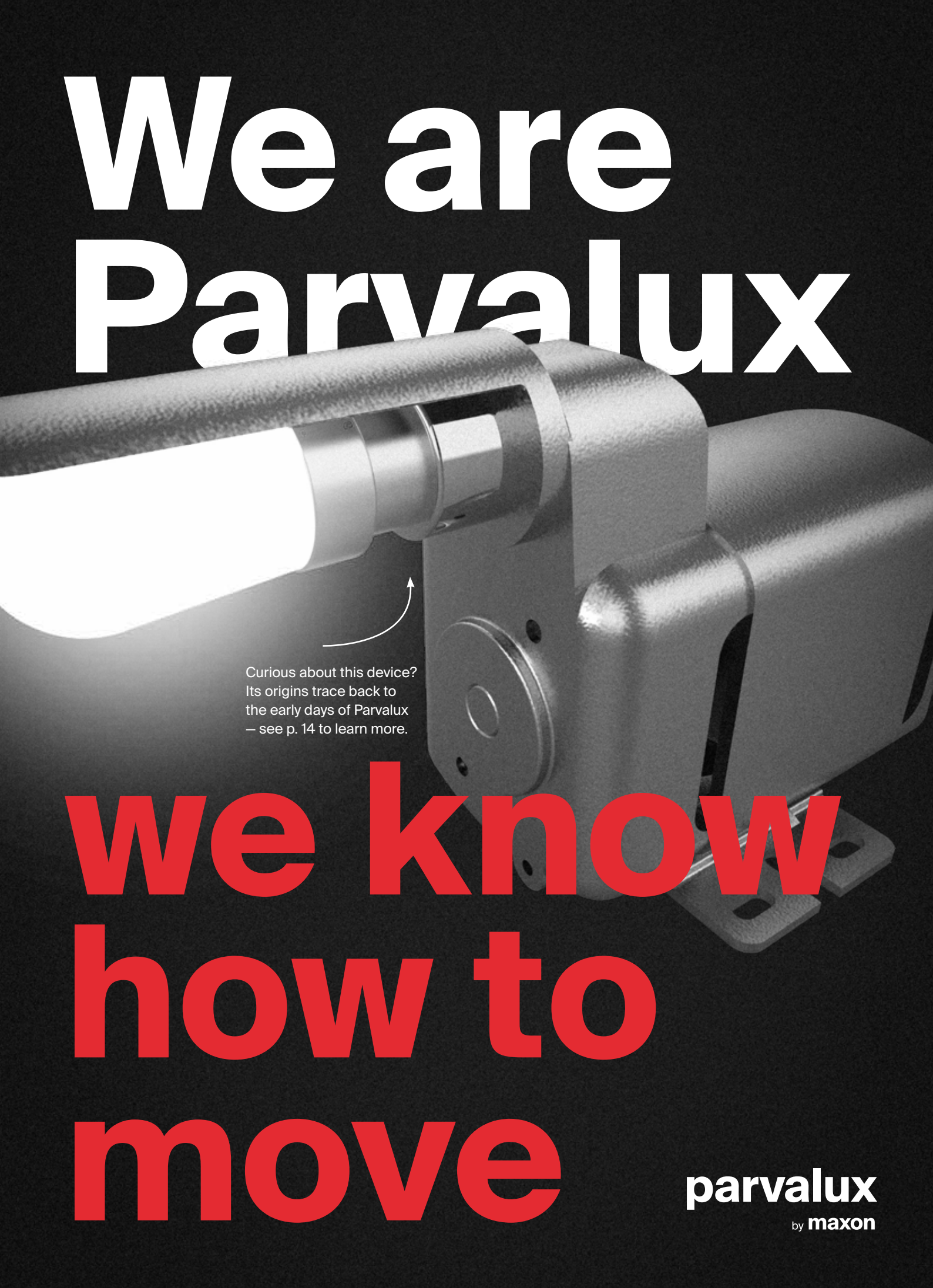
We are Parvalux



Curious about this device? Its origins trace back to the early days of Parvalux — see p. 14 to learn more.

we know how to move

parvalux
by maxon

Where our products come to life: the shop floor of the Parvalux factory. Picture: James Aitken

Imprint

The Parvalux Magazine is a publication by Parvalux Electric Motors Ltd, created in collaboration between the maxon Newsroom – part of the Corporate Marketing and Innovation team – and the Parvalux marketing team.

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Foreword

Movement is all around us – often unnoticed, yet essential. Boarding a train? That door doesn't open by magic. At the bowling alley? The pins don't reset themselves. Behind it all: motors and gearboxes. That's where Parvalux comes in.

With nearly 80 years of experience, we know how to move things – quietly, reliably, and efficiently. Our drive solutions power countless applications, often hidden but always vital.

This magazine offers a glimpse behind the scenes: the people, the products, and the ideas that shape Parvalux. We'll also take you through our history and introduce you to the beautiful region we call home.

We hope you enjoy the read. And if you ever need to move something – we're here to help.

Paul Bascombe and Tim Moul are the Joint Managing Directors of Parvalux. We met Paul for an interview.

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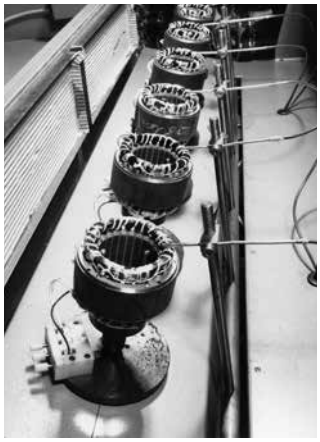

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Interview

Paul Bascombe

“Made in Britain is seen as a sign of quality”

As one of the two Joint Managing Directors of Parvalux, **Paul Bascombe,** together with his team, is shaping the future of the company. In this interview, he discusses Parvalux’s evolution and the growing importance of tailored solutions.

T| Sven Gallinelli James Aitken

Paul, let’s start with a personal question: How did you end up at Parvalux?
Well, it was actually a bit of a coincidence. At the time, I was working in the aerospace sector. My partner was living in Bournemouth, and I was planning to move back there. So I started looking for new opportunities, and I came across a position at Parvalux in engineering. It seemed like an attractive option, both in terms of the role and the location. The desire to move back to the South of England was the main driver for that career change.

You studied mechanical engineering, correct?
Yes, my background is in mechanical engineering – both from university and from previous employment.

When you started your career, did you ever imagine you’d one day be Managing Director of a company like Parvalux in the drive technology sector?
No, honestly, I didn’t. Besides my background in mechanical engineering, I also completed an MBA at Bournemouth University early in my career – which wasn’t necessarily part of the plan. I always had aspirations to move into management roles, but being the Managing Director of a company like Parvalux wasn’t really on my radar in the early days. Coming out of university, I actually saw myself more in the automotive sector.

How would you describe Parvalux as a company today?
Well, speaking about the current situation – after the acquisition by maxon – I’d say that Parvalux has family values at its core. It’s a rewarding and challenging environment to work in, but it’s also a fair environment. maxon has challenged Parvalux to grow and develop as an organisation, and that’s really exciting to be part of. Overall, it’s a motivational place to work.

You’ve been with the company for almost 15 years. That’s a long time! How has the company changed in those years?
A lot has changed. When I started at Parvalux – before the maxon acquisition – the business was quite different. It was more focused on profitability and short-term results, with very little investment back into the company. Projects were only pursued if they were directly funded by customers. Since maxon acquired Parvalux, there’s a much clearer long-term strategy. They’ve invested in new products, projects, and manufacturing facilities. It’s a completely different mindset – moving from a 12-month financial view to a multi-year strategic plan.

Would you say Parvalux is a differ-

The management team: Tim Moul and Paul Bascombe
Parvalux is led by two Joint Managing Directors: Tim Moul (pictured) and Paul Bascombe.

Tim joined Parvalux in 2023 as Head of Operations. In July 2024, Tim became Joint Managing Director, leading production and operational departments of the business. Tim has an MSc in Manufacturing Systems Engineering, and years of experience in manufacturing, holding senior roles in industries such as Aerospace, Automotive, Defence and Nuclear.

Paul, who has been with Parvalux for over 15 years, leads the commercial side of the business. His responsibilities include managing the sales teams and overseeing the delivery of the company's growth strategy.

ent company today? Or are there core aspects that have stayed the same?
Some things have remained the same – Parvalux is still a British motor manufacturer serving its core markets. But we've definitely become more customer-centric. That's a major cultural shift. We've followed maxon's customer-focused approach, and it's changed the way we handle projects and relationships. Previously, it wasn't that we ignored customers, but the focus wasn't as strong as it is now.

maxon acquired Parvalux in 2018. Do you remember when you first heard the rumours about this acquisition?
Yes, I do. I had to sign a non-disclosure agreement during the process, as several companies were assessing Parvalux at the time. When I found out it was the Swiss-based company maxon, I was excited. maxon had a reputation for high-performance, power-dense, high-quality products, so the idea of Parvalux being acquired by a motor manufacturer – rather than a private equity firm or a different industry – was a relief.

Mergers can bring uncertainty – restructuring, new leadership, a shift in company culture. Were you ever worried when you heard about the acquisition?
I wasn't scared. In fact, I think most of us who were involved in the process felt optimistic when we heard that maxon was the potential buyer. It felt like a great opportunity for Parvalux. That gave me confidence that Parvalux would continue to grow in the right direction.

Let's talk about products and innovation. You mentioned that maxon has given Parvalux a longer-term perspective. What are your goals for the company in the coming years?

For me, there are three key priorities. First, we need to standardise our existing product portfolio – especially our brushed DC motors, AC motors, and gearboxes. That's a major project for us right now. Second, we are extending our range of EC (electronically commutated) motors. That's something we don't have today, and we're working closely with the team in Switzerland to build that portfolio. And third, there are opportunities to integrate maxon products into the Parvalux range to offer complete solutions – whether that's gearheads, motors, encoders, or controllers. There's a lot of potential in combining Parvalux gearboxes with maxon motors. These combinations can offer a real technical advantage.

Is it important to the business to provide full integrated systems rather than just components?
Indeed. Our customers request more and more integrated solutions. That will become a major business.

You mentioned earlier the idea of combining Parvalux and maxon products. Do you see that as a major area of opportunity, or more as a niche for specific applications?
I think there's definitely significant potential there. If you look at our sales at Parvalux, the majority is right-angled. For maxon, I believe it's almost the opposite – most of their products are in-line. So there's a natural fit in combining our strengths. For example, we've selected three planetary gearboxes that we believe can be competitive in the markets we serve. I expect our in-line sales to grow over the next three to four years as a result of this collaboration. On the other side, there's also the opportunity to integrate maxon motors onto Parvalux gearboxes. One of the really exciting opportunities I also see is using maxon frameless motors, integrated directly into Parvalux gearboxes. That could offer a truly unique selling point for us and open up new market segments.

> "We've definitely seen a rise in requests for customer-specific solutions – and I think that's something Parvalux is really good at."
>
> **Paul Bascombe**

Innovation plays a vital part for Parvalux and for maxon. However, the principle of the electric motor has been around for over 200 years – it's based on a fixed physical concept. Do you think there's still room for innovation in that field?
I think most of the innovation we'll see at Parvalux will come from system innovation rather than the motor itself. The basic physics of the electric motor is well established. Unless there are breakthroughs in materials science, we're not likely to see radical changes in the core design. That said, maxon has really pushed the boundaries in terms of power density, and there's a lot we can still learn from that. Overall, I believe the real opportunities for Parvalux lie in system-level innovation – combining motors with gearboxes,

electronics, and controllers to offer complete solutions – and also in gearbox innovation itself. That's where I see the future for us.

Speaking about innovation: I heard that customised products and individual customer projects are also a field with remarkable growth for Parvalux.
We've definitely seen a rise in requests for customer-specific solutions – and I think that's something Parvalux is really good at. I see that as a very positive sign for our future. The more we win these kinds of projects, the stronger our position in the market becomes. It's a clear indicator that we're on the right track: Focusing on areas where we can deliver real value and differentiation for our customers. So yes, I see the increase in custom projects as a very encouraging development, and I believe it's something we should continue to build on.

Parvalux has become more customer-centric, as you said. Can you give an example of what that means in practice?
A big change has been ensuring that all departments – not just sales and marketing – are focused on the customer. Production, planning, engineering: everyone now thinks about the impact on the customer, not just what's easiest for us. Another example is that we don't change agreements or pricing mid-project anymore. That builds trust, which wasn't always the case before the acquisition. Trust is essential, and it's something we've worked hard to improve.

Regarding your core market, how would you position Parvalux compared to the competition?
Parvalux operates in a more competitive space than maxon. But like at maxon, quality is a given for us – we can't compromise there. Price plays a role in some markets, but it's not always the most important factor. What really sets us apart is our ability to respond quickly, provide technical support, and communicate clearly with customers. That service mindset is crucial for us.

Does British manufacturing play a role in your brand identity?
Being a UK manufacturer is definitely a selling point, especially in our home market. Many customers in the UK value having a local partner. In certain markets, like the US or India, "Made in Britain" is seen as a sign of quality.

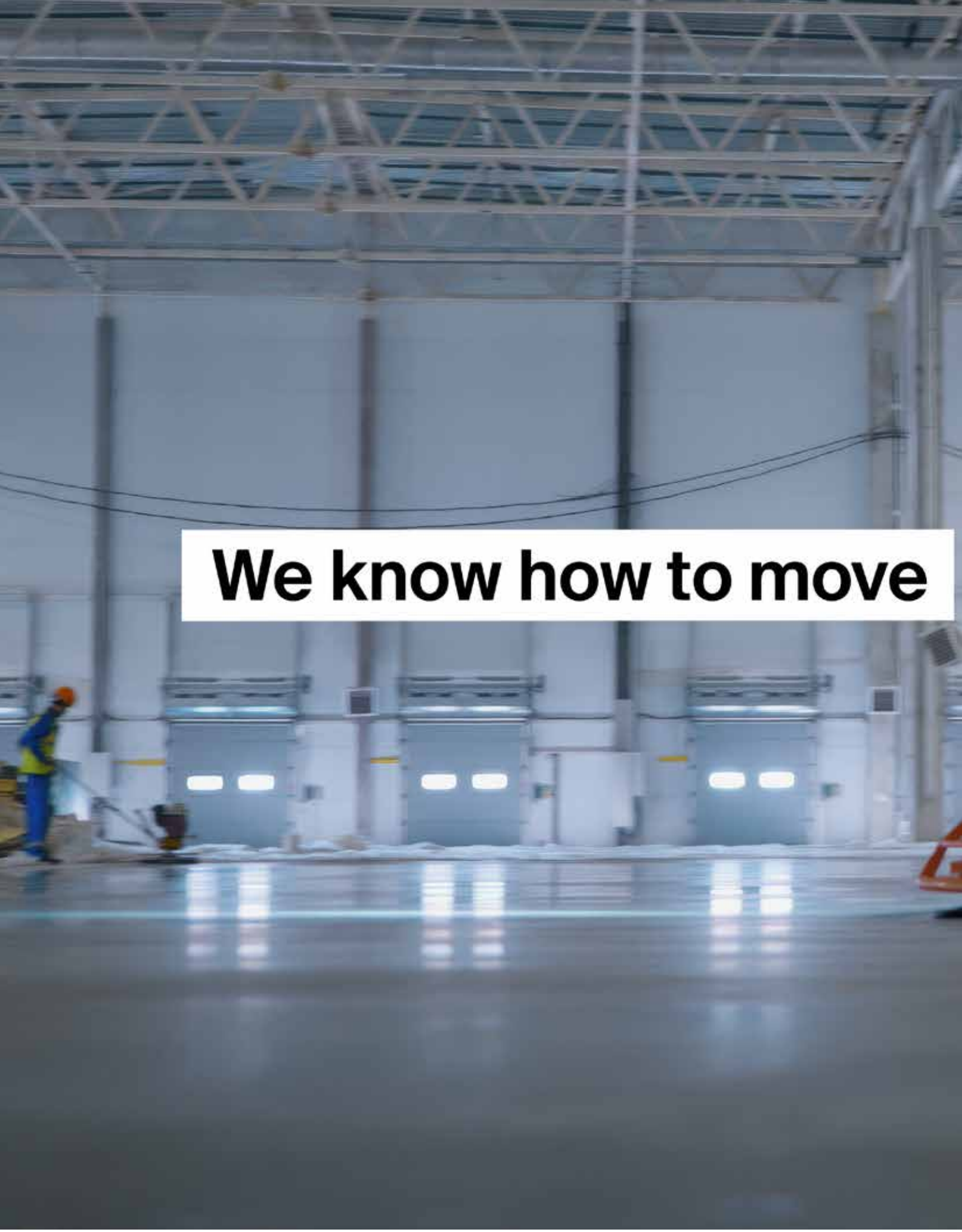
Let's talk about sustainability. I heard Parvalux has one of the largest photovoltaic systems in southern England – true?
Yes, that's correct–in the local area, at least. We have recently achieved ISO 14001 certification which we are very proud of, and we're looking at

It's the people that define the company, this is also true for Parvalux. People such as Jean Loungouedi who works as a setter (left page), Bianca Ivanov who is a Trainer (top) or Sylwia Konieczna, who is a Production Operative (right) – to name just a few of the 210 employees.

how we can make our supply chain more sustainable. For example, we've adjusted materials for improved compliance, and we're working on improving packaging, exploring returnable solutions for some of our larger customers.

And beyond sustainability, Parvalux also seems quite connected to the local community.
Absolutely. We have a "Charity of the Year" chosen by staff vote, and we support that through fundraising activities, raffles, and company contributions. We also engage with local schools, colleges, and universities to promote science, technology, engineering, and mathematics, to inspire the next generation of engineers, which I think has really helped build our presence in the community.

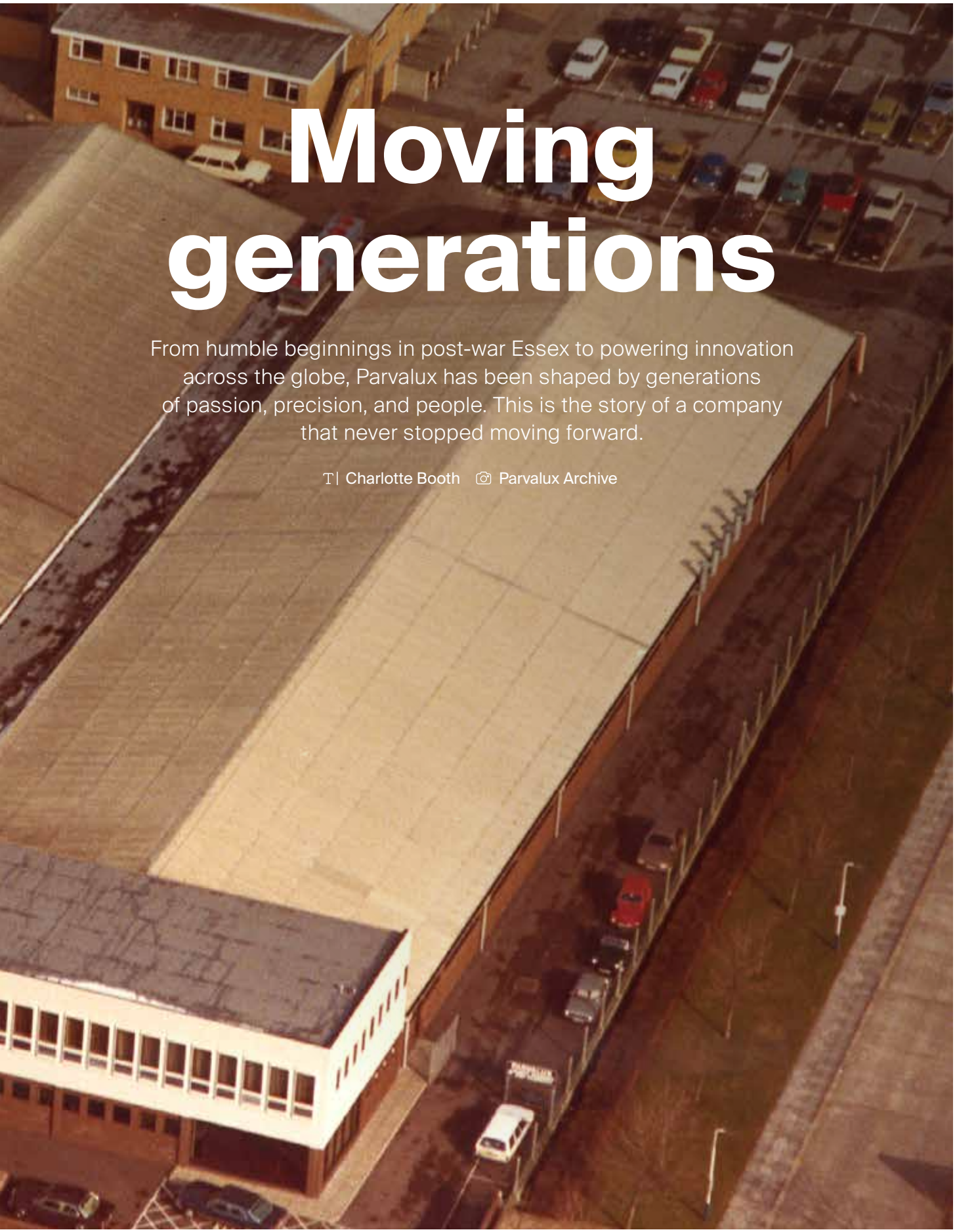
Last question: Do you have a favourite Parvalux product?
Yes! I'm a big fan of the motors we supply for cricket ball machines, used by professional teams like the England national team. I recently visited the customer, and it was fascinating to see how precise and powerful the machines are. It's a very British application too – cricket is such a quintessentially British sport!


We know how to move


cleaning equipment
parvalux
by maxon

The Parvalux Heritage

Former Parvalux production site on Wallisdown Road in Bournemouth. Archive photo



Moving generations

From humble beginnings in post-war Essex to powering innovation across the globe, Parvalux has been shaped by generations of passion, precision, and people. This is the story of a company that never stopped moving forward.

T| Charlotte Booth Parvalux Archive

In 2025 Parvalux Electric Motors Ltd. will have been in business for an incredible 78 years, having been founded in 1947 by Leslie Clark in Romford, Essex. This emerging business provided repairs and motor rewinds. Ten years later, the business had expanded; now designing and manufacturing complete geared motor units for industrial applications which necessitated a relocation of premises to Bournemouth on the UK's southern Jurassic Coast. They stayed in the Parkstone premises until 1961 when they moved to Wallisdown Road.

This family-run business thrived and continued to expand, and in the 1980s the company started installing more production machinery. In 1978, at the age of 19, Kevin Gander had just started working for Parvalux as a Production Operative. In 2025, he is approaching 47 years with the company. He remembers starting work at the time of the changes: "It was family run. I worked with Mr Clark and his grandson, Steven. It expanded not long after I started. Technology has changed a lot since the 1980s, and back then it was quite manual and weighty. Nothing compared to what we have today. It's been really interesting seeing the company evolve."

In 1995, the CNC manufacturing equipment was upgraded, which enabled Parvalux to keep up with industry demand. This growth continued, and many members of staff have very fond memories of Leslie, the founder.

Kevin Gander said: "He knew how to get the best out of people. It's not what he did but how he did it. He respected us and we respected him. It was like one big happy family. If you did something wrong prepare for

What the name "Parvalux" means

To explain the name, we have to dive into Latin: "Parva" means "small" and "lux" means "light". The name might also be inspired by one of the very first products in the company's portfolio: A small light for sewing machines (pictured).

Skilled people were always a critical factor, then and now.

Solidly built machines: An automatic stator impregnation plant from the old times.

it, but if you were right he'd back you to the hilt."

Lee Weston, a Customer Support Engineer, who has been with Parvalux for 40 years, remembers how hands-on Leslie was within the business. Lee started working at Parvalux, not long out of school: "I started on the factory floor – winding section, gearbox section and then I had an opportunity to take over the spares department, and I did that for seven years. One day the owner, Mr Clark came down to me on a Friday morning, and asked if I had a shirt and tie. I replied, 'I think so Mr Clark' and he said 'put it on, and have a shave, because you are upstairs from Monday.' I have been in sales ever since. I'm the longest serving person in sales in the company's history."

Parvalux enters the digital age

Steven Clark took over as Chief Executive from his grandfather Leslie in 2003, and brought Parvalux into the digital age by introducing a CAD system and ensuring everything was fully networked. This digitalisation continued when in 2008 Justin Levine took the role as Managing Director and at the time said: "Parvalux was seen by many people as being old fashioned, with a range of

1947

Leslie Clark founds Parvalux; the company provides repairs and motor rewinds

1957

Parvalux expands into designing and manufacturing geared motor units; relocation to Bournemouth

1980

Renewal of production machinery in the 1980ies

1990

Expansion and modernisation of the production in the 1990s

2008

Parvalux acquires Essex-based EMD Drive Systems Ltd and doubles the annual turnover

2003

Steve Clark takes over as CEO from his grandfather Leslie

The former Parvalux Factory 1 at Wallisdown Road in Bournemouth.

motors and gearboxes that were very dependable but certainly not 'cutting -edge'. None of Europe's larger manufacturers of motors considered Parvalux to be a serious competitor, but I could see that the company had the potential to become a shining star. In 10 years' time I want to have turned Parvalux into something really special."

He recognised that Parvalux had hundreds of loyal customers, and very few product returns which was a testament to their quality, as well as the 'family-run business' service of configuring off-the-shelf products to suit the needs of customers. Or fully customising or designing new products from scratch where this was the best option – something that larger, international businesses were struggling to do. The business model also meant Parvalux could provide single units or thousands of units dependent on requirements, allowing them to serve a wide demographic of customers. This flexibility was a core strength of the company.

Acquiring EMD

Part of the growth trajectory enabled Parvalux to acquire Essex-based EMD Drive Systems Ltd., in 2008. It wasn't long before the EMD office was closed and all the staff relocated to the Bournemouth factory. The acquisition and integration of EMD nearly doubled the company's turnover and made Parvalux the UK's largest privately

2017

Introduction of high-volume production facilities to keep up with growing demand

2018

The Clark Group sells Parvalux to Swiss drive manufacturer maxon

2023

Parvalux leaves the old premises and moves to Parvalux House in Poole

2027

Parvalux will celebrate its 80th anniversary

owned manufacturer of less than 1 kW electric motors and gearboxes.

Barry Moules is one of the few remaining staff who originally worked for EMD and then moved to Parvalux after the acquisition. He has been in continuous employment with the group for the past 48 years; first with EMD, then Parvalux. He started at EMD when he was 16 years old and remembers: "They made similar products to Parvalux and the owner of EMD was at school with old Mr Clark and they were looking for investors. I've been working on the machines ever since. In 2008 they initially decided to keep both sites running until the UK went into recession – and then they had to close EMD and moved all staff to the Parvalux office. I was kept on in a similar role with relocation costs covered and a good salary, which was really appreciated."

The merger helped Parvalux to expand and to offer products in higher quantities than previously possible, as well as being able to introduce a new product development and design function (PDD) and an increased range of AC/DC electric motors and gearboxes. This expanded the range of potential industries and firmed up its role as a global player.

2013 saw another overhaul of the machinery in the Bournemouth factory with new machining and gear-cutting capabilities and in 2017 a high-volume production facility was introduced, enabling them to

meet product-specific, large-scale production line demands.

Joining maxon Group

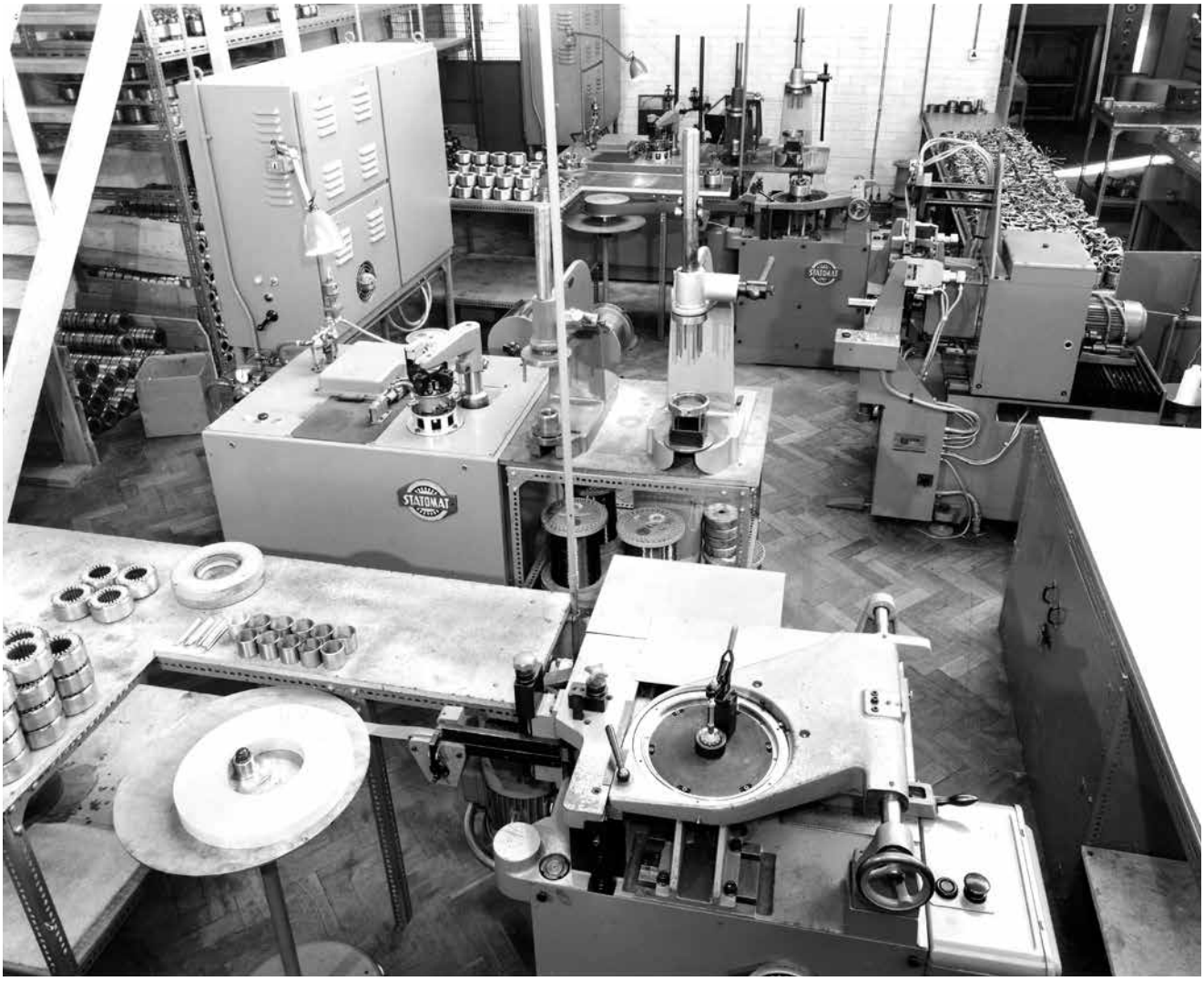
The Clark Group sold Parvalux to the Swiss maxon Group, the specialist for mechatronic drive systems, in 2018, after more than seventy years under family ownership. At the time Parvalux had 185 employees over three production sites in Bournemouth, generated £23 million annually and exported 40% of their products globally.

Nick Spetch, the Managing Director for Parvalux at the time of the sale, said: "We're delighted with the sale to maxon Motor, who have an established pedigree and portfolio in geared motor manufacture worldwide. This market-leading mind-set will help take the business to the next level. The success of Parvalux has been built over an exciting period of growth for the business, particularly over the last 10 years, and we are all very proud of our long-established heritage in the area. Our commitment to delivering outstanding service to all our customers, coupled with the new owners' investment, will help Parvalux grow into more countries and reach new markets."

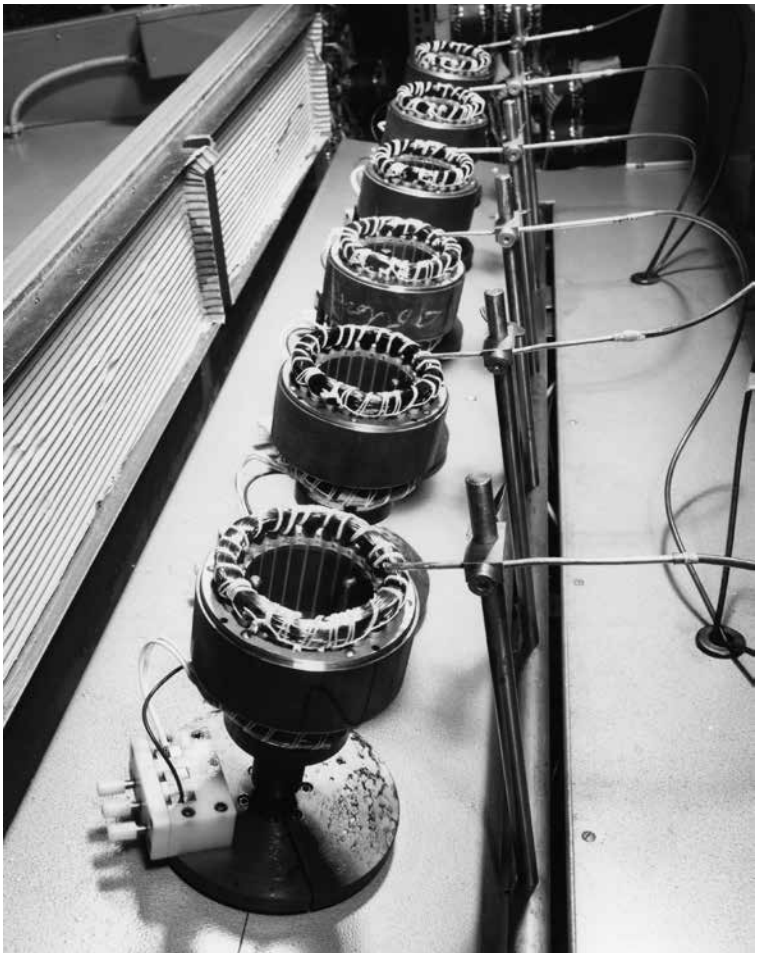
This acquisition has ensured that Parvalux has continued to grow and has opened up opportunities for new customers worldwide to access an unrivalled range of DC geared motors and, more importantly, expertise and know how.

Lee Weston considers the impact maxon has had on the business since the merger. "The ways of working are different now, and technology has been a major driver in that. We have moved from a small family-run business to a more internationally connected family-led business which has a more corporate outlook. Technology has come in very fast, as before we could only afford a certain amount of new tech, whereas maxon could afford more, meaning there was a sudden influx and a quick elevation of the business."

In 2025 the business is bigger than ever, with Parvalux motors and gear



The old Parvalux premises were quite dense. But it had a feature of which many veteran employees still rave about: A parquet floor.



Motor windings – a craft in their own right.

maxon and Parvalux

In 2018, a new chapter began for Parvalux: the company became part of the Swiss drive specialist maxon. Like Parvalux, maxon boasts a rich history – founded in 1961, it remains family-owned by the Braun family to this day. Renowned for its high-precision drive systems, maxon's technology has even been used by NASA in its Mars missions. Today, maxon is active in a wide range of markets, including medical technology, industrial automation, aerospace, and mobility solutions. The company's increasing focus on system solutions made the acquisition of Parvalux a strategic step to broaden its portfolio. Both companies continue to explore synergies and opportunities to combine their technologies – bringing together the best of both worlds.

boxes found on every continent on earth. No mean feat for a company which started doing repairs in Romford, Essex.

New premises

maxon were keen to invest in the future of Parvalux and set about acquiring the site for the development of a new, state-of-the-art factory. In 2023 Parvalux moved to their new premises, Parvalux House, in Poole which accommodates staff, machinery and materials from all three previous premises.

This HQ and manufacturing hub is a purpose-built 14,000 square metre factory and office with the manufacturing and administrative function all operating under one roof. The work flow is more efficient, with all staff and all manufacturing processes in the same building. There is no longer wasted time travelling between sites to access different parts of the process.

This and further efficiencies were made possible with a £3 million investment in new production equipment including state of the art CNC machining equipment, armature manufacturing and processing machinery. Innovations include a material delivery system comprising two train tugs with six tilting trolleys each, scheduled to deliver parts to production lines every 20 minutes. This delivery system has eliminated some of the manual labour associated with the task previously, enabling the staff's skills to be employed elsewhere. There is also a new app developed by the logistics department. This means staff know where stock is located and how much is available which speeds up the picking process and reduces over-ordering.

Sustainability is key, and there are more than 1,500 solar panels which have reduced CO_2 emissions by 343,857 kilograms annually as well as providing power for the building. Additionally, there are composite panels that have great thermal efficiency to keep a neutral temperature throughout the year and works towards the building achieving an energy rating of -5 A+ which means the building is five points better than carbon neutral or net zero.

At the grand opening, Vikki Slade, at the time the Bournemouth, Christchurch and Poole council leader, said: "To have such a high-quality advanced manufacturing and engineering business in our local community with such long and illustrious heritage at the vanguard

of industry and with such good environmental credentials is wonderful."

The staff who have moved to the new building all appreciate the contrast between the old and the new, as Lee Weston says: "The old place was dated, it had been there for 10 years before I started in 1985, and no money had been put into it – this has gone to a modern, open space which is custom designed. We've been taken out of a rusty old can and put into a nice sandwich box! We've literally been taken out of something that hadn't been looked after into something beautiful."

This is echoed by Martin Goodship, Senior Applications Engineer, who said the old and the new sites are "chalk and cheese". He continues: "When I first started working at Parvalux, the factory wasn't that old and they'd already doubled the footprint of the building. I was one of the first to move in downstairs in the new building and I was like 'wow!'. Everything was beautiful, new, pristine, fast, and created just for employees. It is well laid out. We had come from a site at the end of its life and now we're in this great new building. It has made my job easier with the new tech, because the way we assemble things on the shop floor now is much more ergonomic and efficient."

From 1947 to today's modern operations, machinery has always played a crucial role.

British Craftsmanship

Although now a global company and Swiss-owned, many of the veteran staff believe Parvalux has maintained its British identity and not just because it only has factories within the United Kingdom. As Lee Weston emphasises: "Parvalux doesn't have another manufacturing plant anywhere else in the world. Everything is assembled in Poole. So if it has a Parvalux label on it you know it is British-made."

When asked why being British-made was important, Lee Weston added: "It's important as the skillset we have here has been built up slowly over the years." Martin Goodship expands on this: "When we manufacture our motors they are made with meticulous precision, we do work to microns and tolerances like that and everything gets put together so precisely. I would say 95% of the products are infallible – I would like to say even bomb proof."

And Martin goes on: "You could put our motors into something and they will work, work, work, and to me that typifies our standing as a heritage engineering firm. If you go back to the 40s, 50s, and 60s the mentality was put into the design stages which we still use today and that's what makes us British."

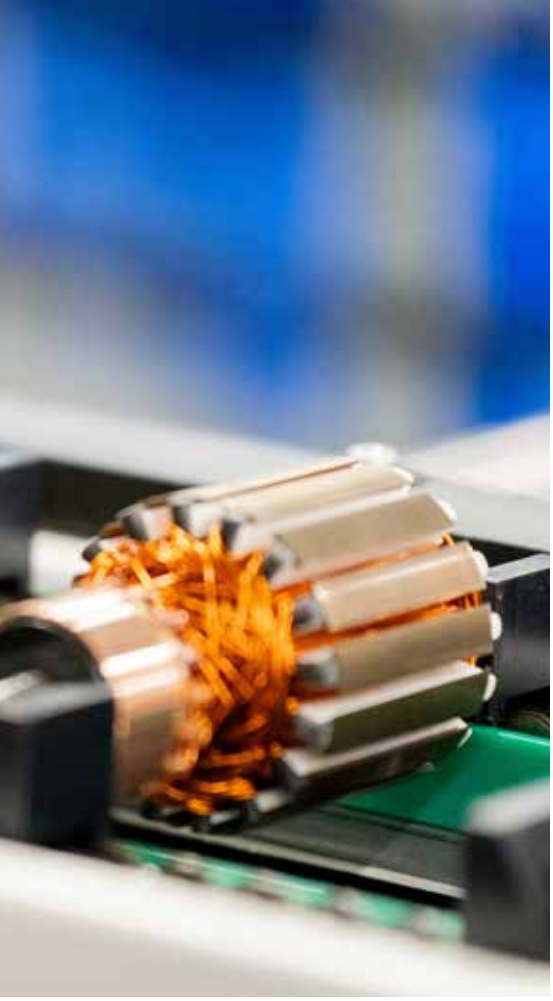
Rebecca Whitmarsh, Production Operative, adds that there is a personal pride with working for a British firm. "Not only do we give jobs to the local area which boosts the economy, but it's nice to have British made stuff to be proud of which is used all over the world. I've made a few thousand motors over the years."

The future of Parvalux

Parvalux has gone through a lot of changes in the past 78 years, and needless to say it is likely to keep on evolving over the next decades.

But with all of those changes under its belt, what will the future hold for Parvalux? Paul Bascombe, Joint Managing Director, says: "Since joining the maxon Group, Parvalux has become an essential pillar in maxon's future strategy and will provide an essential part of its global revenue. Parvalux's portfolio complements maxon's in some exciting ways, bringing together product combinations to serve markets that were not possible before. This presents a lot of potential in combining both Parvalux and maxon worlds."

Exciting new product developments are expected to play a key role in Parvalux's future as it continues to innovate, bringing increased efficiency and performance to its products. This innovation is partly made



possible by the new state-of-the-art facility that is Parvalux House.

Expansion and growth are close to the hearts of both Parvalux and maxon if the new building is anything to go by. Integral to realising maxon's future strategy was the build of this new production facility, representing maxon's commitment towards the future of Parvalux.

Tim Moul, Joint Managing Director, says: "The investment of maxon to support the creation of the new facility shows maxon's commitment to Parvalux. From the start, planning for growth was designed in. The overall building design can facilitate modular extensions with the potential of doubling our size. This will support decades of future expansion for Parvalux within the Technology Road location, demonstrating our combined long-term commitment to the area."

So, for the future, as they say, watch this space.

"Acquiring Parvalux made perfect sense to maxon"

maxon Group CEO **Eugen Elmiger** and Chairman and main shareholder **Karl-Walter Braun** discuss Parvalux's role within the maxon world.

Eugen Elmiger (left) and Karl-Walter Braun (right).

What was the main reason for maxon to acquire Parvalux in 2018?
Eugen Elmiger: maxon and Parvalux are a natural fit. Their product range complements ours perfectly – especially in the area of gearmotors – allowing us to offer more complete drive solutions across a wider range of applications. This acqusition made perfect sense.
Karl-Walter Braun: The real beneficiaries are our customers. From tiny precision motors to more robust drive systems, we can now provide tailored solutions for virtually any need – combining maxon products with Parvalux gearheads.

In what way has Parvalux gained from being part of the maxon Group?
Eugen Elmiger: First and foremost, through our long-term mindset and shared values. As a family-owned company, maxon is focused on sustainable growth – not short-term gains. From day one, we had a clear direction for Parvalux and the determination to invest in its future.
Karl-Walter Braun: One of our early priorities was to build a modern production facility – a major and necessary investment. Today, the "Parvalux House" stands as a symbol of that commitment. Another key step was opening access to maxon's global sales network. Almost overnight, Parvalux gained visibility in international markets and reached new customers. Of course, there's still work ahead to fully realise this potential – but we're on the right track.

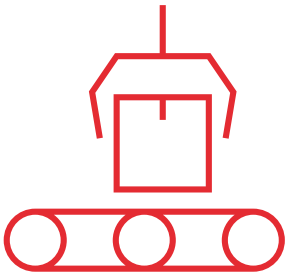
Has Parvalux changed since the acquisition?
Eugen Elmiger: At its core, no – Parvalux remains true to itself. A company is defined by its people, and the Parvalux team continues to show the same spirit: pragmatic, hands-on, forward-thinking. What has changed are the resources, the opportunities – and a broader cultural exchange that strengthens the maxon family.
Karl-Walter Braun: The former facilities were quite modest, at least from a Swiss perspective. The new building wasn't just about better production capabilities. It sent a message: we didn't acquire Parvalux to absorb it, but to grow alongside it – as equals.

Products from Parvalux

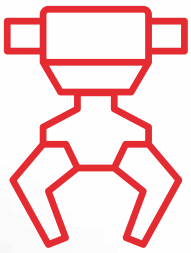
All products and the Parvalux catalogue are available here:

www.parvalux.com

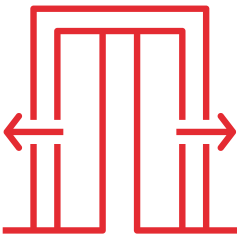
Agriculture



Materials handling



Industrial automation

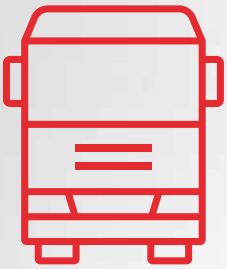


Building automation

Maximum power

As a leading manufacturer of electric drives and geared motors, Parvalux offers a wide range of **standard motors**, a rapid turnaround **modular range,** and **custom drive solutions** for customer-specific requirements. An overview.

T| Zoe Arnold



Transport and logistics

Mobility solutions

Medical devices

Leisure

Proven worldwide

Nearly 80 years of experience in the development and design of drive solutions have made Parvalux a trusted partner worldwide. Manufacturers across a wide range of industries – from industrial automation and medical technology to agriculture – benefit from the extensive product range of robust and reliable gearboxes and motors, along with perfectly matched accessories.

When selecting a motor and gearbox, it is important to choose the most effective product for the intended application. Among other things, it is necessary to weigh up whether speed or torque is more important for the specific use case. The available installation space must also be taken into account.

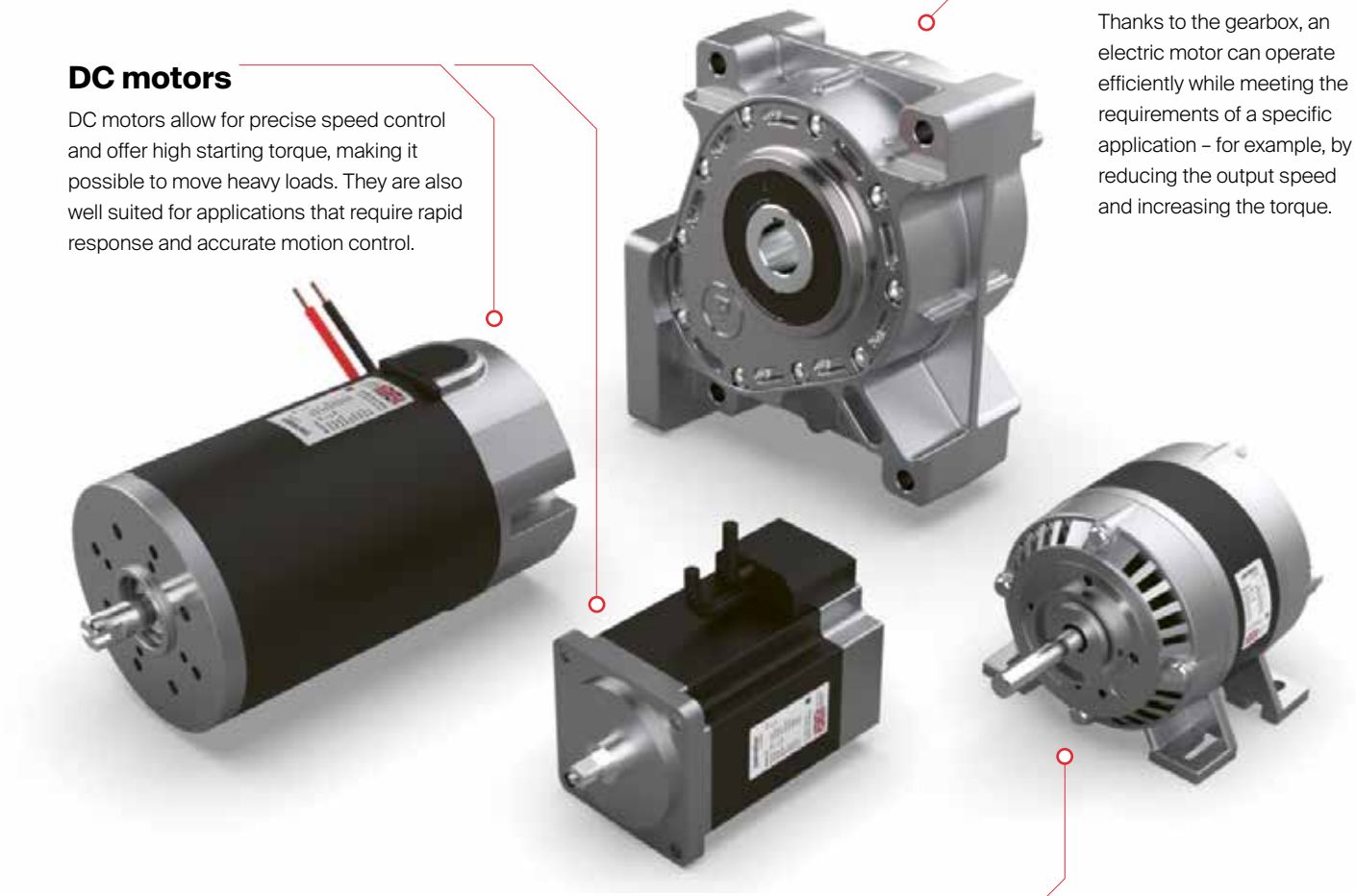
Parvalux's proven standard products range from DC and AC motors to right-angle, inline and planetary gearboxes, as well as accessories such as encoders, controllers and brakes. And for specific requirements, components can always be adapted and expanded accordingly.

DC motors

DC motors allow for precise speed control and offer high starting torque, making it possible to move heavy loads. They are also well suited for applications that require rapid response and accurate motion control.

Gearboxes

Thanks to the gearbox, an electric motor can operate efficiently while meeting the requirements of a specific application – for example, by reducing the output speed and increasing the torque.



AC motors

AC motors are considered extremely durable, as they do not have brushes that can wear out easily and require regular maintenance. Additional advantages include low power consumption at start-up and controlled acceleration.

Standard motors

BLDC motors

Maintenance-free and therefore ideal for so-called “fit and forget” applications.

PMDC motors

Reliable drive with high starting torque for a powerful overall solution.

EPM motors

Thanks to the wide range of speeds, power ratings and torque levels, it is ideal for a broad variety of applications.

AC motors

Single- and three-phase units in aluminium housings. Available as standalone motors or as geared units.

AC/DC motors

The range of AC and DC motors includes series-wound and shunt-wound motors.

Standard gearbox range

Right-angle gearboxes

Particularly compact in design, right-angle gearboxes help minimise the overall weight of a drive solution.

Inline gearboxes

With a wide range of options, inline gearboxes can be precisely tailored to individual requirements.

Planetary gearboxes

The three available models offer torque levels of up to 37.5 Nm in intermittent operation.

Standard accessories

Encoder

The incremental encoder provides additional feedback up to 2048 PPR.

Controller

The controller developed in collaboration with maxon enables precise control of PMDC and BLDC motors.

Brakes

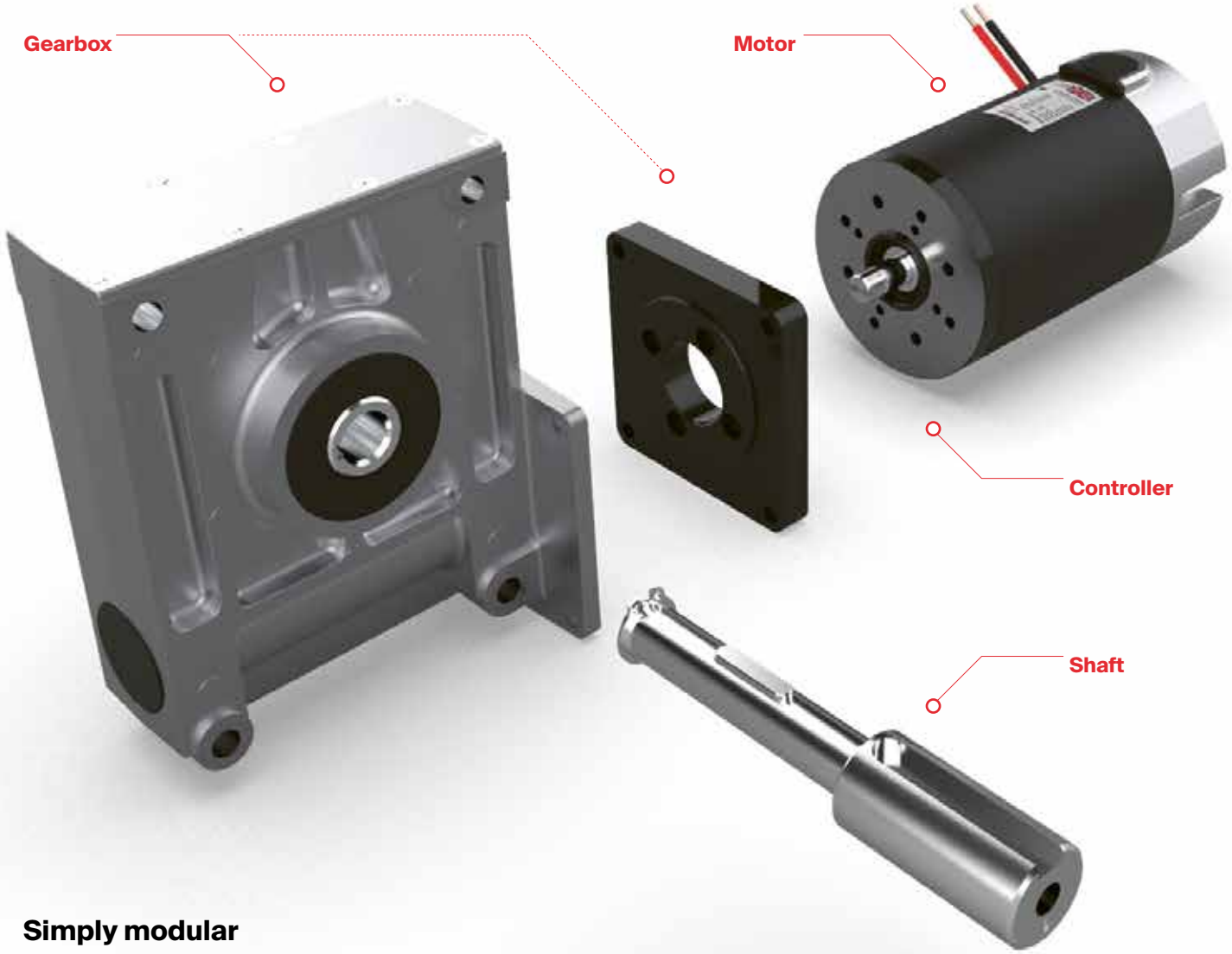
The intelligently designed 1.5 Nm brake can be perfectly combined with the encoder.

All standard products at a glance

A modular toolkit

Quick to configure, quick to build, quick to deliver – that's the promise of the modular Parvalux range. Every situation comes with its own unique characteristics as well as specific requirements, whether in building automation, storage and logistics, or in supporting people with limited mobility.

With brushed and brushless motors, a constantly expanding selection of gearboxes, and a range of accessories such as encoders, brakes, control elements and shaft extension kits, a perfectly tailored individual solution can be assembled. Thanks to the modular system and easy-to-use online configurator, it takes just a few steps from concept to production.



Simply modular

A carefully curated selection of motors, gearboxes and additional accessories that can be combined as required. Thanks to the modular system, even customised solutions of up to ten units can be made available in the shortest possible time.

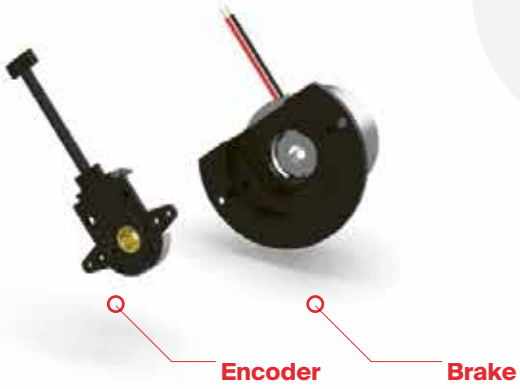
Ready, steady, go!

The configuration consists of three simple steps. Based on voltage, speed, and torque, a motor, a gearbox, or a recommended geared motor combination is selected first. In the final step, this configuration is expanded with specific elements such as an encoder, brake, and controller.

1
Determine output power and torque

2
Refine and select a solution

3
Add any accessories and finalise order



Choosing made easy

Finding the right solution among countless possibilities can be a challenge. A selection of proven combinations helps you reach your goal quickly and with confidence.

Buildings
_ Access control
_ Automatic door systems

Logistics facilities
_ Automated guided vehicles (AGVs)
_ Automated storage and retrieval systems (ASRS)
_ Conveyor systems
_ Warehouse tugs

Mobility
_ Patient lifts
_ Stairlifts
_ Electric wheelchairs
_ Wheelchair lifts

Guide through the modular matrix

Any questions? The downloadable guide offers helpful information about Parvalux's modular range and provides an overview of the entire product portfolio.

Download the guide here

From the ground up

Customised solutions are required when neither standard products nor modular configurations meet exactly the requirements of the specific application. In such cases, Parvalux's Innovation Team, with its experienced designer and engineers can adapt an existing product or develop an entirely new solution and prototype tailored precisely to the desired specifications.

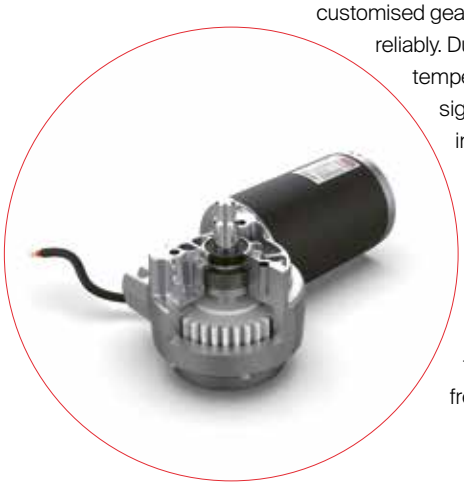
Perhaps a gearbox needs to fit into a unique spatial environment or withstand extreme weather conditions; perhaps the torque must be increased or the speed finely tuned.

There are many examples of customised drive solutions – from windscreen wipers and patient lifts in ambulances to manoeuvring systems for caravans. They all demonstrate how experience, expertise and personal commitment lead to tailor-made innovations.

VIPER3

Wiper systems

Even under the harshest conditions, the customised gearbox operates reliably. Dust, liquids, extreme temperatures, and significant fluctuations in humidity pose no problem. This makes the windscreen wiper particularly suitable for rail transport, maritime applications, logistics, and freight forwarding.



Specifically developed for large wiper systems

GB14

Stairlifts

A gearbox specifically developed for the stairlift market – highly efficient with a sleek design. It is suitable for all high-torque applications. High-performance synthetic oil maximises effectiveness and reduces wear.

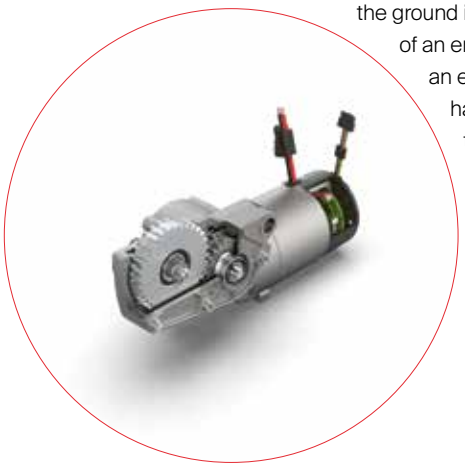
Additional accessories for even greater safety

Explore our customised solutions

GB66

Ambulance

To safely and smoothly lift patients from the ground into the rear section of an emergency vehicle, an exposed gearbox has been developed that integrates seamlessly into the stretcher frame. The integrated electronics ensure precise position control.



Reliable operation even at maximum capacity

GB54

Lifting gear solution

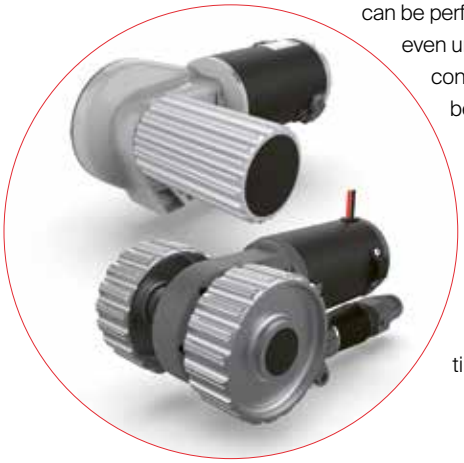
The EPM50-GB54 series offers high torque in a compact design, making it suitable for a wide range of hoisting and platform lift applications. The gearboxes are available in various versions, such as for low-noise operation, high or low voltage.

Adaptable for heavy-duty and domestic applications

GB50

Caravan mover

With the custom-built gearbox, a caravan can be perfectly positioned even under challenging conditions, such as on bends or inclines. An additional drive wheel enables high torque and high shock load capacity, ensuring consistent power transmission at all times.



Consistent power transmission across all terrains

PM10-S

Special drive with IP67 protection rating

A reliable and easy-to-install solution for applications requiring a compact drive. Particularly well-suited for the automotive sector thanks to enhanced IP protection rating, compatible connectors, and an operating temperature range from -40 °C to +85 °C.

Tailored to the automotive sector

The magic of the right-angled gearbox

The right-angled gearbox is more than metal and gears – it's the heart of Parvalux's legacy. Powerful, precise, and endlessly adaptable, it drives motion with a quiet magic that has shaped industries and inspired engineers for decades.

T| Sven Gallinelli and Martin Mathias

In the world of motion and mechanical engineering, there are few components as iconic, dependable, and quietly powerful as the right-angled gearbox. At Parvalux, this unassuming yet mighty device represents not just a product line, but a legacy – an enduring testament to British engineering excellence that has stood the test of time.

For over 70 years, Parvalux has been designing and manufacturing drive solutions that power some of the most critical and complex systems in the world. From healthcare beds that require seamless, silent operation to industrial automation lines that demand precision and durability, Parvalux gearboxes are at the core of motion.

The beating heart

Among these, the right-angled gearbox holds a special place. It is more than just a technical solution; it is the beating heart of many Parvalux drive systems. It exemplifies everything the company stands for: reliability, innovation, and mechanical beauty.

Parvalux's right-angled gearboxes are engineered for durability and adaptability. Their ability to transmit torque at a 90-degree angle makes them ideal for applications where limited space demands compact solutions. The large amount of ratios offered allows the tailoring of gearbox efficiency to stop back-driving for safety critical applications such as stairlifts and patient hoists.Conversely, more efficient ratios can be used where you may want to back drive, such as automatic doors and conveyor systems.

If Parvalux's right-angled gearbox were a human, it would be the dependable problem-solver – strong, adaptable, and always ready to work in tight spaces. It's the kind of person who thrives under pressure and efficiently redirects energy to get the job done.

But power is only part of the story. Right-angled gearboxes are ideal for

There is poetry in precision. There is beauty in mechanical function. The right-angled gearbox drives the world forward.

many varied applications due the flexibility of being easily tailored to the individual needs. They are perfect for applications requiring a change in rotational direction within confined spaces. With high ratios not back driving, they are ideal for applications that require safety built, such as caravan movers or mobility applications.

Even more ideal are less safety critical applications. Here, the ability not to back drive can offer considerable customer savings, as additional braking is not required, such as in converyor systems or medical devices, where where precision and reliability are paramount.

Beyond industrial automation, right-angled gearboxes find use in unexpected places – such as amusement rides, golf trolleys, clay traps and even hog roasts. Their ability to change output shaft direction in compact spaces makes them invaluable across diverse industries.

Each gearbox is the product of meticulous design and precision manufacturing. Housing materials are chosen for strength and durability. Every unit undergoes stringent quality checks to ensure performance in the field. This is not just engineering – it is craftsmanship, built on decades of expertise and a relentless pursuit of excellence.

A Symbol of Intelligent Design

What makes the right-angled gearbox so compelling is its elegance. By changing the direction of drive motion by 90 degrees, it allows mechanical systems to operate in confined or unconventional spaces. It supports design freedom, enabling engineers to reduce the footprint of their equipment without sacrificing performance.

This is where the “magic” lies. The gearbox is not just a mechanical junction – it is an enabler of innovation. It gives life to ideas that would otherwise remain on the drawing board. It is a silent partner in the advancement of technology, helping industries move forward, one rotation at a time.

Parvalux’s right-angled gearbox is more than a component – it is a cornerstone. It symbolises the company’s commitment to quality, its engineering heritage, and its future. As industries evolve and new applications emerge, Parvalux continues to adapt, innovate, and deliver drive solutions that exceed expectations.

There is poetry in precision. There is beauty in mechanical function. And in the case of the Parvalux right-angled gearbox, there is magic – pure, engineered magic that drives the world forward.

“The secret to success is just try one more time”

As the Head of Innovation at Parvalux, **Michael Jonquière** finds solutions for challenging customer applications. In this interview he explains the creative processes behind his work – and why every project starts at the “fuzzy front end”.

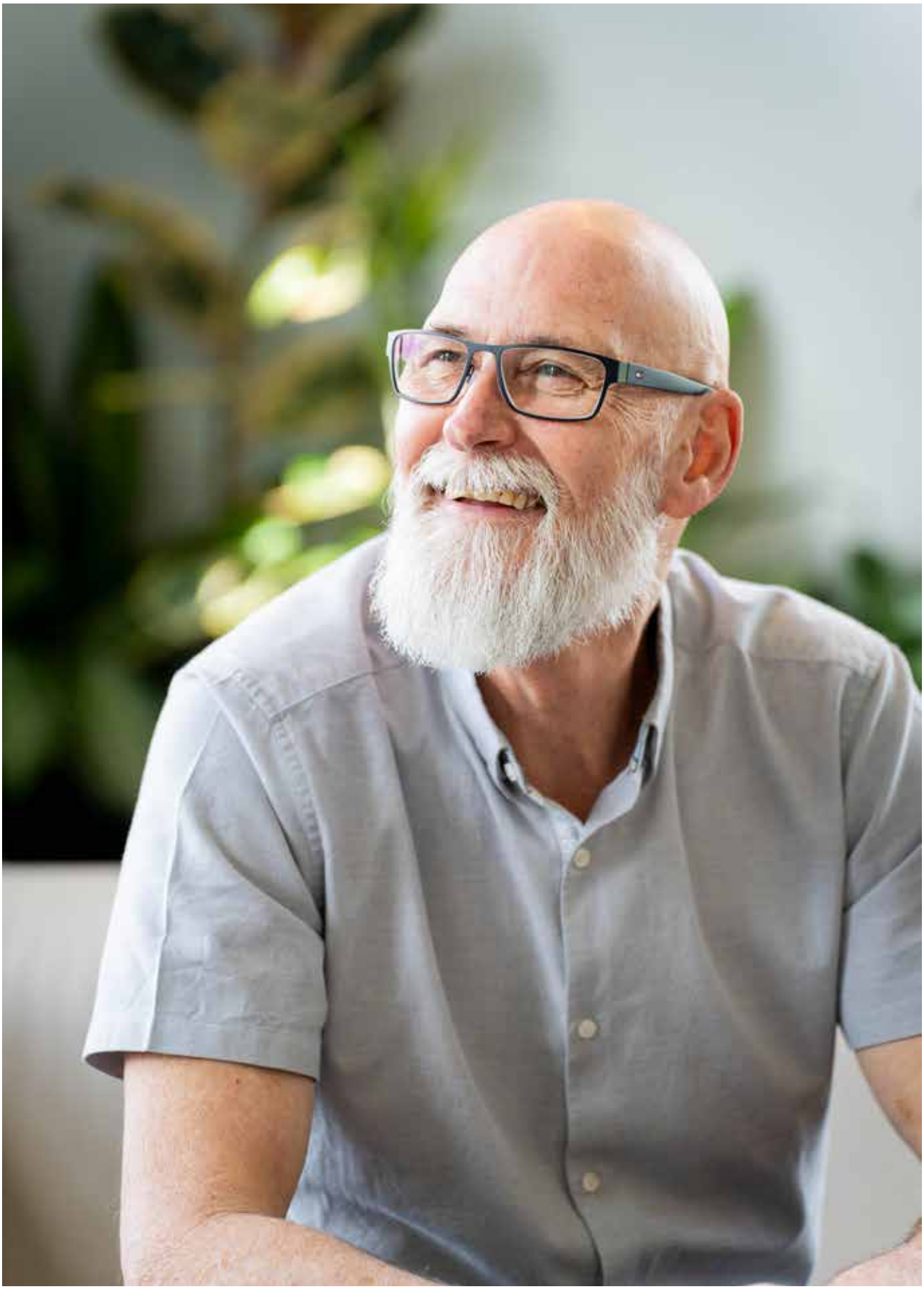
T| Sven Gallinelli James Aitken

Let’s start with an easy question: Could you introduce yourself?
I’m Head of Innovation at Parvalux. Innovation means different things to different people, but for me, it’s about product design and us staying relevant in the market, keeping pace with technological advancements, and pushing forward as technology and markets grow. Incremental design helps maintain our position, but innovation is what enables us to leap ahead. That’s what we’re aiming for: staying in the race with solid design work while looking for opportunities to break away from the pack through innovation.

What is your background?
I have a BSc. Engineering Design and Innovation and tertiary qualifications in digital and analogue electronics, aircraft instrumentation. I also hold multiple CAD qualifications and a few more obscure qualifications in ICT and wildlife. All this diversity helps support a broad ground plane which is useful in innovation. I’ve been with the company for over a decade, mostly working as a Senior Design Engineer in the New Product Introduction (NPI) department, mainly focusing on the design and development of new products.

What originally drew you to Parvalux?
What attracted me and what I think attracts a lot of engineers is the unique environment here. We have the ability to design products in-house, manufacture them, and assemble them ourselves. That full lifecycle approach is rare and extremely appealing for a design engineer. It’s not a large team – the Innovation team is a group of specialists, and that drives you to earn respect through your work. What I really liked is the hands-on aspect: you design a part, build it, test it – you’re involved in every stage. That’s something quite special and something we’ve managed to preserve, even as the company has grown and processes have changed.

You also worked for Parvalux’ parent company maxon for a while. Are there differences between how maxon and Parvalux approach things?
I was involved in the intralogistics division, and I was surprised to see how similar maxon’s design processes were to ours. That gave me confidence that we at Parvalux were on the right track. The main difference, I’d say, lies in the systems and processes for managing activities. maxon’s structure was more formalised and organised, and we’ve been learning from that. It’s helped us streamline and reduce difficulties experienced in a smaller, high-demand team. So, while our design approaches are quite aligned, maxon’s processes have been a valuable reference point for us.



Appreciates the full lifecycle approach at Parvalux: Michael Jonquière.

Innovation is teamwork: Michael Jonquière on the shopfloor of the Parvalux site.

And what do you think maxon could learn from Parvalux?
I don't think it's a maxon-versus-Parvalux thing – it's more about finding the right balance in any organisation. Extreme control can stifle creativity, and too much flexibility can lead to a lack of focus. The sweet spot is somewhere in between, and it's hard to find. So, I'd say we're all learning from each other.

Let's shift back to innovation. The basic principles of electric motors have been around for a long time – how can there still be innovation in such a mature field?
The core physics of electric motors hasn't changed. But there's still a lot of room for innovation, especially in materials: improvements in metals, magnets, precision, and manufacturing techniques have led to more efficient and higher-performing motors. Where it gets exciting is with advanced materials like nanomaterials, graphene, aerogels – these open new possibilities. For instance, I'm currently exploring a maglev bearing system. We're also looking into how nanomaterials could enhance magnetic flux in motor components. It's early days, but there's potential. Will we see a revolution in the next decade? Maybe not, but incremental advances add up.

What does innovation at Parvalux look like in practice? Can you give an example of what you're working on?
Our approach is twofold: on the one hand, we're aligning with frameworks like the ISO 56 000 standards for structured, top-down innovation management. But equally important is the grassroots bottom-up approach – applying innovation directly at the component level for tangible, short- to medium-term impact. That's where I spend most of my time. Since becoming part of the maxon family, we've seen a big increase in customer inquiries for customised solutions – at least one signifcant new inquiry every eight weeks. Previously, these would have been handled ad hoc between the sales and design team, which created a high workload. Now, with a dedicated innovation function, we can take these enquiries and turn them into realistic concepts that can feed into the NPI process for development.

How do such ideas start?
A lot of what we do happens in the "fuzzy front end" – stage zero, a pre-development phase where ideas are still unformed. maxon has something similar and this is the critical time to explore options using design thinking concepts and tools – before the formal development process kicks in with all its constraints. For example, I recently worked on two projects involving double worm drives – quite unusual designs. One was for a medi-

cal hoist application, with the output shaft aligned in the same orientation as the input, which is rare for worm drives. The other was a 180-degree reverse drive for a safety-critical application and we as a business received great commendations from the customer for our approach.

Speaking of costs – does budget limit innovation, or can it drive it?
The further along the development process you get, the more constraints you face – budget, time, resources. So New Product Introduction, by its nature, limits innovation. That's why the fuzzy front end is so important – it's the time when you're most free to explore ideas, without immediate restrictions. Once you enter NPI, the framework narrows, and you're committed to specific goals. So yes, costs can limit innovation, but in the early stages, it can also inspire divergent thinking and creative solutions.

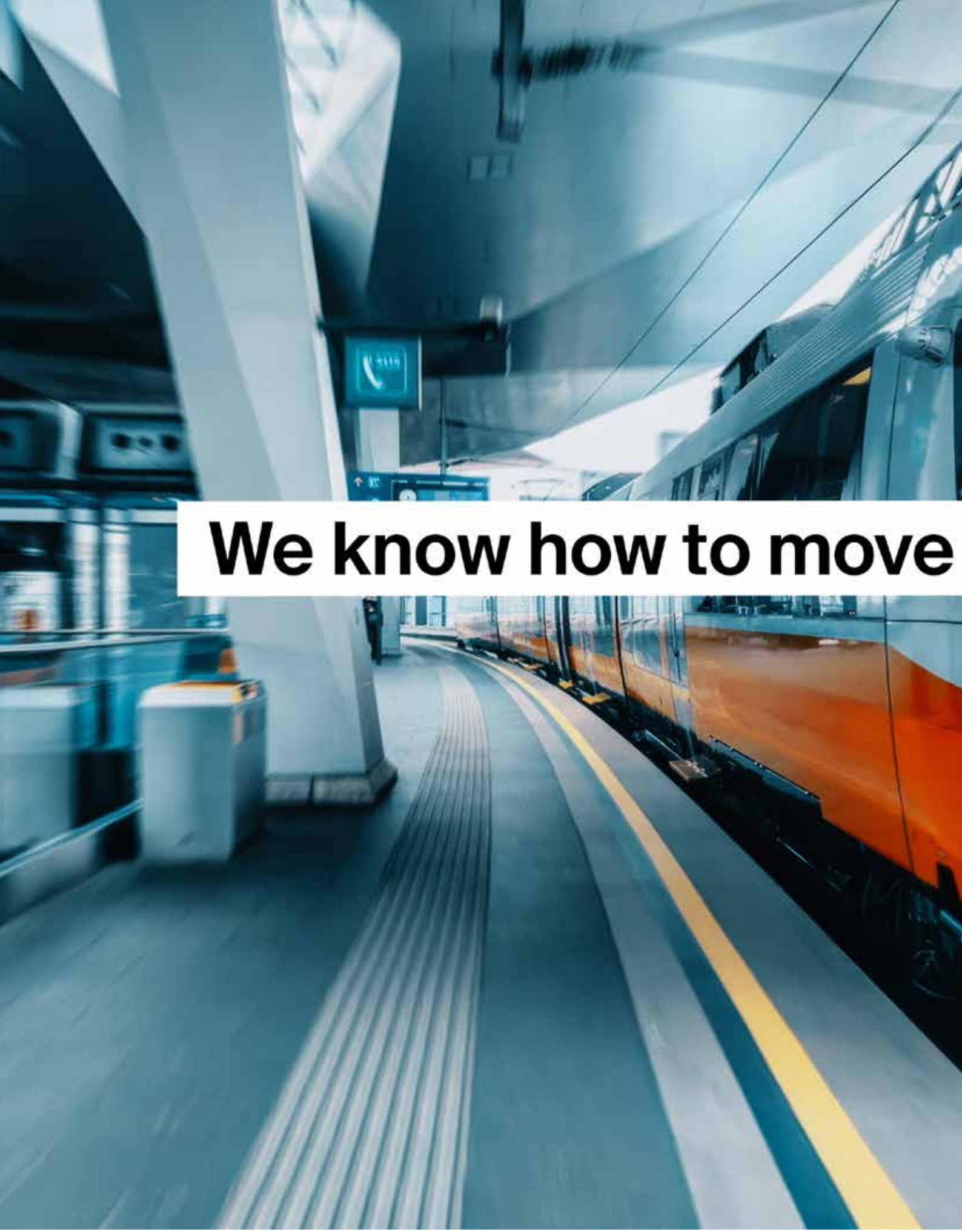
You've worked on a lot of customer projects. In your experience, what makes a project successful?
There's no single recipe, but two things stand out: listen to the customer, and never give up. It sounds simple, but it's true. Officially, you should start a project with a full product design specification, but in reality, that rarely happens. Scope creep is a common challenge. So you have to stay close to the customer, understand their evolving needs, and be persistent – just keep trying, again and again, until you succeed. The secret to success is just try one more time.

> "That's what we're aiming for: staying in the race with solid design work while looking for opportunities to break away from the pack through innovation."
>
> **Michael Jonquière**

Do you have a favourite Parvalux product?
That's a tough one! Every product has its strengths and weaknesses, but if I had to pick, I'd choose our PMDC110, it's the most efficient motor we've ever made and has the highest IP rating. I also like our GB65 gearbox – it's the largest gearbox we make, a beautiful machine.

From an innovation standpoint: Do you see innovation potential in combining maxon and Parvalux products?
Absolutely. However, a lot of those projects are at the early stage and I can't reveal too much about them yet even though I would love to share the details. But there are many opportunities in fully integrated solutions, where we for example combine a maxon motor, Parvalux gearbox, including ancillary devices in a single housing. The potential of such solutions is exciting.

That sounds promising. Any final thoughts on the key takeaway from the innovation process?
I do want to stress that innovation is always a team effort. Whilst I'm Head of Innovation at Parvalux, our innovation efforts rely heavily on many colleagues here at the company and also across maxon. We operate as a project matrix team, bringing in specialists as needed. It's a highly collaborative process, and that's what makes it successful.


We know how to move


train wipers
parvalux
by maxon

How we are moving things

As soon as our motors and gearheads leave the factory, they are put to real use – in a wide range of applications. In this part of the magazine, we present an overview and two examples.

James Aitken

Agriculture

Automation in agriculture boosts efficiency and animal welfare by enabling precise control of heating, ventilation, air conditioning (HVAC), and feeding. Parvalux geared motors are trusted for their durability and reliability. Ideal for systems like air vents, blowers, and feed delivery, our motors help farmers maintain optimal conditions.

Honey extractors I Livestock feed systems I Livestock ventilation systems

Medical Devices

When the COVID-19 pandemic hit, Parvalux leveraged over 70 years of expertise to support medical device makers. Our fast design and production enabled rapid development of ventilators and surgical pumps. Today, our geared motors are used in hospitals worldwide, offering reliable, quiet, and flexible solutions for critical care.

Medical devices I Air pumps and ventilators I Medical and fluid pumps

What our motors and gearboxes can move

Our product portfolio covers a wide range of applications – an overview.

Leisure

Parvalux provides custom and standard geared motors for a wide range of leisure applications–from golf trolleys and clay pigeon traps to arcade machines and target drives. Our motors are trusted for their durability, precision, and quiet operation, even in demanding, continuous use environments across the global leisure industry.

Leisure I Amusement machines I Clay pigeon traps I Golf equipment I Small-arms targets

Building Automation

Building automation enhances everyday life through systems like automated doors, blinds, HVAC, and access control. These rely on efficient, durable motor drives. Parvalux provides AC and DC geared motors trusted in buildings and transit systems worldwide, offering long-term performance in demanding applications.

Access control systems I Door automation I Pool cover closers I Shutter and blind closers

Transport and Logistics

For road, rail, and marine transport, Parvalux provides reliable geared motors essential for safety and efficiency. From powering wiper systems on ships and trains to moving heavy truck tarps and operating train doors, our motors are trusted worldwide–including on NASA's rocket crawler. Tough, efficient, and proven in the field.

Transport and logistics I Automotive I Caravan movers I Golf buggies I Marine steering systems I Rail and marine wiper systems I Tarp pullers I Vehicle winches

Mobility solutions

As people live longer, mobility solutions help maintain independence and quality of life. Parvalux supplies robust, customisable geared motors for products like wheelchairs, scooters, and lifts. Trusted in over 80 countries, our AC, brushed, and brushless DC motors offer the reliability and durability essential for daily mobility.

Mobility scooters I Mobility vehicles I Patient hoists I Personnel lifts I Powered wheelchairs I Stairlifts I Taxi step actuators I Vertical platform lifts I Wheelchair lifts I Wheelchair ramps

Industrial Automation

Industrial automation uses digital controls, robotics, and IoT to boost production efficiency and quality while minimising human input. Electric geared motors are vital to these systems, and Parvalux plays a key role in powering automation globally. Our reliable motors support leading brands across a range of industrial applications.

Floorcare and cleaning equipment I High voltage switchgear I Inspection systems I Mixing equipment I Oil and gas industry I Printing equipment I Robotic solutions I Solar panel and wind turbine tracking I Vending machines

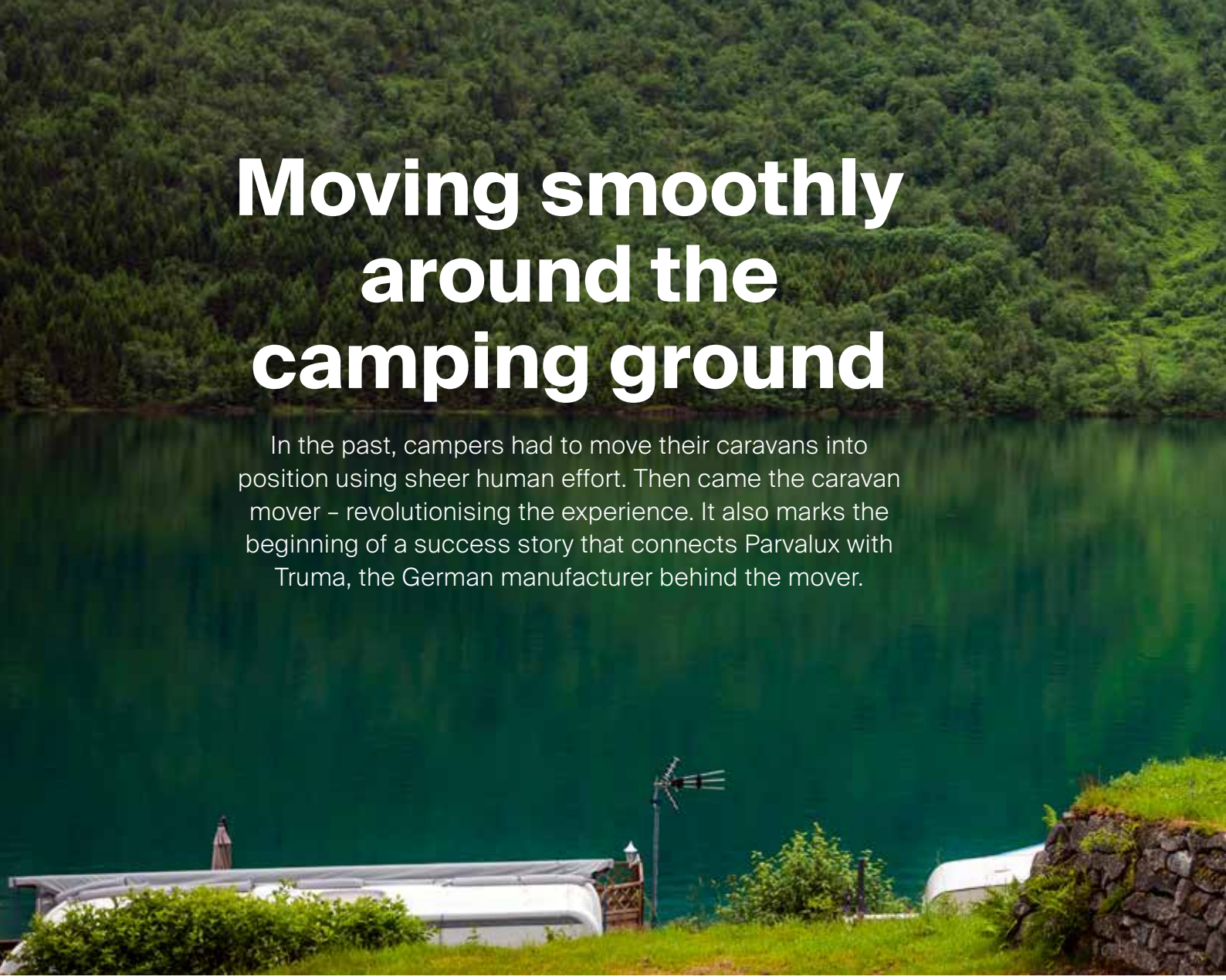
Materials Handling

The rise of e-commerce has driven demand for automated materials handling in warehouses. Parvalux supports top intralogistics manufacturers with reliable gear motor solutions for conveyors, AGVs, sorting systems, and more. Our AC, DC brushless, and brushed motors deliver the performance and efficiency needed for modern, high-speed logistics operations.

ASRS storage and retrieval systems I Automated guided vehicles (AGVs) I Automated shrink wrapping I Conveyors I Pallet and tray shuttles I Sorting machines I Warehouse tugs

Moving smoothly around the camping ground

In the past, campers had to move their caravans into position using sheer human effort. Then came the caravan mover – revolutionising the experience. It also marks the beginning of a success story that connects Parvalux with Truma, the German manufacturer behind the mover.



Out and about with a caravan – for many this is their travel dream come true. If only parking the caravan was easier! That's exactly what the German company Truma was thinking. Truma is well known among camping enthusiasts, because the company, founded in 1949, supplies the caravans with essential accessoires such as water heaters, air conditioning systems, gas supplies – and, well, the caravan mover!

With the manoeuvring systems from Truma, the task of parking the caravan can be carried out comfortably using a remote control. To power this system for the load, Truma installed electric drive systems from Parvalux.

Imagine a holiday close to nature, in your own bed, your personal comforts at hand, and the feeling of being free. If you have ever traveled in a caravan, you likely never want to travel any other way again. In 2024, the European Caravan Federation recorded nearly 61,000 new travel caravan registrations (excluding motor homes) in Europe alone.

Enabling an independent camper life

To that end, it is no surprise that manoeuvring systems are among the most popular retrofit solutions for caravans. Truma has given their models the name "Mover". The Mover is a battery-powered maneuvering system that allows you to move even heavy caravans effortlessly into the tightest spaces with millimeter precision.

Drive units mounted on the chassis with specifically developed drive rollers make precise pitching possible. To transmit torque, the drive rollers are pressed against the tyres of the trailer. Using the remote control, the manoeuvring system can be controlled autonomously from the tow vehicle.

Andrei Armiagov/Adobe Stock

“Mover” has become camper lingo

Truma Gerätetechnik GmbH & Co. KG is the clear market leader in the segment of electric maneuvering systems in Central Europe, and with the British sister company, Powrtouch, also in England. About 22 years ago, the hidden champion was so successful with the launch of the first Mover that their trademark-protected brand name has now become the generic term for electric maneuvering systems, like “velcro” or “bubble wrap”. Reminiscent of “to google”, “Mover” is now often used as a verb in German-language camping forums, where the arduous pitching “without” is an ongoing theme, especially since parking spots at home can also be challenging.

The extensive Mover portfolio from Truma not only comprises a substantial amount of development work and experience, but also powerful and robust components. For this reason, Truma relies on the drive systems and drive rollers from Parvalux for their models Mover smart A and Mover smart M.

Truma and Parvalux have a long-standing relationship – their collaboration dates back over 20 years. “Once a week, our teams exchange information, views, experience, and ideas about various topics and projects,” explains Andreas Schmoll, Senior Product Manager Caravan Mover at Truma. “This is also an important contributing factor regarding the reliability of the devices.”

DC motors provide uniform power output

Parvalux designed the gear motor along with the drive rollers for the Truma Mover smart A and Mover smart M to accommodate extreme strain. It consists of the brushed motor PM 63, a permanent magnet DC (PMDC) motor that Parvalux has adjusted and fitted with a sup-

The remote control is the key to manoeuvring the caravan. Truma

pressor for the application. The advantage of PMDC motors is not only their flexible design, but they also provide a uniform power output. This is important in bends and on inclines. Another benefit: Like most loads in RVs that are supplied by the battery of the caravan, the motor of the Mover runs on 12 V DC.

The gearhead from Parvalux is an angular gearhead of the self-locking type M10SX. The screw drive transmits the power only in one direction. In case of a voltage drop, this ensures that the caravan does not carry on moving on its own. The aluminium drive rollers with wave profile and specifically roughened surface are custom-built. The steel construction, covering, control unit, remote control, and software are all produced by Truma.

Generally, electric manoeuvring systems differ in terms of the mechanics that slide the rollers onto the tyres. For semi-automatic systems, the gear motors with rollers are manually pressed against the tyres using a lever. With automatic systems, only the push of a button is required to activate a separate motor for carrying out this task.

It even moves the caravan uphill

Otherwise, the device concept of both models is essentially the same: next to each of the two trailer wheels, a drive system with an integrated drive roller is clamped to the chassis using Truma's patented quick fastening system. For the Mover smart M, it also includes a lever for sliding the roller onto the tyre.

For the Mover smart A, an additional motor from Parvalux is integrated on each side to carry out this task. A multi-part steel tube connects the left and right side mechanically. The motors are connected to the control, located inside the caravan, via cable harnesses, which were designed to accommodate high currents. In turn, the control is connected to the onboard battery. When maneuvering the trailer uphill on a steep incline, currents of up to 120 A may flow.

The application is faced with the challenges of pressing the rollers onto the tyres with enough force as well as the manoeuvring task itself. "With both variants, an incredibly strong force is applied to the rollers when pressed against the tyres to ensure ample grip. About

The Smart Mover is the heart of the system – powered by Parvalux motors. Truma

4,500 newtons act on the tyre, or rather 450 kg are pressed into the tyre," Andreas Schmoll explains one of the engineering requirements.

Proper grip is key

The grip of the roller on the tyre is also very important, as the driving torque is transmitted via the roller. Additionally, Parvalux gave the surfaces of the aluminium rollers a very rough structure. "This further improves the transmission of power to the tyres." A great amount of know-how and development work has been invested in these devices. It was an engineering feat to ensure that the rollers do not damage the tyres under any circumstances while engaged.

Other requirements for the application arise from bumpy terrain or obstacles. "If the right-side drives over a curb and becomes slower as a result of the higher strain on that one side, the Mover's performance must not drop sharply," says Andreas Schmoll. Consequently, the entire system had to be designed to accommodate asymmetrical strain. For this reason, Truma designed the devices with reserve capacity.

Safety always comes first

Another essential feature is the self-locking M10SX gearhead from Parvalux. The screw drive transmits the power only in one direction. "This is a crucial safety requirement. If a voltage drop occurs for any reason, e.g., because the remote control has been dropped, the gearhead has to self-lock. In practical terms, this means that the gearhead must be able to bring the weight of two metric tons to a complete standstill, even on a hillside," says Andreas Schmoll.

When it comes to manoeuvring using the Mover, speed is counterproductive anyway. Pitching is about precision. The Truma Mover can drive forward and backward, straight ahead, around a bend, and rotate on the spot. Therefore you can manoeuvre your travel trailer at ten meters per minute onto any pitch with millimeter precision. All of this effortlessly via remote control, and if you like, even from the comfort of your camping chair.

And once the caravan is properly parked, the camping adventure can begin – and hopefully continues as smoothly as it started.

Moving young drivers ahead – powered by Parvalux

The earlier children learn about traffic safety, the better prepared they are for real life. A British manufacturer offers youngsters aged 4 to 10 a unique opportunity to gain hands-on driving experience. But first, the perfect car had to be built – and that's where Parvalux came in.

A miniature electric car is giving children as young as four a head start behind the wheel. From just £20 per lesson, manufacturer Young Driver Motor Cars offers a realistic driving experience powered by Parvalux motors – building road safety skills long before the real test.

According to the United Kingdom Department for Transport, young drivers, including those between 17 and 24 years old, are more likely to be involved in an accident compared to other age groups. Young drivers also have relatively higher injury rates in road collisions. The need to make driving a safer experience for the young was the motivator for Ian Mulingani in his leadership of Young Driver.

The Young Driver scheme provides driving lessons throughout the UK in safe areas, off the public highway, to children aged between 10 and 17. Through government-approved instructors, the aim is to give young learners a head start and enable them to become safer drivers. But following demand from parents, 10 years old still wasn't young enough.

Take action

"Parents would bring along younger brothers and sisters who wanted to try our driving lessons, but children of this age were too small to drive the standard, road-going cars we use for 10- to 17-year-olds," says Ian. "I tasked our team to buy some small electric cars, but they couldn't find anything suitable. They were either unrealistic toys, not durable enough for our needs, or collectors' items costing

The Young Driver motor cars let kids drive into their first traffic experiences. Young Driver

£30,000-plus. I realised we needed to make our own." In 2016, Ian worked with a team including external partners to develop an initial model. The first version of the Firefly, with 12 cars produced, delivered around 12,000 lessons to drivers as young as four.

"After four years using the cars, we'd replaced the batteries a few times, and the motors were still running perfectly. We were using motors from Parvalux, which came recommended from our engineering partner at the time," says Ian. "The car bodies were however in need of attention – as you would expect at the hands of such youngsters behind the wheel – so instead of refurbishing the cars, we took the opportunity to develop a new, improved model."

Thanks to Ian's automotive background, he was able to call in engineering expertise, including fellow former Jaguar Land Rover colleague, Dr Ian Pogson, who began working on the design of the electric powertrain for the Firefly Sport. "This time, we ran the car development project just like we had done at JLR," says Dr. Pogson.

Advice from the actual users

This resulted in the "Firefly Sport": The new car includes an upgraded aluminium chassis with independent suspension designed by former Aston Martin prototype guru, Steve Rawson, as well as rack and pinion steering. The body design was even derived from market research among the car's user group: a survey

among drivers under 10 years old. To power the Firefly Sport, the Young Driver team immediately returned to Parvalux motors on the basis that they had already proved themselves. "The motors provided the speed and power we needed, and they just kept going with no maintenance required, so we knew they would give us the right performance," says Dr. Pogson.

Just like modern road going electric sports cars, the Firefly Sport is powered by twin electric motors. Rear mounted right angle gear motors, one per rear wheel, are installed on a pair of swing arms with a spring and damper. Parvalux' parent company maxon, responsible for sales, specified the Parvalux PMDC right angle motor for its high starting torque and smooth, controlled speed delivery.

The motors are combined with a Parvalux GB9 right angle, worm wheel gearbox to optimise torque control. Running time for the Firefly Sport is also key. This means the motors needed to provide high efficiency, while offering sufficient torque in a lightweight package to minimise overall power requirements.

"Removing and replacing the battery during a Young Driver session isn't a practical solution," says Ian, where the Young Driver team provides 15-minute lessons from morning to late afternoon. "Instead, we needed a lightweight, efficient motor, combined with the right battery technology, that can run all day."

Solar power for the battery

The Firefly Sport, weighing just under 200kg, can operate for up to eight hours on a single charge, driving at speeds around 5mph. The car can travel significantly faster in return for a shorter battery life, but the limited speed is optimal for the young driver experience. After use, the specialist high-cell batteries are recharged using a solar power system, minimising running costs and ensuring a zero-emissions operation. Practical engineering support from maxon and Parvalux also

The Firefly sports car weighs under 200 kilograms. Young Driver

A Parvalux drive unit between the suspension and the wheel. Young Driver

helped optimise safety, with advice on how to lock the motor to prevent the car moving when the accelerator pedal is disengaged, like when the car is stationary on a slope, or if the young driver has brought the car to a stop.

"We had already adjusted the motor on the workbench without success, so the maxon team came down to see the car and showed us that after the turnbuckle adjustment, the motor required a load and resistance for the brake to function" says Dr. Pogson. "Just 15 minutes, hands-on with the car, was all it took to resolve our challenge."

Increasing young driver safety

With six cars completed and a further six in progress, Young Driver Motor Cars is looking to expand production. 150 enquiries have already been received from around the world, and the Firefly Sport is set to retail for around £11,000. Young Driver's main intention for the new car though is to expand the potential reach of driving lessons for the young.

"The national average rate for young drivers suffering an accident in the first six months after passing their driving test is 20%, but for Young Driver pupils, it's just 3.8%, a safety improvement of over 80%" says Ian.

Starting electric, staying electric

"Young Driver lessons normalise driving as an experience," says Ian. "If you've been driving since you were younger than 10, there isn't the same pressure to drive beyond your capabilities when you eventually pass your test. Secondly, the younger you are when you start to learn, the more opportunity your neural networks have to build, improving your driving capabilities and safety. If you're four years old today, you'll probably only ever drive an electric car, so Firefly Sport becomes a realistic starting-point for your safe driving future."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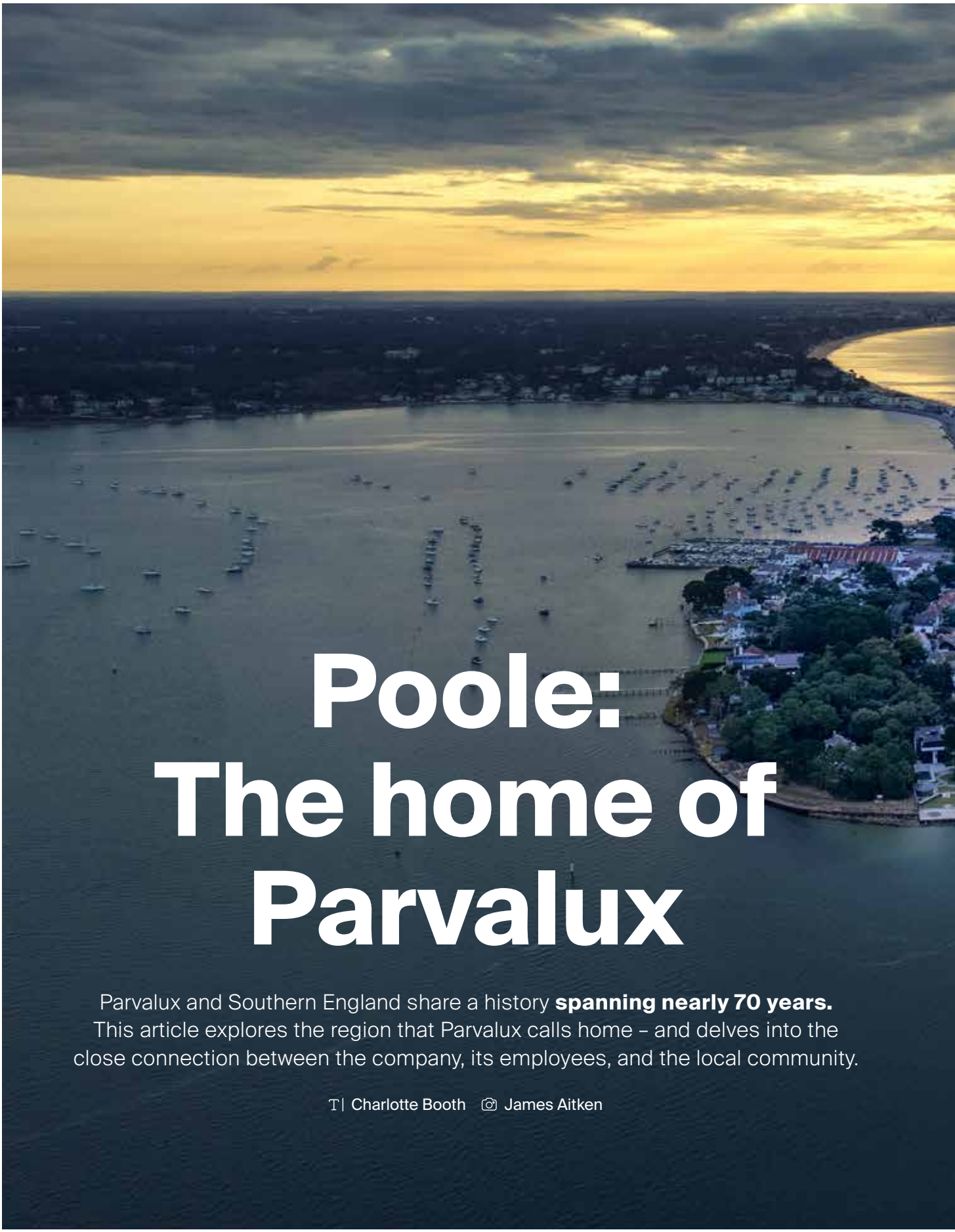

Poole: The home of Parvalux

Parvalux and Southern England share a history **spanning nearly 70 years.** This article explores the region that Parvalux calls home – and delves into the close connection between the company, its employees, and the local community.

T| Charlotte Booth James Aitken

Picture: Robert Szczotka/Adobe Stock

Left: The “King Charles” Pub is around 250 years old.
Right: One of Poole’s most famous people: Robert Baden-Powell, founder of the Boy Scouts Association.

Poole has a long and fascinating history, with Parvalux being a part of it for nearly 70 years. Located on the Jurassic Coast in the south of England, Poole has been inhabited since pre-historic times. With its favourable location on a peninsula, which was easy to defend, Poole has been an important port and harbour since the Roman period.

The Romans used the area as a military base, building a fort to facilitate their invasion of Dorset. During the thirteenth century the port was a hub for cod fishery, as well as harbouring a reputation as being a haven for pirates and smugglers. One local story tells of a group of 30 smugglers who, in 1747, broke into the newly built Custom House and removed two tonnes of tea, and 39 barrels of rum. This had previously been confiscated from the smugglers by the authorities, so perhaps the smugglers felt they were taking back what was rightfully theirs.

As ships became larger, the port at Poole fell into decline in the mid-nineteenth century, but local authorities continued to dredge the channel, ensuring it could once again be an important port. During World War II, this persistence paid off as the port played a vital role as a launch point for “Operation Overlord”, which saw the allied invasion of Normandy, France.

In recent years, Poole has developed as a commercial town with many businesses opening within the marine, banking, and engineering sector. Poole is also a major tour-

ism site with people attracted by its beautiful sandy beach stretching along the coast to Bournemouth and beyond.

In modern Poole, some of the medieval buildings are still standing, although the majority of the town buildings are Georgian dating to the eighteenth century. The Custom House was first built in 1781, and rebuilt in 1813 after a fire, exactly as its original build.

In 2019 Poole formally became part of a three coastal town conur-

Top: No beach in the Poole area would be complete without the colourful beach huts.

Left: Scenic seaside views can be found everywhere in Poole.

Right: The Poole Guildhall is a beautiful place for weddings and civil partnership ceremonies. It was built in 1761.

The sculpture “Sea Music” by Anthony Caro has stood on Poole Quay since 1991. Inspired by waves, sails, and the sound of the sea, it is the only site-specific public sculpture by Caro in the UK and a landmark of modern British art.

bation, joining the towns of Bournemouth and Christchurch to form the tenth largest urban local authority in England. It is now a significant UK city region, being the newest one in the country. Also, Poole is a major urban area with a strong local economy, a vibrant culture, and a high quality of life covering a large area, with 658 miles of roads and a significant coastline.

Birthplace of the Scouts

As with any town, it is built around the people and the community who live there, and Poole is no different. It has made its mark on the history of Great Britain because of its people.

For example, in 1907, Poole Harbour’s Brownsea Island was the location of the very first Scout camp. This is thought by many to be the starting point of the Scout Movement, headed by Robert Baden-Powell. There is a statue of Baden-Powell in the town centre commemorating this event. It was created by sculptor David Annand and was erected in 2008.

The town is also the birthplace of a number of eminent people within British culture. These include Edgar Wright, a director and screenwriter, who studied at the Arts University, Bournemouth. He is particularly known for the movies Shaun of the Dead (2004) and Hot Fuzz (2007).

Popular author John le Carré, famous for spy novels including Tinker, Tailor, Soldier, Spy, was also born in Poole, as was Brianna Stubbs, a Great Britain rowing gold medallist and the youngest person to row across the English Channel.

It is in this thriving, developing town that Parvalux is located.

Queuing up to work at Parvalux

In 1957 Parvalux moved their manufacturing facility from Romford, Essex to Parkstone, an area within Poole, and then in 1961 moved to Wallisdown Road, in neighbouring Bournemouth. They have remained in the Bournemouth/Poole area for an incredible 68 years. Parvalux has

During the thirteenth century the port was a hub for cod fishery, as well as harbouring a reputation as being a haven for pirates and smugglers.

Top: On Poole's Quay, a rich maritime heritage comes to life through tall ships, treasure trails, and the historic Old Town. People enjoy harbour cruises, crabbing, and waterside dining offer views across to Brownsea Island.

Bottom: The "Grace House" used to be a warehouse, today is listed on the "National Hertiage List for England". Its neighbour, the "Poole Arms", prouds itself as the oldest Pub on the Quay.

a good reputation amongst the local residents. Kevin Gander, Production Operative, who has worked for the company for nearly 47 years, recalls: "Even back in 1978 people were queuing up to work at Parvalux, with its good reputation of treating their staff well."

When Parvalux had the grand opening of their new premises, Parvalux House, on Technology Road in Poole in 2023, its reputation as a sterling employer had further developed over the decades. Lee Weston, Customer Support Engineer, who has been with the business for 40 years, says: "Most people in the area know of Parvalux – the business is a major employer of local people."

Martin Goodship, Senior Applications Engineer, who has been with Parvalux for 43 years adds: "The company's growing and people want to come and work here from the local area and from further afield as well."

Staff from three locations (two factories in the Wallisdown area of Bournemouth, and a third in the Holes Bay area of Poole) moved into this custom-built, state-of-the-art Headquarters which serves both manufacturing and administration staff. This sustainable, and ergonomic site covers 14,000 square metres and houses over 210 staff, most of them local.

Developing the next generation

As part of the bedrock of the Poole community for nearly seven decades, Parvalux cares deeply about helping the community to thrive. James Cope, Marketing Manager, says: "At Parvalux, our commitment to community engagement is a part of our culture. Whether through active participation in events, fundraising endeavours, or nurturing the aspirations of future generations, we are dedicated to making a positive impact in local communities." One way Parvalux achieves this is through their work with young people and their continuing contribution to the development of the future skilled workforce.

This has, in recent years, included student work placements, which have enabled young people considering STEM (an abbreviation for science, technology, engineering, and mathematics) as a career path to learn from Parvalux's team of experienced engineers.

These student placements spend time working within various functions, providing them with exposure to different aspects of the business–from working with the design engineers to helping on the shop floor alongside some of the machinists.

Parvalux also actively engage at many STEM career events in the local area to encourage the next generation into the engineering industry. This has included insightful factory tours for apprentices from Bournemouth and Poole College which enables them to bridge the gap between theoretical knowledge and real-world applications.

Quite possibly the most beautiful factory building in Poole: the 'Parvalux House' (though we do admit we might be just a little biased).

As part of Parvalux's commitment to developing the future workforce, they regularly attend the Bournemouth Air Festival with a stand within the STEM village. In 2024, this presence was popular with more than 2,000 visitors over the three days of the festival.

Smart motors

The stand was interactive, with the objective of engaging young minds, sparking curiosity and getting them thinking about a career in engineering. The stand featured interactive motor kits to engage visitors as well as a motor showcase to demonstrate how intelligent Parvalux motors are.

Parvalux also supports local schools and encourages them to undertake projects which can be showcased on the STEM stand. For example, last year, they sponsored, then showcased the robots created by Poole Grammar School, as part of the First Tech Challenge UK, for which the school were awarded the 'Think Award'.

Another branch of Parvalux's community work is raising money for local causes. In 2024, Parvalux sponsored the Under 7 Lions, a Longfleet youth football team, which was used to buy their team kit. In previous years Parvalux had also provided sponsorship to the Under 16 Dolphins, a local American Football team. This helped them to reach the D2 national finals at Loughborough University later that season.

Every year the business also chooses a local charity to support, and the staff participate in fundraising activities for the charity. For example, in 2024 the Parvalux Charity of the Year was SPRING, a charity which helps parents and families deal with baby loss. Harry Thompson, Digital Marketing Executive, raised more than £1,000 doing a skydive for SPRING, to add to the nearly £700 raised through cake sales and other staff fundraising initiatives.

In 2025, the Parvalux Charity of the Year is Forest Holme Hospice Charity, and the staff have already raised nearly £1,000 through different events. This charity supports people who are affected by life-limiting illness or bereavement, either at home or in their hospice location, and aim to enhance their quality of life.

In nearly 70 years in the area, Parvalux has certainly made their presence known by becoming an important member of the thriving business community. This is something they intend to continue to cement over the next seven decades and beyond.

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