



# THE PROTECH SIDE EXHAUST ENGINE INSTRUCTIONS

## RECOMMENDED BREAK-IN PROCEDURE

- Please note that the carburetor low-end adjustment needle valve situated on the side of the carburetor has already been factory preset. Please do not attempt to adjust it at this stage .
- To initially start the engine, the main needle valve must be opened to rich setting. To do this, turn the needle in a clockwise direction until it is fully closed and then open it up five complete turns in an anti clockwise direction.
- We recommend that you run the engine at this setting for at least the first 3 tanks full of fuel
- At this early stage, you may find that because of the rich setting, the engine may initially develop a hydraulic lock because of the excess fuel and be impossible to turn over with the pull starter.
- Whenever this happens, it is necessary to take the glow plug out and turn the model upside down and vigorously spin the engine over and turn the propeller.
- You will notice a spray of unburnt fuel coming out of the plug hole, which will clear the engine. Whilst the glow plug is out, it is a good idea to connect it to your starting battery and check that the element is showing a healthy red glow. If it is not, your battery or starting system has lost power or the glow plug burnt out.
- Having corrected either fault, replace the glow plug and go through the initial starting period again with the same rich needle setting.
- After 3 tanks full of fuel, we recommend that you gradually turn the main needle valve inwards in a clockwise direction by quarter of a turn to gradually increase the engine speed, but still with a protective rich smoky exhaust.
- If while the engine is running, there is no smoky exhaust evident, then the setting is too lean and because of the heat and lack of oil present, the motor can be potentially damaged.
- When you feel that you have mastered the starting procedure and the engine is run in, you can adjust the low-end needle to improve idling and quick engine response to full throttle.
- The low-end needle should be turned cautiously only by 1/8 turn at a time. A clockwise movement will produce a leaner mixture which may be necessary if the motor hesitates and blows exhaust smoke when move to full throttle. Conversely, if when switched to full throttle from idle, the engine cuts abruptly, then it is too lean and the low end should be rotated 1/8 turn in an anti clockwise direction.

### FUEL

Always use a high quality model aircraft of car fuel, which contains oil. We recommend Daytona fuel, which gives maximum protection and should be the part of any fuel you use. Nitromethane helps to increase idling and power and whilst PROTECH engines will run on high percentages of nitro, we recommend that you don't run on any more than a total of 10% nitro.

### WHY THE ENGINE WON'T START

- Fuel flow into the carburetor is blocked. Unscrew the needle valve and blow air into the carburetor.
- The tank may have a blockage ... check it carefully.
- The fuel line from the tank to the motor may be split or have a small pin hole causing air bubbles ... replace it.
- The glow plug may not be operating ... check your battery or replace the plug.
- The fuel filter is clogged up ... replace it.
- The fuel line has slipped off the carburetor or tank.
- You are using the wrong type of fuel.
- The muffler is loose.
- The glow plug connector or lead from the starting battery has a fault ... check it carefully.
- The engine has no compression ... check the head screws and perhaps the cylinder & piston has been scored with dirt.

### RECOMMENDED PROPELLER SIZE

Always use a well-balanced propeller only, below is a list of propeller sizes that we recommend:

R/C STUNT	40 SIZE	46-51 SIZE
SCALE	10 x 6 - 11 x 6	10 x 7 - 11 x 6
R/C SPORT	11 x 6 - 12 x 4	11 x 6 - 12 x 5
	10 x 6 - 11 x 6	10 x 7 - 11 x 6

### RECOMMENDED GLOW PLUG

Select a glow plug that will give the most satisfactory results, we would suggest a medium cold plug (ROSSI Medium P3 ref: R1 0003) for this engine.

**PROTECH® • Geelseweg 80 • 2250-OLEN • BELGIUM • TEL +32 (0)14 25 92 83**  
**FAX +32(0) 14 24 92 89 • info@protech.be • http://www.protech.be**

