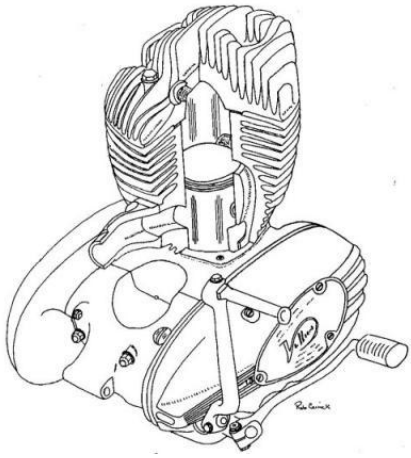
1 Introduction

Since its conception in the fifties, the 9E Villiers motor has enjoyed a long and happy life, in both the roadster and competition roles. It has powered many and various roadsters, and to a lesser degree in terms of numbers, just as many competition variants, to achieve its justifiable place in the hall of fame as the most widely used British engine of all times. Such was its popularity that it was used by over 15 different motorcycle manufacturers to power their roadsters, and competition derivatives.



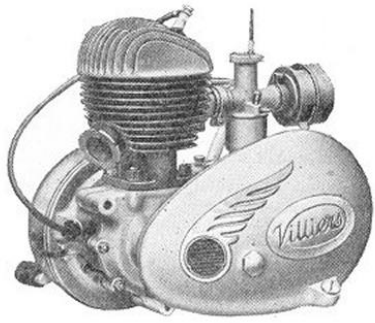
Villiers 32A motor

The popularity of the motor had not gone unnoticed by the karting fraternity who used it in one of the many kart classes, and indeed still continue to do so today, it is from this source that some of the latter day expertise comes, as well as the supply of new parts. With the gaining popularity of pre-65 scrambles and trials events, and the renewed interest in road racing of anything that is old and British, the Villiers engine has once again found yet another niche in history. Today more riders are turning to the humble two-stroke to fulfil their ambitions of owning and riding a British machine, the bigger bikes becoming rarer and expensive as time goes by, and are turning to the Villiers product to satisfy their needs.

This book is not just about the 9E or the 32A, but it is on these engines that we concentrate. Everything discussed here equally applies to the C D H and L range motors, and indeed to the T range twins, so too Starmaker and any 1950/60 style two-stroke. The F and K range motors are not addressed, nor are the industrial units excepting if they are variants of the motorcycle engine. The technology discussed in this book is mid 20th century two-stroke, typified by single transfer ports vertically split crankcases. This is to be contrasted with the later “Japanese” type two-strokes typified by two or three pairs of transfer ports and horizontally split crankcases.

When first produced, the 9E churned out 8.4 bhp at 4000 rpm, but in the light of modern day technology, it can be made to produce some 30 bhp at 9000 rpm (197cc) and 40 bhp at 8500 rpm (250cc) without increasing the number of ports in the cylinder. This sort of increase is fine for road racing and scrambling, but not for trials riding. The trials rider and the road rider do not need all that extra power, but will benefit from the extra reliability and

increased tractability that this type of engine preparation and enhancement would give them in the lower power role, so it can be seen that nothing is lost, and all this development can benefit every branch of motorcycle sport.



Villiers 10D Engine

All riders of Villiers single cylinder powered machines, whatever the branch of motorcycling they are involved in, can profit from the information gathered together and documented by the authors and detailed in this manual. Many of the ideas and modifications listed, have been formulated, tried and tested by the authors, and are willingly passed on to other 9E users to help them understand, modify and maintain their motors.

Throughout this manual reference is made to the authors own engines, and in particular any theory and calculations are illustrated with real data taken from these engines.

The engines used by the authors have received use and abuse over many years, that has taught many of the lessons repeated here.