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Read all Instructions before beginning!!!!

Caution – EXTREME DANGER – Caution
Do not use or mix any other manufacturer's products with any Nitrous Express products.
Do not use or mix any Nitrous Express products with any other manufacturer's products.
THESE INSTRUCTIONS APPLY TO NITROUS EXPRESS PRODUCTS ONLY!
FOR SANCTIONED RACE USE ONLY - NOT FOR SALE OR USE IN CALIFORNIA

READ...UNDERSTAND...AND FOLLOW
these instructions. If there is something you don't understand STOP.... Call the factory tech department for help. Mon-Fri, 9AM-5PM PST.

CAUTION
Adding a NX Nitrous system to your Power Sport machine is a job best handled by a professional mechanic with nitrous oxide installation experience, Nitrous Express Inc. urges you to seek professional help on all installation procedures.

Absolutely do not mix any other brand components, of any kind, with your NX system. Using non-compatible parts or accessories will void your warranty. Using non-compatible, mismatched parts can create a dangerous or potentially fatal event.

Nitrous Express Inc. instructions are as complete as possible, however every possibility cannot be covered in this instruction sheet, if you have any problem or question, STOP and call the NX tech line for help, 1-940-767-7694.

The installation procedures are divided into five sections.
Please pay particular attention to each one.
1. Mounting the Bottle.
2. Installing the nitrous nozzles.
3. Plumbing the fuel system.
4. Testing the system.
5. Tuning tips.

Before starting any installation steps, disconnect the negative battery terminal, and drain all fuel from the vehicle including the carburetors.

SECTION 1: MOUNTING THE BOTTLE

The bottle should be mounted in the storage area or away from the operator. The best positioning of the bottle is shown in illustration "A". Mounting the bottle in this manner will allow the bottle valve or internal siphon tube to be covered with liquid nitrous at all times and properly supports the bottle. Assemble the brackets on the bottle; refer to the chart below to determine the suggested bracket spacing.

Bottle Size	Distance to Short/Bottom Bracket	Distance to Tall/Top Bracket	Billet Bracket Part Number	Contains Siphon Tube
3.5 Oz	1"	3"	11013P/11017P	NO
7 Oz	1 ¼"	7"	11013P/11017P	NO
10 Oz	1 ¼"	10 ¾"	11013P/11017P	NO
1 LB	1 ¼"	5 ½"	11029P	YES
1 1/4 LB	1 ¼"	6 ½"	11029P	YES
2 LB	1 ¼"	6"	11018P	YES
2.5 LB	1 ¼"	7 ½"	11018P	YES
5 LB	1 ¼"	10 ½"	11031	YES
10 LB	2 ¾"	11 ¾"	11108/11108B	YES
15 LB	2 ¾"	15 ¾"	11108/11108B	YES

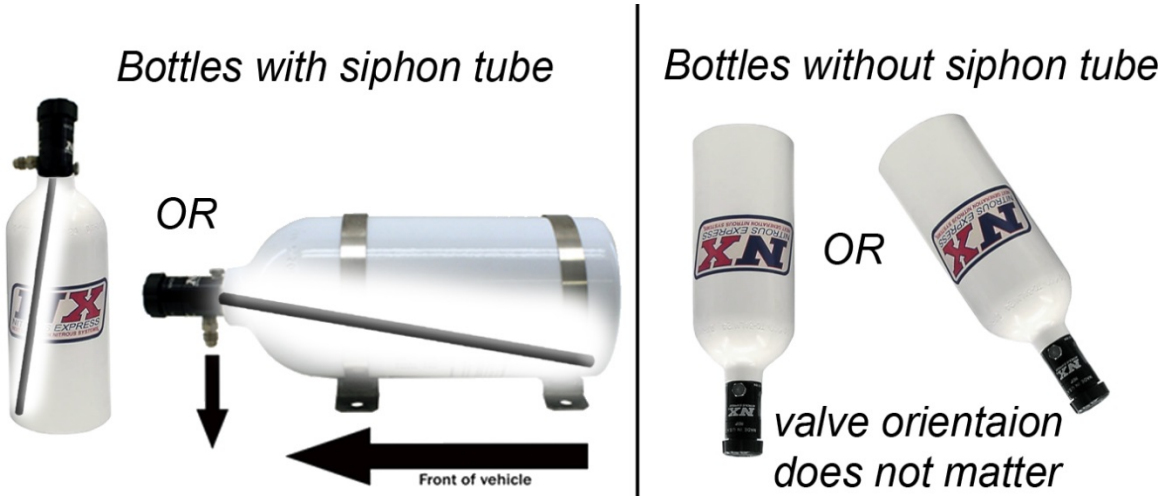
This assembly will serve as a guide to locate the four mounting holes. The bottle brackets should be secured by grade 5 bolts and washers. Before drilling the holes be sure to check for clearance beneath the mounting surface, i.e.: fuel tank, fuel lines, and brake lines. Each dimension given above is from the bottom of the bottle to the center of the bracket, a 10% variance in spacing, if necessary, is acceptable.

Bracket spacing is especially critical when a bottle is mounted on an ATV or motorcycle, or when installed "standing up" (upright position). Bottles mounted with the brackets in or near the middle will oscillate causing metal fatigue resulting in bracket failure. Billet brackets are suggested for installations on ATV and motorcycles, or any vehicles used in rough terrain or where band style clamps allow vibration or oscillation to occur. If band style brackets are used a minimum of two brackets must be installed on systems that use a 7oz bottle or larger. Nitrous Express does not recommend the mounting of bottles to the swing arm or any portion of the suspension of an ATV or

motorcycles. SCTA and BNI require an approved blow down tube (PN 11711P) on all motorcycle installations.

The bottle must be mounted as shown in **"Illustration A".**

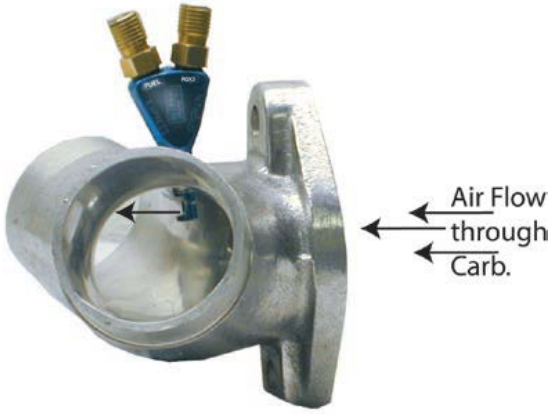
ILLUSTRATION A



SECTION 2: INSTALLING THE NOZZLE

1. Remove all parts necessary to gain access to the intake ports or allow removal of the intake manifold(s). Refer to the factory service manual if necessary.
2. Determine the best location for the nozzle(s) keeping in mind the following:
   A. The nozzle(s) must be installed between the carb(s) or throttle bodies and the engine.
   B. You will need to be able to remove and install the braided hoses to the jet fittings on the nozzle.
   C. The nozzle(s) can be installed in the rubber boot between the carb(s) and the engine if the boot has enough space between the clamps.
   D. The nozzle(s) must be aimed to spray the nitrous and fuel into the engine in line with the airflow through the port, not against the side or wall of the port. (Exception: On single nozzle installation in V-twins the nozzle is aimed toward the center of the manifold, see Illustration B)

ILLUSTRATION B



F. On multiple cylinder installations the nozzle locations only need to be similar, they do not have be exactly all the same. This will allow for clearance around cam chain tensioners, water outlets, etc. (see Illustration C)

3. Once the appropriate location is determined drill a 3/16" pilot hole to verify the location. Then drill the hole to ¼". If the nozzle is to be installed in the rubber intake you do not need to tap the hole, simply thread the nozzle into the hole and seal with a RTV type sealer. If you are installing the nozzle in the cylinder head make sure the cylinder you are working on is at TOP DEAD CENTER (check with service manual for any questions) then place a rag or rags in the port to prevent debris from entering the cylinder (if the rags are coated with grease they will get almost all the fillings out of the port). Carefully start a 1/16-npt tap in the hole, making sure you are square to the hole (being careful not to cross thread the tap). Once the tap has started add a couple of drops of a light lubricant. Turn the tap about 2 full turns then go back about 1/3 of a turn, this will keep the tap from getting stuck on the removed material. Repeat the process until approximately 1/4" of the tap is exposed inside the port. Remove the tap and test fit a nozzle, when threading the nozzle in by hand it should stop approximately two turns from having the start of the threads flush with the surface of the port. If the nozzle will not go in far enough repeat the tapping until the nozzle is at the correct depth. Once the correct depth is achieved, remove the rags) and blow out the port with compressed air. Put clean rags back in the port and move on to the next port, repeating the procedure.
4. On conventional direct port installations select the horsepower increase you desire by viewing the chart found on the last page of these instructions. Select the desired horsepower level and insert the jets into the nozzle, the nozzle is marked "Nitrous"& "Fuel" for your convenience. Connect the stainless braided lines to the nozzle and route them to solenoids. Using the provided brackets, mount the solenoid in a central location that allows the proper routing of the braided lines.

5. **Do not use Teflon tape on any nitrous system component!!! Use Supplied NX Red Thread Sealer only!!!** No sealer is required on AN flare fittings; sealer is required on pipe style threads.

ILLUSTRATION C

SECTION 3A: PLUMBING THE FUEL SYSTEM WITH EXTERNAL PUMP

This is the most important section involved in the system installation. In all cases an adequate fuel supply must be furnished to the fuel pump. On a carbureted street system a stock petcock is usually adequate. On a carbureted competition system a Pingle style dual outlet petcock is required. On all fuel injected applications, you must tap the fuel tank for your fuel supply to the included electric pump. **(Do not "T" off of the high pressure line leading to the fuel injectors; use PN15724P to tap your fuel tank)**

Most systems are designed to be used with a self-regulating Nitrous Express fuel pump (PN 15005P). No fuel pressure regulator is required, however: if a high volume aftermarket pump (such as NX part # 15953) is used, a regulator *is* required.

1. Carbureted street systems are furnished with a "T" fitting that may be used to splice into the fuel line supplying the carburetor. Route a rubber fuel line from this "T" fitting or fuel outlet to the inlet side of the fuel pump, using the supplied hose and clamps. Run a line from the outlet side of the pump to the fuel solenoid using the supplied hose and clamps. (The threaded female end of the fuel pump is the inlet side; the brass barb or nipple is the outlet side.) A fuel filter is also included to be installed *before* the pump on the threaded end. Use extreme caution when cutting and installing the rubber line to prevent rubber debris from fouling the fuel solenoid or clogging the fuel jets. Do not allow either of these lines to come in contact with the exhaust system or any moving parts i.e. suspension.
2. Competition bikes should route a line directly from the dual outlet petcock to the inlet side of the pump using the supplied fuel line and clamps.
3. For added safety and reliability, a fuel pressure safety switch should be used. (PN 15708P). The switch should be plumbed between the fuel pump and the fuel solenoid.

SECTION 4: WIRING THE SYSTEM

The triggering mechanism for NX Power Sports systems is a mechanical wide-open throttle micro-switch. Follow the wiring diagram in "Illustration D". If using a TPS autolearn switch for your triggering mechanism follow "Illustration E". In all applications, always use the furnished relay, this will insure adequate voltage to the solenoids and take the high amperage load off of the trigger switch.

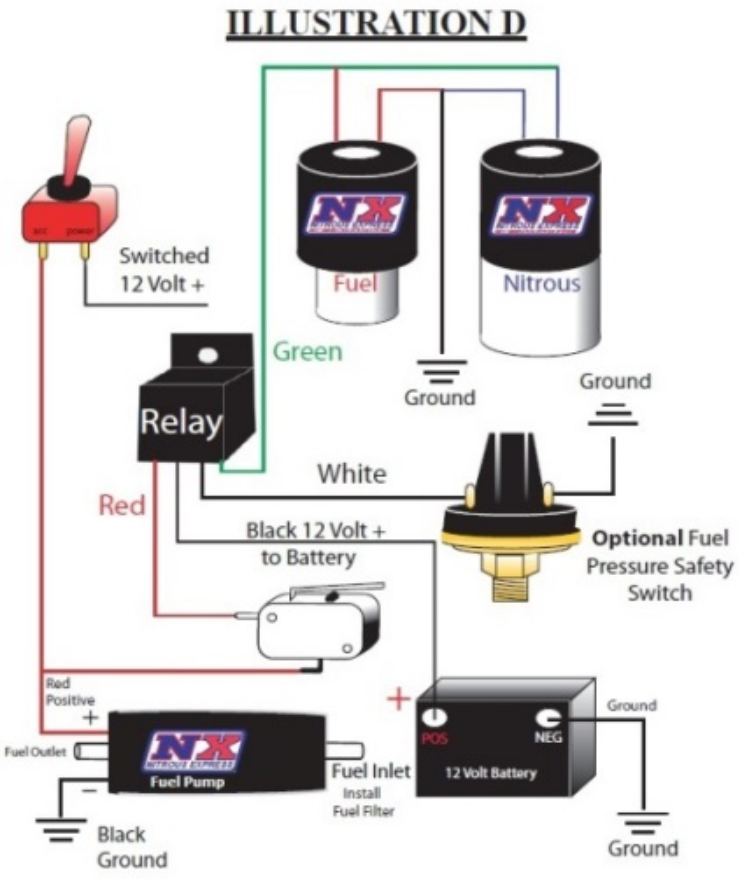
PROGRAMMING a TPS Wide Open Throttle Module with two LEDs. –Note these instructions are for TPS modules with only 2 LEDs on the module. If you have an older version with only 1 LED on the module please refer to nitrousexpress.com/instructions.html for programming instructions.

The NX TPAS is designed to trigger a relay, 1 amp maximum current draw, at or near wide open throttle and automatically calibrates itself to work with rising or falling signal.

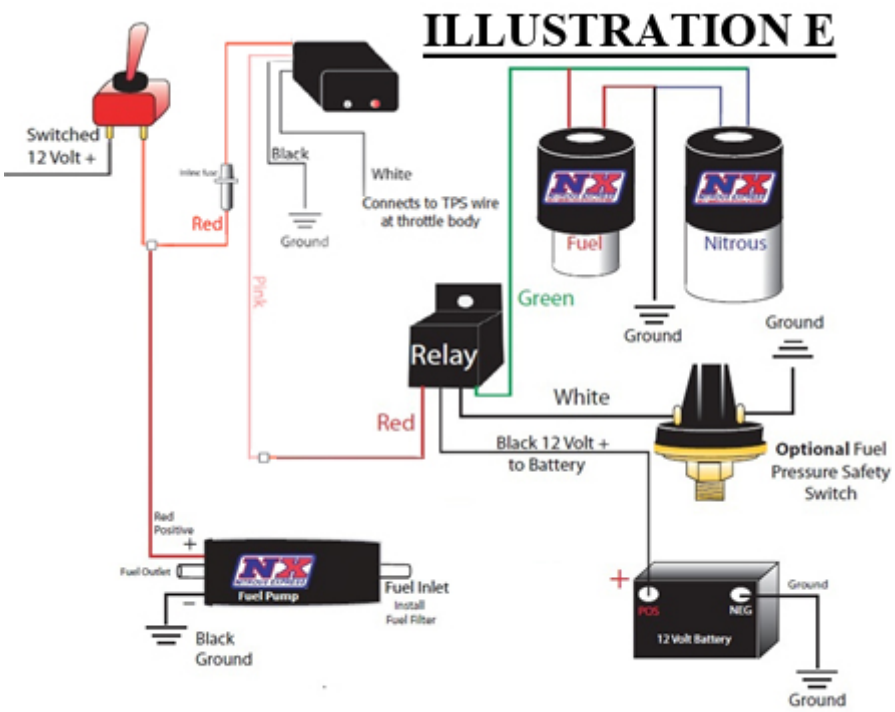
1. The NX TPS Wide Open Throttle Module should be mounted in a place that it will be easy to access the learn button and view the LEDs. Make sure the unit is located away from any heat source, i.e. exhaust manifold, header, or EGR.
2. Following the wiring diagram, route all wires but make no connections.

3. You must determine which wire on your throttle body's TPS is the output signal to the vehicles computer. Connect all wires per NX Self- Programming Throttle Position Activation Switch wiring diagram using a 1 to 3 amp fuse in series with the red wire.
4. On initial power up, press and hold the button while turning on switched +12 volts. The green LED should begin flashing indicating that the unit is not programmed.
5. Release the button.
6. With the throttle at idle position, press and hold the button until the red LED comes on (approximately 4 seconds). The green LED will continue to flash. Release the button and leave the throttle at Idle. The unit is now calibrating the idle position and making sure that the idle signal is stable. Wait for both LED's to turn off.
7. Now move throttle to wide open and hold for 1 second, then release back to idle (Red LED should come on to indicate that its working and waiting to check the calibration).
8. To check the calibration, move throttle to wide open again and then release to idle a second time. Once the check is complete, the Red LED will turn off and the Green LED will turn on indicating that the unit is calibrated and armed.
9. Once calibrated, the unit will activate the relay when the throttle opens to 90% or more and it will remain on as long as the throttle is between 90% and 100%. (When the relay is activated, both the red and green LEDs will be on). When the throttle closes to less than 90%, the unit will turn the relay and the red LED off. The green LED will remain on indicating that the unit is re-armed and ready for the next run.
10. If at any time during the calibration process the green and red LED's flash rapidly in an alternating pattern that means the calibration was not completed correctly. This can be the result of one of two things. Either the throttle was moved while it was calibrating the idle position or the TPS signal is not stable. Check wiring and recalibrate.

When using a Mechanical wide open throttle micro switch



When using an electronic wide open throttle module



TPS Wire Color Chart

Year	Make/Model	
2004	Yamaha/R1	Yellow
2008	Harley/Street Glide	Blue/Green (Pin #59)
2010	Harley/Road Glide	Green/Purple
2013	Polaris/ Razor 900 XP	Green
99-07	Suzuki/Hayabusa	Yellow
08-14	Suzuki/Hayabusa	Pink/Black
01-02	Suzuki/GSXR 1000	Yellow
03-14	Suzuki/GSXR 1000	Pink/Black
06-14	Kawasaki/ZX14	Yellow/White

SECTION 5: TESTING THE SYSTEM

After all components have been assembled on the motorcycle and each piece has been verified that it is installed properly, (call the factory tech line if you have any questions) it is time to test the system. Reconnect the negative battery cable. **Be sure the nitrous bottle is turned off and there is no pressure in the supply line!** Now arm the system by turning the toggle switch to the "ON" position. You should hear the fuel pump come on. Blip the wide-open throttle switch , you should hear the solenoids "click"(the fuel solenoid will click "softer" than the N2o solenoid). Be sure both solenoids are operating.

Open the nitrous bottle and check all connections for leaks. With the lines disconnected from the solenoids, crack your nitrous bottle open to allow Nitrous pressure into the system. Check for any leaks that may be present, and tend to any that may exist. If the solenoid itself is not sealing, activate the nitrous solenoids a few times in rapid bursts to seat the plunger in the solenoids.

(Do not operate the system for prolonged time period with the engine off, fuel from the system will flood the engine.) Start the engine and let it warm to operating temperature. Choose a safe place to test ride your bike; **Always wear all appropriate safety equipment!** Switch the system to the "ON" position; DO NOT TURN ON THE NITROUS BOTTLE! Ride your bike using wide-open throttle, engaging the nitrous system several times or until the motor loses power and stumbles. This purges all air from the fuel circuit and insures it is working properly. If your nitrous system fails to produce this over rich stumble, STOP and recheck every detail of your installation. Once the problem has been located and corrected, rerun the procedure. Now it is time to turn on the bottle and have some real fun!!! *EXERCISE EXTREME CAUTION* when using your Nitrous Express Nitrous System; it is the most powerful system available anywhere!!! Using third gear at or above 3,000 RPM, go to wide-open throttle, while system is armed. An instant power surge should let you know the system is working. You are now ready for normal nitrous usage, have fun and be careful. Tuning is not normally necessary, do not change the factory recommended jetting patterns, if you have a problem contact the factory tech line.

TUNING TIPS

Nitrous oxide works well with all applications, 4 cycle, 2 cycle, diesel, and rotary engines. Each one has individual tuning characteristics and these tips apply generally to each one. Nitrous oxide is referred to as a "LIQUID SUPERCHARGER". THE BIGGEST ENEMY OF ANY SUPERCHARGED ENGINE IS DETONATION!!! Detonation can be caused by many things, lean fuel mixture, rich fuel mixtures, inadequate octane fuel, too much ignition timing, not enough ignition timing, or lugging the engine, just to mention a few!

1. Your vehicle engine should be tuned to its maximum power prior to nitrous use.
2. Your ignition system should be at its maximum. A stock ignition will be adequate on most street systems, but for competition use, you must have the very best available ignition components.
3. The stock spark plug may be too hot for use with Nitrous, We have found for most applications the NGK heat range # 9 is usually best. Do not use platinum tipped spark plugs, the spark kernel is to small for nitrous usage and cannot ignite the mixture at the cylinder pressures that nitrous creates. **Since manufacturers specifications on the plugs vary from make and model, call the tech line to find the right plug for your application.**
4. If you are running more than a 35 horsepower boost NX recommends retarding the timing 2 degrees for every 50 horsepower increment, i.e. if you jet your vehicle to 50 horsepower boost then timing should be retarded by 2 degrees, 100 horsepower boost 4 degrees of retard and so on.
5. The NX system is so advanced that huge amounts of timing retard are not required. If adequate octane fuel is used only small amount of timing retard may be needed. Be aware, Excessive timing retard in an internal combustion engine causes increased cylinder temperatures, engine overheating, and over rich fuel conditions.
6. The fuel system must be in top operating condition. Be sure the fuel filter is clean and there are no restrictions in the fuel supply line.
7. The engine should be at operating temperature before nitrous is used.
8. Never "LUG" the engine while using nitrous! Use the system at wide-open throttle only! Never engage the system below 3,000 RPM's. IF you do any of the above, a dangerous "BACKFIRE" condition may result in serious engine damage or physical injury.
9. **Do not attempt to drill or alter the jets or serious engine damage will result.** These items are engineered to their maximum capability. Any modifications you can make will decrease power and hurt engine parts.
10. All NX systems are designed to operate at 1050 PSI bottle pressure. This is extremely important and cannot be stressed enough!!! If the pressure is below this, the system will be rich, if it is above this it will be lean! The bottle pressure can be monitored easily with our bottle pressure gauge (PN 15509P). In cool weather a bottle heater is required (PN 15938P for 2.0lb or 2.5lb bottles or PN 15936P for 1.0-1.4lb bottles). The use of an insulated bottle jacket will allow the heater to work more efficiently and will also stabilize bottle pressure. In extremely hot weather a wet towel or chamois may be placed over the bottle to reduce pressure.
11. A purge valve (PN 15600P or 15603P) is a must on all competition systems and a plus on the street systems, as well. A purge valve is worth about a tenth of a second on a 1/4 mile pass. The correct purging procedures for drag racing is listed here:
    A. Complete your burnout.
    B. Light the pre-stage bulb.
    C. Push the purge button three times, in one second increments.
    D. Stage immediately, go fast!!!
12. If traction is a problem a progressive controller (PN15957P or PN15835P) may be used to reduce tire spin off the line, smoothly increasing power as the vehicle accelerates, eliminating ET robbing traction loss.
13. If there is a question about the purity of your nitrous supply, a filter (PN 15607P) should be used when refilling your nitrous bottle. Contaminated nitrous will cause serious damage to your system components.
14. Periodically check all fittings, connections, and mounting bolts for leaks and tightness.

15. Always turn the nitrous bottle off when not in use, even between runs.
16. Always start with the lowest power setting in your system. Start out small and work your way up, NX systems produce more “REAL” horsepower than any other on the market today!
17. If you run a 35+ HP system it is recommended that you run the highest motor octane racing fuel available. Here are some tips to help you choose fuel for your bike:

    A. The relevant number to look at when choosing a racing fuel is the “MOTOR” octane number or MON, the research octane number is not a reliable gauge of fuel octane level.
    B. Never store your fuel in a vented container; never store your fuel in white fuel jugs, or in direct sunlight. If you must use plastic, use only dark colors. Sunlight will oxidize the lead out of racing fuel. Lead is what makes it high octane. A steel “JERRY” can is the best.
    C. Do not leave your racing fuel stored in the motorcycle tank. Keep it in a sealed, airtight container off the floor.
    D. NEVER USE AVIATION GAS!!!!!
       Instant engine damage will be the result! The specific gravity of avgas is very light and it is not formulated to operate in non-aircraft engines.
    E. Never buy racing fuel from a vented container, or from an underground tank. Buy from a sealed drum only.

IN CONCLUSION

This instruction sheet and power tuning tips are valid for NX systems only. If you have a kit from another manufacturer this information will not help you. The instruction sheet from another manufacturer’s kit will not help you with the NX system! If you need help call your dealer or the factory tech line.

DO NOT MIX ANY COMPONENTS FROM ANY OTHER MANUFACTURER, THIS WILL VOID ALL WARRANTIES!!!!!

If you follow the foregoing suggestions, your NX system will operate trouble free. Got a problem? Call the factory tech line 9AM to 5PM CST 940-767-7694.

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Powersports Jetting When Using the NX Fuel Pump Part # 15005P

Use this Jetting only if you have a powersports system with a 15005P fuel pump!!! Do not use platinum tip, extended tip, or any spark plug with multiple ground straps or split ground straps. When in doubt about heat range always go one step colder.

High Octane fuel should be used and timing should be retarded 1 degree per 25hp of nitrous

Check all jets for obstructions

Single Nozzle		
HP	N2O jet	Fuel jet
10	18	16
15	20	18
20	24	20
25	26	22
30	31	26
50	35	28

Dual Nozzle		
(Jetting for each nozzle)		
HP	N2O jet	Fuel jet
20	18	16
30	20	18
40	24	20
50	26	22
70	31	26

Three Nozzle		
(Jetting for each nozzle)		
HP	N2O jet	Fuel jet
30	18	16
45	20	18
60	24	20
75	26	24
100	31	26

Four Nozzle		
(Jetting for each nozzle)		
HP	N2O jet	Fuel jet
40	18	16
60	20	18
80	24	20
100	26	22

This jetting chart is for informational purposes only, NX is not responsible for misuse or misapplication.

Pro-Mod Powersports Jetting using NX 140 GPH fuel pump with adjustable regulator (such as part # 15953)

Use this Jetting only if you have a powersports system with a fuel pump and adjustable fuel pressure regulator!!! Do not use platinum tip, extended tip, or any spark plug with multiple ground straps or split ground straps. When in doubt about heat range always go one step colder.

High Octane fuel should be used and timing should be retarded 1 degree per 25hp of nitrous

Check all jets for obstructions

Promod Bike with NX Black pump and adjustable regulator				
HP	N2O Jet	Fuel Jet	FFP	Flow Jet
60	18	15	10	31
100	26	19	10	38
150	31	22	10	44
180	33	24	10	48
200	35	25	10	50
250	41	27	10	57
300*	46	32	10	62
400*	52	34	10	67
*MUST USE 15300 N2O SOLENOID				
*MUST USE 15201 FUEL				

This jetting chart is for informational purposes only, NX is not responsible for misuse or misapplication.

UNDERSTANDING

HAZARDS OF NITROUS OXIDE

IN AUTOMOTIVE AND RACING APPLICATIONS

USERS OF NITROUS OXIDE MUST UNDERSTAND THE HAZARDS. NITROUS OXIDE:

- MAY CAUSE OR INTENSIFY FIRE; IT IS AN OXIDIZER.
- CONTAINS GAS UNDER PRESSURE, MAY EXPLODE IF EXPOSED TO AN OPEN FLAME.
- MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.
- MAY CAUSE DROWSINESS OR DIZZINESS.
- MAY CAUSE FROSTBITE.

NEVER INHALE NITROUS OXIDE OR NITROUS OXIDE MIXTURES EXCEPT UNDER MEDICAL SUPERVISION.

- RACING NITROUS OXIDE PRODUCTS CONTAIN SULFUR DIOXIDE.
- INHALATION OF RACING NITROUS OXIDE PRODUCTS MAY BE HARMFUL OR FATAL.

NEVER APPLY AN OPEN FLAME TO A NITROUS OXIDE CYLINDER

- WHEN FILLING FROM ONE CYLINDER TO ANOTHER.
- TO ENHANCE PERFORMANCE WHEN CYLINDERS ARE IN USE.

FOLLOW REGULATORY REQUIREMENTS AND INDUSTRY STANDARDS WHEN USING NITROUS OXIDE CYLINDERS OR WHEN TRANSFERRING PRODUCT FROM ONE CYLINDER TO ANOTHER (TRANSFILLING)

- ONLY COMPETENT, TRAINED PERSONNEL SHOULD TRANSFILL CYLINDERS.
- TRANSFILLING CYLINDERS CAN BE DANGEROUS.
- ONLY FILL NITROUS OXIDE CYLINDERS BY WEIGHT.
- DO NOT COOL DOWN RECEIVING CYLINDER.
- ONLY USE CYLINDERS THAT ARE DEDICATED FOR NITROUS OXIDE SERVICE. DO NOT CHANGE THE CYLINDER SERVICE TO OR FROM A DIFFERENT GAS.

DO NOT MAKE ALTERATIONS TO CYLINDER OR CYLINDER COMPONENTS

- DO NOT MODIFY PRESSURE RELIEF DEVICE (PRD).
- DO NOT REPLACE, CHANGE, OR MODIFY VALVE.
- DO NOT ALTER, REMOVE, OR COVER PRODUCT LABEL.

FOLLOW SAFE PRACTICES FOR THE STORAGE AND USE OF OXIDIZERS

- SECURE ALL CYLINDERS AND CONTAINERS WHEN BEING USED OR STORED.
- POST NO SMOKING SIGNS IN AREAS WHERE OXIDIZERS ARE STORED OR USED.
- SEPARATE OXIDIZERS FROM FLAMMABLES WHEN STORING.
- STORE AND USE IN WELL VENTILATED AREAS THAT ARE FREE OF COMBUSTIBLE MATERIALS.
- KEEP OIL AND GREASE AWAY FROM CYLINDER AND CYLINDER VALVE.