

AGCO SISU POWER

AGCO SISU POWER DIESEL ENGINES
Driving Massey Ferguson



VISION INNOVATION LEADERSHIP QUALITY RELIABILITY SUPPORT PRIDE COMMITMENT



MASSEY FERGUSON

The Power of Agriculture

For many years, Massey Ferguson has always specified the best, most reliable engines for its world-beating range of tractors, combine harvesters and generating equipment.

The company's total commitment to constant improvement means that more and more AGCO SISU POWER diesel engines can be found at the heart of MF machines.

Their reliability is beyond question, having first been used to power a Massey Ferguson tractor almost 20 years ago.

Clean, powerful, extremely fuel-efficient and very simple to maintain, these robustly-built engines represent the future of agricultural power. Available with 3, 4, 6 or 7 cylinders, this remarkable range of engines deliver

between 69hp and 500hp power and are designed specifically for farming and other off-road applications.

Add to this Massey Ferguson's renowned service and support network and you have the reassurance of total peace of mind.

AGCO SISU POWER. Leading the drive to ever-greater efficiency.



AGCO SISU POWER

A Proud Heritage.

AGCO SISU POWER has its origins in diesel engine manufacturing more than 60 years ago in Finland. By the early 1950s, the company was building some of the first direct injection and turbo-charged diesel engines ever to be produced.

They rapidly developed a reputation for quality and innovation that is just as evident today. In 1957, the first SISU diesel-engined tractor was launched, incorporating some new features – liquid engine cooling, direct injection and wet replaceable cylinder liners, for example – that are still used in AGCO SISU POWER engines now.

The company responded to the market's desire for more horsepower by developing

ever-larger engines. 1960 saw the establishment of a tractor plant in Mogi Das Cruzes, Brazil, but it wasn't until 1994 that diesel engine production commenced there.

However, as far back as 1991, Massey Ferguson took the decision to start using SISU tractor engines and the MF 3680 was the first model to benefit from this new direction.

In 2004, AGCO acquired SISU Diesel's engine factories in Finland and Brazil, since which time it has invested more than €30 million in upgrading and refurbishing the production facilities. AGCO is currently investing in new SISU manufacturing capacity in Russia and China in order to satisfy the increasing demand for these exceptional engines.

Today, more than 30,000 engines are built annually and the business employs nearly 700 people. It is estimated that there are more than half a million SISU engines providing vital power around the world.

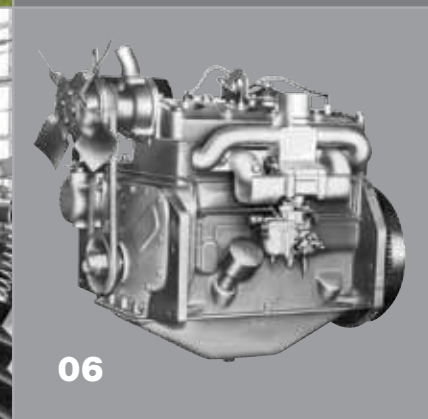
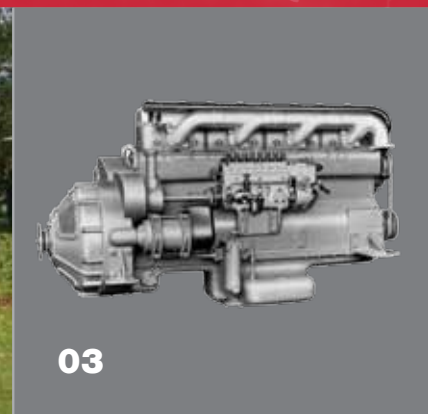
01 MF 3680.

02 AGCO SISU POWER headquarters.

03 AGCO SISU POWER engine.

04-05 Engine assembly in the 1950's.

06 AGCO SISU POWER engine.



AGCO SISU POWER

3rd Generation Series Diesel Engines.

Designed specifically for demanding off-road applications, the new 3rd Generation Series units have been developed to be the most economical agricultural engines in the world. They have also been engineered to emit lower carbon emissions without compromising their impressive fuel economy.

This is achieved by a combination of innovative features – common rail fuel injection, precision injection timing and effective charge air cooling. At the same time, power density and torque levels have been boosted, while maintaining optimum fuel efficiency.

The very latest control system, high pressure fuel injection and turbo-charger work together in perfect harmony to enable the engine to react immediately to changing load conditions. The Electronic Engine Management (EEM) system monitors constantly a wide range of parameters, making continuous precise adjustments to the quantity and timing of fuel injected, based on engine speed and load pressure.

This ensures that emissions are greatly reduced, more power is available, excellent fuel economy is achieved and the engines are fully Tier III compliant. It also has the effect of broadening the operating range within which the tractor is running at optimum fuel efficiency. In addition, EEM facilitates a number of advanced engine control functions, including Engine Speed Control and Power Boost.

The 'extra power' feature provides more power at 2000rpm than at 2200rpm (rated engine speed). This 'power bulge' provides tremendous pulling ability in difficult conditions or with heavy loads on long, steep inclines.

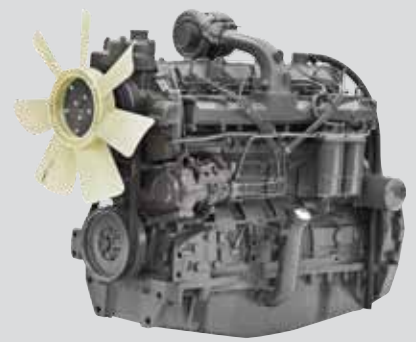
Torque rise is rapid and remains high at lower engine speeds to ensure the most efficient operation and maximum fuel savings.

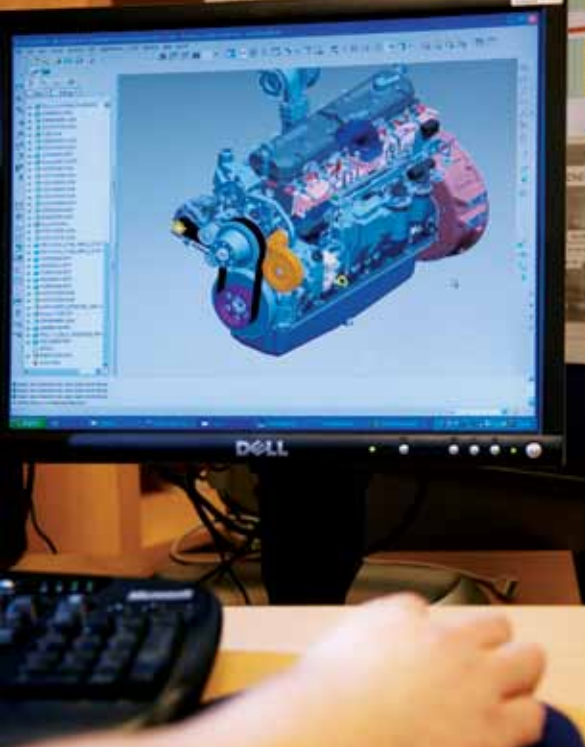
The cylinder head design incorporates two inlet valves and two exhaust valves per cylinder, which allows the fuel injectors to be positioned centrally within the cylinder head. This improves the fuel/air mixture and gas flow, resulting in optimum combustion and reduced emissions and fuel consumption. Also, lower temperatures in the upper cylinder boost the engine's reliability, while the more efficient combustion means improved torque characteristics across the entire working range.

AGCO SISU POWER diesel engines are built to the highest quality standards to ensure many years of robust, reliable performance, and, despite the abundance of advanced technologies, they are very straightforward to operate and simple to maintain.

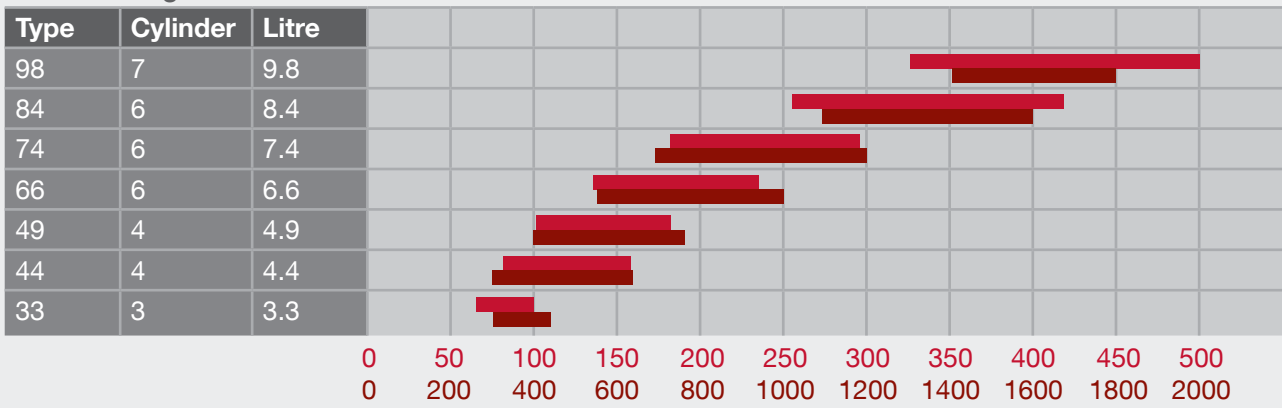
The modular design and commonality of parts between 3, 4, 6 and 7 cylinder engines makes service and parts availability simple and convenient. The entire fuel system is located on the cool side of the engine, while the fuel filters are easily accessible for quick replacement without tools or spillage. All service points have been positioned for ease of access.

Engine noise caused by the combustion process has also been significantly reduced.



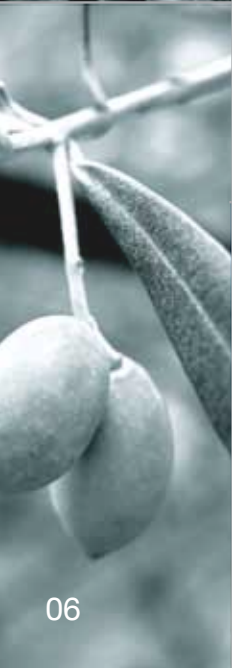


Power ratings



[Red bar] Gross power (hp)
 [Dark red bar] Torque (Nm)








Anticipating the future

In response to the prospect of ever-tighter legislation on vehicle emissions across Europe and beyond, Massey Ferguson collaborated with Bosch to develop a Selective Catalytic Reduction (SCR) system for tractors and combines. This technology is now available on certain models.



With  SCR, the exhaust gases produced by the engine are treated with a urea-based fluid before they are expelled into the atmosphere. Known as AdBlue®, this fluid is precisely metered and injected via the Bosch control system into the exhaust, where there is a catalytic converter. The result is dramatically lower emissions of particulates, nitrous oxide, hydrocarbons and carbon dioxide, and significant – up to 16 per cent – savings in fuel.

The road transport industry – the principal means of moving food products to consumers – has been reaping the benefits of SCR technology for several years. Now it's available to those who grow it. As with many good ideas, the system is simple, easy to control and requires virtually no maintenance. Contained in a separate tank alongside the diesel tank, the AdBlue only needs to be refilled every second fuel tank fill.

A 600-litre container of AdBlue is sufficient to treat over 20,000 litres of diesel.

The SCR equipment is designed to last at least as long as the working life of the engine and way beyond the requirements of the next – Tier IV – phase of emissions-restricting legislation.

Economic. Efficient. Ecological - e³ The facts



- The AGCO SISU POWER e³ SCR system is the most efficient in its class, cutting fuel costs by up to 16%.
- The AdBlue solution works in harmony with the SCR system and can be easily obtained from your Massey Ferguson dealer.



- AGCO SISU POWER e³ engines with Selective Catalytic Reduction run at optimum efficiency without compromising engine performance.
- There is no need for additional service tools or expensive diagnostic interfaces in the vehicle.



- By 2014, a 75% reduction in Nitrous Oxide gases is required as part of Europe wide legislations on emissions levels. By using the e³ SCR system, we are meeting these regulations in time to make a real difference to the environment and to our health.
- The technology offers big savings in costs and helps protect our environment at the same time.

The growing popularity of AGCO SISU POWER

Just take a look at the range of Massey Ferguson tractors, combines and power generators now relying on AGCO SISU POWER diesel engines.



The new MF 8600 Series – providing the massive horsepower for Massey Ferguson’s flagship range. 8.4-litre, 6-cylinders, 270-370hp.



The new MF 7400 Series models – the MF 7497 and MF 7499. 7.4-litres, 6-cylinders, 225-240hp.



The MF 6400 Series – Unbeatable performance and versatility comes from the MF 6400 Series range of tractors. 100-245 hp.



The MF 5400 Series – ever-popular, all-rounder from MF 5465 to MF 5480 offering a choice of 4.4L, 4.9L and 6.6L. 130-145 hp.



The MF 4400 Series – robust, reliable, simple to operate and economical. 3- and 4-cylinder, 74-101hp.



The MF 3600 Series – versatile, multi-purpose tractors. 3.3 litres, 3-cylinders, 69 hp-100 hp.



MF Combine Harvesters – MF Delta hybrid, MF Centora and MF Beta conventional - the ultimate in harvesting machinery.



Massey Ferguson’s extensive range of primary and **stand-by POWER SERIES GENERATORS.**



“SISU Power gets the job done”

Joe Kirk, with brothers Edward and Andrew, farms close to 2000 acres (809ha) in Leicestershire, England, around three-quarters of which is down to arable cropping. He is in a particularly good position to express his views on SISU engines, as he runs four Massey Ferguson tractors and a Cerea combine, all of which are powered by them.

The most recent addition to the fleet is an MF 8690, which was purchased in 2009, following extended use of a manufacturer's demonstrator and subsequently a machine belonging to local dealer Chandlers. The other tractors – a 6485, a 6495 and an 8270 – have each worked around 6500 hours. The 8690 replaced an MF 8280.

“I must say I do rate the engines,” says Joe. “They're reliable, economical to run and they've got plenty of power. I've found that with the 8690, we're not having to push it too hard, even when ploughing. And with the AdBlue option we're using even less fuel. All we've needed to do to the older tractors really is change the filters and make sure clean diesel's going into the tank.”



Further south, in Wiltshire, Tom Reed runs a business specialising in soil stabilisation services and plant hire. Among the fleet of mainly high horsepower tractors available for hire to contractors is an MF 8690, which was bought to replace an 8480.

“The larger soil stabilisers can weigh more than 9.0 tonnes without the lime or cement that’s mixed or incorporated. They do take some pulling,” Tom explains. “The SISU engine copes really well, working mainly at

a speed of 600m an hour while constantly mixing and despite having an extra 40hp over its predecessor, it uses less fuel. We’re very pleased with it.”



Customer Support

AGCO Customer Support...
providing local service to the global brand.

Massey Ferguson is a truly global brand with machines operating all over the world, from revolutionary “little grey fergie” tractors to the latest high-tech tractors and combines. Have you ever wondered how we continue to provide industry-leading parts and service support to such a vast array of machines and technologies across the globe?

Behind every Massey Ferguson machine is the powerful aftersales support of AGCO’s Customer Support organisation.

Our main aim is to ensure that every machine - old or new - is fully supported locally, offering every Massey Ferguson owner:

- The best service in the industry.
- Low cost of ownership.
- A reliable and durable machine.
- Minimum machine downtime.
- A high resale value.

State-of-the-art warehousing and logistics from AGCO Parts

Of course, every Massey Ferguson dealer is fully backed-up by the AGCO Customer Support organisation which provides

industry-leading parts supply through AGCO Parts’ state-of-the-art warehousing and logistics. With outstanding service levels, overnight delivery and inventory covering all Massey Ferguson machines - even those over 10 years old - we only ever supply genuine parts, and we guarantee the right fit, first time.

The right aftersales solution whatever the age of machine

Whatever the age of your Massey Ferguson machine, AGCO Customer Support has the right aftersales solution to save you time & money, providing appropriate, affordable and reliable servicing and maintenance solutions in every situation.

Practical local support where you need it

AGCO places great emphasis on providing the best service to our Massey Ferguson dealers and this extends beyond the exceptional servicing and maintenance solutions and parts supply:

- Expert training and specialist equipment.

- Advanced diagnostic techniques.
- Information retrieval technology to communicate the very latest parts and service information.
- Highly skilled technical support groups.

With aftersales support from AGCO Customer Support, it’s not just about supplying a filter or doing an oil change. It’s about providing the best solution to our customers’ needs, wrapped up with industry-leading parts and service support.

01 Ensuring the best service support

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

05 Support for all Massey Ferguson machines.



01



02



03



04



05

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 machinery is the most widely sold agricultural product 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 painstaking testing both in simulations and in the field, will we allow our products to leave the factory. Whatever you put your tractor 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 tough 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 a 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

Pride means many things to us at Massey Ferguson. 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.

AGCO SISU POWER highlights

Increasingly, Massey Ferguson is specifying AGCO SISU POWER engines for its world-beating tractors, combines harvesters and power generating equipment. The superior efficiency, reliability and fuel economy provides farming businesses across the world with a real competitive edge.

- 01** Available with 3, 4, 6, and 7-cylinder engines, delivering 69 to 500 hp, to suit all farming operations.
- 02** Rugged build quality based on many years of leading edge research & development.
- 03** Lower carbon emissions with no loss of fuel economy.
- 04** All service points and filters easily accessible for simple maintenance.
- 05** Rapid torque rise remains high at lower engine speeds for maximum fuel savings.
- 06** Automatic sensing of changing load conditions means optimum engine efficiency.
- 07** Smoother, quieter engines for reduced operator fatigue.
- 08** Wide availability of genuine AGCO parts, backed by Massey Ferguson's unrivalled aftersales service.



MASSEY FERGUSON is a worldwide brand of AGCO.
© AGCO Limited. 2010 | EuroEnglish/14881/0710/100



MASSEY FERGUSON