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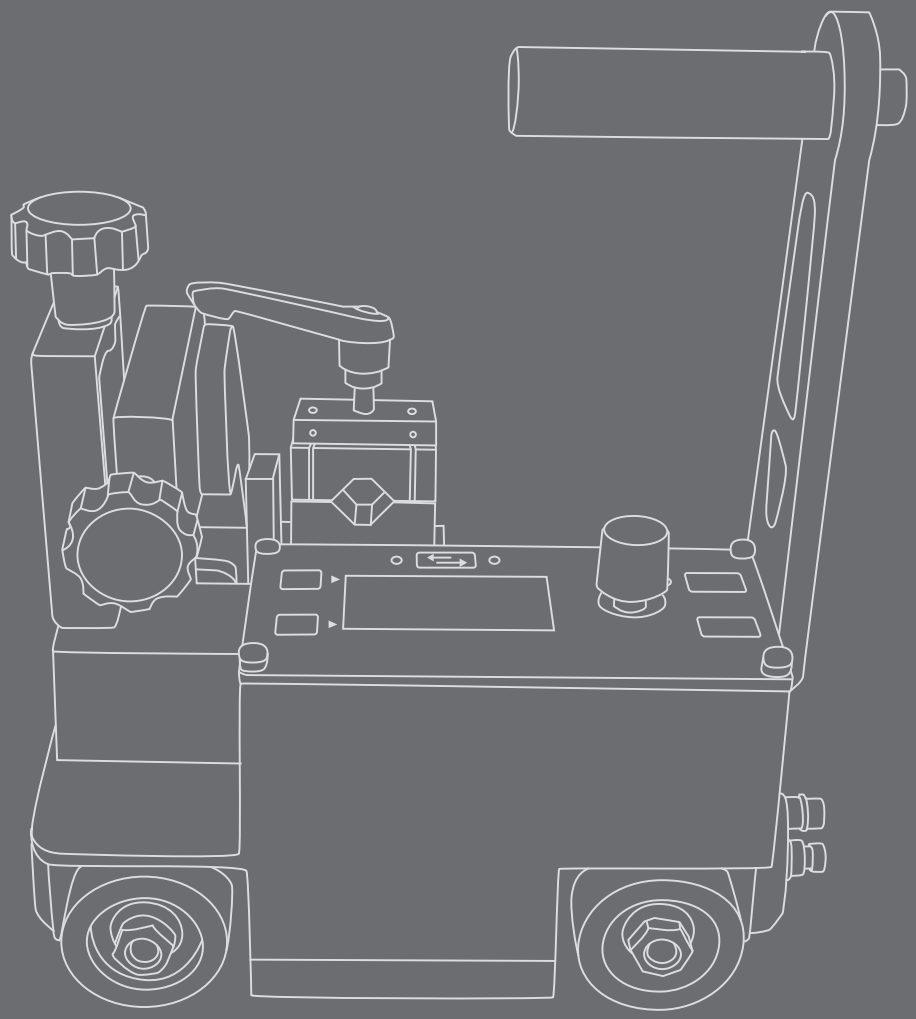
MagTrac

F 61



KEMPPI

EN

OPERATING MANUAL

English

CONTENTS

1. INTRODUCTION

1.1 General

Congratulations on choosing the MagTrac F 61 equipment. 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 operating manual and the safety instructions booklet 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.

For Kemppi's standard safety instructions and warranty terms and conditions, please visit our 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 the product

MagTrac F 61 is a welding carriage for mechanisation of longitudinal MIG/MAG welding applications. Used in combination with the high quality process control system of Kemppi FastMig welding equipment, the MagTrac F 61 is an easy and efficient way of improving the welding productivity and quality.

The MagTrac F 61 is equipped with Kemppi's unique welding gun quick-fixing mechanism (patent pending), which makes it quick and easy to set up and adjust the carriage.

1.3 Operation safety

When using the carriage in applications where weakened magnetic force may pose a threat of the carriage falling down, make sure that such possible accident can not cause any hazard to people or equipment.

Read also the safety guide delivered in the MagTrac F 61 product package.

NOTE! *Welding heat can little by little weaken the carriage's magnetic force.*

1.4 Compatibility

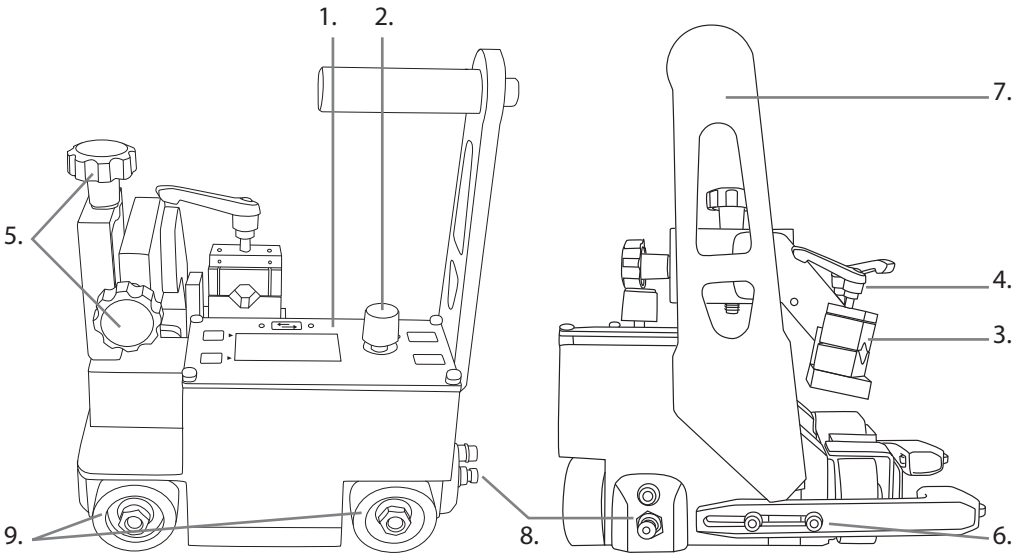
MagTrac F 61 is compatible with the following welding equipment

- FastMig KMS 300 and 400 power sources
- FastMig Pulse 350 and 450 power sources
- MXF 65 wire feed unit
- Control panels SF 52W and SF 53W.

1.5 Product parts

Front view

Side view

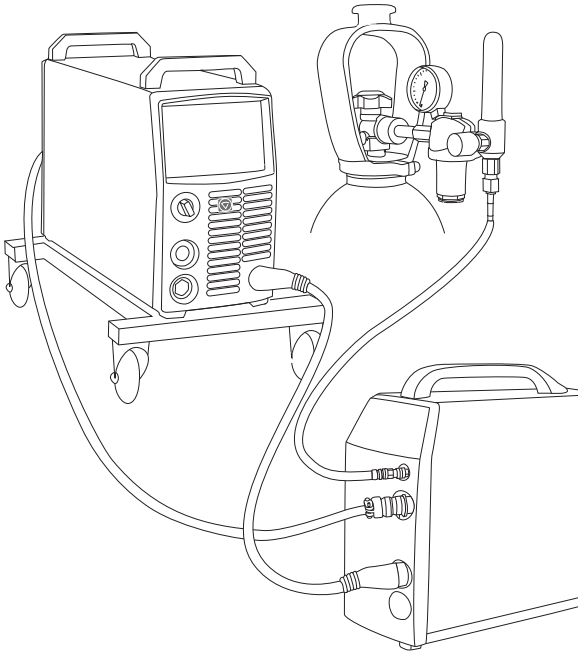


1. Control panel
2. Control knob for scrolling and selecting values
3. Welding gun fixing mechanism
4. Approximate adjustment handles
5. Fine adjustment screws
6. Hex screws for adjusting the guide roller arms
7. Handle for lifting the device and disabling the magnet.
8. Limit switch detects the end of the weld and stops the carriage automatically
9. Wheels

2. PREPARING THE CARRIAGE FOR USE

2.1 Welding machine connections

To use the MagTrac F 61, you need a FastMig power source, wire feeder, and a shielding gas cylinder or other source of shielding gas appropriate for your welding task.

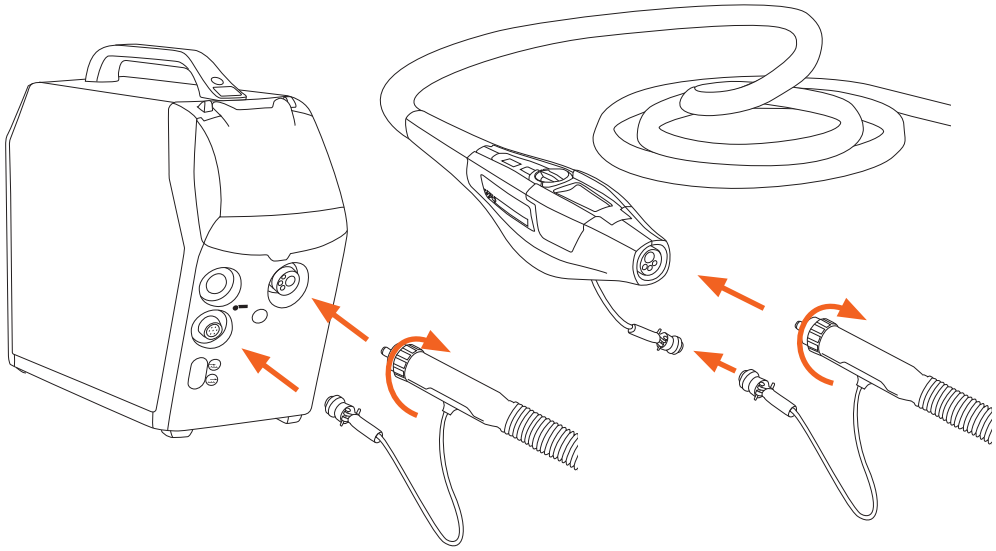


Connect the wire feeder to power source as follows:

1. Connect the welding cable between the plus pole of the power source and the cable connector on the backside of the wire feeder.
2. Connect the control cable between the power source and the wire feeder (the connectors are on the backside of the machines).
3. Connect the shielding gas hose between the gas cylinder and the wire feeder (the connector is on the backside of the wire feeder).

2.2 MagTrac F 61 connections

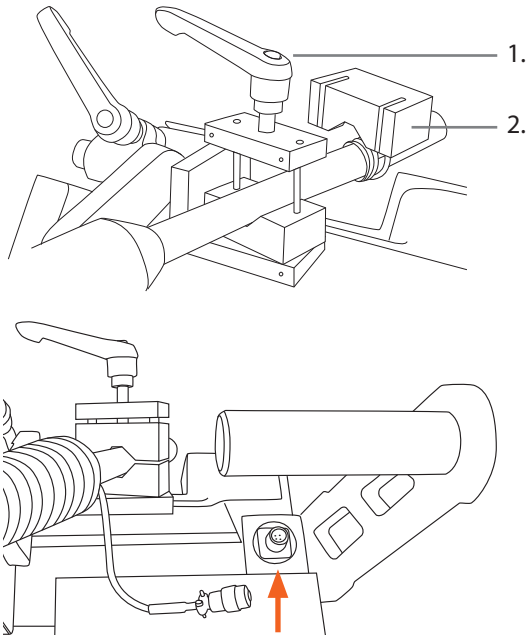
Attach the welding power cable to the Euro connector and the control cable to the data connector either in the wire feeder unit or in Kemppi SuperSnake subfeeder. See the pictures below.

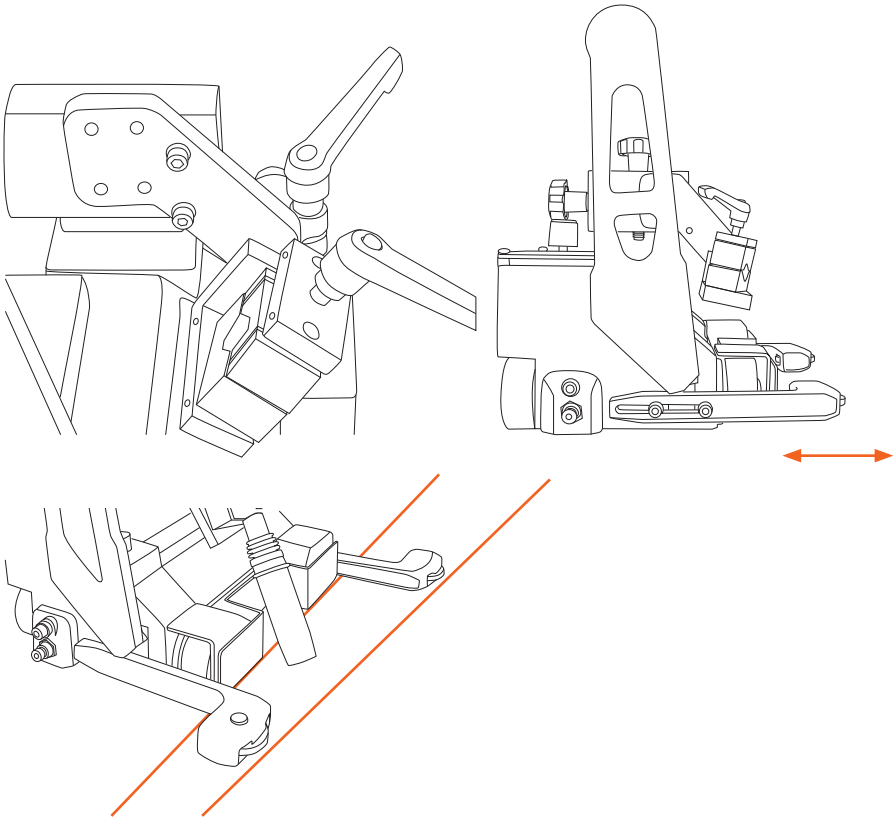


To connect the welding gun to MagTrac device:

The MagTrac F 61 is equipped with Kemppi's unique welding gun quick-fixing mechanism.

1. Loosen the slide block fixing screw (1) and open it a few rounds so that the slide block (2) comes out.
2. Put the welding gun into the slot and replace the slide block.
3. Tighten the gun into its place using the fixing screw.
4. Attach the control cable to the bus connector on the carriage.





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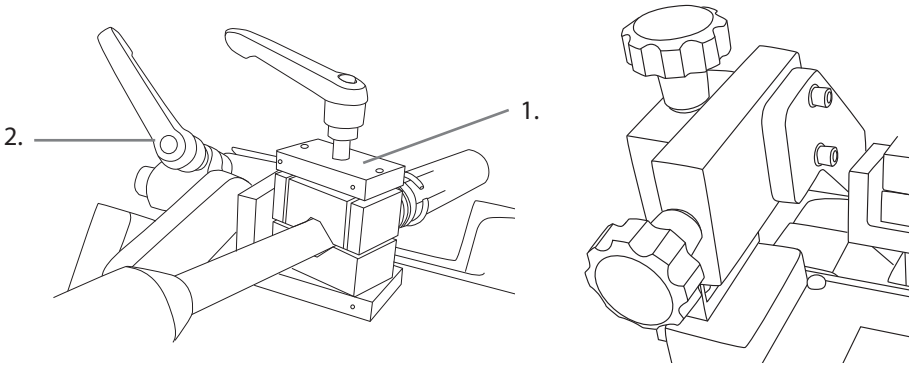
Adjust the position of the carriage against the wall:

1. If necessary, change the position of the welding gun mechanism on the carriage by opening the two hex screws (see the picture).
2. Adjust the position of the carriage so that it slightly pushes against the wall when moving. To accomplish this, set the guide roller arms so that the front arm is a little shorter than the back arm.



Adjust the welding gun position:

1. Loosen the orange handles (1 and 2) and make approximate adjustment of the welding gun position.

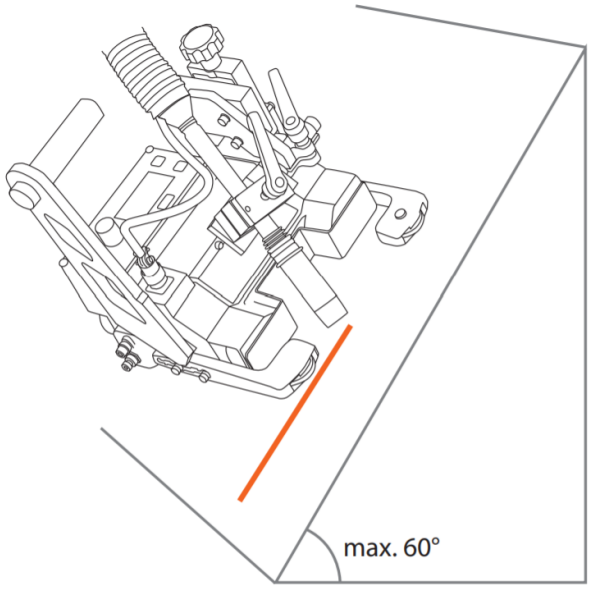
   NOTE! *You can use the adjustment handle like a ratchet wrench by lifting the handle and turning it to a better position.*

2. To fine adjust the gun position, change the distance and height of the welding gun with the adjustment knobs (see the picture).

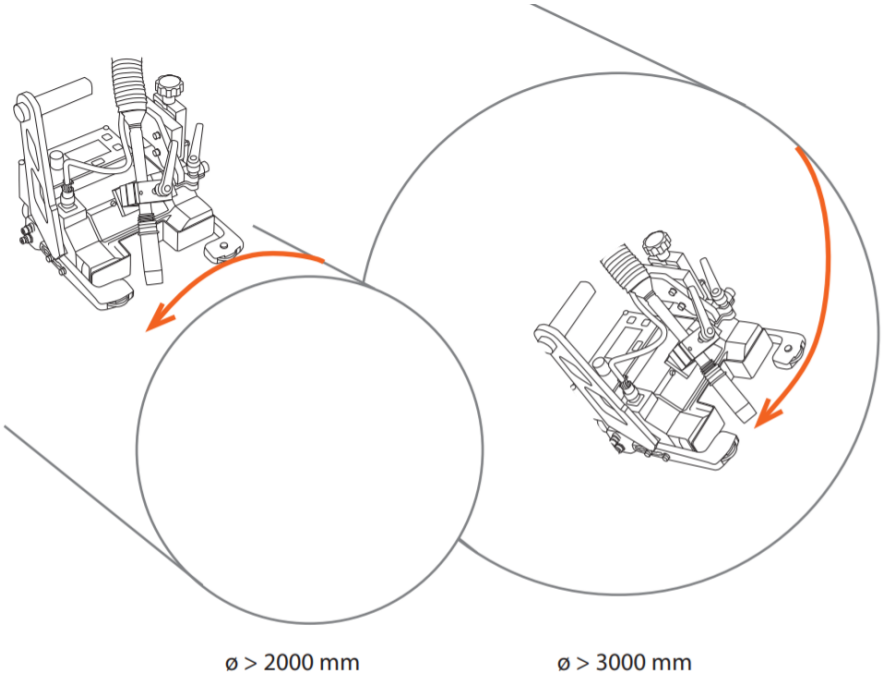
   NOTE! *You can use the fine adjustment knobs also when the carriage is moving.*

2.3 Working environment

Kemppi MagTrac F 61 welding carriage is equipped with a strong magnet that keeps it steadily in it's track also if you drive the device uphill or downhill.



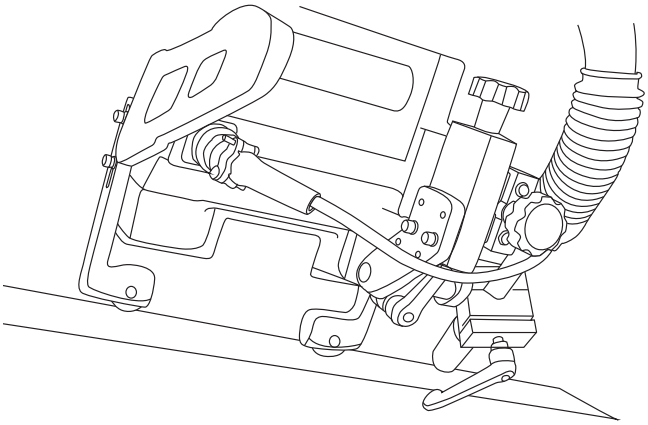
You can also use the MagTrac F 61 on curved surfaces.



Wide range of adjustments

MagTrac F 61 offers a wide range of adjustments. For example, you can turn the guide roller arms 180° to point outwards if you need to improve visibility to the welding arc, or you can swing the welding gun over the side (see the picture).

NOTE! *The limit switch might not work if you change the position of the roller arms or welding gun mechanism. This may prevent the carriage from stopping automatically in the end of the weld.*



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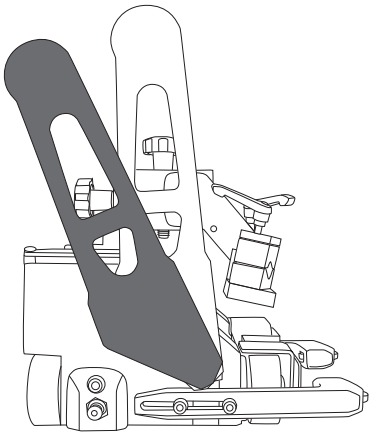
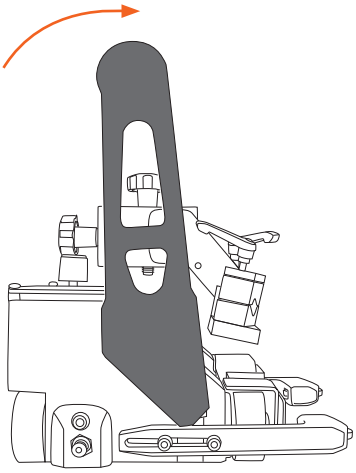
Activating and releasing magnet

When you lift the handle to its up position in order to move the device, the magnet is automatically inactivated.

When you place the device to its welding position, you just push the handle down, and the magnet is automatically activated.



Magnet activated



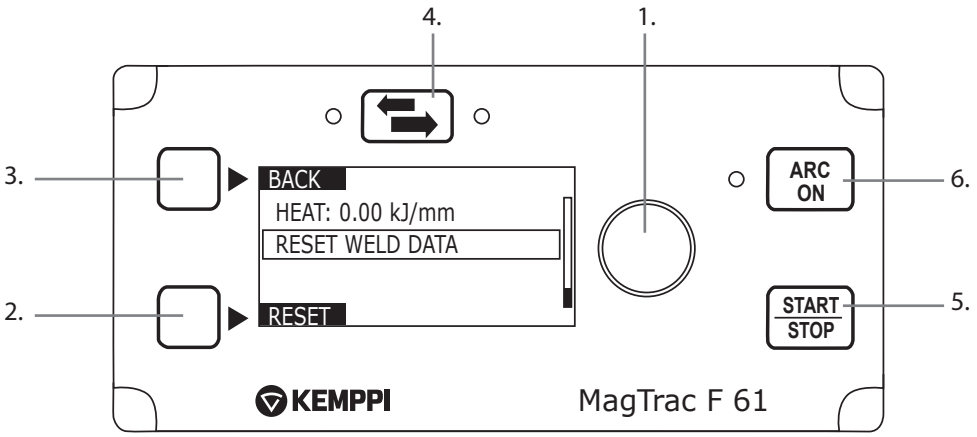
Magnet inactivated

3. USING THE CONTROL PANEL

MagTrac F 61 control panel allows you to view and adjust the welding parameter values. You can use the values stored in the memory channels of the wire feeder, or you can set the desired values on the welding carriage without using the memory channels.

If the memory channel function is active, you can see the channel number on the top row of the carriage control panel display. The MagTrac F 61 communicates with the wire feeder via a control cable integrated in the welding gun cable.

3.1 Control panel buttons



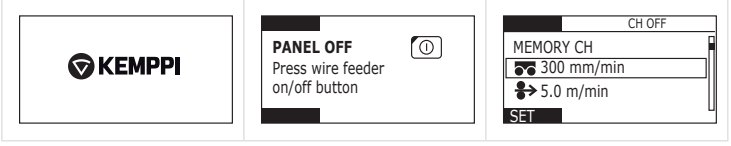
1. Multi-function knob for browsing and selecting values
   - Turn to scroll menus, press to select values
2. Lower soft key for entering menus and executing commands
   - Press to select the active menu item
3. Upper soft key for exiting menus and approving selections
   - Press to approve the selected value and to return to the previous menu level
4. Direction button
   - Press briefly to change the carriage travel direction
   - Push for at least 3 seconds to reverse the direction of the display (this helps the menu usage when MagTrac runs along vertical surface)
5. Start and stop button
   - Press this button to start or stop the welding operation
6. Welding arc on/off button
   - Press this button to turn the welding arc on and off. With the welding arc off, you can test the carriage operation

NOTE! *When making selections in the MagTrac F 61 menu, you can use a quick shortcut: Turn and press the multi-function knob 1 instead of pressing soft keys 2 and 3.*

3.2 Starting up the control panel

When you start the welding system from the power source's main switch, the system turns on and the MagTrac F 61 welding carriage is ready for use.

You can inactivate the system with a long press of the wire feeder's ON/OFF button. When the system is inactive, the carriage cannot be used for welding.



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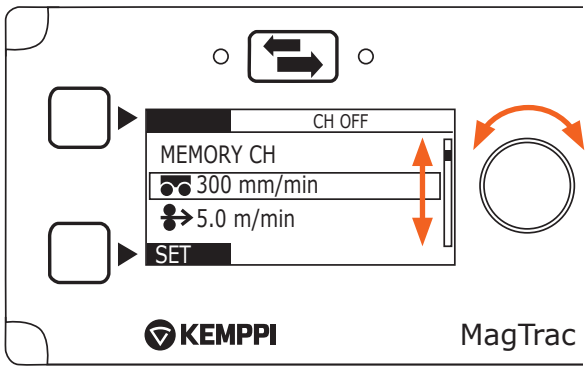
3.3 Control panel menus



To browse menu items, **turn** the multi-function knob 1.

To select the highlighted menu item, **press** the multi-function knob 1.

- The selected active menu items are marked with a solid box.
- The Selected inactive menu items are marked with a dotted box. You cannot changed the values of these menu items.

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3.3.1 MagTrac F 61 main menu

Menu item	Description
MEMORY CH	Load and save memory channels.
300 mm/min	Change the carriage travel speed. The selected speed is shown in the menu name.
5.0 m/min	Change the wire feed speed. The selected speed is shown in the menu name.
CURRENT:	Change the welding current. The selected current is shown in the menu name.
VOLTAGE:	Change the welding voltage. The selected voltage is shown in the menu name.
FINETUNING:	Fine tune the welding values. (Available only when using pulsed or double-pulsed welding process.)
BASECURRENT:	Set the base current value. (Available only when using WiseRoot or WiseThin welding process.)
ARC ON:	Enable or disable the welding arc. When this function is OFF, you can test the carriage operation without igniting the welding arc. (Note that this function is the same as pressing the ARC ON button.)
CYCLE WELD	Open the cycle weld submenu, where you can enable or disable the cycle weld function and set its parameters.
GAS TEST	Run the gas test.
WIRE INCH	Drive the filler wire into the gun.
WELD DATA	Check the weld data recorded from the last welding session.
SETTINGS	Open MagTrac F 61 settings menu.

3.3.2 Memory channel selections (MEMORY CH)

Menu item	Values	Description
CH MODE *	ON, OFF, SET	Select the memory channel usage mode. **ON** = Memory channels are enabled, and you can select the channel to be used. Parameters can be edited on the carriage panel **OFF** = Memory channels are disabled. You can set the welding parameters on the carriage panel, but they are not stored in the memory. **SET** = Memory channel contents can be edited and saved. You can change the welding parameters and save your changes into the active memory channel.
LOAD CH	0…9	Select memory channel to load. Enabled only when CH MODE selection is ON.
SAVE CH *	0…9	Select memory channel to save. Enabled only when CH MODE selection is SET.

*) These menu items are not available with FastMig Pulse. CH MODE setting is always ON, and the channel parameter values are saved automatically.

To change the memory channel in use, do the following

1. In MEMORY CH menu, select CH MODE: ON.
2. In MEMORY CH menu, select LOAD CH and press the multi-function knob.
3. Turn the multi-function knob to select the memory channel number you want to use. (You can scroll numbers also with the lower soft key 'CH'.)
4. When the desired channel number is displayed, press the upper soft key 'BACK'.

NOTE! *If the welding parameter values come from a memory channel, you cannot change any of the values at the MagTrac menu while operating the carriage.*

3.3.3 Travel speed selections ( )

Select this menu item to change the carriage travel speed in the range of 150 - 1500 mm/min. In cycle welding, the carriage travels non-welded sections at the maximum speed of 1800 mm/min.

NOTE! *When the speed reaches 1000 mm/min, the unit of measure changes automatically to m/min.*

To change carriage travel speed, do the following

1. Press the multi-function knob on the travel speed menu item.
2. Turn the multi-function knob to change the speed.
3. Press the multi-function knob to accept the new speed.

3.3.4 Wire feed speed selections ( )

Select this menu item to change the wire feed speed. Note that the welding current value changes automatically to reflect the new wire feed speed.

To change wire feed speed, do the following

1. Press the multi-function knob on the wire feed speed menu item.
2. Turn the multi-function knob to change the speed.
3. Press the multi-function knob to accept the new speed.

3.3.5 Welding current selections (CURRENT)

Select this menu item to change the welding current. Note that the wire feed speed value changes automatically to reflect the new welding current.

To change welding current, do the following

1. Press the multi-function knob on the CURRENT menu item.
2. Turn the multi-function knob to change the current value.
3. Press the multi-function knob to accept the new current.

3.3.6 Welding voltage selections (VOLTAGE)

Select this menu item to change the welding voltage.

To change welding voltage, do the following

1. Press the multi-function knob on the VOLTAGE menu item.
2. Turn the multi-function knob to change the voltage value.
3. Press the multi-function knob to accept the new voltage.

NOTE! *Voltage selection may be replaced by either FINETUNING (in pulsed or double-pulsed processes) or BASECURRENT (in WiseRoot or WiseThin processes) setting.*

3.3.7 Welding arc selections (ARC ON)

You can use this menu item to test MagTrac F 61 operation before starting the actual welding. When the welding arc is OFF, the carriage performs the operations without igniting the welding arc.

To turn the welding arc on or off, do the following

1. Press the multi-function knob on the ARC ON menu item.
2. Turn the multi-function knob to select ON or OFF.
3. Press the multi-function knob to accept the value.

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NOTE! *You can also use the ARC ON button turn the welding arc on and off.*

3.3.8 Cycle weld selections (••• CYCLE WELD)

With MagTrac F 61 you can use the cycle welding function, which means that the carriage repeatedly welds a predefined length and then skips another predefined length.

In CYCLE WELD menu you can define the settings used in cycle welding.

Menu item	Values	Description
•••	ON, OFF	Turn cycle welding on or off.
	10mm…10.00m	Set the length of each weld.
	10mm…2.00m	Set the length of the non-weld section between the welds.
CYCLE COUNT	CONT, 1…255	Set the number of cycles to be welded – CONT means that the carriage continues cycle welding continuously, until it is stopped.

When cycle welding is on, there is a cycle weld symbol (•••) in the top right corner of the MagTrac F 61 control panel display.

NOTE! *Crater fill feature is available in wire feeder control panel.*

3.3.9 Gas test selections (GAS TEST)

Select this menu item to test the gas flow. First select the menu item, and then start the gas flow by pressing the multi-function knob or the soft key START. The shielding gas flows for 10 seconds.

NOTE! *You can interrupt the gas flow at any time by clicking the multi-function knob or the soft key STOP.*

3.3.10 Wire inch selections (WIRE INCH)

Select this menu item to run the filler wire into the welding gun. In MagTrac F 61, the wire inch speed is always the same as the selected wire feed speed.

NOTE! *If the wire inch function is activated on the wire feeder's panel, the wire inch function on MagTrac is not available.*

3.3.11 Weld data selections (WELD DATA)

MagTrac F 61 records useful information about the latest welding session. Select Weld data menu to check the data.

Menu item	Description
●●●	Length of the latest weld.
TOT ARC (m)	Total welded length of the latest welding session. Does not include the non-weld length in cycle welding.
TOT ARC (min, s)	Total time of the latest welding session. Does not include the non-weld time in cycle welding.
CURRENT	Average welding current during the latest welding session.
VOLTAGE	Average welding voltage during the latest welding session.
HEAT	Heat input in the latest welding session in kJ/mm.
RESET WELD DATA	This resets all weld data settings.

3.3.12 Setup selections (SETTINGS)

Select this menu to check or change the MagTrac F 61 settings. The settings are stored in the carriage memory.

Menu item	Values	Description
CONTRAST		Change the contrast of the carriage display.
RESTORE SETTINGS	YES, NO	Restore the parameter values to their initial settings.
PANEL INFO	PANEL SW SYSTEM SW PRG DATE	Open information about the carriage software: Control panel version, system version and the date of the carriage software.

Initial parameter settings

When you use the RESTORE SETTINGS function, the parameter settings are restored to the following values:

Parameter	Factory value
ARC ON	OFF (welding arc is off)
DIRECTION	RIGHT (carriage travels to the right)
CONTRAST	20 (contrast of the control panel display)
CYCLE WELD	OFF (cycle welding is not in use)
WELD LENGTH	50 mm (length of the welded section in cycle welding).
IDLE LENGTH	50 mm (length of the non-welded section in cycle welding).
CYCLE COUNT	CONT (cycle welding continues until it is stopped)
LAST WELD LENGTH	0 mm
TOT ARC	0 mm (total arc length in the latest welding session)
TOT ARC	0 min 0 s (total arc time in the latest welding session)
CURRENT	0 A (average current in the latest welding session)
VOLTAGE	0 V (average voltage in the latest welding session)
HEAT	0.0 kJ/mm (heat input in the latest welding session)

4. 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.

5. ORDERING CODES

MagTrac F61, FastMig KMS, air-cooled		**P08818**
FastMig KMS 400 power source		6054000
FastMig MXF 65 wire feeder		6152100
FastMig SF 53W control panel		6085300W
PM 500 undercarriage		6185291
MMT 42 C welding gun	3 m	6254205
KWF 70-5-GH interconnection cable		6260405
Earth return cable	50 mm^2, 5 m	6184511
MagTrac F61 welding carriage		6190610
MagTrac F61, FastMig KMS, SuperSnake, air-cooled		**P08819**
FastMig KMS 400 power source		6054000
FastMig MXF 65 wire feeder		6152100
FastMig SF 53W control panel		6085300W
PM 500 undercarriage		6185291
MMT 42 C welding gun	3 m	6254205
MXF SYNC mounting kit		W004030
SuperSnake GT 02SC	15 m	61531501
KWF 70-1.8-GH interconnection cable		6260401
Earth return cable	50 mm^2, 5 m	6184511
MagTrac F61 welding carriage		6190610
MagTrac F61, FastMig Pulse, air-cooled		**P08822**
FastMig Pulse 450 power source		6150500
FastMig MXF 65 wire feeder		6152100
FastMig Pulse PF 65 control panel		6155100
PM 500 undercarriage		6185291
MMT 42 C welding gun	3 m	6254205
KWF 70-5-GH interconnection cable		6260405
Earth return cable	50 mm^2, 5 m	6184511
MagTrac F61 welding carriage		6190610

MagTrac F61, FastMig Pulse, SuperSnake, air-cooled		P08828
FastMig Pulse 450 power source		6150500
FastMig MXF 65 wire feeder		6152100
FastMig Pulse PF 65 control panel		6155100
PM 500 undercarriage		6185291
MMT 42 C welding gun	3 m	6254205
MXF SYNC mounting kit		W004030
SuperSnake GT 02SC	15 m	61531501
KWF 70-1.8-GH interconnection cable		6260401
Earth return cable	50 mm^2, 5 m	6184511
MagTrac F61 welding carriage		6190610
MagTrac F61, FastMig KMS, liquid-cooled		**P08826**
FastMig KMS 400 power source		6054000
FastMig MXF 65		6152100
FastMig SF 53W		6085300W
FastCool 10		6068100
PM 500 undercarriage		6185291
MT51MWC welding gun	4,5 m	6255162
KWF 70-5-WH interconnection cable		6260410
Earth return cable	50 mm^2, 5 m	6184511
MagTrac F61 welding carriage		6190610
MagTrac F61, FastMig Pulse, liquid-cooled		**P08827**
FastMig Pulse 450 power source		6150500
FastMig MXF 65 wire feeder		6152100
FastMig Pulse PF 65 control panel		6155100
FastCool 10 cooling unit		6068100
PM 500 undercarriage		6185291
MT51MWC welding gun	4.5 m	6255162
KWF 70-5-WH interconnection cable		6260410
Earth return cable	50 mm^2, 5 m	6184511
MagTrac F61 welding carriage		6190610
Optional:		
SuperSnake GT 02SC	15 m	61531501
FastMig KMS 300 power source		6053000
FastMig MXF 63 wire feeder		6152300
MMT 42 C welding gun	4.5 m	6254207
Control extension cable	6 m	W005871
MT51MWC welding gun	4,5 m	6255162

6. TECHNICAL DATA

MagTrac F 61		
Input power		50 VDC / 1 A
Data bus type		KempBus
Travel speed		150–1800 mm/min
Towing power		30 kg
Driving method		Rail-less drive with permanent magnetic suction
Wheels		4 rubber wheels
Tracing method		Guide rollers
Guide roller height range		10–38 mm, 3 positions
Non-welding distance	Start	127 mm
	End	127 mm
Auto-stop function		Limit switch on both sides
Welding gun		Kemppi MMT 42C
Gun angle adjustment range		+/–30°
Gun distance adjustment range	vertical, horizontal	45 mm
External dimensions	L x W x H	259 x 259 x 285 mm
Weight		6.9 kg
Max surface temperature		150 °C
EMC class		A
Degree of protection		IP2X
Operating temperature range		–20…+40 °C
Storage temperature range		–40…+60 °C
Standards IEC 60204-1 and partially IEC 60974-1		

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