

TOMORROWS ENGINES. TODAY.

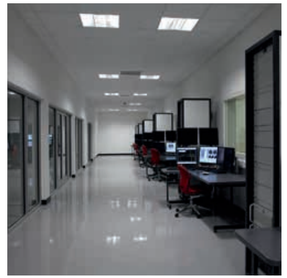
JCB
POWER SYSTEMS

WELCOME TO JCB POWER SYSTEMS

JCB Power Systems has invested in the best manufacturing facilities on two continents to ensure a secure and efficient supply of off-highway diesel engines that are produced at the right cost and with the most efficient technology approach for all markets. The UK factory is a purpose-built, multi-million pound, manufacturing plant and assembly line situated in Foston, Derbyshire. The investment made in the factory includes a brand new Research and Development Centre with over 20 state-of- the-art, ultra efficient engine test cells ensuring JCB Power Systems is at the very forefront of "off highway" diesel engine innovation. Capable of testing engines up to 300kW (402hp) each cell features the very latest measurement and test equipment systems ensuring the most reliable, productive and efficient products are brought to market in the most expedient manner.







GLOBAL MANUFACTURING PARTNER

RECOGNISING THE NEED FOR ENGINE SOLUTIONS FOR ALL MARKETS.

JCB has a long and successful history of machine production in India, dating back to 1979 when it was one of the first manufacturers to spot the opportunity of this emerging market. Now, with four world-class factories producing a vast range of equipment, JCB has become the country's largest manufacturer of construction machinery and India has become one of the largest single markets for JCB equipment worldwide.

In 2011 with the growth of JCB's machine business in India and other emerging economies around the world, JCB Power Systems took the step to become an engine manufacturer with a global footprint and installed a dedicated engine manufacturing and assembly line – identical to the UK factory – at JCB's Indian HQ in Ballabgarth.

Today JCB Power Systems India produces the most technologically advanced and reliable 4 cylinder diesel engines available in the Indian market achieving best-in-class fuel efficiency and whole life costs. With 93% localised content the Indian built products are an example of JCB Power Systems commitment to producing engines that are right for the respective markets from a specification, technology and cost perspective.





JCB's Indian factories mirror JCB's proven production facilities in the UK.

A FORMIDABLE PEDIGREE

THE SUCCESS OF JCB - FROM ITS HUMBLE START IN 1945 TO TODAY'S WORLD LEADING MANUFACTURER OF CONSTRUCTION, AGRICULTURAL AND INDUSTRIAL EQUIPMENT IS A BLUEPRINT IN INNOVATIVE ENGINEERING.

JCB is and will always be a family business. Founder Joseph Cyril Bamford and Chairman, Lord Bamford, made and make big investment decisions quickly which has enabled the business to become a global force in manufacturing whilst fostering a culture of innovation. From the iconic backhoe loader – pioneered and refined by JCB, to the telescopic handler, the Fastrac tractor, the single arm skid steer load and the unique forwards reach industrial fork lift; the company is different by design. The culture of investment in products has been more than matched by JCB's forward thinking approach to global manufacturing and today there are 22 production plants on four continents supplying machinery to every corner of the world. In 2013 celebrated the production of the 1,000,000th machine; a JS excavator destined for export. The JCB ethos for success has informed the vision and strategy for engine design and manufacture. A vision that began in the 1970's with prototype production of 4 and 6 cylinder models and culminated in 2004 with the launch of its purpose- designed off-highway diesel engine – an engine that broke the boundaries of innovation.





Early engine prototype built circa 1976.

World's most efficient backhoe loader.

JCB ENGINE EVOLUTION

JCB POWER SYSTEMS BEGAN PRODUCTION OF THE JCB DIESELMAX 4 CYLINDER, TIER 2 ENGINE IN 2004; THE CULMINATION OF YEARS OF RESEARCH, DEVELOPMENT AND INVESTMENT AND INDEED THE BIGGEST PROJECT EVER UNDERTAKEN BY JCB.

The result: a ground-breaking engine that has been successfully integrated in to hundreds of thousands of OEM products around the world. And one which went on to break the land speed record for a diesel powered vehicle – on its first attempt; an astonishing accomplishment for a new entrant to the market. The subsequent 10 years have seen continued development and investment in new products, new facilities and people which has not only seen the business grow in to one of the major engine producers, but has cemented its reputation for innovation, quality and fuel efficiency. JCB Power Systems continues to develop partnerships with new customers offering renowned performance and reliability for a wide range of applications.

Emissions legislation was the driving force behind the hugely anticipated launch of the JCB EcoMAX T4 engine. Some £80 million was spent researching and developing a new highly efficient combustion system and resulted in an industry-first solution in the shape of the only engine to eliminate the need for exhaust after treatment; a strategy that has since been adopted by other manufacturers. After the successful production of over a quarter of a million 4 cylinder engines, the next natural step for JCB Power Systems was a six cylinder engine. After two years of development, thousands of hours of testing and a further £45 million of investment - the JCB Dieselmax 672 was launched in 2013.



2004 AUGUST
JCB Dieselmax World Record



2006 JUNE
50,000th Engine Built



2007 FEBRUARY
Launch of JCB Dieselmax 4 cylinder Stage IIIA/ Tier 3 mechanical engine

100,000th ENGINE BUILT

2007 AUGUST
100,000th Engine Built



2008 JANUARY
Launch of JCB EcoMAX 4 cylinder Stage IIIB/Tier 4 interim engine



2009 APRIL
Launch of JCB Stage IV/Tier 4 55kW/74hp engine



2011 MARCH
Launch of JCB Stage IIIA/ Tier 3 Dieselmax engine

2012 JANUARY
Launch of JCB Stage IV/Tier 4 engine



2004 DECEMBER
Start of production and launch of JCB Dieselmax 4 cylinder Stage II/Tier 2 engine

2006 MARCH
Launch of JCB Dieselmax 4 cylinder Stage IIIA/ Tier 3 electronic engine



2007 OCTOBER
Launch of JCB Dieselmax 444 G-Drive Range



2008 JULY
Launch of 448 G-Drive Engine



2009 APRIL
Start of India Production



2011 JULY
200,000th Engine Built



2012 JUNE
Launch of JCB Dieselmax 6 cylinder Stage II/Tier 2 engine



2013 JANUARY
Launch of JCB Stage IV/Tier 4 engine



THE FASTEST DIESEL IN THE WORLD...

"A triumph for British engineering excellence and teamwork."

Imagine owning a machine with an engine that has broken all diesel records for speed? With the JCB Dieselmax engine that's exactly what you get. In what can only be described as a stroke of engineering genius back in 2006 a streamlined diesel vehicle was commissioned by JCB's owner, Lord Bamford, to attempt to set a new diesel land speed record at Bonneville Salt Flats in the USA.

The JCB Dieselmax, with two JCB 444 LSR engines, succeeded on its first attempt in August of that year with a stunning speed of 350.092mph (563.418kph) to clinch the record.

The record attempt, designed to showcase the extreme performance capability of the JCB engine, was a triumph. With twice the power and more than four times the weight of an F1 car, the Dieselmax had only half the fuel consumption. And therein lies the huge success of all JCB engines – designed for maximum performance with best possible fuel efficiency.



The JCB DIESELMAX team, including driver Andy Green, celebrate their 350.092mph (563.418kph) world record at Bonneville Salt Flats.

JCB DIESELMAX



ecoMAX

When it came to designing and building an engine to meet Stage IIIB/Tier 4i emissions legislation JCB Power Systems took the challenge and turned it into an opportunity.

Rather than bolting on costly and cumbersome aftertreatment devices the company turned accepted thinking on it`s head and focused instead on designing a combustion system that prevented the creation of pollutants in the first place rather than try and cure them in the tailpipe.

The strategy was bold; the result was an industry first with the ground-breaking JCB EcoMAX. Featuring a high efficiency, advanced combustion system that not only produces very low in-cylinder emissions but also results in incredibly low fuel consumption; offering reductions of up to 10% over Stage IIIA/Tier 3.



With the use of a cooled EGR, a common rail system operating up to 2000 bar, variable geometry turbocharger and careful matching of fuel and air handling systems through the calibration this engine needs no DPF; a solution without compromise!



JCB Power Systems Director of Engine Programmes, Allan Tolley, receives an award for Diesel of the Year.

TIER 4 ONE-CAN SOLUTION.

The JCB EcoMAX Stage IV/Tier 4, 68-129kW (91-173hp) is an innovative one-can solution. A compact, highly efficient SCR system that requires no additional DPF or DOC, offers a compact installation that negates the need for bulky alterations to machine bodywork. Using between 2-3% of diesel exhaust fluid to fuel ratio, coupled with a further reduction in fuel consumption of up to 5% over its Stage IIIB/Tier 4i predecessor, this new engine delivers on its low cost of ownership promise. There is no compromise to engine performance and the engine maintains the same footprint all the way from its Stage II/ Tier 2 roots eliminating the need for major product re-design and reducing complexity in chassis manufacturing.



55-212kW

WHEN JCB POWER SYSTEMS FIRST SET OUT TO DEVELOP ITS OWN ENGINE, IT STARTED WITH A BLANK PIECE OF PAPER.

Armed with the engine industry's best experts, committed resources and JCB's unique approach to design and innovation the aim was always to produce the best, most robust engine on the market; something designed from scratch that exceeded legislation targets, minimised fuel consumption and cost of ownership whilst increasing performance and productivity.

In short a 'No Compromise Solution'. The JCB Dieselmax, launched in 2004, was the first engine to be introduced to the JCB Power Systems range and has proved itself globally in a vast array of applications.

The EcoMAX, initially launched in 2012 to meet demanding Stage IIIB/Tier 4i emissions regulations in Europe and North America, has revolutionised the off-highway engine market with its world-beating 'NO DPF' technology and its proven ability to reduce fuel consumption without compromising performance. Now, ahead of schedule, JCB Power Systems has unveiled its latest innovation; the Stage IV/Tier 4 EcoMAX one-can highly efficient compact SCR solution engine. Our customers have come to expect nothing less than the best in terms of performance and reliability and the latest engine offers even greater fuel economy, class-leading reliability and lower whole life costs.

4 CYLINDER 4.4 & 4.8 LITRE — 55-129kW (74-173hp)

Stage II	Tier 2	Mechanical
Stage IIIA	Tier 3	Mechanical & Common Rail

- Low cost of ownership
- Exceptional transient performance – increasing productivity
- High torque at low engine speed
- Robust cylinder block and unique bedplate design
- X 3 engine PTO drives as standard
- 500 hours oil change interval
- 1000 hours fuel filter change interval
- 6000 hour auto tensioned single poly vee belt
- Simple mechanical and common rail fuel system options
- Low fuel consumption
- Under 89dB(a) noise @ 1m



JCB DIESELMAX

4 CYLINDER 4.4 & 4.8 LITRE — 55-129kW (74-173hp)

Stage IIIB	Tier 4i	Common Rail
Stage IV	Tier 4	Common Rail

- NO DPF
- Stage IIIB/T4i fuel consumption up to 10% lower than Stage IIIA/Tier 3
- Stage IV/Tier 4 fuel consumption up to 5% lower than Stage IIIB/Tier 4i
- Exceptional transient performance
- Increased torque levels at low speed up to 690Nm (508lb-ft)
- Compact and efficient SCR system on Stage IV/Tier 4 68-129kW (92-173hp) models
- Constant power curve feature
- 55kW/74hp Stage IV/Tier 4 option with 400Nm (295lb-ft) torque and no after treatment
- Same footprint as Stage II/Tier 2/ Stage IIIA/Tier 3A



ecoMAX

6 CYLINDER 7.2 LITRE — 140-212kW (188-284hp)

Stage II	Tier 2	Common Rail
Stage III	Tier 3	Common Rail

- Heavy duty design specifically for off highway applications
- Electronic high pressure common rail fuel system
- Exceptionally high torque at low engine rpm
- Constant power curve feature
- Ultra low fuel consumption
- Single sided servicing
- High output rotating electrical auxiliaries
- Range of options available
- Latest generation high efficiency combustion system
- High gradeability sump options for excavator applications
- Stable product platform for Stage V/Tier 5

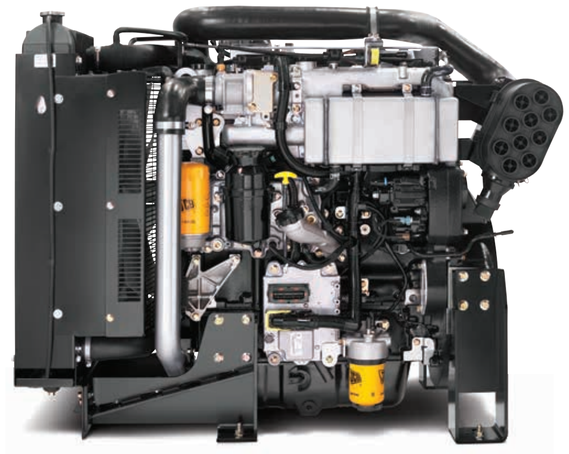


JCB DIESELMAX

INDUSTRIAL POWER UNITS

THE JCB INDUSTRIAL AND AGRICULTURAL POWER UNITS GIVE CUSTOMERS THE OPPORTUNITY TO TAKE ADVANTAGE OF WHAT IS ALREADY A WORLD BEATING ENGINE AND ADD A COMPLETE JCB ENGINEERED INSTALLATION PACKAGE.

The JCB IPU's feature full tropical rated aluminium cooling packages, heavy duty mounting feet, heavy duty air cleaner with integrated pre-cleaner system, hydraulic pump and PTO options and high quality electrical engine harnesses all in a compact, easy to install package. Attention to detail; each and every bracket, fastener, clip and guard is subjected to 1000's of hours endurance testing both in the field, on the screen and back in the lab. No matter if it's crushing and screening, pumping and irrigating or quasi-static equipment JCB Power Systems is confident of providing the ultimate engineered solution for any machine.



55-212kW 74-284hp

G-DRIVE POWERPACKS

JCB G-DRIVE POWERPACKS ARE OEM-READY FOR ALL PRIME AND STANDBY GENERATING SET APPLICATIONS. FOR USE IN BOTH CANOPIED AND OPEN TYPE UNITS ANYWHERE IN THE WORLD.

The engines are the same trusted and reliable models as utilised in the JCB mobile equipment and IPU range, with the addition of constant speed governing and options relative to the power generation sector. Available for both 50Hz and 60Hz markets. Core product focus is power density to offer the most competitively sized cooling pack solutions for any given canopy size, fuel efficiency, superior load acceptance, reliability, quality and competitive cost.



47-206kW 50-220kVa*

*Subject to power factor & generator efficiency.

MOBILE



"With the advanced technology of the latest JCB Tier 4 compliant engine at he heart of the new sweeper range, we are maximising performance, payload, fuel consumption and water conservation and producing the most cost effective and practical city sweeper on the market."

GRAHAM HOWLETT, UK SALES MANAGER, JOHNSTON SWEEPERS



"JCB's innovative approach to Tier 4i engine development brings real fuel saving benefits to customers."

RICCARDO MAGNI, PRESIDENT, MAGNI TH





GENSET



"MOSA specifies JCB engines because they offer lower fuel consumption, lower noise, more reliability and excellent service."

EUGENIO RONCORONI, SALES MANAGER

STATIONARY



"We considered the JCB engines when they were launched because the power to size ratio was particularly good. The JCB 4 litre engines have the same power as some 6 litre engines and offer better fuel efficiency, which is also a key selling point for us. We've had a really good reaction from our customers over the course of the 7 years that we've been using JCB engines."

SIMON RUFFLES, GENERAL MANAGER, PIONEER PUMPS



MARINE



"The fuel consumption is so much better than the last engine. It takes around 38 litres now for a round trip rather than 45 so effectively I'm saving £50.00 per catch. The engine is also so much cleaner than my previous 20 year old unit. Not only has it given my old boat a new lease of life it's also good from an environmental perspective and, as fisherman, we are always keen to protect our waters."

BRIAN BALL, FISHERMAN (MEGAVISSEY)

WHY BUY A JCB ENGINE?

In addition to the engineering pedigree and the investment in producing an engine specifically designed for off-highway applications there are compelling reasons why specifying a JCB engine could be the best business decision you make.

Simple

Starting with a clean sheet of paper, an in-depth knowledge of plant and machinery design and key customer requirements the JCB team developed an engine that is simple to manufacture, simple to maintain, efficient and reliable.

No DPF

The latest JCB EcoMAX engines use a highly developed cooled EGR and unique combustion system design meaning they don't require expensive diesel particulate filters. The resulting engine is compact, easier to install and provides a lower overall cost of ownership.

Efficient

Designed with OEM's and end users at the forefront of product development decisions JCB engines have become renowned for fuel economy and productivity. Advanced and highly developed combustion and air handling systems allow the most efficient operation whilst producing ultra low in-cylinder emissions.

Proven

Every new engine produced by JCB Power Systems is based on extensive research and development including thousands of hours testing both in state-of-the art test cells and out in the real world installed in equipment.

Product Design Stability

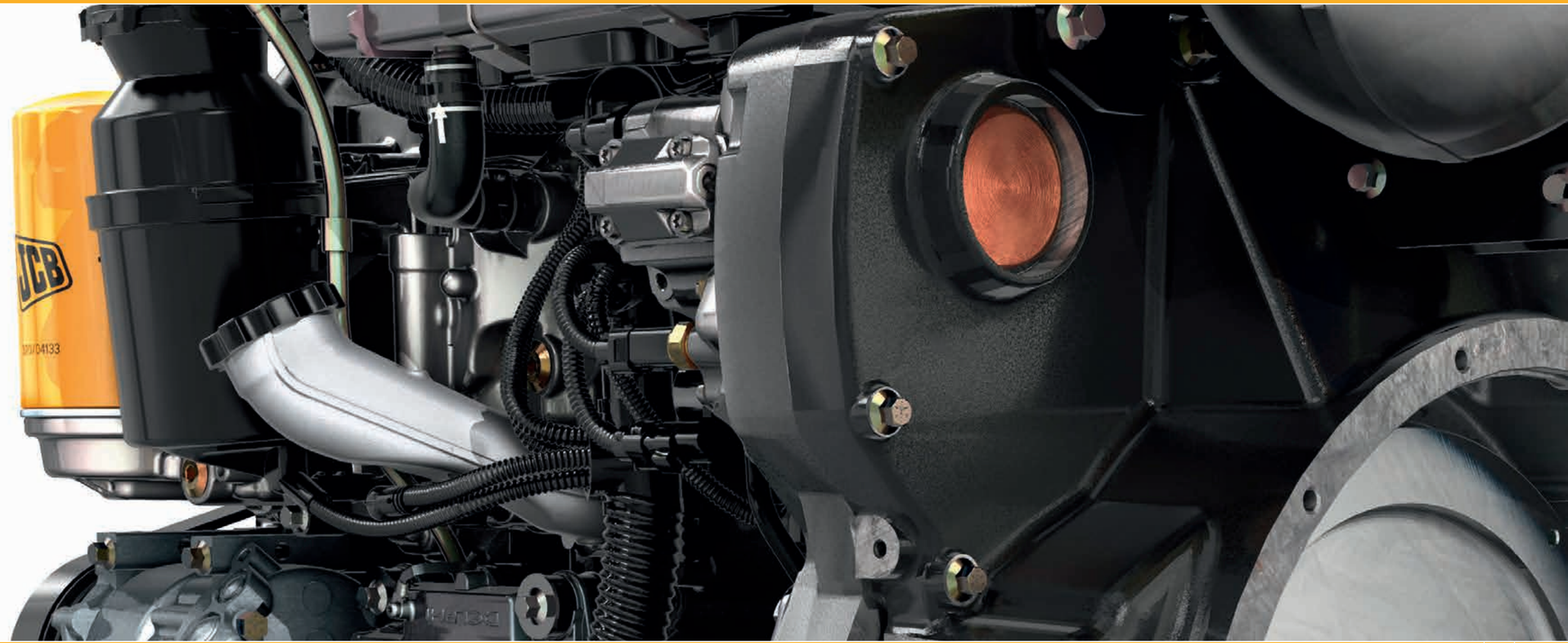
The JCB Dieselmax and EcoMax range share a high degree of component commonality and the engine footprint has and will remain the same from Stage II/ Tier 2 through to Stage V/Tier 5.

Transient Response

Power when you need it most. The highly integrated air handling and fuel systems used on JCB engines are designed to provide power and performance over an increased range of speed and load demands.

High Torque at Low Engine Speed

Power where you need it most. JCB Engines are designed to provide class leading torque at low engine speeds allowing OEM's to design more efficient equipment whilst improving output for the operator.



A GLOBAL TEAM

UNRIVALLED SERVICE AND SUPPORT FROM HARD-WORKING, TALENTED PEOPLE.

When you work with JCB Power Systems you are buying into a company that prides itself on its people and its service. Not only the team at our engine factories, but out in the field, at our dealer network and in any of the JCB offices and factories around the world.

Our dealers have been carefully selected over many years for their ability to provide the back-up and support that our customers deserve. Today our global dealer network consists of 750 dealers spanning 120 countries across five continents and operating out of more than 2000 depots to provide the unsurpassed back-up that we are renowned for.

Whether it's a service, a repair or the collection of a part we have experienced and fully trained technicians with a 'can-do' ethos that has been cultivated to deliver 100% customer satisfaction 24/7 365 days a year. We have worked hard to bring global industry expertise at a local level to give customers the assurance that wherever they are in the world, we are there and ready to support their needs.









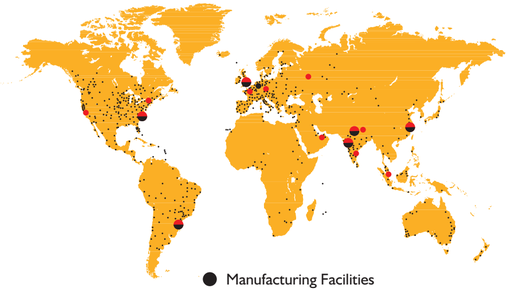
ALWAYS AT THE HEART OF EVERYTHING WE DO.

There's nothing more important to us than our customers.

We understand when you buy an engine from us you want first class support, wherever you are in the world. JCB's founder used to say; "Our customers can get along without us. We can't get along without them". We use his mantra today in everything we do.

It is our aim to make it easy and a pleasure to deal with us so we've invested heavily in our after care to provide the best support we possibly can.

Our highly advanced global parts network despatches more than a million genuine parts every week, delivering 95% of them anywhere in the world within 24 hours. With a state-of-the-art world parts centre in the UK shipping 30,000 lines per week using hi-tech logistics systems and a reliable network of despatch partners, we also have 15 regional parts warehouses to ensure that our promise of 24/7 support 365 days a year is achieved globally. From India to Dubai, from Singapore, France to Moscow and Brazil we have invested in the best facilities – and people - to make sure we keep you up and running so you can do what you do best – run your own business.



- Manufacturing Facilities
- Dealers/Distributors
- Parts Distribution Centres



THE JCB ACADEMY

Keeping engineering at the top of the educational agenda is a firm goal of the JCB group and to illustrate the company's dedication to encouraging the engineers and engineering leaders of the future The JCB Academy was established in 2010 in a renovated mill once owned by industrialist and engineer, Richard Arkwright. The brainchild of Lord Bamford it provides a world-class education to students aged 14-19 with a focus on engineering and business and forms part of the University Technical College system which is supported by higher educational institutes including Cambridge University.

With 12 fully resourced workshops enabling the pupils to work on real-life engineering projects the Academy offers a blend of practical and academic studies, as well as a virtual learning environment which is accessible at any time. School hours are aligned to business hours to prepare students for working life and the strong focus on work placements with manufacturing and engineering companies ensures students leave education with real industrial experience.





JCB TRAINING CENTRE

When a customer buys engines from JCB Power Systems they can be assured that not only are our own people fully trained, but we provide the factory training they need to look after their JCB engines.

JCB's dedicated training centre provides in-depth courses on 4 cylinder and 6 cylinder JCB engines and has fully equipped workshops to provide physical hands-on learning as well as classroom-based theory. All JCB distributor staff undertake a comprehensive training programme from basic engine through to advanced engine diagnostics including installation and application training to ensure they are able to offer customers the same high level of knowledge whatever the application.

As well as dedicated workshop training facilities in all global locations, our knowledgeable teams of trainers also provide training on-site at the customers place of work; anywhere in the world. Face to face courses are supplemented with comprehensive e-learning packages that can be accessed anytime anywhere as long as there is a computer available with internet access.





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