



Notice to Purchaser:

The G3 Power Curve Reed Valve(s) kit is designed for higher-performance use. The user shall determine the suitability of the product for their intended application, and user assumes all risks and liability in connection therein. In no event shall 1Dir Racing be responsible for damages or injury from any source. By installing these products you agree with the Notice to Purchaser!

INSTRUCTIONS:

The following instructions should be read in its entirety before beginning installation. If you are unsure of performing any step described, please contact us directly.

- **Air Filter/Air Box:** Remove and inspect air box and inlet hose for cracks, holes or any unsealed areas
- **Carburetor:** Remove and Re-Jet Carburetor as defined by your riding habits and ATV engine setup. Remove and Log Pilot and Main jet Settings for base reference. Depending on your current Engine and installed performance equipment, jetting principles remain the same.
 - Please read enclosed Tech. Tip on "How to Read Spark Plugs" especially "Jetting Principles" The outlined procedures for testing your ATV under operational conditions is the best way to dial in your Carburetion eliminating the guesswork.
 - Also a huge consideration when jetting your carburetor(s) is the Fuel being used. Please read enclosed Tech. Tip on "Fuel For Thought" this will give your great insight to the type of fuel you'll use and open your eyes to Fuel Consistency being a factor to how your ATV performs.
- **Intake Manifold:** Remove your intake boot. If installing our G3 Thrust Intake Manifold(s) please perform this step. Inspect your rubber inlet/rubber boot for splits and other damage. The slightest air leak will cause unpredictable performance issues, not to mention the contamination and engine damage that may occur.
 - Keep a close eye on your intake boot and all assemblies by performing routine inspections and re-tightening clamps.
 - **Possible modifications:**
 - If using your stock intake manifold you must cut off the rubber air stuffers protruding into the stock reed cage. Cut these air stuffers off flush making sure you do not puncture the boot.
- **Reed Valve:** Remove your existing Reed Valve. If installing our G3 Power Curve Reed Valve(s) or re-installing replacement reed petals please perform this step. Inspect the condition of the Reed Petals. Inspect the tips making sure they are not splitting. Hold the Reed Valve up to light and look into the Reed Cage taking notice of any light leakage. Reed Petals that are worn out or exposed to highly corrosive fuels like Alcohol (if not designed to tolerate) will cause the Tips to curl up and not seat properly. **Most Reed Petals close, hitting their seats on the reed cage hard, at speeds five to 10 times higher than a four-stroke poppet valve (couldn't tolerate this) with the tips striking the cage at some 20 feet per second.**
- **Replacement:**
 - Replacing Reed Petal intervals will vary dramatically depending on how you ride or race your ATC. A good rule of thumb regarding reed petal replacement is to inspect the entire Reed Valve Assembly approximately every 25 hours for basic enthusiast riding. This is also a time to Re-Pack your silencer.
 - Remove retaining screw paying attention not to strip the head. Replace screws should you strip the head, DO NOT Re-USE Worn or Stripped components!
 - Remove Reed Stop. Our Reed Stop is curved, so when re-mounting place the curve side down.
 - Install desired Reed Petals as follows:
 - G10 LXN Reed Petals: All Fuel Types & used with Alcohol. High durability | Fast Rev | Quick throttle response | Steady Pull | Power comes on hard and keeps pulling | All Out the best.

- Carbon Fiber Petals (Pump Gas / Fuel Octane up to 118). Medium-Low durability | Great Rev | Stiff throttle response | Great Top End | Dune & Hill
 - Power Reed Petals Coated (Pump Gas / Fuel Octane 110). Medium durability | Fast Rev | Fast throttle response | Fast Throttle Snaps | Lower Top End | Enthusiast, dune, trail, racing.
 - XG3 Performance (Pump Gas / Fuel Octane 118) High Volume/Replacement. Low durability | Fast Rev | Fast throttle response | Lower Top End | Hard PB | Race, drag,
 - Install the Reed Petals paying close attention in aligning the Tips in on the cage not allowing them to hang over. Center the Petals side-to-side hold them down with your fingers while tightening reed stop screws.
 - Install G3 Power Reed **Install the Adjustable Reed Stops: ** (Changing Reed Stop Positions will influence Jetting)**
 - **Curve Up:** Changes HP/Torque Curve emphasis to lower-mid range and delivers great bottom end. Fast out the hole with quick smooth power, fast revving/throttle snaps with overall great top end.
 - **Curve Down:** Changes HP/Torque Curve emphasis to mid-upper range and delivers hard fast throttle response with fantastic Top End, power comes on hard, arm jerking power and keeps pulling.
 - **Do to manufacturing tolerances, Sometimes it might be necessary to elongate mounting holes to achieve reed tip/petal alignment.**
- 12mm Torque Spacer: Inspect all surfaces for contamination clean appropriately.
- **Sequence of Parts:**
 - Use 1st gasket.
 - 12mm Torque Reed Spacer. (and Integrated Reed Valve equipped with 10 series only jump to intake installation)
 - 2nd Gasket.
 - G3 Power Curve Reed Valve Assembly.
 - G3 Thrust Intake Manifold(s) or your currently used manifolds.(reference intake modifications above)
 - Secure this assembly with supplied metric hardware and torque all bolts to appropriate specifications).
- Install Carburetor. Inspect and clean boot appropriately. Tighten boot clamp to recommended specifications.
- Install Air Filter/Air box inlet hose. Tighten clamps securely.
- Inspect full assembly and you are READY to GO!!
- Don't forget to Re-Torque all mounting bolts after preliminary riding/re-jetting.

Pre-Operation Check List

*** You MUST RE-JET your Carburetor(s). Our proven air groove technology with power curve delivers increased Air/Fuel Velocity, which demands more fuel. Your current performance modifications will greatly influence the G3 Power Curve Reed Valve and directly effects your Re-Jetting. You will increase your Main Jet; adjust your pilot and Needle clip position, using your Air Bypass Screw to help Lean (turn out) or Richen (turn in) baseline settings. PLEASE Read enclosed "Carburetor Theory 101", "Reading Spark Plugs and Re-Jetting". Your engine will run LEAN causing a lack of desired performance, which ultimately WILL damage your engine. We offer for the original purchaser FREE Technical Support for all levels of expertise.

1. Inspect your Silencer Packing!! If you have operated your ATV with over 15-20 hours you should be vigilant and repack your silencer. Maintaining your silencer by re-packing delivers a strong exhaust pulse necessary in proper evacuation of expended fuel during the power stroke. A poorly maintained silencer WILL dramatically influence the over-all performance of your 2-stroke.
2. Change your Spark Plug. When Re-Jetting it is necessary to properly read the deposits on your insulator after Wide Open Throttle testing. A nice light brown/gray tint on the insulator (white part) with a Hard Pulling top end is highly recommended for optimal performance.
3. Fresh Fuel. Do you know that after mixing your fuel with any lubricant depletes the octane of your fuel approximately 2-3 octane per week? You do the math.
4. Air Filter. Increasing Air/Fuel Velocity is greatly impacted by the type and condition of your Air Filter and box. Your Air Filter should be serviced and cleaned every trip or race and is the most common failure point supporting any engine performance modifications. DO NOT over Oil your filter, as this will cause increased load drawing air into the carburetor. Remember, 2-stroke engines principle design is to pump Air (air pumps) and flows at approximately 15 psi towards low pressure created in the case during operation. Depending on your riding/racing conditions, modifying the air induction is a very popular performance modification.

Jetting Procedure Example (a general concept)

Remember maintaining a base line is extremely important: The four corners (as we call it) Pilot Jet, Air BP, Needle Position and Main Jet. Once pre-set conditions are installed keep increasing your Main Jet until achieving upper end/highest most Rich State. Don't just base your decision on reading the Spark Plug(s) it's also performance related and how your engine Revs, Pull or doesn't clear on Revving.

Example:

Depending on performance modifications will dramatically influence our G3 Power Curve Reed Valve(s) over-all jetting requirements.

Pilot Jet settings must first be set for baseline and should be adjusted to type of riding/racing. Different carburetors will affect different settings, however Keihin carburetors usually drop 1-2 sizes, while Mikuni carburetors increase 1-2 sizes. These settings are all dependent on what currently has been installed with prior modifications. Call us should you have any questions.

Needle Clip position usually is set to #2 or #3 depending on riding/racing considerations. Air Bypass screw(s) set 2-turns out.

Main Jet settings should be considered the variable for adjustment. You need to increase the Main Jet(s) until you have determined the upper end/highest possible Rich operation. Increase your main jet until your engine performance is definitely running Rich. A Rich condition is easily determined by poor performance causing the engine to bog under throttle and/or Wide Open Throttle results of poor engine response throughout the throttle band.

Helping you determine a Rich State and Prior to stepping down a main jet size, turn your Air BP Screw(s) out 1-2 turns and notice if this improves performance a bit. Air Bypass screw(s) turned out effectively LEANS the Overlap transition of the pilot affecting fuel volume of the Needle & Main Jet. Pulling and inspecting your Spark Plug(s) will also help your determine a Rich running condition. (See Reading Spark Plugs enclosed).

Once you have determined you are running to Rich, now drop the Main Jet by 10. i.e. 200 to 190 (Keihin) or 430 to 420 (Mikuni) and repeat testing making sure you return Air BP Screw(s) to 2 turns out (baseline).

Pay attention to how your engine is performing as you drop the main jet(s) every decrease will greatly influence the operation of your engine. Repeat dropping your main jet until you achieve a clean clear revving engine that pulls hard. You need to hopefully obtain a Main Jet Size leaving the Air BP Screw(s) at or close to 2 turns out. This adjustment will ultimately help you fine-tune your ATV for Weather and Barometric conditions. **Once you get close to appropriate Main Jet Size fight for every .05 size. If necessary Fine-tune your throttle response as depicted in the chart below.**

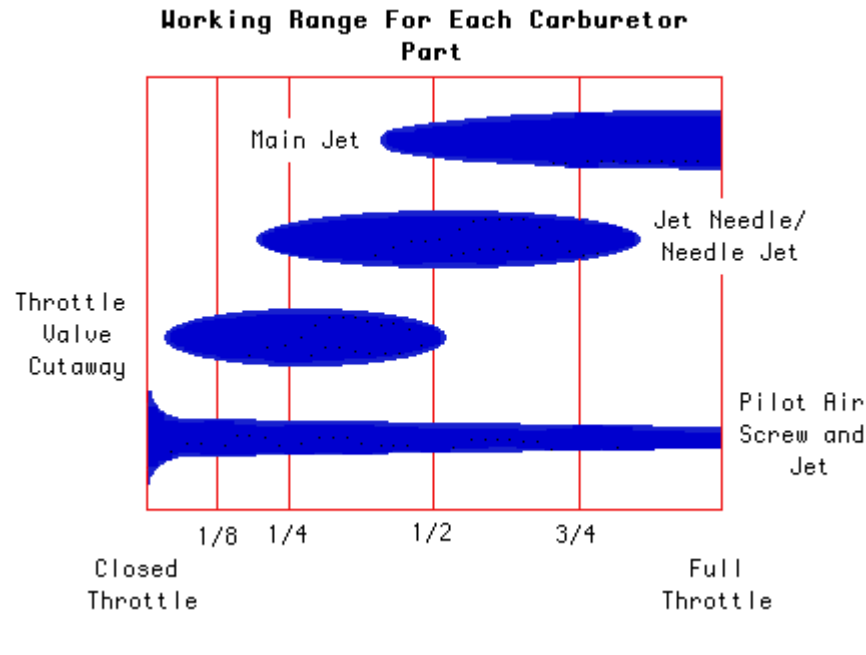
Remember:

Pilot jet is most effective from Idle to 1/4 Throttle, however influences cross over transition of fuel delivery throughout the Throttle position.

Needle is most effective from a bit over 1/4 to 3/4 Throttles.

Main Jet is most effective from 3/4 to Wide Open Throttle (WOT), however Will influence the cross over transition at approximately 1/2 throttle.

Please review the following Range Chart.



Thank you for purchasing our performance products. Should you need help during the installation or have any questions, please feel free in calling us.

Technical Support



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