

**A Holley Performance Brand**

P/N 199R10317

# ***Diesel Nitrous Oxide System***

**Kit Number 02519NOS**



# **OWNER'S MANUAL**

**CONGRATULATIONS** on purchasing your NOS Nitrous Oxide Injection System! Your system is composed of the highest quality components available. It should provide many miles of trouble-free performance when used correctly. If you have any questions regarding the performance of your system, call NOS Technical Service at 1-866-GOHOLLEY.

**NOTICE: Installation of Nitrous Oxide Systems Inc. products signifies that you have read this document and have agreed to the terms stated within.**

It is the purchaser's responsibility to follow all installation instruction guidelines and safety procedures supplied with the product as it is received by the purchaser to determine the compatibility of the product with the vehicle or the device the purchaser intends to install the product on.

Nitrous Oxide Systems Inc. assumes no responsibility for damages occurring from accident, misuse, abuse, improper installation, improper operation, lack of reasonable care, or all previously stated reasons resulting from incompatibility with other manufacturers' products.

Nitrous Oxide Systems Inc. assumes no responsibility or liability for damages incurred by the use of products manufactured or sold by Nitrous Oxide Systems Inc. on vehicles used for competition or racing.

Nitrous Oxide Systems Inc. neither recommends nor condones the use of products manufactured or sold by Nitrous Oxide Systems Inc. on vehicles, which may be driven on public roads or highways, and assumes no responsibility for damages incurred by such use.

NOS nitrous oxide is legal for use in most states when used in accordance with state and local traffic laws. NOS does not recommend or condone the use of its products in illegal racing activities.

NOS has not pursued California Air Research Board (CARB) exemptions for these kits, hence, they are not legal for use on pollution-controlled vehicles in California. A correctly installed NOS nitrous system should not alter the emission control performance of your vehicle under standard EPA test cycle conditions.

## HAZARDS DEFINED

This manual presents step-by-step instructions that describe the process of installing your NOS Nitrous Oxide Injection System. These procedures provide a framework for installation and operation of this kit. Parts are referenced by name and number to avoid confusion. Within the instructions, you are advised of potential hazards, pitfalls, and problems to avoid. The following examples explain the various hazard levels:

**WARNING! Failure to comply with instructions may result in injury or death.**

**CAUTION! Failure to comply with instructions may result in damage to equipment.**

**NOTE:** This information is important, needs to be emphasized, and is set apart from the rest of the text.

**HINT:** These special instructions provide a handy work tip.

## NITROUS OXIDE INJECTION SYSTEM SAFETY TIPS

### WARNINGS

- **Do not attempt to start the engine if the nitrous has been injected while the engine was not running. Disconnect the coil wire and turn the engine over with the throttle wide open for several revolutions before attempting to start. Failure to do so can result in extreme engine damage.**
- **Never permit oil, grease, or any other readily combustible substances to come in contact with cylinders, valves, solenoids, hoses, and fittings. Oil and certain gases (such as oxygen and nitrous oxide) may combine to produce a highly flammable condition.**
- **Never drop or violently strike the bottle. Doing so may result in an explosive bottle failure.**
- **Never change pressure settings of safety relief valve on the nitrous bottle valve. Increasing the safety relief valve pressure settings may create an explosive bottle hazard.**
- **Identify the gas content by the NOS label on the bottle before using. If the bottle is not identified to show the gas contained, return the bottle to the supplier.**
- **Do not deface or remove any markings, which are on the nitrous bottle.**

- Nitrous bottle valves should always be closed when the system is not being used.
- Notify the supplier of any condition, which might have permitted any foreign matter to enter the valve or bottle.
- Keep the valves closed on all empty bottles to prevent accidental contamination.
- After storage, open the nitrous bottle valve for an instant to clear the opening of any possible dust or dirt.
- It is important that all threads on the valves and solenoids are properly mated. Never force connections that do not fit properly.

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## WHAT IS NITROUS OXIDE?

### NITROUS OXIDE...

...Is a cryogenic gas composed of nitrogen and oxygen molecules

...Is 36% oxygen by weight

...Is non-flammable by itself

...Is stored as a compressed liquid

...Exists in two grades—U.S.P. and Nitrous Plus:

- U.S.P. is medical grade nitrous oxide; its common use is dental and veterinary anesthesia. It is also commonly used as a propellant in canned whipped cream. U.S.P. is not available to the public.
- Nitrous Plus differs from U.S.P. in that it contains trace amounts of sulphur dioxide added to prevent substance abuse. Nitrous Plus is intended for automotive applications and is available for sale to the public.

In automotive applications, Nitrous Plus and fuel are injected into the engine's intake manifold, which produces the following results:

- Lowers engine intake air temperature, producing a dense inlet charge.
- Increases the oxygen content of the inlet charge (air is only 22 percent oxygen by weight).
- Increases the rate at which combustion occurs in the engine's cylinders.

## Do's and Don'ts of Nitrous Oxide

### Do's

- Read all instructions before attempting to install your NOS nitrous system.
- Make sure your fuel delivery system is adequate for the nitrous jetting you have chosen. Inadequate fuel pressure or flow will result in engine damage.
- Use 14 gauge (minimum) wire when installing electrical system components.
- Use high-quality connections at all electrical joints.
- Use Teflon-based paste on pipe-style fittings.
- Make sure your engine and related components (ignition, carburetor, and driveline) are in proper working condition.
- If nitrous is accidentally injected into the engine when it is not running, remove the ecu fuse and crank the engine 10 to 15 seconds before starting. Failure to do so could result in an explosive engine failure.**
- Use your NOS nitrous system only at wide-open throttle.**
- Install a proper engine-to-chassis ground. Failure to do so may result in an explosive failure of the main nitrous supply line.**

### Don'ts

- Engage your nitrous system with the engine off. Severe engine damage can occur.
- Modify NOS nitrous systems (if you need a non-stock item, call NOS Technical Service for assistance).
- Overtighten AN type fittings.
- Use Teflon Tape on any pipe threads. Pieces of Teflon tape can break loose and become lodged in nitrous or fuel solenoids or solenoid filters. Debris lodged in a nitrous or fuel solenoid can cause catastrophic engine failure.



- Use sealant of any kind on AN type fittings.
- Allow nitrous pressure to exceed 1100 psi. Excessive pressure can cause swelling or in extreme cases failure of the nitrous solenoid plunger. Solenoid plungers are designed so that pressure-induced failures will prevent the valve from operating. No leakage should occur with this type of failure.
- Inhale nitrous oxide. Death due to suffocation can occur.**
- Allow nitrous oxide to come in contact with skin. Severe frostbite can occur.**
- Use octane boosters that contain methanol. Fuel solenoid failure may occur, producing severe engine damage.

## Chapter 1 Introduction to your NOS Nitrous Oxide Kit

### 1.1 General Information

Kit Number 02519NOS is intended for **DIESEL** applications only. The kit includes jet sizes for higher or lower horsepower settings. To select the jets for your application, refer to **Table 3 on Page 16**.

**NOTE:** This nitrous oxide injection system injects a mixture of nitrous oxide into the air intake duct. If the instructions are not carefully followed, poor mixture can occur, resulting in variations of air to fuel ratio from cylinder to cylinder. In extreme cases, intake manifold backfires can occur, if the instructions are not followed exactly.

These kits have been designed for safety and smoothness of operation. Nitrous oxide is injected into the engine only when the following conditions are met:

- Bottle valve is opened.
- System is armed.
- Engine is at wide-open throttle.

Horsepower and torque increases due to these kits will vary with engine displacement and modifications. Approximate power increase estimates can be made based upon the massflow of nitrous oxide into the engine. The following table is provided to allow you to estimate the power increase you can expect for your application. NOS **strongly** suggests that an upper limit of about 40% to 50% increase in power output from your stock engine. Exceeding this can result in premature engine failure.

**Table 1 Jetting Combinations**

<b>Kits</b>	<b>Nitrous Jetting</b>	<b>Approximate Power Increase (BHP)</b>
Kit 02519NOS	30	30
	35	45
	40	70
	45	90
	51	115
	55	130

Driveability, fuel economy, and exhaust emissions should not be affected under normal (part throttle) conditions.

## 1.2 System Requirements

When used correctly, these kits will work with stock internal engine components. **To ensure proper performance and engine life, the following is an absolute must:**

### Manual Transmissions

If the vehicle is to be exposed to severe operating conditions, such as drag strip usage, the standard clutch should be replaced with a high performance unit.

### Automatic Transmissions

If the vehicle is to be exposed to severe operating conditions, such as drag strip usage, a reputable high-performance transmission shop should service the automatic transmission.

### 1.3 Kit Components

Before beginning the installation of your NOS kit, compare the components in your kit with those shown in Figure 1 and listed in Table 2. If any components are missing, please contact NOS Technical Support at 1-866-GOHOLLEY.

**Table 2 NOS Universal Wet Kit 02519NOS Parts List**

Item	Description	Quantity	NOS P/N
(1)	4AN Bottle Nut Adapter	1	16220NOS
(2)	Bottle Nut Teflon Washer	1	16210NOS
(3)	#10 N <sub>2</sub> O Bottle	1	14745-TPINOS
(4)	#10 Bottle Bracket Set	1	14125NOS
(5)	Fan Spray Nozzle	1	13500NOS
(6)	Fan Spray Nozzle Adapter	1	13715-SNOS
(7)	Fan Spray Nozzle Adapter Nut	1	13713-SNOS
(8)	Nitrous Solenoid	1	16045NOS
(9)	1/4" NPT x 4AN N <sub>2</sub> O Filter	1	15560NOS
(10)	2 ft. 3AN Hose (Blue)	1	15060-1NOS
(11)	Bottle Blow Down Tube	1	16160NOS
(12)	Solenoid Mounting Bracket w/ screws	1	16500NOS
(13)	Flare Jets	6	13760-30,-35,-40,-45,-51,-55NOS
(14)	18ft. 4AN Hose (Blue)	1	15302NOS
(15)	Microswitch	1	15640NOS
(16)	Arming Switch	1	15602NOS
(17)	Wiring Relay—30 AMP	1	15618NOS
(18)	Harness for Wiring Relay with 15 AMP Fuse	1	15604-SNOS
(19)	1/16" NPT Pipe Tap	1	15990NOS

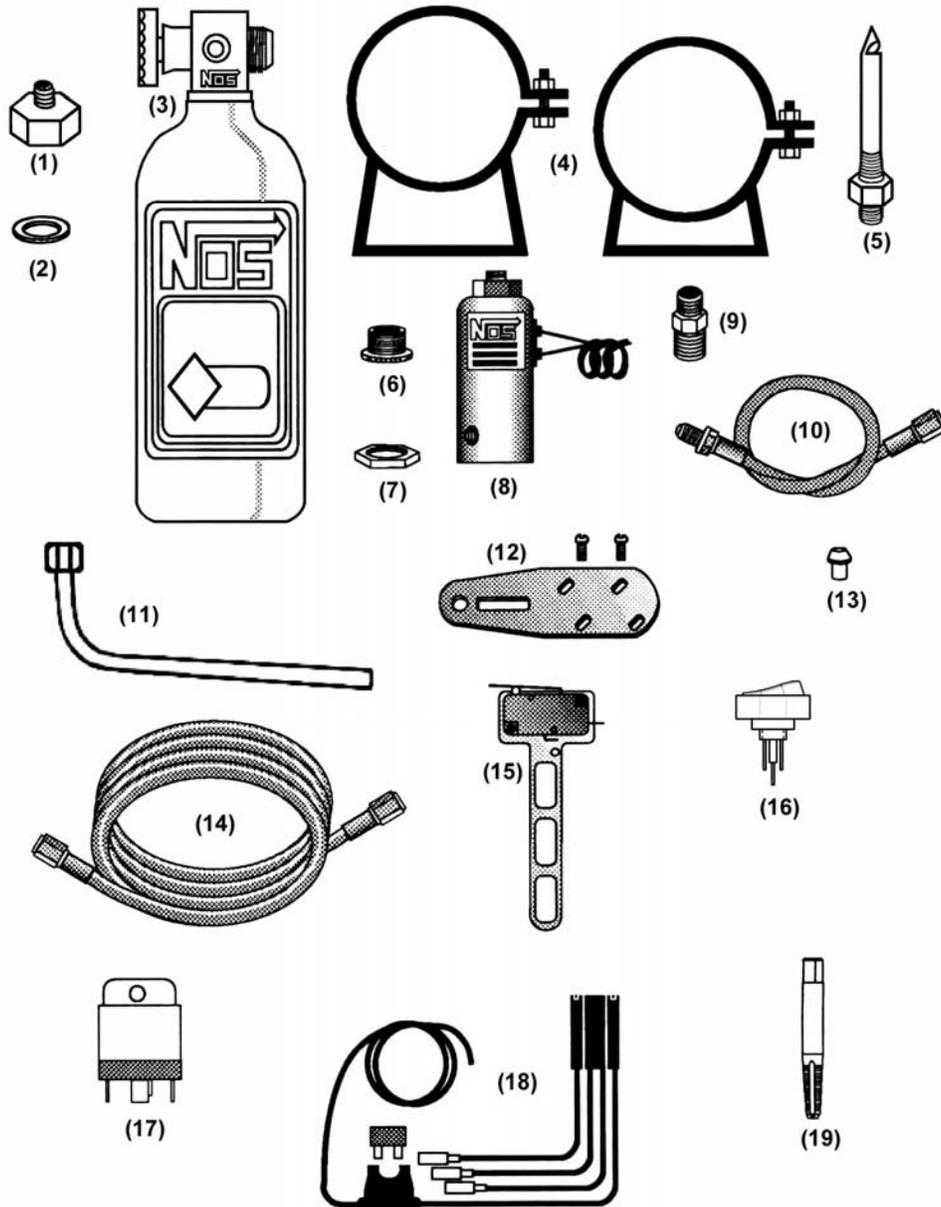


Figure 1 Universal Wet Kit Components

## Chapter 2 Kit Installation

### 2.1 Bottle Mounting Instructions

**NOTE:** Disconnect the battery ground before beginning installation.

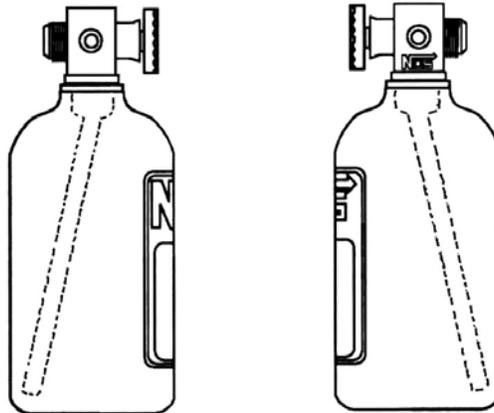
#### 2.1.1 Street Vehicles

Accurate calibration of your NOS nitrous system depends on the bottle remaining at a stable temperature. Mount the bottle away from heat sources, such as the engine compartment or exhaust system, and away from windows, where the bottle is exposed to direct sunlight.

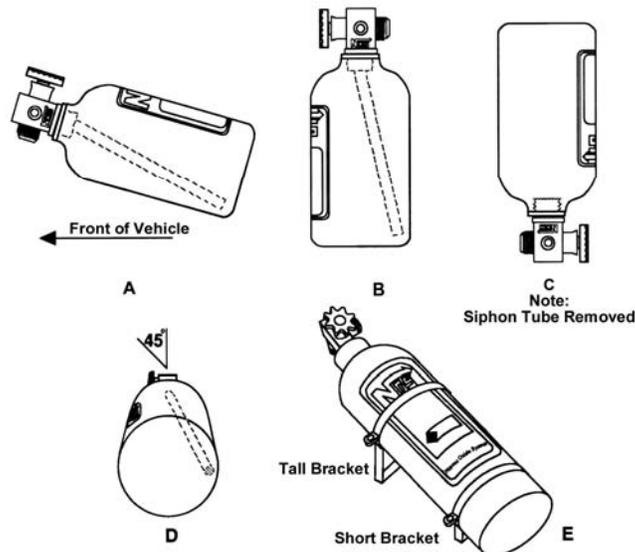
Supplied with the kit is an aluminum blow-down tube (a -8 neoprene-line braided hose can be substituted). The blow-down tube should be routed to the exterior of the vehicle (preferably under the vehicle). This procedure will prevent filling the driver's compartment with a cloud of nitrous oxide, if the safety pressure relief cap should happen to rupture for any reason. If the bottle is mounted in the bed of the truck this tube is not required. The blue safety cap should **ALWAYS** be installed if the blow down tube is not used.

## 2.1.2 Racing Vehicles

Before mounting a nitrous bottle in a racing vehicle intended for use in sanctioned events, check with the sanctioning association for any rules regarding this subject. Most associations require that the bottle be mounted within the confines of the safety roll cage with the safety pressure relief cap vented away from the driver's compartment.



**Figure 2 Nitrous Bottle Siphon Tube Orientation**



**Figure 3 Nitrous Bottle Mounting Orientations**

## 2.2 Bottle Orientation

Bottle placement is critical to the performance of your NOS nitrous system. It is important to understand how the bottle valve and siphon tube are assembled to properly orient the bottle in your vehicle and ensure that it picks up liquid nitrous while undergoing acceleration. All NOS nitrous bottles are assembled so that the bottom of the siphon tube is at the bottom of the bottle and opposite the bottle label (Figure 2).

Whenever the bottle is mounted in a lay-down position, the valve handle must be towards the front of the vehicle with the label facing up (Figure 3A).

If the bottle is mounted vertically, the valve handle and label must face toward the front of the vehicle (Figure 3B). This orientation will position the siphon tube at the back of the bottle where the liquid  $N_2O$  will be during acceleration.

**WARNING! DO NOT attempt to remove the siphon tube without completely emptying the bottle of all nitrous and pressure. Failure to completely empty the bottle will result in an explosive condition causing injury or death.**

A bottle mounted upside-down must have the siphon tube removed before use (Figure 3C). Non-siphon bottles can be specially ordered from NOS.

If the bottle must be mounted parallel to the axles of the vehicle (sideways), the valve handle and label must be angled at approximately 45° toward the front of the vehicle (Figure 3D). This orientation will position the siphon tube toward the rear of the bottle.

**NOTE:** When using a bottle with a siphon tube, the tall bracket should be at the valve end of the bottle and the short bracket at the bottom (Figure 3E).

The most efficient mounting is the lay-down position (Figure 3A) with the valve handle toward the front of the vehicle. This position allows the greatest amount of liquid to be used before the siphon tube begins to pick up gaseous nitrous oxide.

### 2.3 Bottle Installation

After you have determined the location and orientation of the nitrous bottle, use the following procedure to install the bottle:

1. Install the bottle nut adapter (1) and Teflon washer (2) on the nitrous bottle (3). Tighten securely.
2. Loosely install the bottle mounting brackets (4) on the nitrous bottle, as shown in Figure 3E.
3. Locate the bottle/bracket assembly in the desired mounting location, ensuring that the location will provide easy access to the bottle valve, hose connection, and bracket clamp bolts to facilitate bottle changing. See **Figure 4**.
4. Route the outlet of the blow-down tube through the floor of the cab.
5. Use the assembled bottle/bracket unit as a pattern to mark and drill four 5/16" holes in the mounting surface.

**CAUTION!** When drilling or punching holes for these brackets, be aware what components, wires, or hoses are located or routed behind the general area to avoid vehicle or equipment malfunction.

6. Mount the brackets securely to the surface (recommended minimum of 5/16" bolts or No. 12 sheet metal screws).
7. Secure the nitrous bottle in the mounting brackets and tighten the bracket clamps.



**Figure 4 Bottle with blow down tube installed**

### 2.4 Fan Spray Nozzle Installation

**NOTE:** The recommended mounting location for the Fan Spray nozzle is in the cold side intercooler pipe, at least 6-8 inches away from the manifold. See **Figure 5**. If your vehicle is non-intercooled, the nozzle can be mounted in the air inlet duct or air cleaner box. See **Figure 8 and 9**. If your vehicle does not facilitate the above installation requirements, call the NOS technical department to determine compatibility before continuing installation.

1. Before making any permanent modifications to the vehicle, layout the location of all the major components (solenoid, nozzle, nitrous supply lines, etc.).
2. Select the desired mounting location for the Fan Spray Nozzle (5), taking into account the length of the nitrous supply hose and the intended location of the solenoid. Take into account that the nozzle adapter (6) needs to be restrained during final installation, and accessibility of a tool is important. If the Nozzle is to be mounted in a metal pipe, such as the intercooler pipe, then this mounting bung is not required. Simply drill and tap the hole in the pipe. Make sure the nozzle and feed lines will not interfere with engine components or accessories and will not interfere with the hood when closed. The nozzle should not move from the perpendicular position due to strain induced by the nitrous hose.



**Figure 5**

3. Remove the air inlet duct.
4. A. **Metal Mounting Surface:** Drill a 1/4" hole perpendicular to the centerline of the pipe or inlet duct. Tap the hole using a 1/16" NPT tap. If the hole is being tapped in a metal pipe it is recommended that you use a light weight oil or similar lubricant on the tap. Tap depth should be deep enough, so that the discharge orifice of the nozzle is completely submerged into the duct, but not so deep that the Fan Spray nozzle bottoms out. See **Figures 6 & 7**.



**Figure 6 Drill using a 1/4 inch bit.**



**Figure 7 Tap with supplied 1/16 NPT tap.**

**CAUTION!** All debris **must** be removed from the air inlet duct. Use compressed air, if available. Failure to do so can result in severe engine damage. It is recommended to remove the intercooler pipe or air cleaner assembly once the mounting location has been determined and marked.

- B. **Rubber/Hard Plastic Mounting Surface:** Drill a 7/16" hole perpendicular to the inlet duct centerline through the inlet duct. Insert the Fan Spray nozzle adapter (6) into the 7/16" hole with the head inside the duct. Use Loctite or a similar compound on the nozzle adapter threads and securely tighten the nozzle adapter nut (7) to the nozzle adapter (6).



**Figure 8**



**Figure 9**

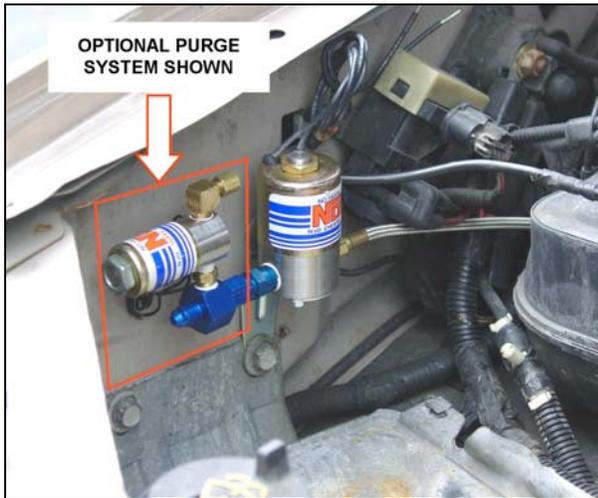
**CAUTION!** Severe engine damage can occur if the nozzle adapter / nozzle assembly works loose from the air inlet duct. Ensure that the Fan Spray nozzle is securely tightened in the air duct.

5. Note the discharge side of the Fan Spray nozzle. Install the Fan Spray nozzle in the inlet duct with the discharge side pointed toward the engine (downstream or in the direction of the induced air stream). Use Teflon paste to ensure adequate sealing.
6. Install the air inlet duct.

## **2.5 Solenoid Mounting**

**CAUTION: Do not overtighten the vise in the following procedure, or the solenoid will be damaged.**

1. Clamp the nitrous solenoid (8) in a bench vise.
2. Thread the 1/4" NPT x 4AN nitrous filter fitting (9) into the inlet port of the nitrous solenoid. Use Teflon paste to avoid leaks.
3. Thread the 1/8 NPT male end of the blue 2 ft. 3AN hose (10) into the outlet port of the nitrous solenoid. Remove from the vise.
4. Attach the nitrous solenoid to the solenoid mounting bracket (12).
5. Select the mounting location for the solenoid assembly. Ensure that the assembly and lines do not interfere with engine accessories or body parts, and that hoses reach the Fan Spray nozzle inlet port without being stretched or kinked.



**Figure 10 Mounting shown w/ optional purge**      **Figure 11 Completed solenoid mounting**

6. Securely mount the solenoid assembly.

## 2.6 Solenoid / Fan Spray Nozzle Hose Connection

1. Select the proper nitrous jet (13). Place the desired jet in the Fan Spray nozzle

**NOTE:** Please refer to Chapter 4, "Preparing for Operation", and Chapter 3, "Baseline Tuning Suggestions", for additional information on jet selection.

2. Connect and tighten the open end of the blue 2 ft. 3AN hose (10) to the Fan Spray nozzle. Hold the Fan Spray nozzle in position with a wrench to ensure the nozzle doesn't rotate out of position when the line is tightened.

## 2.7 Nitrous Feed Line Mounting

**HINT:** Most late model vehicles have access plugs in the cab floor, which are convenient for nitrous line routing. Following the fuel lines along the underbody, and entering the engine bay through the front fender well between the plastic inner fender panel and the body usually works well. See **Figure 12**.

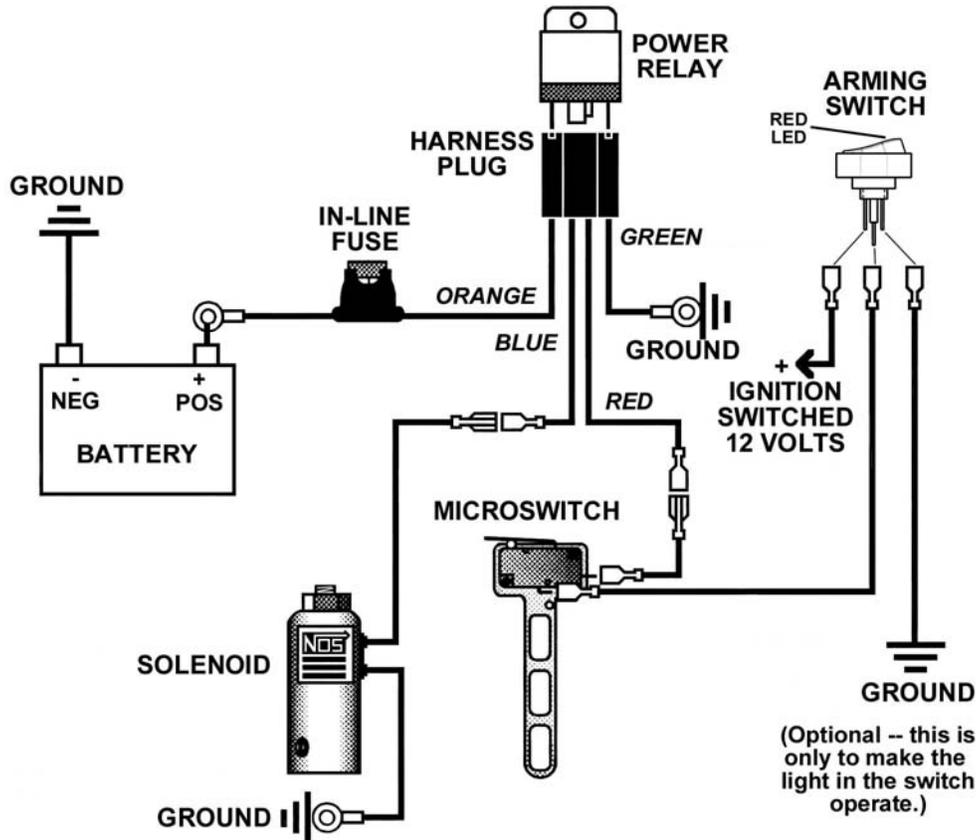


**Figure 12 Floor access hole**

1. Determine the route for your nitrous feed line to follow. Ensure the path is clear of exhaust system, suspension, steering, wheels, electrical lines and components, and tires.
2. Feed the nitrous supply line (14) along the proposed route.
3. If it is necessary to support the nitrous supply line under the vehicle, use 1/2" Tinnerman clamps or nylon tie-wraps to support the line securely.
4. Attach the nitrous supply line to the 4AN bottle nut adapter (1) on the nitrous bottle.

**WARNING! Nitrous oxide can cause death if inhaled. Severe frostbite can occur, if allowed to contact the skin. Always point the nitrous line opening away from people when purging the line.**

5. Purge the nitrous supply line.
  - A. Wrap the end of the nitrous line with a rag and hold securely.
  - B. Point the opening **away** from people.
  - C. Briefly open the bottle valve.
6. Attach the nitrous supply line to the filter installed in the nitrous solenoid inlet port.



**Figure 13 Electric Wiring Schematic**

## 2.8 Electrical System Installation

Refer to **Figure 13** and the procedures in this section for electrical system installation.

**WARNING! Death or injury may occur from working on a charged electrical system.**

1. Disconnect the car battery at the ground cable (if not already done).

**WARNING! Binding or dragging of the throttle linkage will create a potentially dangerous stuck-throttle condition. Ensure that the microswitch does not interfere with normal throttle linkage operation.**

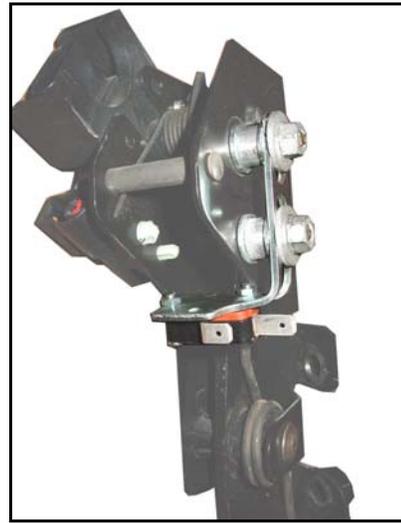
2. Install the throttle microswitch (15) as follows:

**HINT:** The microswitch may be mounted to the bracket in a variety of positions and on either side of the bracket. The bracket may be bent to suit the application.

- A. Mount the throttle microswitch on the throttle pedal so that the pedal arm movement triggers the microswitch. See **Figures 14, 15, & 16**.
- B. Adjust the microswitch to trigger at wide-open throttle by adjusting the microswitch's position to ensure the actuation arm of the microswitch "clicks" at the same point your pedal reaches wide-open throttle against the throttle stop.
- C. Ensure that the throttle and switch can reach the activation position by using the accelerator pedal. Slowly press the pedal to the floor while you listen for the "click" of the microswitch.



**Figure 14**

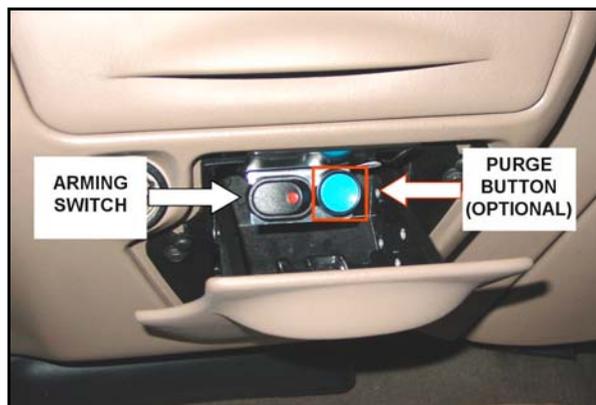


**Figure 15**



**Figure 16 Microswitch in completed location**

3. Install the NOS arming toggle switch (16) in the vehicle interior, within easy reach of the driver. This switch is to be used to activate the nitrous system once safe engine RPM levels are reached. See **Figure 17**.



**Figure 17**

4. Install the wiring relay (17) and relay harness (18) in the engine compartment near the battery. The relay's orange wire should reach the battery (+) terminal.
5. Connect the orange relay wire to the battery (+) terminal. Install a 15 AMP fuse into the fuse socket.
6. Connect one wire from the solenoid to the blue relay wire.
7. Join the remaining solenoid wire to a good chassis ground.
8. Connect the green relay wire to a good chassis ground.
9. Connect red relay wire to either terminal on the microswitch.
10. Connect the open terminal on the microswitch to the middle (#2) terminal on the arming toggle switch.
11. Connect the #1 terminal on the arming switch to a switched 12 volt power source.
12. Connect the #3 terminal of the arming switch to a ground.
13. Reconnect the battery.
14. Turn the arming switch on.
15. Push the throttle wide open while the engine is off. The solenoid should make a clicking noise if it is cycling correctly. If no noise is heard, check all the wiring connections and the wiring schematic in **Figure 13**.

## Chapter 3 Baseline Tuning Suggestions

Your NOS jetting combinations are conservative and are intended to work with stock programming unless otherwise noted. Nitrous combinations are derived based upon 950 psi (85° F) nitrous bottle pressure. Using the listed jetting and nitrous pressure, levels should yield safe and reliable power increase.

This system is designed to aid in burning excess diesel fuel in the engine only. If the engine is burning clean or lean adding nitrous will not help the performance of a diesel engine. It is recommended to have fuel system and or computer upgrades with jets larger than .030. If the vehicle appears to lose power then you will need to step down on the nitrous jet.

## Chapter 4 Preparing for Operation

**NOTE:** If jets for higher HP gains are being considered, you need to perform steps 2A through 2C before selecting a baseline tuning combination.

1. Open the nitrous bottle valve.
2. Inspect the nitrous lines and fittings for leaks.
3. ENJOY!

## Chapter 5 Routine Maintenance

### 5.1 Nitrous Solenoid Filter

When nitrous bottles are refilled they can become contaminated with debris, if the refiller does not have an adequate filter in their transfer pump mechanism. Contaminants in the bottle will eventually become lodged in the nitrous solenoid filter fitting.

You should periodically (after every 20-30 pounds of nitrous usage) examine the mesh in the nitrous filter for debris.

To clean the filter, follow the following steps:

1. Close the valve on the nitrous bottle. Empty the main nitrous feed line.
2. Disconnect the main nitrous feed line from the nitrous solenoid. Remove the nitrous filter fitting from the nitrous solenoid.
3. Remove **all** Teflon paste debris from the solenoid inlet port threads and from the nitrous solenoid filter pipe threads.
4. Examine the mesh in the nitrous filter fitting for contaminants. Blow out debris with compressed air, if necessary.

5. Apply fresh Teflon paste to the nitrous filter pipe threads. Reinstall the filter in the nitrous solenoid.
6. Reconnect the main nitrous supply line to the nitrous solenoid.

## 5.2 Nitrous Solenoid Plunger

### 5.2.1 General Information

The seals used in NOS nitrous solenoid plungers are constructed from materials that are designed to be used with nitrous oxide. When kept free from fuel contaminants or from overpressurization, they should provide trouble free performance.

You should periodically (after every 20-30 pounds of nitrous usage) examine the seal in the nitrous solenoid plunger.

The seals used in NOS nitrous solenoid plungers are designed to work at pressures up to 1100 psi. Exposing the plunger to excessive pressure (whether the vehicle is sitting or in-use) can result in the seal in the plunger seal swelling or in extreme cases, plunger seal disintegration.

**NOTE:** The seals are designed so that if they fail due to overpressurization, they will not leak, the valve will just fail to flow nitrous oxide.

Swelling of the nitrous solenoid plunger seal will reduce nitrous flow (causing an excessively rich nitrous/fuel condition and a loss of power).

### 5.2.2 Nitrous Solenoid Plunger Disassembly and Inspection

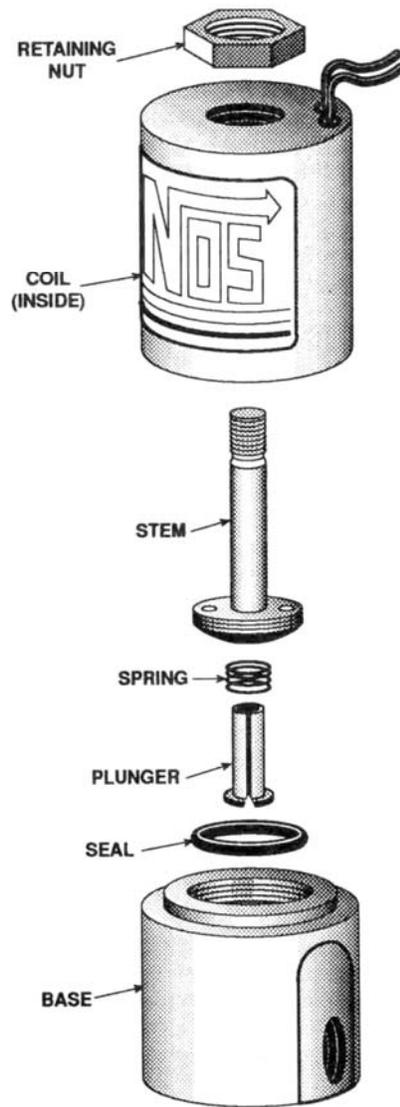
1. Close the valve on the nitrous bottle.
2. Empty the main nitrous supply line.
3. Remove the retaining nut from the nitrous solenoid.
4. Remove the coil and housing from the nitrous solenoid base.
5. Unscrew the stem from the nitrous solenoid base. Do this by double nutting the stem, or by using a solenoid stem removal tool (NOS P/N 16665-SNOS). **Do not use pliers on the solenoid stem. Damage to the stem will result.**
6. Remove the stem, spring, and plunger from the solenoid base.
7. Examine the plunger seal for swelling. The seal surface should be flat, except for a small circular indentation in the center of the seal;

A fuel-contaminated seal will protrude from the plunger and be dome-shaped. A fuel-contaminated seal may return to its original shape if left out in the fresh air for several days. It may then be returned to service.

A seal, which has been overpressurized, may be dome-shaped, or the sealing surface may be flat with the seal protruding out of the plunger. A dome-shaped seal may return to its original shape if left out in the fresh air for several days. It may then be returned to service. A seal, which is flat, but protrudes from the plunger body has probably failed internally and should be replaced.

NOS Jets	Recommended Tuning Suggestions
30,35	Will work with stock programming, but performance can be increased with aftermarket programmer or chip.
40,45	Will not work with stock programming. Aftermarket chip, programmer or pump modifications are required to add additional fuel. If the vehicle is lazy or fails to pick up with this jetting, going down in nitrous jet size will increase performance.
51,55	Significant modifications to the computer or pump are required. This jetting requires a lot of additional fuel in order to work correctly. If the vehicle is lazy or fails to pick up with this jetting, going down in nitrous jet size will increase performance.

**Table 3**



**Figure 18 Exploded View of a Typical Solenoid**

### Nitrous Oxide Accessories

NOS systems are calibrated for optimum performance with a bottle pressure of 900-950 psi. The pressure will change with temperature. Heater kits are thermostatically controlled to keep the bottle near 85° F to provide correct pressure. **Bottle Heater (P/N 14164NOS)** is available for 10 & 15 lb. bottles.

Insulating the bottle helps maintain pressure by keeping heat in the bottle when it's cold, or heat out when it's hot outside. The blankets are made of a rugged, easily cleaned Nylon outer shell with insulation. It's also an excellent "dress up" accessory and perfect for "covering" battle-scarred bottles. **Bottle Blanket (P/N 14165NOS)** is a 7" diameter blanket for the 10 lb. bottle.



**P/N 14164NOS**



**P/N 14165NOS**

The **Remote Bottle Valve (P/N 16058NOS)** is the perfect convenience accessory—it electronically turns the nitrous bottle on and off with the flick of a switch—no more trips to the trunk. It is also great as a safety shut-off valve. It operates on 12V DC. The complete kit includes hardware and installation instructions.

The primary purpose of a **Purge Valve, P/N 16030NOS**, is to release trapped air or gaseous nitrous from the feed line(s). This helps to ensure consistent performances. And, purging looks cool too!



**P/N 16058NOS**



**P/N 16030NOS**

The primary purpose of a **Purge Valve, P/N 16030NOS**, is to release trapped air or gaseous nitrous from the feed line(s). This helps to ensure consistent performances. And, purging looks cool too!

**Nitrous Pressure Gauges (P/N 15910NOS)** measure from 0-1500 psi (although recommended level is 900-950 psi) and are essential in monitoring the bottle.

The **Quick Release Hinged Aluminum Bracket, P/N 14140NOS**, is available for 10 lb. and 15 lb. bottles. **P/N 14147NOS** is available for the carbon fiber bottle.



**P/N 15910NOS**



**P/N 14140NOS**

For those who want the ultimate in appearance, NOS offers many popular bottles that are fully polished. **P/N 14745-PNOS** is our 10 lb. fully polished bottle.

For optimum weight reduction and distinctive high-tech looks, these DOT-approved NOS carbon fiber-wrapped bottles are it! Weighs about half of the standard bottle (empty). **P/N 14747NOS** has 12.5 lb. capacity.



**P/N 14745-PNOS**



**P/N 14747NOS**

To order, contact your local NOS dealer.

**NOS Technical Support**  
**Phone: 1-866-GO-HOLLEY**  
**Fax: 1-270-781-9772**

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

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

**199R10317**  
**Date: 12-10-03**