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

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KEMPACT

MIG 2520

KEMPPI
The Joy of Welding

CONTENTS

1. PREFACE

1.1. INTRODUCTION

Congratulations on having purchased a KEMPPI product. Properly installed and used KEMPPI products should prove to be productive machines requiring only a small amount of regular maintenance.This manual is designed to give you a good understanding of the equipment and its safe use. There is also information on maintenance of the unit and the machine´s technical data. Read the instructions before bringing the machine into use or servicing it for the first time. Additional information on Kemppi products and their use can be obtained from Kemppi or a Kemppi dealer. The specifications and designs presented in this manual are subject to change without prior notice. In this document, the following symbol is used the symbol is used to indicate a risk of injury or death: ⚠

Read the warnings carefully and follow the instructions. Please also study the instructions for safe operation and follow them when installing, operating and servicing the machine.

1.2. PRODUCT INTRODUCTION

The Kempact MIG 2520 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.

1.3. SAFE OPERATION

Read the warnings carefully and follow the instructions.

Welding arc and spatter

The arc and the reflected radiation from it can damage unprotected eyes. Shield your eyes and protect your surroundings appropriately before you start welding. The arc and welding spatter will burn unprotected skin. When welding, use protective clothes and clothing.

Danger of fire and explosion

Observe the fire safety instructions. Remove flammable material in and near the location in which you will weld. Have the necessary fire extinguishing equipment at hand. Note the dangers posed by special jobs, such as the risk of fire and explosion when welding tanks. Note! Sparks may ignite a fire even hours later!
Welding is working with fire, note the special instructions for such work.

Mains voltage

Never bring the welding machine inside the work piece (e.g. container or car). Never set the welding machine on a wet surface. Replace faulty cables immediately, they create a danger to life and can cause a fire. See that the connecting cable does not stick, touch sharp edges, or come in contact with a hot piece.

Welding current circuit

Isolate yourself from the welding current circuit by wearing dry and undamaged protective clothing. Never work on a wet surface. Never use damaged welding cables. Never set the electrode holder, earth clamp, or welding cables on top of the power source or other electrical equipment.

Welding fumes

Ensure adequate ventilation. Always take special measures when welding metals containing lead, cadmium, zinc, mercury, or beryllium.

⚠ **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.**

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 2520 is delivered 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. 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.

2.6. WIRE FEEDING MECHANISM COMPONENTS

Wire feed motor

Clamp screw

Clamping lever

Wire guide

Feed roll and screw

Gun connector (Euro)

2.7. FEED ROLLS

Choose feed roll according to filler wire.

Filler wires	Wire Ø mm	Groove
Fe, SS, CuSi	0.6/0.8, 0.8/1.0	V-groove
Flux cored	0.8/ 0.9, 1.0/1.2	knurled
Al	1.0/1.2	U-groove

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.

⚠ **Do not use a damaged gun.**

2.9. MOUNTING AND LOCKING OF WIRE REEL

1. Install the wire reel so that the hole in the reel is aligned with the pin on the reel holder. Use a reel adaptor, if necessary.
2. Push the reel into its place. Note! Check the reel rotation direction.
3. Lock the reel by turning the locking latch.

2.10. INSTALLING WELDING WIRE

Before installing welding wire, check that the feed roll, wire conduit and contact tip are suitable for the wire.

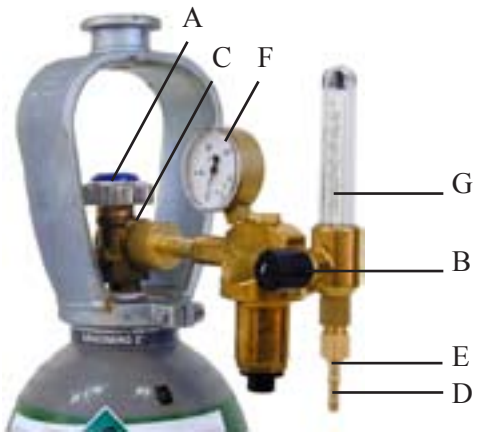
1. Install the feed roll, and check that the right groove is in the wire feed line.
2. Install the wire reel. Note! Do not tighten the locking screw of the reel trigger too much, the reel must roll freely.
3. Round off the wire end and push it through the wire conduit into the wire drive tube.
4. Check that the wire is in the groove and turn press stick into its proper place. Tighten the wire slightly.
5. Feed wire to the gun by pressing the switch until the wire has come through the contact tip. Pressing force to the feed roll is suitable when the wire can be slightly restrained with the fingers.
6. Adjust the wire reel braking force by turning the adjusting screw in the middle of the locking latch. To avoid over-loading the wire feed motor, do not overtighten.

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

When using aluminium filler wire, removing rear guide tube may improve wire feed. When using flux cored wire, always study the manufacturer's operation and safety instructions before use.

2.11. 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.



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 installation instructions are valid for most gas flow regulator types:

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.

⚠ **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 th esupplier of the product. The welding of very thin plates (0.5 to 0.7 mm) - polarity might also work best for solid wire.

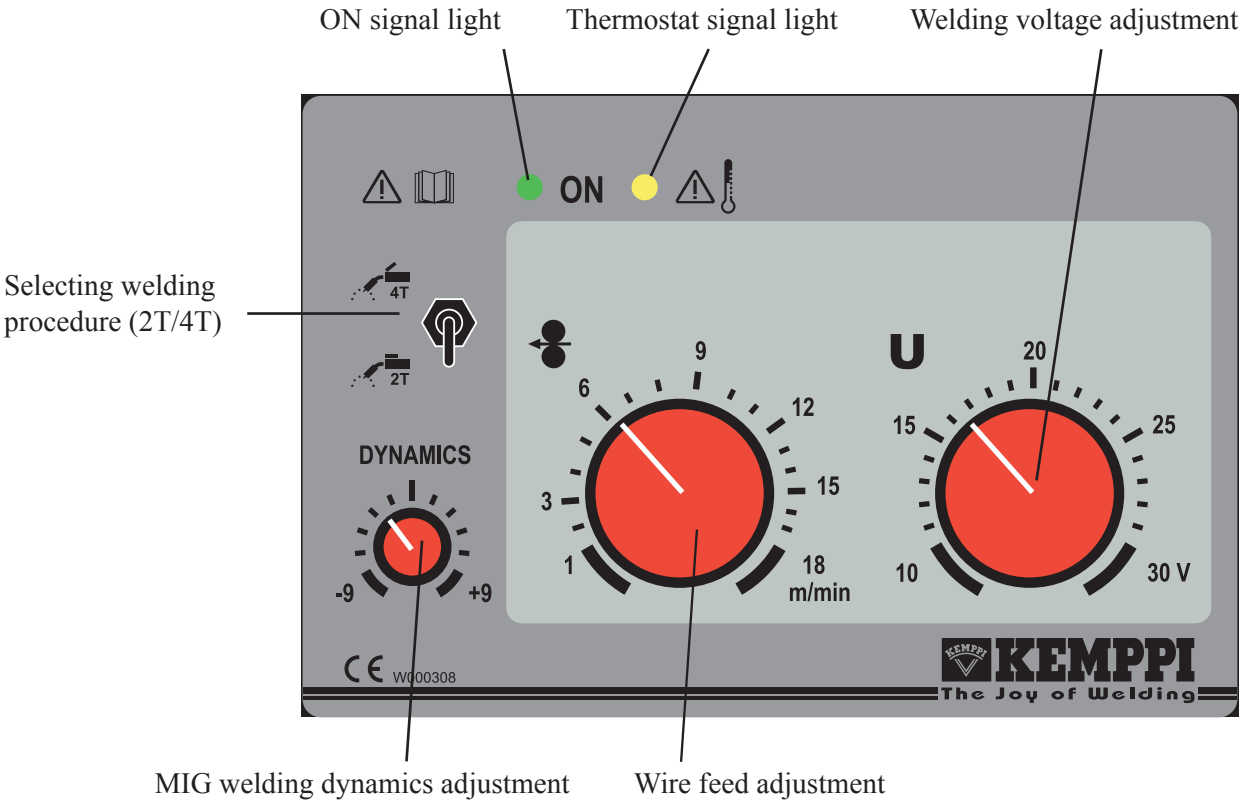
3.2.1. Changing the polarity

⚠ **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.



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.

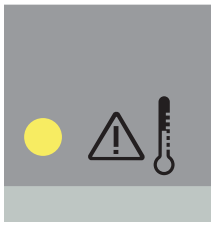
4T: MIG welding with quadruple action of the start switch of the gun:

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.

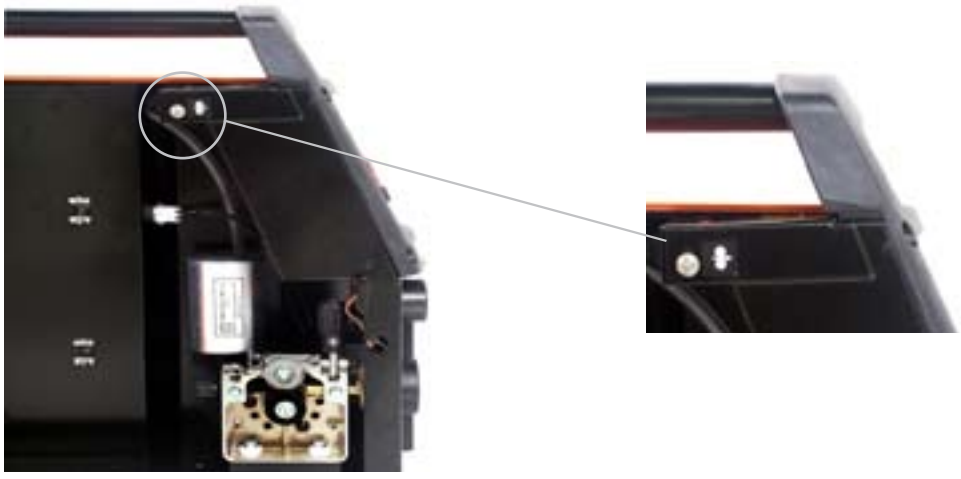
3.6. THERMOSTAT



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

⚠ **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.

5. ORDERING INFORMATION

Item		*Ordering number*
Kempact MIG 2520		6218520
GH 30 Gun holder		6256030
Feed roll 0.6-0.8	V-groove	9483070
Feed roll 0.8-1.0	V-groove	9483071
Feed roll 1.0-1.2	U-groove	9483072
Feed roll 0.8-0.9	V-groove, knurled	9483073
Feed roll 1.0-1.2	V-groove, knurled	9483074
Feed roll 1.0-1.2	V-groove	9483075
MMT 25	3 m	6252513MMT
MMT 25	4,5 m	6252514MMT
MMT 27	3 m	6252713MMT
MMT 27	4,5 m	6252714MMT
Earth cable 35 mm²	5 m	6184311
Transport unit ST 7		6185290
Transport unit P250		6185268
Lift hook		4298180
Gas hose	6m	W000566
Front quide tube orange	0.9-1.6 mm Ss	W000431
Front quide tube white	0.6-0.8 mm Fe, Mc, Fc	W000451
Front quide tube silver	0.8-1.6 mm Al	W000449

The unit fulfils the CE marking demands.

6. TECHNICAL DATA

Kempact Mig 2520		
Mains connection		3~400V +/-15%, 50/60Hz
Connected load 40% ED		12 kVA 250A
	60% ED	10 kVA 207A
	100% ED	7,5 kVA 160A
Mains cable/fuse		4x1,5mm²-5m/16A delayed
Load capacity	40% ED	250A /26,5V
	60% ED	207A /24V
	100% ED	160A /22V
Adjustment range		10 - 30V
Wire feed speed		1 - 18 m/min
Idle voltage		40-50 V
Power ratio		0,64 (250A / 26V)
Efficency		0,87 (250A / 26V)
Wires with filler	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 reel diameter		200 mm (5 kg)
Thermal class		H(180C) / B (130C)
Measurements		L510 x W250 x H415
Weight		17,5 kg
Range of temperature for use		-20C ... +40C
Storage temperature for use		-40C ...+60 C
Degree of protection		IP23C

7. 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!

8. 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 of 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-authorised 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 terns 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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