SECTION 9 - F200 TECHNICAL SPECIFICATIONS

9.1 Approved, commercially available, single cylinder air-cooled overhead valve engines. 200 cc's maximum displacement. See Chart for approved engines.

9.2 Block, Cylinder Head, Crankshaft and Side Cover: Must be approved OEM items. (see 9.2.1) Cylinder head, block and side cover external surfaces may be machined to remove excess material from mounting bosses, cast in brackets, etc that are no longer in use. No external machining allowed to enhance performance.

9.2.1 Blocks, heads, crankshafts and side covers from engines referred to as "Clones" that are duplicates of the GX200 engine are acceptable as long as they are dimensionally the same and conform to the specs listed below. The GX200 components set the standard and no deviations will be allowed.

9.3 Exhaust System: See rule 8.3.2

9.4 Carburetor: Any commercially available butterfly type Tillotson HL series carb. Minimum/maximum venturi diameter = .750/.790". Minimum/maximum throttle bore diameter = .990/1.010". Metering holes non-tech. Restrictor plates are suggested in all Junior classes. See Section 8.8 for recommendations. Filter cups, adapters and air filters non-tech items. The carburetor pulse passage is non tech but cannot be used to bypass the restrictor plate. Its sole and intended purpose is to actuate the fuel pump inside the carburetor. Pulse type fuel pumps permitted.

9.5 Fuel: See rule 8.1 and 8.1.2

9.6 Intake manifold: Aluminum only with a minimum runner/passage diameter through manifold to be .75". Maximum mean inlet tract length is 2". Length determined by adding the longest and shortest tract distances (flange to flange) together and dividing by 2.

9.7 Connecting Rods: Aluminum or steel only. (Fasteners and inserts/bushings excluded) Stock length (plus or minus .010") to be maintained. See chart for specific details.

9.8 Pistons: Any aluminum three ring (compression, scraper and oil and rings must be present in grooves), flat top or dished piston. (No domed or pop up types) Rings and wrist pin non-tech but must be of steel (ferrous) material. OEM wrist pin diameter to be maintained. See chart for maximum bore size and wrist pin diameter for a specific engine.

9.9 Crankshaft: Standard OEM item with stock stroke length (plus or minus .010"). Thermal treating and shot peening permitted. Minor grinding for camshaft clearance and welding cam gear to crank permitted. No other alterations allowed. See list for specific stroke details.

9.10 Flywheel and Ignition Coil: Approved aftermarket flywheels only may be used. Spec diameter is 6.75" +/- .25"dia. and minimum weight is 4.0 lbs. Any approved OEM F200 coil may be used on any engine. (i.e. Briggs coil on a Honda, Tecumseh coil on a Kohler, etc) External coil modifications to facilitate mounting are legal. Coil mounts, flywheel key, spark plug boots and plug wires are non tech items. See below for approved flywheels.

9.11 Cylinder Head: Original factory casting only. Two valves maximum and must maintain original location, (angles are 90° from deck with listed spacing). Carb inlet and exhaust outlet in the head have to be in their stock intended locations. Porting and grinding

permitted. No external addition of metal to enhance performance allowed. Spark plug to be 14mm X .75 reach only and original stock location maintained. Minimum combustion chamber volume when mounted on engine @ TDC is 24 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 – Briggs W/F head is legal but must use a 14mm spark plug to comply with CC check tool.)

9.11.1 Cylinder head repair. Aside from the above, each engine brand will be allowed an approved area on the inlet and exhaust tracts for external repair of broken through "thin cross sections" during the porting process if deemed necessary. The area shall be no greater than a .63" (16 mm) square and either epoxy or welding is acceptable. This repair has to be confined to the "approved" area shown on the list below. (It is the responsibility of the manufacturer or their authorized representative's to apply for the repair if they deem it necessary.)

9.12 Valve Train: Push rods, push rod guide plates, retainers, springs, keepers, rocker adjusters, etc, non tech. Steel valves, springs and push rods only. Retainers may be of aluminum or steel. Intake valve diameter, 1.080" maximum, exhaust valve, .990" maximum with a minimum stem diameter of .188" (4.77mm). Stock approved OEM rocker arms only (with no alterations to their stock ratio). No interchange of rocker arms between engine brands. Stock (Briggs) OEM cylinder head plates only. Rocker arms and (Briggs) cylinder head plates may be welded or reinforced for strength. No other alterations to original configuration permitted. Flat tappets only, must be stock appearing. Unless otherwise specified no titanium components allowed.

9.13 Camshaft: Maximum (actual running) lift .310" measured at the valve retainer. This is to be done after the event (with the lash as ran) and when the engine has cooled down to a reasonable temperature. Note – If the camshaft has a compression release it needs to be taken into account when zeroing the indicator on the exhaust lobe. Cam and crank gear non-tech.

9.14 Fasteners: Non-tech, but must remain in original location. Heli-coils, studs, etc allowed.

9.15 Gaskets: Non-tech.

9.16 Lubrication system: Must retain splash type oiling system.

9.17 Bearings: All ball and roller bearing races shall be of metallic (magnetic steel) construction (excluding retainers) and be of conventional design. This includes inner and outer races as well, the ball/roller material is non-tech.

9.18 Coatings: Wear type coatings allowed on valve train, valves, camshaft, wrist pin, connecting rod and crankshaft only. Coatings of any type not allowed on block, head or side cover.

9.19 Crankcase breathers are to be routed internally through the valve cover as originally intended in OEM configuration. No additional breathers allowed.

9.20 Approved flywheels are the ARC models 6606, 6608, 6613 (w/starter ring gear), 6614. The Briggs PVL ignition is allowed as long as the 4 lb minimum is maintained.

9.21 Tires: See Section 4.1 for Oval specifications and 4.50 for Sprint

9.22 New engines are to be submitted by the manufacturer (or its authorized representative) for approval no later than October 1st to be eligible for the following competition year. OEM components (blocks, heads, cranks, side covers, etc) may be submitted quarterly (Jan, April, July, Oct) by the manufacture (or its authorized representative) at any time and must be

available to the public for not less than 90 days after their approval before being legal for competition. Note - Approval is not automatic and is up to the discretion of the BNSS.

Approved Engines and Specifications

Make	Briggs	Honda	Kohler	Tecumseh	Yamaha	Notes
Model	Animal	GX200	C6 XKE	OHV 5.5	YF200 R1	
Bore, Std	2.688	2.679	2.638	2.797	2.598	Standard Bore
Bore, Max.	2.698	2.709	2.783	2.833	2.809	Maximum allowed
Increase	0.010	0.030	0.145	0.036	0.211	Increase from std.
Stroke	2.200	2.125	2.008	1.938	1.968	Standard Stroke +/- .010
Rod length	3.285	3.303	3.425	3.484	3.324	Cntr to Cntr. Tolerance is +/- .010
Rod length	2.421	2.358	2.540	2.703	2.459	Inside length
Wrist pin dia	0.625	0.708	0.550	0.563	0.630	Tolerance is +/- .0025
Rod journal	1.098	1.180	1.218	0.999	1.101	Tolerance is +/- .0025
Flywheel	5.75 lbs	5.75 lbs	8.1 lbs	7.0 lbs	6.5 lbs	Approx. weight in pounds
Valve spacing	1.382	1.219	1.380	1.250	1.181	Valve angles are 90º from deck

Approved Port Repair Areas. See 9.11.1 for details.

Approved Yamaha YF200 Inlet Tract Repair Area