
CLOOS
qineo
ArcBoT - COBOT WELDING SYSTEM
Optimum human-robot collaboration:
Your easy entry into the world of automated welding!
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# CONTENTS

# COBOT MEETS HIGH-TECH WELDING TECHNOLOGY

The QINEO ArcBoT offers an easy entry into the world of automated welding.

With the QINEO ArcBoT, you can weld even small batch sizes economically and with consistently high quality. The high-tech MIG/MAG welding power source and the very precise Cobot complement each other perfectly. In addition to the relief of the employees – especially with monotonous, repetitive tasks – you benefit from excellent welding results due to the reproducible quality

- **Quick programming**
  Automated welding from batch size 1
- **Simple operation**
  No previous knowledge of robot programming required
- **"Ready to weld" complete package**
  Installation ready for welding within a few hours
- **Excellent welding quality**
  Reproducible welding results for maximum efficiency
- **High economic efficiency**
  Short payback time
- **Compact design**
  Space-saving for flexible adaptation to your production environment


# EXACT, INTUITIVE AND SAFE

A torque sensor in each axis allows the QINEO ArcBoT to be programmed and moved with precision.

The intuitive operation significantly increases work efficiency. The user can make individual adjustments on the user-friendly touch control panel with macros specially developed for welding. In addition, the Freedrive option with foot switch and the intelligent safety concept guarantee sensitive and safe control of the QINEO ArcBoT. Another special feature is the simple restart after an emergency stop as no extensive unlocking or free movement of the robot is necessary.

## OPTIMAL EQUIPMENT

The ArcBoT's equipment options are as flexible as the areas of application for welding. This is ensured by the modular product concept. From the cobot's working area to the welding process, each ArcBoT system is individually configured to your requirements. An ArcBoT, exactly as you need it – for fast and efficient results.

- **QINEO ArcBot**

- **"Ready to weld"-systems**

- **Long track for ArcBoT and workpiece positioner**

- **Welding processes**


- **Accessories**

# READY TO WELD COMPLETE PACKAGE

The QINEO ArcBoT contains all the components required for automated welding – perfectly matched, compact and easy to install. The "Ready to weld" complete package is 1 delivered completely ready for welding, guaranteeing problem-free integration into existing production processes.

**QINEO ArcBoT equipment**

- **> 1** 4-Roller wire drive unit
- **> 2** Wire feed system
- **> 3** Fume extraction torch
- **> 4** QINEO ArcBoT
- **> 5** Optional manual linear axis
- **> 6** Optional welding bench
- **> 7** QINEO operating module
- **> 8** QINEO welding power source

# READY TO WELD ArcBoT-CELL

The “Ready to Weld” ArcBoT-Cell contains everything required for welding. components. It has two welding stations, which are connected by a protective wall. This allows the plant operator to work on the ArcBoT in parallel with the ArcBoT without being exposed to harmful radiation from the arc. Each station is equipped with a safety door. The complete enclosure reliably protects the environment from radiation and welding fumes.

**Two-station ArcBoT-Cell, welding bench available in three sizes**

- 1.000 x 2.000 mm
- 1.200 x 2.400 mm
- 1.500 x 3.000 mm

**QINEO ArcBoT-Cell equipment**

**> 1** QINEO ArcBoT

**> 2** Wire feed system

**> 3** Welding torch

**> 4** Torch cleaning unit

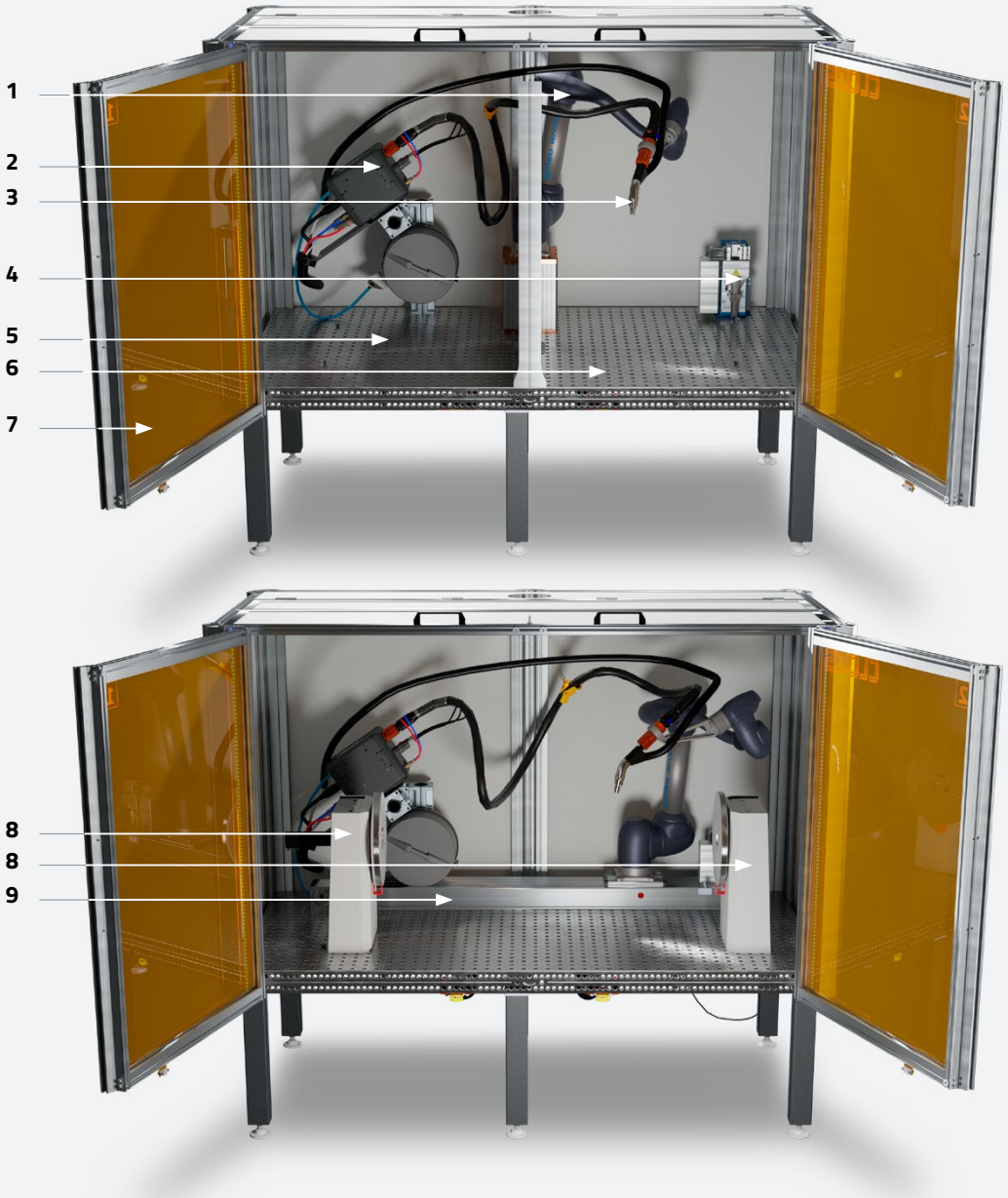
**> 5** Station 1 clamping plate

**> 6** Station 2 clamping plate

**> 7** Safety door with glare protection

**> 8** Workpiece positioners 1+2

**> 9** Longitudinal track



**Expanded application possibilities**

QINEO welding power sources can now be combined directly with cobots from Universal Robots, offering users greater flexibility when integrating modern welding technology.


## QINEO ArcBoT - PRECISE AND ROBUST

The 6-axis QINEO ArcBoT QN-AB-130-10 has a range of 1300 mm and a payload of up to 10 kg. With the QN-AB-170-6, a second ArcBoT mechanics with a reach of 1700 mm and a payload of 6 kg is available. A sensitive torque sensor in each axis enables optimum weight determination of the welding equipment. This is the basis for a very sensitive positioning of the QINEO ArcBot when programming the points as well as for a precise power cut-off on contact (finger-forced stop). The QINEO ArcBoT mechanics has a very robust design and is perfectly suited for industrial welding operation.

| | QN-AB-130-10 | QN-AB-170-6 |
|---|---|---|
| Axes | 6 | 6 |
| Payload | 10 kg | 6 kg |
| Range | 1300 mm | 1700 mm |
| Speed | 1 m/s | 1 m/s |
| Repeat accuracy | ± 0.05 mm | ± 0.1 mm |
| Operating temperature | 0-45 °C | 0-45 °C |
| Weight | 34 kg | 35,5 kg |
| Installation position | Floor, ceiling, walls | Floor, ceiling, walls |
| Protection class | IP54 | IP54 |

# YOUR BENEFITS

**Highest precision**

Torque sensors in all axes

**Finger-forced stop**

Very precise power cut-off when touching the robot

**Intuitive programming**

User-friendly touch control panel with macros specially developed for welding


**Simple restart after emergency stop**

No unlocking or free movement of the robot necessary

**Sensitive and safe control**

Foot switch for freedrive mode

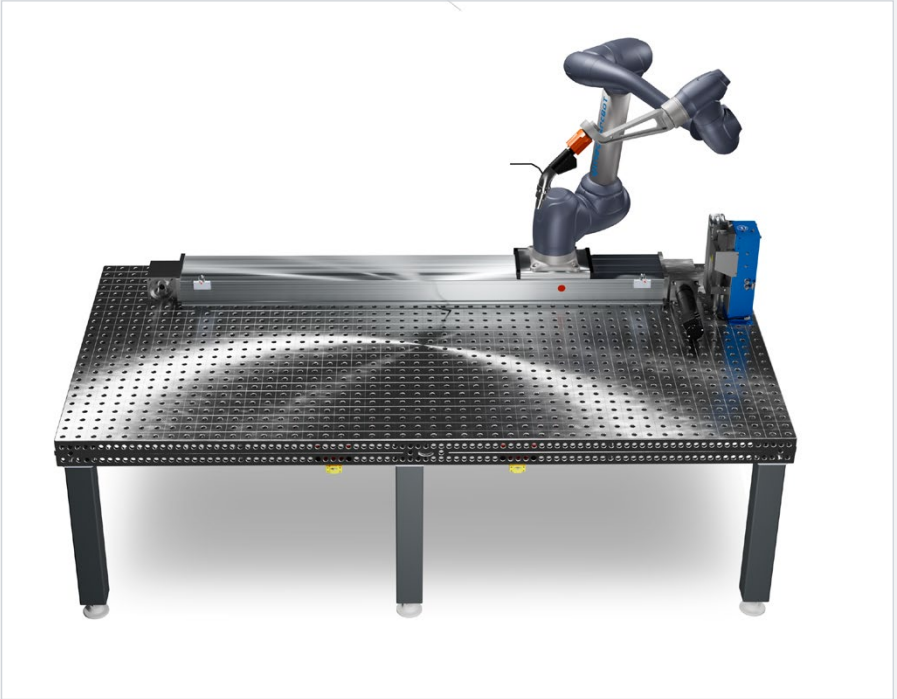
**Optimum personal protection**

Automatic wire retraction for maximum work safety

## ROBOT POSITIONER

### FOR MAXIMUM FLEXIBILITY

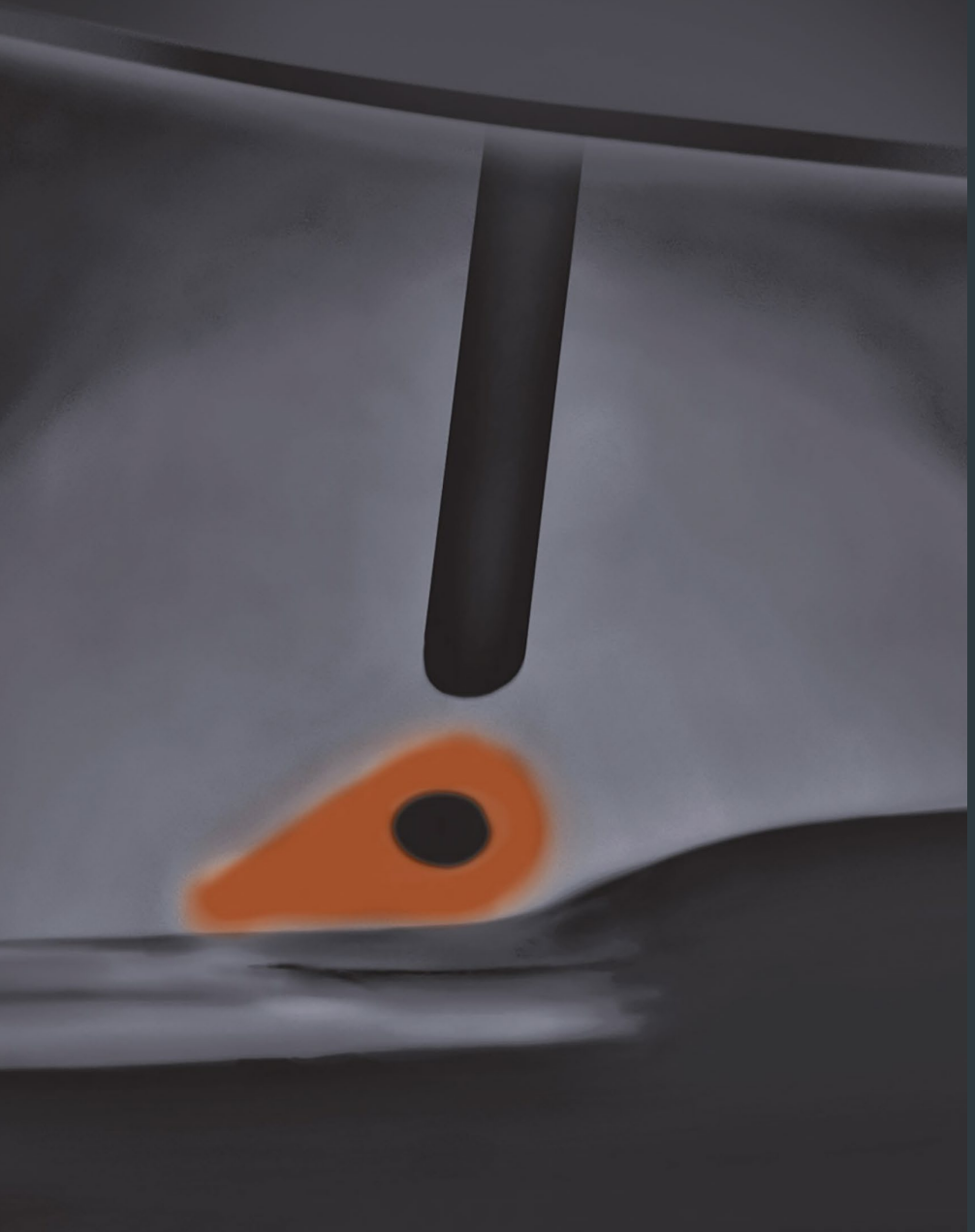
A longitudinal track is available to extend the working area or for quick changes between workstations. It is mounted on the worktop and allows the operator to position the ArcBoT manually. Precise indexing is achieved using locating pins that are integrated into the positioning device's guide rail.



## WORKPIECE POSITIONER

### PERFECT ALIGNMENT OF WORKPIECES

CLOOS offers a rotary and a rotary-tilting positioner for welding tubular workpieces. The turning axis is controlled via the ArcBoT control system, with positioning in absolute or relative coordinates. The tilt axis is adjusted manually, with precise indexing via standoffs.

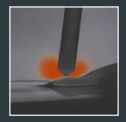




## MODERN PROCESSES FOR MAXIMUM EFFICIENCY

With a large range of proven and innovative welding processes we offer you solutions for the future providing excellent quality, maximum efficiency and productivity. We can provide you with the right welding process for every product requirement.

**Control Weld**
Reliable MIG/MAG welding process for thin and thick materials



**Root Weld**
Energy-reduced short arc for excellent quality in demanding conditions

**Fine Weld**
Extremely low spatter MIG/MAG short arc for mixed gas and CO2 applications

**MoTion Control Weld**
Short arc with reversible 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

**MoTion Vari Weld**
Pulsed arc with reversible welding wire

**TIG Weld**
TIG process for clean and precise welding

# WELDING CURRENT SOURCES AND PROCESSES FOR YOUR ArcBoT

## A SUITABLE SOLUTION FOR EVERY APPLICATION

ArcBoT supports a wide range of powerful welding processes. The first step is to select the process that exactly matches your application. This selection will determine the ideal welding power source, perfectly tailored to your needs. This ensures that you always have a process-optimised solution with maximum arc stability, repeatability and quality.

| Welding process | Material | | | Welding current [A] | | QINEO power source |
|---|---|---|---|---|---|---|
| | Stahl | CrNi | Alu | 20 - 400 | 4 - 400 | |
|  **Control Weld** | √ | √ | — | √ | — | QINEO StarT |
|  **Root Weld** | √ | √ | — | √ | — | QINEO StarT |
|  **Fine Weld** | √ | √ | — | √ | — | QINEO StarT |
|  **MoTion Control Weld** | √ | √ | — | √ | — | QINEO NexT |
|  **Vari Weld** | √ | √ | √ | √ | — | QINEO NexT |
|  **Speed Weld** | √ | √ | √ | √ | — | QINEO NexT |
|  **MoTion Vari Weld** | √ | √ | √ | √ | — | QINEO NexT |
|  **TIG DC** | √ | √ | — | — | √ | QINEO QuesT |
|  **TIG AC/DC** | √ | √ | √ | — | √ | QINEO QuesT |

## PERFECT FOR THE ArcBoT
# QINEO WELDING POWER SOURCES

QINEO welding power sources offer all the functions you need to master your welding tasks with the ArcBoT.

> **High-quality inverter technology** for perfect weld seams
> **Integrated CLOOS welding processes** for every requirement
> **Simple, intuitive operation** for maximum productivity
> **Robust components** for high availability
> **Extensive range of accessories** for individual customisation


### QINEO StarT

The standard power source for many tasks in the steel industry.


### QINEO NexT

All-rounder for tasks in the thin and thick sheet metal sector as well as for aluminium and special materials.


### QINEO QuesT

For all applications where the TIG process is used. The QINEO QuesT is available for DC and DC/AC welding.

## TOOL CHANGE SYSTEM
### FOR MAXIMUM FLEXIBILITY

If the ArcBoT is to perform several different tasks, the tool change system is the ideal solution. The changeover is quick, safe and completely manual-free – for seamless processes and maximum efficiency.

## TORCH CLEANING UNIT
### FOR CONSISTENT QUALITY

The quality of every weld seam depends largely on the welding torch. Regular cleaning prevents porosity and ensures trouble-free wire feeding. This removes welding spatter and slag from the interior of the torch – for reliable processes and first-class results.

## STAND
### SAFE AND READY TO HANDLE

The stand ensures stable support and secure storage of the operating modules – always in the right place for comfortable working.

Tool change system

Torch cleaning unit

Stand for QINEO operating modules

# SENSITIVITY **FOR OPTIMAL WELDING PROCESSES**

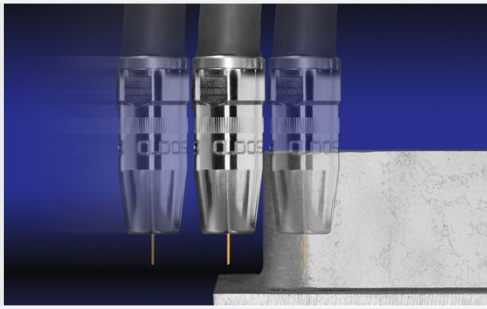
The main task of our sensor systems is to ensure quality through precise welding processes. Furthermore, the flexibility of your system is increased by checking and compensating for tolerances between the programmed paths and the actual workpieces.

For a wide variety of materials and applications, you can choose from four tried-and-tested CLOOS sensors that further perfect automated welding through intelligent control and guidance. The optimised workflow minimises reworking. This allows you to work even more economically and produce high-quality results.

- Advantages for greater productivity
- Four proven sensors for a wide variety of materials, weld seam shapes and applications
- Optimally matched to the ArcBoT solution
- Significantly improved welding quality
- Reduction of manual effort – minimal reworking
- Open up new application possibilities with CLOOS sensor systems

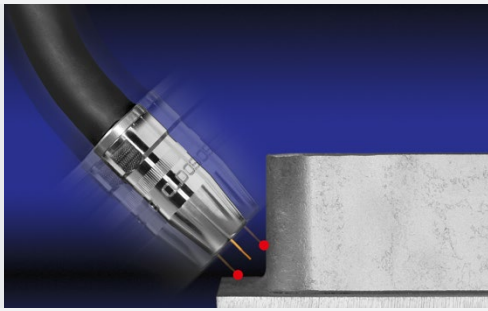
## TACTILE GAS NOZZLE SENSOR

The CLOOS gas nozzle sensor uses an electromechanical sensing principle to determine the start and/or end of the weld seam – deviations due to workpiece tolerances are corrected.



## ARC SENSOR

During welding, the CLOOS arc sensor measures whether the torch position actually matches the programmed path. In the event of deviations, for example due to heat distortion, the robot detects the actual contour and tolerances are compensated directly.



## OPTIONAL –
## FUME EXTRACTION TORCH WITH FILTER UNIT

The measures required for collecting, extracting and filtering the fumes in robot systems are often associated with great effort. Large collection hoods with curtains, complex pipe systems and a large filter unit are necessary to extract and clean the polluted air. When extracting directly at the welding torch, the volume of polluted air is much smaller. By using the extraction welding torch system, you have to invest significantly less in extraction technology, air ducting system and filter device – with the same effect. Another advantage: Due to the significantly better energy efficiency as well as the minimised effort for cleaning and replacement of the filter components, your operating costs are considerably reduced.

**Reduced investment volume with low operating costs**

> Reduced investment costs: Elimination of the extraction hood and the air control systems

> Minimised expenditure: A flexible hose with a small diameter replaces the complex pipe system for discharging the contaminated air to the filter unit

> Less space required: Due to the smaller volume of contaminated air, a smaller filter unit is necessary

> Lower operating costs: Lower energy consumption (only 1.0 to 1.5 kW)


# QINEO ArcBoT AT GLÜPKER

## ECONOMIC WELDING OF SMALL BATCH SIZES!

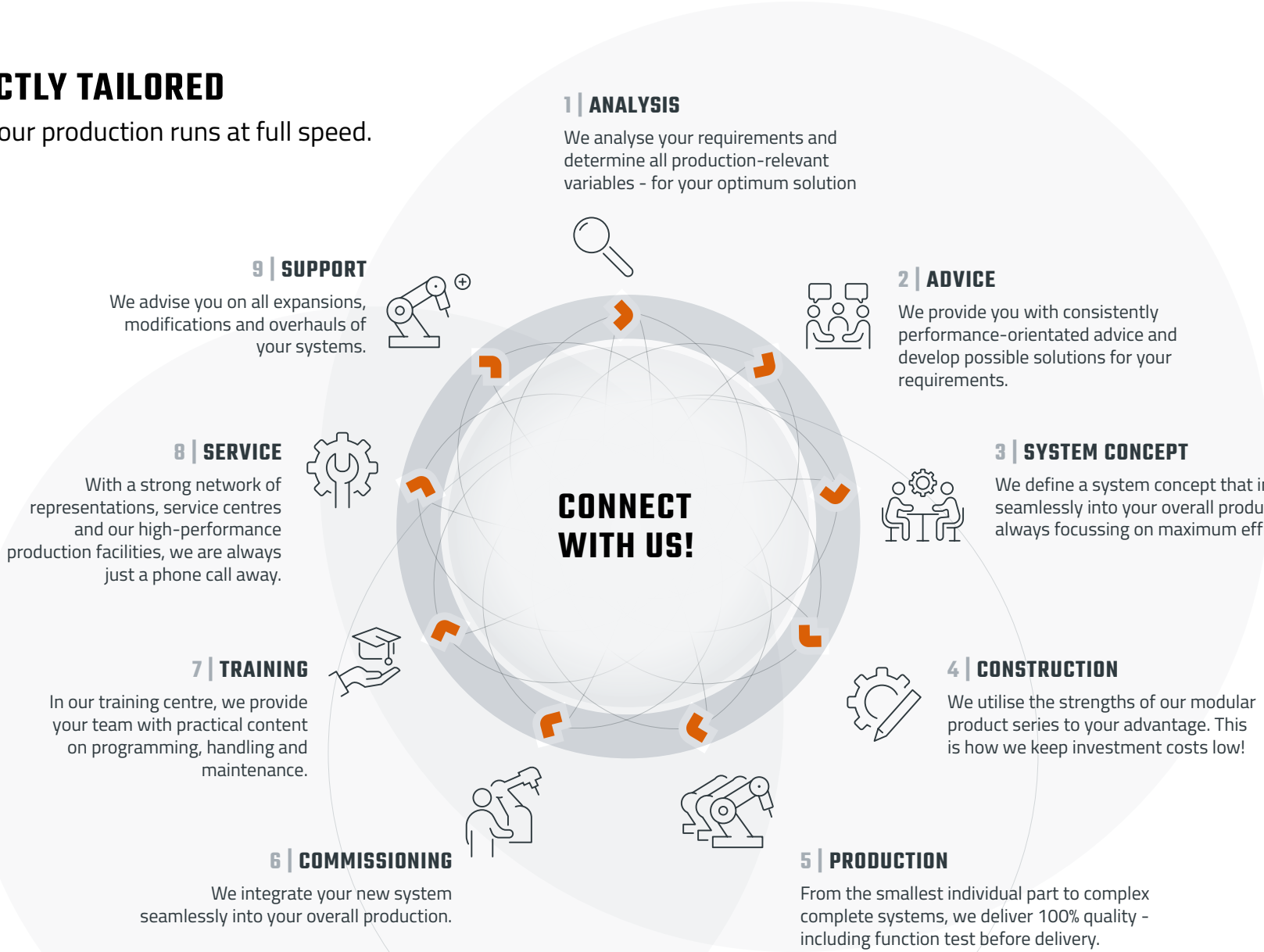
In order to weld even small batch sizes economically and with consistently high quality, the company uses three QINEO ArcBoT welding systems by CLOOS. Now, the QINEO ArcBoT mainly weld smaller components up to a size of half a metre. A torque sensor in each axis allows the QINEO ArcBoT to be programmed and moved precisely.
The user can make individual adjustments on the user-friendly touch control panel with macros specially developed for welding. In addition, the Freedrive option with foot switch and the intelligent safety concept guarantee sensitive and safe control of the QINEO ArcBoT. The QINEO ArcBoT welding systems are each equipped with the high-tech QINEO NexT MIG/MAG welding power source which is characterised by versatile high-performance welding processes and excellent welding properties.

CLOOS TV

Small parts for industrial vehicles

# PERFECTLY TAILORED

So that your production runs at full speed.




### 1 | ANALYSIS

We analyse your requirements and determine all production-relevant variables - for your optimum solution

### 2 | ADVICE

We provide you with consistently performance-orientated advice and develop possible solutions for your requirements.

### 3 | SYSTEM CONCEPT

We define a system concept that integrates seamlessly into your overall production - always focussing on maximum efficiency.

### 4 | CONSTRUCTION

We utilise the strengths of our modular product series to your advantage. This is how we keep investment costs low!

### 5 | PRODUCTION

From the smallest individual part to complex complete systems, we deliver 100% quality - including function test before delivery.

### 6 | COMMISSIONING

We integrate your new system seamlessly into your overall production.

### 7 | TRAINING

In our training centre, we provide your team with practical content on programming, handling and maintenance.

### 8 | SERVICE

With a strong network of representations, service centres and our high-performance production facilities, we are always just a phone call away.

### 9 | SUPPORT

We advise you on all expansions, modifications and overhauls of your systems.


CLOOS

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