



TM KART

MINI 4



041-EM-12

OWNER'S MANUAL

CONTENTS

FUEL AND OIL REQUIREMENTS	2
PISTON-TO-CYLINDER CLEARANCE	2
SQUISH CLEARANCE	2
ENGINE TIMING SETTING	2
PISTON RING END GAP	3
RECOMMENDED MAINTENANCE INTERVALS	4
RECOMMENDED MAINTENANCE INTERVALS	5
TECHNICAL SPECS	8
GENERAL WARNINGS	9
TECHNICAL SUPPORT AND CONTACTS	10

FUEL AND OIL REQUIREMENTS

Use **98 RON unleaded gasoline** (minimum **95 RON**) mixed with **2-stroke engine oil** at a ratio of **4% (1:24)**

- TM KART Recommends **VROOAM LUBRICANTS** castor blend 2t racing engine oil.

PISTON-TO-CYLINDER CLEARANCE

A **diametral piston-to-cylinder clearance of 0,07 - 0.08 mm** is recommended to ensure proper operation of the cylinder assembly and maximum engine reliability.

SQUISH CLEARANCE

After piston replacement or a complete engine overhaul, the squish clearance must be checked. Adjustment is carried out by selecting cylinder base gaskets of different thicknesses, in order to achieve the specified value.

TM KART recommends a squish clearance of 0.50 - 0.55 mm.

After any maintenance operation involving disassembly of the cylinder assembly, ensure that the measured value complies with the specified tolerance range.

ENGINE TIMING SETTING

For engines equipped with **PVL** ignition systems, set the ignition timing to **2.1 mm** before top dead centre (BTDC).

For engines equipped with **Selettra** ignition systems, set the ignition timing to **2.1 mm** before top dead centre (BTDC).

PISTON RING END GAP

A **piston ring end gap** between **0.10mm** and **0.15mm** is recommended.

Measurement must be performed with the ring installed and compressed inside the cylinder, **using a feeler gauge**.

At each piston replacement, the piston ring must also be replaced.

After installing the new ring, check the end gap as shown in the figure 1 (red arrow) and ensure that the measured value complies with the specified limits.

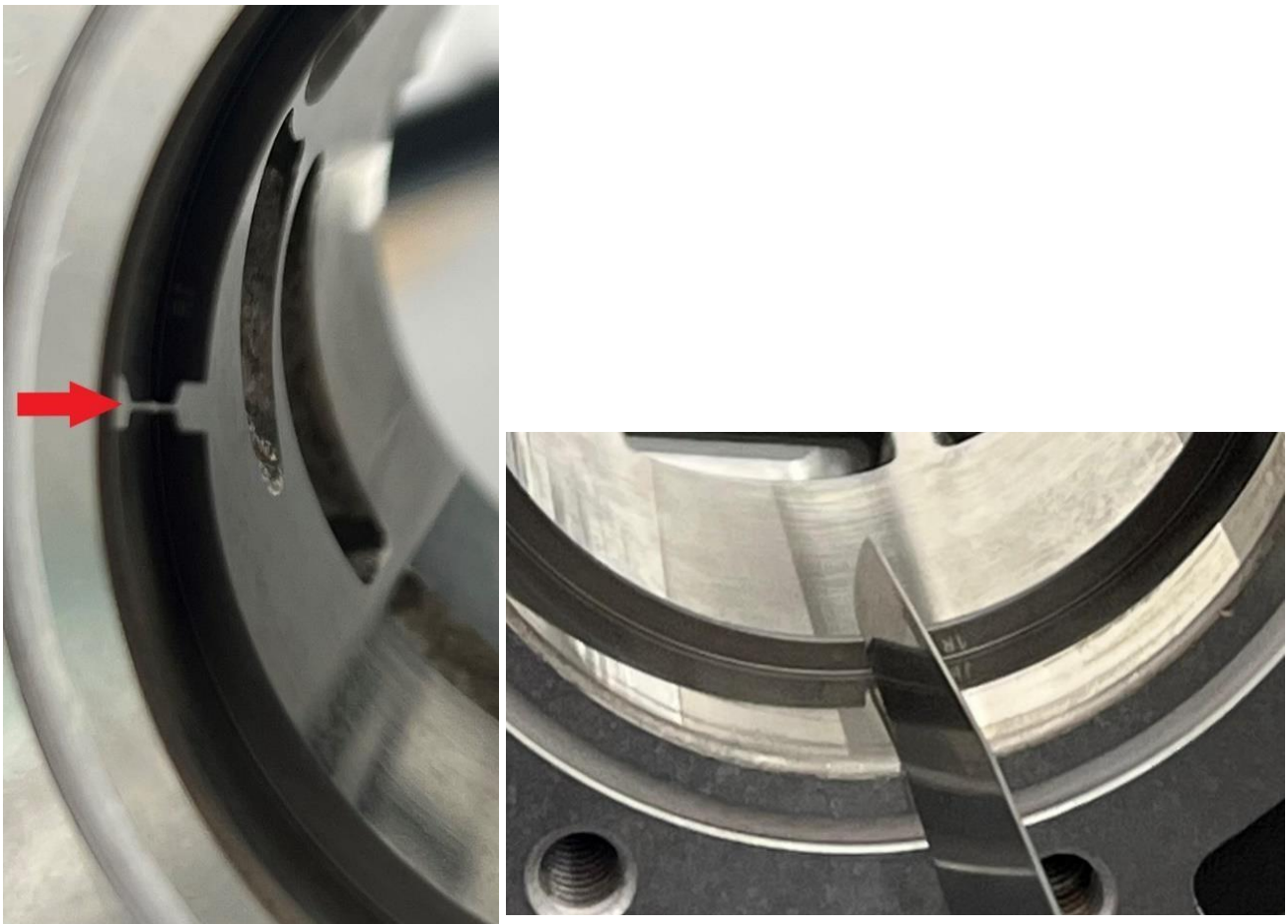


Figure 1: Ring end gap measurement.

RECOMMENDED MAINTENANCE INTERVALS

Refer to the tables below for the recommended intervals for the replacement of main mechanical parts.

Part	Maintenance Interval
Piston	3 hours
Piston pin	3 hours
Crankshaft bearing	15 hours
Needle cage and crankshaft	30 hours
Rod	30 hours

- To preserve engine integrity and extend the service life of mechanical components, avoid over-revving conditions.

Engine speeds exceeding the recommended limits may cause accelerated wear or failure of critical components.

RECOMMENDED MAINTENANCE INTERVALS

Program	Part	Action
Before use	Chain	Check tension and lube
	Sprocket	Check alignment with rear axle
	Exhaust	Check the condition and ensure correct fastening
After use	Chain	Check for wear and lube
	Engine	Clean the external surfaces of the engine
	Exhaust	Check for wear

After 3 hours of use	Piston	Check
Every 5-10 hours	Clutch	Check for wear
	Exhaust and silencer	Disassemble and perform general cleaning
	Cylinder head	Disassemble and perform general cleaning
Every 15-20 hours	Rod	Check for wear, replace if necessary (replace every 30 hours)
	Crankshaft Assembly	Check for wear, replace if necessary
	Bearings	Inspect and replace components

- The service life estimates and replacement intervals provided have been determined based on average engine usage conditions.

The actual service life of components may vary depending on operating conditions, driving style, maintenance practices, and the level of use, whether recreational or competitive.

BREAK-IN PROCEDURE

New or Fully Rebuilt Engine

For new engines or engines that have undergone a complete overhaul, follow the running-in procedure below:

1. Warm up the engine on the stand for approximately **5 minutes**.
2. Complete **2 laps** at moderate speed.
3. Perform a track running-in period of **30 minutes**, avoiding sustained high engine speeds.
4. At the end of the running-in phase, progressively increase engine load and performance until normal operating conditions are reached.

Piston Replacement Only

In case of piston replacement only, follow the procedure below:

1. Warm up the engine on the stand for approximately **5 minutes**.
2. Complete **2 laps** at moderate speed.
3. Perform a track running-in period of **5 minutes**.
4. Afterwards, progressively increase engine load and performance until normal operating conditions are reached.

Warning: During the running-in procedure, avoid sudden acceleration, excessive engine speeds, and over-revving conditions in order to ensure proper bedding-in of mechanical components and maximum engine reliability.

TECHNICAL SPECS

Crankshaft

Crankshaft axial play must be maintained within **0.15 mm - 0.25 mm**.

Spark Plug

Recommended spark plug: **NGK BR10EG**.

Torque specifications:

Part	Thread	Torque Spec.
Spark plug	M14x1.25	20 Nm
Cylinder head nuts	M8	18 Nm
Crankcase bolts	M6x40	12 Nm
Starter ring gear nut	M16x1	25 Nm
Pinion bell nut	M10x1	25 Nm

GENERAL WARNINGS

- Use only **genuine TM KART SRL spare parts**. The use of components not compliant with TM KART SRL technical specifications may compromise engine operation and cause damage to its components.
- During any assembly or overhaul operation, always replace **gaskets, seals, O-rings, and all sealing elements** with new components.
- After assembly, carefully verify that all components have been correctly installed and that the engine complies with the specified assembly requirements.
- The service life estimates and replacement intervals provided in this manual are based on average operating conditions. The actual component life may vary depending on usage conditions, performance demands, and whether the engine is used for **recreational or competitive purposes**.
- This engine is designed and manufactured **exclusively for racing/competition use**. Therefore, it is not covered by any warranty. TM KART SRL declines all civil and criminal liability arising from improper use of the engine or from use not in accordance with its intended purpose.

For any clarification, technical information, or support, please contact directly **TM KART SRL**.

TECHNICAL SUPPORT AND CONTACTS

For technical inquiries, service support, original spare parts, and after-sales assistance, please contact:

TM KART SRL

Tel.: (+39) 0721 1835118

E-mail: info@tmkart.it

Sito web: <https://www.tmkart.it/>

Owner's Manual

Version: 1.1

Release Date: 2026

© TM KART SRL – All rights reserved.



Our work, your speed