# DLE111

# Users Manual

## SAFETY NOTICE

**This engine is not toy. For your own safety, please read the manual carefully before operation. Never allow children under the age of 18 to operate this engine without supervision. You are responsible for the safe operation of this engine.**

Before every use, check the engine assembly, propeller and airframe carefully for loose screws and nuts. Loctite 242 Blue (or similar) is strongly recommended on all the screws.

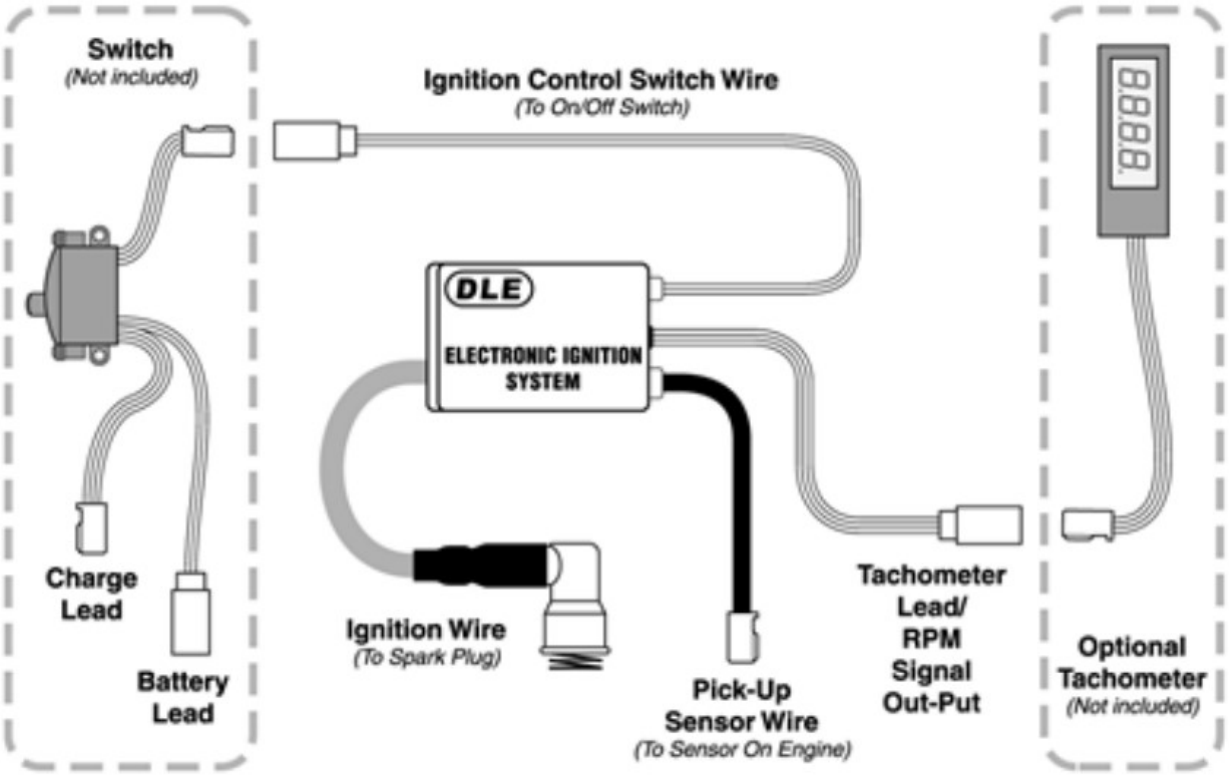
**ENGINE MOUNTING**

During the break-in process the engine must be installed in an environment where vibration can be absorbed i.e. in the model or with soft mount if bench running. Hard mounting to a bench without adequate vibration damping may cause vibration damage to internal parts and shorten the life of the engine. The best way for break-in process is mount the engine in the model.

Always stand clear of and behind the propeller; never allow anyone including yourself, to be in front of or to the sides of the propeller when starting or running the engine. Anyone near the engine should wear protective eyewear. **NEVER WEAR LOOSE CLOTHING** near the engine or propeller.

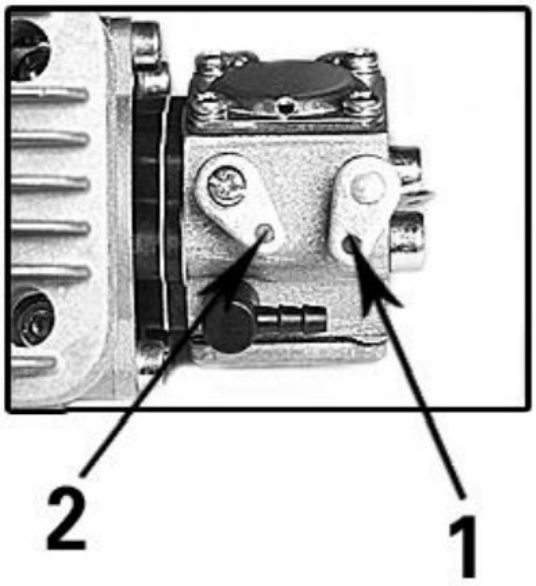
**SPECIFICATIONS**

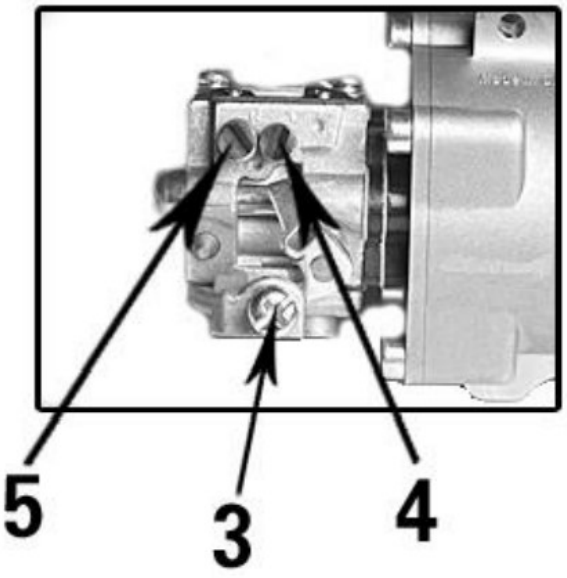
- 11.2HP/7500rpm
- Idle Speed: 1400 rpm/min.
- Static Thrust 25.5Kg / 100 meters Altitude
- Static Thrust 22.3Kg / 1800 meters Altitude
- Recommended propeller: 27x10 ; 26x12 ; 28x12 ; 28x10
- Sparking plug：NGK CM6
- Displacement : 111.2cm3
- Bore and Stroke: 45mmx35mm
- Compression Ratio: 7.6:1
- Recommended Oil Ratio : 30:1
- Weight: Main engine - 2370g Exhaust pipe - 280g Ignition equipment - 190g
- Ignition voltage 4.8V-14V



**ENGINE ADJUSTMENT**

Every engine has been adjusted to average mixture settings which will most likely allow the engine to start and run in most locations. However, as altitudes and barometric pressures vary by location, it is very likely that the carburetor mixture settings will need to be adjusted to obtain optimum performance.




**(1) Choke Lever** **(2) Throttle Lever** **(3) Idle Speed Adjustment Screw**

**(4) Low Speed Mixture Adjustment Screw** **(5) High Speed Mixture Adjustment Screw**

**ADJUSTMENT:** A general starting point is **1.25 turns out for the low speed needle (4)**, and **1.5 turns out for the high speed needle (5)**.

**Low Speed Adjustment** Adjust the Low needle until you achieve a smooth idle and a reliable transition to high throttle. If the engine dies when the throttle is advanced, the mixture is likely too lean. If the engine stumbles when the throttle is advanced, the mixture is likely too rich.

**High Speed Adjustment** The High Speed needle adjusts the mid and high RPM mixture setting. Best practice is to set the high speed needle to achieve maximum RPM and then open an 1/8 of a turn to allow for altitude. If ever the engine slows or stops while at full throttle, the high speed mixture is most likely too lean. In this situation open the High Speed Screw 1/8 to 1/4 of a turn.

**Caution: Don't be tempted to run an overly rich mixture. A too rich mixture will only result in poor engine performance (engine stopping or spluttering when accelerating or deaccelerating), pre-mature carbon buildup, a fouled plug and excessive exhaust residue. However, a lean mixture will also damage the cylinder and piston. A lean run engine is not covered under warranty.**

**During break in and after few runs at full throttle we suggest you unscrew and check the spark plug, it appears to be a slight yellow colour if mixture had been set properly.**

**GENERAL ENGINE OPERATION**

**Fuel—**Please **use non Ethanol 92 or 95 Octane fuel** with an **oil ratio of 30:1** for general use. 40:1 may be used once the engine is run in and if you a re using a high quality fully synthetic oil. **Do not use different types or brands of engine oil.** Doing so may cause carburetor fouling. We recommend 30:1 full synthetic for break in and. After the engine has been run for a period of 2 to 3 hours you can decrease oil to 40:1 full synthetic oil. For prolonged life we do recommend 30:1.

**Breaking-in** - Start the engine and (if necessary) adjust the idle mixture (low speed mixture screw). Idle until the engine warms and slowly increase the RPM. DON'T be tempted to run at full throttle for the first tank of fuel. Run at short bursts of 1 or 2 seconds at up to 4500RPM and back to mid throttle then to idle. Continue with this process for 2 hours while gradually increasing the upper RPM and duration of high RPM. If the engine sags in RPM when run at high RPM throttle back immediately. Stop the engine and adjust the high speed mixture screw 1/8 of a turn out. Restart and retest the engine.

**Low RPM running**- don't be tempted to let the engine run at low speed for an excessive amount of time as this may create carbon build up on the spark plug.

**Fuel Line–** Periodically (or if running become erratic) check the fuel line for possible pin holes or air leaks.

**NOTICE:** The carburetor fuel screen should be cleaned periodically. Carefully remove the pump cover (inlet side of the carburetor), gasket and pump membrane. The screen will be visible and can be cleaned

**WARRANTY INFORMATION**

All the DLE engines enjoy one year parts and labour warranty when run as per factory instructions, used with specified propellers, correct lubricants and lubricant ratios.

Your new DL engine number and purchase date will be recorded for warranty purposes. Please also retain your purchase invoice as additional warranty proof.

**PLEASE NOTE: The following uses may/will damage the engine and are not covered by warranty.**

* Running a DL Engine without oil or too little oil.
* Running the engine with incorrect sized propeller. Oversized propellers can increase stress and wear on internal components and give poorer torque and thrust performance.
* Undersized propellers may cause too high RPM and over stress the engine.
* Running the engine without adequate cooling may cause overheat damage. Please ensure the engine has **adequate ducting** to force air over the cylinder cooling fins with a minimum 1:3 cooling air Inlet to outlet ratio recommended. Additional venturi fins on the air outlet will assist to draw air.

**Please Note: Simply mounting an engine in the engine cowl without proper ducting is considered inadequate cooling.**

# Contact Details

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