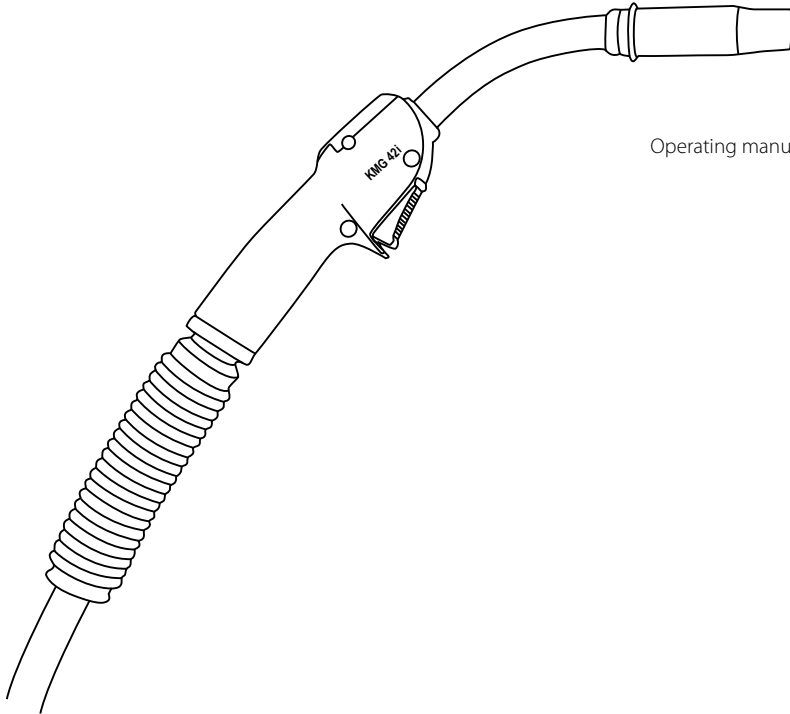


# KMG | 42i



Operating manual • English

**EN**



# OPERATING MANUAL

**English**

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# 1. PREFACE

## 1.1 INTRODUCTION

Congratulations on having purchased this product. Used correctly, Kemppi products can significantly increase the productivity of your welding, and provide years of economical service.

This manual is 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.

Please also study the Operation safety instructions and respect them when installing, operating and servicing the product.

## 1.2 PRODUCT INTRODUCTION

KEMPPI KMG MIG/MAG guns for manual welding are designed for demanding professional use. They are suitable to be used in all MIG units equipped with Euro adapter.

## 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 hurts unprotected eyes. Be careful also with reflecting arc flash. Welding arc and spatter burn unprotected skin. Use safety gloves and protective clothing.

### **Danger for fire or explosion**

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

## General

Never take welding machine inside a work piece (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.

Always wear hearing protection if the ambient noise level exceeds the allowable limit (e.g., 85 dB).

In environments classified as dangerous, only use S-marked welding equipments with a safe idle voltage level. These work environments include, for example, humid, hot or small spaces, where the user may be directly exposed to the surrounding conductive materials.

## 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.

## Environment

Welding equipment is not recommended for use in rain or snow. Protect the equipment against rain and strong sunlight. Always store the machine in a dry and clean space.

Protect the machine from sand and dust during use and in storage. The recommended operating temperature range is -20 to +40 °C.

Place the machine so that it is not exposed to hot surfaces, sparks or spatter.

EMC classification of Kemppi's arc welding equipments are class A in accordance with electromagnetic compatibility standards CISPR 11 and IEC 60974-10, and therefore the product is designed to be used in an industrial environment only.

**WARNING:** This class A equipment is not intended for use in residential locations where the electrical power is provided by a public low-voltage supply system. In those locations it may be difficult to ensure the electromagnetic compatibility due to conducted and radiated disturbances.

Arc welding equipments cause electromagnetic disturbance. To minimize the harmful effects, strictly use the equipment according to the operating manual and other recommendations.

## 2. CONNECTING THE GUN

The gun is equipped with spiral liner for welding normal steel wire. Before connecting the gun, make sure that its wire liner is according to recommendations for the welding wire in question (see consumable parts sheet delivered with the gun).

Set the snap connector carefully at its place so that the control connectors will not get damaged. Tighten the snap connector carefully in order to avoid voltage losses. Loose connection will heat the gun and the feeder unit. Control tightness of connection daily.

Connect liquid hoses of gun and interconnecting cable according to operation instruction of the wire feeder. Fix liquid hoses in such a way that those having red code always are connected to corresponding red counter connectors and the blue ones respectively to blue counter connectors. When connecting liquid and gas hoses check that there are no dirt, metal powder or other wastes.

- Before driving the wire into gun check that the wire end is straight at a length of approx. 200 mm and the tip blunt (file if necessary). A sharp wire tip may damage wire liner and contact tip of gun.
- Watch out for wire sticking out from welding end of gun. Do not direct the gun towards people or work piece, instead make sure that the wire comes freely out in the air.

## 3. USE AND MAINTENANCE

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

Due to high temperatures and wear, the welding end of MIG gun requires most maintenance but also condition of other parts should be checked regularly.

### **Welding end**

- Remove welding spatter and check condition of insulations, contact tip and gas nozzle. Replace damaged and worn-out parts. Use only original Kemppi spare parts.
- Check condition of insulations. Replace damaged insulations immediately.
- Check that in the discharge holes for shielding gas there is no spatter or dirt.

- Use the gun in a proper way:
  1. Do not remove welding spatter by hammering the gun against the work piece!
  2. Do not use sharp tools, because damaging of surfaces will increase stickening of spatter!
  3. Do not bend neck body of gun or fasten the gun from neck body against bench etc., for it may cause destruction of the neck!
  4. Do not use the gun as hammer!

### **Gun cable**

- Clean wire liner when replacing wire reel, or more often.
- Check daily that insulations of handle and gun cable are undamaged.
- Check that there are no sharp bends in gun cable.

## **4. OPERATION DISTURBANCES**

### **The most common operation disturbances are as follows:**

Welding wire does not run smoothly or wire is sticking in the wire liner (arc length varies, you can feel shaking in the handle):

- Wire liner is dirty or blocked-up. Clean with compressed air. Replace wire liner if necessary.
- Wrong wire liner or contact tip. Make sure that wire liner and contact tip are according to recommendations for the welding wire in question (see consumable parts sheet delivered with the gun).
- Contact tip has heated up too much. Check cooling liquid circulation.
- Contact face of contact tip is damaged due to spatter or sparking caused by impurities. Replace contact tip.
- Gun cable has too sharp bends, straighten.
- Welding wire has a lot of dirt, rust or bends etc., which increases friction and results in contact disturbances.
- Check operation of the wire feed unit. Check that drive roll size and type are suitable for wire in question. Check that drive roll pressure is not too low or too high.

Gas shielding is bad (weld pool "is boiling", arc is unstable):

- On inner face of gas nozzle or in contact tip and contact tip holder there is too much welding spatter; clean.
- In discharge hole for shielding gas there is spatter or other dirt; clean.
- There are impurities in shielding gas (moisture, air).
- There are impurities in base material (rust, base coat, grease).



- Pressure gathered in long gas hoses will cause a great flow of shielding gas at welding start, which may cause turbulence or mixing of air into shielding gas. The reason may also be a faulty or a faulty regulated relief valve which lets too much pressure into gas hoses.
- Flow of shielding gas is too small or too big (causes turbulence). Use in short arc range a flow of 8 – 15 l/min, in hot arc range 10 – 20 l/min.
- Distance of gun to work piece is too long. In short arc welding keep the gas nozzle at a distance of 10 – 15 mm and in hot arc welding at a distance of 15 – 30 mm to work piece.
- Angle of tilt of gun is too big.
- There is too much draught at welding place.

## 5. ORDERING NUMBERS

Gun	Length	Ordering code
KMG 42i	4.0 m	6254224

## 6. TECHNICAL DATA

Gun	Loading capacity Ar + CO <sub>2</sub> (A)	Duty cycle (%)	Wire diameters (mm)	Type of cooling
KMG 42i	420	35	0.8 – 1.6	Air

Voltage rating 113 V<sub>peak</sub>.

Connection to Mig unit: Euro adapter

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

The guns meet construction and safety requirements according to standard IEC/EN 60974-7.

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