

# YAMAHA KT100SEC (Electric Start)

TECHNICAL SPECIFICATIONS



VERSION 2.1 – 15 JAN 2021

## **1.0 Introduction**

The following are the Technical Specifications for the Yamaha KT100SEC (electric start) engine, as approved by KNSW.

The engines must be original in all their components according to the Yamaha KT100SEC drawings.

The KT100SEC may be blueprinted in accordance with the provisions of the KT100S Technical Specifications.

However, there can be no interchange of any major components between the KT100SEC engine and the KT100SE and KT100SD engines. The major components consist of crankcases, crankshaft halves, cylinder, ignition rotor, ignition stator and ignition stator carrier plate.

The KT100SEC engine MUST always run with a clutch and a complete KT100SEC engine starting system.

Any removal, addition or polishing of material is strictly forbidden. This includes sandblasting, glass bead blasting, peening, acid etching, spark eroding and/or any other method of metal removal or displacement is not allowed.

All other Specifications not listed in these KT100SEC Specifications, will be as per the KT100S Specifications.

**ANY ALTERATIONS / MODIFICATIONS ARE STRICTLY PROHIBITED EXCEPT AS SPECIFICALLY AUTHORISED WITHIN THESE SPECIFICATIONS AND ANY CLASS REGULATIONS. IF THESE DO NOT SAY YOU CAN MAKE A MODIFICATION, THEN YOU CANNOT.**

## **2.0 Engine Displacement**

As an "Out of the Box" engine, the bore diameter, stroke length and displacement are:

**Bore: 52.00mm**  
**Stroke: 46.00mm**  
**Displacement: 97.6cm<sup>3</sup>**

**Maximum Piston Size: 52.75mm**

### **2.1 Cylinder**

No modifications, grinding or machining is permitted. The minimum cylinder length is 81mm.

### **2.2 Cylinder Base Gasket**

A cylinder base gasket, of similar type and style as supplied with the engine must be used, and may be of any material, the minimum thickness allowed is 0.35mm.

### **2.3 Cylinder Head**

Must be of original engine manufacturer and marked with the word "YAMAHA" and conforming to drawings supplied by Yamaha.

- The distance from the spark plug sealing surface to combustion chamber sealing face shall be 32.00mm +/- 0.1mm.
- Repairs to the spark plug sealing face must be by addition of weld material only and re-machining to a flat surface.
- The head gasket must be retained.

### **2.4 Cylinder Head Volume**

The combustion chamber volume must be a minimum of 11.5cc.

### **2.5 Head Gasket**

- A head gasket must be retained.
- The minimum allowed thickness of the head gasket shall be 0.30mm.

## **2.6 Piston**

- The Piston must be a genuine Yamaha.
- Maximum allowed piston size 52.75mm.
- Minimum length 59.2mm as per specification.
- No modifications are permitted.

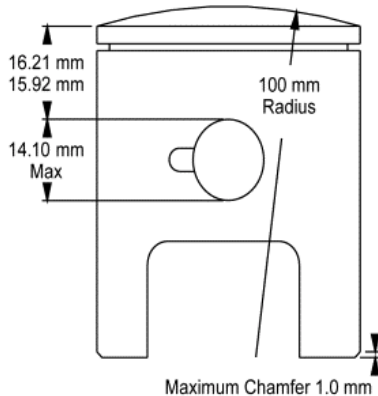


DIAGRAM IS FOR DIMENSIONAL REFERENCE ONLY.

- Note: Skirt length must be equal distance on both sides.

## **2.5 Connecting Rod**

Must be Yamaha only:

- Minimum/Maximum rod length, centre to centre 99.87mm – 100.13mm max.
- Yamaha "J" rod (50W -11651-00) is not eligible.

## **2.6 Crankshaft**

Must be of original engine manufacturer and conform to drawings supplied by Yamaha. The KT100 SE/SD crankshaft with alloy balance weights is the only one to be used in the SEC engine:

- It is permissible to recondition the crankshaft main shaft by plating.
- No machining permitted.
- The minimum crankshaft diameter is 86.8mm.

## **2.7 Crankcase**

Must be of original engine manufacturer with no machining permitted.

## **2.8 Ignition**

Yamaha TCI Type AF Model 49011 as supplied with engine must only be used.

## **3.0 Carburettor**

Must be **any genuine** Walbro carburettor. ~~model WB3A or WB44 as supplied with the engine, NO modifications allowed.~~

- All air must pass through the carburettor throat.
- Allowed to have adjustable (extended) low jet mixture screw, (flex jet).
- Adjustment of carburettor jet needles must be done by manually turning the jet needle (or its extension) only.
- Carburettor throttle cannot be actuated by electro mechanical means.
- It is permissible to fit a mechanical stop to limit the range of carburettor jet needle movement, however no modifications to the carburettor are permitted to mount such a stop.

## **3.1 Airbox Adaptor**

Air box adaptor must be original Yamaha as supplied with the engine.

## **4.0 Internal Additions**

The use of thermal barrier coatings / ceramic coatings on or in the engine / engine components and on or in exhaust components is prohibited.

The use of anti friction coatings on or in the engine / engine components is prohibited.

## **4.1 Non-tech Items**

Non-tech items are gaskets, seals, big end roller/cage, little end spacers, rings, washers, cages, fasteners, spark plug and spark plug lead and cap, gudgeon pins, main bearings, engine sprocket and key.

- Non-tech items are to be of the same type and style as the original. No alteration from the original manufacturer's specifications is permitted to fit a non-tech item.
- Head gasket/s must be retained.
- Only crankcase half gasket may be formed from liquid gasket compounds.
- Spark plugs must have a maximum engagement length of 20mm without the washer.
- Temperature gauge and probe or tuning lights. The spark plug washer may be removed when using a CHT probe under the spark plug.

## **5.0 Exhaust Header Pipe**

A genuine original equipment standard Yamaha swivel header pipe without modification (as supplied by Yamaha or OE for the KT100J and KT100SE/SD engines maybe used.

Modifications to fit a maximum of one (1) exhaust probe are permissible.

## **5.1 Exhaust System**

The remainder of the Exhaust System is in accordance with the provisions of the KT100S Technical Specifications.

## **6.0 Clutch**

Clutches are mandatory for all Sprint Classes.

The only permissible clutches to be used with the Yamaha KT100SEC engine are the following:

- Freeline SL                      AKA # 44
- Strike SSS                        AKA # 47
- Strike SSS evolution        AKA # 47 (Yamaha long shaft) only
- KT100SEC 7yps                AKA # 57
- Ital Red "S" Taperlock      AKA # 55A (Short shaft) only
- Zedtec ZD1                      Long shaft and short shaft

## **7.0 Electrical Wiring and Starter**

Must be as supplied with the engine and battery.

Connections may be replaced with non-genuine items to repair damaged connectors.