Appendix

amendments to manual EOS 150 - EOS 150 ICI mod. 2019

status 12.2018

spark plug - gap to spark plug electrode and moment of torque

To grant for a only single and exact spark at the right time due to ignition timing set for the engine it is also important to set the right gap to the electrode on the spark plug. The below picture shows the right measurement of gap.

A too wide gap resulting in lack of strength of the spark or interruptions. A to narrow gap resulting in inexact sparks and possible additional sparks at wrong times.
Use an accurate feeler gauge to receive a correct measurement!

Moment of torque for the spark plug;
A part of the heat from the combustion goes through the spark plug but the majority should go to the cylinder head and to grant for this a correct moment of torque is imperative!
Therefore use the right figure of 25-30NM when mounting the spark plug.
Use an according torque wrench to receive a correct figure!

alternatives to the NGK BR9HS (the recommended standard spark plug for EOS 150)

Alternative plugs could be f.e.;
Bosch W3AC
Champion 828
Denso IWF27
Adequate listings can be found in the Internet what compare various spark plugs to each other.

2-stroke oil

Due to experience and failure reports on engines because of lack of lubrication especially under high temperature conditions we came to the conclusion to NOT recommending to use the oil brand Motul, any available type until further notice.
Instead, to use any other brand's oil which is FULL SYNTHETIC and in accordance to specifications / performance levels - API: TC, JASO: FD, ISO: L-EGD
Preferrably use types called "Racing" or "High-Performance" as such oil qualities have advanced lubricaton characteristics under high temperature conditions (high engine temperatures).

Recommenadations f.e.;
- Valvoline Racing 2T full synthetic motorcycle oil
- Alpine Racing 2-T high performance full synthetic motor oil
- Liqui Moly Racing Scooter 2T Synth full synthetic motor oil
- Liqui Moly Pro Kart Racing Scooter 2T full synthetic motor oil
- Castrol Power 1 Racing 2T full synthetic motor oil

Reed Valve - and maintenance advice

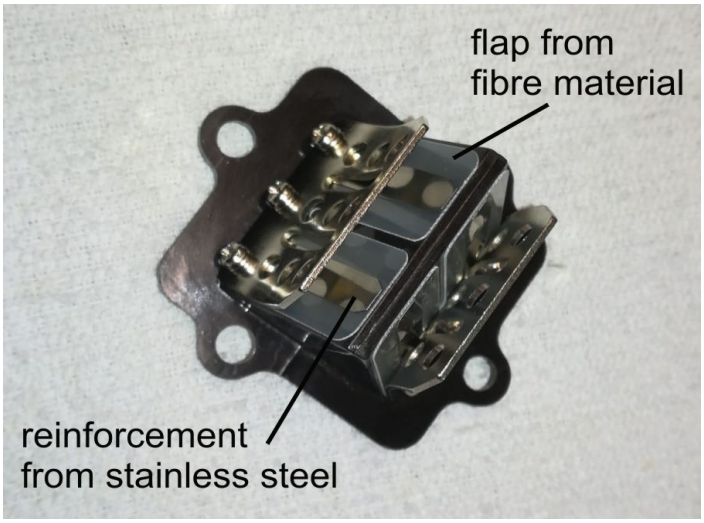
The EOS 150 engine is running up to high RPM operations (max. up to around 9.000) and it can be imagined how many times the valve flaps open and close. Any movement is a kind of bending the material (fibre flaps as well as stainless steel reinforcements) and it is inherent that sooner or later a flap will brake therefore.
A broken flap will not only degrate operation and performance but the loose part will most probably damage piston and cylinder causing the engine to fail totally and stop.
We therefore advice to regularly exchange the Reed Valve to new and wish to amend our maintenance table as follows;

maintenance table

	before every new use	after first 5 hours	every 25 hours	every 50 hours or every year	every 100 hours or every year	after 200 hours
rubber mounts	check				replace	
screws and nuts	check					
throttle cable function	check					
ignition kill switch function	check					
fuel system	check					
air box rubber fitting	check				replace	
drive belt	check		replace			
spark plug cap fitting	check					
carburetion and combustion / spark plug image		check	check			
spark plug		check	replace			
muffler springs			replace			
carburetor membranes and			check		replace	

gaskets						
starter rope / or complete starter					replace	
fuel lines					replace	
Reed valve				replace		
exhaust silencer dampening material					replace	
piston and rings						replace
crankshaft bearings						replace

Change to previous advice;
Reed Valve to replace every 50 hours or every year instead of every 100 hours or every year.



pre-flight check - amendment to Engine operation

Whenever you begin to operate the engine at any time well take care of;
- pre-flight check; check the bolts of the drive wheel bracket as well as condition of the bracket itself (check for damage and/or cracks).

Propeller damages

Damages to the propeller, even small ones, caused by stones or other objects whatsoever what may fall into or go through the propeller will generate imbalance resulting in increased vibrations. These vibrations, if not very minor, may cause defects to the engine and engine parts and/or to the whole system. By an expert propeller damages can be repaired and the propeller can be newly balanced. It is strongly recommended therefore to care for a balanced propeller or do a replacement if a repair is not possible or not practicable.

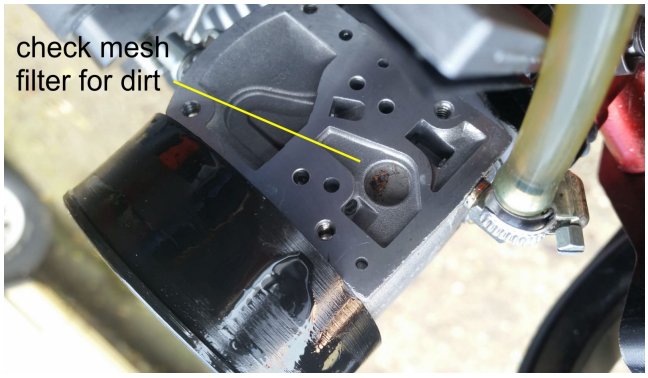
Important note! – If you had a propeller stroke and in consequence a broken propellerit is strongly recommended to replace all propeller bolts to new due to the heavy shock loading what may have occurred. Both, an imbalanced propeller in long term and a shock loading after a broken propeller may also damage or brake the bolts connecting the drive wheel bracket with the engine housing. A check of these bolts is imperative and a replacement safety wise recommended (to use only proper 10.9 bolt quality with Torx head, properly tightened acc. to the bolts' torque table and secured with Loctite 243 thread locker!).
See picture on page before.

Propeller hub extensions

A hub extension to bring the propeller further back for certain reasons (frame construction, different engine applications, purpose to increase thrust etc.) is seen as a general design change of our engine. Possible influences resulting by the additional prying effect cannot be foreseen and are not tested by EOS engine.
If nevertheless offered by a Paramotor-System supplier, then we advise to follow the operating and maintenance instructions given from this particular System manufacturer.

Mesh filter in carburetor - necessity for cleaning in a periodic time lapse

After the fuel inlet nipple, placed on the inside of the carburetor at the side where the membrane of the fuel pump is located, there is a fuel mesh filter. Even if you have installed a fuel filter in the fuel lines still dirt can reach this subject additional filter and can block a sufficient fuel flow. Especially additives in the fuel can cause this impurity (f.e. Ethanol). Sometimes it looks like a "jellylike" layer on the mesh filter. This can mostly pass the regular installed fuel filter but getting stuck in this internal very finely woven mesh filter.
Indication for a polluted mesh filter;
- loss of power
- loss of quick acceleration
- engine not reaching max. RPM
- engine reaching lesser and lesser RPM only, at the end running only at idle or stopping totally



Caution! - A polluted mesh filter may cause the engine to start running to lean step by step with danger of overheating and melting the piston! We therefore recommend to check the filter at least every 10 hours of engine operation.

Amendment to warranty terms

Excluded from warranty claim are wear parts such as rubber mounts on main engine bracket, rubber mounts of the exhaust, airbox rubber fitting (junction flange), drive belt, spark plug, gaskets and membranes, starter rope. Disregarding the age and the operation time of the engine.