

MasterTig MLS™ ACDC – Technical details

■ Single-phase model	MLS™ 2300 ACDC	
Connection voltage	1~230 V -15%...+15%, 50/60 Hz	
Load capacity	TIG	230 A 5.7 kVA (40% ED), 170 A 3.9 kVA (100% ED)
	MMA	180 A 6.0 kVA (40% ED), 120 A 3.7 kVA (100% ED)
Open circuit voltage	58 V	
Welding range	TIG	3 A / 10.0 V ... 230 A / 19.2 V
	MMA	10 A / 20.5 V ... 180 A / 27.2 V
Dimensions	L x W x H	430 x 180 x 390 mm
Weight	15 kg	

■ 3-phase models	MLS™ 3000 ACDC	MLS™ 3003 ACDC
Connection voltage	3~ 400 V -10% ... +10%, 50/60 Hz	3~ 230 V -10% ... 460 V +10%, 50/60 Hz
Load capacity	TIG	300 A 13.3 kVA (40% ED), 190 A 7.9 kVA (100% ED)
	MMA	250 A 14.4 kVA (40% ED), 190 A 11.0 kVA (100% ED)
Open circuit voltage	63 V	
Welding range	TIG	3 A / 10.0 V ... 300 A / 22 V
	MMA	10 A / 20.5 V ... 250 A / 30 V
Dimensions	L x W x H	500 x 180 x 390 mm
Weight	23 kg	

■ Cooling units	Mastercool 20 (for single phase models)	Mastercool 30 (for 3-phase models)
Connection voltage	230 V -15%...+15%	24 VDC
Rated power	100% ED 50 W	50 W
Cooling power	1.0 kW	1.0 kW
Maximum pressure	4.0 bar	4.0 bar
Cooling liquid	20%...40% glycol-water	20%...40% glycol-water
Dimensions	L x W x H 500 x 180 x 390 mm	500 x 180 x 390 mm
Weight	8 kg	8 kg

MasterTig MLS™ ACDC – Ordering codes

■ Power Sources	
MasterTig MLS™ 2300 ACDC	6162300
MasterTig MLS™ 3000 ACDC	6163000
MasterTig MLS™ 3003 ACDC	6163003

■ Cooling units	
Mastercool 20	6162900
Mastercool 30	6163900

■ Control panels	
ACS	6162805
ACX	6162804

■ Torches	
TTC 160, 4 m	627016004
TTC 160, 8 m	627016008
TTC 160, 16 m	627016016
TTC 220, 4 m	627022004
TTC 220, 8 m	627022008
TTC 220, 16 m	627022016

■ Water-cooled torches	
TTC 200W, 4 m	627020504
TTC 200W, 8 m	627020508
TTC 200W, 16 m	627020516
TTC 250W, 4 m	627025504
TTC 250W, 8 m	627025508
TTC 250W, 16 m	627025516

MASTERTIG MLS™ ACDC

■ The Joy of Welding...



...Around the World.



Kemppi Oy – a pioneer in welding technology

■ **Founded in 1949, Kemppi Oy** is one of the world's leading manufacturers of arc welding equipment and related services. Good quality, technological expertise, and entrepreneurial spirit have led Kemppi into global markets. Today this international company operates globally while still having its head office in Lahti, Finland.

From the very beginning, Kemppi has been a pioneer in developing and manufacturing arc welding machines. This continues today: Kemppi leads the way to the welding technology of the future and innovative welding services.

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Arc Under Control
100% KEMPPI



Versatile
Masters of TIG welding

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MasterTig MLS™ ACDC

■ **MasterTig MLS ACDC** models are suitable for TIG welding of all metals, particularly aluminium and stainless steel, as well as for MMA welding. They can be used for manual welding as well as mechanised welding applications.

This product family offers the most versatile and advanced devices for TIG welding. Their characteristics were developed on the basis of the latest achievements in welding research.

For single- or 3-phase network

The product family contains devices for two amperage classes: The MasterTig MLS 2300 ACDC, which is intended for use with single-phase power supply, and the MasterTig MLS 3000/3003 ACDC models, designed for 3-phase power supply networks. In a multi-voltage model (3003), the supply voltage can be 230–460V.

The maximum load of 3-phase devices in TIG welding is 300 amperes with a duty cycle of 40%. Even in continuous use, the load can be 190 amperes.

By applying a special PFC technology, the welding power has been increased to an unusually high level also in the single-phase machine. The peak current is 230 amperes, and even in continuous use the load can be up to 170 amperes.

All the characteristics needed in TIG welding

The MasterTig MLS ACDC enables TIG welding with any type of current: AC, DC+, and DC-. In addition, it lets you use a combination of AC and DC, or the MIX TIG.

The digital control panels offer all the basic functions required in TIG welding, plus a great number of useful additional features that improve the quality and productivity of welding.

Setting the welding parameters is easy, and welder-specific, unique settings can be saved by using the memory channel function. There are also several remote control devices available.

Efficient cooling units

Both of the MasterTig MLS ACDC amperage classes have specific cooling units for water-cooled torches. The MasterCool 30 is intended for 3-phase and MasterCool 20 for single-phase devices.

Reliability based on welding research



Basic welding research supports product development

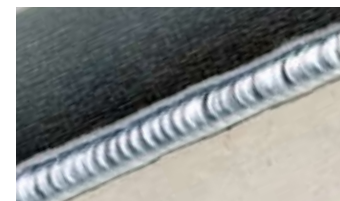
Kemppi's welding technology research unit conducts basic research in welding. The results have been utilised also in the development of the MasterTig MLS ACDC product family.

At the welding laboratory, the action of the welding arc can be slowed down using a high-speed camera, so that it is possible to analyse phenomena taking place in the arc in very great detail.

This is how basic research contributes to product development and helps to create new, increasingly efficient characteristics to Kemppi welding devices.

This type of research is behind the many innovations at Kemppi, which have promoted welding technology in the global market.

This is also how the stable arc and many useful additional features of the MasterTig MLS ACDC devices were born.



New innovations are created in co-operation with our customers

Kemppi's customer service network is continually in touch with the users of Kemppi's products and services at the various levels throughout the welding industry.

User experiences and feedback derived from maintenance and customer services are collected and taken into consideration in the development of new models and services as much as possible. Customer feedback is refined into actual devices, new functions, customer-specific welding programmes, and service products at Kemppi's welding technology research unit.

Thus, Kemppi's product developers can offer tailored solutions for welding professionals at shipyards, metal workshops, construction sites and everywhere else where pieces of metals are joined either manually or by using a welding robot.

Special features improve quality and productivity

MicroTack™ Fast and high quality tacking ensures quality welds

Tack welding is an important phase before solid welding. If tack welds burn through or remain raised or bumpy, the quality of the final weld will inevitably be poor.

MasterTig MLS ACDC has a MicroTack function, which facilitates tack welding also in demanding cases where the sheets to be joined are thin or have different thicknesses.

The heat input remains extremely low in MicroTack welding, which lets you create unnoticeable, neat tack welds without deformations. This makes final welding faster, and increases the productivity of welding work.

MIX TIG™ The benefits of AC and DC in the same weld

The MIX TIG function, designed for welding aluminium materials, is a special method that lets you simultaneously utilise both direct and alternating current welding.

The MIX TIG function lets you efficiently utilise the versatile welding characteristics of the MasterTig MLS ACDC.

You can adjust the current components according to your own requirements and the materials to be welded.

By increasing the proportion of AC, you attain a better cleaning effect, while increasing DC provides better penetration.

Versatile features add smoothness and usefulness

MasterTig MLS ACDC represents the pinnacle of TIG welding for the versatility of its functions.

The ACX control panel offers many functions that facilitate and increase the speed of welding.

For instance, the Minilog function lets you increase or lower the voltage level during welding by simply pressing the torch switch.

The 4T LOG function makes it easy to start and stop welding.

The system also offers memory channels that make selecting settings easier, as well as pulse welding functions that increase productivity.

Control panel features:

ACS: Basic adjustments and MIX TIG
ACX: Basic adjustments, MIX TIG and special features such as MicroTack, pulse welding, Minilog, 4T LOG and memory channels.



The difference in the tack welds is clearly visible. MicroTack was used to weld the piece on the right, and usual TIG was used on the piece on the left.



A stable arc ensures a smooth weld and strong base material attachment, thus ensuring good mechanical properties for the joint.

MicroTack welding is an easy and fast way of improving the quality and productivity of welding.



The MIX TIG function combines the good qualities of direct and alternating current. It makes joining aluminium materials easy and decreases the number of deformations.



All MasterTig MLS ACDC welding devices can be equipped with an ACX or ACS control panel introducing numerous additional features that make welding easier and more efficient.

