



KARTSPORT NEW ZEALAND MANUAL

SECTION N – SPECIFICATIONS

RULE – N13 RAKET 120

Issue 2015-2 published 3-6-15

N13 RAKET 120

N13.1 Rules for this class are under the control of KartSport New Zealand Executive. The KartSport New Zealand Executive reserves the right to alter the class specifications to ensure fairness of competition, safety and the wishes of the competitors. Only written submissions will be accepted for changes, with the Executive acting on them if considered necessary.

N13.2 ENGINE: The Raket 120 engine used in KartSport New Zealand events, unless otherwise specified, must be as per original manufacturer's specifications in regard to construction and surface finish of all components. Any engine which does not comply with these rules is deemed illegal and the competitor will be excluded from the results of any and all competition in which the engine has been used. Unless otherwise specified a tolerance of 0.02mm will be given on all measurements. Glass, bead or sand blasting, shot peening, chemical or any other surface treatment that changes the surface appearance (internal or external) of the engine in any way shape or form is not acceptable. Temperature measuring devices are considered an illegal addition and therefore not allowed. All gaskets must be in situ. No chemical gaskets including sealants of any kind are allowed except for the single exhaust gasket which may be sealed. Any and all measurements given in these rules are for technical references only. Unless otherwise specified you must not machine any dimension to the measurements.

N13.3 CRANKCASE: The crankcase must be the same shape and form as shown in the original manufacturer's drawings. The measurements must not be changed. The part of the crankcase which surrounds the flywheel must also remain unchanged. No machining is allowed other than the original manufacturer's to fit the starter mechanism. The crankshaft seals are free with regard to brand name and are single lip seals with or without dust lip as long as the type and size remains the same as the original manufacture. The only crankshaft main bearings that can be used are SKF C3. The main bearings must be an interference fit in the crankcase as well as onto the crankshaft. With the retaining screws removed from the crankcase, clearances in the main bearings usually allow the case halves to be separated slightly using hand force. Separation of either or both case halves from the crankshaft using hand force only is not permitted and if possible, determines that the engine is illegal.

N13.4 CRANKSHAFT ASSEMBLY: NO machining of any kind or any other modification of the crankshaft is allowed. The balance of the crankshaft may not be changed by removal, or addition of material by any means. The needle bearings in both ends of the connecting rod must be the same type as the original bearings (caged needle roller). The connecting rod must not be machined or modified in any way.

N13.5 CYLINDER: The cylinder unless otherwise specified must not be modified or machined in any way shape or form. Deburring of the port or any edges is regarded as machining and therefore not allowed. Unless otherwise specified the original cylinder liner material including over spray must be insitu. Any re-plating of cylinder is not allowed. Cylinder base gasket sealing face to the lowest point of the combustion chamber - 83.55mm minimum. Cylinder base gasket thickness - 0.40mm minimum, 0.80mm maximum. Spark plug thread may be repaired with a coiled thread repair system (helicoil type) or steel thread insert but repair material must not protrude into the combustion chamber area. Exhaust header retaining lugs may be repaired by welding with aluminium but must be machined back to original dimensions.

N13.6 SPARK PLUG: Any propriety brand spark plug to Nippon Denso W22M P-US specifications is allowed. The spark plug must have the spark plug manufacturer's sealing ring fitted and insitu. The spark plug must not protrude into the combustion chamber area more than 1 (one) thread with the sealing ring in place.

N13.7 PISTON: The piston must be the original manufacturer's piston or a piston supplied as a spare part by Radne Motor AB. The piston crown must be flat with an arrow indicating the exhaust port side. The overall length of the piston must not be less than 51.40mm minimum. The piston crown control edge chamfer must not be more than 0.50mm maximum chord length. The piston skirt control edge must not be more than 0.50mm maximum chord length. The 2 (two) piston rings must be magnetic and of original manufacture and in situ. The hollow gudgeon pin must be magnetic and the same measurements as the original parts supplied by Radne Motor AB.

N13.8 ENGINE COWL/START MECHANISM: The fan cowl is standard for the Raket 120 engine. The correct style of fan cowl for the version of ignition/start system for the engine must be used and must be fitted at all times. There are three types of ignition/start mechanism versions :-

- 1/. Pull start top mounted ignition coil
- 2/. Pull start side mounted ignition coil
- 3/. Electric start side mounted ignition coil

Any or all of the pull start components may be removed from version 1 and 2 engines. All electric start components must be retained on version 3 engines but do not have to be operational.

The stainless steel cylinder cover is standard for the Raket 120 engine and if fitted must be used with the original fan cowl supplied with the version of engine. The cylinder cover may be repaired by welding or panel beating but must retain the original dimensions. Changes in any way to the air slots and or spark plug hole are not allowed.

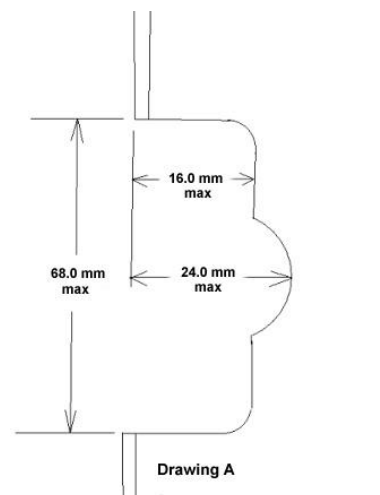
As an alternative to the stainless steel cylinder cover and original cowl, a plastic fan cowl specifically modified and supplied by KIWI KART New Zealand with a circular air inlet diameter of 79mm minimum, 81mm maximum, which extends over the top of the engine may be used. If used the top of the engine cowl may be trimmed to a minimum length of 70mm and it must conform to the following specification regarding cutouts for coil and starter for each engine version 1 to 3.

Version 1:

No additional cut outs in the rim of the flywheel fan part of the cowl.

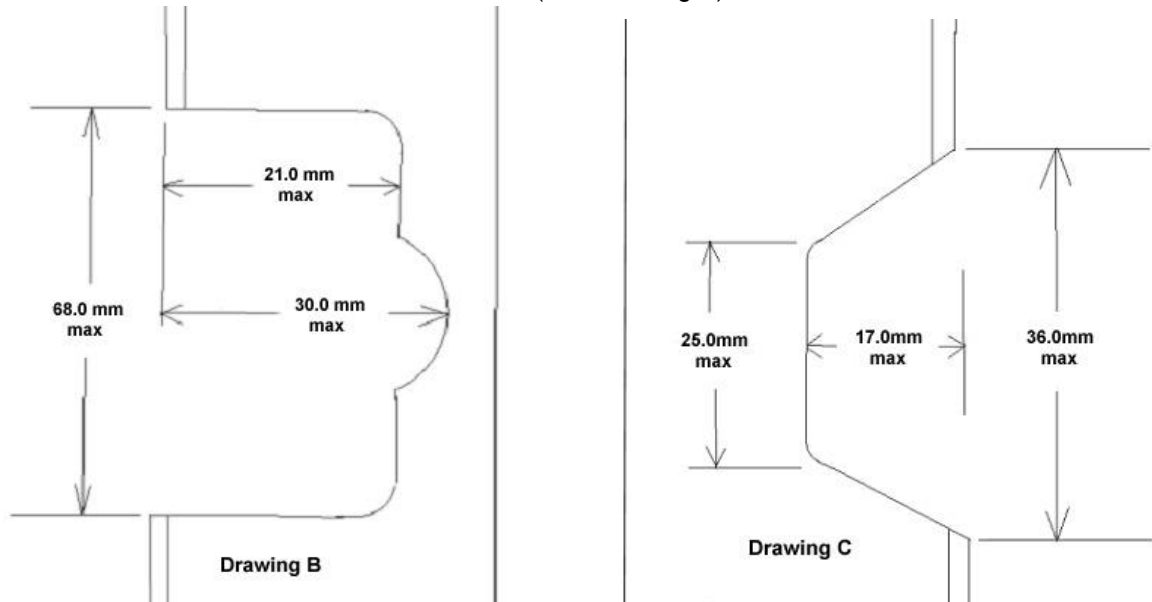
Version 2:

One (1) cut out in the rim of the flywheel fan part of the cowl to allow for the ignition coil of 68.0mm maximum width and 24.0mm maximum depth at the central radii portion of the cutout with a 16mm maximum depth on the flat area either side (refer drawing A).



Version 3:

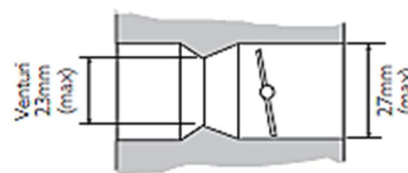
Two (2) cut outs in the rim of the flywheel fan part of the cowl. One (1) cutout to allow for the ignition coil of 68.0mm maximum width by 30.0mm maximum depth at the central radii portion of the cutout with a 21mm maximum depth on the flat area either side (refer drawing B) and one (1) other cut to clear the starter motor nose 36.0 mm maximum width and 17.0 mm maximum depth with 25mm maximum at the base of the cut out (refer drawing C).



N13.10 IGNITION SYSTEM: The ignition system is a transistorised type which has been specially developed for the Raket 120 engine. The ignition stator assembly including the spark plug lead and cap must be that supplied by the original manufacturer for the Raket 120 engine. Any means or method taken to move the ignition system from its original position is illegal. Unless otherwise specified the flywheel must not be machined or modified in any way, shape or form and be the original type as supplied by Radne Motor AB. The flywheel may have up to a maximum of 2 (two) broken, damaged or missing fins. The width of the flywheel measured over the fan blades must not be less than 36.40mm minimum on the original pull start model, 33.25mm minimum on the pull start model with front mount coil and 40mm minimum on the electric start model. This measurement on the electric start model includes the ring gear. The flywheel overall diameter must not be less than 119.50mm minimum on the original pull start models, 113.50mm on the pull start model with front mounted coil and 113.50mm minimum on the electric start model. This measurement is taken on the machined faces. The flywheel key must be fitted and protrude into both the flywheel and crankshaft slots when installed. The key must not measure less than 2.95mm minimum, have parallel sides and must not be stepped. A lead for a rev counter may be attached to the outside of the spark plug lead provided that no modification takes place.

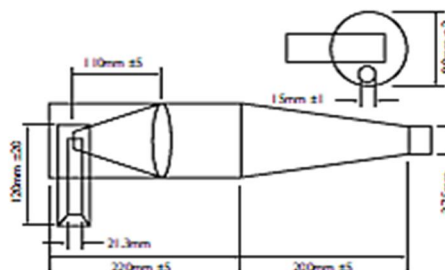
N13.11 INTAKE SILENCER ADAPTOR: Intake Silencer adaptor (Rule N1.25). Intake silencer must be fitted at all times and comply with Rule L5 Option A.

N13.12 CARBURETTOR: The single carburetor must be an original Walbro WG8 series and stock. No modifications are allowed unless otherwise specified. Fuel can only pass through the stock metering orifices. Any means taken to bypass fuel to the engine in any other manner is illegal, no matter how it is accomplished. The carburetor pumper face may be lapped. Necked spigot or button type metering diaphragm may be used. Inlet filter screen must be in situ. mesh size is non tech. Inlet spring is a non-tech item. The Walbro WG8 series fulcrum arm must be used. Arm height non tech, shape obligatory, contour non tech. Deburring is considered machining and therefore not allowed. Refer drawing of throttle venturi.



N13.13 CARBURETTOR MANIFOLD: The carburetor manifold must be the original type marked 5018948 and unless otherwise specified must not be machined in any way shape or form. Deburring is considered machining and therefore not allowed. It is permitted to lap the mounting surfaces of the manifold. Minimum length 29.1mm

N13.14 EXHAUST: The original exhaust header is the only header allowed and original dimensions must be retained. Only 1 (one) exhaust gasket of the original thickness can be fitted. The exhaust header may be repaired by welding of the original parts but, only to the original specifications. The exhaust header mounting holes may be drilled out to 6.2mm maximum diameter.



The exhaust pipe/muffler must be the original part as supplied by Radne Motor AB Part # 3012. Unless otherwise specified no modifications to the exhaust system are allowed in any way shape or form. The exhaust pipe/muffler body may be welded for repair purposes. The weld must not exceed more than half the exhaust's circumference at the point of the weld. The inlet end of the muffler may be repaired, but only to the original specifications. Refer drawing of pipe/muffler. The spacer between the header pipe and muffler may be replaced with a steel (magnetic) tube of the same diameters as the original spacer.

N13.15 CLUTCH: The original clutch assembly as supplied by Radne Motor AB is the only clutch assembly allowed. No modifications to the clutch assembly or parts thereof are allowed. The clutch drum outside diameter must not be less than 87.00mm minimum. The clutch must have 3 (three) original springs insitu, The original springs are of 2.00mm minimum diameter wire with a minimum of 6 (six) active coils each.

N13.16 SQUISH GAP: 1.25 mm minimum. Measure as per Procedure Rule M12.

N13.17 NON-TECH ITEMS: Unless otherwise specified, non-tech items include gaskets and threaded fasteners. Unless otherwise specified, non-tech items must be of similar shape, dimensions, manufacture and position as the original part. Exhaust header retaining bolts and nuts are non-tech with regard to type and size.