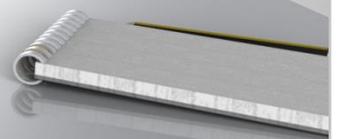
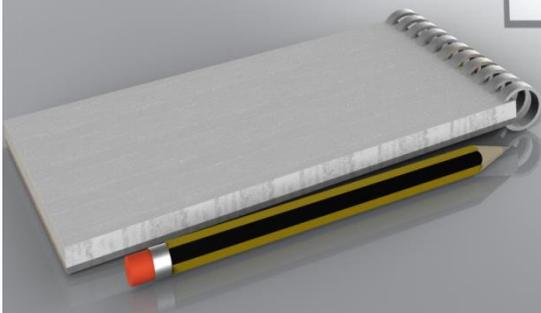




Made for Robots.

Training Modules

Welding Basics | Processes | Welding technology | Maintenance



Welding specialists | Application engineers | Service engineers | Maintenance engineers

Training Modules

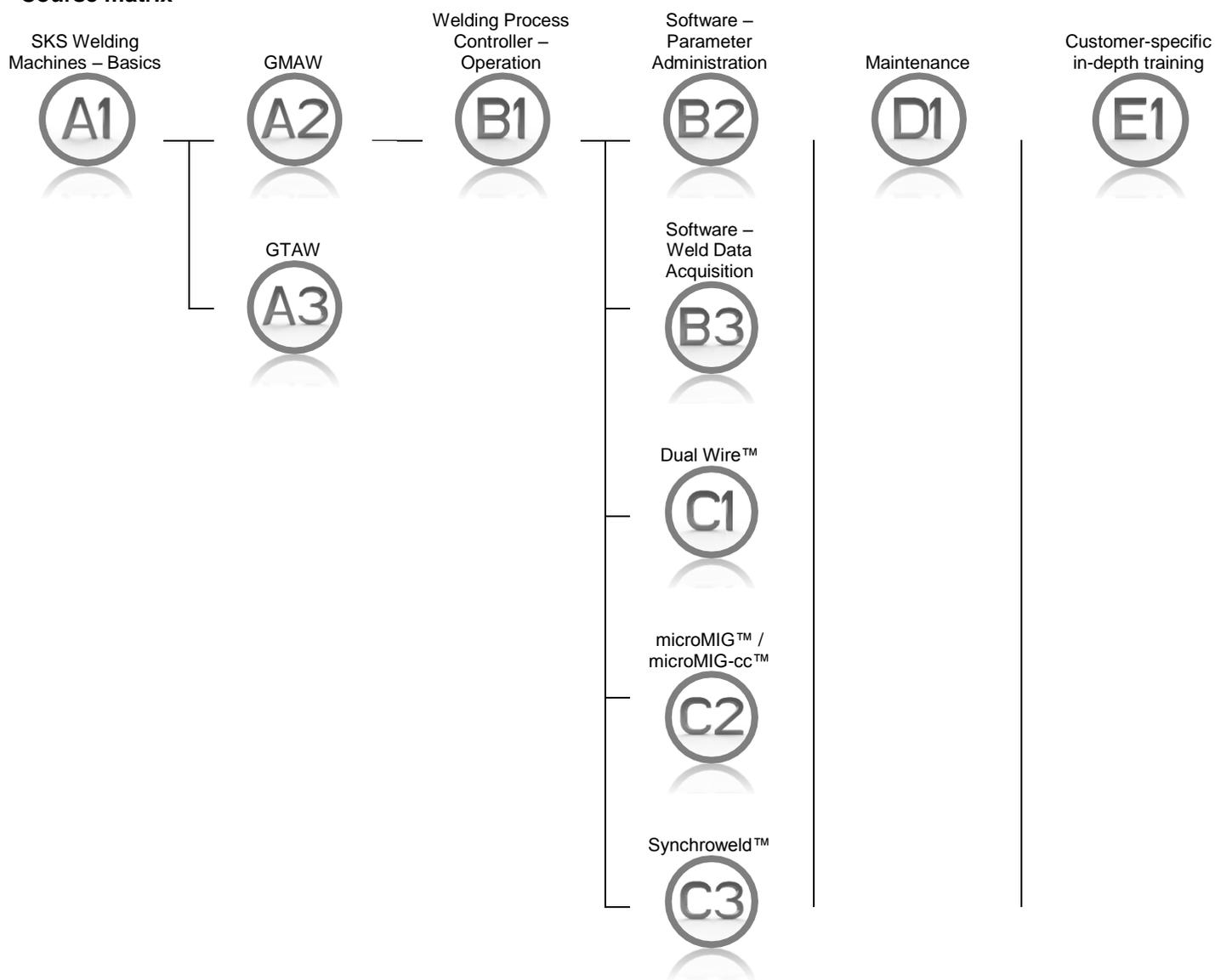
SKS practical training

The handling, installation and operating concepts of SKS welding machines are simple and intuitive. However, training courses help with rapid parameter finding and lay the foundations for optimising practical applications.

Our training programme is divided into individual modules, enabling specially tailored training packages to be put together to meet widely differing requirements.

Basic modules are identified with an **A** and include the basic principles of welding using SKS welding systems. Modules identified with a **B** include the SKS control concept and the use of the Q8Tool software. **C**-modules include the basic theoretical principles of our welding processes. **D** covers the installation and maintenance of SKS systems. We have also created a flexible **E** module in order to address customer-specific questions. Customer-specific courses can be put together by selecting the required modules. Concentrating on the essentials saves time and investment in competence management.

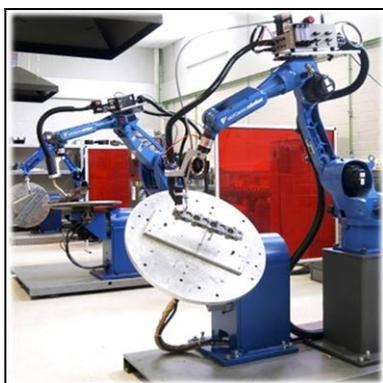
Course matrix



Training Modules

Module	Course content	Prerequisites	Duration
A1	SKS welding machine – basics	None	6h (1 day)
A2	GMAW	Welding qualification or Module A1	9h (1.5 days)
A3	GTAW	Welding qualification or Module A1	9h (1.5 days)
B1	Weld process controllers – operation	Welding qualification or Module A1 + A2	3h (0.5 days)
B2	Software – parameter administration	Module B1	3h (0.5 days)
B3	Software – weld data acquisition	Module B1	3h (0.5 days)
C1	Dual Wire™	Welding qualification or Module A1 + A2 + B1	6h (1 day)
C2	microMIG™ / microMIG-cc™	Welding qualification or Module A1 + A2 + B1	6h (1 day)
C3	Synchroweld™	Welding qualification or Module A1 + A2 + B1	3h (0.5 days)
D1	Maintenance	None	12h (2 days)
E1	Customer-specific in-depth training	Selection of module to be taught in depth	6h (1 day)

Languages: German, English, Polish, Czech



SKS robot laboratory

The SKS welding test laboratory is the ideal platform for practical exercises. Here you will be shown how to find the optimum parameters for a workpiece. You will also be shown what to look for in order to assess the quality of welds using sectional examples from our metallurgical laboratory.

Four fully equipped robots are available in the test laboratory for exercises and welding trials. These will be retooled and equipped for the required processes.



microMIG™ welding

The C-modules serve to explain our welding processes and their areas of application. Settings for practically spatter-free welding and the use of new materials are treated in depth.

Practical applications are used to explain how optimised welds can be achieved using, for example, the pulse process. Special features which arise with newer materials are also included.

Knowledge of the individual processes will be addressed in detail using practical exercises.



Practical example: Torch Neck exchange

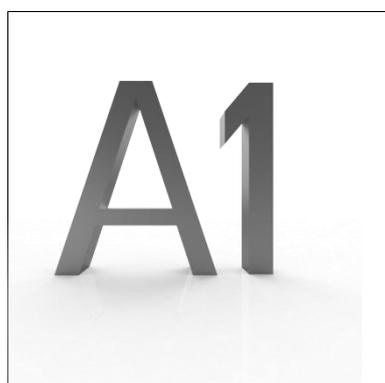
SKS torch necks make installation easier with the innovative bayonet fixing concept. As well as fast changing of the torch neck without tools, a TCP of ± 0.2 mm is guaranteed.

Our training modules for maintenance engineers concentrate specifically on the advantages of SKS components. Along with the reliable installation of torch systems, the objective is to maintain individual components and integrate them into the overall system.

In doing so, particular attention will be paid to our pre-assembled installation options in order to achieve the highest possible availability.

Scope of training module A1, A2, A3

Training module	Course objectives	Participants
A1 – SKS welding machines – basics	<ul style="list-style-type: none"> To obtain a basic knowledge of welding with SKS systems To recognise external influences on the welding system 	Maximum 6 persons
A2 – GMAW	<ul style="list-style-type: none"> To understand the principle of operation of the overall system 	Maximum 6 persons
A3 – GTAW	<ul style="list-style-type: none"> To understand GTAW welding processes 	Maximum 6 persons



Training module A1

Module A1 – SKS welding machine – basics

Order number: 020-A1

Theoretical part

- Inert gas welding processes
- Welding processes with melting electrode
- Types of arc
- Special processes
- Overview of influencing factors encountered when welding

Practical part

- Use of programming tips
- Use of angle gauges
- Test welds to illustrate problems
- Areas of application of the individual arc processes
- Assessing welds

Target group – Persons requiring a basic knowledge of welding technology



Training module A2

Module A2 – GMAW with SKS systems

Order number: 020-A2

Theoretical part

- System design
- System components
- Connecting components
- Processes (GMAW welding)
- Explanation of GMAW welding parameters
- Trouble shooting

Practical part

- Test welds
- Comparison of process types
- Variations in the pulse process
- Changing wearing parts
- Trouble shooting

Target group – Welders | Application engineers | Service engineers



Training module A3

Module A3 – GTAW with SKS systems

Order number: 020-A3

Theoretical part

- System design
- System components
- Connecting components
- Explanation of GTAW welding parameters
- Definition of protective gas and centre gas
- Cold wire
- Maintenance and care

Practical part

- Gas adjustment
- Checking ignition (no contact with component due to ignition stroke)
- Test welds
- Welding reports

Target group – Welders | Application engineers | Service engineers

Scope of training module B1, B2, B3

Training module	Course objectives	Participants
B1 – Weld process controllers – operation	<ul style="list-style-type: none"> • Learning to use the controller • Understanding the controller parameter architecture • Knowledge of controller parameters available 	Maximum 6 persons
B2 – Software – parameter administration	<ul style="list-style-type: none"> • Learning to use the Q8Tool software • Knowledge and concepts for managing controller content and parameters 	Maximum 6 persons
B3 – Software – weld data acquisition	<ul style="list-style-type: none"> • Learning to use the automated data recording facility • Understanding networking options • Knowledge and concepts for recording welding data during production 	Maximum 6 persons



Training module B1

Module B1 – Weld process controllers – operation

Order number: 020-B1

Theoretical part

- Connections
- Structure of groups / parts / programs
- Operation with particulars of control devices
- Operation with particulars of menu contents
- Characteristics / Single-button operation
- Options
- Measurements and alarms

Practical part

- Navigation within the controller
- Various exercises (e.g. selection of group / part / program)
- Changing parameters
- Changing monitoring functions
- Simulation of test welds (Q8 simulator)
- Viewing measurements online and in the memory
- Backup and restore

Target group – Welders | Application engineers | Service engineers



Training module B2

Modul B2 – Software – parameter administration

Order number: 020-B2

Theoretical part

- Purpose of the Q8Tool4 software
- Administrative part
- Measurements and alarms
- Rights system and allocation of rights during installation

Practical part

- Practical exercises on all items

Target group – Welders | Application engineers



Training module B3

Module B3 – Software – weld data acquisition

Order number: 020-B3

Theoretical part

- Purpose of the Q8Tool software
- Q8Tool server and Q8Tool client
- Creating log jobs
- Viewing and exporting log files
- Strategies for orderly data storage

Practical part

- Practical exercises on all items

Target group – Application engineers

Scope of training module C1, C2, C3

Training module	Course objectives	Participants
C1 – Dual Wire™	<ul style="list-style-type: none"> To become familiar with the design, components and principle of operation of twin-wire welding 	Maximum 6 persons
C2 – microMIG™ / microMIG-cc™	<ul style="list-style-type: none"> To understand the welding process To become familiar with the areas of application 	Maximum 6 persons
C3 – Synchronweld™	<ul style="list-style-type: none"> To use the Synchronweld™ function To understand the interaction between robot and welding system 	Maximum 6 persons



Training module C1

Module C1 – Dual Wire™

Order number: 020-C1

Theoretical part

- System design
- System components
- Connecting the components
- Explanation of twin-wire welding parameters
- Use of I-pulse and KF-pulse
- Comments on wire feed speed and welding direction
- Possible uses of twin-wire welding

Practical part

- Test welds
- Changing wearing parts

Target group – Welders | Application engineers



Training module C2

Module C2 – microMIG™ / microMIG-cc™

Order number: 020-C2

Theoretical part

- System design
- Connecting the components
- Description of the welding process
- The microMIG process parameters
- Possible uses of the microMIG process

Practical part

- Test welds
- Welding reports

Target group – Welders | Application engineers



Training module C3

Module C3 – Synchronweld™

Order number: 020-C3

Theoretical part

- Function and use of Synchronweld
- UNI5C / field bus module

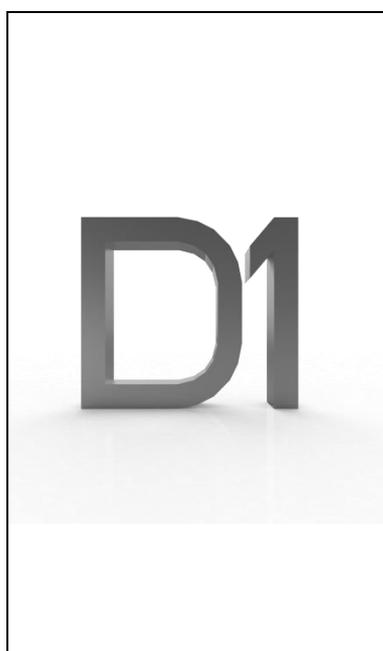
Practical part

- Test welds (with and without Synchronweld)
- Welding reports

Target group – Welders | Application engineers

Scope of training modules D1, E1

Training module	Course objectives	Participants
D1 – Maintenance	<ul style="list-style-type: none">To be able to maintain welding components	Maximum 6 persons
E1 – Customer-specific in-depth training	<ul style="list-style-type: none">To teach customer-specific topics in greater depth	Maximum 6 persons



Training module D1

Module D1 – Maintenance

Order number: 020-D1

Theoretical part

- Fitting and installation of SKS welding equipment on different types of robot
 - General system design, principle of operation of individual components
 - Control via standard interface and integration in a field bus environment
 - System commissioning (initialisation) and system test
- SKS welding machine concept
 - Design and function of welding process controllers, wire feed units, power sources, robot interfaces, field bus interfaces
- Maintenance of welding torches, LSQ-Series power sources and wire feed units
- Aids for fault finding and possible repairs on site
 - Introduction to the Q8Tool software
 - Documentation structure, alarm assignment, repair strategies

Practical part

- Welding tests with fault simulation and localisation of faults in the overall system

Target group – Maintenance engineers



Training module E1

Module E1 – Customer-specific in-depth training

Order number: 020-E1

Theoretical part

- As requested by customer
- In-depth training in a specific topic

Practical part

- Consideration of customer-specific welding tasks

Target group – Application engineers



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