



## **NEW ZEALAND MODEL POWER BOAT ASSOCIATION**

# A Scrutineers Guide to Checking Stock Class Engines for Rule Compliance

Website Version: 1 February 2021

## Current Rule Set

Stock Class. 22.5 cc to 25.4 cc Standard Pump Petrol and Oil only

Petrol is to be that available at any regular retail service station. NOT aviation fuel or any other specialist fuel or blend of fuels.

1. Engine MUST BE a stock standard 231 or 260PUM Zenoah only. No internal modifications are allowed by removing or adding material to or from the engine, with the exception of relieving the side of the piston at the ring area to prevent seizing. The cylinder and head assembly must be a single unit as standard (no removable heads and or head buttons allowed)
2. All stock gaskets and seals must be installed (No splitting of paper gaskets or using thinner replacement gaskets allowed)
3. Engine must run on stock Grey and Red coils.
4. Spark plug can be any standard type (unmodified) and must have its washer installed.
5. No "Stroker" crankshafts allowed.
6. No other aftermarket parts are allowed, eg. Aluminium carburettor isolator block (or other even if only cosmetic in terms of colour etc.).
7. Any factory issued standard carburettor may be used, WT-603, WT-644, but can be substituted with a stock WT-257 or WT-929 (No modifications).
8. Any exhaust system with water cooled manifold is allowed. All boats must meet the current NZMPBA noise rules.
9. The engine must be equipped with a recoil starter used as primary means of starting the engine, the standard Zenoah recoil can be substituted with an "Ezy Start" recoil. Belt starting is only allowed as a secondary means of starting the engine.

### **The following aspects should all be checked when scrutineering a Stock engine.**

During scrutineering at beginning of the regatta, apart from the below, the scrutineer should "seal" the motor by marking a cylinder bolt with a coloured nail polish or similar. The scrutineer should check with the competitor if he has another spare motor that might also need sealing. The competitor should also be advised that if the need arises that the seal has to be broken during the day, then the Race Director must be advised beforehand.

Please note the owner should be responsible for any dismantling and re-assembly of the engine.

1. The number 2075 is cast onto the cylinder, it is found above the drive collet, between the rear cylinder base cap screws. Late model 23 cc and 26 cc have this ID, This can be easily viewed using a torch and a small mirror. Older 23 cc engines have the large spark plug, but no 2075 casting. Another ID is there is 1 hole in the top cooling fin at rear of the 23 cc engine, and there are 2 holes in the 26 cc engine.
2. The carburetor venturi should measure 12.5 mm (or less) with callipers. A small mirror, torch and magnifying glass are useful in checking these aspects.
3. Carburettor Isolator Block. Visual and physical check to make sure it is the genuine Black Plastic fitment.
4. Red and Grey Coils, Visual inspection to confirm they are genuine parts, the grey coil can be remounted from under the carburettor to a separate mount from the motor, or mounted in a different position on the motor using an auxiliary bracket.
5. Spark Plug. Visual check that the washer is in place and not removed or purposely thinned down.
6. Water Cooling Cap. Visual check to confirm it is the genuine round black cap, with 1 water inlet, and 1 water outlet opposite each other.
7. Stroke. Measure through spark plug hole with calipers, measure from BDC to TDC = 28 mm. This applies to both 23 and 26 cc engines.
8. Piston / Bore Size. Remove cylinder and measure diameter with calipers 23 cc = 32 mm and 26 cc = 34 mm. No modifications to the piston, with the exception of relieving the side of the piston at the ring area to prevent seizing.
9. The cylinder and head assembly must be a single unit as standard (no removable heads and or head buttons allowed) Porting / Timing. Visual inspection to identify any machining where material has been removed.
10. Bearing Seals. Visual check to confirm genuine bearings with seal springs are in place. Illegal low drag seals are brass inserts that go between the standard seal and the crankshaft. A visual check will confirm either of these issues.

11. Case & Cylinder Gaskets. Check these are the genuine, Black, Blue or Light Green coloured paper gaskets, visual check they have not been split to thin them.

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