Welding software, the digitalization of welding, Industry 4.0, Internet of Things (IoT), etc., it can be a bit daunting to keep up with rapid advances in technology, both to understand and to assess whether any of it will actually make a difference to the bottom-line productivity in your workplace. So, let’s recap welding technology basics.

The welding process involves controlling a number of parameters which interact to affect the delivery of a chosen molten material onto a base metal. The parameters include the obvious; welding process, material thickness and type, gas, voltage and the less obvious; atmospheric conditions, gas purity, material constituents, etc. The more specific the control of the parameters, the more efficient and better quality the welding will be.

The optimal, most efficient delivery can be plotted on a graph as a synergic curve. (Synergy refers to the combined action of all parts). Synergic curves are specific for each combination of machine/wire/gas, etc. Digital control software programmes have been developed to set certain parameters to achieve the best synergic curve for the selected combination.

Synergic welding machine systems store a range of digital control software programmes in their memory. This type of control means that when a single setting is adjusted, the other settings are changed by the machine to keep to the best synergic curve for that specific welding job, as provided for in the programme.

Synergic MIG welding machines provide incremental current pulses which give tight control of the arc and metal transfer characteristics. There is a relationship between the wire feed speed and the pulse parameters, (pulse duration, frequency, and current levels), control of which ensures that the wire burn-off rate matches the wire feed speed to maintain a constant arc length. So controlled metal transfer is maintained over the complete range of usable wire feed speeds for a particular wire. In the newest technology machines, advanced welding process software programmes can be used to enhance this and other aspects of MIG welding to further optimize welding efficiency and quality.

It is also possible in certain instances to have a welding software programme developed for a specific wire used on a specific machine, taking into account unique characteristic parameters for a fully optimized synergic curve.

To sum up, in practical terms, with synergic welding machines the welder selects wire diameter and shielding gas once for any welding operation and then only needs to adjust one control for the thickness of the material to be welded. For a welding supervisor, a synergic machine can be set up easily for testing to meet weld specifications, adjusted as necessary, and then the selection recorded and selected for use. This set up can then be duplicated on other machines of the same type.

But what if the welder in the workshop running the machine is in a hurry to get the job done, or doesn’t like welding fast, and adjusts the knob? We have seen this create problems for customers with failed welds. The answer is a synergic machine with the ability to “lock” the parameters inputted, the welder can only weld as the job requires and authorization is needed to change them.

There’s another major advantage in the best of the synergic machines - software is easily upgradable. Not only can you buy what you need now and add extra programmes or processes as your needs change, your welding is “future-proofed” for new or improved software. And at the rate of technological advances in the welding field, this is a must.

Digital control, synergic machines:
- regulate and optimize welding for excellent, consistent quality;
- enable welders to do their jobs better, more easily;
- aid businesses to reduce costs.

Choose wisely and the investment in your machine will be spread over 1000s of work hours and keep your business ahead of the game.

More about digitalization and Industry 4.0 next time.
NEWS

Congratulations to Lorch!!

In Europe, the UK Welding Industry holds an awards evening every 2 years. In March 2018, LORCH was nominated for and won the “Best New Welding Product Supplier” with MICORMIG & NFC products.

This is a great accolade, especially as they recognized the leading innovation of MICORMIG technology against some really stiff competition, including Fronius, Kemppi, EWM, GYS, Lincoln, ESAB and Cloos and many other non welding machine manufacturers such as Gullco, BOC Gases etc.

(If you would like to see what all the fuss is about, Welding Engineers has these impressive machines in stock NOW!)

PRODUCT FOCUS - LORCH Micor MIG

LORCH MicorMIG machines with NFC-read ability can be controlled by a swipe of a digital job card. Similar to PayWave, the job card with the parameters required is swiped on the MicorMIG control panel to load the software. A wide range of job cards to match most common welding jobs is available and growing.

The job cards can be combined with “rights management” cards to control access to the parameters set on the machine. The combination of these cards ensures that the welders can complete their welding jobs only as specified by the pre-defined settings and only if operating within the permissible tolerance limits.

SPECIALS

CUTSKILL 35 A PLASMA CUTTING Package
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