



VOLVO
CONSTRUCTION
EQUIPMENT
1832-2007



LOOKING BACK – MOVING FORWARD



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VOLVO CONSTRUCTION EQUIPMENT'S FIRST 175 YEARS

In 2007, it is 175 years ago since the birth of Volvo Construction Equipment. With a pioneering spirit and great inventiveness, the company has always been a driving force in moving development forward throughout all these years. Today Volvo Construction Equipment is not only the world's oldest company in the business, it is also one of the industry leaders.

Three geniuses lay the foundation of Volvo Construction Equipment

In the mid-1800s, the industrial revolution took us from an agrarian society to an industrial society. New developments spawned optimism, belief in the future and an entrepreneurial spirit – an exciting and expansive climate that was perfect for the three technical geniuses who it can be said

laid the foundation for what today is Volvo Construction Equipment; Johan Theofron Munktell and the brothers Jean and Carl Gerhard Bolinder.

The three had a lot in common. Not the least, they had the ability to go their own way, to break away from the mainstream and see well-known problems from new perspectives. That, in combination with their outgoing

and dedicated entrepreneurialism, resulted in their ability to create work environments which attracted competent and skilled co-workers. It was only natural that their paths would eventually cross at some point in time and that their two fantastic companies together would create something really big.



Three sons of priests and the technical geniuses who laid the foundation of Volvo Construction Equipment – Johan Theofron Munktell and the brothers Jean and Carl Gerhard Bolinder.



1830

The microscope is invented and the cell is discovered

1831

Faraday performs his first successful experiment with an electric motor

Johan Theofron Munktell - a legend in Swedish engineering history

In 1832 the technical genius Johan Theofron Munktell was commissioned by the city of Eskilstuna to start an engineering workshop for the purpose of developing local mechanical industry. That became the starting point of a brilliant period of Swedish engineering history. True, many innovations have seen the light of day after Munktell's time in the company and even after his death in the year 1887, but it was he who in a fantastic manner showed the way. For example, the following are some of the groundbreaking designs that Munktell created during only a few decades; Sweden's first mechanical loom, Sweden's first harvester, Sweden's first steam locomotive, the movable dome for the Observatory at Uppsala University and the heating systems for all prisons in the nation!

Already when he came to Eskilstuna in 1832 – only 27 years of age – Johan Theofron Munktell was a respected name in Sweden. He was born in 1805 outside the city of Västerås, but moved to Stockholm at the age of seventeen. After a few years with the prominent engineer Gustaf Broling, he became the foreman at the Royal Mint in 1826, where he more or less on his own modernized the minting machinery. And as if that was not enough, in his time away from work



he designed and built the first Swedish printing press, the very one that Lars Johan Hierta used to print the first Aftonbladet newspaper in 1830.

A true turning point for the city of Eskilstuna

He was enormously full of initiative and had a rare ability to see things in a greater context. When in Eskilstuna, he laid the foundation to the regional technical training that today is engineering education at college level. He was the driving force behind the decision to restore the waterway from Torshälla to Eskilstuna and had locks built that made it possible for ships to sail all the way to the company's dock. This solved a major transportation problem and was a "true turning point for the city since now it had a direct link to the capital city itself", as he himself expressed it.

Started brewery to reduce blacksmiths' drinking

In addition to everything else, Johan Theofron Munktell was also a proponent of healthy living and was not at all pleased with his blacksmiths' unbridled habit of getting drunk on hard liquor, both at work and on their time off. That is why he started his own brewery in 1853, to make beer that the blacksmiths could drink instead. Today it may sound a bit strange, but considering that at this point in history the average consumption was a staggering 2.5 litres of alcohol a week, the beer worked wonders with the workers' health and work capacity.

1832

Johan Theofron Munktell starts his workshop in Eskilstuna

1839

The expression "OK" is printed for the first time in a newspaper (Boston Morning Post)

1845

Briton Stephen Perry invents the rubber band



1853

Munktells manufactures Sweden's first locomotive



1855

The Bessemer method for making steel is patented



Sweden's first locomotive, the "Firstling" was used for railroad construction between Kärrgruvan's mine in Norberg and lake Åmänningen in Bergslagen. It also pulled the very first train load of iron ore from Kärrgruvan's mine.

Munktells manufactures Sweden's first steam locomotive

Eskilstuna Mekaniska Verkstad, which later was re-named Munktells Mekaniska Verkstads Aktiebolag, was at the beginning specialized in printing presses and tool machinery such as lathes, drills, forging presses and grinding machines. Products from Munktells workshop very quickly got a reputation for being of very high quality.

But Johan Theofron saw new possibilities. In 1835 he travelled to England, a trip that among other things gave him inspiration and enough knowledge to initiate manufacture of locomotives. It took a few years, but in 1853 Munktells Mekaniska Verkstad delivered Sweden's first locomotive, the so-called "Firstling".

Inventor of the adjustable wrench also worked at Munktells

An amusing fact – and perhaps another testament to the creative spirit that prevailed in Munktells Mekaniska Verkstad – is that another famous Swedish genius worked there during two time periods (1873-78 and 1880-86). Johan Petter Johansson was his name, the inventor of the adjustable wrench, internationally one of the most well-known Swedish inventions. Before that he also invented his almost-as-famous pipe wrench.

The Bolinder brothers carry on in Munktell's spirit

In 1832 when Johan Theofron Munktell quit the Royal Mint in Stockholm to move to Eskilstuna, he was replaced by another young and very gifted engineer, Jean Bolinder. Just like Johan Theofron, the seven-year younger Jean came directly from an apprenticeship

with Gustaf Broling, and at the Royal Mint he continued in Munktell's creative spirit and invented new machines that both improved and made the business more effective. In this way he made himself a very good name and was offered several well-paying jobs. However, he answered no to all offers since he – once again just like Munktell – first wanted to travel to England to learn more about foundries, casting and engineering technology. So, together with his five-year younger brother Carl Gerhard, who then worked at Kockum, he went to England in 1842. They stayed for a year. It was a meagre existence and they scraped by, but they became rich in knowledge, not the least in the area of steam machinery. When they returned to Sweden they were full of new ideas and in 1844 they started Kungsholmens Gjuteri & Maskin Verkstad in Stockholm. The company quickly made great advances, and in the beginning of the 1850s it flourished and grew.

1860

Abraham Lincoln becomes president of the USA

1866

Fjodor Dostojevskijs "Crime and punishment" is published

1869

The Suez Canal opens



1876

Alexander Graham Bell invents the telephone



1880

Bolinders participates in manufacturing the world's first functional, armed submarine

The world's first functional armed submarine

In 1883, Bolinders Mekaniska Verkstad obtained a worldwide reputation when they participated in the design of the world's first functional armed submarine. The 62 foot long "cigar" had a crew of three and no periscope. Candles were used to check oxygen in the air and were the only source of light. One was sold to Greece, and as soon as the archenemy Turkey found out, theyzht two.



Bolinders builds Sweden's first combustion engine

In 1893 Bolinders builds Sweden's first combustion engine – a single cylinder, four-stroke kerosene engine. The following year Carl Gerhard dies, and five years later in 1899, so does Jean. But the company carries on and the first engine is soon replaced by

a two-stroke hot-bulb engine. The dawn of the engine era becomes an exciting and successful new start for the Bolinder company.

First flight, theory of relativity and Sweden's first farm tractor

The turn of the century generates hopes for a new time, a time full of possibilities to use industrialization, new machines and revolutionary inventions to improve and make life easier for man.. In this creative and optimistic atmosphere, the first Nobel prizes are awarded in 1901, amongst others to Röntgen and Bohr. In 1903 the two ingenious – or perhaps plain crazy – Wright brothers take off on the world's first flight, and later that same year one of the greatest geniuses of all times – Albert Einstein – formulates his theory of relativity.

At Munktell several milestones were also passed on the company's way to becoming Volvo Construction Equipment. In 1906 the company's first construction machine – a steam roller – sees the light of day, and in 1913 the company manufactures Sweden's first farm tractor.



The story starts at a crayfish dinner

Another important milestone, not only for the future Volvo Construction Equipment, but for all of Swedish industrial history occurred in 1927 with the foundation of Sweden's perhaps most well-known company of all time. The idea was born three years earlier, in 1924, at a very Swedish tradition – a crayfish dinner. On a beautiful summer evening, Assar Gabrielsson and Gustaf Larsson met at the restaurant Sturehof in Stockholm. The two automobile enthusiasts ordered a large plate of fresh-cooked crayfish – and a few hours later, Volvo was born. They established that "automobiles are driven by people " and the basic principle behind everything done at Volvo must always be – safety. A principle that holds true even today, no matter if you are talking about our cars, trucks, buses or construction machines. Developing and manufacturing at Volvo has always taken place on human terms.



1886

Gottlieb Daimler and Karl Benz, each on their own, build the world's first automobiles

1889

The Eiffel Tower opens at the World's Fair in Paris

1892

Rudolf Diesel patents the diesel engine

1893

Bolinders builds Sweden's first combustion engine (Weyland's patent)

1895

The Lumiere brothers have their first film screening in Paris – cinema is born

1903

Wilbur & Orville Wright take off on the world's first flight

1912

Titanic sinks following a collision with an iceberg



The stock market collapse unifies Bolinders and Munktells

October 24, 1929 – the stock market collapse in the USA becomes the start of the Great Depression. In connection with the Kreuger crash in 1932 the problems in Sweden are compounded, and assets of the banks shrank as fast as those of the stock exchange. The bank Handelsbanken decided to save its assets within the engineering industry, and a result of this decision was to merge Bolinders and Munktells. So, exactly one-hundred years after Johan Theofron's start in Eskilstuna, Bolinder moves to Eskilstuna and both companies merge under the name AB Bolinder-Munktell.

Volvo buys Bolinder-Munktell

After the war, the future was uncertain for Bolinder-Munktell. The bank Handelsbanken wanted to free itself from its direct dependence on industry, and for awhile it was almost a done deal that the American tractor manufacturer International Harvester was to buy the company. But, following a few turn of events it was Volvo that acquired Bolinder-Munktell in May 1950.

Now follows a real 'heyday' period in the company's history, a time when tractors, combines, and advanced machines for the increasingly mechanized forestry industry were the major

products that generated great volumes. And it was also during the flourishing 1950s and 1960s that the pioneering construction equipment was developed, machines that in time came to dominate the company's production and gradually made the export numbers shoot off the charts.



1913

Munktells produces Sweden's first tractor

1914-18

First World War

1927

Charles Lindberg flies across the Atlantic Ocean in the "Spirit of St. Louis"

1928

Walt Disney creates Mickey Mouse

1929

Belgian illustrator Hergé sends out Tintin on his first Adventure



1932

Bolinder's and Munktell's companies merge to form Bolinder-Munktell

1939

Second World War breaks out



Two pioneers are born

Development and creativity are often all about seeing things through new eyes, to change perspective instead of heading down already trodden paths or running on in old tracks. To – in hindsight – use startlingly obvious and simple ideas to solve difficult problems and make major advances.

It was this ability to question old truths and literally turns things around that enabled Bolinder-Munktell to present two pioneers that laid the foundation for Volvo Construction Equipment's great success around the world – the wheel loader and the articulated hauler.

Volvo launch their first wheel loader

In 1954 Bolinder-Munktell and Bröderna Lundbergs Mekaniska launch their innovative back-end loader, the H10. They had simply turned an ordinary tractor back-to-front, and placing the loader unit over the bigger wheels created possibilities for heavier loads and higher breakout forces. The ground wheels for steering at the rear also made the machine very easy to operate. The first wheel loader from Volvo was born.

Volvo invents the articulated hauler concept

At the end of the 1950s, the engineering company Livab in Braås was

experimenting with combinations of driven hauler trailers and tractors. But there were several difficult problems, not the least of which was manoeuvrability. Since the tractor's front wheels easily slid in snow, the company simply started to sketch a tractor without front wheels, with articulated steering and drive on the load unit's wheels. Development of the machine picked up speed and a few years later, in 1965, Livab signed a cooperative agreement with Bolinder-Munktell. The following year saw the introduction of the DR 631 – the world's first series-manufactured articulated hauler with all-wheel drive. The former Livab is now our articulated hauler entity.



1940

Frank Sinatra makes his entry as the singer in Tommy Dorsey's big band



1943

IBM's chairman Thomas Watson states that he believes that "there is a world-market for perhaps five computers"

1950

Volvo buys Bolinder-Munktell

1954

The first Volvo wheel loader H10 is launched



1966

Volvo BM launches the world's first series manufactured articulated hauler

1969

Neil Armstrong becomes the first man on the moon



Volvo BM is formed and focus shifts to core business

In 1973 the company name changes to the Volvo BM AB in order to strengthen the Volvo identity and reinforce focus on construction equipment. Four years later the company decides to completely abandon the agricultural and forestry sectors, and only concentrate on construction machines. It was a successful and wise decision, and during the following years some of the best machines ever made by Volvo were put to work on construction sites around the world.

The company grows

In 1985 Volvo BM makes the strategic and smart move which opens the American market to the company's products in a whole new way – Volvo BM allies itself with the American manufacturer Clark Equipment (that just like Volvo manufactured its first wheel loader already in 1954) and its subsidiary Euclid. The product name Clark Michigan was abbreviated to only Michigan, and the three brand names Volvo BM, Michigan and Euclid were incorporated in the new company VME Group. With several smart com-



pany acquisitions, this new company group experiences major successes in the following years.

Expanding the product range with excavators and compact machines

The end of the 1980s and the beginning of the 1990s was a time of upheaval and revolution in Europe and the world. The Berlin Wall was torn down in 1989 and 1991 saw the dissolution of the Soviet Union into 15 independent states. Joy and hope mixed with some nervousness at the outset of a new historical era.

In order to expand the product range and enter the compact market, VME purchased the majority of the German company Zettelmeyer Baumaschinen GmbH. Zettelmeyer and their high-quality compact loaders were already market leaders in Ger-

many and other European countries, and the machines were integrated very successfully in the company.

Also in 1991, VME acquired the excavator company Åkermans Verkstads AB in Eslöv, after having been partner and co-owner since 1988. Founded in 1890, Åkermans had been manufacturing excavators since 1939.

Volvo Construction Equipment

In 1995 Volvo purchased Clark's shares in VME and established Volvo Construction Equipment. That same year the French company Pel-Job – Europe's first supplier of compact excavators – was integrated in the company, followed two years later by the Canadian motor grader giant Champion, which further expanded the product range and solidified the presence on the North American markets.



1985

The VME Group is formed

1989

The Berlin Wall comes down

1995

VME becomes a fully owned Volvo company and changes name to Volvo Construction Equipment

1998

The new 30 ton wheel loader Volvo L220D impressed with its productivity and low fuel consumption

2000

The world fears an IT crash in conjunction with the millennium – fortunately the fears are unfounded

2003

Production of Volvo's skid steer loader begins in Asheville

2005

EC700B – an excavator in the 70-ton class – is launched by Volvo



Volvo first in the world to invest in Korea

In 1998 Volvo Construction Equipment once again sought new exciting opportunities and areas to develop the company in and improve its products. As a result, Volvo Construction Equipment became the first foreign company ever to invest in Korea. The acquisition of the surfacing machine division of Samsung Heavy Industries strengthened our product offerings and presence in the Asia.

Chinese partnership and expanded product range with Ingersoll Rand

In January of 2007 Volvo Construction Equipment purchased 70% of Shandong Lingong Construction Machinery Co. Ltd, one of China's biggest manufacturers of wheel loaders, excavators, backhoes and road rollers. Lingong

is set to play a major roll in our strategy for future growth. In April 2007, Volvo also finalized acquisition of the American company Ingersoll Rand's division for road construction machines, including heavier compactors, pavers and machines for material handling such as telescopic handlers and off-road trucks. The acquisition assures Volvo Construction Equipment's position as a world leader in heavy construction equipment. Strategically, it broadens our product offerings and gives us a more complete range of construction machines.

Constant improvements in customer service

Customer service is much more than service and spare parts. Its about anticipating the customer's needs thanks to a continuous dialogue between

the retailer and the customer.

Our wide range of products and services lies at the heart of this philosophy, as does our different service agreement levels such as Volvo Care Track – a telematic system, the Volvo tooth system and factory renovated components.

Visit our history

Feel welcome to experience 175 years of industrial history – for real! At the Munktellmuseet in Eskilstuna, Sweden, you will find a lot of exciting products you can marvel at.

For those who want to know more about our history, welcome to visit us at: www.volvo.com/history.

Here you will find more information about the company and our products.

2006



Sweden's national ice-hockey team captures both the Olympic gold and the World Championship

Volvo's G900 - series graders see the light of day

With an integrated electric-diesel hybrid concept, Volvo shows how to save energy and the environment

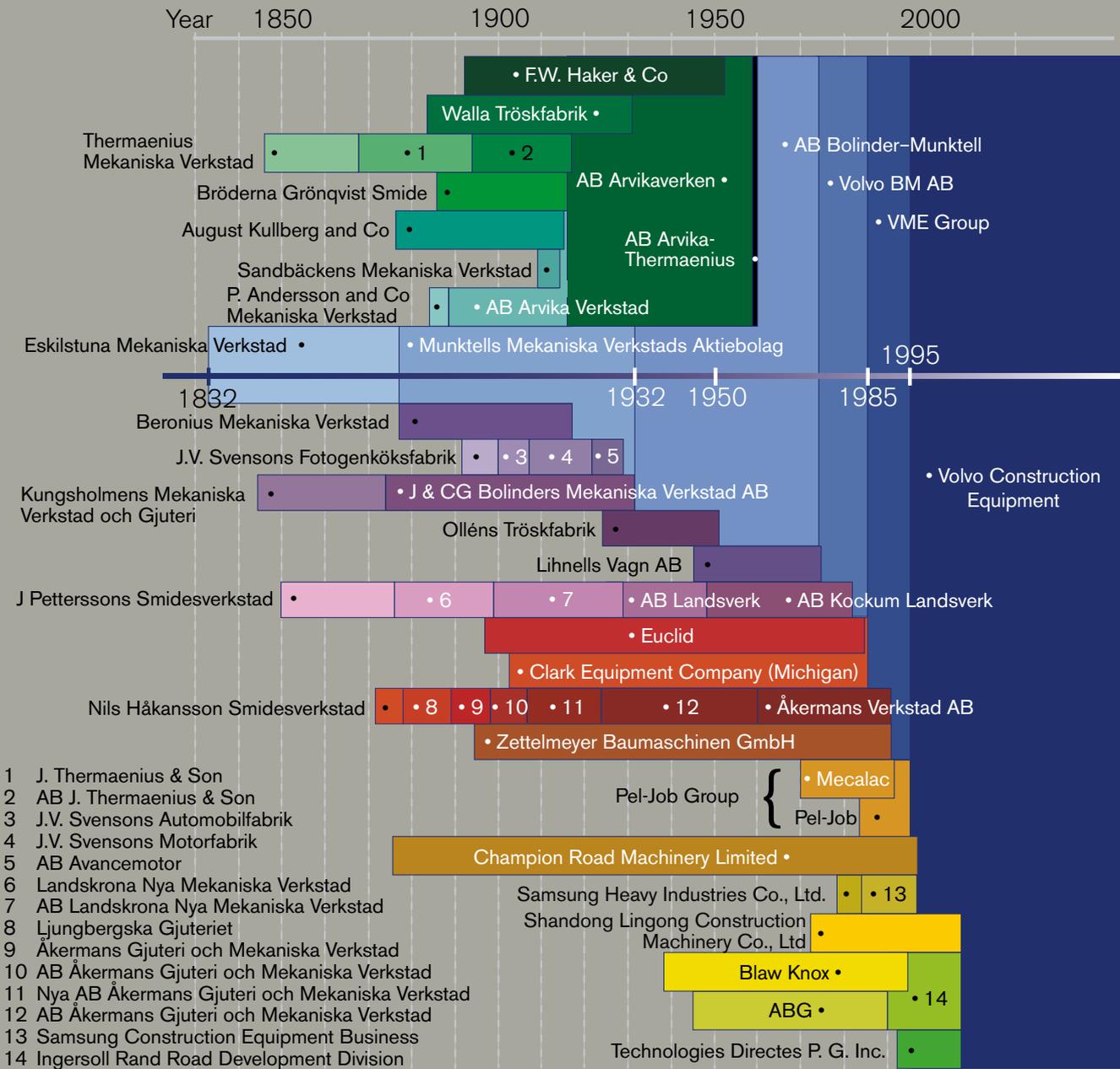
2007

The world's first full-suspension articulated hauler is launched by Volvo

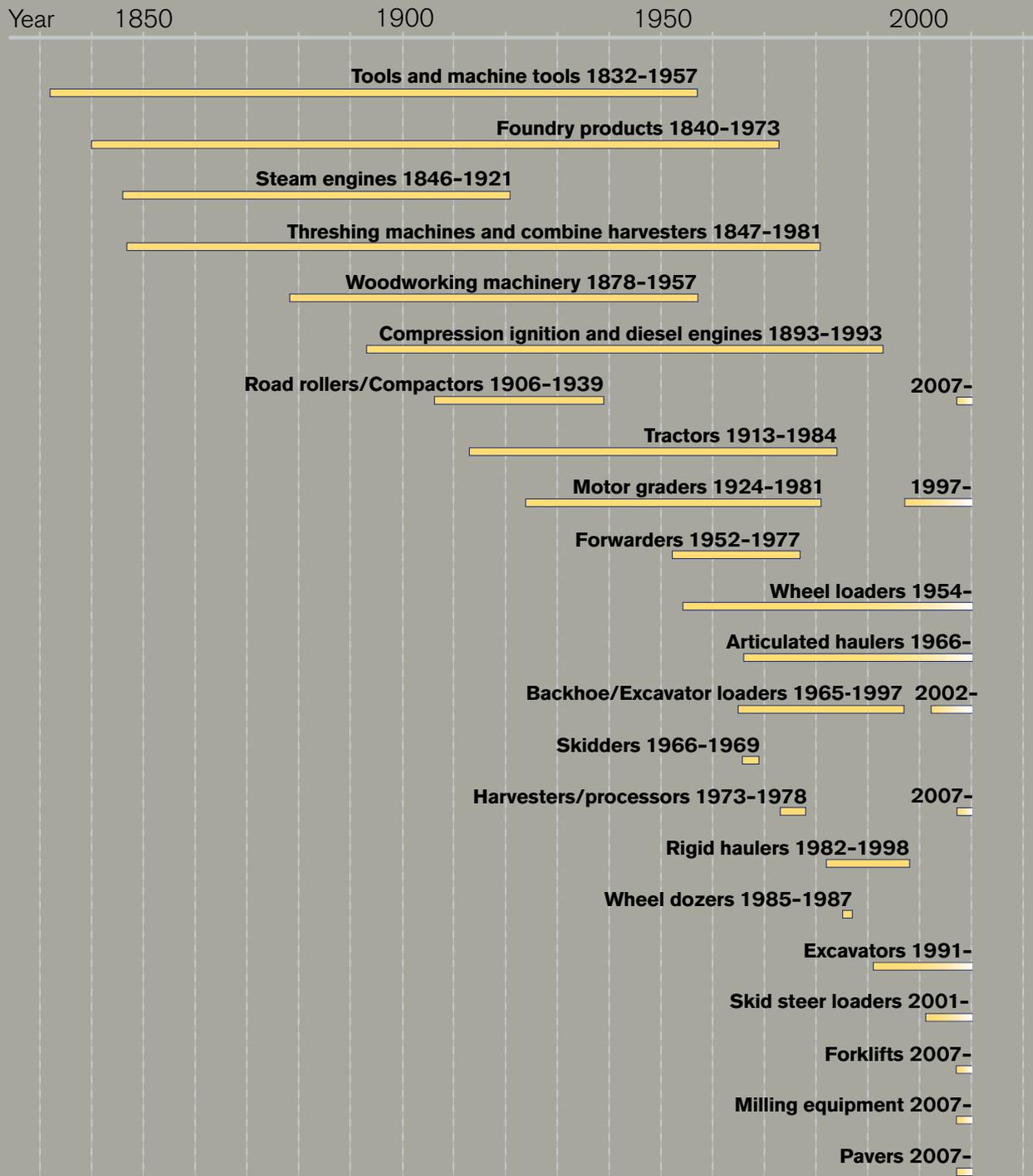
Acquisition of Chinese Lingong and Ingersoll Rand road construction

Volvo launches the L350F, a new 50-ton wheel loader

COMPANY HISTORY MAP



EPOCHS





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