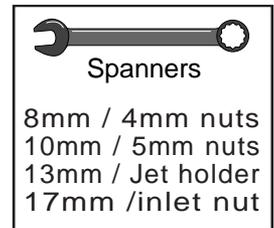
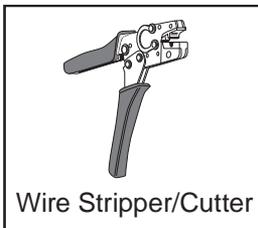
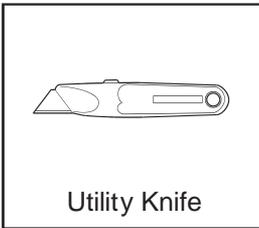


Table of Contents

List of Components	1
Nitrous Bottle Installation	2
Nitrous Supply Pipe Routing & Pulsoid Installation	3
Pipe Fitting Instructions	4
Distribution Block (D-Block) Installation	5 & 6
Venom Injector Installation	7
Metering Jet Location & Size Verification	8
Throttle Switch Fitting Instructions & Wiring Diagram	9
Fitting In Brief & Test Procedure	10

Tools Required



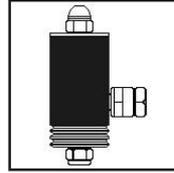
List of Components



20 oz bottle



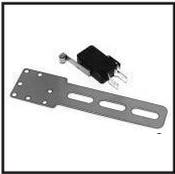
Bottle bracket



N2O Pulsoid

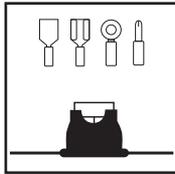


Venom injector nitrous



Micro Switch w/ bracket

Optional



Wiring 10ft-5ft

Connectors

Fuse holder

20 amp fuse



Relay

Optional



Arming switch w/ flip cover



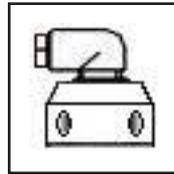
Nylon pipe

- 4mm (red) 2m
- 4mm (blue) 1m
- 5mm (red) 1m
- 4mm (black) 1m



Nuts/olives

- 4mm
- 5mm



D-Block



Jets

Nitrous Bottle Mounting

The most common mounting arrangements for the nitrous bottle are shown below and unless it has been arranged before the purchase, these are the only options that are suitable to ensure the system works correctly.

It is essential that the bottle is mounted in such a way that the valve is **higher** than the base end and no other way is acceptable without modifications to the dip tube.

Please contact us if you are unable to mount the cylinder as shown.



Fig. 1

Our Max Flow bottle valve is equipped with our unique SPRV:

The "SPRV" is a Safe Pressure Relief Valve that is a superior alternative to "blow off discs" that are used on all other brands of valve. Factory set at 1,400 psi and can be adjusted up to 1,700 psi. Pressure control ensures that you won't damage your engine due to excessively high bottle pressures causing a lean out or suffer a burst disc that would lose all the bottle contents.

The "SPRV" works by opening and bleeding off excess "gaseous" pressure when the set pressure is reached and then closes again when the pressure has dropped to a safe level and under normal conditions only a minimum of nitrous gas is expelled.

Please contact WON if you want advice on adjusting the setting.

WARNING

The cylinder valve should not be opened unless the outlet is aimed into open space, or connected to the system. When the valve is opened nitrous is discharged at a high pressure (approximately 800-1,200 psi @ - 129 degrees), at which this temperature can cause a painful freeze burn if it makes contact with the skin.

Supply Pipe Routing

5mm Nylon Pipe: For optimum performance the nylon nitrous supply pipe should be routed away from hot components and hot areas should be avoided. it is advantageous to keep all the pipes as short as possible.

SS Braided Pipe: The same applies if you have chosen the optional braided pipe, plus it is essential that it is routed away from electrical components and wiring. If you are unable to find a suitably cool route please contact WON.

Pulsoid Installation

The Pulsoid should be mounted in the coolest possible location but still be as close to the injector/s as possible (**the pipe from Pulsoid to Venom should be kept under 12" for optimum performance**). The Pulsoid must also be easily accessible for jet changing, as the metering jet is located in the outlet (Fig.5). If possible **avoid** mounting the Pulsoid close to the back or the top of the engine, because these are the hottest location of the bike, which will increase the the vaporisation process of the liquid nitrous to gas. Examples of suitable locations for Pulsoid in the order of preference are; **1)** Inside the air box, **2)** Behind the air box, **3)** Front and forward of the engine, **4)** Above the clutch cover.

Fig. 2



WARNING

Do not kink the nylon pipe by bending it too tightly, as this will weaken the pipe and could result in bursting when the pipe is filled with **high pressure**. **Do not** allow the nylon nitrous supply line to make 'direct' contact with **hot** objects, as this will weaken the pipe and could result in bursting when under high pressure.

The 5mm nitrous supply pipe (black) has a burst pressure of over 6,000 psi but that drastically drops as the temperature increases. Furthermore, raising the temperature of the contents of the pipe causes the liquid nitrous to turn to gas prematurely, which results in poor performance due to inadequate nitrous leading to overfueling. Excessively high bottle pressures should be avoided as it weakens the pipe and increases the risk of the pipe bursting. If your gauge reads a pressure in excess of 1,200 psi you should take measures to cool the bottle down to normal usable pressure of 1,000psi or less, which also improves safety and performance because the N2O will be denser and contain more oxygen to burn more fuel.

Nylon & Braided Pipe Fitting's

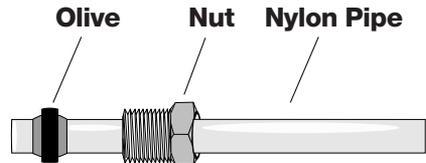
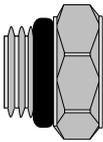
Run the enclosed 5mm black nylon pipe from the nitrous bottle to the nitrous (blue) Pulsoid inlet. Cut the pipe to length using a sharp utility knife or supplied cutter. **Do not** use wire snips, pliers, etc. as these will squash and deform the pipe end making it almost impossible to fit the nut and olive. Slide the nut and olive onto the pipe ends as shown below (Fig. 3). Insert the pipe ends into the fittings (bottle, Pulsoid, etc.). Tighten the nut adequately to retain & seal the pipe (but not excessively) as this will crush (neck) the pipe and restrict the flow. Make sure to push the nylon pipe securely in to the fitting, so it doesn't slide back out while tightening the nut.

To check that the pipe is totally sealed, briefly turn on the nitrous bottle valve and inspect for leaks with soapy water at the connections. If a leak is detected, tighten up the nut (whilst avoiding contact with any escaping gas particles) until the leak is stopped. When you are satisfied that the system is leak proof, release the pressure in the system by using an optional purge if installed or loosening the fitting at the bottle nut.

IMPORTANT: When tightening the fittings to secure pipes, we strongly advise the use of the correct size spanners otherwise damage may occur and the fittings may fail to do their job.

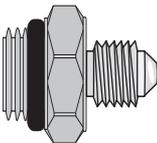
Nylon Pipe

Fig. 3: Female Metric Fitting

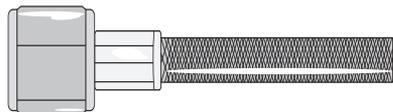


Braided Line

Fig. 4: Male AN Fitting



Female AN Hose connection



NOTE: None of the above pipe fittings require sealant on the threads.

D-BLOCK FITTING INSTRUCTIONS

The most important aspects of D-Block mounting are;

- 1) It is **essential** that D-Block outlet ports are **perfectly horizontal**.
- 2) The entry port can be either higher or lower than the outlet ports.

Of particular importance for fuel applications;

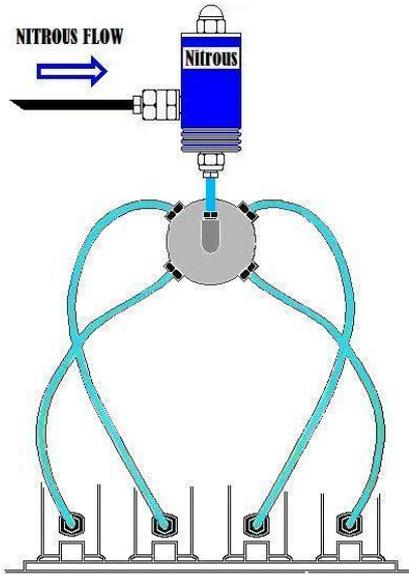
- 3) Whenever possible the injectors should be mounted in the underside of the runners with the D-Block mounted below the injectors, so the pipes just run up hill as shown in Fig. 6.
- 4) If that's not possible and the injectors have to be mounted in the top of the runners then the D-Block should be mounted above the injectors so that the pipes run continuously downhill
- 5) If neither of the above options are possible and the outlet pipes have to loop up above the injector from the D-block, then the peaks of all the pipes should be at the same level.

Of particular importance for nitrous applications;

- 6) When using elbow inlet fittings, the shorter of the 2 elbows should be used for the nitrous side and it should always be fitted with the black plastic restrictor in the outlet end that screw in to the D-Block.
- 7) Always try to arrange the feed pipes to the D-Block entries so they are perfectly straight for as long as possible, with a **minimum** of 2" before any bend. This is particularly important when using straight inlet fittings.
- 8) The D-Block should be situated as centrally as possible, relative to the number of injectors it is to feed. In the case of a inline 4 cylinder engine this would mean it should be mounted between the middle cylinders.
- 9) Pipe lengths from the D-Block to the injectors should always be cut to **exactly** the same length and kept to the minimum length that produces a gentle run to the furthest injector/s.
- 10) When using 4 way D-Blocks, arrange the outlets so the pairs closest together point to each end of the engine, as shown in Fig. 5.
- 11) Run the pipes from the D-Block outlets furthest from the engine to the centre 2 cylinders and run those from the outlets closet to the engine to the end cylinders, as this results in a neat pipe layout as shown in Fig. 5.

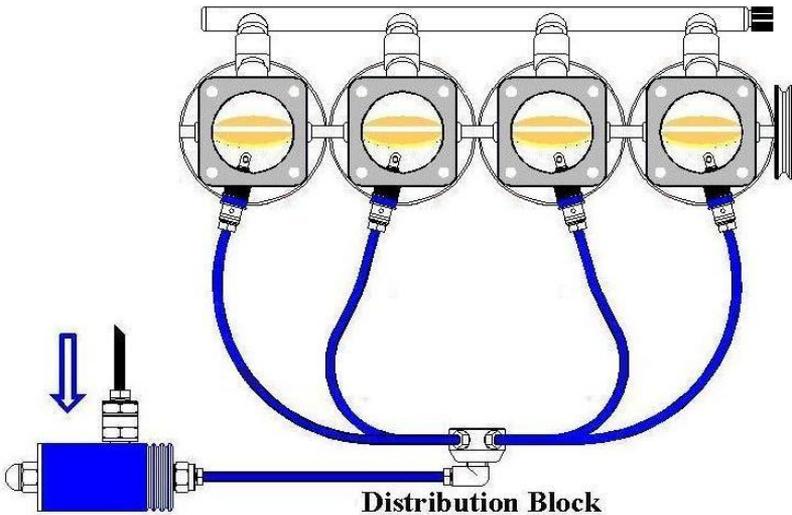
Distribution Block (D-Block) Mounting

Fig. 5



WARNING; Never mount a D-Block any other way than described above as it will result in uneven distribution, leading to potential engine failure. If you feel it is impossible to mount the D-Block as described on your particular vehicle please contact us for assistance.

Fig. 6



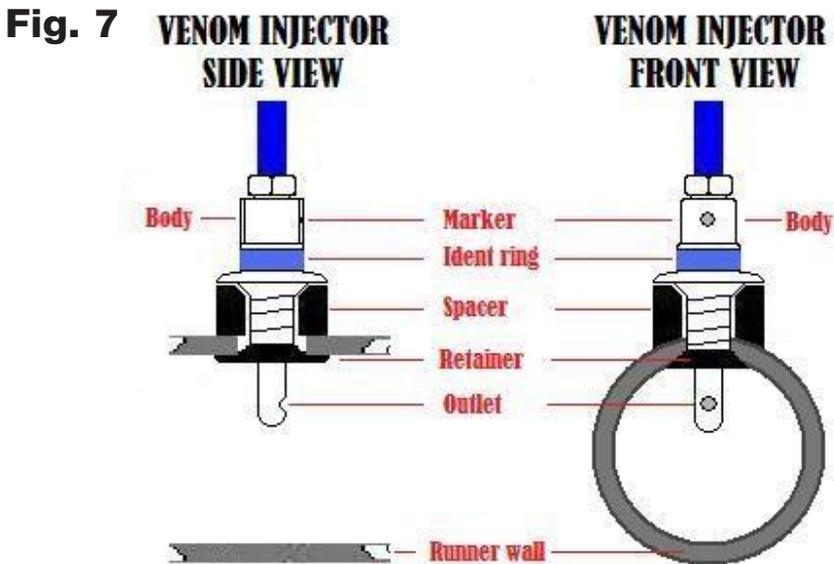
Venom Injector Installation

Venom injectors for direct port applications should be fitted in each inlet runner, as far from the inlet valves as possible. Injectors can be fitted in to rubber sections or in to metal parts of the intake runners, which includes the intake trumpets.

To fit the injector into a rubber hose just punch an 4mm hole in a suitable location. Secure the injector by screwing on the retainer from the inside the hose (Fig. 7.) For best results the discharge tip should be positioned as close to the centre of the runner bore as possible and at very lest it should be ensured that the outlet ports protrude beyond the retainers and/or any part of the induction system.

There are 2 options for fitting injectors in to a metal section of the inlet runners. The easiest is to drill 8 mm holes and use the retainers as described for fitment to rubber hose, the 2nd option is to drill 5 mm holes and tap with 6 x 1mm threads.

To correctly position the injectors in various applications, the most suitable length spacer should be fitted and then a small amount of liquid sealer applied to the external thread before being screwed (lightly) in to position.



⚠ WARNING

Disregarding these instructions could result in poor performance and/or engine damage.

Metering jet size verification

Before connecting the outlet pipe to the Pulsoid, it is **essential** to check that the metering jet is fitted to jet holder / outlet adapter and that is the right size to suit your application. The jet holder / outlet adaptor is located at the opposite end to the mounting stud (see Fig. 8) and can be unscrewed by using a 13mm wrench.

Once removed the head of the metering jet should be visible, protruding slightly from the end of the male thread and it should be possible to see a size/number on the side. If you can't see a number you'll need to remove the jet for closer inspection, possibly with the aid of a magnifying glass.

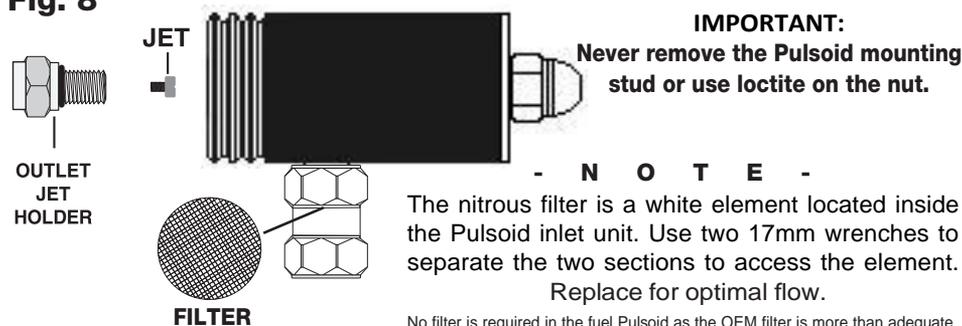
To remove the jet put the jet holder in a 13mm ring spanner or 'clean' socket and unscrew the jet using a suitable flat blade screwdriver.

Check the jet size against the parts list supplied with the system or the jet specification chart on our web site.

Assuming you have the correct jet, screw it back in to the jet holder using your fingers and then 'lightly' nip it up with the screwdriver to make a seal, then reassemble in the reverse order of the above instructions.

CAUTION; The metering jets are made from brass and are easily damaged beyond use if a badly fitting screwdriver or excessive force is used on them.

Fig. 8



- 1) The 'theoretical' power rating is half the nitrous jet number (e.g. 200 = 100bhp).
- 2) Extra fuel needs to be added using a method that best suits your application.

Throttle Micro Switch Installation

The throttle activated micro switch should be mounted to the throttle body by modifying the universal mounting bracket as required to suit your bike. Once fitted check that turning the twist grip to full open, operates the throttle switch **fully**.

IMPORTANT: Never rely on setting up the switch by hand operating the throttle mechanism, as this may not duplicate actual twist grip movement.

When all the electrical components are fitted, wire the system as shown below. For simplicity the systems are supplied without a relay but for greater reliability on an old vehicle or one with limited wiring, a relay can be added as shown in Fig. 9b

Fig. 9a

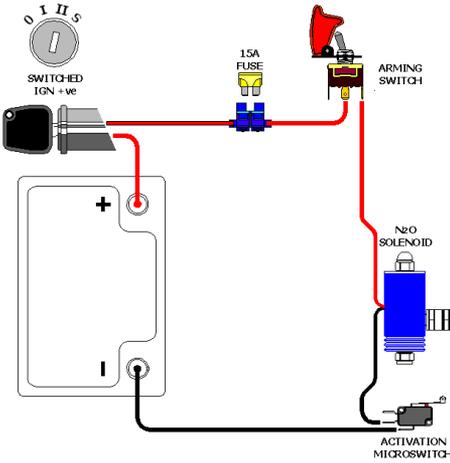
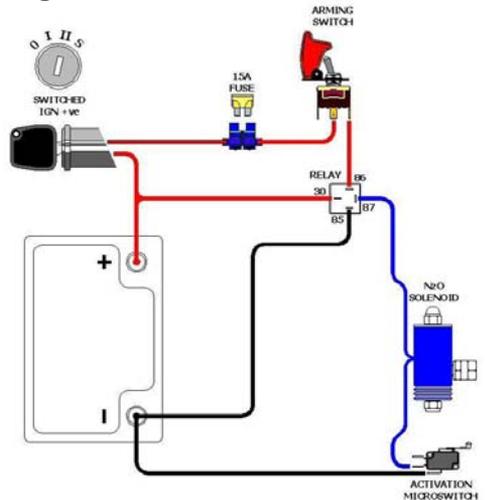


Fig. 9b



! WARNING

When WON switches are not used, alternative replacements rated at a minimum of 15 Amps should be used, unless a suitable relay of at least 15 Amps is added.

Test Procedure

- 1.** Take the free end of the pipe connected to the Pulsoid outlet. Hold it tightly in a gloved hand, aim it safely in to open space. Briefly activate the system whilst watching the flow from the pipe end, where liquid nitrous should be seen flowing when the system is activated and it should stop when the system is switched off.
- 2.** Connect the pipe back into the nitrous injector.
- 3.** Start the engine and run up to normal temperature, hold the revs at approx. 1/3 of max. rpm (e.g. max. rpm limit 9,000 test rpm 3,000) and briefly activate the system whilst monitoring the engines response, and the exhaust gases.
- 4.** Engine rpm should rise (as if you had operated the throttle) and then fall back to normal as you release the switch. The exhaust smoke should be a little blacker than normal which indicates a richer mixture. If the engine sounds different in any way to how it sounds when you rev it up normally, cease testing immediately and report the results to one of our technicians.
- 5.** If the results are as they should be, then you can take the vehicle on the road and carry out the next test. Accelerate hard from say 30 mph up to 70 mph with the nitrous system activated and all you should feel is stronger acceleration and all you should hear is a louder exhaust note. If you hear any unusual noises or feel anything other than a smooth surge of power, STOP testing and contact WON.

Headquarters:

Highpower Systems International Ltd.

Rands Lane, Armthorpe Doncaster

South Yorkshire, England

DN3 3DZ, U.K.

44 (0) 01302 834343

www.noswizard.com