

15th May 2008

## Set up and operational guideline for ZC001 carburettor

If you have been testing on vegetable based oil it is important that before you switch to the legal synthetic oil for racing that you do the following:

- Thoroughly wash out your tank and fuel pipe
- Strip and flush out your carburettor to remove any residue of castor oil that may be left inside the carburettor. As the mixing of these two oils can contaminate your fuel and affect reliability and the operation of your carburettor.

### Advice on use of the carburettor

- The 2 gaskets either side of the thermal block must be in 100% condition. It is permitted to trim these gaskets if necessary for alignment of venturi and pulse holes to allow for small casting variations.

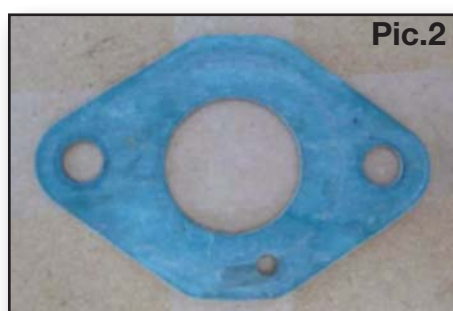
**Do not use black Tillotson gasket as oversize pulse holes do not seal correctly. (picture 3). Comer gaskets in a new more durable material are now available.**

- The thermal block can have a modification to the pulse groove (shown in picture 1). This involves widening the top section of the groove to increase its capacity. This has no effect on performance but can give better engine idle.

Standard Comer carb gasket



Unmodified Modified



Correct



Incorrect

- Filtration of fuel is most important. It is essential that all fuel is thoroughly filtered before putting in the kart tank. The use of an inline filter is permitted. Specification of these will be printed at a later date.

- There are 2 types of needle and seat legal for use:

- Nickel plated seat with rubber tip needle as supplied by Tryton with 1.7mm Ø hole
- Brass seat with rubber insert and alloy needle Tillotson 233665

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- 5) There are 2 types of pressure springs available:
    - a) Medium 10 coils recommended for use with Tryton needle seat.
    - b) Hard 8 coils recommended for use with Tillotson needle seat
  - 6) Gaskets and diaphragms for carburettor must be of original type as supplied by the importer.
  - 7) The carburettor can be run either way up. It is generally found running the carburettor upside down may make the carburettor more difficult to start but can also improve reliability issues if you have experienced dumping.
  - 8) Starting point for settings – how to set carburettor on stand

Remember this is just a guide line, final adjustments will need to be carried out on track

- a) Set throttle cable so that butterfly fully shuts when off throttle
- b) Cable adjuster on carburettor must be set so that butterfly does not go over centre.
- c) When engine is hot set low speed jet between 45 and 65 minutes so that engine only just ticks over 1750 rpm.
- d) Set high jet to 75 minutes, hold engine on full throttle then screw high jet in slowly until engine revs to approximately 12200 rpm. From this point screw high jet out 3-4 minutes. Final adjustment must be made on circuit.

If you are having problems controlling engine temperature do this on the low speed adjustment jet. To make engine run cooler richen jet.

- 9) It is permitted to attach to one of the 2 adjustment jets, a fixture for facilitating easier adjustment of the jet. This must be hand operated by the driver in the immediate vicinity of the carburettor i.e. no cable adjustment mechanisms allowed.

### **Tips on assembly of Carburettor**

- 1) Pressure test needle and seat without diaphragms in place. For Tryton needle and seat should release at 1.4 bar hold at 1.0-1.1 bar. When fully assembled check carb holds pressure, only pump to 0.5 bar. Sometimes carburettor gasket may require to be softened with WD40 to seal when new.
  - 2) Do not over tighten screw to hold lever assembly in place. A gentle nip only.
  - 3) Set lever (paddle) level with base of carburettor
  - 4) Do not over tighten adjustment jets. To mark the closed position it is advisable to remove the spring to do this.
  - 5) If you are experiencing problems with dumping, the following have all helped solve problems for other competitors.
    - a) Run the carburettor upside down
    - b) Rubber mount your engine mount
    - c) Use a flat engine mount
    - d) Do not use engine mount with high degree inclination.
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## **UPDATE ON TRYTON CARBURETTOR ADVICE**

1. Tillotson diaphragm kits DG-1HL or DG-5HL may now be used in addition to the standard Tryton diaphragm kit. These parts may be intermixed.
2. The use of an O ring 7mm x 2mm is strongly recommended. This is fitted between the carburettor cap R2 and the filter R4. This is to seal the spigot location of the filter against the valve body.
3. Beware of damaging adjustment needles by screwing them into carburettor too forcefully. Needles with any damage on the taper will make your carburettor difficult to set and affect the performance.
4. As Shell Super FC and Elf Kart Tech FC are no longer the only engine lubricants legal for racing, it is recommended to use the castor oil Shell Advanced M.
5. New adjustment needles giving a larger sweet spot will be available in approximately 1 week time. Remember to remove the spring for marking of the closed position to avoid damage of needle.
6. The use of alternative pressure springs R33 including multiple springs may be used.
7. The ZC001 Carburettor fiche can be downloaded from the MSA website at the following link:

[http://www.msauk.org/uploadedfiles/msa\\_forms/Comer\\_W60\\_Homologation\\_Fiche.pdf](http://www.msauk.org/uploadedfiles/msa_forms/Comer_W60_Homologation_Fiche.pdf)



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