



P/N A5053-2-SNOS

V-8 SPORTSMAN FOGGER™ SYSTEM

Kit Numbers: 05088NOS



OWNER'S MANUAL

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.

NOTICE: The NOS Sportsman Fogger Kit is not intended for use on hatchback type vehicles without the use of NOS part numbers 16160NOS (External Aluminum Blow-Down Tube) and 16169NOS (Racer Safety Pressure Relief Cap).

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 an 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 interchange nitrous and fuel solenoids. Failure to follow these simple instructions can result in extreme engine damage and/or personal injury.

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.

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.

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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 engine coil wire, open the throttle, and crank the engine 10 to 15 seconds before starting. Failure to do so can result in an explosive engine failure.**
- ❑ **Use your NOS nitrous system only at wide-open throttle and at engine speeds above 3000 RPM.**
- ❑ **Install a proper engine to chassis ground. Failure to do so may result in an explosive failure of the main nitrous supply line.**
- ❑ Use a high-quality fuel, as suggested in Chapter 3, Baseline Tuning Suggestions.

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 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

Direct port nitrous oxide injection kits are intended to provide maximum performance and tunability in a nitrous oxide injection system. Kit numbers 02622NOS and 05088NOS are designed for modified domestic V8 engines using carburetors.

Horsepower increases from these kits will vary with engine displacement and configuration. However, approximate power increases can be estimated based upon the massflow of nitrous oxide into the engine. On a typical engine, the following power increases approximate what you can expect to see.

Table 1 05088NOS Kit Configurations

EXTRA HP	JETTING N ₂ O/FUEL	FUEL OCTANE (R+M/2)	IGNITION TIMING	NGK SPARK PLUG OR EQUIVALENT
100 HP	.018/.018*	93+ pump gas	**	Stock
125 HP	.020/.018*	100+ Octane	**	-7
150 HP	.022/.020*	100+ Octane	**	-8
175 HP	.024/.022	110+ octane racing gas	**	-9
250 HP	.028/.026	112+ octane, .74 or higher specific gravity, racing gas	**	-10
300 HP	.032/.030*	114+ octane, .74 or higher specific gravity, racing gas	**	-11

*Not included with kits.

** See section 5.1.C for timing recommendations

NOTE: All jetting is determined using 950 PSI Nitrous Pressure and 6 PSI Fuel Pressure

Typically, the standard #10 bottle (10 lb.) of nitrous will supply 2 to 3 minutes of operation at wide-open throttle. A full #10 bottle will weigh 25 lbs. For best performance, the bottle should be refilled when it weighs 17 to 18 lbs.

1.2 Sportsman Fogger System Requirements

When used correctly, NOS nitrous oxide injection elevates cylinder pressures and temperatures while increasing the combustion rate. These characteristics make the engine more sensitive to detonation. **To ensure proper performance and engine life, the following are absolute musts:**

NOTE: Most fuel pumps are rated at free-flowing conditions. At 5 psi, their flow rates may be greatly reduced.

- Adequate Fuel Pressure and Delivery**
Most carburetors are designed to work at 5-10 psi. When designing your fuel system, plan on your pumps and lines flow at least 0.10 gallons of *gasoline* per hour per horsepower at 5 psi.
- Forged Pistons**
Cast pistons are very prone to failure at elevated cylinder temperatures and pressures.
- Connecting Rods**
Cast connecting rods tend to break under the high-compressive loads generated with large doses of nitrous oxide. For most applications, factory-forged connecting rods are acceptable. For high output applications, a steel billet or aluminum rod is suggested.
- Cylinder Block**
Four-bolt main cap blocks reduce the tendency for the main caps to “walk” under high-output loading. Cylinder head studs decrease the chance of cylinder heads lifting or moving relative to the deck surface.
- Crankshaft**
Stock-cast crankshafts may break. For most applications, a factory forging is acceptable. Aftermarket units are recommended for very high-output applications.
- High Output Ignition System**
Stock ignition systems are prone to producing misfires at high-RPM conditions. A quality aftermarket racing ignition is suggested.

1.3 Kit Components

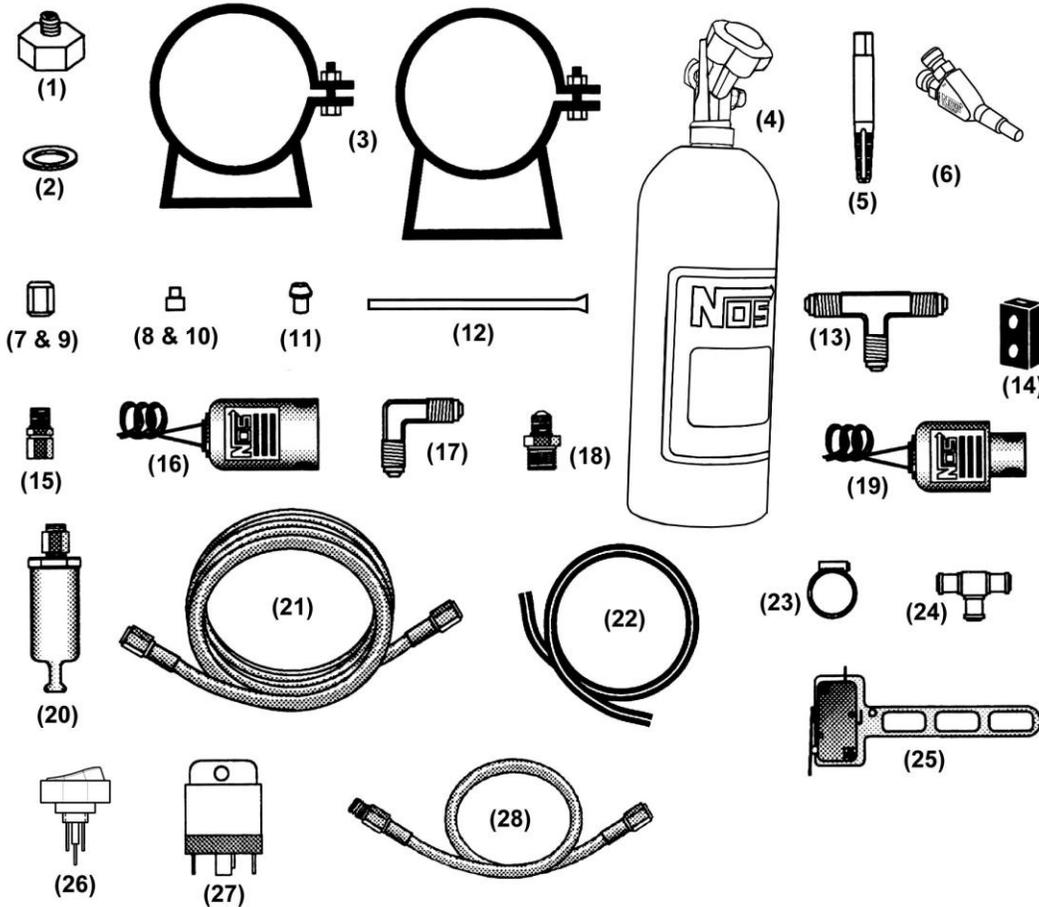
Before beginning the installation of your NOS kit, compare the components in your kit with those shown in Figure 1 or 2, and listed in Table 2 or 3. If any components are missing, please contact NOS Technical Support at 1-866-GOHOLLEY.

Table 2 Kit Number 05088NOS Parts List

Item	Description	Quantity	NOS P/N
(1)	Bottle Valve Adapter	1	16220NOS
(2)	Bottle Washer	1	16210NOS
(3)	Bottle Bracket Set	1	14125NOS
(4)	Nitrous Oxide Bottle 10 lb.	1	14745NOS
(5)	1/16" NPT Tap	1	15990NOS
(6)	Fogger Nozzle	8	13700BNOS
(7)	3AN x 3/16" B-Nut (Blue)	8	17550NOS
(8)	3AN x 3/16" Sleeve (Blue)	8	17600NOS
(9)	3AN x 3/16" B-Nut (Red)	8	17551NOS
(10)	3AN x 3/16" Sleeve (Red)	8	17601NOS
(11)	Flare Jets	See Table 1	
(12)	3/16" X12" Long Tube Bundle	1	16399-SNOS
(13)	4AN Blue "T" block	1	17810NOS
(14)	1/8" NPT Distribution Block	4	16710NOS
(15)	1/8" NPT x 3/16" Compression Fitting	16	16433NOS
(16)	Power Shot N ₂ O Solenoid	2	16020NOS
(17)	1/8" NPT x 1/8" NPT 90° Fitting	4	17530NOS
(18)	N ₂ O Filter	2	15570NOS
(19)	Power Shot Fuel Solenoid	2	16080NOS
(20)	Fuel Filter	2	15540NOS
(21)	4AN 14 ft. N ₂ O Hose	1	15295NOS
(22)	Rubber Fuel Hose (2 ft.)	2	15000-SNOS
(23)	Hose Clamp	8	36R646A
(24)	Fuel TEE (5/16")	2	15534NOS
(25)	Microswitch and Bracket	1	15640NOS
(26)	Arming Switch	1	15602NOS
(27)	Wiring Relay—30 amp**	1	15618NOS
(28)	4AN 1ft. Hose	2	15210NOS

** Wiring and connectors also supplied. 15604NOS – relay wiring harness included.

Figure 1 Kit Number 05088NOS Components



Chapter 2 Kit Installation—Bottle Mounting

2.1 Bottle Mounting Instructions

NOTE: Disconnect the battery ground before beginning installation.

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 the bottle to be mounted within the confines of the safety roll cage with the safety pressure relief cap vented away from the driver's compartment. NOS offers a special safety pressure relief cap (P/N 16166NOS) and an aluminum blow-down tube (P/N 16160NOS) for this purpose.

Figure 2 Nitrous Bottle Siphon Tube Orientation

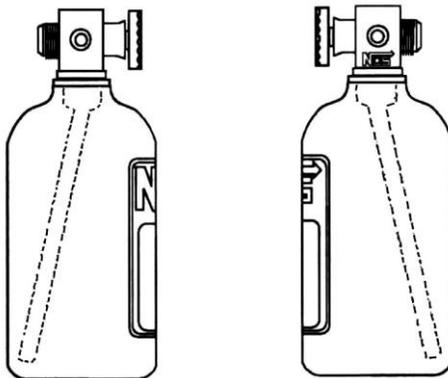
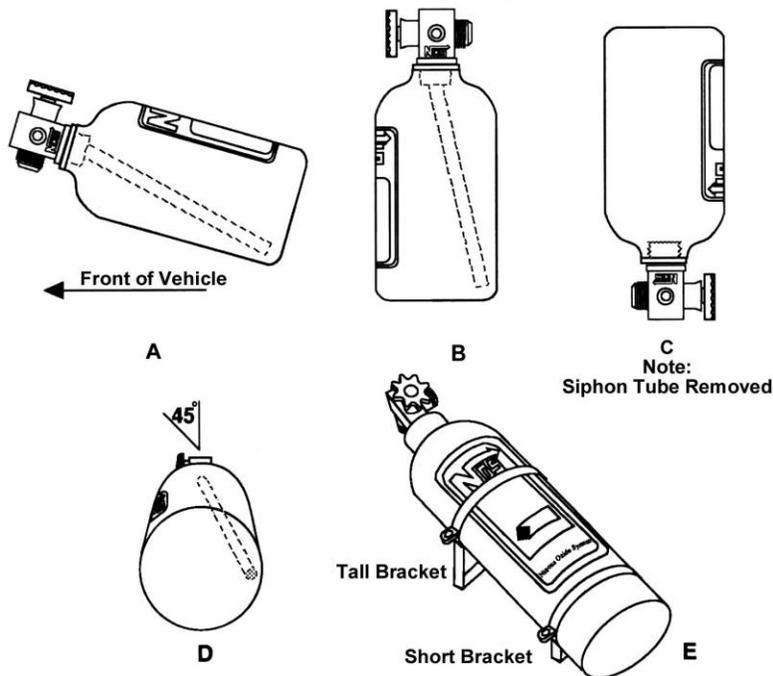


Figure 4 Nitrous Bottle Mounting Orientations



2.2 Bottle Orientation

Bottle placement is critical to the performance of your NOS nitrous system. It is important to note the orientation of the bottle valve and siphon tube in the nitrous bottle (Figure 3). The bottle must be mounted so that the siphon tube is at the back of the bottle when the liquid N_2O will be during vehicle acceleration.

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 4A).

If the bottle is mounted vertically, the valve handle and label must face toward the front of the vehicle (Figure 4B). 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 4C). 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 4D). 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 4E).

The most efficient mounting is the lay-down position (Figure 4A) 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:

NOTE: For parts identification, refer to the parts list (Tables 2 or 3) and the component identification drawing (Figures 1 or 2). Figure 5 or 6 show exploded views of all parts to be installed, while performing the following instructions.

1. Install the bottle nut adapter and washer on the nitrous bottle, and tighten securely.
2. Loosely install the bottle mounting brackets on the nitrous bottle, as shown in Figure 4E.
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.
4. Use the assembled bottle/bracket unit as a pattern to mark and drill four 5/16" holes in the mounting surface.
5. Mount the brackets securely to the surface (recommended minimum of 5/16" bolts or No. 12 sheet metal screws).
6. Secure the nitrous bottle in the mounting brackets and tighten the bracket clamps on the bottle.

Figure 3 05088NOS System Exploded View

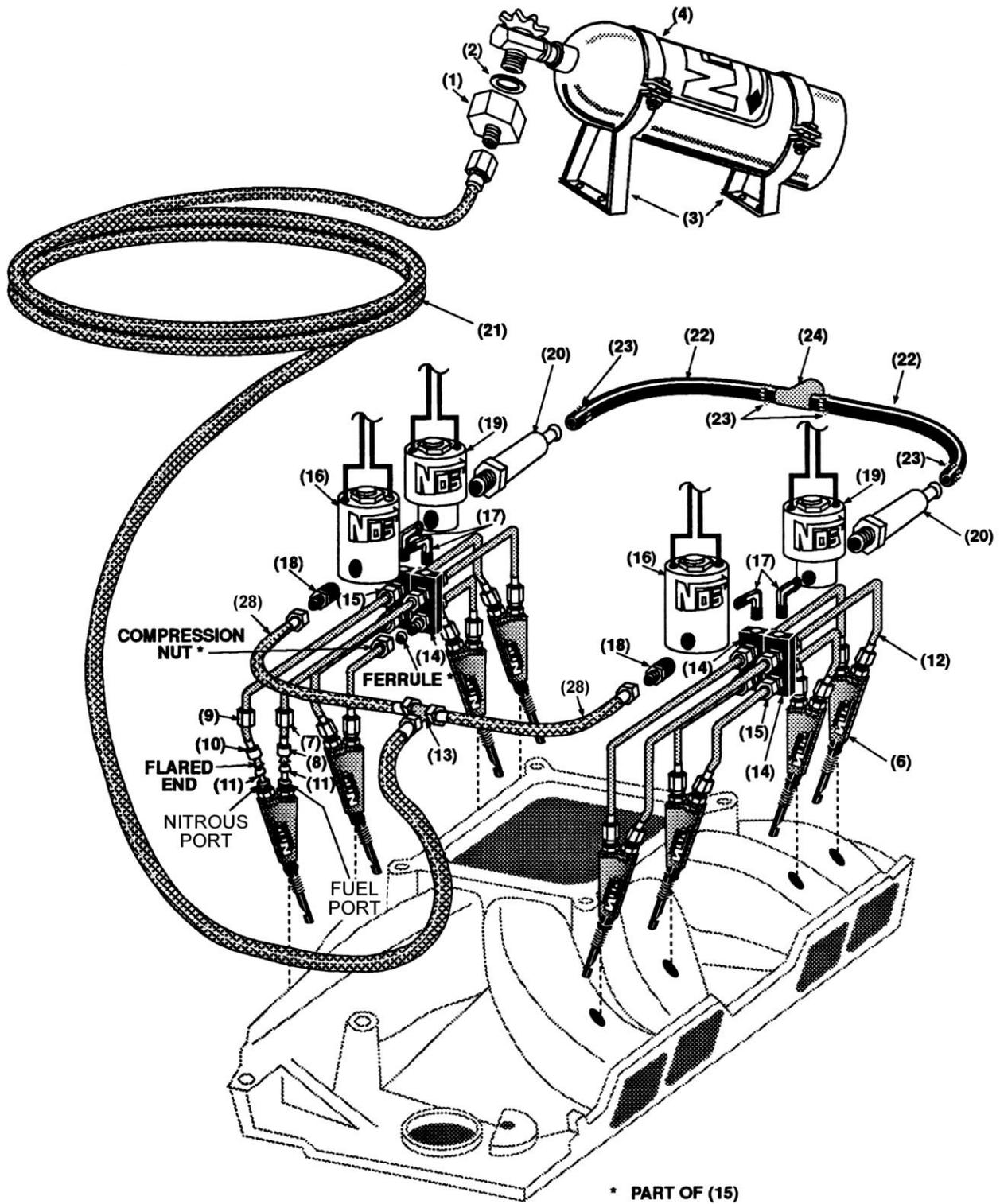


Figure 4 Fogger Nozzle Mounting Position—2x4V Intake

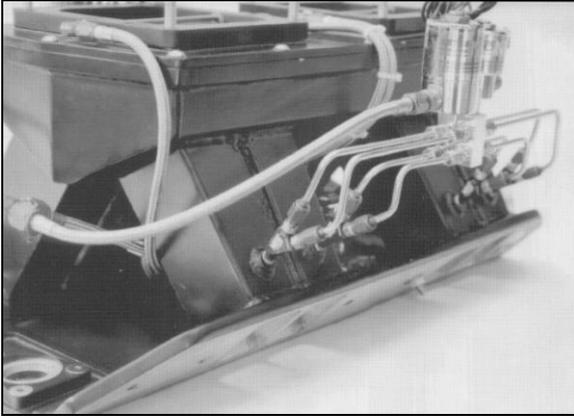
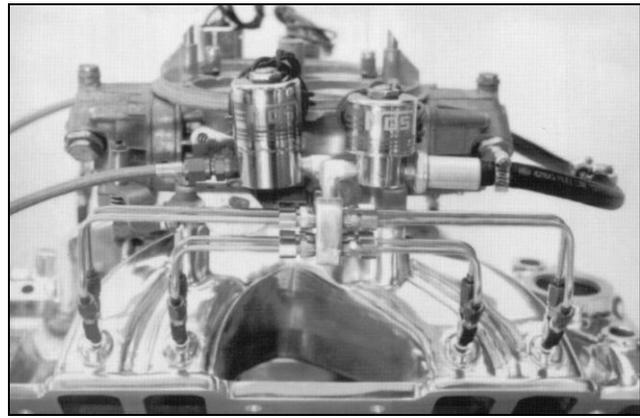


Figure 5 Fogger Nozzle Mounting Position—Single 4V Intake



Chapter 3 Kit Installation

NOTE: For parts identification, refer to the parts list (Table 2) and the component identification drawing (Figures 1). Figure 3 shows the installation assembly for kit number 05088NOS.

NOTE: NOS provides custom plumbing services for Fogger nozzle installation if you would rather not perform these operations yourself.

3.1 Fogger Nozzle Installation

Figure 4 & 5 display typical Fogger nozzle installation locations. Use these figures as a guide for locating your nozzles.

NOTE: When mounting Fogger nozzles, ensure that the nozzles and feed lines do not interfere with engine components.

1. Mark the desired Fogger nozzle mounting locations on the intake manifold.
2. Remove the intake manifold from the engine.
3. Drill a 1/4" diameter hole into the intake manifold at each Fogger nozzle mounting location. For aesthetic purposes, all holes on each cylinder bank should be drilled to line up straight.

NOTE: Holes should be tapped just deep enough for the discharge orifice of the Fogger nozzle head to protrude through. Be careful not to tap holes too deep, as the Fogger nozzle may not adequately seal.

4. Tap each 1/4" hole with the 1/16" NPT tap.
5. Remove all debris from the intake manifold.

HINT: Apply Teflon *paste* to the threads of each Fogger nozzle before installing them in the manifold. This will help prevent vacuum leaks into the intake manifold.

6. Install a Fogger nozzle into each 1/4" hole, orienting the nozzles so the discharge orifices are pointed down the manifold port toward the intake valve.
7. Install the intake manifold on the engine.
8. Remove the red and blue B-Nuts and sleeves from the Fogger nozzles.
9. Examine Chapter 5, Tuning Suggestions, for the proper nitrous and fuel jet selection for your application. Install the desired flare jets in the Fogger nozzles.

3.2 Fogger Nozzle Feed Tube Mounting

3.2.1 Nitrous Feed Tube Installation

NOTE: For professional looking results, the following steps need to be performed with a quality tube-bending tool. NOS sells a tool for this purpose under P/N 15991NOS.

1. Select the four solenoid extension tubes. Measure 1" in from the **flared** end and mark. Install a blue sleeve and B-Nut on the flared end.

NOTE: If you are not experienced in tube bending, it is advisable that before you bend each solenoid extension tube, you make a sample tube using either a piece of brake line or a coat hanger. This "practice" will help you minimize errors and help you to produce an aesthetically pleasing plumbing job.

2. Make a 90° bend to the solenoid extension tubes at the 1" mark. The bend should start at the 1" mark and proceed **away** from the flared end of the tube.
3. Install the two bent solenoid extension tubes and blue B-Nut assemblies on the center two Fogger nozzles on one bank of the manifold (make sure the tubes are attached to the nitrous ports on the Fogger nozzles), with the two long legs of the tubes crossing (Figure 6). Measure between the insides of the tubes and place a center mark across both tubes.
4. Remove the four compression fittings and the 90° elbow from one distribution block. Remove the compression nuts and ferrules from the compression fittings. Apply Teflon paste to the pipe-style threads of the four compression fittings. Install and tighten the fittings into the distribution block.
5. Measure and mark a centerline on the side of the distribution block.
6. Holding the **marked** distribution block alongside the installed "crossed" nitrous feed tubes, so that their center marks are aligned. Place another mark on each solenoid tube extension at the **inside end** of the two exposed body thread sections.
7. Remove the two nitrous feed tubes. Cut off the excess tubes at the **inside end** marks. Deburr and ream the cut ends.

NOTE: Be sure to remove any debris left from cutting and deburring, from the inside of the tube before assembly.

8. Insert the "smoothed" ends of the two **lower** distribution block fittings with the compression nuts and ferrules. Tighten lightly.
9. Insert and lightly tighten a straight nitrous feed tube, blue B-Nut, and sleeve on the two end Fogger nozzles.
10. Insert and hold in place a straight nitrous feed tube in the two upper ports of the distribution block, so they intersect each of the end nitrous feed tubes at 90°. Place a mark on the end nitrous feed tubes at the **bottom** of the horizontal tubes (Figure 11).
11. Place a mark on the two end feed tubes 5/8" farther down from the mark you made in step 10.
12. Remove the two end nitrous feed tubes. Make a 90° bend in two end feed tubes. The bend should **start** at the 5/8" mark and proceed **away** from the flared end.
13. Install and loosely tighten the two end nitrous feed tubes.
14. Place a mark on the two end nitrous feed tubes at the inside end of the two exposed fitting body thread sections (same procedure as in step 6).
15. Remove the two end nitrous feed tubes. Cut off the excess tube at the **inside end** marks. Deburr and ream the cut ends.

NOTE: Be sure to remove any debris left from cutting and deburring from the inside of the tube before assembly.

16. Insert the "smoothed" ends into the two upper distribution block fittings with the compression nuts and ferrules. Tighten lightly.
17. Tighten all nitrous feed tube fittings.
18. Repeat steps 1 through 17 for the other cylinder bank.

Figure 6 Fogger Nozzle Feed Tubes

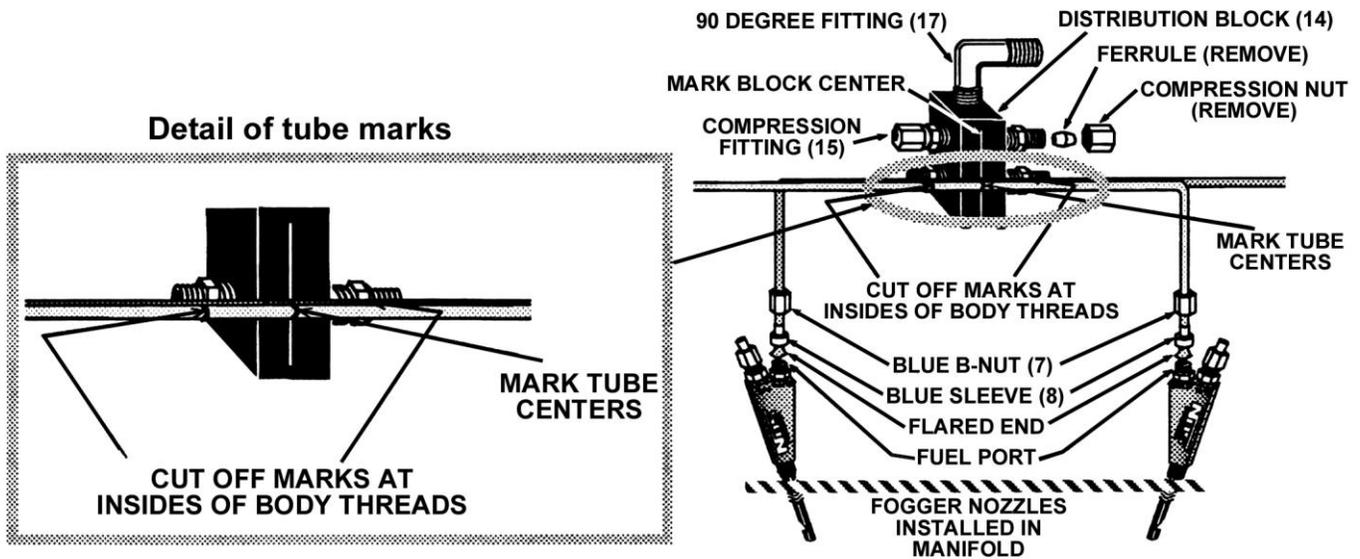
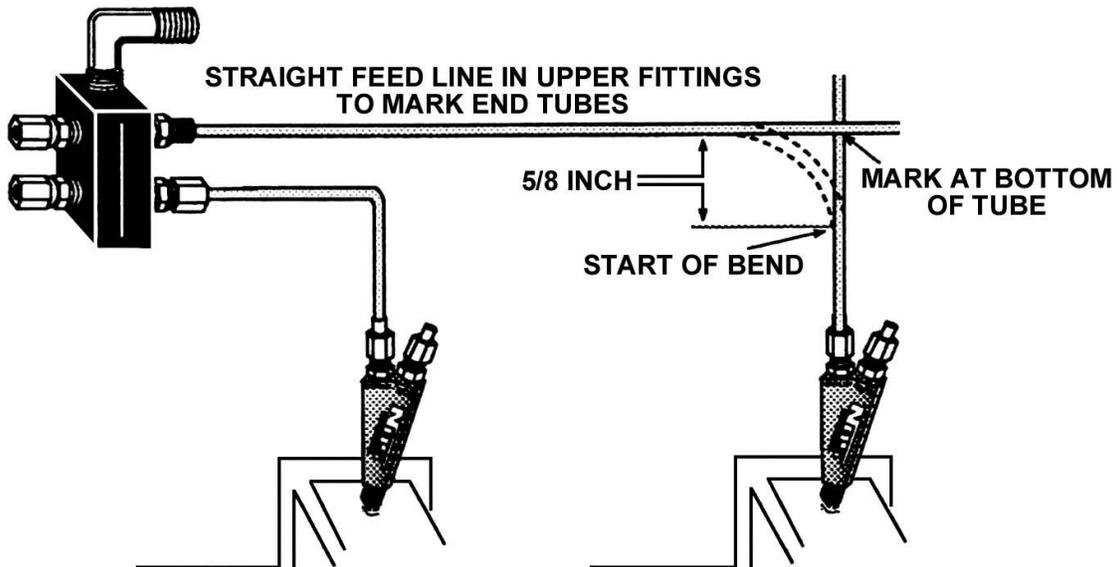


Figure 7 End Fogger Nozzle Feed Tubes



3.2.2 Fuel Feed Tube Installation

NOTE: For professional looking results, the following steps need to be performed with a quality tube-bending tool. NOS sells a tool for this purpose under P/N 15991NOS.

1. Select four of the 12" solenoid extension tubes, and install a red B-Nut and a red sleeve on the flared end.

NOTE: If you are not experienced in tube bending, it is advisable that before you bend each solenoid extension tube, you make a sample tube using either a piece of brake line or a coat hanger. This "practice" will help you minimize errors and help you to produce an aesthetically pleasing plumbing job.

2. Make a 90° bend to the solenoid extension tubes at the 1" mark. The bend should start at the 1" mark and proceed **away** from the flared end of the tube.

3. Install the two bent solenoid extension tubes and red B-Nut assemblies on the center two Fogger nozzles on one bank of the manifold (make sure the tubes are attached to the fuel ports on the Fogger nozzles), with the two long legs of the tubes crossing (Figure 6B). Measure between the insides of the tubes and place a center mark across both tubes.
4. Remove the four compression fittings and 90° elbow from one distribution block. Remove the compression nuts and ferrules from the compression fittings. Apply Teflon **paste** to the pipe-style threads on the distribution block fittings. Install and tighten all the fittings into the distribution block.
5. Measure and mark a centerline on the side of the distribution block.
6. Holding the **marked** distribution block alongside the installed “crossed” nitrous feed tubes, so that their center marks are aligned. Place another mark on each solenoid tube extension at the **inside end** of the two exposed fitting body thread sections.
7. Remove the two fuel feed tubes. Cut off the excess tube at the **inside end** marks. Deburr and ream the cut ends.

NOTE: Be sure to remove any debris left from cutting and deburring from the inside of the tube before assembly.

8. Insert the “smoothed” ends of the two **lower** distribution block fittings with the compression nuts and ferrules. Tighten lightly.
 9. Insert and lightly tighten a straight fuel feed tube, sleeve, and red B-Nut on the two end Fogger nozzles.
 10. Insert and hold in place a straight fuel feed tube in the two upper ports of the distribution block, so they intersect each of the end fuel feed tubes at 90°. Place a mark on the end fuel feed tubes at the **bottom** of the horizontal tubes. See Figure 11.
 11. Place a mark on the two end feed tubes 5/8” farther down from the mark you made in step 10.
 12. Remove the two end fuel feed tubes. Make a 90° bend in two end feed tubes. The bend should **start** at the 5/8” mark and proceed **away** from the flared end.
 13. Install and loosely tighten the two end fuel feed tubes.
 14. Place a mark on the two end fuel feed tubes at the inside end of the two exposed fitting body thread sections (same procedure as in step 6).
 15. Remove the two end fuel feed tubes. Cut off the excess tube at the **inside end** marks. Deburr and ream the cut ends.
- NOTE:** Be sure to remove any debris left from cutting and deburring from the inside of the tube before assembly.
16. Insert the “smoothed” ends of the **upper** distribution block fittings with the compression nuts and ferrules. Tighten lightly.
 17. Tighten all the fuel feed tube fittings.
 18. Repeat steps 1 through 17 for the other cylinder bank.

3.3 Solenoid Mounting

Use the following procedures to install the nitrous solenoid and the fuel solenoid.

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

NOTE: Apply Teflon-based paste to all pipe-style fittings before assembling solenoids.

3.3.1 Nitrous Solenoid Installation

1. Clamp the nitrous solenoid in a bench vise.
2. Loosely install the 90° fitting into the outlet port of the nitrous solenoid.
3. Loosely install the nitrous filter fitting into the inlet port of the nitrous solenoid.
4. Trial fit the solenoid, nitrous filter, and 90° fitting in the distribution block. Note the orientation of the fitting and solenoid. Disassemble the 90° fitting and nitrous filter from the solenoid.
5. Reassemble the 90° fitting and nitrous filter using the Teflon **paste**. Install the solenoid assembly into the distribution block using Teflon **paste**. Tighten the connections to attain the desired mounting orientation.
6. Repeat steps 1-5 for the other cylinder bank.

3.3.2 Fuel Solenoid Installation

1. Clamp the fuel solenoid in a bench vise.
2. Loosely install a 90° fitting into the outlet port of the fuel solenoid.
3. Loosely install a fuel filter in the inlet port of the fuel solenoid.
4. Trial fit the solenoid, fuel filter, 90° fitting and fuel distribution block. Note the orientation of the fitting and solenoid. Disassemble the distribution block and fuel filter from the solenoid.
5. Reassemble the 90° fitting and fuel filter using the Teflon **paste**. Install the solenoid assembly into the distribution block using Teflon **paste**. Tighten the connections to attain the desired mounting orientation.
6. Repeat steps 1-5 for the other cylinder bank.

3.4 Main Nitrous Feed Line Mounting

HINT: Most late-model vehicles have access plugs in the trunk floor that are convenient for line routing. Following the fuel lines along the underbody, and entering the engine bay through the front fender well usually works well.

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 main nitrous supply line 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 nitrous bottle valve adapter.

WARNING: Nitrous oxide is dangerous to humans if inhaled or comes in contact with 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. If working with Kit Number 05088NOS, connect a 4AN 1 ft. hose to each of the N₂O filters installed in the inlet ports of the nitrous solenoids. Install the nitrous TEE fitting to the open ends of the two 4AN 1 ft. hoses.
7. Attach the nitrous supply line to the nitrous nitrous TEE fitting.

3.5 Fuel Solenoid Feed Line Installation

1. Connect a 2 ft. rubber hose to the fuel filter(s) installed in the inlet port of the fuel solenoid(s), using the hose clamp(s).
2. Trim the 2 ft. rubber hose(s) to the desired length.
3. Install the fuel TEE into the 2 ft. rubber hoses and secure with hose clamps.

3.6 Main Fuel Line Installation Tips

CAUTION: The primary fuel line for your nitrous system should be a separate line dedicated to the nitrous system. **Be sure your fuel pump, lines, and regulator are capable of handling the fuel requirements of this system.** Inadequate fuel delivery will result in catastrophic engine failure.

3.7 Electrical System Installation

Refer to Figures 8, 9, and the procedures in this section for the 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 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 carburetor/intake manifold, so that the throttle linkage movement triggers the microswitch.
- B. Adjust the microswitch to trigger at wide-open throttle by adjusting the microswitch's position to ensure that the actuation arm of the microswitch "clicks" at the same point your throttle linkage reaches wide-open throttle against the throttle stop (Position 8A).
- C. Ensure that the throttle and switch can reach the activation position, as shown in Figure 8B, by using the accelerator pedal. Have an assistant slowly press the pedal to the floor while you listen for the "click" of the microswitch.

3. Install the NOS arming switch in the vehicle's interior, within easy reach of the driver.

4. Install the wiring relay in the engine compartment near the battery. The relay's orange wire should reach the battery (+) terminal.

5. Connect the orange relay wire (pin 30) to the battery (+) terminal.

HINT: Solenoids are not polarized. Either wire will do.

6. Connect one wire from each solenoid together. Join the solenoid wires to the blue relay wire (pin 87).

7. Connect the green relay wire (pin 85) to a ground.

8. Connect the red relay wire (pin 86) to either terminal on the microswitch.

9. Connect the other terminal on the microswitch to the center terminal on the arming switch.

10. Connect the terminal (away from the LED) on the arming switch to a fused ignition switched +12 volt power source.

11. Connect the terminal (on the side of the LED) of the arming switch to the ground.

12. Reconnect the battery.

Figure 8 Throttle Microswitch Installation

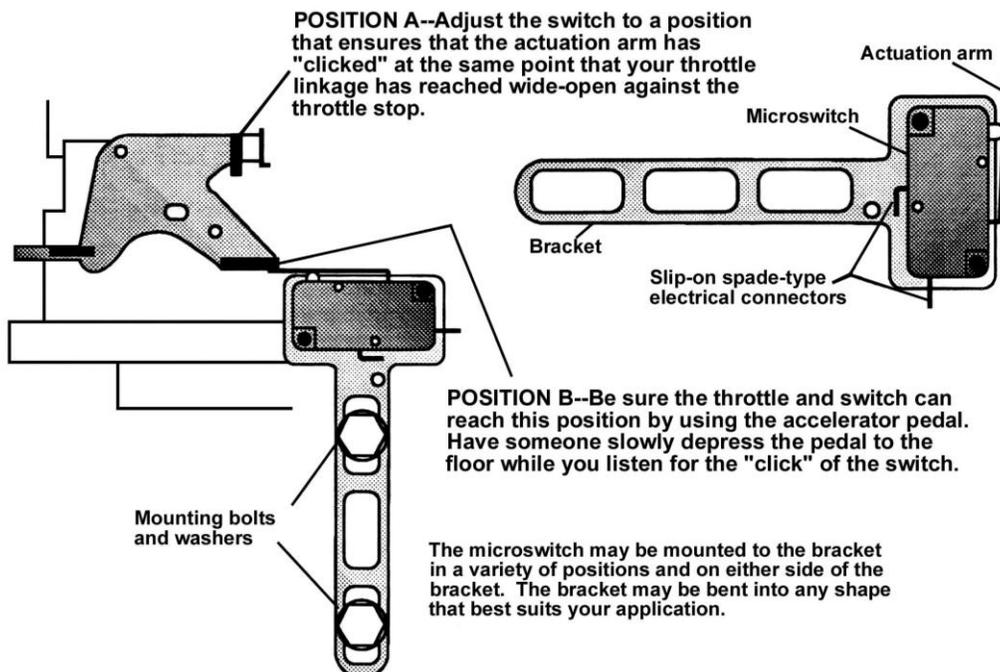
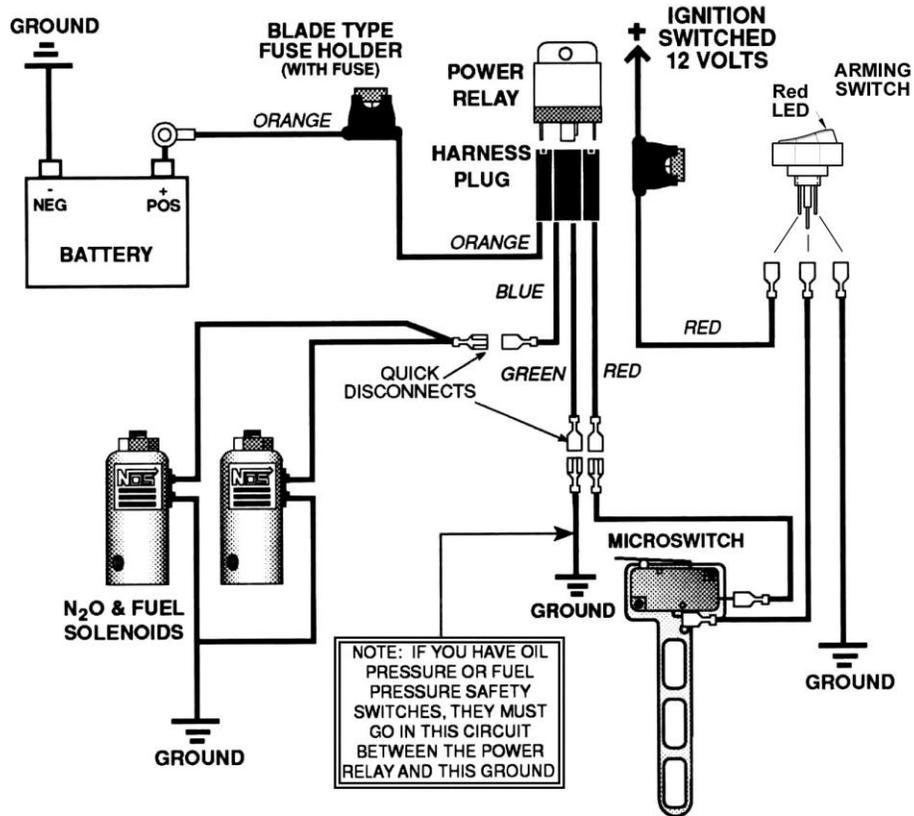


Figure 9 Wiring Diagram



FUSE VALUES	
PRO SHOT SERIES	25 AMP

WIRING COLOR KEY	
ORANGE	TO BATTERY POSITIVE (+) TERMINAL
BLUE	TO ONE WIRE FROM EACH SOLENOID
GREEN	TO GROUND
RED	TO IGNITION SWITCHED +12V THROUGH MICROSWITCH AND ARMING SWITCH

CAUTION: Make certain the nitrous bottle is closed and the fuel pump is not running. Failure to comply will result in the intake manifold being filled with nitrous and/or fuel; creating a potential engine explosion on start up.

13. Temporarily ground the open lead of the nitrous solenoid(s).
14. Hold the throttle wide open.
15. Turn the arming switch **ON**. You should hear a clicking noise if the nitrous solenoid is cycling properly. If no noise is heard, check all the wiring connections against the wiring diagram.
16. Disconnect the temporary solenoid ground.
17. Temporarily ground the open lead of the fuel solenoid.
18. Turn the arming switch **ON**. You should hear a clicking noise (not as loud as the nitrous) if the fuel solenoid is cycling correctly. If no noise is heard, check all the wiring connections against the wiring diagram.
19. Permanently ground the solenoid wires.
20. Connect the remaining solenoid wire from each solenoid to the ground.

Chapter 4 Preparing for Operation

After you have completed the installation of your NOS Sportsman Fogger system kit, perform the following checkout procedure before operating your vehicle.

NOTE: Before performing steps 1-4, make sure that the nitrous bottle valve is closed and the main nitrous supply line is empty.

1. Turn on the fuel pump.
2. Check all the fuel lines and fittings for leaks.
3. Turn the arming switch on. Set the engine speed at 2000 RPM. Briefly depress the activation arm on the microswitch. Engine speed should decrease (or die altogether), if the fuel delivery system is performing properly; if not, refer to Appendix A, Troubleshooting Guide.
4. Open the nitrous bottle valve.

NOTE: There should be no change in the engine idle speed. If the idle speed changes, refer to Appendix A, Troubleshooting Guide.

5. Inspect the nitrous hoses and fittings for leaks.
6. **ENJOY!**

Chapter 5 Tuning Suggestions

NOTE: Your combination may vary. These guidelines are suggested as a safe starting point in tuning.

5.1 Sportsman Fogger Series Jetting

NOS V-8 Sportsman Fogger kit 05088NOS is designed for direct-port nitrous injection applications. As delivered, NOS kits are jetted to operate with typical carbureted fuel systems (low-pressure pumps and bypassing regulators, operating at approximately 6 psi).

In many instances, it is desirable to run elevated fuel pressures to the NOS injection system. To aid the user in selecting jetting combinations, NOS has assembled the following information.

5.1.1 Jetting Tips

In most applications, maintaining a nitrous/fuel ratio between 5.0:1 (richer) and 6.0:1 (leaner) will provide optimum performance. When changing jetting, we suggest that you start with a rich (5.0:1) nitrous/fuel ratio. Lean the nitrous/fuel jetting until the desired performance is achieved. Be careful not to run an excessively high nitrous/fuel ratio. Severe engine damage can occur.

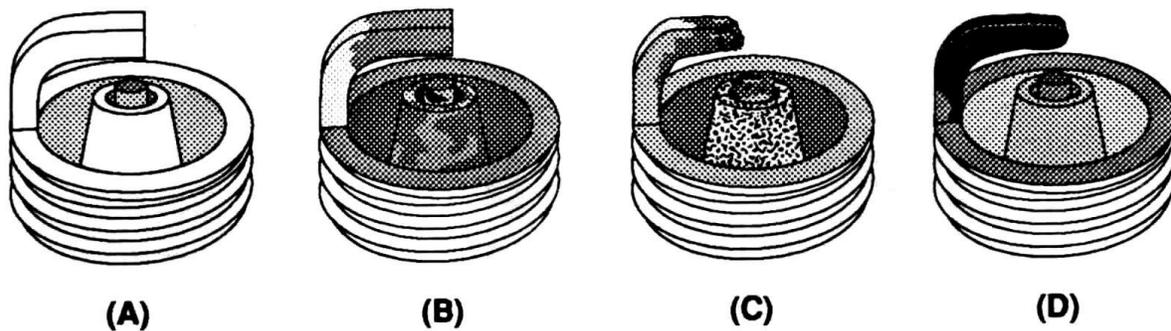
5.1.2 Determining Optimum Nitrous/Fuel Jetting

The jetting combinations included in your kit are compromises, intended to provide you with a safe starting point. They are intended to be used with 900 psi nitrous bottle pressure and 5-6 psi flowing fuel pressure. In many instances, installing slightly smaller fuel jets than the units provided in your kit will provide a more optimum nitrous/fuel ratio and increase power.

Always run the baseline jetting included in your kit before attempting to decrease fuel jet size. Optimum jetting can be determined using the following scheme.

1. Stabilize the nitrous bottle pressure at 900 psi.
2. Perform a dynamometer pull or a full throttle pass down the racetrack. Note the power reading or vehicle mph (not e.t.). Examine spark plugs for the indication of lean or rich nitrous/fuel conditions (refer to Figure 10 for tips on reading the spark plugs).
 - 2A. If spark plugs appear to be excessively rich, decrease the fuel jet size 2 steps (ex. 61 to 59, 82 to 80, etc;).
 - 2B. If spark plugs appear to be excessively lean, increase the fuel jet size 2 steps.
 - 2C. If spark plugs have a "like new" appearance on the porcelain and electrode, do not make a fuel jetting change.
3. Repeat steps 1 and 2 until the desired mixture is obtained.

Figure 10 Spark Plug Condition



How to Read Spark Plugs from a Nitrous Oxide Injected Engine

A. Correct Timing, Mixture, and Spark Plug Heat Range

Ground strap retains a “like new” appearance. Edges are crisp, with no signs of discoloration. Porcelain retains clear white appearance with no “peppering” or spotting.

B. Excessively Rich Mixture

Porcelain may be fuel stained, appearing brown or black. In extreme cases, ground strap, electrode, and porcelain may be damp with gasoline, or smell of fuel.

C. Detonation

Edges of the ground strap may become rounded. Porcelain has the appearance of being sprinkled with pepper, or may have aluminum speckles. During heavy detonation, the ground strap tip may burn off. This phenomena can result from excessive ignition timing, too high a heat range spark plug, or inadequate fuel octane.

D. Excessively Lean Mixture

Edges of the ground strap may become rounded. Under moderate overheating, the tip of the ground strap can discolor, usually turning purple, or the entire ground strap can become discolored.

5.1.3 Determining Optimum Ignition Timing

Determining the correct ignition timing for an engine using nitrous oxide is not cut and dry as it is dependent on many variables. Variables such as piston design, combustion chamber size and design, valve angle, fuel type, nitrous system design, and other factors all play a critical role as to what timing a specific engine/vehicle combination needs. When running larger amounts of nitrous, it is critical that the proper ignition timing be run as well as the proper spark plug heat range.

There is one specific timing that is most ideal for a specific engine and nitrous tune-up. In the end the best and correct method to determine timing in a car is to read the spark plugs.

Due to all these variables, it is difficult to recommend a generic timing for a given amount of nitrous. However the information below is intended to provide a starting point. After this, it is best to use the spark plugs as an indicator as to what timing a specific engine requires. The spark plugs also will help with nitrous and fuel jetting as well as fuel pressure needs.

One large variable that drives the ideal ignition timing is the “combustion efficiency”. This is a combination of the cylinder head valve angle, combustion chamber size and burn characteristics, and piston dome design among other things. The more efficient the overall combustion efficiency is, the less timing is needed with nitrous. Note that when running large amount of nitrous, the old school rule of “take out two degrees per 50 HP of nitrous” is not ideal or wise.

The following timing recommendations below are based on nitrous HP amounts and a factor called “Combustion Efficiency”. Combustion Efficiency takes into account the piston dome, chamber size, valve angle, and other factors. It is split up into three categories, “High”, “Medium”, and “Low”. The following reviews these:

“High” – An engine with an exceptionally efficient and quick burn rate when running nitrous. Typically this would have a piston with a dish, flattop, or very small, flat dome design. Combustion chambers are small and valve angles are greatly reduced from the “factory” valve angle. Generic examples are engines with current high end race heads that have valve angles reduced 7-11 from stock, very small combustion chambers, and flat top piston that still maintain 13-14:1 compression ratios.

“Medium” – An engine with a small and efficient chamber. An example could be a SBC with an 18 degree head with a moderate piston dome.

“Low” – Older engines with factory valve angles. Pistons may have large domes to maintain high compression ratios. Large, open combustion chambers. An example would be a BBC engine with a 119cc open chamber and large dome piston.

The following are some initial recommendations for timing. Be conservative and read your plugs. Run an 1/8th mile hit rather than a ¼ mile pass to start to see initial plug strap readings. The "Plug" recommendation is based on NGK heat ranges. An equivalent Autolite or other brand can be used.

Note: These are for V8's. For a 4 cylinder, cut these numbers in half.

Table 4 Suggested Baseline Timing Combinations

Nitrous HP	Combustion Efficiency	Timing	NGK Spark Plug or Equiv.	Fuel/Octane
100	Low	32	Stock	93+
100	Medium	30	Stock	93+
100	High	28	Stock	93+
125	Low	31	Stock/-7	100+
125	Medium	29	Stock/-7	100+
125	High	27	Stock/-7	100+
150	Low	29	-8	100+
150	Medium	27	-8	100+
150	High	25	-8	100+
175	Low	27	-9	110+
175	Medium	25	-9	110+
175	High	23	-9	110+
200	Low	24	-9	110+
200	Medium	22	-9	110+
200	High	20	-9	110+
250	Low	22	-10	112+
250	Medium	29	-10	112+
250	High	18	-10	112+
300	Low	20	-11	114+
300	Medium	18	-11	114+
300	High	16	-11	114+
350	Low	18	-11	114+
350	Medium	16	-11	114+
350	High	14	-11	114+
400	Low	16	-11	116+
400	Medium	14	-11	116+
400	High	12	-11	116+
500	Low	12	-11	116+
500	Medium	10	-11	116+
500	High	8	-11	116+
600	Low	8	-11	116+
600	Medium	6	-11	116+
600	High	2	-11	116+

Chapter 6 Routine Maintenance

6.1 Nitrous Solenoid Filter

When nitrous bottles are refilled they can become contaminated with debris, if the refiller does not have an adequate filter in his 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.
2. Empty the main nitrous feed line.
3. Disconnect the main nitrous feed line from the nitrous solenoid.
4. Remove the nitrous filter fitting from the nitrous solenoid.
5. Remove **all** Teflon paste debris from the solenoid inlet port threads and from the nitrous solenoid filter pipe threads.
6. Examine the mesh in the nitrous filter fitting for contaminants. Blow out debris with compressed air, if necessary.
7. Apply fresh Teflon paste to the nitrous filter pipe threads. Reinstall the filter in the nitrous solenoid.
8. Reconnect the main nitrous supply line to the nitrous solenoid.

6.2 Nitrous Solenoid Plunger

6.2.1 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 over-pressurization, 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.

Due to the Competition Cheater System kit being a wet manifold style nitrous kit, the nitrous solenoid plunger will get exposed to fuel vapors. This is unavoidable. Fluctuations in the intake manifold pressure due to opening and closing of the throttle induce flow into the out of the NOS injector plate spray bars (fuel and nitrous), when the NOS system is not in use. Long term exposure of the nitrous solenoid plunger seal to the fuel vapors will result in swelling of the plunger seal. This will reduce the nitrous flow (causing an excessively rich nitrous/fuel condition and a loss of power).

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 swelling or in extreme cases disintegrating.

NOTE: The seals are designed so that if they fail due to over-pressurization, 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).

6.2.2 Nitrous Solenoid Plunger Disassembly and Inspection

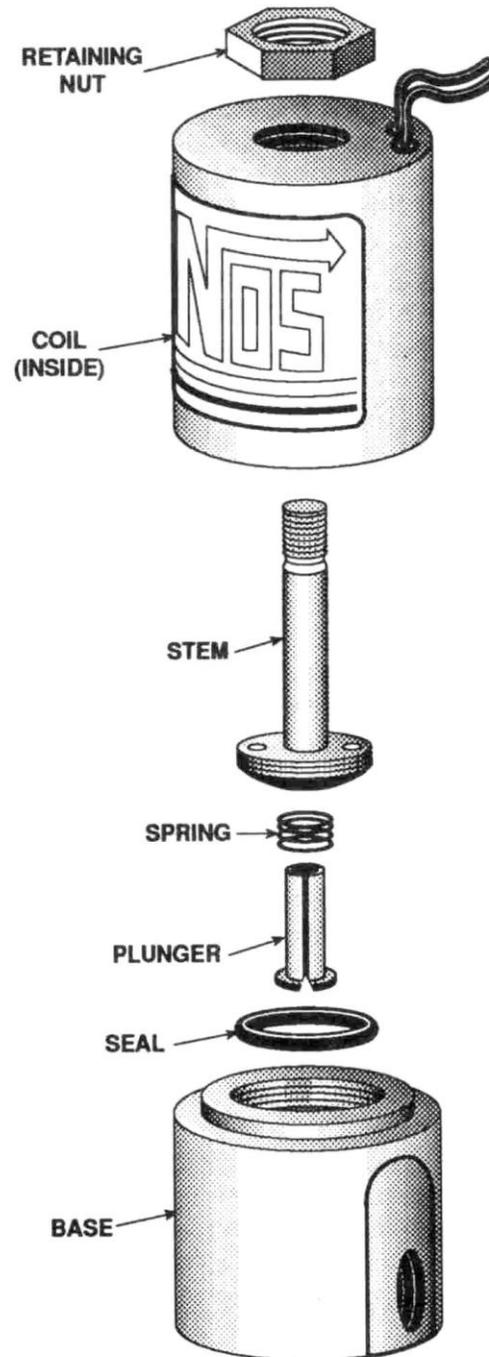
1. Close the valve on the nitrous bottle.
2. Empty the main nitrous supply line.
3. Remove the retaining nut from the nitrous solenoid.
4. Remove the coil and housing from the nitrous solenoid base.
5. Unscrew the stem from the nitrous solenoid base. Do this by double-nutting the stem, or by using a solenoid stem removal tool (NOS P/N 16666-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 over-pressurized, 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.

Figure 11 Exploded View of a Typical Solenoid



Appendix A Troubleshooting Guide

The troubleshooting chart on the following pages should help determine and rectify most problems with your installed NOS system. If you still need assistance determining or fixing problems, call NOS Technical Support Department at 1-866-GOHOLLEY.

PROBLEM	POSSIBLE CAUSES	DIAGNOSTIC PROCEDURE	CORRECTIVE ACTION
No change in engine speed when the fuel solenoid is activated (Chapter 6).	System wired incorrectly.	Compare wiring to schematic.	Wire per instructions.
	Restricted fuel line.	Inspect fuel line for restrictions (crimped or plugged).	Remove restrictions.
	Malfunctioning fuel solenoid.	Disconnect the ground wire for the nitrous solenoid. Turn arming switch ON, and depress the microswitch. Fuel solenoid should make "clicking" noise.	Repair/replace solenoid.
Change in engine speed when N ₂ O bottle valve is opened (Chap. 6).	Malfunctioning nitrous solenoid.	Remove and inspect solenoid. Check for proper inlet and outlet. Check for debris inside solenoid.	Repair/replace solenoid.
Engine runs rich when system is activated.	Bottle valve not fully opened.	Check bottle valve.	Open valve fully.
	Bottle mounted improperly.	Check bottle orientation.	Mount bottle properly.
	Plugged nitrous filter.	Inspect filter.	Clean/replace filter.
	Low bottle pressure.	Check bottle temperature / pressure.	Set bottle temperature to 85-90°F/ 900-950 PSI.
	Inadequate nitrous supply.	Weigh bottle.	Fill bottle. 1-800-99-REFILL
	Mismatched N ₂ O/fuel jetting.	Compare jetting to recommended values.	Install correct jets.
	Excessive fuel pressure.	Install fuel pressure gauge, such as NOS P/N 15931NOS, in the fuel line. Measure the pressure during acceleration, with the system activated.	Regulate pressure down, or install smaller fuel jetting.
	Loose nitrous solenoid wiring.	Inspect the solenoid wiring.	Repair wiring.
Malfunctioning nitrous solenoid.	WARNING: <i>Solenoid discharges nitrous at a high rate. Don't inhale nitrous; death may occur. Skin contact may cause frostbite.</i> Close bottle valve. Disconnect the solenoid outlet port. Disconnect the solenoid (+) lead. Open the nitrous bottle valve. Briefly connect the +12V to the solenoid. Solenoid should discharge N ₂ O at a high rate.	Rebuild solenoid.	
No change in performance when system is activated.	In-line fuse blown.	Check fuse.	Replace fuse.
	System wired incorrectly.	Compare nitrous wiring to schematic.	Wire system per instructions.
	Loose ground wire(s).	Connect 12V test light to battery (+) terminal. Check for continuity at grounds noted in schematic.	Tighten/repair loose ground(s).
	No power to arming switch.	With vehicle ignition on, connect 12V test light to battery (-) terminal. Check for power at pole #1 on arming switch.	Repair wiring.
	Malfunctioning arming switch.	With vehicle ignition ON, turn arming switch ON. Connect 12V test light to battery (-) terminal. Check for power at red wire on arming switch.	Replace arming switch.
	Malfunctioning throttle microswitch.	Temporarily disconnect power relay green wire from microswitch. Connect 12V test light to battery (+) terminal. Manually set microswitch ON. Check for continuity at microswitch positive terminal (Figure 13).	Replace throttle microswitch.
	Overly rich fuel condition.	Check for black smoke or backfiring through exhaust with system activated.	Install smaller fuel jet or decrease fuel pressure.
Engine detonates mildly when system is activated.	Excessive ignition timing.	Check ignition timing.	Reduce timing in 2° increments, up to 8° from non-nitrous conditions.
	Inadequate octane fuel.		Use higher octane fuel; up to 116VPC-16.
	Spark plug heat range too high.		Reduce spark plug heat range (maximum 2 steps).

	Too much nitrous flow.		Reduce nitrous jetting.
Engine detonates heavily when system is activated.	Inadequate fuel delivery due to: Plugged fuel filter.	Inspect fuel filter.	Clean or replace filter.
	Crimped fuel line.	Inspect fuel line.	Replace crimped line.
	Weak fuel pump.	Install fuel pressure gauge, such as NOS P/N 15931NOS. Run engine under load at WOT, with system activated.	Repair/replace fuel pump.
High-rpm misfire when system is activated.	Excessive spark plug gap.	Inspect spark plugs.	Set spark plug gap at 0.030" to 0.035".
	Weak ignition/ignition component failure.	Inspect components (plug wires, distributor cap, etc.)	Replace worn components.
Surges under acceleration when system is activated.	Inadequate supply of nitrous.	Check bottle weight.	Replace with full bottle.
	Bottle mounted incorrectly.	Compare bottle position and orientation to instructions.	Mount or orient bottle correctly.

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.

The **Remote Bottle Valve (P/N 14168NOS)** 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. The complete kit includes hardware and installation instructions.



P/N 14164NOS



P/N 14165NOS



P/N 14168NOS

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! NOS (Nitrous Oxide Systems) now offers their nitrous **Ntimidator Illuminated LED Purge Kit (P/N 16033NOS)**. For kits that are already installed, purchase the LED kit separately and add it to a current purge kit. Part number for the stand-alone LED kit is 16039NOS. The Ntimidator purge kit uses a bright blue LED to light up a 4-foot plume of nitrous each time the purge button is pushed. But this kit isn't just for looks. Use it to release trapped air or gaseous nitrous from feed lines, and it will help ensure consistent system performance. The purge kit will also help maintain bottle pressure between each nitrous pass. Use this kit on any nitrous system with a 4 AN feed line

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 16033NOS



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 dealer.

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

For online help, please refer to the Tech Service section of our website:
www.holley.com

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