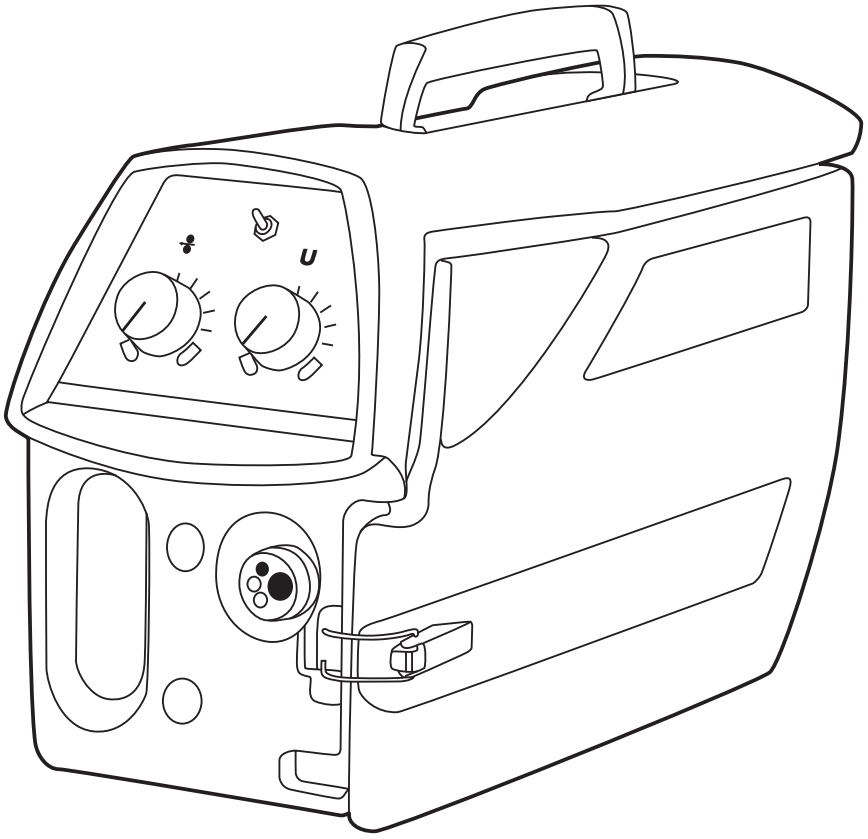
FastMig

MF 29



KEMPPI

EN

OPERATING MANUAL

English

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1. PREFACE

1.1 General

Congratulations on choosing the FastMig equipment. Used correctly, Kemppi products can significantly increase the productivity of your welding, and provide years of economical service.

This operating manual contains important information on the use, maintenance and safety of your Kemppi product. The technical specifications of the equipment can be found at the end of the manual.

Please read the manual carefully before using the equipment for the first time. For your own safety and that of your working environment, pay particular attention to the safety instructions in the manual.

For more information on Kemppi products, contact Kemppi Oy, consult an authorised Kemppi dealer, or visit the Kemppi web site at www.kemppi.com.

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

Important notes

Items in the manual that require particular attention in order to minimise damage and personal harm are indicated with the *'NOTE!'* notation. Read these sections carefully and follow their instructions.

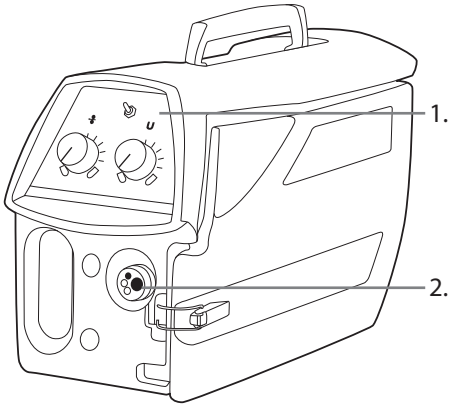
Disclaimer

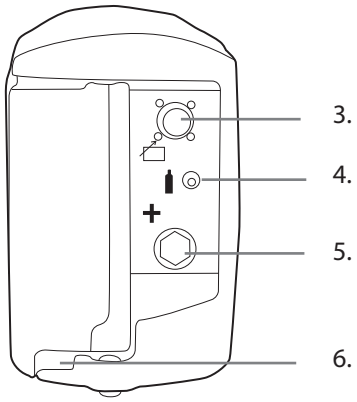
While every effort has been made to ensure that the information contained in this guide is accurate and complete, no liability can be accepted for any errors or omissions. Kemppi reserves the right to change the specification of the product described at any time without prior notice. Do not copy, record, reproduce or transmit the contents of this guide without prior permission from Kemppi.

2. PRODUCT INTRODUCTION

FastMig MF is basic wire feeder designed for demanding enviroment. It can be used with Kemppi's basic FastMig power sources KM 300, KM 400, and KM 500.

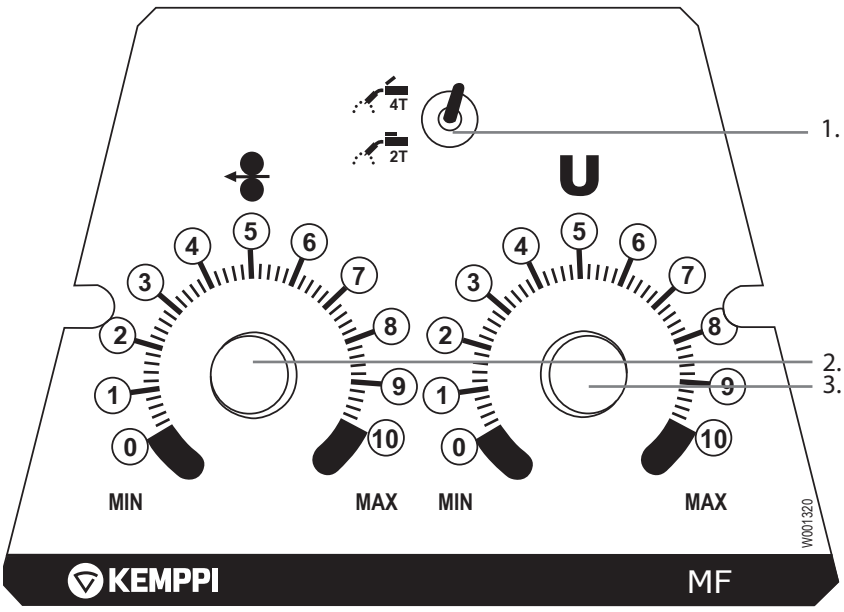
2.1 Operation control and connectors





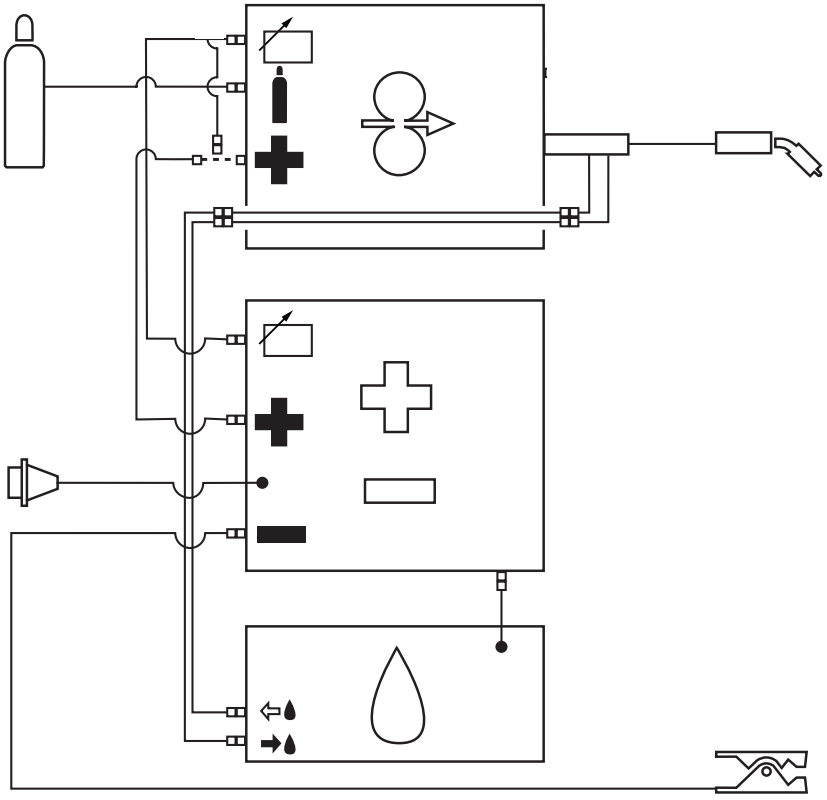
1. Control panel
2. Welding gun EURO connector

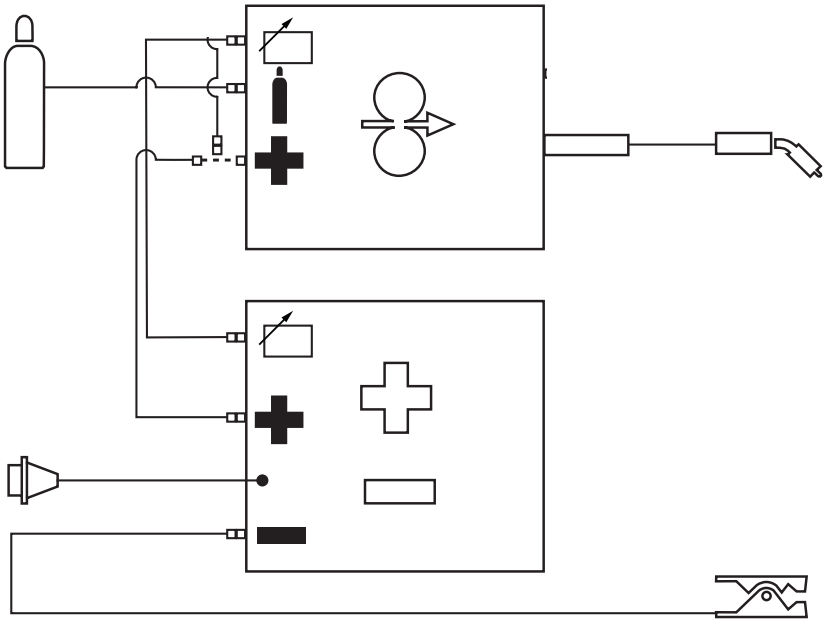
3. Connection for control cable
4. Shielding gas connection
5. Welding current cable connector
6. Lead-in of cooling liquid hoses



1. Selection of gun operating mode
2. Adjustment of wire feed speed
3. Adjustment of welding voltage

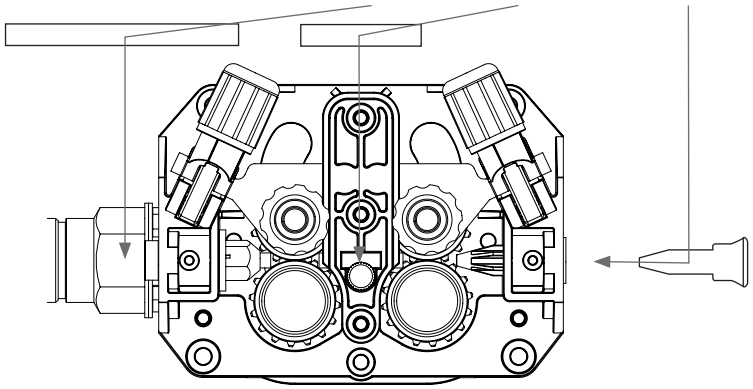
2.2 Connection of system





2.3 DuraTorque™ 400, 4 wheel wire feed mechanism

Wire guide tubes					
	ø mm		outlet tube	middle tube	inlet tube
Ss, Al, (Fe, Mc, Fc) plastic	0.6		SP007437	SP007429	SP007293
	0.8 – 0.9		SP007438	SP007430	SP007294
	1.0		SP007439	SP007431	SP007295
	1.2		SP007440	SP007432	SP007295
	1.4		SP007441	SP007433	SP007297
	1.6		SP007442	SP007434	SP007298
	2.0		SP007443	SP007435	SP007299
	2.4		SP007444	SP007436	SP007300
Fe, Mc, Fc metal	0.8 – 0.9		SP007454	SP007465	SP007536
	1.0		SP007455	SP007466	SP007537
	1.2		SP007456	SP007467	SP007538
	1.4 – 1.6		SP007458	SP007469	SP007539
	2.0		SP007459	SP007470	SP007540
	2.4		SP007460	SP007471	SP007541



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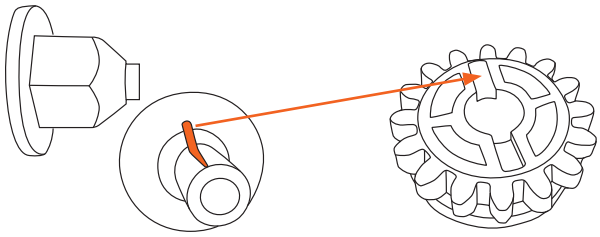
Wire feed rolls, plastic				
	ø mm		lower	upper
Fe, Ss, (Al, Mc, Fc) V-groove V	0.6		W001045	W001046
	0.8 – 0.9		W001047	W001048
	1.0		W000675	W000676
	1.2		W000960	W000961
	1.4		W001049	W001050
	1.6		W001051	W001052
	2.0		W001053	W001054
	2.4		W001055	W001056
Fc, Mc, (Fe) V-groove, knurled V≡	1.0		W001057	W001058
	1.2		W001059	W001060
	1.4 – 1.6		W001061	W001062
	2.0		W001063	W001064
	2.4		W001065	W001066
Al, (Fc, Mc, Ss, Fe) U-groove U	1.0		W001067	W001068
	1.2		W001069	W001070
	1.6		W001071	W001072

Wire feed rolls, metal			
	ø mm	lower	upper
Fe, Ss, (Al, Mc, Fc) V-groove V	0.8 – 0.9	W006074	W006075
	1.0	W006076	W006077
	1.2	W004754	W004753
	1.4	W006078	W006079
Fc, Mc, (Fe) V-groove, knurled V≡	1.0	W006080	W006081
	1.2	W006082	W006083
	1.4 – 1.6	W006084	W006085
	2.0	W006086	W006087
Al, (Fc, Mc, Ss, Fe) U-groove U	1.0	W006088	W006089
	1.2	W006090	W006091
	1.6	W006092	W006093

NOTE! *Mount the lower feed roll, ensuring that the pin on the shaft fits in the cut on the feed roll.*



3. INSTALLATION

3.1 Assembly of MIG system

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

Installation of power source

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

Mounting of KM power sources to transport wagon

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

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.

Mounting of FastMig wire feed units to boom

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

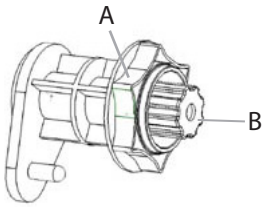
Suspension angle of wire feed unit can be changed by moving fixing point in handle.

3.2 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.

3.3 Mounting and locking of wire spool



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

NOTE! *Check that in filler wire spool 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.*

3.4 Automatic wire feed to gun

Automatic wire feed makes change of wire spool more rapid. In spool 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 spool and cut off the bent length. Be careful that the wire does not spill from the spool 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.
- Draw a bit of loose wire from wire spool. 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.

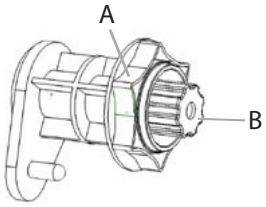
Automatic feed may sometimes fail with thin wires (Fe, Fc, Ss: 0,6 – 0,8 mm, Al: 0,8 – 1,0 mm). In that case you might have to open feed rolls and feed wire manually through feed rolls.

3.5 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.

NOTE! *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.*

3.6 Adjustment of tightness of spool 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 spool so that it would spill from the spool when the rotation of the spool 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.

3.7 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').

3.8 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 mm^2. 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!

NOTE! *Never use a damaged welding gun!*

3.9 Shielding gas

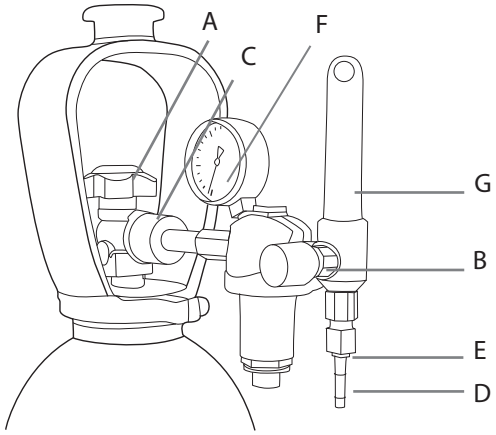
NOTE! *Handle gas cylinder with care. There is a risk for injury if the cylinder or its valve is damaged!*

For welding stainless steels, mixed gases are normally used. Check that the gas cylinder 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.

3.9.1 Installing gas cylinder

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

Parts of gas flow regulator



A. Gas cylinder valve
B. Press regulation screw
C. Connecting nut
D. Hose spindle
E. Jacket nut
F. Gas cylinder 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 cylinder valve (A) for a while to blow out possible impurities from the cylinder 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 cylinder 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 cylinder valve slowly. Gas cylinder pressure meter (F) shows the cylinder pressure. Note! Do not use the whole contents of the cylinder. The cylinder should be filled when the cylinder 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 cylinder valve after having finished welding. If the machine will be out of use for a long time, unscrew the pressure regulation screw.

3.10 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.

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

3.11 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.

3.12 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.

4. 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.
- Spool brake adjustment.
- Electric connections
  - Oxidised couplings must be cleaned
  - Loose couplings must be tightened

Clean dust and dirt from the equipment.

NOTE! *When using compressed air, always protect your eyes with proper eye protection.*

In case of problems contact your KEMPPI dealer.

Lubricate the feed rolls twice a year.

5. MAINTENANCE

When considering and planning routine maintenance, please consider the the frequency of machine use and the working environment.

Correct operation of the machine and regular maintenance will help you avoid unnecessary downtime and equipment failure.

NOTE! *Disconnect the machine from the mains before handling the electrical cables.*

5.1 Daily maintenance

- Check the overall condition of the welding gun. Remove welding spatter from the contact tip and clean the gas nozzle. Replace worn or damaged parts. Only use original Kemppi spare parts.
- Check the condition and connection of the welding circuit components: welding gun, earth return cable and clamp, sockets and connectors.
- Check the condition of the feed rolls, needle bearings and shafts. Clean and lubricate bearings and shafts with a small quantity of light machine oil if necessary. Assemble, adjust and test function.

5.2 Service shop maintenance

Kemppi Service Workshops complete maintenance according to their Kemppi service agreement. Recommended termed service and cleaning is listed in the FastMig KM power source manual.

Regular preventative maintenance by trained technicians will increase equipment life and ensure reliable operation.

5.2.1 DISPOSAL OF THE MACHINE

Do not dispose of electrical equipment 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 taken to an appropriate environmentally responsible recycling facility.

The owner of the equipment is obliged to deliver a decommissioned unit to a regional collection centre, per the instructions of local authorities or a Kemppi representative. By applying this European Directive you will improve the environment and human health.

6. 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 200 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

7. TECHNICAL DATA

MF 29		
Operating voltage (safety voltage)		24 VDC
Connection capacity		100 W
Output 40 °C	60 % ED	520 A
	100 % ED	440 A
Wire feed mechanism		4-roll feed
Diameter of feed roll		32 mm
Wire feed speed		0 – 25 m/min
Filler wires	ø Fe, Ss	0.6 – 1.6 mm
	ø Cored wire	0.8 – 1.6 mm
	ø Al	1.0 – 1.6 mm
Wire spool	max. weight	5 kg
	max. ø	200 mm
Gun connection		Euro
Operating temperature range		-20 ... +40 °C
Storage temperature range		-40 ... +60 °C
EMC class		A
Degree of protection		IP23S
External dimensions	LxWxH	510 x 200 x 310 mm
Weight		8.0 kg

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