Jett Aerotech – DubJett.com

INSTRUCTIONS
BSE and SPORT-JETT 90L

Thank you for ordering the Sport-Jett Engine from Jett Aerotech. We believe that it is the finest, most powerful engine in its class. If you have any questions or comments, please give us a call any time during working hours, 8-5 central time, at 713-680-8113.,or visit our web site at www.dubjett.com.

Fuel: Any good low nitro sport glow fuel with at least 18% oil and 15% nitro will work well. We recommend Powermaster because it contains a very good oil package and is made with quality chemicals. 15% nitro will give optimum results. More nitro will give extra power, but expect shorter life. A little castor oil is recommended.

Prop selection: Tuned engines are much more sensitive to prop selection than you have been used to; therefore the wrong prop can cause many symptoms which lead you to believe you have other problems. These engines are tuned for at least 13500 RPM. If you run a prop that does not turn at least 13500 at peak, you will not get optimum flight performance, and can experience some over-heating problems. We have found that a typical 12x6 prop will turn all the way from 13000 to over 14000, so a little experimentation is in order. You will find that your transition from idle and mid-range is improved greatly as the engine RPMs are increased. If the engine is slow to pipe up, or falls off too readily, try a prop that turns 500 more ground RPMs.

APC 11x8, 11x9 and 12x6 are good props to start with

IN SUMMARY: RPM RPM RPM !

In trying to compare props we recommend you try this formula:

Dia x Dia x Dia x pitch = constant. In other words, cube the diameter and multiply it times the pitch. For example, a 12x6 prop would be 12 x 12 x 12 x 6 = 10368 and an 11 x 8 = 10648; therefore, the two props are close. However, an 11x9 would be 11979, which is a bigger prop, and will turn less RPM.

YOU MUST HAVE A GOOD GLOW PLUG BEFORE ATTEMPTING TO SET YOUR NEEDLE VALVE.
We recommend the Merlin 2003 HOT sport glow plugs (RED seal). Others may perform equally as well.

BREAK-IN: There are many theories on break-in. AAC (Aluminum piston, Aluminum cylinder, Chromed cylinder) engines need very little break-in. However, the connecting rod and other moving parts need to be well seated before they can perform reliably. Tuned engines and specifically tuned ABC or AAC engines tend to work against you during break-in. To adequately loosen up an AAC (which has some interference fit) it must be hot. This means running it fast and hard, but you must do that before you break in the rod--Problem!!!. The best thing to do is start the engine, heat it up quickly (to protect the rod) and run it fast, but rich. This is what we do: We run your engine for you and take the first chance. After we start it we heat it up immediately, but not all the way to the peak. We run it rich at about 13000 for about 30 seconds and start to set the idle. It goes back and forth for about 2 minutes and then we test the peak RPMs. If it runs over 14000 on the 12x6 APC, we send it to you.

Expect your engine to be tighter than you are used to. This is not a problem. The engine will loosen up some after a few flights. To break in the engine, bolt on a slightly smaller prop (11-6), open the needle valve about 4.5 turns total and start. At full throttle, lean the engine in until it is staged on the pipe and running about 13500. If it isn't still rich, change to a smaller prop. The 11x6 APC or Master Airscrew should work fine. Let it run there for about 15-30 minutes. You should be ready to fly.

SETTING THE IDLE: The idle setting should be fairly close from the factory, so try it as-is first. Look at the nut holding the throttle arm. The idle needle should be about flush (even) with the end of the nut. If not, this is a good place to start. (our experience is that this position is still rich, but start here anyway)

Open the throttle and set the high speed to about 1000 below peak. (see below) Warm the engine and pull the throttle back. Set the throttle at 1/3 open, i.e. the opening should be about 3/16 (4.5 mm) wide. Let the engine run and stabilize for 10 seconds. Pinch the fuel line closed. Does the engine speed up and die? If so, it's too rich--turn the idle in (clockwise) 1/4 turn. Repeat, warming at full throttle, pulling back to 1/3 throttle, allowing the engine to stabilize for 10 sec, pinching the tubing until the engine dies within 1-2 seconds. At this point, the carb should be within 1/4 turn of correct.

Open the throttle and warm the engine. Pull the throttle back to idle for a few seconds. Push the throttle slowly to full. If the transition is not smooth, or if the engine stalls (except for a slight pause to pipe up) try 1/8 turn leaner. If the idle is too lean, the engine will not transition past the 1/3 open point without sagging or dying. Continue this procedure, moving only 1/8 turn increments of the idle needle until you have a slow, reliable idle and a rapid transition. Remember, warm the engine before working with the idle and transition settings. Occasionally, someone gets the idle so lean that the high speed will not work. Open the idle needle and start over if this happens.

Idle problems are almost always caused by one of three things: Bad Plug (get a new one). Wrong setting (go back to the instructions). Leaks. The Jett Carb is easy to set, so if you have trouble something is definitely wrong.

Needle Valve Setting For The First Flight: Before you start, you should have a prop that you are sure is not too big, and a well calibrated tach. Your break in prop is about right. Since your engine has already been run it should be ready to start. Leave the battery on and slowly lean the engine in. The engine should stage to 12000 to 13000 quickly while still rich. Slowly continue leaning it in until the engine peaks. You will know the peak when the engine slows down. At this point rapidly open the needle about 1 turn, or until the engine crackles rich. Kill the engine and let it cool. Trying to set the needle after you have taken it past peak is fruitless and can do damage. The pipe will not stage properly and your needle could easily be off by one full turn (lean).

Open the needle 1/2 turn and restart. This time do not lean the engine all to way to the peak--stay about 500 back and let it warm up. **Slowly back the needle up to about 700-1000 below peak RPM and keep it there for the first flight.** Make adjustments slowly from this point. You will be able to run different props without changing the needle but a few degrees. If it takes more, your prop is wrong.

Fuel Tank: Hayes type tanks work well for the Sport-Jett, but any good clunk is OK if you have no leaks and keep it clean. Ensure the tank is padded and isolated from the airframe. CLEAN YOUR TANK AND EQUIPMENT OFTEN AND USE A FILTER IN YOUR PUMP. If you mount your engine upright make sure that the needle valve assembly is at least as low as the center line of the tank (this may be impossible). If not, turn your engine sideways so the engine won't have to draw up hill. **ABOUT 80% OF THE TROUBLE CALLS WE GET ARE ULTIMATELY FOUND TO BE TANK PROBLEMS.**

The engine should run almost a full tank of fuel on the ground without changing RPM significantly. Look for air bubbles in the fuel line while running with 1/3 full tank. You should have no air in the fuel line. *The tank must be completely isolated by thick, dense foam, around all sides, and front and back.* Take the time to do this, along with making sure you have new, good tubing in and outside the tank, and above all else, no leaks.

Maintenance Your engine is designed to last for many hours, but care must be taken to avoid lean runs. A few flights lean will destroy your engine. No amount of castor oil, super oils, etc. will help you then, so avoid even a few seconds of lean running.

Optimum head clearance is .022-.026 (.55mm), but if you are experiencing some overheating, or blowing plugs often, you may want to raise your head. (.002 shims can be obtained from the factory.) Carefully add **one** and try it again. Use care in removing and tightening the head. We suggest you have someone help you if you are inexperienced. An improperly torqued head will ruin your piston and liner fit in just a few seconds running.

Use Marvel Air Tool Oil as an after-run oil. You can get it at most machine tool supply stores.

Your muffler has "cheap" steel screws on purpose. They break when you crash and will do less damage to the engine and muffler. Your muffler is assembled with a special high temp adhesive, so if you need to reassemble it for any reason, return it to the factory, or use "red" Loctite from the auto store. (The red will only work for emergency repairs)

Proper installation of internal engine parts is important, so we recommend you let us do that. If not, we will be glad to assist you in any way.

Fuel Consumption: These engines consume tremendous amounts of fuel. Remember fuel is power.

"Wet front bearings" It is perfectly normal for the engine to blow a bit of fuel out the front bearing when running, especially during full throttle. This keeps the front bearing lubricated.

We hope you enjoy your new Jett engine. If you have any questions, call Dub Jett at (713)680-8113.

HAPPY FLYING!!!

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