Northwest UAV
A GLOBAL COMPANY

PROPULSION & PAYLOAD
INTEGRATION SPECIALISTS

NW-88 HEAVY-FUEL ENGINE

Purpose-Built to Accommodate Aircraft in the 90 to 165 lb. Vehicle Class

- Heavy-Fuel, Two-Stroke with Fuel Injection
- Less Drag = More Endurance
- Made in the USA

Where Precision and Reliability Soar!

From single components to entire propulsion systems – Our main focus is in engines, modular components and support solutions for any UAV or unmanned system.

NWUAV purpose-built NW-88 multi-fuel engine is designed, developed and built for unmanned aircraft systems with larger payload requirements, low altitude, long endurance aircraft and portable power generation.

SPECIFICATIONS

NW-88 Heavy-Fuel Engine	
Total Weight	8800 grams* (see note)
Displacement	88 cc
Bore	39 mm
Stroke	37 mm
Maximum Continuous Speed	7250 rpm
Power Rating at 7250 RPM	7 hp
Maximum Power Rating at ~7600 RPM	~8.3 hp
BSFC at Cruise 5000 RPM at Sea Level	395-456 g/kWh 0.65-0.75 lb/hph
Ignition	Twin 25kv Capacitor Discharge Ignition (CDI); per cylinder
Cooling	Air with Active Cylinder Head Temperature (ACHT) Control
Generator Regulator	12/28 VDC (tunable), 500-Watts Continuous at all Typical Flight Modes
Generator	On-Shaft Permanent Magnet Alternator
Fuel System	Full Authority Digital Engine Controller with Electronic Fuel Injection
Fuel Type	Non-ethanol 93-100 octane gasoline (R+M)/2, Jet-A1, JP-5, JP-8, TS-1, F35
Fuel to Oil Mixture	32:1
Preferred Oil Type	Bel-Ray H1R
ECU Data Storage	1,000 hours at 1Hz Recording Rate
TBO (Estimate)	400 hours

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, Ignition modules (4 each), generator control unit, engine control unit, engine vibration isolation, and bulkhead mount.***

The NW-88 is one of the most configurable UAV engines on the market today. Purpose-built to handle aircraft from 40.82 to 74.84 kg* (90 to 165 lbs) depending on mission requirements.

This design is based on the combat-proven NW-44 and built specifically for unmanned applications, the NW-88 is scalable for use in various classes of aircraft with multiple fuel and incorporates features for larger payloads, operational radius and for enhanced climb and cruise speeds.

Advanced materials incorporate characteristics needed for lighter weight and better performing engines when utilizing heavy-fuels. The specialized fuel injection system allows the NW-88 to dramatically enhance engine system reliability, maintainability, and performance while reducing weight.

The NW-88 core and subsystem components alleviate ITAR and end of life concerns and are primed to meet pending STANAG 4671 and FAA Certification requirements.

REV D AS9100 Quality Management Certified ISO9001 CERTIFIED

Additional Features

- Twin-cylinder engine
- Dual ignition (per cylinder)
- Dual piston rings
- Broad weather envelope (-20° C to +55° C)
- Automatic altitude compensation
- Custom 500 watt direct drive generator with a 12/28 volt Generator Control Unit (GCU)
- ***Multiple generator output configurations available to fit customer horsepower, electrical output and overall weight requirements***
- CAN communication
- Lightweight quiet acoustic muffler
- Interfaces with popular autopilots
- Includes: Fuel injection, barometric pressure, cylinder head and intake air temperature wsensors, and heavy-fuel cold start provisions
- ***Conformal design mitigates unwanted parasitic drag, which increases net fuel-efficiency***
- Manufactured entirely in the USA

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

Northwest UAV
A GLOBAL COMPANY

11160 SW Durham Lane, Suite 1 | McMinnville, OR 97128
Office: 503.434.6845 | Fax: 503.217.6080 | **www.nwuav.com**

AS9100