Choosing the Right Glow Plug

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

**Engine Type**

**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.

**Turbo.** Many new O.S. engines, which feature a special 2-piece turbo head. The biggest benefit of turbo plugs is superior performance. Unlike standard plugs, turbo plugs (identified by a “P” in the description) feature a tapered “seat” that matches perfectly with the head. That creates a superior compression seal and with it, maximum efficiency and power. Turbo plugs are the choice for racers, who want, and need, top performance.  

**A word of caution:** you should never install a turbo plug in a standard engine or vice versa. Doing so risks doing serious (and expensive) damage.

**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

Do You Know This Modeler?

This person has been a Grassfield member for as long as I can remember (no longer than last week). He’s been an avid modeler for decades and decades and used to get in lots of “fixes” with Jeryl Smith’s father, Dave (of course, he was just a teenager then).
Notes from the Editor

By Phil Zuidema, phzuidema@comcast.net

Notes on the Builder’s Show:
Our annual Builder’s Show will be held at the April meeting. This is a great opportunity for you to show off your latest building project. This is open to all Grassfield members. There are five (5) classes open for judging. They are:
NOVICE - This class is for first-time builders. ARF planes can be entered in this class.
SPORT - Open to sport type planes that are not Scale.
SCALE - Open to scale military or civilian scale airplanes.
ARF - Open to Almost Ready to Fly models whether built as per plans or modified. ARF models are not allowed in the Sport, Scale or Racing classes except as noted in the Racing class.
RACING - Open to Q-500 and Q-40 racing planes. Composite aircraft are allowed provided the entrant does the finishing or painting of the plane.

Grassfield Monthly Meeting

The Builder’s Show will be held:
Date: Friday, April 10th, 2009.
Time: 7:00 p.m.
Location: Brooklyn Center Civic Center
       6301 Shingle Creek Pkwy.
       Brooklyn Center, MN 55430

See www.Grassfieldrc.org for a map.

Notes from the Secretary

By Del Berryman, del31@charter.net

Once again, I will be at the meeting on Friday, accepting your 2009 renewal dues. Just a reminder—there is a $10.00 late fee if you aren’t renewed by the 16th of April. So far, we have 48 members that have paid their dues for ’09.
We have some new members for this year, Michael Burk, Dang Vang, Bruce Humphrys and Pat Redig. Michael is from Hopkins, and Pat comes from Scandia. Welcome aboard! You will enjoy the Grassfield Club. There is always something going on every weekend during the flying season. It’s a great club to belong to, and you will meet a lot of good people. I know that I have enjoyed myself and have gotten to know some of my best friends. Michael and Pat, I hope to see you at the field.
That’s about all I have to say for now. Remember, keep a watch on your six. (1 Peter 5:8)

God bless you,
Del

(Continued from page 1) Trimmed Scale Models

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 1.5V 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, done that.” Their experience can save you time and money; and most are glad to help.
• Glow plugs get very hot, enough to glow the filament red or white hot, and removing a glow plug while power is applied can cause burning if appropriate care is not taken. [Tech

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Do You Know This Modeler?

This modeler, a fantastic builder and great scale modeler has been seriously involved in the hobby for a lifetime. He has built more planes than most anyone else I can think of and is seen here taking a coffee break after a hard day of flying in the arctic winter. Jerry Swanson is as pleasant a person to be around as there is.
Editor’s Note: Removing the plug while it’s still being “heated” strikes me as nearly impossible, since any attachment to the plug, that would be doing the heating, must be removed so that you can have access to remove the plug. The only other way to heat the plug is from the combustion in the engine, so if you are handling the engine, it’s generally a good thing to have stopped it running while you “fool” with it. Special caution must be taken while near fuel sources.

- Some connectors for glow plugs can short circuit and damage batteries, or cause them to explode. Batteries may get hot during the use of a glow plug. This especially applies to homemade or non-standard connectors.

Gregg Hemken, Lee La Valley, Jerry Elert, Pat Galarneault and Dave Norman get “fired up” at the FYAO.

I’m sorry, I can’t remember this Grassfielder’s name, but he has cooked a turkey at least two years in a row. The meat just flew off those bones with all the hungry flyers around. (Geez, I’m...
Check the wings folded behind the cockpit. :-)