It is of vital importance, before attempting to operate your engine, to read the general SAFETY INSTRUCTIONS and WARNINGS in the following section and to strictly comply with them. Also, please study the entire contents of this instruction manual, so as to familiarize yourself with the controls and other features of the engine.

SAFETY INSTRUCTIONS AND WARNINGS ABOUT YOUR O.S. ENGINE

Remember that your engine is not a "toy," but a highly efficient internal-combustion machine whose power is capable of harming you, or others, if it is misused or allowed to get out of control. As owner, you, alone, are responsible for the safe operation of your engine, and for seeing that it is operated with due regard for the safety of others, as well as stresses which are exacerbated by the extremely high stresses imposed by car racing and other high-speed operating conditions. As owner, you, alone, are responsible for the safe operation of your engine, and for seeing that it is operated with due regard for the safety of others, as well as stresses which are exacerbated by the extremely high stresses imposed by car racing and other high-speed operating conditions.

The advice which follows is grouped under two headings according to the degree of damage or injury which might result from misuse or neglect.

WARNINGS

These cover events which might involve serious (in extreme circumstances, even fatal) injury.

- Do not over-prime. This could cause a hydraulic lock and damage the engine on starting of the engine.
- If over-primed, remove glowplug, close needle-valve and apply air pressure to come out surplus fuel. Close the header with a rag to prevent any pumped out fuel from getting into your eyes.

NOTES

- This engine is intended for model cars. Do not attempt to use it for any other purpose.
- Mount the engine in your model securely, following the manufacturer's recommendations, using appropriate screws and locks.
- Do not put all of needle-valve inside, otherwise it may knock out at high speed.

NOTES WHEN APPLYING AN ELECTRIC STARTER

Do not over-prime. This could cause a hydraulic lock and damage the engine on starting of the engine.

- Do not put all of needle-valve inside, otherwise it may knock out at high speed.
- Do not put needle-valve all the way down as this may starve the engine and make starting difficult.
- Install an effective silencer (muffler). Freight close exposure to a noisy exhaust (especially from the more powerful high-speed engines) may eventually impair your hearing. The noise is also likely to cause annoyance to others over a wide area.
- The wearing of safety glasses is also strongly recommended.
- Take care that the glowplug clip or battery leads do not come into contact with rotating parts. Also check that this linkage to the throttle arm is secure.
- For your safety, keep all onlookers (especially small children) well back at least 20 feet or 6 meters when preparing your model for running.
- Before starting the engine, always check the tightness of all the screws and nuts especially those around the exhaust header pipe, in particular, may sometimes exist whereby it is just possible for the engine to suddenly restart if it is rotated over compression WITHOUT the glowplug being reconnected.
- Do not stop the engine if the exhaust header pipe is hot. The hot exhaust pipe may cause serious accidents, especially to children or animals nearby.
- Always keep your hands and face away from the exhaust header pipe when starting the engine.
- Keep all onlookers, especially small children, well back from the engine.
- Do not operate the engine near hospitals or residential areas.
- Start the engine only in a place where there is fresh air.
- Do not start the engine near fuel tanks or other flammable objects.
- Keep onlookers well away from the engine.
- Do not operate the engine near trees or plants.
- Do not operate the engine near the body.
- Do not operate the engine near any object that could be damaged by the noise of the engine.
- Do not operate the engine near any object that could be damaged by the exhaust gas of the engine.
- Do not operate the engine near any object that could be damaged by the fumes of the engine.
- Do not operate the engine near any object that could be damaged by the sparks of the engine.
- Do not operate the engine near any object that could be damaged by the heat of the engine.
- Do not operate the engine near any object that could be damaged by the noise of the engine.
- Do not operate the engine near any object that could be damaged by the fumes of the engine.
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- Do not operate the engine near any object that could be damaged by the fumes of the engine.
1. **NEEDLE VALVE ADJUSTMENT**

   Run the vehicle (with throttle fully open) over the longest available straight course a few times to observe the model’s speed. Return the vehicle to the starting point and close the Needle valve 15° and repeat the run, taking note of the improvement in performance.

   Continue with further runs, gradually reduce the Needle-valve setting aim to achieve the highest straight-line speed (optimum position). Remember, however, if the Needle valve is closed too far, the engine will overheat, accompanied by visibly diminished exhaust smoke and the engine rpm will lose speed. At this point, throttle down immediately, stop the vehicle and reopen the Needle valve 30-45°.

2. **METERING NEEDLE ADJUSTMENT**

   After setting the Needle-valve at optimum position, run the vehicle a few times at the straight line.

   With the engine running, close the throttle and allow it idle for about five seconds, then reopen the throttle fully.

   If, at this point, the engine pulls out an excessive amount of smoke and the vehicle does not accelerate smoothly and rapidly or stops, it is probable that the idle mixture is too rich. In this case, turn the Metering needle clockwise 15-30°.

   If, on the other hand, the engine tends to speed up momentarily and then cut out abruptly when the throttle is opened, the idle mixture is too lean. In this case, turn the Metering needle counter-clockwise 15-30°.

3. **THROTTLE STOP SCREW ADJUSTMENT**

   If the engine runs too fast with the throttle closed, the throttle stop screw should be turned clockwise to allow the throttle opening to be reduced.

4. **INSTALLING DUST CAPS**

   When storing the engine, install the cap on the exhaust port, carburetor, etc. to prevent dust from entering the engine.

5. **CHECKING THE ENGINE**

   If the engine will not develop normal performance after long time running due to wearing of parts. It is suggested to check and replace any necessary parts when the following symptoms are detected.

   - Engine sounds changes and easily overheats.
   - Power has dropped extremely.

6. **CARBURETOR PARTS LIST**

   Please regard the standard positions in the instruction manual as just a guide. Positions will vary due to the fuel and silencer used. In general, if a fuel containing less nitromethane is used, the needlevalve will need to be closed further. Remember, closing the needle valve too far can cause rusting and damage to the engine.

7. **ENGINE PARTS LIST**

   The specifications are subject to alteration for improvement without notice.

8. **CAP SCREW SETS**

   These specifications are subject to alteration for improvement without notice.