600 Sprint Universal Rules Technical Inspection

Items to be checked

- **Rev Limiter:** Engines rpm’s cannot exceed the factory stock limit by more than 50 RPM’s
  - Identify engine make and year of engine to determine maximum rpm, reference picture manual.
  - Connect Stewart Warner tachometer to standard connector on competitors engine harness (see separate document on how to operate the tach). This is a three wire connector that will either have a plug cap on it or it will be hooked up to the cars internal tachometer. If it is hooked up to an existing tachometer, unhook it and connect the official tach.
  - If the competitor does not have a connector it is up to the track to either hook up a temporary connector or disqualify the competitor.
  - It is up to the competitor to either rev engine up to hit limiter in the pits sitting still, or go out on the track in one less gear than the race gear. Either way the engine must be accelerated to hit the rev limiter.
  - Press recall on the tachometer to view highest rpm reached. If the recalled RPM is more than 50 over the stock factory rpm limit, it is determined the ECU is not set to factory settings and will be disqualified

- **Displacement:** 06 or newer engine model year cannot exceed 600cc. All older engines cannot exceed 637cc. See list to determine the maximum displacement of the engine.
  - Remove right side crank case cover so the engine can be turned over.
  - Remove cylinder #1 spark plug
  - Find cylinder #1 bottom dead center.
  - Measure Bore Dimension = B in mm
  - Measure Stroke Dimension = S in mm
  - Displacement = (B/2)x(B/2) x 3.14 x S x 100 (to get to CC’s)

- **Porting:** No porting on intake or exhaust
  - Remove throttle bodies, look for grinding, sanding, or filling in ports
    - ZX6R has some grinding marks from the factory
    - Some engines have grinding marks down around the valve seat from factory
  - Remove exhaust pipes, look for grinding and/or sanding

- **Stock Gears, Clutch Operable:** No removing factory gears from transmission.
  - Put car in gear; pull in clutch handle to make sure car rolls free.
  - Shift engine through all 5 or 6 gears. Start down in first, shift through all 5 or 6 gears to make sure there is no neutral anywhere except between first and second. Each time the engine is shifted, rack car back to be sure the gear is installed.
  - Close ratio gears can be checked for by setting up a pointer on the front sprocket and counting the number of times the front sprocket turns relative to the Crank Shaft. Gears 1-4 will have to be checked. You will need the ratios for that particular engine (many can be found in the Hyper catalog) and a degree wheel to mount on output shaft.
- **Charging system:** The stock original factory charging system may not be removed, and must remain in complete working order. No factory racing charging systems.
  - Check to be sure the wires coming from the flywheel cover are connected to the rectifier and that the rectifier is connected to the engine harness.
  - After the race the rectifier should be warm if not hot, if it is not, that is a good sign the charging system is not working.
  - Using a volt meter, check to see that the voltage at the battery is reading higher voltage with the engine running than with the engine shut off. Typically it will be 11.5-12.2 volts with engine off and 13 to 15 volts with engine running. When engine is rev up even slightly the voltage will go up.
  - If charging system is suspected to be missing, the flywheel cover may be removed to prove it is not there. The advantage comes when the flywheel weight is removed, so if the flywheel is there and the charging system is not working, at the tracks digression the driver may be given a week to get it fixed.

- **Cranks and Aftermarket Rods:** No machining to remove weight from the crank (no after-market cranks), Stock connecting rods must be used (no after-market rods)
  - **Option 1:**
    - Remove right side cover
    - Look through opening with Optic Scope
    - Look for machining of crank and after market rods
  - **Option 2:** (better)
    - Remove oil pan (the engine mounting bolts may have to be removed to do this)
    - Inspect crank and rods from underneath the car.

- **Cams:** Cams do not need to be stock, but the lift must be no greater than stock. (cam timing is not limited)
  - Stock lift will need to be known before doing this check.
  - Remove valve cover.
  - Measure across the narrow section, then measure across the widest section with a pair of calipers.
  - Subtract the small number from the big number, this is the lift.
Engine Identification.

**Engine:** 2005-2006 Kawasaki ZX-6R  
**Factory RPM:** 14,800  
**Max Displacement:** 636

**Identifiers:** Oil Cooler in front of engine, Separated from oil filter

**Typical Colors:** Black or Olive green ignition cover with unpainted cast aluminum block and valve cover.
**Engine:** 2003-2004 Kawasaki ZX-6R

**Factory RPM:** 14,400  
**Max Displacement:** 636

**Identifiers:** Oil Cooler in front of engine, Located directly in line with oil filter.

**Typical Colors:** Black or Olive green ignition cover with unpainted cast aluminum block and valve cover
Engine: 2007 Kawasaki ZX-6R
Factory RPM: 15000   Max Displacement: 600
Identifiers: Oil Cooler on top of transmission, Located directly in line with oil filter.
Typical Colors: Black Cases with cast aluminum valve cover.
**Engine:** 2006-2007 Yamaha R6  
**Factory RPM:** 16000  
**Max Displacement:** 600  
**Identifiers:** Oil filter on side of engine, below front sprocket.  
**Typical Colors:** All black except oil pan.
Engine: 2003-2006 Honda RR
Factory RPM: 15,200  Max Displacement: 636
Identifiers: Oil filter and cooler move out, valve cover has less vents
Typical Colors: All Cast Aluminum
Engine: 2007 Honda RR
Factory RPM: 15,300  Max Displacement: 600
Identifiers: Oil filter and oil cooler is moved in about 3”, valve cover has more vents, serial number is in different place
Typical Colors: All Black
Engine: 2006-2007 GSXR
Factory RPM: 15,000  Max Displacement: 600
Identifiers: Redesigned transmission (stacked type)
Typical Colors: Black side covers and valve cover, block is cast aluminum
Carrillo Rod (Illegal)