

# IAME

THE HEART OF KART

# X30

BY IAME

## Super



**BASIC MANUAL**

**"X30 SUPER 175cc"**

## FEEDING

Fuel mixture 98 RON and 4,5% oil (22:1 - CIK homologated)

Our experience dictates use of oils, such as:

- WLADOIL K 2T;
- ELF HTX 909;
- ELF HTX 976;
- SHELL ADVANCE RACING M.

## LUBRIFICATION GEARS



**ATTENTION:** *the engine is supplied without oil in the gear vain.*

### GEARS OIL CHARGING

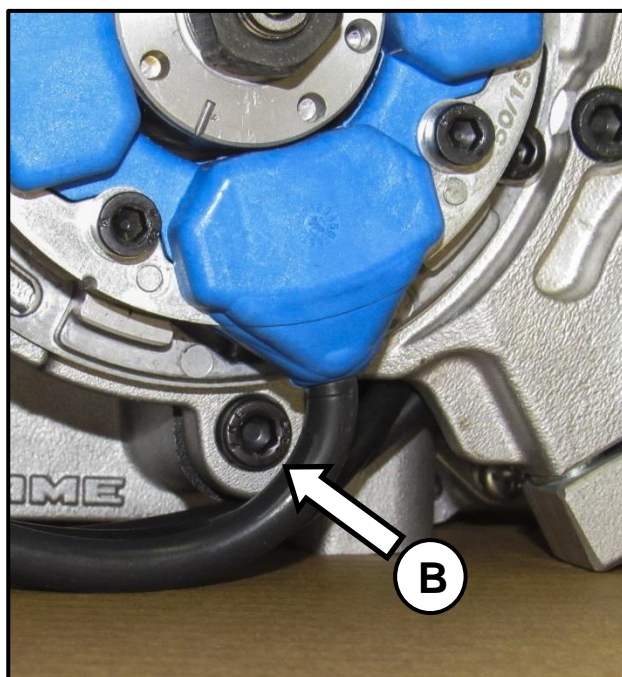
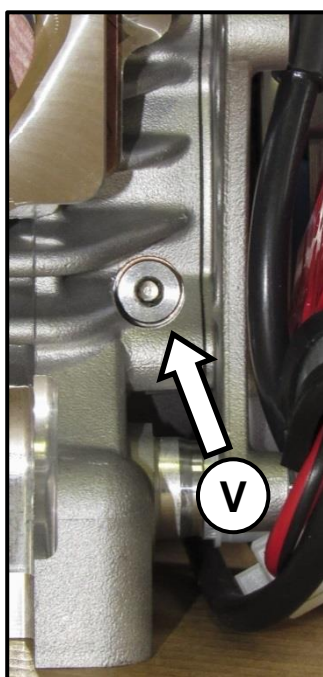
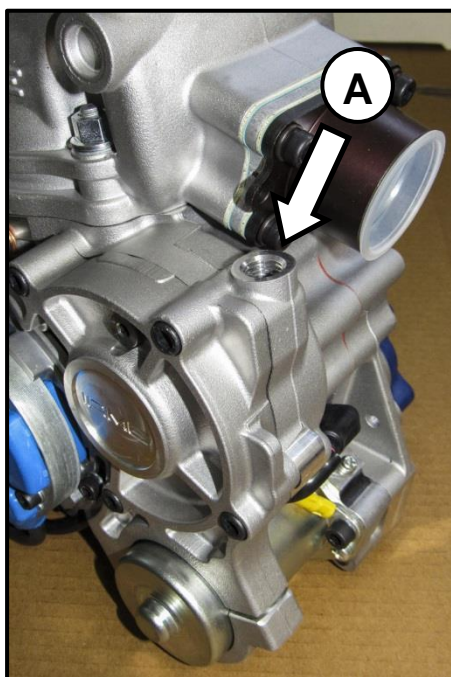
Before use, remove the breather plug and add oil through the hole on the crankcase (A) about 40ml with specific EP 100, as WLADOIL IAME GEAR OIL or generic motor oil SAE 30.

In order to check the prescribed correct quantity of oil in the crankcase, unscrew the screw (V) from the engine as shown in the picture, if the oil slightly flows out, the quantity is correct.

A complete oil change is recommended after 5 hours of operation.

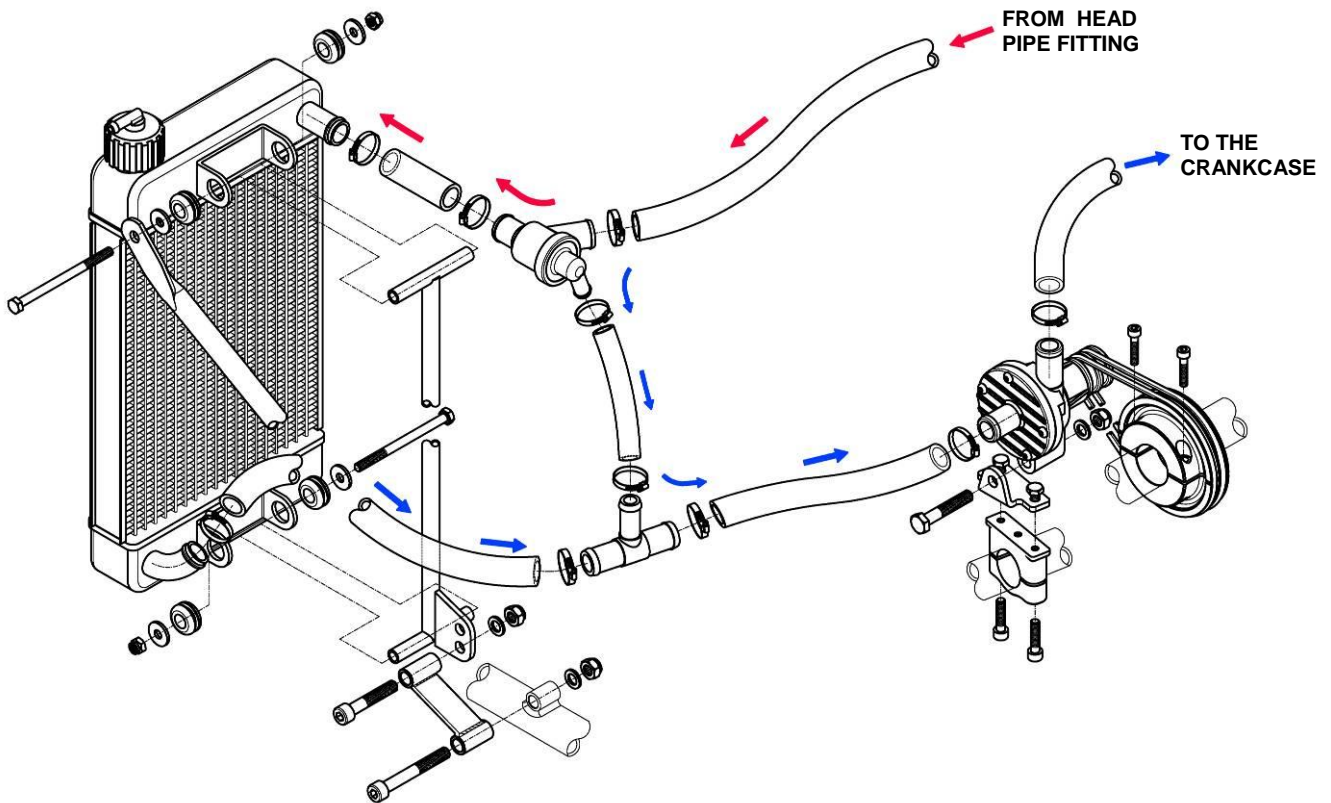
### GEARS OIL DISCHARGING

Remove the drain plug (B) to discharge oil.



## COOLING SYSTEM CONNECTIONS

CONNECT THE SYSTEM AS SHOWN IN FIGURE



Once the system is filled (with pure water), provide to the proper air venting.

We recommend the use of a 3 way-thermostat (opening temperature  $48^{\circ}\text{C}\pm 2$ ), as shown on the drawing, especially during the wintertime.

It is though possible to make a direct connection, removing the thermostat, the T-pipe and the bypass-tube between them.

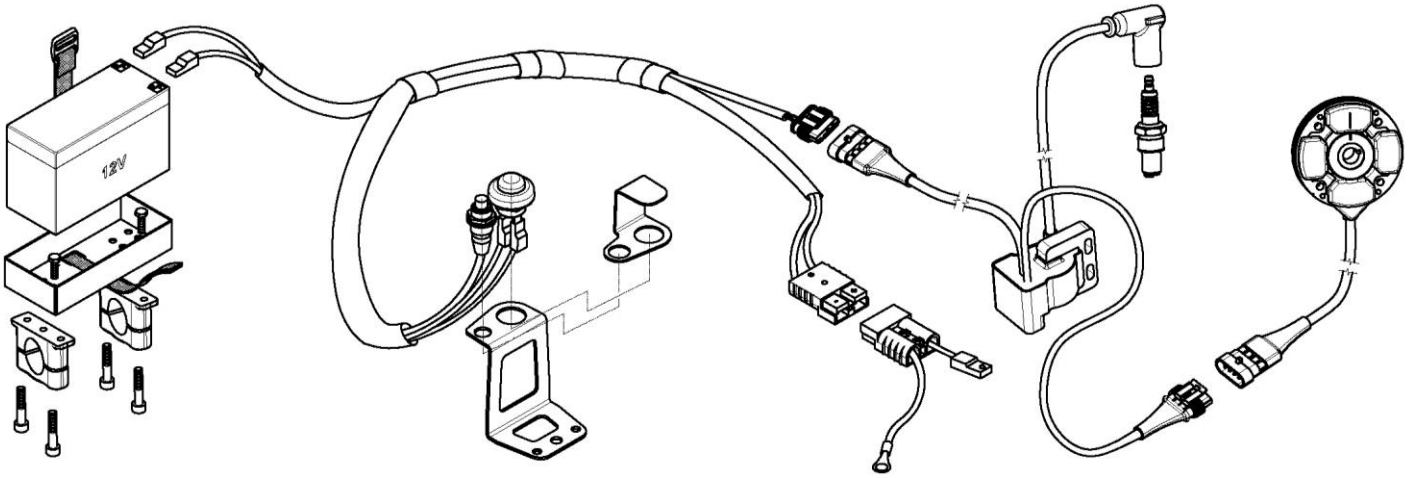
The presence of the thermostat doesn't eliminate the need for adequate partialization of the radiant surface and for protective spoilers on the cylinder during the cold season (temperature  $\leq 5^{\circ}\text{C}$ ).



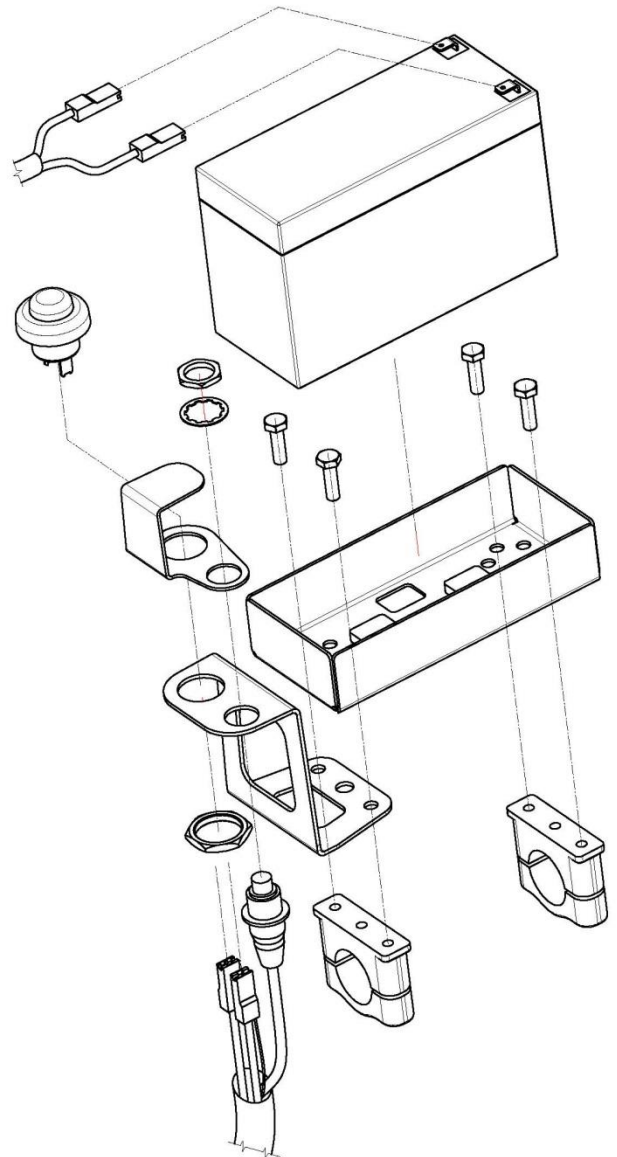
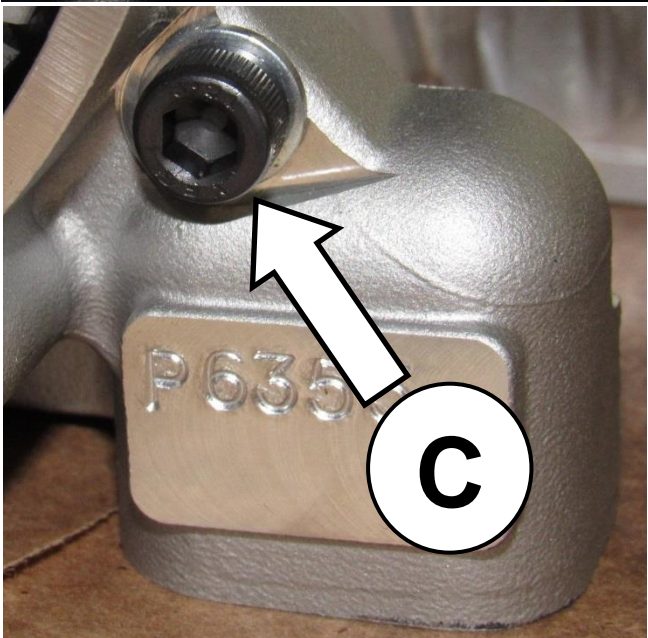
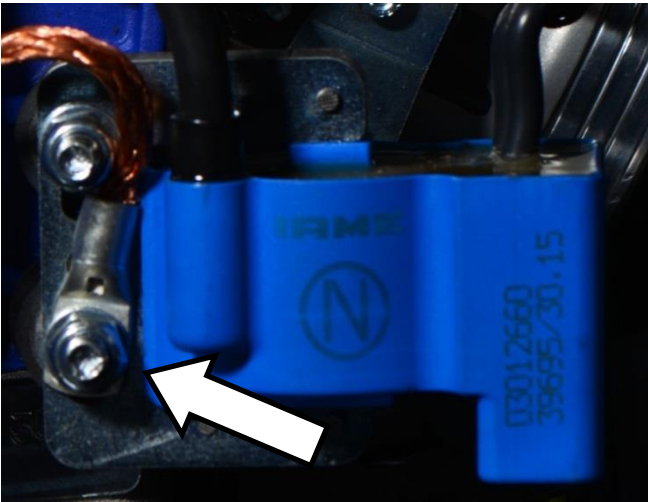
**ATTENTION: water cooling operation temperature**  
**limits: min.  $48^{\circ}\text{C}$  / max.  $54^{\circ}\text{C}$**

## ELECTRIC SYSTEM

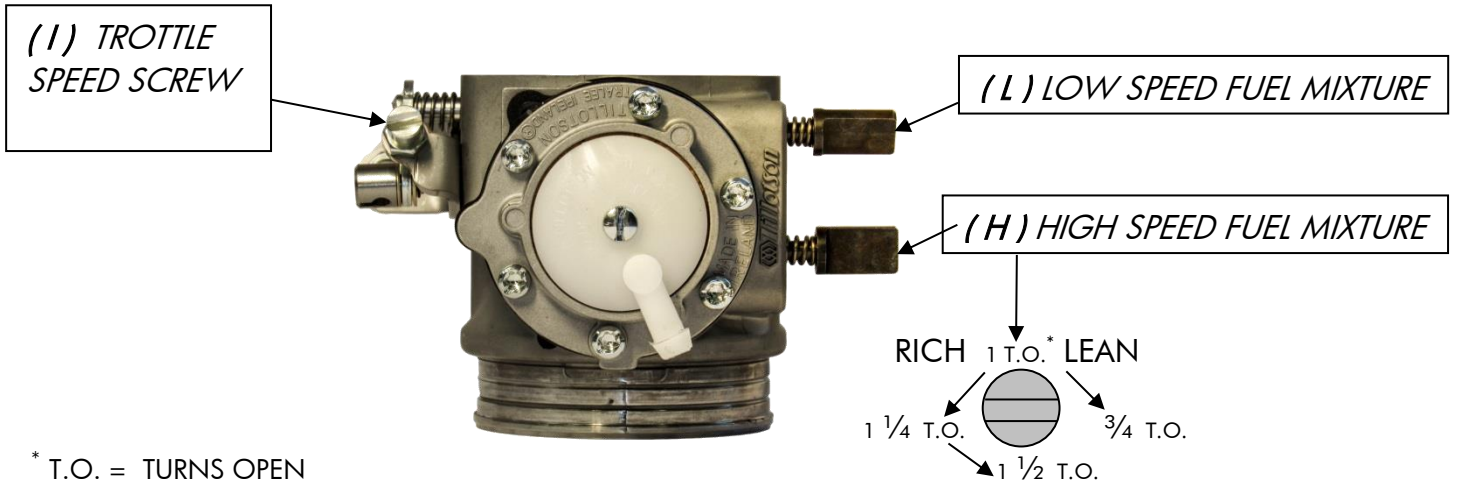
The engine mounts ignition of the digital type with fixed advance at 22°. When the piston is at T.D.C. the notches of the rotor and stator coincide.



**ATTENTION: VERY IMPORTANT IS CONNECT TO CRANKCASE  
(C) THE COPPER WIRE TO ENGINE AND COIL'S BODY.**



# CARBURETTOR ADJUSTEMENT



Normally the correct setting of the mixture screws, after engine run-in, is the following:

- L (close the screw completely and then open): 1 T.O. (1 turn)
- H (close the screw completely and then open): 1 T.O. e  $\frac{3}{4}$  (1 turn and 45')

Based on various factors as altitude, ambient temperature etc. It might be necessary to reset the carburettor to optimize the performance of the engine.

## ATTENTION:

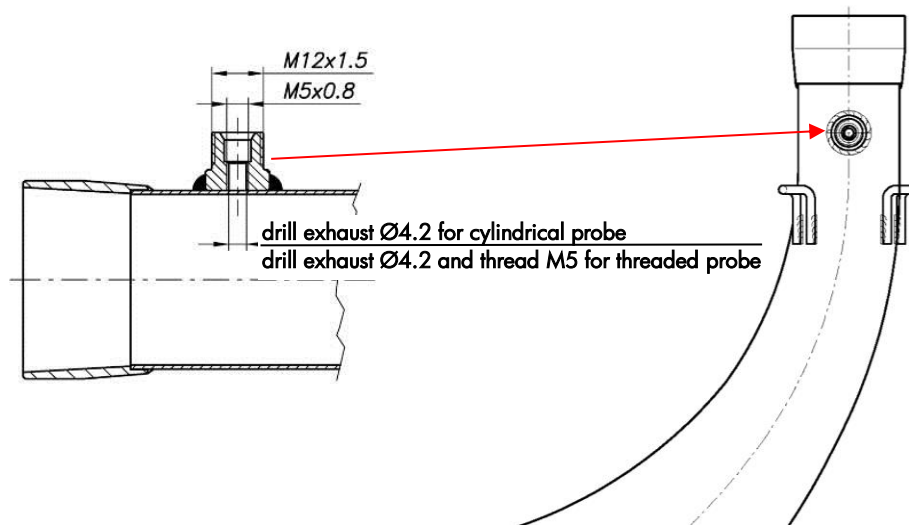
- *Never lean too much as lean mixture will overheat engine and cause seizure.*
- *Do not force H or L closed. It may damage the precision machined orifice and render the carb. unserviceable.*
- *The adjustment of screw must be performed with warm engine.*

## ***EXHAUST GAS TEMPERATURE PROBE***

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The muffler, supplied with the engine is provided with a temperature probe fitting which is not drilled.

Whenever you wish to employ the probe, please proceed as shown in the figure below.



## ***EXHAUST LENGTH SETTING***

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The exhaust length setting depending on the track conditions and needed power diagram.

In general, by shortening the total exhaust length the low RPM an improvement at high RPM is achieved and vice versa, by lengthening the exhaust length the low RPM is improved.

For shortening or lengthen the exhaust, the only thing permitted is use of more spacers 5mm and seals provided by "IAME".

## MAIN ENGINE COMPONENTS AVERAGE ESTIMATED LIFE

The estimated life of the different components, of the engine, changes according to the use and to the desired performance.

### PISTON / CYLINDER MATCHING

The piston replacement must take place within specific intervals, measured through used mixture liters and it changes depending of the engine use, if for competitive use (so to reach the better performance) or not competitive.

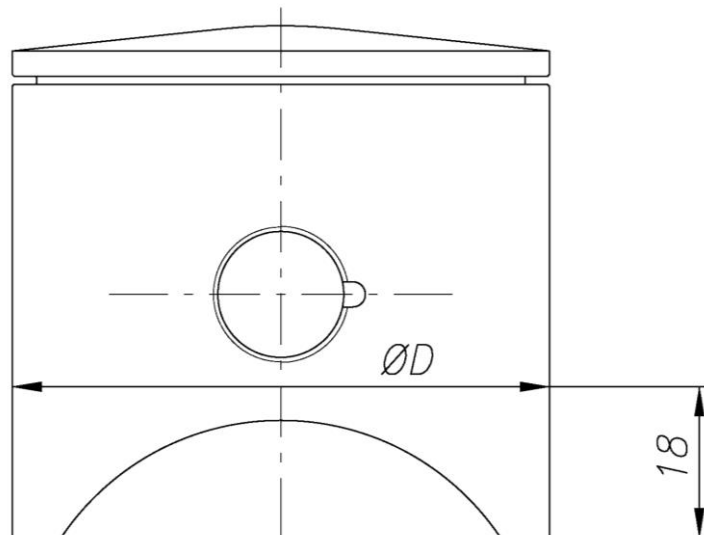
IAME suggests to replace the piston during the competitive use any 100lt, or before whenever the clearance between piston and cylinder exceeds 0.15mm.

For NOT competitive use the replacement must take place any 150 liters of mixture or whenever the clearance between piston and cylinder exceeds 0.15mm.

Every 50 liters inspection process is recommended to check the state of the piston of the piston itself.

The prescribed clearance between cylinder and new piston, is 0.12mm.

The effective piston diameter has to be verified at 18mm from the base, perpendicularly to the piston pin.



The measure marked on the piston top is the effective one of the piston.

Moreover, the clearance between the piston ring tips (installed in the cylinder) must be between 0.40÷0.45 mm.

The clearance can be checked with a feeler gauge, by inserting the ring in the cylinder.

## CONROD BIG END CAGE, CRANKPIN, SHIM AND MAIN BEARING

During the competitive use we suggest the replacement every 200lt .  
For NOT competitive use the replacement can be made about every 250lt.

## CONROD SMALL END CAGE

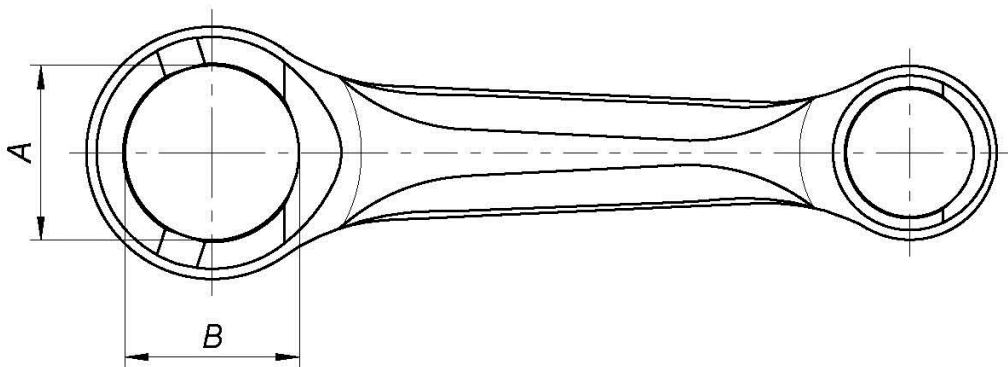
The replacement must be made every 100lt.

## CONROD

During the competitive use we suggest the replacement every 400lt.

For NOT competitive use the replacement can be made every 500lt.

Anyway it must be replaced whenever the big end hole ovalization exceeds 0.01mm. This value is the difference between the diameter measured in "A" and "B" as below indicated.





## TECHNICAL DATA ENGINE SUMMARY TABLE

| DESCRIPTION  | DATA                  | NOTES   |
|--|-----------------------|---|
| FUEL MIXTURE / FUEL                                  | 4,5 % OF OIL          | 98 RON<br>Oil CIK homologated   |
| GEARBOX OIL  | 33 ml                 | advised:<br>EP 100<br>(WLADOIL<br>IAME GEAR OIL)<br>or motor oil SAE 30 |
| OPERATING TEMPERATURE ENGINE                         | min.48°C / max.54°C   |   |
| EXHAUST ANGLES TIMING REFERENCE                      | 186°±2°               | Feeler gauge 0.2x5mm  |
| TIMING ADVANCE                                       | 22° fixed advance     |   |
| COMBUSTION CHAMBER VOLUME                            | 14.25 cm <sup>3</sup> | 13.8 cm <sup>3</sup> min.   |
| SQUISH   | 0.95 mm               | Measured with single<br>wire from 1.5mm                                 |
| CORRECT MEASURE TIPS PISTON RING                     | 0.40 ÷ 0.45 mm        | installed in the cylinder   |
| SPARKPLUG TYPE USE IN<br>STANDARD WEATHER CONDITIONS | NGK R6254E – 105      |   |
| SPARKPLUG TYPE USE IN<br>RAIN ATMOSPHERIC CONDITIONS | NGK BR 10 EG          |   |

Caution should be taken when installing the spark plug. Always clean and inspect the spark plug threads before installation. Always apply anti seize compound, grease or oil.

### - NEVER INSTALL THE SPARK PLUG WITHOUT SOME LUBRICATION -

You should be able to freely turn the plug into the head using only your fingers to turn the plug. Do not force the plug with a tool or damage will occur. After rotating the plug into the head by hand only. Torque to 175-230 lbs-in (20÷26 Nm).

