NW-44 MULTI-FUEL ENGINE

Northwest UAV

A GLOBAL COMPANY

Where Precision and Reliability Soar!

The Extra Features Built Into The NW-44 Multi-Fuel Engine, Will Have You Flying Faster and Quieter At Any Altitude.

- Heavy-Fuel/Gasoline
- Fuel Injection
- Less Drag = Increased Endurance
- Made in the USA

AVAILABLE NOW!

REV D

AS9100
Quality Management Certified

ISO9001 CERTIFIED

APPROVED FOR EXPORT
NORTHWEST UAV: Turnkey Solutions for the UAS Industry

Northwest UAV is America’s industry leader in UAS Propulsion System Manufacturing, providing quality, made in the USA products to clients around the globe. At NWUAV we understand UAS requirements inside and out, incorporating a total lifecycle approach that provides top quality, high-performance solutions to enhance any system platform. Our onsite Engineering Group is dedicated to our company mission of delivering reliable, cost effective UAS systems, and their experience is proven. When you need to get in the air and stay there, you need Northwest UAV.

NW-44 MULTI-FUEL

GENERATOR CONTROL UNIT (GCU)
• 280-Watts
• Outputs: 6V, 12V, 21V or 28V
• Trimmable to your application

BATTERY BACKUP MODULE (BBM)
• Full power system management
• Switches between generator shore power and battery
• Uninterrupted backup battery power

FUEL DELIVERY SYSTEM (FDS)
• Pressurized fuel for EFI, filtered with acrobatic pickup
• Regulated fuel pressure
• Pressure and Bingo level sensors

ENGINE CONTROL UNIT (ECU)
• Purpose built for UAVs
• Highly versatile baseline, customizable

ECU WIRE HARNESS
• Mil SPEC connectors
• EMI/EMC protected

Northwest UAV

All products designed and manufactured to AS9100/ISO9001 standards.
The NW-44 EFI is one of the most configurable small UAV engines on the market today. Purpose-built to handle aircraft from approximately 18 to 34 kg* (40-75 lbs.) depending on mission requirements. The NW-44 EFI core and sub-system components mitigate ITAR and end of life concerns and are primed to meet pending FAA Certification requirements.

*Engine application is dependent on airframe factors including: Aerodynamics, propeller, and operational concept. Please contact NWUAV for guidance.
NWUAV purpose-built NW-44 EFI multi-fuel (heavy-fuel/gas) engine is designed, developed and built for unmanned aircraft systems, low altitude, long endurance aircraft and portable power generation.

The NW-44 EFI is one of the most configurable small UAV engines on the market today. Purpose-built to handle aircraft from 18 to 34 kg* (40 to 75 lbs) depending on mission requirements.

Designed from the ground up for unmanned applications, the NW-44 is scalable for use in various classes of aircraft with multiple fuel types and incorporates features not available with hobby based engine designs.

Advanced materials incorporate characteristics needed for lighter weight and better performing engines when utilizing heavy-fuels. The specialized Fuel Injection System allows the NW-44 to dramatically enhance engine system reliability, maintainability, and performance while reducing weight.

The NW-44 core and subsystem components alleviate ITAR and end of life concerns and are primed to meet pending STANAG 4671 and FAA Certification requirements.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>NW-44 EFI</th>
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<tbody>
<tr>
<td><strong>Total Weight</strong>&lt;sup&gt;*&lt;/sup&gt; (see below)</td>
<td>4344 ± 200 grams</td>
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<tr>
<td>Displacement</td>
<td>43.6 cc</td>
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<tr>
<td>Bore</td>
<td>38.99 mm</td>
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<tr>
<td>Stroke</td>
<td>36.53 mm</td>
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<tr>
<td><strong>Maximum Continuous Speed</strong></td>
<td>7500 rpm</td>
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<tr>
<td><strong>Power Rating at 7250 RPM</strong></td>
<td>3.5 hp</td>
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<tr>
<td><strong>BSFC at Cruise 5000 RPM at Sea Level</strong></td>
<td>395-456 g/kWh, 0.65-0.75 lb/hp-hr</td>
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<tr>
<td>Ignition</td>
<td>Twin 25kv Capacitor Discharge Ignition (CDI)</td>
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<tr>
<td>Cooling</td>
<td>Air with Active Cylinder Head Temperature (Acht) Control</td>
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<tr>
<td><strong>Generator Regulator</strong></td>
<td>6/12/21 or 28 VDC, 280-Watts to AV at typical flight conditions</td>
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<tr>
<td>Generator</td>
<td>On-Shaft Permanent Magnet Alternator</td>
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<tr>
<td>Fuel System</td>
<td>Full Authority Digital Engine Controller with Electronic Fuel Injection</td>
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<tr>
<td><strong>Fuel Type</strong></td>
<td>Non-ethanol 93-100 octane gasoline (R+M)/2, Jet-A, JP-5, JP-8, TS-1</td>
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<tr>
<td><strong>Fuel to Oil Mixture</strong></td>
<td>32:1 ratio by volume</td>
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<tr>
<td>Preferred Oil Type</td>
<td>Bell-Ray H1R</td>
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<tr>
<td><strong>ECU Data Storage</strong></td>
<td>1,000 hours at 1Hz Recording Rate</td>
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<tr>
<td><strong>TBO (Estimate)</strong></td>
<td>400-500 hours</td>
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**NOTES:** Actual performance will vary depending on PMU configuration, application, propeller, fuel, oil, environmental conditions and type of operation.

* Total weight with propeller, cowling and interface harness.

**ADDITIONAL FEATURES**

- Custom 280-Watt direct drive generator with a 6/12/21 or 28 volt Generator Control Unit (GCU); ~280-Watts available, 30-Watts for engine, 250-Watt for payload and aircraft.
- **Multiple generator output configurations available to fit customer horsepower, electrical output and overall weight requirements**
- CAN or Serial Bus communication
- Conformal aerodynamic tuned muffler; lightweight and quiet
- Interfaces with popular autopilots
- Includes: Fuel injection, barometric pressure, cylinder head and intake air temperature sensors, and heavy-fuel cold start provisions
- Conformal design mitigates unwanted parasitic drag, which increases net fuel-efficiency
- MANUFACTURED IN THE USA

Engine application is dependent on airframe factors including: Aerodynamics, propeller, and operational concept. Please contact NWUAV for guidance.

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