

A key piece of grassland rejuvenation equipment, the harrow is mechanically simple and relatively uncomplicated. But the role of management is pivotal to profitability, so machinery must be working at its best. Alex Heath looks at its maintenance.

**R**epairing grass leys after winter in the intervening weeks between taking silage cuts is an important way of making sure high yields and quality are kept to their optimum.

However, equally important is ensuring the kit used is working to its optimum. Chief among the weapons for rejuvenation strategies is the grass harrow,

# Maintaining your grass harrows

of which there is a good choice on the market for farmers interested in this tried and tested tool.

We spoke to Nick Rider of Opico, who showed us all the areas requiring maintenance on

the company's popular contractor spec Grass Master, a heavier duty version of its standard grass harrows.

## Tines

Starting with the soil engaging elements of the machine, tines are staggered across six rows. Mr Rider says the tines are robust, but ensuring they are secured well to the frame is important.

He says the design, using a three-loop spring set-up, means most vibrations are dissipated before the bed frames, but bolts, even with a locking nut, can come free if not checked regularly.

Longevity of tines is hard to quantify, depending on soils, aggressiveness setting and if going into grass or bare soil. However, he recommends replacing them once wear has taken

them to within 25mm of the 'dog leg', in order to maintain efficacy.

Each row of tines is mounted on a parallelogram-style linkage which allows the working angle of the tines to be altered all at once from a central point on each of the beds. Mr Rider advises giving all the bolts holding the assemblies together a dose of thin oil.

Adjusting the working angle is done via a sliding bar and several pre-set holes to give the desired amount of pressure.

This should be treated to a liberal application of grease to stop rust from seizing it together.

## Frame

Bed frames are designed to have a certain amount of flex, affording some ground-following ability. On new machines, the tine bars have been redesigned for more tensile strength, as on older models the rear two bars could be prone to cracking, so this is an area to check on ageing machines

The main frame of harrows is generally robust, but there are some areas that will require attention.

The model we looked around had a fully welded headstock for durability.

However, many are just a three-point linkage frame bolted on to the cross

beam, with steel struts for support. These can bend if the operator is not careful when dropping into work.

Mr Rider says the incidences of bent pins, which hold the forks from which the tine beds hang, are increasing. He attributes this to 50kph road speeds, which put a lot of stress on the pins when in transport mode.

These need replacing if bent to enable folding and unfolding to be done easily.

All pivot points associated with folding need a shot of grease, and the condition of bushes in the main frame's pivoting mechanism should be checked periodically.

## Seeding

Seed is often put down when harrowing, so making sure the seeding unit is accurate and free to work optimally is imperative.

The example machine had the firm's Air 16 seeder on board, which distributes seed via 16 outlet pipes from its 400-litre plastic hopper. This machine should be stored undercover.

The only exposed bearing on the Air 16 is that of the agitator shaft. This should be free to turn and should be given a decent covering of thin oil to keep rust at bay.

Directly below this, the seed roller shaft runs in a brass bush, which should be given a smear of grease periodically. The condition of the seed rollers should also

be checked frequently. Beneath the seed rollers at the bottom of the seed trough is a strip of foam.

Mr Rider says this can become damaged if contaminants, such as bits of wood, are introduced to the hopper with the seed, and needs to be checked by removing the back plate of the seeding unit and removing the seed rollers, which

should also be given a light mist of oil to ensure they slide in and out easily.

Both the seed rollers use a set of brushes which help to regulate the amount of seed in each section of the rollers. These should be just touching the rollers and free to move up and down as the rollers pass under them.

## Power supply

The company uses a mixture of electrical and hydraulic fans, as well as electrical and mechanical metering. Our machine used radar and a hydraulic fan to meter the seed.

Mechanical drives have the drive wheel at the rear of the machine and typically have three grease nipples along the flexi-shaft.

If using an electric fan, Mr Rider says it is critical to couple it directly to the tractor's battery to get the required ampage.

For both fan types, removing their covers and blowing them out will help to get the required airflow through the pipes.



A few minutes spent on harrow maintenance can save hours of downtime in the long run.



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