TM KART

OKJ - OKN - OKS

041-EJ-01

041-EN-03

041-ES-03

OWNER'S MANUAL

CONTENTS

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**.

GEARBOX LUBRIFICATION

To change the gearbox oil, loosen the fill plug and drain the used oil. Then, add the new oil (about **25ml**), check for level using the sight glass. Level should be approximately halfway up the sight glass located on the transmission cover. It is recommended to check the oil level every 3 hours of engine operation.

- TM KART Recommends **VROOAM LUBRICANTS TF825**

Figure 1 shows the location of the **gearbox oil filler plug** (red arrow) and the **oil level sight glass** (black arrow).

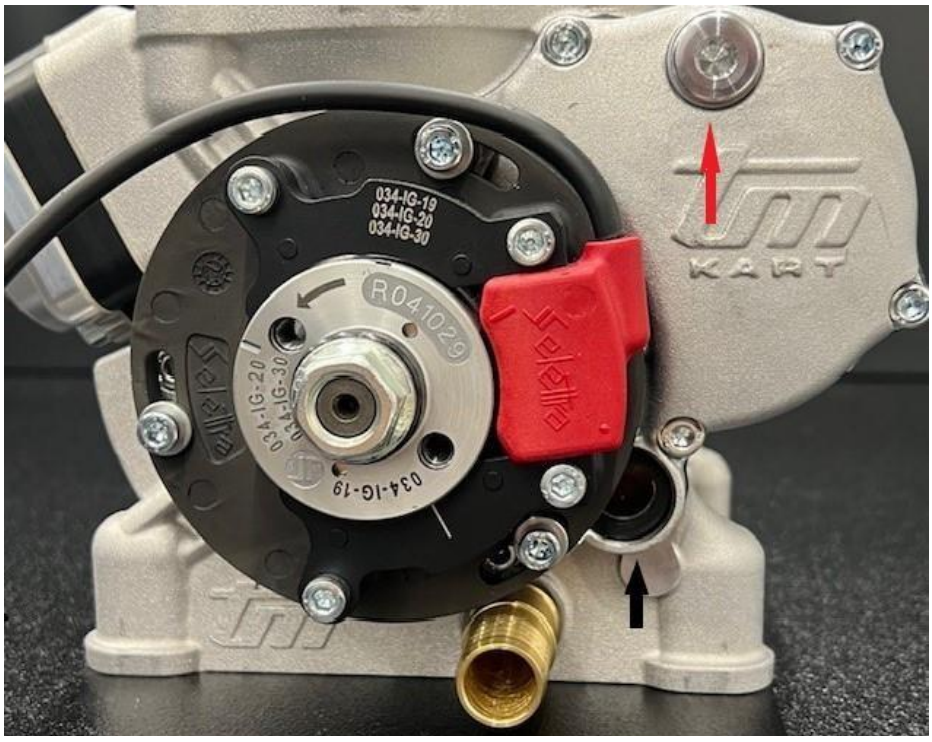

Figure 1: Location of the oil filler plug and the level sight glass.

Figure 2 show the correct installation of the transmission gears. This procedure must be carried out with the piston positioned at top dead center.

Figure 1: Transmission gears installation.

Figure 3 show the correct position of the gear: with the piston at the top dead center, the hole indicated by blue arrow must be aligned with the crankshaft connecting rode journal bore.

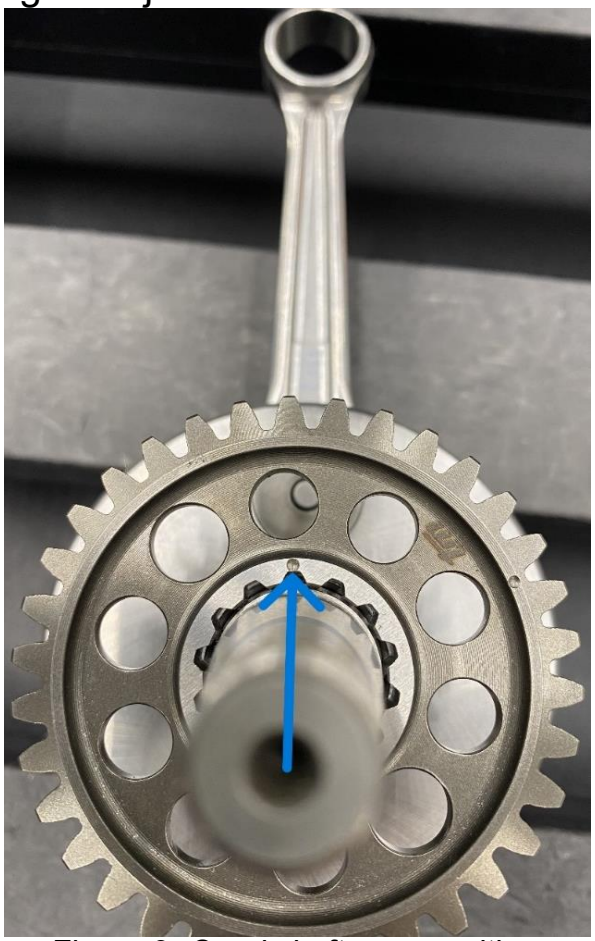

Figura 3: *Crankshaft gear position*.

Figure 4 show the correct position of the balance shaft gear.

Figure 4: Balance shaft gear position.

PISTON-TO-CYLINDER CLEARANCE

Table 1 below lists the **diametral piston-to-cylinder clearance values** for the engine OK/J, OK/N and OK/S. These values are recommended to ensure proper operation of the cylinder assembly and ensure maximum engine reliability.

Engine	Min	Max
OK/J	0,11mm	0,12mm
OK/N	0,12mm	0,13mm
OK/S	0,12mm	0,13mm

Table 1: Diametral piston-to-cylinder clearance, min and max.

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 lists in table 2 the squish value recommends and solder wire thickness recommended.

Engine	SQUISH	Recommended solder wire thickness
OK/J	0.75mm	1 mm
OK/N	0.90mm	1.5 mm
OK/S	0.90mm	1.5 mm

Table 2: Squish value and recommended solder wire thickness.

ENGINE TIMING SETTING

TM Kart recommends, for both ignition system, **PVL** and **Selettra**, the ignition timing below:

- For engines **OK/J** set the ignition timing to **3.7mm** before top dead center.
- For engines **OK/N** set the ignition timing to **2.8mm** before top dead center.
- For engines **OK/S** set the ignition timing to **2mm** before top dead center.

PISTON RING END GAP

Table 3 lists the **piston ring end gap value** recommended by TM Kart.

Engine	Tollerance
OK/J	0,30mm
OK/N	0,35mm
OK/S	0,35mm

Table 3: Piston ring end gap.

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 4 (red arrow) and ensure that the measured value complies with the specified limits.

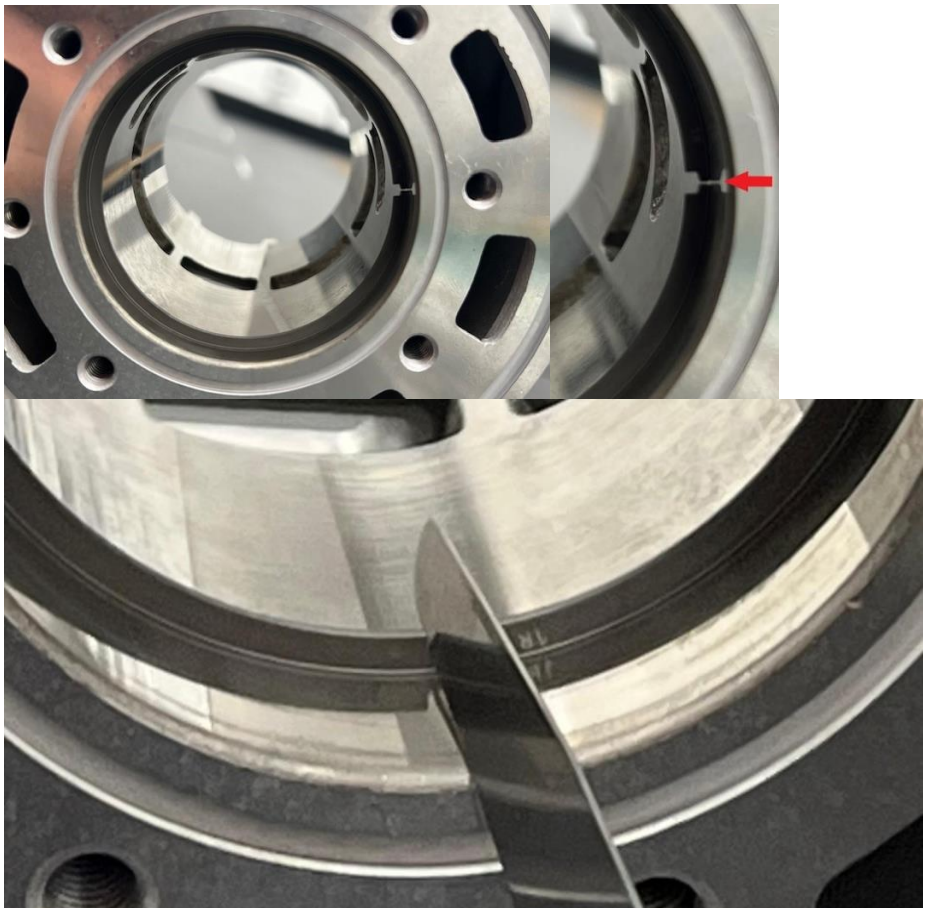

Figure 2: Ring end gap measurement.

EXHAUST VALVE OK/S

TM Kart recommends adjusting the exhaust valve by turning the adjuster clockwise between **5** and **10** turns, starting from the fully released valve position.

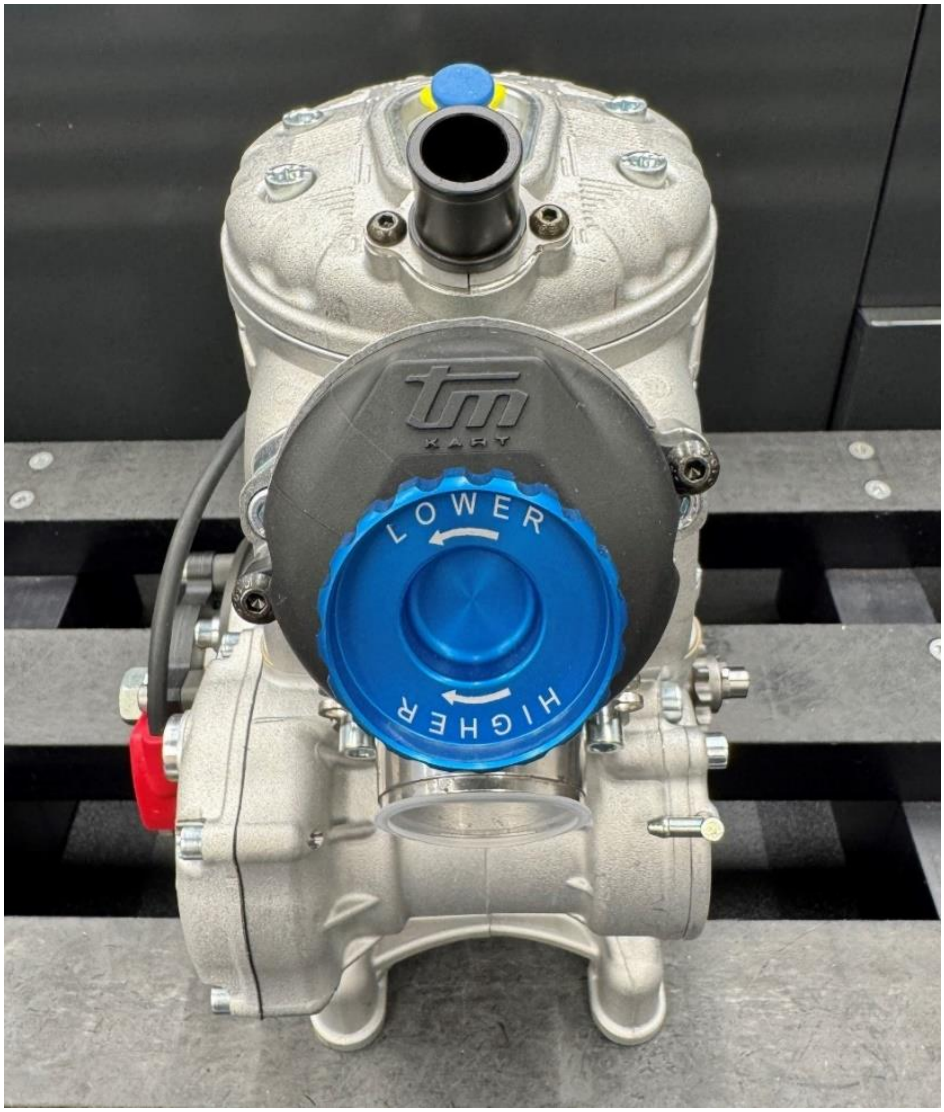

Figure 3: Exhaust valve OK/S

RECOMMENDED REPLACEMENT INTERVALS

Table 4 lists recommended service life intervals for the main engine components, after which, TM Kart recommends replacing the individual part.

Part	Maintenance Interval
OK/J	
Piston	3 hours
Piston Cage	6 hours
Rod	24 hours
Crankshaft Pin and Connecting Rod Bearing Cage	24 hours
Rod Bearings	12 hours
OK/N	
Piston	3 hours
Piston Cage	6 hours
Rod	15 hours
Crankshaft Pin and Connecting Rod Bearing Cage	15 hours
Rod Bearings	10 hours
OK/S	
Piston	3 hours
Piston Cage	6 hours
Rod	8 hours
Crankshaft Pin and Connecting Rod Bearing Cage	8 hours
Rod Bearings	8 hours

Table 4: Recommended replacement intervals.

- **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

TM Kart recommended the maintenance intervals below, which are the same for all engines types: OK/J, OK/N e OK/S.

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

Every 3-5 hours	Gear	Change the gearbox and check for wear
	Piston	Check for wear, replace if necessary
	Engine	Clean components
After 8 hours	Crankshaft Assembly and Connecting Rod	Check for wear, replace if necessary
	Bearings	Check for wear, replace if necessary
	Engine	Complete overhaul, check for wear

- 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, gradually bringing the coolant temperature to **50 °C**.
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, gradually bringing the coolant temperature to **50 °C**.
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 0,20mm - 0,35mm.

Spark Plug

Recommended spark plug: **NGK BR10EG**.

Cooling System Operating Temperature

To ensure optimum performance and maximum engine reliability, the coolant operating temperature should be maintained between **48 °C and 55 °C**.

Torque specifications:

Part	Thread	Torque Spec
Spark plug	M14x1.25	20 Nm
Head Bolts	M6	10 Nm
Cylinder Nuts	M8	18 Nm
Reed valve screw	M6	10 Nm
Crankcase screw	M6	12 Nm

Ignition side crankshaft nut	M12x1.25	20 Nm
PVL ignition aluminium nut	M21x1	20 Nm
Trasmission cover screw	M5	8 Nm
Countershaft gear nut	M12x1	20 Nm
Crankshaft gear nut	M21x1	30 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:

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

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Our work, your speed