

Increased Welding Productivity

Effortless No-Code Programming

Extensive Integration Options

Consistent Quality of Welds

# SmoothTool

MADE FOR WELDING

# Cobot welding increases your throughput

## Future-proof your offerings and welding capabilities

If you are looking to automate your manual welding and have high mix and low volume parts, a cobot welding solution is the right choice for you. With the strength of being flexible, reliable and built to cooperate in a shared workspace, the cobot welding solution is a powerful tool for any welder or operator. It comes with a programming interface that is easy to use and a guarantee of consistent welds.

## Experience the Power of Collaboration

Cobot Welding systems are specifically designed to work alongside human operators, enhancing productivity and efficiency. By harnessing the strength of collaboration, this state-of-the-art technology ensures a harmonious and synergistic working environment.

### Cobot welding is your solution to:

#### Lack of skilled welders:

Give your welders the best tool for maximizing their efficiency

#### Repetitive welds:

Consistently delivers high quality results for long or repetitive welds

#### Changing demands:

Highly adaptable solution that enhances market responsiveness





# Cobot welding: how does it compare to other solutions?

Cobot welding, manual welding and traditional welding automation with industrial robots represent distinct approaches to welding in manufacturing.

Cobot welding involves collaborative robots working alongside human operators, enhancing efficiency and productivity of the staff.

Manual welding relies on skilled labor for precise control in application but may be less consistent.

Welding automation with industrial robots employs programmed machines offering consistency in high volumes but often requires significant initial investment, programming experts and inflexibility for small batches.

**Cobot welding is bridging the gap between manual skill and automated precision,** catering to diverse manufacturing needs with agility and cost-effectiveness.

## Traditional welding automation

- Provides high speed and productivity for large-scale productions with minimum changeover
- Requires a dedicated welding cell due to high safety risks
- Removes the need for welders but creates demand for skilled programmers instead



## Cobot welding

- Suits productions with high mix of sortiment in smaller batches
- Equips the welder with an effective and precise tool to take care of repetitive tasks enhancing productivity and weld quality
- Relies on human input but removes the need for recruiting more welding experts

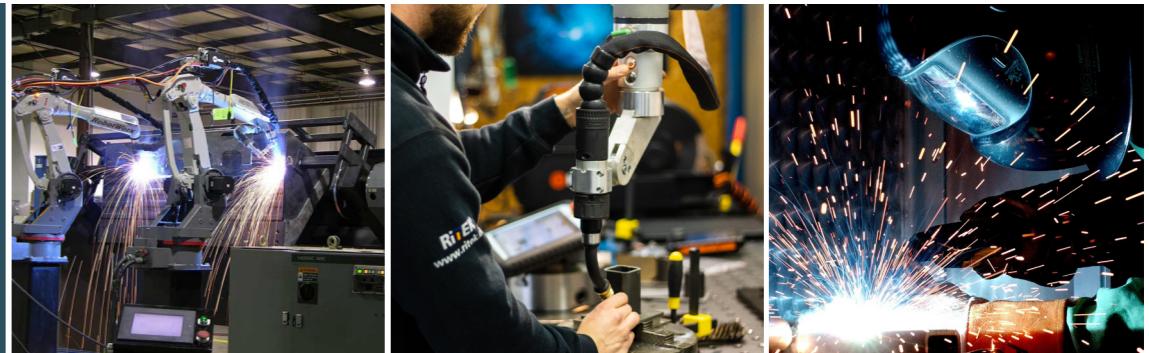


## Manual welding

- Delivers maximum efficiency in high-mix of welding tasks but suffers from diminishing results for larger batch sizes
- Requires skilled welders who are expected to reach consistent weld quality standards over long periods of time
- Least cost-extensive option but vulnerable to scarcity of workers



Explore which type of welding application is the most suitable for your production



Best Fit	Traditional Automation	Collaborative Welding	Manual Welding
Mix	Low	Moderate to High	High
Volume	High	Low to Moderate	Low
Robotics Skill	High	Low	None
Welder Present	No	Yes	Yes
Investment	High	Moderate	Low

# SmoothTool automate your welding

All you need to get the job done and deliver perfect welds

SmoothTool is a user-friendly cobot welding package that is easy to learn and navigate, which makes the transition to welding with a cobot seamless for any welder. It offers a wide range of functionality catering to a variety of welding tasks.

Its program structure ensures exceptional flexibility, allowing for effortless incorporation of numerous weaving patterns, offset items, stitch welds, or multipass welding.

The compatibility with both CB and e-series robots as well as the new UR20 means that all features function across all UR's robot types.



## SmoothTool benefits:

A welder can operate the welding cobot without assistance and programming knowledge.

The welding program can be set up solely by using the programming flange, hence becoming the welder's best tool.

SmoothTool's features are developed with the welder's user experience in mind and continuously enhanced based on user input.



Learn more about SmoothTool



# Retrofit and get started today



## Integrate with your preferred power source

**Choose from our list of pre-integrated power sources or use your existing power source with an I/O setup**

SmoothTool comes with a number of plug-and-produce-ready power source integrations. Besides these, I/O and callback functions can be used to integrate with all other power sources.

The list comprises power sources from leading brands like Lorch, ESAB, EWM, Kemppi and Fronius among others.

The primary advantage of pre-integrated options is their ability to facilitate seamless job switching within a welding program, eliminating the need to halt the process midway to modify power source parameters.

This advanced capability of SmoothTool allows for swift parameter setup and hassle-free communication with the power source directly within the software without the need for manual configuration at the power source.

Read about integration options on our website



**Start automating your welding processes right away using your existing power source**

The RetroFit Kit, a novel off-the-shelf product from Smooth Robotics, simplifies the process of integrating older manual power sources with a cobot setup.

This Kit is compatible with all Euro/US Connector-equipped power sources. Simply attach the RetroFit connector plate, install the adaptor, hook up the feedback clamp and you are ready and set to weld!



Adaptor



Feedback Shunt



Connector Plate

### Learn at a quick glance

Welding with SmoothTool and a pre-integrated power source gives you full control over all parameter settings and allows you to perform even the most advanced weld jobs

Welding with SmoothTool and the RetroFit Kit offers an easy way to perform basic welds with a manual power source with limited scope of configurable parameters

## Companies are already **reaping** the benefits of Cobot Welding

On the ease of use, setting up to begin welding was the most important factor for us. We did not want to spend 30 minutes programming for 15 minutes of welding. The Smooth Robotics Software has hands down been epic in quick programming. I have found that if we have to weld more than 12" in length, it is more effective to use the robot. Even for just 1 part. This is a game changer.



Shawn Wentzel  
Owner - Wenteq Inc  
California, USA



Based on our needs and the purely financial, it makes much more sense to us. We ensure uniform products, and our welders avoid the tedious and repetitive work. They are happy with their new colleague.



Mads Milling ErikSEN  
Owner, Alusteel A/S  
Kværndrup, Denmark



Sven-Ingvar Björck  
Owner, Vattholma Mekano AB  
Uppsala, Sweden

It's very difficult to find skilled welders and a lot of our work is actual weld time, so that's why we bought the robot.

SmoothTool makes programming the robot easy and that's what made it the right fit for us. It's still new to us, but we already have minimum 20-30% in time savings on the welding jobs.



Explore more case stories  
on our website





## Advanced Features made easy

SmoothTool offers a comprehensive welding software solution with all the tools that a welder needs.

The advanced capabilities of SmoothTool allow you to explore the potential of cobot welding and experiment with different methods of production automation to achieve the best possible outcome.

Learn about our software highlights on the following pages.

Other features available: Slope down, Run Flow page, parameter profiles, weld templates, customizable default values, support for external switch/light/fume extraction and much more!

[Read about SmoothTool  
features on our website](#)

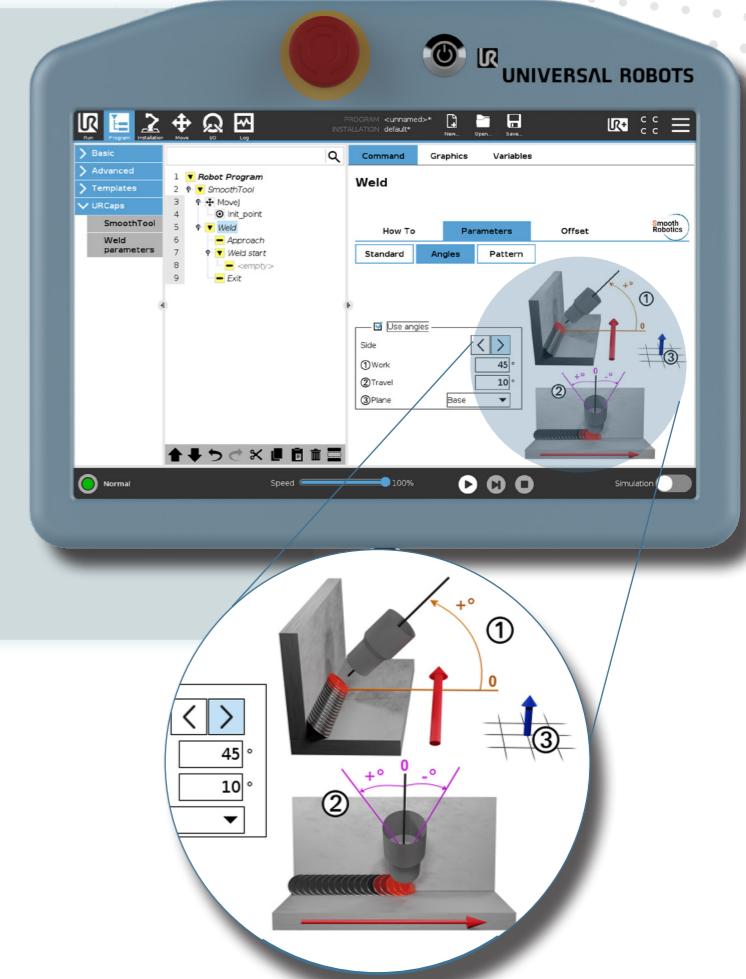


## The Angle System

Set your desired work and travel angles with **ease and precision**

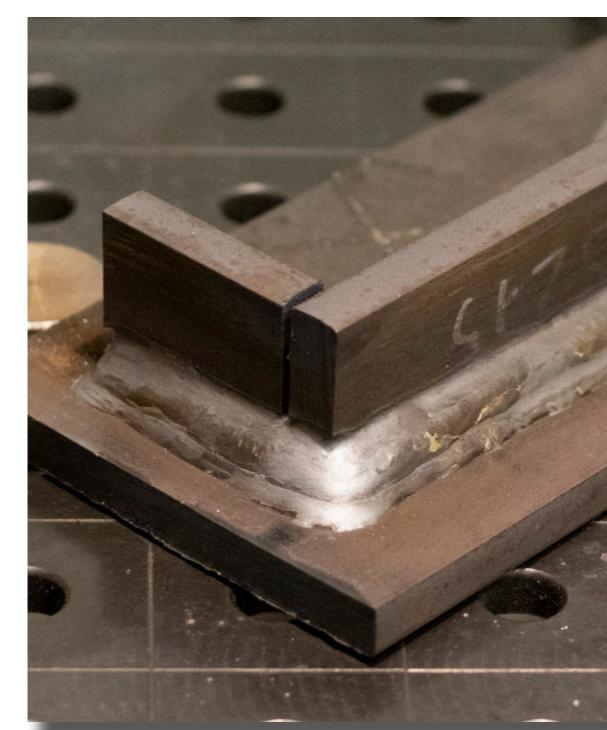
### Feature benefits:

- Achieve superior weld quality with consistent angles of the torch throughout the whole weld
- Precise manual angle programming is no longer required
- Complex welding scenarios such as corners are effortlessly handled by error-free angle control



## Multipass Welding

Enhance your workflow with custom multipass welds



### Feature benefits:

- Quick and easy setup of the number of passes, their individual length and other weld parameters
- Ability to save your multipass weld settings for future use
- The fully customizable Multipass system ensures smooth and efficient delivery of strong and reliable multipass welds

## The Offset Feature

Simply copy and paste your welding

### Feature benefits:

- Conveniently relocate your welding program to a new location by copying your existing program and placing it elsewhere
- Precise control over offset adjustments in the X, Y, Z dimensions, and orientation
- Streamlined program relocation with the intuitive three-point offset method guarantees a seamless user experience

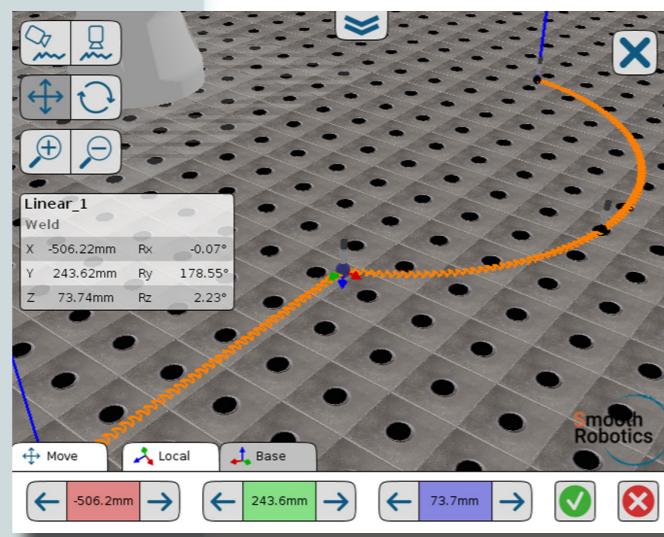


## 3D Universe

Prevent errors by visualizing your welding path

### Feature benefits:

- Gain better understanding of your welding path and programming decisions with the ability to preview and correct your welding program
- The “touch-up” function enables you to make adjustments by moving points in the 3D space and modifying torch angles
- A welding table and robot base can be incorporated into the scene to provide a tangible and scaled environment for your convenience

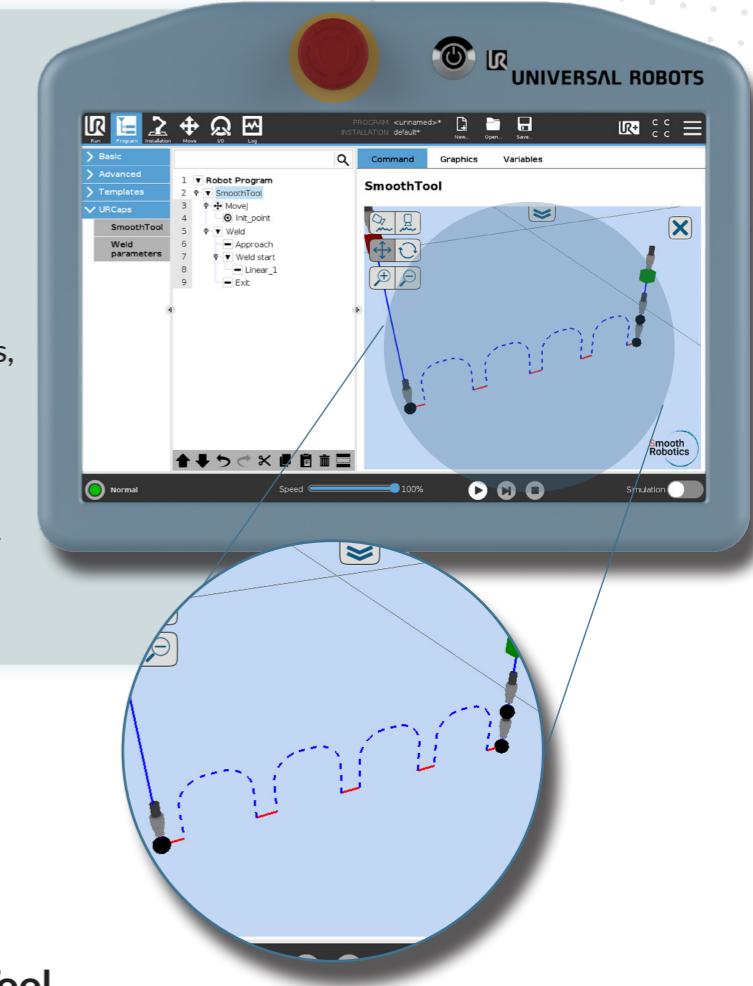


## Stitch Welding

Reduce your costs with custom stitch welds

### Feature benefits:

- Optimize your welding technique to cut production costs associated with use of material
- Flexible customization of the pattern such as stitch length, number of stitches, and many other parameters for precise control over your welding process
- The potential for warping, burn-through and other weld defects is easily mitigated



## Weaving patterns

Weaving made easy with SmoothTool

### Feature benefits:

- Achieve desired results with four main weaving patterns: Trapezoid, Zig Zag, Circles and Crescent and more
- Streamline your weave bead welding with full and precise control over the torch movement with each pattern
- Applicable on both linear and circular weld segments



## Touch Sense

Automatically locate and adjust your welding path

### Feature benefits:

- Streamline setup with a user-friendly search routine, enabling the robot to effortlessly locate the exact position of your welding piece
- Eliminate the need for precise positioning, as the robot autonomously corrects the welding path for enhanced efficiency
- Harness the power of Touch Sense paired with Offset for a dynamic and productivity-boosting workflow in robotic welding



## Tacking

For precise and consistent tacking

### Feature benefits:

- Alleviate the dependency on manual tacking in your welding process and make your workflow more efficient and less reliant on manual intervention
- Ensure heightened precision and consistency in your tacking process
- Easily teach the tacking path using the flange buttons: blue for air points and red for tacking points

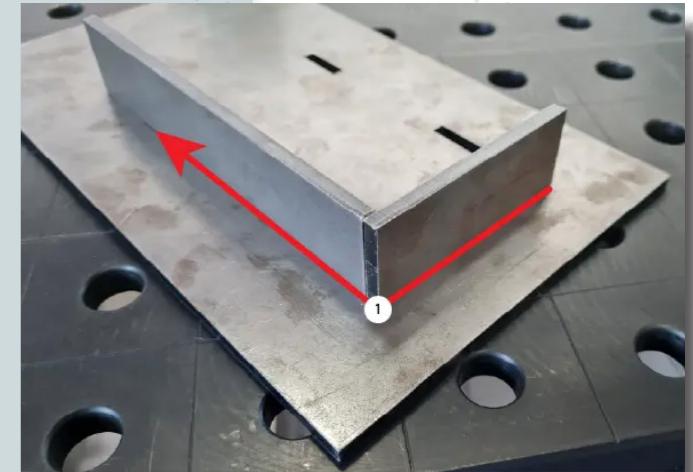


## Improved Corner Handling

Teach corners with **only 1 point**

### Feature benefits:

- Requires significantly fewer points, minimizing programming time and enhancing overall efficiency.
- Creates consistent corner welds so each corner in your weld can be identical
- Travel speed applied at the corner and reorientation distance can be adjusted for optimal results

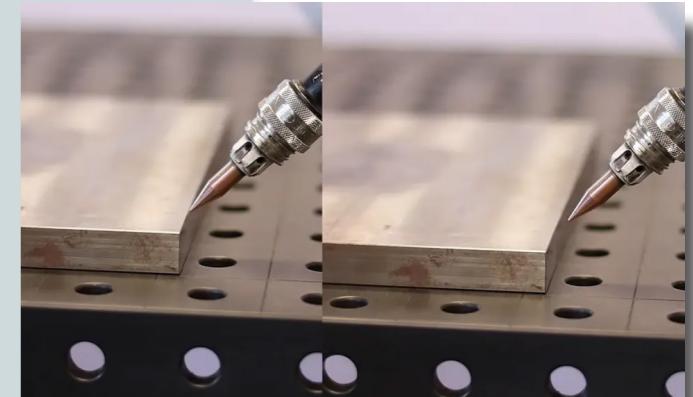


## Stickout Offset

Easily offset your path in the stickout direction

### Feature benefits:

- Simply move the torch closer or further away from the object you are welding
- Useful when having taught your welding path with a stickout that is not optimal for the actual weld
- Ideal for dry-running to avoid contact between the teaching tip/wire and the surface of the object





Series	Model	Module
X5 FastMig	X5 Power Source 400 X5 Power Source 500	Digital Connectivity Module (DCM)
FastMig X	FastMig X 350 Power Source FastMig X 450 Power Source	
Master M	FastMig X 350 (400 V) MV Power Source MasterM 353 MasterM 355	
X5 FastMig	X5 Power Source 400 Manual X5 Power Source 500 Manual X5 Power Source 400 Synergy X5 Power Source 500 Synergy	Connection + cable + 2 relays
A7 MIG Welder	A7 Power Source 350 A7 Power Source 450	ANYBUS-CC M30 ETHERNET/IP 2-PORT
MasterM	MasterM 353 G MasterM 353 GM MasterM 355 G MasterM 355 GM MasterM 356 G MasterM 358 GM	Connection + cable + 2 relays



Series	Model	Module
Titan XQ	Titan XQ 350 puls Titan XQ 400 puls Titan XQ 500 puls Titan XQ 600 puls Titan XQ 400 AC	
Titan XQ R	Titan XQ R 350 puls Titan XQ R 400 puls Titan XQ R 500 puls Titan XQ R 600 puls Titan XQ R 400 AC	
Phoenix XQ	Phoenix XQ 350 puls Phoenix XQ 400 puls Phoenix XQ 500 puls Phoenix XQ 600 puls	
Phoenix XQ R	Phoenix XQ R 350 puls Phoenix XQ R 400 puls Phoenix XQ R 500 puls Phoenix XQ R 600 puls Phoenix XQ R 355 puls Phoenix XQ R 405 puls Phoenix XQ R 505 puls	
Taurus XQ	Taurus XQ 350 Taurus XQ 400 Taurus 500 XQ Taurus 600 XQ Taurus XQ R 350	
Taurus XQ R	Taurus XQ R 400 Taurus 500 XQ R Taurus 600 XQ R	
Phoenix	Phoenix 355 Expert 2.0 puls MM Tkm Rob	BusIntX11



Model	Module
TPS 320i	RI MOD/i CC-M40 Ethernet/IP-2P or RI MOD/i CC
TPS 400i	Ethernet/IP-2P
TPS 500i	
TPS 600i	
TPS 270i C Pulse	
TPS 320i C Pulse	

Model	Module
TS	
TPS3200	Rob3000 Autom. Interface + cable
TPS4000	
TPS5000	



WELD THE WORLD

Series	Model	Module
Mig-Mag Pulsed/Double Pulsed/Multifunction Digital	Power Pulse 505d	Anybus-CompactCom M40 Ethernet/IP



Series	Model
iROB® Pulse	iROB® Pulse 400
	iROB® Pulse 400 Multivoltage
	iROB® Pulse 500



Series	Model	Module
Mig 4004i Pulse WeldCloud™	Aristo Mig U4000i 400V Aristo Mig U4000iw 400V Aristo Mig U5000i 400V	Retrofit Anybus board
Aristo® Mig 4004i Pulse	Aristo® Mig 4004i Pulse	
Mig U5000i Pulse WeldCloud™	Aristo Mig 5000i 400V CE Aristo Mig 5000iw 400V CE Aristo Mig U5000i 400V CE	



Series	Model
WB	WB-P402
	WB-P322E
	WB-P402L



Series	Model	Module
S-ROBOMIG XT SERIES	S3 RobotMIG XT S5 RobotMIG XT S8 RobotMIG XT	LorchNet Connector
ROBO-MICORMIG SERIES	Robo-Micromig 300 Robo-Micromig 350 Robo-Micromig 400 Robo-Micromig 500	



Series	Model	Module
Auto-Continuum	Auto-Continuum 350 Auto-Continuum 500	Ethernet/IP

Choose your preferred components for the **complete solution**



# SmoothTool

## made for welding

We have partners all over the world.  
Find one near you.



Your local Smooth Robotics Partner:



For more information visit us at:  
[www.smooth-robotics.com](http://www.smooth-robotics.com)

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