

Running-in engines

Running-in an engine has always been one of those little mysteries to a newcomer, where to an experienced racer it is a chore that we do without even a second thought.

I recently came across the following instructions in a Yamaha kart engine box and it certainly expanded a little on my own usual brief words of "take it easy for 30 laps".

Thankyou to the original author, whoever you may be !!

Running-in is usually done over three ten minute sessions.

1st session : Low speed on straights, with ****full throttle** through slow corners. Ensure some smoke is blown from the exhaust. Allow the engine to cool.

2nd session : Low to medium speed on straights, ****full throttle** through slow and medium corners. Allow the engine to cool.

3rd session : Medium speed with occasional high speed bursts on straights. Allow the engine to cool.

**** Full throttle** through slow corners helps the engine reach temperatures that the engine normally runs at during a race.

Many people do not 'load' the engine enough when

running-in the engine, resulting in a seizure the first time the engine is run hard. If the track you intend running your engine in on has long straights, you may want to consider reducing your rear sprocket by 2 teeth. If at any time you feel you may have over accelerated the engine, choke it immediately ******.

Following sessions : Run a number of slower laps (similar to a roll-around) to allow the engine to come up to temperature before long sustained full throttle openings are held, otherwise the piston may expand at a greater rate than the cylinder, resulting in a seized engine. Always try to run your engine slightly rich - it only takes ONE run at too lean a mixture to damage your engine. If the setting is too rich the worst that can happen is a fouled spark plug (slightly cheaper to rectify !!)

The following instructions are supplied with a new Rotax FR125 Max engine. These are easy to follow and have been used successfully by many of my customers.

Running in to be done at the race track

15 minutes up to 7,500 rpm

15 minutes up to 9,500 rpm

15 minutes up to 12,000 rpm

All the time vary the rpm as following

Open the accelerator fully until the engine reaches the rpm mentioned above - lift off the accelerator completely - let the rpm come down to 5,000 rpm and accelerate again.

For the first 10 litres of fuel use a mixing ratio of 33:1 (300ml oil per 10 litres fuel)

Make sure the coolant temperature reaches a minimum 50 deg C (130 deg F)

At cold ambient temperature the radiator needs to get partly covered by tape.