NITROGEN ASSISTED NITROUS OXIDE

NANO3000 Series

Sport Kit

Quick Installation & Assembly Instructions

866 • 380 • 6266 nanonitrous.com

GETTING STARTED
ABOUT THE SYSTEM

Before proceeding check the contents of your box against the Bill of Materials

Nitrous oxide systems can greatly increase horse power for an engine a very small cost. On the other hand, although inexpensive, traditional nitrous systems have a reputation of being inconsistent and unpredictable. A variety of techniques and tools have been used in an attempt to overcome the inconsistencies of nitrous, including bottle warmers, blow torches, and complex computer controls.

NANO'S new "Nitrous Regulators" resolve these issues for you.

You have purchased the only nitrous oxide technology that makes your nitrous system instantly ready to perform, maintains perfect nitrous flow, delivers full time repeatable and consistent nitrous performance, and doubles the endurance from a single nitrous bottle fill.

NANO 3000 SPORT KIT BILL OF MATERIALS

Qty 1 - NANO-UNI-CKV1-ASM
Check Valve - Standard Assembly. Stainless Steel (Pre-installed on valve)

Qty 1 - BRLINE 18" STR-6F
NANO 18" Interconnect Line, Braided, -6AN Female JIC to 1/8" npt.

Qty 1 - NANO-UFA-On/Off
NANO Universal Fill Adapter On/Off Valve

Qty 1 - NANO3000-REGm+S030-ASM
NANO 3000 Pressure Compensation Regulator & S030 3000PSI Bottle

Qty 1 - STK-LOGO 3" x 1.24"
NANO Logo Sticker 3 x 1.25" 3-color.

Qty 1 - NANO SPT-VLV
NANO SPORT Valve.

Qty 2 - NANO S030 BR-ASM
T-Bolt NANO Bottle Bracket Assembly for S030 bottles.

Qty 1 - STK-TEMP-LABEL
Temperature Gage for NANO Nitrous bottle. Sticker style.

Qty 1 - NANO PR-GAGE-FF (Option)
NANO 1500 PSI Nitrous Bottle Pressure Gage, Fluid filled.

Quick Installation and Assembly Instructions

Congratulations – **You have just purchased the only nitrous oxide technology that is instantly ready to perform, maintains perfect nitrous flow, delivers full-time repeatable and consistent nitrous performance, and doubles the endurance from a single nitrous bottle fill. No other system on the market can deliver all these advantages.**

Through your bottle heater away. Lets go racing!

***NOTE*: For your convenience, the NANO bottle may have been pre-charged with 3000 PSI high pressure air (HPA). Failure to keep the ON/OFF Valve in the full OFF position (full counter clockwise) until assembly is complete will result in loss of NANO bottle pressure. Do not use nitrous bottle heaters with this system.**

Learn more about all NANO Nitrous products • nanonitrous.com

Installation Sequence

1

2


2a


2b


3a

1. Install the new NANO SPORT Nitrous Bottle Valve

a. Positioned as shown. The NANO anti-reversion check valve has been pre-installed on the Sport valve.

2. Install NANO nitrous bottle Temperature Sticker onto nitrous bottle

a. Place NANO temperature sticker in window of nitros bottle sticker as shown so it is visible when nitrous bottle is installed into vehicle.

b. Peel off temperature sticker backing before installing bottle sticker.

3. Fill and Install the nitrous oxide bottle

3b

a. Fill nitrous oxide bottle

b. Check for NANO Anti-reversion Check Valve nitrous leaks. If leaks are detected call NANO.

c. Install nitrous bottle into nitrous bottle brackets

4. Install Braided Interconnect Line

4a

4b

a. Attach the braided Interconnect line to the On/Off assembly.

b. Attach the NANO On/Off Fill Valve on the top of the NANO Regulator/Cylinder assembly Before attaching, be sure the knob is in the off position.

c. Orient the nitrous bottle and NANO Cylinder so the braided interconnect line can be connected between the cylinder and nitours bottle as shown.

d. Attach the JIC end of the braided Interconnect line to the check valve. Use a 5/8" wrench to hold the check valve steady while using a 11/16" wrench to tighten the braided line to the check valve. *Failure to follow this procedure may result in rotation of the check valve body resulting in leaks.*

e. Tighten the bottle brackets.

5. Install NANO Cylinder

a. Check the NANO Cylinder's pressure gage. If the pressure is below 2800 PSI fill the NANO Cylinder to 3000 PSI.

b. Loosely install the NANO Cylinder T-bolt mounting brackets onto NANO Cylinder - feet forward.

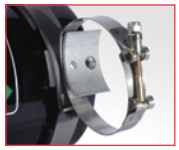
c. Choose mounting preference. (See examples at bottom of this page)

6. Install the NANO Cylinder Mounting Bracket Assemblies

The NANO universal Mounting Brackets are designed to allow for mounting the NANO Cylinder in a variety of ways. The NANO Cylinder can be oriented as desired. Examples of the most common installation configurations used are shown below.

A. Bottle Hoop Install

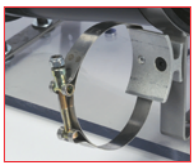
- Loose Nitrous Bracket
- Slip the NANO bracket between the bottle and hoop
- Position the cylinder as desired with feet forward
- Tighten the nitrous bottle hoops
- Slide NANO Cylinder into the Universal Bracket Assembly
- Position the bottle and tighten the bracket hoops



B. Leg Mount

- Determine desired location for mounted bottle
- Mark position for NANO Cylinder feet on nitrous bracket leg
- Using foot of NANO bracket as a template mark location for drilling mounting hole
- Drill mounting ¼" hole in leg of nitrous bracket
- Attach Universal Brackets to nitrous bracket leg
- Insert NANO Cylinder into bracket hoops, position and tighten

C. Remote Mount



- Place hose clamps on tubular frame
- Slip the NANO bracket between the bottle and hoop
- Position the cylinder as desired with feet forward
- Tighten the hose clamps
- Slide NANO Cylinder into the Universal Bracket Assembly
- Position the bottle and tighten the NANO bracket hoops

Startup

1. Check Nitrous Bottle Temperture:
Monitor nitrous temperature using the color coded temperature gauge (sticker) provided in this kit. Green means "go". Red means "no go". Additional temperature labels can be purchased from NANO.

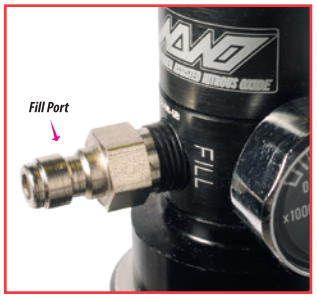
2. Check NANO Cylinder Pressure:
Reference the NANO Cylinder pressure gauge. When full the Cylinder pressure should l;;be about 3000 psi and never below 2800 psi. Use this gauge to monitor the amount of nitrous remaining in you nitrous bottle. When pressure drops to 1000psi or below your nitrous bottle is about empty.

3. Turn NANO to On:
Rotate the On/Off valve counter clockwise to turn on system. See picture below. You will hear the regulator initialize.

4. Check Optional Nitrous Bottle Pressure Gauge:
Check the pressure displayed on the color calibrated nitrous bottle gauge. Green indicates the pressure is between 950 psi and 1050 psi. (Green is for GO). Red means pressure is too high. Go to "Trouble Shooting". Leave NANO system ON during the run.

Operation

Filling the Nitrous Bottle



Always match a full NANO Cylinder (3000psi) with a properly filled nitrous oxide bottle. Attaching an under-filled NANO Cylinder to a nitrous bottle (or visa versa) may result in failure of the NANO Regulator to operate properly and could cause a rich fuel burn.

Always evacuate excess air/nitrogen from the nitrous oxide bottle before doing a nitrous refill by turning the nitrous bottle side down, gently opening the nitrous valve, and letting pressure flow from the bottle until you see vapor escape from the bottle valve. Then shut the valve off and fill the nitrous bottle in the customary manner.

Do not overfill the nitrous bottle. Fill the nitrous bottle to it's designed weight. The empty weight is on your nitrous bottle. Fill it with nitrous oxide until the total weight equals the empty weight plus 10 lbs. Over-filling may cause the pressure relief valve to fail.

Filling the NANO Cylinder

Refill the NANO Cylinder each time you replace the nitrous oxide bottle. When the NANO Cylinder pressure reaches 1200psi it ready for refill.

Always use a full nitrous bottle with a refilled NANO Cylinder. Use the "Fill Port" on the side of the NANO Regulator Assembly, which is labeled as "Fill Port", to fill the NANO regulator cylinder.

WARNING:

- ***Do not heat your nitrous bottle or NANO cylindar.***
- ***Never try to fill the Cylinder from the top of the Regulator Assembly. This will ruin the regulator and require it to be returned to the factory for repair.***
- ***NANO3000 Series cylinders are to be filled to a working pressure of 3000psi with either high pressure air (HPA) or high pressure nitrogen (HPN).***
- ***Never use CO2 to fill NANO cylinder.***

Tuning

WARNING: NANO enabled systems flow more nitrous from the same nitrous jets. Re-tune your vehicle after installing your NANO system.

TUNING FOR YOUR NANO UPGRADE

Start with what you know!

Each nitrous kit manufacturer has its own jet pilling chart with tuning recommendations. The NANO upgrade increases the flow of nitrous through nitrous jets by 20 to 25%. You must adjust your nitrous tune to accommodate the increase in nitrous flow when adding a NANO upgrade to your nitrous installation. Failure to adjust your nitrous tune to accommodate the NANO regulator will result in a lean condition that could damage your engine.

You have two approaches for the retune of your system. *See black boxes to the right.*

If this is a new nitrous kit installation, start with the nitrous kit manufacturer's recommendations then adjust as we recommend.

If you're upgrading an existing nitrous installation, and have established a solid tune for your vehicle, start with that tune as a base line and make adjustments based on our recommendations.

Use the following tables for guidance.

METHOD ONE:
Tune to maintain your current horsepower: Decrease the amount of nitrous oxide to compensate for the 25% increase in nitrous jet flow (Use the Nitrous Re-jetting Table as your reference)

METHOD TWO:
Tune for a 25% increase in horsepower by increase the amount of fuel to compensate for the 25% increase in nitrous flowing through the jets. (Use Fuel Re-jetting Table as your reference and adjust timing for the increase in power. The general rule is retard timing by two degrees for every 50 hp of added nitrous horsepower)

NITROUS RE-JETTING TABLE

Original Jet	20% Decrease	25% Decrease
0.005	0.004	0.004
0.006	0.005	0.005
0.007	0.006	0.006
0.008	0.007	0.007
0.009	0.008	0.008
0.010	0.009	0.009
0.011	0.010	0.010
0.012	0.011	0.010
0.013	0.012	0.011
0.014	0.013	0.012
0.015	0.013	0.013
0.016	0.014	0.014
0.017	0.015	0.015
0.018	0.016	0.016
0.019	0.017	0.016
0.020	0.018	0.017
0.021	0.019	0.018
0.022	0.020	0.019
0.023	0.021	0.020
0.024	0.021	0.021
0.025	0.022	0.022
0.026	0.023	0.023
0.027	0.024	0.023
0.028	0.025	0.024
0.029	0.026	0.025
0.030	0.027	0.026

Original Jet	20% Decrease	25% Decrease
0.031	0.028	0.027
0.032	0.029	0.028
0.033	0.030	0.029
0.034	0.030	0.029
0.035	0.031	0.030
0.036	0.032	0.031
0.037	0.033	0.032
0.038	0.034	0.033
0.039	0.035	0.034
0.040	0.036	0.035
0.041	0.037	0.036
0.042	0.038	0.036
0.043	0.038	0.037
0.044	0.039	0.038
0.045	0.040	0.039
0.046	0.041	0.040
0.047	0.042	0.041
0.048	0.043	0.042
0.049	0.044	0.042
0.050	0.045	0.043
0.051	0.046	0.044
0.052	0.047	0.045
0.053	0.047	0.046
0.054	0.048	0.047
0.055	0.049	0.048
0.056	0.050	0.048

Original Jet	20% Decrease	25% Decrease
0.057	0.051	0.049
0.058	0.052	0.050
0.059	0.053	0.051
0.060	0.054	0.052
0.061	0.055	0.053
0.062	0.055	0.054
0.063	0.056	0.055
0.064	0.057	0.055
0.065	0.058	0.056
0.066	0.059	0.057
0.067	0.060	0.058
0.068	0.061	0.059
0.069	0.062	0.060
0.070	0.063	0.061
0.071	0.064	0.061
0.072	0.064	0.062
0.073	0.065	0.063
0.074	0.066	0.064
0.075	0.067	0.065
0.076	0.068	0.066
0.077	0.069	0.067
0.078	0.070	0.068
0.079	0.071	0.068
0.080	0.072	0.069

FUEL RE-JETTING TABLE

Original Jet	+20% Increase	+25% Increase
0.005	0.005	0.006
0.006	0.007	0.007
0.007	0.008	0.008
0.008	0.009	0.009
0.009	0.010	0.010
0.010	0.011	0.011
0.011	0.012	0.012
0.012	0.013	0.013
0.013	0.014	0.015
0.014	0.015	0.016
0.015	0.016	0.017
0.016	0.018	0.018
0.017	0.019	0.019
0.018	0.020	0.020
0.019	0.021	0.021
0.020	0.022	0.022
0.021	0.023	0.023
0.022	0.024	0.025
0.023	0.025	0.026
0.024	0.026	0.027
0.025	0.027	0.028
0.026	0.028	0.029
0.027	0.030	0.030
0.028	0.031	0.031
0.029	0.032	0.032

Original Jet	+20% Increase	+25% Increase
0.030	0.033	0.034
0.031	0.034	0.035
0.032	0.035	0.036
0.033	0.036	0.037
0.034	0.037	0.038
0.035	0.038	0.039
0.036	0.039	0.040
0.037	0.041	0.041
0.038	0.042	0.042
0.039	0.043	0.044
0.040	0.044	0.045
0.041	0.045	0.046
0.042	0.046	0.047
0.043	0.047	0.048
0.044	0.048	0.049
0.045	0.049	0.050
0.046	0.050	0.051
0.047	0.051	0.053
0.048	0.053	0.054
0.049	0.054	0.055
0.050	0.055	0.056
0.051	0.056	0.057
0.052	0.057	0.058
0.053	0.058	0.059
0.054	0.059	0.060

Original Jet	+20% Increase	+25% Increase
0.055	0.060	0.061
0.056	0.061	0.063
0.057	0.062	0.064
0.058	0.064	0.065
0.059	0.065	0.066
0.060	0.066	0.067
0.061	0.067	0.068
0.062	0.068	0.069
0.063	0.069	0.070
0.064	0.070	0.072
0.065	0.071	0.073
0.066	0.072	0.074
0.067	0.073	0.075
0.068	0.074	0.076
0.069	0.076	0.077
0.070	0.077	0.078
0.071	0.078	0.079
0.072	0.079	0.080
0.073	0.080	0.082
0.074	0.081	0.083
0.075	0.082	0.084
0.076	0.083	0.085
0.077	0.084	0.086
0.078	0.085	0.087
0.079	0.087	0.088
0.080	0.088	0.089

Cylinder Care & Storing

NANO Cylinder Care

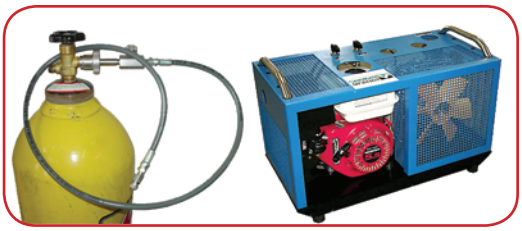
The NANO Cylinder is DOT Safety Certified. This bottle must be tested and recertified as safe by a licensed DOT facility within five years of the bottle's "date of manufacture" and every five years thereafter. The initial date of manufacture is stamped on the top of your Cylinder.

Storing the NANO Regulator

The NANO Regulator can be stored safely at operating pressures. However, during long-term storage we recommend keeping the pressure at 500psi or below.

Personal Filling Solutions

3500-6000PSI Mother Bottles
Portable Compressors



Resources

Resources for High Pressure Air or High Pressure Nitrogen

Note: NANO3000 Series cylinders are to be filled to a working pressure of 3000spi with either high pressure air (HPA) or high pressure nitrogen (HPN). Never use CO2.

Commercial Refill Sources

The following are typical sources for getting you NANO Cylinder refilled.

- Paint Ball Stores and Player Fields
- SCUBA Shops.
- Welding Supply Companies
- Fire Equipment Suppliers & Certification Facilities

The NANO Cylinder is designed with a fill port that can be used by any paintball facility without an adapter. Most other sources have the high pressure air/nitrogen but use a different type of fill fitting. NANO has adapters available to use SCUBA compressors, welding supply companies and Fire Equipment supplier equipment. See Fill Adapter Parts this page.

Having problems finding a store to fill you bottle?

Call NANO Tech Support for Assistance.

Warning:

The NANO Cylinder, regulator and fittings in this kit meet or exceed the safety requirements of the US Department of Transportation (DOT) and the Canadian Transport specifications. Failure of the cylinder or regulator valve at 3000PSI pressure could result in injury or death. By law, the NANO Cylinder must be recertified as safe by a DOT test facility at least every five years from the cylinders date of manufacturer, which is stamped on the neck of the cylinder.

The regulator has pressure safety devices on either side of the valve body (called burst disks) designed to automatically open and release pressure within the system if the internal cylinder or line pressures exceed the design working pressures within the system. One protects against over pressure in the NANO Cylinder and rated at 5K and the other protects against high pressure in the braded line. If a burst disk fails call NANO for technical assistance. Never replace a burst disk with a plug.

This system has a designed working pressure of 3000PSI. Do not over pressurize. Any rupture of the Cylinder or Regulator Assembly can result in major injury. Always observe the Cylinder when handling. Never apply heat to the Cylinder. If any bulge or change in shape are observed immediately remove the pressure from the cylinder and have it tested and recertified by a DOT licensed testing facility.