



KARTSPORT NEW ZEALAND MANUAL

SECTION N – SPECIFICATIONS

RULE – N11 RAKET 85

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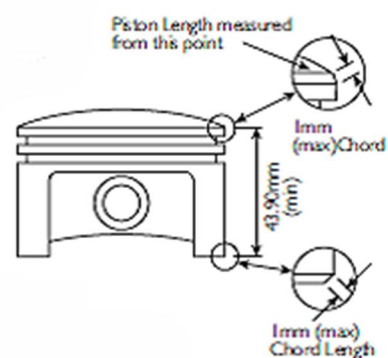
N11 RAKET 85

- N11.1** The Raket 85 engine used in KartSport New Zealand events must be as per original manufacturer's specs in regard to construction and surface finish of all components unless otherwise specified. 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. A tolerance of 0.02mm will be given on all measurements. Glass blasting, shot peening, chemical or any other surface treatment in any way shape or form is not acceptable as original manufacture. All gaskets must be insitu and of original type. No chemical gaskets including sealants of any kind allowed except for the exhaust gaskets which may be sealed. Any and all measurements given in these engine rules are for technical references only. Unless otherwise specified you must not machine any dimension to the measurements.
- N11.2 CRANK CASE:** The crank case must be the same shape and form as shown in the homologation drawings. The measurements must not be changed. The part of the crankcase which surrounds the fly wheel must also remain unchanged (no machining allowed). A sprocket and chain guard other than the original type supplied with the engine may be used provided no machining or changes to the engine are made. The crankshaft seals are free with regard to brand name as long as the type (non Teflon only until 1-2-11) and size remains the same as original manufacture. The crankshaft seal on the drive sprocket side must be 17x28x7mm single or double lip type. Double lip type may have one lip removed. The seal on the ignition flywheel side must be 15x26x7mm with both a sealing lip and a dust cover lip. The crankshaft main bearings must be a single row deep groove ball race 17x40x12 mm. Bearing balls and rings to be metallic. Cages may be non metallic. 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.
- N11.3 CRANK SHAFT ASSEMBLY:** No machining of any kind or any other modification of the crank shaft is allowed, except for the use off a sealer (Araldite or similar) to fill the original oil gallery hole exposed when a clutch is fitted. The balance of the crank shaft 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 anyway.

N11.4 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. The cylinder base gasket sealing face is a cast surface and must not be machined. There must be a minimum of 2 (two) cylinder base gaskets and a minimum of 1 (one) aluminium spacer, minimum thickness including gaskets 1.00mm. Maximum thickness including gaskets 1.30mm. External cylinder surfaces may be sandblasted or chemically cleaned. All internal surfaces must remain as per original manufacture with regard to construction and surface finish.

N11.5 SPARK PLUG: Any propriety brand spark plug to Nippon Denso W22MP-US specifications is allowed. The spark plug must not protrude into the combustion chamber area more than 2 (two) threads with the sealing ring in place.

N11.6 PISTON: The piston must be the original brand (Mahle), but other markings on the crown may vary. No machining of the piston other than the piston skirt bottom is allowed to meet the measurement provided. The piston length is measured from the control edge of the piston to the bottom of the piston skirt as per piston drawing below. 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 Sweden. The markings on the piston crown are, except for the name of the manufacturer, an A with an arrow showing which side must face the exhaust.

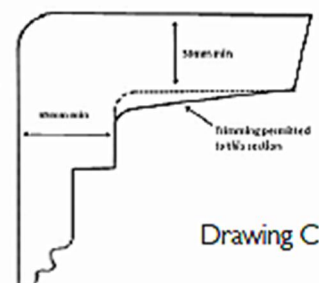
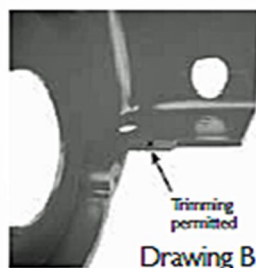
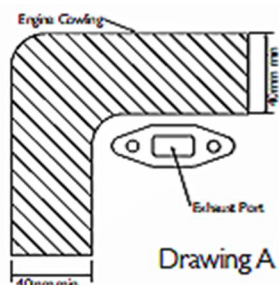


On the original piston crown a classification letter A, B, C, or D may be found. The letter A indicates the smallest diameter. Pistons which are sold as spare parts may not have any classification letters at all, but all spare part pistons are of class A and can be used in all cylinders.

N11.7 ENGINE COWL: The plastic fan cover/engine cowl is standard for the Raket 85 engine, The circular air inlet opening must be a diameter of 79mm minimum, 81mm maximum.

The ONLY modifications allowed are,

1. The engine cowl can be trimmed to fit an old style muffler assembly. If trimmed, it must only be used with an old style muffler. See drawing A for detail.
2. The engine cowl can be trimmed within area marked to allow fitment to an older style casting. See photo B for detail.
3. The engine cowl can be trimmed to fit the new style aluminum exhaust spacer with fins. If trimmed it may only be used with the new style aluminum exhaust spacer with fins. See drawing C for detail.

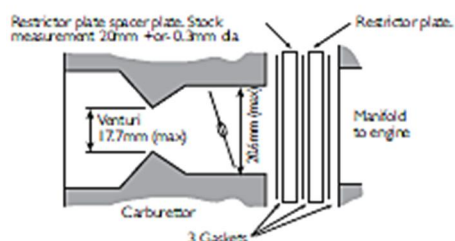


N11.8 IGNITION SYSTEM: The ignition system is a transistorised type which has been specially developed for the Raket 85 engine. The original stator assembly with the black, brown or blue coloured grounding wire or no grounding wire at all is the only stator assembly allowed. The ignition system may not be changed for any other brand or type and any means or method taken to move the ignition system from its original position is illegal. The flywheel must be original Raket 85 but there may be several different original types. Unless otherwise specified the height of the flywheel measured over the fan blades must not be less than 31mm. The height of the Selettra brand flywheel measured over the top of the fins to the machined aluminium surface of the inner face must not be less than 33.25 mm. The Selettra brand flywheel has 26 fan blades and a machined area on the outer face measuring 60.0mm maximum diameter and 9.80mm maximum depth measured from the top of the solid cast post. Only the Selettra flywheel has 2 keyways cut in the center hub and the measurement across the widest corners of the 2 keyways must not be more than 11.50 mm maximum with either slot width 3.10mm maximum. The Selettra flywheel steel center hub width must be not less than 18.40 mm. No machining of the flywheel in any way, shape or form is allowed. The flywheel must be original, no damage or repairs allowed except to threaded holes where helicoil or thread repair inserts may be used to repair threads to the same dimension as original. The Selettra flywheel has two M6 threaded through holes. The flywheel key must be fitted and protrude into both the flywheel and crank shaft slots when installed. The key may be machined, minimum thickness 2.670mm. The key must have parallel sides and not be stepped. A lead for a rev counter may be attached to the outside of the ignition wire provided that no modification takes place.

N11.9 INTAKE SILENCER: Adaptor must comply with Rule N1.25. An Intake Silencer must be fitted. The following is permitted:

" Intake Silencer complying with Rule L5 Option A.

N11.10 CARBURETTOR: The carburettor must be either the Tillotson HS-175D (for Club Days Only) or the Tillotson HS-205A only and stock. No modifications are allowed unless otherwise specified. Manufacturing tooling withdrawal marks parallel with the air flow in the cast section are acceptable. Parallel boring of the venturi is acceptable. Venturi diameter 17.7mm NO GO. 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 carburettor pumper face may be lapped. Inlet spring is a non-tech item. The Tillotson HS series fulcrum arm must be used. Arm height non tech, shape obligatory, contour non tech. Interchange of parts between the HS-175D and the HS-205A is not permitted. It is permissible to remove a section of the choke shaft lever on the HS-205A to provide clearance between the lever and the intake silencer mount in operation.



It is permissible to replace the idle adjustment screw on the HS-205A with a hex head screw/bolt to enable the idle to be adjusted with the intake silencer mount fitted. It is permissible to add material to strengthen the throttle shaft arm hole where the throttle cable locates.

The carburettor restrictor plate internal hole size is:-

Cadet Class: 15.00mm maximum diameter

The carburettor restrictor plate and spacer plate thickness is to be 2mm +/- 0.1mm. The restrictor plate must have a machined parallel hole with square edges (no chamfers). The restrictor plate hole must be centrally located as manufactured and supplied by Kiwi Karts. The restrictor plate, spacer plate and 3 (three) stock appearing gaskets must be in situ.

NOTE: The Tillotson HS-175D will be valid until 31.12.12 for Club Days only. From 1.1.13 only the HS-205A is permitted for all competition.

N11.11 CARBURETTOR MANIFOLD: The carburettor manifold must have the spare part number 279 189. It is permitted to lap the mounting surfaces of the manifold. Minimum thickness 24.2mm.

N11.12 EXHAUST: The original Raket R85 box type muffler Radne Motor AB Part #3140 and exhaust spacer Radne Motor AB Part #3127 with 2 (two) exhaust gaskets. Exhaust spacer width between muffler and engine including gaskets, 19.50mm maximum, 16.50mm minimum. Muffler exit-pipe inside diameter 17mm +/- 0.20mm, length 47.00mm minimum. The new Raket muffler is permitted. The outlet pipe must comply with this rule. It may be used with either of the exhaust spacer options listed below.

The Raket 85 box type muffler AB part#3140 contains two (2) internal baffle plates each with approximately half the surface area perforated (with holes). The perforated area of each baffle plate is to be at opposite sides of the muffler box and the lower plate perforations at the opposite side to the outlet tube.

Radne Top Exit R85 box type muffler Part #506 is permitted, Exit pipe 15mm +0.20mm maximum or -0.50mm minimum. Exit pipe length 61.5mm minimum. Must be fitted with Option 2 spacer and gaskets.

Option 1: Has an original manufactured punched steel spacer plate 4mm +/- 0.30mm in thickness. This plate requires an extra exhaust gasket making a total of 3 (three) gaskets when fitted. The original aluminium spacer must be retained when using this new muffler.

Option 2: Has either the original aluminium spacer or the newer aluminium spacer with fins and 2 (two) gaskets. Exhaust spacer width between muffler and engine with Options 1 or 2 including gaskets 25.5mm maximum, 22.5mm minimum.

In operation the muffler must be securely fastened with no leakage, must be effective and installed in the original position. No modifications to the exhaust system are allowed in any way shape or form. It is permissible under the supervision of a Technical Officer to remove the exhaust during an event to repair a stripped thread for a retaining bolt or to replace a broken retaining bolt. Check on exhaust gas leakage may be made by a gas leak detector. An Indentation is permitted in the sprocket side of the muffler to provide clearance for the chain. Welding is permitted to repair damage and return to legal specification. Where an exhaust is repair welded at the seam, a maximum of two sides only may be welded.

N11.13 DRIVE SPROCKET: Clutch drive . the drive sprocket must have 12 (twelve) teeth of .219 pitch. Only genuine Radne clutch and parts may be used. (Either Clutch drum Part #3144 (with OD of 77.5mm) and Clutch inner Part #3143 or Clutch drum Part #3144-2 (with OD of 87.8mm), Clutch inner Part #3143-1 and inside washer Part #3148-1). No modifications to the clutch are permitted. One-way bearings, which enable push starting, are not permitted.

N11.14 SQUISHGAP: 2.00 mm minimum. Measure as per Procedure Rule M12.

N11.15 NON-TECH ITEMS: Unless otherwise specified, non-tech items include gaskets and threaded fasteners. (Helicoil or thread repair inserts may be used to repair damaged threads to the same dimension.) They must be fitted on the same centre line as the original thread. Unless otherwise specified, non-tech items must be of similar shape, dimensions, manufacture and position as the original part.

