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ELITE 700

Instruction Manual

The
ELITE 700
From
DIGITAL DELAY

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Congratulations on your purchase of the Elite 700 the latest and most advanced delay box made. The Elite 700 incorporates many new features and includes Smart Select Technology. The new Multi Tap feature allows large amounts to be tapped down while the standard Tap feature now has the ability to Tap Up and Down on the same pass. The new Solenoid Saver keeps solenoids from being burnt-up by a locked on button. The new Sleep Mode saves battery charge by turning off all the outputs when the box is not being used.

Along with new features, several standard features have been expanded. The Driver's Reaction Tester has been upgraded and now features a full tree in Bracket Mode and a pro tree in Pro Mode. The Elite 700 also has four Control Panel screens, which along with Smart Select allow the configuration of the buttons and outputs quickly and easily. The Bracket and Pro Mode each have three separate outputs that can be programmed to control different devices. Additionally, the Relay Board is separate for ease of wiring the vehicle.

Upgrading from a Mega 350,450, or Elite 500

If you are upgrading from a Mega 350, 450 or an Elite 500 you will find the Elite 700 is similarly laid out. The Keypad is the same and the screens are laid out in the same 4 line fashion. For the most part the six blue function keys, BRKT, Setup, Next, Clear, Up Arrow and Down Arrow, work the same. Switching between Bracket and Pro is also done in the same fashion as the earlier units. Pressing the Setup key followed by the number 9 key sets the unit in Pro Mode. Pressing the Bracket key (BRKT) sets the unit in Bracket Mode.

While there are several new features in the Elite 700, the biggest change you will notice is the Control Panels. The Control Panels are needed because the functions of the 4 push-button inputs and 6 of the outputs are programmable. The Control Panels are an upgrade and replacement for the S.F.O. and Push-button numerical modes used by the earlier units. Remembering what the mode numbers meant is no longer necessary, as the Control Panels on the Elite 700 are in plain English. To view the Control Panels press the Setup key followed by the number 1 key.

The other large change is the external Relay Board. Exclusive to the Elite 700, the new external Relay Board has separate outputs for Pro and Bracket Modes. This first in Delay Boxes, allows the outputs to control different devices in Bracket and Pro modes without having to change the wiring on the vehicle.

Even if you feel very comfortable with how the earlier boxes work, it is recommended you read pages 8 through 21 before using the Elite 700.

ELITE 700

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Basic Overview

The Elite 700 is really two Delay Boxes in one, a Bracket Delay Box and a Pro Delay Box each with their own independent screens, settings, and outputs. There are eleven Bracket Mode screens and nine Pro Mode screens.

The Elite 700 has the capability to run three 4-Stage Timers at one time. The 4-Stage Timers are labeled Timer 1, Timer 2, and Timer 3. Each of the timers can be set to work in only Bracket Mode, only Pro mode, or in both modes. Any timer that is used in both Bracket and Pro Mode will get two screens, one for Bracket Mode and one for Pro Mode. This allows any timer to have independent stage times between the two modes.

The Elite 700 can also shift the vehicle by time, up to five shifts. Here again, the shifter function, like all output functions, can be set to work in only Bracket Mode, only Pro Mode, or in both modes. Different shift times can also be entered for the two modes. Shifts two through five are on their own screen which can be turned off for vehicles requiring only one shift. This screen is turned on and off by setting Multi Shift setting on or off.

The Startling Line Enhancer (S.L.E.) has its own output and can now be set down to the thousandths of a second in Bracket Mode. In Pro mode the S.L.E. now has a programmable Hold Time. This allows the Transbrake solenoid to fully set before the engine goes to full throttle.

The Line Lock – Burn-out feature allows the Line Locks to be activated during a burn-out for a pre-set amount of time. The Line Locks can also be set to hold at the starting line along with the Transbrake solenoid.

The Multi Tap feature works by taking the Tap Down amount and multiplying it by the amount entered for the Multi Tap. Each time the Multi Tap button is pressed this larger Tap amount is subtracted from the first delay that was started.

Smart Select

Over the years Delay Boxes have added more and more features. The Elite 700 is no exception; it has twenty-four screens; eleven for Bracket Mode, nine for Pro Mode, and four Control Panels which contain ninety-one adjustable settings or values. While this enables the Elite 700 to be tailored to work in almost any application, it can also be intimidating. To make the Elite 700 easy to use, a new technology was developed called Smart Select. Smart Select's main function is to enable or disable screens as they are needed. Smart Select decides which screens are needed for both Bracket mode and Pro Mode by using the settings of the Control Panels. By showing only the screens or lines on a individual screen that are needed, Smart Select simplifies and reduces the time needed to adjust values.

Smart Select can also enable and disable Outputs. Here again Smart Select uses the Control Panel settings to automatically control the Outputs by checking the Bracket and Pro output Control Panel selection settings. When in Bracket Mode, Smart Select only allows the Bracket Outputs to function while keeping the Pro Outputs inactive. When in Pro Mode, Smart Select allows the Pro Mode Outputs to function while keeping the Bracket Outputs Inactive.

Smart Select will also help with setting the Button Control Panel. For instance, Smart Select checks to see if Button 1 is set to Two Hits with Two Buttons. If so, Smart Select sets Button 2, for Second Hit at the Tree. In the same way Smart Select will also enable Button 3 as the Line Lock button if the Burn-out timer is turned on. **All of this is done automatically, just simply set the Control Panels for the outputs and the buttons to what is desired and Smart Select will configure the Elite 700 to function as efficiently as possible.**

Getting Started

Before using the Elite 700 the Control Panels need to be setup. To be able to do this, a basic understanding of how the screens and keypad keys are structured is needed.

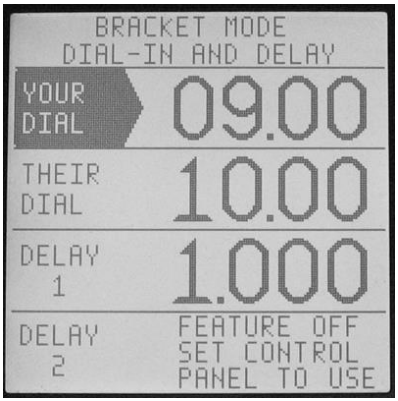
Basics for the Screen and Keypad

At the top of each screen is a header box that runs the entire width of the screen. The top line in the header box states which mode the Elite 700 is in, Bracket or Pro, underneath is the title of the current screen displayed. Below the Header Box are four data lines. The left side of each data line has the line name while the right side has the value or mode setting. To show which line is currently selected a large black selection arrow will point to the selected line. Each time the Next key is pressed, the arrow will move to the next available line on the screen. If the bottom line is selected and the Next key is pressed again the arrow will move to the top most available line.

If the selected line has a number value, pressing the Clear key will clear the number allowing a new value to be entered using the numerical keys. Also when a line with a number value is selected, pressing the Up Arrow or Down Arrow key will cause the value to increase or decrease by one each time the Arrow key is pressed. If the selected line has a mode setting, use the Up Arrow or Down Arrow key to change the mode settings. To view another screen, use the Setup key, each time the Setup key is pressed the next available screen will be shown. The Dial-in and Delay screen can be returned to at any time by pressing the bracket key (BRKT) on the keypad. Pressing the Setup key followed by the Number 1 key will bring up the first Control Panel screen, the Bracket Output Control Panel. Pressing the Setup key followed by the Number 9 key will put the Elite 700 into Pro Mode.

Initial Setup of the Elite 700

When the Elite 700 arrives and you turn it on, you will see the Bracket Mode Dial-In and Delay Screen, as shown below. With the factory settings, the Elite 700 will function as a basic Crossover Delay Box, without any changes done to it.



To use the features of the Elite 700, information needs to be entered. Information is entered using the keypad and is shown on the screen. There are three groups of screens; the Control Panel screens (set up first), Bracket Mode screens, and Pro Mode screens.

The Control Panels are used to configure the Elite 700 to each vehicle, and once set, do not have to be entered again unless adding or removing a device, like a Throttle Stop, or button to the car. There are four Control Panel screens called; Bracket Mode Outputs, Pro Mode Outputs, Button Inputs, and Solenoid Saver.

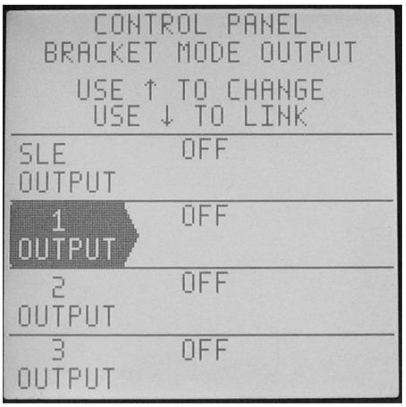
To prevent conflicts in the settings, start by setting up the Output Control Panels first and then set the Button Control Panel.

To Get Started: While on the Dial-In Screen, press the **SET UP** key then the **1** key. The first Control Panel screen, Bracket Mode Outputs will appear.

The Bracket Mode Output Screen

Control Panel Screen 1

This screen is used to select what each of the Bracket Outputs on the Relay Board, controls.



Enter your Bracket Output selections first here, and then wire the corresponding devices to the matching Bracket Output terminals on the Relay Board.

The **Selection Arrow** shows which line is selected.

Use the **↑ key** to change the function of the selected Output.

Use the **↓ key** to select Link or Separate when available.

Use the **NEXT** key to change the selected line.

Choices for each output:

S.L.E. Output

1. Only used to turn on or off the Starting Line Enhancer (S.L.E.) for Bracket Mode.

Output 1 - Driver Selectable

1. Off
2. Timer 1
3. S.L.E. / Timer 1

Output 2 - Driver Selectable

1. Off
2. Timer 1
3. Timer 2
4. Line Lock

Output 3 - Driver Selectable

1. Off
2. Timer 1
3. Time Shift
4. Timer 3
5. Line Lock

If a single device such as a Throttle Stop is going to be used in both Pro and Bracket mode the Outputs need to be Linked. This is explained on page 16.

When done, press the **SET UP** key and go to the Pro Mode Output Control Panel screen.

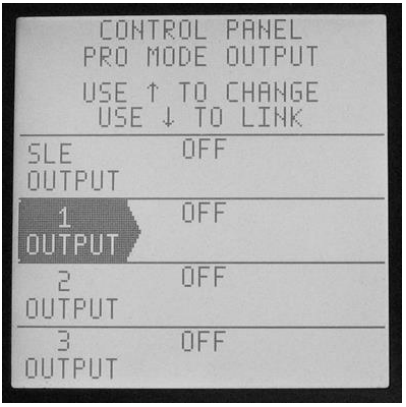
Or to Exit the Control Panels either press the **BRKT** key to enter Bracket Mode, or press the **SET UP** key followed by the **9** key to enter Pro Mode. If no key is pressed for 30 seconds the 700 will automatically return to the mode the 700 was in prior to entering the Control Panels.

Note: If you are not going to use a Bracket Mode output, turn the unused output(s) to OFF.

The Pro Mode Output Screen

Control Panel Screen 2

This screen is used to select what each of the Pro Outputs on the Relay Board, controls.



Enter your Pro Output selections first here, and then wire the corresponding devices to the matching Pro Output terminals on the Relay Board.

The **Selection Arrow** shows which line is selected.

Use the **↑ key** to change the function of the selected Output.

Use the **↓ key** to select Link or Separate when available.

Use the **NEXT** key to change the selected line.

Choices for each output:

S.L.E. Output

1. Only used to turn on or off the Starting Line Enhancer (S.L.E.) for Pro Mode.

Output 1 - Driver Selectable

1. Off
2. Timer 1
3. S.L.E. / Timer 1

Output 2 - Driver Selectable

1. Off
2. Timer 1
3. Timer 2
4. Line Lock

Output 3 - Driver Selectable

1. Off
2. Timer 1
3. Time Shift
4. Timer 3
5. Line Lock

If a single device such as a Throttle Stop is going to be used in both Pro and Bracket mode the Outputs need to be Linked. This is explained on the next page.

When done, press the **SET UP** key and go to the Button Inputs Control Panel screen.

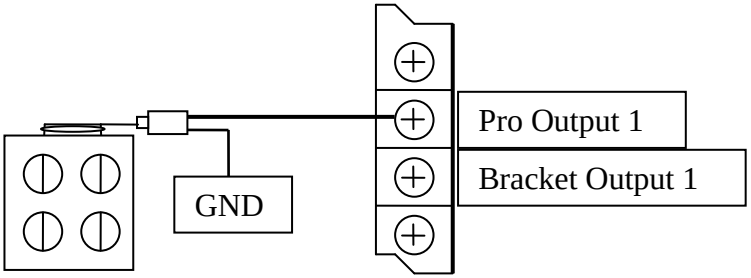
Or to Exit the Control Panels either press the **BRKT** key to enter Bracket Mode, or press the **SET UP** key followed by the **9** key to enter Pro Mode. If no key is pressed for 30 seconds the 700 will automatically return to the mode the 700 was in prior to entering the Control Panels.

Note: If you are not going to use a Pro Mode output, turn the unused output(s) OFF.

Linking Outputs

Linking allows a 4-Stage Timer that is used in both Bracket and Pro Mode to control a single device. Smart Select will automatically Link the Line Locks and/or Time Shift outputs when turned on in both Bracket and Pro Modes.

Note: Linking is required when a 4-Stage Timer is used to control an Electric Under the Carb Throttle Stop from both Bracket and Pro Modes.



To be able to Link two outputs together a couple requirements must first be met. First, the same Timer selection has to be selected on both the Bracket Control Panel and the Pro Control Panel. Then the Throttle modes have to match (page 60). Once this has been done the ↓ key can be used to Link or Separate the two outputs. With Separate just meaning not Linked. Use separate when controlling different devices in Bracket and Pro Modes.

When Outputs are Linked together, they all turn on and off together regardless of whether they are being controlled from Bracket or Pro Mode.

Example, in the diagram above, the Pro and Bracket Outputs 1 are linked and controlled by Timer 1. In Pro Mode, the Pro Timer 1 will control the Throttle Stop as normal. In Bracket Mode the Bracket Timer 1 will control the Pro Output 1 terminal. Thereby controlling the Throttle Stop connected to the Pro Output 1 from the Bracket side.

The Button Inputs Screen

Control Panel Screen 3

This screen is used to select the function of each Push-button.

Enter your Button selections first here, and then wire the corresponding Push-buttons to the matching P.B. terminals on the Relay Board.

The **Selection Arrow** shows which line is currently selected.

Use the **↑ or ↓** keys to change options on the selected line.

Use the **NEXT** key to change the selected line.

Primary functions for each button input:

Button 1
1. Only one hit at the tree
2. Two hits at the tree same button
3. Two hits at the tree two buttons
4. False Start Two Cancels One

Button 2
1. Second shot at tree (set by Smart Select)
2. Tap Up

3. Tap Down
4. Multi-Tap (If Tap Down Button 3 or 4)
5. Back-up
6. Off

Button 3
1. Tap Up
2. Tap Down
3. Multi-Tap (If Tap Down Button 2 or 4)
4. Off

Line Lock / Burn-out (set by Smart Select not shown)

Button 4
1. Tap Up
2. Tap Down
3. Multi-Tap (If Tap Down Button 2 or 3)
4. Off

The next page is the Additional Button Functions Chart. The chart is divided into three parts, showing what the button controls during each part of a pass. Part one is before the Transbrake is applied. Part two is while the Transbrake is applied. Part three is after the Transbrake releases.

In some cases the second or third function may be desired, and not the primary function. For example, if a vehicle is using Nitrous and a Timer Override Button is desired, one of the buttons would be set to Tap Up, even if the Tap Up feature is not desired.

When done, press the **SET UP** key and go to the Solenoid Saver screen.

Or to Exit the Control Panels either press the **BRKT** key to enter Bracket Mode, or press the **SET UP** key followed by the **9** key to enter Pro Mode. If no key is pressed for 30 seconds the 700 will automatically return to the mode the 700 was in prior to entering the Control Panels.

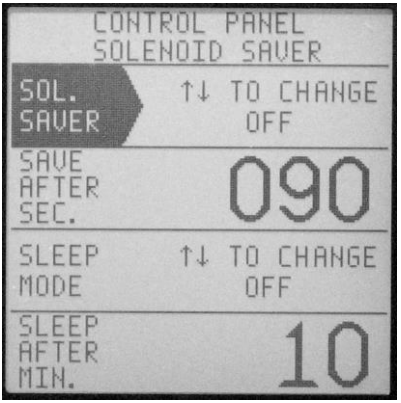
Additional Button Functions Chart

Button	Button Control Panel Setting	Section 1 Before Trans Applies	Section 2 While Trans is Applied	Section 3 After Trans Releases
1	One Hit at Tree	Applies Transbrake	Restarts the Crossover Timer	Resets to Section 2 and applies Transbrake
	and	Applies S.L.E. if used	Restart S.L.E. Timer	Reapplies S.L.E. if used
	Two Hits at Tree 2 Buttons	Applies L.L. if used	Reapplies L.L. if used	Reapplies L.L. if used
	Two Hits at Tree 1 Button	Same as Above	Second Press -- Starts Delay 2 / additional presses restarts Delay 2	Same as Above
	False Start	Same as above	Second Press -- Cancels Delay 1 / Second release starts Delay 2	Same as Above
2	2nd Hit at Tree	Applies Transbrake	Restarts Delay 2 Timer	Resets to Section 2 and applies Transbrake
	Tap Up	Applies S.L.E. if used	Adds Tap Up amount to first delay started	Timer override
	Tap Down	Applies S.L.E. if used	Subtracts Tap Down amount from first delay started	P.T.S.O.
	Multi-Tap	N/A	Subtracts X times the Tap Down amount from the first delay started	N/A
	Back Up	Applies only Transbrake	Subtracts X times the Tap Down amount from the first delay started	N/A
3	Regardless of the Control Panel setting. If the Burn-out feature is on, Button 3 will activate the Line Locks for the burn-out in section 1.			
	Tap Up	Applies S.L.E. if used	Adds Tap Up amount to first delay started	Timer override
	Tap Down	Applies S.L.E. if used	Subtracts Tap Down amount from first delay started	P.T.S.O.
	Multi-Tap	N\A	Subtracts X times the Tap Down amount from the first delay started	N/A
4	Tap Up	Applies S.L.E. if used	Adds Tap Up amount to first delay started	Timer override
	Tap Down	Applies S.L.E. if used	Subtracts Tap Down amount from first delay started	P.T.S.O.
	Multi-Tap	N\A	Subtracts X times the Tap Down amount from the first delay started	N/A

The Solenoid Saver Screen

Control Panel Screen 4

This screen is used to Turn ON or OFF the new Solenoid Saver and Sleep Mode features.



The Solenoid Saver feature keeps the Transbrake solenoid from being destroyed when a button is accidentally left locked on. Using times of 60 seconds or more is recommended.

Warning: Care has to be taken when using the Solenoid Saver Feature. This is in case the vehicle gets held at the starting line for more than the Save After Sec. time. The danger is when the Solenoid Saver feature times out. The Transbrake solenoid turns off releasing the vehicle from the starting line.

The Sleep Mode is to conserve the battery charge and has a screen saver. After the Elite 700 is idle for the programmed amount of sleep time, all of the outputs will turn off. The screen will go blank except for the word ASLEEP which moves around the screen as a screen saver.

To wake up the Elite 700, press any key on the keypad or any button connected to the Elite 700.

The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change the selected line.

Solenoid Saver

Use the ↑ or ↓ key to turn On or Off.

Save After Sec. (Seconds before Transbrake is turned off)

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

The original factory setting of 90 seconds will work for most situations.

Sleep Mode

Use the ↑ or ↓ key to turn On or Off.

Sleep After Min. (Minutes before unit goes to sleep)

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

When done press the **SET UP** key to return to the first Control Panel screen Bracket Mode Output.

Or to Exit the Control Panels either press the **BRKT** key to enter Bracket Mode, or press the **SET UP** key followed by the **9** key to enter Pro Mode. If no key is pressed for 30 seconds the 700 will automatically return to the mode the 700 was in prior to entering the Control Panels.

Setting Bracket Mode Screens

There are 11 total Bracket Mode screens. Depending on how the Control Panels are set up, Smart Select will enable only the screens necessary.

Smart Select will disable (skip) any unused screen. If a screen is desired, and not being displayed, adjust the Control Panel Screens accordingly to enable the screen. Follow the directions under Initial Setup of the Elite 700 to change the settings of the Control Panels.

Note: To go to **Pro Mode**, press the **SET UP** key then the number **9** key.

The Dial-In and Delay Screen

Bracket Mode Screen 1

The Dial-in and Delay screen is the "home" Bracket Mode screen. Press the **BRKT** key to return to this screen at any time. This screen is where you enter your dial-in and delay times.

The **Selection Arrow** shows the line that is currently selected.

Use the **NEXT** key to change the selected line.

Your Dial

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Their Dial

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Delay 1

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Delay 2 (used for second hit at the tree)

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

If the Delay 2 line says the feature is OFF and you want to use it, go back to the Button Inputs Control Panel change Button 1 to two shots at the tree. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Press the **SET UP** key twice to get to Button Inputs, and then change the setting. When done press the **BRKT** key to return to Bracket Mode.

Press the **SET UP** key to go to the next enabled Bracket Mode screen.

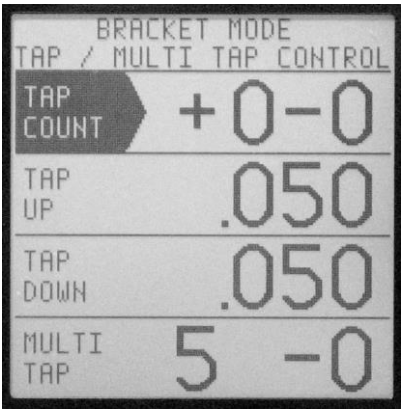
The Tap / Multi Tap Control Screen

Bracket Mode Screen 2

The Tap feature allows you to make adjustments to your Delay time if you feel you have released the Transbrake Push-button at the wrong time. The Tap / Multi-tap feature is used while the Transbrake is counting down, to improve your reaction time. The Tap feature only affects the first delay started. So if Delay 1 is started before Delay 2 the Tap feature only affects Delay 1.

Smart Select will only turn the Tap screen on if one of the buttons is set to tap up or down on the Button Control Panel.

If you do not get this screen and you want to use it, go back to the Button Inputs Control Panel to change setting. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Press the **SET UP** key twice to get to Button Inputs, and then change the setting. When done press the **BRKT** key then the **SET UP** key to bring up this screen.



The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change the selected line.

Tap Count

Use the **CLEAR** key, to clear all the Tap Count numbers. Tap Up, Tap Down, and Multi Tap counts are also cleared each pass

Tap Up

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Tap Down

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Multi-tap (Takes several tap downs with a single press)

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

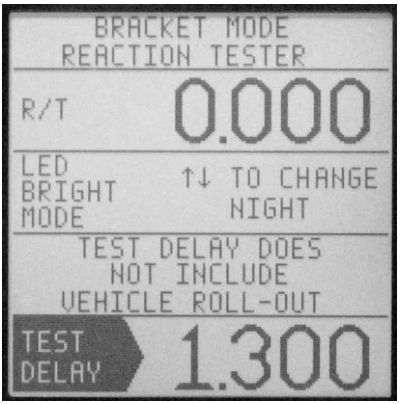
If a line says the feature is OFF and you want to use it, go back to the Button Inputs Control Panel and change the setting(s). To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Press the **SET UP** key twice to get to Button Inputs, and then change the setting. When done press the **BRKT** key then the **SET UP** key to bring up this screen.

Press the **SET UP** key to go to the Reaction Tester Screen.

The Reaction Tester Screen

Bracket Mode Screen 3

This screen is where you can test your reaction time using the Push-buttons mounted in the vehicle. This screen also sets the intensity of the Status LEDs and the LCD backlight.



The Driver's Reaction Tester has been improved in the Elite 700 to allow the driver to practice using a full tree. This allows the driver to practice releasing the button off any bulb. To do this required an addition of a practice delay time called Test Delay. The Test Delay only affects this screen.

To practice, while on this screen, press and hold down a Push-button connected to either P.B. 1 or P.B. 2 terminal. When the desired light on tree comes on, release the button. The Elite 700 will now display your reaction time. Adjust the Test Delay amount to get a perfect light.

Note: After 30 seconds of non-use the Elite 700 will automatically return to the Dial-In and Delay Screen.

The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

Reaction Time

The top line on the Reaction Tester screen is R/T (reaction time). This is where the Elite 700 will display your reaction time while practicing.

LED Bright Mode

This setting controls the intensity of the four LEDs between the Keypad and Screen. The three settings are Day (bright), Night (dim), and Off. Use the ↑ or ↓ key to set to Day, Night, or Off. When Off is selected the LEDs next to the keypad will not turn on and the display backlight will be dim.

Test Delay

This is a practice delay amount for the Reaction Tester only and has no affect on any other operation of the Elite 700.

Adjust the Test Delay time according to which bulb you are going to practice with. Keep in mind that the Test Delay amount will be different than the Delay times used on the Dial-in and Delay screen. This is because the Test Delay does not take into account the vehicle's roll out time. By practicing with the Driver's Reaction Tester using the same bulb as when running eliminations, buttons and button locations can be checked for speed and consistency. Additionally if the Delay 1 time is subtracted from the Test Delay time, the result is a close approximation of the vehicle's roll out.

To change the Test Delay amount, use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

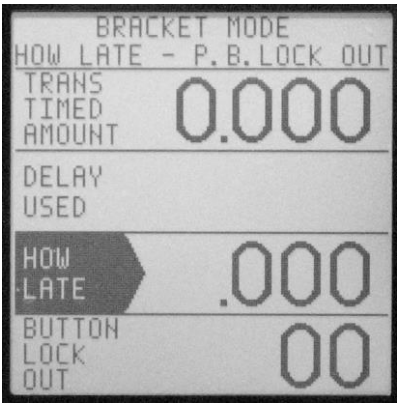
Press the **SET UP** key to go to the next enabled Bracket Mode screen.

How Late – P.B. Lock Out Screen

Bracket Mode Screen 4

This screen has the How Late information, Delay Used, and the Push Button Lock Out time. The latter being a new name for Pushbutton Interrupt time. The How Late – P.B. Lockout screen also contains a new exclusive feature, the Trans Timed Amount.

If the How Late line says the feature is OFF and you want to use it, go back to the Button Inputs Control Panel, and change Button 1 to Two Shots at the Tree. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Press the **SET UP** key twice to get to Button Inputs, and then change the setting. When done press the **BRKT** key then use the **SET UP** key until you return to this screen.



The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

Note: The Button Lock Out time entered here works in both Bracket and Pro Modes.

Trans Timed Amount

This shows the amount of time the Transbrake was delayed. This includes Taps and multiple hits at the tree.

Delay Used (Only used when taking two shots at the tree)

This shows which Delay was used to release the Transbrake when taking two shots at the tree.

How Late (Only used when taking two shots at the tree)

This shows the amount of time that was remaining on the unused Delay when taking two shots at the tree.

Use the **CLEAR** key, to clear both the How Late and the Delay Used.

Button Lock Out (Time the Transbrake button(s) is disabled)

This is the amount of time the Transbrake button(s) is disabled after the Transbrake solenoid releases. This is a safety feature, and is used to keep from accidently reapplying the transbrake solenoid by unintentionally hitting a transbrake button while the vehicle is going down track.

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

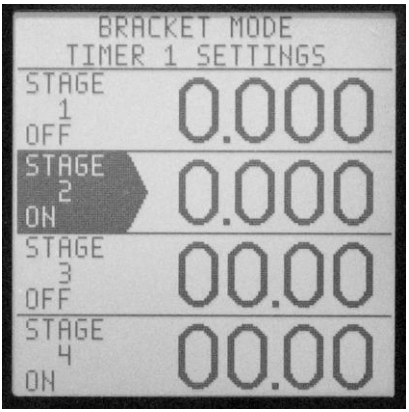
Press the **SET UP** key to go to the next enabled Bracket Mode screen.

Timer 1, 2, and 3 Screens

Bracket Mode Screens 5, 6, and 7

These are the 4-Stage Timer screens. The Elite 700 has the capability to run all three 4-Stage Timers in the same pass. The 4-Stage Timers are used to control down-track timed events. The Timer Screens are enabled by Smart Select and will only turn on if an output is set to a corresponding Timer on the Bracket Output Control Panel.

If you do not get this screen and you want to use it, go back to the Bracket Mode Outputs Control Panel to change setting. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Next make the desired changes for the output settings. When done press the **BRKT** key then use the **SET UP** key until you bring up this screen.



As all of the Timer screens are the same only Timer 1 is shown.

The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

Stage 1

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Stage 2

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Stage 3

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Stage 4

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Throttle Mode

The Throttle Mode is used to control whether the output will supply (On) or remove (Off) 12 Volts for the Stages. The Throttle Mode is shown down the left side of the screen and can either be set to off/on/off/on or on/off/on/off. To change the Throttle mode, hold down the **ZERO** key for 3 seconds.

Note: If Output 1 is set to S.L.E./Timer 1, Smart Select will automatically set the Timer 1 Throttle Mode to match the S.L.E. output mode. S.L.E. Mode high sets the Timer 1 Throttle Mode to off/on/off/on. S.L.E. Mode low sets the Timer 1 Throttle Mode to on/off/on/off.

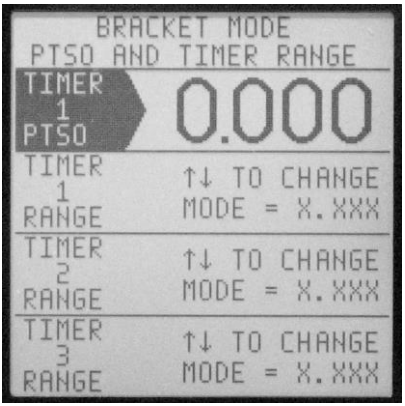
Press the **SET UP** key to go to the next enabled Bracket Mode screen.

P.T.S.O. and Timer Range

Bracket Mode Screen 8

The P.T.S.O. (Programmable Throttle Stop Override) and Timer Range screen will only be enabled by Smart Select if at least one of the Timers is selected on the Bracket Mode Output Control Panel. The P.T.S.O. is like a Tap Down for Timer 1. The Timer Ranges control whether the Timers go down hundredths or thousandths.

If you do not get this screen and you want to use it, go back to the Bracket Mode Outputs Control Panel to change setting. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Then change the setting. When done press the **BRKT** key then use the **SET UP** key until you bring up this screen.



The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

Timer 1 P.T.S.O.

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Timer 1 Range

Use the ↑ or ↓ key to move the decimal point place between X.XXX and XX.XX for Timer 1.

Timer 2 Range

Use the ↑ or ↓ key to move the decimal point place between X.XXX and XX.XX for Timer 2.

Timer 3 Range

Use the ↑ or ↓ key to move the decimal point place between X.XXX and XX.XX for Timer 3.

Note: X.XXX = Thousandths
XX.XX = Hundredths

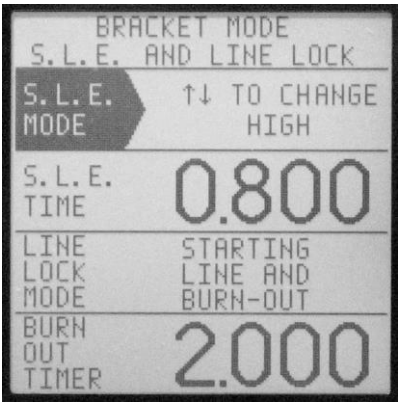
Press the **SET UP** key to go to the next enabled Bracket Mode screen.

S.L.E. and Line Lock

Bracket Mode Screen 9

S.L.E. stands for Starting Line Enhancer. The S.L.E. and Line Lock screen will only be enabled by Smart Select if an output on the Bracket Output Control Panel has the S.L.E. turned on or Line Lock selected.

If you do not get this screen and you want to use it, go back to the Bracket Mode Outputs Control Panel to change setting. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Then change the setting. When done press the **BRKT** key then use the **SET UP** key until you bring up this screen.



The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

S.L.E. Mode

Use the ↑ or ↓ key to select HIGH or LOW.

S.L.E. Time

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Line Lock Mode

Use the ↑ or ↓ key to change between only Starting Line, only Burn-Out, or both Starting Line and Burn-Out.

Note: If Burn-Out or Starting Line and Burn-Out is selected, Smart Select will automatically configure P.B. 3 to control the Line Lock for the burn-out.

Burn Out Timer

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

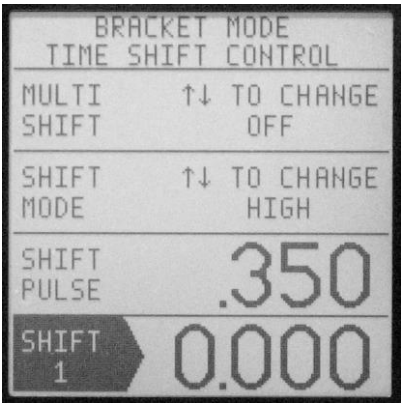
Press the **SET UP** key to go to the next enabled Bracket Mode screen.

Time Shift Control

Bracket Mode Screen 10

The Elite 700 can handle up to 5 shifts by time in a single pass. The Time Shift Control screen will only be enabled by Smart Select, if Output 3 is set to Time Shift on the Bracket Output Control Panel. Since most vehicles only need a single shift, only the first shift is shown on the Time Shift Control screen. For vehicles requiring additional shifts turn on Multi Shift.

If you do not get this screen and you want to use it, go back to the Bracket Mode Outputs Control Panel to change setting. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Then change the setting for Output 3. When done press the **BRKT** key then use the **SET UP** key until you bring up this screen.



The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

Multi Shift

Use the ↑ or ↓ key to turn ON or OFF.

Shift Mode

Use the ↑ or ↓ key to select HIGH or LOW.

Shift Pulse

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Shift 1

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

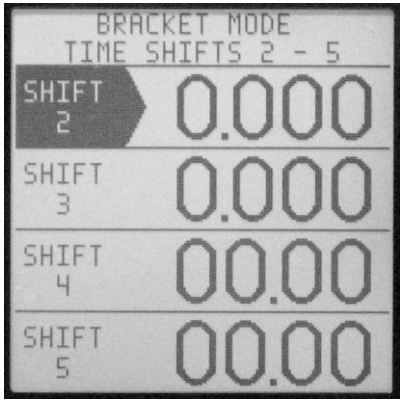
Press the **SET UP** key to go to the next enabled Bracket Mode screen.

Time Shifts 2-5

Bracket Mode Screen 11

The Time Shifts 2-5 screen is used to set shift points for shifts 2 through 5. The Time Shifts 2-5 screens is only available if the Multi Shift option on the Time Shift Control screen is turned on.

If you do not get this screen and you want to use it, go back to the Time Shift Control screen and turn on the Multi Shift option. To bring up the Time Shift Control screen, use the **SET UP** key. Once Multi Shift is turned on, press the **SET UP** key once to bring up this screen.



The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

Shift 2

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Shift 3

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Shift 4

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Shift 5

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Press the **SET UP** key to go to the next enabled Bracket Mode screen.

Pro Mode Screens

There are 9 total Pro Mode screens. Depending on how the Control Panels are set up, Smart Select will enable only the screens necessary.

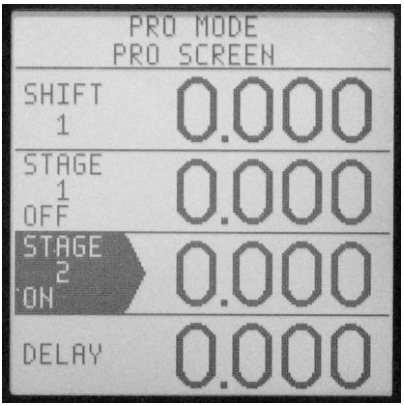
Smart Select will disable any unused screen. If a screen is desired, and not being displayed, adjust the Control Panel Screens accordingly to enable the screen. Follow the directions under Initial Setup of the Elite 700 to change the settings of the Control Panels.

Note: To go to **Bracket Mode**, press the **BRKT** key.

The Pro Screen

Pro Mode Screen 1

The Pro screen is the "home" Pro Mode screen. Press the **SET UP** key followed by the **9** key to return to this screen at any time. This screen is where you enter your Delay, First Shift, and first two Stage Times.



The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

Shift 1

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Stage 1 (Timer 1)

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Stage 2 (Timer 1)

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Delay

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

If a line says the feature is OFF and you want to use it, go back to the Pro Mode Output Control Panel to change setting. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Then press **SET UP** once more to get to the Pro Mode Output and then change the setting.

Press the **SET UP** key to go to the next enabled Pro Mode screen.

The Reaction Tester Screen

Pro Mode Screen 2

This screen is where you can test your reaction time using the Push-buttons mounted in the vehicle. This screen also sets the intensity of the Status LEDs.

The Driver's Reaction Tester has been improved in the Elite 700 to allow the driver to practice using a pro tree. This allows the driver to practice releasing the button off a pro tree. To do this required an addition of a practice delay time called Test Delay. <u>The Test Delay only affects this screen.</u>

To practice, while on this screen, press and hold down a Push-button connected to either P.B. 1 or P.B. 2 terminal. When the top three lights on tree come on, release the button. The Elite 700 will now display your reaction time. Adjust the Test Delay amount to get a perfect light.

<u>Note: After 30 seconds of non-use the Elite 700 will automatically return to the Dial-In and Delay Screen.</u>

The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

Reaction Time

The top line on the Reaction Tester screen is R/T (reaction time). This is where the Elite 700 will display your reaction time while practicing.

LED Bright Mode

This setting controls the intensity of the four LEDs between the Keypad and Screen. The three settings are Day (bright), Night (dim), and Off. Use the ↑ or ↓ key to set to Day, Night, or Off. When Off is selected the LEDs next to the keypad will not turn on and the display backlight will be dim.

Test Delay

This is a practice delay amount for the Reaction Tester only and has no affect on any other operation of the Elite 700.

Adjust the Test Delay time to get a perfect light. Keep in mind that the Test Delay amount will be different than the Delay times used on the Pro Screen. This is because the Test Delay does not take into account the vehicle's roll out time. By practicing with the Driver's Reaction Tester, buttons and button locations can be checked for speed and consistency. Additionally if the Delay time is subtracted from the Test Delay time the result is a close approximation of the vehicle's roll out.

To change, use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

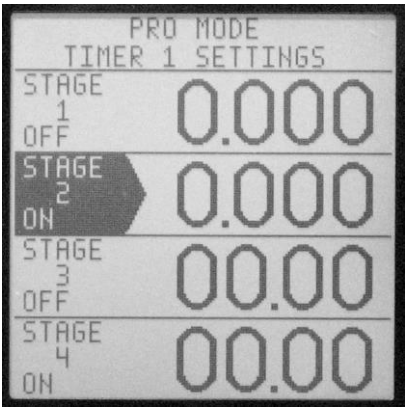
Press the **SET UP** key to go to the next enabled Pro Mode screen.

Timer 1, 2, and 3 Screens

Pro Mode Screens 3, 4, and 5

These are the 4-Stage timer screens. The Elite 700 has the capability to run all three 4-Stage Timers in the same pass. The 4-Stage Timers are used to control down-track timed events. The Timer Screens are enabled by Smart Select and will only turn on if an output is set to a corresponding Timer on the Pro Output Control Panel.

If you do not get this screen and you want to use it, go back to the Pro Mode Outputs Control Panel to change setting. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Then press **SET UP** once more to get to the Pro Mode Output and then change the setting. When done, press the **SET UP** key followed by the **9** key. Then use the **SET UP** key to get to this screen.



The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

Stage 1

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Stage 2

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Stage 3

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Stage 4

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Throttle Mode

The Throttle Mode is used to control whether the output will supply (On) or remove (Off) 12 Volts for the Stages. The Throttle Mode is shown down the left side of the screen and can either be set to off/on/off/on or on/off/on/off. To change the Throttle mode, hold down the **ZERO** key for 3 seconds.

Note: If Output 1 is set to S.L.E./Timer 1, Smart Select will automatically set the Timer 1 Throttle Mode to match the S.L.E. output mode. S.L.E. Mode high sets the Timer 1 Throttle Mode to off/on/off/on. S.L.E. Mode low sets the Timer 1 Throttle Mode to on/off/on/off.

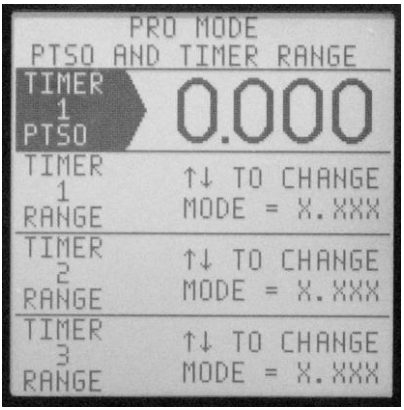
Press the **SET UP** key to go to the next enabled Bracket Mode screen.

P.T.S.O. and Timer Range

Pro Mode Screen 6

The P.T.S.O. (Programmable Throttle Stop Override) and Timer Range screen will only be enabled by Smart Select if at least one of the Timers is selected on the Pro Mode Output Control Panel. The P.T.S.O. is like a Tap Down for Timer 1. The Timer Ranges control whether the Timers go down hundredths or thousandths.

If you do not get this screen and you want to use it, go back to the Pro Mode Outputs Control Panel to change setting. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Then press **SET UP** once more to get to the Pro Mode Output and then change the setting. When done, press the **SET UP** key followed by the **9** key. Then use the **SET UP** key to get to this screen.



As all of the Timer screens are the same only Timer 1 is shown.

The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

Timer 1 P.T.S.O.

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Timer 1 Range

Use the ↑ or ↓ key to move the decimal point place between X.XXX and XX.XX for Timer 1.

Timer 2 Range

Use the ↑ or ↓ key to move the decimal point place between X.XXX and XX.XX for Timer 2.

Timer 3 Range

Use the ↑ or ↓ key to move the decimal point place between X.XXX and XX.XX for Timer 3.

Note: X.XXX = Thousandths
XX.XX = Hundredths

Press the **SET UP** key to go to the next enabled Pro Mode screen.

S.L.E. and Line Lock

Pro Mode Screen 7

S.L.E. stands for Starting Line Enhancer.

The S.L.E. and Line Lock screen will only be enabled by Smart Select if an output on the Pro Output Control Panel has the S.L.E. or Line Lock selected.

If you do not get this screen and you want to use it, go back to the Pro Mode Outputs Control Panel to change setting. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Then press **SET UP** once more to get to the Pro Mode Output and then change the setting. When done, press the **SET UP** key followed by the **9** key. Then use the **SET UP** key to get to this screen

The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

S.L.E. Mode

Use the ↑ or ↓ key to select HIGH or LOW.

S.L.E. Hold Time

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Note: S.L.E Hold Time is the amount of time the S.L.E. will delay turning off when the Transbrake is engaged.

Line Lock Mode

Use the ↑ or ↓ key to change between only Starting Line, only Burn-Out, or both Starting Line and Burn-Out.

Note: If Burn-Out or Starting Line and Burn-Out is selected, Smart Select will automatically configure P.B. 3 to control the Line Lock for the burn-out.

Burn Out Timer

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

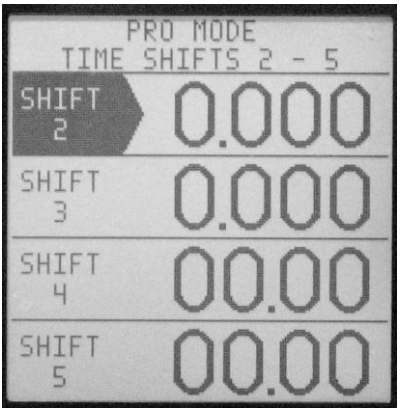
Press the **SET UP** key to go to the next enabled Bracket Mode screen.

Time Shifts 2-5

Pro Mode Screen 8

The Time Shifts 2-5 screen is used to set shift points for shifts 2 through 5. The Time Shifts 2-5 screens is only available if the Multi Shift option on the Time Shift Control screen is turned on.

If you do not get this screen and you want to use it, go back to the Time Shift Control screen and on turn on the Multi Shift option on the top line. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Then press **SET UP** once more to get to the Pro Mode Output and then change the setting. When done, press the **SET UP** key followed by the **9** key. Then use the **SET UP** key to get to this screen



The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

Shift 2

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Shift 3

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Shift 4

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Shift 5

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

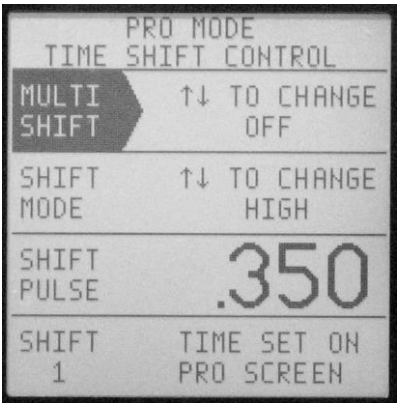
Press the **SET UP** key to go to the next enabled Pro Mode screen.

Time Shift Control

Pro Mode Screen 9

The Elite 700 can handle up to 5 shifts by time in a single pass. The Time Shift Control screen will only be enabled by Smart Select, if Output 3 is set to Time Shift on the Pro Output Control Panel. Since most vehicles only need a single shift, the first shift is shown on the Pro Screen. For vehicles requiring additional shifts turn on Multi Shift.

If you do not get this screen and you want to use it, go back to the Pro Mode Outputs Control Panel to change setting. To bring up the Control Panels, press the **SET UP** key then **1** on the keypad. Then press **SET UP** once more to get to the Pro Mode Output and then change the setting. When done, press the **SET UP** key followed by the **9** key. Then use the **SET UP** key to get to this screen



The **Selection Arrow** shows the line that is currently selected. Use the **NEXT** key to change lines.

Multi Shift

Use the ↑ or ↓ key to turn ON or OFF.

Shift Mode

Use the ↑ or ↓ key to select HIGH or LOW.

Shift Pulse

Use the **CLEAR** key, then use the **NUMERICAL** keys to enter a time. Or use the ↑ or ↓ key to increase or decrease the time by one.

Shift 1

Set on the Pro Screen.

Press the **SET UP** key to go to the Pro Screen.

Understanding the Dial-ins and Delays

The Dial-in and Delay Screen displays both of the Dial-in times and both of the Delay times. These four time settings are used to control how long the Transbrake solenoid stays engaged after the push-button is released. The main feature here is the ability to Crossover, to go off the opponent's top yellow light if you are the faster vehicle. The Elite 700 always does a subtraction of Your Dial-in time from Their Dial-in time. If the result is greater than zero it's added to Delay 1. This new combined time of Delay 1 plus the difference of the Dial-ins is called the Crossover time.

Example, when the vehicle is staged, the push-button connected to the P.B. 1 terminal is pressed. The top status LED will turn on and the Transbrake will engage. When the opponent's top yellow light comes on, the button is released and then the Crossover time starts counting down. When the Crossover time reaches zero the top status LED turns off and the Transbrake is released. Thus, releasing the vehicle from the starting line and starting the pass.

When it is desirable not to Crossover, set the Dial-ins to the same number. When the Elite 700 does the subtraction of Your Dial-in time from Their Dial-in time the difference will be zero. This result is then added to Delay 1 but because the added value was zero only the Delay 1 time will be used as the delay amount for the Transbrake.

The Elite 700 also allows a second hit at the tree. This is where the Delay 2 time is used. Depending on the Push-button Mode, the second hit at the tree can be done with the same button connected to P.B. 1 or a second push-button connected to P.B. 2, this is explained in *Understanding the Push-button Modes*. The Delay 2 time is usually set so that the second hit at the tree is on your top or bottom yellow. The Delay 2 time can be used even if the

main Crossover delay is not being used, however this is not commonly done.

For this example of two hits at the tree, two buttons are used and the Push-button Mode is set to Two Hits with Two Buttons. The vehicle would be staged and both push-buttons would be pressed and held. This would engage the Transbrake and the top LED will light up red indicating the Transbrake is on. When the opponent's top yellow light comes on, the button connected to P.B. 1 would be released. This would start the countdown of the Crossover time. Then when your bottom yellow light comes on the push-button connected to P.B.2 would be released. This would start the count down of the Delay 2 time. When either the Crossover time or the Delay 2 time reaches zero the Transbrake is released and the top status LED turns off. If the two times do not reach zero at the same time a new How Late time is generated and stored in memory. The How Late time is displayed on line 3 of the How Late – P.B. Lock Out screen.

Note: No Delay Box including the Elite 700 can tell which hit at the tree is better, only which hit at the tree reached zero first. This means that if the first release on the opponent's top yellow was a perfect light and the second release on your bottom yellow was red, you will red light.

If you are new to using a Delay Box, a good way to get started is to cancel out the Dial-ins, by either entering all zeros, or the same number in both Dial-ins. Then enter 1.000 second for Delay 1 as this is a good starting value. Make some time trial passes, releasing the Push-button on your top amber light. Adjust the Delay 1 time, by adding more time for a red light or subtracting time if late, to get as close to a perfect reaction time as possible. Once Eliminations start, make sure to enter the Dial-ins for you and your opponent. Release the Push-button on the first amber light that comes on, regardless of the side of the tree.

Understanding the
Tap / Multi Tap Control Screen

Tap Count

The Tap Count is used to show how many times the Tap Up or Tap Down button was pressed. If the Tap Up button was used, the + Count will show a number. If the Tap Down button was used, the – Count will show a number. If a Tap Up or Tap Down button is not used during a pass the corresponding Tap Count will be zero. The Tap Count is stored until the next time the Transbrake is used.

Tap Up

This line shows the amount of time that will be added each time the Tap Up button is pressed. This Tap Up amount will only be added to the first delay started. Any number from .000 to .099 can be used for the Tap Up amount. Use the designated Tap Up Push-button, to keep from red lighting if you released the Transbrake Push-button too early. The Tap Up can only be used if a button has been set to Tap Up on the Button Control Panel.

Tap Down

This line shows the amount of time that will be subtracted each time the Tap Down button is pressed. This Tap Down amount will only be subtracted from the first delay started. Any number from .000 to .099 can be used for the Tap Down amount. Use the designated Tap Down Push-button, to keep from having a bad light if you released the Transbrake push-button a little late. The Tap Down can only be used if a button has been set to Tap Down on the Button Control Panel.

Multi-tap

Use the Multi-tap feature to take several Tap Downs with the single press of a button, of the first delay started. This is used if you released the Transbrake Push-button very late. An example is, if the Multi-tap amount is set to 5, each time the Multi-tap button is pressed it's the same as pressing the Tap Down button five times.

The number on the left side is the programmable Multi-tap amount and the number on the right following the minus sign is the Multi-tap Count. Each time a Multi-tap button is pressed one will be added to the Multi-tap Count. Only a button set up as Back Up or Multi-tap on the Button Control Panel can be used as a Multi-tap button.

Understanding the How Late – P.B. Lockout Screen

Trans Timed Amount

The Trans Timed Amount is the amount of time the Transbrake delayed the last time it was used. The Trans Timed Amount takes into account all the combinations of the Taps and Delays that were used on the pass.

Delay Used

The Delay Used is part of the How Late information and shows which Delay was used to release the Transbrake when taking two shots at the tree.

How Late

When taking two shots at the tree, the How Late time shows how much later the Transbrake would have released using the other delay time. For example if the Delay Used shows a "2" it indicates that Delay 2 was used to release the Transbrake. And if the How Late time is ".012" it indicates

that Delay 1 would have released .012 seconds later. This means if your reaction time was .510 on the time slip, add the How Late time of .012 to the .510 for a total reaction time of .522 this is what your reaction time would have been if Delay 1 had been used.

The How Late is only enabled by Smart Select when Button 1 on the Button Control Panel is set to either "2 Hits With One Button" or "2 Hits with Two Buttons." In either of these two cases the Elite 700 is set up to take two shots at the tree. When both Delay 1 and Delay 2 are counting down at the same time, a How Late time is generated. The Delay Used indicates which delay was used to release the Transbrake solenoid, displaying either a 1 for Delay 1 or a 2 for Delay 2.

Note: No Delay box including the Elite 700 can tell which of the two shots at the tree was better, only which was faster. This means the Transbrake will release when either of the delay times reaches zero, even if it results in a red light.

Button Lock Out

Button Lock Out is the new name for Push-button Interrupt Time. This is a safety feature that keeps the Transbrake from being reapplied when a button is accidentally hit or pressed during a pass. This safety feature only affects the transbrake button(s) after the vehicle leaves the starting line. The time entered is in seconds and is the amount of time that any button used to apply the Transbrake will be disabled after the Transbrake releases. In most cases, the amount of time entered in P.B. Lock Out is just long enough to get the vehicle out of low gear. This is because most Transbrakes will not function in high gear. However if the vehicle's Transbrake will function in high gear, a larger time is recommended. A setting of 00 will turn this feature off.

Understanding the Timers

All the Timers in the Elite 700 are 4-Stage Timers. The 4-Stage Timers are used to control down-track events, using a pre-programmed time. Some examples of what a 4-Stage Timer may control are Throttle Stops, Nitrous solenoids, a Lockup Converter, Electrically controlled shocks, and Lean-out Valves.

Since all of the Timer screens function the same, the information below and on the next page can be used for Timer 1 Settings, Timer 2 Setting, or Timer 3 Settings.

Timing of a 4-Stage Timer starts at the release of the Transbrake solenoid. When the Transbrake releases, the times for both Stages 1 and 3 start counting down. At the completion of Stage 1, the time for Stage 2 starts counting down and at the completion of Stage 3, the time for Stage 4 starts counting down. Additionally, the Stage 3 time must be greater than the Stages 1 and 2 times added together. If the Stage 3 time is less than the total of Stages 1 and 2 added together, or if Stages 3 and 4 are set to zero, Stages 3 and 4 will be turned off.

Another way of looking at the Stage timing is, Stage 1 is how far out the vehicle goes before the Stage 2 time starts. The Stage 2 time would be how long a device is active (its duration). Stages 3 and 4 can be used to repeat what Stages 1 and 2 did further down the track. Using only Stages 1 and 2 an example is, if a Throttle Stop is being used, Stage 1 would be how far out the vehicle went in time before the Throttle Stop closed. Stage 2 would be how long the Throttle Stop stayed closed. Another example using only Stages 1 and 2 is, if Nitrous is being used, Stage 1 would be how far out the vehicle went in time before the Nitrous turned on. Stage 2 would be how long the Nitrous stayed on. If it is desired to have the Nitrous on for the rest of the pass, enter a Stage 2 time greater than the vehicle's ET.

Understanding Throttle Mode

The Throttle Mode is used to control whether the output will supply (On) or remove (Off) 12 Volts for the Stages. Each 4-Stage Timer has a Throttle Mode associated with it. The Throttle Mode has two settings shown as on/off/on/off or off/on/off/on. The Stages' numbers 1/2/3/4 are replaced with either on or off when referring to the Throttle Mode. Meaning on/off/on/off is an abbreviation for; Stage 1 **on**/Stage 2 **off**/Stage 3 **on**/Stage 4 **off**. A Stage set to *on*, indicates +12Volts out for that Stage. A Stage set to *off* indicates no Voltage out for that Stage. The Throttle Mode for each Timer is displayed vertically down the left side of the screen under the Stage numbers. For example, if under Stage 1 the Throttle Mode is off then no voltage will be put out for the duration of the Stage 1 time. As the Stage 2 Throttle Mode is always the opposite of Stage 1, in this example the Throttle Mode for Stage 2 has to be on. Therefore at the completion of Stage 1 the output will switch and put out +12Volts for the duration of the Stage 2 time.

To change the Throttle Mode on any 4-Stage Timer screen, hold down the Zero key for two seconds.

Note: If Output 1, for Bracket or Pro mode, is set to S.L.E./Timer 1, the S.L.E. will have control of the Throttle Mode for Timer 1. This is explained under Conflict Warning on page 63.

Each 4-Stage Timer also has a Timer Range setting explained on the next page.

Understanding the P.T.S.O. and Timer Range Screen

P.T.S.O.

P.T.S.O. stands for Programmable Throttle Stop Override. The P.T.S.O. feature can be thought of as a Tap down for Timer 1. The P.T.S.O. allows a programmable amount of time to be subtracted from either or both Stages 2 and 4 of Timer 1. This is done by pressing a button that has been selected as a Tap Down button on the Button Control Panel. After the Transbrake releases there is a quarter of a second disable time before the P.T.S.O. is enabled. This is to ensure that a late Delay Tap Down is not registered as a P.T.S.O. After the P.T.S.O. is enabled, each time the Tap Down button is pressed while in either Stage 1 or 2 the P.T.S.O. time amount is subtracted from Stage 2. Each time the Tap Down button is pressed while in either Stage 3 or 4, the P.T.S.O. time amount is subtracted from Stage 4.

Note: The P.T.S.O. only affects Timer 1.

Timer Ranges

Each 4-Stage Timer also has a Timer Range setting. The Timer Range setting is used to control whether Stages 1 and 2 go from 0.000 to 9.999 shown as X.XXX or 00.00 to 99.99 seconds shown as XX.XX. Stages 3 and 4 can't be changed and are always 00.00 to 99.99 seconds. Setting the Timer Range is explained on pages 32 for Bracket Mode and 46 for Pro Mode.

Understanding the S.L.E. and Line Lock Screen

S.L.E.

S.L.E. stands for Starting Line Enhancer. The S.L.E. feature is typically used in-conjunction with an in-line Throttle Stop. When activated, the S.L.E. will close the Throttle Stop. This allows the driver to push the gas pedal to wide open throttle position and have the engine rev only to the preset RPM level.

Bracket Mode S.L.E.

To function, the S.L.E. must first be turned on. The S.L.E. is turned on and off using the Bracket Output Control Panel. In Bracket Mode the S.L.E. can be activated two different ways. First, before the vehicle is staged, if either a Tap-Up button or a Tap-Down button is pressed the S.L.E. is activated. Secondly, pressing the Transbrake Push Button during the staging of the vehicle will cause the S.L.E. to activate. Once activated the S.L.E. stays on until the Transbrake Delay time is counting down. While the Transbrake Delay time is counted down the Elite 700 compares the S.L.E time to the remaining Delay time. When the Delay time becomes less than the S.L.E. time the S.L.E. Output is turned off and the engine is returned to full throttle.

Any value between 0.000 and 9.999 can be used as a S.L.E. time. A typical S.L.E. value is eight tenths (0.800). This setting will open the throttle eight tenths (0.800) of a second before the Transbrake releases. If the motor does not get up against the 2 Step in this amount of time, an S.L.E. value greater than eight tenths (0.800) should be used.

If all nines (9.999) are entered the throttle will open up as soon as the **Transbrake push-button is released.** If all zeros (0.000) are entered the throttle will open up **when the Transbrake releases.**

Pro Mode S.L.E.

To function, the S.L.E. must first be turned on. The S.L.E. is turned on and off using the Pro Output Control Panel. In Pro Mode the S.L.E**.** can only be activated by pressing either a Tap-Up button or a Tap-Down button before the Transbrake is engaged. When activated, the S.L.E. will close the Throttle Stop. This allows the driver to push the gas pedal to wide open throttle position and have the engine rev only to the preset RPM level. Once activated the S.L.E. stays on until the Push-button used to apply the Transbrake is pressed, at which time the S.L.E. Hold Time starts counting down. After the S.L.E. Hold Time is counted down the S.L.E turns off, and the engine is returned to full throttle. The S.L.E. Hold Time is used to make sure the Transbrake has time to fully engage before going to full Throttle.

S.L.E. Mode

There are two S.L.E. mode settings High and Low. If set to High, when the S.L.E. Output is activated it will put out +12Volts. If set to Low, when the S.L.E. output is activated it will remove +12Volts.

Conflict Warning:

If Output 1 is set to S.L.E./ Timer 1, the Elite 700 will automatically use the setting for the S.L.E. Mode to adjust the Throttle Mode for Timer 1. This means if the S.L.E. Mode is set to High the Timer 1 Throttle Mode will be forced to Off/On/Off/On. Or if the S.L.E. Mode is set to Low the Timer 1 Throttle Mode will be set to On/Off/On/Off. Any attempt to change the Throttle Mode on the Timer 1 screen will have no effect.

Note: Pressing the zero key while the S.L.E is activated, cancels the S.L.E. and returns full throttle control.

Line Lock Mode

The Line Lock Mode is used to select whether the Line Locks will be used only for the burnout, only at the starting line, or for both. The Line Lock Mode is only displayed if at least one Output, either 2 or 3, for the corresponding Bracket or Pro Output Control Panel is set to Line Lock.

Burn-out Timer

The Burn-out Timer is used to control the length of the burnout. This has the benefit of making the burnouts the same every time. When the Line Lock button is pressed the Line Lock solenoid(s) is turned on. The engine is then brought up to the desired RPM at which time the Line Lock Button is released. When the button is released the Elite 700 will start counting down the Burn-out Timer time. When the count reaches zero the timer will release the Line Lock solenoid(s) allowing the car to roll forward. The Burn-out Timer is only displayed if at least one Output, either 2 or 3, for the corresponding Bracket or Pro Output Control Panel is set to Line Lock.

Note: Smart Select will automatically link the outputs, when Line Locks are used in both Bracket and Pro Mode, page 84.

Understanding the Time Shift Control Screen

Multi Shift

The Multi Shift setting is used to turn on or off the screen with Shifts 2 – 5. When turned on, the Shifts 2 – 5 screen allows up to four additional shift points to be entered. If your vehicle only needs one shift, turn this feature off.

Shift Mode

The Shift Mode is used to select whether +12 Volts is applied or removed from the output for the shift. Select a setting of "Low" for shifter requiring the removal of +12Volts to shift. Select a setting of "High" for a shifter requiring +12Volts to shift.

Shift Pulse

The Shift Pulse is used to select how long the output is active when the shift point is reached. A typical setting for the Shift Pulse is .350 seconds. However if the shifter does not reliably shift from one gear to another the Shift Pulse time should be increased. Any number from .000 to .999 seconds can be entered. Times less than .300 are not recommended.

Shift 1

The Shift 1 time is the amount of time from the release of the Transbrake until the shifter will shift the vehicle from low gear to the next higher gear.

Understanding the Time Shifts 2-5 Screen

Shift Point for Shifts 2 and 3 can be set from 0.000 to 9.999 Seconds. Shift Points for Shifts 4 and 5 can be set from 00.00 to 99.99 Seconds. All the Shifts are sequential and all the Shift times are in reference to the release of the Transbrake. For a Shift Point to be valid it must be greater than the last Shift Point plus the Shift Pulse time. During a pass as the Shifts are made, if any Shift point is set to zero or is not valid, any further shifting of the vehicle will be terminated. If you only need two shifts, set Shift Point 3 to zero.

Understanding the
The Control Panels

The Elite 700 is the first Delay Box to have Control Panels. There are four Control Panels, two for the outputs, one for the buttons, and one for Solenoid Saver. Each has its own screen. The two Output Control Panels are used to select what each one the 7 programmable outputs, on the Relay Board, is going to control. The Button Control Panel is used to select what each one of the 4 programmable button inputs, on the Relay Board, is going to do. The Solenoid Saver Control Panel is used to control both the Solenoid Saver and Sleep Mode.

Output Control Panels

The two Output Control Panels allow the user to easily select what both the Bracket and Pro mode outputs, on the Relay Board, are going to do. The S.L.E. Output control is always for the S.L.E. and cannot be changed. There are 7 programmable outputs on the Relay Board. They are S.L.E., Outputs 1, 2, and 3 for Bracket Mode, and Outputs 1, 2, and 3 for Pro Mode.

Up to six of the Elite 700 outputs can be used at a time. These being two Transbrake, the S.L.E., and either the three Bracket or the three Pro outputs. Devices connected to the inactive outputs (the outputs not being used) will be kept in their off state even if the off state requires +12Volts. An example of this is, if the Elite 700 was in Bracket mode and an Under the Carburetor Throttle Stop requiring +12V to stay open, was connected to Pro Output 1, for use in Pro Mode. The Elite 700 would continue to supply +12V to the Stop to keep it open while in Bracket mode.

The Bracket and Pro outputs can also be Linked when a single device such as a Throttle Stop is going to be

used in both Bracket Mode and Pro Mode. Linking outputs is explained on page 16.

Settings for the Output Control Panels

The Output Control Panels should be set up before the Button Control Panel to avoid conflicts in the settings.

The S.L.E. (Starting Line Enhancer) output "on off" setting allows the Elite 700 to control the starting line engine RPM through a device, usually a linkage Throttle Stop, connected to the S.L.E. terminal.

When setting up the Control Panel Outputs 1, 2, and 3 you will notice that no one output features all the available functions and some functions are only available on one output. The list below contains the six possible output choices. The user can select up to three to be used in Bracket mode and three to be used in Pro mode. Some selections can be used more than once.

1. S.L.E. / Timer 1
2. Timer 1
3. Timer 2
4. Timer 3
5. Line Lock
6. Shift

The S.L.E. and Timer 1 setting is usually only used when a single Throttle Stop is going to be used at both the starting line and down track. In this mode the Throttle Stop is first controlled by the S.L.E. until the Transbrake solenoid releases. Once the Transbrake solenoid releases, Timer 1 takes control of the Throttle Stop.

The Timer 1 setting enables the first of the three 4-Stage timers. Timer 1 can then be used to control a Throttle Stop, Nitrous, Lock-up converter, or any other device controlled by time down track.

The Timer 2 setting enables the second of the three 4-Stage timers. Timer 2 can then be used to control a Throttle Stop, Nitrous, Lock-up converter, or any other device controlled by time down track.

The Timer 3 setting enables the third of the three 4-Stage timers. Timer 3 can then be used to control a Throttle Stop, Nitrous, Lock-up converter, or any other device controlled by time down track.

The Line Lock setting allows the Elite 700 to control the vehicle's Line Lock solenoid(s). Not only during the Burn-out but at the starting line as well. During the Burn-out there is now a timer which allows consistent Burn-out times. Using the Line Lock at the starting line is beneficial for vehicles that have a tendency to creep at the starting line.

The Shift by Time setting allows the Elite 700 to be used to shift the vehicle up to five times by time. For vehicles requiring only one shift set the Multi Shift setting to off.

The Button Control Panel

The buttons are used to start all timing sequences of the Elite 700. While up to four buttons can be connected to the Elite 700 at one time, for the Elite 700 to work a minimum of one button must be connected to the Button 1 input. The function of each button is controlled by the Button Control Panel.

The Button Control Panel allows the user to easily select what each button is going to do. The list below shows the nine possible button choices.

1. One Hit at the Tree 1 Button
2. Two Hits at the Tree 1 Button
3. Two Hits at the Tree 2 Buttons
4. False Start
5. Line Lock – Burn-out
6. Tap Up
7. Tap Down
8. Multi-tap
9. Back-up

These settings are considered the primary functions. Explanations of each of the primary functions along with any second or third button functions are shown on a quick Additional Button Functions chart on page 19.

Start by setting up the Button Control Panel by setting Button 1 to the desired setting. If Button 1 is set to "Two Hits at the Tree with Two Buttons" Smart Select will force Button 2 to Second Hit at Tree as this is then the only available setting for Button 2.

Next, if Button 1 is <u>not</u> set to "Two Hits at the Tree with Two Buttons the Back Up feature is going to be used, set Button 2 to Back Up.

Finally, if any button has not been previously set, it can be used as either a Tap Up or Tap Down or left Off. If Button 2, 3, or 4 is set to Tap Down either of the other two buttons can be set to Multi-tap.

As the Output Control Panel and the Button Control Panel are set, the Smart Select feature will automatically enable the screen(s) that is necessary for the selected function.

Button 1 Settings

When in Bracket Mode

Only One Hit at the Tree is the most commonly used setting, and works just like it sounds. Press the button down when staging the vehicle, and then release the button, usually on the top yellow light. When the button is released the Elite 700 will start counting down the Crossover/Delay 1 time.

If the button is pressed again the countdown is terminated. Then when the button is then released again the Elite 700 will start counting down the full Crossover/Delay 1 time again. This is helpful if the driver flinches (lets go of the button before the top yellow comes on).

2 Hits with 1 Button also works just like it sounds. Allowing two shots at the tree with one button, this is usually both top yellows but can be set for top and bottom on the same side of the tree. When the button is released the first time the Crossover/Delay 1 time starts counting down. The button is then pressed and released a second time, which starts the Delay 2 time counting down. The Transbrake will release when either of the delay times reaches zero, even if this results in a red light.

The main benefit of this setting is, allowing two shots at the tree using only one Push-button, in case you missed the tree with your first release. The downside is you cannot

reset the first delay to stop a red light if you flinch. The second press of the button switches to Delay 2 while Crossover/Delay 1 time continues counting down.

2 Hits with 2 Buttons uses two Push-buttons, one for each Delay time. With Button 1 starting the Crossover/Delay 1 time and Button 2 starting the Delay 2 time. The main benefit of this setting is, allowing two shots at the tree, in case you missed the tree with your first release. Also if the driver flinches on the first hit, Button 1 can be pressed again to avoid a red light. The downside is, having to use two separate Push-buttons at the starting line. Also the loss of a Button input for other uses.

False Start is similar to 2 Hits with 1 Button. The main difference is that when the button is pressed the second time the Crossover/Delay 1 time is canceled. When Button 1 is released the first time, the Crossover/Delay 1 time starts counting down. If Button 1 is then pressed a second time, the Crossover/Delay 1 time is canceled. Then when Button 1 is released a second time Delay 2 time starts counting down.

The Transbrake will only release on Crossover/Delay 1 if Button 1 is not pressed a second time. However if Button 1 is pressed and released a second time the Transbrake will be released when Delay 2 time reaches zero.

When in Pro Mode

Regardless of the Button 1 Mode setting Smart Select will automatically select **Only One Hit at the Tree** while the Elite 700 is in Pro mode. This is the only Button Mode that works in Pro Mode.

Only One Hit at the Tree works just like it sounds. Press the button down when staging the vehicle, and then release the button when the three yellow lights come on. When the button is released the Elite 700 will start counting down the Pro Delay time.

Button 2 Settings

When in Bracket Mode

The Second Hit at the Tree setting is automatically turned on when the Control Panel setting for Button 1 is set to 2 Hits with 2 Buttons. This is the only valid setting for Button 2 in this Mode. While in Second Hit at the Tree Mode, Button 2 activates Delay 2 when in Bracket Mode and Button 2 is disabled when in Pro Mode. Each time the Button 2 is pressed the Transbrake solenoid is engaged and the Delay 2 time value is loaded into a counter. When the button is then released the counter starts timing down. When the counter reaches zero the Transbrake solenoid is released.

The **Back-up** setting is used by vehicles that require the Transbrake solenoid to be engaged to back-up. The Back-up feature is explained on page 78.

The second function for Back-up setting is to be a Multi-tap button. The Multi-tap feature is explained on page 57.

There is not a third button function for the Back-up setting.

The **Tap Up** setting enables Button 2 to be used to Tap Up, allowing time to be added to the first delay started. The Tap Up feature is explained on page 56.

The second function for the Tap Up setting is, to activate the S.L.E. output before the Transbrake is engaged. The S.L.E. feature is explained on page 62.

The third function for the Tap Up setting is to function as a Timer 1 Override. The Override feature is explained on page 77.

The **Tap Down** setting enables Button 2 to be used to Tap Down, allowing time to be subtracted from the first delay started. The Tap Down is explained on page 56.

The second function for the Tap Down setting is, to activate the S.L.E. output before the Transbrake is engaged. The S.L.E. feature is explained on page 62.

The third function for the Tap Down setting is to activate the P.T.S.O. feature. The P.T.S.O. feature is explained on page 61.

The **Multi-tap** setting is only available for Button 2 after Button 3 or 4 has been set to Tap Down. The Multi-tap setting allows Button 2 to be used to activate the Multi-tap feature. The Multi-tap feature is explained on page 57.

No second or third button function for Multi-tap.

When in Pro Mode

The **Back-up** setting is used by vehicles that require the Transbrake solenoid to be engaged to back-up. Button 2 is the only button that can be used to activate the Back-up feature. The Back-up feature is explained on page 78.

The **Tap Up** setting enables Button 2 to activate the S.L.E. output before the Transbrake is engaged. The S.L.E. feature is explained on page 62.

The Second function for the Tap Up setting is, to function as a Timer 1 override. The Override feature is explained on page 77.

The **Tap Down** setting enables Button 2 to activate the S.L.E. output before the Transbrake is engaged. The S.L.E. feature is explained on page 62.

The second function for the Tap Down setting is to activate the P.T.S.O. feature. The P.T.S.O. feature is explained on page 61.

The **Multi-tap** setting has no function in Pro Mode.

Button 3 Settings

Button 3 is the only button that can be used to control the Line Locks for a burnout. Smart Select automatically changes Button 3 to Line Lock control if the Line Lock mode is set to Burn-out or Starting Line and Burn-out.

Note: If Button 3 is being used to control the Burn-out Timer, it will not activate the S.L.E.

When in Bracket Mode

The **Tap Up** setting enables Button 2 to be used to Tap Up, allowing time to be added to the first delay started. The Tap Up feature is explained on page 56.

The second function for the Tap Up setting depends on the Line Lock Mode setting. If the Line Lock Mode is set to Burn-out or Starting Line and Burn-out, then the second function of the Tap Up setting is to control the Line Lock Solenoid(s) for the burnout. The Burn-out Timer is explained on page 64.

If the Burn-out Timer is not being used, the second function of the Tap Up setting is, to activate the S.L.E. output. The S.L.E. feature is explained on page 62.

The third function for the Tap Up setting is, while the vehicle is going down the track, to function as a Timer 1 override. The Override feature is explained on page 77.

The **Tap Down** setting enables Button 3 to be used to Tap Down, allowing time to be subtracted from the first delay started each time the button is pressed.

The second function for the Tap Down setting depends on the Line Lock Mode setting. If the Line Lock Mode is set to Burn-out or Starting Line and Burn-out, then the second function of the Tap Down setting is to control the Line Lock Solenoid(s) for the burnout. The Burn-out Timer is explained on page 64.

If the Burn-out Timer is not being used the second function for the Tap Down setting is to activate the S.L.E. output. The S.L.E. feature is explained on page 62.

The third function for the Tap Down setting is, while the vehicle is going down the track, to activate the P.T.S.O. feature. The P.T.S.O. feature is explained on page 61.

The **Multi-tap** setting is only available for Button 3 after Button 2 or 4 has been set to Tap Down. The Multi-tap setting allows Button 2 to be used to activate the Multi-tap feature. The Multi-tap feature is explained on page 57.

No second or third button function for this setting.

When in Pro Mode

The function of **Tap Up or Tap Down** setting depends on the Line Lock Mode. If the Line Lock Mode is set to Burn-out or Starting Line and Burn-out, then the primary use of the Tap Up or Tap Down setting is to control the Line Lock Solenoid(s) for the burnout. The Burn-out Timer is explained on page 64.

If the Burn-out Timer is not being used the primary function of the **Tap Up or Tap Down** setting is, to activate the S.L.E. output. The S.L.E. feature is explained on page 62.

Regardless of the Line Lock mode the second function for the **Tap Up** setting is, while the vehicle is going down the track, to function as a Timer 1 Override. The Override feature is explained on page 77.

Regardless of the Line Lock mode the second function for the **Tap Down** setting is to activate the P.T.S.O. feature. The P.T.S.O. feature is explained on page 61.

The **Multi-tap** setting has no function in Pro Mode.

Button 4 Settings

When in Bracket Mode

The **Tap Up** setting enables Button 4 to be used to Tap Up, allowing time to be added to the first delay started. The Tap Up feature is explained on page 56.

The second function for the Tap Down setting is, to activate the S.L.E. output before the Transbrake is engaged. The S.L.E. feature is explained on page 62.

The third function for the Tap Up setting is to function as a Timer 1 Override. The Override feature is explained on the next page.

The **Tap Down** setting enables Button 4 to be used to Tap Down, allowing time to be subtracted from the first delay started. The Tap Down is explained on page 56.

The second function for the Tap Down setting is, to activate the S.L.E. output before the Transbrake is engaged. The S.L.E. feature is explained on page 62.

The third function for the Tap Down setting is to activate the P.T.S.O. feature. The P.T.S.O. feature is explained on page 61.

The **Multi-tap** setting is only available for Button 4 after Button 2 or 3 has been set to Tap Down. The Multi-tap setting allows Button 4 to be used to activate the Multi-tap feature. The Multi-tap feature is explained on page 57.

No second or third button function for this setting.

When in Pro Mode

The **Tap Up** setting enables Button 4 to activate the S.L.E. output before the Transbrake is engaged. The S.L.E. feature is explained on page 62.

The Second function for the Tap Up setting is, to function as a Timer 1 Override. The Override feature is explained below.

The **Tap Down** setting enables Button 4 to activate the S.L.E. output before the Transbrake is engaged. The S.L.E. feature is explained on page 62.

The second function for the Tap Down setting is to activate the P.T.S.O. feature. The P.T.S.O. feature is explained on page 61.

The **Multi-tap** setting has no function in Pro Mode.

Timer Override Feature - Nitrous

If Button 2, 3, or 4 is set to the Tap Up setting, it can function as an Override for Timer 1. The Override Feature is intended for use when Timer 1 is being used to control Nitrous. The Override Feature allows the driver to manually activate the Nitrous while the vehicle is going down the track, by pressing the Tap Up button during either Stages 1 or 3.

For example, if the Elite 700's Timer 1 is controlling Nitrous and Stage 1 is set to 0.500 and Stage 2 is set to 1.500, half a second after the vehicle leaves the starting line the Nitrous would activate for one and a half seconds. To manually turn the Nitrous on again further down track, using the Tap Up button, the 700 would need to be counting down the Stage 3 time. Therefore if you plan on using the Override feature, enter a time greater than your E.T. in Stage 3. Stage 4 can be left zero.

Back-up Feature

If Button 2 is set to the Back-up setting, it can be used to back up the vehicle without starting a delay cycle. The advantage of using a Back-up button over a bypass button is the Solenoid Saver feature does not work for a bypass button. If the Button 2 input is only going to be used for backing up, any kind of normally open switch, can be used.

Note: If a toggle switch is going to be used to activate the Back-up feature, it is recommended that the Solenoid Saver feature is used.

Bypass Button

If Button 2 is not going to be used to back up the vehicle, a bypass button can be used. To wire in a bypass button take one wire from your button and connect it to the +12 Volt terminal on the Relay Board. Then connect the other wire from the button to the same terminal on the Relay Board that the Transbrake solenoid is connected to.

Note: The button and wiring used for the bypass button will need to be able to handle the current of the Transbrake solenoid. Also a bypass button bypasses the Solenoid Saver feature of the Elite 700.

Understanding the Solenoid Saver Screen

The Solenoid Saver feature keeps the Transbrake solenoid from being destroyed when a button is accidentally left locked on. This usually happens when a driver uses a toggle or rocker switch to back-up and then forgets to turn it off.

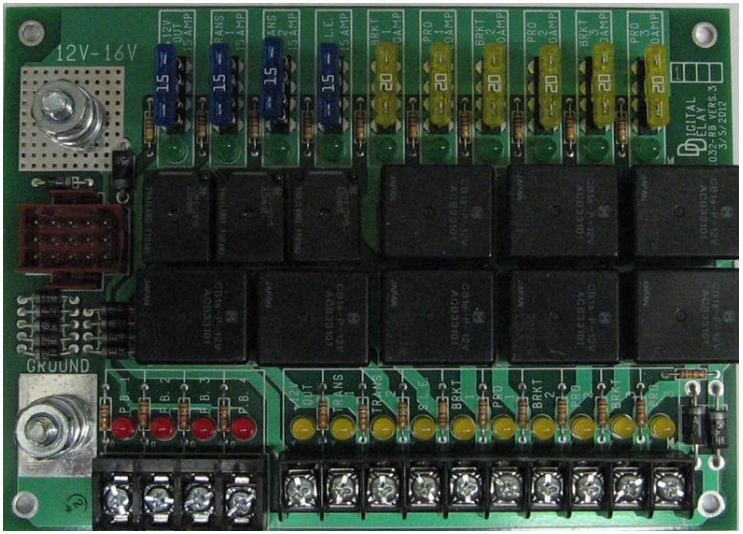
When the Solenoid Saver is turned on, and the Transbrake is applied the Save After Seconds time will start counting down. When the Save After Seconds time reaches zero the Elite 700 will turn off the Transbrake solenoid.

Warning: Care has to be taken when using the Solenoid Saver Feature. This is in case the vehicle gets held at the starting line for more than a minute. The danger is when the Solenoid Saver feature times out. The Transbrake solenoid turns off releasing the vehicle from the starting line.

The original factory setting of 90 seconds will work for most situations.

The Sleep Mode is to help conserve the battery charge and is also a screen saver. After the Elite 700 is idle for the programmed amount of sleep time all of the outputs will turn off. Also the screen will go blank except for the word ASLEEP which moves around the screen as a screen saver. To wake up the Elite 700, press any key on the keypad or any button connected to the Elite 700.

The Relay Board



The Relay Board is where all the electrical connections are made. The plug from Elite 700 plugs into the same-colored socket on the Relay board, it will only fit in one way. This is the only connection that is necessary between the two. The Relay Board has two power studs, one for ground and one for power. It also has four push-button inputs and 10 fused outputs.

The Colored Status LED's.

The green LEDs are used to indicate whether the Relay Board has power and if a fuse has blown. When power is applied to the Relay Board the green LEDs will light. If power is applied, and there is an unlit green LED, the fuse for that output has blown indicating there is a problem with the wiring or the device connected to that output. Once the problem is fixed, replace the fuse with a new one.

The yellow LEDs are used to indicate which output is turned on and supplying battery power.

The red LEDs are used to indicate that a button is pressed (or active).

Wiring the Power and Ground Studs

The power stud should be connected to a power source capable of supplying enough current to run all the devices connected to the Elite 700's outputs at the same time. In most cases this will either be the Master Cutoff switch or the Starter Solenoid. Use whichever one is closer to the Relay Board. The gauge of the power wire needs to be selected according to current load. To figure out your total current load, add up the individual current draw of each device connected to an output. Then use the list below to see what gauge power wire you need.

1-15	Amps 14 gauge
16-25	Amps 12 gauge
26-40	Amps 10 gauge
41-60	Amps 8 gauge
61-80	Amps 6 gauge
81-120	Amps 4 gauge

For wire gauges of 6 or 4 the Relay Board needs to be sent to Digital Delay to have the power stud upgraded to a heavy duty power stud.

The ground stud should be connected to a non-aluminum chassis ground with a 14 gauge wire. The ground stud should also be used for each button that is connected to any of the push-button inputs. If additional devices are going to use the ground stud as a common connection point, the 14 gauge wire going to the chassis should be increased to handle the additional current.

Wiring the Push-buttons

There are four push-button inputs, labeled PB 1, PB 2, PB 3, and PB 4. PB 1 is always the primary Transbrake push-button, PB 2, 3 and 4 are programmable. Use the Push-button Control Panel to select the desired functions for all the Push-buttons.

All four push-button inputs wire the same, so only PB 1 will be explained, follow the same procedure for the other pushbuttons. Most push-buttons only have two wires. Connect one wire to the ground stud and the other wire to the PB 1 terminal. No other connections to the push-button wires should be made. If your push-button has three wires you will only need to use two of them. The two wires are the Common (C) and the Normally Open (N O). The Normally Closed (N C) wire is not used.

Wiring the Outputs

The Relay board has ten outputs. They are +12 Volts, Trans 1, Trans 2, S.L.E., Bracket 1, Bracket 2, Bracket 3, Pro 1, Pro 2, and Pro 3. Each of the ten outputs has its own fuse. The +12 Volts, Trans 1, Trans 2 and S.L.E. outputs are each rated at 15 Amps max and come with a 15 Amp fuse installed on the Relay Board. The three Bracket and three Pro outputs are each rated at 40 Amps max and come with a 20 Amp fuse installed on the Relay Board. Any of the 20 Amp fuses can be increased up to 40 Amps when needed. When wiring a device to the any of the outputs on the Relay Board it is important to use the correct wire gauge for the current load. Use the list below to see what wire gauge is needed for the device.

1-15 Amps 14 gauge
16-25 Amps 12 gauge
26-40 Amps 10 gauge

The **+12 Volt** output is an unswitched fused battery source. This output is on any time the Relay Board has power. An example use of this output would be to supply power for a bypass button.

Trans 1 and Trans 2 are separate but identical Transbrake outputs. While the outputs are identical for ease of understanding, Trans 1 should be considered the primary Transbrake output and Trans 2 the spare Transbrake output. The Trans 1 output is where the Transbrake solenoid and the 2 step wire would connect. The spare Transbrake output is just that, a spare in case the main Transbrake output fails. However the spare output can be used for other functions. Such as, to control line locks at the starting line when all the other outputs are being used. Also, the two transbrake outputs can be tied together to drive high current Transbrake solenoids, up to 30Amps.

Connect one wire from your Transbrake solenoid to the Trans 1 terminal. Connect the other wire from the Transbrake solenoid to ground. Also connect the red wire from a 2 Step or a wire coming from the Launch terminal on the ignition box to the Trans 1 terminal.

The **Starting Line Enhancer** (**S.L.E**) output is a dedicated output for use with a **Linkage** style Throttle Stop to control the engine RPM at the starting line. If you want to use the S.L.E. feature, connect one wire from your Linkage Stop solenoid to the S.L.E. terminal. Connect the other wire from the Linkage Stop solenoid to a ground.

If you want to use an **Air** Under the Carb Throttle Stop as an S.L.E. you can use the S.L.E. output Terminal.

If you want to use an **Electric** Under the Carb Throttle Stop as an S.L.E. you must use the BRKT 1 or the PRO 1output to control the Throttle Stop. These outputs can handle the higher current of the Electric Throttle stops.

The **Bracket and Pro outputs** all work the same. So only the Bracket 1 will be explained. When you receive the Relay Board the Bracket 1 output will have a 20 Amp fuse. This can be increased to a 40Amp fuse if more current is needed. Depending on what is being controlled the Bracket 1 output can supply or remove 12 Volts. It cannot supply ground. One wire from the device needs to be connected to the Bracket 1 terminal and the other wire from the device needs to be connected to ground.

Smart Select Automatic Linking

If either Line Locks or the Shifting by Time is going to be used in both Bracket and Pro Mode, Smart Select will automatically link the Bracket and Pro Outputs. This simplifies the wiring by allowing the solenoid to be connected to just the Bracket output. No jumper wire is needed between the Bracket and Pro outputs.

Note: If the device to be controlled needs Ground, instead of +12 Volts, an additional relay will need to be installed between the device and the Relay Board.

To wire the additional relay;

Connect pin 85 to the desired Relay Board output.
Connect pin 86 and 30 to Ground.
Connect pin 87 to the device.

Screen Contrast Adjustment

The contrast for the Elite 700 screen can be adjusted by pressing the 2 or the 3 key. This can only be done when the Elite 700 is not running a delay cycle. Repeatedly pressing the 2 key will lighten the contrast of the screen. Repeatedly pressing the 3 key will darken the contrast of the screen.

Note: On the case, above the numbers 2 and 3 is a circle. The lighter half of the circle is on the number 2 side and the darker half is on the number 3 side. This is a reminder for the screen contrast adjustment control.

Cooling Fan

The Elite 700 has a built-in fan to help with cooling the unit. The fan will automatically turn on every time the Elite 700 is turned on. The fan draws only a $1/10^{th}$ of an Amp and can be left on with virtually no loss of battery charge. The fan will continue to run when the Elite 700 is sleeping. While it is highly recommended to always leave the fan on, under certain non-race conditions it may desirable to turn the fan off. You can turn the fan off by holding down the number 5 key for five seconds.

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