



Pumpless Water/Methanol System

P/N: SNO-2190 & SNO-2290



Caution – EXTREME DANGER – Caution

**Do not use or mix any other manufacturer's products with any Snow Performance products.
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THESE INSTRUCTIONS APPLY TO SNOW PERFORMANCE PRODUCTS ONLY!

FOR SANCTIONED RACE USE ONLY - NOT FOR SALE OR USE IN CALIFORNIA

Thank you for purchasing a Snow Performance Boost Cooler® Gas Water-Methanol Injection kit! Keep these instructions for reference.

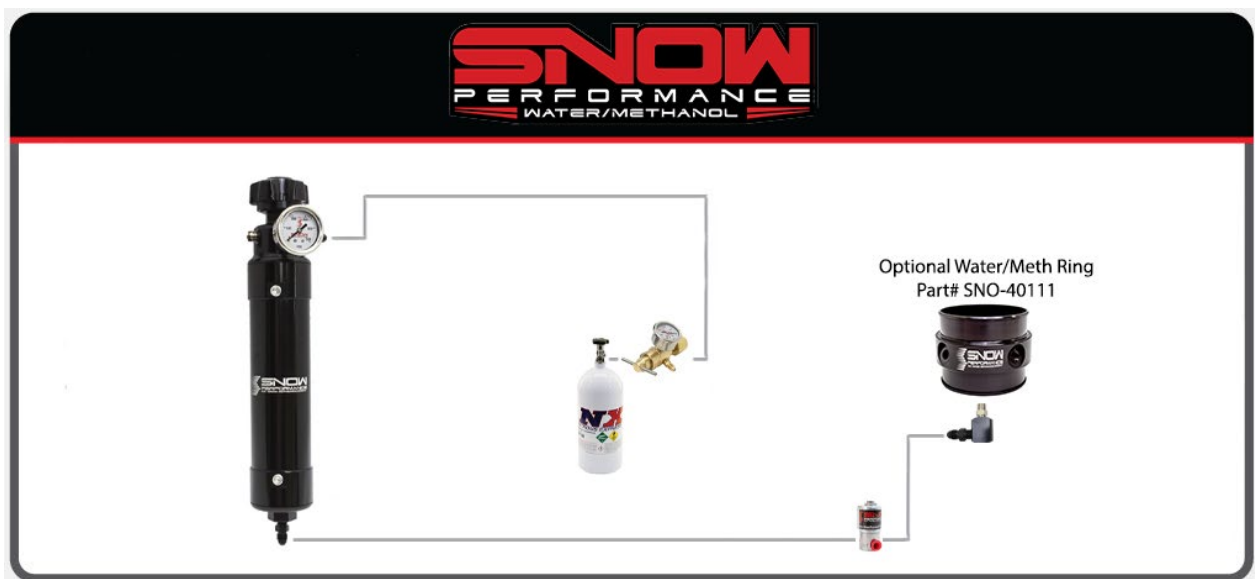
Tools Required:

- **Phillips/Flat Head Screw Driver**
- **Power Drill with a .340" ("R") drill bit**
- **Razor Blade**
- **Preferred Electrical Supplies** (Crimpers/Stripping Tools, Butt Connectors, Eye Hooks, Posi-Taps, Fuse Taps, Soldering supplies, etc.)
- **Spare 16 gauge wire** (Optional Depending On Install)
- **Open End Wrench Set/Socket Set**
- **1/8"-27 NPT** (Optional Depending On Install)

Average Install Time: 2-4 Hours

Step 1: Tank Install

To begin, simply need assemble your pumpless water/methanol tank with the supplied brackets and mount it in your preferred location. The tank must be mounted vertically to ensure the pressurized water/methanol is fed from the bottom of the tank. A secondary source with a pressurized gas such as Nitrous Oxide or Co2 will also be needed as I am sure you are aware being you are installing and using a system of this tier. Now attach the included pressure regulator to the bottle you will be using to pressurize the system. We will be using Nitrous Oxide in our Nitrous Express 10lb bottle w/ mainline valve (**Part# ML11100**) for this illustration. (**Pictured Below**)



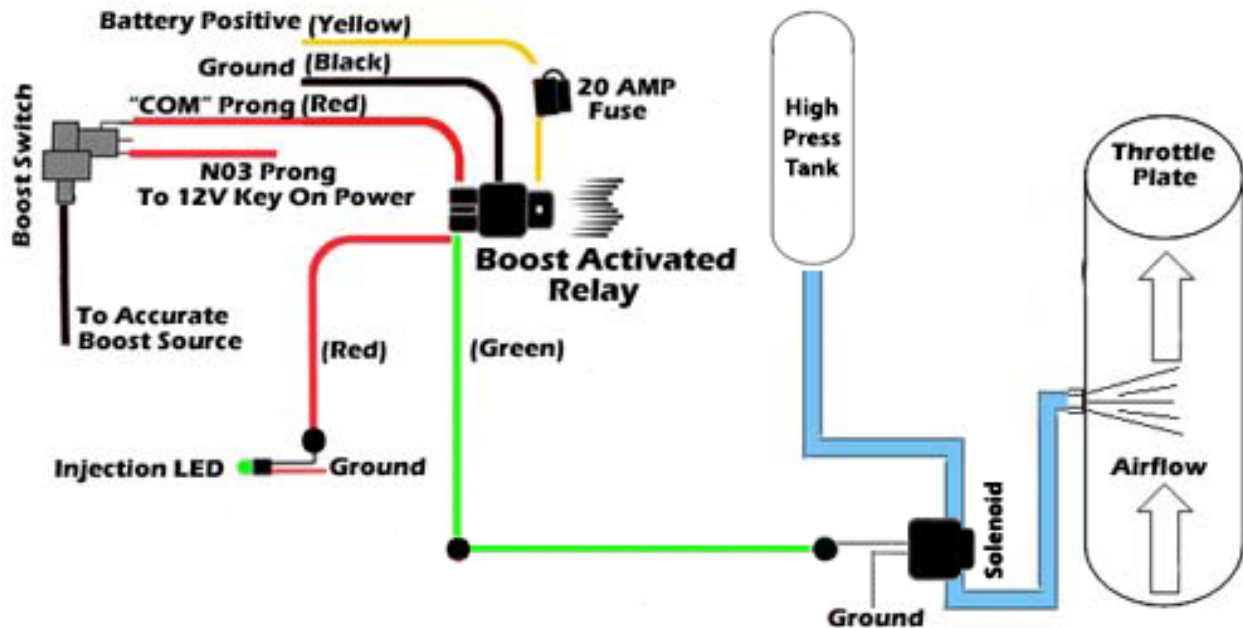
Step 2: Nozzle Mounting

Typical nozzle placement is approximately 6" or less before the throttle body inlet on the vehicle but the nozzle can be installed anywhere on the intake pipe after a intercooler outlet/supercharger outlet/turbo outlet. The nozzles should always be placed after an intercooler due to the possibility of the narrow passages and loss of air velocity leading to puddling. Nozzles should also be mounted after a MAF sensor due to the possibility of faulty readings. Nozzles may be mounted before a positive displacement supercharger. Many options are offered to mount your nozzle including Mounting for metal and rigid plastic: Drill and tap the intake tube with an 11/32" drill bit and a 1/8"-27 NPT thread tap in desired nozzle mounting location. ***To prevent debris from entering the engine, remove the intake tube from the vehicle prior to drilling*** Mounting in rubber boot (Nozzle Mount Adapter Part# SNO-40110): This sandwich adapter allows a secure threaded connection in any rubber intake boot for water-methanol nozzles. Install the nozzle at a 90° angle to the direction of airflow, and so that the nozzle tip is flush with the inside of the intake tube or protruding slightly to ensure an uninterrupted spray pattern. Ensure the nozzle's cone of spray has no obstructions near the mounting location.

- Install the nozzle assembly into the threaded intake tube using E-6000 sealant on the nozzle threads.
- Using an open end wrench, tighten the nozzle assembly ½ turn past finger tight so that the nozzle head is flush with the inside of the intake tube.
- Re-install the vehicle's intake tube into its proper mounting location

Step 3: Electrical / Injection Settings

To complete your water-meth install locate the part# for your injection kit and follow the subsequent electrical wiring diagram/instructions. The wires on the level sensor / LEDs are interchangeable and it does not matter which wire connects to ground 12V source.



Boost Switch Wiring:

Mount the boost switch in desired location using a tie wrap or something similar.
Hard mounting boost switch using screws is not recommended as diaphragm distortion could cause the switch to malfunction

Slide 1/8" silicone tubing (supplied) over nipple on boost switch. Use tie wrap or clamp to secure boost hose.

Using supplied boost "T" fitting attach the other end of the silicone tubing to a manifold boost source. Step 4: Using preferred electrical fitting connect the red wire from the relay that shares its terminal with a green wire, to the red wire on the LED.

Relay Wiring:

The relay is a normally open relay designed to close the circuit to the solenoid when triggered by the boost pressure switch.

Mount the relay in desired location near the pressure switch, using supplied (1) #6x $\frac{1}{2}$ " self-tapping screw.

Using preferred electrical fitting connect relay BLACK wire to chassis ground.

Using preferred electrical fitting connect the supplied fuse holder and 20 AMP fuse in line with the YELLOW wire.

Using preferred electrical fitting connect the end of the YELLOW wire to battery positive terminal.

Using preferred electrical fitting connect relay GREEN wire to one solenoid wire.

Using preferred electrical fitting connect relay RED wire (same terminal as green wire) to green LED red wire.

Using preferred electrical fitting connect relay single RED wire to boost switch prong labeled "COM".

Set Activation Point:

The boost switch will engage the water-meth kit once a certain boost PSI has been reached and turn the system off once boost drops below the user set point.

At the factory setting, the boost switch will start injection at 9-11 psi boost.

To increase the activation point, one (1) full turn clockwise will increase switch pressure by about 2psi.

To decrease the activation point, one (1) full turn counter-clockwise will decrease switch pressure by about 2psi.

If the engine hesitates or bogs when injection starts, raise the boost setting in increments of 1-2 psi.

Typical injection onset points are at $\frac{1}{2}$ of maximum boost

Testing:

You are now complete with your high pressure water/methanol system install. Check the system for any leaks/correct wiring. To test the system before use follow the below steps

Make sure tank is filled with fluid. Step 2 Arm systems by putting key in the ignition.

Remove nozzle from intake location. Place in location that is easy visible.

Disconnect boost hose connecting to the boost switch. Using an air compressor with a regulator give 15-25 PSI of air directly to the boost switch. The system should engage, fluid should be atomized out of the nozzle. If no injection occurs check wiring/grounds for the system.

Enjoy increased octane! See tuning tips / FAQ at the end of these instructions for more info.

Tuning Quick Reference:

The power potential of the system is realized through increased boost and/or timing. The large gains on octane and cooling provided by the system make this possible, even on standard pump fuel.

The Boost Cooler[®] adds an alternate fuel source as well as significantly cools combustion. With the Boost Cooler[®], one does not need to cool combustion with overly rich air/fuel ratios. To minimize combustion quench, you should start with an air to fuel ratio of 12.0-12.5:1. Injecting water/methanol lower than 3300-3500 RPM could result in combustion quench.

All vehicles are different. If the engine bogs or loses power, then injection is starting too early, the quantity is too much, or there is not enough methanol in the mixture (50/50 water/methanol recommended).

Maintenance:

Remove nozzle(s) and clean screen filters once per year using a calcium removing formula such as CLR®

The Boost Cooler® has been designed to operate with high concentrations of methanol. Oil or other additives are not required for system lubrication, and can cause damage to the system.

Contaminants in the fluid such as dirt can damage the system. Ensure that dirt and debris do not fall into the tank. This can lead to solenoid/pump failure.

Do not use Teflon tape or paste to seal connections. These sealers are not as effective as the E-6000 sealant provided and can break down over time with high methanol use, clogging components.

Water/Methanol FAQ:

Q: How long will a 3 Qt tank of water/methanol last?

A: This depends on a number of variables (HP, injection system, settings, driving style, etc.) For most gasoline engines in the 250-550 HP range the standard 3Qt reservoir will last around two 12-15 gallon tanks of gasoline.

Q: What fluids can I use in my water/methanol system?

A: Boost Juice®: This is the best fluid to use and is Snow Performance's 49% methanol, 51% water mixture that can be shipped to your door or picked up at a local dealer. (If you are using your washer reservoir as the injection tank, Boost Juice® is a great washer fluid and can be injected directly on the windshield without damaging the vehicle.) • Windshield Washer fluid: Only if it is blue in color and rated for -20 deg F. It should have no special additives. This means it is safe to use and made of 30% methanol, 70% water. If it is another color or another temperature rating, do not use it. You can "spike" your Blue -20 Washer fluid to a 50% mixture by adding 3 12OZ yellow bottles of Heet® gas-line-antifreeze to every gallon of washer fluid. • Mix your own: You just need to make

sure the methanol is “neat” and contains no lubricants or other additives. We recommend a 50% mixture by volume of M-1 pure grade methanol and distilled water. • Do NOT use E85 or any other fluid with gasoline mixed in. It will destroy the fluid delivery part of your Boost Cooler® and instantly void the warranty.

Q: Do I have to have a custom dyno tune with a water-meth kit?

A: While extremely recommended for maximum performance and safety while injecting water-methanol a custom tune is not necessary to operate the vehicle as long as the following are met. 1) The vehicle is not utilizing an existing custom tune for the water-methanol 2) A low methanol concentration is being injected and not severely affecting the air/fuel ratio. Consult your local dyno professional for tune / recommendation.

Q: What ratio of water/methanol is recommended?

A: A 50/50 ratio is recommended for maximum performance and safety. Ratios of anywhere from 30% to 50% methanol work well and deliver excellent octane gains and cooling without over richening the air fuel ratio.

Q: Can I use pure methanol?

A: While all components of Snow Performance systems are designed to be able to handle 100% pure methanol, it is not recommended for a number of reasons. • Safety: Pure methanol is easy to ignite with a low 140F degree flash-point and burns with an invisible flame. • Performance: Water absorbs almost twice as much heat as methanol in the intake and inside the combustion chamber. Water cannot be flash-ignited, so has what is almost an infinite octane number. In Page | 12 the government studies for WWII piston-powered aircraft, 50/50 water-methanol was found to be the best fluid to use for auxiliary fluid injection.

Q: Can I inject water/methanol with nitrous?

A: Yes! With nitrous, water/methanol injection allows the use of more timing advance even with large (250HP+) quantities. The cooling effect of the water/methanol inside the combustion chamber also makes for reduced peak combustion temperatures.

Q: Should I mount my nozzles pre or post turbo/supercharger?

A: • Centrifugal Supercharger/Turbo: Never mount an injector nozzle before a centrifugal supercharger or turbocharger compressor. Sending fluid through the compressor wheel that spins anywhere from 50,000rpm to 250,000rpm can erode the leading edges of the fine aluminum. Studies performed by SAAB, concluded that pre-turbo injection will over time cause cavitation on the turbo wheel leading edges. • Positive Displacement Supercharger: Mounting the nozzle before this style of blower is perfectly safe and actually provides some additional benefits. The small amount of water-methanol fluid isn't harmful to any rotor seals or surfaces or coatings. Additionally, it keeps the rotors and housing MUCH cooler, which reduces heat transfer to the rest of the intake and air charge.

Disclaimer:

Do not use this product until you have carefully read the following agreement. This sets forth the terms and conditions for the use of this product. The installation of this product indicates that the **BUYER** has read and understands this agreement and accepts its terms and conditions. Performance products by their nature are designed to increase horsepower and performance not engineered in the original vehicle and the increased stress could result in damage to related systems.

This is a high performance product – use at your own risk. Snow Performance Inc., Its agents, employees or owners shall not be under any liability whether in contract or otherwise whether or not resulting from our negligence or contents of information supplied for any damage or loss resulting from such information.

The **BUYER** is responsible to fully understand the capability and limitations of his/her vehicle according to manufacturer specifications and agrees to hold the **SELLER** harmless from any damage resulting from failure to adhere to such specifications.

The **SELLER** disclaims any warranty and expressly disclaims any liability for personal injury or damages.

The **BUYER** acknowledges and agrees that the disclaimer of any liability for personal injury is a material term for this agreement and the **BUYER** agrees to indemnify the **SELLER** and to hold the **SELLER** harmless from any claim related to the item of the equipment purchased. Under no circumstances will the **SELLER** be liable for any damages or expenses by reason of use or sale of any such equipment.

The **BUYER** is responsible to obey all applicable federal, state, and local laws, statutes, and ordinances when operating his/her vehicle, and the **BUYER** agrees to hold **SELLER** harmless from any violation thereof. The **SELLER** assumes no liability regarding the improper installation or misapplication of its products. It is the installer's responsibility to check for proper installation and if in doubt, contact the manufacturer.

Note:

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Snow Performance 1-Year Warranty Policy:

Snow Performance, Inc. warrants that the Product shall conform to and perform in accordance with published technical specifications and shall be free of defects in materials and workmanship for 1-year providing:

1. You are the original purchaser and provide proof of purchase.
2. The system was purchased from a Snow Performance Authorized Dealer at MRP pricing set by Snow Performance.

***No warranty will be offered for any Snow Performance products if purchased below MRP. For MRP pricing of your product check**

3. An RMA # has been attained and is displayed on package containing returned part.

4. Parts Warranty ~ 90 day warranty on parts purchased separately if used in conjunction with a Snow System. No warranty implied if used with a non-Snow part/system. Subject to Snow's inspection of the product, Snow will remedy defects in materials and/or workmanship by repairing or replacing, at Snow's option, the defective product without charge for parts or labor, subject to the limitations and exclusions described in this warranty. This warranty does not cover problems caused by normal wear and tear including aesthetic oxidation of surfaces, accidents, unlawful vehicle operation, or modifications or repairs to product not performed or authorized by Snow. This includes any product that is disassembled or taken apart for any reason.

In addition, this warranty does not cover problems resulting from conditions beyond Snow's control including, but not limited to, theft, misuse, overloading, or failure to assemble, mount or use the product in accordance with Snow's written instructions or guidelines included with the product or made available to the original retail purchaser. In the event of failure, Snow will repair or replace the part at Snow's sole discretion. Failures resulting from misapplication or misuse of the Product, failure to adhere to any specifications or instructions, or failure resulting from neglect, abuse, accidents, or act of nature are not covered under this warranty.

Warranty service may be obtained by emailing tech@snowperformance.net with a copy of your purchase invoice for the product, getting an RMA (Return Merchandise Authorization) number, and delivering the part to Snow. Customer agrees to insure the Product or assume the risk of loss or damage in transit, to prepay shipping charges to Snow, and to use the original shipping container or equivalent. Shipping for Warranty replacement parts shipped outside the continental US will be charged to customer.

Non-Warranty Repair/Retest:

Products returned due to damage or misuse and Products retested with no problem found are subject to repair/retest charges. Product will be returned to customer at customer's expense. A credit card number must be provided in order to obtain an RMA (Return Merchandise Authorization) number prior to returning Product.

Distributor/Dealer Warranty:

All customers/dealers must deal directly with Snow Performance to receive warranty. No warranty will be issued through a distributor for any reason.

Return Policy:

All returns must be called in for RMA #. Snow Performance will not take used kits or parts for refund. If you are returning an unused kit there is a 15% restocking fee minus shipping/handling. All returns must be made within 30 days of purchase date. No exceptions.

LIMITATION OF LIABILITY:

REPAIR OR REPLACEMENT OF A DEFECTIVE PRODUCT IS THE ORIGINAL RETAIL PURCHASER'S EXCLUSIVE REMEDY UNDER THIS WARRANTY. DAMAGE OR INJURY TO THE ORIGINAL RETAIL PURCHASER, TO HIS OR HER VEHICLE, CARGO, OR PROPERTY, AND/OR TO ANY OTHER PERSON OR PROPERTY IS NOT COVERED BY THIS WARRANTY. THIS WARRANTY IS EXPRESSLY MADE IN LIEU OF ANY AND ALL OTHER EXPRESS WARRANTIES, WHETHER ORAL OR WRITTEN. SNOW'S SOLE LIABILITY IS LIMITED TO THE REMEDY SET FORTH ABOVE. IN NO EVENT WILL SNOW BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, INCIDENTAL, SPECIAL, EXEMPLARY, OR PUNITIVE DAMAGES OR FOR ANY OTHER DAMAGES OF ANY KIND OR NATURE (INCLUDING, BUT NOT LIMITED TO, LOST PROFITS OR LOST SALES). SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU

