

Scottish Prokart G200 Technical Regulations 2023

1. General

All engines must be 200cc (196cc) 4-stroke engines with recoil starters as manufacturer **by Loncin.**

All Loncin engines must be supplied via Scrivener Racing or Phoenix Racing and remain unaltered from those imported by E.P.Barrus and sold as Loncin G200F Euro5 engines serial number starting T05600 with the exception of the points identified in section 3. Any attempt to obtain an unsporting advantage by means of substitution or selection of parts between engines to gain a performance advantage or obvious attempt to deviate from the spirit of these regulations will be deemed a breach of these regulations.

The relevant Club Prokart Representatives (at East of Scotland Kart Club and Grampian Kart Club) reserve the right to make amendments to these regulations at any time during the season in order to remove doubt, or equalise parts in question, on the grounds of keeping a fair and open spirit of sportsmanship and to maintain a cost effective championship.

Engines will be provided with the modifications listed under section 3k, m and q completed prior to handover. Any requests to change these regulations must be sent via your relevant Club Prokart Representative.

2. Definitions

Mandatory (where stated in the regulations as MUST or SHALL)

Optional (where stated in the regulations as MAY or CAN)

2a. The standard unmodified equipment must not have had any material added or removed in any way and must demonstrate the same tooling marks present on a "master" engine as held by your relevant Club Prokart Representative which can be inspected by arrangement out with race weekend – it is the responsibility of the team to arrange sufficient time/notice to allow checks to be complete. The Club Prokart Representative or the Scrutineer on the day reserves the right to swap any part or complete engine at any point giving sufficient notice (to swap top cover plates, fuel pumps, clutches etc and fill with oil) or use dimensional control Go/No-Go gauges to check legality of any part of the engine in direct comparison with the "master" to ensure the spirit of these regulations is maintained.

2b. Legality limit – per the user manual shipped with the Loncin G200 engine. Bore limit is 68.25mm

3. Permitted Alterations

Only alterations listed in this section are permitted – unless it says you can do it then accept you can't!!

3a. Fuel Tank – the fuel tank must be removed and the engine fitted with a top cover plate for mounting the fuel pulse pump. The feed for the pulse pump is defined in Section 3m. A fuel filter must be installed in each feed line from the fuel tank to the engine.

3b. Exhaust

- Junior Pro Class must use the Loncin box type exhaust only which must have the baffle plates completely removed. The existing gas exit holes in the torque tube may not be altered in any way nor may any additional holes be added. No machining of the torque tube is permissible. Additional welding reinforcement must be added at the pipe to box connection. Exhausts must be complete with heatshield and the shields retaining screws should be tack welded to the shield. The outlet mesh and associated ring may be removed.
- Senior Class must use "Candy-Cane" type pipes with 3/4" screwed muffler as manufactured by NR Racing or Webba type barrel exhaust as supplied by Webba Engineering.
- Original Box and Candy Cane Type exhausts must have additional bracing secured to the engine block. The brace must be attached to the spare tapped hole below the exhaust and above the rear heat shield.

3c. Carburettor – the original carburettor must remain unaltered from its shipped state – see 3d, 3e.

3d. Main Jets – Senior Class maximum size permitted is #77 however smaller jets can be used. Junior Class must use a #76 jet. Jets will be checked with a go/no-go gauge.

3e. Emulsion Tubes – Stock emulsion tube must remain unmodified and have the stamp marks as shown in figure 1.

3f. Air Box – must be standard, unmodified. The outer cover must be secured by use of a M6 nylock nut. The original wingnut can remain or be removed. **There shall be no visible gap between the outer cover and main airbox carburettor intake.**

3g. Air filter – the original filter, if used, must have the base rubber washer in place. The paper element must be removed to prevent water logging in wet conditions. The foam outer sock can be removed however is recommended to be retained to prevent dirt entering the carburettor. The outer plastic cover per 3f above must remain as standard, unmodified and securely fixed in its original position. **Aftermarket compatible outer foam filter socks may be used.**

3h. Spark Plugs – the original Torch F7RTC spark plugs can be replaced with either **NGK BP6ES, BPR6ES or BP7ES** along with the shipped resistor spark plug cap.

- 3i. Coil Pack – all coils used must be the genuine Loncin coils stamped LC168F as shown in figure 2 and must be checked prior to sealing the engine flywheel cover. The shipped metallic cap can be replaced as required with an NGK / Honda equivalent.
- 3j. Engine Bodywork – All the engine bodywork and heat shielding must remain standard and unmodified unless where permitted i.e. Throttle return spring – see section 3r. The pull-cord mechanism may be replaced with similar after market part to suit the crank bell housing – please note the Honda mechanism may not fit. Rotating the pull cord starter on its standard mounting holes is permitted. The outer bodywork can be painted as required.
- 3k. Crankshaft / Timing Gear – the internal governor wheel must be removed including all clips and washers. Care must be taken to ensure all internal debris associated with the governor arm and gear is also removed. The crankshaft itself must remain stock and unmodified and as illustrated in Figure 3 – any attempt to replace the crank with the Honda T2 model will result in the engine being declared illegal. The timing collar must have the manufacturers etched model number CW168LC as per Figure 4 must **not** be rotated – this will be considered an attempt to obtain a performance advantage and is against the spirit of these regulations
- 3l. Camshaft – Stock camshaft/gear must remain as shipped and unmodified and must have Loncin original marking as shown in Figure 7.
- 3m. Crankcase/Cylinder head – can only be modified by the removal of the oil alert system and governor mechanism which, once removed, must be tapped to take the vacuum feed connection for the fuel pulse pump which is taken from the governor rod hole which shall be tapped to suit an M8 banjo connector. Straight banjo uses M8x1.25 thread, side banjo uses M8x1.0 thread. Any carbon deposits must be removed by chemical cleaning only – no mechanical removal is permitted. Valve seats may be ground using paste only – no machining of valve seats is permitted. Valves must remain stock as supplied by Loncin. **Cylinder head gasket may be the either the composite graphite/fibre gasket (min thickness 1.0mm) or metal shim gasket (min thickness 0.2mm).**
- 3n. Piston and Conrod – must be Loncin Euro5 flat-top piston with matching piston rings, gudgeon pin and con-rod with manufacturer's stamped serial numbers starting 168F as shown in Figure 6.
- 3o. Flywheel/Timing – Stock flywheel must remain as shipped and unmodified and have the manufacturers etched model number 168F as per Figure 5 must **not** be drilled or adjusted in any way. Cooling fan must be in place and all fins in place. The flywheel timing key may be machined to allow the ignition timing to be set to maximum allowable advance. Maximum flywheel/timing advancement will be checked using the ABKC timing tool and must not extend into the no-go gauge marked on the T1 indication when used in combination with the ABKC crank lock tool – refer to Figure 8.
- 3p. Clutch – A dry, air cooled centrifugal clutch of Noram Magnum, Maxtorque 1600 or 4000 series type (or others introduced meeting the same intended purpose) must be used to transmit drive. Wet clutch units are not permitted. The clutch should be in standard form as supplied and have maximum engagement speed of no more than 2500 rpm engine speed – the clutch must not be adjustable whilst installed in position. Spring rates are open up to the maximum engagement speed. Drum gearing is open.
- 3q. Valve Springs must to be replaced with Honda G4 springs, ref 14751-ZH8-940. No other size/rating of springs is permitted.
- 3r. Installation of a quick release throttle cable mechanism can be fitted. This includes control arm spring, retaining collar, clevis collar/post and throttle return spring. Drilling of the heatshield and throttle arm to take the throttle actuator and return springs is permitted.
- 3s. Engine Seals - Engines must be sealed at the crank case cover after relevant checks have been completed. Sealing will be done by the appointed Club Prokart Representative or the appointed engine builder only.. Drilling of the side case is required to permit the installation of a scrutineering seal. A 3mm hole will be drilled through the side case locating lug for the seal wire. All seals will be supplied by the Club Prokart Representative or the appointed engine builder. If the seal is found to be damaged i.e. as a result of an accident, then this must be brought to the attention of a member of the sub-committee who will notify the Club Technical Representative/Scrutineer. The seal may be replaced at the discretion of the Club Technical Representative once inspected. If the seal is believed to be damaged as a result of a deliberate attempt to remove it then a fee of £30 will be charged for re-checking and replacement of each seal. Any engine found to be missing a seal will be deemed illegible until the engine re-checked and a seal is installed. It is the responsibility of each team to ensure the conditions of their seals are checked immediately after each race/event and to notify a member of the sub-committee of any damage.
- 3s. Junior Prokarts must have a 15mm diameter official ESKC restrictor plate installed between the carburettor insulator plate and the carburettor body so the ESKC tag is visible at the rocker cover side. A 15/15.1mm go/no go gauge will be used to scrutineer. All other parts of the Loncin G200F engine must be in accordance with Section **3a-3s.**

4. Oil

- 4a. Only 5W30 grade shall be used.

5. Manufacturers markings

Figure 1 – Emulsion Tube original markings have 1617H on the end.



Figure 3 – Crankshaft must be Loncin original with hole through crank as shown.

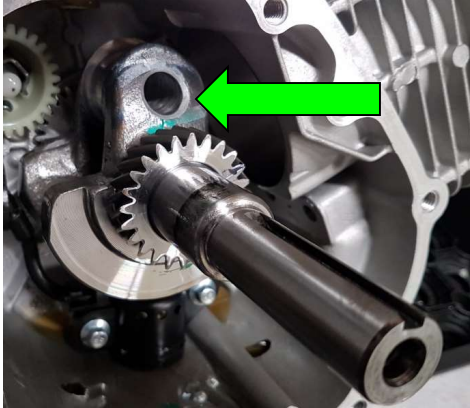


Figure 2 – Coil Pack



Figure 4 – Crank Timing Collar must have Loncin original marking CW168LC and not be rotated on the crank.

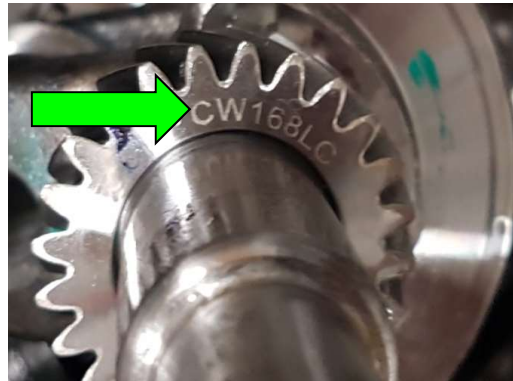


Figure 5 – Flywheel must have Loncin original marking 168F manufacturers marking

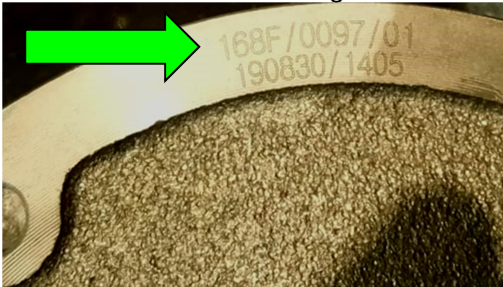


Figure 6 – Piston and Conrod must have Loncin original marking starting 168F



Figure 7 – Camshaft must have Loncin original marking containing the LC168F number.

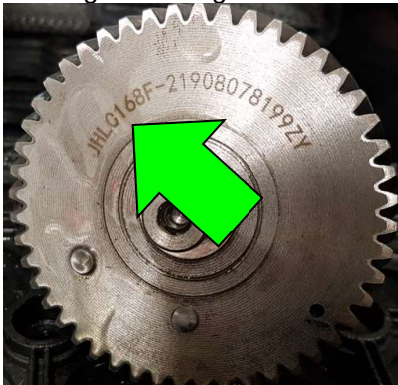


Figure 8 – Flywheel advancement checked using ABKC Crank lock and ignition coil gauges.



Notes for Figure 8 – Ignition timing advancement will be checked using the ABKC crank lock as shown in the left image. When a feeler gauge is placed in the T1 slot on the coil gauge, it **must not** land on the magnet area – if it **does** then it will be considered too far advanced and therefore illegal. The right image shows an example of the maximum ignition position with the slot just at the front edge of the magnet area.

NOTE – the design of the Loncin coil may not match the cutout in the coil gauge for either the older T1 or newer T2 Honda coil types, however the intended purpose of being able to check with the gauge sitting on the top coil surface remains the same.

For consistency, checks will be done using the older T1 coil gauge as shown in the right hand image above.

Loncin 2021> engine serial numbers T0560021xx onward

Engines manufactured after 2020 with serial numbers starting T0560021xx (where xx represents the month of manufacture i.e 06=June) may have slightly different markings due to manufacturing impacted due to the COVID19 pandemic, Some parts may have similar (laser scribed instead of hard stamped) or different markings, however these shall be compared to the original marked parts as listed in Section 5, for sizes/dimensions or weight if required.

Example of alternative marking from Section 5 Figure 4 showing marking DY6/DY8 on the crank shaft timing collar.



Replacement parts such as valves, pistons, piston rings, conrods, crank shafts etc may be replaced during normal servicing of the engine by using only those parts sourced from E.P. Barrus or their agents. Please contact the Prokart Technical representative or appointed engine builder to ensure the correct model/items are used.

Cylinder head gaskets (metal shim type) are not Loncin supplied parts therefore compatible Honda/aftermarket gaskets (intended for Honda GX200) can be used as long as they meet the minimum thickness stated in section 3m.

Summary of Permitted Alterations to the G200 Loncin Engine

Mandatory All Classes (where stated in the regulations as MUST or SHALL)

- Replacement of Stock Fuel Tank – replace with pulse pump, pipe and mounting plate – see section 3a.
- Replacement of stock box type exhaust with candy cane type – see section 3b
- Removal of complete Governor system including arm, springs and internal control mechanism incl. all washers and plastic gears – see section 3k.
- Removal of Internal Oil Alert switch and wiring – see section 3k.
- Drilling of Engine Block (where governor arm was), for Fuel Pulse Pump vacuum connection – see section 3k.
- Replacement of stock valve springs – replace with Honda G4 (HONDA REF 14751-ZH8-940) – see section 3q.
- Drilling of Engine Block (Front side case location dowel lug) to allow installation of scrutineering seal - done as part of sealing – see section 3s.
- Replacement of pullcord retaining bolt/screw to allow installation of scrutineering seal – done as part of sealing – see section 3s.
- Both oil drain bolts and both oil filler plugs must be secured to prevent them coming undone and causing a possible oil spillage on track. The plugs may be drilled and lock wired or drain plug retaining kits are available through Scrivener Racing. Oil filler plugs may be drilled and secured with cable ties.

Mandatory Junior Pro class (where stated in the regulations as MUST or SHALL)

- Use of debaffled box type exhaust – see section 3b.
- Installation of 15mm ESKC stamped carburettor restriction plate– see section 3t.

Optional all classes (where stated in the regulations as MAY or CAN)

- Replacement of stock spark plug with NGK type – see section 3h.
- Drilling of Heat Shield for throttle return spring – see section 3r.
- Drilling of Throttle Arm for control/return spring – see section 3r.
- Installation of Quick Release Clevis, Mounting Post/Collar and return spring – see section 3r.