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AUTHORIZED DISTRIBUTOR

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Engine
 for Ultralight
 and Amateur
 Built Aircraft

VM 133M



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VM 133M

Light aircraft engine for Microlight and light (experimental) sport aircraft. The Verner VM 133M engine is a new model developed by Verner Motor Company in the Czech Republic, on the basis of the experience gained from the production of the first model, Verner 1400.

The engine is supplied with carburetors, air filters, oil hoses and clamp, voltage regulator/rectifier and low battery charge warning light, low oil pressure sensor and warning light, and basic tools for ordinary maintenance.

To operate the engine the following minimum instruments and components are needed. These are not normally supplied with the engine, only on request: oil cooler, exhaust pipes with silencer, engine rubber shock mounts, electric tachometer, dual CHT gauge with sensors, and oil temperature gauge with sensor.



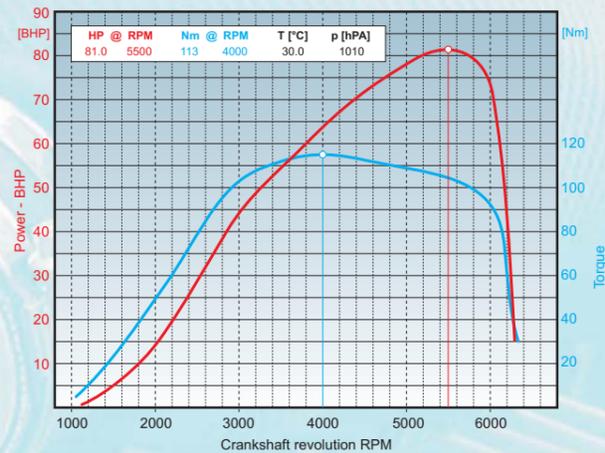
Main features of this engine:

- ▶ Four stroke piston engine
- ▶ 2 cylinder horizontal opposed Boxer
- ▶ Chain driven OHC operated four valves per cylinder
- ▶ Air cooled
- ▶ Fed by 2 carburetors (motor cycle model) Dellorto PHBE 36 mm diameter
- ▶ Wet lubrication system is sump type with oil pump and oil filter automotive type. An oil cooler is normally installed
- ▶ Engine case cast in magnesium alloy

- ▶ Reduction gear box with teathed steel gears oiled from the motor oil
- ▶ A torsional vibration absorber (clutch type) is mounted in the reduction gear box
- ▶ The propeller's shaft is bored out alongside (for e.g. To permit the use of an in flight variable pitch prop.)
- ▶ Electronic ignition system CDI breakerless double type (with 2 spark plugs per cylinder
- ▶ Variable ignition timing driven from an ECU, fed from a magneto-alternator with battery charging system 12 V/160 W
- ▶ Electric starter
- ▶ Mechanical driven fuel pump
- ▶ Crank-shaft and con-rods mounted on sliding bearings (automotive type, VW, Mercedes)
- ▶ Light dry weight only 60 kg (without exhaust pipe and oil cooler)
- ▶ TBO 1000 hours

Each engine is tested and tuned at the factory during 2 hours total running time, therefore no "breaking in" period is required. The manufacturer reserves the right to make changes and improvements to the design of the engine at any time and without prior notice. Check for the continued validity of the information available from this brochure before placing your order for an engine.

Performance Characteristics:



Technical Specifications:

Displacement	1330 cc / 85.19 cubic inch
Bore	97 mm / 3.81 inch
Stroke	90 mm / 3.54 in
Compression ratio	1 : 9.5
Maximum power	81 BHP (61 kW) @ 5500 RPM (5 minutes max.)
Max. continuous power	72 BHP (52 kW) @ 4500 RPM
Torque	115 Nm (85 ft/lb) @ 4000 RPM
Fuel spec. consumption	210 g/HP/hour (285g/kWh) at maximal continuous power (0.47 lb/hph)
Propeller rotation	CCW, viewed from the front (tractor propeller) - like Rotax 912
Weight	dry weight: 60 kg, oil cooler: 1 kg, exhaust pipe: ~4 kg
Ignition timing	5° BTDC up to 2500 RPM, after, electronically variable
Spark plugs	NGK DCPR9E R diameter 12 mm
Spark plug gap	0.4 mm (0.016 in)
Electric starter	12 V/1000 W
Generator (Alternator)	12 V/160 W (13 Amp)
Lubrication	semi-synthetic motorcycle oil SAE 15W-50, API SH-CF (oil capacity 2.5 - 3 liters) (we use DENICOL Pro 2000 racing motorcycle oil)
Fuel	aviation petrol 100 LL AvGas or motor petrol, octane number 93 or more
Fuel pump	Pierburg 7.20971.63
Carburetors	2 x Dellorto PHBE 36 - Verner setting
Reduction drive	1 : 2 gear box, lubricated with motor oil
Propeller hub	Ø75 x 6 x M8 mm tapped holes and Rotax standard on request
Recommended TBO	1000 hours

Main Dimensions:

