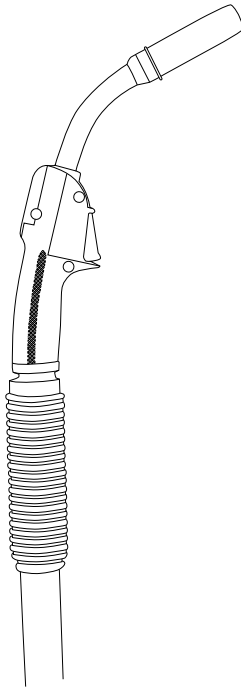


WeldSnake | 35 30W, 42W



Operating manual • English *EN*

Käyttöohje • Suomi *FI*

Bruksanvisning • Svenska *SV*

Bruksanvisning • Norsk *NO*

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OPERATING MANUAL

English

CONTENTS

| | | |
|------------|---|-----------|
| 1. | PREFACE | 3 |
| 1.1 | General..... | 3 |
| 1.2 | Product Introduction | 3 |
| 1.3 | Operation Safety..... | 4 |
| 2. | CONNECTING THE GUN | 5 |
| 3. | USING THE WS GUN WITH UNITS OTHER THAN PROMIG AND FEED | 6 |
| 3.1 | Changing the connection | 6 |
| 4. | MOUNTING THE GUN REGULATOR RMT 10 | 8 |
| 5. | USING THE GUN REGULATOR RMT 10 | 9 |
| 5.1 | Regulating the wire feed speed and welding power | 9 |
| 5.2 | Selecting the selecto channel..... | 9 |
| 6. | OPERATION OF THE THERMAL SHIELD | 11 |
| 7. | USE AND MAINTENANCE | 11 |
| 8. | OPERATION DISTURBANCES | 12 |
| 9. | ORDERING NUMBERS | 14 |
| 10. | TECHNICAL DATA | 15 |

1. PREFACE

1.1 GENERAL

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 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.

1.2 PRODUCT INTRODUCTION

KEMPPI WeldSnake WS extended length (6 m and 8 m) MIG/MAG guns for manual welding are designed for demanding professional use. They are compatible with Kemppi DL Teflon liners for welding 1.2 (1.6) AL and 1.0 – 1.2 SS wires. The WS guns are suitable to be used with all MIG units equipped with a 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

The welding arc hurts unprotected eyes. Also be careful with reflecting arc flashes. The welding arc and spatter burn unprotected skin. Use safety gloves and protective clothing.

Danger of fire or explosion

Pay attention to fire safety regulations. Remove flammable or explosive materials from the welding location. Always reserve sufficient fire-fighting equipment at the welding location. Be prepared for hazards in special welding jobs, e.g. the danger of fire or explosion when welding container type work pieces.

***NOTE!** Fire can break out from sparks even several hours after welding has been finished!*

Mains voltage

Never take the welding machine inside a work piece (e.g. container or truck). Do not place the welding machine on a wet surface. Always check cables before operating the machine. Change damaged cables without delay. Damaged cables may cause injury or start a fire. Connection cable must not be compressed or 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 damaged cables. Do not put the MIG gun or welding cables on the 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

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

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

2. CONNECTING THE GUN

In their delivery state, internal connections of WS guns are made so that they are suitable to be used only with Promig and Feed wire feeders.

Do not use the WS gun in any wire feeder other than Promig or Feed before you have changed the internal connections of the gun according to the instructions in the following paragraph.

Do not use the WS gun in units other than Promig or Feed before you are certain that the RMT 10 gun control unit is not coupled to the gun.

Mount the DL Teflon liner delivered with the gun according to the mounting instructions delivered with the liner. Before connecting the gun, make sure that its wire liner is according to the recommendations for the welding wire in question (see the 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 loss. A loose connection will heat up the gun and the feeder unit. Control the tightness of the connection daily.

Connect liquid hoses of the gun and interconnecting cable according to operation instructions of the wire feeder. Fix liquid hoses in such a way that one that have a red code are always connected to the corresponding red counter connectors and the blue ones respectively to the blue counter connectors.

Make sure the connectors of the liquid and gas hoses are free of dirt, metal powder or other waste.

Make sure that the wire feeder is equipped with feed rolls and wire guide tubes recommended for the wire you use.

Before driving the wire into the gun check that the end of the wire is straight in length of approx. 200 mm and that the tip of the wire is blunt (file if necessary). A sharp wire tip may damage the wire liner and the contact tip of the gun.

Look out for wire coming out of the welding end of gun. Do not direct the gun towards people or the work piece but make sure that the wire exits the gun without obstruction.

3. USING THE WS GUN WITH UNITS OTHER THAN PROMIG AND FEED

In the WS guns, in addition to start operations, gun control and thermal protection operations are also transmitted along the control lines of the snap connector. Hence the delivery state of the guns is such that without any alternations to the internal connections, the guns are suitable to be used only with Promig and Feed wire feed units.

The use of WS guns in other MIG units without any alternations to the connections may cause following erratic behaviour:

- Start is always switched on and wire is being fed continuously, even though the trigger is not pulled.
- Start does not operate even if the trigger is pulled. If the RMT 10 gun control unit is installed, the use of the WS gun in other units than Promig or Feed may cause a malfunction as described above, even though you have changed the internal couplings of the gun.

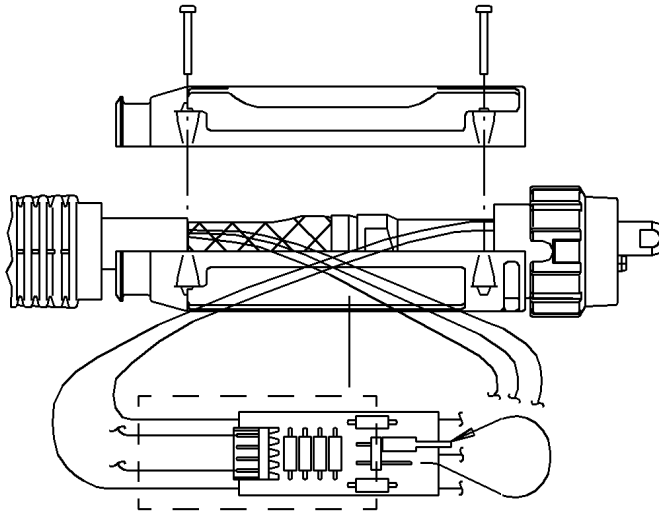
***NOTE!** If the RMT 10 gun control unit is coupled at its place, using the WS gun in units other than Promig or Feed may cause malfunctions as described above, even though you have changed the internal coupling of the gun.*

3.1 CHANGING THE CONNECTION

Under the plastic cover of the snap connector head of the WS gun there is an electronics card, on which there is a shorting jumper for changing the connection.

- Release the fastening screws (4 pcs.) of the plastic cover protector of the snap connector head.
- Lift the cover approximately 50 mm. Do not bend the cooling liquid hoses.
- Take the electronics card out of the plastic protector.
- Gently pull the insulating hose covering the card to the direction of the snap connector so that the shorting jumper becomes accessible. Handle the wires of card and their connections carefully.
- In the delivery state, the shorting jumper is mounted to the connectors, next to which, at the base of the card, there is a printed symbol text "PRO". Disconnect the shorting jumper and connect it to the another connector pair with the symbol text "FU".
- Pull the insulating hose back onto the card.
- Mount the card back in its original place. Make sure that clamping rings of wires remain in their original position. Make sure the plastic cover does

- not press against the card when it is reattached to the gun.
- Press the cover of the plastic protection back in place. Make sure that the cooling liquid hoses and their bending protections are placed inside plastic protection without any sharp bends and make that they retain the original shape of the hose.
- Tighten the screws of the cover.



- Mark the sticker on the cover to signify that the connection has been changed into the position "FU".



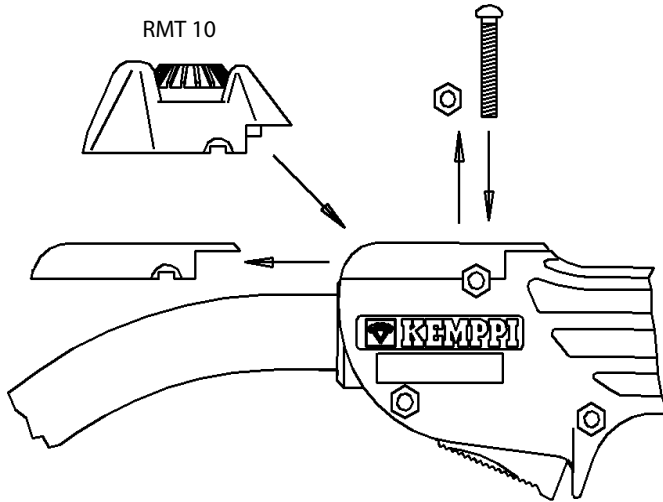
- The gun is now ready for use in devices other than Promig or Feed, e.g. in FU wire feeders of Multisystems.

You can use the WS gun with the FU connection also with the Promig and Feed but control and thermal protection operations will not be available.

4. MOUNTING THE GUN REGULATOR RMT 10

In the handle of the WS gun there is a place for the gun regulator RMT 10 (6185475), which is available as an accessory. This regulator enables you to regulate the welding power of synergic MIG or pulsed MIG welding with the Promig and Feed, or select preprogrammed welding parameters according to your wishes.

In the delivery state there is a cover plate in place of the gun regulator.



- Release the fastening screw of the cover plate.
- Release the cover plate from the handle by pushing it out on its guides. Under the rear end of the cover plate you will now see a connector to which the gun regulator connects. Make sure the regulator RMT 10, its connectors and the connectors of the gun are free of metal powder, dirt, etc. Clean carefully if necessary.
- Push the gun regulator RMT 10 onto the guides, but not completely to the end. Make sure that the connector on the handle side is in the correct position and that the connectors are correctly connected to each other. Push the regulator carefully to its place.
- Tighten the screw.

5. USING THE GUN REGULATOR RMT 10

Depending on the panel used in the Promig (or Feed) wire feeder, the gun regulator RMT 10 will enable you to regulate wire feed speed in MIG welding as well as the welding power of synergic MIG or pulsed MIG welding. You can also select preprogrammed welding parameters from Selecto channels 1 – 5 according to your wishes. Selecting and regulating signals of Selecto channel are transmitted along the start lines of the gun through a Euro adapter.

The gun regulator RMT 10 works only with the Promig and Feed wire feeders.

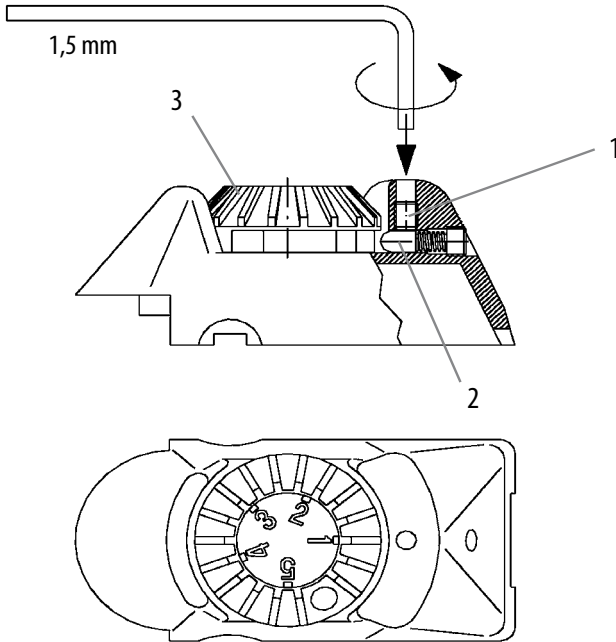
5.1 REGULATING THE WIRE FEED SPEED AND WELDING POWER

The means to regulate the wire feed speed for MIG welding and regulation of welding power for synergic MIG or pulsed MIG welding as well as other relevant regulations, fine adjustment and selections are described in the operation instructions for Promig and Feed wire feeder units.

5.2 SELECTING THE SELECTO CHANNEL

When you are using a wire feeder fitted with a panel with Selecto mode, you can also select the channels 1 – 5 from the WS gun by using the gun regulator RMT 10. The use of the Selecto mode is described in the operation instructions for the Promig.

Positions 1 – 5 of the potentiometer on the RMT 10 correspond to the Selecto channels 1 – 5 (see sticker on the potentiometer). In order to find correct position of the potentiometer and to feel channel positions when turning the potentiometer, you should release the spring-loaded bearing of the RMT 10. On the outer edge of the potentiometer there are grooves corresponding to Selecto channels 1 – 5 into which the bearing slides.



- Loosen the hexagon socket head screw (1) until the bearing (2) is released and pressed against the outer edge of potentiometer (3) (look in the gap between the regulator frame and the potentiometer).

Restoring the RMT 10 into its normal state, where potentiometer positions corresponding to Selecto channels are not felt:

- Turn the potentiometer (3) a little so that the bearing (2) is forced out of the groove on the potentiometer edge.
- Tighten the screw (1).

6. OPERATION OF THE THERMAL SHIELD

Inside the plastic protection of the snap connector head, WS / W guns have, as an extension for a liquid-current cable, a PTC thermal shield, which in Promig or Feed equipment switches off the welding when gun overheats. The thermal shield prevents overheating of the liquid-current cable and other parts of the gun in case the cooling liquid for some reason should not circulate in the gun. When the thermal shield switches off the welding, a pilot lamp for the thermal shield of the Promig wire feed unit is lit. It is possible to continue welding when the gun has cooled down enough.

***NOTE!** The thermal shield operates only with the Promig and Feed units. The thermal shield does not operate if the internal connections of the gun are changed into position "FU".*

If the thermal shield switches off the welding, it is likely that cooling liquid does not circulate in the gun or that the flow is very weak. Do not continue welding until you have cleared up the reason for the disturbance and repaired the fault.

Check the following:

- The cooling unit is running and has enough cooling liquid.
- The cooling liquid hoses of the gun and interconnecting cable are correctly connected and they do not have any sharp bends.

7. 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 a long lifespan for the gun.

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

Welding end:

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

Use the gun properly:

- Do not remove welding spatter by hitting the work piece with the gun!
- Do not use sharp tools, because damaging of surfaces will increase the sticking of spatter!
- Do not bend the neck body of the gun or fasten the gun by its neck to a workbench etc., for it may damage the neck of the gun!
- Do not use the gun as a hammer!

Gun cable:

- Clean the wire liner when replacing the wire reel or more frequently.
- Check on a daily basis that the insulations of the handle and the gun cable are undamaged.
- Check that there are no sharp bends in the gun cable.

8. OPERATION DISTURBANCES

Welding is stopped and the pilot lamp of thermal shield of the Promig unit is lit:

- Thermal shield of the gun has stopped welding. Find the fault before you continue welding. Especially check connections of the cooling liquid hoses (also in the interconnecting cable).

Start does not operate although you pull the trigger, or start is always switched on, although you do not pull the trigger:

- Internal connection of the gun is in position "PRO" although you are using the gun in a wire feeder other than Promig or Feed. Change connection according to the instructions.
- RMT 10 gun control unit is coupled, although you use gun in other units than Promig or Feed. Detach the gun control unit.

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 if necessary.
- Wrong wire liner or contact tip. Make sure that the wire liner and contact tip are according to recommendations for the welding wire in use (see the consumable parts sheet delivered with the gun).
- The contact tip has heated up too much. Check the cooling liquid circulation.
- The contact face of the contact tip is damaged due to spatter or sparking caused by impurities. Replace contact tip.
- The gun cable has sharp bends, straighten.

- The 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 the drive roll size and type are suitable for the wire in use. Check that the drive roll pressure is not too low or too high.

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

- There is too much welding spatter on the inner face of the gas nozzle or in the contact tip and the contact tip holder; clean.
- There is spatter or other dirt in the discharge hole for shielding gas; clean.
- There are impurities in the shielding gas (moisture, air).
- There are impurities in the base material (rust, base coat, grease).
- Pressure cumulated in long gas hoses will cause a burst of shielding gas at the beginning of welding, which may cause turbulence or mixing of air into the shielding gas. The reason for this might also be a faulty or a poorly adjusted relief valve, which puts too much pressure into the gas hoses.
- Flow of shielding gas is too low or too high (causes turbulence). In short arc range a flow of 8 – 15 l/min, in hot arc range 10 – 20 l/min is to be used.
- Distance between the gun and the 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 from the work piece.
- Angle of tilt of the gun is too large.
- There is too much draught at the welding location.

9. ORDERING NUMBERS

| | | Package contents | | |
|------------|--------------|------------------------|--|-------------------------|
| Code | Filler wire | Basic gun | Wire liner | Contact tip |
| 6253516A12 | AL 1.2 | 6253516 / WS 35 6M | 4304100 / DL-teflon 0.8 – 1.6 AL 6m | 9580124A / M8 1.2A |
| 6253516S10 | SS 1.0 | 6253516 / WS 35 6M | 4304120 / DL-teflon 0.8 – 1.0 SS 6m | 9580123SS / M8 1.0SS |
| 6253046A12 | AL 1.2 – 1.6 | 6253046 / WS 30W 6M | 4304100 / DL-teflon 0.8 – 1.6AL 6m | 9580124A / M8 1.2A |
| 6253046S10 | SS 1.0 | 6253046 / WS 30W 6M | 4304120 / DL-teflon 0.8 – 1.0SS 6m | 9580123SS / M8 1.0SS |
| 6253046S12 | SS 1.2 | 6253046 / WS 30W 6M | 4304140 / DL-teflon 1.2 – 1.6SS 6m | 9580124SS / M8 1.2SS |
| 6253048A12 | AL 1.2 – 1.6 | 6253048 / WS 30W 8M | 4304110 / DL-teflon 0.8 – 1.6AL 8m | 9580124A / M8 1.2A |
| 6253048S10 | SS 1.0 | 6253048 / WS 30W 8M | 4304130 / DL-teflon 0.8 – 1.0SS 8m | 9580123SS / M8 1.0SS |
| 6253048S12 | SS 1.2 | 6253048 / WS 30W 8M | 4304150 / DL-teflon 1.2 – 1.6SS 8m | 9580124SS / M8 1.2SS |
| 6254206A12 | AL 1.2 – 1.6 | 6254206 / WS 42W 6M | 4304100 / DL-teflon 0.8 – 1.6AL 6m | 9580124A / M8 1.2A |
| 6254206S10 | SS 1.0 | 6254206 / WS 42W 6M | 4304120 / DL-teflon 0.8 – 1.0SS 6m | 9580123SS / M8 1.0SS |
| 6254206S12 | SS 1.2 | 6254206 / WS 42W 6M | 4304140 / DL-teflon 1.2 – 1.6SS 6m | 9580124SS / M8 1.2SS |
| 6254208A12 | AL 1.2 – 1.6 | 6254208 / WS 42W 8M | 4304110 / DL-teflon 0.8 – 1.6AL 8m | 9580124A / M8 1.2A |
| 6254208S10 | SS 1.0 | 6254208 / WS 42W 8M | 4304130 / DL-teflon 0.8 – 1.0SS 8m | 9580123SS / M8 1.0SS |
| 6254208S12 | SS 1.2 | 6254208 / WS 42W 8M | 4304150 / DL-teflon 1.2 – 1.6SS 8m | 9580124SS / M8 1.2SS |

10. TECHNICAL DATA

| Gun | Loading capacity Ar + CO2 (A) | Duty cycle (%) | Wire diameters (mm) | Type of cooling |
|--------|----------------------------------|----------------|------------------------------|-----------------|
| WS 35 | 300 | 35 | AL 1.2 SS 1.0 | Air |
| WS 30W | 300 | 100 | AL 1.2 (1.6) SS 1.0 – 1.2 | Liquid |
| WS 42W | 400 | 100 | AL 1.2 (1.6) SS 1.0 – 1.2 | Liquid |

| Gun | Cooling data | | | |
|--------|-----------------------------|---------------------------|--------------------|---------------------|
| | Max. temp. in inlet (°C) | Min. flow rate (l/min) | Min.pressure (bar) | Max. pressure (bar) |
| WS 30W | 50 | 1 | 1 | 5 |
| WS 42W | 50 | 1 | 1 | 5 |

Connection to Mig unit: Euro adapter

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

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

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