

2017 F-Series Technical Competition Regulations

Table of Contents

1. Aims
2. General Principles
 - 2.1. Codes of Conduct
 - 2.2. Regulation Adjustments
3. Engines Specifications
 - 3.1 Starter
 - 3.2 Battery
 - 3.3 Air Box
 - 3.4 Carburetors
 - 3.5 Fuel Pumps
 - 3.6 Ignition and Electrical System
 - 3.7 Piston / Rings / Cylinder Heads
 - 3.8 Exhaust System
 - 3.9 Clutch
 - 3.10 Cooling System
 - 3.11 Internal Modifications
 - 3.12 Reed Gage, and Reeds
 - 3.13 Exhaust Flex Tubing
 - 3.14 Bearings, Seals, Gaskets

4.0 Engines

4.1 Micro Rok

4.2 Mini Rok

4.3 Leopard

4.4 Parilla Leopard USA MY 09

4.5 Parilla X-30

4.6 Motori Seven

4.7 PRD Fireball

4.8 Vortex Rok TT

4.9 Rotax

4.10 X125T-MX

4.11 Honda CR 125

4.12 KZ / ICC

5.0 Chassis Specification

5.1 AXLES

5.2 BRAKES

5.3 BODYWORK

5.4 CHASSIS ELIGIBILITY

5.5 CHASSIS INTEGRITY

6.0 TIRE SPECIFICATIONS

6.1 TIRE MANUFACTURER / COMPOUND

6.2 TIRE SIZES-

6.3 TIRE SIZES

6.4 NO MODIFICATION

6.5 TIRE USAGE

6.6 SPARE TIRES

7.0 Authorized Racing Equipment

7.1 MAXIMUM EQUIPMENT PERMITTED

7.2 RADIO COMMUNICATION

7.3 TELEMETRY

7.4 GAUGES

8.0 Fuel

8.1 RACING GASOLINE

8.2 OIL

1. Aims

This manual contains the rules, regulations and technical requirements that govern The F-Series Gearup Challenge Championship. This rulebook provides pertinent information to assist in the preparation of racing karts for competition, in addition to, an overview of the rules that apply to The F-Series racing program.

2. General Principles

2.1 Codes of Conduct

Unless optional equipment or modifications are specifically permitted by this rulebook, they are prohibited. The intent of the rules is determined by The F-Series. Each written rule contained herein will override a competitor's interpretation of said rule. Verbal approval, regarding the interpretation of a rule and/or procedure, from The F-Series, without a written statement from the Technical Department, will be deemed invalid.

2.2 Regulation Adjustments

The F-Series strives to provide clear regulations and to maintain minimal manual changes throughout the season. The F-Series will make all attempts to provide 15 day notices for rule changes, however, if it is necessary to implement a rule immediately, an

effective date will accompany said changes. All changes can be located on www.thefseries.com.

3. Engine Specifications

Note: Any part may be verified against a known stock part supplied by the manufacture through the chain of distribution, this purpose is allowed for the means of determining the legality of a part and or component. Some specifications may not be attainable, and modifications are not allowed to achieve the specification posted.

3.0 STARTER

Entry must have all the starter components intact. The aftermarket Eclipse starter is approved and should be used as intended without any modifications, it may not be allowed within the RMAX series. If a competitor comes to the grid and is unable to start his or her kart he or she may at the discretion of the race director or club use an auxiliary starter to start without being penalized. Only if announced at the drivers meeting by the race director.

3.2 BATTERY

Is non-tech, but must be of the same size and shape and must be of the same amperage and voltage as OEM. 12volt / 6.5 – 9.5 Amperage Hour. Kart may only have one battery installed and connected to engine. Any battery found to be cracked or broken and leaking will be removed from the event.

3.3 AIR BOX

OPEN, but must be CIK or, RLV approved air box with two inlet tubes not to exceed 22.0 mm (+/- 1.0 mm) inside diameter and 95.0 mm minimum length. Formula 125 will be allowed the 30 mm All CIK homologated KG and Freeline boxes with internal filters are legal and must remain as manufactured. All air boxes may not be modified although the rubber flange may be trimmed on the inside of the air box to the flange lip. Aftermarket internal foam air filters are allowed as long as no modification is made to the air box itself. The position of the air box is non-tech. The new KG air box with internal filter is allowed- CIK homologation is 37-38/SA/15 and must remain as manufactured. The K&N RK1000 is approved. The air box/cleaner cup adapter must be the OEM as manufactured, some manufactures have multiple adapters due to very early manufacturing. NO aftermarket adapters are allowed. No modifications are allowed to the adapter. Rotax Max FR125 - AS PER RMC RULES

3.4 CARBURETORS

OEM as supplied from the engine manufacturer, jetting is open unless specified. Washers may be added to the stock needle jets for the purpose of tuning, must be the OEM needle jets. The way the throttle cable connects to the arm and the bracket that holds the cable are non-tech, you must not modify the manifold or the carburetor. The arm, throttle shaft and butterfly are OEM with no modifications. The slide assembly is included in jetting but must retain OEM replacement parts. Surface finish of venturi and bore must remain as manufactured. Butterfly type: Must be of original manufacture and stock. The Welch plugs are non-tech but must be of the same size and shape that comes in the overhaul kits, the fuel may only pass through stock metering orifices. Any means taken to bypass fuel to the engine in any other manner is not allowed. Any components not specified herein must be stock appearing. Inlet springs are non-tech item. Machine work to the throttle shaft is not allowed. Surface finish of venturi and bore must remain as manufactured. Carburetors must be matched to engine as homologated. All pumper style carburetors are single pumpers with plastic fuel cap. All IAME engines must use blue cap. Fuel adjustment needles must be stock from the needle top to the "O" ring step. Needles may be modified beyond the "O" ring step to attach needle extensions. No remote carb adjusters or triggers. The Carburetor may be installed up side down for the purpose of tuning on the track as long as there are no modifications to the carburetor, manifold, or any other component related to completing this change. Rotax Max FR125 - AS PER RMC RULES

3.5 FUEL PUMPS

Must be of diaphragm pulse type, manufacturer and location are open. No electric fuel pumps and no secondary pumps allowed. Rotax Max FR125 must utilize stock pump location.

3.6 IGNITION and Electrical SYSTEM

OEM, as supplied and per factory specifications (Battery non-tech). Electrical harness and starter control must be as manufactured. Static timing must be at the factory settings, key must be in place, with no modifications allowed. Spark plug must have the washer intact unless a head temp sensor is used then the washer may be removed. The spark plug wire and cap are non-tech items. Rotax Max FR125 - AS PER RMC RULES

3.7 PISTON / RINGS / CYLINDER HEADS

OEM as supplied by engine manufacturer only no Interchange is allowed. Wrist pin must be made of ferrous material. No plating or ceramic coatings permitted.

3.8 EXHAUST SYSTEM

A. Exhaust and silencers OEM as supplied by manufacturer. No plating or ceramic coatings permitted. Header and pipe: No interchange allowed. Pipe and header must be of original manufacture with no modifications. Exhaust system must start and complete race intact as intended for use by the manufacturer. Connector pipe where applicable must be round and of proper O.D. as to connect pipe to header as supplied by manufacturer. Connector pipe length non-tech unless otherwise specified. Addition of exhaust gas temperature lead and/or O-2 sensor is legal, but hole must be plugged if either sensor is not used. No welding for repairs allowed unless approved by F-Series Tech Director.

3.9 CLUTCH

OEM, as supplied with engine from manufacturer and as per factory specifications. Non-adjustable, single disk or shoe type clutch only. Clutch engagement not to exceed 7,000 RPM for the Cadet, and 6000 RPM for all other classes. To be tested with remote RPM meter attached to the spark plug lead. Test procedure from a dead stop driver will accelerate at full throttle for approximately ten feet and clutch may not exceed posted RPM limit. Clutch drum gear (amount of teeth on drive sprocket) is non tech unless specified. Although you may not make any modifications to the OEM clutch drum, Only 7 factory clutch drums from the manufacture will be allowed. All engines' must have the clutch and drive chain covered. This is for the purpose of safety and this will be mandatory technical item.

3.10 COOLING SYSTEM

Coolant may not contain any Glycol based material. Water wetter or other surfactants may be added. Radiator OPEN used as supplied by manufacturer, or after-market product. (Must be mounted to right or the left of the driver) Aftermarket water pumps are allowed, but must be driven by the rear axle, unless motor is equipped with internal pump either option it must be of the same type as OEM.

3.11 INTERNAL MODIFICATIONS

All internal modifications of any kind are strictly prohibited. (This includes adding and or deleting of parts, i.e. gaskets, nuts, bolts etc.) Example: if the manufacture calls out a 10 thousand gasket you may not use two 5 thousand gaskets as a replacement.

3.12 REED CAGE, and REEDS

Will be OEM with no modifications. Must retain stock reeds and reed screws with no modification.

3.13 EXHAUST FLEX TUBING

Exhaust Flex tubing is a non-tech item. (Must be Flexible Tubing only) PRD will use the OEM solid pipe. Some engines require a controlled exhaust flex length. X30 will require 16 3/4 inches min. and Leopard 15 3/4 inches min. The measurement will be from backside of the header flange at the cylinder around the right side of the exhaust to the first weld of the large cone on the pipe. Only the USA my 09 Leopard may run the solid exhaust pipe as per pdf, the 09-exhaust pipe may not be used on older leopards

3.14 BEARINGS, SEALS, GASKETS

Bearings are open but must be of the same type, material and design as the OEM bearings. Replacement bearings must be standard type, conventional bearings with steel or plastic retainers. They must be of the same width and outside diameter as original bearings. Ceramic or angular contact bearings are not allowed. Seals are open, but they must be unmodified, and must be installed as the manufacturer intended. Gaskets are open but must be unmodified, and must meet the manufacturer's thickness and cannot be added or deleted. You may not stack base gaskets, (must be single gasket as it was supplied from factory). Combustion Chamber Volume (CCV) will be checked to the top of spark plug hole. Rotax Max FR125 - AS PER RMC RULES

4.0 Engines

4.1 Micro Rok

Engine Specifications [2017 TAG USA-MINI ROK.pdf](#) See website

Spec gear 11-82 unless otherwise specified.

Spark Plug Specifications NGK B8EG, NGK B9EG, NGK B10EG

Carburetor spec jet #95

Exhaust Restrictor 16mm

4.2 Mini Rok

Engine specifications [2017 TAG USA-MINI ROK.pdf](#) See website

Spark Plug Specifications NGK B8EG, NGK B9EG, NGK B10EG

4.3 lame Leopard

Engine Specifications [2017 Tag USA Leopard.pdf](#) See website

CCV 9.5 cc

Minimum squish 0.026

Exhaust Port Height Max 1.380 Check with LAD Tool

Carburetor HL 334A, HL 334AB and HL 334AA

Venturi 0.905

Carburetor bore 1.005

Reed Thickness 0.012 + or - .002

Ignition Selettra 4 pole or Digital K

Crank complete weight 1875g - +/- 3%

Jr- Restrictor Exhaust Exhaust Header 30mm opening
Controlled exhaust flex length 15 3/4 inches min.

Note: Air cups must be the square only (see spec. sheet). Must say USA on cylinder. (see Leopard spec. sheet, serial numbers) P.N.-10381 - Screws M3 x 4.5-Gold finish original - the threaded portion of the screw is: 4.60mm- 4.85mm - the diameter of the head is: 4.80mm- 4.90mm P.N.-10380 - Screws M3 x4.5-Silver finish sold as spares. - threaded portion of the screw : 4.40mm - 4.60mm - diameter of head : 5.00mm - 5.50mm.

The base gaskets are open but the thickness must remain as manufactured, the two allowed gasket thickness are .008 and .015. The only lame filter adapter being manufactured is the 10771-c this is the only allowed and approved filter cup adapter (square version) all other cups are deemed not legal.

All new 'P' series engines that come with the new Digital K Ignition must use the Digital K Ignition. You may not install the old-style ignition on a 'P' series engine. You may remove the three tabs as this will allow the Digital K Ignition to be retro fitted into an old

case.

4.4 Parilla Leopard USA MY 09

Engine Specifications

[2017 Tag USA MY 09 Leopard.pdf](#) See website

CCV 9.5 cc

Minimum squish 0.026

Exhaust Port Height Max 1.380 Check with LAD Tool

Carburetor HL 334AB

Venturi 0.905

Carburetor bore 1.005

Reed Thickness 0.012 + or - .002

Ignition Selettra 4 pole or Digital K

Exhaust JR 30 mm inner dia.(IAME JR header pipe)

Controlled exhaust flex length 15 3/4 inches min.

Note: Air cups must be the square only (see spec. sheet). Must say USA on cylinder. (see Leopard spec. sheet, serial numbers) P.N.-10381 - Screws M3 x 4.5-Gold finish original - the threaded portion of the screw is: 4.60mm- 4.85mm - the diameter of the head is: 4.80mm- 4.90mm P.N.-10380 - Screws M3 x4.5-Silver finish sold as spares. - threaded portion of the screw: 4.40mm - 4.60mm - diameter of head : 5.00mm - 5.50mm. The base gaskets are open but the thickness must remain as manufactured, the two-allowed gasket thickness are .008 and .015. OEM thickness. The only IAME filter adapter being manufactured is the 10771-c this is the only allowed and approved filter cup adapter (square version) all other cups are deemed not legal.

4.5 Parilla X-30

Engine Specifications

[2017 Tag USA Parilla X30.pdf](#) See website

CCV 10.6 cc

Port Height Lad Tool 1.340

Minimum 0.035 squish Note: Only one of the two allowed base gaskets may be utilized at any given time.

Carburetor Tillotson-HW-27A

Carburetor bore Venturi 26mm

Reed Thickness 0.012 + or - .002

Crank complete weight 2150g - +/- 1%

SELETTRA DIGITAL "K" IGNITION as manufactured, PVL is not allowed.

Exhaust JR 31 mm inner dia. (IAME JR header pipe)
Controlled exhaust flex length 16 3/4 inches min.

4.6 **Motori Seven**

Engine Specifications [2017 Tag USA Motori Seven.pdf](#) See website

CCV 9.5 cc

Minimum squish 0.028

Port Height 1.350

Carburetor VSHH 30 CS (max. dia. - 30.06mm) or HL360 series with new style intake.

Venturi 1.185

Carburetor bore 1.19

Reed Thickness 0.012

Ignition Digital

Exhaust SR STAMPED w/MUFFLER (The new style exhaust pipe is allowed as submitted without any modifications)

Note: Complete Crank weight Kg 2,450 Tolerance= \pm gr100

4.7 **PRD Fireball**

Engine Specifications [2017 Tag USA PRD Fireball.pdf](#) See website

CCV 10.0 cc

Minimum squish 0.028

Carburetor HL360 A

Venturi 0.950 Carburetor bore 1.065

Reed Thickness 0.015

Ignition PRD

Crank complete weight 1975g - +/- 10 grams 11

Note: Exhaust header must use the solid pipe that the engine comes with (no flex pipe)

allowed). Engine must have "U.S." stamped on it with the serial number. Allowed base gaskets are .006-.014 to achieve the minimum squish and CCV.

4.8 **Vortex Rok TT**

Engine Specifications

[2017 Tag USA Vortex Rok TT.pdf](#) See website

CCV 10.8cc

Port Height 1.370

Minimum squish 0.038

Carburetor HL360

Venturi 0.950

Carburetor bore 1.065

Reed Thickness 0.008

Ignition Selletra 36/A/09

Crank complete weight 1860g+/-10g

Cylinder Head Gasket Thickness 0.2

Note you may add two 0.1 gaskets to equal out specification

Ignition Timing .065-.070 BTDC

4.9 **Rotax**

Formula Rotax engine rules must comply with Rotax Max Rules for 2017

Formula Junior Rotax Evo engine must comply with 2017 rules.

4.10 X125T-MX

Engine Specifications
website

[2017 Tag USA X125 T.pdf](#) See

CCV 11.0 cm

Exhaust 180 degrees
Boost 172 degree's

Minimum squish .84mm

Carburetor Tillitson # HL334AB

Venturi 30mm

Carburetor bore 23mm

Reed Thickness .25mm carbon. 1 stiffener must be as supplied

Ignition as MFG - PVL

Crank complete weight + or – 2120 grams

Exhaust JR 30 mm inner dia. (X125 JR header pipe)

4.11 Honda CR 125

Engine Specifications
website

[2017 TAG USA Stock Honda.pdf](#) See

Go Pro Motorplex & F1 Outdoors additional noise rule requirements. Must pass sound check to race and practice.

Minimum 14-inch Silencer

2 Hole maximum airbox CIK/FIA only

Mandatory Foam/Fabric air box filter element

All stated items must be present during all on track sessions, if rules are disregarded this will result in disqualification from event.

4.12 KZ CIK/FIA

Engine Specifications

[2017 F-Series CIK/FIA KZ Rules.pdf](#) See website
[Technical drawing No. 7.pdf](#)

Go Pro Motorplex & F1 Outdoors additional noise rule requirements. Must pass sound check to race and practice.

Mandatory Foam/Fabric air box filter element

CIK/FIA homologated minimum 14-inch silencer. Sound absorbing material must be good working condition.

All stated items must be present during all on track sessions, if rules are disregarded this will result in disqualification from event.

5.0 Chassis Specification

Round tubing only.

5.1 AXLES

Maximum diameter of 50 mm.

5.2 BRAKES

Cadet, Junior, Senior rear systems only. Front wheel systems are permitted in Shifter Division ONLY. A dual rear system is allowed.

5.3 BODYWORK

As per current CIK Homologation, or as per approved by TAG™ Racing International. Scribner Plastics part #6010, #6020, #6030L, #6030R.and #6050 rear are currently approved.

5.4 CHASSIS ELIGIBILITY

As per current CIK Homologation or as per approved by The F-Series. US manufactured chassis meeting current US safety and technical specifications must be approved Non CIK approved Chassis must be submitted to and approved for competition by The F-Series officials prior to competing in an F-Series event

5.5 CHASSIS INTEGRITY

Any chassis found to be cracked or broken will be disallowed from competition. Repair-- may be welded or replaced only. Final repair will be subject to technical inspection prior

to reentering track.

6.0 TIRE SPECIFICATIONS

6.1 TIRE MANUFACTURER / COMPOUND

Manufacturer Slicks for SR Division LeCont White LP11 JR Division LeCont Red LP 10 Wet compound LeCont LH06 or option MG WT

6.2 TIRE SIZES-Formula Junior and Senior classes 4.5 front / 7.10 rears in all classes.

6.3 TIRE SIZES-Cadet classes - 4.5 front / 4.5 rears.

6.4 NO MODIFICATION - or tire treatment of any type is permitted.

6.5 TIRE USAGE - A maximum of ONE set (four tires) per event. Tires used for qualifying must start the race.

6.6 SPARE TIRES - Are permitted on a one for one basis due to uncontrolled damage. Replacement is based on competitor's safety. Regular wear during competition shall not be a consideration for replacement. Replacement is permitted only by decision of the Race Director.

7.0 Authorized Racing Equipment

7.1 MAXIMUM EQUIPMENT PERMITTED - by competitor per each event. - Maximum one (1) Chassis - Maximum two (2) Engines - Maximum one (1) Set SLICK tires - Maximum one (1) Set RAIN tires - Maximum one (1) FRONT / one (1) REAR SPARE tire * * Spare tires replaced for damaged originals only, as per race director. *Equipment used in qualifying MUST then be used in all heats, pre-final and finals. ** Helmet, Driver suit, neck collar, gloves must comply with current national safety standards.

7.2 RADIO COMMUNICATION - Is permitted in Sprint divisions by race control only. And is also permitted in road race divisions.

7.3 TELEMETRY - Absolutely no communication will be allowed between the data acquisition system and any other item or system during any sanctioned F-Series event (practice, time trials, or racing).

7.4 GAUGES - Data acquisition systems are allowed in all classes. Sensor type and number of sensors is open. If a sensor needs external power, the sensor may be powered from the data acquisition system or from the kart battery. All sensor data must be recorded on the data acquisition system. Any sensor not sending data to the data acquisition system must be removed from the kart. The data acquisition system must NOT be powered from the kart battery; it must be powered by its own power source. Data acquisition systems used during any sanctioned F-Series event (practice, time trials, or racing) will be limited to only the collection, display, and storage of data. Absolutely no two-way communications will be allowed between the data acquisition system and any other item or system during any sanctioned F-Series event (practice, time trials, or racing). Any system that is capable of modifying / activating, ignition timing, air or fuel ratio mixtures, traction control, throttle position, or any other setting on the vehicle are expressly forbidden. The race steward, race director, and or tech officials may require that any or all data acquisition devices or sensors be removed or disabled during any sanctioned F-Series event (practice, time trials, or racing). Downloading of the data stored on the data acquisition system to a computer for data analysis after an event is permitted.

All teams shall provide any, and all, of the data to the race steward, race director, and or tech officials upon request during any sanctioned F-Series event (practice, time trials, or racing). Loss of data or failure to produce data when requested may result in loss of qualifying times and/or finishing position, or other penalties

8.0 Fuel

8.1 RACING GASOLINE – Only fuels allowed are VP C12 / VP 98 / Sunoco 110 Methods of testing will be determined by tech official and will be prior to events. Rotax which will run as per current national RMAX rules.

8.2 OIL - Synthetic or Castor are permitted. Excluding Rotax engines which will run Per current Rotax Max FR125 - AS PER RMC RULES Fuel & Oil Mixture – Oil 4 Ounces Minimum to 8 Ounces Maximum Per 1 Gallon Racing Gasoline.