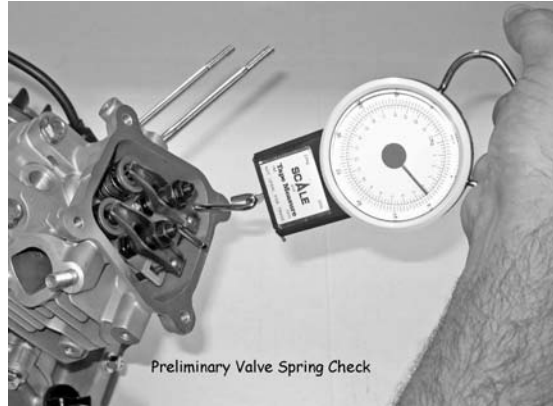


SECTION 12 - CLONE TECHNICAL SPECIFICATIONS

- 12.1 Rules & Intent: The intent of this engine package is to provide a low cost out of the box power source to attract new or budget minded karter's to local and regional level karting. That being said, it has to be acknowledged that there are certain convenience and/or safety modifications that have to be allowed as well as some dimensional guide lines to verify the engines legality should there be a need to inspect internal components. The following are recommended areas of inspection should it become necessary.
- 12.2 Approved engines – OHV engines generally referred to as Clones with a maximum displacement of 200 cc's. (Current legal engines include the Lifan, Grey Hound, Harbor Freight Blue, Yellow, Jaing Dong, Yamakoyo, Blue Max & Ducar)
- 12.3 Engine Components: Must be original OEM items in their stock state unless otherwise specified. Removal of unnecessary OEM items such as exhaust system, air cleaner, fuel tank, governor, low oil sensor, etc is permitted. Welding or epoxy repair permitted to the block, head and side cover provided they don't enhance performance.
- 12.4 Exhaust System: Non tech except header must be round and a constant diameter (no multi stage) and the end may be expanded to accommodate an RLV type B91 or other muffler/silencer. (Max length of expanded end to accommodate muffler/silencer not to exceed 4" in length) No loop type exhaust. Silencers are a local option but highly recommended. If a silencer is not used the full length has to be a constant diameter and the end of the pipe must be flared or have a protective washer welded on.
- 12.5 Carburetor: Huayi type carb only. Choke assembly must be in place and functional. Venturi .615" max and throttle bore .751" max. Throttle shaft is .115" min dia. Butterfly is .037 min thickness. Main metering jet is non-tech. (Since the amount of air flow (throttle bore & venturi) and fuel type is controlled, teching the jet size is unnecessary) Filter adapter and filter non tech. Any pulse type fuel pump permitted and can be pulsed from the crankcase, side cover or valve cover.
- 12.6 Fuel Tank: Non Tech. (It is recommended that for safety reasons a remote/floor mounted tanks be used.)
- 12.7 Fuel: 93 Octane (max) Pump Gas. See rule 8.1 and 8.1.2 for details.
- 12.8 Clutch: Any engine mounted disk or shoe clutch allowed. Dry clutches only. (There are many used disc clutches available for a reasonable price) (Shoe/drum clutches only can be a local option)
- 12.9 Connecting Rods: OEM cast rods only. No modifications allowed.
- 12.10 Pistons: OEM Std bore (2.685" max) only. Three ring design and all rings to be intact and functional. (Oversize's to be permitted at a later date.)
- 12.11 Crankshaft: Standard OEM item with stock stroke length of 54mm or 2.126" (plus or minus .005"). No alterations permitted.
- 12.12 Flywheel and Ignition Coil: OEM stock/unaltered flywheels and plastic fins only. (no machining allowed) Timing is non-tech. Flywheel key may be altered and is non tech but must be installed. (Due to the variations of the OEM keys and keyways they will be non tech to allow optimum timing with a minimum of cost.) Plastic fins must be intact and have their full depth. Minimum (bare) flywheel weight is 5.0 lbs.
- 12.13 Cylinder Head: OEM heads only with no modifications allowed. Valve seats to be a single 45° only with a top angle relief of 30°. No porting, grinding or matching allowed to the ports or combustion chamber. Spark plug to be 14mm X .75 reach only. Minimum combustion chamber volume when mounted on engine @ TDC is 27.5 cc's using prescribed procedure as noted in rule 8.5. This is to be done after the event and when the engine has cooled down to a reasonable temperature. Note - Head gasket required,

but thickness is non-tech and can be either steel or aluminum. Spec on thickness is non-tech to allow competitors to alter chamber volume to achieve the 27.5 cc minimum which some engines fall short of from the factory. The BNSS has several thicknesses available. (Inquire at info@burrisracing.com)

- 12.14 Valve Train: OEM push rods, push rod guide plates, retainers, springs, keepers, rocker arms and adjusters only. OEM valves with 45° seat angle only and no lightening or polishing. Stock 1:1 ratio OEM rocker arms only. OEM valve springs only with a maximum spring diameter of .798" (wire diameter .073" max) and a maximum tension of 10.8 lbs at .850" compressed height. (Note-if a competitor is suspected of using illegal valve springs a quick field check can be performed as shown below using an inexpensive fish scale. Hook the scale under the rocker arm next to the push rod and lift until the valve opens and note the reading on the scale. If the springs appear to be much over the 10.8 lbs @ .850" spec then the springs can be removed from the head for a proper check.)
- 12.15 Camshaft: Stock appearing camshaft cores only with the ez-spin assembly un-altered and in stock condition.
- 12.16 Cam lobe base circle diameter min/max is .860" - .875".
- 12.17 Duration for intake and exhaust lobes taken at the valve retainer. Intake duration of 217/221 degrees at .050 lift and 84/88 degrees at .200 lift. Exhaust duration of 220/224 degrees at .050" lift and 95/99 degrees at .200" lift (The +/- 2 degree range allows for wear and engine/gauging variations).
- 12.18 Max intake lift is .240". Max exhaust lift is .245". Readings are taken with a dial indicator on the valve spring retainer with zero lash.
- 12.19 Fasteners: Non-tech, but must retain their original factory size. Heli-coils, studs, etc allowed for repair purposes.
- 12.20 Gaskets & Sealer: Gaskets are non-tech and sealer may be applied unless otherwise specified.
- 12.21 Bearings: Crankshaft bearings shall be of metallic (magnetic steel) construction (excluding retainers) and be of conventional design and stock appearing and the same dimensions as the OEM bearings. This includes inner and outer races as well as the balls and rollers. No other materials allowed.
- 12.22 Coatings: Internal performance coatings of any type not allowed.
- 12.23 Crankcase breathers are to be routed internally through the valve cover as originally intended in OEM configuration. No additional breathers allowed.
- 12.24 Tires: See Section 4.1 for Oval specifications and 4.50 for Sprint.
- 12.25 Claiming: Claiming is a Local Option and prices and conditions (such as what accessories are exempt from the claim, who gets to claim the engine in question, etc) are to be set by those entities. Due to the escalating costs that are being charged for "Blue Printed" clone engines it is strongly recommended that a reasonable and fair claim fee be used as an aid to keeping costs down.
- 12.26 Pull Starter: The pull starter is non tech and optional.



Preliminary Valve Spring Check