PRODUCT CATALOGUE EN 2008 - 2009





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Kemppi – The Joy of Welding

Founded in 1949, this family-owned company is one of the world's leading manufacturers of arc welding equipment and related products. Kemppi operates all over the world, and the company headquarters and production units are located in Finland. Kemppi has sales companies in Finland, Sweden, Norway, Denmark, Germany, France, England, Holland, Australia, Poland, Chile, Russia and China, as well as sales office in Singapore.







Kemppi's basic values guide all of the company's operations

Throughout its history, Kemppi has introduced many new innovations to the market, pioneering the development of both welding devices and productive welding solutions and services. Today, the company still relies on the same basic values that have guided its operations for nearly 60 years.

Kemppi will invest in continuous research and product development in the future, too, placing the primary emphasis on usability, the technical quality of the products, and comprehensive customer service.

Entrepreneurship

Entrepreneurship and confidence in our capabilities form the cornerstone of Kemppi's success. They provide a solid foundation for the courage and readiness to take risks that are required for being able to respond to new market situations.

Innovativeness

Innovativeness, curiosity, and an open-minded attitude in all operations are manifested as continuous searching for new ideas. Inventiveness means the courage to view matters from the other side, too. One should not fear mistakes, but learn from them.

Honesty

Honesty comes naturally to us at Kemppi. One should be honest to oneself in order to be able to treat others honestly. Honesty and reliability go hand in hand – at Kemppi, we keep our promises.

Respect for the individual

Respect for the individual also means respecting differences. Good decisions are made when several opinions are heard and taken into consideration. Respecting other people and understanding their motives makes co-operation easier in an international operating environment.

Vision:

"We are the preferred partner for customers, providing the most productive solutions through best technologies, expertise, flexibility and fast response."



MIG/MAG welding

MIG/MAG welding is a semiautomatic welding process where the welding arc is formed between the material being welded and the welding wire fed through the welding gun. The filler wire is fed mechanically by the wire feeder.

To protect the molten weld pool, shielding gas is also fed through the welding gun. The MIG process uses inert shielding gas (metal inert gas welding), whereas MAG welding employs active shielding gas (metal active gas welding). Usually the shielding gas contains active carbon dioxide or oxygen, and therefore the most commonly used type of MIG/MAG is MAG welding.

MIG/MAG is the most common welding method in today's welding industry, but it is also becoming more and more popular with hobby users. Benefits of this method include high weld deposition rate and welding speed, easy mechanisation and automation and wide range of uses.

Synergic MIG/MAG welding equipment

In synergic MIG/MAG welding machines the welding parameters can be selected with a 1-knob adjustment. For instance when the wire feed speed is adjusted, the device automatically adjusts the voltage and other welding parameters according to a preset welding program.

For instance the Kempact[™] Pulse 3000, FastMig[™] Synergic, and Kemppi Pro Evolution products allow synergic adjustment.

Adaptive MIG/MAG welding devices

In the adaptive welding machines the selection of welding parameters is made extremely easy. For instance when using the MinarcMig Adaptive models, the user only needs to select the sheet thickness and start welding. Even an inexperienced welder can produce successful welds with adaptive MIG/MAG devices.

Pulse and double pulse MIG/MAG welding

In pulse welding, the power source pulses the welding current so as to move the filler material to the molten weld pool one drop at a time. The benefits of this process include lack of spatter, decreased porousness, and good appearance of the weld. Pulse welding is primarily used in welding aluminium and stainless steels.

In double pulse welding, also the wire feed speed is pulsed in addition to welding current. This further facilitates the manageability of the weld particularly in position welding.

The pulse and double pulse features are available in the Kempact[™] Pulse 3000 and Kemppi Pro Evolution welding machines.



Кемромат

A well-known MIG/MAG welding equipment product line representing all you need in welding: effortless usability, efficiency, and reliability.

In brief

Reliable product model with a long presence on the market.

Equipment that is easy to adjust and operate

Strong wire feed mechanism brings reliability to welding

Inductance selection improves arc performance

Applications

Light and medium workshops Installation and set-up Repair and maintenance Car repair Agriculture

Recognized MIG welding product line

The compact Kempomat MIG/MAG welding machines are designed for the welding professional and all others who require significant amounts of welding in their jobs. All Kempomat packages are equipped with a power source, wire feed unit, and a transport unit.

Kempomat 1701 is a unit for small metal fabrication shops operating on 1-phase current.

Kempomat 2100 and **2500** are units suitable for metal fabricators using 3-phase current, for example, auto body repairs and other metal fabrication workshops.

Kempomat 3200 and **4200** are high-power welding machines for use in 3-phase current and equipped with a 4-roll feed unit. These units are also well suitable for heavy metal industry.

Dependable device for all types of MIG welding

A suitable welding machine for virtually any MIG welding task can be found from the Kempomat product line selection.

The lighter power range units are suitable for home use, farms, and small metalworking shops. The more powerful 3200 and 4200 models can well be used as the basic welding machine also in the heavy metal fabrication industry.



Kempomat			2100	2500	3200	4200	
Connection voltage	400 V	3~, 50/60 Hz	380 (-10 %)415 (+6 %)	380 (-10 %)415 (+6 %)	380 (-10 %)415 (+6 %)	380 (-10 %)415 (+6 %)	
	230 V	3~, 50/60 Hz	220 (-10 %)240 (+6 %)	220 (-10 %)240 (+6 %)	220 (-10 %)240 (+6 %)	220 (-10 %)240 (+6 %)	
Rated power at maximum cu	rrent		7.5 kVA	9.2 kVA	13.6 kVA	18.5 kVA	
Connection cable		H07RN-F	3G1.5 (5 m)	4G2.5 (5m)	4G2.5 (5m)	4G6 (5m)	
Fuse, delayed			10 A	10 A	16 A	16 A	
Load capacity 40° C		40 % ED	200 A/23 V (25 %)	250 A/26 V (30 %)	320 A/32 V	420 A/37.5 V	
		60 % ED	130 A/20.5 V	180 A/23 V	265 A/27 V	325 A/31 V	
		100 % ED	100 A/19 V	140 A/21 V	205 A/24 V	265 A/27 V	
Open circuit voltage, maximu	ım		40 V	35 V	42 V	48 V	
Voltage steps			10	10	40	32 (230 V), 56 (400 V)	
Power factor at maximum cur	rrent		0.95	0.95	0.95	0.95	
Efficiency at maximum currer	nt		0.85	0.75	0.75	0.80	
Welding range			30 A/14 V-200 A/24 V	40 A/14 V-250 A/26 V	40 A/15 V-320 A/32 V	40 A/15 V-420 A/37.5 V	
Filler wires		ø mm	0.6–1.2	0.6–1.2	0.6–1.6	0.6–1.6	
External dimensions		L x W x H, mm	910 x 410 x 820	930 x 440 x 860	970 x 480 x 970	970 x 480 x 970	
Weight		kg	54	80	118	130	
Kempomat 1701							
Connection voltage	230 V	1~, 50/60 Hz	220 (-10 %)240 (+6 %)				
Rated power at maximum cu	rrent		6.5 kVA				
Connection cable		H07RN-F	3G1.5 (5 m)				
Fuse, delayed			16 A				
Load capacity 40° C		15 % ED	170 A/21 V				
		60 % ED	85 A/18.5 V				
		100 % ED	76 A/17.5 V				
Open circuit voltage, maximu	ım		40 V				
Voltage steps			8	Note!			
Power factor at maximum cur	rrent		0.85	The maximum w	rire spool size in all Kempon	nat devices is 300 mm.	
Efficiency at maximum currer	nt		0,70	 Models 1701, 2100 and 2500 are equipped with a 2-roll and models 3200 and 4200 with a 4-roll wire feed mechanism. 			
Welding range			30 A/14 V-170 A/22.5 V				

Ordering codes

External dimensions

Weight

	Power source	Gun	Earthing ca	ble	
Kempomat 1701	230 V	KMG 20 (3 m)	16 mm ²	5 m	6214171
Kempomat 2100	230/400 V	MMT 25 (3 m)	25 mm ²	5 m	KMAT21003MMT
	230/400 V	MMT 25 (4.5 m)	25 mm ²	5 m	KMAT21004MMT
Kempomat 2500	230/400 V	MMT 25 (3 m)	25 mm ²	5 m	KMAT25003MMT
	230/400 V	MMT 25 (4.5 m)	25 mm ²	5 m	KMAT25004MMT
Kempomat 3200	230/400 V	MMT 32 (3 m)	35 mm²	5 m	KMAT32003MMT
	230/400 V	MMT 32 (4.5 m)	35 mm²	5 m	KMAT32004MMT
Kempomat 4200	230 V	MMT 42 (3 m)	50 mm ²	5 m	KMAT42003MMT230
	230 V	MMT 42 (4.5 m)	50 mm ²	5 m	KMAT42004MMT230
	400 V	MMT 42 (3 m)	50 mm ²	5 m	KMAT42003MMT
	400 V	MMT 42 (4.5 m)	50 mm ²	5 m	KMAT42004MMT
KMW Sync 2 synchronizing unit for the push-pull gun					6219150
MSD-1 metering unit (2500, 3200, 4200)					6185666
GH 20 gun holder					6256020
MIG MMT welding guns on page 35.					

L x W x H, mm 850 x 392 x 750

47

kg



Kempoweld

A series of first-class performance MIG/MAG welding machines that increase welding productivity through good reach and ease-of-use.

In brief

Detachable wire feed unit extends the reach of welding

Convenient welding settings adjustment and clear control panel

Fast wire spool replacement and automatic wire thread

Applications

Heavy and medium-heavy metal fabrication workshops

Installation and set-up

Repair and maintenance

Adjustable steel specialists for the professional

The Kempoweld equipment consists of the powerful MIG/MAG power source, the separate wire feed unit, and the transport unit. In addition, the watercooled models also have a built-in cooling unit. This equipment is suitable for demanding professional MIG/MAG welding use.

There are three different power level options available for Kempoweld power sources:

3200 (320 A with 40 % duty cycle), 4200 (420 A) and 5500 (550 A).

One of the following can be selected as the wire feed unit:

Wire 200 is a wire feed unit equipped with 2-roll drive.

Wire 400 is a similar unit to the Wire 200, but it is equipped with a more powerful 4-roll drive.

Wire 550 is a wire feed unit equipped with 4-roll drive and is also suitable for use with the most powerful Kempoweld power sources.

Easy control and excellent reach

Kempoweld equipment represents first-class performance, sturdy design, and effortless usability: the user only needs to select the necessary current and set the wire feed speed.

The wire feed unit can easily be installed onto the power source, but it can also be conveniently taken to the work site using a connection cable.



Kempoweld power sources			3200, 3200W	4200, 4200W	5500W
Connection voltage	400 V	3~, 50/60 Hz	380 (-10 %)415 (+6 %)	380 (-10 %)415 (+6 %)	380 (-10 %)415 (+6 %)
	230 V	3~, 50/60 Hz	220 (-10 %)240 (+6 %)	220 (-10 %)240 (+6 %)	-
Rated power at maximum current			13.6 kVA	18.5 kVA	30 kVA
Connection cable	200–240 V	H07RN-F	4G2.5 (5 m)	4G6.0 (5 m)	-
Fuse, slow	200–240 V		20 A	25 A	
Connection cable	380–415 V	H07RN-F	4G2.5 (5 m)	4G2.5 (5 m)	4G6.0 (5 m)
Fuse, slow	380–415 V		16 A	16 A	32 A
Load capacity 40° C		40 % ED	320 A/32 V	420 A/37.5 V	-
		60 % ED	265 A/27 V	325 A/31 V	550 A/42 V
		100 % ED	205 A/24 V	265 A/27 V	430 A/36 V
Open circuit voltage, maximum			42 V	48 V	56 V
Voltage steps			40	32 (230V), 56 (400 V)	32
Power factor at maximum current			0.95	0.95	0.95
Efficiency at maximum current			0.75	0.75	0.80
Welding range			40 A/15 V-320 A/32 V	40 A/15 V-420 A/37.5 V	50 A/18 V-550 A/42 V
External dimensions		L x W x H, mm	990 x 530 x 880 (3200)	990 x 530 x 880 (4200)	1075 x 480 x 1140
			990 x 530 x 1090 (3200W)	990 x 530 x 1090 (4200W)	
Weight		kg	106 (3200)	126 (4200)	194
			118 (3200W)	138 (4200W)	
Kempoweld wire feeders			Wire 200	Wire 400	Wire 550
Operating voltage		50/60 Hz	30 V AC	30 V AC	30 V AC
Rated power			250 VA	250 VA	250 VA
Load capacity		40 % ED	400 A	400 A	550 A (60 %)
		100 % ED	260 A	260 A	430 A
Wire feed mechanism			2 roll	4 roll	4 roll
Wire spool, maximum		ømm	300	300	300
Filler wires		ø mm	0.6–1.6	0.6–1.6	0.6–2.4
External dimensions		L x W x H, mm	570 x 210 x 440	570 x 210 x 440	570 x 210 x 440
Weight		kg	12	12	13

Ordering codes

Power sources	
Kempoweld 3200, 230/400 V	621532002
Kempoweld 4200, 230 V	6215422
Kempoweld 4200, 400 V	6215424
Kempoweld 4200W, 230 V	6216422
Kempoweld 4200W, 400 V	6216424
Kempoweld 5500W, 400 V	6216554
Wire Feeders	
Wire 200 (2-roll wire feed)	62172001
Wire 400 (4-roll wire feed)	621740001
Wire 550 (4-roll wire feed)	621755001
Metering unit	
MSD-1 V/A (standard / 5500 W)	6185666
Synchronising unit	
KMW Sync 2	6219150
Swing arm KV 400	6185247

Air-cooled interconnection cables	
KW 50-1.3-GH	6260350
KV 400 50-1.5.GH (with swing arm)	6260351
MULTIMIG 50-5-GH	626010401
MULTIMIG 50-10-GH	626010601
Liquid-cooled interconnection cables	
KW 50-1.5-WH	6260352
KV 400 50-1.7-WH (with swing arm)	6260353
KW 50-5-WH	626035401
KW 50-10-WH	626035601
KW 95-1.5-W	6260391
KW 95-1.5-W KW 95-5-WH	6260391 6260393
KW 95-1.5-W KW 95-5-WH KW 95-10-WH	6260391 6260393 6260394
KW 95-1.5-W KW 95-5-WH KW 95-10-WH KV 400 95-1.9-WH (with swing arm)	6260391 6260393 6260394 6260392
KW 95-1.5-W KW 95-5-WH KW 95-10-WH KV 400 95-1.9-WH (with swing arm) Branch cable KMP	6260391 6260393 6260394 6260392 3151360



The MIG welding machine represents award-winning design and usability for every welder. Adaptive control and long cables make it easier to use than ever before.

In brief

Adaptive control makes welding easier than ever before

Operates anywhere, with regular mains power and a generator

Lightweight and easy to transport even with a gas cylinder.

Excellent welding qualities also with long cables

Applications

Thin sheet metal fabrication workshops Installation and set-up Repair and maintenance Home and hobby use

An adaptive tool for the mobile welder

MinarcMig Adaptive welding devices can be used to easily create successful welds. Their welding qualities and usability are on such a high level that the product family earned the distinguished Red Dot international industrial design award during 2006.

MinarcMig Adaptive 150 is particularly suitable for welding with Fe wire and solid core wire. In relation to its small size the load capacity is very high at 150 A with a 35 % duty cycle.

MinarcMig Adaptive 180 stands out with its aluminum, steel and, stainless steel MIG-MAG welding qualities. When using the automation function the control panel display shows the welding current and voltage, wire feed speed, and the material and gas combination. The load capacity of this model is 180 A with a 25 % duty cycle.

Easier welding than ever

MinarcMig Adaptive units have an adaptive control method. You only need to select the thickness of the sheet and pull the welding gun trigger. The machine will automatically adjust the welding parameters accordingly.





In MinarcMig Adaptive 150, the welding power is adjusted using the control knob according to the thickness of the sheet to be welded. The other control is used to fine-tune the arc length.

From the clear MinarcMig Adaptive 180 display you can read the welding current, voltage, wire feed speed, and the material and gas combination.



Technical specifications

MinarcMig Adaptive		150	180
Connection voltage	1~, 50/60 Hz	230 V (±15 %)	230 V (±15 %)
Rated power at maximum current		6.9 kVA	8.6 kVA
Connection cable	H07RN-F	3G2.5 (3.3 m)	3G2.5 (3.3 m)
Fuse, delayed		16 A	16 A
Load capacity 40° C	25 % ED	180 A/23.0 V	
	35 % ED	150 A/21.5 V	
	60 % ED	120 A/20 V	120 A/20 V
	100 % ED	100 A/19 V	100 A/19 V
Open circuit voltage		22–31 V	15.5–42.5 V
Power factor at maximum current		0.58 (150 A/21.5 V)	0.60 (180 A/23.0 V)
Efficiency at maximum current		0.80 (150 A/21.5 V)	0.81 (180 A/23.0 V)
Welding range		20 A/13,5 V–150 A/22 V	20 A/12 V-180 A/23 V
Wire spool, maximum	ømm	200	200
Wire feed mechanism		1 roll	1 roll
Filler wires ø mm	Fe solid wire	0.6–1.0	0.6–1.0
	Fe cored wire	0.8–1.0	0.8–1.0
	Ss	-	0.8–1.0
	Al	-	1.0
External dimensions	L x W x H, mm	400 x 180 x 340	400 x 180 x 340
Weight (incl. gun and cables)	kg	9.4	9.8

Ordering codes

MinarcMig Adaptive 150	incl. gun, cables, gas hose, and shoulder strap	6108150
MinarcMig Adaptive 180	incl. gun, cables, gas hose, and shoulder strap	6108180
MIG gun	150: MMG 18 (3 m)	6250180
	180: MMG 20 (3 m)	6250200
Earthing cable	3 m	6184003
Shield gas hose	4.5 m	W001077
Shoulder strap		9592162
Transport unit	MST 400	6185294
	ST5	6185219



KEMPACT™ MIG 2520, 2530

The MIG welding unit with diverse features and plenty of welding power, but still very lightweight. Easy to carry to the welding site and trouble-free to use.

In brief

An efficient and compact welding tool for the mobile welder

Suitable for solid wires, cored wires, and self-shielded flux-cored wires.

Automatic weld stop function and post current control

Stable arc and easy welding

Applications

Thin sheet metal fabrication workshops Car repair Agriculture Shipyards and offshore industry Installation and set-up Repair and maintenance

Plenty of welding power per kilogram

Kempact MIG series machines are compact MIG/MAG welding units equipped with a built-in wire feeder.

Their modest size and weight can be misleading, as the Kempacts can offer enough power even for demanding welding jobs. Their maximum current is 250 A with a 40% duty cycle.

Kempact MIG 2520 is a powerful and compact MIG welding machine, which can use 5 kg filler wire spool. The unit has a 2-roll feed mechanism.

Kempact MIG 2530 Kempact MIG 2530 has the same features as the 2520 model, but this unit also supports 15 kg filler wire spool. The machine has DuraTorque 4-roll feed.

Light to transport, easy to weld

The Kempact MIG 2520 or 2530 is the ideal choice when portability is an essential element of welding. The weights of these models are 17.5 kg and 20 kg, which is 75 % less than the weight of traditional welding equipment.

In addition, the stability of the Kempact arc and the many convenient features allow a fast, strong, and high-quality weld result.

The machines are suitable for welding professionals as well as other individuals with welding needs in their work.



Kempact MIG		2520	2530
Connection voltage	3~, 50/60 Hz	400 V (±15%)	400 V (±15%)
Rated power		12 kVA	12 kVA
Connection cable	H07RN-F	4G1.5 (5 m)	4G1.5 (5 m)
Fuse, delayed		16 A	16 A
Load capacity 40° C	40 % ED	250 A/26.5 V	250 A/26.5 V
	60 % ED	207 A/24 V	207 A/24 V
	100 % ED	160 A/22 V	160 A/22 V
Open circuit voltage		40–50 V	40–50 V
Power factor at maximum current		0.64	0.64
Efficiency at maximum current		0.87	0.87
Welding range		10–30 V	10–30 V
Wire feed speed	m/min	1–18	1–18
Wire spool, maximum	ø mm	200	300
Wire feed mechanism		2 roll	4 roll
Filler wires ø mm	Fe, Ss	0.6–1.0	0.6–1.0
	Cored wire	0.9–1.2	0.9–1.2
	AI	0.9–1.2	0.9–1.2
	CuSi	0.8–1.0	0.8–1.0
External dimensions	L x W x H, mm	510 x 250 x 415	580 x 280 x 440
Weight	kg	17.5	20

Ordering codes

Kempact MIG 2520	Includes earthing cable	(35 mm ² , 5 m) and gas hose (6 m)	6218520
Kempact MIG 2530	Includes earthing cable	(35 mm ² , 5 m) and gas hose (6 m)	621853001
Gun holder	GH 30		6256030
MIG welding guns	MMT 25	3 m	6252513MMT
	MMT 25	4.5 m	6252514MMT
	MMT 27	3 m	6252713MMT
	MMT 27	4.5 m	6252714MMT
Earthing cable	35 mm ²	5 m	6184311
Transport units	ST 7 (power source + ga	s bottle)	6185290
	P 250		6185268
KFH 1000 wire feeder hanging device			6185100
Welding boom	Incl. KFH 1000 feeder ha	nger	6264026
Wire feeder hanging device			4298180



KEMPACT™ PULSE 3000

Efficient synergic MIG/MAG machine equipped with pulse and double pulse features for welding aluminum and other materials.

In brief

A lightweight synergic welding unit with many useful features

Pulse and double pulse features provide strenght and appearance to welds

Memory features enable easier welding setting adjustment

A user friendly one-knob adjustment, Kemppi Process Manager™

More reach with the Kemppi WeldSnake[™] welding gun

Suitable for generator use

Applications

Thin sheet metal fabrication workshops Installation and set-up Repair and maintenance

Diverse selection of pulse welding features

Kempact Pulse 3000 is a synergic MIG/MAG welding machine equipped with diverse functions for the professional who knows what he wants and wishes to control weld quality with precision.

Kempact Pulse 3000 features include pulse welding, double pulse welding, and ready-to-use welding programs which enable automatic optimization of welding settings for desired welding applications.

Storing settings into memory and their retrieval for use is quick and easy using the 100 memory channels.

The KempactCool 10 cooling unit is available for liquid-cooled welding guns.

Excellent aluminum welding capabilities

Kempact Pulse features have been perfected in the Kemppi product development laboratory in such a manner that the arc remains steady on all weldable materials, also in demanding aluminum MIG/MAG welding.

A wide current range and generator compatibility further add to the Kempact Pulse operating range. Whether welding in a workshop or out in an installation environment, the Kempact Pulse 3000 guarantees ideal welding parameter control.

Kempact Pulse includes many additional arc control features that enable high-quality and trouble-free welding on all different materials.



Kempact Pulse 3000		3000	3000 MVU	
Connection voltage	3~, 50/60 Hz	400 V (±15 %)	400 V (±15 %)	230 V (±10 %)
Rated power at maximum current		12 kVA	10 kVA	10 kVA
Connection cable	H07RN-F	4G1.5 (5 m)	4G1,5 (5 m)	4G1,5 (5 m)
Fuse, delayed		16 A	16 A	16 A
Load capacity 40° C	40 % ED	250 A/26.5 V	250 A/26.5 V	250 A/26.5 V
	60 % ED	207 A/24 V	207 A/24 V	207 A/24 V
	100 % ED	160 A/22 V	160 A/22 V	160 A/22 V
Open circuit voltage		56 V	68 V	68 V
Power factor at maximum current		0.69	0.78	0.78
Efficiency at maximum current		0.84	0.83	0.83
Welding range		8–30 V	8–30 V	8–30 V
Wire spool, maximum	ø mm	300	300	300
Wire feed mechanism		4 roll	4 roll	4 roll
Filler wires ø mm	Fe, Ss	0.6–1.2	0.6–1.2	0.6–1.2
	Cored wire	0.9–1.2	0.9–1.2	0.9–1.2
	AI	0.9–1.2	0.9–1.2	0.9–1.2
	CuSi	0.8–1.2	0.8–1.2	0.8–1.2
External dimensions	L x W x H, mm	580 x 280 x 440	580 x 280 x 600	580 x 280 x 600
Weight	kg	22	33	33
KempactCool 10				
Operating voltage	50/60 Hz	400 V (-15+10 %)		
Rated power	100 % ED	250 W		
Cooling power		1.0 kW		
Maximum pressure		450 kPa		
Recommended cooling liquid		20–40 % ethanol/water		
Tank volume		31		
External dimensions	L x W x H, mm	580 x 280 x 300		
Weight	kg	13		

Ordering codes

Kempact Pulse 3000*		
*Package includes: welding cable (5 m), earthing (5 m), and gas hose (6 m)	cable 35 mm²	621830002
Kempact Pulse 3000 MVU		62183000302
KempactCool 10		621860001
Gun holder	GH 30	6256030
Earthing cable	5 m, 35 mm²	6184311
Transport units		
ST 7 (power source and gas bottle)		6185290
P20 (power source, cooling unit and gas bottle)		6185261
P250 (power source)		6185268
Hanging device		4298180
Gas hose	6 m	W000566
Wire spool hub, installation kit		4289880
Hub adapter, for 5 kg wire spool		4251270

MIG welding guns		
PMT 27	3 m	6252713
PMT 27	4.5 m	6252714
PMT 32	3 m	6253213
PMT 32	4.5 m	6253214
PMT 35	3 m	6253513
PMT 35	4.5 m	6253514
WS 35	6 m, Al 1.2	6253516A12
WS 35	6 m Ss 1.0	6253516510
MMT 32	3 m	6253213MMT
MMT 32	4.5 m	6253214MMT
MMT 35	3 m	6253513MMT
MMT 35	4.5 m	6253514MMT
The Kemppi Arc System, See page 88		





FASTMIG[™] – BASIC MODELS

Lightweight and powerful equipment for basic MIG/MAG welding. The detachable wire feed unit provides reach and the digital display improves control.

In brief

Three power sources and two wire feed units available

The wire feeder is easy to detach and take to the worksite

Easy welding settings adjustment speeds up welding

Energy efficiency is 10 % better than in switch-controlled equipment

Applications

Heavy and medium-heavy metal fabrication workshops Shipyards and offshore industry Installation and set-up Repair and maintenance

Basic power for MIG/MAG welding

FastMig Basic equipment is intended for basic needs of heavy and mediumheavy industry MIG/MAG welding. The equipment includes the power source, a detachable wirde feed unit, and the transport unit. In addition, a cooling unit is available for liquid-cooled welding guns.

Adjustment of welding settings is done conveniently and accurately using the stepless control knobs and a clear digital display.

FastMig KM 300, 400 and **500** power source maximum load capacities are 300, 400, and 500A. They are lightweight and energy conserving devices.

Wire feeders MF 29 and MF 33 are units designed for demanding conditions. Their dual-wall casing endures even harsh conditions, and wire feed is always steady and trouble-free.

FastCool 10 cooling unit is available for liguid-cooled welding guns.

Individuality through modularity

FastMig Basic product line power sources, wire feeders, and the cooling unit are inter-compatible, so the product selection always has the right and customized solution for all MIG/MAG heavy-metal industry basic welding needs.

The MVU-labelled multi-voltage power source models can be used in 3-phase networks with another current than 400 V.



FastMig™		KM 300	KM 400	KM 500	KM 400 MVU, 400 V	KM 400 MVU; 230 V
Connection voltage	3~, 50/60 Hz	400 V (-15+20 %)	400 V (-15+20 %)	400 V (-15+20 %)	400 V (-15+20%)	230 V (±10%)
Rated power at max current		12.9 kVA	18.5 kVA	25.9 kVA	19 kVA	20 kVA
Connection cable	H07RN-F	4G6 (5 m)	4G6 (5 m)	4G6 (5 m)	4G10 (5 m)	4G10 (5 m)
Fuse, delayed		25 A	35 A	35 A	35 A	50 A
Load capacity 40° C	60 % ED	-	-	500 A/39 V		
	80 % ED	-	400 A/34 V	-	400 A/34 V	-
	100 % ED	300 A/29 V	380 A/33 V	430 A/35.5 V	-	380 A/33 V
Open circuit voltage		65 V				
Power factor at max current		0.9	0.9	0.9	0.8	0.8
Efficiency at max current		0.87%	0.87%	0.87%	0.87%	0.87%
Welding range	MIG	20A/12V - 300A/32V	20A/12V - 400A/36V	20A/12V - 500A/40V	20A/12V - 400A/36V	20A/12V - 500A/40V
External dimensions	L x W x H, mm	590 x 230 x 430	590 x 230 x 430	590 x 230 x 430	590 x 230 x 580	590 x 230 x 580
Weight	kg	34	35	36	49	49

FastMig™		MF 29	MF 33	FastCool 10		
Operating voltage		24 V DC	24 V DC	Operating voltage		24 V DC
Rated power		100 W	100 W	Rated power		50 W
Load capacity 40° C	60 % ED	520 A	520 A	Cooling power		15 kW
	100 % ED	440 A	440 A	Maximum pressure		450 kPa
Wire feed speed	m/min	0–25	0–25	Recommended coolin	g liquid	20–40 % ethanol/water
Wire spool, max	ø mm	200	300	Tank volume		3
Wire feed mechanism		4-roll	4-roll	External dimensions	L x W x H, mm	570 x 230 x 280
Filler wires, ø mm	Fe, Ss	0.6–1.6	0.6–1.6	Weight	kg	11
	Cored wire	0.8–1.6	0.8–2.0			
	AI	1.0–1.6	1.0–2.4			
External dimensions	L x W x H, mm	510 x 200 x 310	590 x 240 x 445			
Weight	kg	9.4	13.6			

Ordering codes

Power Sources		MIG welding guns		
FastMig™ KM 300	6033000	MMT 35 (3 m)	6253513MMT	
FastMig™ KM 400	6034000	MMT 35 (4.5 m)	6253514MMT	
FastMig™ KM 500	6035000	MMT 42 (3 m)	6254213MMT	
FastMig™ KM 400 MVU	603400003	MMT 42 (4.5 m)	6254214MMT	
Wire Feeders		MMT 42W (3 m)	6254203MMT	
MF 29	6063200	MMT 42W (4.5 m)	6254204MMT	
MF 33	6063300	MMT 52W (3 m)	6255203MMT	
Cooling unit FastCool 10	6068100	MMT 52W (4.5 m)	6255204MMT	
Transport units		Intermediate cables		
PM 500	6185291	KM 70-1.8-WH	6260411	
PM 501 (with PSL 55)	6185292	KM 70-1.8-GH	6260413	
PM 502	6185293	KM 70-10-GH	6260417	
P 500 (MF29, MF33)	6185265	KM 70-10-WH	6260418	
T 10*	6185231	KM 70-20-GH	6260450	
Accessories		KM 70-20-WH	6260451	
KWF 200 hanging frame	6185285	KM 70-30-GH	6260454	
KWF 200 protection sliders	6185286	KM 70-30-WH	6260455	
KWF 300 protection sliders	6185287	Other lengths if requested * FastMig requires a mounting kit, order number W002085.		
KV 200 mounting plate	6185249			
KV 400 swing arm (PM 500)	6185248			



FASTMIG[™] – SYNERGIC MODELS

A MIG/MAG welding device with extremely versatile features for industrial use. Synergic controls and an extensive range of welding programs make using the device easy and efficient.

In brief

A modular, expandable MIG/MAG device

A wide range of optional components, accessories and welding programs

Reliable and robust wire feeders

The WiseRoot welding process ensures fast, high-quality root welds

Possibility to collect and analyse welding data

Applications

Shipyards and offshore industry

Heavy and medium-heavy metal fabrication workshops

The chemical industry

High quality welds from the root to the top

Kemppi's FastMig Synergic is a modular welding device intended for professional use. It lets you choose the power source, wire feeder, control panel and cooling unit according to your needs and way of work.

There are three FastMig Synergic power sources to choose from: **KMS 300**, **KMS 400** and **KMS 500**. They are efficient inverter power sources. They are controlled from the wire feeder's control panel, so you do not need a separate control panel for the power source.

There is a wide range of optional accessories available, such as a remote control panel, a swing arm, various undercarriages and a mounting plate for two wire feeders.

Value-added services improve quality and efficiency

You can order additional welding programs for various applications and materials for the FastMig Synergic. You can precisely upgrade your device for its use even when your welding needs change. Thus you can ensure that the quality of your welds remain perfect now and in the future.

The welding data collection and analysis systems offered by Kemppi enable you to collect precise data concerning the operation and use of the whole FastMig Synergic fleet in your production. You can use the welding data to further develop the efficiency of your production process.

For more information on the Kemppi Arc System and Pro Weld Data services, see "Kemppi's solution business".

FastMig Synergic wire feed units

All the FastMig Synergic wide feeders have a strong casing suitable for use even in heavy duty applications. A powerful motor and precision gearing and transmission ensure a steady and reliable wire feed. For each device there are several control panel options available with either basic functions or expanded functions.

MSF 53

- Compact and lightweight wire feeder.
- Suitable for use even in small places.
- The casing material is shock-proof plastic, and a double-skinned construction makes it particularly durable.
- Suitable for a 200 mm wire spool.
- For the control panel, you can use either the SF 51 that contains the basic functions, or the SF 52 with more versatile functions.

MSF 55

- Functional, light-weight and elegant design.
- Suitable for use in traditional metal workshops.
- Casing material is plastic and aluminium.
- Suitable for 200 mm and 300 mm wire spools.
- For the control panel, you can use either the SF 54 that contains the basic functions, or the SF 53 with more versatile functions.

MSF 57

- Represents the new, streamlined Kemppi design.
- Suitable for heavy industry and installation work.
- The casing material is shock-proof plastic, and a double-skinned construction makes it particularly durable.
- Suitable for 200 mm and 300 mm wire spools.
- For the control panel, you can use either the SF 54 that contains the basic functions, or the SF 53 with more versatile functions.







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Cooling device FastCool 10

For liquid cooled welding guns you can equip FastMig Synergic with a FastCool 10 cooling device.

The control panels on the FastMig Synergic series have clear displays and a wealth of various features and functions for increasing the quality and productivity of welding.

Choose the control panel according to your needs and preferences

The control panels SF 51 and SF 52 are used in the MSF 53 wire feeder.

The control panels SF 53 and SF 54 are used in the MSF 55 and MSF 57 wire feeders.





The basic control panels SF 51 and SF 54 include the following features and functions:

- A digital display
- Stepless adjustment of the welding voltage
- · Stepless adjustment of wire feed speed
- MMA welding option
- Gas test
- Wire inch
- · Last used welding parameters shown in displays
- Selection of control panel or remote control

The SF 52 and SF 53 control panels also include the following functions:

- **creep start** makes it easier to start welding with high wire feed speeds
- Hot start reduces the number of welding faults when you start welding
- **Crater fill** reduces the number of welding faults when you finish welding
- **Memory channels** offer an easy way of using the same MIG welding parameters as previously
- **Optional services** help you further utilise the benefits of your FastMig. Such services include WiseRoot, welding program packages, customization of control panel functions, PIN-code lock on the panel, and many other useful features.



WISEROOT™



Installation and operating instructions in a DVD product package

The optional WiseRoot feature comes with a DVD product package that contains clear installation instructions and useful information about the WiseRoot welding process.

You will also find information about the WiseRoot root pass welding techniques and its special features presented in text, images and welding demonstration videos.

This product package helps you make full use of the WiseRoot feature right away.

A process specially designed for welding root passes

WiseRoot is a modified MIG/MAG welding process specially designed by Kemppi for welding root passes. It is available for FastMig Synergic as an optional feature.

WiseRoot speeds up and facilitates root pass welding and improves the quality of the welds. The feature is activated from the control panel, after which it is ready for use right away.



When using the WiseRoot process the welding machine continuously monitors the welding current and voltage, and controls the formation of the short circuit, so that the filler wire droplets fall off into the weld pool at precisely the right time. This makes it easier to control the arc and significantly decrease spatter.



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FastMig power source	es	KMS 300	KMS 400	KMS 500	KMS 400 MVU; 400 V	KMS 400 MVU; 230 V
Connection voltage	3~, 50/60 Hz	400 V (-15+20 %)	230 V (±10 %)			
Rated power at maximum current		13.9 kVA	19.5 kVA	26.1 kVA	19 kVA	20 kVA
Connection cable	H07RN-F	4G6 (5 m)	4G6 (5 m)	4G6 (5 m)	4G10 (5 m)	4G10 (5 m)
Fuse, delayed		25 A	35 A	35 A	35 A/50 A	35 A/63 A
Load capacity 40° C	60 % ED	-	-	500 A/39 V		
	80 % ED	-	400 A/34 V	-	400 A/36 V	400 A/36 V
	100 % ED	300 A/29 V	380 A/33 V	430 A/35.5 V	380 A/35 V	380 A/35 V
Open circuit voltage	MMA	50 V				
	MIG	65 V				
Power ratio at maximum current		0,9	0,9	0,9	0,8	0,8
Efficiency at maximum current		0,87	0,87	0,87	0,87	0,87
Welding range	MIG	20A/12V - 300A/32V	20A/12V - 400A/36V	20A/12V - 500A/40V	20A/12V - 400A/36V	20A/12V - 500A/40V
	MMA	10 A/20 V-300 A/32 V	10 A/20 V-400 A/36 V	10 A/20 V-500 A/40 V	10 A/20 V-400 A/36 V	10 A/20 V-500 A/40 V
External dimensions	L x W x H, mm	590 x 230 x 430	590 x 230 x 430	590 x 230 x 430	590 x 230 x 580	590 x 230 x 580
Weight	kg	34	35	36	49	49

FastMig wire feeders		MSF 53	MSF 55	MSF 57
Operating voltage		50 V DC	50 VDC	50 VDC
Rated power		100 W	100 W	100 W
Load capacity 40° C	60 % ED	520 A	520 A	520 A
	100 % ED	440 A	440 A	440 A
Wire feed mechanism		4 roll	4 roll	4 roll
Wire feed speed	m/min	0–25	0–25	0–25
Wire spool, maximum	ø mm	200	300	300
Filler wires ø mm	Fe, Ss	0,6–1,6	0,6–1,6	0,6–1,6
	Cored wire	0,8–1,6	0,8–2,0	0,8–2,0
	AI	1,0–1,6	1,0–2,4	1,0–2,4
External dimensions	L x W x H, mm	510 x 200 x 310	620 x 210 x 445	625 x 243 x 476
Weight	kg	9,4	11,1	14
Material		plastic	metal	plastic

FastMig cooling device		FastCool 10
Operating voltage		24 V DC
Rated power		50 W
Cooling power		10 kW
Maximum pressure		450 kPa
Recommended cooling liquid		20–40 % ethanol/water
Tank volume		31
External dimensions	L x W x H, mm	570 x 230 x 280
Weight		11 kg



Ordering codes

Power Sources	
FastMig™ KMS 300	6053000
FastMig™ KMS 400	6054000
FastMig™ KMS 500	6055000
FastMig™ KMS 400 MVU	605400003
Control panels	
SF 51	6085100
SF 52	6085200
SF 53	6085300
SF 54	6085400
WiseRoot [™] feature	6265011
Wire Feeders	
MSF 53	6065300
MSF 55	6065500
MSF 57	6065700
Cooling device FastCool 10	606810001
Transport units	
PM 500	6185291
PM 502	6185293
PM 501 (with PSL 55)	6185292
P 500 (MSF53)	6185265
P 501 (MSF55, MSF57)	6185269
T 10*	6185231
T120**	6185252
Remote control units	
R10, 5 m	6185409
R10, 10 m	618540901
R20, 5 m	6185419
RMT 10 (PMT)	6185475
Remote control cable, 10 m	6185481
Accessories	
MSF 53 hanging frame (incl. KPS mounting set)	6185285
MSF 55 hanging kit	W001694
MSF 53 protection sliders (incl. KPS mounting set)	6185286
KWF Sync 300	6263300
GG200/300 gas guard	6237406
Swing arm KV 401 (PM 500)	6185248
Gun holder GH30	6256030

MIG welding guns	
PMT 35 3 m	6253513
PMT 35 4.5 m	6263514
PMT 42 3 m	6254213
PMT 42 4.5 m	6254214
PMT 50 3 m	6255013
PMT 50 4.5 m	6255014
PMT 30 W 3 m	6253043
PMT 30 W 4.5 m	6253044
PMT 42W 3 m	6254203
PMT 42W 4.5 m	6254204
PMT 52W 3 m	6255203
PMT 52W 4.5 m	6255204
WeldSnake guns on page 35.	
Earthing cable	
5 m, 50 mm²	6184511
5 m, 70 mm²	6184711
Cable for MMA welding	
5 m, 50 mm ²	6184501
5 m, 70 mm ²	6184701
Interconnection cables	
KWF 70-1.8-GH	6260401
KMS 70-1.8-WH	6260410
PROMIG 2/3 70-10-GH	6260326
PROMIG 2/3 70-10-WH	6260334
PROMIG 2/3 70-20-GH	6260327
PROMIG 2/3 70-20-WH	6260337
PROMIG 2/3 70-30-GH	6260330
PROMIG 2/3 70-30-WH	6260340
Other lengths if requested	

* FastMig requires a mounting kit, order number W002085.
** The T120 transport unit requires a mounting kit, order number W003053.

The Pro Weld Data system See page 91

The Kemppi Arc System, See page 88



KEMPPI PRO EVOLUTION IN MIG/MAG WELDING

A modular welding system equipped with a digital control system for demanding professional MIG/MAG use.

In brief

A multi-process system that can be also expanded to MMA and TIG welding

A selection of versatile and clear control panels

A wide range of features and functions improve quality and productivity

Possibility to collect and analyse welding data

Applications

Shipyards and offshore industry

Heavy and medium heavy metal fabrication workshops

Steel structure workshops

Automotive and vehicle industry

Chemical and process industry

The reliable workmate for a professional

Kemppi Pro Evolution represents the state of the art of Kemppi's welding systems. It is a modular multi-process system that comprises several components: a power source, wire feeder, control panel and a cooling device. You can choose the components to precisely meet the intended use of the machine.

All the Kemppi Pro Evolution components are of the highest quality. They are based on the latest technology in the industry and offer the most versatile range of features and functions. Thus, the system is highly suitable for demanding applications in shipbuilding, industry, etc. where professional welding quality and productivity in welding work are required.

The power source, wire feeder, control panel and cooling device options are introduced on the following pages.

Digital control offers precision, efficiency and productivity

The digital control system makes the Kemppi Pro Evolution devices extremely precise. The control panels include a great number of features and functions that minimise the amount of finishing work required for welds.

Kemppi Pro Evolution systems also let you monitor the key figures related to the welding functions in your production process, as well as collect important welding data from the entire welding machine fleet. This information can then be utilised for developing your production.

For more information on improving the productivity of welding with Kemppi's services, see "Kemppi's solution business".



Kemppi Pro Evolution power sources

The digitally controlled power sources are the cornerstones of the Kemppi Pro Evolution series.

There are power sources in three different power classes available for the system, with load capacities of 320, 420 and 520 amperes at 100–70% duty cycle.

They are multi-functional power sources based on inverter technology for all welding methods both in manual and robotic applications.

The high internal regulation speed and full digital controls guarantee first-class welding characteristics.

In MIG/MAG and pulsed MIG welding the power source is controlled through the wire feeder control panel, so the power sources do not require a separate control panel.





ProMig wire feeders

There are several wire feeders available for the Kemppi Pro Evolution system to meet different needs. The wire feeders in the ProMig 500 series are suitable for all uses, and the ProMig 100, 200 and 300 are particularly suitable for shipbuilding and heavy industry applications.

Multi-functional ProMig 500 wire feeders

The wire feeders in the ProMig 500 series have a four-roll feed mechanism that ensures a smooth and uninterrupted wire feed. The automatic wire thread also makes changing the filler wire spool faster.

The operation of the wire feeders is very reliable and secure whether you use thin and soft aluminium wires or thick and hard solid wires.

The ProMig 500 wire feeder series comprises the following devices. All of them can be equipped with any of the control panels in the Kemppi Pro Evolution series.

- **ProMig 501** has a horizontal torch connection. Promig 501L is a corresponding left handed model.
- **ProMig 511** has has a horizontal torch connection and an ergonomic swing arm. The swing arm improves the operational range and simultaneously supports and protects the torch.

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• ProMig 530 has an inclined torch connection.

ProMig wire feeders for for shipbuilding and heavy industry applications

The ProMig 200 and ProMig 300 wire feeders in the Kemppi Pro Evolution product family are particularly suitable for the demanding conditions in shipbuilding and heavy industry due to their robust construction and excellent movability.

ProMig 200 is a wire feeder designed for a 200 mm wire spool.

ProMig 300 is suitable for both 200 mm and 300 mm wire spools.

ProMig 100 is a compact and lightweight sub-feeder for welding up to 30 metres from the main wire feeder.





ProCool cooling units

There are two kinds of cooling units available for the Kemppi Pro Evolution system designed for use with liquid-cooled MIG/ MAG welding guns and TIG torches.

These microprocessor-controlled cooling units are designed for demanding professional use.

ProCool 30 is suitable for use with the P40 trolley, and the cooling unit is placed under the power source.

ProCool 10 is suitable for use with the P30W trolley.

The Kemppi Pro Weld Data system

The Kemppi Pro Weld Data system is used to collect and analyse welding information based on the use and operation of Kemppi Pro Evolution devices.

The **PRO DLI 20** adapter is used for transferring the welding data to a computer for analysis. Information collected in this way can be used, for instance, for planning production, improving productivity, and WPS documentation.





ProMig wire feeder control panels

MC control panel is a basic panel with for instance the following features:

- Welding process selection: MMA or MIG welding with 2T or 4T mode.
- Arc dynamics adjustment for MMA and MIG/MAG welding.
- Saving welding values for later use.
- Gas test.



ML control panel contains all the basic functions as well as the possibility to use synergic adjustment.

The Synergic selector switch lets you choose normal MIG/MAG welding, 1-MIG welding or pulsed MIG welding.

Synergic adjustment offers fast selection of welding parameters, using preset Kemppi welding programs. It considerably improves the productivity of work and the quality of welds.

MXE control panel is the most versatile control panel available for the Kemppi ProMig wire feeders.

In addition to basic features this panel includes for instance the following functions:

- Wide range of preset welding programs for different materials, shield gases and filler wires.
- An easy-to-use synergic one-knob control for pulsed MIG and double pulse MIG welding.
- User specific customised parameters







Kemppi Pro Evolution power sources		3200 / 3200 MVU	4200 / 4200 MVU	5200 / 5200 MVU
Connection voltage	3~, 50/60 Hz	400 V (-15+20 %)	400 V (-15+20 %)	400 V (-15+20 %)
Connection voltage, MVU	3~, 50/60 Hz	400 V (-15+20 %)	400 V (-15+20 %)	400 V (-15+20 %)
		230 V (±10 %)	230 V (±10 %)	230 V (±10 %)
Rated power at maximum current		13.3 kVA	19.7 kVA	26.6 kVA
Connection cable		4G6 (5 m)	4G6 (5 m)	4G6 (5 m)
Fuse, delayed		25 A	35 A	35 A
Connection cable, MVU		4G6 (5 m)	4G10 (5 m)	4G16 (5 m)
Fuse, delayed, MVU		35 A	50 A	63 A
Load capacity 40° C	70 % ED	-	420 A / 19.7 kVA	520 A / 26.6 kVA
	100 % ED	320 A / 13.3 kVA	400 A / 18.6 kVA	440 A / 20 kVA
Power ratio at maximum current		0.93	0.93	0.93
Efficiency at maximum current		0.85	0.85	0.85
Welding range	MMA	10 A/20V-320 A/33V	10 A/20V-420 A/37V	10 A/20-520 A/40V
	TIG	5 A/10-320 A/23V	5 A/10V-420 A/27V	5 A/10V-520 A/30V
	MIG	20A/12 V-320A/37 V	20A/12 V-420A/39 V	20A/12 V-520A/42 V
External dimensions	L x W x H, mm	530 x 230 x 520	530 x 230 x 520	530 x 230 x 520
External dimensions, MVU	L x W x H, mm	530 x 230 x 630	530 x 230 x 630	530 x 230 x 630
Weight	kg	37/MVU 45	41/MVU 49	48/MVU 56
ProMig wire feeders		100	200	300
Operating voltage		50 V DC	50 V DC	50 V DC
Rated power		150 W	100 W	100 W
Load capacity 40° C	60 % ED	500 A	460 A	460 A
Wire feed mechanism		4 roll	4 roll	4 roll
Wire feed speed	m/min	0–18	0–18	0–18
Wire spool, maximum	ø mm		200	300
Filler wires ø mm	Fe, Ss	0.6–1.6	0.6–1.6	0.6–1.6
	Cored wire	0.8–2.0	0.8–1.6	0.8–2.0
	Al	1.0–2.4	1.0–1.6	1.0–2.4
External dimensions	L x W x H, mm	575 x 185 x 200	500 x 230 x 315	600 x 225 x 415
Weight	kg	8.9	13	17 kg
ProMig wire feeders		501, 501L	511	530
Operating voltage		50 V DC	50 V DC	50 V DC
Rated power		100 W	100 W	100 W
Load capacity 40° C	60 %	520 A	520 A	520 A
Wire feed mechanism		4 roll	4 roll	4 roll
Wire feed speed	m/min	0-18	0-18	0-18
Wire spool, maximum	ø mm	300	300	300
Filler wires ø mm	Fe, Ss	0.6–1.6	0.6–1.6	0.6–1.6
	Cored wire	0.8–2.0	0.8–2.0	0.8–2.0
	AI	1.0–2.4	1.0–2.4	1.0–2.4
External dimensions	L x W x H, mm	620 x 230 x 480	620 x 230 x 670	640 x 230 x 430
Weight	kg	22	25	21

Cooling units		ProCool 10	ProCool 30
Operating voltage		50 V DC	50 V DC
Cooling power	100 % ED	120 W	120W
Rated power	100 % ED	120 W	120 W
Maximum pressure		400 kPa	400 kPa
Recommended cooling liquid		20–40% ethanol/water	20–40% ethanol/water
Tank volume		31	31
External dimensions	L x W x H, mm	450 x 190 x 420	610 x 230 x 290
Weight	kg	16	12.5

Ordering codes

Kemppi Pro Evolution 3200	6131320
Kemppi Pro Evolution 4200	6131420
Kemppi Pro Evolution 5200	6131520
Kemppi Pro Evolution 3200 MVU	613132003
Kemppi Pro Evolution 4200 MVU	613142003
Kemppi Pro Evolution 5200 MVU	613152003
Wire Feeders	
ProMig 501	6232501
ProMig 501L (left handed)	6232505
ProMig 511 (with swing arm)	6232511
ProMig 530	6232530
ProMig 100 sub-feeder	6236305
ProMig 100B (special version with fast coupling)	6236306
ProMig 200	6231520
ProMig 300	6231530
Control panels	
MC	6263501
ML	6263502
MXE	6263504
Cooling units	
ProCool 10	6262012
ProCool 30	6262016

Synchronising unit

Prosync 50/Promig 100, push-pull gun	6263121
Remote control units	
R 20 (2-knob)	6185419
RMT 10, gun remote control unit	6185475
C 100 T, wireless	6185412
External metering device	
PMU 10	6265010
Cables	
Earthing and welding cables when r	requested
Transport units	
P 30 W	6185262
P40	6185264
P 500 (for Promig 501)	6185265
Gun holders	
GH 20	6256020
GH 30	6256030
Hanging devices	
ProMig 501	3135870
ProMig 530	4298180

Interconnection cables for ProMig 5	01, 511, 530				
Water hose (ProMig 511, 1.6 m)	4269330				
Water hose (ProMig 501/530,1.0 m)	4269340				
70-5-WH	6260312				
70-10-GH	6260313				
70-10-WH	6260314				
70-15-GH	6260315				
70-15-WH	6260316				
Interconnection cables for ProMig 100					
50-15-GH	6260211				
50-25-GH	6260213				
70-15-WH	6260225				
70-25-WH	6260227				
Interconnection cables: ProMig 2	200, 300				
70-15-GH	6260325				
70-20-GH	6260327				
70-15-WH	6260335				
70-20-WH	6260337				
The Pro Weld Data system See page 91					

The Kemppi Arc System, See page 88 Wire guide tubes for 2-roll wire feed mechanism Wire ø mm Wire guide tube ø mm Fe, Mc, Fc 0,6...0,8 1,0 3134140 3133700 0,9...1,6 2,0 4285900 -> 1,8 4102283 > brass plastic 3134290 Ss, Al 0,8...1,6 2,5





PainommFe, Ss, Al10.6/0.831338100.6/0.83133810Plain V-groove10.8/0.8 (L)31321000.8/0.8 (L)31332100.8/0.8 (L)3133210I1.0/1.23138650I1.0/1.2 (L)3138200I1.0/1.2 (L)3137300I1.0/1.2 (L)3137300I1.0/1.2 (L)313320I31332003141120I1.0/1.2 (L)313120I1.0/1.2 (L)313320I3133200I3133200Fe, Fc, McI1.0/1.2 (L)3133940I1.0/1.2 (L)3133940I3133940I3133940Fe, Fc, McI1.0/1.2 (L)3133940I1.0/1.2 (L)3133940I3133940I3133940Fe, Fc, McI1.0/1.2 (L)3133940I1.0/1.2 (L)3133940I3133940II3133940Fe, Fc, McI1.0/1.2 (L)3133940II.0/1.2 (L)3133940II.0/1.2 (L)3133940II.0/1.2 (L)I.3/3940Fe, Fc, McI1.0/1.2 (L)3133940II.0/1.2 (L)I.3/3940II.0/1.2 (L)I.3/3940Fe, Fc, McII.0/1.2 (L)I.0/1.2 (L)I.0/1.2 (L)I.0/1.2 (L)I.0/1.2 (L)I.0/1.2 (L)Fe, Fc, McII.0/1.2 (L)I.0/1.2 (L)I.0/1.2 (L)I.0/1.2 (L)I.0/1.2 (L)I.0/1.2 (L)Fe, Fc, McII.0/1.2 (L)I.0/1.2 (L)I.0/1.2 (L)	Feed rolls	2-rc	bll		4-roll			
Fe, S, AlI0.6/0.83133810I0.6/0.83133810Plain V-grooveI0.8/0.8 (L)3143180I0.8/0.8 (L)3143180I1.0/1.2313210I1.0/1.2313320I1.0/1.0 (L)313850I1.0/1.0 (L)313820I1.2/1.2 (L)3137300I1.4/1.6/2.0313380I1.4/1.6313820I1.4/1.6/2.0313380I1.6/1.6 (L)3141120I1.4/1.6/2.0313380Fe, Fc, McI1.0/1.23133940I1.2/1.2 (L)313390Fe, Fc, McI1.4/1.6313390I1.4/1.6/2.0313390I1.6/1.6 (L)3141130I1.4/1.6/2.0313390Fe, Fc, McI1.6/1.6 (L)3141130I1.4/1.6/2.0313390I1.6/1.6 (L)3141130II.4/1.6/2.0313390I1.6/1.6 (L)3141130II.4/1.6/2.0314103I1.6/1.6 (L)314210II.4/1.6 (L)314220I1.6/1.6 (L)314220II.4/1.4 (L)314220I1.6/1.6 (L)314220II.4/1.4 (L)314220I1.6/1.6 (L)314220II.4/1.4 (L)314220I1.6/1.6 (L)314220II.4/1.4 (L)314220I1.6/1.6 (L)314220II.4/1.4 (L)314220III.6/1.6 (L)I.4/1.2 (L)I.4/1.4			ø mm			ø mm		
Plain V-groove I 0.8/0.8 (L) 3143180 I 0.8/0.8 (L) 3143180 I 1.0/1.2 3133210 I 1.0/1.2 3133210 I 1.0/1.0 (L) 3138650 I 1.0/1.0 (L) 3138650 I 1.2/1.2 (L) 3137390 I 1.2/1.2 (L) 3137300 I 1.6/1.6 (L) 313120 I 1.4/1.62.0 313380 I 1.6/1.6 (L) 3141120 I 1.4/1.62.0 313380 I 1.6/1.6 (L) 3141120 I 1.4/1.62.0 313380 Fe, Fc, Mc I 1.0/1.2 3133940 I 1.0/1.2 3133940 I 1.2/1.2 (L) 3133940 I 1.4/1.6/2.0 3133940 I 1.4/1.6 3133940 I 1.4/1.6/2.0 3133940 I 1.4/1.6 3143130 I I.4/1.6/2.0 3134030 I 1.4/1.6 3141130 I I.4/1.6/2.0 3142030 I <td< td=""><td>Fe, Ss, Al</td><td></td><td>0.6/0.8</td><td>3133810</td><td></td><td>0.6/0.8</td><td>3133810</td></td<>	Fe, Ss, Al		0.6/0.8	3133810		0.6/0.8	3133810	
I 1.0/1.2 3133210 I 1.0/1.2 3133210 I 1.0/1.2 3133210 I 1.0/1.0(L) 3138650 I 1.0/1.0(L) 3138650 I I.0/1.0(L) 3137300 I I.0/1.2 3137300 I I.0/1.2 3137300 I I.0/1.2 3137300 I I.2/1.2 (L) 3137300 I I.2/1.2 (L) 3133200 I I.4/1.6/2.0 3133800 I I.4/1.6/2.0 3133800 I I.0/1.2 3133900 I I.1/1.0 3131900 I I.1/1.0	Plain V-groove		0.8/0.8 (L)	3143180		0.8/0.8 (L)	3143180	
Image: Section of the section of th			1.0/1.2	3133210		1.0/1.2	3133210	
I 1.2/1.2 (L) 3137390 I 1.2/1.2 (L) 3137390 I 1.2/1.2 (L) 3137390 I 1.4-1.6 3133820 I 1.4-1.6/2.0 3133820 I 1.6/1.6 (L) 3141120 I I.6/1.6 (L) 3141120 I 1.6/1.6 (L) 3141120 I I.6/1.6 (L) 313380 F F I 1.0/1.2 3133940 I I.0/1.2 3133940 F F I 1.0/1.2 3133940 I I.0/1.2 3133940 F F I 1.0/1.2 3133940 I I.0/1.2 3133940 Knurled V-groove I 1.2/1.2 (L) 3133940 I I.41.6/2.0 3133940 I 1.6/1.6 (L) 3141300 I I.41.6/2.0 3133940 I I.6/1.6 (L) 3141130 I I.41.6/2.0 314030 I I.6/1.6 (L) 3142210 I I.41.6/2.0 3142210 F F I.4/1.4 (L) 3142200 I I.4/1.4 (L) 3142200			1.0/1.0 (L)	3138650		1.0/1.0 (L)	3138650	
I 1.4-1.6 3133820 I 1.4-1.6/2.0 3133820 I 1.6/1.6 (L) 3141120 I I.6/1.6 (L) 3141120 I 1.6/1.6 (L) 3141120 I I.6/1.6 (L) 3133800 I 1.6/1.6 (L) 3141120 I I.6/1.6 (L) 3133800 Fe, Fc, Mc I 1.0/1.2 3133940 I I.0/1.2 3133940 Knurled V-groove I 1.2/1.2 (L) 3137380 I I.4-1.6/2.0 3133940 I 1.4/1.6 (L) 3133940 I I.4-1.6/2.0 3133940 I 1.6/1.6 (L) 3133940 I I.4-1.6/2.0 3133940 I 1.6/1.6 (L) 3141300 I I.4-1.6/2.0 3134030 I 1.6/1.6 (L) 3141300 I I.6/1.6 (L) 314210 Fe, Fc, Mc, Se, Al I 1.4/1.4 (L) I.412200 I I.4/1.4 (L) I.4/1.4 (L) I.6/1.6 (L) I.4/1.4 (L) I.6/1.6 (L) I.6/1.6 (L) I.4/1.2 (L) I.6/1.6 (L) I.4/1.2 (L) I.6/1.6 (L) I.4/1.2 (L) I.6/1.6 (L) <			1.2/1.2 (L)	3137390		1.2/1.2 (L)	3137390	
I.6/1.6 (L) 3141120 I.6/1.6 (L) 3141120 I.6/1.6 (L) 3141120 I.2/1.2 (L) I.3/33940 I.2/1.2 (L) I.3/33940 I.2/1.2 (L) I.3/33940 Fe, Fc, Mc I.2/1.2 (L) I.3/33940 I.2/1.2 (L) I.3/33940 I.2/1.2 (L) I.3/33940 Knurled V-groove I.2/1.2 (L) I.3/33900 I.2/1.2 (L) I.3/33940 I.2/1.2 (L) I.3/33940 I.2/1.2 (L) I.3/133900 I.2/1.2 (L)			1.4-1.6	3133820		1.4-1.6/2.0	3133820	
Fe, Fc, Mc I 1.0/1.2 3133940 I 1.0/1.2 3133940 I 1.0/1.2 3133940 Knurled V-groove I 1.2/1.2 (L) 3137380 I 1.2/1.2 (L) 3133940 I 1.2/1.2 (L) 3133940 I 1.2/1.2 (L) 3133940 I 1.2/1.2 (L) 3133940 I I.4.1.6/2.0 3141130 I I.4.1.6/2.0 3134060 IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII			1.6/1.6 (L)	3141120		1.6/1.6 (L)	3141120	
Fe, Fc, Mc I 1.0/1.2 3133940 I 1.0/1.2 3133940 Knurled V-groove I 1.2/1.2 (L) 3137380 I 1.2/1.2 (L) 3133940 I 1.2/1.2 (L) 3137380 I 1.2/1.2 (L) 3133940 I 1.2/1.2 (L) 3133940 I 1.4-1.6 3133940 I 1.4/1.6/2.0 3133940 I 1.4/1.6/2.0 3133940 I 1.6/1.6 (L) 3141130 I I.6/1.6 (L) 314130 I I.6/1.6 (L) 314130 Fe, Fc, Mc, I 1.2/1.2 (L) 3142210 I I.2/1.2 (L) 3142200 I I.2/1.2 (L) IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII						2.4	3133880	
Fe, Fc, Mc I 1.0/1.2 3133940 I 1.0/1.2 3133940 Knurled V-groove I 1.2/1.2 (L) 3137380 I 1.2/1.2 (L) 3137380 I 1.2/1.2 (L) 3137380 I 1.2/1.2 (L) 3133940 I 1.2/1.2 (L) 3133940 I 1.4-1.62 3133940 I 1.4-1.6/2.0 3133940 I 1.6/1.6 (L) 3141130 I 1.4/1.6 (L) 314130 Fe, Fc, Mc, I 1.2/1.2 (L) 3142210 I 2.4 3142210 Fe, Fc, Mc, I 1.2/1.2 (L) 3142210 I 1.4/1.4 (L) 3142210 Trapezoid groove I 1.6/1.6 (L) 3142200 I 1.6/1.6 (L) 3142200 I 1.6/1.6 (L) 3142200 I 2.0/2.0 (L) 3142230 I I I I I I IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII						3.2	3133910	
Knurled V-groove 1.2/1.2 (L) 3137380 I 1.2/1.2 (L) 3137380 1.2/1.2 (L) 3137380 I 1.4-1.6 3133990 I 1.4-1.6/2.0 3133990 I 1.6/1.6 (L) 3141130 I 1.6/1.6 (L) 3141130 I 1.6/1.6 (L) 3141130 I I.6/1.6 (L) 314130 I 1.6/1.6 (L) 3141130 I I.6/1.6 (L) 314030 Fe, Fc, Mc, I 1.2/1.2 (L) 3142210 I I.2/1.2 (L) 3142200 Fe, Fc, Mc, I 1.4/1.4 (L) 3142200 I I.4/1.4 (L) 3142200 Trapezoid groove I.6/1.6 (L) 3142200 I I.6/1.6 (L) 3142200 I 1.6/1.6 (L) 3142200 I I.6/1.6 (L) 3142200 I I.6/1.6 (L) 3142200 I I.6/1.6 (L) 3142200 I I.6/1.6 (L) III III III IIII IIII IIIIIIIII	Fe, Fc, Mc		1.0/1.2	3133940		1.0/1.2	3133940	
Image:	Knurled V-groove		1.2/1.2 (L)	3137380		1.2/1.2 (L)	3137380	
I.6/1.6 (L) 3141130 I.6/1.6 (L) 3141130 I.6/1.6 (L) 3141130 I.2/1.2 (L) I.2/1.2 (L) <td></td> <td></td> <td>1.4-1.6</td> <td>3133990</td> <td></td> <td>1.4-1.6/2.0</td> <td>3133990</td>			1.4-1.6	3133990		1.4-1.6/2.0	3133990	
Fe, Fc, Mc, Ss, Al 1.2/1.2 (L) 3142210 A 1.2/1.2 (L) 3142200 A </td <td></td> <td></td> <td>1.6/1.6 (L)</td> <td>3141130</td> <td></td> <td>1.6/1.6 (L)</td> <td>3141130</td>			1.6/1.6 (L)	3141130		1.6/1.6 (L)	3141130	
Fe, Fc, Mc, Ss, Al 1.2/1.2 (L) 3142210 4 1.2/1.2 (L) 3142210 1.2/1.2 (L) 3142200 1.2/1.2 (L) 3142200 31						2.4	3134030	
Fe, Fc, Mc, Ss, Al 1.2/1.2 (L) 3142210 1.2/1.2 (L) 3142210 Trapezoid groove 1.4/1.4 (L) 3142200 1.4/1.4 (L) 3142200 Trapezoid groove 1.6/1.6 (L) 3142200 1.6/1.6 (L) 3142200 V 1.6/1.6 (L) 3142200 1.6/1.6 (L) 3142200 V 1.6/1.6 (L) 3142200 1.6/1.6 (L) 3142200 V V V V 3142200						3.2	3134060	
SS, Al 1.4/1.4 (L) 3142220 1.4/1.4 (L) 3142220 Trapezoid groove 1.6/1.6 (L) 3142200 1.6/1.6 (L) 3142200 L L L L	Fe, Fc, Mc,		1.2/1.2 (L)	3142210		1.2/1.2 (L)	3142210	
Trapezoid groove 1.6/1.6 (L) 3142200 1.6/1.6 (L) 3142200 2.0/2.0 (L) 3142230 2.4 (L) 3142240	SS, AI		1.4/1.4 (L)	3142220		1.4/1.4 (L)	3142220	
2.0/2.0 (L) 3142230 2.4 (L) 3142240	Trapezoid groove		1.6/1.6 (L)	3142200		1.6/1.6 (L)	3142200	
2.4 (L) 3142240						2.0/2.0 (L)	3142230	
						2.4 (L)	3142240	

(L) = Fitted with ball bearings







CONSUMABLE PARTS FOR WIRE FEED MECHANISMS



WIRE GUIDE TUBES



Kemppi's wire liners are strong and durable. The sturdy and stiff spiral supports the filler wire excellently and prevents it from bending too much when installing in the gun. The liners have the same colour as the corresponding feed rolls of the same wire diameter in Kemppi wire feeders. The selection table for consumable parts includes the liner colours, which fit to the gun in question. The liners are also suitable for welding of cored filler wires of the corresponding wire diameter. Kemppi's new solution for aluminium, stainless steel and acid-resistant steel welding is the two-layer DL-teflon liner. It is suitable for all common wire diameters and materials, and all Kemppi MIG guns.

Steel wires/cored filler wires	Cored filler wire ø	Ordering code, 3 m	Ordering code, 4.5 m
White	0.6–0.8	4188571	4188572
Red	0.9–1.2	4188581	4188582
Yellow	1.4–1.6 (1.2)	4188591	4188592
Green	1.6–2.0	4188601	4188602
Black	2.0–2.4	4188611	4188612
Blue	2.8–3.2	4188621	4188622
Aluminium			
DL-teflon wire liner	0.8–1.6	4300840	4300850
- Neck section (spiral/Teflon)		4302150	4302150
Stainless steel			
DL-teflon wire liner	0.8–1.0	4302680	4302690
- Neck section (spiral/Teflon)		4302740	4302740
DL-teflon wire liner	1.2–1.6	4302700	4302710
- Neck section (spiral/Teflon)		4302750	4302750
WeldSnake™	Cored filler wire ø	Ordering code, 6 m	Ordering code, 8 m
DL-teflon wire liner, AL	1.0–1.6	4304100	4304110
DL-teflon wire liner, SS	1.0	4304120	4304130
DL-teflon wire liner, SS	1.2–1.6	4304140	4304150



MIG WELDING GUNS AND CONSUMABLE PARTS



Technical specifications and ordering codes

4.5 m

6252514

code

MMT		MMT 25	MMT 27	MMT 32	MMT 35	MMT 42	MMT 30W	MMT 42W	MMT 52W
Load capacity,	35 %	250 A	270 A	320 A	350 A	420 A	-	-	-
$Ar + CO_2$	100 %	-	-	-	-	-	300 A	400 A	500 A
Cooling		Air	Air	Air	Air	Air	Liquid	Liquid	Liquid
Filler wires	ømm	0.6–1.2	0.6–1.2	0.8–1.6	0.8–1.6	0.8–1.6	0.8–1.6	0.8–1.6	0.8–1.6
Length / Ordering	3 m	6252513MMT	6252713MMT	6253213MMT	6253513MMT	6254213MMT	6253043MMT	6254203MMT	6255203MMT
code	4.5 m	6252514MMT	6252714MMT	6253214MMT	6253514MMT	6254214MMT	6253044MMT	6254204MMT	6255204MMT
PMT		PMT 25	PMT 27	PMT 32	PMT 35	PMT 42	PMT 30W	PMT 42W	PMT 52W
Load capacity, $Ar + CO_2$	35 %	250 A	270 A	320 A	350 A	420 A			
	100 %						300 A	400 A	500 A
Cooling		Air	Air	Air	Air	Air	Liquid	Liquid	Liquid
Filler wires	ø mm	0.6–1.2	0.6–1.2	0.8–1.6	0.8–1.6	0.8–1.6	0.8–1.6	0.8–1.6	0.8–1.6
Length / Ordering	3 m	6252513	6252713	6253213	6253513	6254213	6253043	6254203	6255203

6253514

6254214

6253044

6254204

6255204

35

6253214

6252714 The optional gun remote control unit RMT 10 (6185475). The gun's standard delivery has welding set for steel wire.

WS		WS35	WS30W	WS42W	MMG	MMG18	MMG20	
Load capacity, $Ar + CO_2$		300 A/35 %	250 A/100 %	300 A/100 %		150 A (35%)	180 A (25 %)	
Cooling		Air	Liquid	Liquid		Air	Air	
Filler wires ø mm	Ss	1.0	1.0–1.2	1.0–1.2	Fe	0.6–1.0	0.6–1.0	
	AI	1.2	1.2 (1.6)	1.2 (1.6)	Ss, Al		0.8–1.0	
Ordering codes	6 m, Al 1.2	6253516A12	6253046A12	6254206A12	3 m	6250180	6250200	
	6 m Ss 1.0	6253516S10	6253046S10	6254206S10	MMG18 and MMG20 guns are used only in MinarcMig equipment. Wire liners:			Mig
	6 m Ss 1.2	-	6253046S12	6254206S12				
	8 m, Al 1.2	-	6253048A12	6254208A12				
	8 m Ss 1.0	-	6253048S10	6254208S10	MMG18	MMG18 0.6–1.0 mm (Fe)		4307650
	8 m Ss 1.2	-	6253048S12	6254208S12	MMG20	0.6–1.0 mm (Fe)		4307650
The ordering number comprises the gun, the DL Teflon wire liner and 5 contact tips.					0.6–1.0 mm (Ss. /	AI)	4307660	


TIG WELDING

In TIG welding (tungsten inert gas), the welding arc is formed between a nonconsumable tungsten electrode and the base material. Argon, which is most commonly used as the shielding gas, is fed through the TIG torch to shield the electrode and molten weld pool. The current is either alternating or direct current, which can be pulsed as necessary.

This type of welding can be done with or without filler wire. If filler wire is used, it is fed to the weld pool separately, either manually or mechanically.

TIG welding is a popular process for applications where high product quality is necessary, such as piping, food-industry applications, metal furniture, and in the energy sector.

DC TIG welding

The direct-current TIG welding process is suitable for welding unalloyed and low-alloy steels, stainless steels and titanium.

The Kemppi welding devices suitable for DC TIG welding include the MasterTig and MasterTig MLS[™] products, the Kemppi Pro Evolution welding system, and the MinarcTig[™] models. The Minarc MMA welding machines can also be equipped with a TIG torch.

AC TIG welding

Alternating-current TIG, or AC TIG welding is particularly suitable for welding aluminium and aluminium alloys. The primary area of application for AC TIG welding is use with thin materials, but the process is also used frequently in repair welding for thicker aluminium pieces.

Kemppi devices suitable for ACTIG welding include for instance the MasterTig AC/DC and MasterTig MLS[™] ACDC models. These devices are also suitable for DC welding, so they offer a versatile solution for all weldable base materials.

MIX TIG welding

MIX TIG is a special TIG welding method used in the MasterTig MLS ACDC welding devices. It uses both direct and alternating current. It combines the benefits of AC and DC welding, as alternating current provides good cleaning effect while direct current guarantees good penetration.

This method is suitable for the same applications as AC TIG welding. The MIX TIG method is particularly suitable for applications, where thin and thick pieces are joined together.



MINARCTIG™

The marvel of the welding market. Small but effective machine, which includes all basic properties required in TIG and MMA welding–and even more in specially equipped MLP models.

In brief

Light weight and a compact size give better reach

Great voltage reserve increases ease of operation

Minilog and pulse functions improve welding productivity

Steady, easily targeted arc makes welding easy

Applications

Installation and set-up Repair and maintenance Thin sheet metal fabrication workshops Chemical and process industry

Little giants in two power categories

The MinarcTig product range is suitable for DC TIG and MMA welding. The dual-process function makes these machines versatile aids for welders. In jobs requiring great precision, you can use TIG welding and, for the welding of thick, solid seams, the MMA method works best.

MinarcTig 180 and **180 MLP** are machines that can be connected to standard single-phase network, and their load capacity is top-of-the-range for their size.

MinarcTig 250 and **250 MLP** are versatile and very powerful machines that can be connected to the three-phase network. In TIG welding, you can get current of up to 250 A.

In MLP models the control panel includes some special features to make welding easier and more efficient, such as the Minilog function and the easy-to-use pulse welding function.

Power and feautures for both large and small jobs

MinarcTig products are suitable for both indoor and outdoor use, for thick and thin materials and for both alloyed an unalloyed metals. You can use them to weld both demanding root passes and filler passes requiring high efficiency.

The MinarcTig's steady arc, speed and user-friendly operation improve productivity in welding. The device is suitable for many kinds of user environments: for installation-, repair- and maintenance work in different fields of industry or at institutes of education.



MinarcTig		180/180 MLP	250/250 MLP
Connection voltage	50/60 Hz	1~, 230 V (±15 %)	3~, 400 V (-20+15 %)
Rated power at maximum current	TIG	6.7 kVA	7.2 kVA
	MMA	7.0 kVA	8.2 kVA
Connection cable	H07RN-F	3G2.5 (3 m)	4G1.5 (5 m)
Fuse, slow		16 A	10 A
Load capacity 40° C	35 % ED TIG	180 A/17.2 V	250 A/20.1 V
	100 % ED TIG	120 A/14.8 V	160 A/16.4 V
	35 % ED MMA	140 A/25.6 V	220 A/28.8 V
	100 % ED MMA	100 A/24 V	150 A/26.0 V
Welding range	TIG	5 A/10.2 V-180 A/ 17.2 V	5 A/10.2 V-250 A/ 20.1 V
	MMA	10 A/20.4 V-140 A/ 25.6 V	10 A/20.4 V-220 A/ 28.8 V
Open circuit voltage		95 V	95 V
Power factor at maximum current	TIG	0.62	0.92
	MMA	0.63	0.91
Efficiency at maximum current	TIG	0.75	0.80
	MMA	0.81	0.86
Stick electrode	ø mm	1.5–3.25	1.5–5.0
External dimensions	L x W x H, mm	400 x 180 x 340	400 x 180 x 340
Weight	kg	7.8 (8.4 with connection cable)	10.7 (11.6 with connection cable)

MinarcTig™ 180				
Power source, TTC 160; 4 m, earthing cable; 16 mm ² 5 m		MINARC180TTC4		
Power source, TTC 160; 8 m, earthing cable; 16 mm ² 5 m		MINARC180TTC8		
Power source, TTC 160; 4 m, earthing cable; 16 mm ² 5 m		MINARC180MLPTTC4		
Power source, TTC 160; 8 m, earthing cable; 16 mm ² 5 m		MINARC180MLPTTC8		
MinarcTig™ 180 VRD AU				
Power source, TTC 160; 4 m, earthing cable; 16 mm ² 5 m		MINARC180TTC4AU		
Power source, TTC 160; 8 m, earthing cable; 16 mm ² 5 m		MINARC180TTC4AU		
MinarcTig™ 250				
Power source, TTC 160; 4 m, earthing cable; 25 mm ² 5 m		MINARC250TTC164		
Power source, TTC 160; 8 m, earthing cable; 25 mm ² 5 m		MINARC250TTC168		
Power source, TTC 220; 4 m, earthing cable; 25 mm ² 5 m		MINARC250TTC224		
Power source, TTC 220; 8 m, earthing cable; 25 mm ² 5 m		MINARC250TTC228		
Power source, TTC 160; 4 m, earthing cable; 25 mm ² 5 m		MINARC250MLPTTC164		
Power source, TTC 160; 8 m, earthing cable; 25 mm ² 5 m		MINARC250MLPTTC168		
Power source, TTC 220; 4 m, earthing cable; 25 mm ² 5 m		MINARC250MLPTTC224		
Power source, TTC 220; 8 m, earthing cable; 25 mm ² 5 m		MINARC250MLPTTC228		
Accessories				
Welding cable	16 mm² 5 m	6184103 (180/180 MLP)	$25 \text{ mm}^2 5 \text{ m}$	6184201 (250/250 MLP)
Earthing cable	16 mm² 5 m	6184113 (180/180 MLP)	25 mm² 5 m	6184211 (250/250 MLP)
Torch TTC 160, 4 m		627016004		
Torch TTC 160, 8 m		627016008		
Torch TTC 220, 4 m		627022004		
Torch TTC 220, 8 m		627022008		
Gas flow regulator AR/clock		6265136		
Remote control unit for TIG torch RTC 10		6185477		
Remote control unit for TIG torch RTC 20		6185478		
Remote control unit R10, 5 m		6185409		



MASTERTIG AC/DC 3500W

A powerful TIG welding machine suitable for all types of materials, with many functions and several control panel options.

In brief

Reliable arc ignition and dependable functionality.

A wide selection of functions provide high-quality welds in all situations.

Automatic AC balance increases the quality and speed of welding.

Precise penetration control using the AC frequency adjustment.

Welding parameters and costs under strict control.

Applications

Installation and set-up Repair and maintenance Thin sheet metal fabrication workshops Chemical and process industry

Welding power and precise control

The Mastertig AC/DC 3500W is a three-phase TIG welding machine equipped with extensive control options and both AC and DC TIG welding functions. It can also be used as an efficient power source for MMA welding.

There are three control panel options: the ACDC basic control panel, the ACDC Minilog panel containing special functions, and the ACDC Pulse panel equipped with the most diverse set of functions.

All the necessary functions needed for TIG welding are included in the basic control panel, and the Minilog and Pulse panels contain plenty of special functions. The control panel safety lock prevents unauthorized use of the device.

The Mastertig AC/DC 3500W is equipped with a cooling unit for liquid-cooled torches.

Precise control of welding current

The Kemppi MLS technology (multi logic system) used in the Mastertig AC/DC device along with the diverse control panel options enable very precise control of the welding current in different phases of the welding task.

When the shape of the arc, the weld penetration, the cleaning effect, as well as the other features are under precise control, this keeps also the costs under control and ensures that the quality of the welds remains on high level.



MasterTig AC/DC 3500W		
Connection voltage	3~, 50/60 Hz	400 V (±10 %)
Rated power, maximum	TIG	11.7 kVA
	MMA	15.7 kVA
Fuse, delayed	400 V	20 A
Load capacity 40° C	60 % TIG AC	350 A/24 V
	100 % TIG AC	280 A/21.2 V
	60 % MMA DC	350 A/34 V
	100 % MMA DC	280 A/31.2 V
Welding range	TIG DC	3 A/10 V-350 A/24 V
	AC	10 A/10 V-350 A/24 V
	MMA	10 A/20 V-350 A/34 V
Open circuit voltage	AC, DC	70 V DC
Power ratio at maximum current		0.9
Efficiency at maximum current		0.80
External dimensions	L x W x H, mm	690 x 260 x 870







Mastertig AC/DC 3500W	6163505
Control panels	
ACDC basic panel	6162801
ACDC Minilog panel	6162802
ACDC Pulse panel	6162803
Torches	Kemppi TTK, page 53
Cables	Earthing and welding cables when requested
Transport units	
T120	6185252
Т 22	6185256
Gun holder	
GH 20	6256020
Remote control units	
C 100C, 5 m	6185410
C 100D, 5 m	6185413
C 100AC, 10 m	6185417
C 100F, 5 m	6185405



MasterTig MLS™

Diverse DC TIG welding. This product series offers devices of several power levels and a wide range of possibilities, and their sturdy construction can endure even the roughest handling.

In brief

The compact size ensures effortless mobility

ICS cooling technology reduces the number of failures due to impurities

Quick pulse function increases the welding speed and quality of the welds

Sturdy structure ensures durability even in a demanding outdoor environment

Also suitable for generator use

Applications

Installation and set-up Repair and maintenance Thin sheet metal fabrication workshops Chemical and process industry

A product series for many applications

The MasterTig MLS product series devices are compact and sturdy TIG welding inverters. They are suitable for TIG and MMA welding using DC current.

MasterTig MLS 2000 is a model that uses 1-phase current, which has a load capacity of up to 200 amps using a 30% duty cycle.

MasterTig MLS 3000 and **4000** are more powerful 3-phase current device models.

Mastertig MLS device packages using liquid-cooled TIG torches can be equipped with the new Kemppi **MasterCool 10** cooling unit based on new HydroCool technology. Its functions are controlled from the power source control panel.

Reducing open-circuit voltage is possible by utilizing a purpose-built VRD accessory (voltage reduction device).

Functions for all DC TIG and MMA welding needs

The MasterTig MLS product series contains a range of four control panel options. The control panels utilize advanced Kemppi MLS technology (multi logic system) offering a wide array of features, which can be used to precisely control the arc and weld pool behavior in different environments and with different base materials.



MasterTig MLS™		2000	3000	4000
Connection voltage	50/60 Hz	1~, 230 V -10 % +10 %	3~, 400 V -15 % +20 %	3~, 400 V -15 % +20 %
Rated power at max current	TIG	6.5 kVA	8.4 kVA	13.8 kVA
	MMA	7.1 kVA	9.4 kVA	15 kVA
Connection cable	HO7RN-F	3G2.5 (3.3 m)	4G1.5 (5 m)	4 G2.5 (5 m)
Fuse, delayed		16 A	10 A	16 A
Load capacity 40° C	30 % ED TIG	200 A/18 V	300 A/22 V	400 A/26 V
	60 % ED TIG	150 A/16 V	230 A/19.2 V	320 A/22.8 V
	100 % ED TIG	130 A/15.2 V	200 A/18 V	270 A/20.8 V
	35 % ED MMA	160 A/26.4 V	-	-
	40 % ED MMA	-	250 A/30 V	350 A/34 V
	60 % ED MMA	140 A/25.6 V	205 A/28.2 V	285 A/31.4 V
	100 % ED MMA	120 A/24.8 V	160 A/26.4	220 A/28.8 V
Welding range	TIG	5 A/10 V-200 A/18 V	5 A/10 V-300 A/22 V	5 A/10 V-400 A/26 V
	MMA	10 A/20.5 V-160 A/26.4 V		
Open circuit voltage		80 V DC	80 V DC	80 V DC
Power factor at max current		0.75	0.95	0.95
Efficiency at maximum current		0.80	0.86	0.86
Stick electrode	ø mm	1.54.0	1.55.0	1.56.0
External dimensions	L x W x H, mm	410 x 180 x 390	500 x 180 x 390	500 x 180 x 390
Weight	kg	15	22	23

Cooling units		MasterCool 10
Connection voltage	50/60 Hz	400 V (-15+20 %)
		230 V (-15+10 %)
Rated power	100 % ED	250 W
External dimensions	L x W x H, mm	500 x 180 x 260
Weight	kg	10

Power Sources	
MasterTig 2000 MLS™	6112200
MasterTig 3000 MLS™	6114300
MasterTig 4000 MLS™	6114400
Cooling units	
MasterCool 10	612235001
Control panels	
MTL	6116000
MTX	6116005
MTM	6116010
MTZ	6116015
Torches on page 53	

Transport units	
T 100	6185250
T130	6185222
T200	6185258
Remote control units	
R 10, 5 m	6185409
R 10, 10 m	618540901
R 11F foot pedal	6185407
R 11T, wireless	6185442

Adapters	
For air-cooled TTK torches	3148720
For liquid-cooled TTK torches	3148720 + 3148710
Cables	
Remote control cable,10 m (R 10)	6185481
Earthing and welding cables when r	equested



MTL control panel contains all the basic features needed in MMA and TIG welding.

Examples of MTL panel functions:

- Arc dynamics control. With this setting you can prevent electrode from sticking to the work piece and reduce the amount of welding spatter.
- Ignition pulse control and gas test
- Torch operating mode selection (2T/4T)
- HF ignition or contact ignition selection for TIG welding
- Pre-gas and post-gas control
- Welding current upslope and downslope control



MTX control panel contains all the MTL panel features and, in addition, is equipped with quick pulse and 4T LOG functions.

Examples of MTX panel functions:

- When using the 4T LOG function, the search arc ensures a precise start of the weld, and the tail arc fills the final craters and prevents welding errors at the end.
- Synergic quick pulse for TIG welding
- Control of the pulse ratio, pulse frequency and base current
- TIG spot welding automation

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MTM control panel contains all the MTX panel features with the exception of the 4T LOG functions. In addition, the MTM panel includes the following features:

- Memory channels that can be used to save settings for easy and swift access whenever needed.
- Minilog function, which enables you to switch between two current levels during the welding just by pressing the torch switch.



MTZ control panel contains all the MTX panel features and, in addition, is equipped with the Minilog feature. In addition, the MTZ panel includes following features:

- Minilog
- Spot welding function
- TIG pulse features: long pulse, quick pulse, and synergic pulse





MASTERTIG MLS™ ACDC

A versatile line of products for the TIG welding of aluminium and stainless steel and for MMA welding. Suitable for both manual and mechanised welding.

In brief

Suitable for all weldable materials and all types of current

The benefits of AC and DC for the same weld using the MIX TIG[™] function

High-quality and fast tack welds using the MicroTack[™] function

Special functions for ease and productivity in welding

Can be connected to either the single- or three-phase networks

Applications

Metal fabrication workshops Shipyards and offshore industry Chemical and process industry Mechanised welding

Versatile masters of TIG welding

The MasterTig MLS ACDC models are suitable for all metals, but particularly for the TIG welding of aluminium and stainless steel and for MMA welding.

This product family offers the most versatile and advanced devices for TIG welding. They have been developed based on the latest Kemppi welding research.

MasterTig MLS 2300 ACDC is a TIG welding machine that can be connected to the single-phase network. Its welding current is exceptionally high in relation to its size, thanks to special PFC technology.

MasterTig MLS 3000/3003 ACDC models are very efficient and versatile TIG welding machines, used in the three-phase network. The connection voltage of the 3003 model can be 230–400 V.

A reliable arc for all types of current

It is possible to use these machines with any type of current: AC, DC+ and DC-. In addition, the MIX TIG function is also available, i.e. a combination of AC and DC.

The digital ACS- and ACX control panels offer all the basic functions needed for TIG welding, as well as many useful additional functions aimed at improving the quality and productivity of welding.

Both of the MasterTig MLS ACDC amperage classes have specific cooling units for water-cooled torches. MasterCool 30 is meant for three-phase machines and MasterCool 20 for single-phase machines.

MasterTig MLS ACDC		2300 (2300 AU)	3000 (3000 AU)	3003
Connection voltage	50/60 Hz	1~, 230 V (±15 %)	3~, 400 V (±10 %)	3~, 230 V (-10 %)460 V (+10 %)
Rated power at maximum current	TIG	5.7 kVA	13.3 kVA	9.2 kVA
	MMA	6.0 kVA	14.4 kVA	10 kVA
Connection cable	H07RN-F	3G2.5 (3.3 m)	4G2.5 (5 m)	4G2.5 (5 m)
Fuse recommendation (slow)		15 A	16 A	20/16 A
Load capacity 40° C	40 % ED TIG	230 A/19.2 V	300 A/22 V	300 A/22 V
	60 % ED TIG	200 A/18 V	230 A/19.2 V	230 A/19.2 V
	100 % ED TIG	170 A/16.8 V	190 A/17.6 V	190 A/17.6 V
	40 % ED MMA	180 A/27.2 V	250 A/30 V	250 A (230 V AC 30 %)/30 V
	60 % ED MMA	150 A/26 V	230 A/29.2 V	230 A/29.2 V
	100 % ED MMA	120 A/24.8 V	190 A/27.6 V	190 A/27.6 V
Welding range	TIG	3 A/10 V-230 A/19.2 V	3 A/10.0 V-300 A/22	V 3 A/10.0 V–300 A/22 V
	MMA	10 A/20.5 V-180 A/27.2 V	10 A/20.5 V-250 A/30	0V 10 A/20.5 V–250 A/30 V
Open circuit voltage		58 V DC (20 V DC/VRD)	63 V DC (20 V DC/VR	D) 58 V DC
Power factor at maximum current		0.99	0.62	0.95
Efficiency at maximum current		0.82	0.83	0.81
Stick electrode ø mm	MMA	1.5–4.0	1.5–5.0	1.5–5.0
External dimensions	L x W x H, mm	430 x 180 x 390	500 x 180 x 390	500 x 180 x 390
Weight	kg	15	23	25
Cooling unit		MasterCool 20		MasterCool 30
Connection voltage		230 V (±15 %)		24 V DC
Rated power	100 % ED	50 W		50 W
Cooling power		1.0 kW		1.0 kW
Maximum pressure		4.0 bar		4.0 bar
Recommended cooling liquid		20-40 % ethanol/water mixture		20–40 % ethanol/water mixture
Tank volume		31		31
External dimensions	L x W x H, mm	500 x 180 x 260		500 x 180 x 260
Weight	kg	8		8

Ordering codes

Power Sources	
MasterTig MLS 2300 ACDC	6162300
MasterTig MLS 2300 ACDC VRD AU	6162300AU
MasterTig MLS 3000 ACDC	6163000
MasterTig MLS 3000 ACDC VRD	6163000VRD
MasterTig MLS 3003 ACDC	6163003
Control panels	
ACS	6162805
ACX	6162804
Welding cable	
16 mm², 5 m	6184103
25 mm², 5 m	6184201
25 mm², 10 m	6184202
35 mm², 5 m	6184301
Earthing cable	
16 mm², 5 m	6184113
25 mm², 5 m	6184211
25 mm², 10 m	6184212
35 mm², 5 m	6184311

Gas flow gauge AR/clock	6265136
Cooling units	
MasterCool 20	6162900
MasterCool 30	6163900
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
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

Remote control units	
RTC 10	6185477
RTC 20	6185478
R 10, 5m	6185409
R11F	6185407
Transport units	
T130	6185222
T110	6185251

The control panels used in MasterTig MLS ACDC units operate using DC MLS[™] logic. You can select a control panel according to your needs. All the necessary functions for TIG welding are included in the basic panel. The panel equipped with special features also offers additional functions that improve welding comfort, quality, and productivity.



ACS control panel is the basic panel of MasterTig MLS ACDC. It includes all the necessary functions for efficient and productive TIG welding.

All current types: AC, DC-, DC+

- MIX TIG^{T}, i.e. a combination of AC and DC
- Pre and post gas adjustment
- Hot start function
- Welding current upslope and downslope control
- Quick setup function for speedy adjustments
- Torch operating mode selection (2T/4T)
- TIG arc contact and HF ignition
- Remote control selection and control range setting
- Torch cooling fluid refill function
- Gas test function

CONTROL PANELS FOR MASTERTIG MLS ACDC

ACX control panel includes all the features of the basic panel, but you also receive several functions that simplify and speed up welding.

- MicroTack[™] is a very fast and efficient tack welding function
- Pulse features: long pulse and synergic pulse
- The 4T LOG function makes it easy to start and stop welding
- Minilog function enables you to switch between two current levels during the welding just by pressing the torch switch.
- The memory function enables easier use of previously used settings
- Memory channels can be used to store user-specific settings





ProTig 410

A detachable TIG ignition unit for professional use representing the well-known Kemppi Pro quality. Precise welding parameter control and a diverse selection of functions.

In brief

Trouble-free arc ignition and steady burn

The device can be easily detached and moved to the welding site.

The safety voltage of the TIG unit ensures safe use

Wide selection of functions increases welding quality and productivity

Suitable for:

Repair and maintenance Thin sheet metal fabrication workshops Chemical and process industry Shipyards and offshore industry

Kemppi Pro Evolution in TIG welding

ProTig 410- is an arc ignition and control device used in TIG welding along with Kemppi Pro Evolution power sources. The device also enables the use of the Kemppi Pro Evolution welding system in TIG welding. The machine can also be used for MMA welding.

ProTig 410 is designed for professional use. It ensures the trouble-free ignition and steady burn of the arc allowing TIG welding to be effortless even on demanding welding objects.

The unit can be attached on top of the Kemppi Pro Evolution power source, but it can also be easily detached and moved to the welding site on its standard frame. Additional reach is provided by the remote control option.

An extensive range of adjustments bring fluency to welding

Two control panel options are available for the ProTig 410 ignition unit. They include the selection of ignition methods and welding parameters as well as the save settings function, which enables easier use of previously used settings.

The reliable ignition and steady burn of the arc, as well as the diverse selection of functions, are the Kemppi Pro Evolution qualities that increase the productivity and weld quality also in TIG welding.



ProTig 410		
Operating voltage		50 V DC
Rated power		50 W
Load capacity 40° C	60 % ED	400 A/26 V
	100 % ED	310 A/23 V
External dimensions	L x W x H, mm	615 x 260 x 400
Weight	kg	17
Power source technical specifications on page 30		

Power source technical specifications on page 5

Ordering codes

Power Sources	
Kemppi PRO 3200 Evolution	6131320
Kemppi PRO 4200 Evolution	6131420
Kemppi PRO 5200 Evolution	6131520
TIG ignition unit Protig 410	6271262
Control panels for TIG welding	
TL-operation panel	6271265
TX-operation panel	6271266

Remote control units	
R 10 (1-knob)	6185409
R 10F, foot pedal	6185406
R 10F, extension cable 10m	6185482
TTK TIG torches on page 53	
Cooling units	
Procool 10	6262012
Procool 30	6262016

Transport units	
P 30 W	6185262
P40	6185264
P40L	6185264L
Interconnection ca	bles
50-1-G	6271906
50-1-W	6271907
50-10-GH	6271913
50-10-WH	6271914
Earthing and wolding	cables when requested

Earthing and welding cables when requested.

ProTig control panels



TL-operation panel

- Control of welding parameters
- Ignition method selection: HF or contact ignition
- Welding process selection: TIG or MMA welding
- Torch operating mode selection: 2T or 4T



In addition, the TX panel includes

- Selection of welding manner: continuous welding, spot welding or pulse welding
- Minilog
- Pre-programming and storing of welding parameters
- Learning function

Scratch and contact TIG torches

Kemppi's TIG torch range includes three torches equipped with a torch neck shielding gas valve. This also makes it possible to use these TIG torches with MMA power sources.

In manual metal arc welding (MMA), the TIG arc can normally be ignited only with the scratch method, and therefore these torches are called scratch-start TIG torches. The arc is ignited by scratching the work piece with the electrode and turned off by pulling the torch away from the work piece.

NOTE! When using scratch-start ignition, the torch remains live after welding.

The TTC 220GV torch is an exception to this rule, as it allows for using scratch-start ignition. Therefore, the torch is active only when the switch is pressed.

TTM 15 V torch

In type-labelling, the letter 'V' means that there is a valve in the torch neck for the shielding gas. The torch is equipped with a 4-metre torch cable.

This torch model is suitable for use with all MMA welding power sources with a small cable connector. These include the Kemppi Minarc 120. 150, and 151.

TTM 15 V BC torch

In type-labelling, the letter 'V' means that there is a valve in the torch neck for the shielding gas. The torch is equipped with a 4-metre torch cable.

This torch model is suitable for use with all MMA welding power sources with a big cable connector (BC = big connector). These include the Kemppi Master 2500, 3500, Master 2850, and Minarc 220.

TTC 220 GV torch

In type-labelling, the letters 'GV' mean that there is a valve in the torch neck for the shielding gas. The torch is equipped with a 4-metre torch cable.

This torch model is equipped with a big connector and is compatible with the following Kemppi welding machines: Master 2500 MLS[™], Master 3500 MLS[™] and Minarc 220.

Benefits of the TTC 220GV torch

- Operational safety, as the arc will ignite and burn only when the switch is pressed down.
- **Ease of use**, as the welding current can be adjusted from the torch handle using the RTC 10 remote control unit included in the basic set-up.
- Versatility, as the torch remote controller can also be used for MMA welding.



TIG TORCHES



Technical specifications and ordering codes

TTC		TTC 130	TTC 130F	TTC 160	TTC 160S	TTC 220	TTC 200W	TTC 250W	TTC 250WS
Load capacity	DC 40 % ED	130 A	130 A	160 A	160 A	220 A	300 A	350 A	250 A
	100 % ED	-	-	-	-	-	200 A	250 A	200 A
Electrodes	ømm	1.02.4	1.02.4	1.02.4	1.02.4	1.03.2	1.02.4	1.04.0	1.04.0
Connection	Gas/current	R¼	R¼	R¼	R¼	R¼	R¼	R¼	R¼
	Liquid	-	-	-	-	-	Snap connection	Snap connection	Snap connection
Length / Ordering code	4 m	627013004	627013104	627016004	627016204	627022004	627020504	627025504	627025704
	8 m	627013008	627013108	627016008	627016208	627022008	627020508	627025508	627025708
	16 m	627013016	627013116	627016016	627016216	627022016	627020516	627025516	627025716

RTC 10 (6185477) and RTC 20 (6185478) remote control units are available as options (See page 79).

Technical specifications and ordering codes

ттк		TTK 130	TTK 130F	TTK 160	TTK 160S	TTK 220	TTK 220S	TTK 300W	TTK 350W	TTK 250WS
Load capacity	DC 40 % ED	130 A	130 A	160 A	160 A	220 A	220 A	300 A	350 A	250 A
	DC 100 % ED	-	-	-	-	-	-	200 A	250 A	200 A
	AC 40 % ED	100 A	100 A	120 A	110 A	160 A	120 A	250 A	300 A	250 A
	AC 100 % ED	-	-	-	-	-	-	140 A	200 A	140 A
Electrodes	ømm	1.02.4	1.02.4	1.02.4	1.02.4	1.03.2	1.03.2	1.02.4	1.04.0	1.04.0
Connection	Gas/current	R1⁄4	R1⁄4	R¼	R¼	R¼	R¼	-	-	-
	Liquid/current	-	-	-	-	-	-	R3/8	R3/8	R3/8
	Gas	-	-	-	-	-	-	R¼	R¼	R1⁄4
Length / Ordering	4 m	627063004	627063104	627066004	627066204	627072004	627072304	627080504	627085504	627075704
code	8 m	627063008	627063108	627066008	627066208	627072008	627072308	627080508	627085508	627075708
	16 m	627063016	627063116	627066016	627066216	627072016	627072316	627080516	627085516	627075716



MMA welding

MMA welding (manual metal arc) does not require shielding gas; protection for the weld pool comes from the electrode cover which melts during welding, and forms a protective layer of slag on the weld pool. When the welding is completed and the layer of slag is removed, the finished weld will be discovered underneath.

MMA welding is the oldest and still the most commonly used arc welding process, although the proportion of MMA use is decreasing as gas-shielded welding processes are becoming more popular.

MMA welding is, however, an irreplaceable method for instance when welding outside in windy conditions where using shielding gas would be difficult. Another important benefit is that electrodes can be bought everywhere, also in small packages.

Kemppi's range of MMA welding machines offers inverters of DC constant-current type for all user groups from home users to extensive industrial applications.



MINARC™

The little giant of TIG welding that astounded the welding world. The Minarcs are known of their stable arc and easy controllability.

In brief

This compact-sized device is easy to carry to the worksite

Suitable for basic, rutile and cellulosic electrodes

The anti-freeze function reduces the sticking of the electrode and speeds up welding work in 220 model

TouchArc[™] ignites the TIG arc with a gentle touch in 220 model

Applications

Metal workshops Construction industry Agriculture Repair and maintenance

Plenty of power in small package

The Minarc products are small and light-weight MMA welding inverters, with an exceptionally high load capacity for their small size. The popular Minarc 150 series has been complemented with a more robust three-phase model.

Minarc 150 is an all round MMA device operating on 1-phase current. A **151 model** with a with a 110-volt transformer is also available.

Minarc 220 is equipped with all the good features of Minarc 150, but its power capabilities and features have increased considerably.

Both of the Minarc product series come with VRD models equipped with low open-circuit voltage.

Enjoy the easyness of arc control

The superior arc performance of the Minarc products have made them wellknown among the welding people. The arc stability and controllability are based on a large voltage reserve and the automatic arc dynamics control.

Also, the good tolerance of input voltage fluctuations gives further reliability to Minarc's good arc performance, even in demanding field conditions and when using extra-long cables up to 50 m.

For TIG welding the Minarc 220 model is equipped with the scratch-TIG function using the TTC 220 GV torch or the TouchArc[™] feature that lets you light the TIG arc easily with just a gentle touch on the work piece.





Minarc		150 (VRD)	150 AU	120 AU
Connection voltage	1~, 50 /60 Hz	230 V ±15 %	240 V + 10 % 20 %	240 V + 10 % 20 %
Load capacity	35 % ED MMA	140 A/7.5 kVA	140 A/7.5 kVA	-
	50 % ED MMA	-	-	110 A/5.5 kVA
	100 % ED MMA	100 A/5.1 kVA	100 A/5.1 kVA	80 A/3.9 kVA
	35 % ED TIG	150 A/5.0 kVA	150 A/5.0 kVA	-
	50 % ED MMA	-	-	120 A/3.5 kVA
	100 % ED TIG	110 A/3.3 kVA	110 A/3.3 kVA	80 A/2.2 kVA
Connection cable	H07RN-F	3G2.5 (3.3 m)	3G2.5 (3.3 m)	3G1.5 (3.3 m)
Fuse, delayed		16 A	15 A	10 A
Welding range	MMA	10 A/20.5 V-140 A/25.6 V	110 A/3.3 kVA	10 A/20.5 V - 110 A/24.4 V
	TIG	10 A/10.5 V – 150 A/15.6 V	10 A/10.5 V – 150 A/15.6 V	10 A/10.5 V – 120 A/14.4 V
Plug type		Schuko	AU plug	AU plug
Open circuit voltage		85 V (30 V/VRD)	30 V	30 V
Power factor at max current		0.60	0.60	0.60
Efficiency at max current		0.80	0.80	0.80
Stick electrode	ø mm	1.5–3.25	1.5–3.25	1.5–2.5
External dimensions	L x W x H, mm	320 x 123 x 265	320 x 123 x 265	320 x 123 x 265
Weight	kg	4	4	4
Minarc		151	220 (VRD)	
Connection voltage	1~, 50/60 Hz	110V±15% 3~	400 V –20 % +15 %	
Rated power	35 % ED MMA	140 A	220 A	
	100 % ED MMA	100 A	150 A	
	35 % ED TIG	150 A	220 A	
	100 % ED TIG	110 A	160 A	
Connection cable	H07RN-F	3G6 (2 m)	4G1.5 (5 m)	
Fuse, delayed		32 A	10 A	
Welding range	MMA	10 A/20.5 V-140 A/ 25.6 V	10 A/20.4 V-220 A/28.8 V	
	TIG	10 A/10.5 V - 150 A/15.6 V	10 A/10.4 V-220 A/18.8 V	
Open circuit voltage		85 V	85 V (30 V/VRD)	
Power factor at max current	Puikko	0.60	0.91 (TIG 0.92)	
Efficiency at max current		0.80	0.86 (TIG 0.80)	
Stick electrode	ø mm	1.5–3.25	1.5–5.0	
External dimensions	L x W x H, mm	320 x 123 x 265	400 × 180 × 340	
	,			

Minarc 150, incl. earthing and welding cable, connection cable with Schuko	6102150	
Minarc 151, incl. earthing and welding cable, connection cable	6101151	
Minarc 220, incl. earthing and welding cable, connection cable	6102220	
Minarc 150 VRD, incl. earthing and welding cable, connection cable with Schuko	6102150VRD	
Minarc 220 VRD, incl. earthing and welding cable, connection cable	6102220VRD	
Minarc 120AU, incl. earthing and welding cable, connection cable with AU plug	6102120AU	
Minarc 150AU, incl. earthing and welding cable, connection cable with AU plug	6102150AU	
Accessories	150, 150 AU, 120 AU, 151	220, 220 VRD
Earthing cable	6184015	6184211
Welding cable	6184005	6184201
Carrying straps	9592162	9592162
TIG torch	6271432 (TTM 15 V)	627022304 (TTC220 GV)



MASTER 5001

Strong and powerful welding inverter suitable for all types of MMA welding, but also for many other applications.

In brief

High load capacity enables a wide range of use

Can also be used for MIG/MAG welding

Remote control and the ability to use long cables increase reach

Applications

Installation and set-up Repair and maintenance Shipyards and offshore industry Chemical and process industry

Ample power for MMA welding

The Master 5001 is a constant current and constant voltage type of welding inverter used in three-phase current which can provide welding current of up to 500A. In addition to MMA welding, it is also suitable for carbon arc gouging, and TIG welding using DC current.

Due to its large load capacity the Master 5001 power source is also very suitable for welding with long cables and thick electrodes.

This power source is also very suitable for use with the Kemppi ArcFeed or any other voltage sensing wire feed unit even in MIG/MAG welding.

A power source for multiple uses

The Master 5001 is a diverse tool for the metalworking professional, as it is suitable not only for MMA welding, but also for carbon arc gouging, DC TIG welding, and MIG/MAG welding with a voltage sensing wire feed unit.

High load capacity, controllability and remote controls enable the use of an extensive selection of electrodes and good reach. They make this power source an excellent companion for travelling welders, for repairs and production welding.

Master 5001		
Connection voltage	3~, 50/60 Hz	400 V ±10 %
Rated power at maximum current		25.6 kVA
Connection cable	H07RN-F	4G6 (5 m)
Fuse, delayed		35 A
Load capacity 40° C	60 % ED	500 A (80 %)
	100 % ED	440 A
Welding range	MMA	10 A/20-500 A/40V
	MIG	10 A/10V-500 A/30V
	TIG	20A/12V-500A/40V
Maximum welding voltage		50 V/500 A
Open circuit voltage		68 V
Power factor at maximum current		0.93
Efficiency at maximum current		0.85
Stick electrode	ø mm	1.5–6.0
External dimensions	L x W x H, mm	530 x 230 x 520
Weight	kg	48

Master 5001		6130512
Remote control units	C 100C (5 m/10 m)	6185410/6185411
	C 100D (5 m)	6185413
Earthing and welding cables when requested		
Extension cable for remote control unit	10 m	6185451
	25 m	6185452
	50 m	6185453
Transport units	T100	6185250
	T110	6185251
	T120 (Master 5001)	6185252



A powerful MMA welding machine for all electrode types. Excellent arc features and durable design.

In brief

Plenty of welding power in a small package

A compact unit, suitable for spaceconstrained welding sites

Sturdy structure will last even in demanding conditions

Plenty of useful functions for MMA and TIG welding

Applications

Installation and set-up Repair and maintenance Shipyards and offshore industry Chemical and process industry

Durability and progressive features

The Master MLS product line units are power sources equipped with versatile functions for both MMA and DC TIG welding. In addition to generous welding power, they offer plenty of progressive features in order to improve the weld quality and efficiency.

Master MLS control panels

Master MLS units have two control panel options: a MEL panel containing the basic functions needed for MMA welding and a MEX panel with a more diverse selection of functions.

With the MEX control panel you can store your welding settings into memory and retrieve them conveniently for use when needed.

Fine adjustments and durability for extreme conditions

Master MLS device control has been implemented using advanced Kemppi MLS technology (multi logic system), which enables the welder to easily adjust the properties precisely for each particular welding task.

Their design makes them highly suitable for outdoor use and extreme conditions. Due to their small size, they allow access to confined welding sites as well. Master MLS units can also be used with generators.



Master MLS™		2500	3500
Connection voltage	3~, 50/60 Hz	400 V (-15+20 %)	400 V (-15+20 %)
Rated power at maximum current	MMA	9.4 kVA	15 kVA
	TIG	8.4 kVA	13.8 kVA
Connection cable	H07RN-F	4G1.5 (5 m)	4G2.5 (5 m)
Fuse, delayed		10 A	16 A
Load capacity 40° C	40 % ED	250 A/30 V (300 A/22 V TIG)	350 A/34 V (400 A/26 V TIG)
	100 % ED	160 A/26.4 V	220 A/28.8 V
Welding range	Puikko	10 A/20.5 V-250 A/30 V	10 A/20.5 V-350 A/34 V
Welding range	Puikko TIG	10 A/20.5 V-250 A/30 V 5 A/10 V-300 A/22 V	10 A/20.5 V-350 A/34 V 5 A/10 V-400 A/26 V
Welding range Open circuit voltage	Puikko TIG	10 A/20.5 V-250 A/30 V 5 A/10 V-300 A/22 V 80 V	10 A/20.5 V–350 A/34 V 5 A/10 V–400 A/26 V 80 V
Welding range Open circuit voltage Power factor at maximum current	Puikko TIG	10 A/20.5 V-250 A/30 V 5 A/10 V-300 A/22 V 80 V 0.95	10 A/20.5 V-350 A/34 V 5 A/10 V-400 A/26 V 80 V 0.95
Welding range Open circuit voltage Power factor at maximum current Efficiency at maximum current	Puikko TIG	10 A/20.5 V-250 A/30 V 5 A/10 V-300 A/22 V 80 V 0.95 0.86	10 A/20.5 V-350 A/34 V 5 A/10 V-400 A/26 V 80 V 0.95 0.86
Welding range Open circuit voltage Power factor at maximum current Efficiency at maximum current Stick electrode	Puikko TIG Ø mm	10 A/20.5 V-250 A/30 V 5 A/10 V-300 A/22 V 80 V 0.95 0.86 1.5-5.0	10 A/20.5 V-350 A/34 V 5 A/10 V-400 A/26 V 80 V 0.95 0.86 1.5-6.0
Welding range Open circuit voltage Power factor at maximum current Efficiency at maximum current Stick electrode External dimensions	Puikko TIG Ø mm L x W x H, mm	10 A/20.5 V-250 A/30 V 5 A/10 V-300 A/22 V 80 V 0.95 0.86 1.5-5.0 500 x 180 x 390	10 A/20.5 V-350 A/34 V 5 A/10 V-400 A/26 V 80 V 0.95 0.86 1.5-6.0 500 x 180 x 390

Ordering codes

Power Sources		
Master 2500 MLS™		6104250
Master 3500 MLS™		6104350
Control panels		
MEL		6106000
MEX		6106010
Remote control units		
R10	5 m	6185409



MEL control panel

- Remote control usage
- Switch for changing between MMA and TIG welding
- Clear display with welding and arc current values
- Ignition pulse and arc dynamics control

P10	10 m	619540001
RIO	TOTIL	018340901
R11T wireless		6185442
R11F foot pedal		6185407
Remote control cable for R 10	10 m	6185481
Transport units		
T100		6185250
T110		6185251
T130		6185222



MEX control panel

- Can operate remote control and TIG torch control RTC 10
- Ignition pulse and arc dynamics control
- Operating mode selection: MMA or DC TIG welding, carbon arc gouging, or broken arc welding
- Memory features



KEMPPI PRO EVOLUTION

The multi-process power sources representing the well-known Kemppi Pro brand bring a professional feel to MMA welding.

In brief

The dependable and stable arc enables productive welding

Extensive electrode selection due to high voltage reserve

Quality welds with minimal spatter due to precise controls

Withstands extremely heavy use

Applications

Installation and set-up Repair and maintenance Shipyards and offshore industry

Kemppi Pro Evolution in MMA welding

The digitally controlled multi-process power sources in the Kemppi Pro Evolution product series are suitable for all types of welding. They can also be also used for demanding MMA welding and carbon arc gouging.

The power source functions are controlled in MMA welding either by using the PL control panel containing the basic functions or by using a more diverse PX control panel. Both contain all the necessary functions for efficient manual metal arc welding.

There are three different power classes available for Kemppi Pro Evolution power sources: 3200, 4200 and 5200.

A diverse tool for the professional

Kemppi Pro Evolution power sources are true instruments for the professional as far as functionality and power are concerned.

These machines can be used for welding with all electrode types, including cellulosic electrodes. The arc features are stable and the power source maintains steady current regardless of variations occurring in the length of the arc.

The features include electrode ignition pulse, automatic arc dynamic control, high voltage reserve, and an anti-freeze function that assists in continuing welding when the electrode gets stuck to the material being welded.



Kemppi Pro Evolution power sources		3200	4200	5200
Connection voltage	3~, 50/60 Hz	400 V (-15+20 %)	400 V (-15+20 %)	400 V (-15+20 %)
Rated power at maximum current		13.3 kVA	19.7 kVA	26.6 kVA
Connection cable	H07RN-F	4G6 (5 m)	4G6 (5 m)	4G6 (5 m)
Fuse, delayed		25 A	35 A	35 A
Load capacity 40° C	70 % ED	-	420 A/36.8 V	520 A/40.0 V
	100 % ED	320 A/32.8 V	400 A/36 V	440 A/37.6 V
Welding range	MMA	10 A/20V-320 A/33V	10 A/20V-420 A/37V	10 A/20-520 A/40V
Open circuit voltage		65 V	65 V	65 V
Power factor at maximum current		0.93	0.93	0.93
Efficiency at maximum current		0.85	0.85	0.85
External dimensions	L x W x H, mm	530 x 230 x 520	530 x 230 x 520	530 x 230 x 520
Weight	kg	37	41	48

Ordering codes

Power sources		
Kemppi Pro Evolution 3200		6131320
Kemppi Pro Evolution 4200		6131420
Kemppi Pro Evolution 5200		6131520
Control panels		
PL-operation panel		6185801
PX-operation panel		6185802
Remote control unit R 10	1-knob, 5 m	6185409
Transport unit T 10		6185231
Remote control cable	10 m	6185481
Earthing and welding cables when requested		





Control panels

The Kemppi Pro Evolution control panels for MMA welding contain many useful functions resulting in easier and more efficient welding.

PL control panel functions

- Display of welding parameters
- Control of welding current
- Arc dynamics control

PX control panel functions

- Display of welding parameters
- Control of welding current
- Arc dynamics control
- Method selection: tack welding, MMA welding, or carbon arc gouging

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Welding automation

Welding automation refers to advanced mechanisation of welding, where a welding robot performs all the routine working phases. The robot takes care of the movement of the welding head, ignition and extinguishing of the arc, and control of the welding process.

All this takes place according to a preset program. The program has been saved in the welding robot's control unit, and by changing the program, the robot can be reprogrammed for use in different welding applications.

Welding automation usually aims at improving the cost-efficiency and production capacity in welding work and to maintain even quality of work.

Kemppi offers an efficient range of products for robot welding

In addition to manual welding devices, Kemppi also offers products for welding automation. Kemppi's welding robots have an extensive scope of application, and there are devices suitable for both analogue and digital data transmission.

The properties of Kemppi's products have been streamlined to meet the needs of fast paced welding automation. Particular attention has been paid to the speed of data transmission channels, reliable ignition of the arc, and the dependability of wire feeding. In addition, there is also a wide range of welding programs available for various materials, as well as additional accessories, such as a remote control panel and the possibility of controlling welding devices directly from the robot's control unit.

Push-pull and multi-torch systems

The Prosync 50 synchronisation unit that is available as accessory to the robotic products in the Kemppi Pro Evolution series expands the range of uses of the Kemppi Pro devices in welding automation.

The synchronisation unit enables you to connect up to four torch or two push-pull gun systems to the power source. One ProMig 520R or 540R welding interface can be used with either a push-pull gun or two separate ProMig 120R wire feeders. Two welding interfaces can also be connected to one power source.

In addition to a robot torch, standard delivery of the KempArc can include also a manual torch for tacking and repair needs. The synchronisation unit available as optional accessory also enables the use of a push-pull gun.



KempArc[™]

A solution specifically designed for welding automation, which offers diverse customizable features according to customer-specific needs.

In brief

Rapid communication increases the productivity of the welding robot significantly

The reliable wire feed mechanism reduces the number of halts in production

The small and lightweight wire feed unit travels easily with the robot arm

Memory channels and welding programs enable easier robot programming

The web user interface enables control of the equipment directly from the robot control unit

Applications

Robotic welding Mechanised welding Automatic welders

Speed up robotic welding

KempArc Synergic is a compact welding machine solution designed specifically for the needs of welding automation. It is customizable according to customer requirements.

KempArc SYN 300, 400 and **500** are power sources in three different classes. They are suitable for both digital and analogue data transfer.

KempArc DT 400 is a very small filler wire sub-feeder, which travels easily with the welding robot arm. Long wire lines can also be utilized in large robot stations by using several DT 400 sub-feeders. A motorized wire feed option is also available.

KempArc Cool 10 is a cooling unit suitable for the KempArc product series.

Increased fluency with the features and the WiseThin[™] process

The welding programs and the more than 90 memory channels make the robot programmer's job easier. The programmer can select the thickness of the sheet to be welded directly from the control panel, after which the machine can automatically detect the right welding values.

A specially modified welding process WiseThin is also available for the Kemparc Synergic system. It is a special process developed by Kemppi for welding automation.

The additional features required by robotics come as standard with the KempArc products. Data on the current used for seam tracking is obtained without extra accessories, and so is the current used for seam searching. Depending on the application, it can be defined to 50 or 200 V.



KempArc™		SYN 300	SYN 400	SYN 500
Connection voltage		400 V (-15+20 %)	400 V (-15+20 %)	400 V (-15+20 %)
Rated power at maximum current		13.9 kVA	19.5 kVA	26.1 kVA
Connection cable	HO7RN-F	4G6 (5 m)	4G6 (5 m)	4G6 (5 m)
Fuse, delayed		25 A	35 A	35 A
Load capacity 40° C	60 % ED	-	-	500 A/39 V
	80 % ED	-	400 A/34 V	-
	100 % ED	300 A/29 V	380 A/33 V	430 A/35.5 V
Open circuit voltage		50 V	50 V	50 V
Power factor at maximum current		0.9	0.9	0.9
Efficiency at maximum current		0.87	0.87	0.87
Primary current	50 % ED I1max	19.8	28	40
	100% ED I1	19.8	25.5	31
External dimensions	L x W x H, mm	590 x 230 x 500	590 x 230 x 500	590 x 230 x 500
Weight	kg	35	37	41

KempArc [™] power sources		
SYN 300 (digital)		6201300
SYN 400 (digital)		6201400
SYN 500 (digital)		6201500
SYN 300 (analogue)		6201300AN
SYN 400 (analogue)		6201400AN
SYN 500 (analogue)		6201500AN
Wire feed unit DT 400		6203400
Cooling unit KempArc Cool10		620810001
Options		
Remote control panel		W007075
Sync. card for push-pull gun		6263300
WiseThin [™] process		6265013
Protocol cards		
Ethernet IP		9774120ETH
Interbus S		9774120IBC
Interbus S	optical	9774120IBO
Profibus		9774120PRF
Devicenet		9774120DEV
Mounting clambs for the wire feed	er	
Fanuc ArcMate 100iR		W003367
Kuka KR5 HW		W003696
Motoman EA1400		W002450

Cables		
Interconnection cable (5 m)	air-cooled	6260441
Interconnection cable (10 m)	air-cooled	6260445
Interconnection cable (5 m)	liquid-cooled	6260461
Interconnection cable (10 m)	liquid-cooled	6260465
Cable clamp	ball-joint	W003211
Cable clamp	fixed	W003210
Earthing cable (5 m)	70 mm²	6184711
Earthing cable (10 m)	70 mm²	6184712
Transport unit PM 502		6185293
Feed roll installation kits		
Drive ring, V groove, plain	V0.8/0.9 metal	W003745
	V1.0 metal	W003746
	V1.2 metal	W003747
	V1.6 metal	W003748
Drive ring, V groove, knurled	1.0 metal	W003749
	1.2 metal	W003750
	1.4/1.6 metal	W003751
Gear ring kit DT400	metal	W003752
Support spiral		9484090



ProMig[™] 520R MXE

A versatile robot welding interface equipped with analogue data transmission for welding aluminium, stainless steel, and steel materials that require pulse welding.

In brief

Versatile features ensure error free operation

Reliable welding arc ignition

Stable arc and spatterless welds

Possibility to monitor and analyse welding data

Applications

Demanding robot welding applications Aluminium welding Stainless steel welding

Analogue robot welding device

ProMig 520R MXE is a robot welding interface particularly suitable for welding aluminium, stainless steel and steel materials that require pulse welding. It can be used with welding robots equipped with analogue data transmission.

In this system you can use any of the Kemppi Pro Evolution power sources and cooling units, and the standard ProMig 120R feeder. The welding set can be air- or liquid-cooled.

The system includes an MXE control panel, so it suitable for: normal MIG, synergic MIG, or synergic pulse and double pulse MIG welding.

Precision and versatility

All functions and adjustments, as well as the actual welding operation are controlled by a micro processor, which ensures an extremely accurate wire feed and welding program control.

The system has exceedingly versatile features. In addition to the basic features, the standard features include also touch sensing that lets you check whether the wire is stuck to the work piece after each work cycle. Weld current monitoring and through-arc seam tracking are available as an option.



ProMig 120R is a stable, light-weight filler wire sub-feeder that is mounted on the arm of a welding robot. It ensures a stable and reliable filler wire feed all the way to the welding end of the robot. The device is suitable for use in both ProMig 520R MXE, and ProMig 540R MXE systems.

The four-roll ball-bearing mounted wire drive mechanism made completely of metal ensures error free and reliable wire feeding in all situations. The tachometer feedback system in the wire feed motor ensures accurate micro processor controlled regulation of wire feed speed.

MXE controlpanel is the most versatile panel in the Kemppi Pro Evolution series. It contains all the basic functions needed in MIG/MAG welding, such as arc dynamics adjustment, creep start, hot start, and crater fill.

The control panel has 125 preset welding programs and 64 memory positions for saving welding values. It enables the use of up to four torches with one power source, and the possibility to control the welding process using the Kemppi Pro Weld Data system.

For a general introduction of the MXE control panel, see "Kemppi Pro Evolution in MIG/MAG welding" in this product catalogue.



Technical specifications

		Wire feeder Promig 120R	Welding interface ProMig 520R MXE
Operating voltage		50 V DC	50 V DC
Rated power		100 W	100 W
Load capacity 40° C	60 % ED	500 A	-
	100 % ED	390 A	-
Spool (optional)	max ø, mm	-	300
Wire feed mechanism		4 roll	-
Wire feed speed	m/min	025	-
Filler wires	ømm	0.62.4	-
External dimensions	L x W x H, mm	319 x 152 x 167	620 x 230 x 480
Weight	kg	8	20
Push-pull gun, maximum current		2 A (programmable)	-
Maximum I/O capacity	digital I/O	-	16/6
	analogue I/O	-	3/4
Power source technical specifications or	page 30		

Power Sources	
Kemppi Pro Evolution 3200	6131320
Kemppi Pro Evolution 4200	6131420
Kemppi Pro Evolution 5200	6131520
Control units	
ProMig 520R MXE (0 active)	6231510MXFA
ProMig 520R MXE (1 active)	6231510MXKU
Wire feeder	
ProMig 120R	6231510MXFA
Cooling units	
DraCoal 10 (constata)	(2(2012
Procool to (separate)	6262012

Synchronising unit	
Prosync 50	6263121
Voltage sensor	4289560
Wire spool hub	4289880
Interconnection cables	
5 m, air-cooled	6260441
10 m, air-cooled	6260445
5 m, liquid-cooled	6260461
10 m, liquid-cooled	6260465

Feed rolls	
Metallic ø 1.0 mm (1 pc)	W002024
Metallic ø 1.2 mm (1 pc)	W002025
Ball-bearing mounted, plastic ø 1.0 mm (1 pc)	3137390
Seam searching kit	W002139
Connector kit 520R	W002140
Support spiral	9484090



ProMIG™ 540R MXE

A versatile MIG/MAG robot welding interface where a digital field bus ensures a fast and accurate data transmission.

In brief

Versatile features ensure error free operation

Trouble-free arc ignition and spatterless welds

Possibility to monitor and analyse welding data

Long MTBF

Easy to customise

Applications

Advanced welding applications Aluminium welding Stainless steel welding

Precise digital adjustability

ProMig 540R MXE is a robot welding interface with a digital field bus. The digital field bus enables a fast and accurate data transmission between the control unit and the welding device. It decreases the number of error situations and improves the quality of welding. As all the information is transmitted via a bus, no separate wires and auxiliary devices are needed.

In this system you can use any of the Kemppi Pro Evolution power sources and cooling units, and the standard ProMig 120R feeder. The welding set can be air- or liquid-cooled.

ProMig 540R MXE contains the same versatile features and functions as the analogue ProMig 520R MXE model in the Kemppi Pro Evolution Robotics series.

For more information about the features, functions and devices in the system, please see "ProMig 520R MXE" in this product catalogue.

Easy selection of plug and play bus protocol

The user can select the correct field bus protocol by attaching a field bus card in the system and selecting the desired card type.

This feature makes ProMig 540R MXE compatible with all welding robot brands. The following bus types are available: DeviceNet, Profibus, Interbus (copper cable), and Interbus (fibre optic).



		Wire feeder Promig 120R	Welding interface ProMig 540R
Operating voltage		50 V DC	50 V DC
Rated power		100 W	100 W
Load capacity 40° C	60 % ED	500 A	-
	100 % ED	390 A	-
Spool (optional)	max ø, mm	-	300
Wire feed mechanism		4 roll	-
Wire feed speed	m/min	025	-
Filler wires	ø mm	0.62.4	-
External dimensions	L x W x H, mm	319 x 152 x 167	620 x 230 x 480
Weight	kg	8	20
Push-pull gun, maximum current		2 A (programmable)	-
Power source technical specifications on page 30			

Ordering codes

Power Sources						
Kemppi Pro Evolution 3200	6131320					
Kemppi Pro Evolution 4200	6131420					
Kemppi Pro Evolution 5200	6131520					
ProMig 540R interface (with MXE)	6231540					
Wire feed unit ProMig 120R	6236320					
Cooling units						
ProCool 10 (separate)	6262012					
ProCool 30 (tower)	6262016					
Field bus protocols						
Devicenet	9774120DEV					
Profibus	9774120PRF					
Interbus (copper cable)	9774120IBC					
Interbus fibre optic	9774120IBO					

Cables							
5 m, air-cooled	6260441						
10 m, air-cooled	6260445						
5 m, liquid-cooled	6260461						
10 m, liquid-cooled	6260465						
Transport units							
P 40	6185264						
P 30W	6185262						
Feed rolls							
Metallinen ø 1.0 mm (1 kpl)	W002024						
Metallinen ø 1.0 mm (1.2 kpl)	W002025						
Ball bearing, plastic ø 1.0 mm (1 pcl)	3137390						
Seam searching kit	W002139						
Connector kit 540R	W002141						
Support spiral	9484090						

Kemppi's robotics portfolio

Power source and interface			Wire feeder	Panel	Feat	ures													
Synergic	Digital and analog	KempArc™ Synergic	KempArc™ DT 400	RF 59	59	90	•	•	•	•	-	-	0	430 380 300	46	•	0	2	0
Pulse and double	Digital	ProMig 540R MXE	ProMig 120R	MXE	125	64	•	0	•	•	•	•	0	440 400 320	50 46 46	•	0	4	0
pulse	Analog	ProMig 520R MXE	ProMig 120R	MXE	125	64	٠	0	•	•	•	•	0	440 400 320	50 46 46	•	0	4	0
• = Yes • = Optional - = Not available Special functions includes adjustable creep start, hot start, crater filling etc.				Welding programs	Memory channels	Seam searching	Seam tracking	Special functions	Dynamic regulation	Pulse welding	Double pulse welding	Additional curves	Maximum current (100 %)	Maximum voltage	Process monitoring	Gas flow sensor	Number of torches	Push-pull wire feed	
robotics@kemppi.com																			

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OTHER PRODUCTS

Safety at welding work

Welding is hot work that includes many risks for the the welder's health. Good planning, prior preparation of work sites, and general carefulness can improve safety at welding work.

Kemppi offers a range of equipment and auxiliary devices that improve working safety and comfort. Welding helmets, appropriate hangers for welding devices, swing arms, protective gas guards, and other accessories help to protect the welder.

Carbon arc gouging

Carbon-arc gouging refers to a method where metal is removed by melting it with a welding arc and blowing the melted metal away with compressed air. A carbon rod is used as an electrode, which can be either round or flat in shape.

Gouging can be used for opening root welds, opening faulty welds and cracks, preparing welding grooves, cleaning steel-casts, and many other purposes.

For carbon-arc gouging, Kemppi offers the highly effective KempGouge power source.

Voltage sensing wire feeders

Voltage-sensing wire feeders use the welding arc to generate the energy required for controlling the feeder's operations. In normal MIG/MAG welding, the welding parameters' values are controlled by the power source via the control cable, but voltage-sensing technology makes such a control cable between the power source and the feeder unnecessary.

Kemppi ArcFeed is a product family of voltage sensing wire feed units that lets you expand the use of existing power sources to more productive MIG/MAG work with only minor costs, especially for the power sources used in MMA welding.

Controlling devices

REMPPI

Very small things usually help to increase the comfort and safety in welding work. It often results in increased working efficiency, too. For instance, Kemppi's gun remote control units, handheld and pedal control units and remote control panels decrease the need of back and forth movement, thus increasing the efficiency of work and making it more rewarding.

Easy control of welding parameters improve the quality of welds, too.



ArcFeed

Voltage-sensing wire feed unit, which allows you to upgrade old MMA power sources for more efficient MIG/MAG use. A small investment but a big leap to greater productivity.

In brief

Suitable for many kinds and many brands of CC- and CV power sources.

Possibility to weld with self-shielded flux-cored wires.

A solid structure, especially suitable for construction industry and shipyard conditions.

The LCD display can be clearly seen in both clear and cloudy conditions

Applications

Shipyards and offshore industry Building sites Welding of oil and gas pipes

Productivity from voltage-sensing wire feed

ArcFeed is a voltage-sensing wire feed unit for MIG/MAG welding. The machine uses the power of the welding arc in the control of its functions.

In voltage-sensing wire feed units, there is no need for a special control cable between the power source and the wire feeder, so it is easy to move the welding equipment for, say, field work on building sites and at shipyards.

ArcFeed 200 and **300** are the basic models. The smaller one is suitable for 200 mm wire spools and the larger one for 300 mm wire spools.

ArcFeed 300P is equipped with a specially efficient wire feeding mechanism, so it is also suitable for the welding of thicker wires all the way up to 2.4 mm self-shielded flux-cored wire.

ArcFeed 300RC corresponds to the 300 model, but its also equipped with a remote control unit, that can be used with the Kemppi Master 5001 and Kemppi Pro power sources.

More efficient use of your old MMA power sources

Because the arc-controlled wire feed unit does not require a control signal from the power source, the unit can be connected to many kinds and many brands of power source, which do not require complex control features.

Because of this, with a Kemppi ArcFeed wire feed unit, it is possible to upgrade your current MMA welding power sources to more versatile and productive MIG/MAG use.



Technical specifications

ArcFeed		200	300, 300RC	300P
Rated power		150 W	150 W	150 W
Load capacity 40° C	60 % ED			
	80 % ED			
	100 % ED	300 A	300 A	300 A
Wire feed mechanism		4 roll	4 roll	4 roll
Filler wires ø mm	Cored filler wires	1.22.0	1.22.0	1.22.4
	Self-shielded flux-cored wires	1.62.0	1.62.0	1.62.4
	Solid wires	1.01.6	1.01.6	1.01.6
External dimensions	L x W x H, mm	510 x 200 x 310	590 x 240 x 445	590 x 240 x 445
Weight	kg	11	15	15

Ordering codes

Wire Feeders		
Kemppi ArcFeed 200	6120200	
Kemppi ArcFeed 300	6120300	
Kemppi ArcFeed 300P		6120310
Kemppi ArcFeed 300RC		6120301
Accessories		
Gas flow regulator		W000364
Hanging frame for the ArcFeed 200 model		6185285
KFH 1000 hanging device for ArcFeed 300, 300P and 300RC mod	dels	6185100
Safety slide bars for the ArcFeed 200 model		6185286
Safety slide bars for ArcFeed 300, 300P and 300RC models	6185287	
Cables		
Cables extension cable	70 mm², 25 m	6183725
Cables extension cable extension cable	70 mm², 25 m 70 mm², 10 m	6183725 6183710
Cables extension cable extension cable earthing cable	70 mm ² , 25 m 70 mm ² , 10 m 16 mm ² , 5 m SKM25	6183725 6183710 6184015
Cables extension cable extension cable earthing cable MIG Guns	70 mm ² , 25 m 70 mm ² , 10 m 16 mm ² , 5 m SKM25	6183725 6183710 6184015
Cables extension cable extension cable earthing cable MIG Guns MMT 32	70 mm ² , 25 m 70 mm ² , 10 m 16 mm ² , 5 m SKM25 3 m	6183725 6183710 6184015 6253213MMT
Cables extension cable extension cable earthing cable MIG Guns MMT 32 MMT 32	70 mm ² , 25 m 70 mm ² , 10 m 16 mm ² , 5 m SKM25 3 m 4.5 m	6183725 6183710 6184015 6253213MMT 6253214MMT
Cables extension cable extension cable earthing cable MIG Guns MMT 32 MMT 32 MMT 35	70 mm ² , 25 m 70 mm ² , 10 m 16 mm ² , 5 m SKM25 3 m 4.5 m 3 m	6183725 6183710 6184015 6253213MMT 6253214MMT 6253513MMT
Cables extension cable extension cable earthing cable MIG Guns MMT 32 MMT 32 MMT 35 MMT 35	70 mm ² , 25 m 70 mm ² , 10 m 16 mm ² , 5 m SKM25 3 m 4.5 m 3 m 4.5 m	6183725 6183710 6184015 6253213MMT 6253214MMT 6253513MMT 6253514MMT
Cables extension cable extension cable earthing cable MIG Guns MMT 32 MMT 32 MMT 35 MMT 35 MMT 42	70 mm ² , 25 m 70 mm ² , 10 m 16 mm ² , 5 m SKM25 3 m 4.5 m 3 m 4.5 m 3 m	6183725 6183710 6184015 6253213MMT 6253214MMT 6253513MMT 6253514MMT 6254213MMT
Cables extension cable extension cable earthing cable MIG Guns MMT 32 MMT 32 MMT 35 MMT 35 MMT 42 MMT 42	70 mm ² , 25 m 70 mm ² , 10 m 16 mm ² , 5 m SKM25 3 m 4.5 m 4.5 m 4.5 m 3 m 4.5 m	6183725 6183710 6184015 6253213MMT 6253214MMT 6253513MMT 6253513MMT 6253513MMT 6253514MMT 6253514MMT 6253514MMT 6253514MMT 6254213MMT



KempGouge™ ARC 800

A robust special power source designed for carbon-arc gouging that lets you open roots, prepare welding grooves and remove excess metal.

In brief

Specially designed to meet the needs of carbon-arc gouging

Low noise level in idle run

Easy to move using a transport trolley with large wheels

Possibility to adjust the gouging current straight from the work site

Applications

Shipyards Metal fabrication workshops Foundries

Specifically designed for carbon-arc gouging

KempGouge ARC 800 is a power source package suitable for all types of carbon arc gouging. The package includes an 800-ampere power source with control panel. The product is supplied complete with a transport trolley.

The device be used with the majority of metals, such as steel, stainless steel, cast iron, nickel, copper, magnesium and aluminium.

It lets you open roots or faulty welds and cracks, prepare welding grooves, cut metals, make holes and clean casts and remove excess metal.

In addition to a power source you will need a gouging electrode holder with a compressed air connection, and a round or flat carbon rod.

Remote control brings comfort of use

The device can be equipped with a R10 remote control unit, which enables gouging current adjustment straight from the work site.

Remote control brings more productivity and comfort to gouging work, since you don't need to move between the work piece and the power source.



Technical specifications

KempGouge ARC 800		
Connection voltage	3~, 50/60 Hz	400 V, -15 %+20 %
Rated power	50 % ED	44 kVA
Connection cable	H07RN-F	4G16 (16 mm)
Fuse		63 A delayed
Load capacity 40° C	50 % ED	800 A/44 V
	100 % ED	600 A/44 V

Welding range		20 A/20 V-800 A/44 V
Open circuit voltage		50 V
Power ratio at max. current		0,9
Efficiency at max. current		0,90
Dimensions with transport unit	L x W x H, mm	700 x 660 x 1400
Weight with transport unit	kg	115

Ordering codes

Power source	
KempGouge ARC 800	6284000
Connection cables	
4 X 16 mm², 5 m	W000869
4 X 16 mm², 10 m	W003408
Earthing cables	
95 mm², 5 m (DIX120)	61840951
95 mm², 10 m (DIX120)	61840952
120 mm², 5 m	61841201
120 mm², 10 m	61841202
Includes transport unit	

GT 4000 carbon arc gouging electrode holder

The GT4000 electrode holder is intended to be used in carbon-arc gouging. It is suitable for use with the KempGouge™ ARC 800 arc gouging machine.

The gouging carbon used in the electrode holder can be round or flat. The air pressure used for gouging can be adjusted by the control knob on the electrode holder.



Load capacity 40° C		1000 A
Cooling method		Air
Compressed air pressure		5 bar
Air flow rate		900 l/min.
Weight		3 kg
Electrode diameters	Pointed	4-13 mm (5/32-1/2")
	Flat	10-16 mm (3/8-5/8")

Ordering codes

Gouging electrode holder with 2.1 m cable

6285400

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WELDING ACCESSORIES



1. Earth clamps/Connection				
Kemppi 200, 200A	2535 mm, cable shoe connection ø 6 mm			
Kemppi 350, 350A	5070 mm, cable shoe connection ø 6 mm, co	opper braid between the connector jaws	9871540	
Kemppi 500, 500A	7095 mm, cable shoe connection ø 8 mm, co	opper braid between the connector jaws	9871541	
Kemppi G- 600, 600A	35120 mm, cable connection with hex screw	ı, brass frame, screw-type	9871560	
2. Electrode holders	60/35 % ED, current rating	Weight (g) / cable size (mm²)		
KEMPPI 300	150/200, 300 A	321/1625	9871021	
KEMPPI 400	200/250, 400 A	421/1625	9871031	
KEMPPI 500	250/300, 500 A	500/3550	9871041	
KEMPPI 600	300/400, 600 A	855/5070	9871051	
MYKING 200	200 A	285/1025	9871060	
MYKING 450	450 A	485/3570	9871070	
MYKING 600	600 A	535/5070	9871080	
All have a copper alloy frame and	l cable connection with a hex screw			
3. Gun holders				
GH 10			6256010	
GH 20			6256020	
GH 30			6256030	

Gun holders are primarily intended to be attached to welding machines, but they can also be attached to transport units and welding tables.

4. Cable connectors

Current durability A	Cable mm ²	Ordering code, male	female
200	1025	9771650	9771626
250	35	9771671	9771628
315	50	9771670	9771627
400	70	9771680	9771629
500	95	-	9771630
600	95	9771681	-
Branching connector	70/90	1 male, 2 female	9771637
5. Gas guards	GG 400		6237405
	GG 200/300		6237406

GG 400 is an accessory for wire feeders. It regulates gas flow at regulation range 5-25 l/min. It stops the welding automatically, if the gas pressure is not sufficient.



REMOTE CONTROLS



Model	C100C	C100C	C100AC	C100D	C100D	R10	R10	R20	R20	R11T
Length	5 m	10 m	10 m	5 m	10 m	5 m	10 m	5 m	10 m	
Ordering number	6185410	6185411	6185417	6185413	6185414	6185409	618540901	6185419	6185419E	6185442
FastMig [™] Synergic						х	Х	х	Х	
WeldForce™						х	Х	х	Х	
Kemppi Pro Evolution						х	Х	х	Х	
ProTig						х	х			
Minarc 220						х	х			
Kemppi Pro Evolution MMA						х	Х			
MinarcTig™						х	Х			
MasterTig MLS™						х	Х			х
MasterTig MLS [™] 2300 ACDC						х	х			
MasterTig AC/DC	х	х	х	х	х					
Master MLS [™]						х	х			х
Master	х	х		х	х					

Model	C100F	R10F	R11F	C100T
Length	5 m	5 m	5 m	
Ordering number	6185405	6185406	6185407	6185412
Kemppi Pro Evolution				х
ProTig		х		
Kemppi Pro Evolution (MMA)				х
MinarcTig™			х	
MasterTig	х			
MasterTig MLS [™]			х	
MasterTig MLS [™] 2300 ACDC			х	
MasterTig AC/DC	х			
Master 5001				х



RTC 10





TTC 220

Gun/torch	compatible remote control	ls		
RMT 10	For PMT guns	6185475		A Sector May
RTC 10	For TTC torches	6185477		PTC 20
RTC 20	For TTC torches	6185478		RTC 20
			RMT 10	

Gas guard KGP 10



Shielding gas has an important role for the weld pool, but released in the breathing air, it can create a serious risk for the welder. The KGP10 gas guard prevents this risk.

A gas guard protects the welder

KGP10 gas guard prevents shielding gas from leaking into the breathing air from the gas hose between the power source and the welding gun even if the gas hose was faulty and the gas valve was left open.

The device gets its operating power from the welding cable connection, so the gas flow is active only when the welder pulls the torch trigger.

The KGP10 gas guard can be attached to the DIX connectors of any MIG/MAG welding power source.

It is particularly useful when using long extension cables (30 - 50 m) between the power source and the wire feeder. The gas guard prevents leaks in the interconnection cable.

A shielding gas leak can be lethal

A hole in the shielding gas hose can be lethal particularly in closed spaces with inadequate ventilation.

Faults in shielding gas hoses are difficult to recognize. In such a case, shielding gas may flow into the breathing air and replace oxygen. This may cause unconsciousness and even death.

Kemppi's KGP 10 gas guard prevents this kinds of hazards in the interconnection cable.

BOOMS, HANGING DEVICES AND SWING ARMS

Together, the Kemppi welding boom and the KFH 1000 hanger ensure safe working conditions. An inclination control mechanism improves ergonomics and makes welding convenient and efficient.

Mount securely on the boom

The KFH 1000 hanging device lets you mount your Kempact welding devices and various wire feeders securely on the welding boom.

Remember that the devices equipped with a plastic carrying handle attached with screws should never be mounted by the handle. Instead, always use the clam piece delivered with the product.

There is also available a Kemppi welding boom with the reach of 2–6 metres. It is equipped with a KFH 1000 hanger. Together, the Kemppi welding boom and the KFH 1000 hanger ensure safe working conditions.

Swing arms for improved ergonomics

The Kemppi KV 400 and KV 401 swing arms let you mount the wire feeder on power source so that the feeder and welding cable easily adapt to the welder's movements when he or she moves from one place to another.

This improves the ergonomics in welding work and makes it more efficient and convenient. You can use the swing arm with the wire feeders in the KWF, Wire and MSF series.



Ordering codes

KFH 1000 hanging device	6185100
Welding boom	6264026
KV 400 swing arm	6185247
KV 401 swing arm	6185248

Hanging device ProMig 501	3135870
Hanging device ProMig 530	4298180

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2-wheel trolleys	Ordering number	• MST 4	Master 1600, 2500, 3500	MasterTig MLS 2000	MasterTig MLS 3000, 4000	MasterTig MLS 3000, 4000 MasterCool 10	Master 5001	MasterTig AC/DC 3500W	MasterTig MLS 2300, 3000, 3003	Kemppi Pro Evolution 3200, 4200, 5200	Kemppi Pro Evolution 3200, 4200, 5200 ProMig / ProTig	KempoWeld	Kempact Pulse 3000	FastMig Basic + Synergic * T 10 + installation set W002085	FastMig Basic + Synergic * T 120 + installation set W003053	MinarcMig Adaptive 150, 180	Minarc Tig 180, 250, 180 MLP, 250 MLP	Minarc 220
MST 400	6185294	11.8														٠	٠	٠
ST 5	6185219	17														•		
ST 7	6185290	17											•					
T 10	6185231	18								٠				•				
T 100	6185250	20	٠	•	٠	٠												
T 110	6185251	18	٠	٠	٠				٠									
T 120	6185252	33					•	٠		٠	•				•			
T 130	6185222	23	•	•	•	•			٠									
T 200	6185258	28			•	•												

ST 5



• T 10

T 100









T 200





• Recommended maximum gas bottle size is 20 l.

• T 110



KE

of

Welding

The Joy



T 120

TRANSPORT UNITS





WELDING HELMETS ALFA, BETA 60, 90, 90A, 90X

Kemppi Beta 90X welding helmet combines ADC technology and the new headband mechanisms to stop the disturbing light rays coming from the side.

In brief

Perfect protection against welding radiation and spatters

Good visibility to the work area improves efficiency and comfort

Beta 90A and 90X are equipped with an automatically darkening protective glass

Easily adjustable and well fitting headbands

Lightweight and balanced structure, which also protects the chin, ears, and neck

Interchangeable filter glasses

Alfa welding helmet

Kemppi Alfa is a welding helmet intended for arc welding, carbon arc gouging, and plasma cutting, which is used to protect the welder's eyes, head, and neck from arc radiation, reflected radiation from the environment, and welding spatters.

The helmet can also be used as protective gear during grinding and skimming while keeping the filter glass in the upright position.

Beta welding helmet

Kemppi Beta gives the welder perfect protection without compromising visibility or user-friendliness. Kemppi Beta welding helmets are equipped with a pivoting filter glass on top of a clear safety glass, which also fills the requirements set for grinding.

Kemppi Beta automatic helmets 90A and 90X

The filter shade level (EN 3/11) and sensitivity on the Beta 90A helmet are fixed. The Beta 90X model you can adjust both filter shade level and sensitivity of the filter lens. Therefore, Beta 90X is well suitable for all welding processes (filter shade range 4/9-13).

You can also adjust the filter delay in the Beta 90X model, meaning how rapidly it becomes clear after arc cut-out. The adjustment range is 0.2–0.8 seconds.

Due to effective angular dependence compensation, the Beta 90X deters light hitting the glass in an angle. Therefore, this model is ideal for demanding welding jobs.



Arc welding filter shade range (SFS 5143, EN169)

	Current strength, A								
Welding processes	15	30	60	100	150	200	250 3	00 400	500
		20 40	0 80	125	5 17	5 225	275	350 4	50
MMA Welding		9	10	11		1.	2	13	14
MIG, steels			10		11	1.	2	13	14
MIG, aluminium			10		11	12	13	14	15
TIG, all metals	9	10	11		12	13		14	
MAG (CO ₂ welding)			10	11	12	1	3	14	15
Carbon arc gouging					10	11	12	13 14	15
Plasma cutting			11			12		13	

Technical specifications

Welding helmet		BETA 60	BETA 90	BETA 90 A	BETA 90 X
Filter lens dimensions	mm	60 x 110	90 x 110	90 x 110	90 x 110 mm
Viewing window	mm	60 x 110	90 x 110	46.5 x 95	46.5 x 95 mm
Shade range		EN 8-14	EN 8-14	EN 3 / 11	EN 4 / 9 -13
Sensitivity		-	-	Fixed	Adjustable
Switching time	s	-	-	0,0005	0,00015
Delay (dark> bright)	S	-	-	0,2	0.2–0.8 adjustable

Ordering codes

Welding helmet	
Alfa	9873010
Beta 60	9873040
Beta 90	9873045
Beta 90 A	9873046
Beta 90 X	9873047
Filter glass	
60 x 110 mm EN 8	9873161
60 x 110 mm EN 9	9873171
60 x 110 mm EN 10	9873181
60 x 110 mm EN 11	9873191
60 x 110 mm EN 12	9873202
60 x 110 mm EN 13	9873211
60 x 110 mm EN 14	9873212
90 x 110 mm EN 8	9873241
90 x 110 mm EN 9	9873242
90 x 110 mm EN 10	9873243
90 x 110 mm EN 11	9873244
90 x 110 mm EN 12	9873245
90 x 110 mm EN 13	9872146
90 x 110 mm EN 14	9873247

Spatter protection glass			
Alfa		60 x 110 mm	9873149
Alfa, polycarb.		60 x 110 mm	9873155
Beta 90X		51 x 107 x 1.0	9873251
Beta 60		60 x 110 x 1.0	9873252
Beta 90, 90A, 90X		90 x 110 x 1.0	9873253
Beta 60, 90, 90A, 90X		90 x 110 x 1.5	9873254
Magnifying filter glass			
Beta (1,0)		51 x 108 mm	9873260
Beta (1.5)		51 x 108 mm	9873261
Beta (2.0)		51 x 108 mm	9873262
Beta (2.5)		51 x 108 mm	9873263
Colored safety glass	Beta, polycarb. DIN 3	90 x 110 x 1.0	9873255
Auto-darkening welding filter lens			
Auto-darkening welding filter lens Beta 90 A, DIN 3/11		90 x 110	9873051
Auto-darkening welding filter lens Beta 90 A, DIN 3/11 Beta 90 X, DIN 4/9-13		90 x 110 90 x 110	9873051 9873055
Auto-darkening welding filter lens Beta 90 A, DIN 3/11 Beta 90 X, DIN 4/9-13 Viewing lens	Alfa	90 x 110 90 x 110	9873051 9873055 9873157
Auto-darkening welding filter lens Beta 90 A, DIN 3/11 Beta 90 X, DIN 4/9-13 Viewing lens Glass support spring	Alfa	90 x 110 90 x 110	9873051 9873055 9873157
Auto-darkening welding filter lens Beta 90 A, DIN 3/11 Beta 90 X, DIN 4/9-13 Viewing lens Glass support spring Alfa	Alfa	90 x 110 90 x 110	9873051 9873055 9873157 9873014
Auto-darkening welding filter lens Beta 90 A, DIN 3/11 Beta 90 X, DIN 4/9-13 Viewing lens Glass support spring Alfa Beta 60	Alfa	90 x 110 90 x 110	9873051 9873055 9873157 9873014 3149840
Auto-darkening welding filter lens Beta 90 A, DIN 3/11 Beta 90 X, DIN 4/9-13 Viewing lens Glass support spring Alfa Beta 60 Beta 90, 90 A, 90 X	Alfa	90 x 110 90 x 110	9873051 9873055 9873157 9873014 3149840 3149850
Auto-darkening welding filter lens Beta 90 A, DIN 3/11 Beta 90 X, DIN 4/9-13 Viewing lens Glass support spring Alfa Beta 60 Beta 90, 90 A, 90 X Headband	Alfa	90 x 110 90 x 110	9873051 9873055 9873157 9873014 3149840 3149850
Auto-darkening welding filter lens Beta 90 A, DIN 3/11 Beta 90 X, DIN 4/9-13 Viewing lens Glass support spring Alfa Beta 60 Beta 90, 90 A, 90 X Headband Alfa	Alfa	90 x 110 90 x 110	9873051 9873055 9873157 9873014 3149840 3149850 9873012
Auto-darkening welding filter lens Beta 90 A, DIN 3/11 Beta 90 X, DIN 4/9-13 Viewing lens Glass support spring Alfa Beta 60 Beta 90, 90 A, 90 X Headband Alfa Beta	Alfa	90 x 110 90 x 110	9873051 9873055 9873157 9873014 3149840 3149850 9873012 4306370
Auto-darkening welding filter lens Beta 90 A, DIN 3/11 Beta 90 X, DIN 4/9-13 Viewing lens Glass support spring Alfa Beta 60 Beta 90, 90 A, 90 X Headband Alfa Beta Sweatband	Alfa	90 x 110 90 x 110	9873051 9873055 9873157 9873014 3149840 3149850 9873012 4306370 9873018



KEMPPI SOLUTION BUSINESS

Kemppi's services and solutions are available for order as a ready-made service package or fully tailored to customer needs.

For more information on Kemppi's training and consultancy services and welding data analysing systems, send e-mail to to Kemppi's service business unit at solutions@kemppi.com In addition to producing reliable arc welding devices, Kemppi offers a range of service products and solutions that let the company share its welding expertise with its customers. Their significance in the welding world is continuously growing due to the constant technical development and the labour-intensive nature of welding work.

Increasing the cost-efficiency of welding has turned out to be an efficient way to improve profitability, machine stock management, and development of production related operations.

Kemppi's service products and solutions help the client utilise both the individual welding devices as well as the entire machine stock to the full. The core philosophy with our services is to be the customer's trusted partner in all development of welding operations, from individual welders to production planning and corporate executive level.

Training helps you make the most out of your welding devices

Training and consultancy, guidance at commissioning, and customer specific, tailored service and warranty options are examples of our services that help welders use their Kemppi devices more efficiently without unnecessary interruptions and downtime.

Welding programs create added value to machine investments

Welding programs that facilitate welding and improve its quality can be obtained for certain Kemppi welding devices as additional features. Tailored welding programs are available for instance for shipyard welding, pipe welding, and for welding aluminium and stainless steel.

New welding programs are being developed in Kemppi's welding laboratory, and they are also available as customer specific, tailored products and services. Modified welding processes refer to welding arcs that have been tailored for specific applications, such as the WiseRoot[™] designed for root pass welding, and the WiseThin[™] used for welding automation.

Increased productivity with monitoring and analysing

Welding data monitoring and analysis are services that enable the customer to obtain facts concerning the key figures of production, and use this data to develop its production process. Kemppi Arc System, Pro Weld Data, as well as arc time measuring devices are such services offered by Kemppi.



Kemppi Arc System is the latest development in the evolution of welding device manufacture. It means analysing the work process in welding and making the entire production process more efficient.

In brief

A comprehensive service solution that produces reliable welding data

Enhances production related costawareness in the welding industry

A comprehensive full service solution defined to meet specific needs of each customer

Applications

All industries that use welding in their production processes

Networked welding production

Refining welding data into measurable units

The Kemppi Arc System, KAS, is a comprehensive solution for welding data collection and analysis, offered by Kemppi, which helps to improve quality and productivity in the welding industry.

KAS supplies real facts about welding as well as analyses based on those facts to be used in development of production processes.

It's purpose is to replace welding related illusions with true facts. The facts can then be used as the basis for reliable production development plans via increased cost-awareness and implementing measures based on actual welding data.

KAS is a service utilising high technology

Kemppi Arc System represents the state of the art in systematic methods for welding data collection.

Welding data is collected from welding devices in a digital format, and sent via base stations to the Kemppi Arc System server. The data are analysed on the server, and a report based on that analysis is sent to the customer.

The KAS system produces exact data on welding currents, voltages, wire feed speed, machine maintenance needs and many other details. Data collected in this manner can be complemented with customer specific reference data.





KEMPPI ARC SYSTEM

The reports are useful to the welders as well as to the executive level

The Kemppi Arc System solution incorporates a reporting option that can be utilised in all areas of welding work from actual welding to the top executive level in a company.

The produced and refined welding data can be viewed for instance by the welders, production supervisors, and corporate managers. All users have their individual views for the collected data, and all the levels can utilise the information to develop their own role or to boost production.

The finished reports are sent to the client by e-mail according to the desired schedule. Thus, the system enables easy monitoring of the development of productivity, as well as the measures that should be taken when preset limit values are exceeded.

KAS is a comprehensive full service solution

The Kemppi Arc System is a comprehensive full service solution which is tailored according to customer specific needs. In addition to the data transfer hardware, it includes the device architecture specification, consultancy and target specification, design of data analysis, implementation of the system and the required hosting services.

All these items are specifically designed, partly in co-operation with the customer. That is why the delivery chain of the Kemppi Arc System solution essentially differs from the traditional way of purchasing a welding device. The system is always delivered as a turnkey solution where the customer receives the key to developing and managing its own operations. Productivity of work has traditionally been studied using work analysis methods, but the Kemppi Arc System offers the first productivity monitoring system in the world that is based on high technology. It is also an excellent method for machine fleet management, maintaining quality, and measuring production operations.

The Kemppi Arc System is the latest, revolutionary phase in the evolution of welding device manufacturing.

Productivity and cost-efficiency are important in the welding industry

Productivity monitoring is particularly important in companies that use welding, as the majority of welding costs are caused by labour. Filler wires and shielding gases, welding machine costs and electricity form only a quarter of the costs at the most. The remaining costs come from labour.

The problem with monitoring productivity in welding is, however, that it has to be evaluated on the basis of individual observations that are often ambiguous and uncertain.

The systematic way for data collection offered by the Kemppi Arc System can remove these uncertainties, and the development of productivity and operations can be evaluated in a reliable manner.

When there are precise facts instead of assumptions to base your decisions on, things may suddenly start looking surprisingly different.



PRO WELD DATA

Real-time monitoring of welding parameters makes machine specific welding information available for quality control and production planning purposes.

In brief

Real-time monitoring of welding parameters

Simultaneous control of up to 64 power sources

Fast reaction to deviations in welding operations

Field bus coupling length of up to 400 metres, with the minimum accuracy of measurement of 0.2 seconds.

Applications

Quality control in manual and automated welding

Tracing deviations

Calculation of production costs

A system for welding quality control

The Kemppi Pro Weld Data system lets you collect and analyse important welding data from the Kemppi Pro-, Kemppi Pro Evolution-, FastMig- and Kemparc welding devices. The data collected this way can be utilised for quality control and planning welding operations.

The Pro Weld Data system comprises a DLI interface that is connected to the welding device, and data analysis software running on a computer. The interface collects welding data from the welding device and transmits it to the computer via an Interbus field bus to be analysed in a special Pro Weld Data program.

PRO DLI 20 interface is used in the Kemppi Pro and Kemppi Pro Evolution devices

FAST DLI 20 interface is suitable for use with the FastMig and Kemparc devices.

Welding data analysis brings competitive edge

The cost structure and schedules in welding work do not normally allow extensive inspection of welds, and it is difficult to carry out sufficiently detailed non-destructive test methods (NDT) afterwards.

In order to maintain high quality of welds, you should do things right already at the working phase and supervise and ensure that this really happens. That is not easy either with traditional methods.

The Pro Weld Data system has been designed to offer the possibility to control the quality of welds by collecting and analysing welding parameters to ensure that the quality of welds remains steady and productivity high.

Simultaneously it also serves as a tool for production development. You can also utilise the system to control the condition and service needs of the welding devices, which ensures an efficient and uninterrupted production.



Pro Weld Data reveals the bottlenecks in production

The Pro Weld Data system can be used to calculate many kinds of values related to welding, such as welding energy, wire consumption and heat input.

A Windows based graphic interface offers a new dimension to quality monitoring and control in the welding process. The user can freely specify names for different types on information, so it is easy to locate, control and further process different jobs and welds afterwards.

You can define limits to the values being monitored. When these limit values are exceeded, the system either gives off an audio alarm or displays an alarm symbol. Welding can then be stopped at the alarm. It is possible to later analyse information by for instance displaying all those jobs where limit values were exceeded.

Collected data can also be archived, and used welding parameters can be checked even many years later, as necessary.

Ordering codes

Pro Weld Data Network	
Pro Weld Data software	6265003
Interbus host card desktop (PC card, incl. Interbus software)	9774110
PRO DLI 20 adapter (needed for each Kemppi Pro power source)	6265008
FAST DLI 20 adapter (needed for each FastMig power source)	6265017

The Interbus cable used for cabling the system is supplied per meter depending on the client and number of devices. The ordering code for the cable is 9720770.

Pro-PC interface	
DLI 10, RS cable , PRO cable (1 m)	6265006
DLI 10, RS cable , PRO cable (5 m)	6265007





Technical specifications

Measured current range		20 – 500 A
Cable diameter,	mm²	50 – 95
Battery lifetime, minimum		5 years
Protection class		IP23
Operating temperature		-10 +50 °C
External dimensions (L x W x H)	mm	92 x 82 x 32
Weight	g	215

Ordering codes

ArcTimer	6209200
Protective plate	W003231

An easy-to-use measurement device that replaces the guesses about arc burntime with facts. An efficient method for developing work-process productivity.

In brief

Small and convenient device for measuring arc burning time

Provides precise information in order to develop welding productivity

Easy to install and use

Applications

Can be used with all welding power sources

More productivity with the arc time measuring device

Kemppi ArcTimer is a small palm-size tool that measures actual arc burning time from any welding device. It is intended for developing welding workprocesses and improving productivity for individual welding machines.

Kemppi ArcTimer is attached to the welding or earthing cable, and it uses the current running in the cable to measure the arc time. When welding starts, the device begins to record the arc time. You can see the time on the display in hours with an accuracy of two decimals. The arc time reading on the display increases, until you reset the device by pushing the button under the display.

Replace guesses with precise information

Measuring productivity in the welding industry is particularly important due to the labor-intensity of the field. Usually estimates are made based on arc burning time, which is measured by the amount of welding wire used per welder or welding-team.

Estimates made using these types of methods are very general in nature and they are usually inaccurate and skewed. Work-process development should not be based on inaccurate estimates.

With the ArcTimer you get accurate and actual data about arc burning time, which helps you develop your production so that it leads to actual productivity improvements.



A welding process, designed for automated and manual thin sheet welding and MIG brazing, that procudes high-quality welds at a great speed.

In brief

Best welding results for thin sheets when used together with MicroTack feature

Lack of spatter reduces the need for post-welding finishing

Good tolerance for air gap and parameter variations

Low heat input decreases deformations

Applications

Thin sheet welding and MIG brazing applications

Structural steel and stainless steel welding

Welding zinc-coated metal sheets

A tailored process for thin sheet welding

Kemppi's WiseThin is a modified short-arc welding process for thin sheets. It is suitable for both manual and automated welding as well as for MIG brazing. WiseThin can be installed as an optional feature in all KempArc robot welding devices.

The features of this welding process have been fine-tuned in Kemppi's welding laboratory so as to make them particularly suitable for welding automation, and in particular, to meet the needs of thin sheet welding in industries such as automotive and transportation.

WiseThin process makes groove preparation quicker and easier, as it allows greater variation for the air gap. Also, finding the right welding parameters is easy, as WiseThin tolerates well variations on parameters.

■ MicroTack[™] and WiseThin[™] assure quality welds

Kemppi's MicroTack feature and WiseThin welding process are unbeatable pair in thin sheet welding. MicroTack allows you to join the pieces together with strong but barely noticable tack welds prior to final welding, and WiseThin ensures the good quality of the final weld. Both of these methods are quick and easy to use, which has a favourable effect also on the productivity.

For more information about MicroTack feature, see MasterTig MLS[™] ACDC section in this product catalogue.



The small number of deformations increases the quality and productivity of welding lap joints.



The WiseThin process tolerates large air gaps in angle joints.

ARC UNDER CONTROL

A trained welder's ear can spot errors in a weld from the sound of the arc. However, you cannot rely on sensory perceptions only when you want to improve the quality and productivity of welding. For that, the arc must be in perfect control.

Kemppi's product promise – Arc Under Control

The design of Kemppi's welding devices, software and services focuses on one thing: error-free welding arc. It ensures high productivity and high quality welds to our customers.

Today, we utilise electronics, programming skills, and special welding research methods in a way that results in state of the art products, ease of use, and optimal welding result. The arc truly is under control.

Reliable welding equipment performance is imperative when considering smooth workflow. The machine must work without failure from day to day, and welding settings must be easy to find. Based on proven customer needs, the importance of the arc has become more emphasised. The arc is the corner stone on which the quality of the final weld is built.

The significance of the arc can be both seen and heard. A trained ear can distinguish possible errors in the arc through listening, and a trained eye can see them afterwards in the final weld.

However, we can't only rely on our senses in the development of better quality welding machines that increase productivity. Instead, it requires precise observations of the phenomena in the arc that take place in fractions of a second. Reliable data is also required on duty cycle. Kemppi's customers can utilise this information in developing the quality and processes in their own production.

The high speed digital video camera used in our research enables detailed analyses of the arc in various situations. It produces information about the electrical variables in the different phases of the process, as well as the behaviour of the base materials in the weld pool.

We utilise research results in the development of new Kemppi products and welding innovations. Our monitoring and service products let our customers collect information to improve the quality and productivity of their production process.

Kemppi's product promise "Arc Under Control" is based on uncompromised facts. For our customers this means that the arc is perfectly under control - from welders to product design experts. We at Kemppi vouch for that - according to our product promise.



All Kemppi welding machines and accessories have CE marking, and they conform to European safety and compatibility standards

■ Kemppi was the first welding device manufacturer to receive the ISO 9001 quality certificate already in 1990, and the ISO 14001 environmental management certificate in 2001.

A Kemppi welding device is a safe choice for all industrial environments.

Quality and requirements

Kemppi is committed to technical excellence that is testified with ISO 9001 quality management system received already in 1990 and ISO 14001 environmental management system since 2001 in the manufacture of professional welding devices with high-quality components in a carefully monitored production process.

CE mark indicates that a product complies with all European directives and essential harmonised standards based on the principles of the New Approach.

Kemppi products conform to the following international standards:

Safety requirements	for arc welding equipment
IEC / EN 60974-1	- Part 1: Welding power sources
IEC / EN 60974-2	- Part 2: Liquid cooling systems
IEC / EN 60974-3	- Part 2: Arc striking and stabilizing devices
IEC / EN 60974-5	- Part 5: Wire Feeders
IEC / EN 60974-7	- Part 7: Torches
IEC / EN 60974-10	- Part 10: Electromagnetic compatibility (EMC) requirements
IEC / EN 60974-11	- Part 10: Electrode holders

EMC classification according to CISPR 11: Class A. Kemppi's arc welding devices are designed for industrial applications.

Degree of protection and operating temperature

Degree of protection for Kemppi machines is IP23S, which indicates protection against hits and rain. The devices are not, however, intended for us in the rain or in wet conditions; they can only be left outside while it rains with the power off.

The operating temperature of Kemppi's welding devices is -20 °C \dots +40 °C which makes them suitable for extreme conditions. The storage temperature is -40…+60 °C.

Load capacity

The load capacity of Kemppi welding machines is given as amperage based on the duty cycle percentage. The duty cycle indicates the proportion of a 10 minute cycle that you can weld with the given current without the device overheating. Because the duty cycle has been given for the temperature of $+40^{\circ}$ C, it is higher in normal room temperature.





Important decisions are at hand in the welding business. The solutions you implement today will affect your competitiveness in the long run. Kemppi Arc System[™] is an intelligent tool for welding operations management: it ensures an efficient use of your company's machine and human resources and reveals any bottlenecks in production. It helps improve productivity on all levels of your business.



www.kemppi.com