



VIRTUAL WELDING

THE WELDER TRAINING OF THE FUTURE



MAGIC FOLDER APP

Discover amazing 3D animations and videos in this folder. Download now for free!



BECOME A WELDING EXPERT WITH **VIRTUAL TRAINING**



Many professions are already exploiting the advantages of virtual training in order to prepare for the real world. That's how pilots train, practicing countless take-offs and landings in a simulator before they fly a real plane. The bigger, more expensive, and more dangerous the equipment used, the more often training is carried out in the virtual world. So why not facilitate welder training with virtual tools as well?

VIRTUAL WELDING

- / SAFE for novice welders
- / COST-SAVING for the training center
- / FOUR PROCESS VARIANTS
- / MOBILE CASE for flexible use



*Search for the icons
in this folder and
access even more
interesting content
with your
Magic Folder App.*





VIRTUAL WELDING
MIG/MAG
MANUAL

SIMULATION AND TRAINING

Virtual training is the ideal instrument to realistically simulate complex processes and difficult situations in a risk-free and cost-effective way and to practice them again and again. This also makes it ideal for welder training.



VIRTUAL WELDING
MIG/MAG
ROBOTICS

SAFETY AND POTENTIAL SAVINGS

The safety risk for beginners, which is significantly higher for welding than other professions due to the hot arc, disappears entirely when welding virtually. With Virtual Welding, trainees can learn and practice basic welding skills step-by-step on typical workpieces. Furthermore, virtual training allows expensive consumables such as metal, wire and shielding gas to be saved.



VIRTUAL WELDING
MMA
WELDING

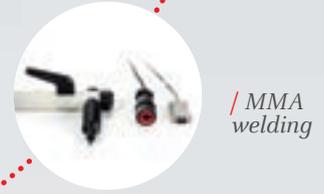


VIRTUAL WELDING
TIG
WELDING

TRAIN WITH 4 FUNCTION PACKAGES AND 3 PROCESS VARIANTS

In addition to the 3 process variants for manual welding training, there is also the option to practice MAG welding on robots. Training with robots can be carried out safely and cost-effectively – without fume extraction, eye protection, or a fireproof floor.

- / Manual arc welding 111
- / MAG welding 135
- / MAG welding 135 mechanized
- / TIG welding 141



/ MIG/MAG Robotics

WORKPIECES AND WELDING POSITIONS

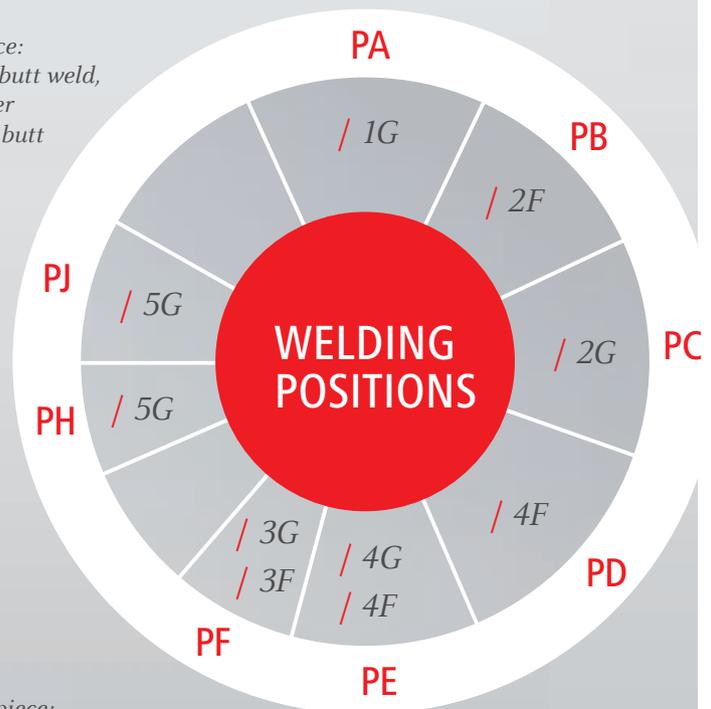
Each welding task requires different welding techniques and manual skills.

This is why welding trainees must be trained to master these different welding positions. Virtual Welding features an extensive range of options for practicing on a variety of workpieces that can be placed on the simulator in different positions. Whether an overhead fillet weld or an upward single-V butt weld – users can be trained in almost all welding positions.



4 WORKPIECES

for different weld seam profiles and welding positions:





COLOR SIGNALS

- / Give immediate feedback
- / Immediate corrections are possible

GHOST

FOR THE PERFECT WELD SEAM

The first step is always the training sequence where the trainee welds under the guidance of the "Ghost". Next the real welding situation is simulated.

TRAINING SEQUENCE

In the training sequence, the virtual trainer (Ghost) specifies the optimum welding speed, the distance to the workpiece, and the angle of contact of the welding torch or electrode holder, as well as the filler metal. On-screen traffic light color signals and real welding noises show the trainee the current status as well as all deviations and/or correct techniques. This makes it possible for them to correct what they are doing straightaway.

VARIABLE GHOST

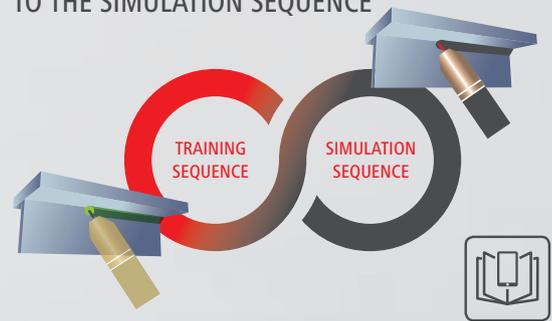
The variable "Ghost" lets trainers store their own know-how and manual skills in a few steps and provide them to their trainees to use as a training guideline. This allows the trainer to pass on their welding style one-to-one.

SIMULATION SEQUENCE

In the simulation sequence, the trainee practices in a real welding situation without the support of the Ghost. The result is a virtual, realistic, and three-dimensional weld seam. This can be analyzed after the simulation using the playback feature with the help of the Ghost.

FROM THE TRAINING SEQUENCE TO THE SIMULATION SEQUENCE

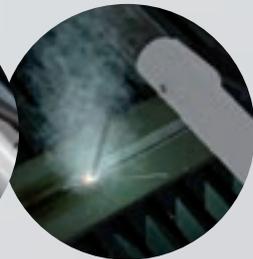
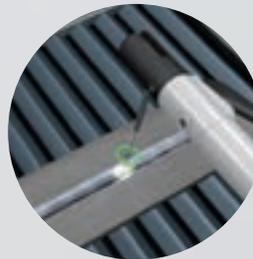
/ 5



MANUAL ARC WELDING

Training sequence

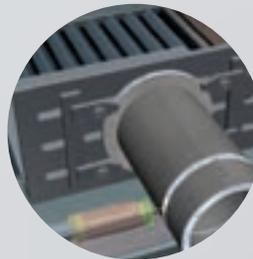
Simulation sequence



MAG WELDING

Training sequence

Simulation sequence



MECHANIZED MAG WELDING

Training sequence

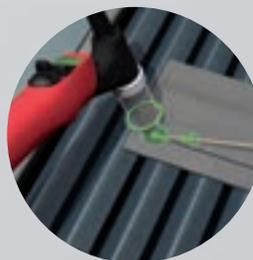
Simulation sequence



TIG WELDING

Training sequence

Simulation sequence



VIRTUAL WELDING

THE PERFECT TRAINING SYSTEM



VERY INTUITIVE OPERATION



Simple menu navigation and touchscreen option-selection combine to make Virtual Welding very easy to use.

READY-TO-WELD PACKAGE



Virtual Welding offers the user a complete package and a comprehensive didactic concept for efficient welder training.

- / Virtual training with pre-defined welding tasks, based on IIW welder training
- / Pre-defined theory documents for theoretical welding knowledge
- / Knowledge test to review the learned content



REALISTIC VIEW

3D glasses provide a very realistic representation of practice welds. This makes the user feel as if they are in a real welding cabin.



DATA BACKUP

Ranking lists, welding results, curricula and courses, and the variable "Ghost" can be transferred and saved to a USB thumb drive. The results can also be used for certificates.

FLEXIBLE USE

/ Thanks to the Mobile Case, the system can be used flexibly, for example in external training rooms.



NO LANGUAGE BARRIERS

Virtual Welding is currently available in over 20 languages, which practically eliminates language barriers during training.



REALISTIC WELDING TORCHES

The right, ergonomically designed welding torch (or electrode holder), faithfully modeled on the original, for every process.

MAKING LEARNING FUN WITH QUIZZES



One question, three possible answers – welding beginners can have fun testing and expanding their welding knowledge, alone or in a group. The questions can be individually configured and updated. The integrated glossary acts as a reference aid for the welding novice.

POSITIVE GROUP DYNAMIC



A pedagogically sophisticated points system means that comparable training results can be achieved again and again; this allows the trainees to be assessed objectively and transparently. By spurring one another on and interacting in this way, as well as being assessed professionally, trainees learn swiftly and effectively.



INDIVIDUAL CURRICULA AND COURSES

The trainer can personally create curricula and courses, allowing the training to be individually tailored to target groups. Specific manual skills can also be practiced.



ANALYSIS OPTIONS

Every welding process is recorded and can be replayed at any time, meaning it can be closely analyzed against the optimal target.



UPDATE CAPABILITY

Virtual Welding can easily be updated with the latest version of the software and new processes using an external DVD drive.



POTENTIAL SAVINGS USING THE EXAMPLE OF THE FOHNSDORF TRAINING CENTER

13 TRAINEES

were followed during the first two weeks of their welder training at the Fohnsdorf (Austria) training center. The results of the welding trials on the Virtual Welding Simulator were documented, as well as the data for the real welds.

RESULTS OF THE STUDY:

LESS PRESSURE ON THE TRAINERS

Thus providing more time to support participants during real welding

16.3%
MORE EFFICIENT TRAINING

SAVINGS OF UP TO
€ 231*
on material costs per participant

65%
more arc time on the Virtual Welding simulator

3X MORE TRIALS

On the Virtual Welding simulator, > 3x more welding trials can be conducted in the same training time than in the welding cabin



"Fohnsdorf Training Center uses 'Virtual Welding' for MMA and MAG welding qualifications. It is an exceptional tool that enables the user to improve their skills. The simulators are fully integrated into the training content. First, the individual welding positions are practiced on the simulator and then you implement what you've learned in practice. The playback function provides a constant analysis of errors from the system during training, allowing the user to continually improve their skills. The training modules are designed to create an interplay between virtual and real applications."

* ONLY with task 135 P FW PB and 135 T FW PB.

** Evaluation based on 1577 real and 1733 virtual weld seams

/ Perfect Welding / Solar Energy / Perfect Charging

THREE BUSINESS UNITS, ONE GOAL: TO SET THE STANDARD THROUGH TECHNOLOGICAL ADVANCEMENT.

What began in 1945 as a one-man operation now sets technological standards in the fields of welding technology, photovoltaics and battery charging. Today, the company has around 5,660 employees worldwide and 1,321 patents for product development show the innovative spirit within the company. Sustainable development means for us to implement environmentally relevant and social aspects equally with economic factors. Our goal has remained constant throughout: to be the innovation leader.

Further information about all Fronius products and our global sales partners and representatives can be found at www.fronius.com

Fronius Canada Ltd.
2875 Argentia Road, Units 4,5 & 6
Mississauga, ON L5N 8G6
Canada
Telephone +1 905 288-2100
Fax +1 905 288-2101
sales.canada@fronius.com
www.fronius.ca

Fronius USA LLC
6797 Fronius Drive
Portage, IN 46368
USA
Telephone +1 877 FRONIUS
sales.usa@fronius.com
www.fronius-usa.com

Fronius UK Limited
Maidstone Road, Kingston
Milton Keynes, MK10 0BD
United Kingdom
Telephone +44 1908 512 300
Fax +44 1908 512 329
info-uk@fronius.com
www.fronius.co.uk

Fronius International GmbH
Froniusplatz 1
4600 Wels
Austria
Telephone +43 7242 241-0
Fax +43 7242 241-953940
sales@fronius.com
www.fronius.com