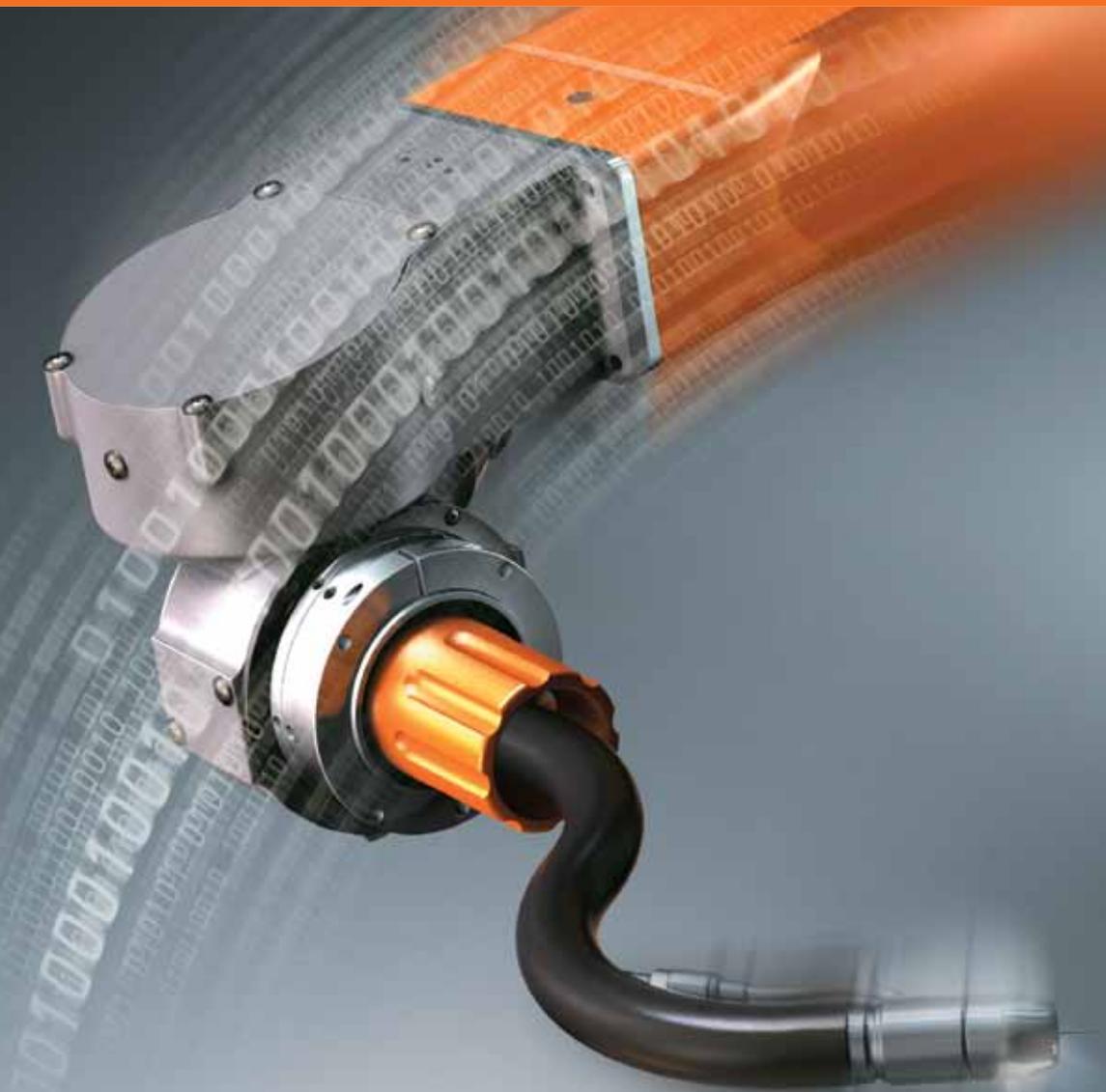


CLOOS

Weld your way.

QIROX® Software

Management for professionals



QIROX®

Artificial intelligence!

Every hardware is only as good as the software that controls it. QIROX® Software enables peak performances of your automated welding processes.



QIROX® Software

CLOOS: Your brand for innovative welding technology!

Providing added value for our customers! This is the motivational force behind our 700 employees.

We are constantly raising our bar by pushing ourselves to provide innovative welding processes and solutions that will contribute to the long-term commercial success of your company.

Our process competence is at the forefront in welding and cutting of various ferrous and non-ferrous metals. We offer our customers individual solutions which are optimized and adapted specifically to your product and production requirements.

CLOOS develops, manufactures and delivers innovative solutions to more than 40 countries worldwide. With our **QINEO®**, the new generation of welding machines for manual and automated applications, and **QIROX®**, the system for automated welding and cutting, our product range covers the entire spectrum of arc welding technology. Our product portfolio includes intelligent software, sensor and safety technology solutions – all of which are customised to meet your specific needs and requirements!

Leadership and competence equals process automation and welding at its best.

Whatever your needs are, we “Weld your way.”

CLOOS provides full service solutions – all from a single source!

Benefits of choosing CLOOS

- Unique and customised process and product solutions:
 - Delivering you more commercial success!
- High level of industrial and engineering competence:
 - We know what matters to you!
- Professional advice and a high level of global service quality:
 - From start to finish, we are with you all the way!
- Superior quality and technological know-how:
 - “Made in Germany” can be relied on

We offer optimised solutions with maximum efficiency and a high degree of welding and cutting products that are customised to your application: And we have been doing this for over 90 years!

Cloos
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QIROX® The system solution for automated welding and cutting.

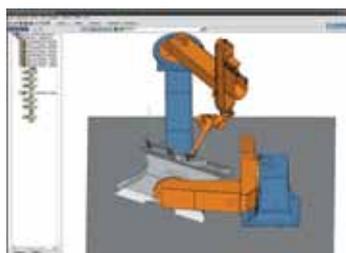
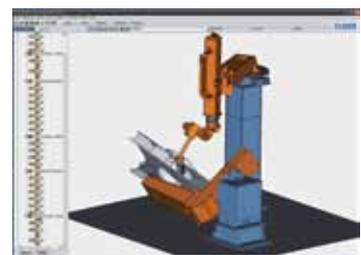
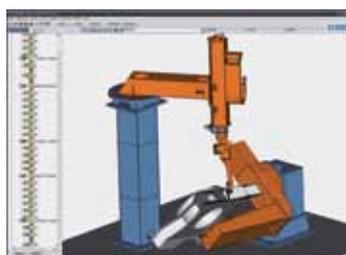
QIROX® is the new CLOOS product brand comprising all solutions for automated welding and cutting. Due to its modular design, the QIROX® system allows scalable solutions which can perfectly match your production requirements. The QIROX® system includes the robot technology, positioners, safety technology, software, sensors and the interface to the process technology. It is completed by an extensive range of options and complementary services. As a result of this comprehensive service from just one supplier, our customers can gain considerable economic and quality benefits.

Offline programming for QIROX® robots

ROBO-PLAN is the Offline programming system for QIROX® robots. As an easy to learn and effective instrument with extensive functions it assists the user in the specific implementation of automated welding tasks.

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 ROBO-PLAN Offline programming system with its outstanding features can help you achieve this.

- You can generate or modify your production program on the PC without loss of time and take existing component data from many common CAD systems. You will be able to manage your robot programs easily.
- All workflows and optimisations can be simulated on the PC while your system is producing, including of course collision testing and using the additional PLC functions.
- Feasibility studies can be generated with ROBO-PLAN and cycle times and program run times determined without interrupting the manufacturing process.
- You can benefit from libraries containing your components, process data and macros. Recurrent tasks will be completed even more efficiently.
- Special functions such as the user-friendly gravity position function or the use of a laser sensor will significantly improve the quality of your work.



ROBO-MOD System modelling – fast and easy



The basis for programming with ROBO-PLAN is the modelling of the system environment as a CAD model for current or planned welding tasks. The generation and adaptation of the system layout can be done easily and quickly with the ROBO-MOD module.

The ROBO-MOD module is used to combine CAD components from imported CAD files with the kinematic modelling of robots which can be used for planning in ROBO-PLAN. Premanufactured robots can be altered and adapted to planning requirements or interchangeable components can be compiled for robot libraries.



The following functions are available:

Geometric modelling

- Generation of geometric basic structures
- Import of CAD models in ACIS, CATIA, Pro E- and STEP format

Kinematic modelling

- Kinematic connection of components to a system layout
- Placing of components within a cell
- Allocation of degrees of freedom to a joint
- Determination of axis-specific movements

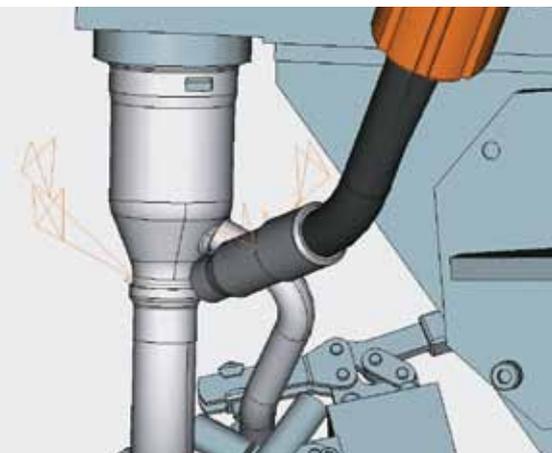
Chart

- 3-D shaded illustrations
- Wire frame graphics
- Combined shaded / wire frame graphics
- Rotating, shifting and „zooming“ using the mouse

Path programming and TEACH functions

The key function of ROBO-PLAN is the generation of movement data with special functions for the welding task. You can define the paths point by point or automatically generate paths along a contour. Repeated processes are made noticeably simpler due to the library functions.

With ROBO-PLAN you can generate programs by interactive positioning of the robot model. Workpieces are integrated into the layout by directly loading your CAD data. An easy generation of welding paths is possible by selecting the edges on the workpiece and by manual teaching. The finished program is saved in robot code. Existing programs, also generated online, can be re-loaded, processed and archived. PLC-axes and sensor systems will of course be taken into account.



Automatic programming of a path

Survey of functions Path functions

- Copy, cut and paste paths
- Rotate and mirror paths, divide and join paths
- Change a processing direction on a path
- Change the processing sequence
- Automatic programming of a path along a contour or around a contour
- Tool distance override (angle of attack, angle of inclination and rotation angle)
- Automatic generation of a movement between paths
- Independent generation of positioning movements from one position to another
- Automatic gravity position function

Survey of functions TEACH functions

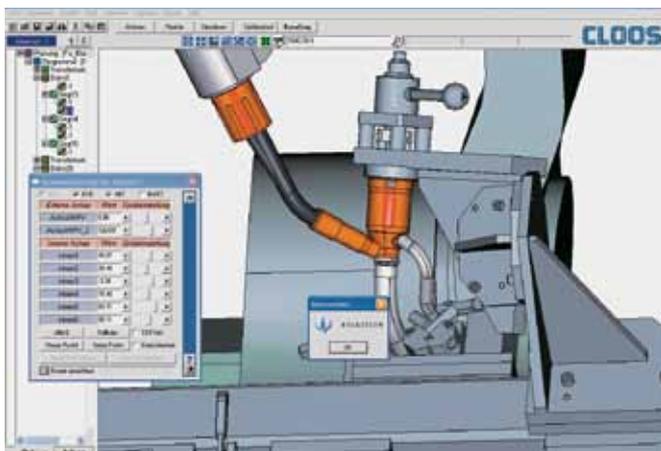
- Axis-specific (PTP) and Cartesian (CP) process
- Synchronous movement of external axes
- Program, approach and delete points
- Scroll forward and backward to points
- Insert and delete one or several points
- Absolute or relative shifting and rotating
- Accessibility test with calculation of axis value

Simulation, check and test



It is time-consuming and costly to test new applications. Simulation with collision testing and subsequent optimisation will save system downtimes and unnecessary costs incurred by collisions of the torch with the workpiece. ROBO-PLAN integrates this function into the Offline development environment.

Some of the options offered by ROBO-PLAN are the generation of measuring and transfer paths, the simulation (run) of programs with interactive display and the collision testing.



Collision testing

Survey of functions Simulation

- Movement simulation of the robot and external (synchronised) axes
- Display of working envelope limits
- Calculation of cycle time
- User-friendly simulation control
- Collision testing
- Integration of PLC functions (clamping tool movement, tool axes, etc.)



TANDEM welding

Data transfer

After a successful offline test, the program code generated by ROBO-PLAN is transferred via USB stick or data line.



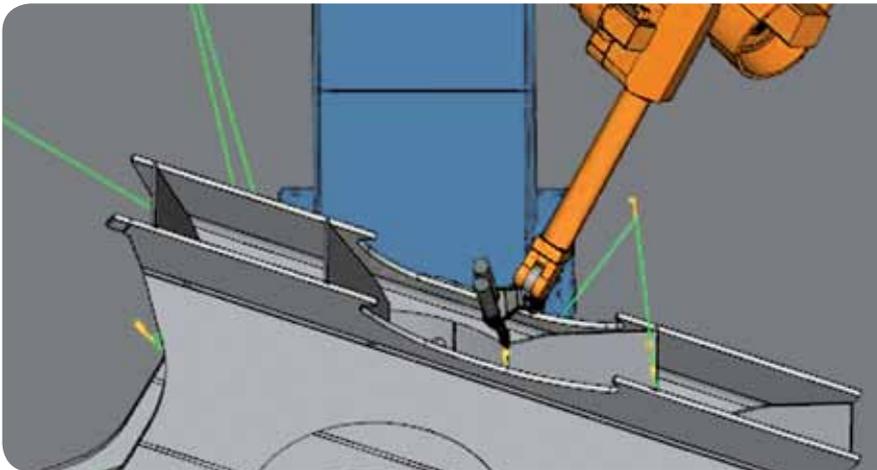
Special functions

ROBO-PLAN provides specialised functions such as automatic positioning into gravity position, simulation of several robots or measurement of component parts using sensor technology. You can improve the weld seam quality in your production by a simple „push of the button“.

Gravity position: The generation of paths in gravity position is often difficult, particularly if specified deviations of the gravity position are required.

ROBO-PLAN can offer you optimum support here.

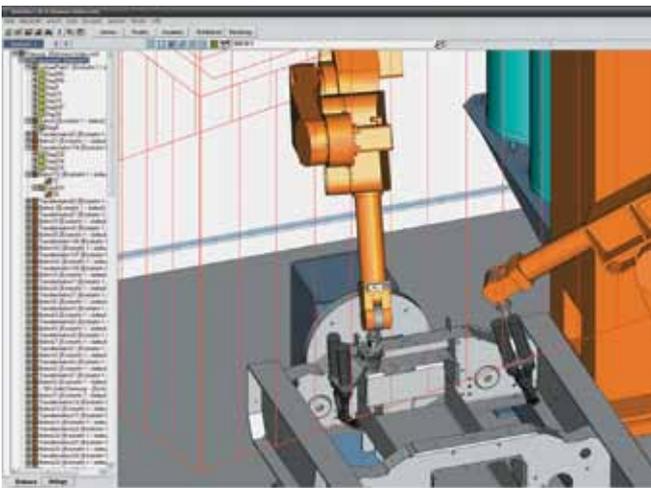
It is possible to generate the optimum component position without too much effort using the integrated gravity position function. This is of course done by taking into account the degrees of freedom and the axis limits. The maximum possible flexibility can be guaranteed by manual intervention.



Path optimisation for gravity position

Master/Slave: You can simulate individual or common movements of several robots on a component part with ROBO-PLAN. This function is also taken into account when generating the program code.

Laser technology: The use of a contactless laser sensor (CSE) provides a considerably faster and more detailed result when measuring in the programs. ROBO-PLAN integrates this technology into the measuring path generation which optimises the precision and speed of path programming.



Master / Slave function

ROBO-PLAN is the optimum support for your QIROX® robot systems. This excellent combination of sophisticated functions and intuitive operation will increase the availability of the robot for your production.

The most important features of ROBO-PLAN at a glance:

Generation of robot programs on a PC

- Programming work on the robot system is significantly reduced
- Effective production of workpieces irrespective of batch size

Feasibility analysis

- Quick examination as to whether the workpiece can be processed on the robot system, taking into account the dimensions and accessibility
- Costs are avoided because the suitability of tools can be tested before construction

Optimum production planning

- Effective production planning due to determination of cycle times and easy calculation of production costs

Determination of cycle time and program run times

- Rough determination of program run times based on the weld parameter database, to determine the throughput speed on complex production lines

Collision test

- Comprehensive collision inspection because ROBO-PLAN controls and displays all functions
- Costs due to possible collisions on the system are avoided with offline tested programs
- Integration of external motion sequences

- Considerably reduced rework of programs in the robot controller because the movements of clamping fixtures and PLC-controlled tool axes are already allowed for in ROBO-PLAN

Short learning time

- Logical and easy to learn operating concept in familiar WINDOWS environment
- Specialised functions assist the user

Function CAD paths

- Optimised programming due to automatic point generation along the workpiece edges

Library for process data

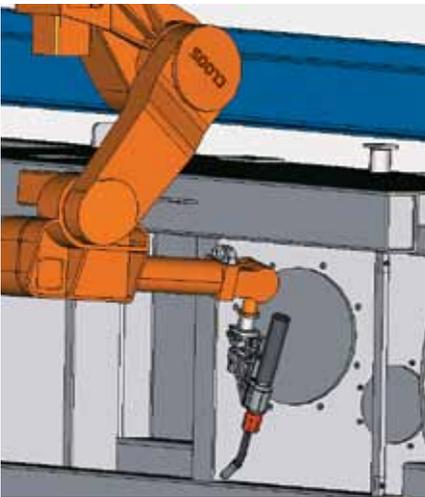
- Fast access to existing process information, recurring weld parameters, component parts and tools in the library which can be added to by the user

Specialised functions

- Automated generation of gravity positions
- Assistance from laser sensors during measurement
- Simulation of several robots on one workpiece

Video and screenshot function

- Capturing of simulations as video and detail screenshots



Simulation of the robot position



Remote access to QIROX® robots

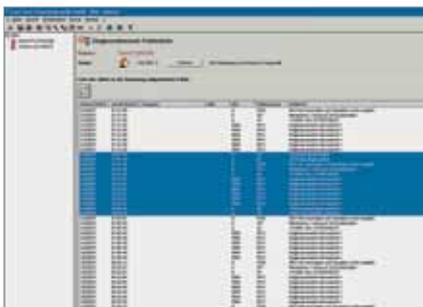
With the CLOOS Remote Service Manager you can use remote diagnostics and maintenance as an effective tool to avoid downtime and unnecessary service costs. CLOOS robot specialists can assist you in resolving service and maintenance tasks, without loss of time and with effective functions - no matter where your system is located.

The central point for use of the CLOOS RSM Remote Service Manager is the PC which is linked to the QIROX® robot controllers. The software contains all important maintenance and diagnostics functions for the robot controller. CLOOS Service staff can perform diagnostics and maintenance work on request and at any time via internet connection, using standardised remote functions.

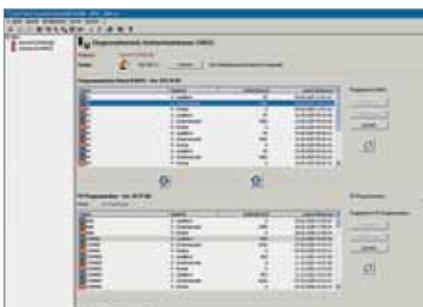
No matter whether it is a software update for the robot controller, diagnostics of system status and maintenance cycles or remote service measures, rapid assistance, cost-effective service and updating of software versions can be provided by the RSM via the protected internet connection.



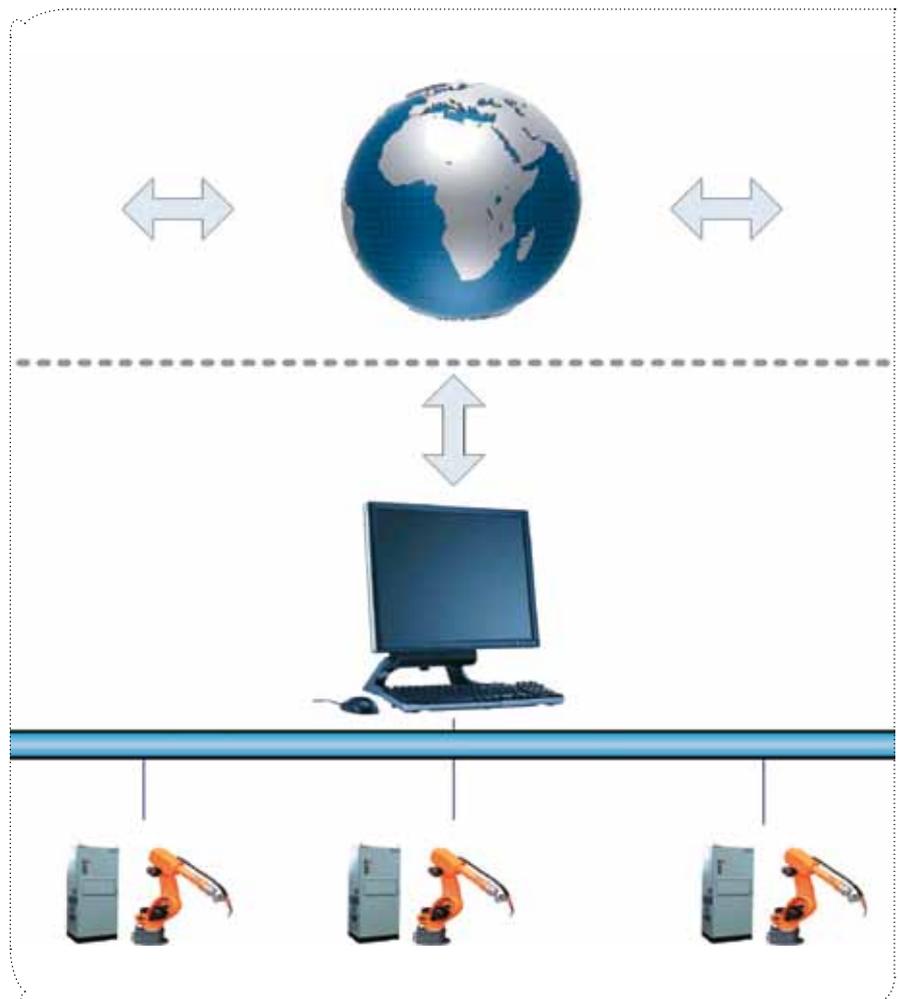
Information query



Error list



File management robot / PC



The characteristic feature of the CLOOS Remote Service Manager is its numerous functions. Developed for QIROX® welding robots, RSM is the optimum addition to your robot system network

The most important functions are summarised below:

All robots in the network are managed via a user-friendly tree structure.

Display of

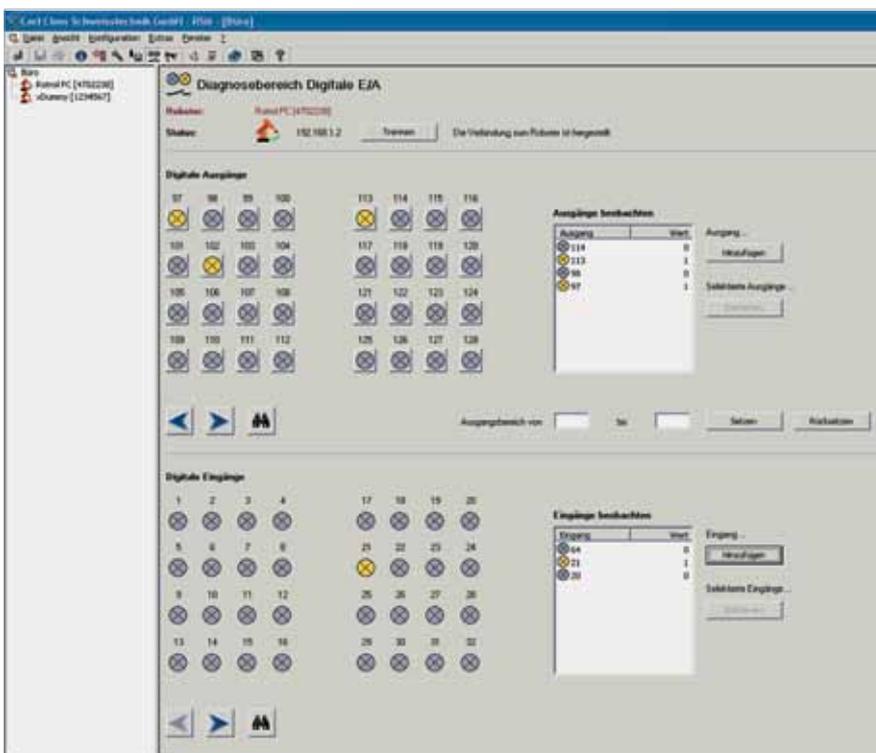
- Robot configuration
- Current error list
- Internal / external axes
- Software versions
- (CAN) bus data
- Digital / analogue inputs and outputs
- CPU chip set
- Real time, setting and resetting of freely selectable digital inputs and outputs

Management and data exchange of programs between PC and robot

- Separate display of programs from robot and PC with the functions Copy, Rename and Delete
- Further processing of selected data such as info or error lists
- Printing with print preview
- Export into common formats such as txt, xml or csv

Extensive service functions

- QIROX® Controller Software update
- Loading and saving robot configuration
- Loading and saving machine data
- Performance of the service functions of the drive regulator
- Network settings and diagnostics
- Processing of system functions in the robot such as date and time
- Monitoring of defined maintenance cycles
- Setting the teach pendant service password
- Generation of diagnostics data
- Display of safety data
- Modification of TCP / TOV values in the robot



Setting inputs and outputs



Service

Active worldwide

There are more than 40 sales and service centres in our worldwide CLOOS organisation, which are at your disposal for sales and service. In addition, our experienced service team in Haiger can be called at any time for any problems. In this way we can ensure effective help on site if breakdowns occur.



Long service life guaranteed

With maintenance and inspection at regular intervals the technical availability of a CLOOS system is nearly 100 %. But if faults do occur, we can minimise downtime by means of a quick repair. This is ensured by well-equipped spare parts stores and a computer-controlled logistic system.

Always at your service

Our Service-Hotline is free of charge and in the case of emergencies is always available for you. Even in the case of products which have been in use for more than 20 years we have the expertise to answer all your questions.

Service-Hotline

☎ +49 (0) 2773 85-132

Additional information regarding QINEO® the new range of welding power sources can be obtained at www.qineo.de

qineo®





Weld your way.

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