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› Saito Engines FA-125A AAC Engine User Manual

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Saito Engines FA-125A AAC Engine User Manual

Model: FA-125A | Brand: Saito Engines

1. INTRODUCTION

The Saito FA-125A AAC engine represents a significant advancement in model engine technology, offering a powerful yet compact solution for a wide range of aircraft. This engine is designed to provide exceptional thrust while maintaining a lighter weight profile compared to its predecessors. Its unique size allows for versatile application, from .90-size sport aerobats to larger 1.20-size sport and IMAC planes.

This manual provides essential information for the safe and effective operation, setup, and maintenance of your Saito FA-125A AAC engine. Please read it thoroughly before attempting to operate the engine.

2. KEY FEATURES

- **Enhanced Power-to-Weight Ratio:** Less weight but more thrust, providing superior performance.
- **Lightweight Design:** Approximately 10 ounces lighter than the FA-120 model, contributing to improved aircraft agility.
- **High RPM Performance:** Capable of turning an APC 16x6 propeller at 9,000 rpm, indicating strong power output.
- **Integrated Muffler:** Features 13mm muffler threads for efficient exhaust management and reduced noise.
- **Compact Size:** Designed to fit into a 1.00-size case, despite its 1.25 cubic inch displacement, allowing for broad compatibility.

3. PRODUCT OVERVIEW

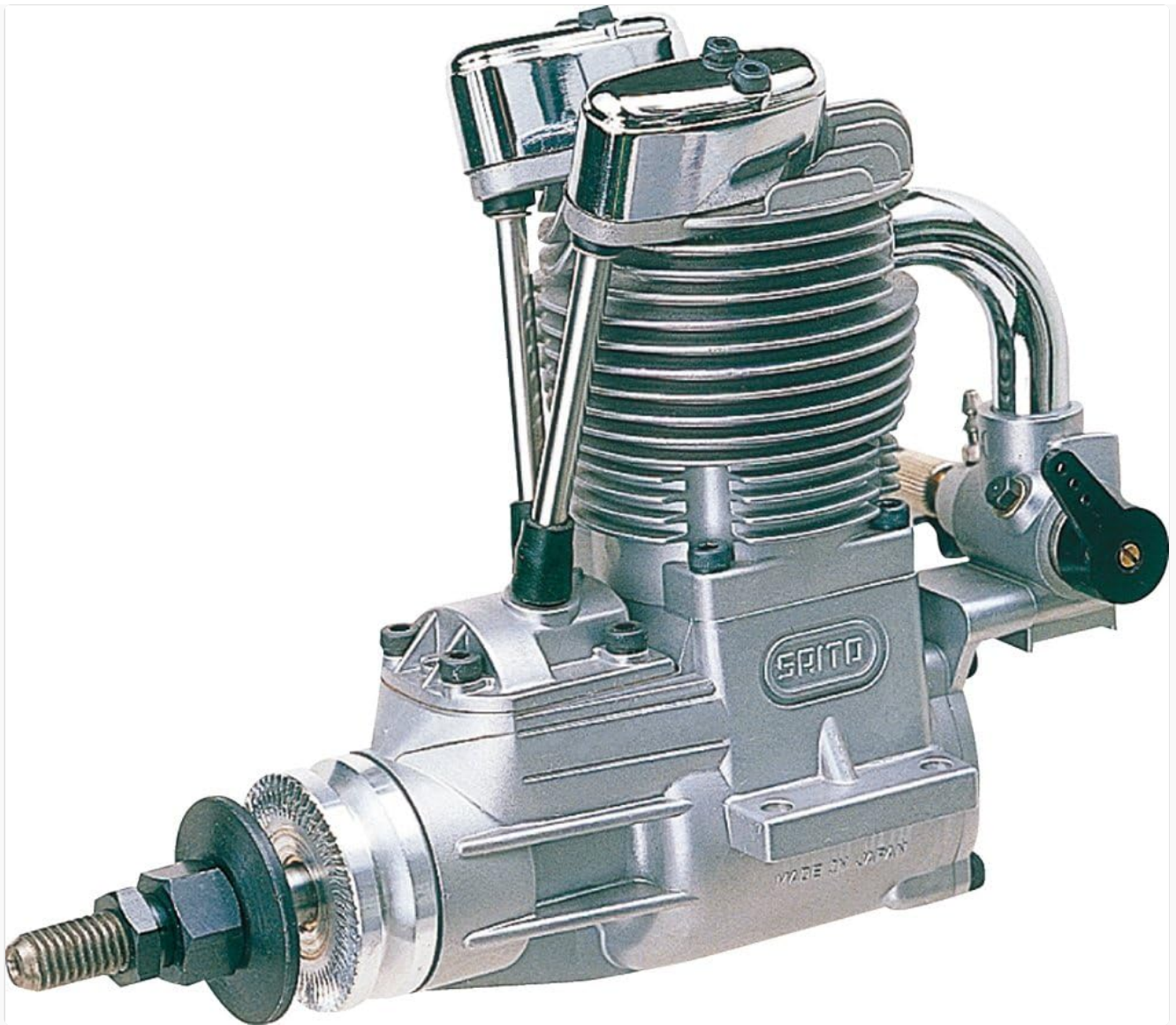


Figure 1: Saito FA-125A AAC Engine. A detailed view of the Saito FA-125A AAC engine, showcasing its compact design, finned cylinder head, and integrated muffler. The engine is silver-colored with chrome accents on the valve covers and exhaust pipe. This image highlights the overall construction and key components of the engine.

4. SETUP AND INSTALLATION

4.1 Unpacking and Inspection

Carefully remove the engine and all accessories from the packaging. Inspect all components for any signs of damage during shipping. If any damage is found, contact your dealer immediately.

4.2 Mounting the Engine

Mount the FA-125A engine securely to the aircraft's engine mount using appropriate hardware. Ensure the mounting bolts are tightened evenly and securely to prevent vibration and potential damage during operation. Verify that there is adequate clearance for the propeller and muffler.

- Use high-quality, vibration-resistant mounting hardware.
- Ensure the engine is aligned correctly with the aircraft's thrust line.
- Check for proper airflow around the engine for cooling.

4.3 Propeller Installation

Select a propeller suitable for your aircraft and the FA-125A engine (e.g., APC 16x6 as recommended). Install the propeller onto the engine shaft, ensuring it is balanced and securely fastened. An unbalanced propeller can cause excessive vibration, leading to engine and airframe damage.

- Always use a propeller balancer.
- Tighten the propeller nut firmly, but do not overtighten.
- Ensure the propeller is installed in the correct direction for thrust.

4.4 Fuel System Connection

Connect the fuel tank to the carburetor and muffler pressure tap (if applicable) using fuel-resistant tubing. Ensure all connections are secure and free of leaks. Use only recommended fuel types for model aircraft engines.

- Use clean fuel and a fuel filter.
- Prime the fuel system before the first start.

4.5 Glow Plug Installation

Install a new, appropriate glow plug into the cylinder head. Do not overtighten the glow plug, as this can damage the cylinder head threads.

5. OPERATING INSTRUCTIONS

5.1 Fuel Requirements

The Saito FA-125A engine is designed to operate on model engine fuel containing a blend of methanol, nitromethane, and oil. Consult your engine's specific requirements for the recommended nitromethane and oil content. Always use fresh, clean fuel.

5.2 Starting the Engine

1. Ensure the aircraft is securely restrained.
2. Open the throttle fully and prime the engine by covering the carburetor intake and flipping the propeller until fuel reaches the carburetor.
3. Close the throttle to a slightly open position (idle setting).
4. Attach the glow plug igniter.
5. Using a starter or by hand-flipping the propeller (with extreme caution and a chicken stick), start the engine.
6. Once started, remove the glow plug igniter.

5.3 Engine Break-in

Proper break-in is crucial for the longevity and performance of your engine. Run the engine with a slightly rich fuel mixture for the first few tanks of fuel. Avoid prolonged full-throttle operation during this period. Refer to the manufacturer's specific break-in recommendations.

5.4 Tuning the Engine

Adjust the high-speed and low-speed needles on the carburetor to achieve optimal performance. Start with the high-speed needle, adjusting for maximum RPM, then slightly richen it for a reliable four-stroke run. Adjust the low-speed needle for a smooth idle and transition to high throttle.

- **High-Speed Needle:** Adjust for peak RPM, then back off 2-4 clicks (richen) for reliability.
- **Low-Speed Needle:** Adjust for smooth idle and transition.

5.5 Shutting Down the Engine

To shut down the engine, close the throttle completely or pinch the fuel line. Never attempt to stop the engine by hand.

6. MAINTENANCE

6.1 After Each Flight Session

- Drain any remaining fuel from the tank and fuel lines.
- Run the engine dry or use an after-run oil to protect internal components from corrosion.
- Clean the exterior of the engine to remove dirt, oil, and fuel residue.
- Inspect the propeller for nicks or cracks and replace if necessary.

6.2 Periodic Maintenance

- Check and clean the glow plug. Replace if the element is damaged or discolored.
- Inspect fuel lines for cracks or hardening and replace as needed.
- Check all mounting bolts for tightness.
- Periodically check valve clearances according to Saito's recommendations (if applicable for this model).

6.3 Storage

For long-term storage, ensure the engine is thoroughly cleaned and lubricated with after-run oil. Store the engine in a clean, dry, and temperature-controlled environment.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Engine won't start	No fuel, faulty glow plug, incorrect needle settings, air leak.	Check fuel supply, replace glow plug, adjust needles, check fuel lines and connections.
Engine runs erratically/poor performance	Incorrect needle settings, old/bad fuel, clogged fuel filter, air leak, worn glow plug.	Adjust needles, use fresh fuel, clean/replace filter, check for leaks, replace glow plug.
Engine overheats	Lean fuel mixture, insufficient cooling, incorrect propeller.	Richen fuel mixture, ensure adequate airflow, use recommended propeller size.
Excessive vibration	Unbalanced propeller, loose engine mount.	Balance propeller, tighten engine mounting bolts.

If you encounter issues not listed here, or if the suggested solutions do not resolve the problem, please contact Saito Engines customer support or a qualified hobby technician.

8. SPECIFICATIONS

Attribute	Detail
Brand	Saito Engines
Model Number	FA-125A (SAIE125A)
Displacement	1.25 cubic inches
Recommended Propeller	APC 16x6
Muffler Threads	13mm
Material	Stainless Steel (components)
Product Dimensions (L x W x H)	22.86 x 18.29 x 9.14 cm (approx. 9 x 7.2 x 3.6 inches)
Item Weight	454 g (approx. 16 oz)
Manufacturer	Horizon Hobby

9. WARRANTY AND SUPPORT

For specific warranty information regarding your Saito FA-125A AAC engine, please refer to the documentation included with your purchase or visit the official Saito Engines or Horizon Hobby website. Warranty terms and conditions may vary by region and retailer.

For technical support, spare parts, or service inquiries, please contact:

- **Saito Engines Official Website:** www.saito-mfg.com (Note: This is a placeholder URL, please verify the actual official website)
- **Horizon Hobby Support:** As the manufacturer, Horizon Hobby provides support for Saito products. Visit their official website for contact information and support resources. www.horizonhobby.com/support

Always provide your engine's model number (FA-125A or SAIE125A) and serial number (if applicable) when contacting support.

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Always operate model engines responsibly and in accordance with local regulations and safety guidelines.