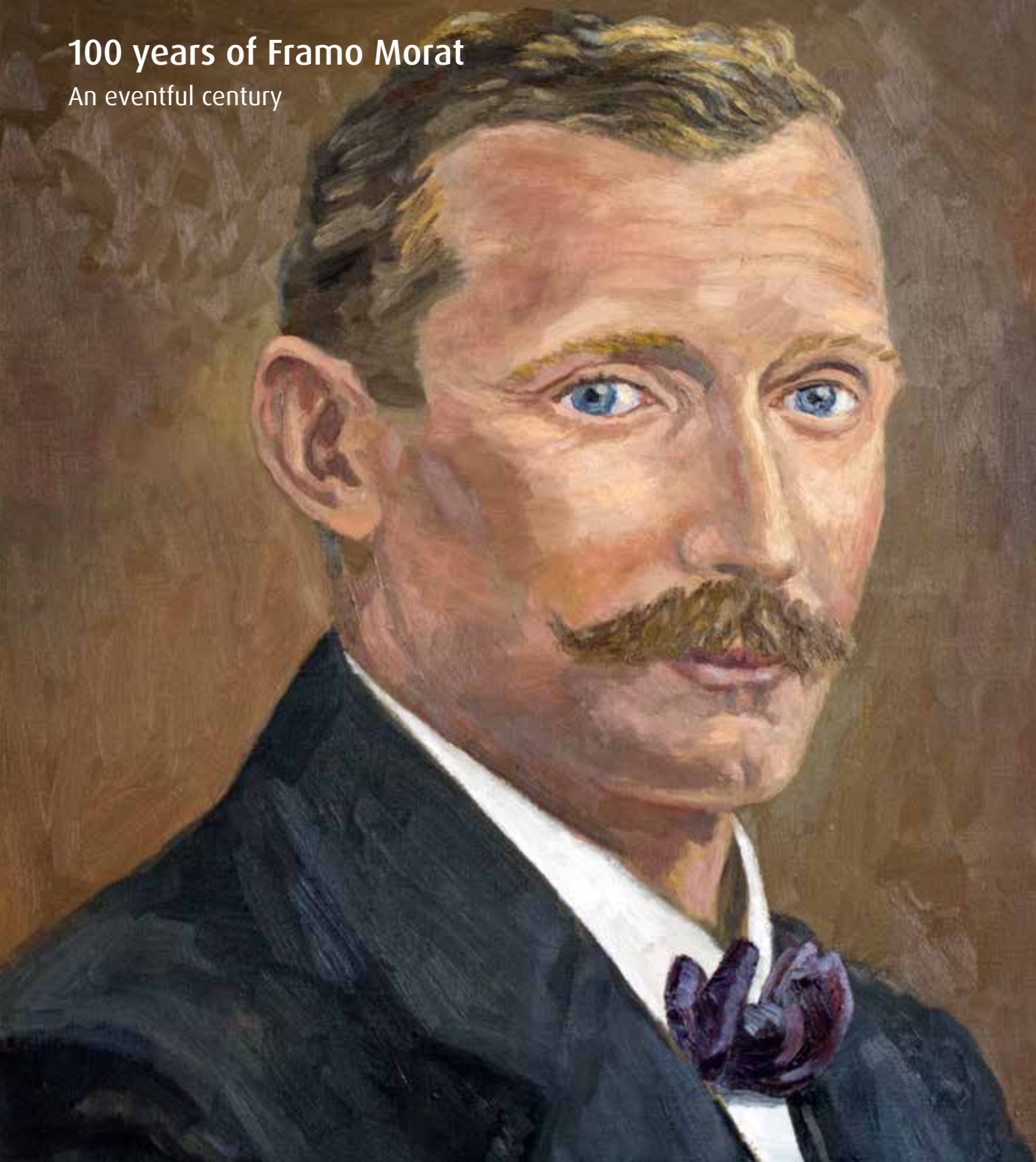


100 years of Framo Morat

An eventful century



It runs in the family

Thinkers, inventors, entrepreneurs

A long tradition

100 years of Framo Morat – this is not just the chronology of an industrial company from Eisenbach in the Black Forest. 100 years of Framo Morat is also the story of a family of passionate thinkers and inventors. It was started by Karl Morat who, thanks to his excellent spindle drills and drilling needles, was already known beyond the Black Forest. He was followed by his son Johann, who founded the parent company in 1863, producing turning tools, gear chairs, gearwheels and other tools.

From this company his own son, Franz, finally founded Franz Morat GmbH (a limited company) in 1912. At the original company building “auf dem Höchst” he produced, among other things, pressure gauges (manometers) and counters, smaller turned parts, and gearwheels for the watch and clock industry. And he, too, passed on his technical and entrepreneurial skills. In 1930 his son, Franz Morat

junior, started looking for new sales markets and drove forward the company’s international strategy in order to offset the effects of the economic crash. He commuted between Paris and Eisenbach, and later London. With his company Framex, founded in 1932, he successfully sold the products of his father’s company throughout Europe.

He returned to Eisenbach after the start of the Second World War in order to take over management of the factory, which he passed on to his cousin Josef Morat in 1948. Franz Morat junior resigned as personally liable partner in 1977 and passed on his shares to his children Gisela Brake-Morat and Franz Armin Morat. The latter passed on his shares in the company to his sons Franz Robert Morat and Dr. Daniel Morat in 1992. They have been the sole partners since 2011 and are carrying on the family tradition in the sixth generation.



Notification of the change in the partnership agreement from the founding year of 1912.



Johann Morat with his sons Josef, Hermann, Alois and Franz in front of the original company building “auf dem Höchst” in Eisenbach.

Karl Morat
1811 – 1882



Johann Morat
1838 – 1904



Franz Morat sen.
1876 – 1953



Franz Morat jun.
1911 – 1986



Josef Morat
1915 – 1996



Franz Armin Morat and Gisela Brake-Morat



Franz Robert Morat and Dr. Daniel Morat



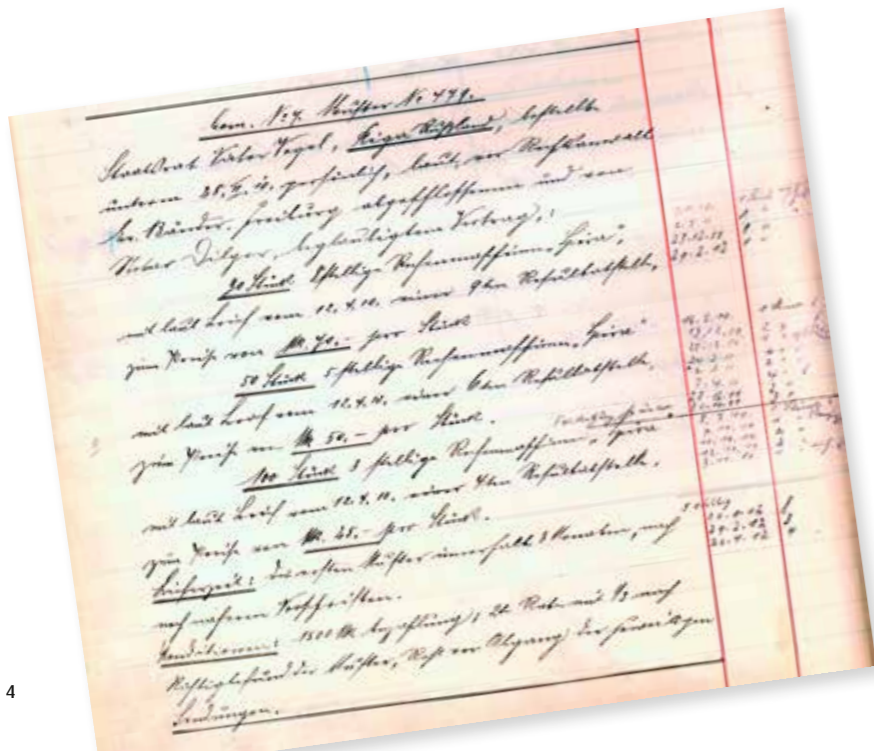
Small wheels for the world's gears

From Eisenbach to Australia

Gear wheels, counters and worm gears may sound small and modest. But if one looks at where, all over the world, these small wheels from the Black Forest drive things – and drive things forward – one soon recognises the modern, internationally oriented high-tech company of today. Business connections to Russia and Australia were already listed in the first order books. Franz Morat junior then travelled to the USA by ship in order to open up new markets.

The company was by no means breaking new ground in its international business, but was continuing a long Black Forest tradition. The watchmakers and glassblowers had already carried their goods from here to all the European countries – just like the entrepreneurs of the Morat Family, who were already attending international trade fairs and exhibitions in the 19th century, often winning awards for their products. As a global player, Framo Morat is now actively supporting its customers all over the world.

Breakthrough to
worldwide markets



European idea

Franz Morat junior undertook his business trips on a motorcycle – a legendary Royal Enfield.



International business connections

Documented in the company's first order book: State Councillor Viktor Vogel from Riga ordered numerous "Spira" calculators.

Revolutionary inventions

Self-timers, pressure gauges, direction indicators

In the first few years following the founding of his company, Franz Morat senior largely continued his previous activities: he produced pressure gauges, spring drives and counters, registers as well as gearwheels for the watch and clock industry. In the 1920s he expanded the range of products with timers and shutter releases for photography, and direction indicators for cars. He delivered the latter to Fiat in Turin and to the Horch Works at Zwickau, for example. The robust indicators were still being sent to Norway, where they indicated directions for military trucks, until 1978.

Franz Morat junior transported the shutter releases (patented in 1930) to Paris by motorcycle – in pieces in his rucksack. He put the devices together on a board in his hotel room so that he could then sell them to photographers in France.

The end of the war was not just “zero hour” for Germany: the French occupation forces gradually confiscated all the machines and had them transported to France. The company had to start from scratch all over again.



A gear chair

A gear chair was indispensable for the accurate tothing of gearwheels. Franz Morat himself manufactured the gear chairs he needed for his production.



Shutter releases

The triggers and shutter releases for photography, with which the company was very successful during the 1920s and 1930s, were based on typical clock drives.



Pressure gauges

The company's pressure gauges were in great demand for decades as a result of their precision and reliability.



Indicator switches

Franz Morat KG also profited from the triumphal march of the car. Indicator switches from Eisenbach were built into cars and trucks from 1930 until 1978.



1912
Founding of Franz Morat GmbH in Eisenbach

1916
Franz Morat senior takes over all the shares in the business from his brothers Joseph, Hermann and Alois Morat

1920
Production of timers and shutter releases, indicators and pressure gauges



1926
Expansion of the company's buildings with a generously proportioned extension

1932
Founding of Framex by Franz Morat junior in Paris

1936
Founding of another Framex branch by Franz Morat junior in London



1940
Wedding of Franz Morat junior and Anneliese Charlotte Wilhelm from Wiesbaden, here with the children Franz Armin and Gisela

1943
Conversion of the company to a KG (limited partnership) with Franz Morat junior as sole personally liable partner

1945 – 1948
Dismantling of equipment by the French military administration

The company
1912 – 1945

Success due to precision and design

Knitting machines, laboratory equipment, overhead projectors, customer-specific drives

The company
1945 – 1980

After the war the company principally produced gearwheels, screws and, from 1953, worm gears. Because, however, production at the works in Eisenbach had been heavily restricted due to the dismantling of machines by the French occupation forces, Franz Morat junior felt he had no choice but to seek new business fields in the American Zone.

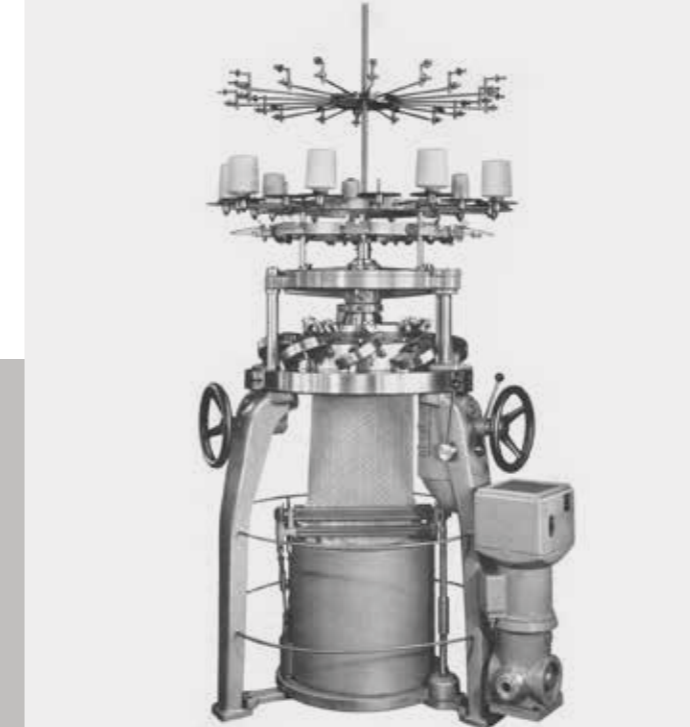
He merged the medical technology company Hellige and a circular knitting machine producer to produce Hellige Morat & Co. GmbH (a limited company) in 1947, a subsidiary in Stuttgart that developed and produced circular knitting machines until well into the 1960s.

But the core workforce in Eisenbach soon also risked taking on more complex tasks under the management of Josef Morat, the cousin of Franz Morat junior. In addition to worm gear sets, the takeover of the laboratory instrument producer llado also led to the uptake of laboratory mixers, magnetic stirrers and calorimeters in the production programme. The overhead projectors from llado, in particular, brought great success because, thanks to their being equipped with Fresnel lenses, the devices were particularly flat and compact and thus in great demand.



Gearwheels and screws

Just after the war it was not easy to maintain production. But the wheels were soon turning again thanks to the Black Forest talent for improvisation.



The Jaquard circular knitting machine

Circular knitting machines were constructed by Hellige Morat & Co. in Stuttgart-Vaihingen from 1952. Assemblies such as the yarn monitor and the stop system for yarn transport were produced at the Eisenbach works. The company developed the world's first fully electronically controlled circular knitting machine, the MORATRONIC, in 1963.



Customer-specific drives

The demand for individual drive solutions led to the development of customer-specific drives for the first time in 1966 – now a central field of business.



Laboratory technology

The striking orange was characteristic of llado Labortechnik, a company taken over by Franz Morat KG in 1978.

1948

Management of the works in Eisenbach by Josef Morat, cousin of Franz Morat junior

1947

Franz Morat junior takes over a circular knitting machine company in Stuttgart as well as Fritz Hellige & Co. GmbH in Freiburg



1953

Death of Franz Morat senior



1958

Development of a special catalogue programme for the worm gear sets that were increasingly in demand

1960

More than 100 personnel employed – for the first time



1963

Expansion of business activities into electronics with a new 3,000 m² building. Founding of F. Morat & Co. GmbH for plastic injection moulding technology

1966

Start of the development of customer-specific drives and drive solutions

1972

Move into another building with 5,000 m² production area



1976

First step towards creating a brand: the Europe-wide introduction of the "Framo" trade mark

1978

Gerhard Hochholzer takes over management from Josef Morat

1977

Franz Armin Morat and Gisela Brake-Morat take over the shares belonging to father Franz and cousin Josef Morat

We keep the world moving

Geared motors; rehabilitation, mobility and medical equipment

The company
1980 – 2012

There was a small technical revolution in 1981 with the introduction of the “Compacta” slip-on geared motor. It accommodates the motor, drive and limit switch in the smallest of spaces so that it advanced to become what is still a very popular product in mechanical engineering. The “Mini” linear actuator ultimately impresses with its universal linear drive and integrated limit switch. As a result of customer-specific modifications, these geared motors also offer universal use – they are employed in sheet metal bending machines, in feed systems or for illuminating theatre stages and television studios.

Mobility equipment has increasingly gained in importance during recent years and decades. Special drives move stair lifts and wheelchairs, ensure the optimum position of laboratory and operation tables, and help people get back on their feet quickly after operations.

But regardless of whether gearwheels, geared motors or rehabilitation equipment are involved – customers’ individual requirements are always the top priority in our development and production.



Compacta

The “Compacta” slip-on geared motor is suitable for a wide variety of applications in mechanical engineering, whether as a conveyor drive or a drive system for mixing plants. It is still a bestseller in the standard drives segment.



Mini

The extremely short “Mini” linear actuators have been used since 1984 wherever precise positioning and control are necessary.



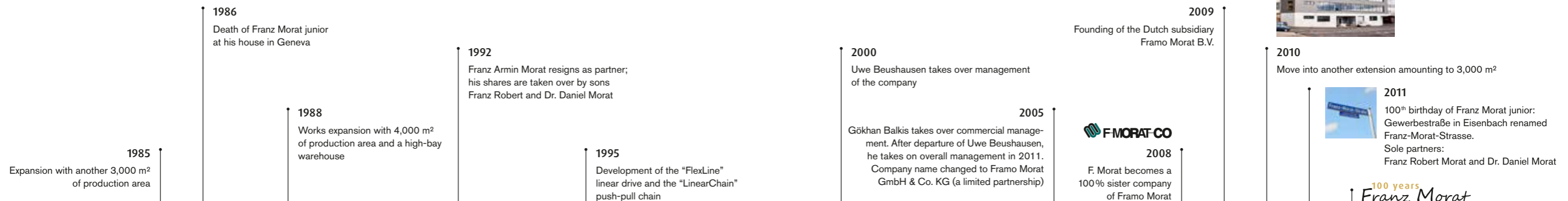
Stair lift drives

With an increasingly aged society demand for stair lift drives is rising. Framo Morat has positioned itself to meet this development.



Rehabilitation and medical equipment

Longer living as well as better living – demographic change is driving rehabilitation and medical equipment sales, in particular.



Drives for the future

Renewable energies and e-mobility

Sun and wind – the future belongs to renewable energies, something Framo Morat believes in passionately. This passion can be found in the transport lifts and pitch drives of wind turbines, as well as in the trackers for guiding solar modules. In the modules, worm gears, linear and rotary actuators ensure, for example, that the sunlight is always perpendicular to the solar cells. This allows module performance to be increased by up to 45%, depending on the technology and geographical location. All drive components are especially designed for use in sun, wind and weather to permit dependable long-term operation with minimal maintenance and repair costs.

But who knows what will have to be moved and driven in the future? Our specialists are always ready – to develop and contribute towards creating suitable technology. Something for you to look forward to!

Tracking systems for solar collectors

In parabolic trough collectors, the reflectors must be guided in such a way that the sunlight is precisely focused on a focal line. The parabolic troughs, arranged in a north-south alignment, must be guided from east to west by a single-axis adjustment mechanism for maximum solar energy yield.

E-Motive

The rapid development of electric cars not only requires alternative energy sources, but also new drive solutions. Many of the latest electric motors are driven with the help of drive shafts from Framo Morat.



Rehabilitation and mobility equipment

Smooth, powerful but nevertheless highly precise movements require special compact drives.



The work is changing but the dedication remains the same

Memories of eventful and exciting times

Training at Franz Morat! During the 1950s and 1960s, young men from Eisenbach did not have to think long about what they should do for their career after leaving school because their fathers and grandfathers had already trained here. The only question was whether they were more interested in commercial skills or technology.

Depending on their preference, they could train to become book-keepers, salesmen, precision mechanics or gear specialists. What was then on the cross-disciplinary syllabus, however, was thriftiness. Because what has today been rediscovered as sustainability was a matter of course in the rather barren post-war period. Tools were valuable and were treated as such. And materials had to be treated with particular economy.

The Italian guest-workers who were employed from the 1960s onwards were a gain not only for the company, but also for the

whole region. The cosmopolitan Franz Morat junior was particularly interested in their integration. People from every part of Germany and all over the world now work at Framo Morat. And even if today's youth can choose from every possibility and career opportunity, very many of them decide to start right "at the top". At a height of 944 metres – at Framo Morat.



**Bernd Sigwart,
Sales Manager**

At the company from 1958 to 2008

"Satisfied customers are loyal customers. We've always worked according to this principle, whether driving to customers on a Sunday to replenish supplies or when looking for the optimum drive solution. The fact that many customers have already been loyal for 30, 40 or even 50 years confirms our position."



Stories
from the past

A job for life

The increasingly demanding activities require specialists who trained whilst still young. This is why the company has always placed a lot of value on a good in-house training system.

**Alfons Scherzinger,
Precision Mechanics Master,
Production Planning Manager**

At the company from 1957 to 2007

"After the war, the Morat family car was also our only company car. But we knew how to cope. We mostly handled smaller consignments on my motorbike. And when parts had to be taken to Freiburg for galvanising, the greengrocer took on this task with his truck."



**Albert Rosenstiel,
Purchasing Manager**

At the company from 1953 to 1997

"I started as a commercial trainee under Hugo Morat, a cousin of Franz Morat junior – a brilliant technician and excellent specialist who really got involved in his engineering activities. He gave me a present after I passed my exams."

**Irmgard Beha,
Secretary and Bookkeeping**

At the company from 1957 to 2002

"My parent's house was directly opposite the company. Franz Morat, who was mostly in Freiburg during the week, often used to ask me to take dictation spontaneously on a Sunday. I was always generously compensated for this work. I used to get clothes, for example, produced with our circular knitting machines. And Franz Morat once took my father and I on a round tour in his Cessna aeroplane."



**Erhard Fischer,
Gearing Master,
Production Manager**

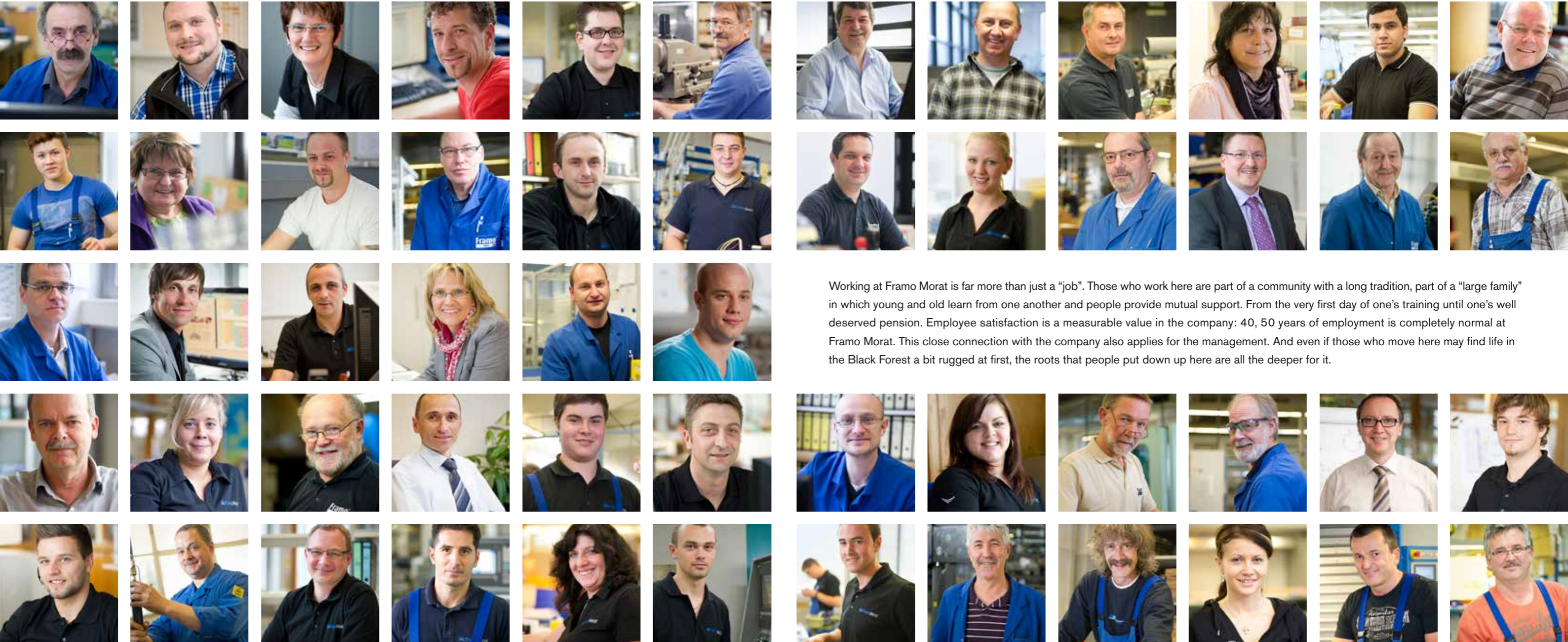
At the company from 1955 to 2006

"Franz Morat always had a sympathetic ear for his workers. His credo was always: 'If things are going well for the workers, then things are also going well for the works.'"

Trained, experienced and deeply rooted

The personnel

The people
behind the technology



Working at Framo Morat is far more than just a “job”. Those who work here are part of a community with a long tradition, part of a “large family” in which young and old learn from one another and people provide mutual support. From the very first day of one’s training until one’s well deserved pension. Employee satisfaction is a measurable value in the company: 40, 50 years of employment is completely normal at Framo Morat. This close connection with the company also applies for the management. And even if those who move here may find life in the Black Forest a bit rugged at first, the roots that people put down up here are all the deeper for it.

We've moved a lot in 100 years

A wide-ranging product portfolio

The wheels
that mean the world

Up to 300 mm
diameter with straight or angled, internal or external toothing – gearwheels are produced exactly to customer specifications.

More than 1,000,000
worm gears are produced at the company annually.

A maximum of 500 mm
standard stroke length with a very short housing – the “Mini” linear actuator.

A lively 1,600 Nm
is the drive torque of the “Compacta” slip-on geared motor.

A powerful 35,000 N
of thrust is created by the “LinearChain” push-pull chain with a stroke length of 2 m, unguided chain and guided load.

153
parts are to be found in the drive of a component mixing device used in dental technology.

70 %
is the angle that the stair lift drive can master.

135 kg
can easily be transported upstairs and downstairs with the stair lift.

An area of 60 m²
of solar collectors can be precisely guided by a single actuator.

As different as the products developed and manufactured by Framo Morat during the last 100 years may appear at first glance, they all have something in common: something is moved. Whether with gearwheels, worm gears or complete drive solutions – the interests of Framo Morat were and are precisely controllable movements. And in future we will also ensure that things keep running and in motion. With maximum technical competence, state-of-the art production plants, and our unconditional desire for perfection.



GEARVALLEY

The gearwheel is reinvented over and over in Eisenbach. Because the region has been characterised by the precision mechanics industry since a centre of the watch and clock industry blossomed here in the 18th century. Since then gearwheels, precision turned parts, drives and valves have been developed and produced in the heights of the Black Forest.

100 years
Franz Morat
1912 - 2012

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