



**A Holley Performance Brand**

# THROTTLE & RPM-ACTIVATED NITROUS CONTROL SYSTEM P/N 15970NOS

**Installation Instructions  
199R10300**

## INTRODUCTION:

Congratulations on the purchase of your NOS throttle and RPM-activated nitrous control system! This package is intended to provide increased convenience and safety in the operation of your NOS nitrous oxide injection system. It allows hands-free, totally automatic activation of the nitrous at WOT *and* within the selected RPM range, freeing the driver to concentrate on the task of driving the race car.

The NOS throttle-activated microswitch eliminates the need for an awkward pushbutton switch. It also prevents the nitrous system from being used when the throttle is closed, such as while shifting. With the exception of a throttle-based progressive controller (P/N 15835NOS), no nitrous oxide injection system should be used at less than wide-open throttle.

The NOS RPM-activated switch is designed to serve as a valuable tuning aid. When installed and used properly, it will govern the entire RPM range within which the nitrous system will operate. The RPM switch will not allow the nitrous system to operate outside of its pre-selected RPM range. In this way, it acts as two RPM switches in one, first turning on and then off the nitrous system. In some cases, an RPM switch may be used to aid starting line traction by delaying the activation of a single-stage nitrous system, until the vehicle is in motion.

As a safety device, the NOS RPM switch serves several valuable functions, if both high and low RPM limits are correctly adjusted. First, it will prevent the nitrous system from accidentally being activated while the engine is not running since a reading of zero RPM is below the low limit. Secondly, it will prevent the nitrous from being injected at a RPM that is too low, such as when a driver accidentally shifts from first to fourth gear. Finally, it will act as a nitrous "rev limiter", shutting off the flow of nitrous and fuel at the high limit point. (This should not be confused with an engine rev limiter, which momentarily turns off the fuel or ignition, if the engine goes over speed.)

The RPM levels at which nitrous is switched on and off can easily be changed by pulling out the existing chip and replacing it with a unit set for the desired RPM. The available RPM chips range from 2600 RPM up to 12,000 RPM.

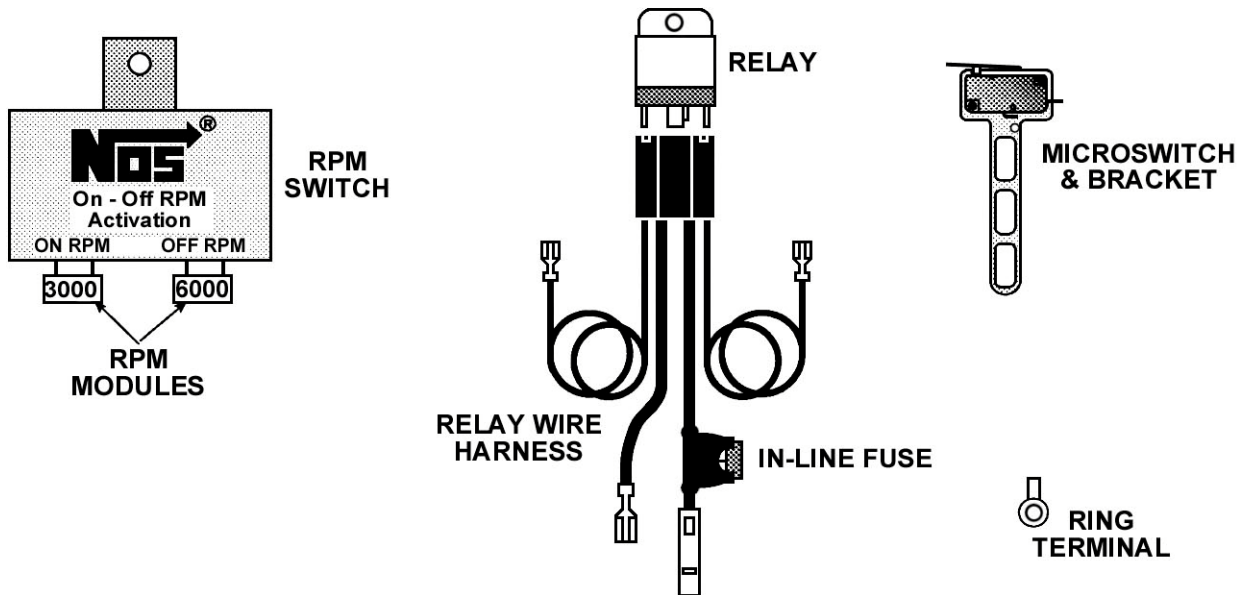
## KIT COMPONENTS:

Before beginning installation, compare the pieces you received with the component list below. If any pieces are missing or damaged, contact the NOS technical department at 1-866-GOHOLLEY for assistance.

Item	Description	Qty.	P/N
(1)	RPM Switch	1	200R527A
(2)	RPM Module	1	15800-30-SNOS
(3)	RPM Module	1	15800-60-SNOS
(4)	RPM Module	1	15800-120-SNOS
(5)	Microswitch	1	15640NOS
(6)	Bracket	1	15645-SNOS
(7)	Screw	2	15647-SNOS
(8)	Nut	2	15648-SNOS
(9)	.250 Blue Connector	2	15885B-SNOS
(10)	.250 Blue Male Spade	1	15886B-SNOS
(11)	.187 Green Male Spade	2	15888G-SNOS
(12)	Relay	1	15618NOS
(13)	Harness	1	15604-SNOS
(14)	Fuses (15, 20, & 25 amp)	3	*
(15)	Ring Terminal	1	204R241-9

\* Varies with application

Figure 1 Component Identification



## INSTALLATION OF MICROSWITCH & UNIVERSAL BRACKET FOR THROTTLE ACTIVATION OF NITROUS SYSTEM:

1. Remove engine inlet air ducting and/or any obstruction to the microswitch mounting location.
2. Examine throttle linkage to determine an appropriate mounting location. Refer to Figure 2 for additional guidance.
3. Note that the mounting bracket may be bent and/or trimmed to facilitate mounting.

**HINT:** For installations that will require multiple bends, make a template of the bracket from posterboard (cereal boxes work well). Attach the microswitch to the cut-out and check fit. Note the bends and/or trimming required and reproduce them with the metal bracket.

4. Loosely secure the microswitch in place. Adjust the microswitch position to ensure that the actuation arm has “clicked” on at the same point your throttle linkage has reached W.O.T. (If possible, have throttle arm stop close to, or on top of, the microswitch’s “button”, which is under the actuator arm).
5. Tighten the microswitch mounting bolts.

**NOTE:** Wire the microswitch before final installation to avoid difficulty later.

6. Reinstall the engine inlet air ducting, etc.

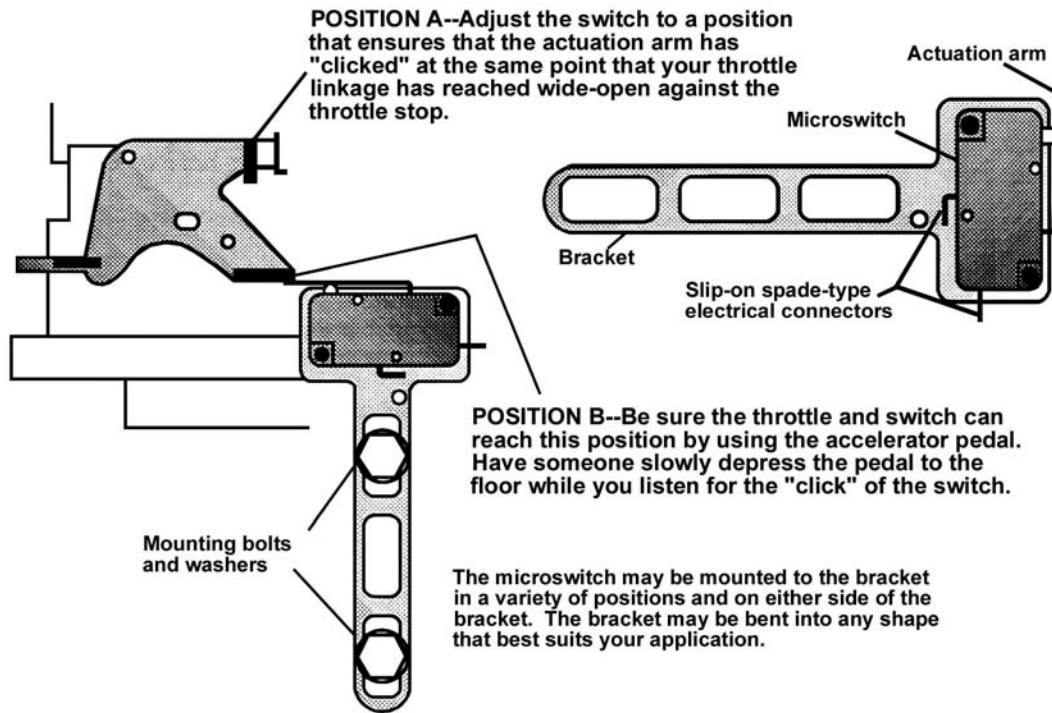
**CAUTION!** Pay strict attention to the switch wiring. If you have previously installed an NOS nitrous kit, you will note that the switches may be connected differently. If you are upgrading your existing system, do not follow the wiring diagram from your original instructions. Use only the diagram shown in this instruction booklet.

The NOS power relay is designed to prevent high amperage current from damaging the control components, such as the RPM switch, microswitches, shift handle buttons, etc. The power contacts in the relay will carry a maximum of 30 amps.

## MODULE AND RELAY MOUNTING:

Begin by mounting the relay close enough to the battery to allow the heavy 10 gauge orange wire that contains the fuse to be attached directly to the positive terminal of the battery. The ring terminal I.D. is 3/8” to accommodate the attachment bolt of side terminal batteries. The battery post of Ford style starter relays may also be used, just make sure that the terminal that is directly connected to the positive post of the battery is used. Complete the wiring by following the diagram.

Figure 2 Microswitch Installation



1. Select a mounting location for the RPM-activation switch.

**NOTE:** This unit may be mounted inside the vehicle or in the engine compartment.

2. Mount the RPM switch using either double-sided tape or a #8 sheet metal screw.

### WIRING (Refer to diagram on page 5):

1. Connect the red wire to a 12-volt switched source, such as the ignition or nitrous arming switch.
2. Connect the black wire to a ground. (This wire must be connected to a ground at all times.)
3. Connect the white wire to a triggering source. On many factory electronic ignitions, use the negative side of the coil.

**NOTE:** Some late model ignitions (such as coil-on-plug and other distributor-less ignitions) may require other modification and/or RPM chips in order to function correctly. Contact the NOS Tech Dept (1-866-GOHOLLEY 8-5 CST) if you have questions.

4. Connect the yellow wire to the ground side of the activation circuit of your NOS relay. Be sure that the arming switch and throttle switches are left in the circuit.

### RPM MODULES:

The plug-in modules used to control the RPM limits of this switch are available in a variety of RPM values. The race car tuner may use any combination of those modules listed below to suit his specific needs. This switch is designed for distributor-less ignition systems (DIS) with either **coil-on-plug** (one spark plug for each coil) or **waste-fire** (two spark plugs for each coil). The RPM modules that you select depends on the type of ignition system that your vehicle has:

- If your vehicle is **coil-on-plug** (one spark plug for each coil), use the 3000 RPM and 6000 RPM modules.
- If your vehicle is **waste-fire** (two spark plugs for each coil), use the 6000 RPM and 12,000 RPM modules.

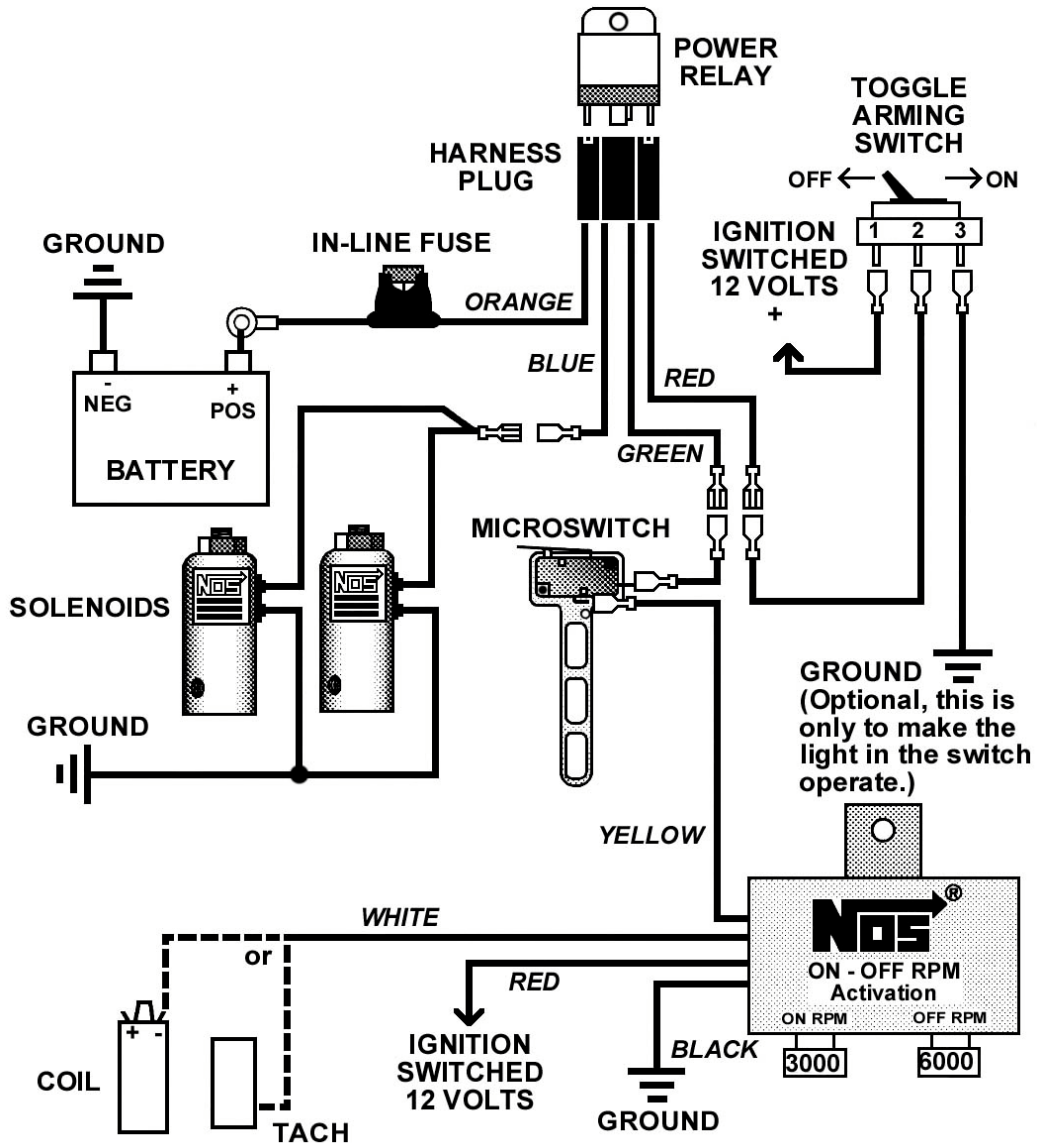
**NOTE:** A waste-fire coil fires twice as many times per engine revolution as a coil-on-plug coil, hence the need to double the RPM points.

**NOTE:** It is best to call the NOS Tech Dept (1-866-GOHOLLEY 8-5 CST) for specific installation advice for your application.

**Additional RPM modules may be obtained under the following part numbers:**

15800-26NOS	2600 RPM	15800-54NOS	5400 RPM
15800-30NOS	3000 RPM	15800-56NOS	5600 RPM
15800-32NOS	3200 RPM	15800-58NOS	5800 RPM
15800-34NOS	3400 RPM	15800-60NOS	6000 RPM
15800-36NOS	3600 RPM	15800-66NOS	6600 RPM
15800-38NOS	3800 RPM	15800-70NOS	7000 RPM
15800-40NOS	4000 RPM	15800-72NOS	7200 RPM
15800-42NOS	4200 RPM	15800-74NOS	7400 RPM
15800-44NOS	4400 RPM	15800-76NOS	7600 RPM
15800-46NOS	4600 RPM	15800-78NOS	7800 RPM
15800-48NOS	4800 RPM	15800-80NOS	8000 RPM
15800-50NOS	5000 RPM	15800-112NOS	11200 RPM
15800-52NOS	5200 RPM	15800-120NOS	12000 RPM

**WIRING DIAGRAM:**



Fuse Values	
Powershot	15 amp
Super Powershot	15 amp
EFI Series	20 amp
Cheater Series	15 amp
Pro Shot Series	25 amp

Relay Wiring Color Key	
<b>Orange (pin 30)</b>	To battery positive terminal (+12V supply)
<b>Blue (pin 87)</b>	To one wire from each solenoid (provides +12 volts to activate solenoids)
<b>Green (pin 85)</b>	Through microswitch then to yellow wire from RPM switch (ground for relay activation)
<b>Red (pin 86)</b>	To ignition-switched 12 volts through arming switch (+12V for relay activation)

RPM Switch Wiring Color Key	
<b>Red</b>	To a 12V switched source (such as arming switch)
<b>Black</b>	To a chassis ground
<b>White</b>	To a TACH signal, such as the negative side of the coil or the TACH output of ignition module
<b>Yellow</b>	To one side of throttle microswitch (provides ground for green wire of relay)

## TROUBLESHOOTING:

PROBLEM	POSSIBLE CAUSES	DIAGNOSTIC PROCEDURE	CORRECTIVE ACTION
Nitrous system does not operate at any time	Blown fuse.	Check fuse.	Replace fuse and inspect wiring for a short.
	Loose ground wires.	Check all ground wires for continuity to negative side of battery.	Tighten / repair loose wires.
	Malfunctioning arming switch.	Make sure that terminal #1 is connected to power. With arming switch in "ON" position, check terminal #2 for power.	Replace switch.
	Malfunctioning relay.	Disconnect blue and green relay wires, turn on arming switch, and ground the green wire. The relay should click and the blue wire should have power.	Replace relay.
	Malfunctioning microswitch.	Disconnect blue relay wire from solenoids and yellow RPM switch wire from microswitch. Connect jumper wire from open terminal of microswitch to ground. With arming switch ON, operating the microswitch should cause the relay to click.	Replace throttle microswitch.
	Malfunctioning RPM switch.	Make sure red RPM switch wire has power. Disconnect yellow wire from microswitch. Bring the engine up to the speed indicated on the "ON RPM" module. The yellow wire should have continuity to ground at this time.	Replace RPM switch.
System operates at less than WOT.	Maladjusted microswitch.	Observe throttle linkage and switch while operating throttle linkage.	Readjust microswitch.



**NOS Technical Support**  
**Toll-Free Phone: 1-866-GOHOLLEY**  
**Phone: 1-270-781-9741**  
**Fax: 1-270-781-9772**

**For online help, please go to the Tech Service section of our website: [www.holley.com](http://www.holley.com)**

**For bottle refill information: 1-800-99-REFILL**

**199R10300**  
**Date: 2-3-03**