twice your tree, Crossover)

**Press and Hold:** MODE

**To Change Delay Box Type From:**
- DELAY, INTERFACE, TWICE YOUR TREE, CROSSOVER

The display will show your time settings, that you are in the "RUN" condition, and what delay box type or "MODE" you are using. This way the driver knows before the run that the box is ready. By pressing the MODE button, you can change the delay box type you wish to use. Below are the 4 different delay boxes that are built into the Super Crossover Controller box.

To view or change any of the settings for the type of delay box you are going to use, press the TBK button. (see page 5)

To view or change the Throttle Stop settings, press the STOP button. (see page 7)

### The 4 Different Delay Box Types (Modes)

#### 4 Digit Delay Box: In this mode, the box functions as a straight 4 digit delay box (0.000 - 1.999 secs.). This is for leaving off your side of the tree. Only Delay settings, TB LOCKOUT, and TB PAUSE settings are accessible in this mode.

<table>
<thead>
<tr>
<th>THEIR E.T.</th>
<th>YOUR E.T.</th>
<th>DELAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.00</td>
<td>9.00</td>
<td>1.020</td>
</tr>
<tr>
<td>RUN (INTERFACE)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Interface Delay Box: In this mode, the box functions as a Crossover box, a 4-digit box, plus an Interfacer. This allows you to "leave" off your opponent's top bulb and your own top bulb, and the Interfacer will launch off the quicker of the two reactions. This minimizes "late" lights. If your reaction time off your opponents light would be a .525 light, and off your own top bulb would be a .505 light, the box will launch off the quicker (earliest) of the two (.505). Since it will take the quicker of the two lights, this means it will take a red light over a good light. The whole idea of the delay box theory is to use enough delay to keep from red lighting. If you've used a delay box in the past, then you know that a bad reaction time is usually late, not red. You can also use the "Last Chance" feature and leave off your bottom bulb if you feel you missed one or both top bulbs. If the box detects a third (3rd) press of the button, it will cancel out both hits of both top bulbs and lets you leave off the bottom bulb on your tree. If you need any delay off the bottom bulb, you can program the "Bottom Bulb Delay" for that amount. For a starting point, subtract 1 second from your top bulb delay setting and use this for your bottom bulb delay. Example: 1.045 for your top, then 0.045 for your bottom.

- DELAY, THEIR ET, YOUR ET, BOTTOM DELAY, CROSSOVER COMPENSATION, TB LOCKOUT, and TB PAUSE are accessible in this mode.

#### Twice Your Tree: In this mode, the box functions as two delay boxes designed to "leave" off your own top bulb and bottom bulb. Use this mode if you are Full Tree (.500) racing and you are leaving first or you can't see your opponent's top bulb because of "blinders" on the tree. The box will launch your car on the faster of the two "hits". This feature is very similar to the INTERFACE box described above, and has all the same features including "Last Chance". DELAY BOTTOM BULB DELAY, TB LOCKOUT, TB PAUSE are accessible.

<table>
<thead>
<tr>
<th>THEIR E.T.</th>
<th>YOUR E.T.</th>
<th>DELAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUN .020</td>
<td>1.020</td>
<td></td>
</tr>
<tr>
<td>TWICE YOUR TREE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Cross Over Delay: In this mode, the box functions as a straight "Cross-Over" delay box. This allows you to "leave" off your opponent's top bulb. Only DELAY, THEIR ET, YOUR ET, CROSSOVER COMPENSATION, TB LOCKOUT, TB PAUSE are accessible in this mode.

<table>
<thead>
<tr>
<th>THEIR E.T.</th>
<th>YOUR E.T.</th>
<th>DELAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.00</td>
<td>9.00</td>
<td>1.020</td>
</tr>
<tr>
<td>RUN (CROSSOVER)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Tip:
Practice using your new delay box at home by "interfacing" it into your practice Christmas tree. Most practice Christmas tree manufacturers sell some type of tree to delay box interfacer. Dedenbear's own Practice Christmas Tree (Model PCT-1) uses part number: PCT-1IF available from most dealers.
Setting the Delay boxes

1. To set the delay box parameters or settings, first choose which "MODE" you will be using. Either DELAY, INTERFACE, TWICE YOUR TREE, or CROSSOVER.

2. Then press the "TBRK" button to access, display, and adjust all the special features and racer settings (E.T.'s, Cross Comp, Etc.) that will work for that particular "box".

3. When you get to a setting you wish to change, use the arrow keys to change the settings.

4. Repeat steps 2 and 3 until you have made all the changes you wish to make.

When you enter a setting it will be carried over into ALL the delay box "modes"; Example: Let's say you're in straight 4-digit delay box mode (RUN DELAY), when you set your delay for your top bulb in "DELAY: 1.020", it will automatically change all 4 boxes. Changes made to any setting remain in the computer's memory forever, until you change it, even if you disconnect the vehicle's battery!!

When you are finished making adjustments you can return to RUN mode 3 ways:

1) Leave box alone for 8 seconds, it'll automatically return to RUN mode.
2) Quickly press and release the transbrake button. If you do this quick enough (less than the TB "ON" PAUSE setting), the box will return to RUN mode and not set the brake.
3) Press and hold the transbrake button. This will return to RUN mode and lock the transbrake.

TYPICAL DELAY BOX SETTINGS

DELAY SETTING:
(400 SEC) PRO TREE.................. ABOUT 0.010 - 0.030
(.500 SEC) PRO TREE.................. ABOUT 0.110 - 0.130
(.500 SEC) FULL TREE - Top Bulb,..... ABOUT 0.950 - 1.090
(.500 SEC) FULL TREE - Bottom Bulb..... ABOUT 0.000 - 0.100
TB PAUSE setting.................. ABOUT 0.050 - 0.500
CROSS COMPENSATION time............. ABOUT 0.000 - 0.030
(depending on the angle of the Christmas Tree lights)
BOTTOM DELAY.................. ABOUT 0.000 - 0.090

(TIP: Your bottom bulb usually equals: top bulb delay minus 1.000 second. In some cases, if you use less than 1.000 second, you won't need any delay for the bottom bulb. Enter .000 for "Bot Delay")

Original Factory settings

When you first purchased the SCC-1, the E-PROM was programmed at the factory with these settings. When you make changes to the settings, they will stay in the E-PROM forever, until you change them again, even when disconnected from power!

| DELAY: 1.000 | THROTTLE TIMER: T1: 0.30 T3: 13.00 |
| THEIR ET: 10.00 | THROTTLE STOP TYPE: BASEPLATE |
| YOUR ET: 09.00 | (Programmed as a 2-stage timer) |
| BOT DELAY: .100 | SLC START LINE |
| CROSS COMP: 0.15 | CONTROL: TOP BULB |
| TB PAUSE: 0.10 |
| TB LOCKOUT: 03.00 |
SETTING THE 4 STAGE THROTTLE STOP TIMER

Each stage of the 4 stage Throttle Stop timer is the time (distance) from the starting line. All four stages begin when the transbrake solenoid releases. The example to the left shows a throttle stop that will close 1 second off the starting line (T1: 1.00), then open 2 seconds from the starting line (T2: 2.00), then close again 8 seconds from the starting line (T3: 08.00), then at 9 seconds from the starting line it'll open again (T4: 09.00). The duration the Throttle Stop is closed is the difference between Timer 1 & 2, and Timer 3 & 4.

TIP: T1 = closes, T2 = opens, T3 = closes, T4 = opens

REMEMBER: Each stage of the Throttle Stop Timer must be programmed for the time down the track from the starting line and all 4 timers must be in order! (T1 must be smaller than T2, T2 must be smaller than T3, and so on...)

If you make a mistake in the programming of the timers, (example: timer 1 is larger than timer 2) the display will read "TS SETTINGS WRONG" and the throttle stop will stay wide open so you can at least complete the pass.

- To display or set the 4 stage throttle stop timer:
  1. Press the STOP button.
     This will display all 4 timer settings as: T1 (timer #1), T2 (timer #2), T3 (timer #3), T4 (timer #4). Use this display to verify your settings. If you wish to change any of the timer settings go on to step 2 thru 5.

     (If you don't press any buttons, the box will return back to RUN mode after 8 seconds and will be ready to race automatically! This is so you don't miss the next race by having the box in "set up" mode! The box always returns back to RUN mode, ready to race, by itself, so you don't have to remember to do it yourself! The box will also return to the RUN mode immediately any time you press the transbrake button!)

     2 Press the STOP button again to display & adjust T1 (timer #1).
        Use the up, move cursor, or scroll up and scroll down buttons to change the timer settings.
        If you don't want or need to make any changes to the timer settings being displayed, simply press the STOP button to go on to the next timer setting.

     3 Press the STOP button again to display & adjust T2 (timer #2).
     4 Press the STOP button again to display & adjust T3 (timer #3).
     5 Press the STOP button again to display & adjust T4 (timer #4).

PRO-BRAKE VALVE BODIES: When you press your transbrake button to put your transmission in reverse, this will activate the throttle stop timer(s). PRESS RESET BUTTON TO STOP TIMER SEQUENCE AND RESET BACK TO "RUN" MODE.
Setting the 4 Stage throttle stop timer as a 2 STAGE TIMER

To set the 4 stage Throttle Stop Timer as a 2 STAGE THROTTLE STOP TIMER, use the instructions for setting a 4-stage timer, except set Timer #3 and Timer #4 past the finish line! Also, set both Timer #3 & 4 for the same time setting so that they will cancel each other. Example: on a 9.90 car, set Timer #3 & 4 at 11.00 seconds.

REMEMBER: TIMER #3 & TIMER #4 MUST MATCH TO CANCEL EACH OTHER.

Setting the Throttle Stop Timer for your TYPE OF THROTTLE STOP

PRESS: STOP
UNTIL DISPLAY SHOWS:
THEIR E.T. YOUR E.T. DELAY

THRTTL STOP TYPE
LINKAGE STYLE

PRESS AND HOLD: RSET
FOR ABOUT 1.5 SECONDS TO CHANGE

Since "Base Plate" or "Under the carb" stops use +12volt to keep wide open, and "Linkage" or "Cable" stops use +12volts to close, you must set the timer for which ever type you will be using on the "TS" terminal and controlling with the 4 stage timer. You will only need to set this once, for whichever type of stop you will be running. Once you set it, the box will never change, unless you change it.

- To change the Throttle Stop type:
  1. Press the STOP button until the display reads: "THRTTL STOP TYPE" on the top line, and the current setting on the bottom line; "LINKAGE STYLE" or "BASE PLATE STYLE".
  2. To change the THROTTLE STOP TYPE, press and hold the "RSET" button for about 1.5 seconds, until the display changes. Release button.

Setting the STARTING LINE CONTROL

PRESS: STOP
UNTIL DISPLAY SHOWS:
THEIR E.T. YOUR E.T. DELAY

SLC START LINE CONTROL: 2-STEP

PRESS AND HOLD: RSET
FOR ABOUT 1.5 SECONDS TO CHANGE

The SLC (Starting Line Control) option controls "Linkage" type throttle stops in the throttle linkage to limit engine rpm on the starting line. You have the option of having the throttle go wide open when your top bulb lights, or when the delay box releases the trans brake. This is so you don't have the engine revved up against the converter while you wait for long crossover handicaps. Once you set it, the box will never change, unless you change it.

- To change the SLC: Starting Line Control:
  1. Press the STOP button until the display reads: "SLC START LINE CONTROL", and the current setting, "TOP BULB" or "2-STEP".
  2. To change the SLC START LINE CONTROL, press and hold the "RSET" button for about 1.5 seconds, until the display changes. Release button.

LIMITED 1 YEAR WARRANTY

DEDENBEAR PRODUCTS components are warranted directly by Dedenbear Products against defective material or workmanship under normal use and service for a period of one (1) year after purchase. Dedenbear Products will repair or replace the defective unit, at Dedenbear Products option, free of charge. THIS WARRANTY DOES NOT COVER ANY DAMAGE TO THE COMPONENT CAUSED BY ABUSE, MISHANDLING, ALTERATION, ACCIDENT, ELECTRICAL CURRENT FLUCTUATIONS, FAILURE TO FOLLOW INSTALLATION/OPERATING INSTRUCTIONS, MAINTENANCE, STORAGE AND ENVIRONMENTAL CONDITIONS, OR REPAIR ATTEMPTS MADE BY ANYONE OTHER THAN Dedenbear PRODUCTS AUTHORIZED SERVICE FACILITY. DEDENBEAR PRODUCTS SHALL NOT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, OR OTHER TYPE DAMAGES RESULTING FROM THE USE OF ITS PRODUCTS, OTHER THAN THE LIABILITY STATED ABOVE. This warranty is in lieu of all other warranties of merchantability or fitness of use. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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