

Product info

MIG-MAG pulse welding with an extra portion of finesse

THE NEW LORCH S-XT



Welding solutions for the world's smartest companies

LORCH

THE NEW LORCH S-XT: THE HIGH END OF MIG-MAG PULSE WELDING!

Welding is extremely hard work. What makes a tough job even harder are the wide-ranging requirements that call for a specific appearance, quality and geometry of the weld seam. In today's world of cut-throat industrial competition, you will not be able to satisfy these rigorous requirements unless you bring the right amount of experience and expert equipment to the table. There is, however, another decisive factor that is easily overlooked, but which plays a major role in producing top-tier and, first and foremost, profitable welding results: you need to have the right feel for the arc. Only if welder and machine function as a unit will they be able to attain welding results that are profitable over the long run. If you manage to meet these requirements, you will complete your welding tasks with more efficiency, saving you both cold hard cash and valuable time.

Capable of handling any MIG-MAG pulse welding challenges the welder has to overcome or can throw at it – our new Lorch S-series allows the welder to adapt the machines to his specific requirements and preferences. Affording him the ability to stay in full control of the arc at all times, Lorch S-series machines make it possible for the welder to weld steel, stainless steel, and even CuSi with extremely little spatter and perfect weld pool control. The welder will experience sheer elation the moment he starts enjoying the new powerful XT and Speed processes, the optimised operating concept and the exceptional level of customisability the machines have to offer for all applications in trade and industry along with the extensive range of accessories that leave nothing to be desired. Sounds great, does it not? And, it feels even better and will win you over with the first weld you complete: the new S-series engineered by Lorch.



YOUR ADVANTAGES AT A GLANCE:

- Infinitely variable welding inverter for MIG-MAG pulsed arc welding
- Available in three power variants with 320 A, 400 A and 500 A that are designed for real-world applications and allow for fully customised configurations
- Duty cycle at maximum current, varying with the power variant – 40 %, 50 %, and 60 %
- New, patented SpeedPulse XT process for faster and more relaxed pulse welding
- Powerful new SpeedArc XT and TwinPuls XT processes
- Enhanced: SpeedUp, SpeedRoot, SpeedCold and other Speed processes
- Variable arc length control for welding without errors in all positions
- Dynamic control for XT and standard processes
- Arc can be adjusted specifically for starting, welding and end phases
- Including electrode welding function
- As an S-RoboMIG model for a wide range of robot and automation solutions
- Intuitive operating concept with optimised control panel
- Patented current-voltage combo control for perfect arc control
- Optimised cooling system with up to 35 % more cooling output
- Revamped, completely transportable industrial housing
- Quatromatic function
- Possibility for remote control torch with the Powermaster torch
- Available as a mobile system, a compact system or with separate wire feeder case
- Can be completely automated (LorchNet connection, robot interface or bus coupling)
- Manufactured and tested according to DIN EN 60974-1, with CE mark, S-symbol and IP 23
- Extensive accessories

SPEEDPULSE XT – EXTRA FAST. EXTRA LOW-SPATTER. EXTRA PROFICIENT HANDLING.

SpeedPulse XT turns you into the undisputed Master of the Arc. This is assured by the patented control technology of the new Lorch S-series. It combines the new process and all of the benefits of the earlier SpeedPulse welding process. Instead of making him break out in a sweat during pulse welding, the SpeedPulse XT afford the welder such extra freedoms as the ability to influence the arc by changing the distance between torch and workpiece. Better still, the new S-series responds with unprecedented speed and accuracy. And, it delivers this type of speed and accuracy in every pulse phase.

These properties allow the welder to guide the arc more safely and intuitively and to transfer even the slightest correction into the welding process without any delay. The S-series, thereby, produces results that you can see as well as feel.

When combined with the exceptionally robust and stable properties of the arc, this means: improved handling, higher quality, and low to insignificant spatter, reducing the amount of necessary rework to a minimum. This is what we call welding at the pulse of time.



SpeedPulse XT – Recordings with a high-speed camera



Fig. 1: The primary droplet forms at the end of the wire.



Fig. 2: The primary droplet has detached, allowing the secondary droplets to form.

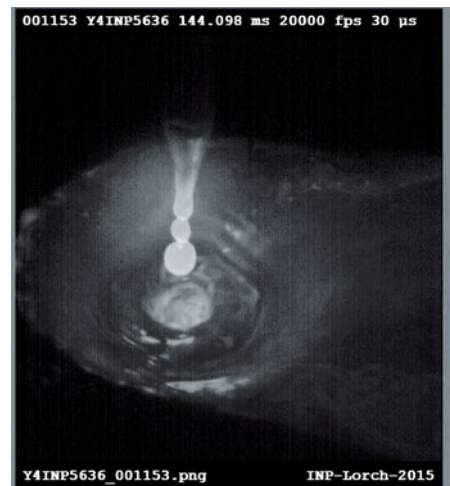
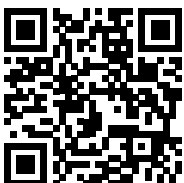


Image 3: The primary droplet enters the weld pool, and the secondary droplets detach.



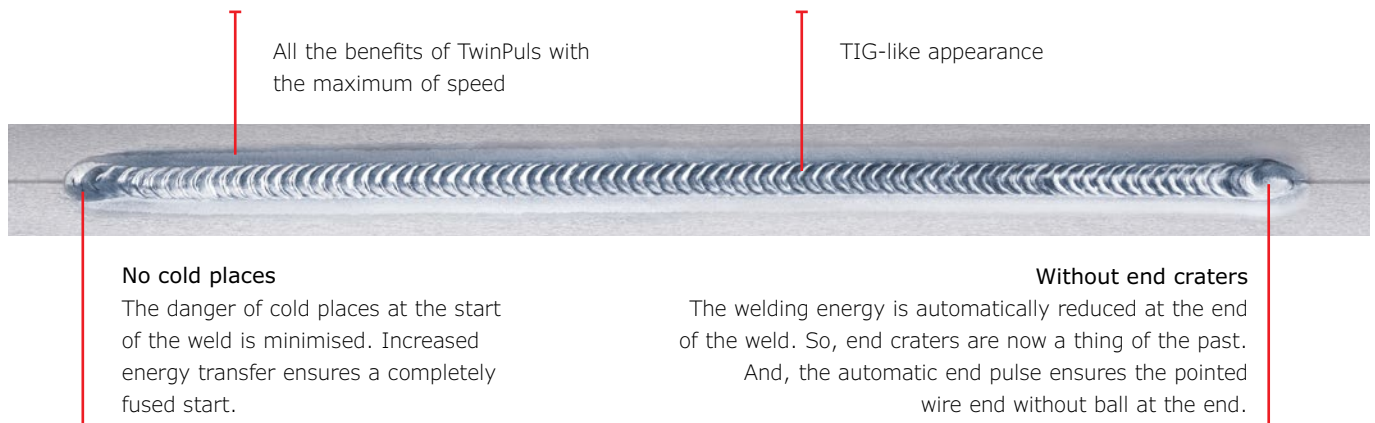
SpeedPulse XT – watch the full-length video at:
www.youtube.com/user/LorchTV

TwinPuls XT – looks really fantastic.

TwinPuls XT controls specifically and separates heating and cooling phases. What does that mean to you? You benefit from a significantly lower and more systematic heat input into the workpiece as well as from much lower distortion, resulting in notably less rework. What is more, the isolation of the different phases makes working in difficult positions much easier. Real-world applications that commonly used to be completed by TIG welding can now be welded with MIG-MAG processes thanks to the ground-breaking

capabilities of the new and improved TwinPuls XT. Welding is now simply faster and more efficient. Producing no cold starts or end craters whatsoever, TwinPuls XT achieves perfect results that even stand up to TIG seams.

There is one end to everything, except when you talk about weld seams. They have not one but two ends and look astounding thanks to TwinPuls XT.



SpeedArc XT – deeply impressive.

SpeedArc XT sets itself apart by its highly focused and stable arc combined with an energy density that stands head and shoulders above any other comparable process. Delivering much deeper penetration into the base material across the entire power range, this process delivers a level of penetration to which ordinary

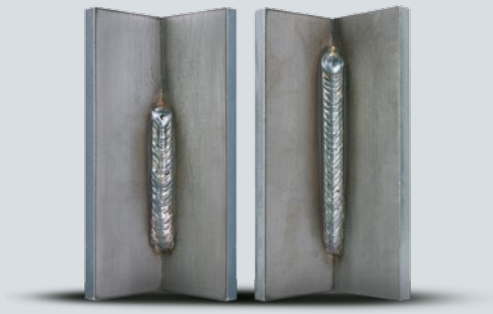
MIG-MAG machines simply cannot measure up. The greater arc pressure that flows into the weld pool SpeedArc XT adds a significant speed boost to MIG-MAG welding across the entire power range, making it noticeably faster, much easier to control and, consequently, much more economical.



SpeedArc XT even makes extra large weld preparation angles a thing of the past. A weld prep angle of 40° is entirely sufficient to place a proper seam. This helps conserve not only valuable time but also precious material.

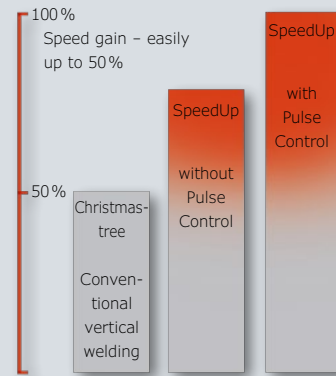
SpeedUp – experience an entirely new high during vertical seam welding

Up to now, vertical seam welding required a tremendous amount of experience and a steady hand. Now, professionals in trade and industry have a brand new, simple-to-use tool at their disposal – Lorch's new S-series – that treats them to a perfectly coordinated welding process that is powerful enough to even substitute the supreme discipline of the trade – "Christmas tree welding". SpeedUp combines the hot high-current phase with



On the left, the challenging Christmas tree, on the right, the ingeniously simple SpeedUp

the cold phase to effect a reduced heat input – thereby, offering good penetration, exactly dimensioned weld seams and nearly perfect a-measurement dimensions. Unparalleled arc regulation delivers outstanding speed and produces results that show no transitions and virtually no spatter.

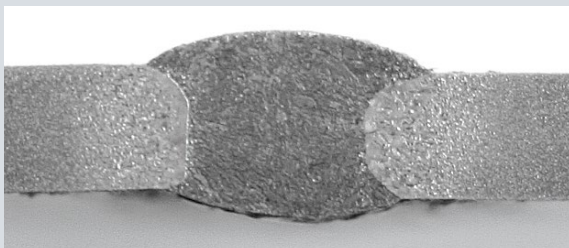


Packing the power of the new Lorch S-XT, the concentrated SpeedUp arc is 100% faster on steel and stainless steel than conventional Christmas tree welding.

SpeedRoot – for MIG-MAG root welding quality that is noticeably better

Previously, the main requirement for joining both edges of the material perfectly and as free from defects as possible was to apply this simple formula: root = TIG.

Whilst enabling clean results, the application of this process was also exceedingly slow. SpeedRoot delivers dramatic speed benefits as well as MIG-MAG weld seams whose quality is on par with TIG welds. This superior performance is made possible by the high-end control technology that is built into every machine of the S-series! This technology controls the level of current and voltage with utmost precision, thereby guaranteeing high speed process reliability and flawless weld appearance.



Optimum, slightly rounded weld appearance without fusion defects – for maximum gap tolerance and gap bridging.

Anyone who has ever bridged a 4 mm gap on 3 mm sheets without weaving using the S-series and SpeedRoot will never want to go back to the solution they used before. Especially when they discover that the perfect weld seam they are looking at took them much less time than it would have if they had resorted to TIG welding.



What is mainly crucial for root welding is what is otherwise not seen: Shown as a mirror image: weld front side (left) and weld rear side (right).

SpeedCold – for cold hard efficiency during thin sheet welding

SpeedCold keeps the arc stable during thin sheet welding and puts an end to pesky sticky spatter. The new Lorch S-series with SpeedCold will even weld sheets as thin as 0.5 mm and eliminates the need for rework almost entirely. Any spatter that does occur is so “cold” that it will usually not stick to the material. SpeedCold truly shines when used for welding butt, lap and corner welds on thin sheet metal. Responding in

milliseconds to any changes in the arc, the SpeedCold control is distinguished by its exceptional weld seam control as well as the outstanding seam shaping and gap bridging properties, especially on CrNi steel. Lower heat input means less rework thanks to less distortion, less spatter and reduced use of energy. And, we have not even talked about the speed advantages this process has to offer. You cannot ask for much more.



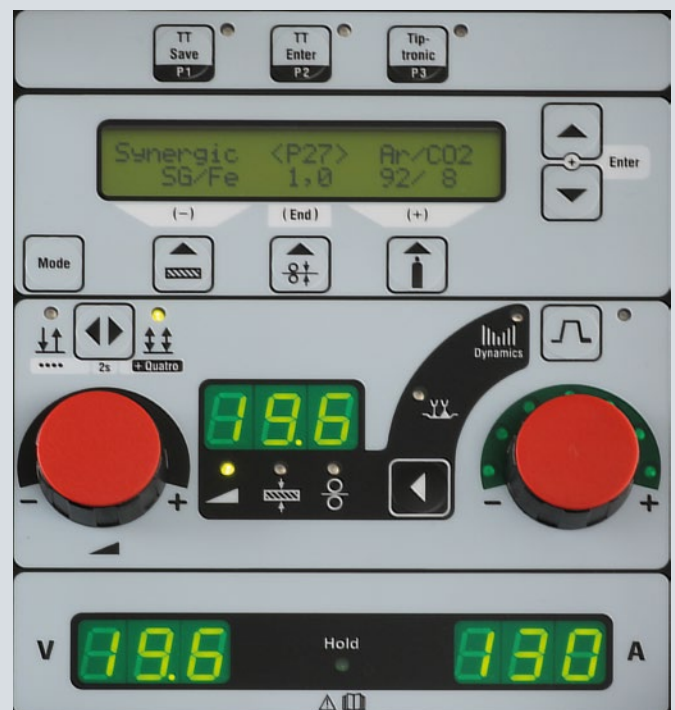
Shown as a comparison in the image on the left: a welded corner seam.

Standard short arc welding (left): rapidly advancing weld pool that is about to drop off.

SpeedCold (right): welded in full with utmost speed and reliability (35 cm/min).

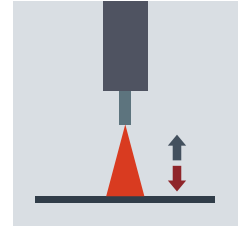
The standard MIG-MAG welding programs

Last, but not least, Lorch also gave the standard MIG-MAG welding programs included with the new S-series a complete overhaul, taking them to an entirely new level. This means for you: exceptional arc behaviour that is fully customisable to your preferences thanks to the new dynamic control. We consider the programs so ground-breaking that we gave them a new name in the optimised control panel: “Synergic”.



Variable arc length control.

Variable arc length control is what it is all about. And, believe us, it is much simpler to use than to spell its name. This innovation included in the new S-series affords the welder intuitive ease of use that is combined with a clearly improved control over the pulse arc and allows him to react much more easily to arising conditions by adjusting the distance of the torch while welding. Whether you are dealing with varying gap dimensions or unevenness in the workpiece – from now on, even cumbersome welding positions, e.g. in corners, will be much easier to master. Another welcome side effect is that the welder can also actively counteract arc blow by shortening the arc.

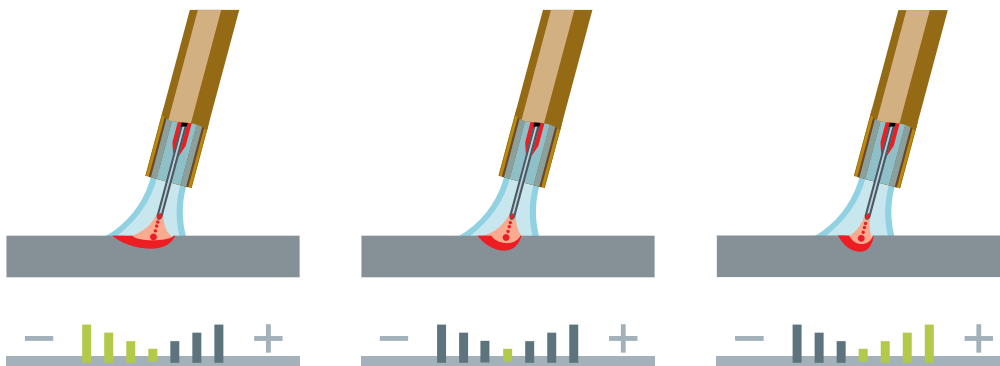
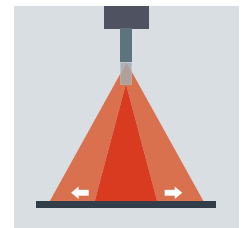


The welder can react much more easily to arising conditions by adjusting the distance of the torch.

Innovative dynamic control.

Lorch's new S-series comes with innovative dynamic control, which makes it possible for the welder to fine-tune the arc characteristics for all new welding programs until they perfectly match the workpiece and the welding task at hand. For an even better seam and an extremely good feel whilst welding.

A turn of the control knob is all it takes to set the arc to soft or hard or anywhere in between. SpeedPulse XT also boasts a large number of additional parameters that have a beneficial effect on the weld penetration geometry and, thus, positively influence the weld penetration reliability, particularly during stainless steel welding. These capabilities swiftly turn the welder and his machine into a dynamic duo.

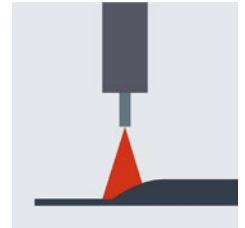


The dynamic control allows the welder to set the arc to any width he requires or prefers.

Effortless welding over tack welds.

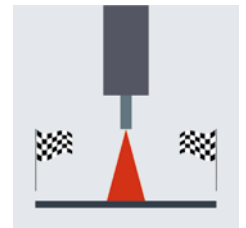
Unfortunately, tack welds and similarly unfavourable conditions on the workpiece are part and parcel of every welder. At least, welders who are fortunate enough to work with Lorch's new S-series will not have to deal with such nuisances. Where other pulse arcs experience the occasional stutter, our new S-series with SpeedPulse XT will never skip a beat and complete any task without a hitch. This is a difference you can actually hear.

Aside from ensuring that spatter is kept at a minimum, the patented control technology can also completely eliminate the otherwise typical and sometimes abrupt and annoying changes in frequency. The result is a pleasant sound with a constant frequency combined with a first-class seam and a flawless welding result that stands up to any inspection.



Separate arc control.

Good from beginning to end: With the new S-series, Lorch offers the possibility of individually adjusting the arc specifically for the starting, welding and end phases, thereby giving the welder a means to systematically influence the energy input. It is a simple and smart solution to help the welder to reduce or even eliminate initial fusion defects in the weld seam. The welder can, furthermore, use this solution to end with a clean finish by filling the end crater in an aesthetically pleasing way. No more trade-offs when setting up the machine – this is how we define welding with comfort.

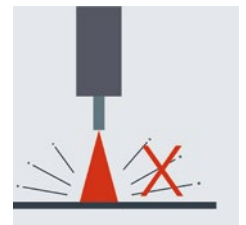


Extra low-spatter.

Efficiency in an industrial welding context mainly translates to the ability of reducing to the minimum the need for expensive rework after the actual welding work is finished. This is why Lorch has been focusing on even more ways to reduce the tendency to produce spatter in all machines of the S-series. And, our engineers have come through for us yet again by implementing a host of improvements such as even faster, yet moderate, correction interventions of the control during pulse welding with SpeedPulse XT.

Or, enhanced arc control in slope phases. Or, the ability to adjust arc length and arc dynamic at the same time. Or, additional ignition parameters. Or...

And, their success has proven them right: Lorch customers capable of exploiting the full potential of our new S-series managed to reduce the amount of spatter to "practically" zero. This outcome pleases the welder just as much as the person responsible for production.



Additional cooling options.

Along with the standard cooling with 1.1 kW, there are two additional cooling options available within the new S-series for wire feeder systems. In plain language, this means: up to 35 % more cooling output – making it optimal for highly intensive industrial applications. More cooling also means less stress on the torch system, which can have a positive effect on the service life of torches and wear parts. There is an additional version available with a larger pump for welders who have to work with long interpass hoses of 20 metres or more. This model ensures that the full power is delivered exactly where the welder requires it.



TAILOR-MADE TO YOUR APPLICATION

Configure your unit just as you need it – optimally tuned for your field of work.

Assess your situation and configure your system just as you need it – optimally tuned for the real-world application required for your business.

Let's take a look at a unit from the S-SpeedPulse XT series for an example. By selecting the wire feed unit and making the decision for gas or water cooling, you determine the basic configuration of your unit. With the feeder unit versions, you have the choice between workshop, assembly, and dockyard wire feeders – naturally all with industrial 4-roll precision feed. The interpass hose packages, the connection between power source and case unit, are available in lengths of 1, 5, 10, 15 or 20 m. As a result, you can work, depending on torch length, up to 25 m away from the unit. You can achieve the maximum degree of freedom with the choice of a Powermaster torch with remote control technology.

You can control all important parameters with this directly using the control panel at the torch. The selection of operating options is just as customisable. You can freely decide where the operating unit is to be located – just in the case unit, on the main unit, or on both! In addition, there is a wide range of accessories which finish off your customised performance package. Starting with the feeder case unit undercarriage-wheel set or rotary unit, as well as extra large wheels for uneven ground, if required. Or the handy, height-adjustable hose package holder: the fixture is designed as a simple and convenient holder for hose packages and NanoFeeders, comes in all standard lengths that are commonly available, and can be mounted on both sides.

The equipment

	S-Pulse XT	S-SpeedPulse XT	S-RoboMIG
"Welding process" equipment			
New Synergic MIG-MAG standard welding program*	●	●	●
SpeedArc XT* (incl. SpeedArc)	●	●	●
Pulse (incl. TwinPuls)	●	●	○
SpeedPulse XT* (incl. SpeedPulse, Speed-TwinPuls, TwinPuls XT)	○	●	○
SpeedRoot	○	●	○
SpeedCold	○	○	○
SpeedUp	○	○	○
TIG (with ContacTIG)	○	○	○
"Cooling system variant" equipment			
Cooling system (1.1 kW)	●	●	●
Boosted cooling (1.5 kW)**	○	○	○
Cooling system with large pump** (for long Interpass hoses ≥ 20 m and for working at heights)	○	○	○
All systems are also provided with the electrode welding function as standard equipment.			● Standard equipment
* With innovative dynamic control.			○ Optionally available
** Only available in combination with the single wire feeder systems (B versions).			

Operating and case options



Size it up: Where do you want the wire feed unit?



In the compact unit.
Drivable compact unit with integrated wire feed.

In the Separate feeder unit.
In this way, you can work up to 25 metres away from the unit. The hose package connects you.

2 feed units.
Above with a separate unit and below inside the main unit. Ideal, if you often weld using different wires. You save yourself the trouble of constant changeover.

2 feed units as a double separate feeder case unit.
Perfect for different wires, and when maximum mobility is required.

Technical data	S3 mobile Pulse XT / S3 mobile Speed Pulse XT	S3Pulse XT / S3 SpeedPulse XT	S5Pulse XT / S5 SpeedPulse XT	S8Pulse XT / S8 SpeedPulse XT
MIG-MAG				
Welding range (A)	25 – 320	25 – 320	25 – 400	25 – 500
Voltage adjustment	infinitely variable	infinitely variable	infinitely variable	infinitely variable
Duty cycle				
Duty cycle 100 % 40 °C (A)	250	250	320	400
Duty cycle 60 % 40 °C (A)	280	280	350	500
Duty cycle I max. 40 °C (%)	40	40	50	60
Feed and wire				
Feed system	4 rolls (2 driven)	4 rolls (2 driven)	4 rolls (2 driven)	4 rolls (2 driven)
Weldable wires, steel (mm)	0.6 – 1.2	0.6 – 1.2	0.6 – 1.6	0.6 – 1.6
Weldable wires, steel, aluminium (mm)	1.0 – 1.2	1.0 – 1.2	1.0 – 1.6	1.0 – 2.4
Mains				
Mains voltage (V)	400	400	400	400
Phases (50/60 Hz)	3~	3~	3~	3~
Positive mains tolerance (%)	15	15	15	15
Negative mains tolerance (%)	15	15	15	15
Mains fuse (A)	16	16	32	35
Mains plug	CEE 16	CEE 16	CEE 32	CEE 32
Dimensions and weights				
Dimensions (LxWxH) (mm)	812x340x518	– –	– –	– –
Dimensions – power source (LxWxH) A-version (mm)	– –	1116x463x812	1116x463x812	1116x463x812
Dimensions – power source (LxWxH) B-version (mm)	– –	1116x445x855	1116x445x855	1116x445x855
Weight (kg)	34	– –	– –	– –
Weight – power source A-version gas-cooled (kg)	– –	92.8	97.3	107.3
Weight – wire feeder (workshop model) (kg)	– –	20.2	20.2	20.2

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TAKE OUR “S” SERIES FOR A SPIN.

You are the expert on the welding challenges you face every day. This is why we invite you to put our new S-XT series through its paces by subjecting it through the gruelling tasks you have to deal with every day. We will bring a test system to you and let you explore if it lives up to what its specifications promise. As an added benefit, we will also provide you with the expertise of our professionals, who can always give you an edge by sharing smart tips and tricks that will increase efficiency in your daily operations. As you can see, having a Lorch and an S-XT at your disposal is always a shrewd idea.

Did we manage to grab your interest? Simply contact our Lorch Welding Technology Centre or log on to www.die-neue-s.de.

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