UAS Engine System
Antivibration System
Quick Release System
Power Management System

TACTICAL UAS
MANNED ISR

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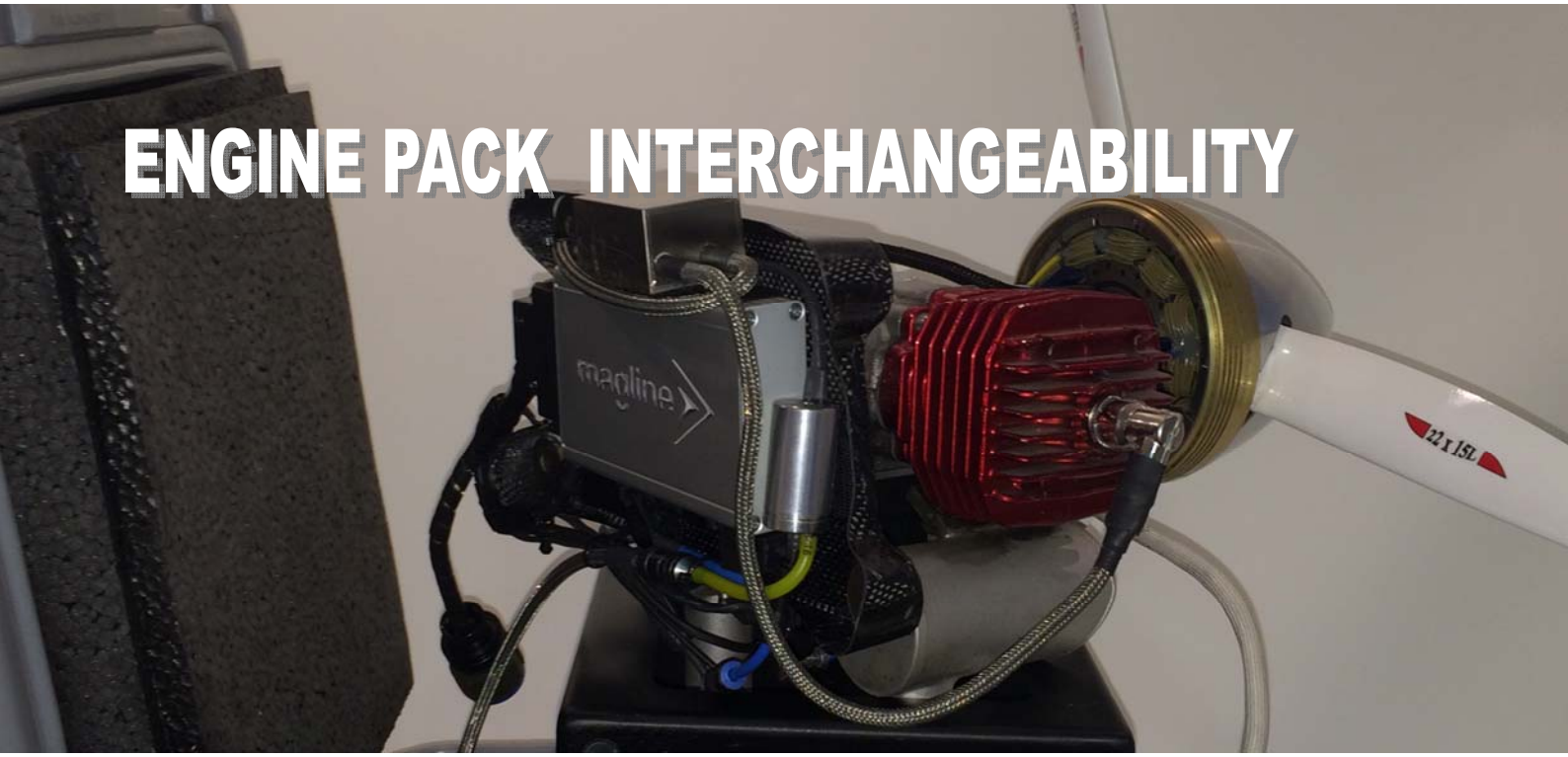


ENGINE PACK INTERCHANGEABILITY

Electronic Fuel & Power Management

Electronic Inginition uses robust hardware and software in conjuction with state of the art electronic injection equipment: Brushless rotary uel pump, MIL conectors, heat sink protections..

Direct shaft mounted 3 phase Generator, provides seamless engine start and 500W power generation for 28Vdc, 12Vdc and 5Vdc for the different types of systems in UAS.

LiFe battery complements an electric package that provides protection to all electronic systems for a safe and reliable operation.

Engine block system

Most common engine blocks, from 3W, DA, or even certified Meggitt engines are supported. Please contact for block and displacement options.

Mapping for precise engine injection ensures smooth running, reliable operations and longer TBOs.

Engine information parameters can be accessible via CAN bus. Status of the engine can be monitored along with precise fuel consumption for accurate fuel control.

ENGINE PACK INTERCHANGEABILITY

Mechanical Decsription

Lighweight quick release connectors for vibration damping, Air, Fuel and Electrics management provide an easy way to interchane engine blocks rapidly, ensuring continuous UAS operations.

Engine blocks use top quality components and high grade materials along with MIL standardand hardware for safe and reliablel operations.

Carbon fiber, and aerospace grade aluminium materials provide high strength and also light weight structures.

Flexible operation

Instalation is made via nylon blocks which mount rigid to the engine bulkhead. A carbon fiber subframe provides easy mount and protection for electronics, which are also mechanically isolated from engine vibration by means of 4 shock absorbers, tuneable for perfect damping at any operating frequencies.

Engine pack overhaul program allows for customer to receive a fresh engine once TBO hours have been reached. Moving parts and special components are replaced while engine block and core electronics remain in place after a complete health check has been performed for an extended & cost effective TBO.

Magline delivers engine packs to any part of the world. Customer can mount them and start up in barely 45 seconds.

Interface & Comms

Engine packages can be adapted to almost any aircraft due to the simplicity of the interface conception.

Can Bus device allows for comunication with CAN protocol. Compatible with any autopilot systems.

28/12/5 Vdc out at 500W for payload operation. Safe LiFe battery ensures ease of start up as well as electronics protection.

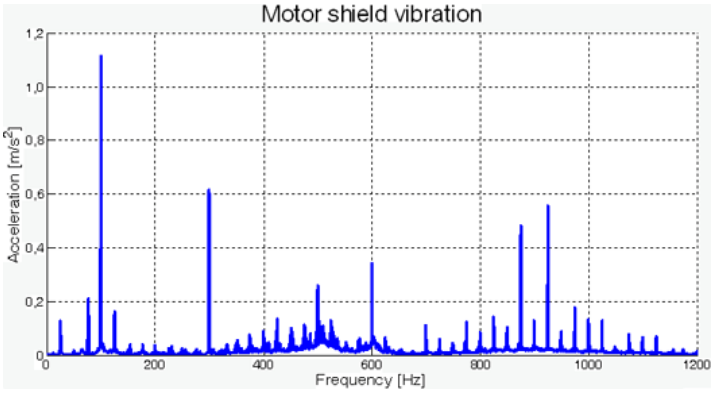
ANTIVIBRATION SYSTEM SPECIFICATION

Antivibration system

Light and robust 7075 T-6 Aluminum CNC machined metal bushings to provide beads for elastomer dampers to the exact frequency damping spec.

Engine bulkhead made out of light weight carbon fiber, provides easy mount for electronics equipment which is isolated from direct engine heat transfer.

Special made quick release fasteners allow for easy hand fastening of the engine block, which is rigid mount to the fuselage bulkhead.



Engine vibration specturm is characterized to dimension dampers in order to filter out high frequency vibration shock typical of the two stroke engines that may affect electronics, payload and structure elements.

Elastomeric isolators are made out of soft rubber compound, and accesible for easy replacement.

Nylon machined block mounts allow direct fit for hand featener to be installed up to the required torque spec.

Benefits

Structure is rigid mounted although engine floats inside a custom rubber suspension system which is not subjected to operation installation mistakes.

Engine provides characteristic vibration spectrum that are filetered out for longer components durability and electronics correct behavious.

All comonents are easily replaceable with spares in case that abnormal wear would be apparent.

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ENGINE QUICK RELEASE SYSTEM

Quick Release System

Light and robust 7075 T-6 Aluminum CNC machined components.

Hand fastening for the complete engine package installation, for a no tool environment during on stage operations.

Easy access to every component for ease of depot-level maintenance operations

Quick connectors allow for Air box (carbon fiber) to be replaceable for unrestricted engine air intake.

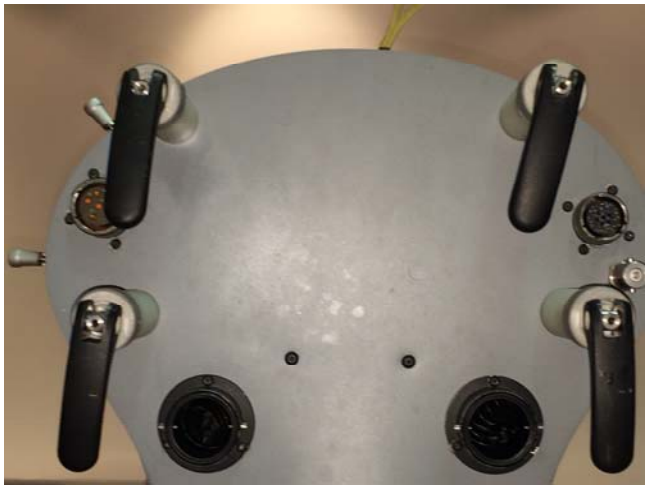
Fuel quick connectors are no-spill for safety and cleaningless during engine block replacement.

Keyed MIL connectors and wiring provide safe electrical connections, which are operator proof.

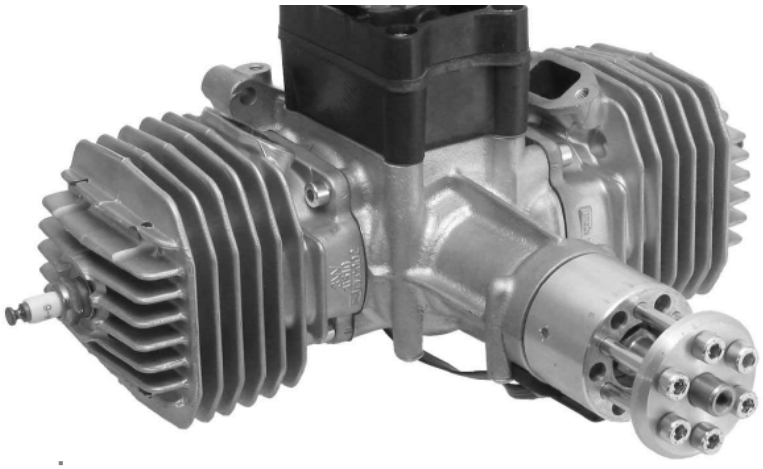
Engine package is easily replaceable in barely 45 seconds from engine shut down to replacement engine start up.

UAS system is almost operative under any circumstance in a matter of minutes due to the engine readiness at maintenance centers..

Magline overhaul program provide fresh engines under almost any circumstances.



ENGINE PACK SYSTEM SPECIFICATION



ECU / EFIS up to 500cc engines
Interfaces with Piccolo CAN bus Engine Monitor

Engine Pack System
Structure
3W / DA / Meggit engine blocks
Carbon fiber engine bulkhead
High Tensile Strength Carbon Fiber / Aluminium materials
Quick release engine fasteners
Mechanical
Displacements from 28 up to 360cc
Brushless / maintenance free fuel pump
Customized Vibration Dampers
Muffler or direct exhaust
Electrical
Power generator for 28Vdc, 12Vdc and 5 Vdc @ 500W available
Engine starter
General speccs
MIL Specs connectors, and wiring
Extended MTBo for electronics and block
Air/Electric/Mechanical quick connectors

General dimensions
Depends up on engine block dimensions
Special features
45 seconds for complete engine pack replacement to start-up.
Magline overhaul program delivers fresh overhauled engines
Special cases provide protection when not in use
Diagnostics sw tools allows for specialist engine control
Led lights provide quick reference for in-the-fiel diagnosis
Extra power available for 3 phase anti-icing systems
Quick parameter monitoring via CAN bus data exchange

For additional information
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Magline is UTC Aerospace Systems distributor
for ISR systems (Cloud Cap Technologies) in EU
Magline is Cloud Cap Technolgies Center in Europe

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POWER MANAGEMENT & QUICK RELEASE SYSTEM

Quick Release System
Materials
7075 T-6 Aluminum construction
Aerospace grade materials & manufacturing processes
CNC machined componnets
Mechanical
Fuel:Spill free connectors
Electrical: Keyed MIL connectors
Air: Anodyced Air intake connectors
Structure: Hand fastening bolts
Operational features
45 engine pack replacement time for average qualified operators

General dimensions
Bulkhead sized according to the engine specs
4x fasteners for up to 360cc engines
Special features
Carbon fiber non restrictive Air Box
Metallic fuel lines
Protected and shielded wiring looms
Fail proof connectors

Electrical System Specs
Power Generated
28Vdc 12 Vdc and 5 Vdc (independent circuits)
Voltage regulator
500W generated in 3 Phase Alternator
Solid State power electronics
Electronic ignition
Mechanical
Brushless 3 phase Alternator
Electronic Injector
Brushless pump to max 3 Bar
Maintenance free system

General dimensions
Regulator (crackshaft mounted) D120mm, 500W version
Fuel injection and electronics box 433x302x162mm

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