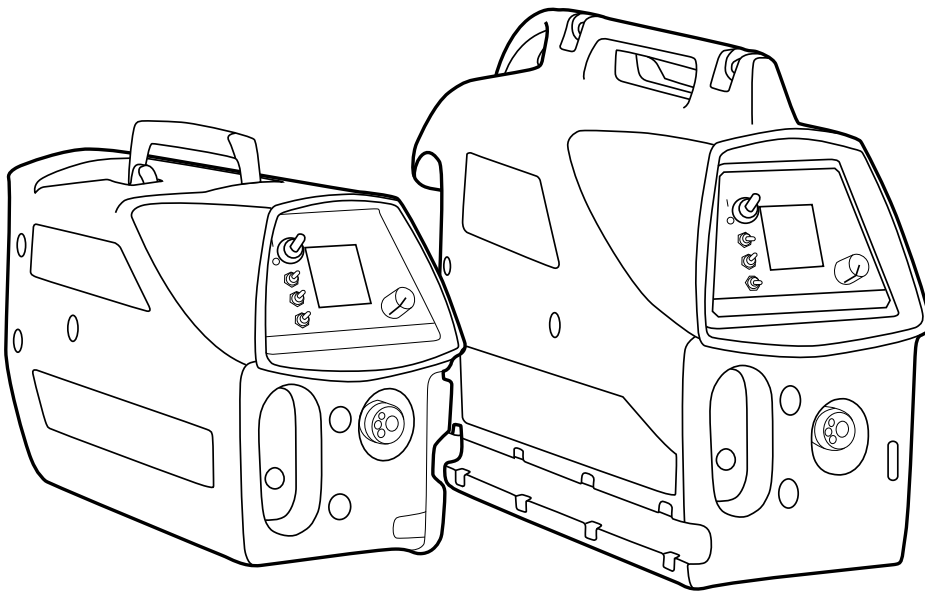


ArcFeed | 200, 300, 300P, 300RC



Operating manual • English *EN*

Käyttöohje • Suomi *FI*

Bruksanvisning • Svenska *SV*

Bruksanvisning • Norsk *NO*

Brugsanvisning • Dansk *DA*

Gebrauchsanweisung • Deutsch *DE*

Gebruiksaanwijzing • Nederlands *NL*

Manuel d'utilisation • Français *FR*

Manual de instrucciones • Español *ES*

Instrukcja obsługi • Polski *PL*

Инструкции по эксплуатации • По-русски *RU*

操作手册 • 中文 *ZH*

OPERATING MANUAL

English

CONTENTS

1. PREFACE	3
1.1 General.....	3
1.2 About voltage-sensing technology	3
1.3 Introduction	4
2. BEFORE USE	5
2.1 Connecting the cables.....	5
2.2 Selecting the welding wire	5
2.3 Mounting the wire spool	5
2.4 Installing the MIG/MAG welding gun.....	6
3. MACHINE SETTINGS	6
3.1 Setting the maximum wire feed speed.....	6
3.2 Adjusting the pressure of the feed rolls.....	7
3.3 Adjusting the spool brake.....	7
3.4 Reversing polarity	8
3.5 Changing the feed rolls.....	8
4. USING THE MACHINE	10
4.1 Using the control panel functions	10
4.1.1 Switching the machine on and off.....	10
4.1.2 Selecting the CC or CV mode.....	10
4.1.3 Selecting the welding gun operating mode.....	11
4.1.4 Changing the wire feed speed adjustment scale	12
4.1.5 Using the power source remote control (only 300 RC).....	12
4.2 Using the inside controls	13
4.2.1 Burn back time	13
4.2.2 Gas test.....	13
4.2.3 Wire inch.....	13
4.2.4 Post gas time.....	13
4.3 Hanging the device.....	13
5. MAINTENANCE	14
5.1 Daily maintenance	14
5.2 Regular maintenance	14
5.3 Disposal of the machine.....	14
6. ORDERING NUMBERS	15
7. TECHNICAL SPECIFICATIONS	16

1. PREFACE

1.1 GENERAL

Congratulations on your choice of the Kemppi ArcFeed wire feeder. 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 ABOUT VOLTAGE-SENSING TECHNOLOGY

The voltage-sensing wire feeder uses the welding voltage to generate the energy required for controlling the wire feeder's operations. Before starting to weld, you just select the desired settings for the feeder and the power source according to the welding requirements, the base and filler material, and the shielding gas to be used.

When you start welding in CC mode, the feeder controls the parameters so that the quality of the welds always remains high.

In normal MIG/MAG welding, the parameters' values are controlled by the power source via the control cable, but voltage-sensing technology makes such a control cable between the power source and the feeder unnecessary.

Constant Current (CC) power sources

The CC type of welding machine changes the wire feed speed according to the arc voltage. The voltage will change with different arc lengths while only slightly varying the amperage.

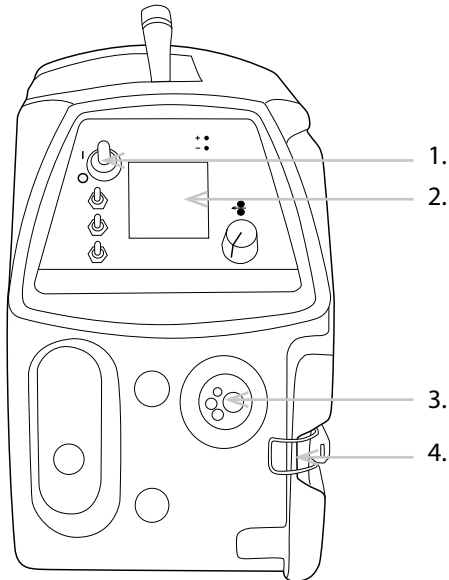
Constant Voltage (CV) power sources

The CV type of welding machine maintains a relatively stable, consistent voltage regardless of the amperage. It results in a relatively flat volt-amp curve. The MIG/MAG welding machines are typically CV type machines.

1.3 INTRODUCTION

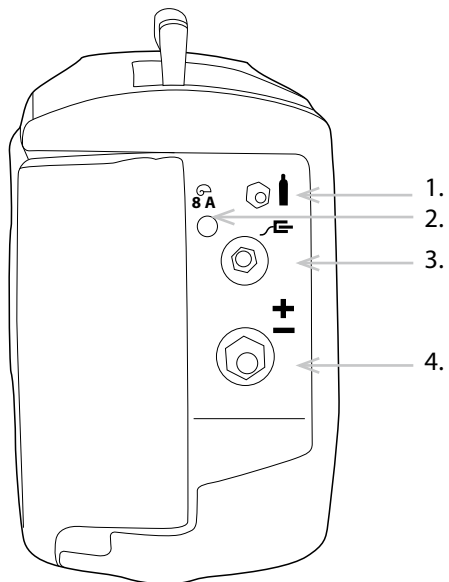
The Kemppi ArcFeed is a voltage sensing wire feeder for MIG/MAG welding. It can be combined with a variety of power sources of various brands, also with the ones designed for MMA welding. The recommended power sources to be used with Kemppi ArcFeed are Kemppi Master 5001 and Kemppi Master MLS 3500.

Front view



1. Main switch
2. Control panel
3. Welding cable connection
4. Locking latch

Back view



1. Shielding gas connection
2. Fuse
3. Earthing cable connection
4. Power source connection

2. BEFORE USE

2.1 CONNECTING THE CABLES

Before starting to use the Kemppi ArcFeed, the necessary cable connections must be done in the power source and the wire feeder.

To connect the cables, do the following:

1. Switch off the power source and connect its earthing clamp to the workpiece.
2. Switch off the Kemppi ArcFeed and connect the feeder earthing cable to the male DIX connector (negative pole) in the back of the feeder. Then connect the feeder earthing clamp to the workpiece.
3. Connect the welding cable from the power source to the female DIX connector (positive pole) in the back of the feeder.
4. Connect the shielding gas hose to the connector (1) in the back of the feeder.

The Kemppi ArcFeed is now connected to the power source.

2.2 SELECTING THE WELDING WIRE

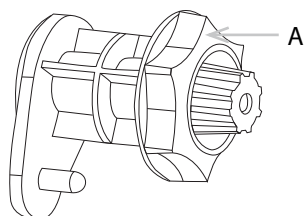
Select the suitable welding wire according to the base material, filler material and shielding gas. The Kemppi ArcFeed is optimized for use with 1.2mm rutile flux-cored or solid wire, but the following wires can be used:

- Flux-cored wires 1.2–2.0 mm
or up to 2.4 mm with the 300P model
- Innershield wires 1.6–2.0 mm
or up to 2.4 mm with the 300P model
- Solid wires 1.0–1.6 mm

In Kemppi ArcFeed 200 you can use 200mm wire spools. In models 300, 300P and 300RC, you can use 300 mm wire spools.

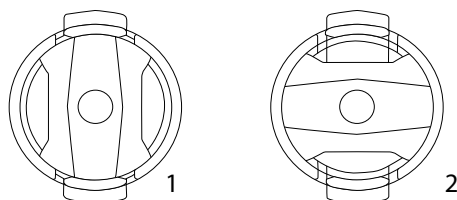
2.3 MOUNTING THE WIRE SPOOL

Model 200:



1. Open the locking nut (A) of the spool holder.
2. Check the rotating direction of the wire spool and push the spool into its place so that it rotates in the right direction.
3. Close the locking nut (A).

Models 300, 300P and 300RC:



1. Turn the locking knob (1) of the spool holder so that the locking clips are opened.
2. Check the rotating direction of the wire spool and push the spool into its place so that it rotates in the right direction.
3. Turn the locking knob (2) of the spool holder to close the locking clips.

2.4 INSTALLING THE MIG/MAG WELDING GUN

After mounting the wire spool, connect the welding gun cable to the connector (3) in the front of the feeder.

Remember that you need to use suitable wire liner and feed rolls for the welding wire you are using. Check also, that the correct groove is used in the feed rolls. If you need to change the feed rolls or select different groove, look the instructions in chapter 3.5.

Before feeding the wire into the gun, release the wire from spool and cut off the bent length. Be careful not to let the wire unwind from the spool. Check that the end of the wire has no sharp edges, which may damage the wire guide tube and the contact tip of the welding gun.

NOTE! When feeding the welding wire into the gun, be sure that you are not pointing the gun at anyone and that there isn't anything in front of the gun. The cut wire can be very sharp.

To feed the wire from the spool to the welding gun, do the following:

1. Draw some loose wire from the wire spool and feed it through the back guide to the feed rolls. Do not release pressure of feed rolls!
2. Locate the Wire inch button inside the feeder and push the button down to start the wire inching. Let the wire go through the feed rolls and enter the wire liner.
3. Keep the wire inch button pressed, until the wire comes through the contact tip.

Check once again that the wire is still properly in the grooves of both feed roll pairs. Now the Kemppi ArcFeed is ready to weld.

NOTE! When welding gun trigger is pressed, the welding current is connected to the wire. To avoid accidents and electric shock, it is not recommended to use gun trigger for wire inching.

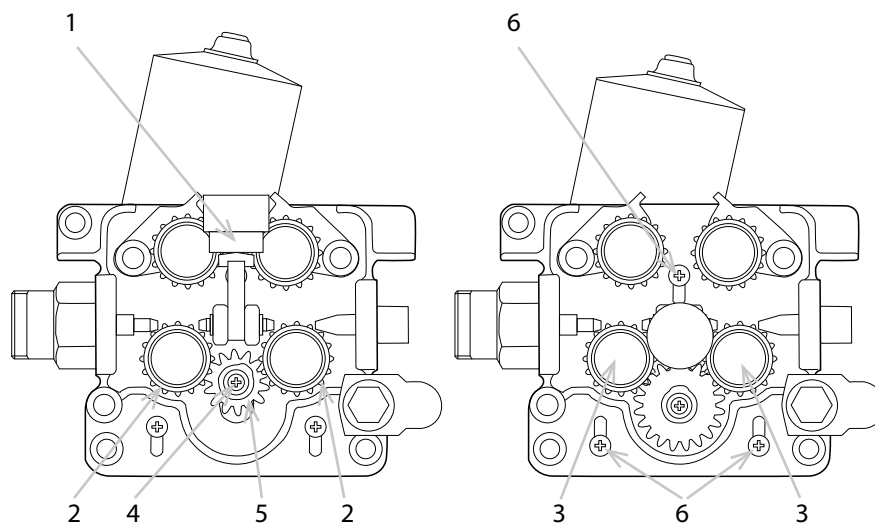
3. MACHINE SETTINGS

3.1 SETTING THE MAXIMUM WIRE FEED SPEED

The maximum wire feed speed of Kemppi ArcFeed is by default 18 m/min. This is enough for most welding work. However, if you need higher speed, you can raise it to 25 m/min by replacing the gear wheel D28 with a larger one, model D40.

NOTE! After changing the gear wheel, you must also set the right jumper setting on the control card of the feeder.

To change the gear wheel, do the following:

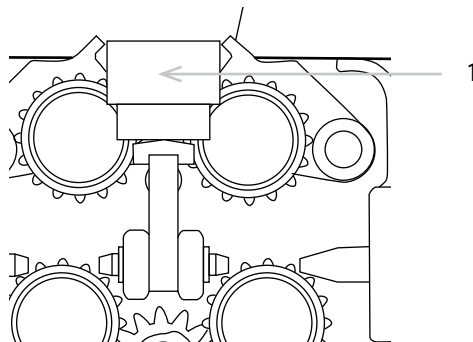


1. Open the locking lever (1) and remove the lower feed rolls (2). Open the screw (4) and remove its washer. Then remove the gear wheel (5) from motor shaft.
2. Loosen the screws (6) by one turn and replace the gear wheel with the larger one. Tighten the screw (4).
3. Put the lower feed rolls (2) back to their place, but don't tighten the screws.
4. Lift the motor so that there is a clearance of about 0.2 mm between the gear wheel and the lower feed rolls.
5. Tighten screws (6). Check the gear clearance and adjust the motor position if necessary. Tighten the feed roll screws (3).

To set the jumper setting, do the following:

1. Turn the feeder off.
2. Remove the plastic cover of the feeder by unscrewing the fixing bolts.
3. Locate the control card inside the feeder and change the position of the jumper X6 so that it connects the two pins.
4. Replace the cover of the feeder and tighten the fixing screws.

3.2 ADJUSTING THE PRESSURE OF THE FEED ROLLS



The pressure adjustment knob is located at the end of the locking lever (1). With the adjustment knob you can adjust the pressure of the feed rolls, so that the wire runs smoothly into the wire liner and brakes a little when coming out of the contact tip.

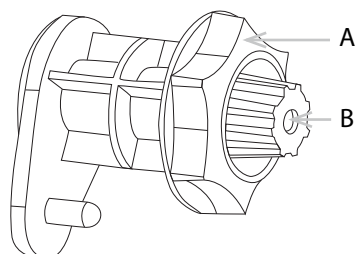
Make sure that the pressure is hard enough to avoid wire from slipping in the feed rolls, but not too hard, because then it might flatten the welding wire or damage its coating. Too hard pressure may also cause friction and excessive wearing of the feed rolls.

3.3 ADJUSTING THE SPOOL BRAKE

The Kemppe ArcFeed is equipped with a spool brake to prevent the wire from unwinding and tangling when the spool stops rotating at the end of the weld. The need for spool brake force is increased with the increase of the wire feed speed.

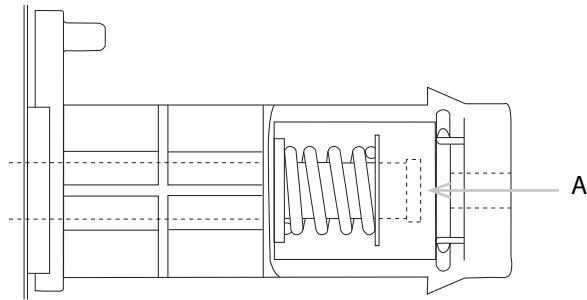
The spool brake causes extra load to the wire feed motor, so do not apply too high brake force.

To adjust the spool brake in model 200, do the following:



Increase the spool brake force by turning the brake adjusting knob (B) clockwise. To decrease the brake force, turn the knob anticlockwise.

To adjust the spool brake in models 300, 300P and 300RC, do the following:



Adjust the spool brake force through the hole in the spool locking mechanism with a screw driver. Increase by turning the screw clockwise and decrease by turning it anticlockwise.

3.4 REVERSING POLARITY

Polarity of the welding machine refers to the pole in which the welding cable is connected. In MIG/MAG welding the gun is usually connected to the plus pole, i.e. you are using positive polarity. However, some filler wires are recommended to be welded with the gun in negative pole.

The Kemppi ArcFeed recognizes automatically the polarity you are using. This means that it knows in which pole the welding cable is connected at the power source. The led on the control panel indicates, whether you are using positive or negative polarity.

To reverse the polarity, do the following:

Switch the welding cable and earthing cable from one pole to the other at the power source. After that, the wire feeder recognizes the new polarity, and indicates it with the control panel led.

3.5 CHANGING THE FEED ROLLS

There are different feed rolls for different welding wires. Also, each feed roll has two grooves for different wire sizes.

The Kemppi ArcFeed is equipped with standard feed rolls, which are equipped with plain grooves. These feed rolls can be used in welding with all kinds of wires. There are, however, following feed roll groove shapes available for special purposes:

- Knurled groove is designed for cored wires and steel wires.
- U groove is designed for aluminium wires.
- Trapezoidal groove is designed for heavy welding applications.

The feed rolls and the wire liners have following colour codes in order to make identification easier.

Feed rolls	
colour of filler wire	ø mm
white	0.6 and 0.8
red	0.9, 1.0, 1.2
yellow	1.4, 1.6, 2.0
black	2.4

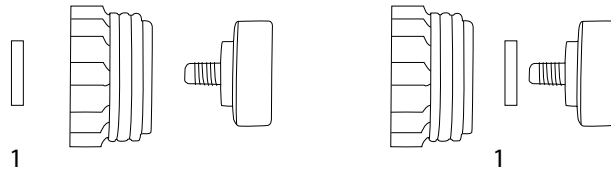
Wire guide tubes	
colour of filler wire	ø mm
orange	0.6-1.6
blue	over 1.6

To change feed rolls, do the following:

1. Remove the feed rolls by unscrewing their fixing screws.
2. Insert the new feed rolls into their place.
3. Select the right groove according to the wire you are using. See the instructions below.
4. Fasten the feed rolls with their fixing screws and drive the wire into the welding gun as instructed in chapter 2.4 'Installing the welding gun'.

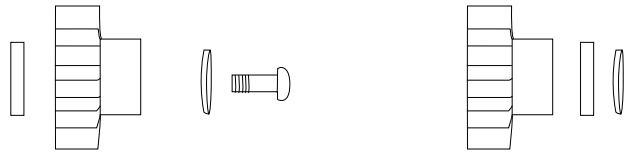
To change the feed roll groove, do the following:

Each feed roll has two grooves for different filler wire diameters. When changing the feed rolls select the groove according to the wire you are using.



Move the feed roll selector plates from one side to another.

Choose the correct groove by moving the groove selector plate (1) from one side to another in feed roll as shown in the left-hand picture above.



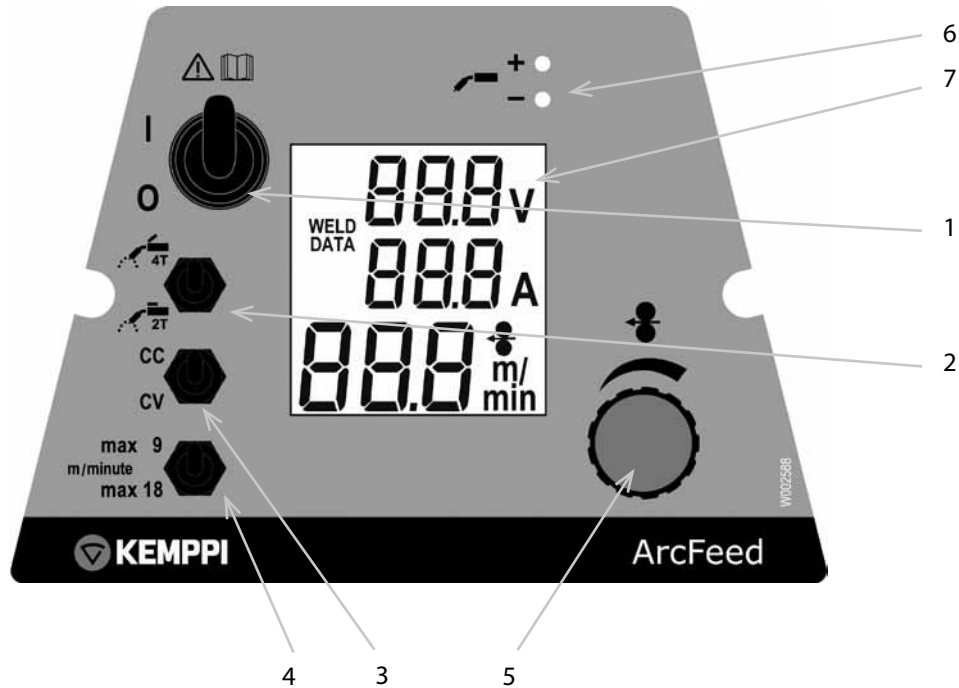
Move also the gear wheel selector plate.

When changing the feed roll groove you must also set the gear wheel to new position. This is done by changing the gear wheel selector plate to the other side of the wheel.

4. USING THE MACHINE

Before starting to use the Kemppi ArcFeed wire feeder, you must be aware of the power source type you are using (either CC, constant current, or CV, constant voltage). The suitable welding wire for the welding application must also be loaded in the feeder. For more information, see Chapter 3.

4.1 USING THE CONTROL PANEL FUNCTIONS



1. ON/OFF switch
2. Gun operating mode selector (2T/4T)
3. CC/CV mode selector
4. Selector of the wire feed speed scale
5. Control knob.
6. Polarity indicator light
7. LCD display

4.1.1 Switching the machine on and off

To turn on the machine, set the main switch (1) to position ON. The LCD display of the control panel lights up, and the machine is ready for use.

4.1.2 Selecting the CC or CV mode

With the CC/CV switch you can choose between constant current (CC) and constant voltage (CV) type of power source. Set this switch according to the power source you are using. See the documentation of the power source to find its type.

Adjusting the welding values in CC mode:



In CC mode, the display shows the open-circuit voltage and a reference value for welding current. The reference value is a pre-defined value that has been determined using 1.2 mm flux-cored wire.

Before starting to weld, use the control knob (5) to set the welding current to match the welding current of the power source.

NOTE! When welding in CC mode, the dynamics setting at the power source must be set to its maximum value. For instructions on how to do it, see the documentation of the power source.

Adjusting the welding values in CV mode:



In CV mode the display shows the welding voltage and wire feed speed (WFS). The adjustment range of the wire feed speed depends on the size of the wire drive roll. With the small drive roll the WFS can be 0–18 m/min, and with the large drive roll it can be 0–25 m/min.

To adjust the welding values in CV mode, do the following:

1. Estimate the welding values to be used in the welding task.
2. At the power source, select the correct values for welding voltage and current, if available.
3. Use the control knob of the Kemppi ArcFeed to enter the necessary WFS setting at the feeder. The value is shown on the display.

4.1.3 Selecting the welding gun operating mode

With the switch (2) you can set the MIG welding gun to either two-sequence (2T) or four-sequence (4T) mode.

How to use the welding gun in 2T operating mode:

1. Press the gun trigger down to start welding.
2. Release the gun trigger to stop welding.

How to use the welding gun in 4T operating mode:

1. Press the gun trigger down to start the flow of the shielding gas.
2. Release the trigger to start welding.
3. Press the trigger down again to stop welding.
4. Release the switch again to stop the flow of the shielding gas.

4.1.4 Changing the wire feed speed adjustment scale

With the wire feed speed scale selector (4) you can affect the sensitivity of the control knob when changing the wire feed speed.

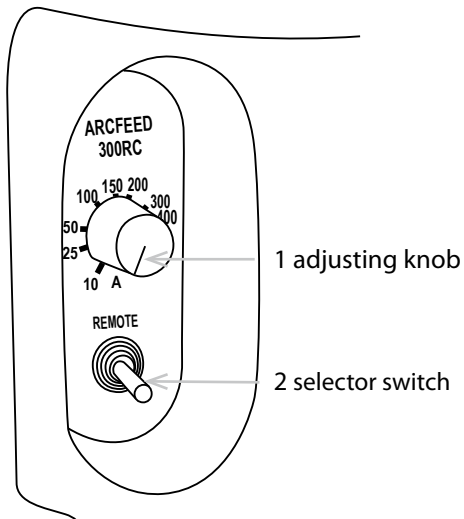
- If you want to use exact wire feed speed adjustment, select the adjustment scale 0...9 (max 9 m/minute).
- If you want to use rough adjustment, select the adjustment scale 0...18 (max 18 m/minute).

4.1.5 Using the power source remote control (only 300 RC)

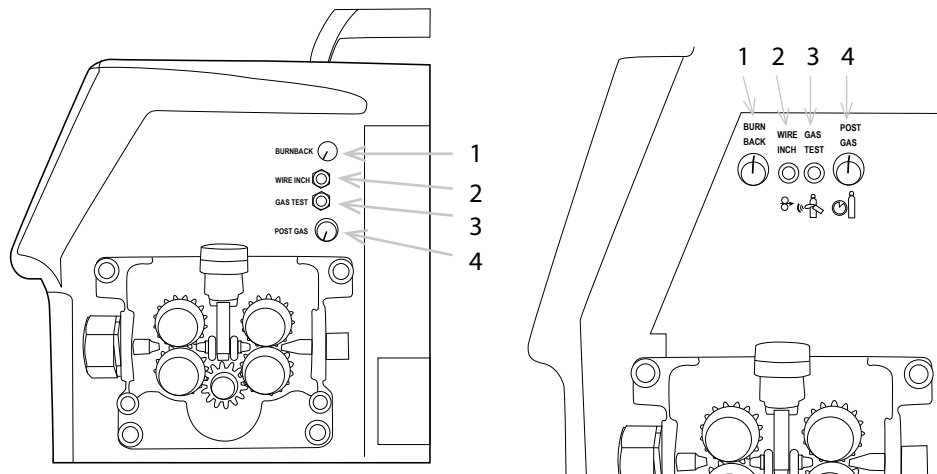
ArcFeed 300RC model is equipped with a power source remote control function. It allows you to adjust the power source current level straight from the work site. Remote control can be used in constant current (CC) mode only. For more information on CC mode, see 4.1.2 "Selecting the CC or CV mode".

To use the remote control

1. Turn the selector switch (2) to up position (REMOTE) and keep it there.
2. Select the desired welding current with the adjustment knob (1). The scale is suggestive for Master 5001 power source.
3. Release the selector switch.



4.2 USING THE INSIDE CONTROLS



ArcFeed 200

ArcFeed 300, 300P and 300RC

4.2.1 Burn back time

Burn back time control knob (1) lets you adjust the length of the post-welding current. Using Burn back feature makes it easy to stop welding without wire sticking or burning back to the contact tip.

4.2.2 Gas test

Gas test button (2) lets you test the shielding gas and measure the gas flow.

4.2.3 Wire inch

Wire inch button (3) lets you drive the welding wire without turning on the welding current. This feature can be used for example when feeding in the new wire.

4.2.4 Post gas time

Post gas time (4) control knob lets you adjust the length of the post-welding gas flow. This feature, combined with the burn back time, provides a smooth finish of the weld.

4.3 HANGING THE DEVICE

The Kemppi ArcFeed 200 wire feeder should never be hanged by its handle. Use a special hanging frame for hanging it to a welding beam or other. See 'Accessories' in Chapter 'Ordering numbers' at the end of this manual.

The Kemppi ArcFeed 300, 300P and 300RC models can be hanged by their handle by using a special hanging device, KFH 1000. See 'Accessories' in Chapter 'Ordering numbers' at the end of this manual.

5. MAINTENANCE

5.1 DAILY MAINTENANCE

Do the following always before starting to use the machine:

- Check the tightness of the earthing cable connections.
- Check the condition of mains and welding cables and replace damaged cables.
- Make sure that all extension cables used in the mains connection are in proper condition and compliant with regulations.

NOTE! The mains cables may be repaired and installed only by electrical contractors and installers authorised to perform such operations.

5.2 REGULAR MAINTENANCE

All electromechanical devices require routine service maintenance depending on usage. This type of routine maintenance will prevent hazards and malfunctions.

We recommend that you schedule a service inspection of your welding machine every six months. An authorised Kemppi service agent will inspect and clean your machine, ensuring that all power connections are tight and secure. Power connections can become loose and oxidised with frequent and high changes in temperature.

NOTE! Disconnect the machine from the mains power supply before handling electric cables.

5.3 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.

6. ORDERING NUMBERS

		Ordering number
Wire feeders		
Kempfi ArcFeed 200		6120200
Kempfi ArcFeed 300		6120300
Kempfi ArcFeed 300P		6120310
Kempfi ArcFeed 300RC		6120301
Accessories		
Gas flow regulator		W000364
Hanging frame for ArcFeed 200		6185285
KFH 1000 hanger ArcFeed 300 and 300P		6185100
Protection slides for ArcFeed 200		6185286
Protection slides for ArcFeed 300 and 300P		6185287
Cables		
Extension cable	70 mm ² , 25 m	6183725
Extension cable	70 mm ² , 10 m	6183710
Earthing cable	16 mm ² , 5m SKM25	6184015
MIG guns		
MMT 32	3 m	6253213MMT
MMT 32	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

7. TECHNICAL SPECIFICATIONS

Kemppi ArcFeed	200	300/300RC	300P
Rated power (W)	150	150	150
Welding wire types			
Flux-cored wires, \varnothing (mm)	1.2...2.0	1.2...2.0	1.2...2.4
Innershield wires, \varnothing (mm)	1.6...2.0	1.6...2.0	1.6...2.4
Solid wires, \varnothing (mm)	1.0...1.6	1.0...1.6	1.0...1.6
Loadability (A)			
60 % ED			
80 % ED			
100% ED	300	300	300
Wire feed speed with small drive roll (m/min)	0...18	0...18	0...9
Wire feed speed with large drive roll (m/min)	0...25	0...25	0...12.5
Storage temperature range	-40 °C... +60 °C	-40 °C... +60 °C	-40 °C... +60 °C
Operating temperature range	-20 °C... +40 °C	-20 °C... +40 °C	-20 °C... +40 °C
Degree of protection	IP23S	IP23S	IP23S
EMC class	A	A	A
Dimensions			
Length (mm)	510	590	590
Width (mm)	200	240	240
Height (mm)	310	445	445
Weight (kg)	11	15	15
Spool size (mm)	200	300	300
Gun connector type	EURO	EURO	EURO

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