# ENGINE CONSTRUCTION

With this engine, the piston travels about one-third of the top of its stroke (TDC) when the engine is cold. This is normal. The cylinder head is slightly larger than normal. The piston and cylinder are designed to achieve a perfect clearance when they reach operating temperature.

## WARNINGS

- Model engine fuel is poisonous. Do not touch the engine or any part of the engine with any part of your body, or inside your mouth. Always store it in a clearly marked container and out of the reach of children.
- Model engine fuel is capable of harming you, or others, if it is inhaled, ingested, or allows skin contact. Always wash your hands before eating, drinking, smoking or using the toilet.
- Remember that your engine is not a “toy”, but a piece of machinery capable of harming you, or others, if it is operated incorrectly. It is of vital importance, before attempting to operate your engine, that you familiarize yourself with the engine and other features of the engine.
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## NOTES

- Please do not run near pedestrians or small children. Please do not run where loud noises can disturb anyone else to smoke, near to it.
- Do not smoke or allow heat, sources of sparks, or anything else which might ignite it. Do not smoke or allow heat, sources of sparks, or anything else which might ignite it. Do not smoke or allow heat, sources of sparks, or anything else which might ignite it. Do not smoke or allow heat, sources of sparks, or anything else which might ignite it. Do not smoke or allow heat, sources of sparks, or anything else which might ignite it.
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## IMPORTANT DYNAMICS

- Please observe the exhaust smoke. When the engine does not start or stops right after starting, check the linkage moves correctly. Do not force it to turn further. Do not force it to turn further. Do not force it to turn further. Do not force it to turn further.
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- CARBURETOR CONTROLS - STANDARD POSITIONS

- RUN THE ENGINE

- During running-in, the engine has the carburetor tightly fit into its intake. Secure it changing its angle according to the car chassis.

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1. **NEEDLE VALVE ADJUSTMENT**
   - Run the vehicle with the throttle fully open. Should the minimum available straight course for a few times to observe if the specified speed. Return the vehicle to its starting point and close the Needle valve 15° and repeat the run, takaing note of the improvement in performance.
   - Continue with further runs, gradually reduce the Needle valve setting aiming to achieve the highest straight line speed (optimum position).
   - Remember however, if the Needle valve is too close, the engine will overheat, accompanied by visibly diminished exhaust smoke and the model 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 even stops, it is probable that the idle mixture is too lean. In this case, turn the Metering valve clockwise 15°–30°.
   - If, on the other hand, the engine has trouble to speed up momentarily and then cut out abruptly when the throttle is opened, the mixture is too rich, 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 counter-clockwise to allow the throttle opening to be reduced.

**OPTIMUM MIXTURE CONTROL POSITION**

With the optimum mixture control position, light smoke is visible during high speed turning and the engine runs smoothly during acceleration. Carry out adjustment 1–3, patiently until the engine responds quickly and positively to the throttle control.

Remember that, if the engine is operated with the backlash mixture slightly too lean, it will overheat and run unevenly with all engines. It is advisable to set both the needle valve and metering needle slightly rich on the right side of the best rpm setting, as a safety measure. Finally, beyond the normal break-in period, a slight readjustment toward a leaner needle setting may be required to maintain maximum performance.

**O.S. GENUINE PARTS & ACCESSORIES**

- **GLOW PLUG**
  - p3 (71461300) + p4 (71461400) + (71461500)
- **O.S. SPEED T-SERIES GLOW PLUG**
  - P7 (41472420) + (41472425)
- **CARBURETOR REDUCER**
  - p (71533266) (71533261) (71533265) (71533265) (71533261) (71533265)
- **M2020SC CARBURETOR HEAD PIPE ASSEMBLY**
  - P2 (71204600) (100mm)
  - Header Pipe Spring (2pcs.) (72101270)
  - Exhaust Ring Seal (2pcs.) (71228120)
- **M2020SC CARBURETOR HEAD PIPE ASSEMBLY**
  - P1 (71204210) (100mm)
  - Header Pipe Spring (2pcs.) (72101270)
  - Exhaust Ring Seal (2pcs.) (71228120)
- **M2020SC CARBURETOR HEAD ASSEMBLY**
  - P3 (71205560) (100mm)
  - Header Pipe Spring (2pcs.) (72101270)
  - Exhaust Ring Seal (2pcs.) (71228120)
- **T-200SNC W/TUNED SILENCER COMPLETE SET**
  - P1 (72105132) (100mm)
  - Exhaust Seal Ring (2pcs.) (72101270)
  - Joint Spring (2pcs.) (72105132)
  - M2020SC CARBURETOR HEAD PIPE ASSEMBLY**
  - P2 (71204600) (100mm)
  - Header Pipe Spring (2pcs.) (72101270)
  - Exhaust Ring Seal (2pcs.) (71228120)

4. Then, inject some O.S. SPEED MAINTENANCE OIL (code no. 71403010) into the engine, and rotate the engine with an electric starter for 4 to 5 seconds to distribute the oil all to the working parts.

5. Finally, when cleaning the exterior of the engine, use methanol or a household cleaning agent. Do not use gasoline, kerosene, or any petrol/based chemical as they may damage silicone fuel tubing.

6. **THREE VIEW DRAWING**

   **DIMENSIONS** (mm)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Diameter</td>
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<tr>
<td>Length</td>
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</tr>
<tr>
<td>Width</td>
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   **SPCIFICATIONS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Metric</th>
<th>Imperial</th>
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</thead>
<tbody>
<tr>
<td>Weight</td>
<td>353 g</td>
<td>12.45 oz.</td>
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</tbody>
</table>