

TECH TIP**Working with Carbon Fiber**

Wear gloves when you work with it. The fiber tends to splinter, and pieces of it could lodge in your fingers. It's very difficult to cut, so you'll need a carbide-rod saw or a razor saw. (Although you could use an X-Acto knife, it would take forever, and the blade would become dull quickly.) You have to scuff the carbon fiber's surfaces with sandpaper before you apply CA or epoxy to them. Wear a filter mask when you sand. Many types of CA and epoxy work well with carbon fiber. To strengthen wings (foam and wooden), you should use .0070 mil-thick fiber. To reinforce the area near retract cutouts, .014-mil—thick fiber is best.

From "Using Carbon Fiber" in the Radio Control Airplane How To's book, on sale at www.rcstore.com.

Aileron Setup Tips

Before you attach your aileron servo's control arm and aileron pushrod linkages, be sure to turn your transmitter and receiver on and center the servo.

Mechanically adjust your model's linkages so that your ailerons are perfectly centered at neutral and that they move the distance recommended by the model manufacturer.

When you stand behind the model (facing the tail) and move the aileron transmitter stick to the right, the right aileron should move up, and the left aileron should go down the same amount.

Before flight, always check to be sure that none of your model's control surfaces are binding and that they move in the right direction.

From "Ailerons: the Next Step" in The Park Flyer Pilot's Guide, on sale at www.rcstore.com.

Choosing the Right Glow Plug

From OS Engines

Several factors influence the use of the correct glow plug for your engine. Here are some guidelines:

Standard engines: Engines with a 1-piece head are most common. Standard plugs are easily available, inexpensive, and fit almost all standard engines. Standard plugs are installed with a washer, which creates a compression seal with the head.

Displacement: Small displacement engines need a hotter plug than larger displacement because larger engines have more mass and retain heat better.

Nitro Content: Use of higher nitro fuels will require a colder plug than lower nitro fuels.

Temperature: The hotter the day, the colder the plugs need to be.

Additional Things to Know:

- Hot plugs promote better idling and acceleration. If your engine runs rough or accelerates sluggishly, a hotter plug will help.
- Cold plugs produce more power and may improve performance if your engine runs hot. The downside is rougher idling and more difficulty in tuning.
- Fuel-air mix not only affects how your engine performs; it can also have an impact on how long your plug lasts. If you run rich, it means that you're using more fuel than necessary for top performance. Modelers are often advised to run rich during engine break-in, because it helps cool the engine. However, running too rich can also cause an engine to bog down or quit entirely. In addition, it also means that the glow element is being exposed to more contaminants than necessary, which shortens plug life. Running lean means that you're using less fuel. "Leaning in" an engine has a positive effect on performance. However, care is needed here, because over-leaning an engine can harm it, by raising operating temperatures, and burn up a plug [Tech Editor's Note: More than the plug might be lost, excessive leaning can ruin an engine! before it's time. Do not over lean!]

Final Thoughts: Choosing the right glow plug not only improves performance, but can also extend the life of your engine and the glow plug itself. With the guidelines above and the tips below, you're well on your way to achieving both.

- Buy quality plugs. You're protecting your investment.
- Store plugs where it's dry. Moisture can ruin them.
- Use the right glow plug. Follow the guidelines above.
- Follow the proper break-in procedures.
- Tune your engine carefully. Running too lean will make your engine "blow" plugs more often. Proper tuning helps extend plug life.
- Never touch the filament of a glow plug. Doing so can break the filament and ruin a plug.
- Don't over tighten your plug. Tighten it until it's just snug.
- Be sure to shim your engine correctly. A plug that's too close to the piston can cause pre-detonation, which will quickly damage a glow plug.
- Use only a glow starter or 1.5 V battery to heat your plug. Otherwise, your plug may burn out ahead of it's time. Don't be afraid to ask for help. Experienced modelers have already "been there,