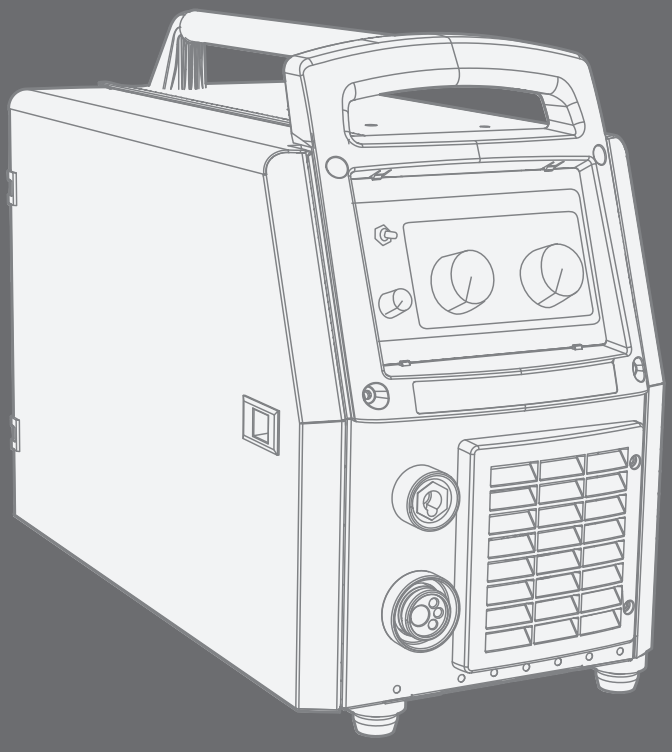
1910184
R06

Kempact

MIG 2530



KEMPPI

OPERATING MANUAL

English

CONTENTS

EN

1. PREFACE

1.1 General

Congratulations on choosing Kempact series welding 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 operating manual and the safety instructions booklet 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.

For Kemppi's standard safety instructions and warranty terms and conditions, please visit our web site at www.kemppi.com.

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

NOTE! *Items in the manual that require particular attention in order to minimise damage and personal harm are indicated with this symbol. 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.

1.2 Product introduction

The Kempact MIG 2530 is compact MIG inverter suitable for repair and installation use, and for light and medium industrial use. The power source and the wire feeding mechanism are contained in the device. The power regulation of the power source is implemented with IGBT transistors operating at a frequency of approximately 30 kHz.

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. BEFORE YOU START USING THE UNIT

2.1 Unpacking

The equipment is packed in durable packages, designed specially for it. Nevertheless, before using the equipment, always make sure it was not damaged during transport. Also check that you have received what you ordered and that there are instructions for it. NOTE! The packaging material of the products is suitable for recycling.

2.2 Placement of the unit

Place the unit on a horizontal, solid, and clean surface. Shield it from heavy rain and scorching sun. Make sure that cooling air circulates freely.

2.3 Serial number

The serial number of the unit is marked on the rating plate of the unit. The serial number makes it possible to trace product manufacturing series. You might need the serial number when placing spare parts orders or when planning maintenance.

2.4 Connection to the mains supply

The Kempact 2530 is equipped with a five metre mains cable without a plug. Installation of the plug should be carried out only by a competent electrician. For fuse and cable sizes, see the technical data in the end of this document.

2.5 Distribution network

All regular electrical devices without special circuits generate harmonic currents into distribution network. High rates of harmonic current may cause losses and disturbance to some equipment.

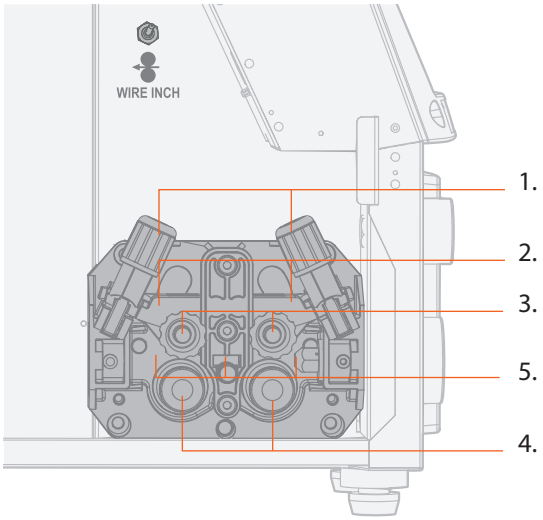
WARNING: *This equipment does not comply with IEC 61000-3-12. If it is connected to a public low voltage system, it is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment may be connected.*

EN

2.6 Ground cable

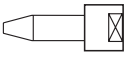
Fasten the earth clamp of the return current cable carefully, preferably direct onto the piece to be welded. The contact surface of the earth clamp should always be as large as possible. Clean the fastening surface from paint and rust. Use at least 35 mm² cables. Thinner cross-sectional areas cause overheating of connectors.

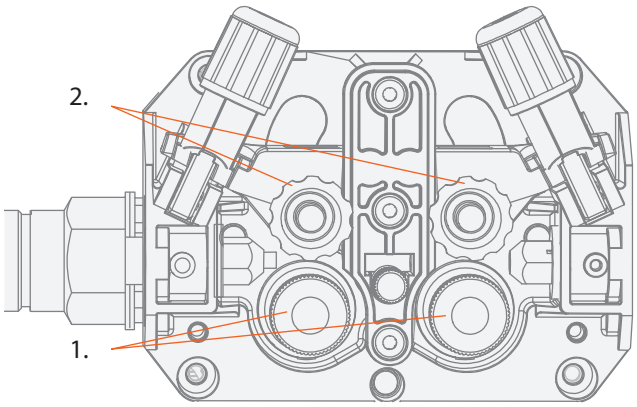
2.7 Wire feeding mechanism components



1. Clamp screw
2. Clamping lever
3. Feed rolls
4. Gun connector (Euro)
5. Wire guides

DuraTorque™ 400, 4 wheel 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
							



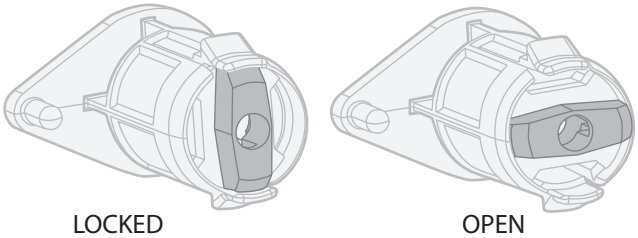
Wire feed rolls				
	ø mm	Colour	Drawing	Pressing
Fe, Ss, Al, V-groove	0.6	pale grey	W001045	W001046
	0.8/0.9	white	W001047	W001048
	1.0	red	W000675	W000676
	1.2	orange	W000960	W000961
	1.4	braun	W001049	W001050
	1.6	yellow	W001051	W001052
	2.0	grey	W001053	W001054
	2.4	black	W001055	W001056
Fe, Fc, Mc, knurled	1.0	red	W001057	W001058
	1.2	orange	W001059	W001060
	1.4/1.6	yellow	W001061	W001062
	2.0	grey	W001063	W001064
	2.4	black	W001065	W001066
Fe, Fc, Mc, Ss, Al, U-groove	1.0	red	W001067	W001068
	1.2	orange	W001069	W001070
	1.6	yellow	W001071	W001072

2.8 Installation of welding gun

Make sure the gun wire conduit and the flow nozzle match the manufacturer's recommendations for the type and diameter of wire you use. Too small a conduit may overload the wire feed device and disturb the wire feeding. Tighten the gun quick connector to eliminate voltage losses. A loose joint will make the gun and the wire feeder warm.

NOTE! *Do not use a damaged gun.*

2.9 Mounting and locking of wire reel



LOCKED OPEN

- Release locking nails of wire reel hub by turning locking knob a quarter round.
- Mount the reel at its place. Note rotating direction of reel!
- Lock the reel with locking knob, locking nails of hub remain to outside position and will lock the reel.

2.10 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.
- 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 a bit 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.

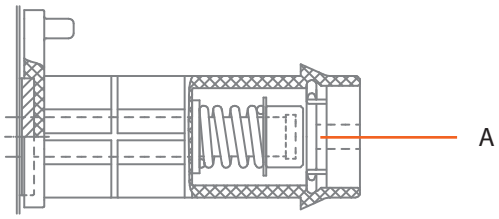
NOTE! *Check that the wire or wire reel does not touch the equipment body, there is a danger of short circuit*

2.11 Adjustment of pressure

Adjust the pressure of feed rolls with the control screw 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.*

2.12 Adjustment of tightness of reel brake



Brake force is adjusted through hole in locking device of reel hub by screwing the control screw (A) with screwdriver.

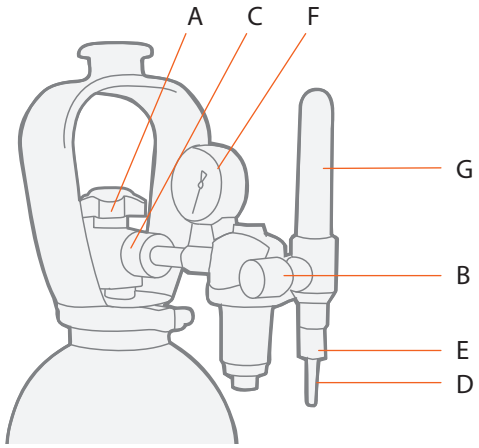
Adjust brake force as so big that the wire is not allowed to become too loose on the reel so that it would spill from the reel when the rotation of the reel stops. Need for brake force is increased with increase of wire feed speed.

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

2.13 Shielding gas

The MIG shielding gas consists of carbon dioxide, mixed gases and argon. Shielding gas flow rate is determined by the amount of welding current. The typical flow rate of gas in the welding of steel is 8–15 l / min.

The following installation instructions are valid for most gas flow regulator types:



Parts of gas flow regulator

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

1. Step aside and open the bottle valve (A) for a while to blow out possible impurities.
2. Turn the press regulation screw (B) of the regulator until no spring pressure can be felt.
3. Close the needle valve if there is one in the regulator.
4. Install the regulator on bottle valve and tighten the connecting nut (C) with a wrench.
5. Install the hose spindle (D) and jacket nut (E) into the gas hose and tighten with a hose clamp
6. Connect the hose with the regulator and the other end with the wire feed unit. Tighten jacket nut.
7. Open the bottle valve slowly. The gas bottle pressure meter (F) shows bottle pressure.

NOTE! *Do not use the whole contents of the bottle. Bottle should be filled when bottle pressure is 2 bar.*

8. Open the needle valve if there is one in the regulator.
9. Turn the regulation screw (B) until the hose pressure meter (G) shows the required flow (or pressure). When regulating the flow amount, the power source should be switched on and the gun switch pressed simultanously.

NOTE! *Close the bottle valve after welding is finished. If the machine will not be in use for a long time, unscrew the pressure regulation screw. Always fasten the gas ottle tightly in vertical position, to a wall stand or bottle cart, specially designed for it. For safety reasons, always remove the gas bottle from the transport stand of the machine before lifting of transport of the machine by car!*

3. OPERATION

3.1 Main switch and signal lights

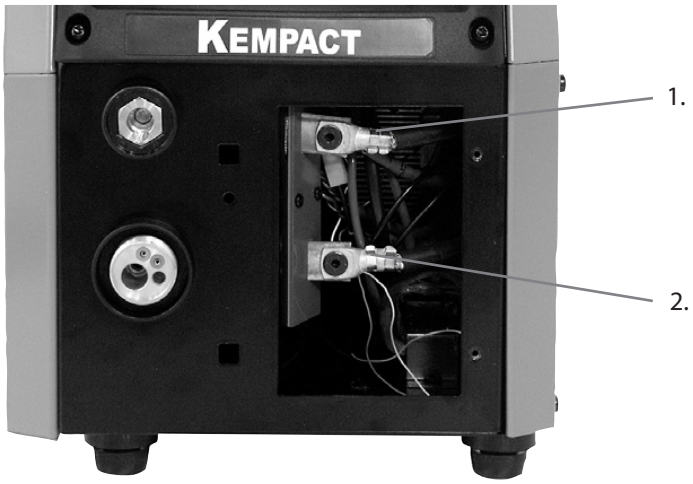
With the switch in the 'I' position, the primary and control circuits of the machine become live and the 'ON' signal light on the panel lights up. The welding circuit receives voltage when the gun switch is operated or when the wire feed test switch is pressed.

Always use the main switch to turn the machine on and off with the main switch; do not use the power plug for this purpose.

3.2 To select polarity for welding

Solid wire is usually welded in + pole and cored wire in – pole gun. Check for the recommended polarity on the package or consult the supplier of the product. The welding of very thin plates (0.5 to 0.7 mm) – polarity might also work best for solid wire.

3.2.1 Changing the polarity



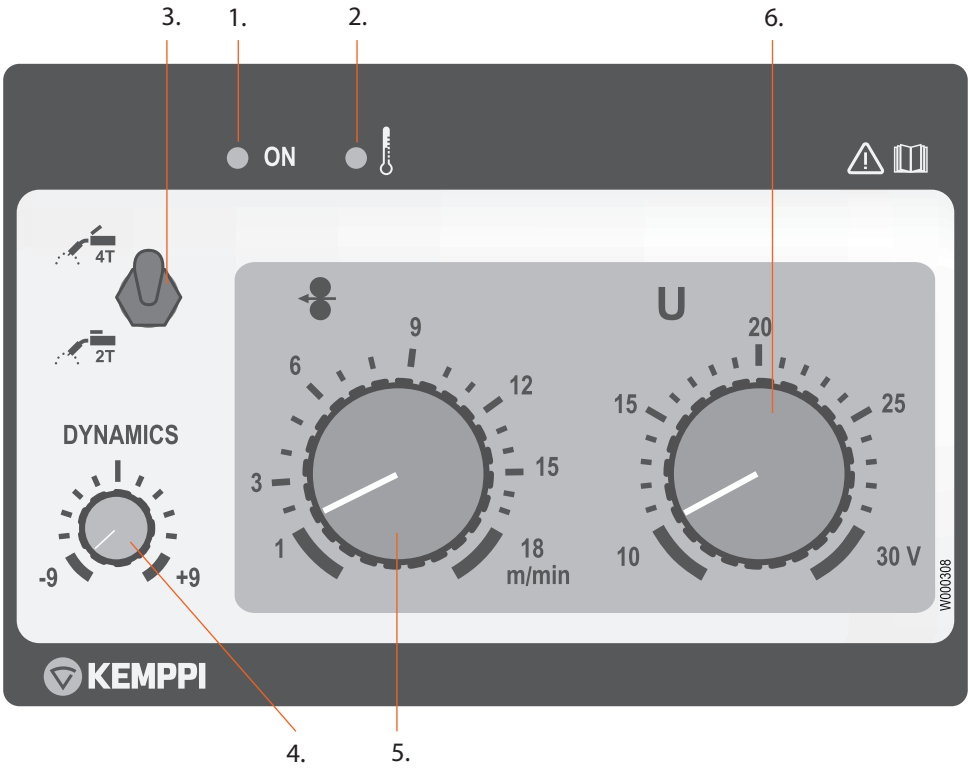
1. – pole
2. + pole

NOTE! *Only a service shop authorised by Kemppi may change the polarity.*

3.3 Panel

Adjusting voltage and wire feed speed

The welding voltage can be adjusted from 10 to 30 V, and the wire feed speed from 1 to 18 m/min. Adjust the values appropriately by using the table of guideline values on the door of the wire compartment and by testing.



1. ON signal light
2. Thermostat signal light
3. Selecting welding procedure (2T/4T)
4. MIG welding dynamics adjustment
5. Wire feed adjustment
6. Welding voltage adjustment

3.4 Selecting the welding procedure (2T/4T)

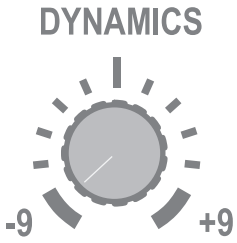
2T: MIG welding with double action of the start switch of the gun:

1. Switch closed – welding starts.
2. Switch open – welding ends.

4T: MIG welding with quadruple action of the start switch of the gun:

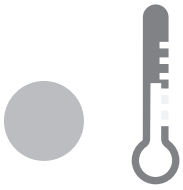
1. Switch closed – flow of shielding gas starts.
2. Switch open – welding starts.
3. Switch closed – welding ends.
4. Switch open – flow of shielding gas ends.

3.5 Adjusting welding dynamics



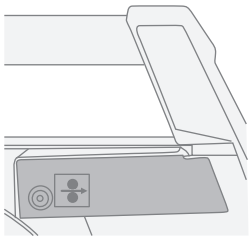
The adjustment of MIG welding dynamics influences the properties of the welding arc and the amount of splatter. The recommended basic setting is '0'. The values -> min (-1...-9) provide a softer arc for diminishing the amount of spatter. The values -> max (1...9) provide a coarser arc, suitable when increased arc stability is desired and when using 100% CO_2 shielding gas for welding steel.

3.6 Thermostat



The temperature control of the machine prevents the power source from over-heating.This means that the machine can not become damaged if loading exceeds the specified load factor during welding. When the signal lamp indicating overheating is lit, the welding circuit can not be activated. The lamp will turn off after a pause of about three minutes, and welding can be started again in the usual way by pressing gun switch.

3.7 Wire feed switch



The wire feed switch will start the wire feed motor without opening the gas valve. The power source will start up, but without providing welding power.

4. MAINTENANCE

4.1 Daily maintenance

NOTE! *Be careful of mains voltage when handling electric cables!*

Clean the wire channel of the electrode and check the contact tip regularly. Always check the condition of the mains and welding cable before operation and replace defective cables.

NOTE! *Only a competent electrician is allowed to remove or install the mains cable!*

4.2 Regular maintenance

KEMPPI -service workshops sign special service contracts with customers for regular maintenance. All parts are cleaned, checked and if necessary, repaired. Also the operation of the welding machine is tested.

4.3 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.

5. ORDERING NUMBERS

Kempact MIG 2530		621853002
GH 30 Gun holder		6256030
Earth cable 35 mm²	5 m	6184311
Transport unit ST 7		6185290
Transport unit P250		6185268
Lift hook		4298180
Wire spool pole		4289880
5 kg spool adapter		4251270
Gas hose	6 m	W000566

6. TECHNICAL DATA

Kempact MIG 2530		
Connection voltage	3~, 50/60Hz	380 – 440V ±10%
Rated power at max. current	40% ED	250 A / 12 kVA
Supply current	I_{1max}	17 A
	I_{1eff}	11 A
Connection cable	H07RN-F	4G1.5 (5 m)
Fuse (delayed)		16 A
Output 40 °C	40% ED	250 A /26.5 V
	60% ED	207 A / 24 V
	100% ED	160 A / 22 V
Welding range		10 – 30 V
Open circuit voltage		30 – 45 V
Power factor at max. current		0.64
Efficiency at max. current		87%
Wire feed speed		1 – 18 m/min
Filler wires	Fe, Ss	ø 0.6 – 1.0 mm
	Cored wire	ø 0.9 – 1.2 mm
	Al	ø 0.9 – 1.2 mm
	Cusi	ø 0.8 – 1.0 mm
Shielding gas		CO_2, Ar, Ar & CO_2 mixed gases
Wire spool (max. ø)		300 mm (15 kg)
Thermal class		H(180 °C) / B (130 °C)
External dimensions	LxWxH	580x280x440
Weight		20 kg
Operating temperature range		-20 °C ... +40 °C
Storage temperature range		-40 °C ... +60 °C
EMC class		A
Degree of protection		IP23S
Standards **IEC/EN 60974-1** **IEC/EN 60974-5** **IEC/EN 60974-10**		

For connection options of all gun and torch models and corresponding remote controls, refer to Kemppi Userdoc at https://kemp.cc/connectivity.

www.kemppi.com

KEMPPI