

Engine delivers on all fronts

KARTING

KEN SEEBER

It's noisy and raw, it revs to 15,000-plus rpm, delivers about 13-14kW, costs \$1100 and has been around in karting for more than 20 years.

It is the Yamaha air-cooled S engine that has been the mainstay engine for karting around the world.

This engine was specifically designed for karting and, in Australia, it is used in every facet of the sport, whether it be sprint (bitumen), dirt track or speedway. For it to be still selling worldwide in big numbers is a tribute to the sound original engine design.

In Australia it is used in the popular national Clubman class (or

Sportsman class, as it is known in WA) in sprint racing and the KT class in dirt racing.

The two-stroke engine has a 46mm stroke, a standard bore size of 52mm, with a nominal capacity of 98cc. To allow for wear and subsequent reconditioning, the engines, under Clubman class rules, are allowed to be bored up to 53 mm.

With a big range of incremental piston sizes available, the engines can have a long lifespan, disasters aside.

The average karter might have their engine rebuilt once every year at a cost of around \$600, although this can vary if a failure has occurred.

At the front of the engine is the carburetor that has two adjustable jets. These are set by the driver during racing to ensure that the fuel-air mixture is correct. In front of the carburetor is the regulation

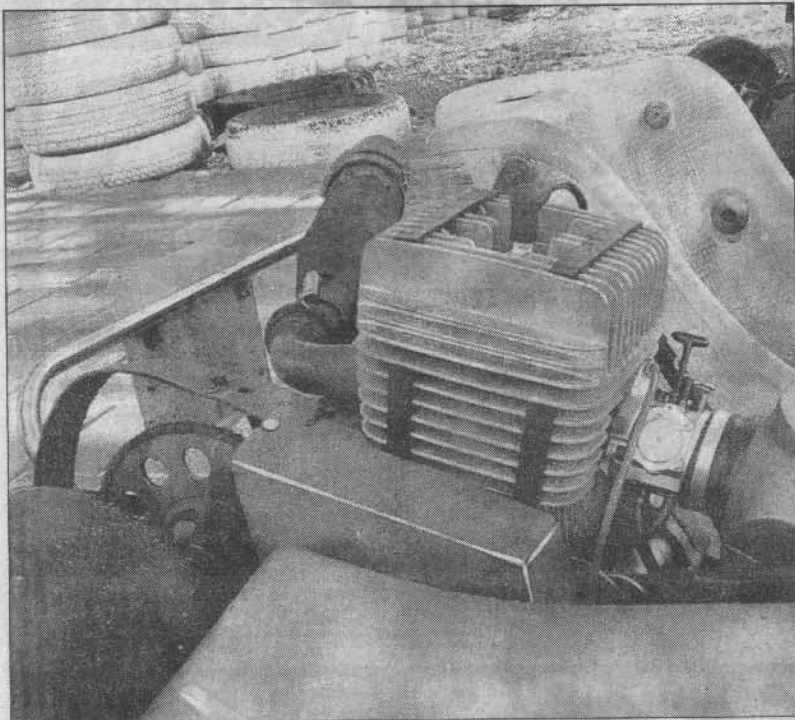
intake air silencer. At the rear of the engine and behind the seat is the exhaust system that must conform to class rules, particularly with respect to silencing.

Because of these measures, the engines of today are much quieter than they were two decades ago. Up until this time, these engines have been direct drive, meaning there is no clutch.

While this offers absolute mechanical simplicity, the kart requires a push start.

As with some other kart engines that have a clutch and electric starter, Yamaha have recently released a version of the engine with a starter and clutch.

The advantage of this is greater convenience and the ability to restart during a race, should the driver have a spin.



The 20-year-old Yamaha KT100S engine is still the mainstay karting engine.