

XL .91RFS AIRCRAFT ENGINE MAINTENANCE INFORMATION

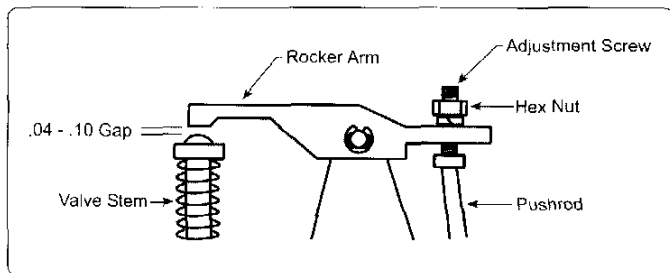
This maintenance information is provided to help you keep your new XL RFS series aircraft engine running in top form. Following this maintenance information will ensure the long life and dependability you expect from your engine.

ADJUSTING THE VALVES

The valve clearances are preset from the factory, but do require periodic adjustment. Reset the valves after the first 1 hour of engine run-time. After that, the valves can be checked and adjusted about every 8 hours of run-time. The valves will need adjustment if you notice a severe loss of power or after you have repaired and/or reassembled the engine.

IMPORTANT Always adjust the valves with the engine cold.

- 1) With the engine cold, remove the rocker cover on top of the cylinder head by unscrewing the two socket-cap screws.
- 2) Rotate the crankshaft until the piston is at top-dead center. Both valves will be closed at this point.
- 3) The required valve clearance is between .04mm and .10mm, measured between the valve stem and the rocker arm. Use feeler gauges to check the clearance. The .04mm feeler gauge should pass through the gap with only slight friction. The .10mm feeler gauge should be tight.



- 4) Working with one valve at a time, loosen the locking nut, using a small wrench. Use a screwdriver to turn the adjustment screw counterclockwise about 1/2 turn. This will open the gap slightly. Slide the .04mm feeler gauge between the rocker arm and the valve stem. Carefully turn the adjustment screw clockwise until the rocker arm touches the feeler gauge. Using a small wrench, tighten the lock nut.
- 5) Remove the feeler gauge and double check the gap. Repeat step # 4 if necessary to achieve the correct setting, then repeat the process for the second valve assembly.

MAINTENANCE

Engine maintenance should be done on a regular basis to ensure that you keep the engine running in top form, especially over time. Following these simple maintenance practices will ensure the long life and dependability you expect from your engine.

- Avoid running the engine under dusty conditions. If you are in a dusty environment, we suggest using an air filter over the carburetor.
- At the end of every flying day, purge the engine of fuel by disconnecting the fuel line from the carburetor and allowing the engine to run dry of fuel.

- Use a high-quality after-run oil in the engine after you have purged the engine of fuel. Inject the oil into the engine through the carburetor and through the glow plug hole. Rotate the crankshaft several times to distribute the oil throughout the engine. This will prevent rust from forming inside the engine, especially on the ball bearings.
- Wipe the outside of the engine dry using a soft cloth.
- Use a fuel filter between the fuel tank and the carburetor.
- Periodically check to make sure all of the engine bolts are tight, including the muffler and exhaust pipe cinch nuts.
- Periodically check your fuel system, including the plumbing inside the fuel tank, for leaks or cracks. We recommend changing the silicone fuel tubing inside and outside the fuel tank at the start of every flying season or about once a year.
- If you have attached a length of fuel tubing to the crankcase breather nipple, periodically check the tubing for any blockage.

Long-Term Storage

If you will not be using your engine for a long period of time, such as during the winter, we suggest you take the following precautions to preserve the reliability of your engine:

- Run the engine completely dry of fuel as described above. This is extremely important.
- Remove the rocker cover and cam gear cover and apply a generous amount of after-run oil on and around the rocker arm assembly and the cam gear. Reinstall the covers.
- Remove the engine backplate and apply a generous amount of after-run oil to the engine crankcase and to the rear ball bearing, then reinstall the backplate.
- Apply a generous amount of after-run oil to the joint between the carburetor barrel and the carburetor housing to prevent the barrel from sticking.
- Remove the glow plug and apply a generous amount of after-run oil into the cylinder head. Reinstall the glow plug and turn the crankshaft over several times to distribute the oil.
- Once that is done, place the engine in a sealed baggie and remove as much air from the baggie as possible. Your engine can now be stored for a long period without worrying about rust or engine degradation.

Resetting the Timing

The timing must be reset if the crankshaft and/or cam gear has been disassembled. To reset the timing, rotate the crankshaft until the piston is at top-dead center. (Verify this by looking through the glow plug hole.) With the piston at top-dead center, install the cam gear with the small punch mark facing toward you and pointing straight down toward the bottom of the crankcase. Reinstall the cam gear cover and tighten the screws.

