

Operation instruction • english
Gebrauchsanweisung • deutsch
Gebruiksaanwijzing • nederlands
Manuel d'utilisation • français

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FASTMIG™

MF 29



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1. PREFACE

1.1. INTRODUCTION

Congratulations on having purchased this product. Properly installed Kemppi products should prove to be productive machines requiring maintenance at only regular intervals. This manual is arranged to give you a good understanding of the equipment and its safe operation. It also contains maintenance information and technical specifications. Read this manual from front to back before installing, operating or maintaining the equipment for the first time. For further information on Kemppi products please contact us or your nearest Kemppi distributor.


The specifications and designs presented in this manual are subject to change without prior notice.

In this document, for danger to life or injury the following symbol is used: 

Read the warning texts carefully and follow the instructions. Please also study the Operation safety instructions and respect them when installing, operating and servicing the machine.

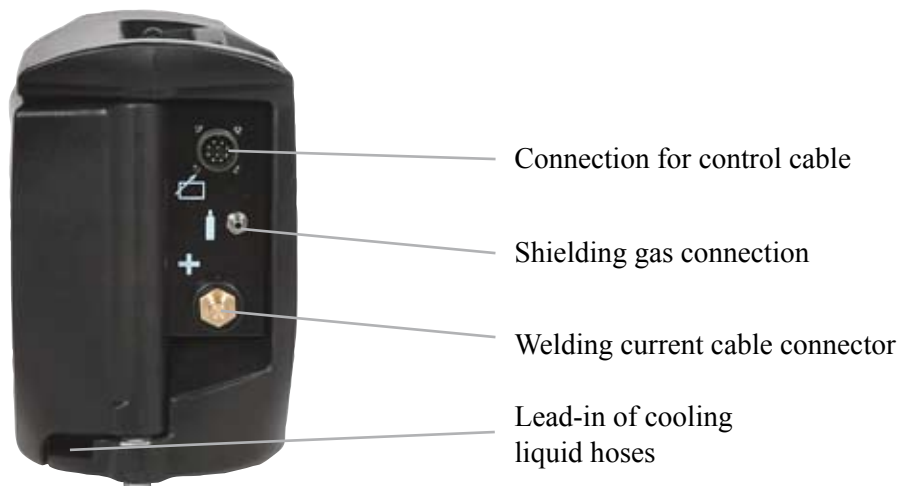
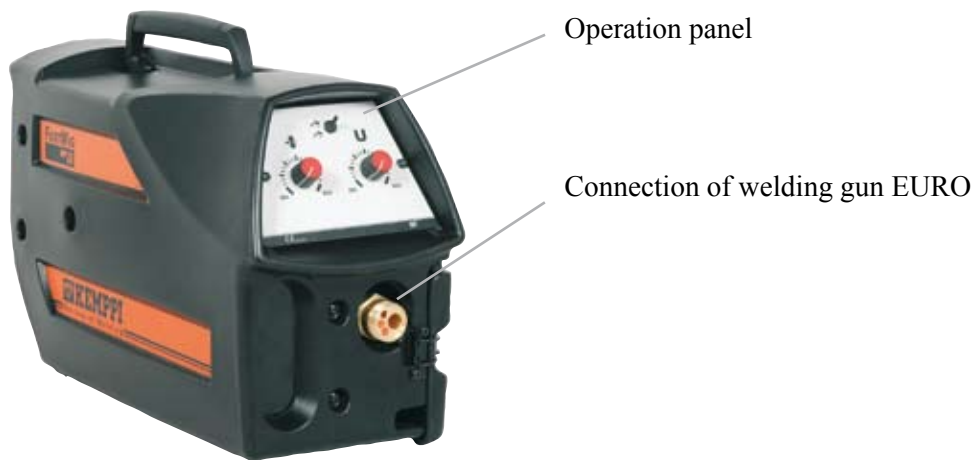
1.2. PRODUCT INTRODUCTION

FastMig™ MF is basic wire feeder designed for demanding environment.

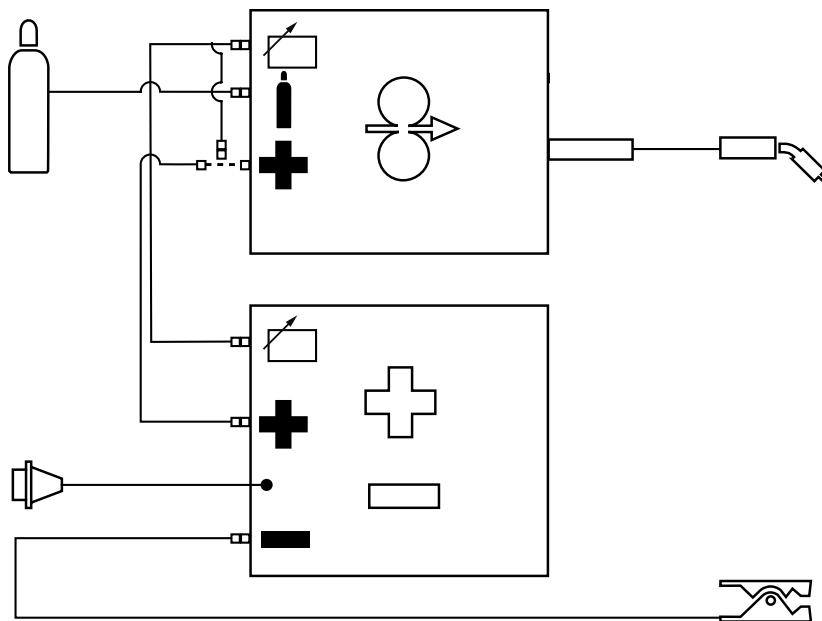
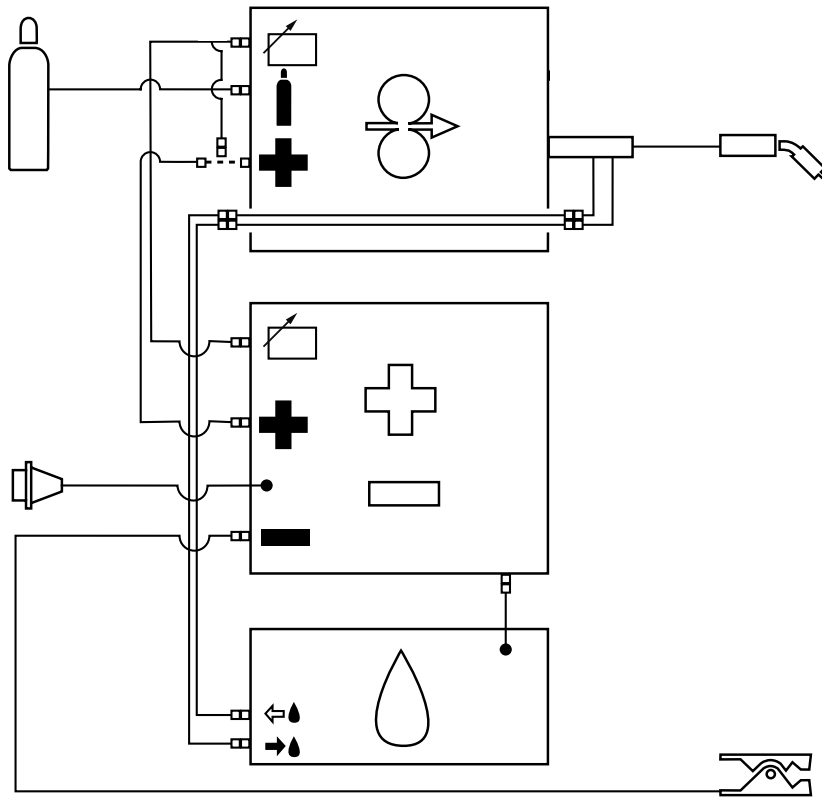
 **This equipment's electromagnetic compatibility (EMC) is designed for use in an industrial environment. Class A equipment is not intended for use in residential location where the electrical power is provided by the public low-voltage supply system.**

1.2.1. Operation control and connectors

MF 29



1.2.2. Connection of system



1.2.3. Parts of wire feed mechanism, MF 29

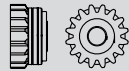
DuraTorque™ 400 4 - roll wire feed mechanism



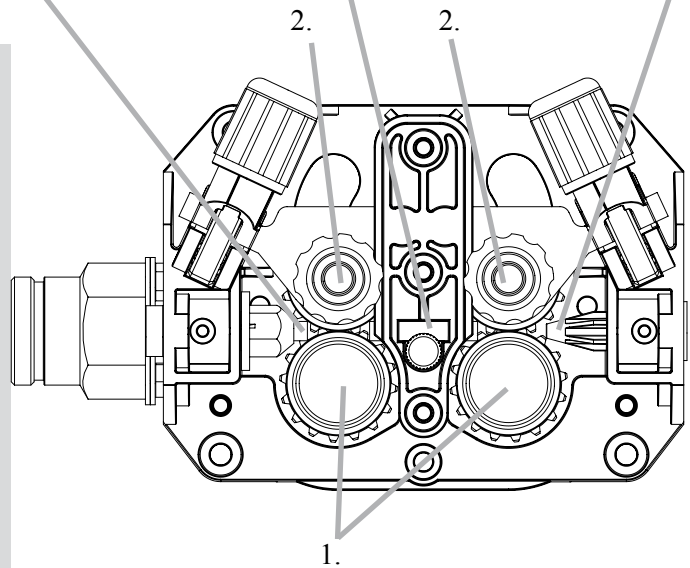
Wire guide tubes

Ss, Al Fe, Mc Fc	ø 0,6...1,6 mm	→	ø 2,5/64 mm W000762 silver, plastic	→	ø 2,5/33 mm W000956 silver, plastic	→	ø 2,0 mm W000624 plastic
	ø 1,6...2,4 mm	→	ø 3,5/64 mm W001430 silver, plastic	→	ø 3,5/33 mm W001431 silver, plastic	→	ø 3,5 mm W001389 plastic
Fe Mc Fc	ø 0,6...0,8 mm	→	ø 1,0/67 mm W001432 white, steel	→	ø 2,0/33 mm W001435 orange, steel	→	ø 2,0 mm W000624 plastic
	ø 0,9...1,6 mm	→	ø 2,0/64 mm W001433 orange, steel			→	ø 3,5 mm W001389 plastic
	ø 1,6...2,4 mm	→	ø 4,0/63 mm W001434 blue, steel	→	ø 4,0/33 mm W001436 blue, steel	→	ø 3,5 mm W001391 brass

Feed rolls



Fe Ss Al	Plain	0,6	1	W001045	pale grey
		0,6	2	W001046	pale grey
		0,8/0,9	1	W001047	white
		0,8/0,9	2	W001048	white
		1,0	1	W000675	red
		1,0	2	W000676	red
		1,2	1	W000960	orange
		1,2	2	W000961	orange
		1,4	1	W001049	braun
		1,4	2	W001050	braun
		1,6	1	W001051	yellow
		1,6	2	W001052	yellow
		2,0	1	W001053	grey
		2,0	2	W001054	grey
Fe Fc Mc	Knurled	1,0	1	W001057	red
		1,0	2	W001058	red
		1,2	1	W001059	orange
		1,2	2	W001060	orange
		1,4/1,6	1	W001061	yellow
		1,4/1,6	2	W001062	yellow
		2,0	1	W001063	grey
		2,0	2	W001064	grey
		2,4	1	W001065	black
		2,4	2	W001066	black
Fe Fc Mc Ss Al	U-groove	1,0	1	W001067	red
		1,0	2	W001068	red
		1,2	1	W001069	orange
		1,2	2	W001070	orange
		1,6	1	W001071	yellow
		1,6	2	W001072	yellow



1 = drawing feed roll, 2 = pressing feed roll

1.3. OPERATION SAFETY

Please study these Operation safety instructions and respect them when installing, operating and servicing the machine.

Welding arc and spatters

Welding arc will hurt unprotected eyes, also be very careful with reflecting arc flash. Welding arc and spatter will burn unprotected skin. Therefore it is highly recommended to always use safety gloves and protective clothing.

Danger for fire or explosion

Pay attention to fire safety regulations. Remove flammable or explosive materials from welding area. Always reserve sufficient fire-fighting equipment on welding area. Be prepared for hazards in special welding jobs, eg. for the danger of fire or explosion when welding container type work area. Note! Fire can break out from sparks even several hours after the welding work has been finished!

Mains voltage

Never take welding machine inside a work area (eg. container or truck). Do not place welding machine on a wet surface. Always check cables before operating the machine. Change defect cables without delay. Defect cables may cause an injury or set out a fire. Connection cable must not be compressed, it must not touch sharp edges or hot work pieces.

Welding power circuit

Isolate yourself by using proper protective clothing, do not wear wet clothing. Never work on a wet surface or use defect cables. Do not put MIG-gun or welding cables on welding machine or on other electric equipment. Do not press MIG-gun switch, if the gun is not directed towards a work piece.

Welding fumes

Take care that there is sufficient ventilation during welding. Take special safety precautions when welding metals, which contain lead, cadmium, zinc, mercury or beryllium.

2. INSTALLATION

2.1. ASSEMBLY OF MIG SYSTEM

Assemble the units in order mentioned below and follow mounting and operation instructions which are delivered in packages.

1. Installation of power source

Read paragraph: "Installation" in operation instructions for FastMig™ power sources and carry out the installation according to that.

2. Mounting of KM power sources to transport wagon

Read and follow the instructions given in the transport cart installation/assembly manual

3. Connecting cables

Connect the cables in accordance with the equipment notes provided.

The polarity of the welding wire (+ or -) can be changed by replacing the MF welding current cable and return current cable with the FastMig™ power source welding cable connector.

4. Mounting of FastMig™ wire feed units to boom

⚠ Wire feed unit must be mounted to boom in such a way that its chassis is galvanic separated both from swing arm and boom.

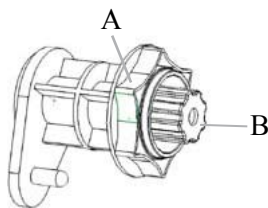
Suspension angle of wire feed unit can be changed by moving fixing point in handle.

2.2. MOUNTING OF MIG WELDING GUN

In order to ensure trouble-free welding check in operation instructions of gun used by you that wire guide tube and contact tip of gun are according to manufacturer's recommendation suitable to be used for wire feed diameter and type in question. To tight a wire guide tube might cause for wire feed unit a bigger stress than normally as well as disturbances in wire feed.

Screw snap connector of gun tight that there won't come any voltage losses on connecting surface. A loose connection will heat gun and wire feed unit and feeder.

2.3. MOUNTING AND LOCKING OF WIRE REEL



- Release the locking nut (A)!
- Mount the reel at its place. Note rotating direction of reel
- Lock the reel with locking nut..

⚠ Check that in filler wire reel there are no parts sticking out, which could e.g. chafe against chassis or door of wire feed unit. Dragging parts might expose chassis of wire feed unit under voltage.

2.4. AUTOMATIC WIRE FEED TO GUN

Automatic wire feed makes change of wire reel more rapid. In reel change the pressure of feed rolls need not to be released and filler wire goes automatically to correct wire line.

- Make sure that groove of feed roll matches the diameter of welding wire used.
- Release the wire end from reel and cut off the bent length. Be careful that the wire does not spill from the reel to sides!
- Straighten about 20 cm of the wire and see that the end of it has no sharp edges (file off if necessary). A sharp edge may damage the wire guide tube and contact tip of the welding gun.

FastMig™ MF 29 wire feed unit:

- Draw a bit of loose wire from wire reel. Feed wire through back liner to feed rolls. Do not release pressure of feed rolls!
- Press the gun switch and feed wire until wire goes through feed rolls to gun. See that wire is in grooves of both feed roll pairs!
- Press still the gun switch until wire has come through contact tip.

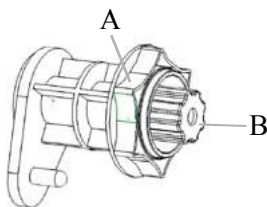
Automatic feed may sometimes fail with thin wires (Fe, Fc, Ss: 0,6...0,8 mm, Al: 0,8...1,0 mm). In that case you might have to open feed rolls and feed wire manually through feed rolls.

2.5. ADJUSTMENT OF PRESSURE

Adjust the pressure of feed rolls with the control screw (20) so that the wire is fed into the wire guide tube evenly and allows a little braking when coming out from the contact tip without slipping at the feed rolls.

⚠ Excessive pressure causes flattening of the filler wire and damage to the coating. It also causes undue wear of the feed rolls as well as friction.

2.6. ADJUSTMENT OF TIGHTNESS OF REEL BRAKE



Brake force is adjusted by screwing the adjusting nut (B), tightening clockwise direction.

Adjust brake force as so big that the wire is not allowed to become too loose on the reel so that it would spill from the reel when the rotation of the reel stops. Need for brake force is increased with increase of wire feed speed.

Since the brake loads for its part the motor, you shouldn't keep it unnecessarily tight.

2.7. BURN BACK TIME

Electronics of feed unit controls stopping of welding automatically so that the wire end doesn't melt fastened to the contact tip or the work piece. Automatics work regardless of the wire feed speed. Can be adjusted also from power source SETUP-menu ('PoC').

2.8. GROUND CABLE

Connecting of earth cable should be preferably connected directly to the welding material. Contact surface of press always should be as large as possible.

Clean the fastening surface from paint and rust!

Use in your MIG equipment at least 70 mm². Thinner cross-sectional areas might cause overheating of connectors and insulations.

Make sure that the welding gun in your use is designed for max. welding current needed by you!

Never use a damaged welding gun!

2.9. SHIELD GAS

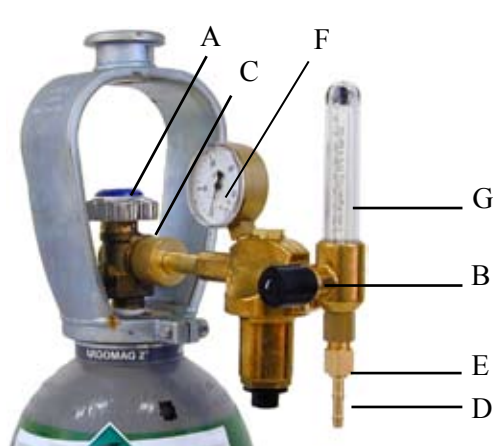
⚠ Handle gas bottle with care. There is a risk for injury if gas bottle or bottle valve is damaged!

For welding stainless steels, mixed gases are normally used. Check that the gas bottle valve is suitable for the gas. The flow rate is set according to the welding power used in the job. A suitable flow rate is normally 8 – 10 l/min. If the gas flow is not suitable, the welded joint will be sporous. Contact your local Kemppi-dealer for choosing gas and equipment.

2.9.1. Installing gas bottle

⚠ Always fasten gas bottle properly in vertical position in a special holder on the wall or on a carriage. Remember to close gas bottle valve after having finished welding.

Parts of gas flow regulator



- A Gas bottle valve
- B Press regulation screw
- C Connecting nut
- D Hose spindle
- E Jacket nut
- F Gas bottle pressure meter
- G Gas hose pressure meter

The following installing instructions are valid for most of the gas flow regulator types:

1. Step aside and open the bottle valve (A) for a while to blow out possible impurities from the bottle valve.
2. Turn the press regulation screw (B) of the regulator until no spring pressure can be felt.
3. Close needle valve, if there is one in the regulator.
4. Install the regulator on bottle valve and tighten connecting nut (C) with a wrench.
5. Install hose spindle (D) and jacket nut (E) into gas hose and tighten with hose clamp.
6. Connect the hose with the regulator and the other end with the wire feed unit. Tighten the jacket nut.
7. Open bottle valve slowly. Gas bottle pressure meter (F) shows the bottle pressure. Note! Do not use the whole contents of the bottle. The bottle should be filled when the bottle pressure is 2 bar.
8. Open needle valve if there is one in the regulator.
9. Turn regulation screw (B) until hose pressure meter (G) shows the required flow (or pressure). When regulating flow amount, the power source should be in switched on and the gun switch pressed simultaneously.

Close bottle valve after having finished welding. If the machine will be out of use for a long time, unscrew the pressure regulation screw.

2.10. MAIN SWITCH I/O

When you turn the main switch of the FastMig™ power source into I-position, the pilot lamp closest to this switch will light up, indicating the power source is ready for welding.

⚠ Always start and switch off the machine with the main switch, never use the mains plug as a switch.

2.11. OPERATION OF COOLING UNIT, FASTCOOL 10

Operation of cooling unit is controlled in such a way that pump is started when welding is started. After welding stop pump is rotating for approx. 5 min cooling the gun and the cooling liquid to ambient temperature.

Read in operation instructions for the Fastcool 10 unit the trouble situations of the liquid circulation system and protection against torch etc. damage.

2.12. HANGING

MF 29 can be hanged to the barrier with an optional hanging frame (6185285). The machine is not supposed to be hanged from its handle.

3. SERVICE, OPERATION DISTURBANCES

The amount of use and the working environment should be taken into consideration when planning the frequency of maintenance of MF. Careful use and preventive maintenance will help to ensure trouble-free operation.

The following maintenance operations should be carried out at least every six months:

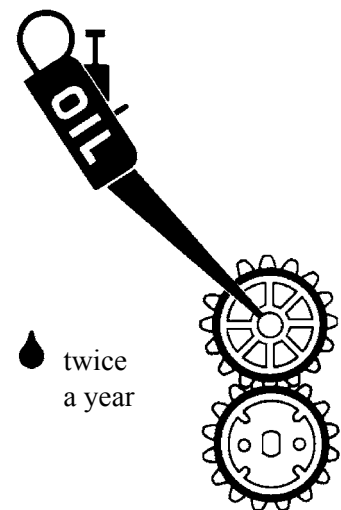
Check:

- The wear of the grooves of the feed rolls. Excessive wear of grooves causes problems in wire feed.
- The wear of the wire guide tubes of wire feed. Badly worn feed rolls and wire guide tubes should be discarded.
- The wire guide tube in the gun should be set as near the feed rolls as possible, but not touching them and the wire must follow a straight line from the end of the tube to the groove of the feed roll.
- Reel brake adjustment.
- Electric connections
 - * Oxidised couplings must be cleaned
 - * Loose couplings must be tightened

Clean dust and dirt from the equipment.

⚠ When using compressed air, always protect your eyes with proper eye protection.

In case of problems contact your KEMPPI dealer.



4. DISPOSAL OF THE MACHINE



Do not dispose of electrical equipment together with normal waste!

In observance of European Directive 2002/96/EC on Waste Electrical and Electronic Equipment and its implementation in accordance with national law, electrical equipment that has reached the end of its life must be collected separately and returned to an environmentally compatible recycling facility. As the owner of the equipment, you should get information on approved collection systems from our local representative.

By applying this European Directive you will improve the environment and human health!

5. ORDERING NUMBERS

MF 29		6063200
KM 300	3-ph 400V	6033000
KM 400	3-ph 400V	6034000
KM 500	3-ph 400V	6035000
Cooling unit Fastcool 10		6068100
Transport unit PM500		6185291

Accessories

KWF 300 protection slides	6185286
KWF gas flow regulator (mounting set)	W000364

MIG-guns

MMT 25	3 m	6252513MMT
MMT 25	4,5 m	6252514MMT
MMT 27	3 m	6252713MMT
MMT 27	4,5 m	6252714MMT
MMT 32	3 m	6253213MMT
MMT32	4,5 m	6253214MMT
MMT 35	3 m	6253513MMT
MMT 35	4,5 m	6253514MMT
MMT 42	3 m	6254213MMT
MMT 42	4,5 m	6254214MMT
MMT 30W	3 m	6253043MMT
MMT 30W	4,5 m	6253044MMT
MMT 42W	3 m	6254203MMT
MMT 42W	4,5 m	6254204MMT
MMT 52W	3 m	6255203MMT
MMT 52W	4,5 m	6255204MMT

Interconnecting cables

KM 70-1.8-WH	6260411
KM 70-15-WH	6260412
KM 70-1.8-GH	6260413
KM 70-15-GH	6260414

6. TECHNICAL DATA

		MF 29
Working voltage (safety voltage)		24 VDC
Rated power		100 W
Max. load (nominal values)		
	60 % ED	520 A
	100 % ED	440 A
Operation principle		4-roll feed
Diameter of feed roll		32 mm
Wire feed speed		0...25 m/min
Filler wires		
	∅ Fe, Ss	0,6...1.6 mm
	∅ Cored wire	0,8...1.6 mm
	∅ Al	1,0...1.6 mm
Wire reel		
	max. weight	5 kg
	max. size	∅ 200 mm
Gun connector		Euro
Operation temperature range		-20...+40 °C
Storage temperature range		-40...+60 °C
Degree of protection		IP 23 C
Dimensions		
	length	510 mm
	width	200 mm
	height	310 mm
Weight		8.0 kg

The products meet conformity requirements for CE marking.

7. TERMS OF GUARANTEE

Kemppi Oy provides a guarantee for products manufactured and sold by them if defects in manufacture and materials occur. Guarantee repairs must be carried out only by an Authorised Kemppi Service Agent. Packing, freight and insurance costs to be paid by orderer. The guarantee is effected on the date of purchase. Verbal promises which do not comply with the terms of guarantee are not binding on guarantor.

Limitations on guarantee

The following conditions are not covered under the terms of guarantee: defects due to natural wear and tear, non-compliance with operating and maintenance instructions, connection to incorrect or faulty supply voltage (including voltage surges outside equipment spec.), incorrect gas pressure, overloading, transport or storage damage, fire or damage due to natural causes i.e. lightning or flooding.

This guarantee does not cover direct or indirect travelling costs, daily allowances or accommodation.

Note: Under the terms of guarantee, welding torches and their consumables, feeder drive rolls and feeder guide tubes are not covered. Direct or indirect damage due to a defective product is not covered under the guarantee. The guarantee is void if changes are made to the product without approval of the manufacturer, or if repairs are carried out using non-approved spare parts.

The guarantee is also void if repairs are carried out by non-authorized agents.

Undertaking guarantee repairs

Guarantee defects must be informed to Kemppi or authorised Kemppi Service Agents within the guarantee period. Before any guarantee work is undertaken, the customer must provide proof of guarantee or proof of purchase, and serial number of the equipment in order to validate the guarantee.

The parts replaced under the terms of guarantee remain the property of Kemppi.

Following the guarantee repair, the guarantee of the machine or equipment, repaired or replaced, will be continued to the end of the original guarantee period.

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