MF2100

Latest generation of high output big balers

VISION INNOVATION LEADERSHIP QUALITY RELIABILITY SUPPORT PRIDE COMMITMENT

MASSEY FERGUSON

A major step forward in baler technology

Massey Ferguson's factory at Hesston, USA, has long been regarded as a centre of excellence in the development of world-beating baling machinery, leading the way in terms of quality, innovation and long-term reliability.

Simplicity with sophistication
The MF 2100 Series of four big square balers introduces a host of totally new features designed to provide farmers with substantial improvements in capacity, bale density and operating efficiency, together with real savings in time and costs. These machines represent a whole new generation of big balers, 'raising the bar' significantly in this highly competitive sector of the market.

The design engineers at Hesston set out to create a family of balers that was simple to operate and maintain, but which incorporated a range of clever new developments destined to produce perfect bales – in less time, and transported at less cost. The sleek, modern lines of these machines underline their place at the forefront of baler design.

Ultimately, owners of these superb balers will have the reassurance that they have a machine based on proven technology, more than 30 years specialist experience and leading edge innovation. 2008 saw the 30th anniversary of production of big balers at our Hesston plant. You don't need any more reassurance than that!


MASSEY FERGUSON
2170


MASSEY FERGUSON


MASSEY FERGUSON
2170

We’ve got the power

Massey Ferguson’s range of big balers has a model for the precise size of bale you need.

Massey Ferguson balers have long been renowned for their ability to produce bales of consistent density, shape and weight, so the MF 2100 Series forms bales to the same dimensions as previous models, whether you’re baling silage, hay or straw.

All four models benefit from increases in capacity particularly the MF 2190 which, for example, can deliver up to 30% extra due to a 30% increase in plunger speed. This coupled with a heavier flywheel and a longer plunger stroke increases the inertia created within the bale chamber to increase the output.

This flagship model produces the bale size required by straw-burning power stations and heating plants, while the other models will bale renewable energy crops, such as miscanthus.

Higher capacity across the range enables major savings in fuel and time to be achieved, with increased bale weights lowering the significant cost of transport.

Avedore 2 is a combined heating and power generating plant in Copenhagen, Denmark. It is the largest of its type in the world and burns a number of biofuels with the option of burning fossil fuels if needed. Avedore 2 burns 172,000 tonnes of straw bales each year to provide heating for 200,000 households and electricity for 1.3 million homes. The bale size this plant has been designed to use is 1.28 m x 1.20 m, the size produced by the MF 2190. A similar power station at Ely in the UK also uses the same bale size as its benchmark.

Model range				
Model	Bale size (W x H)	Straw	Hay	Silage
MF 2150	0.80 x 0.88 m	●	●	●
MF 2160	1.20 x 0.70 m	●	●	●
MF 2170	1.20 x 0.88 m	●	●	●
MF 2190	1.20 x 1.28 m	●	●	-

● = Baling capability, - = Not applicable

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Built for the most demanding harvests

Even in the toughest conditions, you don't want reliability problems in, what is often, a race against time. The MF 2100 Series balers will quickly earn your trust, with their day-in, day-out consistency and dependability.

These balers are built around a simple, but immensely strong, frame on which all components are mounted. High quality steel used in the construction ensures long-term durability – in fact higher grade materials are used throughout, boosting the machines' reliability.

Upgraded bearings and the use of sealed-type bearings have together eliminated the need for the main AutoLube system and the use of sealed for life bearings have reduced maintenance times significantly and increased reliability over balers having AutoLube systems .

Access to all areas of the baler for maintenance and service has been substantially improved by the design of large, lightweight side panels that can be opened in seconds. In addition, three extra work lights have been fitted under the shielding for easier twine-loading and service area illumination at night.

The proven Massey Ferguson ball hitch provides a solid, secure baler/tractor connection and is fully adjustable to fit any tractor hitch design - although other hitch designs can easily be fitted, if required. High ground clearance allows more than enough room to pass over even the largest crop swath. This also increases service access underneath the baler.

The heart of the matter
Central to the production capacity boost are improvements to the baler driveline. On the MF 2190, the gearbox runs at an uprated 33 strokes/minute which can increase the baler capacity by up to 30%. On the other three models in the series, the speed is increased to 47 strokes/minute.

The flywheel has had its weight increased to give greater force to the plunger and smooth out the power requirement from the tractor. The crank arms are longer than before increasing the force applied to the crop on the compression stroke generating higher densities within the bale. The flywheel slip clutch now has five discs, as opposed to four on the previous model, to give increased protection. There is also a flywheel shearbolt retainer to prevent shield damage.

The presence of the baler-mounted hydraulic system means variables in the tractor's system do not affect baler performance. It also allows the procedure of attaching baler to tractor to be a smooth and easy operation. The bale ejector, roller bale chute lift and pick-up lift all run off the tractor's hydraulics, leaving the baler-mounted pump to take charge of the bale chamber doors and the knotter blower.

01 Maintenance and service is quick and easy with lightweight side panels.

02 MF ball hitch.

03 Massive protected flywheel.

04 Heavy duty plunger.

05 Baler driven self contained pump powers density and fan drive.

The start of a perfect bale

Attention to detail in all key areas of the baling process has taken the MF 2100 Series to new levels of efficiency and output.

Improved pick-up
This area has been the subject of extensive upgrading to deliver a high capacity but gentle feed of the crop into the baler.

This is clear in the pick-up flotation system, which now relies on torsion bar suspension instead of spring flotation. The more integrated design adds to the pick-up's terrain-following capability. The new design gives improved ground clearance during baling and transportation. The vertical clearance between the pick-up and tongue frame is increased to enable extra crop volume to be handled.

Four feeding augers for the non-cutter baler provide positive, even feed of the crop into the packers ensuring the machine can be run to its full potential. Cutter balers have a full-width top auger to give a smoother crop feed.

A robust, solid wind guard is standard on all models, promoting better control of the crop at all times.

Within the Massey Ferguson system, the packers feed the crop into the pre-pack chamber to make the flake. Once the pre-set even density is achieved, the stuffer – timed with the plunger – feeds the flake into the bale chamber. Because the stuffer only cycles when the flake is ready, perfect flakes are produced every time.

Bale density is fully automated and maintained from the terminal in the cab which monitors the load on every plunger stroke. This provides the best bale shape with consistent bale weights throughout the day even when the moisture changes.

Even density silage bales retain their optimum nutritional value, while hay and straw bales are consistently solid and square for efficient transport and storage.

Reliability and durability is enhanced by the extensive use of sealed bearings and common sense design. All reducing cost of ownership.

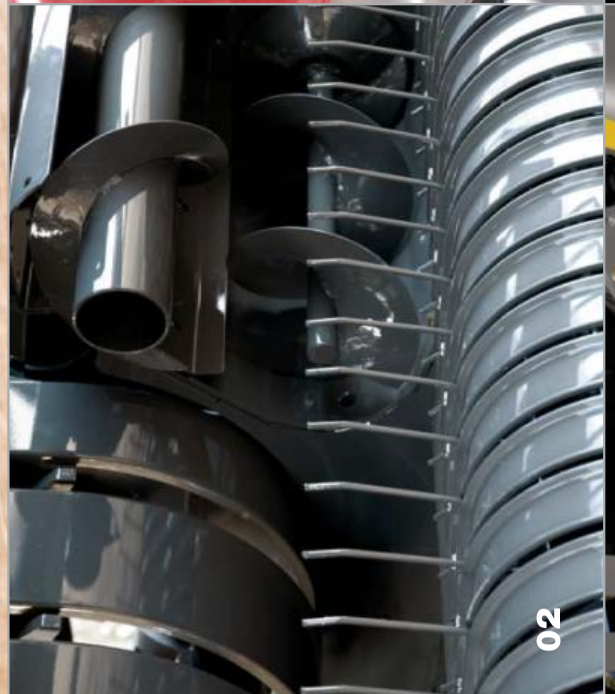
01 The new MF pickup with increased capacity.

02 Four feeding augers = Higher capacity feed.

03 Stuffer system = Proven, trustworthy design but now even more durable.

04 Wind guard = More control of the crop flow into the baler.

05 Packer crank = Even feed into pre-pack chamber.



Unique knotter system

The double-knotter system pioneered at the Hesston factory has an unrivalled record of reliability, tying many millions of bales all over the world for over 30 years. It continues to perform this vital role in the MF 2100 Series balers.

With the aim of perfect bale quality and protection, the knotters are chain-driven directly from the gearbox, enabling plunger, knotters and needles to be synchronised precisely.

The renowned double knotter system has been with us for over 30 years and why change the best on the market.The system allows the baler to produce the highest density bales with the lowest possible strain and wear on the knotter components, increasing knotter reliability and durability and therefore reducing running costs.

In order to achieve high density bales the twine is fed from the top and bottom of the chamber eliminating contact with the knotter components, allowing the highly compacted bales to be pushed out pulling the twine along (as shown in Picture 4 opposite). The first knot finishes the bale on the way out of the chamber, the second then becomes the first on the new bale to be formed. As the twine is only inserted into the knotter on a tying cycle, there is no strain on the components this dramatically reduces the amount of wear, increases longevity and reduces running costs.

Some the best engineering designs are simple and straightforward – this system is a superb example, further enhanced by the new knotter blower.

Powered by the baler-mounted hydraulic pump, the knotter blower maintains a constant flow of air at 140 km/h through the knotter stack, instantly clearing any debris entering the knotter area. The design has been refined to incorporate a transverse impeller-type, hydraulically driven fan, which increases fan efficiency and has a lower power consumption.

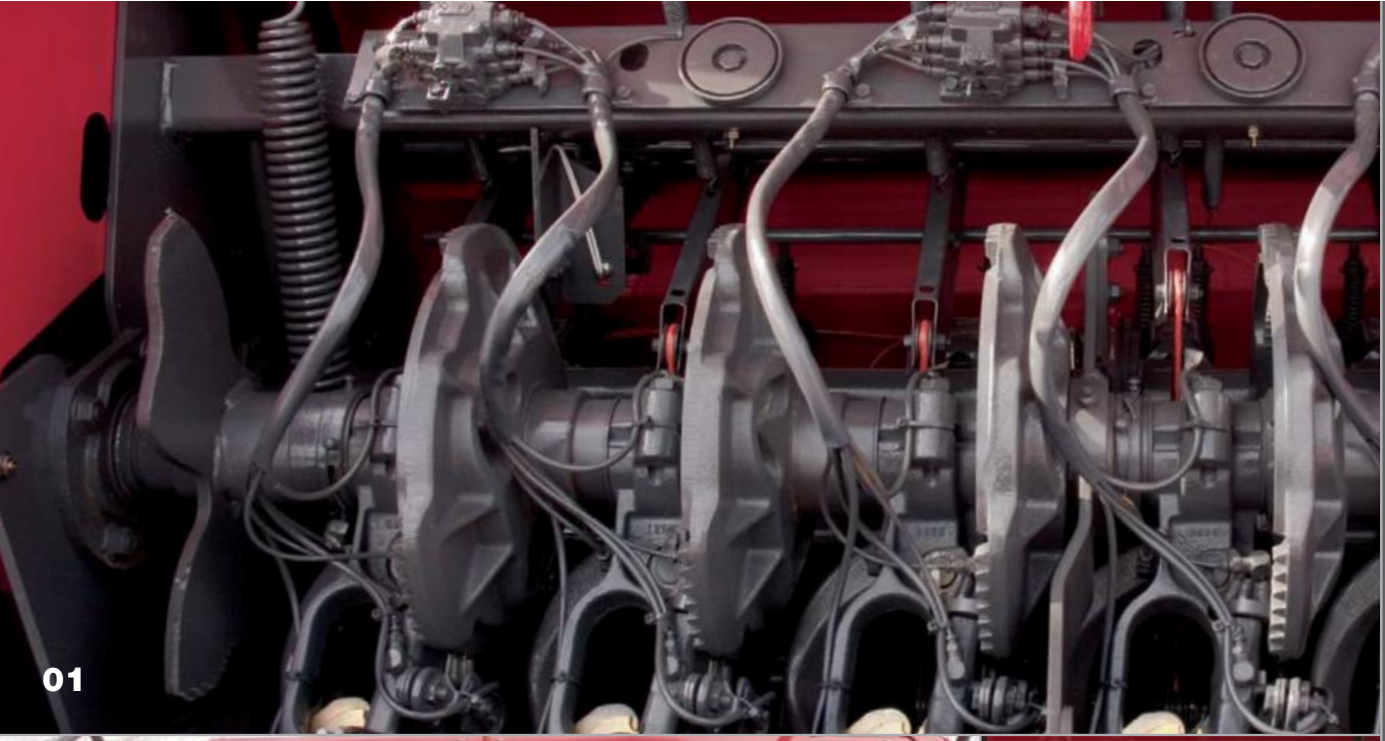
Extensive use of sealed bearings throughout the knotter stack prolongs component life and, again, minimises maintenance and lowers the cost of ownership.

Now mounted in the centre of the bale chamber, the bale length star-wheel floats with the top chamber door, ensuring that the star-wheel gets firm traction in all crop conditions for improved bale length accuracy. In addition, the knotter bale trip lockout is built to a heavier duty specification for longer life.

The knotters are lubricated by an AutoLube system, controlled from the terminal – lubrication intervals can be varied to take account of intensity of use.

All models carry 30 balls of twine in the twine boxes.

The balls are carried at a 30° angle making loading much easier. The twine boxes take up less room on the side of the baler allowing much better service access.



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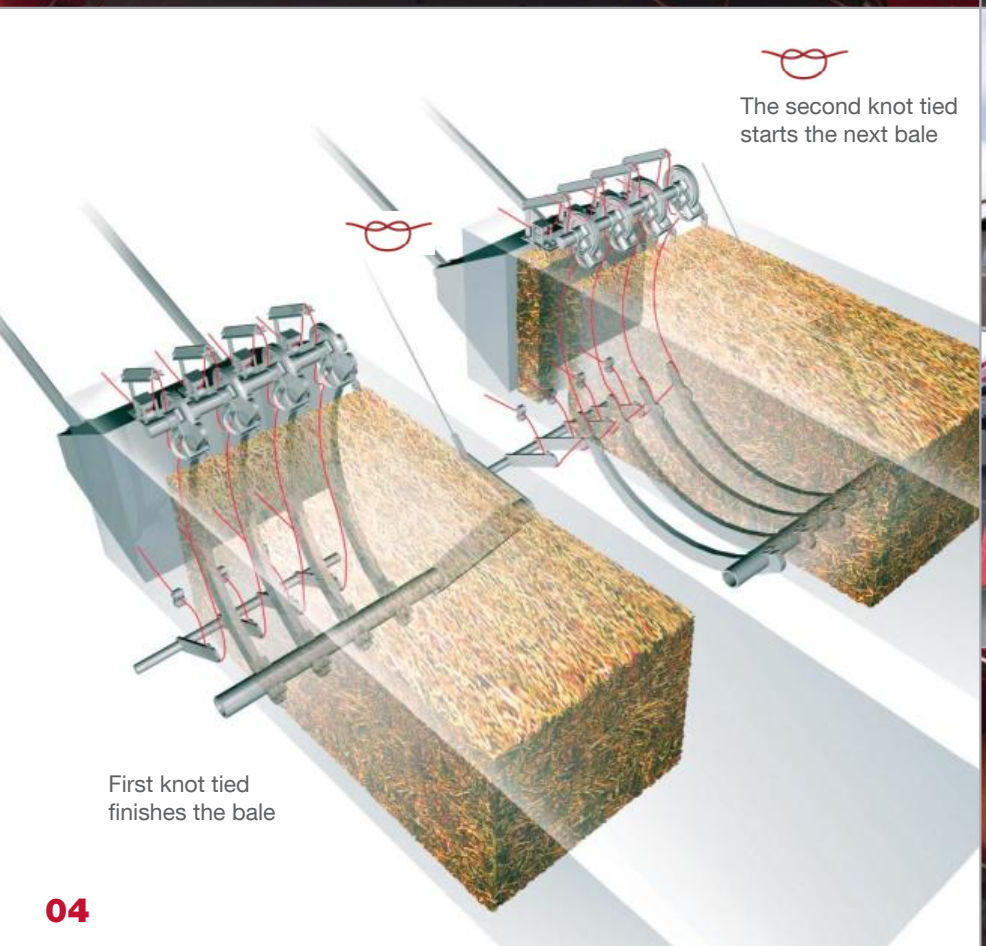

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01 Knotters.
02 Knotter blower.
03 Knotter AutoLube system.
04 The double-knotter cycle.
05 Star-wheel.
06 High capacity twine box.
07 Easy placement of twine.

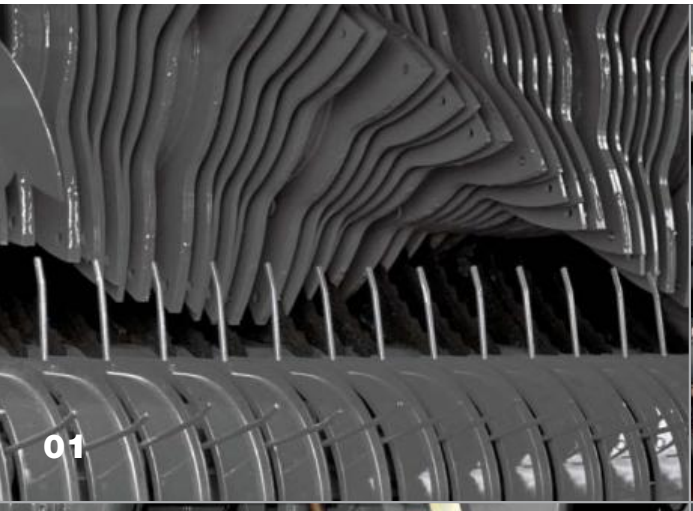
Essential optional extras

For high quality silage or chopped straw, the MF 2150, MF 2160 and MF 2170 can be factory fitted with a heavy-duty pre-cutter unit. It can also be specified for hay and straw only for the MF 2190.

This unit chops the crop to your required length and the packer tines take the crop and fill the pre-forming chamber. By retaining the packer drive, the all-important quality of the flakes is not compromised.

The MF 2150 has a cutter with 11 knives, whilst the MF 2160, MF 2170 and MF 2190 have 19 knives, offering average chop lengths of 48 mm, 96 mm and 192 mm. The length of cut can be easily and quickly changed by lowering the knives from the cab and repositioning the selector pin. Lowering the knife bed also means sharpening can be effected quickly and efficiently. Each cutter knife has its own spring loaded breakaway system to protect against foreign object damage. Combined with the superior density control of the MF baler, this allows you to achieve the finest quality feed bales and highest density straw bales.

Suspended tandem axle
A self-steering, suspended tandem axle is available as an option to further enhance the baler's performance. This axle is fitted with 500/45 – 22.5 tyres for better flotation, higher ground clearance and reduced compaction. While hydraulic brakes are standard, an air braking system is an option. The MF 2150 is fitted with 500/50 – 17 tyres.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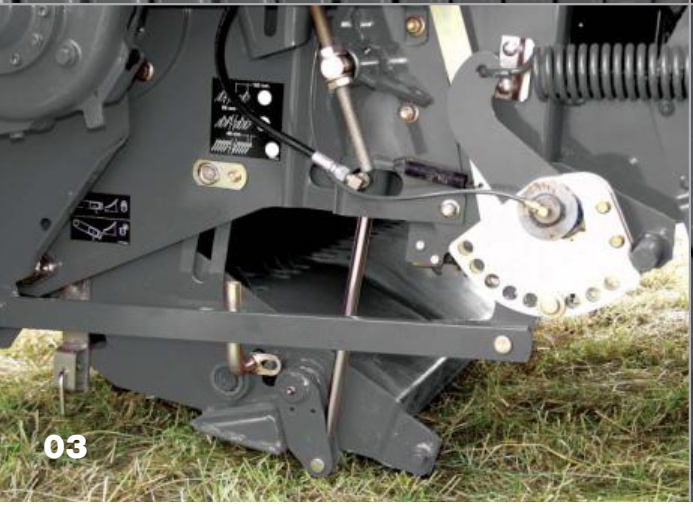
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01 Pre cutter unit.

02 Spring loaded breakaway system.

03 Lowering the knife bed gives easy access to knives.

04 Three preset chop lengths can be easily selected using this selection rod.

Complete control at your fingertips

The entire baling operation can be monitored from start to finish by means of the highly versatile and simple-to-use GTA Console I, giving the operator fingertip control over each stage of the process. Acknowledged as the best monitor in the field, the console can be customised to display precisely the information that's required.

The system ensures that every bale is the same density, regardless of moisture content, and automatically diagnoses faults.

The high quality, easy-to-read colour screen couldn't be more clear, whatever time of the day or night, and the baler itself is ISO-compliant so it can be used on any tractor with an ISO VT terminal.

What the GTA Console can do for you
Functions monitored on the console include:
- Strokes per flake
- Current flakes per bale
- Baler chamber pressure
- Feeder slip bar graph
- Knotter cycle and alarm
- Driving direction arrows
- Bale drop
- Load performance

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01 GTA console.

Customer support

Dedicated service and dynamic support

Massey Ferguson is a truly global brand with machines operating all over the world, and behind every Massey Ferguson machine is the powerful after sales support of AGCO's Customer Support organisation.

Industry benchmarking shows that AGCO offers customers world-class parts and service support, and this is never truer than in support of our harvest machinery both in and out of season.

In season excellence
The Harvest Support Programme is designed to be extremely dynamic and able to adapt immediately to changing conditions. Each harvest experience in every country is used to continuously enhance the comprehensive service. Key elements include:

- A dedicated harvest parts warehouse guaranteeing superb parts supply and availability, and enabling a direct and rapid logistical response.
- 24/7 AGCO Parts warehouse and Customer Service facilities for MF European combine markets.
- Dealer direct access to on-line parts ordering 24/7 with full visibility of parts availability throughout the European warehouse network round-the-clock.
- Exceptional services such as late cut-offs, special transport, 'Eurodirect' deliveries throughout Europe direct to MF dealers and customers, and collection services
- Specialist technicians with expert product knowledge supporting local markets.
- Local dealer commitment to the highest levels of service by operating 'out of hours' parts and service support.

Year round distinction
Naturally we recognise that supporting our harvest equipment goes beyond the harvest period.

All Massey Ferguson machinery benefits from year round focus in the form of both the exceptional standards provided by AGCO Parts as well as specific servicing packages:

- Industry-leading parts supply through AGCO Parts' state-of-the-art warehousing and logistics.
- Genuine parts from AGCO Parts, the only genuine supplier, guaranteeing the right fit, first time, every time.
- Well-qualified parts specialists and highly-trained service technicians providing dedicated service support and technical solutions.
- After sales solutions for all ages of machinery for maximum uptime in every situation.
- Specific focus on preventative maintenance through comprehensive pre- and post-season health checks.
- Long term reliability from affordable servicing and maintenance packages.

After sales support from AGCO Customer Support is about providing the best solution to our customers' needs through world-class parts and service; providing the local service to the global brand.

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01 Ensuring the best service support.

02-04 Industry-leading parts supply from AGCO Parts.

05 Lifetime support for all Massey Ferguson machines.

Our promise to you

Our mission at Massey Ferguson, since the company was founded, has been to design, engineer and manufacture reliable, trustworthy and innovative machinery. Machinery that people recognise the world over.

VISION
Our vision for the world of agricultural machinery has always been clear; to produce worthwhile and innovative solutions for professional farmers feeding the world. Always recognisable, the Massey Ferguson brand of products signifies technological advancement, enhanced design, strict testing and quality manufacturing which is consistently trustworthy and hardworking.

INNOVATION
We've always been one step ahead when it comes to innovation. Our founder, Harry Ferguson is proof of that.

Through continual questioning and analysis of customers' needs, our products are designed, tested and built to enhance productivity, efficiency and convenience, constantly pushing the boundaries of farm machinery.

From the simplest push of a button to technological innovations in engine and transmission efficiency, we strive to make life simpler for the operator.

LEADERSHIP
Massey Ferguson is the most widely sold agricultural machine in the world, making us the leaders in the agricultural arena. We've won awards for our class-leading technology and advancement in design and we're already driving ahead, environmentally and economically.

QUALITY
It takes certain distinctive attributes to make a quality product. At Massey Ferguson, this distinction starts at the drawing board and doesn't stop. Every stage of manufacturing, from the building and testing process to sourcing the best components, demands excellence. Our products and services meet the most stringent standards allowing us to deliver our promises, confidently.

RELIABILITY
We don't let a Massey Ferguson machine out of our sight until we are 100% sure it will perform to the high standards you expect. Only after rigorous and pain staking testing both in simulations and in the field, will we allow our products to leave the factory. Whatever you put your machinery through, day after day, season after season, we can guarantee we've already tested those limits and gone beyond them.

SUPPORT
Agriculture can be a solitary business, that's why we make sure that you can get support whenever you need it and at crucial times of the year. Be assured of sustainability from more than 3,200 dealer outlets in over 140 countries and a comprehensive machinery distribution network, you'll be part of dedicated family of specialists who make it their business to give you genuine, top quality service support.

Equally, we won't let an opportunity slip through your fingers. If you have the commitment but not necessarily the financial resources to compete in today's market-driven climate then AGCO Finance could have the solution. Ask your local dealer for more information.

Financial options are market specific but can include leasing, hire purchase, contract hire and loan facilities.

PRIDE
Here at Massey Ferguson, pride means many things to us. It's in everything we do and it shows. It's in our proud heritage, our unique product design and our ongoing support to our customers.

COMMITMENT
We are deeply committed to delivering the highest of expectations and to build quality, reliable products with innovative features that are backed by the best support packages. Ultimately, we are committed to continuous growth and profitability for all, whilst recognising the needs of both large and small businesses through professionalism and quality.

Specifications

Bale Size		MF 2150	MF 2160	MF 2170	MF 2190
Cross section (width x height)	mm	800 x 880	1200 x 700	1200 x 875	1280 x 1200
Length	mm	Up to 2700			
Dimensions and Weights					
Overall width - single / tandem axle	mm	2500/2600	2990/3020		3190/3020
Overall length – bale chute up	mm	8000			7860
Overall height – to top of hand rail	mm	3240	3270		3582
Weight (single axle/tandem axle, no cutter)	kg	6480/7440	7323/7923	8482/9082	9942/10315
Main Drive					
Protection		Slip and overrun clutches, shearbolt			
Gearbox type		Enclosed, double reduction			
Plunger					
Speed	strokes/min	47			33
Length of stroke	mm	740			820
Pickup					
Effective crop operating width	mm	2260			
Protection		Slip and overrun clutches			
Suspension		Torsion bar			
Feeding System					
Packers		Fork type, 4 tine	Fork type, 6 tine		
Protection		Splined slip clutch			
Cutter					
Drive protection		Multiple slip clutch			
Number of knives		11	19		
Knife protection		Individually sprung			
Cut length		3 knives = 192mm, 8 knives = 96mm, 11 knives = 48mm			
Tying Mechanism					
Number / type of knotters		4 / Double knot, twine tie	6 / Double knot, twine tie		
Twine type / capacity		Polypropylene or sisal / 30 balls			
High Velocity Knotter Blower		Standard			
Knotter lubrication		Automatic			
Tyres					
Single axle / Tandem axle		600/50-22.5 12 ply /500/50-17	700/50-22.5 12 ply /500/50x22.5	700/50-22.5 12 ply /500/50x22.5	28L x 26/ 500/50x22.5
Lights					
		3 work lights, hazard/turn indicator lights, tail lights, 7 service lights			
Control and Monitoring System					
		GTA Console I			
Tractor Requirements					
PTO horsepower - min / with Cutter	kW	110 / 150	120 / 170		150 / 200
PTO	rev/min	1000			
Hydraulics - min/ recommended		2/3 double acting auxiliary valves			
Equipment					
Standard		Two-rail bale ejector, Knotter Autolube			
Optional		Cutter, Tandem Axle, Heavy-duty roller bale chute with drop indicator			

MF 2100 highlights

Here's a quick reminder of some of the advanced features of the MF 2100 Series balers that has taken them to new levels of efficiency and output.

01 Up to 30% greater baling capacity (on the MF 2190).

02 Increase in plunger speed for greater output on all models.

03 On-board hydraulics control knotter blower and bale chamber doors. This way bale density is not affected by variables in tractor hydraulics.

04 Improved pick-up design delivers high capacity yet gentle feed of crop.

05 Chain-driven from the main gearbox, the unique double knotter system is retained to give reliable tying for bale after bale.

06 Pre-compression chamber pre-forms every bale flake ensuring the crop is of even density and evenly distributed throughout the flake.

07 New knotter blower standard on all models - blasts air at 140 km/h over the knotters to clear debris.

08 Optional 65 km/h rated self-steering tandem axle for enhanced performance .

09 High strength, high quality steel frame gives integral durability.

10 Simple, efficient drive gives top performance and easy maintenance.

11 Standard automatic knotter lubrication system maintains peak efficiency.

12 Excellent twine storage capacity reduces downtime and increases output – 30 balls on all models.

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