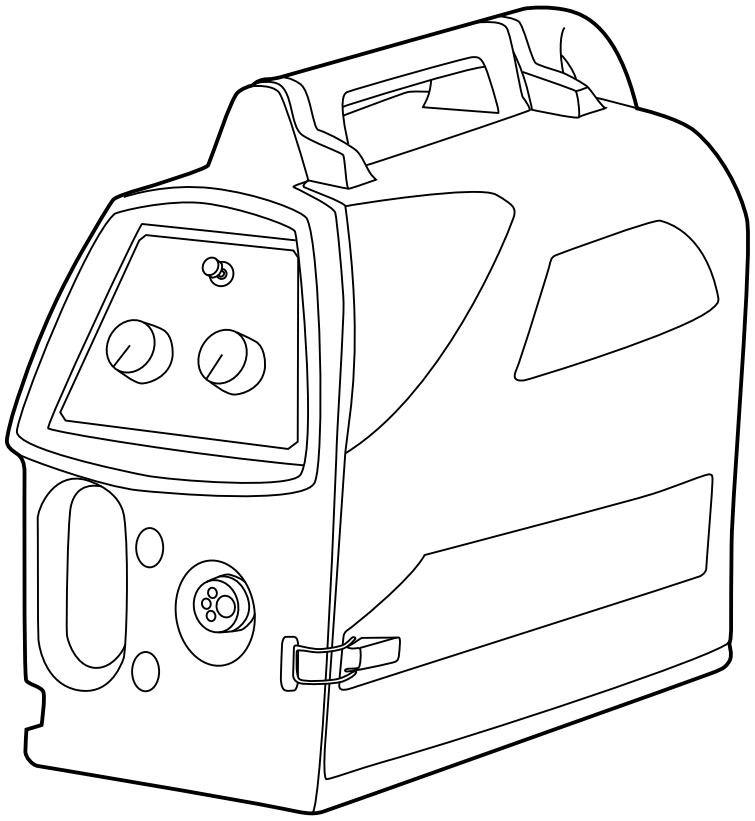
HiArc

F 30



Operating manual EN

Manual de instrucciones ES

Manuel d'utilisation FR

Manual de utilização PT

Инструкции по эксплуатации RU

KEMPPI
The Joy of Welding

OPERATING MANUAL

English

CONTENTS

1. GENERAL

Congratulations on choosing the HiArc F 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 device 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.

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.

1.1 About HiArc F wire feeder

Kemppi's HiArc F 30 wire feeder in designed to be used especially with Kemppi's HiArc M power sources. They are inverter MIG/MAG welding power sources to be used in 3-phase mains power supply. HiArc welding machines are designed for industrial and professional use.

The HiArc power sources are equipped with pre-set adjustment features. The HiArc chooses automatically arc dynamic setting according to your gas selection.

2. PRODUCT INTRODUCTION

2.1 Before use

Always make sure before use that the products have not been damaged during transportation.

Check also that you have received the components you ordered and the instruction manuals needed. Product packaging material is recyclable.

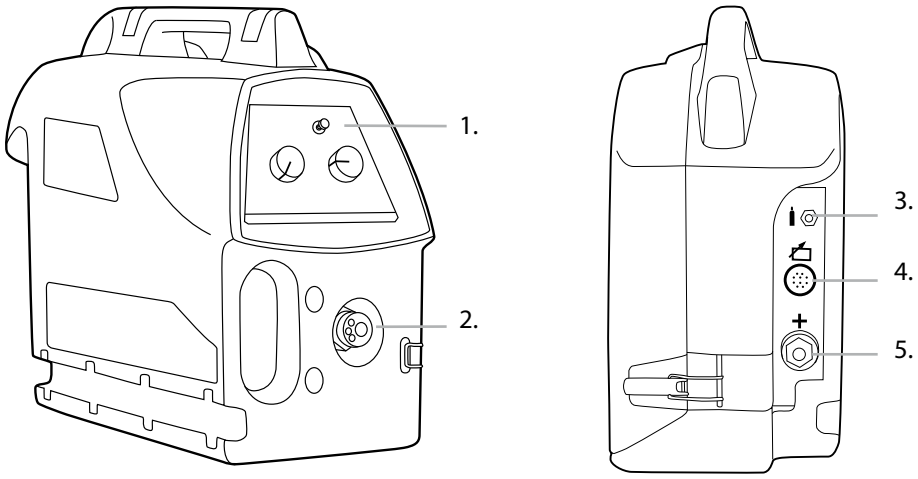
NOTE! *When moving the welding machine, always lift it from the handle, never pull it from the welding gun or other cables.*

Operating environment

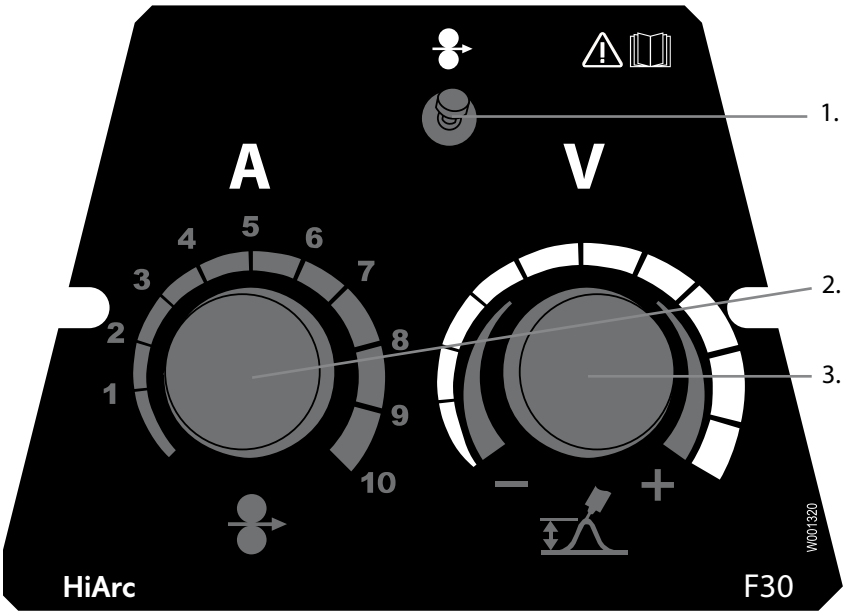
This machine is suitable for both indoor and outdoor use. Always make sure that the air flow in the machine is unrestricted. The recommended operating temperature range is –20 °C…+40 °C.

Please read also the Safety Instructions concerning the operating environment.

2.2 Operation control and connectors



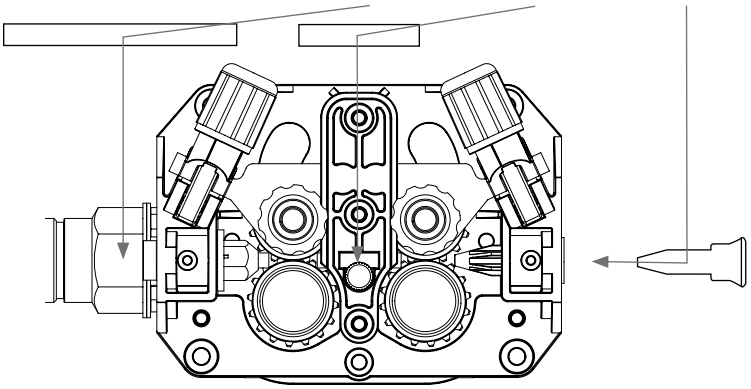
1. Operation panel
2. EURO connection for welding gun
3. Shielding gas connection
4. Connection for control cable
5. Welding current cable connection



1. Wire inch
2. Adjustment of wire feed speed (A)
3. Adjustment of welding voltage (Arc length)

2.2.1 DuraTorque™ 400, 4 wheel wire feed mechanism

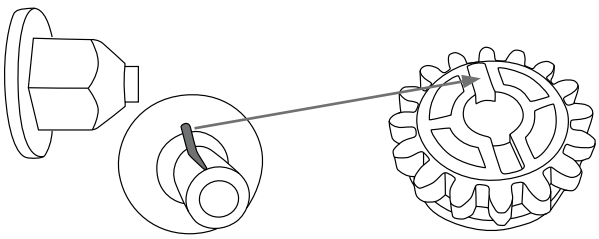
Wire guide tubes					
	ø mm		**outlet tube**	**middle tube**	**inlet tube**
Ss, Al, (Fe, Mc, Fc) plastic	0.6	light grey	W007437	W007429	W007293
	0.8 – 0.9	white	W007438	W007430	W007294
	1.0	red	W007439	W007431	W007295
	1.2	orange	W007440	W007432	W007296
	1.4	brown	W007441	W007433	W007297
	1.6	yellow	W007442	W007434	W007298
	2.0	grey	W007443	W007435	W007299
	2.4	black	W007444	W007436	W007300
Fe, Mc, Fc metal	0.8 – 0.9	white	W007454	W007465	W007536
	1.0	red	W007455	W007466	W007537
	1.2	orange	W007456	W007467	W007538
	1.4 – 1.6	yellow	W007458	W007469	W007539
	2.0	grey	W007459	W007470	W007540
	2.4	black	W007460	W007471	W007541



Wire feed rolls, plastic				
	ø mm	**colour**	**lower**	**upper**
Fe, Ss, (Al, Mc, Fc) V-groove V	0.6	light grey	W001045	W001046
	0.8 – 0.9	white	W001047	W001048
	1.0	red	W000675	W000676
	1.2	orange	W000960	W000961
	1.4	brown	W001049	W001050
	1.6	yellow	W001051	W001052
	2.0	grey	W001053	W001054
	2.4	black	W001055	W001056
Fc, Mc, (Fe) V-groove, knurled V≡	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
Al, (Fc, Mc, Ss, Fe) U-groove U	1.0	red	W001067	W001068
	1.2	orange	W001069	W001070
	1.6	yellow	W001071	W001072

Wire feed rolls, metal			
ø mm	**lower**	**upper**
Fe, Ss, (Al, Mc, Fc) V-groove V	0.8 – 0.9	W006074	W006075
	1.0	W006076	W006077
	1.2	W004754	W004753
	1.4	W006078	W006079
Fc, Mc, (Fe) V-groove, knurled V≡	1.0	W006080	W006081
	1.2	W006082	W006083
	1.4 – 1.6	W006084	W006085
	2.0	W006086	W006087
Al, (Fc, Mc, Ss, Fe) U-groove U	1.0	W006088	W006089
	1.2	W006090	W006091
	1.6	W006092	W006093

NOTE! *Mount the lower feed roll, ensuring that the pin on the shaft fits in the cut on the feed roll.*



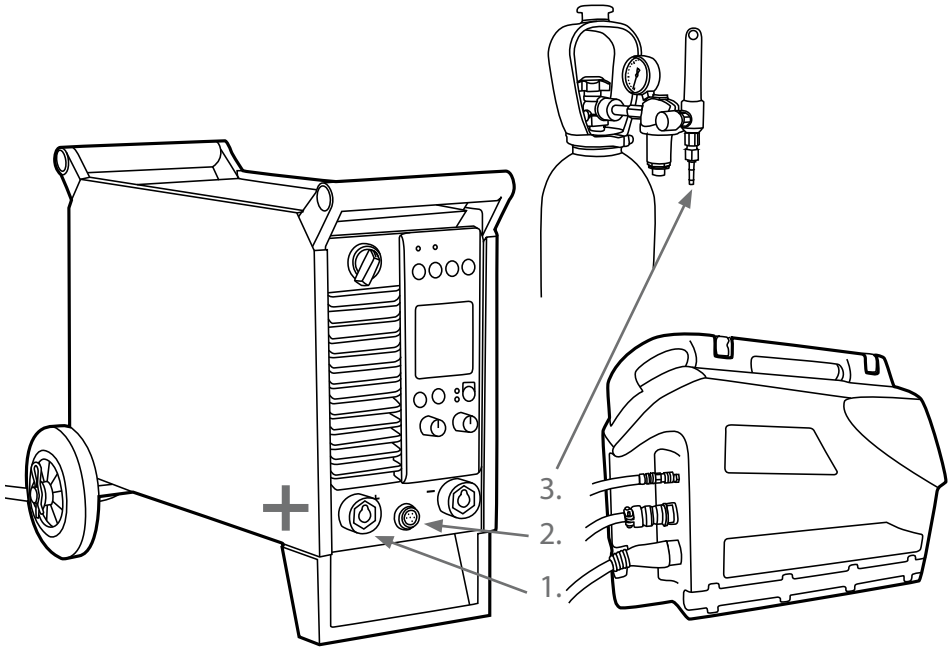
3. INSTALLATION

Assemble the units in order mentioned below and follow mounting and operation instructions.

3.1 Power source connection

The HiArc F wire feeder is recommended to be used with the HiArc M power sources.

To connect the wire feeder to the power source, do the following:



1. Attach the HiArc F 30 wire feed unit power cable to the + connector of the HiArc M power source. Hand tighten the connector with a clockwise push and twist action to lock.
2. Attach the HiArc F 30 wire feed unit control cable plug to the control socket of the power source.
3. Connect the shielding gas hose to the gas bottle or to the shielding gas distribution system.

NOTE! *Normally the wire feeder should be connected to the plus pole. However, with some filler wires and shielding gases, you should connect the feeder to the minus pole, and the earth return cable to the plus pole.*

3.2 Shielding gas connection

The shielding gas hose is fixed with a connector to the the wire feeder.

Connect the other end of the gas hose to a gas cylinder's control valve or to the shielding gas distribution network at your worksite.

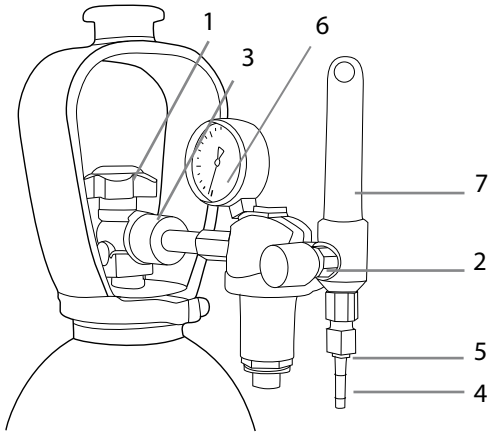
The thickness of the parent material, joint type and welding power define the required shielding gas flow rate.

NOTE! *Make sure that you are using the correct type of shielding gas for the welding application. When using pure CO_2 shielding gas, make sure you use a gas pre-heater. A 110 V power supply is provided for CO_2 gas pre-heaters at the rear of the HiArc power source. See the HiArc M operating manuals for further details.*

To connect the shielding gas hose to a suitable regulator for MIG/MAG welding

1. Connect the shielding gas hose to the gas cylinder's control valve and tighten the connector (connector is not supplied in the package).
2. Adjust the shielding gas flow rate with the control valve screw.
3. Always close the cylinder valve after use.

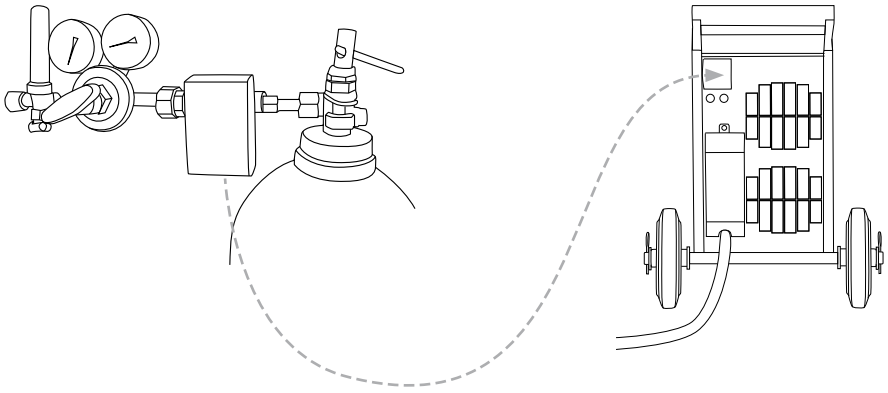
Parts of the gas flow regulator



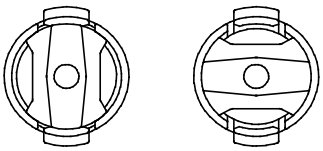
1. Gas bottle valve
2. Flow regulation screw
3. Connecting nut
4. Hose tail
5. Hose tail nut
6. Gas bottle pressure gauge
7. Shielding gas flow meter

Connector for shielding gas heater

- When using CO_2 shielding gas, a 110V gas heater can be connected to the power supply located at the back of the HiArc M power source. Please see the plug-in delivery package for usage and fitting instructions.



3.3 Mounting and locking of wire spool



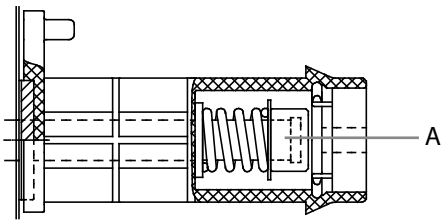
LOCKED OPEN

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

NOTE! *Check that in filler wire spool there are no parts sticking out, which could e.g. chafe against chassis or door of wire feed unit. Dragging parts might expose chassis of wire feed unit under voltage.*

3.4 Adjustment of spool brake

Brake force is adjusted through the hole behind the locking clip. Remove the locking clip by hand, and adjust the tension and pressure to the friction pads mounted inside with a screw driver. See diagram and location A.



The load applied varies depending on the size and weight of the filler wire and spool, but also the filler wire feed speed set. The heavier the wire spool and the faster the feed speed, the greater the need to increase the braking load. Adjust the pressure, secure the locking clip, set the wire feed speed and check that the braking force is enough to ensure the filler wire does not spill from the spool on overrun.

NOTE! *Too much or unnecessary loads can impact welding quality, load and wear to the wire feed system.*

3.5 Adjustment of pressure arms

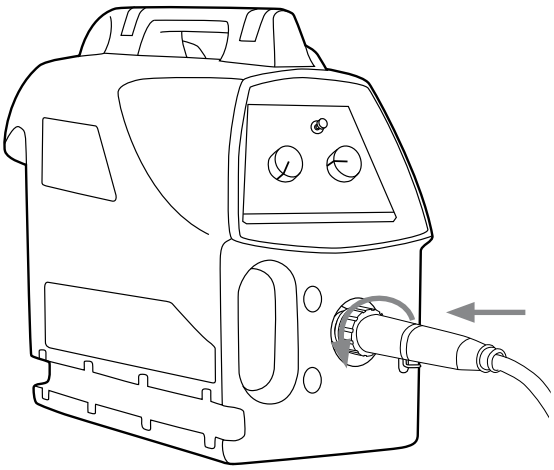
Adjust the drive pressure to the filler wire with the thumb screws mounted over the pressure arms. Notice the graduated scales indicating load. The load applied should be sufficient to overcome a light braking force applied by hand to the filler wire, as it exits the welding gun contact tip.

For smaller diameter and soft filler wires, less feed pressure is required. It should be possible to apply a light breaking force to the filler wire by hand, as it exits the gun contact tip. But slightly more wire flow restriction should render the drives rolls to slip slightly over the filler wire without deforming the wire.

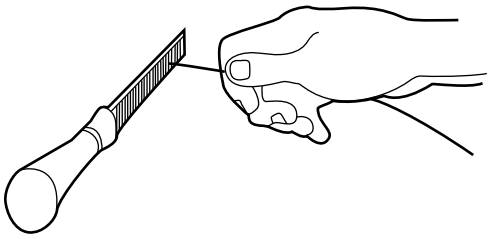
NOTE! *Excessive pressure causes flattening of the filler wire and damage to coated or cored filler wires. It also causes undue wear of the feed rolls and increases gearbox load, so reducing service life.*

3.6 Feeding the welding wire

Simply ensure that the groove of the feed roll matches the diameter of filler wire used. Release the wire end from the spool and cut off any deformed section. Be careful the wire does not spill from the spool sides.



1. Connect the welding gun and tighten the collar.
2. Straighten about 20 cm of filler wire and ensure the tip has no sharp edges. File if necessary, as a sharp wire edge may damage the wire gun liner – particularly softer plastic liners.



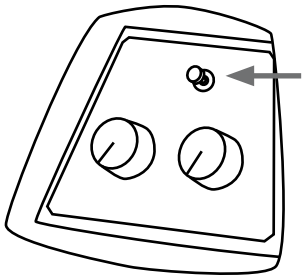
NOTE! *Remember to remove the sharp cut tip of the filler wire before loading the wire to the welding gun, so preventing damage to the liner inside the welding gun cable. It will also improve feed quality and increase the service life of your gun liner.*

3. Present the filler wire tip to the back of the wire feed rolls and press the wire inch switch on the wire feed panel. Feed the wire to the gun contact tip and prepare to weld.

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.*

NOTE! *Smaller diameter filler wires may need to be loaded manually – with the feed roll pressure arms released. This is because it is easy to over estimate the pressure required to feed these smaller filler wires. Too high feed roll pressures can easily deform filler wires and contribute to later feeding problems.*

4. Press the Wire Inch button and allow the filler wire to feed through the gun cable to the contact tip.



The welding gun leads the filler wire, shielding gas and electric current to the weld piece. When you press the welding gun trigger, shielding gas will flow and filler wire will begin to feed.

3.7 Calibrating wire feed speed

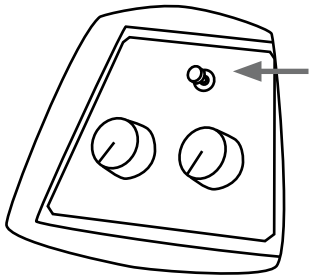
To ensure that the pre-sets and meter displays work as planned, you must calibrate the wire feed speed of your Hiarc power source and F 30 wire feeder welding equipment.

Calibration

1. Start the calibration by pressing Crater Fill button for 3 seconds.

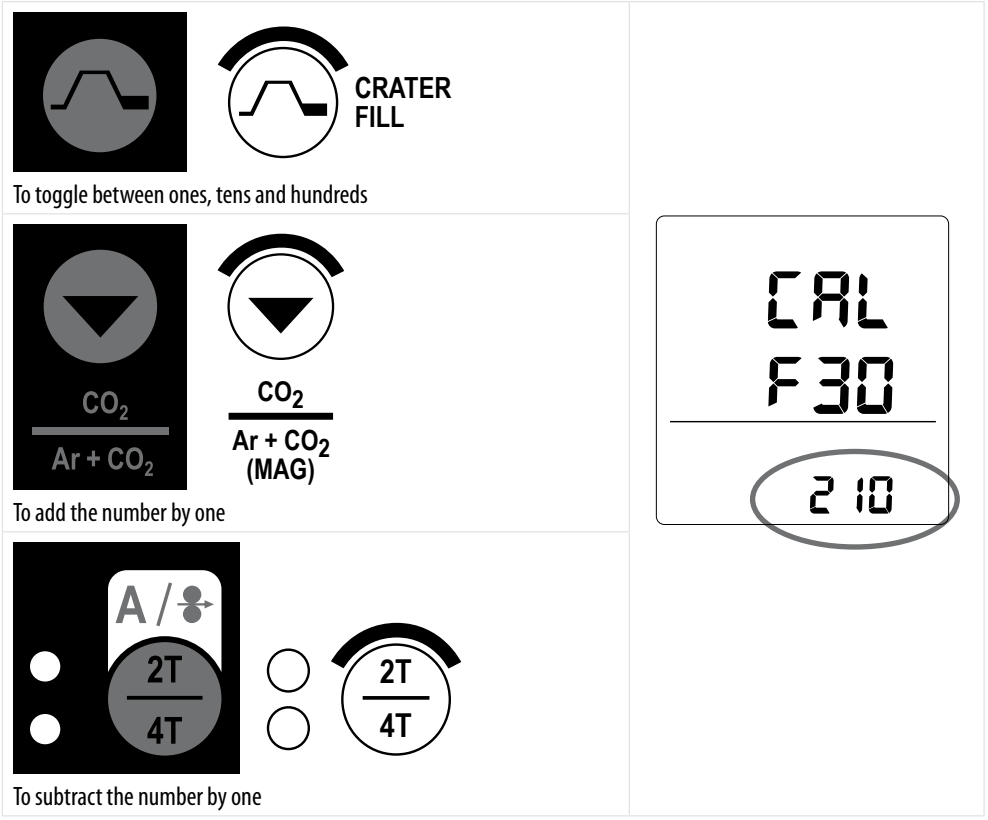
2. Press GAS TEST button to select either HiArc F 10 or HiArc F 30 wire feeder.

3. Cut the filler wire at the contact tip.
4. Press Wire Inch button at the wire feeder.
   - Wire feed starts and continues for 12 seconds



5. When wire feed stops, cut the wire at the contact tip and measure the length of the fed wire in mm.

6. At the power source control panel, enter the length of the wire using the buttons below.



NOTE! If you enter a value that does not fit in, the machine forces the value within the acceptable limits. This is to prevent you from entering false values.

7. Press Wire Inch button again.
   - Wire feed starts and continues for 2 seconds.
8. When wire feed stops, cut the wire and measure its length.
9. At the power source control panel, enter the length of the wire in the same manner as in step 6
10. Press Wire Inch button.

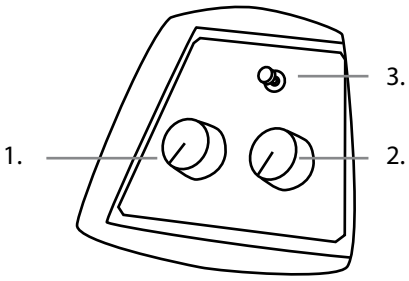
To skip the calibration

- If you want to skip the calibration, press Crater Fill button for 3 seconds. The machine exits the calibration mode.
- If the device is left idle for 5 minutes, it automatically exits the calibration mode.
- If the device is turned off before the step 10, it automatically exits the calibration mode, and the old calibration values remain.

3.8 Hanging

HiArc F 30 can be hanged from the handle to the boom.

4. CONTROLLING WELDING FUNCTIONS



1. Wire feed speed
2. Welding voltage
3. Wire inch

In the control panel you can adjust the welding wire feed speed (1) and welding voltage (2). With the Wire inch button you can feed the filler wire into the welding gun.

Parameter adjustment depends on selected mode: Automatic or Manual mode.

Used power source model R / A also influences. In R model there is only Manual mode.

4.1 Control panel functions in basic operation

If you are using the power source in basic operating mode without automatic functions, the control knobs have the following functions:

With the amperage knob (A) you can adjust the welding current and the wire feed speed. The wire feed speed increases with the amperage level.

With the voltage knob (V) you can adjust the welding voltage level. The voltage level determines the arc length.

4.2 Control panel functions in automatic operation

If you are using the power source in automatic operating mode, the power source takes care of adjusting the wire feed speed and the welding voltage according to the welding power you adjust.

In automatic operating mode the control knobs have the following functions:

With the amperage knob (A) you can set the welding power. The welding current, wire feed speed and the welding voltage are adjusted automatically according to this setting.

With the voltage knob (V) you can make fine adjustments to the welding voltage. The middle position of the knob is the default value.

5. SERVICE, OPERATION DISTURBANCES

The amount of use and the working environment should be taken into consideration when planning the frequency of maintenance of HiArc F 30. Careful use and preventive maintenance will help to ensure trouble-free operation.

The following maintenance operations should be carried out at least every six months:

Check:

- The wear of the grooves of the feed rolls. Excessive wear of grooves causes problems in wire feed.
- The wear of the wire guide tubes of wire feed. Badly worn feed rolls and wire guide tubes should be discarded.
- The wire guide tube in the gun should be set as near the feed rolls as possible, but not touching them and the wire must follow a straight line from the end of the tube to the groove of the feed roll.
- Spool brake adjustment.
- Electric connections
  – Oxidised couplings must be cleaned
  – Loose couplings must be tightened

Clean dust and dirt from the equipment.

Lubricate the feed rolls twice a year.

NOTE! *When using compressed air, always protect your eyes with proper eye protection.*

In case of problems contact your KEMPPI dealer.

6. DISPOSAL OF THE MACHINE

Do not dispose of electrical equipment with normal waste!

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 you will improve the environment and human health.

7. ORDERING CODES

Wire feeder		
HiArc F 30		6310030
Welding guns		
FE 42	3.5 m	6604203
FE 42	5.0 m	6604204
Interconnection cables		
HiArc F30 50-5-GH	50 mm^2, 5 m	6260500
HiArc F30 70-5-GH	70 mm^2, 5 m	6260501
HiArc F30 50-10-GH	50 mm^2, 10 m	6260513
HiArc F30 70-10-GH	70 mm^2, 10 m	6260514
HiArc F30 50-15-GH	50 mm^2, 15 m	6260515
HiArc F30 70-15-GH	70 mm^2, 15 m	6260516
HiArc F30 70-20-GH	70 mm^2, 20 m	6260523
HiArc F30 70-30-GH	70 mm^2, 30 m	6260633
Optional extensions		
HiArc 10-70-G	70 mm^2, 10 m	6310710
HiArc 15-70-G	70 mm^2, 15 m	6310715
HiArc 10-50-G	50 mm^2, 10 m	6310510
HiArc 15-50-G	50 mm^2, 15 m	6310515
Wire feeder options		
Gas pre-heater		6314010
Fastening plate	(HiArc M 400A/R)	W007362

8. TECHNICAL DATA

HiArc F 30		
Operating voltage		24 V
Rated power		100 W
Output at 40 °C	60 % ED	520 A
	100 % ED	440 A
Wire feed mechanism		4-roll
Wire spool	max. weight	20 kg
	max. ø	300 mm
Feed roll	ø	32 mm
Wire feed speed		0 – 25 m/min
Filler wires	ø Fe	0.6 – 1.6 mm
	ø Cored wire	0.8 – 2.0 mm
Gun connection		Euro
Degree of protection		IP23S
Operating temperature		–20 °C…+40 °C
Storage temperature		–40 °C…+60 °C
External dimensions	L x W x H	590 x 240 x 445 mm
Weight		11.9 kg
Standards IEC 60974-5 IEC 60974-10		

KEMPPI OY
Kempinkatu 1
PL 13
FI-15801 LAHTI
FINLAND
Tel +358 3 899 11
Telefax +358 3 899 428
export@kemppi.com
www.kemppi.com

Kotimaan myynti:
Tel +358 3 899 11
Telefax +358 3 734 8398
myynti.fi@kemppi.com

KEMPPI SVERIGE AB
Box 717
S-194 27 UPPLANDS VÄSBY
SVERIGE
Tel +46 8 590 783 00
Telefax +46 8 590 823 94
sales.se@kemppi.com

KEMPPI NORGE A/S
Postboks 2151, Postterminalen
N-3103 TØNSBERG
NORGE
Tel +47 33 346000
Telefax +47 33 346010
sales.no@kemppi.com

KEMPPI DANMARK A/S
Literbuen 11
DK-2740 SKOVLUNDE
DANMARK
Tel +45 4494 1677
Telefax +45 4494 1536
sales.dk@kemppi.com

KEMPPI BENELUX B.V.
Postbus 5603
NL-4801 EA BREDA
NEDERLAND
Tel +31 765717750
Telefax +31 765716345
sales.nl@kemppi.com

KEMPPI (UK) Ltd
Martti Kemppi Building
Fraser Road
Priory Business Park
BEDFORD, MK44 3WH
UNITED KINGDOM
Tel +44 (0)845 6444201
Telefax +44 (0)845 6444202
sales.uk@kemppi.com

KEMPPI FRANCE S.A.S.
65 Avenue de la Couronne des Prés
78681 EPONE CEDEX
FRANCE
Tel +33 1 30 90 04 40
Telefax +33 1 30 90 04 45
sales.fr@kemppi.com

KEMPPI GmbH
Perchstetten 10
D-35428 LANGGÖNS
DEUTSCHLAND
Tel +49 6 403 7792 0
Telefax +49 6 403 779 79 74
sales.de@kemppi.com

KEMPPI SPÓŁKA Z O.O.
Ul. Borzymowska 32
03-565 WARSZAWA
POLAND
Tel +48 22 7816162
Telefax +48 22 7816505
info.pl@kemppi.com

KEMPPI AUSTRALIA PTY LTD.
13 Cullen Place
P.O. Box 5256, Greystanes NSW 2145
SMITHFIELD NSW 2164
AUSTRALIA
Tel. +61 2 9605 9500
Telefax +61 2 9605 5999
info.au@kemppi.com

ООО KEMPPI
Polkovaya str. 1, Building 6
127018 MOSCOW
RUSSIA
Tel +7 495 739 4304
Telefax +7 495 739 4305
info.ru@kemppi.com

ООО КЕМППИ
ул. Полковая 1, строение 6
127018 Москва
Tel +7 495 739 4304
Telefax +7 495 739 4305
info.ru@kemppi.com

KEMPPI, TRADING (BEIJING) COMPANY, LIMITED
Room 420, 3 Zone, Building B,
No.12 Hongda North Street,
Beijing Economic Development Zone,
100176 Beijing
CHINA
Tel +86-10-6787 6064
+86-10-6787 1282
Telefax +86-10-6787 5259
sales.cn@kemppi.com

肯倍贸易（北京）有限公司
中国北京经济技术开发区宏达北路12号
创新大厦B座三区420室 (100176)
电话：+86-10-6787 6064
+86-10-6787 1282
传真：+86-10-6787 5259
sales.cn@kemppi.com

KEMPPI INDIA PVT LTD
LAKSHMI TOWERS
New No. 2/770,
First Main Road,
Kazura Garden,
Neelankarai,
CHENNAI - 600 041
TAMIL NADU
Tel +91-44-4567 1200
Telefax +91-44-4567 1234
sales.india@kemppi.com

1921730
1244