$4.95 U.S.

DIAL-A-JET

PATENTED

Fuel Induction System

Accurate jetting in seconds!!

Installation and Tuning Manual for snowmobiles

Dial-A-Jet is much more than a quick and easy way to change jetting!!

Dial-A-Jet is a completely adjustable external jetting system that delivers pre-atomized (vaporized) fuel for maximum horsepower at any temperature or altitude. Dial-A-Jet improves throttle response and fuel efficiency. Dial-A-Jet works well with stock or modified engines, high flow air filters and performance exhaust systems.

Easy to install kits are also available for all ATV's, dirt bikes and street motorcycles

INTRODUCTION

Dial-A-Jet:

Delivers pre-atomized fuel to the engine
Works with any type carburetor
Works with stock or modified engines
Provides peak horsepower at all times
Gives instant throttle response
Fast and easy tuning
Protects against burn down
Purges float bowl of moisture & alcohol
Works with ethanol or oxygenated fuel
Improves fuel efficiency
Has no moving parts or electronics to fail
Proven performance and reliability since 1985

Available kits

Dial-A-Jet kit

One Dial-A-Jet per carburetor for carburetors up to and including 44mm, supplies 10% to 15% of overall fuel flow in a pre-atomized or vapor state. Single, Twin, Triple and Four Cylinder kits available.

Dial-A-Jet Dually

Two Dial-A-Jets per carburetor, supplies 20% to 30% of overall fuel flow in a pre-atomized or vapor state. Only recommended for 40mm carbs and larger. Duallys are used on large displacement engines or engines that flow a high CFM (Cubic Feet per Minute) rate. Also for high performance applications or where extended altitude or temperature range is required. NOTE: Two regular kits do not make a Dually. The Dually Kit has different components.

DAJ Remote Mount Kit

Want the power that the Dial-A-Jet can give you, but your sled won't allow for standard mounting? The Remote Mount Kit for Dial-A-Jet is the answer. With this kit, you can mount your Dial-A-Jet bodies on the air box above the carburetors. This allows the air box to fit normally, yet gives you the advantages of using a Dial-A-Jet Automatic Fuel Induction System. The Remote Mount Kit is designed to access areas on your carburetor that lack the room to install the Dial-A-Jet body.

Limited Space Mounting Bracket

This kit was designed specifically for installations where the air box crowds the carburetor, leaving little or no room for Dial-A-Jet. For flat slide or round slide carburetors 38mm through 44mm.

Positive Seal Snorkel kit (includes filter)

The Snorkel and Filter kit is designed to feed outside air to the Dial-A-Jet. This improves performance and eliminates debris, belt dust or powder snow from clogging the air correction circuit which will make your engine run rich. Any potential problem with under hood pressure is eliminated, giving you totally consistent jetting. One kit needed per Dial-A-Jet body. See Fig. 13 p. 15.

Deep Well Float Bowl Nuts

Deep Well Float Bowl Nuts were designed to store more fuel around the main jet eliminating the potential of running lean due to fuel starvation. The Dial-A-Jet fuel pick-up is placed further from the main jet eliminating fuel cavitation between the two circuits. The Deep Well Nut is also a space saver allowing you to place the Dial-A-Jet fuel pick up on the side of the nut rather than the bottom. Available for 32mm through 44mm VM series round slide carbs. See page 16 for sizes.

How Dial-A-Jet Fuel Induction works

Dial-A-Jet is an additional fuel circuit that may be adjusted manually through a five position rotary disc. Each position on this disc is a calibrated air correction circuit. More air (larger hole) makes the Dial-A-Jet leaner. Less air (smaller hole) makes the Dial-A-Jet richer.

Dial-A-Jet has its own fuel mixing chamber where air and fuel are properly mixed and pre-atomized (vaporized). Fuel is drawn into this chamber from the float bowl, then united and swirled at high speed with air from the air correction circuit, thus vaporizing the fuel. This vaporized fuel is then inducted into the carburetor. This fuel weighs only 10% of what raw fuel weighs. The light weight of this fuel charge allows quick response to slight changes in engine fuel demand (engine load). You now have quicker throttle response, a broader power band, improved fuel mileage, cooler running engine, longer plug life and excellent burn down protection. The fuel induction is controlled by engine vacuum, air flow, and acoustic sound signal. The heavier your engine is loaded, the more fuel Dial-A-Jet feeds. When engine load decreases, so does Dial-A-Jet fuel flow. **You now have a demand feed fuel induction system that feeds fuel linear to engine load.**

FUEL WILL SIT AT THE LEVEL OF YOUR FLOAT AND WILL NOT GO UP THE LINE WHEN THE ENGINE IS REVVED. THE ENGINE MUST BE UNDER LOAD, SUCH AS ACCELERATION, WITH THE TRACK ON THE GROUND BEFORE FUEL IS DELIVERED TO THE DIAL-A-JET.

The smallest hole on the Dial-A-Jet is the richest setting (when positioned like fig.1) and **the largest hole is the leanest setting** (when positioned like fig.2). The dial is set in the center of all 5 settings when the arrow on the dial is pointed toward the fuel delivery tube (see fig.3). The (-) means leaner (less fuel) and the (+) means richer (more fuel). The ratchet spur (fig.4) MUST BE engaged in the dial notches. The Lockdown Screw (fig.1)must be loosened each time before dial is turned and lightly tightened to secure setting. **Failure to loosen lock down screw will damage internal O-rings. Do not over tighten as damage will occur.**

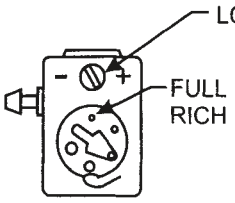


FIG.1

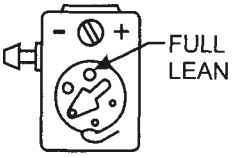


FIG.2

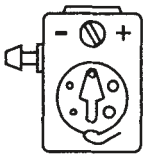


FIG.3

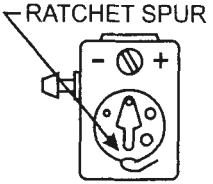
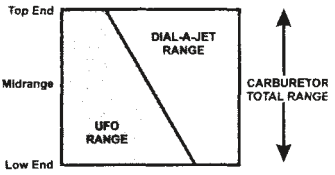


FIG.4

MISC. TECHNICAL ASSISTANCE

UFOs and Dial-A-Jets

We are frequently asked how or if the UFO works with a Dial-A-Jet. The answer is they work great together. When a UFO and Dial-A-Jet are used on the same carburetor you now have a very high tech carburetor at a reasonable price. Due to the carburetor's newfound ability to atomize fuel more efficiently, your engine can produce maximum horsepower and torque under all conditions without changing jets. The chart will show you where each product is most effective. As you can see by the chart, they compliment each other.



Silver line protection is provided in every kit.

Dial-A-Jet fuel line can also be protected against abrasion, wear, and kinking by installing a larger diameter clear fuel line over the Dial-A-Jet fuel line, if you wish to be able to view your float level height.

Yamaha

Yamaha uses jets with increments of 2.5 below 160. Count 2.5 increments as one jet size. In the larger number range, above 160, where jets are available in increments of 10 only, each jump of 10 is one full jet size.

Yamaha twins prior to '94 use the DJ210-1X.
Yamaha Twins '94 and newer, we recommend using the Dial-A-Jet kit number **DJ210-1YAM**. This allows clearance for the throttle linkage. On the **left** carburetor, place the DJ body at approximately the 10:00 o'clock position and on the **right** carburetor, place the DJ body at approximately the 2:00 o'clock position.

Yamaha Triples use DJ211-1YAM.
'94 and newer has a special fitting available which eliminates drilling & tapping of the float bowl. Part No. DJ550 (1 req'd. per carb). These fittings are standard in kit numbers DJ-210-1YAM and DJ211-1YAM.

Yamaha Triple Installation: Drill a #21 hole through the standard carb clamp, rubber intake boot and carburetor bellmouth in the 12:00 position. Replace float bowl drain screw on the side of the carb with special fitting provided in kit. Install DJ as per instructions. The carburetor should, of course, be removed for the drilling and tapping process. Care should be taken to keep the carburetor clean and free of debris from drilling & tapping.

Ski-Doo

A Ski-Doo seldom has to be leaned out in midrange. They are usually very close from the factory.

Gasoline

We recommend that you use a major brand of gasoline with the **highest octane** available from a **high volume station**. There is less chance of water or alcohol settling out of the fuel, leaving you with an unknown octane or alcohol/water percentage.

Spark Plug Reading

When Dial-A-Jet is installed and properly tuned, the spark plugs will be a very light color due to the combustion efficiency. Remember, it is unburned fuel that colors the plugs.

MISC. TECHNICAL ASSISTANCE

Lean Midrange

Anytime you are running more than 4 main jet sizes below the original equipment main jet from the factory, you should watch for a lean midrange condition. You can usually correct the lean condition with a needle e-clip adjustment.

Fuel Flow

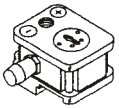
Even with the Dial-A-Jet on the leanest setting, the total fuel delivered will be richer than the main jet size. The Dial-A-Jet cannot reduce the fuel flow of the main jet.

Dial-A-Jet Adjustments

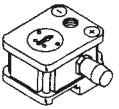
Your main jet is too rich if you can turn your dial to any position without a change in performance.

COMPONENT IDENTIFICATION

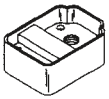
Below is a description and illustration of Dial-A-Jet components. Quantities will vary depending on kit purchased.



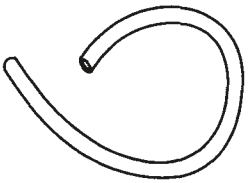
-Left Dial-A-Jet body fuel enters on (-) side



-Right Dial-A-Jet body fuel enters on (+) side



-Pro Mount Nitrile Base Pad



-1/8 in. Fuel Line approximately 12 in. per Dial-A-Jet body

-Lockdown Screw

-Brass Pro Mount fuel Delivery Tube

-OPTIONAL for 40mm or larger carbs XL Fuel Delivery Tube, 1/4" longer threads as well as overall length

-10 x 32 Threaded Float Bowl Fitting

-1/4 x 28 Dually Threaded Float Bowl Fitting

-Float Bowl Poly Washer

⚠ WARNING ⚠

Personal injury and damage to property can result from the improper installation of any product, including the Dial-A-Jet. Read instructions thoroughly prior to installation. Call Thunder Products to discuss any step in more detail. Turn off fuel, remove carbs, and drain float bowl in a well ventilated area away from open flames or sparks in accordance with the factory service manual for your brand. When working with combustible liquids such as gasoline, we suggest you have a fire extinguisher available.

Use safety glasses when drilling and tapping.

PRO MOUNT INSTALLATION

This mounting procedure is designed for a professional looking installation. This is a very simple installation. Drill and tap two holes and connect a fuel line. That's it!!

NOTE: Pro Mount Update Kits are available for early style Dial-A-Jets that were held in place with a nylon zip tie.

1. Select a position on the bellmouth of your carburetor anywhere between 9:00 to the 3:00 o'clock position. You may mount the DJ on the back of the bellmouth, just before the carb begins to taper down to the venturi size. The DJ body can hang out in mid air as long as the fuel delivery tube is threaded into the bellmouth (see fig. 6, page 7). Remove the fuel delivery tube from the Dial-A-Jet body (simply back the screw out). Hold the Dial-A-Jet in place where you intend to install it. Place a scribe through the Dial-A-Jet body and scribe the carburetor.

2. Center punch the exact spot you plan to drill. Drill a hole using a #21 drill bit (#21 is the drill bit size). You may substitute a 5/32 drill bit and drill your hole slightly on the loose side. Tap this hole with a 10 x 32 thread tap (available at almost any hardware store). This drill and tap are the same size used on your float bowl hex nut.

Any hose routing is acceptable keeping it as short as possible as well as free of kinks or abrasions.

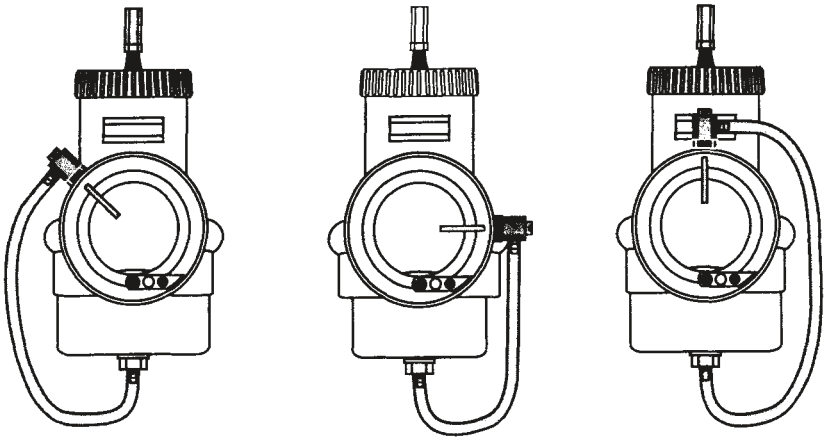
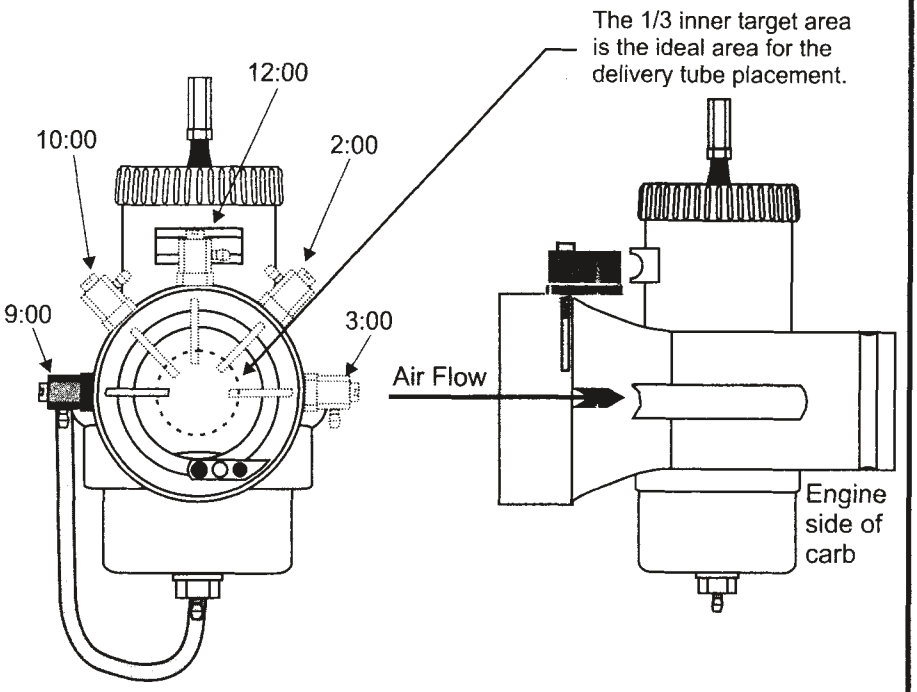


FIG.5

PRO MOUNT INSTALLATION, CON'T.

3. Place the nitrile base pad provided in the kit between the Dial-A-Jet body and the carburetor. Press down firmly on the DJ, compressing the DJ nitrile base pad. Now thread the fuel delivery tube into your carburetor until the Dial-A-Jet body has a snug fit to your carburetor. ***DO NOT over tighten or damage will occur.***

Any position between 9:00 and 3:00 o'clock is acceptable.



The Dial-A-Jet body can hang over the back edge of the bellmouth as shown.

FIG.6

Notch your rubber air boot if necessary for clearance or you may need to go through the rubber air boot and/or clamp and thread Dial-A-Jet into your carb.

PRO MOUNT INSTALLATION CON'T.

4. Remove the hex nut drain located on the bottom of the float bowl. Drill the center of the hex nut (fig.7) with a #21 bit (you may substitute a 5/32 in. bit and drill your hole slightly on the loose side) and tap with a 10/32 tap. Install the poly washer over the brass fitting and thread into the float bowl hex nut. Re-install the hex nut and connect fuel line from the fitting to the Dial-A-Jet. Make a kink-free loop with no obstructions or abrasions while keeping the fuel line as short as possible. Make certain you have no leaks.

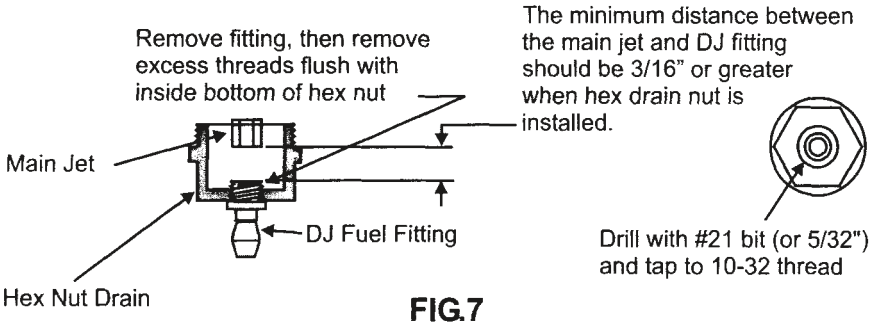


FIG.7

DJ WATER TRAP INSTALLATION

Four options are available:

OPTION 1:
Replace water trap assembly with Deep Well Float Bowl Nuts (as seen on page 16). Then install standard 10x32 DJ fuel fitting.

OPTION 2:
Snip the water trap line approximately 1 in. below the water trap nut and install a reducer fitting 3/8 to 1/8. Attach the Dial-A-Jet line to this. The water trap is no longer needed. Dial-A-Jet will purge the float bowl of water or alcohol before it can accumulate and cause engine damage.

OPTION 3:
Replace the water trap assembly with a conventional hex carb fitting, tap into this per Dial-A-Jet directions.

OPTION 4:
Tap into flat spot on the side of the water trap hex nut and install brass fitting supplied in kit. Note: Mark your water trap in the installed position so you will know what side of the carb your fitting will end up.

TUNING INSTRUCTIONS

IMPORTANT

Prior to installing the Dial-A-Jet system, your carburetors must be properly jetted for your altitude and temperature. Float levels must be set correctly and carburetors must be synchronized. Most machines come from the factory jetted several sizes too rich. Ask your local dealer or high performance shop for the correct jet size. We will use this "new jet size" for our baseline. NOT THE STOCK JET SIZE THAT CAME FROM THE FACTORY. Now that you have a properly jetted machine, we can start with your Dial-A-Jet system. See page 10 - Testing & Jetting to establish your baseline.

Ballpark settings

From your properly jetted machine (as per paragraph above), you will usually end up 2 to 4 jet sizes leaner.

Tuning your Dial-A-Jet

A good starting point is to remove two main jet sizes from a properly jetted sled (not from factory jet settings). Then set the Dial-A-Jet in the richest position, dropping one dial setting each test run (see technical illustrations on page 3). If you end up at the leanest dial setting to get the best running quality, this would indicate that you would need to drop another main jet size. Repeat the testing process again starting at the richest dial setting and working your way toward the leanest one click at a time. The object is to get the best running quality with the dial set in the center position, giving you two richer and two leaner settings. If your sled appears to run the same on two different settings, use the leaner of the two.

Needle position

Start with your needle in the stock position first. Providing your machine takes the throttle crisply and cleanly through midrange, leave the needle position alone. If your sled does not take the throttle quickly and cleanly, try 1 e-clip richer at a time. If condition worsens, start moving needle 1 e-clip leaner at a time (move e-clip up to lean needle setting, move e-clip down to richen needle setting).

TUNING INSTRUCTIONS CON'T.

High Altitude Tuning

Look at the manufacturers recommended main jet size for the maximum altitude that you intend to operate your sled at. Drop two sizes below this. Example: If the manufacturer says to run a 200 main jet, drop to a 180. Now set your Dial-A-Jet to the richest position and gradually lean it down one click at a time until it runs best at your altitude. If your sled appears to run the same on two positions, use the leaner setting of the two. If your sled is still too rich on the leanest Dial-A-Jet setting, drop another jet size. Remember to set your DJ richer as you go to lower altitudes. Additional altitude range is available by installing a TPI Valve - see page 17.

Jetting Help

We always suggest that any modifications be performed cautiously and conservatively. Go down slowly in jet size per our instructions. Here are some hints and suggestions that will help you jet your snowmobile:

1. First and most obvious, take it to a shop or friend that you feel most confident with. We recommend you read Aaen's book on carburetor tuning.

2. A surefire way to achieve maximum performance is to purchase a set of EGT's (Exhaust Gas Temperature) gauges.

TESTING and JETTING without DJ Installed to establish your baseline

Select a safe and proper testing area free of objects or debris with ample acceleration and shut down area. Tuning procedure: Select a main jet for optimum wide-open performance. Start engine and allow time for a complete warm-up.

Run the snowmobile on a flat, hard-packed surface at full throttle. If the engine fails to pull full RPM or labors at full throttle, the main jet is too large (rich). Install the next lower available jet size and repeat full throttle test. Continue to change jetting one size at a time until engine runs efficiently at full open throttle. Check the condition of spark plugs after each run to determine mixture.

If the main jet is slightly lean, the engine will run better when cool and lose power as it heats up. If the main jet is slightly rich, the engine will miss and lose power rapidly under loaded conditions. The main jet is the first fuel system to pick up dirt and foreign matter. Keep your gas clean and watch for sudden heating and/or momentary full throttle seizing.

Remember that changes in main jet tuning will have an effect on the state-of-tune of the needle jet system and adjustments may have to be made to the needle position after changes in main jetting. The smaller your main jet is, the larger restrictor your needle becomes (midrange leans out).

TUNING INSTRUCTIONS CON'T.

Your machine should run like it does when the temperature drops. Listen for the crisp cracking sound as you start leaning the dial adjustments. The lazy mellow sound is too rich.

The ability to identify a rich or lean mixture is the most important tuning tool.

LEAN CONDITION

When the fuel mixture is too lean, the following conditions may be present:

*The improper condition improves when the choke is engaged.

*The spark plug is pale and/or the electrode burns away.

*The RPM of the engine fluctuates under constant throttle.

*A lack of normal power is evident.

*The metal-to-metal (ping) sound of a tight piston or detonation may be noted.

RICH CONDITION

When the fuel mixture is too rich, the following conditions may be present:

*The exhaust sound is dull or muted and recurrent.

*The improper condition becomes worse when the choke is engaged.

*The improper condition gets worse as the engine heats up.

*Exhaust is heavy and more visible as the throttle is advanced.

*Spark plug fouling is experienced.

*Engine misses or "four-cycles" under loaded conditions.

*A strong fuel smell is noted in the air.

CORRECT PLUG COLOR

The plug color should range from a cardboard box color to coffee color with a strong shot of cream.

TUNING INSTRUCTIONS CON'T.

Acceptable Exhaust Temperature Ranges

Each engine produces its own exhaust thermal signature. The size of the carburetors, timing of the ignition, diameter and shape of the exhaust pipes, quality of the fuel and the location of the EGT sensors all affect the temperature observed. **For proper placement of exhaust gas temperature sensors, consult the manufacturer of the exhaust system.** In general, if all cylinder temperatures are within 50 degrees F of each other, and the readings are 150 to 200 degrees F below the maximum temperature obtainable on the power side of the bell curve (see below), you are operating safely and at top efficiency.

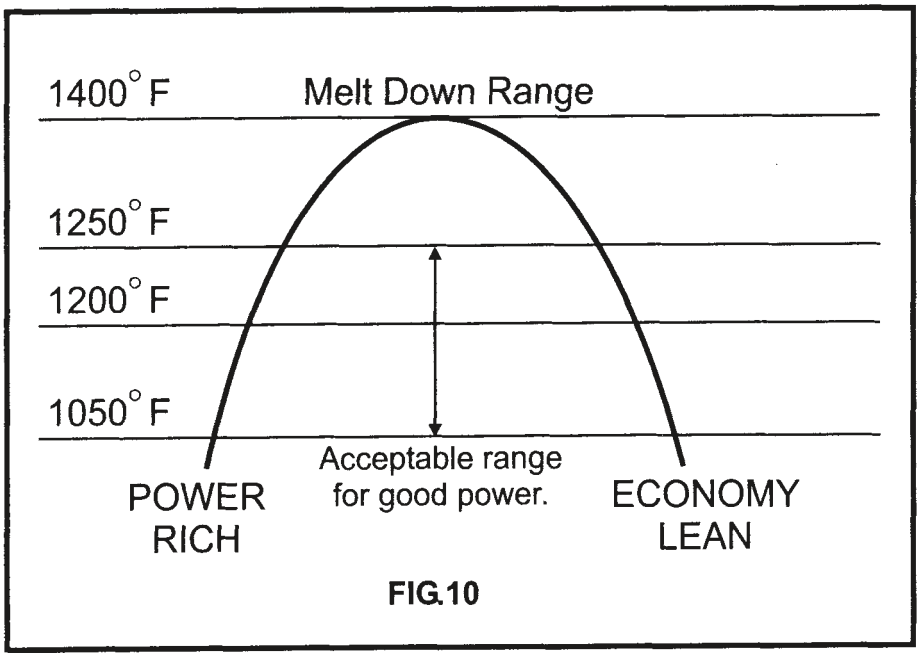


FIG.10

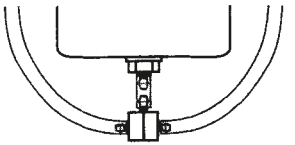
AVAILABLE KITS

Dually Kit

Single Dial-A-Jet kits can be upgraded to a Dually by ordering the following part numbers:

Twins: DJ210-2U
Triples: DJ211-2U

You cannot order two regular kits to make a Dually.



Optional water trap "T" fitting installation

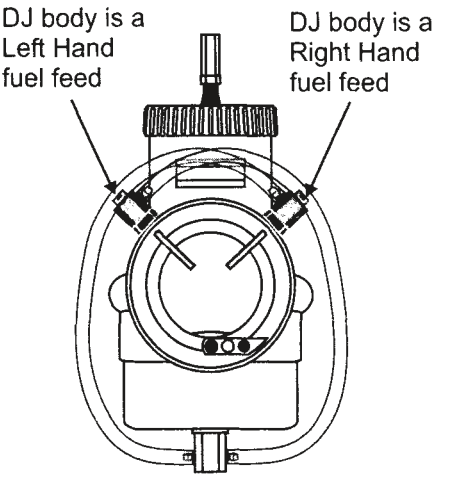
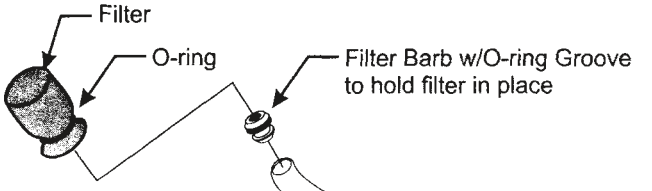


FIG.12

Positive Seal Snorkel Kit (includes air filter)



Designed to feed clean filtered air to the Dial-A-Jet. This improves performance and eliminates sand, dirt, snow, moisture or other foreign debris from clogging the air circuit which will make your engine run rich. The Snorkel Kit gives you totally consistent jetting by eliminating under hood pressure. Applications for snowmobile, motorcycle or ATV. One kit covers one Dial-A-Jet body.

DO NOT route the snorkel vent line into the air box!

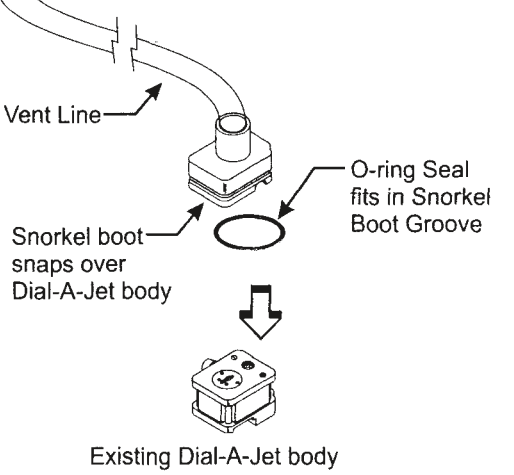


FIG.13

UNDERSTANDING YOUR DIAL-A-JET

Sick and tired of changing jets?

Dial-A-Jet will take care of this problem and a whole lot more!

Why change jetting? Some people don't!

Your engine will lose 10% to 15% of total horsepower with improper jetting. A 100 HP machine will make 85 to 90 HP. The simple fact is that changing jets is not a pleasant task and takes a lot of time. ***Now*** you can run at peak horsepower all the time whether your engine is stock or modified. The best part is that jetting is quick, easy and accurate with Dial-A-Jet.

Dial-A-Jet IS NOT like a Power Jet. A Power Jet feeds raw liquid fuel, just like the other circuits, and works from 7/8 throttle and up. Dial-A-Jet feeds pre-atomized (vaporized) fuel for instant throttle response and works from just above idle to full throttle.

Dial-A-Jet feeds a fine consistent mist of pre-atomized fuel instead of raw liquid fuel like all other jetting circuits in your carb. Remember, pre-atomized fuel weighs 10% of what liquid fuel weighs, therefore, it is very responsive to engine needs.

Dial-A-Jet gives you great throttle response. The pre-atomized fuel is delivered to the engine instantly and acts as an intermediate circuit until the heavy wet fuel from the other circuits catch up.

Dial-A-Jet pre-atomized fuel fills in the lean spots between the poorly atomized fuel molecules from other jetting circuits eliminating lean spots. It is the path of least resistance, a law of physics. This gives you a consistent, even fuel supply at all engine RPMs.

Dial-A-Jet allows you to run at peak HP at all temperatures and altitudes. No other product does this at any price.

Dial-A-Jet is the easiest and fastest way to "tune-in" any modifications you have performed on your machine. From pipes to porting, Dial-A-Jet makes it work right.

Dial-A-Jet is a great protection against burn down due to its ability to feed fuel accurately based on the engine's demand.

Dial-A-Jet consistently purges your float bowl of moisture (water, alcohol or benzines) as they settle to the bottom. This eliminates water seizures or burn down, carburetor icing, galling or broken intake skirts on your piston.

Dial-A-Jet eliminates detonation/pinging and compensates for poor fuel quality with a simple click of the dial.

UNDERSTANDING YOUR DIAL-A-JET

Dial-A-Jet allows you to re-jet your entire engine (single, twin, triple or four cylinder) in about one minute.

Dial-A-Jet allows you to tune each cylinder individually for maximum performance.

Dial-A-Jet improves fuel mileage 5% to 15% or more.

Dial-A-Jet has no moving parts or complicated electronics. It works every time, all the time.

Each Position on the Dial-A-Jet is **NOT** a jet size. This varies by machine depending on numerous factors such as: carbs, air box, engine size and vacuum, pipes, etc.

When turning the dial on the Dial-A-Jet, you are selecting a richer or leaner fuel range by varying the size of the air correction circuit (hole in Dial). The larger holes are leaner, the smaller holes are richer. Each position on the Dial-A-Jet has a much broader range than any single main jet size.

With Dial-A-Jet installed, your fuel feed cannot be less than the size of your main jet, ranging three to six jet sizes larger or more in total.

Dial-A-Jet feeds fuel linear to engine load. This factor along with the amount of air box restriction will determine fuel feed.

Fuel quality. The best way to avoid burn downs due to "bad gas" is to use premium fuel from a high volume, major brand gas station.

Temperature probe location and temperature readings should be in accordance with the pipe manufacturer's or machine manufacturer's recommendations.

Stagger jetting: If your machine normally requires different size main jets on each cylinder without Dial-A-Jets, the same will hold true with Dial-A-Jets installed.

Dial-A-Jet works from just above an idle and up, therefore does not affect starting or idle.

Lower **altitudes or temperatures require richer jetting.**

Higher **altitudes or temperatures require leaner jetting.**

Heavier loads or heavier pulling such as riding double, deep or wet snow, require more fuel - richer jetting.

Aggressive clutching requires more fuel - richer jetting, simply because your engine is pulling harder.

UNDERSTANDING YOUR DIAL-A-JET

Dial-A-Jet is an auxiliary fuel circuit that feeds pre-atomized fuel into your carb at the proper fuel/air ratio. All other circuits in your carb feed raw liquid fuel and will function normally.

Dial-A-Jet works across your needle jet (and PowerJet if you have one) and your main jet. It affects all circuits in your carb except the idle circuit.

Each click on the Dial-A-Jet is worth 1500 ft. to 2000 ft. of altitude or 15 degrees to 20 degrees of temperature change.

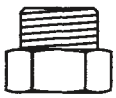
Float Level can be quickly and easily determined for each carburetor by noting the fuel height in each DJ fuel line.

DIAL-A-JET ACCESSORIES

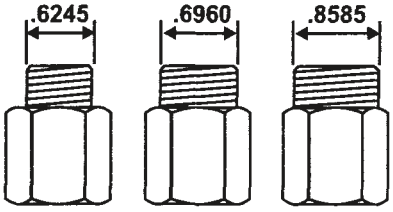
NEW Deep Well Float Bowl Nuts

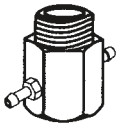
Deep Well Float Bowl Nuts provide a clean, hi-tech look along with making sure there is ample fuel to flow to your Dial-A-Jets.

Available in these measurements. Measure at the threads as shown.



Standard Float Bowl Nut



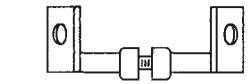


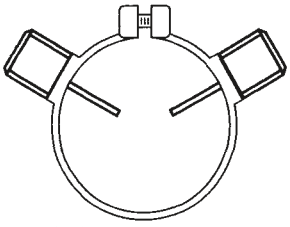
Deep Well Float Bowl Nuts can be used for both Single and Dually Dial-A-Jet Kits. Fuel barbs do not come installed.

Fits 32mm to 44mm VM series round slide carbs (specify carb size)

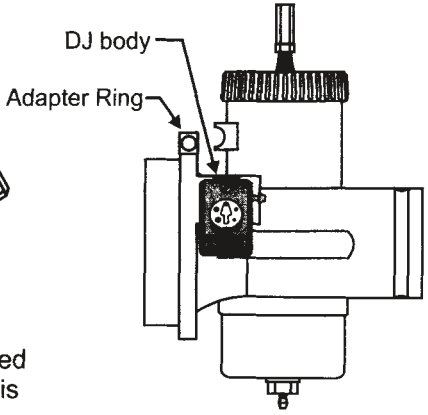
Limited Space Mounting Bracket

Fits 32mm to 44mm carburetors





Dial-A-Jet can be mounted on LH or RH side with this bracket.



Attention motorcycle and ATV owners

Thunder Products makes a complete line of Dial-A-Jets for all makes and models of motorcycles and ATVs. Modern motorcycles and ATVs run very lean. Adding a custom exhaust and air filter makes them run even leaner and hotter. Dial-A-Jet can cure this problem. The best part is Dial-A-Jet can be installed without having to dissassemble your carburetors. Dial-A-Jet gives you more performance and horsepower, improved throttle response and fule mileage, excellent running quality and total reliability. Easy installation.

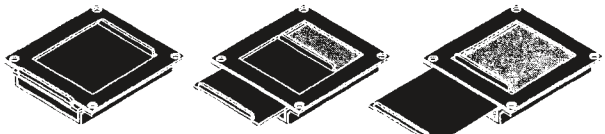
TPI Valves PAT. PEND.

The Total Performance Intake Valves increase your power, improve throttle response and fuel efficiency by controlling your air flow.

"Low-Boy" Style

Now in colors!

Black, Blue, Red, Yellow and Green



Closed Partially Open Full Open

"Knobby" Style

Total Performance Intake Valve

Make it Flow - Make it GO!!

Racers and tuners as well as many trail riders have known for many years that opening up the air box in order to allow more air makes more horsepower. This is usually called "ventilating" or "gutting" the air box. They also know that more air means that the engine will be running leaner, exactly the same as installing a smaller main jet.

Only one thing was missing and that was the ability to go back to the richer jetting required for colder weather or lower altitudes. What did they do about this? They tried to tape or stuff foam rubber in the openings they had created. All of this was very messy and imprecise. Much of the time they were either too rich or too lean or they had to start changing the main jets in order to be jetted correctly.

There must be a better way, and there is! It's called a TPI Valve. The TPI Valve can be opened completely to the leanest position or closed completely to the richest position or any position in between.

The TPI Valve gives you a range of two to four jet sizes of adjustment providing you use the recommended number of valves in your air box. Two cycle engines require approximately one TPI (Low Boy) per 300cc of engine size. Four cycle engines usually require one TPI (Low Boy) per 400cc of engine size.

TPI Valves continued

TPI Valves are designed to control air flow into your air box. The interneal filter assures you that the air entering your air box is filtered. Now you can have precise control of air flow. The TPI Valve allows you to quickly and easily adjust and test which position is best for your particular area, altitude or temperature. The TPI Valve works with any engine, stock or modified, two stroke or four stroke. The TPI Valve is a straight forward, inexpensive product that works every time!

TPI Valves work great with Dial-A-Jets and extend your altitude and/or temperature range.

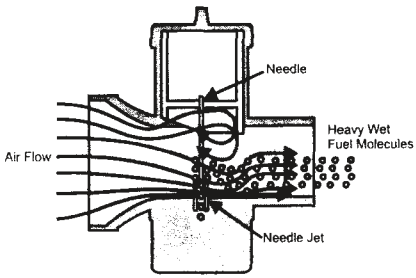
All valves come with a medium and fine filter. The fine filter is used in ATV or dirt bike applications and the medium filter is recommended for snowmobile applications. The TPI Low-Boy Valves sell for $19.95 ea. Yamaha SX Vipers use the Knobby TPI Valve and they sell for $14.95 each.

U.F.O.™

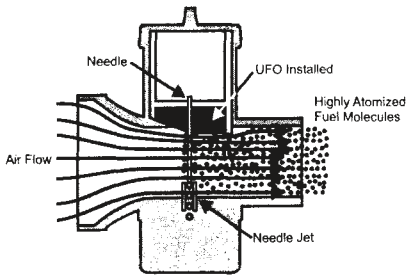
PAT. PEND.

Ultimate Flow Optimizer

ONLY $30.00 per carb



Standard Round Slide Carb

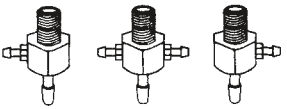


Round Slide Carb With UFO

The U.F.O. is a simple, trouble free, aerodynamic piece that fits Mikuni roundslide carburetors from 32mm through 44mm. The U.F.O. makes a normal round slide carburetor out perform the more expensive flat slide carburetor by eliminating turbulence and increasing air flow and velocity. Connecting the needle jet to engine vacuum creates a highly atomized fuel charge with gains of approximately

1HP per 100cc of engine displacement or more!

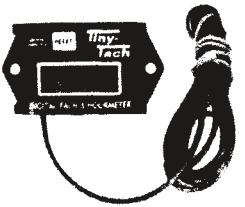
TPI Billet Aluminum Vent Fittings



Replace the plastic vent fittings on your Polaris or Arctic Cat airbox with these high-tech, high quality billet aluminum fittings. All fittings are connected with a vent line that equalizes the float bowl pressure to each carburetor, improving performance.

Twin kit: $19.95
Triple kit: $29.95

Tiny- Tach



This is an excellent, inexpensive way to keep track of your sled's operating RPM. A must have when adding a pipe, clutching or carburetor mods. Easy installation with inductive pickup. Features tachometer and hour meter with Quartz accuracy. Specify number of cylinders.

Installs in 5 minutes! Only $49.95!

ONLY $19.95

TPI Springs *Primary and Secondary*

The quality must go in for the performance to come out!

We start with the best materials available, then the springs are precision wound for absolute consistency. Springs are heat-treated in computer controlled ovens. This process is a proprietary process normally used only in the aircraft industry. This processing gives the spring the memory, life cycle and consistency not found in any other springs.

TPI Secondary Springs *have approximately 25% more compression rate than standard OEM springs. The increased compression rate in the secondary or driven springs produces more belt side pressure and less slippage. Back shifting is also improved.*

TPI Primary Springs *have slightly higher preloads for a quicker, more powerful holeshot.*

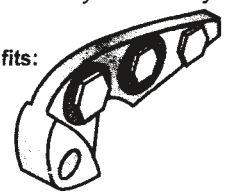
THUNDER SHIFT PATENTED

Gets the power to the ground!!

Fully adjustable clutch weights for precision tuning low end, midrange and top end independently!!

This allows you to follow the power curve of your engine accurately whether you have a stock or modified engine.

Easy to tune, fits:
Arctic Cat
Polaris
Comet
Yamaha YXR



No other weight matches the THUNDER SHIFT KIT in quality, performance and value. Save time and money while increasing performance.

$89.99 (most kits)

Thunder Shift "HEAVY HITTERS" PATENTED

Gets the power to the ground on the New Hi-Performance Machines !!

$199.00

Massive belt squeeze without machining your clutch!

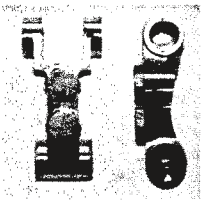
Thunder Shift Heavy Hitters are fully adjustable, heavy pivot mass clutch weights that can be adjusted a full 15 grams in .4 gram increments for precise clutch tuning. You can adjust your low end, midrange and top end, separately. Made for machines that normally require weights in the high 50 grams up to more than 85 grams of weight. These are the highest quality, highest-tech weights available at any price!

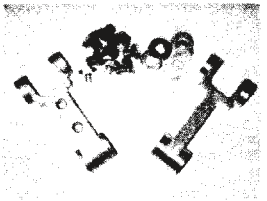
TRA Thunder Shift Arms PATENTED

Drops right in. No grinding, cutting or drilling. Best of all you can still use your clicker adjustments for thousands of combinations!

The all new Thunder Shift Arms (TSA) for the Ski-Doo clutch are machined from aircraft grade billet aluminum. They are five times stronger than stock arms - a must for big engines!

Big top end gains!
Much quicker backshifting!





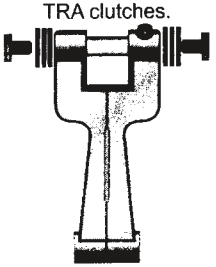
Bolts right in! ***$279.00/set of 3***

THUNDER SHIFT Ski-Doo TRA PATENTED

Gets the power to the ground!!

No other weight matches the THUNDER SHIFT KIT in quality, performance and value. Save time and money while increasing performance.

Fits ALL Ski-Doo TRA clutches.



TRA arm not included

These kits are for the pro tuner! $88.00
Fully adjustable clutch weights for precision tuning.
TSK-190 ranging from 3 grams to 18 grams
TSK-195 ranging from 10 grams to 25 grams

These kits are for the hot trail rider! $24.00
New Adjustable Econo Kit.
TPK-001 (light) 10.5 to 15.5 grams
TPK-002 (heavy) 14.5 to 20.5 grams

Thunder Products, Inc., 21676 Deep Lake Road, Richmond, Mn 56368
Phone (320) 597-2700 Fax (320) 597-2712

See our website for the latest information or updates.

www.thunderproducts.com