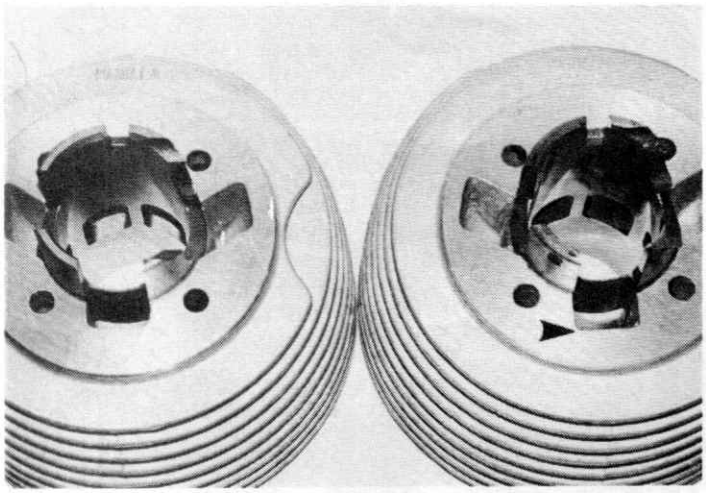
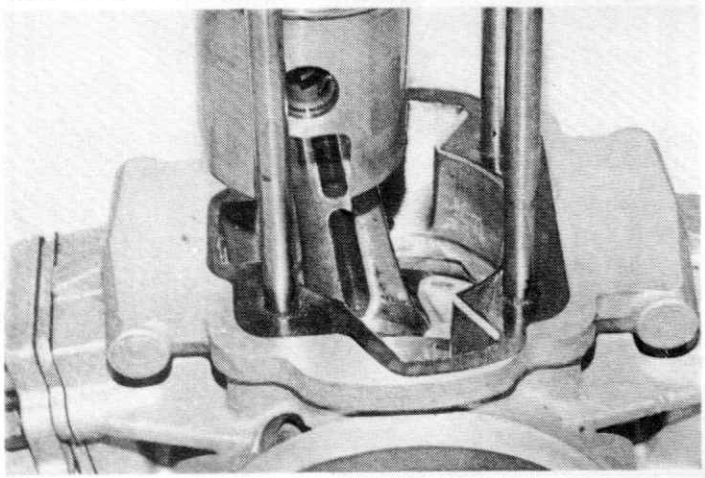
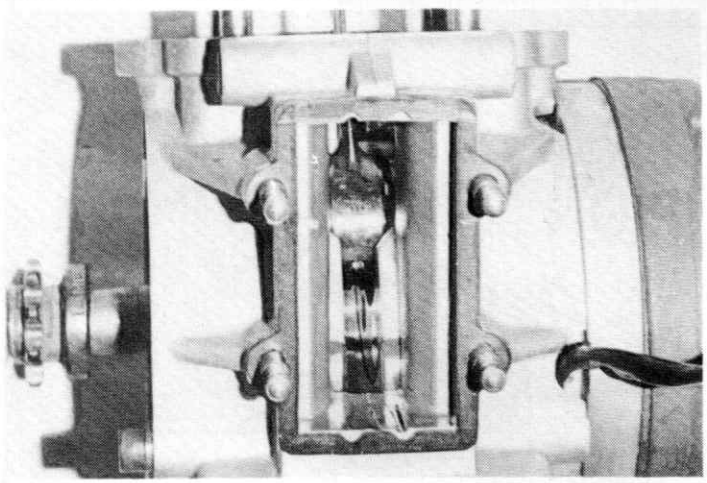
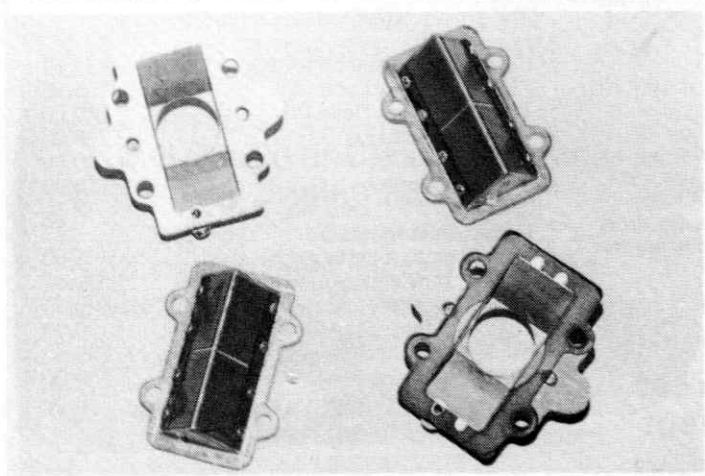
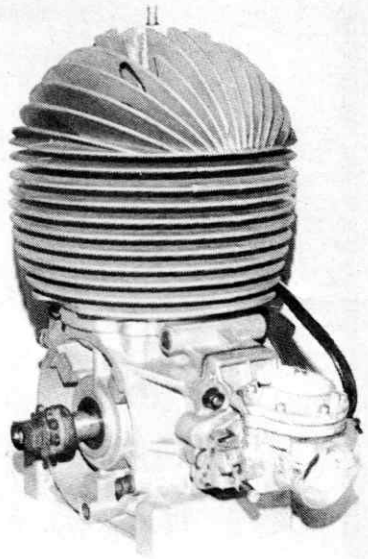








Parilla TT25 ▶



PARILLA TT25 & KOMET K55TT REED VALVE MOTORS

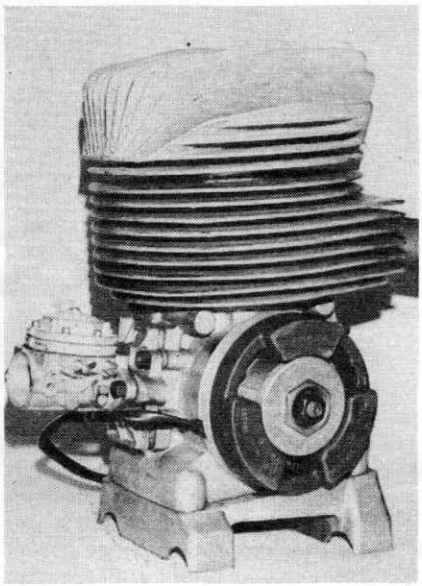
BY ALAN T. BURGESS

There have only been two basic lines of development for 100cc motors for karting. The Americans provided reed valve induction because it was ideally suited for the operational characteristics required of a chainsaw engine from which their engines, such as the McCulloch and Homelite, were developed. The Italians, having the advantage of starting with a clean sheet of paper to design a purpose-built motor, went for the most complex technology used in motor cycle racing two strokes, rotary valve induction. It is difficult, although not insuperable, to obtain the greatest maximum power from either form of induction compared with the piston-timed type but a direct drive single speed kart requires healthy torque that is not excessively 'peaky', as with the latter system.

Because the reed valve motors were dominating the sport for at least five years before the advent of the rotaries, it was too easy to assume that they were inferior and it was argued that the obstruction of the reed assembly within the inlet passage would both have a throttling effect (like a restrictor) and prevent the crisp acoustical tuning from carburettor intake to exhaust tip that provides maximum power.

The reed kart engines gradually adopted a lower status and so were allocated to classes tailored for beginners on the grounds of reduced performance, mechanical simplicity and lower price. The motor cycle industry, on the other hand, showed increasing interest in reed valve induction — for rotaries normally have a vulnerable sideways pointing carburettor and are less suitable for mass

◀ **ILLUSTRATIONS OPPOSITE FROM TOP TO BOTTOM.**
Parilla TT25.
The arrow indicates the deeper TT passage on a reed type barrel.
Crankcase flange is not as massive as on the Komet.
Induction passage aims directly at the big end eye.
The reed assemblies for both Parilla and Komet are identical.



◀ Komet K55TT

production Whilst karters have largely ignored the reed motors, many very high performance reed bike engines have come on the market.

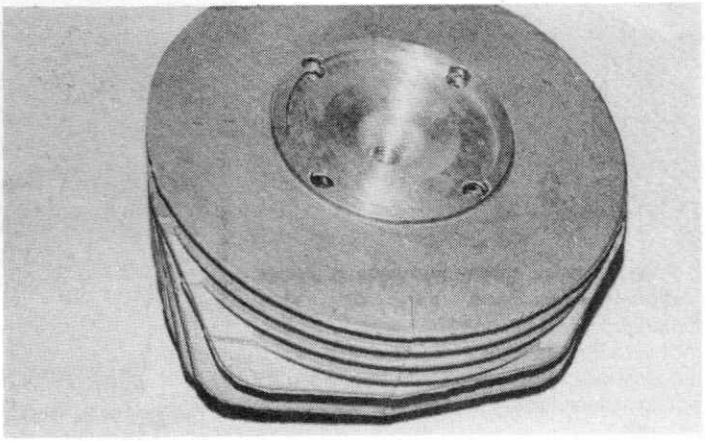
IAME have previously followed a strategy of continual development to cater for world championship level racing, and then continuing production of earlier models at a lower price for the equivalent of National and Britain type classes. This way a model can be continued for perhaps 15 years, so ensuring that every scrap of life from the tooling is utilised. When the McCulloch started to fade from the American scene, the simple and sturdy Yamaha was available to help push it on its way. This threat to the grass roots level of karting, representing the largest number of participants, could only be stemmed by producing an Italian reed valve motor — no doubt a bitter pill to swallow. This move would not only make all the alleged virtues of this induction type available, but would also counter the way in which a world champion's motor could one day be raced in the lowest of economy classes.

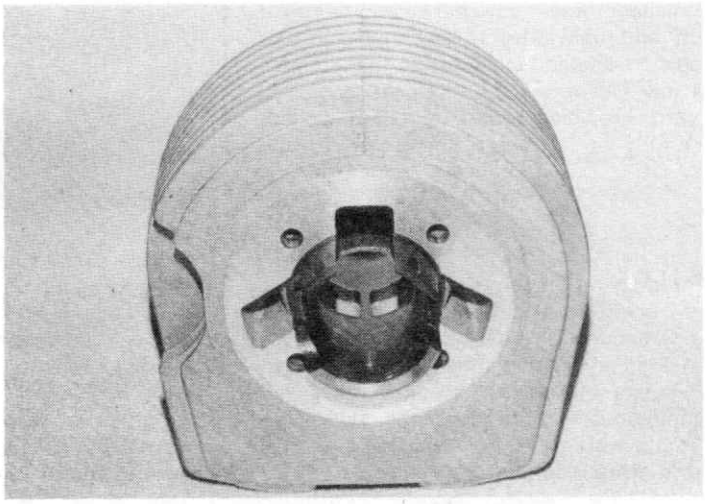
The Parilla TT25 is unmistakably of that brand for the head and barrel are identical to its rotary cousins and the conventional long stroke of 53.8mm with a 48.2mm bore is retained. A slight but interesting change concerns the TT passage which is deeper than on a rotary valve Parilla. This has the effect of providing flow that is more comparable to that through the normal transfer passages but it does increase the crankcase volume and thus reduce the pumping effectiveness. As the barrel stud spacing is identical, it would be interesting to see what effect putting a TT25 barrel on a rotary TT23 would have after the latter's crankcase TT passage was enlarged to match.

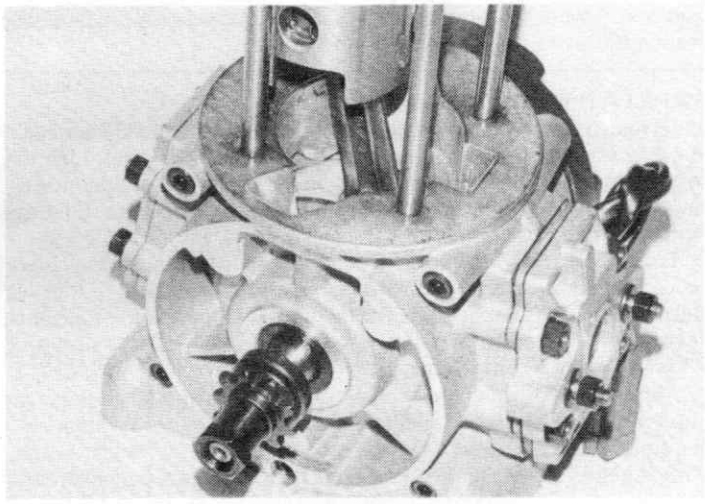
The crankshaft is conventional Parilla except that there is no keyway for the rotary valve drive. At the moment it comes with plastic stuffers but these are to be changed to aluminium. The version we examined had the knife-section connecting rod but this will be changed to the latest tapered rod without side slots.

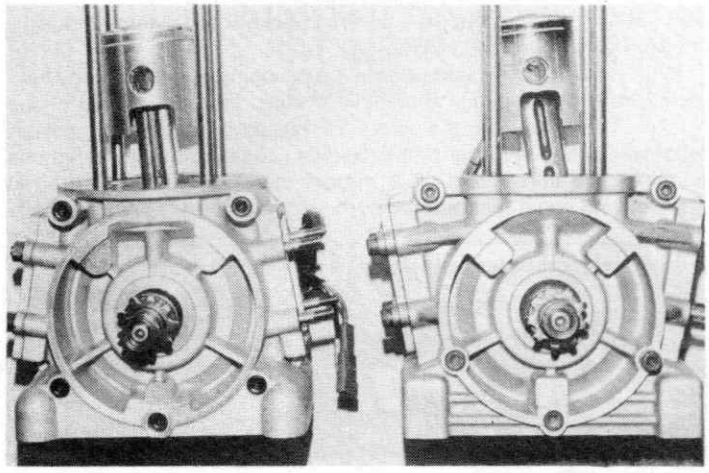
The piston has steel location pins for the rings rather than brass and they are located by ridges. It is hoped that this modification will prevent ring chatter. Selected motors will have a different variety of silver caged big end bearing — this will be an INA High Selection type where the needles are loose within their individual slots.

Naturally the major area of interest is the crankcase with its provision to take a carburettor at the front, back or both. The four









ILLUSTRATIONS OPPOSITE FROM TOP TO BOTTOM. ▶
Komet K55TT.
The standard K80 head is used.
The bottom of the K55 barrel.
Crankcase has a circular flange.
Komet on the left and Parilla to the right to illustrate the difference in induction angles. Both engines fit on identical mounts.