



**MagicWave** 1700 / 2200  
**TransTig** 2200

TIG & MMA welding



PERFECT WELDING



# What welders never dared dream of ...

## GENERAL REMARKS

### Fronius works its magic again!

TIG welders can raise a heartfelt cheer! Specially for them, Fronius has developed a series of machines that make their every wish come true: MagicWave 1700 / 2200 for DC and AC, and TransTig 2200 (for DC only).

These power sources are up-to-the-minute characters, in every way, and eager to please: Ever-so discreet, with a super-quiet yet highly stable arc. Extremely straightforward to use – in fact, almost self-explanatory. Single-phase, so they can be plugged into any wall power outlet. Light and tough at the same time, and completely digitised – which you won't find on any other TIG machine.

What is more, every single one of these machines is a member of a complete, totally co-ordinated welding system, all of whose components perfectly complement one another. All in all, the upshot is the sort of welding results which up to now you could only dream of.







## UTILISATION

### Here, there, everywhere

One of the great things about the MagicWave and TransTig units is that they're completely at home out in the field. Weighing in at a mere 15 kg, these power sources are among the lightest in the world, so you can take one with you just about anywhere. Also, their sturdy design makes them more than a match for the tough conditions encountered in the field, and because they are single-phase, they can simply be plugged into any ordinary 230 V socket. And there aren't too many places where you won't find one of those!

In terms of materials, these machines are very suitable for aluminium and its alloys, but also for low and high-alloy steels and non-ferrous metals, of course. Thanks to their great versatility, the MagicWave 1700 / 2200 and TransTig 2200 are used right across the entire spectrum of industry – from the construction of chemical plant, tanks and containers to mechanical and plant engineering and pipeline construction, and taking in all site-erection, structural metalworking, maintenance and repair firms. Delivering just as perfect results when used for robot welding as in manual welding.

## ECONOMY

### AAA-rated

This series of TIG machines is a dazzling example of just how efficient modern welding systems can be. Their efficiency begins with the high-grade componentry that is used for all Fronius machines. Special mention should also be made of their high degree of power efficiency, extremely low open-circuit power, automatic cooling-unit cut-out (which has a direct and measurable impact on the current consumption), and of course the automatic cap-shaping function, which reduces the working times needed by the welder. All in all, these features result in outstandingly long operational life, a small number of wearing parts, and lower labour costs. And in a welding system that is highly cost-effective in every possible regard.



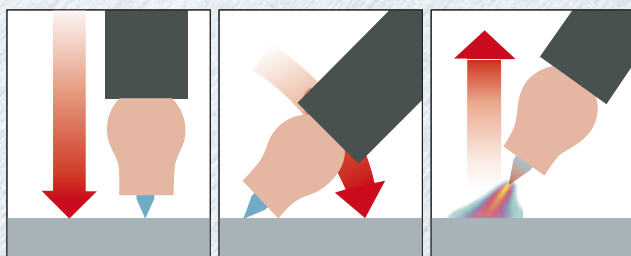


# Masterpieces made easy

## WELDING PROPERTIES

### Perfection every step of the way

The Fronius welding systems have been thought out right down to the last detail. For every possible application, the goal was nothing less than perfection itself. The result is a system that makes every single operating step as easy and pleasant as possible. From ignition all the way through to the end of the weld, from tack-welding to shaping the electrode cap. But let's take it all a step at a time ...

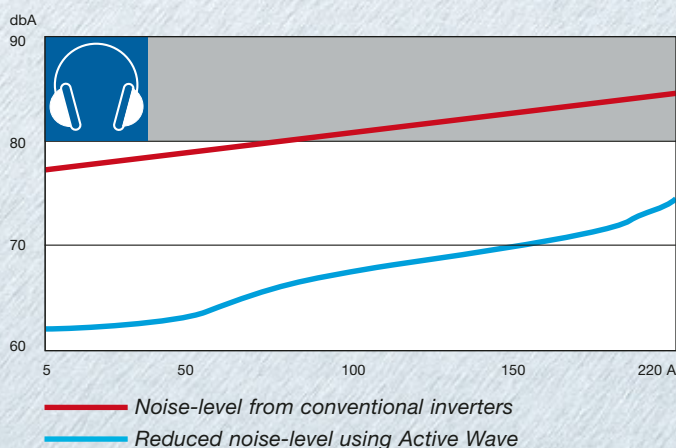


For sensitive areas of application: Touchdown ignition

... starting with the ignition, which plays a key rôle in TIG welding. On each of the three machines, ignition is possible either with or without touchdown. In the non-contact mode, the arc starts immediately with a high-voltage impulse, ensuring perfect ignition right from the first push of the button – even with extra-long hosepacks. The touchdown ignition is especially valuable in sensitive areas of application. And the important thing here is to make sure that there are no tungsten inclusions. The digital process control takes good care of this, perfectly controlling the entire sequence.

### Active Wave – for peace and quiet

From now on, TIG AC welding will be a much quieter business – with a much quieter arc. No dream, this, but hard fact. For which we have Active Wave to thank: the integrated digital signal processor always computes – in real time – the waveform that will permit the highest possible arc stability with the lowest possible noise-emissions levels. Measurement of these noise levels clearly shows that with Active Wave, even when the machine is delivering 220 A of power, the dbA value is still below 80 dbA. If you're not a welder yourself, and want to know how important this development is, then just ask one!







### New: Tack welding with TAC

Before you can weld, you have to tack. The usual way of doing this – up until now, at least – is to make the two weld-pools of the parts join up by making a slight movement with the torch. With TAC, one spot is all it takes. And on to the next one. And the one after that. And so on. Because with TAC, the arc during tacking is not continuous, but pulsed. And this prompts the two weld-pools to “jump together”, in next to no time, to make one single weld-pool. This works fast, and is a lot easier.

### Finish like you started

A perfect start needs a perfect finish to go with it. At the end of the weld, there are two main things to watch out for: The first of these is the gas post-flow, to make sure that the electrode and the weld-pool do not oxidise. In the past, the gas post-flow had to be set manually. On the digital machines, the ideal post-flow time is computed automatically. The second thing is the end crater. This has to be filled, at a lower amperage. The new power sources take care of this, too, with the crater-fill and downslope function.

### Special program for aluminium

Aluminium always needs special treatment. So Fronius have made sure that it gets it. For example, in TIG AC welding, aluminium is normally not welded with a pointed electrode tip, but with a shaped cap at the tip of the electrode. On fillet welds, this leads to inadequate root fusion. The MagicWave machines use a pointed electrode with a much smaller shaped cap, and perfect root fusion as a result.

The cap is shaped automatically, by the way, which means huge savings of time. All you need to do is clamp the pointed electrode into the electrode holder, pre-select the cap diameter (e.g. 1.6 mm), and the arc immediately forms the shape and size of cap that you want.

Cap diameter: 1 mm  
 Base metal: AlMg3  
 Sheet thickness: 5 mm  
 Welding current: 185 A  
 Welding voltage: 15.6 V  
 AC Balance: -5

Cap diameter: 3.2 mm  
 Base metal: AlMg3  
 Sheet thickness: 5 mm  
 Welding current: 185 A  
 Welding voltage: 15.6 V  
 AC Balance: 0





# “Fully loaded” with comfort features for easier welding



## HANDLING

### Easy, easier, easiest

The machines come with an operating concept that is simply exemplary. The control panel is just about entirely self-explanatory, and correspondingly easy to use. Then there is the facility for simplifying the panels still further in practice, by activating only those functions and controls that you are actually going to need. This makes welding even more agreeable.

### Remote-control à la carte

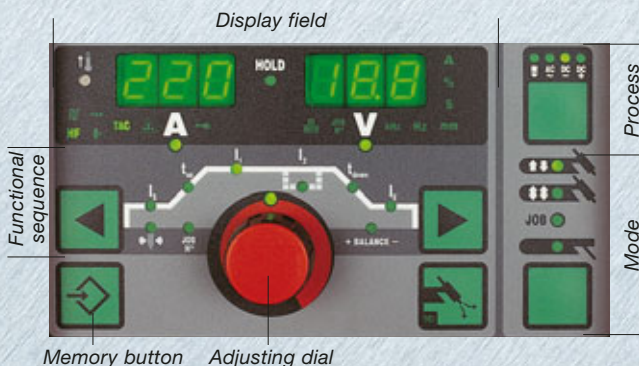
For all three machines, there is a huge selection of remote-control units, for every conceivable task. The JobMaster TIG torch, with its integral remote-control unit, merits special mention here: No matter where the power source happens to be, you can call up all the settings right from your welding torch – any time, anywhere. This is an absolute world first in the TIG field. The JobMaster TIG torch comes with a digital parameter display, job-recall and freely selectable parameters, meaning that you can decide for yourself which parameter you want to be able to adjust during welding.

### Complete system, even including a TIG torch

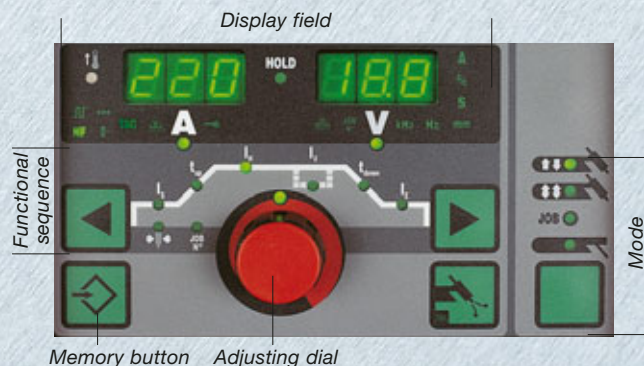
Interested in one of these TIG machines? Then you can look forward to enjoying not just the very latest in power-source technology, but also an entire welding system that is complete in itself. Each member of the system is designed to “fit in” optimally with all the others, in perfect harmony. It takes in everything from the modularly designed machine (which, incidentally, is available for both gas and water-cooled torches) to remote-control units and a wide range of different robot interfaces.

Turning to the welding torches: A brand-new series of torches has been developed. Particularly advantageously for TIG welding, these all come with a leather hose, whose much greater flexibility means that the welder only has a smaller proportion of the total weight of the torch to carry with him while he works. They also have an ergonomical, swivel-mounted handle. Another great feature is the torch central connector F++: with a separate water connector so that there is absolutely no way that any coolant can get into the gas channel and cause porosity in the weld metal.

MagicWave 2200 control panel



TransTig 2200 control panel







Pictures from left to right:

JobMaster TIG torch with integrated remote control and display

Ergonomically shaped, swivel-mounted torch handle

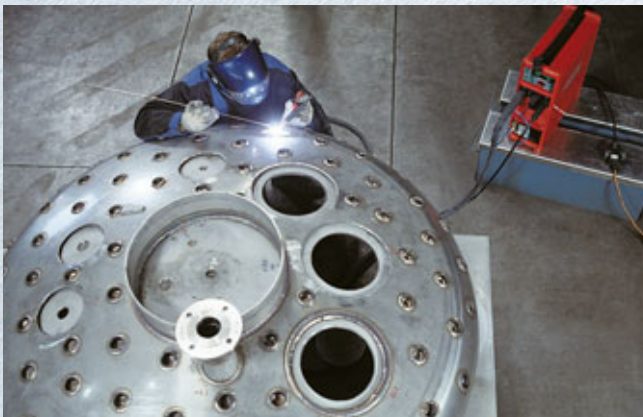
TR 2200 F pedal remote-control unit: For precision control of the welding current, all the time

RCU 2000 remote control unit: For completely remote-controlling the power source

## SAFETY

### Better safe than sorry

Anybody at all familiar with Fronius machines will know that there's absolutely no need to worry about their safety features. Every power source comes with the CE mark and with the [S] mark permitting welding in confined spaces in conditions of enhanced electrical hazard, also when AC welding, of course. Also, all of the power sources amply fulfil the requirements of IEC "degree of protection IP 23", meaning that they are safely protected from dirt and water, for use in the field. The integral fan is thermostat-controlled and so only runs when it is needed. This reduces dirt collection and prolongs the service life of the power source. At Fronius, though, safety starts even sooner: in the development stage. The MagicWave and TransTig machines were designed from the ground up to be so robust and compact that they can take just about anything in their stride.



## CHECKLIST

	MW 1700	MW 2200	TT 2200
Anti-stick function	●	●	●
Automatic gas post-flow (dep. on welding amperage)	●	●	●
Automatic cap-shaping	●	●	
Automatic cooling-unit cut-out	●	●	●
Switchover facility between touchdown and HF ignition	●	●	●
Digital weld-process control	●	●	●
Energy-saving inverter technology	●	●	●
Earth leakage monitoring	○	●	●
Remote-controllable	●	●	●
Free choice of parameter on welding torch	●	●	●
Gas-test function	●	●	●
Generator-compatible	●	●	●
Job mode	●	●	●
Microprocessor control	●	●	●
Polarity reversal	●	●	
Robot interface, analogue / digital	○	○	○
RPI ignition	●	●	
Current-flow signal	○	○	○
Rate-of-flow watchdog for torch cooling	○	○	○
Continuous welding-current adjustment from torch	●	●	●
Thermostat-controlled fan	●	●	●
Overtemperature protection	●	●	●
<b>Operating modes:</b>			
2-step mode / 4-step mode	●	●	●
AC / DC	●	●	
Spot welding	●	●	●
<b>Digital display of:</b>			
Run-status	●	●	●
Operating mode	●	●	●
Crater-fill current / Start-arc	●	●	●
Service codes	●	●	●
"Hold" function	●	●	●
Job number	●	●	●
Mains voltage monitoring	●	●	●
Welding voltage, Welding amperage (actual value)	●	●	●
Overtemperature	●	●	●
<b>Adjustable parameters:</b>			
AC balance / AC frequency / AC waveform	●	●	
Arc-force dynamic	●	●	●
Electrode diameter	●	●	●
Crater-fill current / Start-arc	●	●	●
Falling characteristic	●	●	●
Gas pre-flow time / Gas post-flow time	●	●	●
Hot-Start	●	●	●
Spot-welding time	●	●	●
Continuously adjustable welding power	●	●	●
TAC (programmed tack-welding)	●	●	●
TIG pulsed-arc	●	●	●
UpSlope / Downslope	●	●	●

● series ○ optional



## TECHNICAL DATA

		MagicWave 1700	MagicWave 2200	TransTig 2200
Mains voltage, 50–60 Hz		230 V	230 V	230 V
Mains voltage tolerance		–20/+15 %	–30/+15 %	–30/+15 %
Mains fuse protection (slow-blow)		16 A	16 A	16 A
Primary continuous current (100 % d.c.)		3.3 kVA	3.7 kVA	3.0 kVA
Cos phi 1		0.99	0.99	0.99
Welding-current range (continuous)	TIG	3 – 170 A	3 – 220 A	3 – 220 A
	Electrode	10 – 140 A	10 – 180 A	10 – 180 A
Welding current at	10 min/25° C	40 % d.c. 170 A	40 % d.c. 220 A	50 % d.c. 220 A
		60 % d.c. 140 A	60 % d.c. 180 A	60 % d.c. 200 A
		100 % d.c. 110 A	100 % d.c. 150 A	100 % d.c. 170 A
	10 min/40° C	35 % d.c. 170 A	35 % d.c. 220 A	40 % d.c. 220 A
		60 % d.c. 130 A	60 % d.c. 170 A	60 % d.c. 180 A
		100 % d.c. 100 A	100 % d.c. 150 A	100 % d.c. 150 A
Open-circuit voltage		50 V	50 V	50 V
Standardised operating voltage	TIG	10.1 – 16.8 V	10.1 – 18.8 V	10.1 – 18.8 V
	Electrode	20.4 – 25.6 V	20.4 – 27.2 V	20.4 – 27.2 V
Degree of protection		IP 23	IP 23	IP 23
Type of cooling		AF	AF	AF
Insulation class		B	B	B
Dimensions L x W x H	mm	485 x 180 x 344	485 x 180 x 390	485 x 180 x 390
	Inches	19.11 x 7.10 x 13.56	19.11 x 7.10 x 15.37	19.11 x 7.10 x 15.37
Weight		14.6 kg / 35.1 lb	17.4 kg / 38.3 lb	16.4 kg / 36.1 lb



### FK 2200 cooling unit

Mains voltage, 50–60 Hz		230 V
Mains voltage tolerance		–30/+15 %
Cooling capacity Q-max	+20° C	950 W
	+40° C	570 W
Delivery rate		3.0 l/min
Delivery head		35 m
Max. pump pressure		3.8 bar
Coolant capacity		1.5 l
Degree of protection		IP 23
Dimensions L x W x H	mm	540 x 180 x 180
	Inches	21.28 x 7.10 x 7.10
Weight (without coolant)		6.6 kg / 14.5 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](http://www.fronius.com)