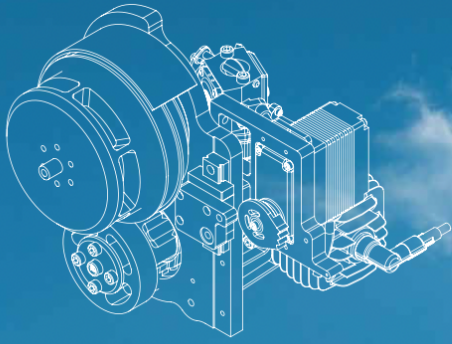




LOWENTALHYBRID



LH-03

LOWENTAL UAV HYBRID SYSTEM

The Lowental Parallel Hybrid System is an advanced parallel hybrid propulsion solution, comprised of an electric and internal combustion engine. It delivers both positive and unique features into one powerful, efficient and safe power plant with long endurance capabilities.

ADVANTAGES

The Best of both Worlds – a combination of an Electrical motor and ICE (Internal Combustion Engine).

The electrical motor enables high output power in low geometrical signature, which functions as follows:

- Propulsion source for take-off and rapid climbing.
- Starter for ICE.
- Alternator during cruise.

The internal Combustion Engine functions as:

- Supplies the power for long distance cruising.
- Supplies the power to the motor, generating electrical power to the UAV avionics and battery charger.

MAIN FEATURES

- Enables a lighter UAV battery package.
- Mission time is multiplied by three!
- Operator can switch between electric and ICE modes.
- The system enables low acoustic signature above target.
- Redundancy for ICE (electric motor operation).
- System allows the starting of the ICE in the air.
- Safer and more reliable UAVs propulsion system.

The unique Lowental Parallel Hybrid System allows the UAV designer to enjoy the best of both worlds: that is, the benefit of the ICE, low fuel consumption during long distance cruising and the electrical motor power, which supplies the energy needed for take off and rapid climbing.



INCREASE PAYLOAD
CAPABILITIES



INCREASE
ENDURANCE



POWER MANAGEMENT
AND RELIABILITY
smooth transition between
battery and fuel power



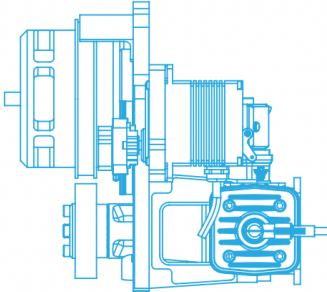
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PERFORMANCE COMPARISON

Typical tactic UAV mission time comparison between electric motor vs parallel hybrid system

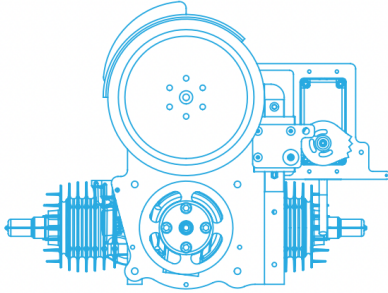
	ICE Platform 50-100 kg Platform	LH-03 50-100 kg Platform
ENDURANCE TIME	20 Hours	30 Hours
PAYLOAD	12kg	12kg
ELECTRICAL POWER CRUISE POWER (ICE)	- 5000 W	10000 W 4000 W

LOWENTAL HYBRID LH-01 SPECIFICATIONS

Usage	Parallel hybrid drive system for fixed wing/VTOL	
Cruising Output Power	3500 Watt	
Maximum Gasoline Output Power	4500 Watt	
Maximum Electric Output Power	12000 Watt	
Nominal Charging Power Output	1000 Watt	
Fuel Consumption at 300[Watt]	1600 gr/Hr	
Starting Method	Automatic	
Fuel Consumption Rate	0.38-0.45 Kg/kW-h (rai	
Engine Type	Air-cooled, 2-stroke, twin cylinder "boxer" engine	
Fuel Delivery	EFI	

Total Weight (inc. electronics, ESC, fuel system and engine mount)	5 KG
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OPERATING ENVIRONMENT

Atmospheric Temperature	-20 ~ 50°C	
Altitude	0 ~ 3,000m	
Fuel Type	Gasoline / Heavy fuel	
Life Time	Approx 500 hours (overhauling every 150 hour operation)	
Recommended Propeller	29"X10	