PARRA 1,5cm3 DIESEL & Glow

OPERATING INSTRUCTIONS

** Displacement 1,49 cc(.09pi) *D/S 13x12 mm *Weight 90 gr (ver.2)*

The new *PARRA- WASP 1.5 diesel* engine was designed for all aeromodellers who love diesel engines and need a modern quality engine for use in competition and sport flying. It fills the gap left by legendary diesel engines now out of production, but incorporates modern design elements and delivers high performance. The *PARRA's* initial design has been further developed over one year, with extensive testing by the best racing and combat specialists. The *WASP 1.5* is made from the finest materials, with precision fits and tolerances made possible by modern machinery and expert workmanship.

A wide range of uses is accommodated by the 4 versions (profile models);
AAC-R.- with 30º down exhaust. Chrome plated aluminium sleeve & aluminium piston with high silicon content.
AAC-C- with 30º up exhaust. Chrome plated aluminium sleeve & aluminium piston with high silicon content.
ABC-R- with 30º down exhaust. Chrome plated brass sleeve & aluminium piston with high silicon content.
ABC-C.- with 30º up exhaust. Chrome plated brass sleeve & aluminium piston with high silicon content.

Each engine can be supplied with two types of carburettor inserts allowing optimisation of fuel suction (for aerobatics and combat) or power (for racing). Both versions have modern Schnuerle porting, latest technology two-piece "push-pull" cylinder head/contra-piston assembly and a balanced crankshaft riding in two ball bearings. The prop driver design avoids snagging the opponent's combat streamer cord and minimises ingress of dirt. Careful design has resulted in a rugged long-lasting engine of low weight (AAC version is 90 gr.) that is easy to start and operate.

RUNNING IN
The engine is accurately fitted and adjusted at the factory, so it requires a relatively short running-in period of about 3 to 5 runs of 5 minutes each, allowing it to cool down between runs. Opening the needle valve to 3 turns will allow starting and running during this period at about 60% of peak power. You may see some burnt colour and grey particles in the exhaust oil during the first few runs, indicating that the moving parts are bedding in. The exhaust colour should clean up to a clear yellow colour (a bit like honey), which indicates correct adjustment for good operation. After the fifth run, you can increase engine speed to approximately 95% of peak and it should hold steady RPM. Maintain this slightly under-compressed and rich setting for the first 10 flights.
For Glow AAC & ABC head conversions, add to the head, one extra shim for running-in period. Remove shims depending upon usage requirements and how engine is performing. Nelson head type is more effective than Standard glow head.

FIRST FLIGHTS
It is very important to not overwork or force the engine during initial flights. Set compression to avoid darkened exhaust oil colour. Never black! Darkened exhaust oil indicates over-compressed condition, which generates excess heat and load on the parts. Remember also that if you close the needle in excess, you also reduce the vital oil supply to the engine. Don't hurry to produce high speed performance too early with your engine. Your care and patience now will be rewarded by a long operating life and top engine performance.

FUEL
The fuel should contain not less than 18% CASTOR OIL. The recommended mix for diesel is: 18% Castor Oil, 35% Diethyl Ether, 47 Kerosene and add 1.5% Ethyl Nitrate or DII.
The recommended mix for glow is 80% methanol and 20% Castor Oil. Nitromethane is not necesary but it can be used 5 – 10 %.
Remember that engine life is maximised with adequate lubrication, never use less than 15% of Castor oil.

RECOMMENDED PROPELLERS
The *PARRA-WASP 1.5 diesel's* flexibility allows it to satisfactorily operate on a wide range of propellers. Some experimentation will give optimum performance for your application. The propeller should be the most rigid possible (filled nylon or wood) and balanced in order to prevent vibration. We recommend 7x4 for running in period. The following propellers are a good starting point:
Combat – 6,5x5 – 6x4 APC & 6x5 – 6x4 Graupner
Racing – 6,5x6 – 6,5x5,5 APC & 6x6 – 6x5 Graupner
Sport Flying – 7x4

MAINTENANCE
All parts can be removed without force. If you do not have experience, don't totally dismantle your engine. For cleaning dirt from inside the engine, it is normally enough to remove the head by unscrewing the clamp ring and unscrewing the rear cover. Wash with kerosene or ethyl alcohol. Then lubricate it with a few drops of machine oil into the cylinder and rear ball-bearing before reassembly. Use nothing more aggressive than a plastic scrubber to clean carbon from the head or piston crown, rinsing well before reassembly.

For further disassembly, please visit our website www.clubtamaran.com where you can find technical solutions and tips for maximum enjoyment of your *PARRA-WASP* engine.

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