RE 64
FLEX
THE KIESER TRAINING MAGAZINE

TOGETHER WE ARE STRONG

On the first of October, the centres of Exersuisse in Switzerland returned to the Kieser Training fold, meaning that you can now train in more than 20 centres in Switzerland and in more than 150 worldwide.

"This merger combines the strength of two successful chains," says Michael Antonopoulos, joint owner and CEO of Kieser Training, who together with fellow board member Nils Planzer acquired Kieser Training at the start of the year from Werner Kieser and his wife Dr Gabriela Kieser. He stresses that "Exersuisse and Kieser Training are an excellent fit". This is because the Exersuisse centres were Kieser Training centres until 2010. At the end of the franchise agreement, the former master franchisee Jost Thoma Holding continued to run the centres under the name Exersuisse. Now the two chains are back together again, allowing all customers to benefit from an even denser network of centres.

All Exersuisse contracts remain valid. Patrik Meier, COO of Kieser Training extends a warm welcome to all new customers. "We are looking forward to supporting you in future with both advice and resources," adding that the new centres will gradually be adapted to accord with the current Kieser Training standard. This relates not just to the company's corporate design but in particular to equipment such as the recently developed machines.

"This merger combines the strength of two successful chains."

Michael Antonopoulos

"The first step will be to equip all centres with the Lumbar-Extension machines (LE)," says Meier. "That is extremely important. The 1:1 assisted training on the computer-assisted back machine lies at the heart of the Kieser Training brand and of course we want to offer it to all customers". This machine allows us to isolate and strengthen the deep autochthonous back extensor muscles. A weakness in these muscles is closely linked to back problems. The recent additions to the Kieser Training family of machines will also be installed in centres as soon as possible, e.g. the A5 for strengthening the pelvic floor muscles and the B3/B4 for ankle strengthening.

Kieser Training has taken on all Exersuisse staff. During a welcome celebration at the company's head office in Zurich in August, staff had an opportunity to meet their new colleagues. Stefan Läderarch, manager of the centre in Zug is enthusiastic: "I relish the new challenge and will seek to ignite the Kieser flame in the hearts and minds of all customers!" Patrik Meier is also convinced: "With a mixture of team spirit, cooperation, commitment and passion, we will guide Kieser Training to a successful future; together, we are strong!"

New locations

Switzerland
Baden, Basel, Bern, Biel, Freiburg, Horgen, Lucerne, Schaffhausen, Schlieren, St. Gallen, Solothurn, Thun, Winterthur, Zug, Zurich

Opening in

Australia
August 2017
Sandringham
Level 1, 220 Bay Road
Sandringham Victoria, 3181

Germany
October 2017
Bietigheim-Bissingen
Borsigstraße 6
74321 Bietigheim-Bissingen

Early 2018
Bonn Bad-Godesberg
Godesberger Allee 20–26
53175 Bonn

MACHINES FOR MUSCLES: FOR EFFECTIVE TRAINING

Kieser Training has been running its own Research Department for the last 15 years and for even longer has developed, produced and distributed its own machines. All with one aim in mind: To maximise training gain.

Thinking across disciplines to develop a new prototype
From left to right: Alexander Weiersmüller, Marc Grepper, Dr. sc. ETH David Aguayo, Phil Sencil, Werner Kieser, Michael Koletnik

It is Thursday and as on every Thursday the conference room at the Kieser Training Head Office in Zurich is transformed into a huge think tank. It is when scientists, engineers and designers from Research and Machine Development get together to work intensively on innovative ideas for the development and improvement of strength training machines. Right in the thick of it is Werner Kieser, who despite having sold the company is still involved as ideas man and mentor in the area of machine development.

"Muscles need a targeted load and machines are best at doing that"

Werner Kieser

Kieser Training has had its own Research Department for some 15 years – for a good reason: "Anyone who believes that established science can provide simple answers to your questions is mistaken," says Werner Kieser. The role of the Research Department is to identify high-quality, normative data for training and machine development, which it then analyses and subjects to critical assessment. The results can then be translated into practice.

To this end, Kieser Training organises specialist conferences and initiates cooperation with scientists, universities and other organisations – both for the exchange of ideas and the express transfer of knowledge. In addition, the researchers acquire and evaluate external studies or run their own. "Over the last decade, research has changed significantly," says Marc Breitinger, Chief Technology Officer at Kieser Training. "This is partly due to improvements in methodology but also the rapid rate of technical progress. The sole purpose of our work is to maximise the benefit to customers from this progress." Maximising customer benefit is also the primary reason why Kieser Training develops and produces its own machines. They do not want to rely solely on what the market decides to produce. Instead, the company prefers to focus on the development of completely new machines for individual muscle groups using a multi-disciplinary, collaborative approach.

Examples of this are the two foot machines – the B3/B4 for strengthening the ankle muscles. They came out of a study by Dr Marco Hagen from the University of Duisburg-Essen, Germany. Breitinger explains: "We are currently the only provider that can offer customers targeted training for these muscles." In addition to major innovations, the team also works regularly on refining the existing stock of machines, e.g. improving adjustment options or developing entry aids.

According to Breitinger, the mix of different disciplines produces a major benefit: "Individual colleagues see the process from idea to finished machine from completely different perspectives. For example, our scientists are focussed on anatomical principles and the sequence of movements whereas for our engineers it is all about the mechanics." Another important focus is to ensure that any development complies with existing internal and external quality and safety standards.

At present, the team is working hard on new prototypes that are already in the test phase. Although it uses cutting-edge construction principles, the team is keen to maintain a quasi-industrial design that is clean and uncluttered: "The design should be timeless and the materials durable. In addition, the principle underlying all machine development is to concentrate on the essential, i.e. the effective build-up of muscles and strength."

Did you know?

Our centres offer a huge range of machines and exercises, including machines that are exclusive to Kieser Training, e.g. the E4/E5 (for strengthening the shoulder muscles), the H3-7 (for the hand muscles) or the B3/B4 (for strengthening the ankle muscles). With the help of our machines you can effectively strengthen the most important muscles in your body.

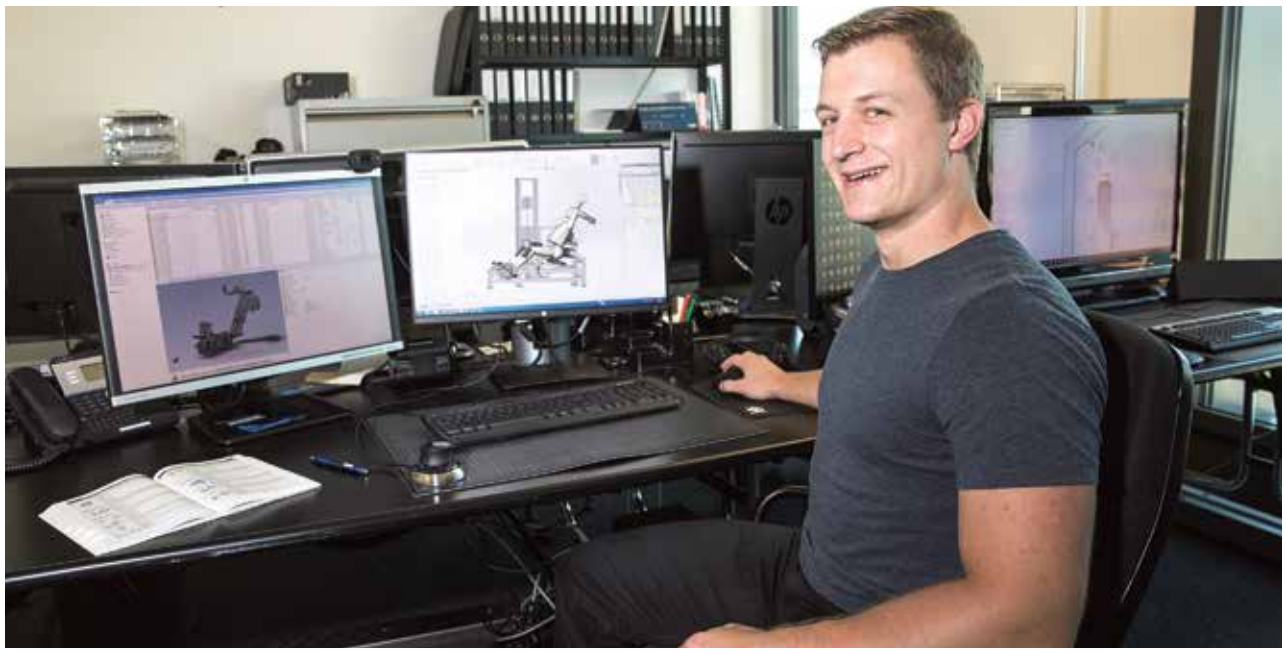
Below a summary of the benefits:

1. they are simple to use
2. they can be adjusted to fit the individual
3. they demand nothing in terms of prior training status
4. machine weights can be adjusted in small increments
5. movements are guided and two-dimensional
6. they provide almost total isolation of target muscles
7. the load is correct throughout the individual customer's entire range of motion

Foot machine B3

BENEFITS OF MACHINE TRAINING

Kieser Training offers a huge range of machines and exercises that can help strengthen the entire body. But what makes our machines so special? Biomechanics engineer Marc Grepper explains.



1. Our machines are safe and easy to use. For example, we are gradually fitting our machines with entry aids to help customers use them with as little effort as possible. There are special devices that make it easier to grip the handles or adjust the counterweight when sat in the machine.

2. Machines can be adjusted to fit the customer; this ensures that training is correct in anatomical terms. The range of adjustments is considerable, allowing machines to be used by both shorter and taller customers alike. To ensure that machines are adjusted correctly, instructors adjust each new machine added to a training programme to the customer's actual body size.

3. Machines demand nothing in terms of training status, making it irrelevant whether or not customers have prior experience of training. They can train effectively from the outset.

4. Training weights can be adjusted in small increments of just 2 lbs. That is important because training progress varies from person to person. At the outset, progress is usually greater but after regular training, you approach your genetic potential and progress is slower. Small increments mean that the weight can be adjusted almost infinitely to match your progress. Of course, this fine adjustment is also important for those with health-related limitations.

5. The movements are guided and two-dimensional, meaning that you do not have to learn complicated sequences of movements or coordination patterns before you start. This reduces the risk of injury and makes training safer than training with free weights or your own body weight.

6. Our machines satisfy the principles of muscle isolation. This is particularly important as you can only target an individual muscle if it is isolated. The same applies to individual muscle groups. If you are an existing Kieser Training customer, you will know that already. For example, if you do an exercise for the biceps or the triceps or the rotator cuff you only feel the effect in the particular muscles. It is this that makes training particularly effective.

7. Our machines use cam technology, ensuring that muscles are subject to the right load throughout the exercise irrespective of the angle of the joint. What do we mean by that? Straighten your upper arm. When the arm is straight, the bicep is not as strong as it is when the arm is bent. Our machines ensure that muscles are subject to an adequate resistance throughout your personal range of motion. That also makes training very effective and safe.

Marc Grepper
Biomechanics Engineer, Kieser Training
"For me, strength means increasing sporting performance. To achieve and do what you want."

WHAT MAKES OUR MACHINES SO SAFE?

As Head of Machine Development at Kieser Training, Michael Koletnik always has an eye on ensuring that machines meet high quality and safety standards.

"Our machines are very safe," explains the design engineer. "They are medical training machines that meet the requirements of the Medical Devices Directive."

These requirements are described in more than 200 standards. One of the most important is the "Stationary Training Equipment Standard", an ISO standard that covers the safety requirements for machines. Koletnik explains: "For example, it stipulates the design of the casing used on our machines or the space required for movement." According to the standard, any part of the machine that is located behind the customer's back must be cased in. Recently, a further requirement has been added; the casing must be attached by screws. "Of course that increases the maintenance outlay but that is irrelevant. In the final analysis, what counts is that nobody is injured."

Koletnik likes to check the safety of the machines himself – this is over and above the regular quality checks. Once a month he travels to the production facility at Breuberg. "I sit in the machines and do the exercises. I can then feel if something is not running smoothly."

High quality and safe operability also play a role in the development of machines. Before a new machine can be installed in the centres, it is extensively tested." Although the CAD software allows us to view a machine in 3D from all sides, it cannot of course check how hard or easy it is to operate a specific mechanism."

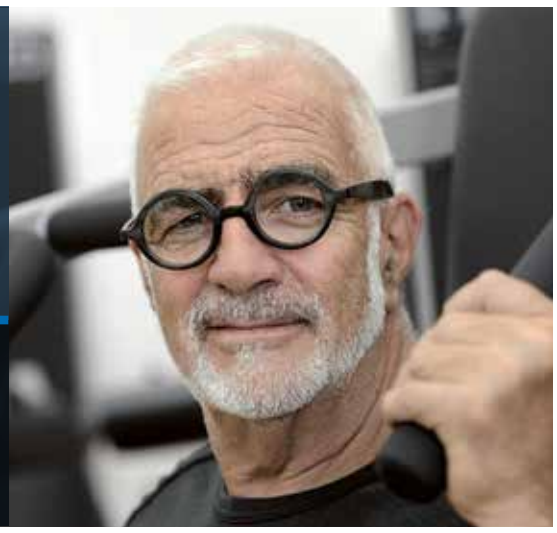
"SAFETY IS PARAMOUNT ON ALL KIESER TRAINING MACHINES"

An example: It is easy to move a lever arm using the mouse but what about real life situations? Is it still comfortable and safe to operate if the customer has a fractured arm or back pain? "All these things are tested with customers who meet a specific profile." Engineers then revise the drawings and produce and test a second prototype. "Only if it meets all requirements, do we produce 0-series machines. These are then re-tested in several of our centres. If all parties are satisfied, the machine then goes into full-scale production and we equip all centres with the new machine."

Michael Koletnik
Head of Machine Development
"For me strength means a healthier life."

WERNER KIESER'S CORNER

WHY MACHINES?



Recent magazine articles have frequently recommended training using your "own bodyweight" as though it were something fundamentally different from training with equipment. Probably the best known example of this type of training is the press-up. Biomechanically, the press-up corresponds exactly to the familiar bench press with a barbell and a training weight of 67% of bodyweight. The effect is the same, irrespective of whether you pull yourself up on a horizontal bar and do pull-ups or use a pull-up machine and adjust the weight stack to your own bodyweight. However, there are two problems with all exercises using your own bodyweight. In order to trigger the required neuro-muscular changes, the weight must be increased continuously. That is difficult if not downright impossible with bodyweight exercises. The answer is not to increase the number of repetitions but to train with a dumbbell, for example – a simple solution to the problem. However, a further problem with both bodyweight exercises *and* dumbbells is that of variable resistance, and this can only be solved with the right machine. When you do a press-up or a bench press, the movement is harder at the start but becomes easier as you extend the arms. In the final third of the exercise, the training effect is zero. The muscles used in the exercise, i.e. the forearm extensors and pectoral muscles only produce strength during approximately 50% of the movement. Our machines solve this problem. For example, on the B6, the machine adjusts the resistance during the exercise so that these muscles are worked and developed throughout their entire range of motion. In addition, there is probably another – unspoken – reason why "training without machines" is recommended: High-quality machines developed on the basis of scientific criteria require investment – only to be expected if you want to solve a fundamental problem. Our LE machine costs in the region of 60,000 euros but in return it efficiently deals with a problem that cannot be solved without it.

Werner Kieser

THE MAN WITH NO BACK PAIN

Phil Sencil is 66 years of age and still free from back pain. He is also the mechanical engineer who played an important role in the development of the Lumbar Extension Machine (LE). Over the years, this machine – invented by the American Arthur Jones – has helped many people banish back pain.

When asked whether he has ever experienced back pain, Phil initially smiles. Then he laughs – a deep laugh that spreads like a wave from his abdomen to this face and ends in friendly laughter lines around his eyes. "Of course, if I sleep awkwardly at night my back is sometimes stiff. However, I have never suffered from back pain," he replies.

Sencil was born in Japan but spent most of his life in the United States. For the last 33 years he has designed and constructed strength training machines. Initially, he worked for a supplier of Nautilus, the first company established by the legendary Arthur Jones and then for MedX, the subsequent company set up by Jones. Whilst at MedX, he played an important role in the development of the LE computer-assisted back machine. Today he works as a machine engineer for Kieser Training.

Sencil recalls being the first engineer recruited by Jones at MedX. "He invited me to breakfast, during which he smoked ferociously and drank one cup of coffee after another as he told me about his ideas for the back machine. He was so convincing that I said 'yes' immediately." On the eighth of October 1987, the LE was presented to the public for the first time – at the Waldorf Astoria in New York. It proved to be a ground-breaking invention in the field of back training: For the first time ever it was possible to isolate and test the deep back extensor muscles and then to strengthen them – as a rule 12–18 training sessions are required to achieve this.

Sencil sits in one of the large, grey-black steel machines with its pelvic-roller, pad, belt and foot plate. Working against a resistance, he slowly straightens his torso, extends the back and then bends forward again. An instructor sits next to him monitoring his every movement, which are also visualised on a screen in the form of strength curves. The LE is a mighty beast. It weighs a full 940 kilograms and contains an impressive amount of steel for strengthening muscles that are actually quite small. Sencil smiles wryly. The training is strenuous "but effective", he says and laughs.

Phil Sencil, machine engineer at Kieser Training. For him strength means being able to do the things he wants to do.

"We have made some improvements to the LE since the early days. For example, we have refined the software and test instruments. That was a fairly major task." Phil Sencil enjoys his work, explaining his enjoyment as follows: "It is difficult to develop something genuinely new. However, if you are successful, it is both enjoyable and exciting. And if someone then says: Wow! That is the most exciting part of my work."

"The LE is a mighty beast."

Phil Sencil

IMPRINT

Reflex is published four times a year, including online. Stay informed!
To subscribe to Reflex **visit kieser-training.com**

PUBLISHER / COPYRIGHT
Kieser Training AG
Hardstrasse 223
CH-8005 Zürich

CEO
Michael Antonopoulos

EDITOR
Claudia Pfülb, reflex@kieser-training.com

EDITORIAL OFFICE / TEXT
Tania Schneider
prschneiderei.de

TRANSLATIONS
Sue Coles

PROOFREADING
Dr Philippa Söldenwagner-Koch
lektoratbilingual.de

facebook.com/
KieserTrainingGlobal

LAYOUT
Naef - Werbegrafik GmbH
naef-werbegrafik.ch

PRINT
Mephisto Werbung

PICTURE CREDITS
P.1, photo: Paolo Hummel
P. 2, S. 3, photos: Hoai Nguyen
P. 4 (bottom), photo: Verena Meier Fotografie