

# X3 MIG Welder

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## 1. READ FIRST

### 1.1 General

Congratulations on choosing the X3 MIG Welder series power source. 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](http://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 minimize damage and harm are indicated by the symbols below. Read these sections carefully and follow their instructions.

 *Note: Gives the user a useful piece of information.*

 *Caution: Describes a situation that may result in damage to the equipment or system.*

 *Warning: Describes a potentially dangerous situation. If not avoided, it will result in personal damage or fatal injury.*

#### 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.

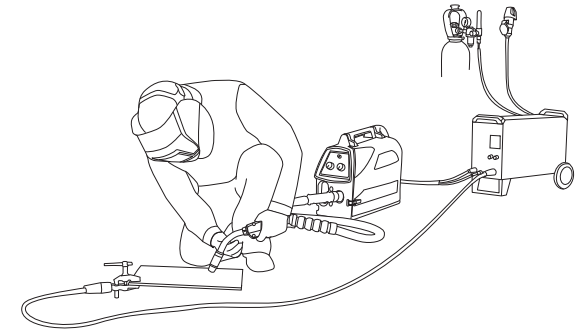
### 1.2 About X3 MIG Welder product series

X3 MIG Welder is a set of inverter-based welding equipment intended for professional use in industrial MIG/MAG welding applications. It can be connected to a 3-phase mains power supply.

The X3 MIG Welder contains either a 400- or 500-ampere X3 Power Source and the X3 Wire Feeder 300 unit for wire feeding.

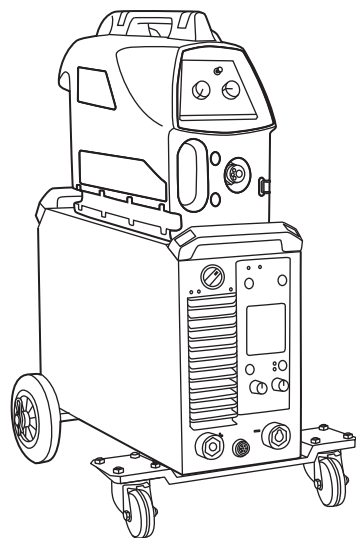
The system is equipped with gas type selection buttons. It automatically presets the welding dynamic characteristic according to your gas selection choice.

Enjoy welding with your Kemppi product!



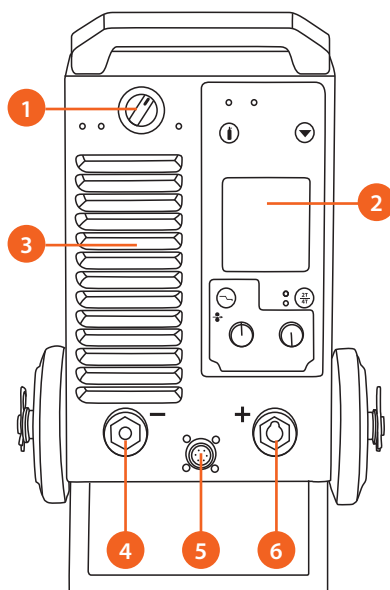
## 2. X3 MIG WELDER STRUCTURE

### 2.1 System introduction



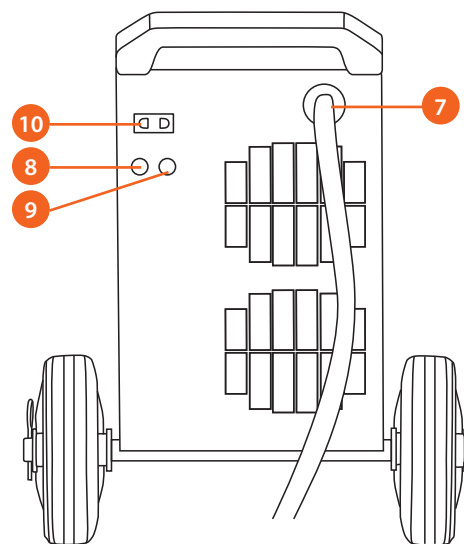
- X3 Power Source
- X3 Wire Feeder 300: The wire feeder can be installed as stand-alone, or it can be mounted on top of the power source with an optional X3 Wire Feeder Mounting Plate.
- X3 Wheel Set / X3 Four Wheel Set (optional). The power source can be equipped with large rear wheels and/or a set of turning front wheels.
- P20 undercarriage (optional)
- Power supply for external gas heater

### 2.2 X3 Power Source



FRONT

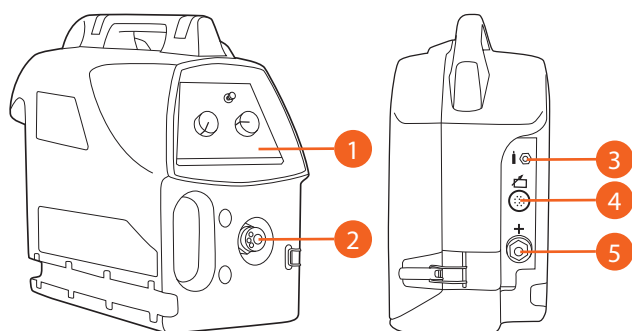
1. ON/OFF switch
2. LCD display
3. Fan grill
4. Earth return cable connector ( - )
5. Control cable connection
6. Wire feeder cable connector ( + )



BACK

7. Mains cable
8. Power source fuse, 6.3 A
9. Shielding gas heater fuse, 2 A
10. Connector for shielding gas heater

## 2.3 X3 Wire Feeder



1. Control panel
2. Welding gun connection
3. Shielding gas connection
4. Control cable connection
5. Welding current cable connection

## 3. INSTALLATION

### 3.1 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.

**i** 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  $-20\dots+40$  °C.

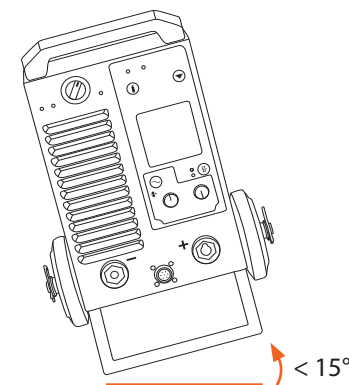
Please read also the Safety Instructions concerning the operating environment.

### 3.2 Positioning of the machine

Place the machine on a sturdy, level surface that is dry and does not allow dust or other impurities to enter the machines cooling air flow. Preferably site the machine to a suitable carriage unit so it is above floor level.

Notes for positioning the machine

- The surface inclination may not exceed 15 degrees.



- Ensure the free circulation of the cooling air. There must be at least 20 cm of free space in front of and behind the machine for cooling air circulation.
- Protect the machine against heavy rain and direct sunshine.

The machine is not allowed to be operated in the rain as the protection class of the machine, IP23S, allows preserving and storing outside only.

**i** Never aim the spray of sparks from a grinding machine toward the equipment.

### 3.3 Distribution network

All regular electrical devices without special circuits generate harmonic currents into distribution network. High rates of harmonic current may cause losses and disturbance to some equipment.

#### X3 Power Source 400 / 400 AU

This equipment complies with IEC 61000-3-12 provided that the short-circuit power  $S_{sc}$  is greater than or equal to 4.7 MVA at the interface point between the user's supply and the public supply network. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power  $S_{sc}$  greater than or equal to 4.7 MVA.

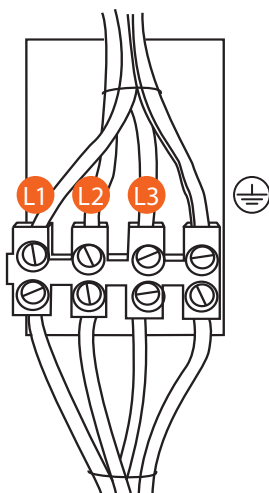
#### X3 Power Source 500 / 500 AU

This equipment complies with IEC 61000-3-12 provided that the short-circuit power  $S_{sc}$  is greater than or equal to 5.2 MVA at the interface point between the user's supply and the public supply network. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power  $S_{sc}$  greater than or equal to 5.2 MVA.

### 3.4 Connecting cables

#### 3.4.1 Mains connection

The X3 Power Source is connected to a 380 – 440 V three-phase network. On the back side of the machine, there is a mains cable that does not have a plug. Before use, check the mains cable and install a suitable mains plug. If the cable does not comply with the local electrical regulations, replace it with a compliant cable.



#### Replacement of the mains cable:

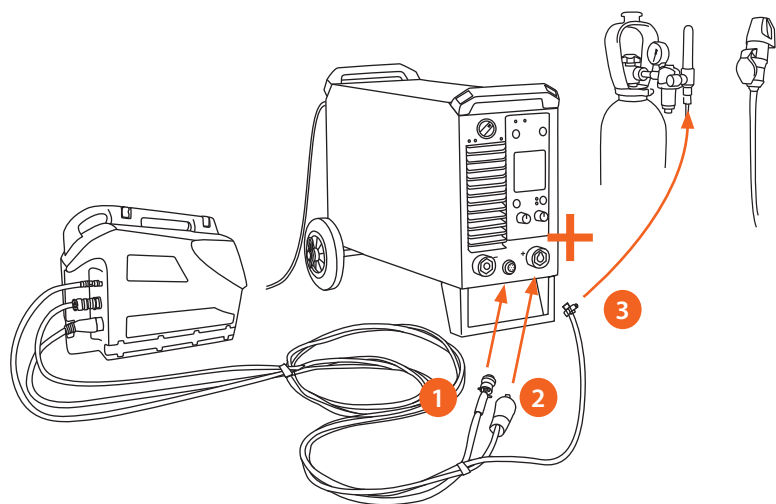
1. Unscrew the mounting screws on the cover plate of the machine, and remove the case by lifting it.
2. Disconnect the phase leads from connectors L1, L2, and L3, and disconnect the protective earth lead.
3. Pass the cable to the machine through the mains cable inlet ring at the rear of the machine, and secure the cable with a cable clamp.
4. Connect the cable's phase leads to connectors L1, L2, and L3.
5. Connect the yellow-green protective earth lead to its connector
6. Screw the cover plate back in place.

**!** *The mains cable or wall plug may be installed or replaced only by an electrical contractor or installer authorised to perform such operations.*

### 3.4.2 Wire feeder connection

On the front side of the power source, there are connectors for the interconnection cable and the control cable for connecting the power source to the wire feeder.

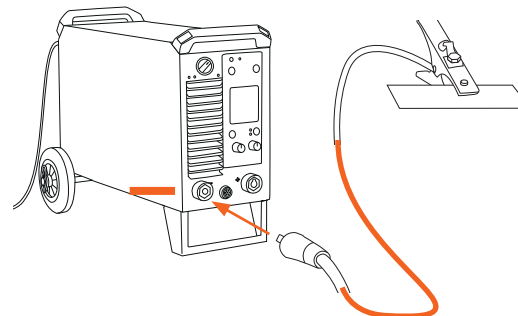
To connect the wire feeder to the power source, complete the following steps:



1. Attach the wire feeder's welding current cable to the plus (+) connector of the power source. Hand tighten the connector with a clockwise push and twist action to lock.
2. Attach the wire feeder 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.

**i** Normally the wire feeder should be connected to the plus (+) pole. However, with some filler wires and shielding gases, you should connect it to the minus (-) pole, and the earth return cable to the plus pole.

### 3.4.3 Earth return cable connection



Attach the earth return cable to the minus (-) connector. Hand tighten the connector with a clockwise push and twist action to lock.

Attach the other end of the earth return cable to the workpiece before welding.

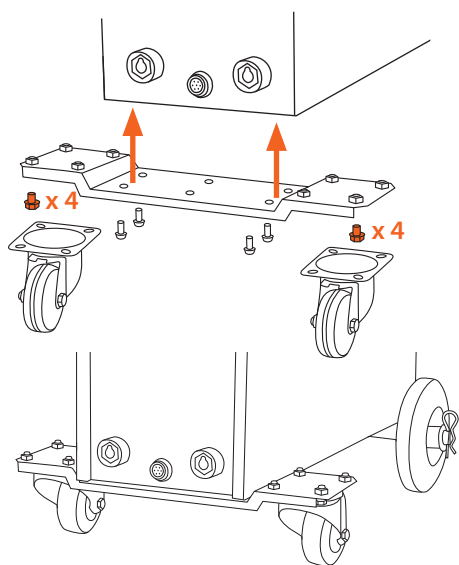
**i** When attaching the earth return clamp to the work piece, remember to clean the work piece surface so as to achieve safe and undisturbed operation.

## 3.5 Optional accessories

### 3.5.1 Wheel sets

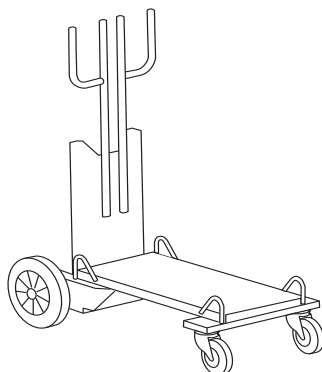
The X3 Power Source can be fitted with wheels for easy movement of the unit.

There are two different wheel sets available, one with big rear wheels only and another with big rear wheels and turning front wheels. Installation instructions are delivered with the wheel set package.



### 3.5.2 Undercarriage

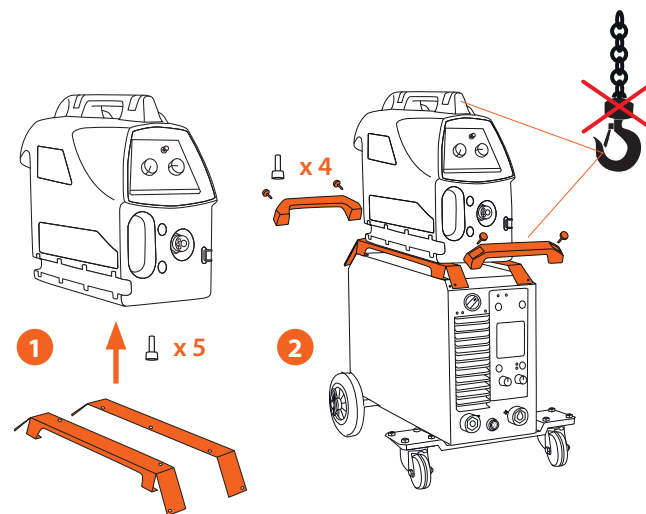
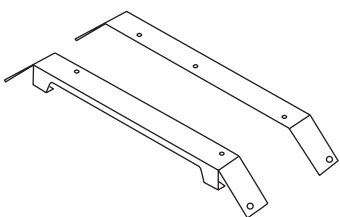
To enable easy movement of the unit, the power source can be mounted on the P20 undercarriage. Installation instructions are delivered with the undercarriage package.



### 3.5.3 Wire feeder mounting plate

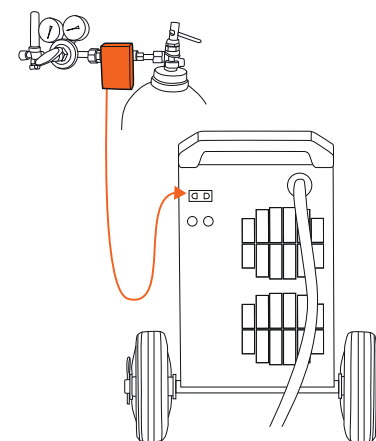
If you are using wheels or undercarriage, you can attach the wire feeder on top of the power source using the X3 Wire Feeder Mounting Plate to create a compact welding unit that is easy to move around.

To mount the wire feeder on top of the power source, follow the instructions delivered with the mounting plate.



### 3.5.4 Gas heater

When using CO<sub>2</sub> shielding gas, a 110 V gas heater can be connected to the power supply located at the back of the X3 MIG Welder power source.

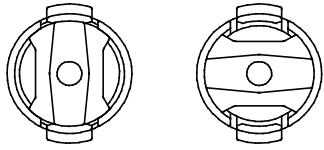




## 4. OPERATION

### 4.1 Loading the filler wire

#### 4.1.1 Mounting and locking the wire spool



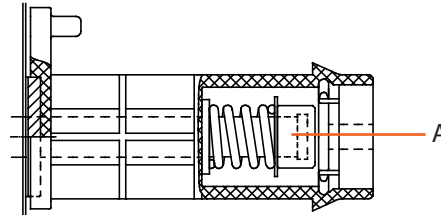
LOCKED

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.

#### 4.1.2 Adjusting the 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 on the wire feed speed. 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.

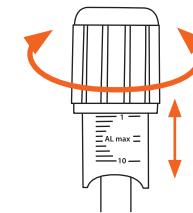
**i** Too much or unnecessary loads can impact welding quality, load and wear to the wire feed system.

#### 4.1.3 Adjusting the 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.

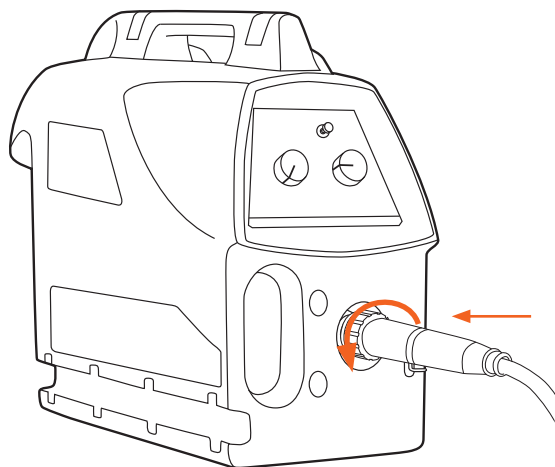
For smaller diameter and soft filler wires, less feed pressure is required. It should be possible to apply a light braking force to the filler wire by hand, as it exits the gun contact tip. But slightly more wire flow restriction should render the drives rolls to slip slightly over the filler wire without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

**i** 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.



#### 4.1.4 Feeding the filler wire

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

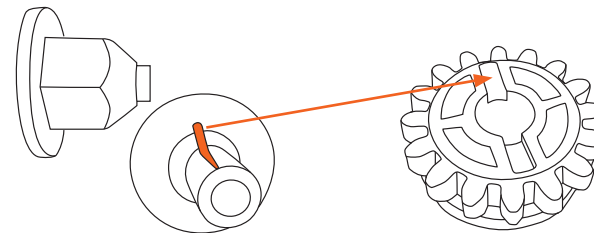
#### 4.1.5 Wire feed mechanism DuraTorque 400

Wire guide tubes					
	ø mm	colour	outlet tube	middle tube	inlet tube
Ss, Al, (Fe, Mc, Fc) plastic	0.6		SP007437	SP007429	SP007293
	0.8 – 0.9		SP007438	SP007430	SP007294
	1.0		SP007439	SP007431	SP007295
	1.2		SP007440	SP007432	SP007296
	1.4		SP007441	SP007433	SP007297
	1.6		SP007442	SP007434	SP007298
	2.0		SP007443	SP007435	SP007299
	2.4		SP007444	SP007436	SP007300
Fe, Mc, Fc metal	0.8 – 0.9		SP007454	SP007465	SP007536
	1.0		SP007455	SP007466	SP007537
	1.2		SP007456	SP007467	SP007538
	1.4 – 1.6		SP007458	SP007469	SP007539
	2.0		SP007459	SP007470	SP007540
	2.4		SP007460	SP007471	SP007541

<i>Wire feed rolls, plastic</i>				
	<i>ø mm</i>	<i>colour</i>	<i>lower</i>	<i>upper</i>
Fe, Ss, (Al, Mc, Fc) V-groove <b>V</b>	0.6		W001045	W001046
	0.8 – 0.9		W001047	W001048
	1.0		W000675	W000676
	1.2		W000960	W000961
	1.4		W001049	W001050
	1.6		W001051	W001052
	2.0		W001053	W001054
	2.4		W001055	W001056
Fc, Mc, (Fe) V-groove, knurled <b>VΞ</b>	1.0		W001057	W001058
	1.2		W001059	W001060
	1.4 – 1.6		W001061	W001062
	2.0		W001063	W001064
	2.4		W001065	W001066
Al, (Fc, Mc, Ss, Fe) U-groove <b>U</b>	1.0		W001067	W001068
	1.2		W001069	W001070
	1.6		W001071	W001072

<i>Wire feed rolls, metal</i>			
	<i>ø mm</i>	<i>lower</i>	<i>upper</i>
Fe, Ss, (Al, Mc, Fc) V-groove <b>V</b>	0.8 – 0.9	W006074	W006075
	1.0	W006076	W006077
	1.2	W004754	W004753
	1.4	W006078	W006079
Fc, Mc, (Fe) V-groove, knurled <b>VΞ</b>	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 <b>U</b>	1.0	W006088	W006089
	1.2	W006090	W006091
	1.6	W006092	W006093

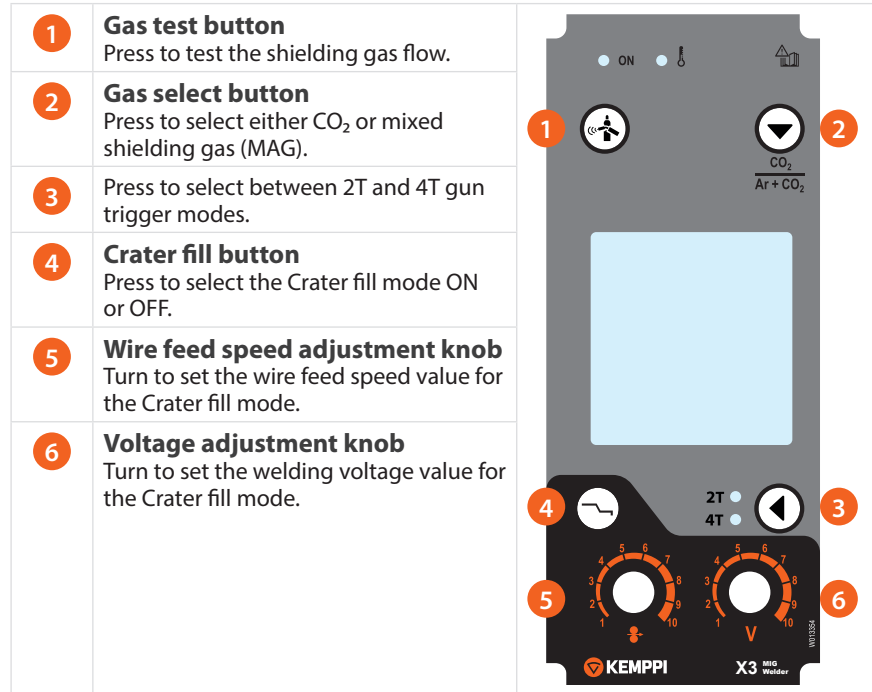
**i** Mount the lower feed roll, ensuring that the pin on the shaft fits in the cut on the feed roll.



## 4.2 Controlling the welding system

### 4.2.1 Setup panel

Use the Setup panel on the X3 Power Source to change the settings of your welding system.



### 4.2.2 Starting the power source

To start the power source, turn the main switch to position 'I'. Initially, the firmware version number is displayed in the LCD display. After that, the firmware number is replaced with the parameter display, and the machine is ready for setup.

### 4.2.3 LCD display

The X3 MIG Power Source is equipped with an LCD display. Welding parameter settings are made through the X3 Wire Feeder control panel for wire feed speed (A) and voltage (V). During welding the display always shows the welding current (A) used.

The average welding values remain on display for 10 seconds after you stop welding.

The upper part of the display shows wire feed speed, the selected welding voltage and gas type selection. The lower part of display shows the Crater fill values.

### 4.2.4 LED indicators

There are two LED indicator lights on the top of the control panel.



1. The ON light indicates that the power source is turned on.
2. The second light indicates that the machine is over heated.

**i** The machine stops automatically when it reaches its maximum operating temperature. If the heat indicator led is on, the machine has exceeded its normal maximum operating temperature. Stop welding and wait until the led turns off. The machine is then ready for welding to continue.

## 4.2.5 Settings menu parameters

In Settings menu you can enable or disable welding parameters and adjust their values.

	Parameter	Values
CrE	<b>Creep start</b>	1 = On / 0 = Off
PrE	<b>Pre gas</b>	1 = On / 0 = Off
Pre gas	<b>Pre gas</b>	1 = On / 0 = Off
Pos	<b>Post gas</b>	1 = On / 0 = Off
Ign	<b>Hard ignition</b> Makes the arc ignition stronger by increasing welding voltage at the start of the weld.	1 = On / 0 = Off
HSt	<b>Hot stop</b> Enhances the end of the weld in certain applications by delaying the arc extinction and raising the welding voltage at the end of welding. Especially useful in tack welding.	1 = On / 0 = Off
BUr	<b>Burn back time</b> Time that torch will be live after welding has stopped to prevent filler wire from sticking to the work piece. (-01 = Use defaults from welding program.	Integer (ms): -01...999
LOC	<b>Panel Lock</b> Locks the setup panel and prevents welding parameters from being changed. 'LOC' flashes on the screen on attempt to change parameters. Setting is remembered on the next startup.	1 = enabled with code 769 0 = disabled with code 769
FAC	<b>Factory reset</b> Resets the user interface and special settings to factory defaults on menu exit.	1 = On / 0 = Off






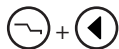

### To enable or disable welding parameters

1. Open Settings menu by pressing **Crater fill** and **Gas test** buttons simultaneously.
2. Use **Gas select** and **2T/4T** buttons to navigate to the desired parameter.
3. Press **Crater fill** button to toggle the the state of the parameter (On or Off).
4. Exit the menu and save the changes by pressing **Crater fill** and **Gas test** buttons simultaneously.

### To set values for Burn back time or Panel lock code

1. Open Settings menu by pressing **Crater fill** and **Gas test** buttons simultaneously.
2. Use **Gas select** and **2T/4T** buttons to navigate to **BUr** or **LOC** menu item.
3. Press **Crater fill** button to activate a single digit so that it starts to blink.
4. Use **Gas select** and **2T/4T** buttons to increase and decrease the value of the digit.
5. Press **Crater fill** to activate another digit.
6. Press **Crater fill** and **Gas test** simultaneously to exit the menu and save the changes.

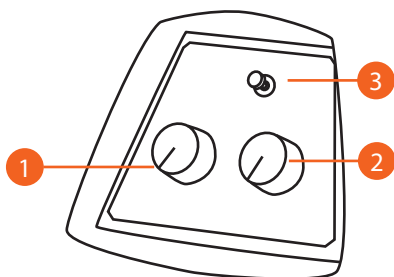
### To use carbon arc gouging

 + 	Press <b>Crater fill</b> and <b>2T/4T</b> to enter the gouging mode.
 + 	Adjust the voltage with <b>Gas select</b> and <b>2T/4T</b> buttons.
	Activate another digit by pressing <b>Crater fill</b> button.
 + 	Exit gouging mode by pressing <b>Crater fill</b> and <b>2T/4T</b> simultaneously.

 *Output terminals are live in carbon arc gouging mode.*

#### 4.2.6 Wire feeder control panel

Use the Control panel on the X3 Wire Feeder to adjust the welding parameters.



1. Wire feed speed  
Turn to adjust the wire feed speed. The amperage level is automatically changed to match the wire feed speed setting. See the value tables at the end of this manual.
2. Welding voltage  
Turn to adjust the welding voltage level. The voltage level determines the arc length.
3. Wire inch  
Press to feed the filler wire into the welding gun.

#### 4.3 Selecting shielding gas

Press the shielding gas selection button to set the shielding gas type to either CO<sub>2</sub> or mixed gas according to the gas you are using.

Select CO<sub>2</sub> if you are using carbon dioxide. Select Ar + CO<sub>2</sub> (MAG) if you are using mixed gas.

**i** X3 MIG Welder has a factory set Pre gas time of 0.2 s and a Post gas time of between 2 – 4 s, depending on the welding power settings.

#### 4.4 Gas test

To test the shielding gas flow, press the gas test button once. The shielding gas starts to flow and stops automatically after 20 seconds.

To interrupt the gas test, press the button again.

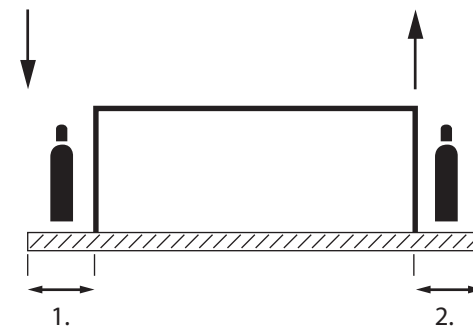
#### 4.5 Trigger logic and Crater fill function

The purpose of Crater fill is to facilitate controlled finishing of welding and to reduce the welding faults caused by the final crater. The Crater fill parameters can be specified in the Setup panel.

##### 2T mode

MIG welding with 2T mode of the gun trigger.

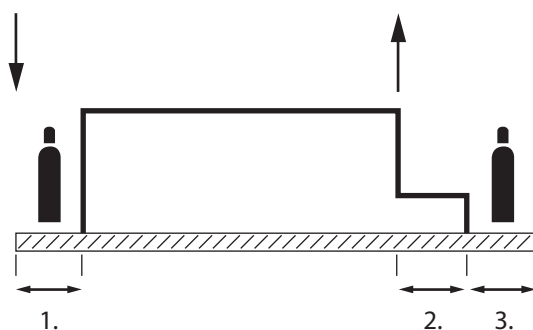
- Press the trigger – welding starts after preset Pre gas time.
- Release the trigger – welding ends. Post gas flows for preset time.



1. Pre gas time
2. Post gas time

## 2T mode and Crater fill function

- Press the trigger – welding starts after preset Pre gas time.
- Release the trigger – values drop to preset Crater fill level and welding ends after preset time. Post gas flows for preset time.



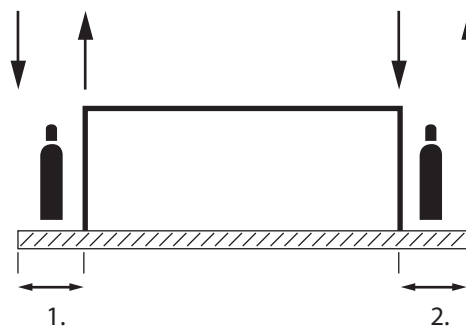
1. Pre gas time
2. Crater fill time
3. Post gas time

## 4T mode

MIG welding with 4T mode of the gun trigger.

- Trigger pressed down – flow of shielding gas starts.
- Trigger released – welding starts.
- Trigger pressed down – welding ends and shielding gas flow continues.
- Trigger released – flow of shielding gas ends.

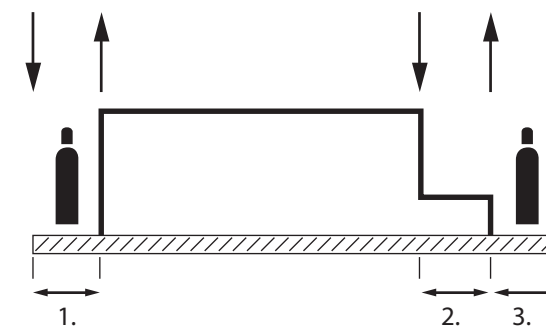
 Post gas time at least preset minimum.



1. Pre gas time
2. Post gas time

## 4T mode and Crater fill function

- Trigger pressed down – flow of shielding gas starts.
- Trigger released – welding starts.
- Trigger pressed down – welding values change to Crater fill level.
- Trigger released – welding ends. Post gas time flows for preset time.



1. Pre gas time
2. Crater fill time
3. Post gas time

## 4.6 Calibrating wire feed speed

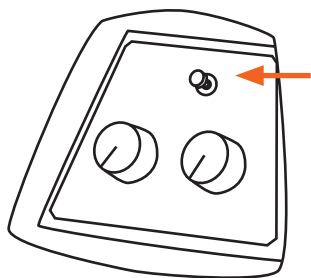
To ensure that the pre-sets and meter displays work as planned, you must calibrate the wire feed speed on your X3 MIG Welder.

### To calibrate the wire feed speed

1. At the power source control panel, press the Crater fill button for 3 seconds.



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



4. When wire feed stops, cut the wire at the contact tip and measure the length of the fed wire in mm.
5. At the power source control panel, enter the length of the wire using the following buttons.

	Toggle between the digits of the number	
	Increase the digit by one	
	Decrease the digit by one	

**i** If you enter a value that does not fit in, the machine forces the value within the acceptable limits..

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

### To skip the calibration, do one of the following:

- Exit the calibration mode by pressing Crater fill button for 3 seconds.
- Exit the calibration mode by leaving the machine idle for 5 minutes.
- Turn off the machine before the step 9 to exit the calibration mode and keep the old calibration values.

**i** The X3 Wire Feeder 300 must always be calibrated before the first use and if combined with a different X3 Power Source.

**i** Check the wire feeder's calibration regularly. Correctly calibrated wire feeder ensures quality welds.



## 5. TROUBLESHOOTING

Problem	Cause
The machine stops working. Overheating indicator is lit, and Err 4 is displayed.	The machine has overheated. <ul style="list-style-type: none"> <li>• Ensure that cooling air has unrestricted flow.</li> <li>• The machine's duty cycle has been exceeded.</li> </ul> If no other damage is caused, the fan starts working and the machine recovers within a couple of minutes. If the problem persists, please contact Kemppi service representative.
Machine stops working. Err 2 or Err 3 is displayed.	The mains voltage is either too low (Err 2) or too high (Err 3). * The machine recovers automatically, when the mains voltage is in the recommended range (342 – 484 V).
Machine stops working. Err 43 is displayed.	The wire feeder motor is overloaded. Check that you are using the right wire type and that the wire feed route is unobstructed.
Poor welding result	Several factors affect the welding quality. <ul style="list-style-type: none"> <li>• Check wire feed calibration.</li> <li>• Check that the earth return clamp is properly attached, the point of contact is clean and that the cable and its connectors are intact.</li> <li>• Check the voltage and wire speed settings on the control panel are correct for the given wire size and type.</li> <li>• Check that the shielding gas flow rate at the gun nozzle is correct.</li> <li>• Check that the shielding gas is suitable for the filler wire used.</li> <li>• Check that the wire feed is constant, and adjust if necessary.</li> <li>• Check that the mains voltage is not too irregular.</li> </ul>
Main switch indicator does not switch on	The machine has no mains voltage <ul style="list-style-type: none"> <li>• Check the mains fuses</li> <li>• Check the mains cable and the wall plug</li> </ul>


\* Contact Kemppi service in case of Err 2 and Err 3 without mains voltage cause.

## 6. MAINTENANCE

### 6.1 Regular maintenance

Check regularly the electrical connections of the machine. Clean any oxidised connections, and tighten the loosened cable connections.

Let authorised Kemppi service workshop make periodic service to your machine. Appropriate use and regular service guarantee trouble-free use of the machine. This allows you to avoid interruptions and increase the productivity of the machine.

 **NOTE!** Remember that the machine may be repaired only by an electrical contractor or installer authorised to perform such operations.

### 6.2 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.

## 7. TECHNICAL DATA

<i>X3 Power Source</i>		<i>400 / 400 AU</i>	<i>500 / 500 AU</i>
Mains connection voltage	3~, 50/60 Hz	380 – 440 V (–10 %...+10 %)	380 – 440 V (–10 %...+10 %)
Mains connection cable	H07RN-F	4 G4	4 G4
Rated power at max. current	60 % ED	17.6 kVA	24.5 kVA
	100 % ED	12.5 kVA	17 kVA
Supply current (maximum)	$I_{1max}$	27 A	37 A
Supply current (effective)	$I_{1eff}$	19 A	29 A
Idle power	$P_i$	< 20 W	< 20 W
Open circuit voltage	$U_{av}$	52 – 57 V	57 – 62 V
No-load voltage, $U_0$	$U_0$	47 – 57 V	51 – 62 V
Fuse		25 A	35 A
Output	60 % ED	400 A / 34 V	500 A / 39.0 V
	100 % ED	310 A / 29 V	390 A / 33.5 V
Welding current and voltage range		25 A/15 V – 400 A/38V	25 A/15 V – 500 A/43 V
Power factor at max current	$\lambda$	0.88	0.90
Efficiency at max current	$\eta$	89 %	90 %
Operating temperature range		–20...+40 °C	–20...+40 °C
Storage temperature range		–40...+60 °C	–40...+60 °C
EMC class		A	A
Minimum short-circuit power SSC of supply network		4.7 MVA	5.2 MVA
Degree of protection		IP23S	IP23S
External dimensions	L x W x H	629 x 230 x 414 mm	629 x 230 x 414 mm
Weight		32 kg	36 kg
Power supply for auxiliary devices	$U_{aux}$	110 V/150 W	110 V/150 W
Standards		IEC 60974-1 IEC 60974-10	IEC 60974-1 IEC 60974-10

The equipment complies with the requirements for the CE mark.

<i>X3 Wire Feeder 300</i>		
Operating voltage	U <sub>1</sub>	24 V
Gun connection		Euro
Wire feed mechanism		4-roll
Filler wires	Fe	0.6 – 1.6 mm
	MC/FC	0.8 – 2.0 mm
Wire feed speed		0 – 25 m/min
Wire spool weight (max)		20 kg
Wire spool diameter (max)		300 mm
Operating temperature range		-20...+40 °C
Storage temperature range		-40...+60 °C
Degree of protection		IP23S
External dimensions LxWxH		590 x 240 x 445 mm
Weight		12 kg
Standards		IEC 60974-5 IEC 60974-10

The equipment complies with the requirements for the CE mark.

For connection options of all gun and torch models and corresponding remote controls, refer to Kemppi Userdoc at <https://kemp.cc/connectivity>.

## 8. ORDERING CODES

X3 Power Source 400		X31004000
X3 Power Source 400	(AU)	X31004000AU
X3 Power Source 500		X31005000
X3 Power Source 500	(AU)	X31005000AU
X3 Wire Feeder 300		X31003000
<b>Interconnection cables</b>		
Interconnection cable 50-1.8-G	50 mm <sup>2</sup> , 1.8 m, max. 300 A	6260508
Interconnection cable 70-1.8-GH	70 mm <sup>2</sup> , 1.8 m	6260518
Interconnection cable 50-5-GH	50 mm <sup>2</sup> , 5 m, max. 300 A	6260500
Interconnection cable 70-5-GH	70 mm <sup>2</sup> , 5 m	6260501
Interconnection cable 50-10-GH	50 mm <sup>2</sup> , 10 m, max. 300 A	6260513
Interconnection cable 70-10-GH	70 mm <sup>2</sup> , 10 m	6260514
Interconnection cable 50-15-GH	50 mm <sup>2</sup> , 15 m, max. 300 A	6260515
Interconnection cable 70-15-GH	70 mm <sup>2</sup> , 15 m	6260516
Interconnection cable 70-20-GH	70 mm <sup>2</sup> , 20 m	6260523
Interconnection cable 70-30-GH	70 mm <sup>2</sup> , 30 m	6260633
<b>Optional extensions</b>		
Extension cable 50-10-G	50 mm <sup>2</sup> , 10 m, max. 300 A	6310510
Extension cable 50-15-G	50 mm <sup>2</sup> , 15 m, max. 300 A	6310515
Extension cable 70-10-G	70 mm <sup>2</sup> , 10 m	6310710
Extension cable 70-15-G	70 mm <sup>2</sup> , 15 m	6310715
<b>Earth return cables</b>		
Earth return cable, X3 MIG Welder	50 mm <sup>2</sup> , 5 m, max. 300 A	6184511
Earth return cable, X3 MIG Welder	70 mm <sup>2</sup> , 5 m	6184711
<b>Accessories</b>		
X3 Wheel Set		X37000001
X3 Four Wheel Set		X37000002
X3 Wire Feeder mounting kit		X37000003
P20 undercarriage		6185261

Fe 0.8 mm, CO <sub>2</sub>		mm	1	1.5	2	3	4	6	8	10
		m/min	2.8	4.0	5.0	8.0	11.5	14.0	16.0	18.0
	V	V	14.5	17	18	21	24	26.5	29	31.5
	A	A	45	60	80	110	140	160	170	190

Fe 0.8 mm, Ar + 15 – 25% CO <sub>2</sub>		mm	1	1.5	2	3	4	6	8	10
		m/min	2.8	4.0	5.0	8.0	11.5	14.0	16.0	18.0
	V	V	14.5	16.5	17.5	20	22.5	25.3	28	30
	A	A	50	70	90	120	150	160	180	200

Fe 1.0 mm, CO <sub>2</sub>		mm	1.2	1.5	2	3	4	6	8	10	12
		m/min	2.2	3.0	4.3	6.0	7.3	9.7	12.0	15.0	18.0
	V	V	16.5	18.0	19.5	22.2	24.0	27.3	31.0	35.0	38.0
	A	A	60	85	120	150	170	200	230	260	285

Fe 1.0 mm, Ar + 15 – 25% CO <sub>2</sub>		mm	1.2	1.5	2	3	4	6	8	10	12
		m/min	2.2	3.0	4.3	6.0	7.3	9.7	12.0	14.5	18.0
	V	V	15.6	17.2	18.8	19.8	21.4	25.9	31.5	33.8	35.0
	A	A	60	90	125	155	170	205	240	280	300

Fe 1.2 mm, CO <sub>2</sub>		mm	1	1.5	2	3	4	6	8	10	12	16	20
		m/min	1	2	3	3	4.5	6	8.5	10	11	12.5	14
	V	V	14.2	17	19	19.8	22	24	29.5	32	34	37	39
	A	A	40	90	120	140	155	185	230	265	280	300	330

Fe 1.2 mm, Ar + 15 – 25% CO <sub>2</sub>		mm	1	1.5	2	3	4	6	8	10	12	16	20
		m/min	1	2	3	3.6	4.5	6	8.5	10	11	12.5	14
	V	V	13	15.7	17.5	18.8	20	21.5	27.5	31.5	32.8	35.5	37
	A	A	50	95	125	145	165	200	245	285	300	330	345

Fe 1.6 mm, CO <sub>2</sub>		mm	1.2	1.5	2	3	4	6	8	10	12	16	20
		m/min	1.0	1.3	1.8	2.8	3.0	3.5	5.0	5.5	6.0	7.0	13.0
	V	V	16.0	17.5	19.6	21.5	22.5	24.5	30.0	31.5	33.0	36.0	40.0
	A	A	75	95	130	185	195	215	275	295	315	350	500

Fe 1.6 mm, Ar + 15 – 25% CO <sub>2</sub>		mm	1.2	1.5	2	3	4	6	8	10	12	16	20
		m/min	1.0	1.3	1.8	2.8	3.5	4.3	5.0	5.8	6.5	7.5	13.0
	V	V	13.2	14.6	16.8	20.0	22.0	24.6	27.0	30.4	33.5	36.0	40.0
	A	A	85	105	135	195	225	250	280	330	370	400	500



[userdoc.kemppi.com](https://userdoc.kemppi.com)



Declarations of Conformity – Overensstemmelseserklæringer –  
Konformitätserklärungen – Declaraciones de conformidad –  
Vaatimustenmukaisuusvakuutuksia – Déclarations de conformité –  
Dichiarazioni di conformità – Verklaringen van overeenstemming –  
Samsvarserklæringer – Deklaracje zgodności –  
Declarações de conformidade – Заявления о соответствии –  
Försäkran om överensstämmelse – 符合性声明