

KRM Bogballe M-Line fertiliser spreaders:

Don't let choice confuse you

Branded KRM, Bogballe fertiliser spreaders have been imported from Denmark by Yorkshire-based Keith Rennie Machinery since 1986 and have since gained a loyal following. Fast forward to 2004, when Bogballe introduced the M-Line. Key elements of these models have altered little over the years, but that's not to suggest they're all the same: they go from entry-level through to variable application machines. Bottom line? You need to know your spreaders to secure the most appropriate used buy

James de Havilland

Over a decade ago, profi took an in-depth look at five different tractor-mounted broadcasters, one of which was a KRM Bogballe EX Trend. Predecessor to the M-Line we feature here, the KRM machine, at 6%, had the lowest Coefficient of Variation of all models at the test spread width of 24m. Plucking this one figure from a test that ran across three issues (4/04, 5/04 and 6/04) does not, of course, tell the whole story. But it is fair to say the KRM Bogballe came out as a well respected machine with few demerits. As an update of the proven EX Trend, the M-Line has a good heritage and has become the best seller in the KRM mounted spreader line-up. Its basic design has remained

pretty much the same since its introduction, though, as you'd expect, the control systems have evolved. But what other details do used buyers need to consider?

Well, let's start by adding a degree of extra confusion by briefly touching on the range below, the L-Line. These models share the same basic distribution discs as the M-Line but have hopper capacities of up to 2,050 litres and a maximum spread width of 24m. The hopper is 2.10m wide. We mention the L-Line because these models may well offer much of what you want but in a smaller package. If you get to grips with what the larger M models can provide (in the following text), you will be suitably equipped to understand the smaller L models, too.

Specification basics

All models are pto-driven, twin-disc broadcasters. M-Line can be fitted with a choice of spreading vanes to suit different materials and spread widths. The vanes are made from hard manganese alloy that will oxidise – but the metal is designed to harden as the vanes are used. This reduces the rippling that can be associated with stainless vanes and is claimed to ensure accuracy is maintained right up to the point where the unit is worn thin and needs renewal. The vane types are:

- E1 to spread 12m to 18m
- E2 to spread 20m to 24m
- E6 to spread 18m to 36m
- E8 to spread 28m plus

Typically a spreader sold new with E2 vanes would also come with a set of E6 units to allow a swap to suit certain materials. As with all broadcasters, spread width and calibration are influenced by the material to be spread. KRM continues to update its spread charts, with the latest available on the firm's website – www.krm-ltd.co.uk.

The M-Line divides into M2 and M3 models, the key difference relating to hopper size. To try and avoid tripping up over model descriptions, the basics are:

- M2 Base. These have a 2.40m wide hopper, which is 1.25m in depth
- M2 Plus. A wider, deeper hopper measuring 2.90m wide and 1.40m deep
- M3 Plus. These have the same M2 Plus hopper but can take a bigger load.

In line with their capability to have a bigger capacity, M3 models also have a stronger

Used fertiliser spreaders Search

KRM Bogballe M2W Plus

Model data

Year: 2012.
Condition: Excellent.
Comment: Two hopper extensions to give 3,300 litres capacity. Controller ZURF. In-cab headland control.



Price: £6,800

Used fertiliser spreaders

Search

KRM Bogballe L2 ICON

Model data

Year: 2012.
Condition: Excellent.
Comment: Dual hopper extensions to give 1,600 litres capacity. New vanes. Good spec for an L2 spreader.



Price: £4,700

Used fertiliser spreaders

Search

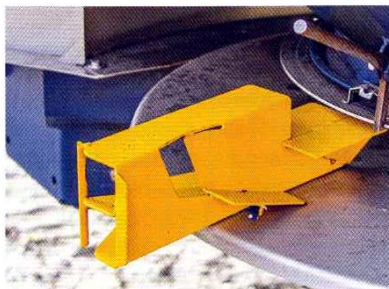
KRM Bogballe M2 Base

Model data

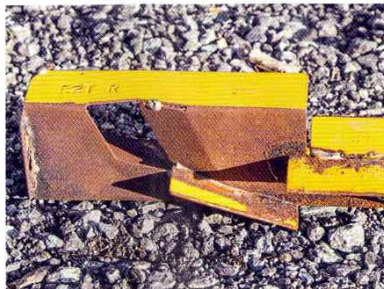
Year: 2012.
Condition: Excellent.
Comment: One full and one half hopper extensions to give 2,150 litres capacity. New vanes. No disc guards.



Price: £4,700



New spreader vanes will help to ensure spreading accuracy...

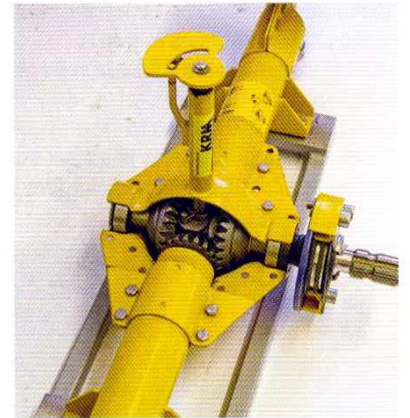


...thinned metal showing on worn units that are due for renewal (see text).

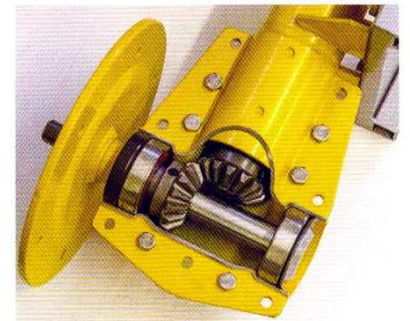
chassis, but otherwise they're pretty much the same as the M2.

Next, you need to look at the actual hopper capacity, as this will change in line with the extensions fitted:

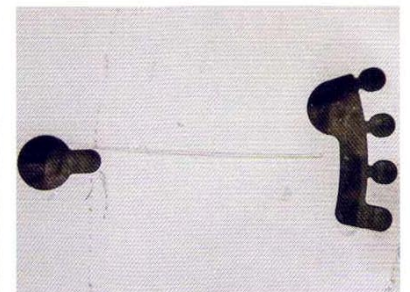
- M2 Base. 1,250 litres. Extensions increase to 1,800, 2,350 or 2,675 litres
- M2 Plus. 1,800 litres. Extensions increase to 2,550, 3,000 or 3,300 litres
- M3 Plus. As the M2 Plus but with further



Waterproof gearbox slip clutch has a blue backing plate. A damaged input shaft may prevent the pawl that locks the offside disc bevel from moving, locking the spreader in either headland or broadcast position.



The disc drive has a bearing at both the top and bottom of the shaft. If the black seal is displaced during washing, water can get into the upper bearing. The bearings are easy to renew. Like the gearbox, the split housing is packed with grease.



The job of swapping vanes is made easier by a simple location system on the disc.

extensions to increase capacity to 4,050 or 4,500 litres.

There is now an M6 range that goes up to 5,550 litres, but these units will not yet have reached the used market.

Hopper capacity understood, there's then a choice between M2 or M3 and M2W or M3W spreaders. The latter 'W' models have automated weighing, the load cell position playing a critical role in enabling these spreaders to offer more than just variable rate control. The smaller L2 models can be specified with a load cell but this is rare in the UK.

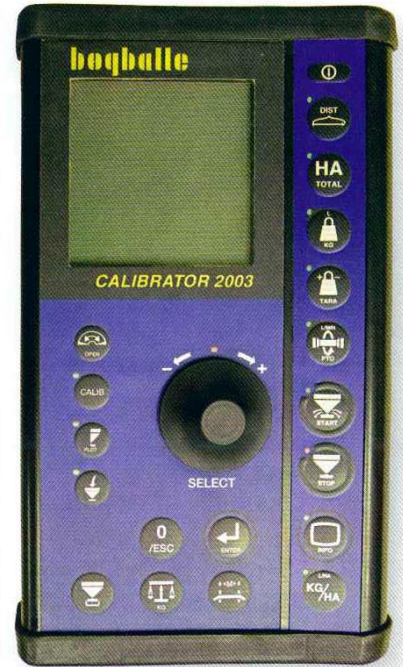
NOTE: A load cell system cannot be retro-fitted to a standard model.

The final difference relates to the control system fitted. At launch, the choices were

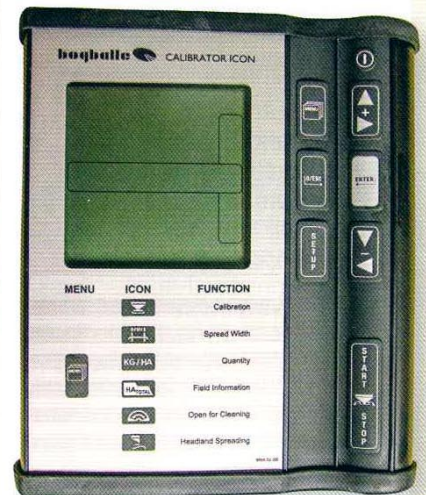
between basic hydraulic control, where the tractor spool valve is used to open and close the hopper shutter, to more advanced electronic control boxes. Up to now, it has been pretty simple, but with controllers it gets a little more involved because the systems on offer have changed. Bogballe puts different names on boxes that can look pretty much the same – until you know what to look for.

To attempt to simplify matters, the key controls include:

■ **Hydraulic.** Simple system with a manual lever to swap from field to headland spreading. No variable rate control and not related to forward speed. An increasingly rare basic system that's more likely to be found on older machines, though it's still favoured



Phased out by the time most M-Line spreaders were introduced, the Calibrator 2003 control box will be a rare find. It still does the job and can work GPS variable rate and Section Control Standard.



Calibrator ICON controller is the most common find on M-Line models without a load cell, but it may also be found on standard models made between 2007 and 2008. It will work with GPS variable rate and Section Control Standard.

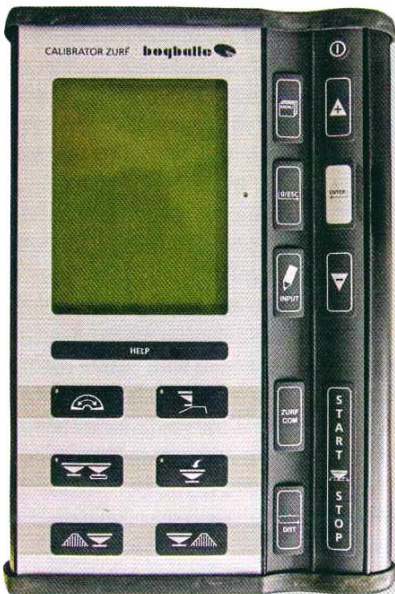
in certain regions to include livestock areas

■ **Calibrator 2003.** Introduced in 1998 this electronic control system was phased out as the M-Line was introduced. Does pretty much the same basic control functions as later designs and will link to GPS and features speed rate control; see note in italics

■ **Calibrator UNIQ.** Designed to work with load cell W models, the UNIQ controller was



Calibrator UNIQ offers GPS variable rate, Section Control Standard but not Section Control Dynamic, and it does not have intelligent control. Now replaced by ZURF.



Calibrator ZURF has more features than the similar UNIQ unit (above). If you want optimum accuracy, this is the controller to go for. Will work with GPS variable rate, Section Control Standard and Section Control Dynamic. This is the only controller to offer the latter.

also fitted to standard spreaders as the Calibrator 2003 was phased out. First of 'new' generation controllers that enables data to be downloaded to a PC. Software updates remain available via KRM

■ **Calibrator ICON.** Introduced in 2007 to replace the UNIQ and still current. Update of UNIQ

■ **Calibrator ZURF.** Only offered on the W spreaders, the 2009-and-on ZURF system brings full GPS compatibility and can be 'patched' into modern tractors fitted with a seven-pin ISO plug.

NOTE: Calibrator UNIQ and older controllers use a tractor wheel sensor to monitor forward speed. If the wheel speed sensor fails or is lost it can be either renewed or, on tractors with ISObus connectivity, done away with by using a simple ISO connector. The latter will patch into the tractor's forward speed sensor and, at £75, is cheaper than fitting the original sensor system.

It's easy to get muddled and confused by controllers, but, in terms of the basics, all do much the same job but with the later

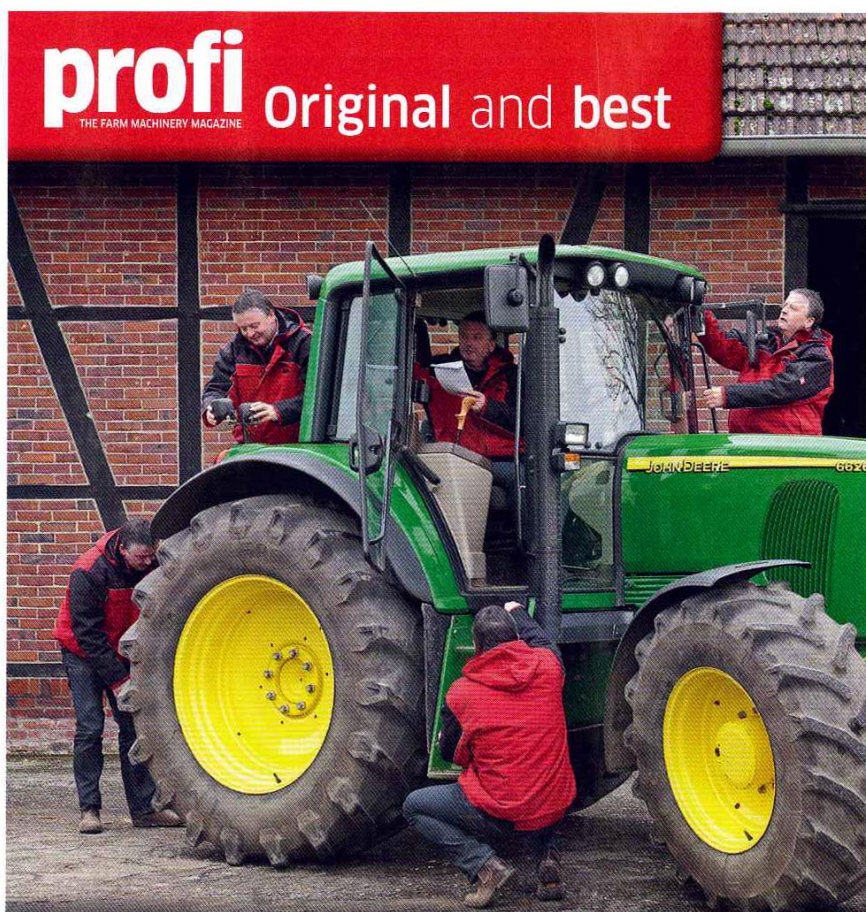
ICON and ZURF offering increased compatibility with third-party systems and ISObus controllers. If you want the latest and most accurate system, go for a ZURF box. If you don't want to do manual calibration, you'll need to consider a used spreader fitted with load cells and a UNIQ or later type of controller.

All controllers have a good dependability record, problems typically relating to damage to the wiring harness as opposed to the actual box itself. If buying privately, try and ensure the spreader is mounted on a tractor so it can be tried out. A connected box will show up an alert if there is a problem. Reconditioned control boxes are available from KRM and if you wish to upgrade the



It will take a keen eye to spot the difference between single...

...and double bearing agitators. Latter are better for variable rate spreading.



controller it may be possible, but check with KRM first.

Bogballe continues to offer 'software' support for its UNIQ-and-on controllers, with updates available via KRM's website. Many of the upgrades are designed to allow existing controllers to be operated with the latest section control systems.

If you want GPS variable rate control, any electronic controller from 2003 and on will do the job and will work with section control as standard. If you want the Bogballe Section Control Dynamic system (SCD) you will need a ZURF control box. In simple outline, SCD allows both headland and angled bout pass control of the spread pattern to be worked automatically via GPS.

From 2011, W models with a ZURF controller were also offered with Intelligent Control. This system uses data from the load cell to take into account the angle of the spreader according to terrain. It can use this data to more accurately maintain the spread rate to match undulating ground.

The headland control system can be manual, cable-operated from the cab or electronic. It works in the same way but differs only in how it is engaged. If operated electronically, there is an actuator on the top of the gearbox. The latter is easy to spot. If just a lever is fitted, an actuator kit can be retrofitted, the parts listing at £530.

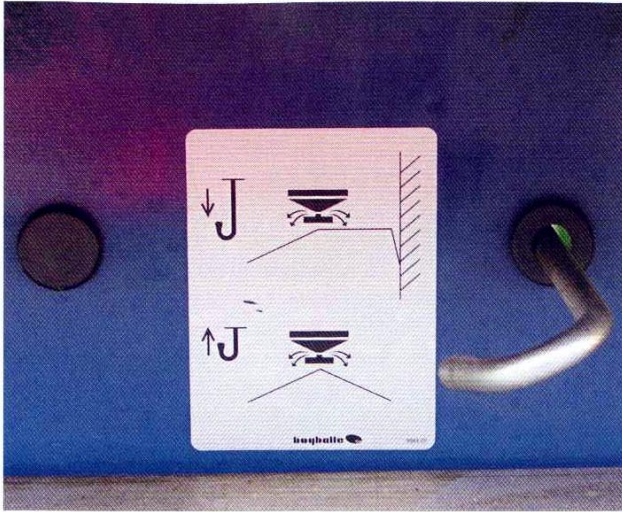
Get the best in the business - get profi knowledge

- Unique DLG Powermix test results
- Industry recognised & widely respected
- Content researched & written by dedicated professionals

What to look for

Two simple basics for starters – condition and specification. Don't waste time looking at a machine that does not have the spec you are after. A possible exception may be if the capacity is too low. Extensions are

Subscribe online at www.profi.com or tel: +44 (0)1795 592 896



Take a peek above the gearbox to see if there's a motor for in-cab headland spreader control. If not, the system is manual. Upgrading is possible on any electronic machine and saves getting out of the tractor or running in headland mode when you should be spreading to full width.

moderate play, the top bearing is likely to need renewing. The top bearing can also be damaged by zealous pressure washing, its rubber bearing seal getting dislodged. The bearings aren't too difficult to renew. Like the gearbox, the disc drives are simple to dismantle and re-pack with grease.

Moving into the hopper, give the agitators a check, play suggesting the bearings should be replaced. Bogballe changed from single to twin bearings on M-Line models from around 2014, sticking with single units on the small L-Line. It is possible to upgrade single- to twin-bearing designs but the job will be more expensive than just keeping an eye on maintenance. Agitator bearing wear is most pronounced on spreaders working

readily available from KRM. As to condition, KRM supplies all new Bogballe spreaders with a large bottle of protective oil and touch-up paint. To suggest all owners lavish TLC on their spreaders will be wide of the mark, but it is fair to say these broadcasters do tend to wear well. The paint on these machines is really good, and this, combined with the extensive use of stainless steel, should mean used examples that have not been damaged or stored out in the elements will hold up well.

Start at the pto and head back. The actual shaft does not have to work overly hard on a spreader, though it will wear out if poorly maintained and operated at a demanding angle. If there is play in the UJs, budget to renew.

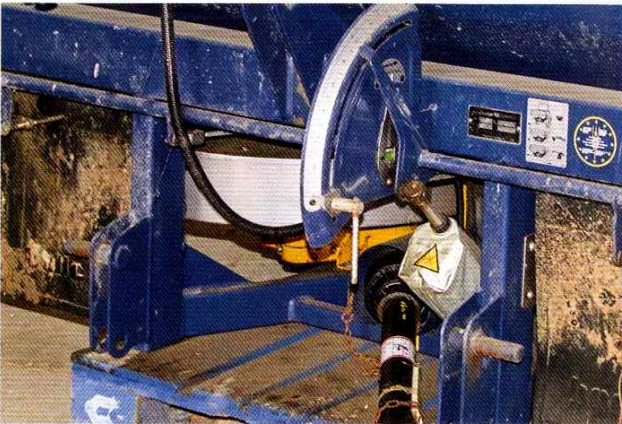
Pre-2008 Bogballe spreaders have an open spring gearbox slip clutch that can seize if it's not kept clean and properly adjusted. This is resolved on subsequent models with a 'waterproof' design that pretty much looks after itself. Earlier spreaders with a seized slip clutch can be easily repaired, although the later design is offered as a retrofit.

A seized slip clutch on a pre-2008 unit can lead to torque damage to the gearbox input shaft that, in turn, can result in the spreader remaining stuck in either normal or headland spread mode. A simple check is to see if the latter operates as it should. A gearbox with a blue disc on the slip clutch will have a case-hardened shaft. This may have been fitted to earlier machines and is unlikely to give problems. If a repair is needed it is made simpler by the gearbox being relatively straightforward to take apart.

Disc bearings are sealed for life and are easy to check; if the disc has anything more than



It is easy to spot the difference between the heavier headstock of W load cell...



...and the standard non-weight models. Pictured L-Line headstock is less beefy than M-Line's.

on variable rates. A new single bearing kit is priced at £33.90.

The double outlet shutters can get out of synch over time so check they close properly. With the quantity handle set to zero, the two shutters should close together adjacent to a notch in the base of the hopper. If they don't, they need readjusting, which is a relatively straightforward job, and the machine recalibrating to maintain spread accuracy.

The hopper canopy is designed to keep out rain and should seal securely around the top lip of the hopper. Inspect the material for damage and tears and make sure it opens and closes via the single lever.

On W models with a load cell, it will either work or not. KRM suggests problems with load cells are rare, even on older Bogballe spreaders, but you should still do a check before buying. If you come across a problem, seek advice.

The vanes are wear items and these do need to be in good condition. It is safer to assume they need to be renewed. Easy to fit, a fresh set of E1 and E2 vanes are £275, E6 and E8 listing at £394.

Finally, check all wiring, levers, actuators and hydraulic hoses. The scale to level the

machine on the tractor is vital for set-up accuracy, so ensure that it has not been damaged.

As to details, extra wide mudguards were a £395 option on M-Line spreaders made prior to 2014 when they were made standard. L-Line models still list wide stainless steel mudguards as a £285 option and both types can be retrofitted if necessary. These accessories comprise

ISO cable enables older controllers to be patched into a tractor's in-built speed sensing system. At £75, the cable is cheaper than putting a new wheel sensor onto a modern ISO-equipped tractor.



a side guard kit to help prevent mud from extra wide tyres getting onto the discs. Bogballe paint responds well to a wash and oil, but the non-stick finish means the company's decals are less resilient. So if you view a machine devoid of useful spec pointers, such as Base, Trend, Plus, Quadro or the controller name, don't assume the features are missing. Take a close look at the original build sheet to really know the machine that's under consideration.

Summary: If you start to scout around for a used KRM spreader now you may find that dealers have nothing to offer. The trick, as is always the case, is to let your dealer know you are after a used machine so they can give you the first pick of any trade-in that may come their way. As a rule, these spreaders are renewed to allow an upgrade as opposed to the machine needing to be replaced.

It is really difficult to put a price on a used spreader as prices can vary widely for what can appear to be much the same model and specification. Furthermore, KRM spreaders that do come up for sale tend to be around five years or older. No problem with that, but check the control system fitted is what you want. At present, a model with a ZURF controller is a rare find, with even ex-demo machines being thin on the ground.

With grateful thanks to: John Flintoff, Thirsk; J Ramsden and Son, York; and Ted Barker, of KRM.