

The way to Automate

Simply intelligent welding.

LORCH

Simply intelligent welding.

Because automation is not rocket science but simply a matter of selecting the right system.



Modular construction kit system

With LorchAutomation, you need not purchase a system with components and functions that you will probably never use. Cost-effectiveness for us means that you only pay for what you really need for the automation of your welding task. Therefore, you can configure your automation package from the Lorch construction kit exactly in accordance with your requirements and add to it at any time with additional module components.

Perfectly matched components

One must set the tone. The LorchControl conducts the automation orchestra perfectly. Every module – whether the turntable, power source or pneumatic slide axis – knows its role precisely. All interact perfectly together and receive their commands from the control unit via the LorchNet bus system. Whatever the welding process, whatever the components – everything which belongs together comes together here.

Extremely fast implementation

Install machines, connect to each other, switch on, ready to start. The automation is set up for operation within a very short time. We call this “Plug & Weld” and means the end of tinkering for you. You concentrate immediately on the essentials, namely perfectly automated weld seams. You can achieve real results within hours of putting it into operation. We do not know of any other system that can proof this.

Individually expandable

To be honest there are some truly special applications which we cannot cover completely with our system construction kit. For this reason, we have purposefully designed our automation solution as an open system in which other components can be integrated – even at a later date. LorchAutomation is able to take into account special application requirements so that you can achieve the best individual solution for yourself.

Real short changeover times

Automating small batch sizes economically for often changing tasks; that is the challenge and the changeover time is the critical factor. No time must be wasted. The system perfectly supports each step. All settings can be made quickly and precisely. The Tiptronic job memory in the power source and LorchControl is extremely helpful. The welder has prepared the system for the present welding tasks in the shortest time.

Easy-to-use operating concept

The Lorch “3 steps and weld” operating concept also applies to the automation.

3 steps to achieve weld perfection:

1. Select workpiece diameter
2. Specify welding speed
3. Adjust welding power source

Time-consuming pre-tests no longer exists. The preparation of the system is a matter of minutes and the handling afterwards is child's play for every operator: Insert work-piece, press button and the welding process starts.

Trust is good. Our Control is better.

LorchControl. Head of the system and your cockpit for optimum welding results.

As it should be: one press of the Start button is sufficient and the welding process starts.

The torch moves into position via its pneumatic positioner, the gas flows, the power source increases the power up to the starting current, the arc is ignited and the welding current flows. The turn-table and cold wire move immediately, just at the right moment. The welding process has been put into operation and now runs for exactly as long as is necessary in order to complete the weld seam including the critical overlap area for circular seam welding. Afterwards, the components retract from the product in exactly the correct order and at the right moment, in the defined presence of post shielding gas the welding process is ended – the result: a perfectly automated weld seam.

It sounds somewhat self-evident, however, it is not. In order to ensure that the components work optimally together, a controlling head is needed which gives the commands. The LorchControl provides this. All processes up to diagnostics and error handling are coordinated here. The heart of the system is the automatic parameter handling, which regulates the process completely automatically.

The best thing about the LorchControl is that it is so simple to operate. Whether MIG-MAG or TIG.

3 steps to achieve weld perfection:

1. Select workpiece diameter
2. Specify welding speed
3. Adjust welding power source

All other parameters are determined automatically. Using the Tiptronic job memory, even the fine tuning for 100 different workpieces, can be stored and called up at any time for a fast changeover.



Simply **intelligent** welding.



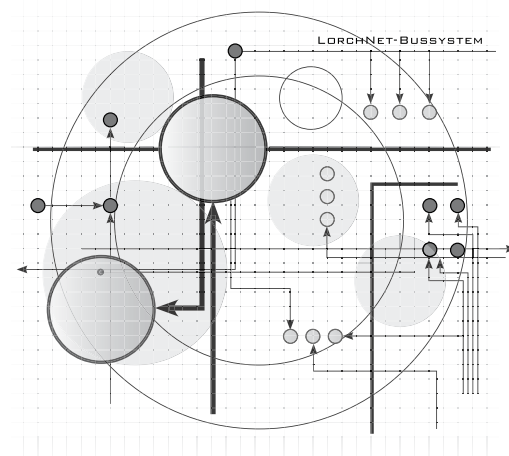
LorchControl

Unique Plug & Weld.

LorchNet. The cable for all components.
Simply plug in. The connection is made.

What has become standard for your PC is often the starting point for tinkering for automated welding. Often weeks and even months passed until the different system components could recognize each other and mutually exchange and understand communications signals. Months of fine tuning were required until everything works perfectly.

For this reason, so that this does not happen to you, we have developed LorchNet. From a technical viewpoint, LorchNet is a modern bus coupling system: a digital data highway with standardized communication. This connection provides all Lorch industrial welding machines and components with signals and guarantees that they understand each other perfectly. The result is "Plug&Weld" and ensures for the automation that the left hand knows what the right hand is doing.



Your benefit: Maximum reliability, extremely fast set-up and an absolutely easy exchange of singular modules due to the compatibility of the LorchAutomation system. Install them, connect them and you are ready to start. You concentrate immediately on the things with which you really earn money – perfectly automated weld seams.

Simply **intelligent** welding.



LorchNet

For perfect lap times.

LorchTurn 50 and Turn 100. The endurance athletes for optimum circular welding. With absolutely constant rotation speed. Guarantees for outstanding seam quality.



Turn 100

Load capacity	1000 N (100 kg)
Turntable ø	300 mm
Hollow shaft ø	30 mm
Min. / max. speed	0,4–5 rpm
Swivel adjustment	0–90° infinitely variable swivel gear adjustment



Turn 50

Load capacity	500 N (50 Kg)
Turntable ø	300 mm
Hollow shaft ø	30 mm
Min. / max. speed	0,8–10 rpm
Swivel adjustment	0–90° infinitely variable manual adjustment



Base

The strength of our athletes for perfect circular welds consists of the constancy and precision of the lap times – the highest degree of difficulty for this discipline. They have the necessary power reserves, a long service life and are totally reliable – lap for lap. A specially developed vector-regulated frequency converter combined with the

most modern three-phase technology provides the necessary physical aspects of the turn tables. The ideal welding position is facilitated by the infinite swivel adjustment from 0 to 90 degrees. A face-plate with a centering groove provides optimum positioning of the workpiece. The variable workpiece holder supports the

turn table for its task. The tracker used is spring-loaded and compensates for workpiece tolerances or workpiece changes caused by heat. Clamping levers facilitate easy fixing and provide the necessary holding. The amply dimensioned welding current connection is well enclosed, protected against dust inside the turn. And

the maintenance-free, non-contact sensor guarantees the exact reproducibility of each start position. Because each fluctuation would deteriorate the weld quality and the production would be unusable. The three-jaw chuck made of special cast iron means that weld spatter can't stick. In addition, a standard hollow shaft is required for the

use of long workpieces. The backing gas is also supplied through it. A LorchTurn is built for the demanding rigorous use: universal, modular, well thought out and with excellent quality.

The “Base” is the foundation of the small turn tables and all of the responsible components for the fixing of the workpiece and torch.

Simply intelligent welding.

LorchTurn

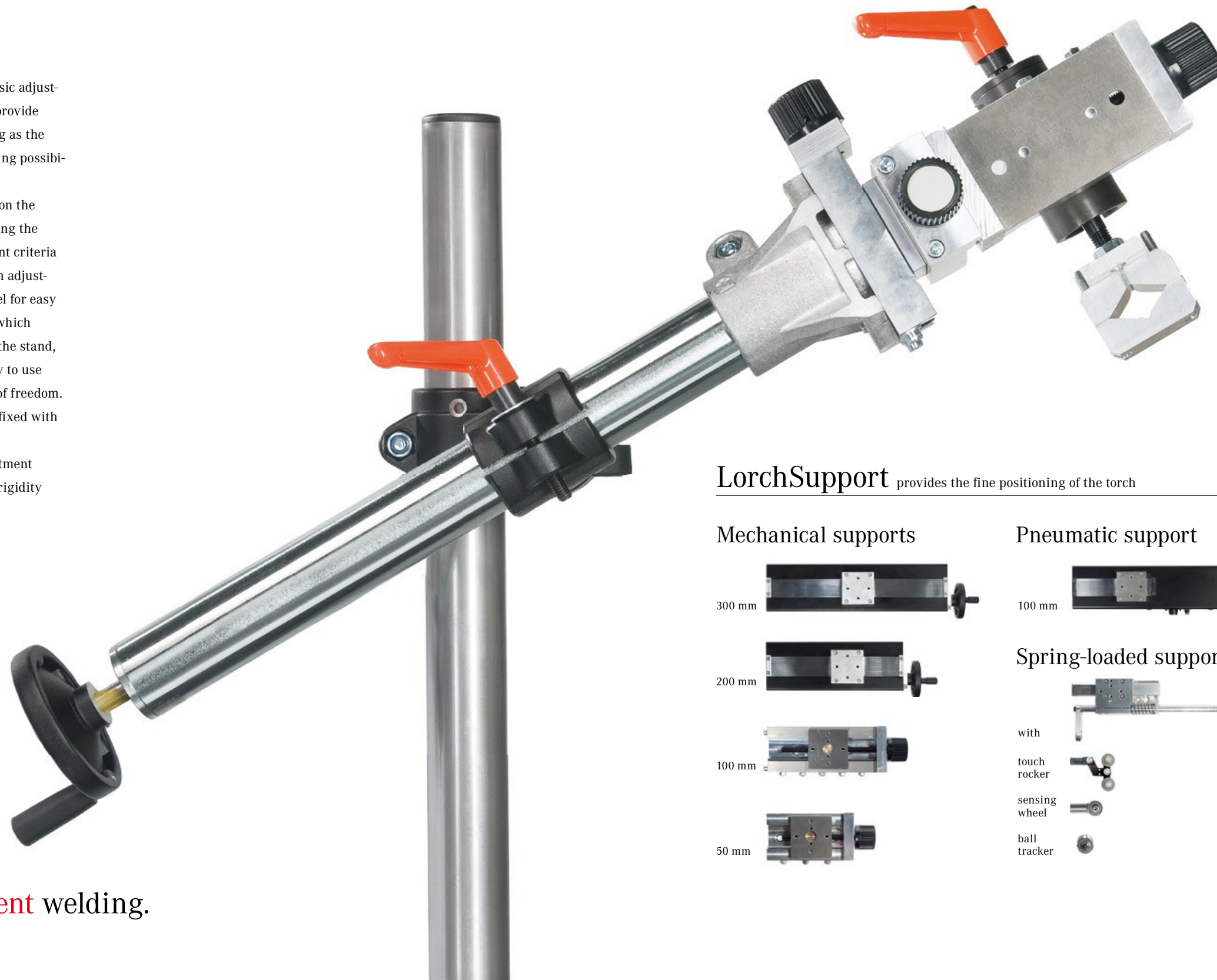
Always brought into **position** correctly.

Lorch**Fix & Pos**. Everything finds exactly the same welding position. Again and again.
Supported mechanically or pneumatically.

The perfect apparatus for fast basic adjustment of the torch position must provide maximum movability. As varying as the workpieces it holds, the positioning possibilities must also be as flexible.

On the one hand, movability and on the other hand absolute rigidity during the welding process are the important criteria here. Due to its height and length adjustment options, like the hand wheel for easy adjustment and the swivel gear which increases the working radius of the stand, "LorchFix&Pos" provides an easy to use system with maximum degrees of freedom. Everything can be adjusted and fixed with a minimal use of tools.

The clamping levers at the adjustment positions provide the necessary rigidity during the welding operation.



LorchSupport provides the fine positioning of the torch

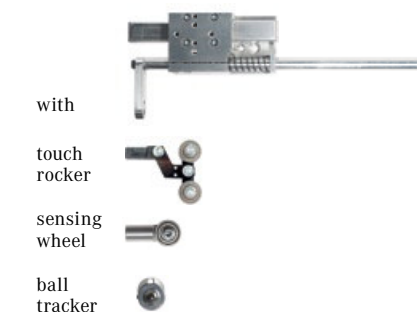
Mechanical supports



Pneumatic support



Spring-loaded support



Base

Using the Base, all reference axes remain stable to each other and the torch guide can be swiveled out of the working area immediately. The movement free space for easy removal and re-loading of the workpiece is produced. A magnetic stop provides 100% repeat accuracy. And you decide the working location of your automation with the fork-lift truck.

Simply **intelligent** welding.

Lorch**Fix & Pos**

Completely flexible. Firmly fixed.

Lorch**Fix**. Can be moved like your wrist.
For 360° torch position freedom.

LorchFix takes over the fine adjustment of the torch using the supports. The adjustment spindles help for the exact adjustment of the torch position. Whether you work with 2 or 3 coordinates, a pneumatic slide axis or even if you would like to use a spring-loaded weld guide – everything interlocks perfectly.

The stable universal joint provides maximum flexibility for adjustment of the torch and is firmly fixed in the correct position using the associated clamping lever. The welder has certainly found the ideal torch position in the shortest time – no other system is so flexible. The torch clamp with prism sleeve has an extraordinarily large fixing range. Should your torch fail, even a standard torch can be used

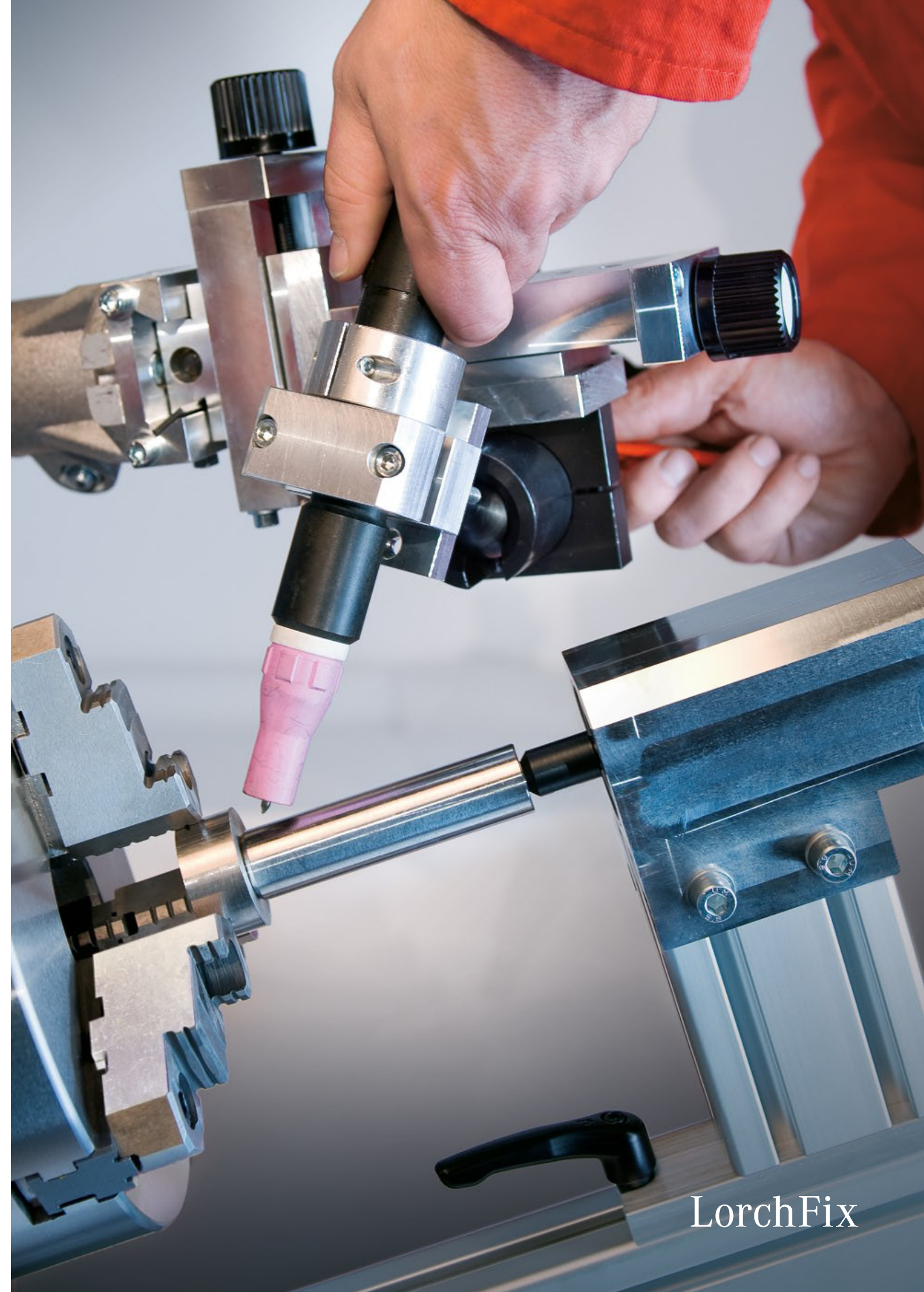
temporarily as well as all common machine torches. Thus resulting in maximum reliability for your production. Simple aids ensure that the torch can be put back into exactly the same position after cleaning or replacement of wearing/consumable parts. And this with the minimum possible setting up time and maximum reliability of the system.



LorchFollow weld tracking system

Not every workpiece is perfect. Some could also not even be exactly round. The spring-loaded “LorchFollow” weld tracking system with its sophisticated mechanics for constant spacing between torch and workpiece ensures that a perfect weld is always achieved.

Simply **intelligent** welding.



LorchFix

Heavy duty tasks? You're welcome.

Lorch**Turn 500**. For loads up to 500 kg.
The large turn tables from Lorch.

Our heavyweight champions are required when it is a matter of large loads. The strength and load capacity are the biggest but not the only differences to the Turn 50 and Turn 100. The infinitely variable swivel adjustment is performed by operating a hand wheel. If required, an electric motor is also available for convenient adjustment. The solid basic structure is designed for transport with a lift truck or forklift and also ensures the necessary stability to the stand arm for the torch bracket.

Support blocks which can be adjusted for height provide the necessary support for long parts. The workpiece can be safely placed on them and turns in the speed of the turntable.



Turn 300

Load capacity	3000 N (300 kg)
Turntable ø	500/800 mm
Hollow shaft ø	150 mm
Min. / max. speed	0,08-1,0 rpm
Swivel adjustment	0-120° infinitely variable using hand wheel or motor

Turn 500

Load capacity	5000 N (500 kg)
Turntable ø	740/1000 mm
Hollow shaft ø	295 mm
Min. / max. speed	0,08-1,0 rpm
Swivel adjustment	0-120° infinitely variable using hand wheel or motor

Simply **intelligent** welding.



LorchTurn 500

You have the choice. We have the appropriate process.

MIG-MAG or MIG-MAG-pulse



MIG-MAG for demanding automaters

This concerns output. Real productivity. And countless more meters of weld seam. Whether MIG-MAG or MIG-MAG pulse. The welding machines from Auenwald have already set the standard in the past for cost-effective, practical welding.

And practically everything is right for the new Lorch S-series and P-series: easiest “3 steps and weld” operation, top weld quality and, of course, also the speed. New! From the inventor of the MIG-MAG TwinPuls®.

The new welding dimension: SpeedPulse in the S and SpeedArc in the P synergic increase welding power and welding speed with simultaneous perfectly controllable arc.

TIG or TIG with cold wire



Perfect TIG automation

Whoever welds with TIG knows why. Perfect appearance is important. A “must” for all quality welds. And whoever automates TIG is on the search for the perfect weld. Whoever then uses the Lorch V-Series or also the mobile T-Series has reached his

objective. The weld quality is unbeatable. Achieved with operation which cannot be surpassed for simplicity due to the “3 steps and weld” operating concept and which impresses many thousands of welders in the whole world again and again.

Both as DC version for ideal steel, stainless steel and copper welds as well as in the AC/DC version for perfect aluminium welding. Whether with or without cold-wire feeder. You are welding in the Champions League here.

Simply **intelligent** welding.

Lorch**Power**

Precise and served ice cold.

Lorch**Feed**. The TIG cold-wire feeder automates the wire feeding operation.

Perfect cold-wire feeding is required when creating filling volume is the task in automated TIG welding in order to bridge gaps and compensate for material tolerances. The LorchFeed is used here and provides superior TIG quality with absolute precision.

The Feed has a completely digital controller, a tachometer-regulated feed motor and a 4-roll precision feeder for the exact wire delivery for this.

There are many possible uses because the Feed can, along with its role as a completely integrated part of the automation system, also be used as a “standalone” solution for manual welding.

Extremely helpful thereby: the synergy function ensures automatic wire feed correction in the case of changes in the welding current. For the use in automation the operating command is completely taken over by the LorchControl.

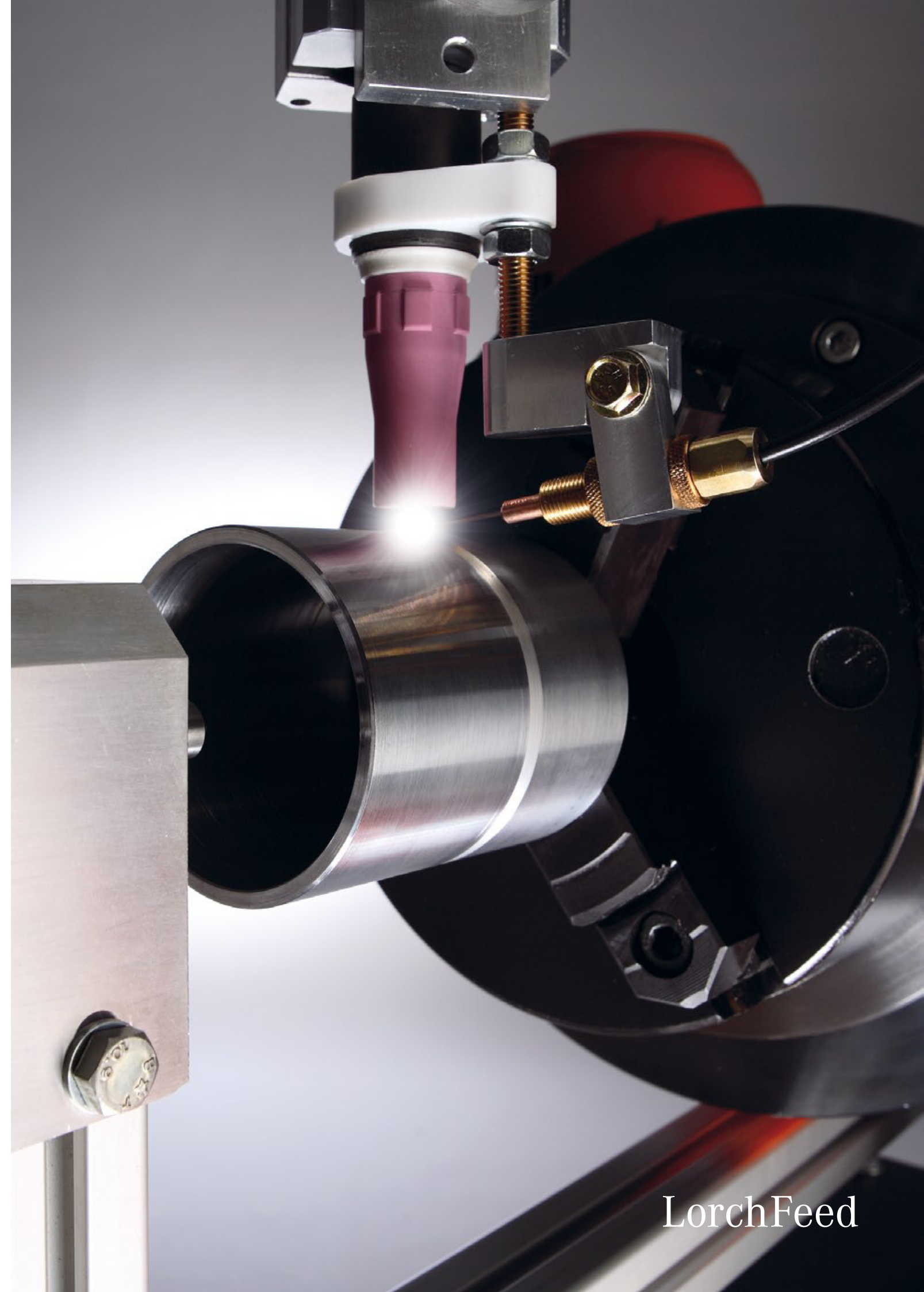
Amongst others, the Feed is impressive due to its

SynchroPulse, where the wire feed is pulsed synchronously with the pulse of the welding current of the Lorch power source. This ensures ideal filler wire introduction and outstanding weld pool control.

The “3 steps and weld” operating concept also provides easy handling for the Feed and the Tiptronic provides sufficient job memory.



Simply **intelligent** welding.



LorchFeed

Technical data

Control		1.2
Mains voltage	V	230
Mains frequency	Hz	50/60
Mains connected load	max. kVA	2,3
Mains fuse	A	16
Mains plug		Shockproof
Power outputs	W	250/750
External peripherals	Pneumatic feed apparatus Welding current source actuation	
	Forming gas valve Monitoring contacts Blowout valve	

Turn rotary tilting table		Turn 50	Turn 100	Turn 300	Turn 500
Load capacity	N (kg)	500 (50)	1000 (100)	3000 (300)	5000 (500)
Turntable	ø mm	300	300	500 (opt. 800)	740 (opt. 1000)
Hollow shaft, free passage	ø mm	30	30	150	295
Min. / max. speed	U/min	0,8-10	0,4-5,0	0,08-1,0	0,08-1,0
Swivel range		90°	90°	120°	120°
Swivel adjustment		Manual	Swivel gear	Swivel gear	Swivel gear
Max. welding current	A	400	400	400 (opt. 800)	400 (opt. 800)
Controller		Control 1.2	Control 1.2	Control 1.2	Control 1.2

Fix tube clamping system					
Handling weight	max. kg	6	6	6	6
Action radius	max. mm	1000 x 1000	1000 x 1000	1000 x 1000	1000 x 1000
Spindle element feed stroke 500	mm	265	265	265	265
Spindle element feed stroke 1000	mm	765	765	765	765
Tube diameter	ø mm	50	50	50/60	50/60

Base				
Load capacity	max. N (kg)	3000 (300)	3000 (300)	Torch guidance system either mounted to
Dimensions	mm	500 x 600 x 420	500 x 600 x 420	turntable or freestanding tripod

Feed cold-wire feeder		
Feeder speed	m/min	0,1-6,0 (opt. 0,5-20)
Drive/feeder		4 roll tachometer-regulated motor digital speed feedback
Pulse frequency	max. Hz	5
Mains voltage	V	230
Mains frequency	Hz	50/60
Mains plug		Shockproof

Q-Sys welding data monitoring		
Mains voltage	V	230
Mains frequency	Hz	50/60
Mains plug		Shockproof
Dimensions	mm	260 x 170 x 160

Supports		
Pneumatic	mm	100
Manual	mm	50/100/200/300
Spring-loaded	mm	0-50 Sensor heads variants: Wheel Rocker Ball roller

Support blocks		
Load-bearing capacity	kg	500
Ball rollers height adjustment	mm	430-710
PU rollers height adjustment	mm	525-805
Steel rollers height adjustment	mm	525-805

Practical case:
Welding high quality
automotive tuning
components.



Tasks as we like them:

Welding TIG in combination with the LorchFeed cold-wire feeder. Every year, this Lorch system welds approx. 60,000 shock absorber casings of many different designs, which correspond to about 90 tons of rust-free chromium nickel steel. Approx. 1.5 tons of welding wire are used within the process. Overall, the work batch sizes are between five and 200 pieces which totals more than 100,000 welds annually. 100,000 welds which previously had to be produced by hand. Now the welders turned into pilots and operate the system and are responsible for its correct configuration. The skilled welder is no longer required for the highly repetitive production. He can now deal with more challenging welding tasks. 1,500 hours of annual capacity are now available for additional welding orders. We call this genuine productivity.



Lorch Automation DVD available at:

www.lorch.eu

LorchAutomation.

Solutions for small and medium welding tasks.

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