

# ENGINES AND POWER EQUIPMENT

## ALTERNATIVE ENGINES BY HUGH TILLEY

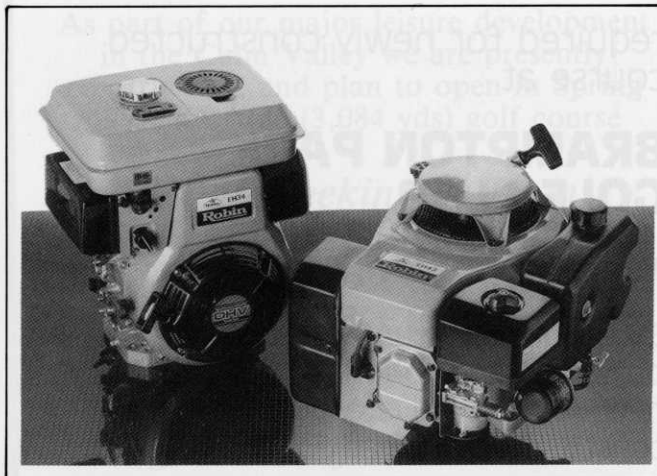
**I**NTERNAL combustion engines power a wide range of machines on the golf course of which the most obvious are mowers. Some manufacturers offer alternative power units as original equipment, usually if they are selling into different markets, such as professional and domestic. However there are also many other situations when a change of engine is required. The most obvious is when an engine has become 'clapped out' and while it is usual to replace with an identical unit, this is not always possible. Other advantages of changing engines includes to improve economy, power output, service back-up or reliability.

Economically the most clear cut situation is changing from a petrol engine to a diesel. As a rough guide the greater cost of a diesel will be recovered within two years if it operates five hundred or more hours a year, because of greater fuel economy, lower maintenance requirement, better resale value and not least the fact that diesel fuel does not 'evaporate'. Economy is less

important for smaller engines, and there is minimum difference between modern engines of similar power. Where both two and four stroke options are available the former can be expected to provide more power from a given capacity and weight, however lightness may be at the expense of longevity and economy.

Another important reason to change engines may be to increase available power, and this may be true where the club has been sold a semi-domestic model to give a lower price. The competent dealer and importer will ensure that he sells suitable machines or tells of his reservations, however there are a number of less experienced dealers, and some clubs to whom the price on the bottom line is all important.

The competence of this service back-up is yet another reason for re-engineing, and service back-up should always be very high on the list in selecting original equipment. Each engine manufacturer has a network of dealers across the country, and selecting a competent dealer is as important as selecting make, some of these dealers may be engine



Lower noise and vibration levels from Fuji "Robin" OHV engines.

specialists rather than grass machinery specialists so be prepared to look outside your normal suppliers.

This might make it sound as if re-engineing is just a matter of lifting out the old engine and dropping in a new one - and in many cases it is, certainly in the lower power ranges where engines are built to American standards with common dimensions and mountings and a range of shaft ends, in other cases the engine manufacturer will have a fitting kit, usually simply a number of shims (or washers).

For most people technical data is just a load of meaningless jargon, space does not permit explanation here. Varying the fuel injection or induction settings allows one engine block to provide a range of outputs and the use of turbocharging not only gives more power but will also provide better fuel efficiency. Typically the engine for a rider mower needs high torque back-up, or slogging power, whereas industrial engines operate at more constant speed and power - these variations can also be met by fuel injection settings.

More understandable will be characteristics such as noise levels, and exhaust emission, and by public demand manufacturers are devoting considerable amounts of money to reduce both. Noise level also needs to be equated to tone, as a deep tone is less tiring for the operator than a 'sharp barking' engine. In general liquid (water) cooled engines are quieter than an air cooled engine, but liquid cooling systems provide more components to fail.

Other operator concerns relate to ease of starting, indirect injection engines tend to be more difficult to start than a direct injection engine because a glow plug is required to heat the air in the pre-combustion chamber. Cost of spares may also be an important consideration, many of the Japanese engines have relatively expensive parts and maintenance, so it may be worth costing common parts such as fan belts and filters, and even piston and crankcase parts with a petrol engine - which is more likely to require these, perhaps at around 2,000 hours. Diesel engines can be expected to run to 5,000 hours before requiring the head off.

## THE ESSENTIAL BACKSTOP

**W**HETHER you upgrade your equipment on a regular basis or, due to restricted budgets, simply refurbish the machinery and power units every year, it is important to keep it in an ideal state of readiness at all times.

To be able to achieve this, you need to have a partner who is able to support your spares and service programme through spring, summer, autumn and winter.

One of these support teams is a family business named Meetens, established over eighty years as one of the leading engine and spares distributors in the United Kingdom. Based in Wimbledon, the company distributes Robin, Mag, Kohler, Villiers and Sachs-Dolmar

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*the professional's choice*



## POWER-TRIM bunker trimmer lawn edger

When you compare the quality of Power-Trim with any other edgers, you'll see why so many professionals choose it for hard use day after day. The Power-Trim durability and convenience means extra years of trouble-free use for you - with professional-looking results on your lawn!

### TRIM GOLF BUNKERS FAST WITH POWER TRIM

#### Quality features...

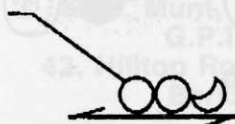
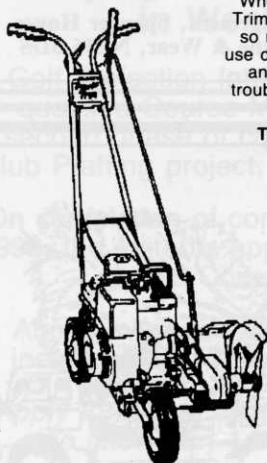
POWER-TRIM has built-in durability, 10" cutting blade, recoil start, welded steel frame construction. Wheels are ball bearing industrial type, with solid rubber tyres. Permanently sealed ball bearing cutting head provides years of reliable service. Safety clutch that disengages the blade automatically when the blade is raised to its top position.

Full Local Authority blade guard, kerb wheel kit optional. Briggs and Stratton/or Honda units.

**Grass Machinery Sales**  
Spring Bank, Ersham Road,  
Hailsham, East Sussex,  
BN27 3PN.

Tel & Fax 0323 841687

Also supplier of Yazoo machines  
and parts

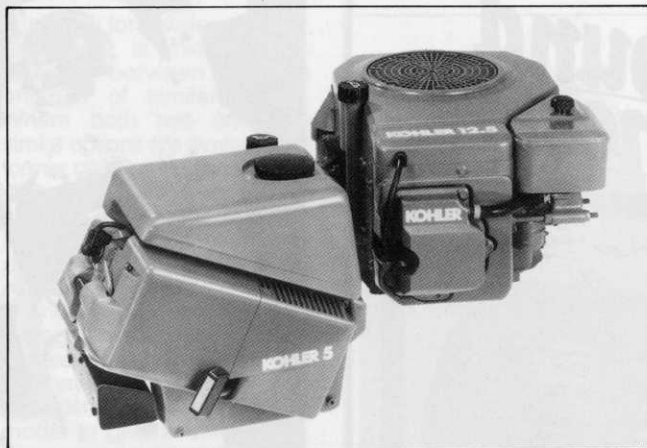


# ENGINES AND POWER EQUIPMENT

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equipment and promise a same-day despatch service to any greenkeeper wherever situated.

Keith Child, managing director of Meetens, told Greenkeeping Management that due to the fact that they now hold in store what is said to be the largest range of engines and spares available from one source, many of their clients have stopped holding inventory and rely on Meetens as their permanent stock room.



Kohler Command Engines 5HP Horizontal Shaft/12.5HP Vertical Shaft.

FOR the small scale irrigation duties or the larger drainage projects ALCON PUMPS invariably have in their range a unit to meet the duty. Self priming, end suction and diaphragm are the designs with a variety of drives that range through petrol and diesel engines, single and three phase electric motors, power-take-off and hydraulic power. Add to this the varied materials in which the pumps are produced, such

as aluminium, brass, cast iron and plastic, provides quite a selection.

All of these combinations allows for the potential user such choices as portability and durability when you consider that the fluids to be pumped could cover clean water, suspended or abrasive solids, chemical contamination or even light oils.

Gasket materials and shaft seals can be varied to accommodate the latter items in particular

The manufacturers of ALCON PUMPS approve and utilise new and modern prime movers as they become available, thus giving the customer the facility of an engine of his preference.

Briggs and Stratton, Honda and Villiers are still prominent in the petrol ranges and Lister-Petter or Yanmar in the diesel.

As the trend is towards the use of lightweight diesel engines alongside petrol engines on the smaller pumps the introduction of carrying frames produces a very compact and truly portable set. Wherever ALCON PUMPS are in use there exists a technical and back-up service not far away in the form of our agency network, who can call upon the manufacturers for support whenever necessary.

## Alcon Pumps



**SELF PRIMING CENTRIFUGAL AND DIAPHRAGM UNITS**



**STATIONARY, PORTABLE, MOBILE OR TRACTOR MOUNTED**

**PETROL, DIESEL, ELECTRIC AND PULLEY DRIVE**

**FOR ALL OF YOUR WATER APPLICATIONS**

**Alcon Pumps** are made and marketed by

**LA BOUR PUMP COMPANY LIMITED**

Denington Estate, Wellingborough, Northamptonshire NN8 2QL  
Tel: 0933 225080. Telex: 31428 LABOUR G. Fax: 0933 440032

powered units are promised soon.

Quality of design, materials specification and manufacture are the secrets behind the success of Fuji "Robin" engines, while additional advantages incorporated into the new OHVs include: exceptionally quiet running; easy starting and frugal fuel and oil consumption.

The design incorporates twin balancer shafts, reducing vibration by up to 30% and a vertical cylinder layout allowing greater operating angle (achieved without penalty to the overall height of the engine).

### 'State of the art' diesels

Diesel power is a growing trend in professional equipment circles and Fuji "Robin" offers five models from 4.8hp to 8.5hp.

The latest models to be introduced are the 4.8hp DY23 and 5.5hp DY27.

Weighing only 27kg and sporting useful features like: recoil starting (optional dual recoil/electric) and automatic decompression system, for easy self bleeding of the fuel line on site; and twin, washable air filters, these engines have proved their worth in numerous applications where petrol power was previously the only option.

The economy and increased working life achieved by diesel power has resulted in several companies developing conversions for petrol powered grass care machinery.

Among these companies is RFE Turf Machinery of Midhurst, West Sussex which has fitted a Fuji "Robin" DY35 diesel to the Ransome Motor 180.

RFE has plans to convert other machines to diesel power as it sees more and more professional users looking towards diesel economy in the future.

### LONG LIFE OHV ENGINES FROM FUJI "ROBIN"

FUJI "Robin", famous for its wide range of 'pro use' 4 stroke petrol engines and compact diesels, has introduced its first overhead valve engines in the UK.

Claimed to be the most advanced of their type on the market these engines will be of interest to grass care machinery manufacturers and users who appreciate the benefits of a power source that can be relied upon to perform reliably, day-in-day-out, over a long working life.

OHV engines currently available are the 9hp EH30, 11hp EH34 and 13hp vertical shaft EH43. Lower horse

### THE AMAZING POWER TRIM BUNKER/LAWN EDGER

SAVE hours of time and effort using a Power Trim to re-cut a fresh edge around sand bunkers on the golf course or to tidy up and trim around flower borders, paths, bowling greens, ornamental lawns and driveways.

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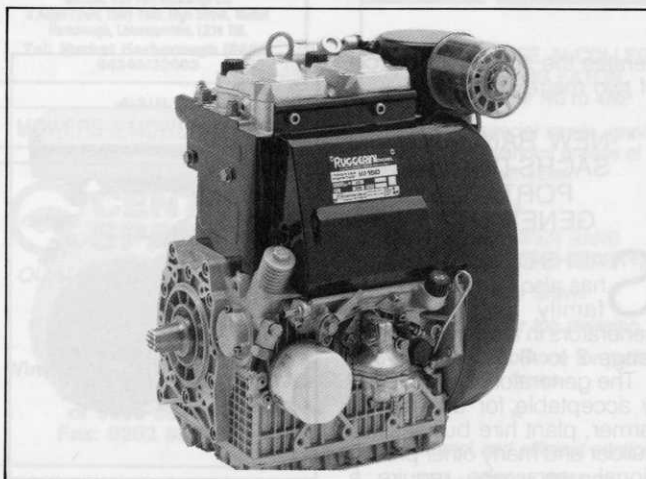


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Many local authorities and golf clubs are now saving hours of labour on these very important but time consuming tasks with the help of Power Trim. Rotate the cutting head through ninety degrees to cut and trim in most awkward areas. If required, machine can be fitted with a local authority approved blade guard. An optional curb wheel kit is available for riding and cutting behind curb stones.

Full spares and service back up available if required from Grass Machinery Sales.



Ruggerini MD150 Engine 16.3HP Twin Cylinder Horizontal Shaft.

vided by Kohler has long enjoyed an enviable reputation on greens triples. Currently all the major UK suppliers list Kohler. Some users choose to convert their engines to run on propane. Calor provide kits specifically designed for Kohler engines. Kohler vertical shaft engines are now widely used on more robust grass maintenance equipment.

The Ruggerini diesel range has four engine families which give a horse-power range from 7.5 to 38hp. Engines are available with both shafts and direct coupling hydraulic motor mountings. An ancillary drive facilitates the fitting of a second hydraulic pump. Special quiet air cooled and water cooled diesel engines are available. For those who really want to diversify we can offer fully marinised units too. Both horizontal and vertical shafts are available.

Should the power required be between 4 and 38hp with quality and economy the criteria, then Hancox must be worth a call.

## REPOWERING FOR EQUIPMENT UPGRADE

THERE are many reasons for putting a new engine on a product. The most obvious is replacing a worn engine with the same model to renew the power, when repair becomes uneconomical. There are, however, others.

A user may repower to upgrade the products he is using. May be the power of the existing engine is not sufficient, may be the quality is not good

enough for the application or perhaps there is a requirement for an alternative fuel.

At Hancox we are able to offer a solution to every need from 4 to 38hp with a choice of petrol, gas or diesel fuel.

Hancox now hold the UK Distributorship for Kohler petrol and Ruggerini diesel engines.

Hancox offer a complete engine replacement service, which embraces the correct choice of engine for the product, a fitting kit and a full time Designer/Applications

Engineer to ensure engines are fitted correctly, economically and to fulfil legislation.

Hancox have test facilities available to control both the acoustic and power output of engines they supply. Bespoke silencers are regularly supplied with performance well in excess of that provided by many engine manufacturers.

Hancox are supplying both Magnum and Command engines to a wide range of users. The smooth power pro-

147

148  
150

## WE TOOK OUR TIME... AND GOT IT RIGHT.

*Rome wasn't built in a day. And neither was the new range of OHV engines from Fuji "Robin".*

*Had they been, the engines wouldn't have been so durable, reliable and quiet.*

*They wouldn't have been so easy to start, so smooth running and so frugal on fuel and oil.*

*They wouldn't have twin balancer shafts to reduce vibration by up to 30%. Nor a vertical cylinder layout for a greater operating angle.*

*In short, they wouldn't have been Fuji "Robin".*

*Now available through a 70 strong dealer network in 9, 11 and 13hp models (lower horse power engines will follow soon), they represent sheer ingenuity in OHV technology.*

*We think you'll agree that the new Fuji "Robin" range was well worth waiting for.*



**Redbreast Industrial Equipment Ltd.,**  
1 Staveley Way, Brixworth, Northampton,  
NN6 9EU. Tel: (0604) 882088  
Fax: (0604) 882015.

*Sheer  
Ingenuity*

152

**FUJI ROBIN**

# ENGINES AND POWER EQUIPMENT

## SACHS-DOLMAR (UK) WIN GMA AWARD

**B** RITAIN'S leading independent outdoor power equipment specialist, Sachs-Dolmar (UK) Limited, have won the Garden Machinery Association's annual award for the "Commercial Machine of the Year - 1989" with their revolutionary Robin Dagger Soil Ameliorator.

Introduced into the British Isles in 1988 the compact and versatile Dagger has made many converts. They have found the machine invaluable in improving drainage, stimulating root growth and very effectively alleviating soil compaction.

Chris Hindle, Sachs-Dolmar (UK) Sales Director said: "The Robin Dagger has been widely accepted by the industry and this award justifies Sachs-Dolmar's belief in what was an entirely new concept."

The Dagger Soil Ameliorator is powered by a robust Robin 40.2cc two-stroke engine which drives a spike between 10cm (4") and 50cm (20") as desired, into the ground and injects a 35 litre blast of compressed air at 150 psi. This

aerates the subsoil in a circle of two metres diameter.

## NEW RANGE OF SACHS-DOLMAR PORTABLE GENERATORS

**S**ACHS-Dolmar (UK) Ltd, has also launched a new family of portable generators in the power output range 2 to 4kVA.

The generators will be readily acceptable for use by the farmer, plant hire businesses, builder and many other professional users who require a generator that is robust, rugged and functional.

Each petrol driven generator in the range is available with a choice of engine.

The engines are from the well respected manufacturers Briggs and Stratton, Honda and Robin.

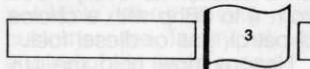
Highly competitive prices for the 2kVA models start at £445 ex VAT, the 3kVA models start at £675 ex VAT, the 4kVA diesel is £1,495 ex VAT, and the welder-generator is well priced at only £1,960 ex VAT.

Backing up the Sachs-Dolmar generator range is the Sachs-Dolmar (UK) coun-



Villiers Engine.

trywide network of distributors who provide an advice, parts and service capability second to none.



## MAG ENGINES LTD

**E**ASE of Engine interchanging and availability are key factors in engine replacement market. Both the side valve GS series and the newly introduced overhead valve GH series satisfy these

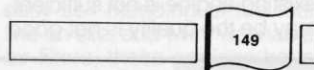
needs.

The GS and GH ranges incorporate high powered transistor ignition systems for maximum performance with virtually no maintenance starting from cold has been made easier with an automatic compression release allowing 30 to 40 per cent less pulling effort required.

Design features of the GH series have resulted in extra low noise and vibration levels, fuel consumption and oil consumption are decreased by approximately 25 per cent and 50 per cent respectively compared to side valve engines.

The GH150 vertical shaft 5HP unit can be operated on slopes of up to 25 degrees, a unique oil retaining well ensures complete lubrication at all times.

With a power range up to 13HP plus a wide range of P.T.O. extensions means that in most cases MAG Engines are a "drop in" fit. MAG's stocking commitment provides off the shelf delivery on all GS and GH series units.



**KOHLER  
MAGNUM**



**SACHS  
DOLMAR**

## ONE STOP SHOPPING

for all your  
engine and spares  
requirements

Any time.. On time.. Every time.

Here at Meetens we have recently celebrated our 80th anniversary as one of the leading engine and spares distributors in the United Kingdom.

Since 1908 we have continually updated our range of engines and suppliers to provide the most efficient service to our customers.

We also promise a same day despatch service from what is probably the largest range of spares available from one source.

For a stable, reliable service  
**CALL US NOW**

**MEETENS**  
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