

## **- GRAND NATIONAL RULES ( Reference APBA)**

**1 The objective of the rules for the Grand National Hydroplane Class are to promote and govern a professional class of propeller driven Inboard Racing Hydroplanes using high performance versions of readily available, big block (defined as having a cylinder bore spacing greater than 4.600”) automotive and marine engines with parts available over the counter or OEM and utilizing recognized manufacturer racing gasoline.**

**2 Hull, cavitation plates and drive shaft shall not be adjustable while boat is in motion. Propulsion will be by one underwater propeller. Said propeller shall be no more than three blades and must be of cast material.**

**3 It is mandatory that all Grand National Hydroplanes competing have two-way radio communications.**

**4 A minimum 1 hour must be allowed between heats where the same boats compete.**

**47.5 Fuel All stock classes and classes that designate “gasoline” as a fuel without additives must use unleaded fuel corresponding to petroleum based fuel as defined by American Society for Testing and Materials (ASTM), designation: D4814, with the following clarifications. a. The specific gravity must fall within the range: .715 to .765 at 60 degrees F. b. The maximum oxygen content is 4.0% by weight. c. The only allowable oxygenates are ether and alcohols, as listed and characterized for oxygen mass fraction in ASTM D4814. d. The ethanol content must be less than 25% by volume. e. Epoxides (i.e. propylene oxide) will not be considered ethers. Nitrogen bearing compounds are not allowed. f. Lubrication additives are permitted, provided the resulting mixture would meet all other requirements.**

**Approved racing fuels listed below. Power Mist VP T-102 C-11 T-105 C-12 T-111 C-14 T-112 C-16 Sunoco Trick Sunoco Standard 110 Trick 114 Sunoco Supreme 112 Trick Turbo 119 Sunoco HCR 114 Sunoco Maximal Renegade Citgo Pro 110 Citgo 110 Turbo Blue Turbo Blue 110 You cannot mix any of these fuels. They must be used as per the spec sheet for the fuel that you declare. Example 1: You cannot mix Power Mist with Sunoco. Example 2: You cannot mix unleaded gasoline with any race fuel. Example 3: You cannot mix VP C12 with VP**

**Methanol also approved for Grand National.**

### **6 Engines**

#### **6.1 468 CID Engine Option 1**

**6.1.1 Engines are to be of U.S. manufacture, cast iron block, supplied by OEM, automotive or marine, 4 cycle, internal combustion type. Total cubic inches not to exceed 468. Engine must be normally aspirated utilizing any Holley 600 CFM carburetor with a throttle bore of 1-9/16 max. both primary and secondary. Ignition may be any type, except crank-driven. No overhead camshafts**

**7.5.1.2 Inspection Procedure: Length of hull, weight of hull, fuel check, cubic inches, carburetor size**

#### **7.6.2 468 CID Engine Option 2**

**7.6.2.1 Block: Only cast iron OEM or aftermarket short deck blocks permitted.**

**7.6.2.2 The bore, stroke combination allowed will be: 4.310 x 4.00 (454 Chevy) or 4.440 x 3.760 (427 Chevy).**

**7.6.2.3 Rods: Stock length rods, 6.135 in.**

**7.6.2.4 Carburetor: Holley 4 barrel carburetor with throttle bore 2 inch max.**

**7.6.2.5 Cams: Roller cams may be used.**

**7.6.2.6 Rocker arms: Stock 1.7: 1 rocker arm ratio only. Roller rockers may be used.**

**7.6.2.7 Valves: Valve head diameter: Intake 2.300" max, Exhaust 1.900" max**

**7.6.2.8 Cylinder heads: Only Chevrolet common wall intake cylinder heads allowed. No Brodix, Pontiac, Darts, etc.**

**7.6.2.9 No grinding or polishing of any kind in the intake ports, exhaust ports or combustion chambers.**

**7.6.2.10 The following are not inspectable: intake manifold, cam, compression ratio, piston and rings, carburetor body and venturi.**

### **7.6.3 511 CID Engine Option 3**

**7.6.3.1 US manufacture, automotive or marine, 4 cycle internal combustion type cast iron blocks only.**

**7.6.3.2 Total cubic inches not to exceed 511.**

**7.6.3.3 Engine to be normally aspirated utilizing any American-made carburetor with a throttle bore as follows:**

**a. Primary: 1 9/16" maximum.**

**b. Secondary: 1 9/16" maximum.**

**c. A .250 inch thick restrictor plate, located a maximum distance of 1.5 inches below the carburetor, with these dimensions will be acceptable. These holes shall not be conical in shape; must be straight cut. Plate thickness shall include gaskets. All other adapters or spacers shall be included in the maximum distance.**

**7.6.3.4 Ignition may be of any type.**

**7.6.3.5 No overhead camshafts.**

**7.6.3.6 Two valves per cylinder maximum.**

**7.6.3.7 Cast intake manifold only. Must be available from a major manufacturer.**

**7.6.3.8 No symmetrical port heads permitted.**

**a. Allowed: common wall type including Chevrolet, Dart 320 and 360, Brodix -1, -2, -3, -4, and other non-symmetrical port cylinder heads**

**b. Not Allowed: Pontiac Prostock, Dart Big Chief, Oldsmobile DRCE, Dart Oldsmobile, Brodix EPD, and other symmetrical port cylinder type heads.**

**7.6.3.9 In order to run this engine, the hull must weigh a minimum of 2,500 pounds excluding driver, and must be 20 feet minimum length and maximum length of 26 feet**