

A7 Cooler

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1. INTRODUCTION

1.1 General

Congratulations on choosing the A7 Cooler cooling unit. 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 harm are indicated with below symbols. 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 Product introduction

A7 Cooler is used for liquid cooling of welding gun. It is designed for Kemppi's robotic welding equipment A7 MIG Welder, but it can also be used in manual welding. It is fully compatible with FastMig X product family.

The operation of A7 Cooler is controlled by a micro-processor. To ensure critical cooling of the welding gun in robotic applications, the unit has a flow switch in the return line.

2. INSTALLATION

2.1 Removal from packaging

The equipment is packed in durable packages specially designed for them. Check the equipment before taking it into use, to make sure that the equipment or a part of it have not got damaged during the transportation. Also check that the delivery corresponds your order and that you have received all the necessary instructions for installing and operating the equipment. The packaging material can be recycled.

2.2 Locating the machine

Place the machine on a horizontal, stable and clean ground. Protect the machine from heavy rain and burning sunshine. Check that there is enough space for cooling air circulation in front of and behind the machine.

2.3 Serial number

The serial number of the machine is marked on the machine CE-marking. Identificating the serial number is the only proper means of maintaining and identifying parts for a specific product. It is important to make correct reference to the serial number of the product when making repairs or ordering spare parts.

2.4 Installation and main parts

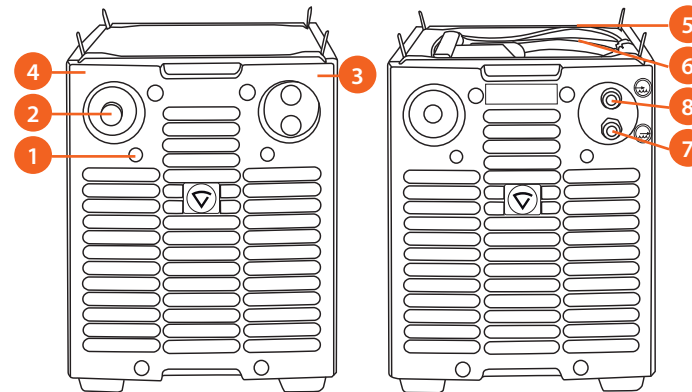
2.4.1 Assembling the equipment

The equipment is assembled in the following order:

1. A7 Cooler 6068220
2. Transport unit PM500 6185291
(If used with FastMig)

Assembly the transport unit according to the instructions in the package. Fasten the cooling unit to the transport unit by using the screws and bolts delivered with the equipment.

2.4.2 Main parts of cooling unit



Front machine

1. Housing
2. Test switch
3. Overheat control lamp
4. Filling hole

Back side

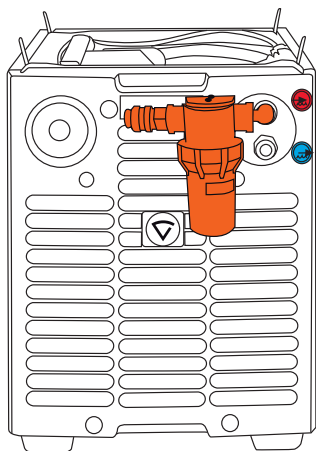
5. Mains voltage connection cable
6. Control cable
7. Cooling water output hose
8. Cooling water input hose

2.5 Preparing for operation

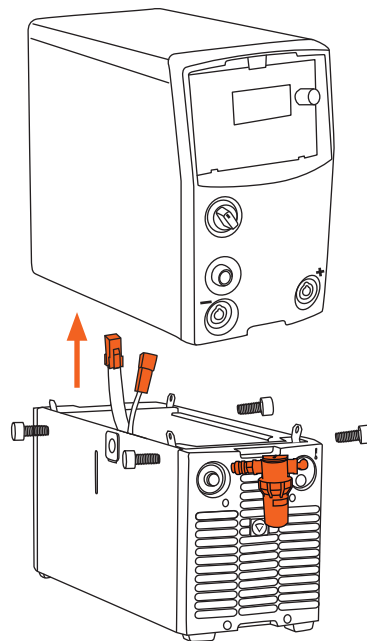
i Cooling liquid is harmful! Avoid also contact with skin or eyes. In case of injury, seek for medical help.

See also 2.4.2. Main parts of cooling unit.

1. Fasten the filter unit's mounting plate to the cooler's front panel. Then connect the filter unit to the snap connector and fasten the unit to the mounting plate. Inside the cooler there is a flow switch, factory-adjusted to 1 litres per minute. To change the flow rate, loosen the locking screws of the black slide control and move it to show the desired flow rate.



2. Connect the mains voltage and control connectors of the cooler unit to the corresponding connectors on the base of the power supply. The connection can be established through the base of the power supply when the devices are separated or through the right side of the A7 Cooler unit by removing the right side plate.



3. Attach the power supply on the cooler.
4. Connect the cooling water hoses with the wire feed unit, follow colour markings.
5. Fill the reservoir with cooling liquid. It is preferred to use Kemppi brand cooling liquid. Also water can be used, if the temperature doesn't go below 0 degrees Celsius. The capacity of the reservoir is 3 litres.
6. Switch on the power supply.
7. Press and hold down the test switch until the torch hoses are filled with liquid.

i When A7 Cooler is connected to the power source for the first time, the cooler function is normally active. To deselect the cooler function, follow the instructions below depending on the power source type in use.

Filter unit and flow switch

Depending on the FastMig model in question and the control panel type fitted, please follow the graphical instruction below in order to deselect or select water-cooling function. FastMig Pulse or FastMig X operation is set to 'AUTO', FastMig KM, KMS and M equipment is set as water function 'ON' from the factory.

If no cooler is fitted, deselect the cooler function as instructed in the following. Welding will be prevented if cooler function is enabled and no cooler is fitted.

A7 MIG Welder, FastMig X and Pulse

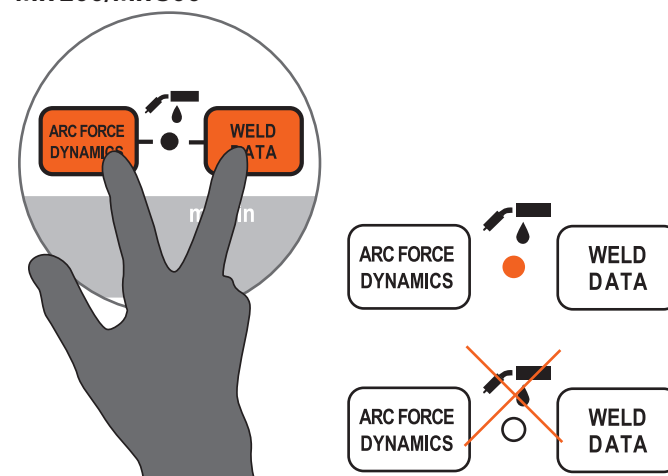
The factory default setting for A7 MIG Welder, FastMig X and Pulse is AUTO. If a cooling unit is not connected and the operator tries to establish air-cooled operation together with an air-cooled gun, Err 27 is displayed. To establish air-cooled operation, select cooler 'OFF'. This is done in the 'System Config Menu' as follows: Press the **Menu** button on the X 37 power source panel. Move the menu display arrow (via panel's left-hand up-down arrow keys) to select 'System Config Menu' and then press the select button. Choose 'Water Cooling:Auto' and change via control knob to setting 'Water Cooling:OFF'; then press **Back/Exit**. Cooler will then be set to the 'OFF' state for air-cooled operation. Reset power source via on/off switch and continue welding.

When selected, the operation of the cooling unit is automatic, starting when welding commences. When welding stops the pump will continue operation for approx. 5 min, so reducing the gun and the cooling liquid to ambient temperature.

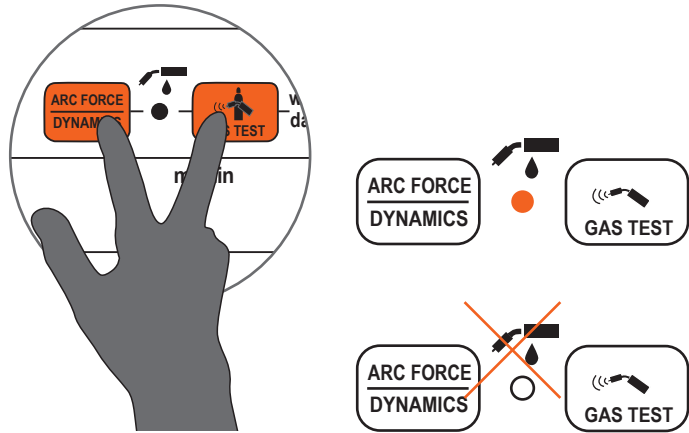
FastMig M, KMS and KM

When leaving the factory, cooling unit status is set 'ON'. If no cooling unit is connected, set the cooling unit status to 'OFF'. Depending on your panel type follow the instructions described in the graphic below. Having selected the cooling state required, reset the power source by switching off at the main on/off switch. Restart the power source and weld.

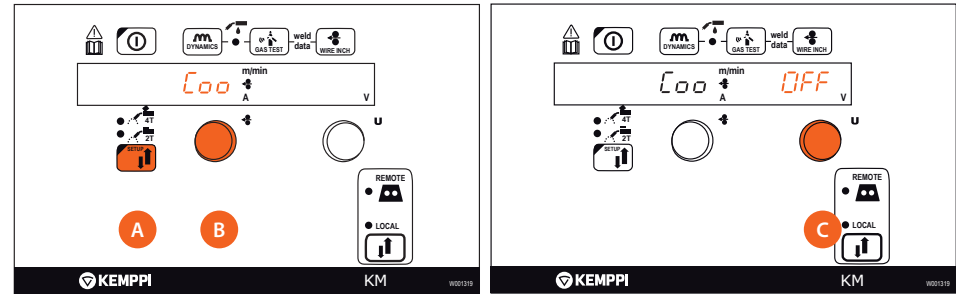
MR 200/MR 300



SF 51/SF 54

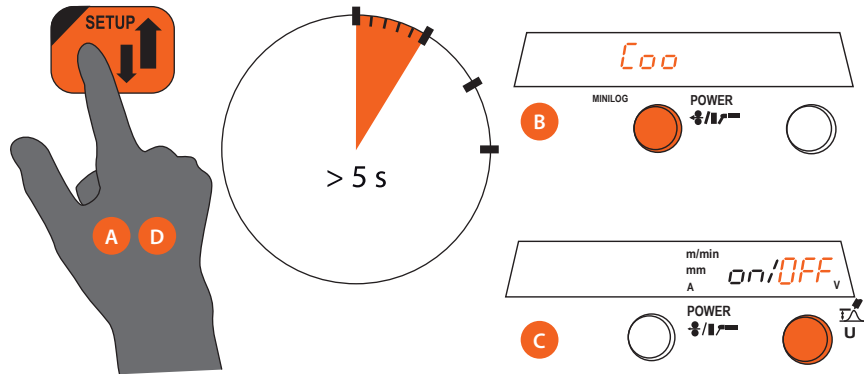


KM



After completing the preparations explained above, the device is ready for welding. Before welding, read the operating instructions.

SF 52W/SF 53W and MS 200/MS 300



3. OPERATION

3.1 Cooler operation

See also 2.4.2. Main parts of cooling unit

The A7 Cooler cooler operation is controlled by the microprocessor of the power supply. The cooler pump starts to operate when the welding begins. After the welding has stopped, the pump will operate 1 to 5 minutes longer depending on the welding time. During this time the liquid will cool down to the ambient temperature and cools down the welding gun.

Check the tank liquid level regularly and add liquid, if necessary.

If the tanks coolant liquid level runs low, welding is stopped and an error code appears on the FastMig panel. See trouble-shooting 4.5.

3.2 Overheat signal lamp

The overheat signal lamp is lighting when temperature control of the machine has detected cooling water overheat. The ventilator cools down the machine and when the lamp goes out welding can be started again.

3.3 Storage

The machine must be stored in a clean and dry room. Protect the machine from rain and keep it away from direct sunshine in places where temperature exceeds +25° C. Check that there is free space in front of and behind the machine for air circulation.

4. MAINTENANCE

i Watch out for mains voltage when handling electric cables!

In planning product maintenance machine utilization degree and circumstances should be considered. Careful use and preventive maintenance help to avoid unnecessary production disturbances and breaks.

4.1 Daily maintenance

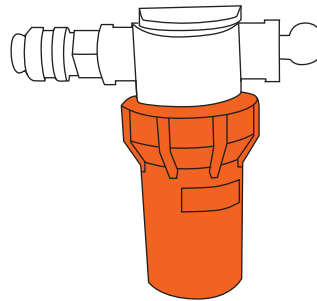
The following maintenance operations should be carried out daily:

- Check water level and input flow, add liquid if needed.
- Check cables and connections. Tighten, if necessary and replace defect parts.
- Check that there are no leakages in the cooling water hoses.

4.2 Monthly maintenance

Check and clean the filter unit on the front panel once a month:

1. Unscrew the cup from the filter and remove the filter from the pivot.
2. Clean the filter net using water and compressed air.
3. Replace the filter net and the cup.



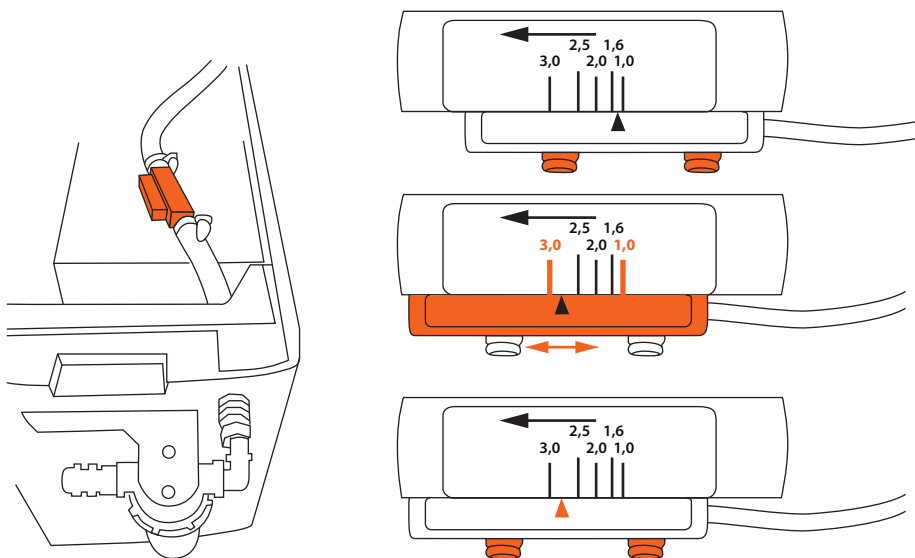
4.3 Every sixth months

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

- Clean off dust and dirt. Change the cooling liquid and wash up the pipes and water reservoir with pure water.
- Check seals, cables and connections. Tighten, if necessary and replace defect parts.

4.4 Flow switch adjustment

The flow switch is located inside the cooler, on top of the water tank. If the cooler is already connected to the power source, you must disconnect it (see chapter 2.5). Loosen the locking screws of the black slide control and move it to show the desired flow rate. Tighten the locking screws and reconnect the cooler to the power source.



4.5 Trouble shooting

See also 3.2. Overheat signal lamp.

Overheat signal lamp is lit.

The unit is overheated.

- Check water circulation.
- Check that there is enough free space in front of and behind the machine for cooling air circulation.

Error code Err5 or Err 27 on the FastMig panel

- Check the liquid hoses for damages.
- Remove any hose blockages.
- Check water circulation, add liquid if needed.

For further information and assistance, contact your nearest Kemppi service workshop.

5. 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 center, as 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 CODES

A7 Cooler unit		6068220
Filter unit and flow switch kit		SP800807
Filter unit		SP012057
Flow switch		SP012056
Welding cooling liquid	In 10 litre cans	SP9810765

7. TECHNICAL DATA

<i>A7 Cooler</i>		
Operating voltage		400V -15 % ... +20 %
Connection capacity	100 % ED	250 W
Cooling power		1 kW
Start pressure, max.		0.4 MPa
Cooling liquid		Kemppi brand cooling liquid
Tank volume		ca. 3 l
External dimensions	L x W x H	570 x 230 x 280 mm
Weight		11 kg
Operating temperature range		-20 ... +40 °C
Storage temperature range		-40 ... +60 °C
EMC class		A
Degree of protection		IP23S

And you know.