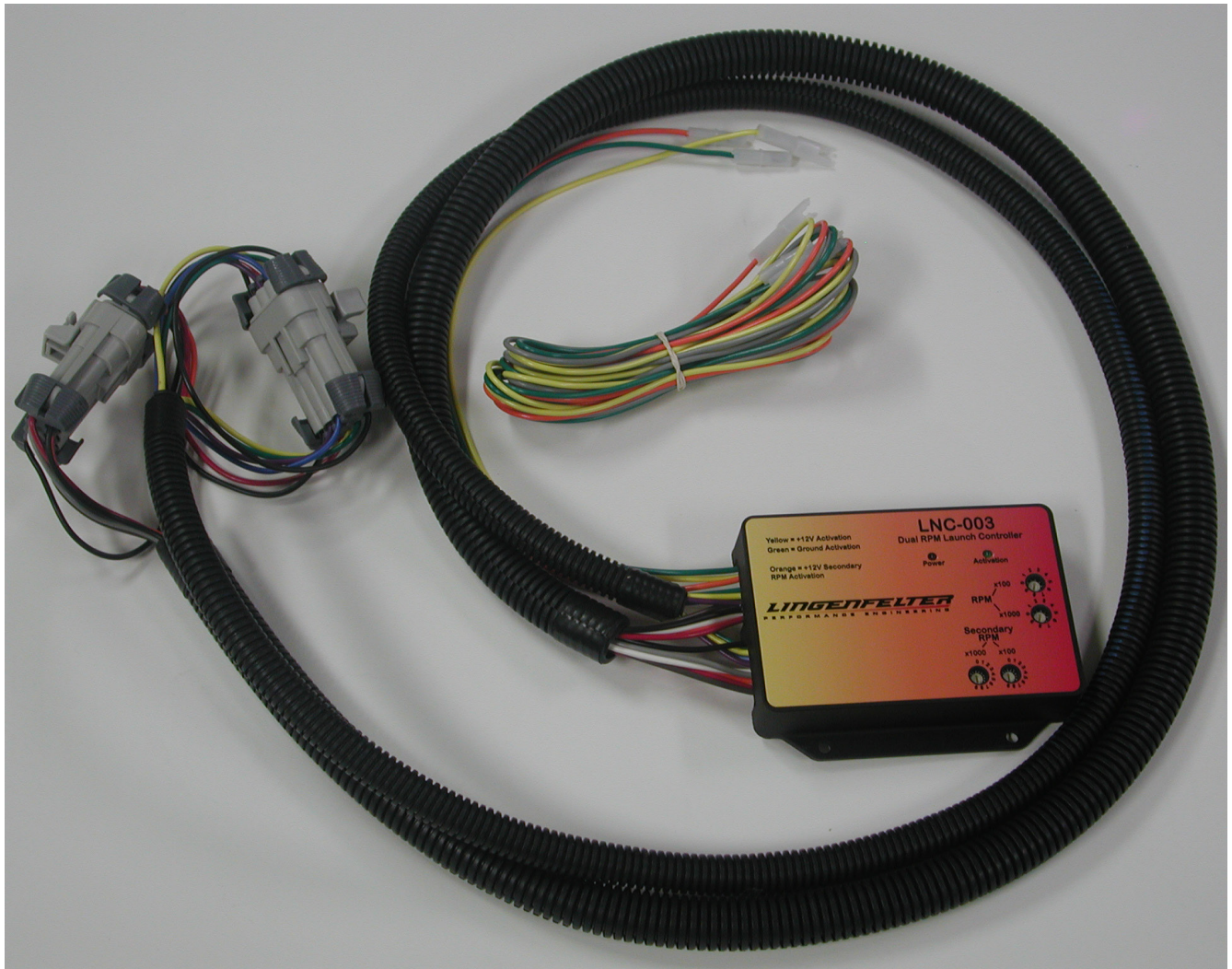


## Installation Instructions For Lingenfelter LNC-003 Dual RPM Launch Controller

Adjustable 2-Step RPM Limiter For GM LSx Series Engines



PN: L460105297

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## PERFORMANCE ENGINEERING

### Parts List

#	Part number	Description
1	LNC-003	LPE Dual RPM Launch Controller
1		72" trigger wire harness ( <i>part of PN LNC-003</i> )
2		hook & loop tape, 3.5" length
4	AV16037	self-tapping screw
1	L920010000	LPE decal
1		instructions

### Optional Items

• Transient voltage suppression diode	L450080000
• MPH activated switch	L460050000
• LED for indicator light	
• Red 12 vdc LED with 30 cm leads	L450030000
• Green 12 vdc LED with 30 cm leads	L450040000
• Sealed 40 amp heavy duty relay kit	L450100000
• Red LED lighted paddle toggle switch, 20 amp	DC-7600500

### Specifications:

- Custom molded high temperature glass filled Nylon 6 enclosure with direct access to the controller settings without requiring removal of a cover or access panel.
- 40 MHz 16-bit automotive qualified processor with eight channel Enhanced Time Module.
- Each coil drive circuit has a dedicated timer to keep the timing accurate over the full RPM range.
- Independent coil drive provides Sequential Ignition Kill when RPM limiting is active.
- Reverse battery protection.
- Both of the activation inputs have active clamps and optical isolation to suppress electrical noise from external solenoids (such as trans brake and line lock).
- Digital filter provided in software to further isolate electrical noise on the activation inputs.
- Separate Primary and Secondary RPM x100 & RPM x1000 switches for easier setting adjustments.
- RPM limiter activation point can be adjusted from 1500 to 9,900 RPM in 100 RPM increments.
- Both **Ground Activation** and **+12 Volt Activation** inputs are provided for the Primary RPM limit activation.
- Dedicated +12 volt activation input for the Secondary RPM limiter.
- True plug-and-play coil pack connection design for ease of installation and removal.
- Fully encapsulated (potted) construction for added durability.
- 90 day warranty (from date of purchase).

## LNC-003 description:

The LNC-003 Dual RPM Launch Controller is a true 2-Step spark based RPM limiter for use with LSx based engines and ignition systems. The LNC-003 provides two RPM limit settings - a Primary and a Secondary.

The LNC-003 can be used to provide consistent launch RPM off the line in drag racing and other standing start racing applications. In turbocharged applications the LNC-003 can also be used to load the engine and help build additional boost off the line.

The LNC-003 can also be used as an adjustable individual cylinder RPM limiter, providing reliable and fast acting spark based engine RPM limit control. This is especially useful in vehicles that have auxiliary fuel control systems where it is not possible to make sure that both the factory ECM/PCM and the auxiliary systems both turn off fuel at exactly the same time. The reason this is important is that if the two don't completely cut fuel at the same time you will run lean when the one system cuts off the injectors (but not the other), risking severe engine damage.

## WARNINGS:

**The RPM limiter function of the LNC-003 acts by disabling spark to individual cylinders and not fuel like most production RPM limiters so the 2-Step/Launch Control function is not meant for use on the street or for use on cars equipped with catalytic converters. The 2-Step/Launch Control function of the LNC-003 is only for use at the race track on race vehicles not equipped with catalysts. Failure to follow these precautions can result in premature catalyst failure.**

**DO NOT operate the engine with the LNC-003 RPM limit active for extended periods of time. Due to the raw fuel in the exhaust when the RPM limit is active, a risk of backfiring exists if you do so.**

**DO NOT** place in direct exposure to exhaust manifolds, turbocharger turbine housings or other underhood items that are high temperature heat sources (radiated heat sources). The warranty does not cover damage due to melted enclosures or wiring due to improper installation.

**Do NOT** submerge the Controller in liquid or directly wash the unit with liquid of any type! The switches on the LNC-003 are sealed but are NOT rated for high pressure wash, use caution if power washing near the LNC-003 controller

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### Switches and indicator lights:

#### Red (Power) LED:

- Comes on solid on start-up (power on)
- When active RPM is reached, red LED will blink (even if activation wire is not triggered)

#### Green (Activation) LED:

- Slow blink rate (4 Hz) for Primary Activation only
- Medium blink rate (8 Hz) for Secondary Activation only
- Fast blink rate (16 Hz) for both Primary and Secondary inputs on



### Settings:

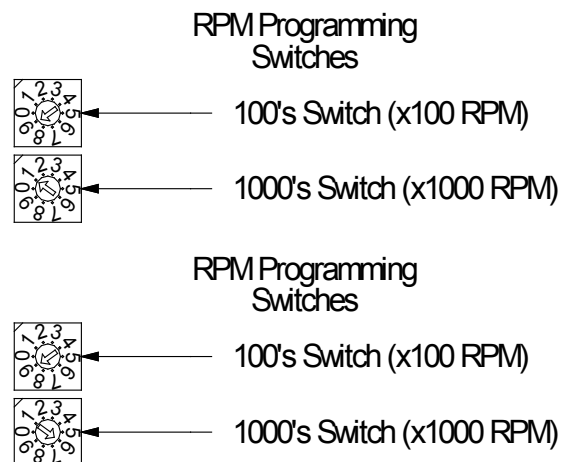
- Controlled by two (2) ten position switches (Primary **RPM**) and two (2) sixteen position switches (**Secondary RPM limit**)
  - Two (2) ten position switches for selecting hundreds of RPM (x100) and thousands of RPM (x1000) for the Primary RPM limit setting
  - Two (2) sixteen position switches for selecting hundreds of RPM (x100) and thousands of RPM (x1000) for the Secondary RPM limit setting. Switch positions after 9 not used.

### Notes:

- The LNC-003 RPM limiter function will not trigger at RPM levels below 1500 RPM
- If both the Primary and the Secondary RPM limit are enabled then the Primary setting is selected
- The Primary RPM limit setting can be set higher or lower (or the same as) the Secondary RPM limit setting
- **Changes to the switch point settings (RPM, Degrees, Rate) must be done with the ignition off**
  - The switch positions are only read on start up

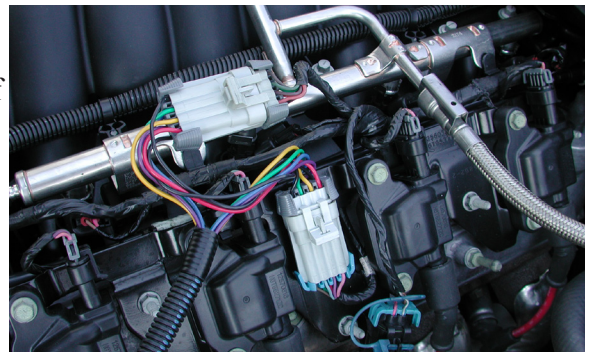
### Example settings:

- 1900 RPM activation point for launch control
  - Upper (x100) RPM switch on position 9
  - Lower (x1000) RPM switch on position 1
- 6900 RPM activation point for RPM limiter
  - Upper (x100) RPM switch on position 9
  - Lower (x1000) RPM switch on position 6



## Installation:

- Make sure the ignition is off before beginning installation.
- You can mount the LNC-003 using the supplied hook and loop tape or the supplied self tapping screws.
  - Do NOT mount the LNC-003 directly on top of the engine or near the exhaust manifolds due to heat concerns.
  - Do NOT mount the LNC-003 in the line of site of high temperature objects such as exhaust manifolds, turbine housings etc. If needed, put a heat shield in between the heat source and the module to protect the plastic case.
  - Do NOT install within 6" of nitrous solenoids or other devices with strong magnetic fields.
  - If you have relocated coil packs, do not run the high voltage spark plug wires along side the low voltage coil pack wires. Keep the wires as far apart as possible and, if they do have to intersect, have them intersect at right angles.
- Disconnect the pack connectors on each side of the engine and then plug the LNC-003 wiring harnesses in between on each side. It does not matter which bank of cylinders each side of the LNC-003 harness connects to.
- The only wiring that is required is for the trigger wire(s) depending on how you want to enable the device. See page 7 for an example vehicle wiring diagram.
- The possible Primary RPM trigger/activation connection methods are:
  - Ground activation wire (green) - connect this wire to a source that supplies a ground path when you want the LNC-003 to become active
  - +12 volt activation wire (yellow) - connect this wire to a source that supplies +12 volts when you want the LNC-003 to become active (i.e. brake light switch, line-lock solenoid)
  - Switch connected in between the ground activation wire and the +12 volt activation wire (green wire connected to yellow wire through a switch, usually a momentary switch)
  - Ground activation wire connected to +12 volt activation wire (green connected to yellow) for standard RPM limiter operation (LNC-003 always active)
- Set the desired Primary RPM switch activation point using the two ten position rotary switches for the 1000 RPM increment (x1000) and the 100 RPM increment (x100).
- The Secondary RPM trigger/activation connection method is:
  - +12 volt activation wire (orange) - connect this wire to a source that supplies +12 volts when you want the Secondary RPM limit of the LNC-003 to become active (i.e. brake light switch, line-lock solenoid)
- Set the desired Secondary RPM switch activation point using the two (2) sixteen position switches for selecting hundreds of RPM (x100) and thousands of RPM (x1000) for the Secondary RPM limit setting. Switch positions after 9 are not used.



## Launch Control/2-Step Features

The independent coil drive of the LNC-003 provides sequential ignition kill when RPM limiting is active. The desired RPM limiting is set as shown on page 3. The activation for the Primary RPM setting of the Launch Control/2-Step function is controlled by the ground (green) or +12 volt (yellow) activation wires. The activation for the Secondary RPM setting of the Launch Control/2-Step function is controlled by the +12 volt (orange) activation wire.

If you are triggering off of the clutch switch, the 2-Step will trigger each time you depress the clutch pedal. This can be used to provide an ignition cut/torque cut on each gear change to potentially allow for faster shifts/faster clutch engagement.

If you do not want the 2-Step to trigger when you engage the clutch pedal once you are moving then you will need to install a momentary switch or use the Lingenfelter MPH activated switch. With the MPH activated switch you can set at what MPH you want the 2-Step activation to be disabled.

### Additional notes:

The LNC-003 is designed for use on all known GM LS series engine applications (LS1, LS6, LS2, LS7, LS3, LQ4, L76, L92 and other Gen III and IV GM V8 applications along with other GM V8 engines using the same ignition coil system) including the following vehicles:

- 1997-2004 C5 Corvette
- 2005-2009 C6 Corvette (including Z06)
- 1998-2002 LS1 V8 equipped Camaro and Firebird
- 2004-2006 Pontiac GTO
- 2008-2009 Pontiac G8 with the L76 or the LS3 engine
- 2004-2006 Cadillac CTS-V
- 1999-2008 GM CK trucks (Tahoe, Yukon, Escalade, H2, Sierra, Silverado, Avalanche) with the 4.8, 5.3, 6.0 and 6.2L Gen III and IV V8 engines (will not work on 305 & 350 Vortec engines)
- 2003-2006 Chevrolet SSR
- 2006-2008 Trailblazer SS and other S/T body trucks with the 4.8, 5.3 and 6.0L Gen III & IV GM V8 engines

The LNC-003 should function on the following vehicles/engines but has not yet been tested on them:

- CK trucks with 8.1L V8 engines (L19) with individual coil ignitions
- Front wheel drive 5.3L LS4 Gen IV V8 equipped cars (Impala SS, Grand Prix & Monte Carlo)

The LNC-003 should also function with these products but has not yet been tested with them:

- Aftermarket coils for the LS series engines (such as the MSD coils) used with GM ECM/PCM.
- Aftermarket engine management systems and ignition systems (Accel, BigStuff3, Motec, FAST, MSD, etc.) that run the production GM coils.

**The LNC-003 will NOT work with other individual coil ignition systems like those found on the GM Northstar or Ecotec engines or on the Ford modular V8 and the Chrysler Hemi V8.**

### Important Information regarding spark plug wires and spark plugs:

You must use noise suppression ignition wires and resistor type spark plugs with this Controller. The LNC-003 Controller contains High Frequency Digital Electronics and will NOT function correctly without Noise Suppression Wires!

### Nitrous, line-lock and trans-brake solenoid warning:

LPE has found that these solenoids can cause fly-back voltage levels at times in excess of 600 volts. These voltage levels have the potential to damage sensitive electronics including the LNC-003, the PCM/ECM and other modules in the vehicle. Lingenfelter Performance Engineering has developed a

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## **P E R F O R M A N C E   E N G I N E E R I N G**

transient voltage suppression (TVS) diode kit (PN L450080000) for use with line-lock solenoids, trans-brake solenoids and other aftermarket automotive solenoids of this type. LPE recommends the use of our noise suppression diode on all vehicles that have a line lock or trans-brake.

**For additional product installation information and technical support, contact LPE or your LPE products distributor. You can also find technical support and usage discussions regarding this product and many other LPE products in our Internet forums:**

**<http://www.lingenfelter.com/LPEforumfiles>**

### **NOTICES:**

It is the responsibility of the purchaser to follow all guidelines and safety procedures supplied with this product and any other manufactures product used with this product. It is also the responsibility of the purchaser to determine compatibility of this device with the vehicle and other components.

Lingenfelter Performance Engineering assumes no responsibility for damages resulting from accident, improper installation, misuse, abuse, improper operation, lack of reasonable care, or all previously stated reasons due to incompatibility with other manufacturer's products.

Lingenfelter Performance Engineering assumes no responsibility or liability for damages incurred from the use of products manufactured or sold by Lingenfelter Performance Engineering on vehicles used for competition racing. Lingenfelter Performance Engineering neither recommends nor approves the use of products manufactured or sold by Lingenfelter Performance Engineering on vehicles which may be driven on public highways or roads, and assumes no responsibility for damages incurred from such use.

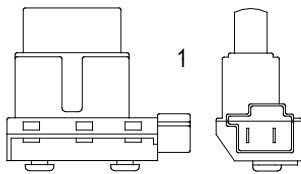
It is the purchaser's responsibility to check the state and local laws and sanctioning body requirements pertaining to the use of this product for racing applications. Lingenfelter Performance Engineering does not recommend nor condone the use of its products for illegal street racing.

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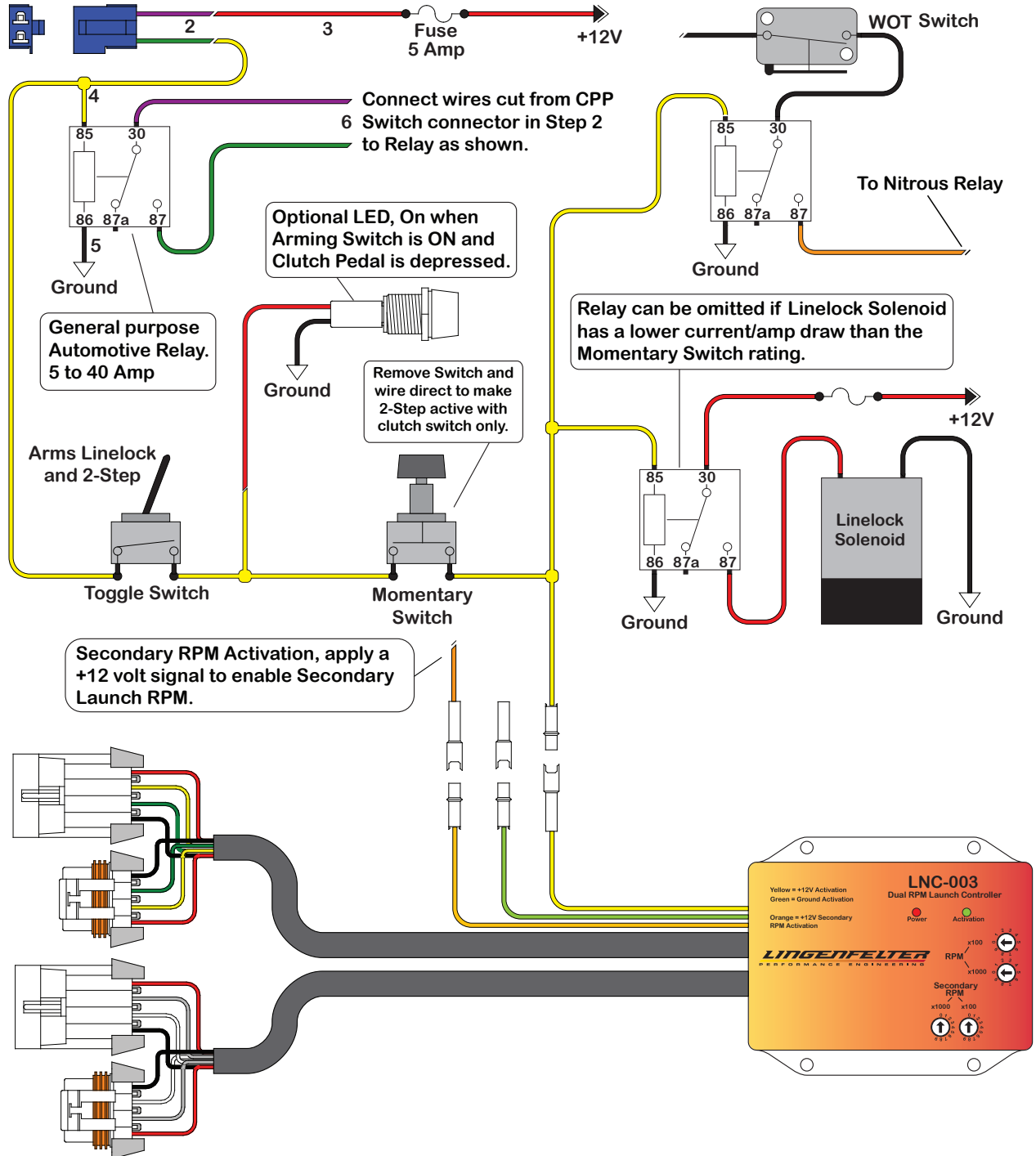


### Manual Transmission with Linelock & Nitrous

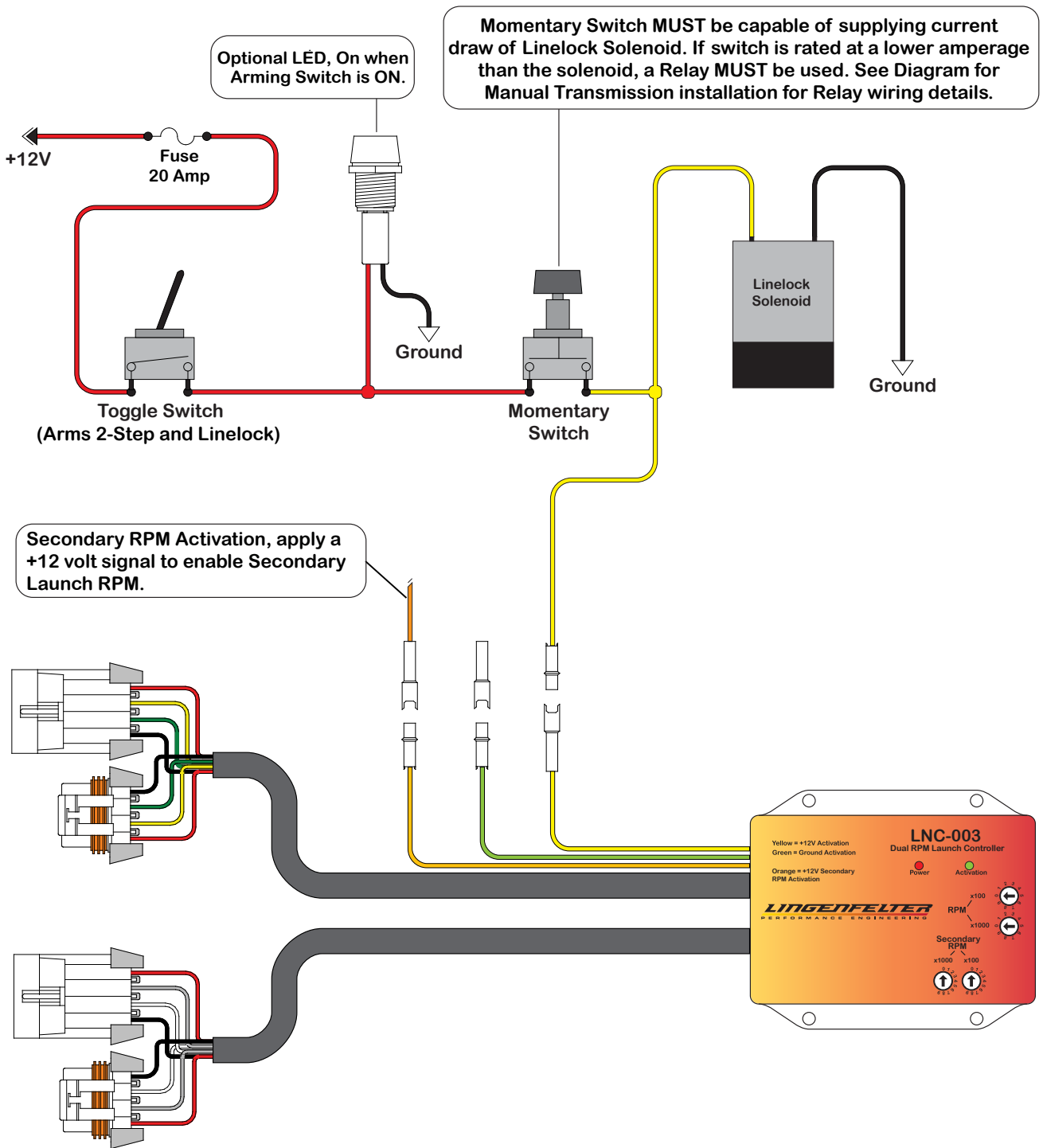


- 1 - Locate CPP (Clutch Position Switch) and unplug 2-wire connector.
- 2 - Cut wires approx. 3" back from connector.
- 3 - Find +12 volt Key On power source and connect to one wire of CPP connector.
- 4 - Splice two wires onto remaining CPP connector wire and connect one wire to #85 on Relay. The extra wire will be used for LNC-003 Launch Controller activation.
- 5 - Connect terminal #86 on Relay to Ground.
- 6 - Connect wires cut from CPP Switch connector to Terminals #30 and #87 as shown.

Wire color illustrated is for 1999 TransAm

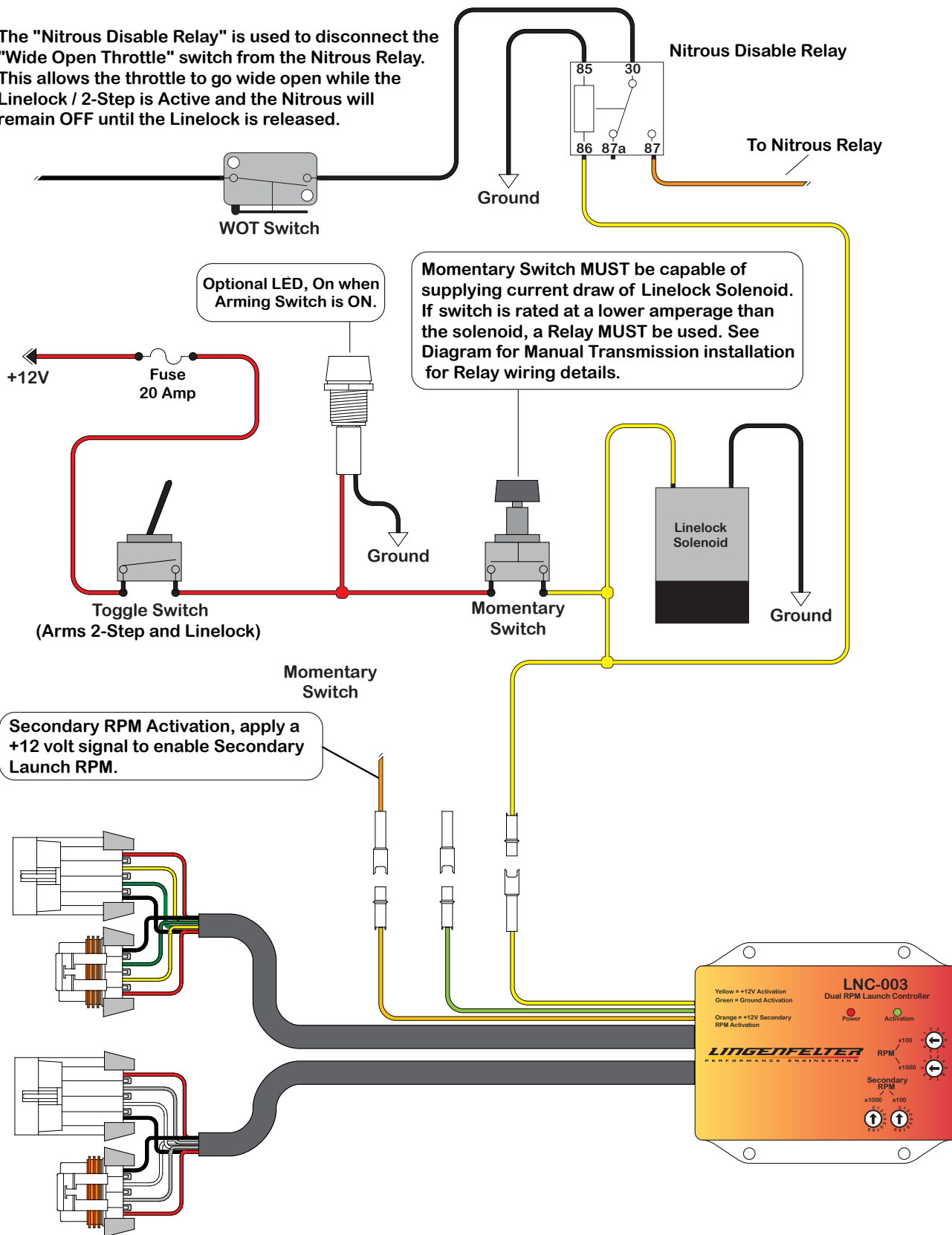


### Automatic Transmission with Linelock



### Automatic Transmission with Linelock & Nitrous

The "Nitrous Disable Relay" is used to disconnect the "Wide Open Throttle" switch from the Nitrous Relay. This allows the throttle to go wide open while the Linelock / 2-Step is Active and the Nitrous will remain OFF until the Linelock is released.



## LNC-003 Wiring Diagram

--- Harness #1 ---

--- Harness #2 ---

Cut harness wires 50" in length.  
Finished trim length = 48"  
20 Gauge

Cut Wire Loom 42" Long

