

McHale Fusion 3 and Fusion 3 Plus baler wrapper:

All rolled up ... and ready to wrap

Launched in late 2012, the Fusion 3 combination baler wrapper was joined by the Fusion 3 Plus in 2014. The Plus version adds film-on-film or NRF (Net Replacing Film) wrapping, further broadening the appeal of these fixed-chamber combi machines. Strong demand has helped to ensure firm residuals for both the Fusion 3 and Fusion 3 Plus entering the used market, but where are the keys to unlocking the best second-hand buy?

James de Havilland

McHale launched the original Fusion integrated baler wrapper back in 2002, the basic design template of these models proving the concept so successful that the current Fusion 3 and Fusion 3 Plus models share the same basic DNA. If this suggests the company has simply updated the Fusion and done little development since, this is certainly not the case. The Fusion 2, launched for the 2008 season, saw a number of changes to enhance dependability and boost versatility (see *profi* used machinery 04/2010), with the Fusion 3 again building on the basic design to boost overall ease of operation and maintenance. With the Fusion 3 Plus, McHale introduced film-on-film application whilst still allowing net to be applied to suit unwrapped bales of hay and straw, or for individuals who wish to use net wrap instead of film for haylage and silage. The Fusion 3 Plus machines have subsequently proved to be strong sellers, a 'film'-only bale having a number of claimed advantages such as easier plastic recycling, as there is only film to deal with as well as better sealing enhancing bale quality. Fusion 3 Plus also offers the opportunity to reduce wrapping layers by better distributing plastic across the largest surface of the bale, which, in turn, can help increase silage quality. This will particularly apply where six layers plus are used to wrap the bale. We put a Fusion 3 Plus through a comprehensive practical test (*profi* 7/8 2015) and were impressed: our summary suggested McHale 'sets new standards in the market'.

What to look for – specification

Job one is to pick between a Fusion 3 and the Fusion 3 Plus. If you don't want film-on-film

Used baler wrapper
Search

McHale Fusion 3

Year: 2012

Condition: Good. Fully dealer serviced to include new chains

Bale count: 34,560

Comment: Well up to front-line operation.

Price: £35,950



Used baler wrapper
Search

McHale Fusion 3

Year: 2014

Condition: Good. Fully dealer serviced

Bale count: 44,850

Comment: Second set of chains installed last season. Dealer serviced from new.

Price: £36,500



then the choice is simple. If, on the other hand, you're not sure, it may be worth holding out for the Plus model even though these are only just starting to appear on the used market, with limited choice and possibly premium pricing. However, it will be cheaper in the long run to choose the variant you want.

Next up is specification. The selectable knife option lets the operator choose between 0, 12, 13 or all 25 knives from the in-cab controller, a job that can be done manually on standard Fusion 3 machines. Vredestein Flo-Pro 560/60 R22.5 or BKT 560/60 R22.5 tyres are standard, with McHale offering a wider and lower Vredestein Flo-Pro or BKT 650/50 R22.5 as an alternative. The latter is not a common choice in the UK, as it increases the machine's standard transport width up from 2.76m to 2.94m.

A crop roller ahead of the pick-up is pretty much a default fit on Fusion 3 and is standard on Fusion 3 Plus. The roller is effective at helping to even out lumpy swaths and compress taller swaths of drier crops. An integral crop guard comes as part of the package, but this can be upgraded. At the rear, a pair of bale guide bobbins secures the bale as it is wrapped on side slopes, and these bobbins were also a default fit for many buyers until they were made standard from 2016.

A side tip attachment that can be used to flip discharged bales on their end is available as an option, although this is not common in the UK spec. Other choices will have included a screw-adjustable, swing-down drawbar stand



Fitted as standard to the Fusion 3 Plus, the McHale iTouch controller displays live images from two cameras as standard. Split camera and menu screen came as a part of the package from 2017.

in place of a fixed static item and air brakes – rare – as an alternative to the standard hydraulic braking system. The more advanced iTouch controller with two cameras is fitted to the Fusion 3 Plus (see separate box).

What to look for – condition

McHale caught the style bug for the Fusion 3, the twin-skin composite side panels certainly making these, and the same sized Fusion Plus model, appear more modern than their predecessors. The Fusion 3 scrubs up really well too, so be on your guard if the



Expert Plus Control Console is standard on the Fusion 3. A lube check alarm for both grease and oil levels is included, so there is no excuse for dry chains and oil-starved roller bearings. A selectable knife option allows the knife sets to be changed from the tractor cab.

machine looks scruffy and battered. First impressions count and are important.

A McHale dealer will obviously prepare a machine for sale, but, if you get the chance to view a machine before it has been through the workshop, you may get a clue to its past care. These units can pump out a huge quantity of bales in a season, a fair number also rolling up a large tonnage of straw to exploit their ability to drop bales in pairs.

These days, it is not unusual for Fusions to knock out more than 10,000 bales a season,

Used baler wrapper Search

McHale Fusion 3 Plus

Year: 2015

Condition: Good. Fully dealer serviced to include new chains

Bale count: 28,560

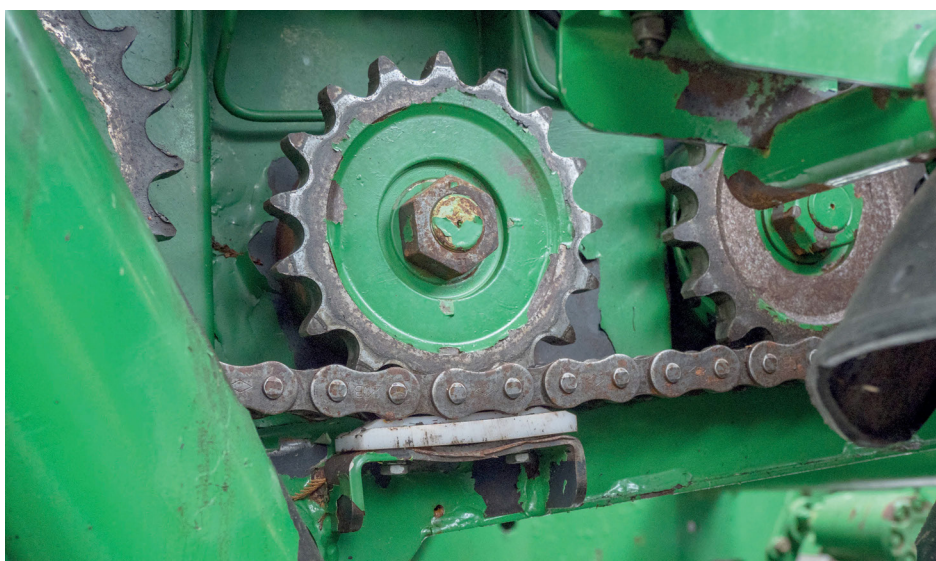
Comment: Plus models rarer in UK. Popular used.

Price: £38,950





The net wrap cut system is simple and robust but, over time, the nut that releases the net hook wears and will need renewing.



A white 'plastic' wear strip runs under the lower idler sprocket on the nearside of the machine. If the strip is missing or badly worn, check the entire chain run for wear.

with some pre-owned Fusion 3 units now entering the market with well in excess of 50,000 bales on the counter. A high bale count can seem a little daunting but, assuming you buy the right machine, this does not mean a well-used machine cannot continue to offer reliable service; earlier Fusion 1 and Fusion 2 models can work successfully after having produced in excess of 150,000. The trick is to balance purchase price, maintenance costs and annual workload.

So what should you look for? As is always the case, there are the fairly obvious general checks you should make before working a baler, along with those that are more specific to a Fusion. The best place to start is at the front with the pto and then work back from there.

Standard control systems

Fusion 3 models are fitted with the McHale Expert Plus Control Console. When combined with a load-sensing valve, the control can be set to automate both making the bale and wrapping. Wrapped bale offload and bale transfer can be altered to suit terrain, the system allowing unwrapped bales to be unloaded in pairs. The controller has a lube check

alarm for both grease and oil levels. A selectable knife option enables the chosen sets to be changed from the tractor cab. Fusion 3 Plus has a more sophisticated iTouch Control as standard. This features a colour 7in touch-screen monitor and offers increased levels of monitoring and access to all key features to select between automated and manual control.

Physical buttons on the side of the screen duplicate access to main functions. As part of the package, two cameras are included. These can be switched to show the NRF application to the bale in the chamber and the wrapper in action at the rear of the machine. On later machines, an automatic mode can be set to switch the camera on at pre-determined points.

Look first at the drawbar towing eye and then move on to the pto. All Fusion 3 and 3 Plus models are fitted with a Walterscheid star-tubed, heavy-duty pto. Make sure the sections can slide freely and that the joints are in good order. It is all too easy to overlook the pto, with just a new set of plastic OEM guards weighing in at approximately £250. Having the cross shafts refurbished costs around the same.

The baler gearbox divides drive to the pick-up and feed rotor on one side and to the bale chamber on the other. If oil is changed at the prescribed first 50-hour service interval and annually after that, gearbox wear is unusual even on machines with in excess of 100,000 bales. The key check is to assess for play in the input shaft and to also keep an eye out for any weeping from the seal. This is not a problem area, so ask questions if you detect any play.

Follow the drive to the pick-up and remove the covers to take a peek at the drive chains. If the chain tensioner is at its maximum, budget to renew the chain, making sure that the drive sprockets are in sound order. The five tine-bar pick up has galvanised pick-up bands. Inspect for damage. The tines and related cam track bearings are wear items, with the latter being good for a season or 10,000 bales plus.

A Walterscheid nine-plate clutch protects the pick-up drive; it needs to be greased at the end of the season and the unit's torque slip clutch set at 900Nm. It is important not to over-grease this unit, as this will cause the clutch to slip too easily.

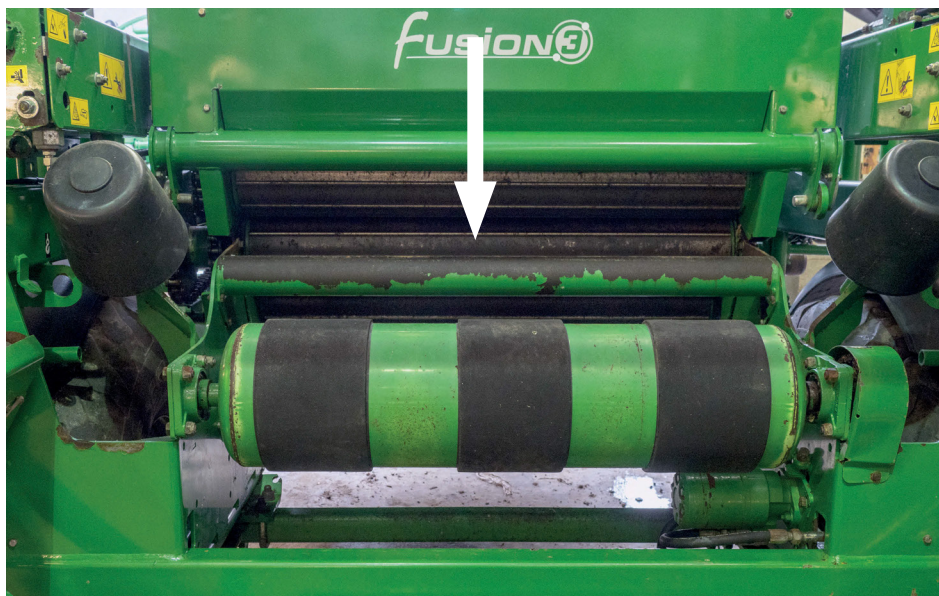
As mentioned the crop roller is a popular option on Fusion 3 machines and is standard on Fusion 3 Plus. If fitted, give it a spin, checking it turns freely with no catch points in its rotation. These items can get damaged, a slight bend causing stalling in work. The sealed bearings last well.

McHale feed rotors are tough items with the flights welded on both sides for strength. The double-row drive side bearing, which is, incidentally, available as a retrofit to the previous generation Fusion 1 and Fusion 2, has doubled the life expectancy of the original rotor bearings. It should easily last for 50,000 bales.

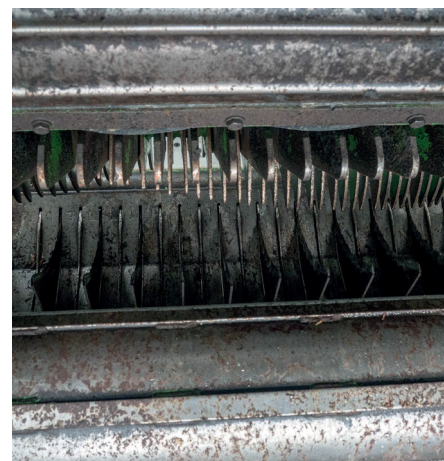
Engaging the knives is done via the Control Console, with machines equipped with selectable knives able to operate with 0, 12, 13 or all 25 knives. Fusion 3 Plus machines with the more advanced iTouch Control can have knife control as an option. This will



Ring Holding Device secures the wrapping ring to ensure it is correctly positioned ahead of wrapping the next bale. If you can't see any friction material, new pads will be needed.



The solid bar ahead of the wrapping table (arrowed, above) was replaced by a roller (arrowed below) from 2016. This smoothens chamber-to-wrapper bale transfer, although the earlier design still works reliably.



Only half the knife sets are typically engaged, with spacers filling the gaps when the other sets are not fitted. Look over this area with particular care for any signs of damage.

automatically lower the knives when the bale reaches 95% of its size, returning them to work for the next bale. This allows the outside of the bale not to be chopped. Check the system works and inspect the knives for wear and damage. The knife operating pressure is indicated on the control box.

When all the knives are engaged, theoretical chop length can be as low as 46mm, down from the 50mm of the 23-knife Fusion 1 and Fusion 2. With all the blades engaged, squeezing a tonne plus of grass into a bale is easily possible. All models come with a drop floor to enable intake blockages to be cleared from the tractor seat.

This leads us onto the bale chamber. On the Fusion 3 the hydraulic chamber roller pressure system adjusts via a valve on the baler, with a gauge visible from the cab indicating the set pressure. This is a simple and robust system. On Fusion 3 Plus models, bale density is controlled via the iTouch Control display. It is not common for the pressure setting to give trouble in service, but it pays to have the system and related accumulator checked by a McHale dealer periodically.

The 18-roller chamber is again not known for problems, but, as with all working components, that's not the same as saying the bearings and rollers themselves do not wear out. If you are looking over a machine with in excess of 80,000 bales, seek some advice unless you really know what you are looking at. A dealer can supply parts to pretty much renew anything worn.

McHale uses 100H Diamond drive chains on the main drive, the firm having switched to a link-free 'endless' chain back in 2007. This was done to help prevent problems

Key Fusion 3 developments over Fusion 2

- New guarding – better access and a more modern look
- New platform and hand rails – easier access to net system
- Door lock tap located outside the panels on the main platform – operator convenience
- Improved net storage – on main platform
- Heavy-duty Walterscheid pto – with star tubing
- Five tine bar pick-up – claimed 25% better ground cleaning and crop transfer
- Knife pressure display – on control box with audible alarm
- Knife position sensor – ensures the best chop quality
- Double-row rotor bearing – reduced service intervals
- Additional film roll holders – more film storage
- LED lighting

Key developments – Fusion 3 and 3 Plus

- 2016. Increase in diameter for feed rotor and side auger
- Sprung rotor floor to ease shock loads when baling uneven swaths
- Solid bar behind bale chamber changed to a roller to ease bale-to-wrapper transfer



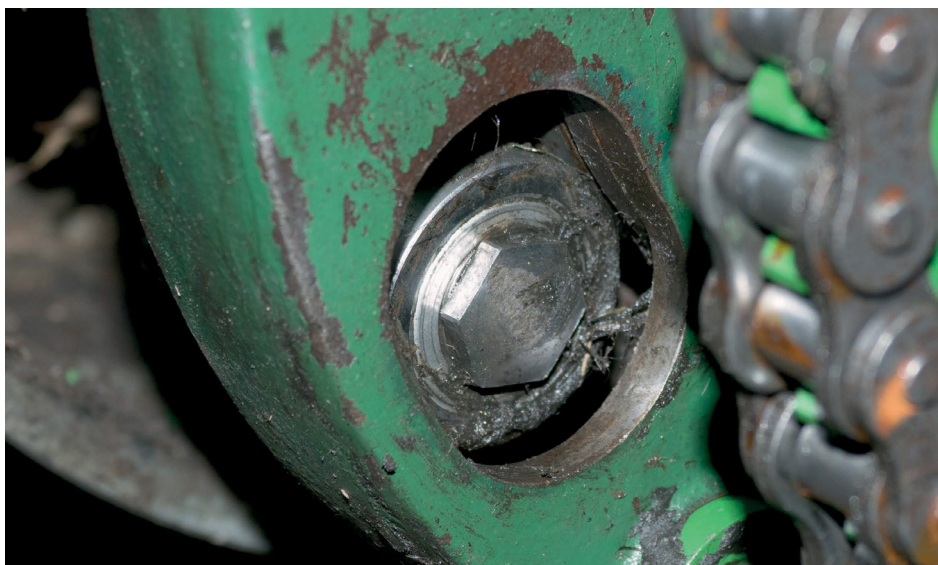
A key development in 2016 was the switch to larger diameter side augers, the rotor also growing in diameter. The floor under the rotor was also changed from solid to suspended to smoothen crop flow; balers from 2018 (right) have the flex nylon pad also mounted on rubber blocks.

with chain links and has the added advantage of making it easier to see if the original manufacturer chain sets have been replaced on a used buy. If all the bales are chopped, which places more stress on the driveline, the chains can last in excess of 20,000 bales. Indeed some users exceed 30,000 depending on the baling conditions. Good quality chain oil and chain maintenance all help longevity.

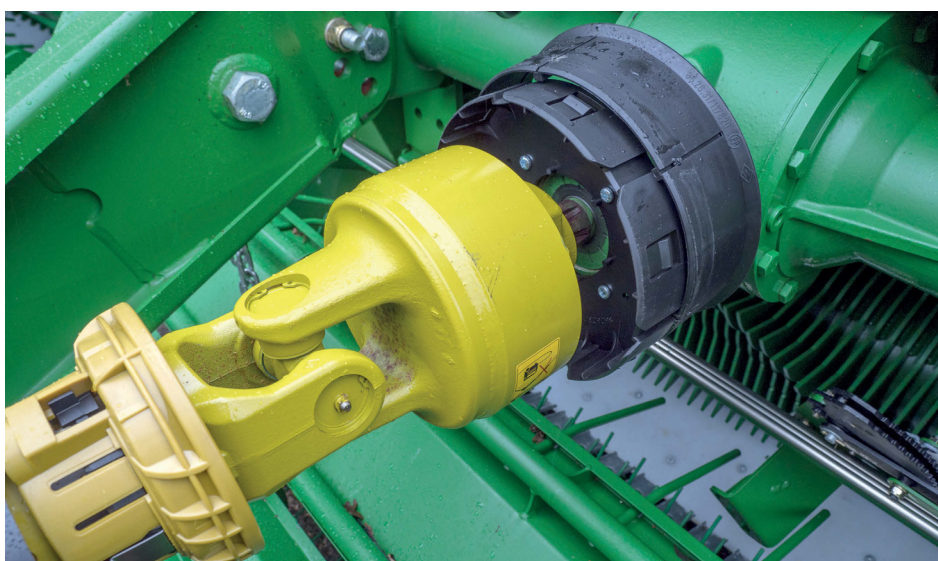
A complete set of new OEM drive chains will cost around £850 plus fitting. Spurious alternatives may have been fitted on a non-dealer serviced baler. Look for the diamond stamp on the chain links. The progressive greasing system for the bearings similarly needs checking over to ensure that it's functioning correctly.

The net wrap system was redesigned for the Fusion 2 and carried over to the Fusion 3. The double-bar tension system, when correctly maintained, should be trouble-free. While looking over the tensioner, check the rubbing surfaces are smooth and free of nicks. If they are rusted, a few minutes rubbing them down with emery paper will help to prevent net snags on the first few bales of the season. Actual net tension is applied via a gas strut which moves the net tension bars. On the Fusion 3 Plus, ensure there's good movement in the rollers that apply both net and film.

McHale deserves a big pat on the back for making it relatively easy to swap between tractors with different types of hydraulics, all balers having connections to allow hooking up to designs with a constant flow, and closed- or open-centre systems. This is of relevance as these balers are increasingly run by tractors in excess of 125hp, although



Play in the tine carriers? The cam bearings may need renewing (above), and the cam track itself should be replaced if you feel a wear lip. The track material was made from cut steel originally, changing to cast and now to a cast and hardened design. The latter can last for 40,000 bales plus.



The pto slip clutch and cross shafts need checking properly. The clutch provides valuable protection that is increasingly important on balers operated by a high-powered tractor.

most higher-powered tractors these days will have a variable displacement pump as opposed to gear systems. But, as is always the case, do check.

The bale transfer system works reliably even on steep terrain, with just two manual greasing points on the bottom section of the chamber that transfers the bale from the baler to the wrapper. The vertical wrapping system is carried over from the original Fusion 1, albeit with developments to the electronics and sensors, and it can be safely said that it's tough and only likely to give problems if the sensors play up. It is possible to check for physical damage by running a full wrapping cycle without a bale. The film tension sensors on the end of the dispenser rolls contain their own integral battery pack. To check the sensor function, spin the rolls and check this causes a light to come up on the controller. If the sensors batteries are weak they can send false readings. Typically, sensors last for four seasons, with replacements costing about £200.

Summary: Is this a comprehensive list of everything to inspect? Although additional detail appears within the picture captions, the

How much to look after?

If McHale Fusions have a key 'fault' then it has to be the machine's ability to keep churning out a decent wrapped bale with very little in the way of TLC. This can mean a pre-owned buy, before it has been through the workshop, has perhaps a bit more wear than you might expect. But despite this, even a well-used machine should not break the bank to bring back to good health. How much? No short answer, but dealers suggest a 'typical' comprehensive 30,000 bale service, to include new chain sets, will cost between £2,500 and £3,000, though a neglected machine may need more spending on it. Of equal importance, a dealer can prepare a machine to suit your annual workload. Chains that will be routinely changed on a contractor machine churning out in excess of 10,000 bales a season behind a 200hp tractor will be treated to more work than a unit doing a 1,000 bales behind a 125hp tractor.

outlined checks are just the basics. A comprehensive run-through will take a dealer half a day, so consider this if you are looking over a Fusion model that has come straight out of work. You will have to pay a premium for a Plus model as these are still a relatively rare used find. The Fusion 3 is easier to locate, with an entry-level, private sale typically weighing in at £32,000 – but needing work to bring it up to front-line reliability. A dealer purchase will start at about £33,500, this buying a machine that may well have had in excess of 40,000 bales through its chambers but is still capable of delivering a high annual bale count. The later the baler and the lower the bale count, the more you will pay. But budget for around £35,000 and you should secure a machine that has a lot of economical baling and wrapping ahead of it.

As an aside, the Fusion 2 still has much to offer. Entry-level buys, depending on age and bale count, can be picked up from £20,000, a thorough dealer inspection and a sympathetic-to-your-needs overhaul perhaps adding another £2,500 to the final bill. It is worth noting that prices may vary depending on machine age, bale count and condition.

Outline specification: McHale Fusion 3/Fusion 3 Plus

Length/width/height ¹⁾	5.80m/2.95m/2.99m
Weight Fusion 3/Fusion 3 Plus	5,500kg/5,650kg
Ground clearance	360mm
Pick-up width ²⁾	1.86m
Pick-up tyres	16 X 6.50 - 8
Tine rows	Five
Tine spacing	70mm
Tine thickness/length	5.6mm/128mm
Rotor width	1.12m
Knives (sets)	0/12/13/25 (Select) or 0/25 (Standard)
Knife spacing	46mm
Chamber rollers	18
Chamber width/diameter	1.23m/1.25m
Chamber net/film width	1.30m
Automatic chain oil/roller bearing grease	Standard
Net wrap tension	Manual on Fusion 3, auto on Fusion Plus
Wrap film width	750mm
Film roll capacity ³⁾	10 + 2
Tyres	560/60 R22.5, option 650/50 R22.5
Min pto power	80kW/107hp
Min hydraulic flow, pressure	45 litres/min, 180 bar
Hydraulic system compatibility	Open, closed or load-sensing
¹⁾ Standard tyres; ²⁾ tine-to-tine distance; nominal working width 2.1m; ³⁾ Fusion 3 has 1+1 net roll capacity. Manufacturer data for guidance only	