622 PRD FIREBALL RK125CC WC

622.0 INTRODUCTION:

The PRD Fireball RK125CC WC engine was developed to create an affordable engine package that can be used in Sportsman through Masters Classes. PRD Fireball engines running in the WKA TAG classes follow the rules in Section 609. The rules and specifications in this section apply specifically to the Controlled TAG classes and are exceptions to Section 609.

622.1 ENGINE:

Only 2007 PRD Fireball RK125cc water cooled engines with US serial numbers are legal. All components must be O.E.M. unless otherwise noted. No mixing of parts from 2005 Fireball Engines with 2007 Fireball Engines.

622.2 CARBURETOR AND FILTER CUPS

622.2.1 CONTROLLED TAG CARBURETORS:

Approved carburetors for Controlled TAG classes are the Tillotson HL166A, HL166B or HL166C. See Figure 611.8 for specifications.

622.2.2. SPORTSMAN (JUNIOR 1) FILTER CUP:

Sportsman classes require a PRD-USA/ RLV filter cup with an air inlet hole of 0.460" +/-.001 no go, the hole will remain as manufactured. No cleaning, de-burring or any other modifications are allowed. O-ring must be used and functional. The filter cup must be sealed to carburetor.

622.2.3 JUNIOR (JUNIOR 2) FILTER CUP:

Junior classes require the use of a PRD-USA/ RLV filter cup with an air inlet hole of 0.875" +/-.001 no go, the hole will remain as manufactured no cleaning, de-burring or any other modifications are allowed. O-ring must be used and functional. The filter cup must be sealed to carburetor.

622.2.4 SENIOR AND MASTER FILTER CUP:

Senior and Masters PRD Controlled uses a filter cup with a center hole diameter of .880" minimum.

622.3 AIR BOX/INTAKE SILENCER:

In Controlled TAG only air boxes/intake silencers as supplied by PRD with the engine are legal using two 22mm +/- 1mm tubes. Only the top two holes of the four hole air box may be utilized. The air filter is optional.

622.4 REEDS & REED CAGE:

Reed cage must remain unmodified. The rubber coating on the reed cage may be surfaced to flat. Branded Reeds "PRD-USA.COM" as shown in the Engine PDF are required.

622.5 CYLINDER

662.4.1 MAXIMUM PISTON SIZE:

Maximum piston size is 54.25mm, maximum bore is non-tech.

622.4.2 CYLINDER HEIGHT:

Cylinder overall height as measured from machined surface to machined surface is 86.80 mm minimum.

622.5 CYLINDER HEAD

622.5.1 COMBUSTION CHAMBER VOLUME:

Minimum volume is 10 ccs. Use of the L.A.D. tool is mandatory for measuring volume.

622.5.2 COMBUSTION CHAMBER DIAMETER:

Combustion chamber diameter 54.10mm +/- .2mm

622.6 OIL SEALS, BEARINGS & GASKETS:

Only PRD/RLV crank case oil seals are legal. Bearings and gaskets are non-tech.

622.7 IGNITION

622.7.1 TIMING:

Ignition timing a maximum of .090" B.T.D.C. (no minimum).

622.7.2 SPARK PLUG BOOT:

Spark plug boot/cap is open.

622.8 ELECTRICAL SYSTEM:

All components must remain O.E.M. and unmodified. Battery is labeled "KARTSPORT".

622.9 COOLING SYSTEM

622.9.1 RADIATOR:

Only radiators unmodified as supplied by PRD with the engine are legal.

622.9.2 WATER PUMP:

Water pump must be PRD O.E.M. and axle driven. The water pump may be driven directly by the axle.

622.10 CLUTCH/CHAIN COVER

622.10.1 CLUTCH:

Both stock PRD clutches are legal. Spec: 744 grams minimum weight including drum, center, ring gear, bolts and washers.

622.10.2 CLUTCH NUT:

Only the O.E.M. clutch nut can be used to start the engine when using a hand held starter.

622.10.3 CLUTCH COVER:

Only the fully enclosed cover is legal (part number PRD-7157). Clutch covers with venting that exposes the ring gear are not legal.

622.10.4 THIRD BEARING:

Use of a third bearing is prohibited.

622.11 PIPE/EXPANSION CHAMBER AND HEADER:

Only pipes/expansion chambers/connectors as supplied by PRD are legal. Spec pipe length 16" minimum as measured with a .250"(1/4") tape from the pipe side of the exhaust header flange, around the outside radius of the header to the first weld on the pipe at the major diameter. Only step connector tubing is legal. PRD header O-ring cushion may be installed in the header cup to cushion the flex part. PRD connector wraps may be used. A ••• +/- wide ring may be welded into the pipe cup to stop the divergent cone from mushrooming.

622.12 CYLINDER LEAK DOWN TEST:

All PRD classes are considered "Restricted Classes" (air leakage can cause an increase in performance). This test is used to detect excessive leakage through the engine, engine seals and carburetor. The location of the leak is not important. The test measures a percent of leakage. The engine will not be legal if the maximum leak percentage is exceeded irrespective of where the leak occurs. The cylinder leak down test is performed as follows:

RESTRICTED ENGINE LEAKDOWN TEST

Parts required:
Cylinder leakage tester
Calibration tool (available from PRD distributors)
Header plug (available from PRD distributors)
Filter cup rubber boot (available from PRD distributors)
Carburetor plug (available from PRD distributors)

1. Remove the pipe and flex connector from the header.
2. Install the header plug in the header outlet and tighten.
3. Sportsman (JR I) and Junior (JR II):

- Place the rubber boot over the filter cup and tighten the hose clamp. SR and Masters
- Install the carburetor plug in the carburetor inlet.

4. Remove the spark plug and locate the piston at the bottom of the stroke.
5. Screw the outlet hose of the leakage tester kit in the spark plug hole and connect all hoses in the kit including the hose with the gauges.
7. Attach the air line.
8. Set the initial pressure low.
9. Turn the regulator until the primary gage is set on 10 pounds.
10. The maximum leakage gage reading is 50%.
11. Any reading above 50% leakage is illegal.

622.13 TARGET R.P.M./GEAR

622.13.1 LIMITED ENGINE SPEED:

R.P.M. is limited in an effort to increase competitiveness and engine life. The PRD factory representative or race director, if the factory rep. is unavailable, will call out the gear ratio for all classes. The specified gear ratio will be the base gear ratio +/- one tooth. Each age group has a different target R.P.M., the R.P.M. is established with a single kart and driver on the track alone, race R.P.M. will be higher.

622.13.2 TARGET R.P.M.

Junior I	13,500 to 14,000 R.P.M. APX.
Junior II	14,500 to 15,000 R.P.M. APX.
Senior	14,500 to 15,000 R.P.M. APX.
Masters	14,500 to 15,000 R.P.M. APX.

622.14 TIRES:

Sportsman (Junior I)	4:50 Front 4:50 Rear
Junior (Junior II)	4:50 Front 7:10 Rear
Senior	4:50 Front 7:10 Rear
Masters	4:50 Front 7:10 Rear