



*Year: 2004. Bale count: 39,750.
Price: £19,950 ex VAT. Entry-level prices from £17,000. Allow £2,500 to bring a tired unit up to dependable condition.*



*Year: 2006. Bale count: 21,200.
Price: £29,950 ex VAT. Fusion '1' in good state will be priced from £28k. Always check tyres, as these are costly to replace.*

McHale Fusion 1 and Fusion 2 baler wrappers:

No need for Fusion confusion

Back in 2002, McHale introduced its Fusion combination baler wrapper. Specifically designed to produce and wrap silage bales, the original model was superseded by Fusion 2 for the 2008 season. James de Havilland checks out both variants and outlines key pointers when picking a used buy

Now well established, McHale Fusion 1 and current Fusion 2 baler wrappers are highly sought after as a used buy. The fully integrated wrapping system is proven, and the combination's compact overall dimensions allow it to operate in smaller fields and travel down narrow lanes, making it popular with both contractor and farm users.

From a used purchaser's perspective, one of the first questions to ponder is whether the original Fusion 1 represents as sound a buy as a later Fusion 2. There's a natural tendency to assume that a later model must be the wiser bet. In the case of the Fusion, however, it's perhaps more

accurate to say that, even though there are differences, it's unlikely that a Fusion 1 will give away much, if anything, to its younger brother in terms of in-field output.

It's also worth bearing in mind that the later Fusion 2 is yet to put in an appearance in any substantial numbers on the used market; the only exception here are in-demand, ex-demo units. So, in short, if you want a Fusion 2 for this season, you'll almost certainly need to budget for a new one. Moreover, for those planning much further ahead, now is the best time to start putting out some feelers for the limited models that may come in as part-exchanges at the end of 2010.

Model changes and specification

In terms of development, the original Fusion was subjected to the odd nip and tuck during its production run, but McHale suggests any significant changes will have been applied to all existing machines. Of course, that's not to say that there are no detail differences between an early and late Fusion; there are a few, but nothing that should be of major concern. From a used buyer's standpoint, this is important as it means you can make a judgement on the condition of a particular machine without worrying that a younger model might have benefited from a spec change

McHale Fusion 2



*Year: 2009. Bale count: 10,100.
Price: £37,550 ex VAT. Sought-after Fusion 2 is a rare used find. Ex-demonstration models fetch around £42,000.*

that either enhances its reliability or overall performance in the field.

From the outset, the Fusion was a top specification machine with a refreshingly short list of factory options. The main spec to focus on is tyre size, with the standard 560/60 R22.5 sized flotation rubber proving more popular than the 650/50 R22.5 alternative. Respective overall widths are 2.86 and 3.04m, the slightly narrower Fusion 2 slimming to 2.76m or 2.94m with the same tyre sizes. The tyres are suitable for travel speeds up to 40km/hr – an important factor for some users.

So what, then, are those key difference between the original Fusion and Fusion 2? Though both do the same job, arguably the main point of separation is that Fusion 2 incorporates a simpler baler-to-wrapper transfer system.

On top of that, Fusion 2's bale chamber also sports an extra roller – this roller replaces a short section of plate within the chamber – that helps to prevent bale stall in dry crops, which is a trait that will be of particular relevance to those who handle hay and straw as well as silage.

It is also perhaps fair to say that a Fusion '1' may need a bit more maintenance and operational care than Fusion 2. For example, if the operator starts to take in crop before the top door of the bale chamber

is fully closed on Fusion '1', the cross member beam on the chassis behind the pick-up can trap grass. Regular cleaning is a sensible idea.

On the Fusion 2, this crop build-up problem is eliminated, because its revised tubular chassis eliminates the design need for a cross beam.

Bale transfer on a Fusion '1' is also more complicated – a potential concern for users. But on the plus side, the transfer system operates smoothly – smoother than on Fusion 2.

Indeed, some owners upgrading to Fusion 2 take time to grow ac-

customised to its more positive transfer of bales from baler to wrapper.

Drawbar, gearbox, pick-up, feeder system and knives



Fusion drawbar is fabricated and relatively short. Look for tight-turn damage. The pto should last well so just confirm the clutch shows no signs of slipping. Check the support jack is still in place.

McHale stretched the drawbar on Fusion 2 to overcome criticism that the original design was a bit too short for the tightest turns. The hitch ring typically lasts well on both versions, but inspect for excess wear on high bale count machines.

The pto shaft has its own integral slip clutch, so take a look to see if there are any signs of it having slipped enough to discolour the paint. If in doubt, get it



Fusion 2's drawbar is longer than the original item to allow tighter turns. Adjust hitch ring to suit tractor. Crop press is an option that's well worth having.



Pick-up tines and bands tend to take a bit of a battering, but they're not too costly or difficult to renew. Contract users typically run half a knife set to save on power and fuel.

checked. The gearbox is not known for any issues, but it does like clean oil every season. Inspect for leaks, and note that the gearbox chamber side bearing should be checked every 20,000 bales.

In the crop intake department, the pick-up drive chain, cam track, tines and stripper plates are all wear items and, as such, are handy indicators of how carefully the machine has been maintained. A Fusion with under 40,000 bales generally only needs the odd tine and plate replacing.

Fusion 1 models have a box-section chassis. The underside of the baler needs a periodic clean to prevent crop residues from building up.



Fusion 1 or Fusion 2?

Both original and current Fusion 2 balers should deliver similar levels of output. So the main question is whether it makes more sense to splash out on the newer '2', or save some cash and stick with the original Fusion. Here's the answer. Where the workload is predominantly silage and the machine will be treated with a degree of care, the older Fusion still stacks up. On the other hand, if straw and hay are going to feature in significant quantities, Fusion 2 may be the better bet, as its extra chamber roll – it has 18 in total – really comes into its own in drier conditions. Similarly, the younger machine's much simpler bale transfer system may be favoured by those who aren't perhaps quite so diligent with their maintenance.

And it doesn't get too much worse on a tired example: new parts to refurbish a worn pick-up seldom top £500, though we'd probably budget for up to £750 if the pick-up is in a visibly battered state. Cam track bearings generally need renewing every 10,000 bales and, as an aside, it's also worth noting that McHale's pick-up tines are often less expensive than spurious items.

The pick-up on Fusion 1 is operated via a separate controller linked into the RDS Expert main control. Most users set the height of the pick-up and then leave it in float. In contrast, the Fusion 2's pick-up is controlled via the baler tractor's hydraulics, doing away with the original Fusion's separate valve block. Both models have an accumulator on the pressure side for shock load protection.

From 22 to 17 bales a hectare

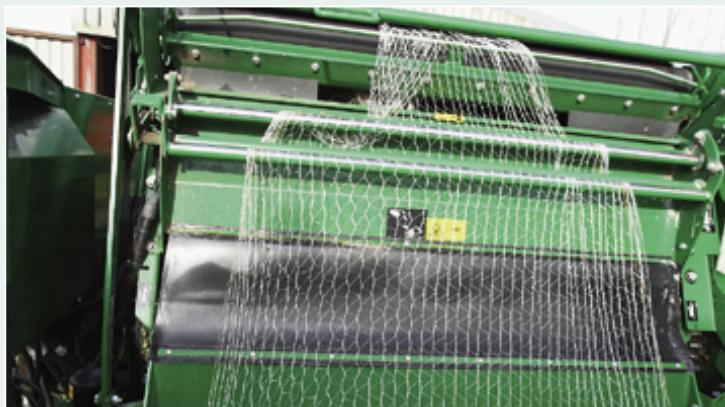
The rotor feed 'chopping' unit has a theoretical chop length of 50mm when the full set of 23 knives are installed, although contractors tend to run with half a set to reduce fuel use and to perhaps make a less dense bale. Where increased density is the priority, a Fusion is able to squeeze about a tonne of grass into a bale, with users suggesting that a Fusion can turn a 22-bale per hectare field into one that produces 17. That'll be welcome news for

farmers, as they should be able to reduce their plastic wrap costs by around 20%. Fusion knife control is operated via the Expert control box, with a drop floor system enabling any blockage to be cleared. The Fusion 2 has a separate dial that enables the user to easily check the knife operating pressure.

Rotor bearings typically need renewing every 25,000 bales on an original Fusion. For Fusion 2, in 2008, McHale introduced a double-row rotor bearing, which has a heavier load capacity and should result in a longer service life. Older Fusions can be retrofitted with this new bearing design when the originals are worn out; price is around £90 each from a McHale dealer.



Net wrap feed on the original Fusion baler wrapper passes through a single bar tensioner. Easy to thread and reliable, the critical check is to ensure the rubbing surface is kept smooth and shiny for the best possible performance.



The Fusion 2 has a double-bar net tension system for a tighter wrap. This is useful when baling hay and straw.

The original Fusion bale chamber has 17 rollers. A plate at the top front of the chamber sometimes causes a dry bale to stall, but it's not a problem in silage. Storage on either side holds four film rolls each.

Net wrap system

In line with its improved ability to bale hay and straw, the Fusion 2 net wrap feed was altered from the 'single bar' set-up of the original Fusion to a system that employs two bars. For silage work, the original system is just fine, the later set-up allowing more tension to be applied to the net for a tighter wrap for hay and straw.

On the Fusion 2, a 'gas strut' forms a part of the tension system, and this strut may need attention if it becomes weak. Otherwise, both systems are simple and not known for any problems. A key check is to ensure the net friction surfaces are shiny and free of nicks. Where the tension bars are rusted over, they need to be cleaned up with emery cloth prior to setting out for work.

Bale chamber driveline

From 2007, the main drive chain is fitted in the factory without a link, so it's easy to identify if the original is still in place. McHale utilises a high shock load 100H Diamond main drive chain, with 20B 1 1/4in





ensure that a 3/4in free-flow return pipe can be used, as this has sufficient capacity to help avoid circulated oil overheating.

Chamber and bale transfer

The important differences between an original Fusion and Fusion 2 are:

- Bale chamber is mounted higher on the Fusion 2

- The original Fusion 1 has a box-section chassis with a bulky cross section behind the pick-up

- Fusion 1's bale chamber has 17 rollers; Fusion 2 has 18

- Powered roll transfer table on Fusion rises to meet the discharged bale

- The Fusion 2's bale chamber is raised, thus eliminating the need for any moving parts for bale transfer.

Apart from the previously mentioned detail changes, it is the differences above that the buyer needs to be aware of when

Fusion 2 is perhaps better suited to baling hay and straw: an extra chamber roller (arrow) reduces chamber friction. Note the tension spring to the main drive idler and the spare knives in the carrier.

and 1in pitch chains driving the chamber rollers and ancillary items. All the chains are designed to wear at a similar rate, so it's generally just a case of replacing the complete set as necessary.

It is difficult to predict chain life, because so much depends on the average density setting, chop length and the horsepower on the front of the machine. As a guide, new chains are needed every 20,000 bales if all bales have been chopped. But just because a baler has clocked 30,000 bales, it doesn't mean that all the chains have been changed.

To extract maximum performance from the chains, ensure the integral lubrication system operates as it should and that only dedicated chain oil has been used. Old sump oil is definitely not recommended. The chain oiling rate is set via the Expert control box, so this can be viewed on the box's display. McHale advises owners to check replacement chain prices with their dealers before assuming they're available for less elsewhere. A full set of original chains can be purchased from McHale dealers for around £830.

Hydraulic system

From the outset, McHale made the Fusion compatible with tractors featuring both open- and closed-centre hydraulics. The main valve block allows users to switch between both full-flow and load-sensing systems by simply winding a socket tap out or in respectively. A load-sensing pipe is supplied with the baler, so it should be simple to switch between different tractors. If the baler wrapper is to be run by a tractor with constant flow, it pays to



Lower right valve-block on Fusion controls pick-up raise, lower and float. All key bearings receive a measured shot of grease under high pressure. Ensure the lube system is working to achieve max bearing life.



Fusion 2 moves control of the pick-up from the control box to a tractor spool. Load-sensing flow control is standard on Fusion and Fusion 2, but both of them can work with constant flow.



Top is a 3/4in return, the middle the 1/2in feed, and the lower the 1/4in sensor hose. Constant flow systems need a big return to prevent oil overheating, but load sensing set-ups may 'get away' with a 1/2in hose.

selecting between a Fusion and the younger Fusion 2. If you're keen to have the most 'positive' transfer of bale across to wrapper, Fusion 2 has the edge.

The original Fusion's transfer system is more complicated: it has additional moving parts, driven by five rollers in the bale chamber. In contrast, the Fusion 2 has a simpler transfer system.

On an older Fusion, an



Fusion raises transfer rolls to provide a smooth passage of the bale on to the wrapper. This works well, but is more complex as the drive requires cleaning. Note the steel plate just above the door hinge point (see arrows).



The baler is raised in the chassis of the Fusion 2 to allow a simplified direct bale tip into the wrapper, with no need for any driven transfer rolls. This is a much simpler set-up, although it can feel aggressive. Note the extra roll at the machine's hinge point.

important check is to assess the driven transfer roller situated outside the bale chamber, as the drive chain is prone to choking with grass.

Wrapper

The wrapper elements of the Fusion and Fusion 2 are essentially the same. In broad outline, the bale is rotated on a dual roller turntable, with a wrapper ring carrying two rolls of film. The sensors that monitor the wrapping process are not known for any problems, but spend time looking over all the wiring and inspect for any signs of damage. It is well worth getting a dealer to check over the set-up of the system, as you'll have no way of ensuring that everything is operating as



Detail changes have been made to various areas of the Fusion, including the latest Fusion 2 featuring a spring return on its film roll retention latch. The wrapper ring should lock when the rear cover is opened.

Wrapper ring drive wheels have a smooth friction surface on Fusion. A tread pattern was added for Fusion 2 to prevent slipping in wet conditions; that said, most wheels are fine without the tread.



it should until you start work. Users suggest the wrapping element of the Fusion is dependable, and a sharp film cut-off blade and keeping everything as clean as possible certainly help to reduce the risk of any in-field issues.

The wrapper ring is driven via a pair of flanged wheels. On the Fusion, the friction surface of the wheels is plain, McHale adding a grooved surface in around 2006. This modification can be carried out on earlier models if ring slip is an issue; slip can happen in damp weather conditions, but typically it's not a problem. The message is not to be overly concerned until slip is actually experienced if, indeed, it ever crops up.

The wrapper ring should lock into position when the wrapping process is over and also when the side access panels are opened. A brake engages after the ring has stopped to hold the film dispensers in-line as the machine travels to make the next bale. These are lined with easily replaced brake pads, so check by taking a look for any wear.

Control boxes

With its larger display, the Fusion 2 Expert Plus control box is able to graphically show certain settings, but, in operational terms, the earlier Expert box is just as

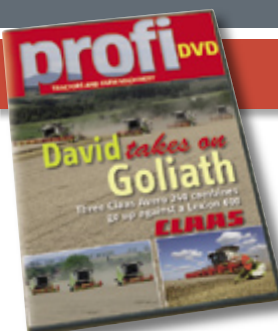
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On the Fusion 2 model, the RDS Expert Plus control box (left) replaced the RDS Expert. The latter has a separate raise/lower control for the baler's pick-up.

easy to use; the key difference from an operator's viewpoint is that the original Fusion Expert box has a separate pick-up control. The latter is not used on Fusion 2, because the pick-up raise/lower operation is controlled direct from the tractor spool valve.

If at all possible, it is obviously well worth operating the controls by connecting them up to the baler wrapper and then using them to open and close the tailgate, check the bale transfer system and confirm the number of bales put through the model in question. The wiring to the controls comes in modular lengths, incidentally, so it is possible to replace a section if it has been damaged. It's a false economy to run a machine with patched-up wiring, as downtime will almost certainly be the end result.

Summary: Now is a good time to start looking for a used Fusion baler wrapper for now and next season. Though second-hand examples of the original Fusion are not as thin on the ground as they were a couple of years ago, operators tend to hang onto these machines, even when pushing through more than 10,000 bales a year.

As a Fusion with perhaps 40,000 bales plus is not a rare find, it's worth considering how much it would cost to bring a well-used example up to an operational and reliable condition. As a very rough guide, £2,500 should be sufficient for a dealer to return a tired machine back to a serviceable state. For example, it may



be possible to acquire a tired-looking, 2004 Fusion with 40,000 bales on the clock for about £17,000, and then have it freshened up for a total cost of less than £20,000. A 2006 machine with 35,000

Expert Plus box provides more information and includes a selector to make it easy to switch between silage, hay and straw bales. Both box vintages give a trip and total bale count.

bales will probably command £25,000, or perhaps nearer £27,000 if it's ready to go straight to work.

Assuming one can be found, a two-year-old, 20,000-bale Fusion 2 model is likely to carry a dealer tag of £28,000-£30,000. Locate a year-old unit with 10,000 bales, and it'll probably be listed up at £35,000-£37,000.

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