



which have the same ecosystems, as ideal for golf as they attract fine grasses and are free draining,” explained John, who made a presentation to around 80 Worpleston members explaining the need for an extensive woodland management programme to return to the course to where it once was.

“Those who attended John’s presentation understood what was going on and appreciated that it wasn’t just a butchery exercise but that it would be done very carefully, ensuring that the correct trees were removed and that younger ones were left to take their place,” said Jeremy.

“I think that some members had the wind taken out of their sails when they posed their questions and got scientific agronomic replies. I think they were slightly taken aback and had their initial perceptions changed.”

One of the concerns that is often expressed when tree removal, heather regeneration, schemes are muted is that the course will become a lot easier as a result.

“In many cases we make it more difficult because you are creating more temptation – a desire to cut a

corner that was previously wooded – and as amateur golfers we all, to a man or woman, think we are better than we are and attempt shots that we shouldn’t. In reality scores tend to go up not down when we carry out such work,” said John, who recalled a comment from his business associate BBC commentator and ex Ryder Cupper, Ken Brown – “Why would an 18 handicapper want the course hard anyway?”

It was agreed that the work would be carried out in three phases and Brian felt that the most dramatic and politically-sensitive phase – work within sight of the clubhouse – be carried out first.

“I think after the first phase had been completed the members were appreciative of the trees that were cut down but had no real imagination of how bare it would look when the undergrowth had been removed,” said Club Captain, John Philips.

It was not long before the views across the course that had re-emerged, some after 30+ plus years were being enjoyed be all.

John (Nicholson) undertook all the preparatory work required ahead of the first chainsaw slicing

timber – acquiring felling licences from the Forestry Commission and appointed the contractor, Tony Craggs, who would undertake the felling work and another contractor would come on, remove the stumps and carry out the mulching and scraping. John supervised the job from start to finish so he was in hand to address any issues that arose.

“There were two men who lived on site in a caravan while they carried out the work. They were amazing workers and worked from first light until it was dark,” explained Jeremy, whose role during much of the work was to offer reassurances and answer questions from concerned members who were watching large swathes of their golf course being thinned out.

He also received a deputation from a group of local residents who explained to him that there was a longstanding protection order on trees bordering the course.

“The interesting thing was that the licence that John had acquired from the Forestry Commission over road everything already in existence. However we spoke with the residents and with everything being



INSET TOP: Brian Turner  
INSET BOTTOM: Paul Robinson  
(Deputy Course Manager)



done so sympathetically the work was agreed without any acrimony.”

The issue of change puts many people on edge and members are genuinely concerned if any dramatic changes to the golf course they love are to be made.

“Members here had got used to playing holes individually and not being seen by anyone on adjoining fairways. They liked the isolation, yet they would happily play other courses – links courses, where you could see everyone else.,” said Brian.

One major benefit has been that holes can be played in the manner they were intended.

For example the 14th has a bunker down the left hand edge which had been virtually hidden by trees before the work was carried out and golfers aimed much further right, often going into the garden of the house on the right hand side of the rough. Now players can aim much further left, aiming to drift the ball off the now visible left hand bunker into the middle of the fairway.

With the final phase completed during the last winter programme, in total around 35%-40% of trees were removed - approximately 800 tonnes of timber and, with the seed beds uncovered, once again heather has begun to return to the course.

In many ways the tree removal is the easy bit with the clear up and

on-going maintenance work creating many more man-hours.

“When clearing woodland people have this lovely idea that there will be a lawn underneath but when you go into unmanaged woodland it’s actually quite nasty – brambles, bracken etc because the ecosystem has been created due to the lack of light and air,” said John.

“There is more maintenance work now that the trees have been cleared but we have the manpower and machinery to carry out the work and it doesn’t take too long to maintain.

The benefits far outweigh the work that it has created,” said Brian, who leads a team of eight at Worplesdon.

With the work complete the verdict has been virtually unanimous in its praise.

“Our regular visitors have been very complimentary. We have an annual event, the Cyril Gray Public Schools Championship, which brings 32 teams of six to Worplesdon and to a man they have said the course is fantastic,” said Jeremy.

John, who regularly visits golf clubs up and down the country, has heard a number of people comment on the work at Worplesdon.

“It is nice to be able to sit in the background and smile knowing that I was involved in it,” he said, while he is full of praise for the decisions that the golf club took to get to

the end result.

“I think Worplesdon has achieved a lot more here because they didn’t compromise, something a lot of clubs tend to do in similar situations. I think, apart from one or two areas, the club did everything I would have wished for them to do. And it’s more difficult for them as I don’t have to live with it, and the concerns of the members, every day. I do think Worplesdon has been the bravest club I’ve been involved with,” said John, who has seen many individuals who have been the driving forces behind similar projects leave their clubs, and even give up golf, because of the pressures and strains of piloting such a project through a sceptical golf club.

“That very nearly happened here,” revealed Jeremy, who has been on the receiving end of many more positive comments from a membership, whose only real concern is the preservation of the one piece of untouched land on the right hand side of the 9th.

“People say to me that they are praying that we are not going to do anything to that area, which contains several rhododendrons.”

That aside Worplesdon is reaping the rewards for their decision and commitment to carry it through and the club once again boasts one of the foremost heathland courses in the country.

**ABOVE:** The 14th hole with the left hand fairway bunker now visible from the tee

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James de Havilland takes a closer look at the intricacies of current machinery, this month looking at the Toro Reelmaster 5610

# The anatomy of...

## a Fairway Mower



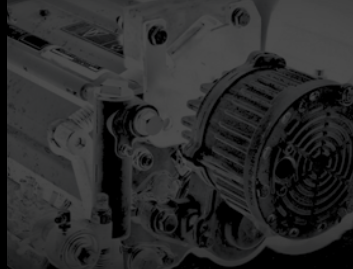
It's all about the DPA cutting units...

There are three models in the Toro Reelmaster 5010 series, the 35.5hp RM5410-D with 5 inch, 8- or -11 blade reels and the 35.5hp RM5510-D and 44.2hp RM5610-D, both with 7 inch reels and a choice of 8- or 11-blades. These differences apart, each model shares the same basic running gear and DPA reel design. Here we take a closer look at the range-topping 5610...

**ABOVE:**  
With a ground bearing pressure of around 10psi, the five-gang Toro Reelmaster 5160 can operate in less than ideal conditions. The 7 inch diameter units can be specified with a choice of 8- or 11-blades.

# Step-by-step Analysis...

## Toro Reelmaster 5610



**Ride-on Fairway mowers have evolved to the point where modern units can now deliver a consistent quality cut at outputs that would have been considered impossible perhaps even a decade ago. To suggest there have been huge developments that have enabled this would be wrong, but subtle design tweaks have been combined to make the Toro Reelmaster 5610-D a deservedly popular model.**

Of equal importance, Toro, and indeed all the key manufacturers, have taken the maintenance demands of their mowers into consideration. No point in developing a mower that can deliver high levels of performance if this needs to be matched to intensive workshop care.

In the case of the Reelmaster 5010 Series, a key development has been the adoption of Toro's now well proven DPA, Dual Precision Adjustment, cutting units. A key DPA design feature is the use of a cast alloy main structure. Unlike traditional welded tubular cutting unit frames, Toro claim the rigid cast alloy frame of a DPA unit is easier to build 'true' in the factory and, once in service, remain that way. This means there is no parallel adjustment built in to accommodate any difference in end-to-end reel to bedknife clearance; the company suggests it will not be needed.

Other DPA design features include a removable cast support frame for the bedknife. This is designed to not only make it simpler to remove the bedknife for sharpening but to also allow the bedknife clearance to the reel to remain constant and at the same level as it is adjusted to accommodate wear/sharpening. According to the company, this prevents the bedknife having to be lowered as it wears, so doing away with 'bulldozing' the sward before it can be acted upon by the cutting action of the reel. The aim is to ensure a consistent cut as the reels are reground and across the full 2.54m cut width.

The EdgeMax bedknife comes as part of the Toro package when new, although a standard steel bedknife is available as a lower price replacement. The company suggest, however, that the EdgeMax design will retain its sharpness up to three times longer than standard steel. This is thanks to the increased wear resistance of the cutting lip. When the EdgeMax needs to be reground it can still be sharpened using a standard grinding wheel.

An interesting point is that



Operator orientated features include adjustable side arm and steering column. The seat can be specified with pneumatic suspension. This has the advantage of automatically setting the spring rate to suit the weight of the operator.



Toro first introduced its DPA - Dual Precision Adjustment - cutting units on its greens mowers, the cast alloy units progressively being introduced to other models including the Reelmaster 5010 series of fairway mowers in 2006.



The rear mounted engine radiator and hydraulic cooling package is easy to access for routine cleaning. Positioning the coolers at the rear of the mower helps reduce noise reaching the operator and allows Toro to offer a cab as an option.



Ribbed front rollers are made of Teflon coated alloy. A choice of groomer or 'groomer broomer' can be specified along with a choice of rear roller scraper or brush. Toro fit their Reelmaster 5410 with 5 inch reels. These are well suited to links and undulating ground.



Separate pumps are fitted for steering, traction, unit raise and reel drive. Note extensive use of solid hydraulic lines. Behind the pumps are the valves that are used to set the reel speed in relation to forward speed. Consistent clip rate is claimed for an even finish.



The rear engine hood tilts to provide good daily service access with all check points, including the battery, on the same side. Open frame design aids cooling and helps to prevent debris build-up around key components.



Adjustable side arm houses key controls. It can also be raised to allow access from the offside; useful in sheds where the mower may be parked with poor nearside access. Visibility from the seat and a general lack of clutter make it easier to accurately place the mower.



A simple stop if flipped up to limit the maximum mowing speed by limiting the travel pedal. Adjusted by adding or removing washers, the system allows the mower's speed to be easily set in the workshop, the operator flipping the stop down for full travel speed.

Toro advocates setting the reel to bedknife with light contact and not have an 'air gap'. This light contact, suggest the company, helps retain a 'square' edge on both the bedknife and face of the reel blades. In service, the units should make a characteristic 'singing' noise. To adjust the clearance, a single click on the ratchet adjusters on each side of the unit will make 9/10th of a Thou adjustment.

Judicious backlapping is also recommended by Toro. The key is to do the job little and often and not waiting for a noticeable drop in quality of cut before reaching for the lapping compound. Diligent maintenance of the bedknife to reel clearance and sensible backlapping are keys to extending the periods between a regrind, suggest the company.

The best way to assess how well the units are cutting is to of course look at the job they are doing. The simple workshop test is, of course, to use paper strips to check the units, ensuring they are cut cleanly when the strips are sliced from the vertical.

A Teflon coated ribbed alloy roll is fitted as standard to DPA units and a groomer or 'Groomer Broomer', with integral brush, may be specified. The grooming attachments both have permanent drive that will keep then spinning when raised out of work. This prevents debris building up on the groomer / brush. The working position of both is adjusted via a single click control with a distinct 'handle' enabling each one to be set at the same height as its neighbour.

In the UK, most Reelmaster 5610 mowers are specified with a powered rear roller brush, a scraper coming as part of the standard specification. The rear brushes have a spiral design that both vertically and laterally sweeps the roll and so prevents the build up of grass, worm casts and other debris.

To help control float over undulations, a spring compensation unit is fitted to each unit. A simple threaded rod adjustment can stiffen the spring as required. In most cases a single compensation spring is sufficient, but a second can be added to cope with more severely undulating fairways.

### Running gear

The Reelmaster 5010 Series all share the same layout and running gear. Unusually, Toro offer four-wheel drive as an easy retrofit option. If two-wheel drive turns out to be the wrong choice, adding a

driven steering axle will not break the bank.

An integral part of the four-wheel drive package is CrossTrax traction control. In broad outline CrossTrax is designed to prevent wheelslip, automatically diverting 'power' from a front wheel with low grip its opposite number at the rear. This idea is not necessarily unique but users suggest it can help cut slip on damp, dewy mornings.

The four-cylinder Kubota engine, which is turbocharged on the 5610, drives four separate hydraulic pumps. Each pump is dedicated to one job; steering, unit raise lower, traction and sending oil to the unit motors. According to Toro this ensures the cutting units are not starved of power as they are raised out of work when the operator starts to make a turn. Of equal importance, the units will be more likely to be up to speed sooner when they are dropped back into work following a turn.

It is also interesting to see the amount of solid hydraulic pipe that is used, Toro using hose only where necessary. Solid pipe is better at dispersing heat than hose and, because it can be fixed in place, is less liable to wear. As with other manufacturers, Toro see hydraulic hoses as wear items, with a recommended service life of two years. In practice most users prefer to keep an eye on the hoses, replacing those that show signs of fatigue. Sensible routine maintenance, in other words, is a key to ensuring any weak hoses are replaced before they can have a chance to fail in service.

### Operator area

The operator area is free of levers and clutter, the steering column adjusting to suit different sizes of driver. The standard suspension seat can be up-graded to a pneumatic version, the key advantage of which is that the seat automatically adjusts to accommodate the weight of the person sitting on it. This can make a huge difference to operator comfort as few will take the time to set up the seat when swapping between machines.

All key controls are mounted on a side arm, a pair of bolts enabling the arm's height and level to be adjusted. There are no levers, a joystick operating the raise and lower with toggle switches for reel engagement. Ergonomics have really come a long way in the past 10 years, Toro working to ensure all their ride-on mowers share the same basic control systems. This is

a real help when swapping between different mowers.

One simple but interesting development introduced with the 5010 series is the working speed control. Comprising an adjustable stop, the control is flipped up to limit pedal travel. This prevents the operator exceeding a pre-set speed. When travelling between fairways, the stop is simply flicked back down to allow the travel pedal to be pushed down fully. To adjust the set working speed, washer spacers are added or removed as required, a decal in front of the stop indicating how fast the mower will go with a given number of washers installed.

### Maintenance

The rear engine hood has a swing out rear screen. This is easy to blow clean. The hydraulic cooling radiator pivots on pins at its base, allowing it to be either blown clean when tilted back or lifted and cleaned whilst resting on the ground. Having the radiator pack at the rear of the mower also means less noise from the cooling fan reaches the operator, as well as reducing the amount of heat behind the seat.

With the radiator screen closed, the engine hood can be tilted to provide nearside access to all key daily checks. This includes the battery. There is also a good deal of space around the engine, so getting at filters is easier. The chassis is also 'open', a useful point when it comes to giving the mower a cleaning blast of compressed air.

The operator seat platform tilts to the offside so again providing nearside access to the hydraulic and the reel speed valves. Again, Toro have tried to design the 5010 Series so they are easier to look after and, when work is needed, make the job of the mechanic less complex.

### Summary:

Quality of cut is a key design priority with any mower designed to produce a good finish. What is interesting is the way in which ideas first seen on greens mowers have filtered through to fairway mowers. A Toro Reelmaster 5010 is equally at home mowing fairways as a premier league sports pitch. The quality of cut it produces is that good.

*With particular thanks to Tadmarton Heath Golf Club and Course Manager Brian Owen, Alastair Rathbone, Central Contract Supplies and John Pike and Rob Atwell of Toro distributor, Lely UK.*

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# Rising to the Challenge

Rosie Freeman discusses why stormy seas and torrential rain and winds are no match for the determination of Head Greenkeeper Alick Mackay at Furness Golf Club

**As golf club locations go, Furness Golf Club's on the Furness Peninsula on the Cumbrian coast is nothing if not dramatic. And difficult – especially when it comes to grass-growing conditions.**

The Walney Island course in Barrow-in-Furness – thought to be the sixth oldest golf club in England – is perched on an exposed tip that sees its west-side thrashed by the Irish Sea and subject as a whole to some of the heaviest rainfall and winds in the country.

So it goes without saying that Head Greenkeeper, Alick Mackay, has a difficult job on his hands producing and maintaining grass cover on this, the most demanding of locations.

Having joined the club five years

ago – when fairways 11 and 12 were almost bare and there was talk of tearing some areas up for returfing – the course's transformation is testament to his perseverance and teamwork with experts at the STRI and Barenbrug.

“This is a very difficult course subject to extreme conditions, We're not a true links course, but we are rugged seaside course and we also get a heck of a lot of rain here. In 2007 we had over 30 inches of rain and last year over 48 inches. So we're at the beck and call of the weather – it dictates everything,” said Alick

He had been consulting with the STRI's Henry Bechelet on a bi-annual basis since 2004. But it was when the pair combined their strengths and expertise with that

of Jayne Leyland, of Barenbrug, in 2007 that proved the turning point.

“We have an STRI visit twice a year. In the past, we've tried different mixtures and had other seed companies involved, but to no avail. The problems got so bad three years ago there was talk of returfing, but myself and the Chairman of Green, Gordon Walker, were adamant we were sticking with seed. That's when we decided to involve Jayne.”

Furness Golf Club is a difficult site and environment – it's subject to relentless rainfall, wind and salt-spray and it was after a lot of grass cover was lost down one particularly sandy end of the course that they turned to Jayne.

“Alick wanted to reseed to get better cover, but we needed to bring



Head Greenkeeper,  
Alick Mackay





nised this and so if a mixture isn't working we re-jig it to suit."

In addition, a solution has also been found for Furness' wind-burnt fairways in the form of a fescue mixture containing that delivers superior sward density with excellent drought tolerance, salt tolerance and recovery. A perennial ryegrass mixture has also helped improve Furness' fairways in heavily trafficked areas.

A Tall Fescue has also been used to keep cover on some mounds and problem areas around the course.

Alick is clearly delighted with the improvements to the course. "It's been a lot of hard work – I've been here five years and it's taken all that time to get it right. Including myself, we're only a staff of three maintaining 18 holes and, together with Jayne and Henry's input, we can all be really proud of what we've achieved here."

But the hard work doesn't stop here. Alick continues to work with Jayne on a species exchange trial on a practice green, something that will in the future help him – as well as his fellow greenkeepers trying to achieve grass cover in similarly adverse weather conditions.

Alick's willingness to try new mixtures and cultivars has, in fact, been key to the success of this project.

"Some people sit on the fence and just use traditional mixtures, but it's important to try new things to see what will suit different conditions and climates," he argues. "Personally, I'd like to use just fescues and bents throughout the course, but some of the mixtures have other species in and so this just goes to show that you can't always have what you want.

"You have to look at the alternatives available. The mixtures have been a success and we've now got full grass cover. You have to be open-minded."



Head Greenkeeper, Alick Mackay in the distance

in a specialist who knew about the different grass types and how they would perform in this environment after seeing them perform in trials.

Alick invited Jayne to offer advice on seeding solutions for the more environmentally challenging parts of the golf course. We really appreciated her input," said Henry.

Soil tests conducted when Alick first joined Furness confirmed that fescue and bent grasses were in general best suited to the course's sand and clay soil.

However, the introduction of unique, site-specific species would also prove essential in order to cope with some of the extreme environmental stresses identified throughout the golf course.

"The clay tends to dry out in the summer and the ferocity of the wind

on the sandier parts of the course also makes for difficult conditions," Alick explained.

"There's barely a calm day here! We're also without irrigation on the tees, which is a factor. But the mixtures Jayne came up with have been a success and we now have full coverage."

A prime example of finding a mixture to suit Furness' extreme conditions is the use of a low-input drought- and salt-tolerant BAR 40 on a very exposed, problem tee.

"This particular tee, the 8th tee, is battered by wind, rain and salt-spray – it's very exposed," says Alick.

"Our greens range from being wet to being very dry hence using the different mixtures.

"The weather really does dictate everything for us. Jayne has recog-

For further information on the particular mixes used please contact Jayne Layland at [barenbrug.co.uk](http://barenbrug.co.uk)



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