

Maureen Keepin reports on the dramatic developments in engineering have resulted in the production of highly durable rotary mowers with an improved cutting finish. Taking over rough and semi rough areas how can clubs strive to sharpen up their rotary act?

MAKING THE MOST OF ROTARY

Rotary mowers are proving their worth as part of today's greenkeepers' armoury. You will not find them on the tees or greens - as they cannot cut the sward tightly enough, but rotaries are certainly delving ever deeper into the rough of the golf industry.

Easy to adjust and less expensive to maintain than cylinder mowers, regular sharpening of rotary blades is still critical and should form a vital part of any maintenance programme.

First developed in 1934, early rotary mowers had power driven, horizontally spinning blades. They were introduced on to the golf course because of their capability of dealing with longer grass than the cylinder cutter.

A rotary is not as competitive as a cylinder mower in terms of cutting cost per hectare - as the grass grows faster when cut with a rotary - but it can be cut more easily at higher cut rates.

Neither do they produce as good a cut as a cylinder mower, as the blade hits and destroys the grass leaf tissue which can lead to yellowing at the tips - this is why it is crucial to sharpen the blades at least twice a week for optimum performance. This leads to slower grass growth and less yellowing.

Generally a rotary can stand grass up, even when wet, enabling it to cover

wheel marks left in the turf. Increasing steadily over the last five years, rotary sales have grown from 600 to 850 (figures from OPE).

"This is a very good increase," said Pieter Nel, John Deere's Division Sales Manager for Commercial and Consumer Equipment.

"In the past people used cylinder

mowers, but rotary mowers have advanced to such an extent they can produce an almost similar quality of cut at a height of between one to six inches.

"They are cheaper to maintain, as sharpening their blades is easier," he added. They are safer than cylinders, as you are running rotaries below the deck. "The mulching issue is also important," he said.

"Disposal of clippings can be very expensive but with a mulching deck on a rotary this problem is removed."

What to look for in a rotary mower

"Operator comfort is certainly a key area and quality of cut is vitally important," said Peter. "Vibration is always an issue and our 1445 and 1565 machines have been redesigned for greater operator comfort."

Durability and reliability of the machine are also important - and customers expect a good back up package from manufacturers and dealers. These issues can be crucial in the purchasing decision.

Mowing in semi rough and rough

"A dramatic shift has taken place over the last five to six years with a tremendous increase in flexible rotaries with multiple decks," said Alan Prickett, UK Branch Manager of Textron Golf, Turf and Specialty Products.

"These are more accurate at a lower cutting height. Ten years ago, the bulk of semi rough mowing was carried out using trailed gang mowers or self-propelled hydraulic gang mowers."

Starting off initially with the use of rotaries with fixed 60 inch and 72 inch machines, giving a reasonable cut to a height of 2 inches, the golf market started asking for greater productivity.

While this could be achieved with

a wider cut, there was a considerable downside. By increasing the cutting width there was far more unsightly scalping on undulations.

This was not acceptable. The only way of squaring the circle - combining increased productivity with a decent finish - was by using multiple cutting decks. Textron developed an 11ft cutting width bat-wing machine, with triple deck rotaries - one at the front and two at the sides.

Productivity increase was sorted, and a finer finish was developed at a lower cutting height, which greenkeepers wanted on semi rough areas.

On the Jacobsen AR250 there are five standard blades, and a secondary blade above those which has a mulching effect. This chops the grass a multiple number of times before discharging.

"This gives a really clean finish behind the machine," and avoids clumping and removes long strands of grass often just flattened by cylinder mowers," said Alan.

Rough areas are increasingly cut with rotaries, generally bat-wing or wide single unit machines fitted with three blades. Here again, the desire for higher productivity and lower maintenance costs rule the day. Certainly rotaries lift longer grass during mowing and cut these tougher blades and this is a distinct advantage over the cylinder.

"We have seen an increase in the sale of our 16 feet bat-wing with nine blades and 90hp," said Alan.

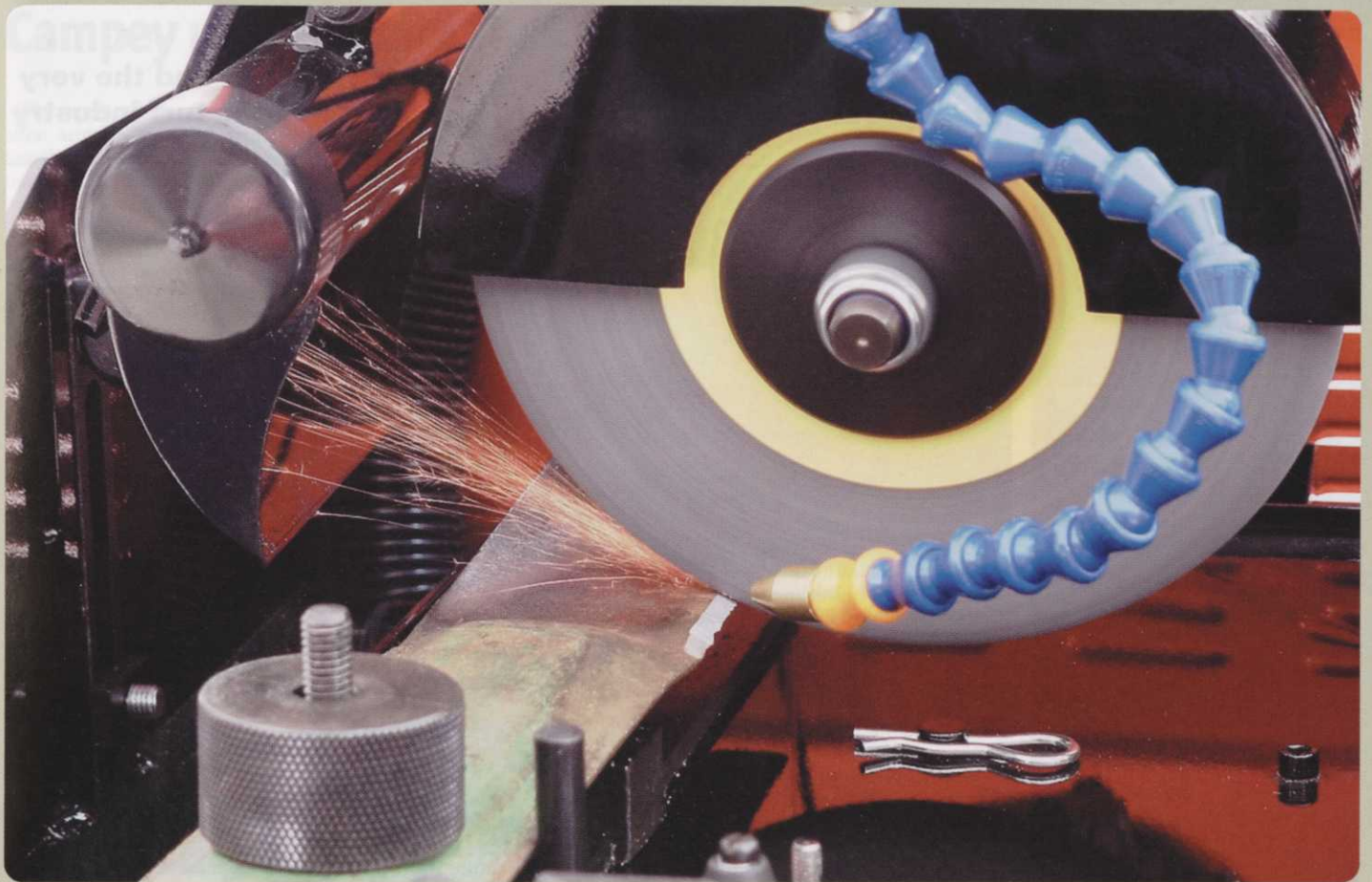
"These can cut 16 acres an hour and machines have just been delivered to Worthing Golf Club and Woodbury Park."

Increased productivity, with a respectable finish, has secured the rotary's future in the rough.

Sharpening up the act

Normally sharpened with a hand-held angle grinder, there are serious problems arising from sharpening





rotary blades using this method.

You need professional balancing equipment, as it is almost impossible to balance blades ground by hand. If a rotary machine is run with unbalanced blades you massively increase bearing wear and shaft wear - which can substantially add to the running costs. This is due to the fact the average rotary blade is travelling in excess of 100mph.

"Textron are using Bernhard's rotary grinder Rota Master at their dealerships and have been very pleased with results," said Alan Prickett.

"Quick, efficient and accurate it gives a very fine finish on the ground edge. We ensure perfect balance before the blades are refitted to the machines," said Alan.

"That in turn ensures excellent bearing life and a smooth ride for the operator."

Generating a huge amount of vibration if blades are not balanced, this comes back through the machine. One of the biggest problems arises when chunks are missing from the blade.

Low vibration and noise levels are achieved with rotaries by using larger engines at lower revs, together with improved insulation. Reductions in noise and vibrations were driven downwards by CE legislation. These are major health and safety issues - reinforcing the need for golf clubs to make sure rotaries are well balanced.

New power technology is difficult to harness with rotaries, as they are generally power hungry and have therefore to be run on petrol or diesel - electric does not measure up.

As the mower is delving into

extremely rough areas of grass, stones and wood can cause considerable damage to the blade.

"Often it is not a matter of just fine tuning the blade on a rotary mower, but eliminating damage by taking chips out of it," said Stephen Bernhard, Managing Director of Bernhard and Company.

Rota Master has been developed by Bernhard to avoid the need to completely discard a rotary blade. The machine grinds efficiently and with greater precision, reducing the amount of time needed to sharpen blades.

"Greenkeepers used to find it a real chore, either when sharpening blades themselves using angle grinders or bench grinders, or out sourcing their sharpening," he added Stephen.

"Our purpose-built machine can efficiently and cost-effectively grind them while agronomy factors should not be overlooked. Rotary mowers may have enough engine power to keep cutting when they are blunt, but damage is inflicted on the sward."

Around the courses

At Wildernesse Golf Club, in Kent, Course Manager, Huw Morgan, said: "We are starting to use rotaries on the rough and semi rough, where we previously used cylinder mowers."

Huw has managing Wildernesse for more than eight years and is the 2002 Toro Excellence in Greenkeeping Award winner

"When it is dry, cylinder mowers provide a better cut, but taking it over a 12 month period rotaries are best. They are more flexible and can mow when damp, which is pretty essential at the moment.



Machines have improved significantly and they now give a good quality of cut."

With a large rotary machine and a few hand held rotary mowers the club also hire in other pieces of equipment, as required. Rotary blades are currently sent out to a local dealer, as the club does not have the facilities for grinding them, although cylinder grinding is carried out in-house.

Royal Lytham and St Annes has been using rotaries on the rough and semi rough since 2001 - when they bought a set of mowers with five cutting decks.

"This gives a more clinical cut in

the spring time," said Paul Smith, Head Greenkeeper.

"We found with grass like rye it is extremely difficult to cut when it is coming into flower. Cylinders often just push the stalk over but rotaries can tackle this," he said

"Cylinder mowers are still used, so we get the best of both worlds."

Paul has a special jig to fit to his Hunter grinder for cylinder mowers, which specifically grinds rotary blades.

"The downside is we have to put an edge on the blade quite frequently but this is not a big undertaking," said Paul.