



**QIROX**

Automated welding and cutting with system

**CLOOS**

Weld your way.

[www.cloos.de](http://www.cloos.de)

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## QIROX: Systematic automated welding and cutting

QIROX comprises all solutions for automated welding and cutting. Due to its modular design, the QIROX system allows scalable solutions which can perfectly match your production requirements. The QIROX system includes the robot technology, positioners, safety technology, software, sensors and the interface to the process technology. It is supplemented by a comprehensive accessories program and matching services.



# From the idea to the finished component, a whole product life ...

## 1. Consulting

With this comprehensive “pre-service”, we take care of your project from the beginning and transfer our integrated process expertise to your component. Thus we ensure you a decisive lead in technology.



## 2. Planning

We elaborate a solution which perfectly meets your individual requirements. We work hand-in-hand with our customers to guarantee you on-schedule project processing.



## 3. Design

From the cell to the fully-automated production line – due to the modular design of our product series we develop customised solutions which meet all your production requirements.



...with our tried-and-tested products and systems – from a single source!



Robots



Power sources



Workpiece positioners

#### 4. Production

Our production workshops are the core of our company. Welding machine and robot technology is our strength – including our core competence: the arc.



#### 5. Commissioning

Our specialists carry out the installation step-by-step in your production hall and test your system for faultless functionality. In this way, we guarantee a smooth installation and a rapid start of production.



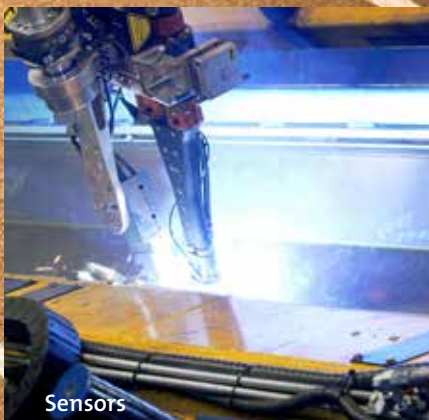
#### 6. Training

We train your employees and service technicians in programming, operation and maintenance in our modern training centre.



#### 7. Service

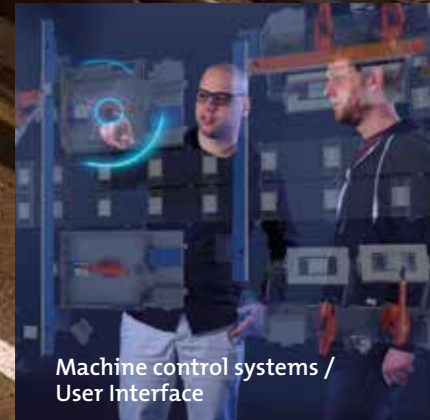
Our competence team advises you on any extensions, modifications and retrofits of your existing robot and welding systems. We offer complete service packages for inspection, calibration and maintenance.



Sensors



Process software



Machine control systems / User Interface

## Compat robot cell for process safety and top quality at Halder

The Halder family company has been producing soft-faced hammers for over 75 years and is the world leader in this product segment. The Hidden Champion has automated the entire welding process for the soft-faced hammers made at the Baden-Württemberg site in Achstetten. The compact QIROX QR-CC-6 robot cell produced by CLOOS guarantees constant quality and reproducibility. It does not require much space and could be easily integrated into the

production. From sensors to controller and safety technology the compact cell is a tailor-made unit with components which match each other optimally. The cell has a 2-station positioner with turning/swivelling movement.

**Component:** Soft-faced hammers

**Process:** Vari Weld

**Material:** Thin plate up to 4 mm





## The components:

- 6-axis robot mechanics with classic wrist and 3,200 mm working envelope
- 2-station positioner with horizontal station change and two workpiece positioners with turning and swivelling movement



More on CLOOS TV



## CLOOS robot welds compact cargo bikes

For welding cargo bikes, multi-cycles GmbH in Cologne relies on an automated solution by CLOOS. Thanks to the flexible design of the system and the use of different welding processes such as MoTion Weld and Vari Weld, the robot can weld different steel and aluminium components with consistently high quality. The robot system consists of two opposite welding stations, each of which has a horizontal swivelling axis with an L-shaped extension arm. The counter bearing stabilises even long workpieces during welding. The station change is made by a horizontal rotation.

Because of the 2-station arrangement, the machines can be loaded mutually. The heart of the system is the QIROX QRC-350-E robot. The 6-axis articulated arm robot has an excenter axis 7 which is integrated between robot base and centre point of axis 1. The seventh axis extends the working range for optimal positioning of the welding torch.

**Component:** Cargo bikes

**Process:** MoTion Vari Weld

**Material:** Aluminium up to 4 mm







## The components:

- 6-axis robot mechanics with classic wrist, 3,500 mm working envelope and extended range by seventh robot axis
- 2-station positioner with horizontal station change and two workpiece positioners with turning and swivelling movement with flexible counter bearing
- MoTion Vari Weld



More on CLOOS TV

## CLOOS robots weld aerial ladders for aerial rescue vehicles

Fire brigades all over the world use vehicles from Rosenbauer Karlsruhe GmbH & CO. KG. The international technology leader for aerial rescue vehicles fully relies on CLOOS for automated welding. Since the middle of 2019, the aerial ladder elements have been welded with two identical QIROX robot systems. The robot is mounted here in overhead position on a linear track with vertical and horizontal stroke. The aerial ladders are inserted between two workpiece positioners, each with a vertically arranged faceplate. The workpiece which is fixed between the faceplates is turned into

the optimum processing position by a horizontal turning axis. In addition, the robot systems are equipped with online and offline sensors to compensate for any component tolerances. By changing to the automated welding technology, the company can respond even more flexibly to customer requirements, saves time both in welding and in secondary processes and achieves excellent welding results.

**Component:** Aerial ladders

**Process:** Vari Weld

**Material:** Sheet up to 4 mm





## The components:

- Robot system for long, lightweight components
- 6-axis robot mechanics with classic wrist and 3,500 mm working envelope
- Floor-mounted linear track with horizontal and vertical stroke
- Workpiece positioner with turning and swivelling movement with flexible counter bearing
- Laser Offline Sensor
- Vari Weld



More on CLOOS TV

## Tandem welding guarantees excellent weld quality

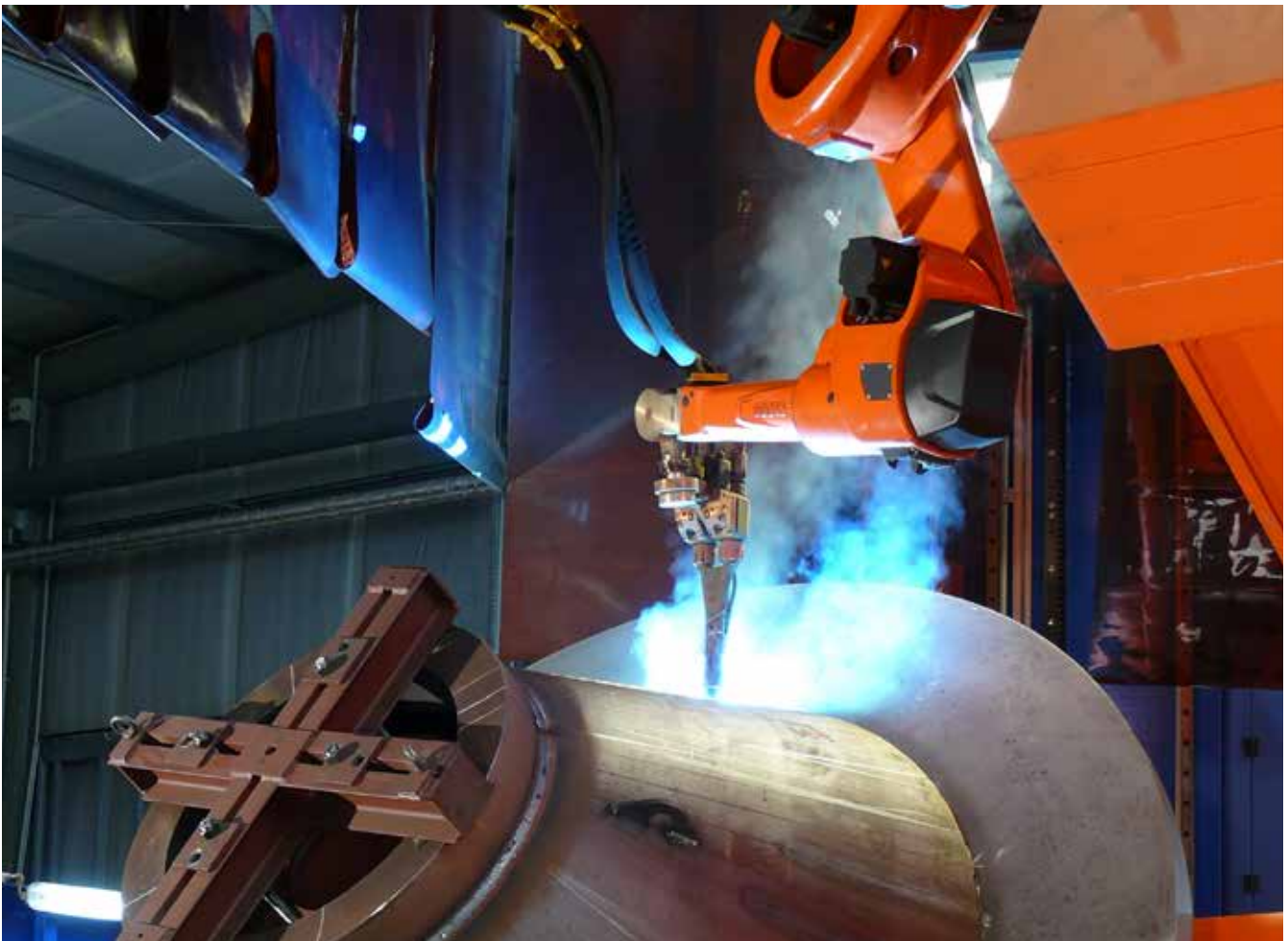
The Schottel 360° marine propulsion allows turning manoeuvres within the narrowest space or landing without tug boats are possible. One propulsion component is exposed to high forces: the structural support tube. It houses the deflection gear for the power transmission to the propeller and is the connection to the body. Here the weld quality is very important. Therefore, the structural support tube is TANDEM welded. This welding process ensures an excellent weld quality because the low heat input avoids material tensions and distortion. In the system, a 30 tonne L positioner

turns and swivels the support tube into the best gravity position for welding. Furthermore, a rotating C frame with vertical stroke enlarges the robot working range and allows welding components with different dimensions.

**Component:** Structural support tube

**Process:** Tandem Weld

**Material:** Thick plate from 8 mm on





## The components:

- Robot system for heavy, compact components
- 6-axis robot mechanics with classic wrist and 3,500 mm working envelope
- Floor-mounted linear track with vertical stroke for overhead robot mounting
- Workpiece positioner with turning and swivelling movement
- Arc sensor
- Tandem Weld



More on CLOOS TV



## Complex robot system welds brackets at BPW

BPW Bergische Achsen KG is a world-leading manufacturer of axle, brake and suspension systems as well as bearings for lorry trailers. At its production site in Brüchermühle, the family-run, long-established company commissioned a new CLOOS robot system for welding connection pieces in early 2017. The new system has enabled

BPW to significantly improve both the quality of its production processes and the work environment for its employees.

**Component:** Axis bracket for trailers

**Process:** Speed Weld

**Material:** Sheet 4-8 mm





## The components:

- Chained system for small components
- 6-axis robot mechanics with hollow shaft wrist and 2,800 mm working envelope
- 6-axis robot mechanics with classic wrist, 45 kg payload at the wrist and 3,900 mm working envelope
- Gantry robot
- Compact cells with 2-station positioner with horizontal station change and two workpiece positioners with turning and swivelling movement with flexible counter bearing
- Workpiece carrier with RFID recognition and conveyor
- Camera-based component recognition and quality control
- Component marking
- Speed Weld



More on CLOOS TV

## QIROX Robot: International top class

The robot is the central element in the QIROX solution package. You benefit in particular from the modular design of the entire mechanics. All components of the robot, from the robot base to the wrist, are perfectly matched to each other. By using different component groups, you get a customised welding robot for every production requirement. With our four robot series for different applications, optimal solutions can be realised for the most diverse welding processes

and production environments. Depending on your requirements, you can choose between a robot with a classic or a hollow shaft wrist. The robot is supplemented by a variety of different positioners. These expand the working area of the robot and bring the workpieces into an optimal processing position.

- **Flexibility:** Modular design for tailor-made systems, perfectly adapted to individual production requirements
- **Quality:** Repeatability, long service life and maintenance intervals
- **Service:** Global dense service network and high availability of consumables and spare parts





## The entry model:

Easy entry into the world of robot welding

**WS**  
Series

- Optimum price-performance ratio
- Easy entry into the robot welding technology



## The compact solution:

Agile and highly dynamic for short cycle times

**WM**  
Series

- Highly dynamic, agile and efficient
- Small floor space due to compact design

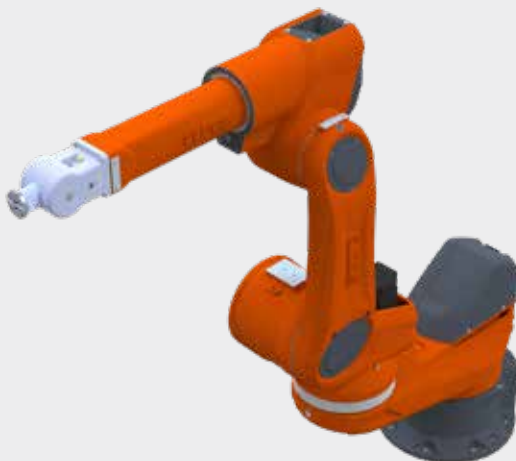


## The all-rounder:

Flexible application possibilities for individual requirements

**WL**  
Series

- For almost all processes
- Multiple tasks and processes with one robot thanks to tool changing system
- Extension of range by seventh robot axis (option)



## The power pack:

Precise and powerful for high payloads and a wide range of applications

**PL**  
Series

- Powerful and precise
- A wide variety of application possibilities
- Laser welding, handling, grinding and more



## QIROX Robot Positioners: Robots always in perfect position

The modular QIROX system offers you a wide variety of sophisticated robot positioners – tailor-made, for your individual production requirements. The positioners always bring the robot in an optimum welding position. Thus you reach extremely good welding results which captivate with a high weld seam quality – independent from complexity and size of the workpieces.

- **Extended robot working envelope:** Optimum welding of large-volume and complex workpieces
- **Versatile utilisation ratio:** Easy realisation of additional movement devices and extensions
- **Maximum efficiency:** High moving and turning speeds with exact path accuracy and high repeatability





## QIROX Workpiece positioners: Your component in perfect position

The modular QIROX system offers you a wide variety of sophisticated workpiece positioners – tailor-made, for your individual production requirements. The workpiece positioners always bring the robot in an optimum welding position. Thus you reach extremely good welding results which captivate with a high weld seam quality – independent from complexity and size of the workpieces.

- **Improved accessibility:** Ideal workpiece positioning for optimum weld quality
- **Flexible use:** Solutions for every workpiece size and loads between 2.5 and 300 kN with many extension possibilities
- **Maximum efficiency:** Welding of complex components without interruption in short cycle times





## Sensitivity for optimum welding processes

Via our system solution for automated welding and cutting QIROX, we integrate state-of-the-art welding technology into your welding production. The main task of our sensor systems is to ensure quality control through precise welding procedures. The flexibility of your systems increases due to the control and compensation of tolerances between the programmed paths and the real workpieces. For a wide range of materials and applications, you can choose from four

field-proven CLOOS sensors which further perfect automated welding by intelligent control and guidance. The optimised workflow minimises rework. This allows you to work even more economically and produce high-quality products.

### Advantages for increased productivity

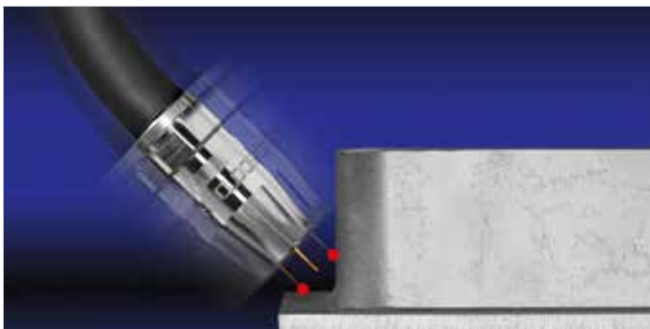
- Four proven sensors for the most different materials, weld shapes and applications
- Perfectly tailored to the CLOOS system solution QIROX
- Considerably improved weld quality
- Reduction of manual effort – minimum rework
- Opening up new application possibilities with CLOOS sensor systems





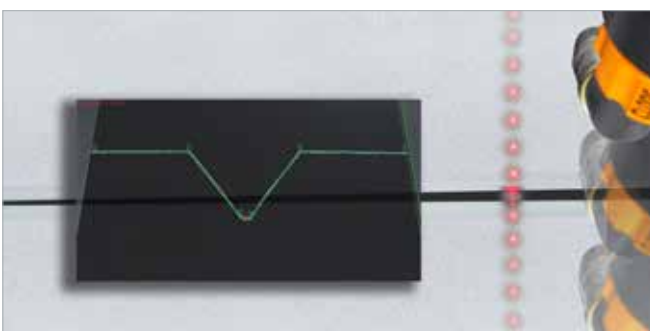
## Tactile gas nozzle sensor

The CLOOS gas nozzle sensor uses electromechanical sensing technology to determine the start and end of the weld seam – deviations caused by workpiece tolerances can be corrected.



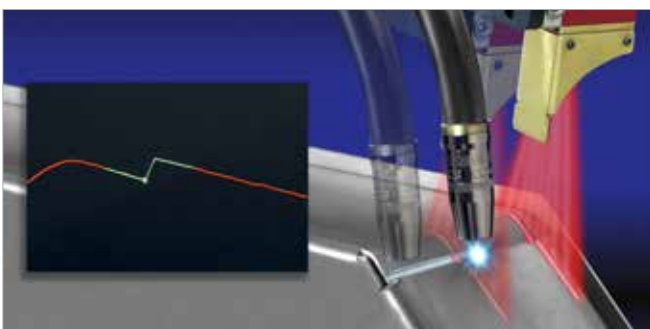
## Arc sensor

During the welding, the CLOOS arc sensor measures whether the burner position actually agrees with the programmed track. In the case of deviations, for example by heat distortion, the robot recognises the real contour, tolerances are directly compensated.



## Laser Offline Sensor

Before start of the welding process, the system scans the beginning and/or the end of the weld offline and records the measurement data. This data is used to adapt the programming to the measured actual state.



## Laser Online Sensor

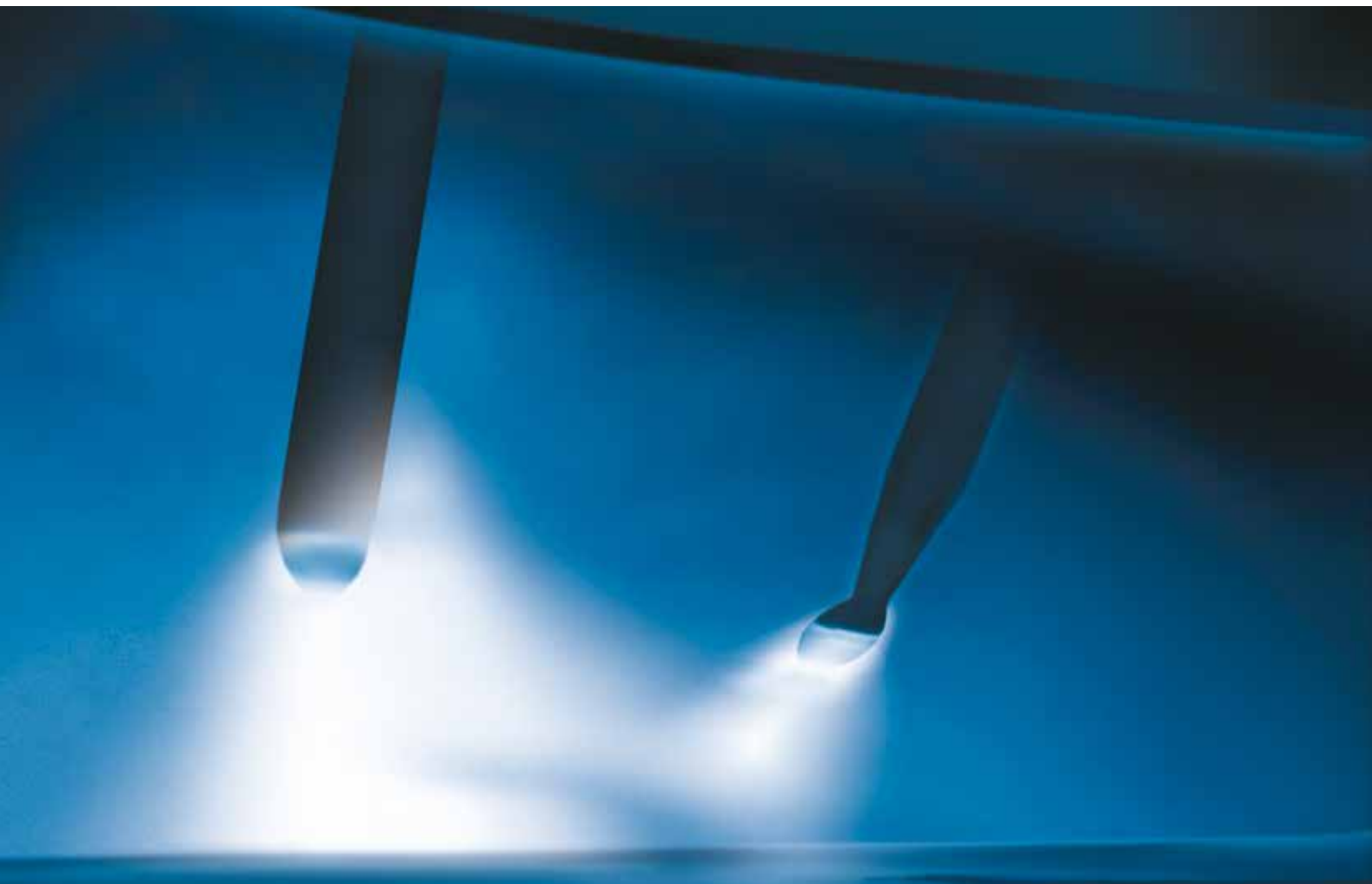
This high-tech sensor offers maximum flexibility. The tracking section is measured online during welding – the workpiece position of, for example, the welding torch or the laser beam and various process parameters are adjusted continuously to reach an optimum welding result.

## The right welding technology for your materials

With a large range of proven and innovative welding processes, CLOOS can offer solutions for the future providing maximum efficiency and productivity with regard to automated welding. New processes such as Tandem Weld or Laser Hybrid Weld are developed and tested in our technology centre under practical conditions.

Even the proven MIG/MAG welding processes are continuously improved to meet the increasingly complex requirements. This decisive competence edge is offered only by CLOOS.

Excellent ignition behaviour, a quiet and stable arc and excellent weld seam qualities: Eight welding processes allow highly flexible application possibilities with a variety of materials. Clean Start, the ignition routine patented by CLOOS, ensures reliable and low spatter arc ignition with all processes.

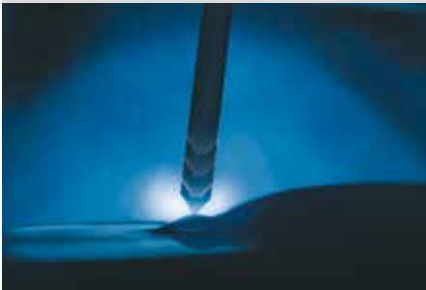




## MoTion Control Weld



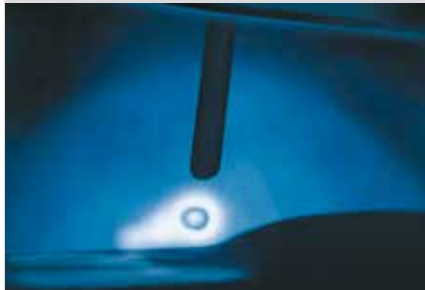
Controlled short arc with reversing wire drive unit



## Vari Weld



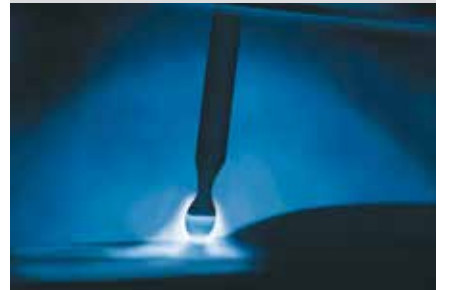
MIG/MAG pulsed arc for optimum welding results even under demanding conditions



## Speed Weld



Stable MIG/MAG pulsed arc for numerous applications



## Rapid Weld



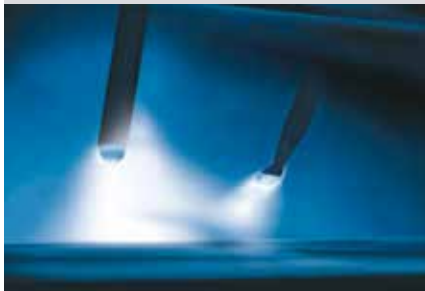
Focused high-capacity MIG/MAG spray arc for deep penetration and efficient welding



## Tandem Weld



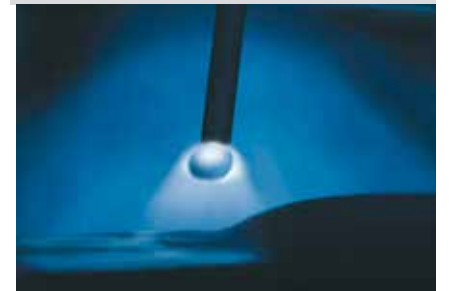
Combination of two synchronised MIG/MAG arcs for maximum deposition rate



## Cold Weld



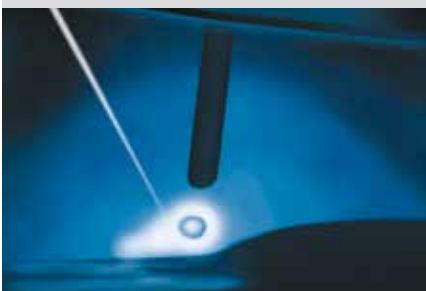
Directionally stable MIG/MAG AC pulsed arc for optimum results when welding demanding materials



## Laser Hybrid Weld



Combination of laser welding and MIG/MAG arc for maximum efficiency and quality



## TIG Weld



Reliable process for clean and precise welding



## Fine Weld



Extremely low spatter MIG/MAG short arc for mixed gas and CO<sub>2</sub> welding



## QIROX Micro Cells

### "Ready to weld" entry solution for automated small part welding

You wish to automatically weld even small workpieces at economical conditions and with excellent quality? The QIROX Micro Cells offer an optimal entry into the automated welding technology. The turnkey "Ready to weld" Micro Cells do not require much space. They can be integrated easily, quickly and flexibly into your production. From the welding robot to the controller and power source to the safety technology – You benefit from a customised unit with perfectly

matched components from a single source. With the wide range of options, you can adapt the Micro Cells particularly to their individual requirements. Achieve excellent welding results at maximum efficiency!

- **Optimum entry into automated welding technology:**

- Maximum ROI and minimum risk

- **"Ready to weld" solution:**

- Easy commissioning for a quick production start

- **Space-saving design with little floor space:**

- Easy integration into the production environment

- **Wide range of options:**

- Flexible adaptation to individual requirements

- **Single source supply:**

- Perfectly matched components





**QIROX Micro Cell QR-MC-1.1S**



**QIROX Micro Cell QR-MC-1.2S**



**QIROX Micro Cell QR-MC-1.1M**



**QIROX Micro Cell QR-MC-1.2M**

## The economic way to weld

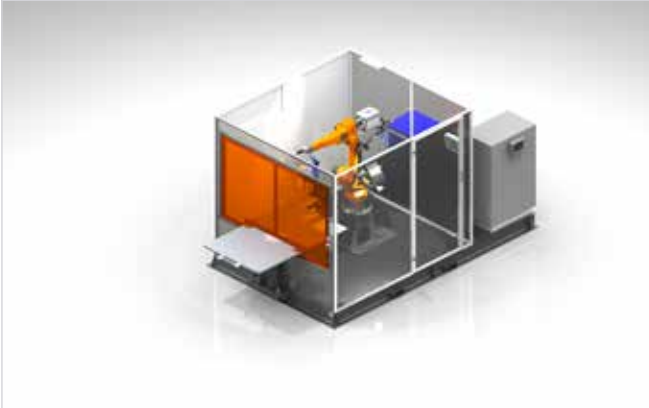
In order to achieve optimum and economic welding of any work-piece, CLOOS has developed an extensive range of compact cells.

They do not require much space and can be easily integrated into any production. From sensors to controller each compact cell or compact system is a tailor-made unit with components which match each other perfectly. With their large variety of welding processes, extensive options and complementary services,

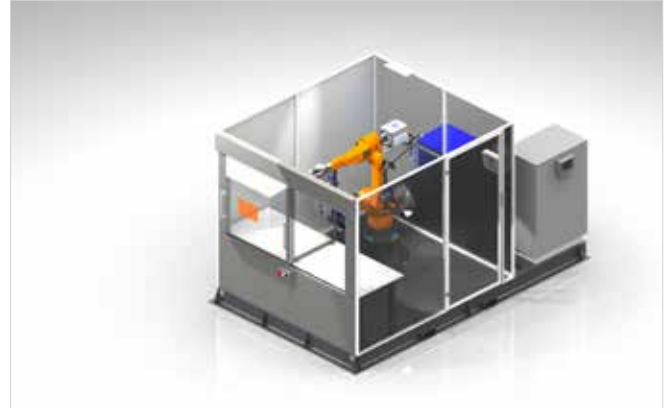
CLOOS can offer you the perfect solution for all requirements of automated series production.

- Easy integration into any production line
- Plug & Weld: Ready-to-weld delivery
- Low space requirement due to modular and compact design
- Easy transport by special transport devices; cell size adapted to truck beds
- One contact for development, project management, production and service
- Single source supply
- Easy intuitive operation
- Rapid amortisation because of a low cost price
- Low-maintenance and flexible complete system
- High duty cycle: water-cooled torch
- "Made in Germany" quality
- Flexibility by innovative Cloos welding processes, welding of different materials
- Ideal for beginners and professionals because of universal application

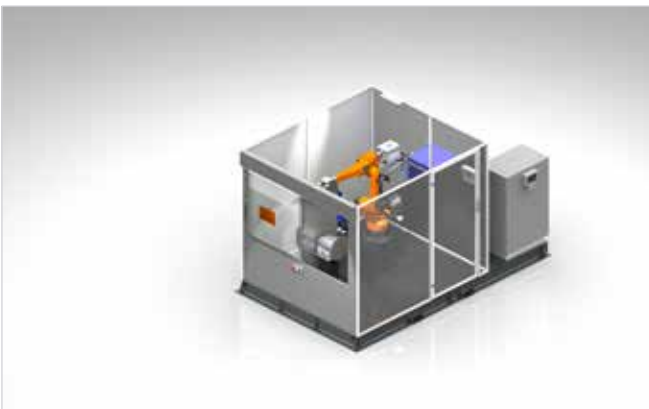




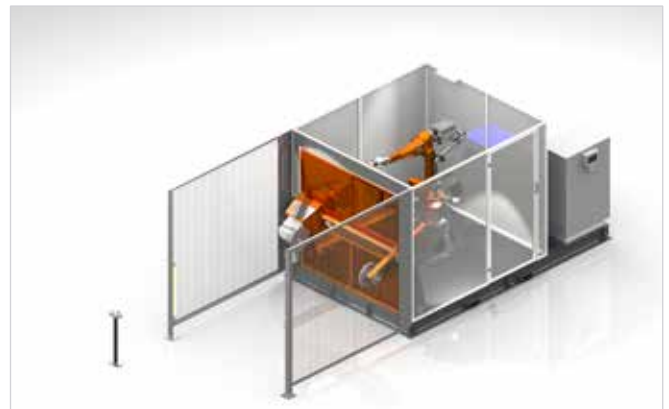
**QIROX Compact cell QR-CC-1.1**  
with manual rotary table



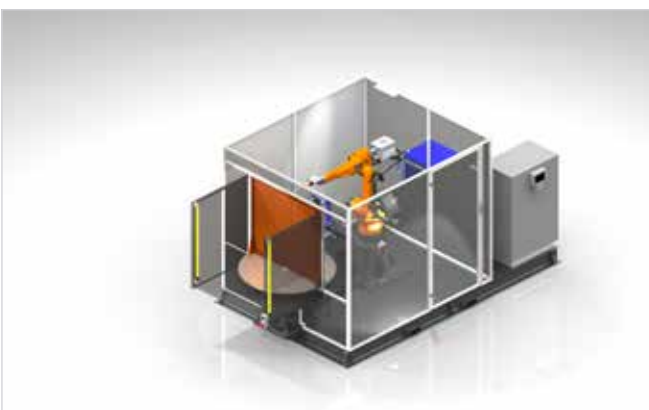
**QIROX Compact cell QR-CC-2.1**  
with clamping plate



**QIROX Compact cell QR-CC-3.1**  
with two positioners



**QIROX Compact cell QR-CC-4.1**  
with 2-station rotary positioner



**QIROX Compact cell QR-CC-5.1**  
with automated rotary table



**QIROX Compact cell QR-CC-6.1**  
with 2-station positioner

## Compact systems "Ready to weld"

The **QIROX compact systems** are perfectly matched "ready to weld" systems in a compact size. Each compact system is equipped with two stations so that a high and economic duty cycle can be obtained.

While the robot is welding the components on one side, loading or unloading is carried out simultaneously on the other station. Robot and positioner are mounted on a common base frame. This guarantees a quick and perfectly adjusted system assembly.

- **Economic:** Weld any workpiece at economic conditions – with our customised solutions for maximum productivity and efficiency.
- **Compact:** Just integrate the systems into your production – the compact design saves production area.
- **User-friendly:** Use our comfortable operating panels – we guarantee easy, precise and intuitive handling.
- **Reliable:** Count on "Made in Germany" – as technology leader we guarantee maximum performance in proven CLOOS quality.
- **Flexible:** Realise individual extensions and retrofits – the modular design makes it possible.

Each **"All in one" compact system (AIO)** is equipped with two stations so that a high and economic duty cycle can be obtained. While the robot is welding the components on one side, loading or unloading is carried out simultaneously on the other station.

The clamping lengths of the standard versions can be changed. Optionally you obtain a movable counter bearing, so that the clamping lengths can be infinitely adjusted.

- **Time-saving:** Benefit from easy assembly and maintenance – our compact systems are completely pre-installed electrically and mechanically.
- **Single source supply:** Trust in many years of know-how together with highest innovation power.





**Compact system QR-CS-10**  
with 2-station rotary positioner



**Compact system QR-CS-20**  
with horizontal rotary positioner with vertical rotation and counter bearing



**QIROX Compact system QR-CS-25 Flex**



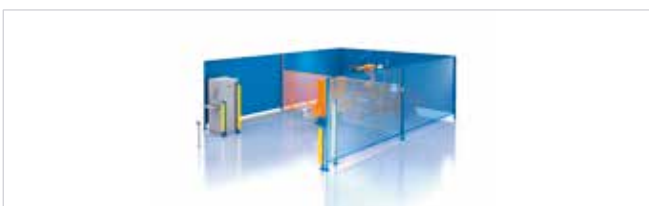
**Compact system QR-CS-30**  
with horizontal rotary positioner with vertical rotation and counter bearing for medium-sized to big workpieces



**QIROX Compact system QR-CS-35 Flex**



**Compact system QR-CS-40**  
with vertical rotary positioner with vertical rotation and counter bearing



**Compact system QR-CS-50**  
with rotary positioner with turning/swivelling movement for small to medium-sized workpieces



**Compact system QR-CS-60**  
with horizontal rotary positioner with turning/swivelling movement for medium-sized to big workpieces



**QIROX Compact system QR-CS-70 Flex**



**QIROX Compact system QR-CS-80 Flex**

# QINEO Welding Technology

## High-tech welding power sources for automated applications

Our high-quality welding power sources have been developed specifically for commercial and industrial welding purposes. They meet every demand of manual and automated welding. Moreover the modular QINEO system allows individual solutions which can be adapted to your specific production requirements and objectives. From capacity class to operating

module and special equipment, each QINEO is customised and supplemented by a comprehensive accessories program and matching services.



..... Operation .....

..... Power unit .....

..... Cooling module .....

..... Substructure .....





## Upstream and downstream processes

### Fully-automated to the tiniest detail

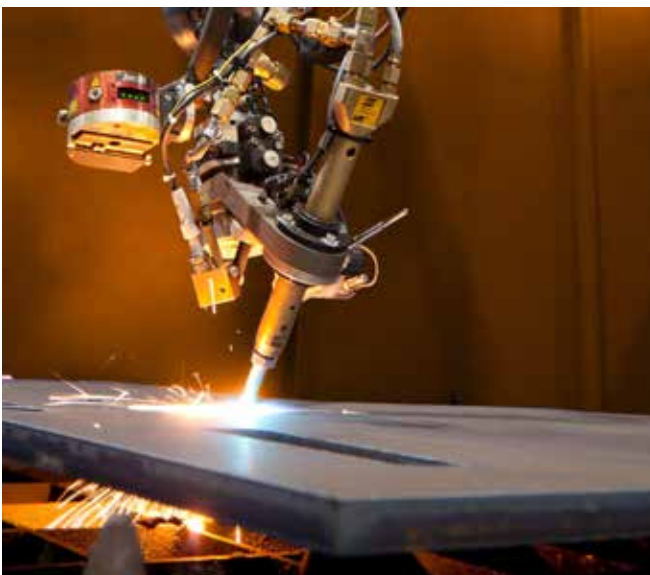
The demand for high-complex chained systems is steadily increasing. Solutions for automated welding technology with upstream and downstream processes such as grinding are more and more being integrated in a production line. Close automation gaps and increase the efficiency in your manufacturing processes!





## QIROX Grinding Solutions: Automated grinding and polishing

In addition to welding technology, grinding and polishing are among the key machining operations in numerous industries and sectors. The applications are extremely diverse. Use also our solutions for automated grinding and polishing. The robots offer consistently high quality – even in 24/7 operation. You also benefit from shorter cycle times, minimised costs and increased productivity.



## QIROX Cutting Solutions: Numerous cutting technologies

When selecting a suitable cutting system it is important to match it perfectly to the respective task and to keep future projects in consideration. Therefore, CLOOS offers you Laser Cut, Plasma Cut and Oxyacetylene Cut, three different cutting processes with special characteristics and individual advantages. Depending on the material type, plate thickness, geometry, quantity, cut quality and influence on the material the advantages regarding efficiency vary from one process to the other. Benefit from our unique combination possibilities of cutting and welding.



## Testing with QIROX robots Ensure best quality

A QIROX robot equipped with intelligent sensor technology inspects the quality of the finished workpieces, which are only sent for further processing after successfully passing the inspection. With a test cell, you increase the quality of your welding production while reducing costly rework. During the testing process, the robot moves to defined points on workpiece and measures them. The software displays precisely which points are being measured and whether the individual points are within the permitted tolerance. Because the software deviations are accurately documented, many errors arising in earlier production steps can be analysed and eliminated permanently.

## C-Gate IoT Platform

### Connectivity and digitisation in welding technology

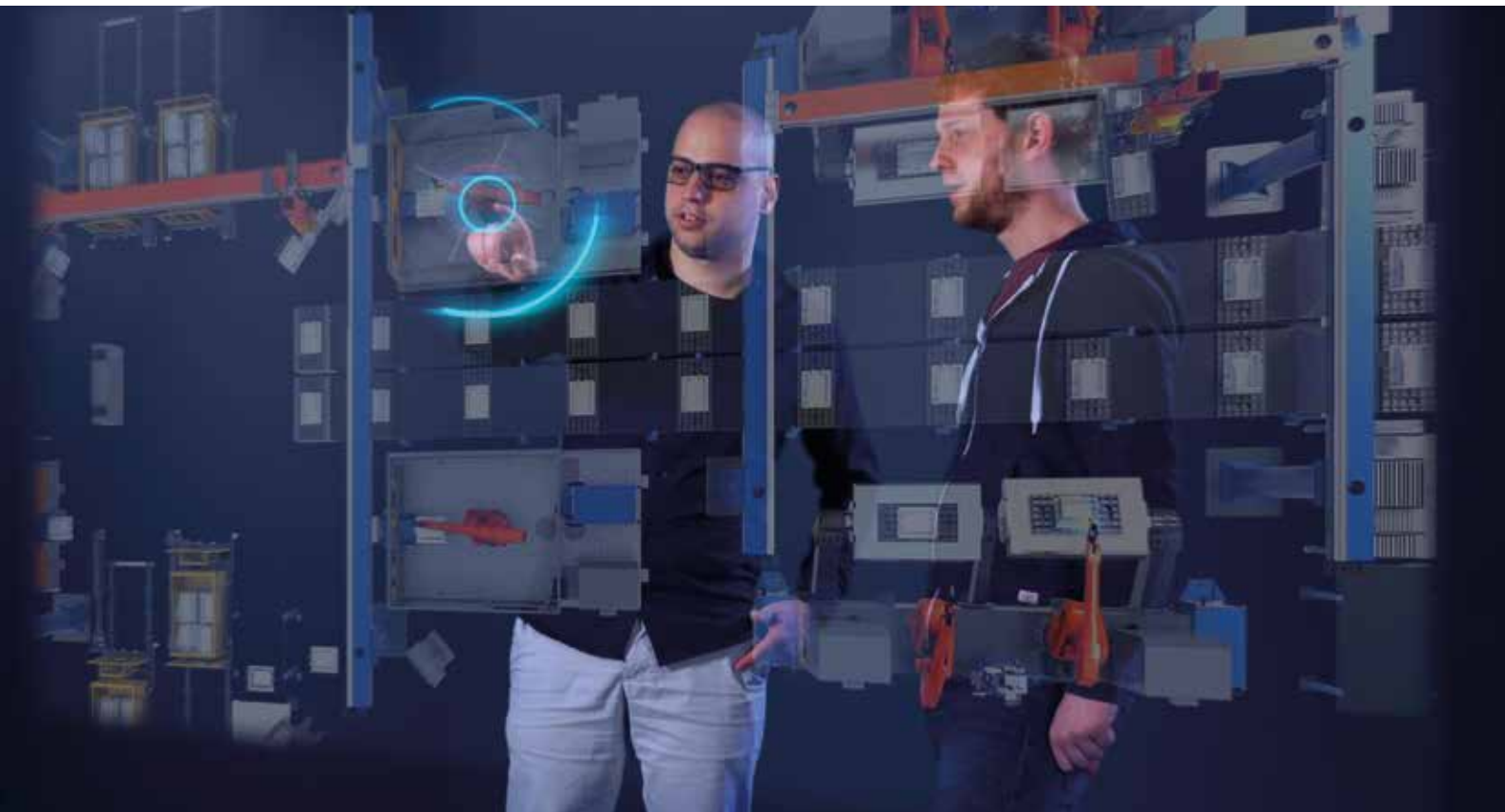
The digitisation platform for your company:

Access information from your welding production in real-time!

All information is entered and processed centrally in an integrated information and communication tool. This allows you to monitor and control your production processes down to the smallest detail.

### Your advantages at a glance:

- **Integrated information and communication tool:** Central acquisition and processing of all data
- **Digitisation, monitoring and analysis of CLOOS production systems:** Efficient production of customer-specific products in high quality
- **Single source supply:** System access to all active components without interface difficulties
- **Configurable system:** Individual adaptations to customer-specific requirements
- **User friendliness due to integrated functions:** Dashboard, evaluation possibilities, mobile access, cloud applications, KPI analysis



## Overview of C-Gate modules

### C-Gate.Ultimate

#### C-Gate.BS

Basis



- Networked production
- Connection possibilities for MES and ERP systems
- Standardised interfaces
- Support on the way to the Smart Factory

#### C-Gate.PR

Production



- Transparent, digitised production process
- Measureable production output
- Optimised production processes
- Reduction of set-up and downtimes

#### C-Gate.QM

Quality management



- Immediate reaction to deviations in the production process
- Detailed component overviews, protocols and reports
- Production and station tracking
- Fulfilment of the technical welding quality requirements

#### C-Gate.PM

Maintenance



- Management of maintenance plans
- Reminder of upcoming maintenance
- Logging of maintenance
- Predictive Maintenance (in future)

Soon available!

#### C-Gate.PG

Program management



- Program availability on all systems
- Central management of the programs
- Traceability of all program changes (in future)

Soon available!

More information:



c-gate.cloos.de

## QIROX Software Management for professionals

The basis for optimum production is an efficient process flow and optimum use of the operating equipment. Downtime due to modification work or time-consuming tests must be reduced to a minimum. The CLOOS software solutions help you to improve the performance of your systems thus increasing the productivity of your production and the quality

of your products. From offline programming, data and process administration to automated creation of your welding instruction: the CLOOS software supports you!

### QIROX Quick Weld Programming QWP:

#### Simple, quick and intuitive operation

The new operating software QIROX Quick Weld Programming offers an even more user-friendly, intuitive operation of the QIROX welding robots. Benefit from a considerable reduction of the programming times by more than 50 percent. In connection with the new operating system QIROX

Operating System (QOS) and the new QIROX Technology Interface (QTI) you raise the efficiency of your welding production to a new level.



## QIROX IRPS

### Welding by a simple touch of the button!

You wish to weld the smallest batch sizes efficiently and automated? Particularly in steel and metal construction, the programming expenditure for automated welding of small batch sizes is often disproportionately high. Use the IRPS Instant Robot Programming System to create programs for automated welding in a short time.

So the automated welding of workpieces in batch size 1 pays off now.

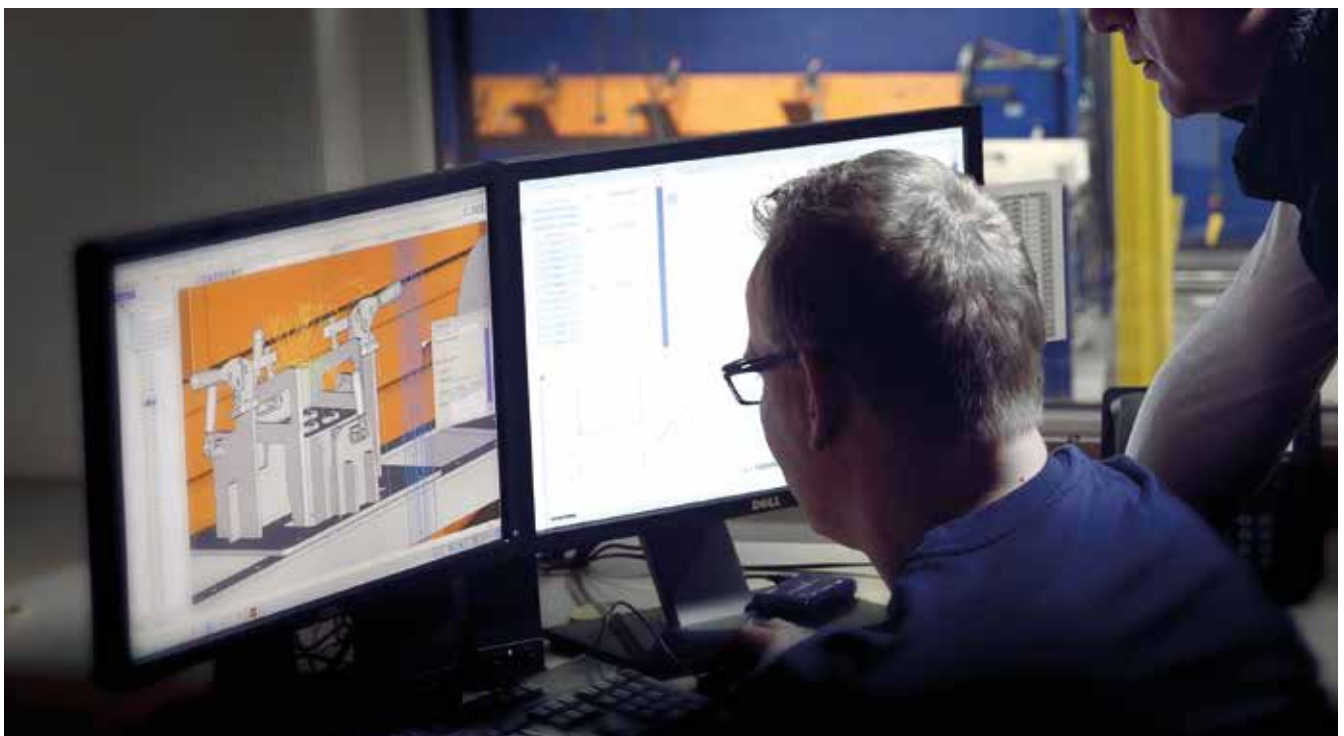


## QIROX RoboPlan:

### Maximum efficiency with offline programming

While the robot system is in production, a new program can be simultaneously produced in RoboPlan. RoboPlan allows the generation of welding and travel paths as well as sensor routines on 3D models and the welding parameters and other functions required for running the program can then be defined. The program developed in this way is transferred into the robot controller directly. This process is less time-con-

suming than the generation of a new program in the robot system using the TEACH process. Thus you increase the system utilisation, optimise the production process and make your welding production more flexible.



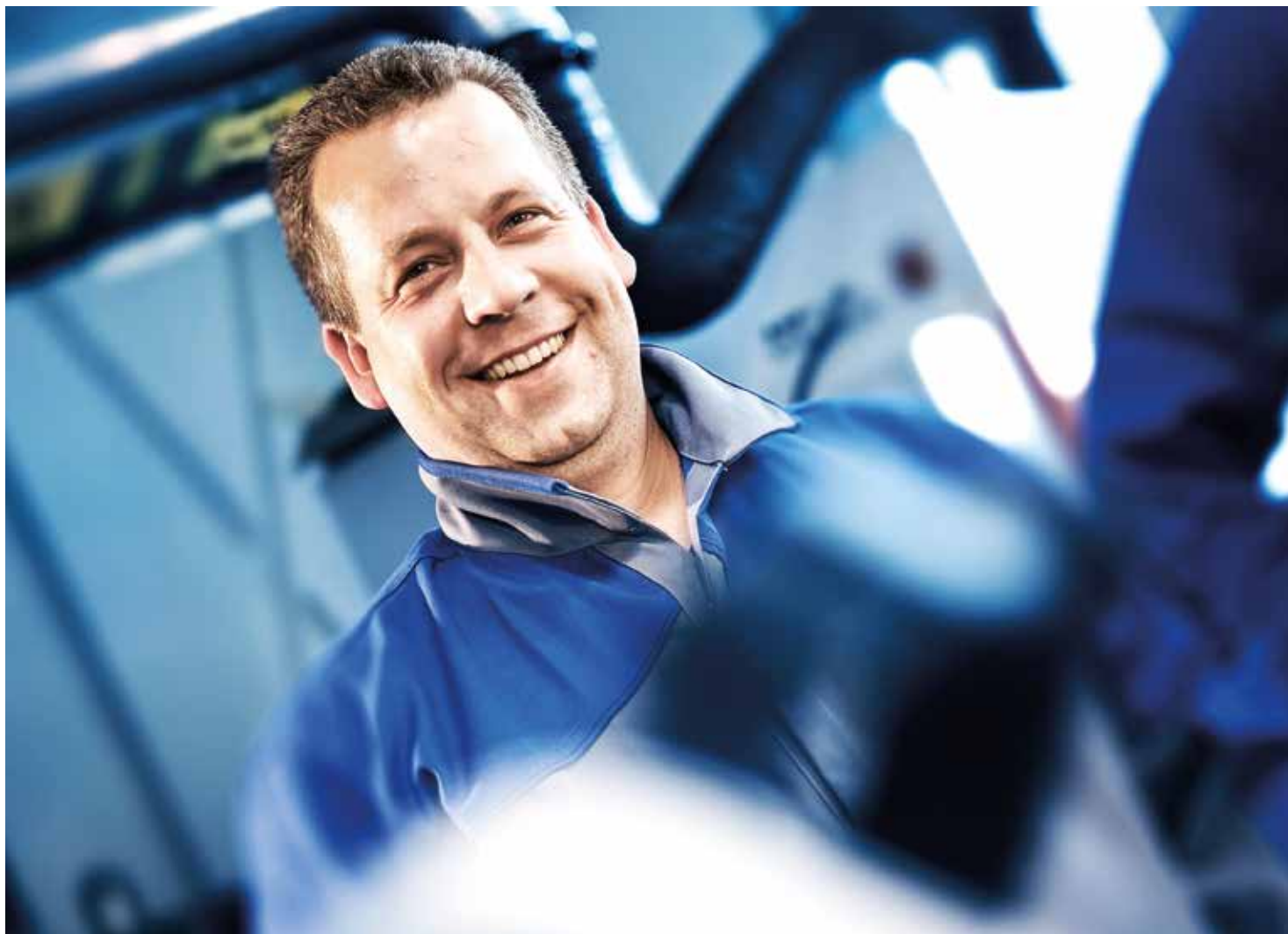
## The CLOOS Service Team: Your quick and effective assistance 24 hours a day!

Our service team and more than 60 service centres worldwide ensure quick and efficient help when problems occur. Our service team and the engineers receive continual training to meet the changing requirements and can provide a professional and effective fault finding service.

### Care and maintenance: Ensure the technical availability!

Continuous availability is the most important criterion for the economic efficiency of commercially and industrially used industrial robots and welding systems. With preventive maintenance and inspections, downtimes can be avoided demonstrably. The technical availability of CLOOS welding

technology amounts to almost 100 percent in the case of a continuous, professional support. We offer you customised services which are adapted to your individual requirements.







## Spare parts and consumables service: A warehouse for all needs

It is not infrequent that our industrial robots and welding equipment remain in service for more than 20 years. All industrial robots and welding power sources of CLOOS are designed for continuous operation under tough conditions. Even in the case of regular maintenance and careful operation, damages by wear, operating errors or accidents cannot be excluded. No matter what component you need: The CLOOS Spare parts store can supply it. Thanks to the consistently modular construction of our new generation of QIROX welding robot systems and QINEO welding power sources, spare parts can be replaced without problems in no time at all.



## Retrofits: Meet the requirements of tomorrow today

The requirements of you and your customers always change. To meet and even exceed the expectations, a quick and efficient adaptation of your production is necessary. Our service team advises and helps you with any modifications/retrofits required on your robot systems to increase their productivity and to adapt them to changed requirements.



## Seminars by CLOOS – learn from specialists!

It is decisive to train the employees well to use the robot technology in a competent and efficient manner. The participants are trained in programming and operation in the modern, well equipped CLOOS training centre. The training courses take place in small groups and under real conditions. In team work customers, you are prepared for the special demands of robot technology with the aid of components, which are similar to those used in practise.

## CLOOS Welding technology: Robot and welding technology from a single source

Since 1919, Carl Cloos Schweisstechnik GmbH has been one of the leading companies in welding technology. More than 800 employees all over the world realise production solutions in welding and robot technology for industries such as construction machinery, railway vehicles, automotive and agricultural industry. The modern CLOOS welding power sources of the QINEO series are available for a multitude of welding processes. With the QIROX robots, positioners and special pur-

pose machines CLOOS develops and manufactures automated welding systems meeting the specific requirements of the customers. The special strength of CLOOS is the widely spread competence. Because – from the welding technology, robot mechanics and controller to positioners, software and sensors – CLOOS supplies everything from a single source.



**1919**

Founded by Carl Cloos

**820**

Employees worldwide

**150**

Million EUR Group Revenue

**9**

Production Facilities worldwide

**14**

Subsidiaries worldwide

**64**

Sales and Service Centres worldwide

**8.5**

Percent R&D Rate CLOOS Germany

**61**

Percent International Sales

**44**

Apprentices and Dual Dual BSc/MSc Students  
CLOOS Germany

**53**

Percent of Employees have completed Vocational  
Training at CLOOS



# All over the world



**Carl Cloos Schweisstechnik GmbH**

Main office: Carl-Cloos-Strasse 1  
Central warehouse: Carl-Cloos-Strasse 6  
35708 Haiger  
GERMANY

Telephone +49 (0)2773 85-0  
Telefax +49 (0)2773 85-275  
E-mail [info@cloos.de](mailto:info@cloos.de)  
[www.cloos.de](http://www.cloos.de)

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Weld your way.