INSTRUCTIONS FOR O.S. MAX-CZ-R ENGINE

IMPORTANT: Before attempting to operate your engine please read through these instructions so as to familiarize yourself with the controls and other features of the engine. Also, pay careful attention to the recommendations contained in the "Safety Instructions and Warnings" leaflet enclosed.

SPECIFICATIONS

Displacement	2.11cc (0.129cu.in.)
Bore	14.0mm (0.551in.)
Stroke	13.7mm (0.539in.)
Practical R.P.M.	3,000—29,000

The air cleaner shown in the photo is optional and available from O.S.

PRE-OPERATIONAL CHECKS

1. The somewhat violent changes of vehicle attitude that occur in off-road running, combined with the fact that, in buggy type cars, the fuel tank is often located some way from the carburettor, means that fuel 'head' at the carburettor can vary a great deal. Therefore, it is recommended that a muffler pressurized fuel feed system be used.
2. Do not run your model without fitting an air cleaner to the carburettor air intake. Dust and dirt that may otherwise be drawn into the engine will rapidly shorten its life. In addition to the air cleaner supplied with the car kit, an optional high-performance air cleaner is available from O.S.

Note: As the MAX-CZ-R features 'ABC' type construction, the piston will feel tight at the top of its stroke when the engine is cold. This is normal. The piston and cylinder are designed to achieve a perfect running clearance when they reach their normal running temperatures.

GLOWPLUG

An O.S. No.8 glowplug is fitted to the engine. When replacing the glowplug, it is advisable to use the recommended O.S. No.8. The engine may not always run properly with other types of glowplug.

FUEL

Use only top quality commercial model two-stroke engine fuel, containing not less than 18% lubricant.This engine is designed to run on both low and high nitromethane content fuels, i.e. from mild mixtures containing a few percent of nitromethane, up to high-speed racing fuels containing 40%, or more, of nitromethane. Generally, power output is increased – up to a certain point – as the nitromethane content of the fuel is increased. As a starting point, we recommend a fuel containing 10 – 20% nitromethane, changing to a fuel containing more nitro if necessary. When the nitro content of the fuel is increased or the brand of fuel is changed, it is advisable to initially run the engine with a richer needle-valve setting, so that the optimum setting for the new fuel may be rechecked as described in the RUNNING-IN paragraph.

RUNNING-IN ("Breaking-in")

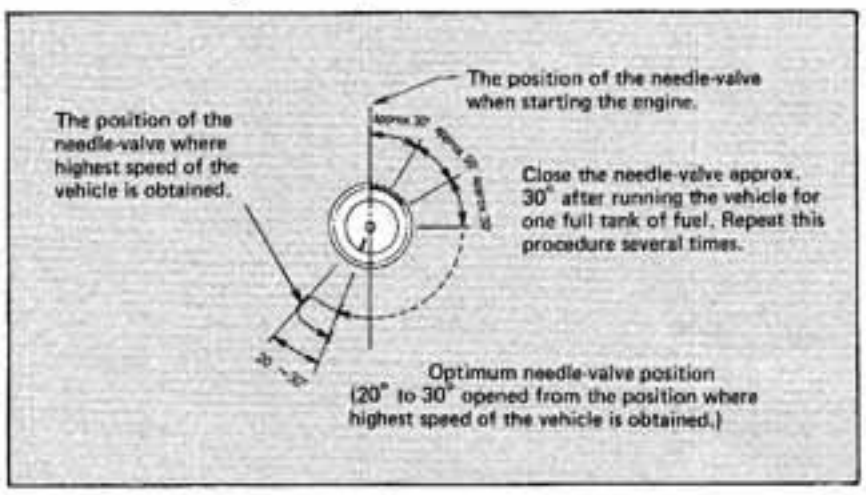
For long life and high-performance, every engine needs to be properly 'run-in' or 'broken-in'. There are several running-in methods, but the following is suitable for use with this engine.

WARNING! The operating handle of the recoil starter is close to the cylinder head, which becomes very hot when the engine is running. Therefore, to avoid burning your fingers, restart the engine only after making sure that it has cooled.

1. Turn the needle-valve clockwise slowly and gently until it stops. This is the fully closed position. Do not use force to turn the needle-valve beyond this point. Now reopen the needle-valve 3½ turns. (The mark on the needle-valve knob may be used as a reference mark.) Finally, set the throttle at a position very slightly opened from the idling position and start the engine.

WARNING! It is vitally important to set the throttle at the correct position before starting the engine. Never open the throttle wider. If the engine is allowed to run with the throttle too far open under 'no-load' conditions (i.e. with the wheels of the car not in contact with the ground) it will speed up to extremely high revolutions — even at part throttle settings — which may result in serious damage.

2. Leaving the needle-valve at the starting setting of 3½ turns open, run the car on level ground. If the engine stops, due to being over-rich, close the needle-valve 20° to 30° and try again. It should be remembered that, at this stage, response to the throttle control will be less than perfect, due to the rich setting (indicated by dense exhaust smoke) that is required for initial running-in.
3. Run the car on level ground with this needle-valve setting until one full tank of fuel has been consumed. Now close the needle-valve approximately 30° and run the model for another full tank of fuel. Repeat this procedure, gradually closing the needle-valve between runs until the highest speed is obtained. The critical needle-valve setting is that at which the highest straight-line speed can be safely maintained without losing power. Make a note of the needle-valve setting at this point.



4. If the needle-valve is closed beyond this high-speed setting, the engine will overheat and the car will slow down, accompanied by markedly diminished exhaust smoke. In this case, bring the model to a halt and reopen the needle-valve 20° to 30°.

5. Now open the needle-valve 20° to 30° from the optimum setting, and run the car for about three tanks of fuel.
6. The completion of the above procedure marks the conclusion of the running-in period, although, as further running time is recorded, a slight readjustment towards a leaner setting may be required to maintain maximum performance.

Note: If the engine should need to be disassembled (e.g. for cleaning or minor parts replacement) it is advisable to return the needle-valve to the original rich starting setting and check whether further running-in time is required before the car is raced again. In the event of any major working parts (e.g. piston/cylinder-liner assembly) being replaced, or if the nitro content of the fuel is increased, or the brand of fuel changed, the complete running-in process should be repeated.

CARBURETTOR

The MAX-CZ-R is equipped with an O.S. Type 2BK carburettor. See separate instruction leaflet for details of adjustments, spare parts, etc.

Note: The minute particles of foreign matter that, almost invariably, are present in any can of fuel, may upset mixture strength so that engine performance becomes erratic and unreliable. It is recommended that fuel is passed through a filter when the tank is filled and that a good in-line filter is installed between the fuel tank and carburettor and, furthermore, that this filter is frequently cleaned to remove dirt and lint that accumulates on the filter screen. Finally, clean the carburettor itself periodically.

AFTER RUNNING

- Drain any remaining fuel from the tank at the conclusion of the running session.
- After emptying the tank, energize the glowplug and try to start the engine, so that any fuel remaining in the engine will be consumed. If necessary, repeat this procedure until the engine fails to fire.
  Leaving raw fuel inside the engine may result in difficult starting later.
- Clean the exterior of the engine with methanol or kerosene. Do not use gasoline or a solvent which may damage the silicone fuel tubing or the plastic car body.

PARTS LIST

Check	Code No.	Description
eBay	21201000	Crankcase
eBay	21202000	Crankshaft
eBay	21203010	ABC Cylinder & Piston Assembly
eBay	21204310	Heatsink Head
eBay	21205030	Connecting Rod
eBay	21206000	Piston Pin
eBay	21208000	Drive Washer
eBay	21213000	Heatsink Head Fitting Screws
eBay	21214000	Gasket Set
eBay	22631019	Crankshaft Bearing (Front)
eBay	21230000	Crankshaft Bearing (Rear)
eBay	21283011	Carburettor Complete (Type 2BK)
eBay	71608001	Glowplug No.8
eBay	* 72403001	Air Cleaner

* Optional extra parts

The specifications are subject to alteration for improvement without notice.

Note: This engine is equipped with a recoil starter developed by the Kyosho Corporation. As a consequence, some related component parts differ from those of the standard model MAX-CZ-R.

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