



VarioSynergic 3400 / 4000 / 5000

VarioSynergic 3400-2 / 4000-2 / 5000-2

MIG/MAG welding



PERFECT WELDING

A high-calibre machine that's user-friendly, too.

GENERAL REMARKS

It's got the lot

The VarioSynergic is a new, yet tried-and-tested power source. It has state-of-the-art technology and a new, redesigned look, and is based on a principle that makes it a classic. The VarioSynergic 3400 / 4000 / 5000 are step-controlled, microprocessor-regulated MIG/MAG machines with up to 500 A of power. Sturdy and dependable.

But there's a lot more to a VarioSynergic even than all this. It's a complete welding system. Consisting of a power source, a wirefeeder, a welding torch and a cooling unit. Each perfectly matched with all the others, right down to the very last detail. And there's a lot more *in* a VarioSynergic, too: All the skill that it takes to give a top-quality, error-free welding sequence. The term for this is "synergic operation" – and it makes welding the easiest thing in the world. Just set your sheet thickness and filler metal, and off you go.

The VarioSynergic is available in two versions: a compact version with an integral wirefeeder, or a two-part version with an external wirefeeder – for on-site/maintenance use.

UTILISATION

A true all-rounder

"Can do, will do" – that, in a nutshell, is the VarioSynergic approach to different areas of application. Although primarily intended for the heavy steel, machinery, apparatus, plant and tank construction fields, VarioSynergics are equally at home in the craft and workshop sectors. The main materials are unalloyed and low-alloy steels, but the VarioSynergic is just as happy welding high-alloy steels, aluminium and aluminium alloys.



Everything is possible. It's as easy as that.



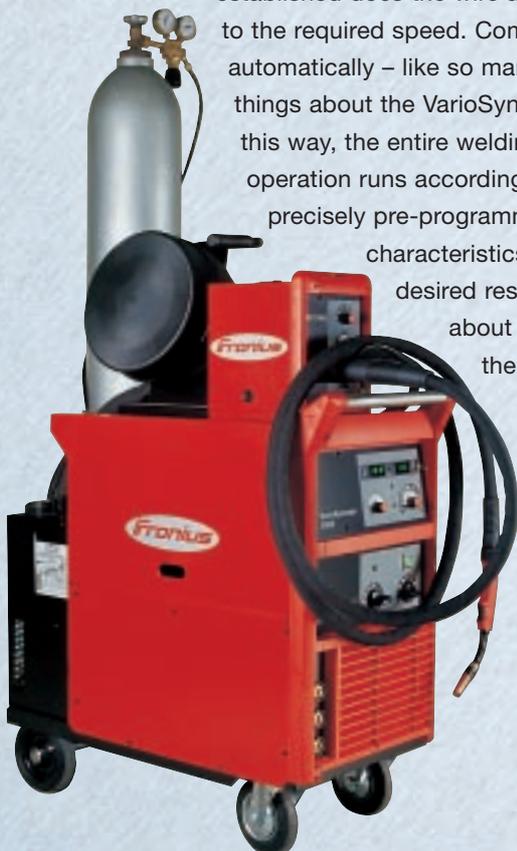
WELDING PROPERTIES

As good as it gets

When it comes to step-controlled welding machines, there's probably no other machine quite like it. Neither in terms of all it's capable of, nor of the quality of weld-seam that it delivers. Every VarioSynergic works with wire diameters of between 0.8 and 1.6 mm, is suitable for welding steel under mixed gas and – thanks to the specially tuned inductance – also under CO₂, happily welds all flux-cored and solid wires, welds with either a dip-transfer or a spray arc and offers a defined end-of-welding sequence using a programmed wire burn-back routine.

Jerk-free ignition

The ignition process is absolutely dependable and is always jerk-free. This is ensured by the microprocessor-controlled ignition sequence. At the beginning of welding, the wire is fed very slowly. Only once the arc is established does the wire accelerate to the required speed. Completely automatically – like so many other things about the VarioSynergic. In this way, the entire welding operation runs according to precisely pre-programmed characteristics, and the desired results come about almost by themselves.



HANDLING

“Dial” your way to master-welder status

With a VarioSynergic, anybody can become an accomplished master welder. Because, as their name implies, the VarioSynergic power sources come with the synergic function built in. Meaning that for every single application, they have a suitable program that uses stored expert knowledge. You make the preselections for sheet thickness and filler metal. Just turn the dials – that's it. The machine takes care of everything else, with masterly skill. Amperage, voltage, deposition rate – the lot. Leading to perfect welding results that really are the very best in its class.

A smooth operator

The entire welding system of the VarioSynergic is brilliantly thought-out, and designed to ensure troublefree operation. Its extra-large transport wheels make light work of moving the machine around, rolling effortlessly over every minor obstacle. Needless to say, it comes with crane hoisting lugs, and the 4-roller drive in the wirefeeder is also a standard feature. As is the Fronius ++ central connector for the torch, with a separate coolant connection so that there is absolutely no risk of any water getting into the gas channel and causing any porosity. And for the two-part version, a super-strong interconnecting cable was developed, with a robust strain-relief feature.



ECONOMY

A good investment

There are many good reasons for choosing a VarioSynergic power source. One of them is its excellent cost/performance ratio, which is enough to convince even the thriftiest economiser. The other reasons include: automatic cooling-unit cut-out, for longer coolant-pump service life; less post-weld machining, thanks to the low-spatter arc; easy access to all parts needing maintenance; modular machine concept for system add-ons; robust, compact and high-quality accessories; low downtimes, etc. In short: a long service life, low running costs and ease of servicing. Whichever way you look at it, the VarioSynergics are simply a “must have”.

SAFETY

– comes as standard, of course

A very maximum of safety comes as standard on all Fronius machines. Every power source, no matter how big or small, comes with the “S” mark – for welding in confined spaces in conditions of increased electrical danger – and the “CE” mark. Also, when used out in the field, the VarioSynergics are protected against water and foreign bodies as stipulated in IEC “degree of protection IP 23”. What is more, there is a thermostatically controlled fan integrated inside each machine, which greatly reduces dust accumulation. And if the machine is ready for operation but not active at this moment, the cooling unit cuts out automatically. These are the main safety plus-points – but by no means the only ones. For every single Fronius machine is designed from the ground up with maximum safety in mind, right from the development phase.



Tremendous ease of handling: Just turn the dials to set your sheet thickness and filler metal, and off you go!



Troublefree wire travel, thanks to 4-roller drive



The specially tuned inductance makes it possible: Optimum welding with CO₂ and mixed gas



CHECKLIST

- 4-roller drive
- Automatic cooling unit standby
- Basket-type spool adapter
- Crane hoisting lugs (optional)
- Current-flow signal (optional)
- Feeder creep
- Feeder inching, without gas or current
- Gas pre-heating socket (optional)
- Gas test function
- Generator-compatible
- Interconnecting hosepack holder (optional)
- Intermediate wire feeder (optional)
- Microprocessor control
- Over-temperature sensor switch
- Polarity switchover (optional)
- PullMig operation (optional)
- Synergic operation
- Thermostat controlled fan

Operating modes

- 2-step mode
- 4-step mode
- Spot welding
- Stitch welding

Display of

- Error codes
- Globular (intermediate) arc
- Hold function
- Inductance taps
- Manual mode
- Material thickness
- Overtemperature
- Welding current (actual & guideline value)
- Welding voltage (actual & guideline value)
- Welding speed
- Wirefeed speed

Adjustable parameters

- Burn-back time
- Gas post-flow time
- Gas pre-flow time
- Spot-welding time
- Intermittent welding time
- Feeder creep speed
- Welding power



TECHNICAL DATA

| | VS 3400 | VS 4000 | VS 5000 | |
|--|-------------------------|-------------------------|-------------------------|------------------|
| Mains voltage, reconnectable, $\pm 10\%$ | 3 x 230 V / 400 V | 3 x 230 V / 400 V | 3 x 230 V / 400 V | |
| Mains frequency | 50 / 60 Hz | 50 / 60 Hz | 50 / 60 Hz | |
| Mains fuse protection, slow-blow | 20 A | 35 A | 35 A | |
| Primary continuous current (100 % d.c.) | 9.2 A (400 V) | 11.2 A (400 V) | 15.9 A (400 V) | |
| Cos phi | 0.99 (340 A) | 0.99 (400 A) | 0.99 (500 A) | |
| Efficiency | 76.8 % (200 A) | 78.6 % (220 A) | 80 % (200 A) | |
| Welding current range | 10 – 340 A | 30 – 400 A | 35 – 500 A | |
| Welding current at: 10 min/25° C | 40 % d.c. 340 A | 50 % d.c. 400 A | 40 % d.c. 500 A | |
| | 60 % d.c. 270 A | 60 % d.c. 360 A | 60 % d.c. 410 A | |
| | 100 % d.c. 210 A | 100 % d.c. 280 A | 100 % d.c. 320 A | |
| | 10 min/40° C | 35 % d.c. 340 A | 35 % d.c. 400 A | 30 % d.c. 500 A |
| | | 60 % d.c. 260 A | 60 % d.c. 290 A | 60 % d.c. 360 A |
| | | 100 % d.c. 200 A | 100 % d.c. 220 A | 100 % d.c. 280 A |
| Open-circuit voltage | 45 V | 51 V | 54 V | |
| Operating voltage | 14.5 – 31.0 V | 15.5 – 34.0 V | 15.8 – 39 V | |
| N° of switching steps | 2 x 7 | 3 x 7 | 4 x 7 | |
| Degree of protection | IP 23 | IP 23 | IP 23 | |
| Type of cooling | AF | AF | AF | |
| Insulation class | F | F | F | |
| Dimensions, L x W x H | 890 x 460 x 945 mm | 890 x 460 x 945 mm | 890 x 460 x 945 mm | |
| | 35.07 x 18.12 x 37.23 " | 35.07 x 18.12 x 37.23 " | 35.07 x 18.12 x 37.23 " | |
| Weight | 139 kg / 305.8 lb | 147.5 kg / 324.5 lb | 156 kg / 343.2 lb | |



| Wirefeeder | VR 3000 | VR 3300 |
|----------------------|------------------------|------------------------|
| Feed motor | 42VDC | 42VDC |
| Motor output | 164 W | 164 W |
| Gear ratio | 5:1 | 5:1 |
| Wire diameters | 0.8 – 1.6 mm | 0.8 – 1.6 mm |
| Wirefeed speed | 0 – 18 m/min | 0 – 18 m/min |
| Degree of protection | IP 23 | IP 23 |
| Dimensions L x W x H | 620 x 290 x 420 mm | 600 x 260 x 440 mm |
| | 24.43 x 11.43 x 16.55" | 23.64 x 10.24 x 17.34" |
| Weight | 16 kg / 35.2 lb | 13 kg / 28.6 lb |

| Cooling unit | FK 3000 R |
|--|----------------------|
| Mains voltage | 230 V |
| Mains frequency | 50 / 60 Hz |
| Cooling capacity Q = max. +20° C +40° C | 1200 W |
| | 700 W |
| Delivery rate | 3.0 l/min |
| Pump pressure | min. 3 bar |
| Coolant capacity | 5.5 l |
| Degree of protection | IP 23 |
| Dimensions L x W x H | 215 x 240 x 480 mm |
| | 8.47 x 9.46 x 18.91" |
| Weight (without coolant) | 11 kg / 24.2 lb |



FRONIUS INTERNATIONAL GMBH
 Buxbaumstrasse 2, P.O.Box 264, A 4602 Wels
 Tel: +43 7242 241-0, Fax: +43 7242 241-394
 E-Mail: sales@fronius.com
www.fronius.com