

KEMPOMAT 150 is a half-automatic welding equipment designed for welding of thin plates.

KEMPOMAT 150 includes a thyristor controlled welding power source, wire feeder as well as the connections for voltage, shielding gas, gun and return current cable and it is possible to fit wheel equipment with cylinder rack as well as a \varnothing 300 mm wire reel.

Mount the wheels delivered with the basic machine before the installation of the machine.

TECHNICAL DATA

Connection voltages	220/230 - 240 V
Connection current	2,5 kVA
Fuse	10 A delayed
Welding current, max.	150 A stepless adjustment
– at duty cycle	
10 %	125 A CO ₂ /Ar, Ar/O ₂ , Argon
60 %	70 A CO ₂
100 %	50 A
Shape correction by heating, max.	6 s 240 A
Welding voltage	12-20 V stepless adjustment
Open circuit voltage	approx. 48 V
Filler materials, reel \varnothing 300 mm	
– Fe and stainless steel wire	\varnothing 0,6 and 0,8 mm
– Aluminium	\varnothing 1,0 mm
Shielding gases	Ar/O ₂ stainless steel CO ₂ /Ar, CO ₂ carbon steels Ar Aluminium
Temperature class	H
Degree of protection	IP 22
Dimensions without wheel equipment, cylinder and wire reel	
length	500 mm
width	240 mm
height	575 mm
weight	48 kg

The product meets conformity requirements for CE marking.

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CONTROL DEVICES AND OPERATIONS

Main switch

– at connection a signal light is ignited in the push-button

Adjustment of voltage 1–10, stepless

Adjustment of welding current 1–10, stepless

Shape correction by heating

When a carbon holder with carbon is fitted to the contact tip and the wire feed is adjusted at zero, current for shape correction by heating is got from the equipment. The shape correction by heating is possible after approx. 10 s from the switch-on of current. The load protection prevents too frequent loading for which reason keep a pause of approx. 10 s after time used for shape correction by heating, max. 6 s.

Wire feed

Also a smaller reel than \varnothing 300 mm fits the hub of the wire if a fitting auxiliary bushing corresponding to the width difference of the reels is set onto the hub.

Do not tighten the wire feed roll too much with the pressing spring, only to such extent that wire coming from the nozzle can be lightly braked with fingers without slipping at the wire feed rolls. The brake spring is adjusted so that no loose wire remains on the reel when stopping the wire feed.

NOTE! The operation of the thermostat does not stop the wire feed. Always choose groove of the feed roll, wire guide tube, inside spiral and nozzle in a correct way according to the welding wire.

Equipment for wheels and cylinders

Check the locking of the cylinder chain. Note the risk that cylinder may fall on the rolling and swinging chassis. Follow systematically the operation instructions of the gas valve and meter in order to prevent damage of the overpressure and the waste of gas.

OPERATION AND MAINTENANCE

The welding object has to be dry; the shielding protection may become weaker in wind.

The welding equipment has to be protected against hard rain.

When necessary the equipment is cleaned with clean compressed air and connections are checked.

The amount of use and the working conditions should be taken into consideration in the maintenance of the equipment. Careful use and preventive maintenance will ensure troublefree operation without unforeseeable service interruptions.

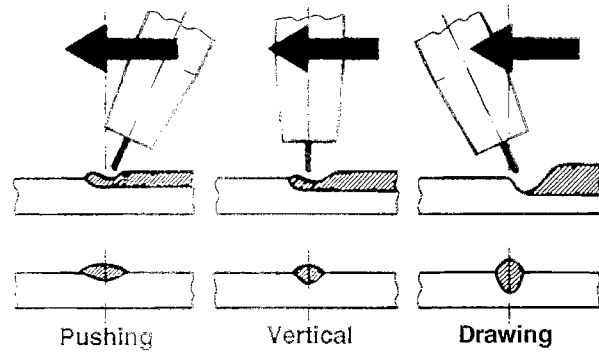
Connection of the primary cable from the mains supply and changes to any internal primary voltage connectors should only be carried out by a competent electrician.

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WELDING

Position of the welding gun

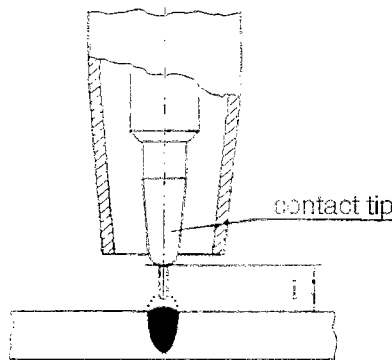
The angle of gun to the weld has an effect on the width of the weld run according to picture 9.



Picture 9

Distance of welding gun from work piece

The distance l between contact tip and workpiece should be kept constant during welding, picture 10.



Picture 10

Welding speed

Speed of the welding gun has effect on the width of the weld run. With a slower speed it is possible to get a wider weld run.

Welding

The values for voltage and wire feed are set from the potentiometers of the machine. Welding current, wire feed and shielding gas flow start when you press on the gun switch and stop when you release the switch.

Shielding gas

Construction steel: mixed gas 80 % Ar/20 % CO₂ or CO₂

Stainless steel: mixed gas 98 % Ar/2 % O₂

Aluminium: Argon

Flow speed of shielding gas approx. 10 l/min

Wire diameter

Construction steel: \varnothing 0,8 mm is recommended, also \varnothing 0,6 mm can be used with mixed gas 80 % Ar/20 % CO₂

Stainless steel: \varnothing 0,8 mm

Aluminium: \varnothing 1,0 mm (1,2 mm contact tip is recommended)

Wire conduit

With construction steel is used a wire spiral of steel being ready in the machine.

With stainless steel and aluminium a teflon wire conduit has to be used.

The pressing pressure of the wire feed rolls has to be adjusted so low as possible with aluminium and for \varnothing 1,0 mm wire a suitable groove of the feed roll has to be used.

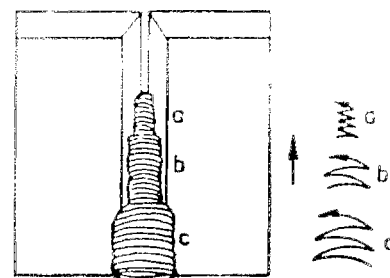
Adjustment of the welding values

The wire feed is adjusted first according to plate thickness and standard value table and then the arc is adjusted steady with help of voltage.

If the wire penetrates into the molten weld pool, increase voltage. If a molten drop is formed on the wire end, reduce voltage.

There has been made a standard value table seen on page 21 (also in wire reel box of the machine) in order to make setting of welding data easier.

NOTE! The value 4 mm in the table is by no means the upper limit for a plate which can be welded with KEMPOMAT 150. In butt joint of thicker plates it is possible to use the single V preparation and widening movement, picture 11. In the fillet preparation it is possible to use also widening or multirun welding.



Picture 11

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Vertical weld

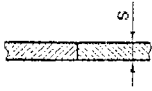
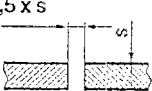
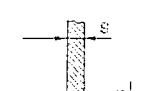
It is possible to perform the vertical weld either from the top downwards or on the contrary. The plates with thicknesses less than 1 mm can be welded with values according to the standard value table. In the square butt preparation of the thicker plates the values of the table are reduced with 0,5-1 degree.

The fillet preparations are welded with values according to the table from the top downwards. In welding from below upwards the wire feed is reduced with 0,5-1 degree.

Preparation of the groove

The tacking close enough with thin plates that the plates are not pulling or going across.

With construction steel and stainless steel a gap which is 1/3...1/1 of the plate thickness, is used with thicknesses more than 1,5 mm in square butt preparation. With aluminium no gap is used.

KEMPPI 4-23835 9885590	Fe				CrNi 18/8		Al		
	ø 0,8 mm				ø 0,8 mm		ø 1,0 mm		
	80% Ar+ 20% CO ₂		CO ₂		98% Ar+ 2% O ₂		Argon		
s	⚡	U	⚡	U	⚡	U	⚡	U	
	0,5	2,5	3,0	2,6	5,0	2,6	3,0	—	—
	0,8	3,0	4,0	3,0	6,0	3,5	4,0	—	—
	1,0	3,5	5,0	3,5	7,0	4,5	5,0	3,5	2,0
	1,5	5,0	7,0	4,5	8,0	6,5	6,0	4,5	5,0
	2,0	—	—	—	—	—	—	6,0	7,5
	0,5 x s	—	—	—	—	—	—	6,5	8,5
	3,0	—	—	—	—	—	—	7,0	10
	4,0	—	—	—	—	—	—	—	—
	2,0	6,0	8,0	5,0	8,5	7,0	7,0	—	—
	3,0	7,0	9,0	5,5	9,0	8,0	7,5	—	—
	4,0	8,0	10	8,0	10	9,5	9,5	—	—
	0,5	2,8	4,3	2,8	6,0	3,0	4,0	—	—
	0,8	3,2	5,0	3,3	6,5	4,0	5,0	—	—
	1,0	4,0	6,0	4,0	7,0	5,0	6,0	4,0	3,0
	1,5	5,0	7,5	5,0	8,5	7,0	7,0	5,5	6,0
	2,0	6,0	8,0	5,5	9,0	7,5	8,0	6,5	8,0
	3,0	7,5	9,0	6,0	9,5	8,0	9,0	7,0	9,0
	4,0	7,5	9,5	6,0	10	9,0	10	7,5	10

TROUBLE SHOOTING AT WELDING

Disturbance in earthing of the welding current circuit. Place the earthing press steadily direct to the working piece.

Contact tip is blocked or worn-out. Replace by a new one.

Gas nozzle is spattered or gas flow is incorrect. Clean the gas nozzle and adjust the gas flow at approx. 10 l/min.

NOTE! Outdoors or in a draughty place adjust the gas flow to a bigger value.

Pressing pressure of the wire feed rolls incorrect. Adjust the pressing spring, with aluminium the pressing so small as possible, with construction steel and stainless steel the pressing somewhat stronger.

Groove of the wire feed roll and the wire guide tube are not in straight line. Adjust the line straight by means of the adjusting piece of the wire feeder.

Friction brake of the wire feed roll is too tightened or dry. Adjust the spring and lubricate the friction brake.

The wire tube is dirty or worn-out. Clean with dry compressed air or replace by a new one.

NOTE! Use with construction steel a wire spiral only of steel, and with aluminium and stainless steel a teflon wire tube.

WHEN CLEANING WITH COMPRESSED AIR ALWAYS PROTECT YOUR EYES WITH PROPER EYE PROTECTION.

IN CASE OF PROBLEMS CONTACT YOUR KEMPPI DEALER.

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OPERATION SAFETY

Never watch the arc without a face shield designed for arc welding!

The arc damages unprotected eyes!
The arc burns unprotected skin!

Be careful for reflecting radiation of arc!

Protect yourself and the surroundings against the arc and hot spray!

Remember general fire safety!

Pay attention to the fire safety regulations. Welding is always classified as a fire risk operation.

Welding where there is flammable or explosive material is strictly forbidden.

If it is essential to weld in such an area remove inflammable material from the immediate vicinity of the welding site.

Fire extinguishers must always be on site where welding is taking place.

Note! Sparks may cause fire many hours after completion of welding.

Watch out for the mains voltage!

Take care of the cables - the connection cable must not be compressed, touch sharp edges or hot work pieces.

Faulty cables are always a fire risk and highly dangerous.

Do not locate the welding machine on wet surfaces.

Do not take the welding machine inside the work piece (i.e. in containers, cars etc.)

Ensure that neither you nor gas bottles or electrical equipment are in contact with live wires or connections!

Do not use faulty welding cables.

Isolate yourself by using dry and not worn out protective clothes.

Do not weld on wet ground.

Do not place MIG gun or the welding cables on the power source or other electrical equipment.

Don't press on MIG gun switch, if the gun is not directed towards work piece.

Watch out for the welding fumes!

Ensure that there is sufficient ventilation.

Follow special safety precautions when you weld metals which contain lead, cadmium, zinc, mercury or beryllium.

Note the danger caused by special welding jobs!

Watch out for the fire and explosion danger when welding container type work pieces.

TERMS OF GUARANTEE

KEMPPI OY provides a guarantee for products manufactured and sold by them if defects in manufacture and materials occur. Guarantee repairs must be carried out only by an Authorized KEMPPI Service Agent. Packing, freight and insurance costs to be paid by third party. The guarantee is effected on the day of purchase. Verbal promises which do not comply with the terms of guarantee are not binding on guarantor.

Limitations on guarantee

The following conditions are not covered under terms of guarantee: defects due to natural wear and tear, non-compliance with operating and maintenance instructions, connection to incorrect or faulty supply voltage (including voltage surges outside equipment spec.), incorrect gas pressure, overloading, transport or storage damage, fire or damage due to natural causes i.e. lightning or flooding.

This guarantee does not cover direct or indirect travelling costs, daily allowances or accommodation.

Note: Under the terms of the guarantee, welding torches and their consumables, feed, drive rollers and feeder guide tubes are not covered. Direct or indirect damage due to a defective product is not covered under the guarantee. The guarantee is void if changes are made to the product without approval of the manufacturer, or if repairs are carried out using non-approved spare parts.

The guarantee is also void if repairs are carried out by non-authorized agents.

Guarantee period

The guarantee is valid for one year from date of purchase, provided that the machine is used for single-shift operation.

The guarantee period for double and treble shift operation is six months and four months respectively.

Undertaking guarantee repairs

Guarantee defects must be informed to KEMPPI or authorised KEMPPI Service Agents within the guarantee period. Before any guarantee work is undertaken, the customer must provide proof of purchase and serial number of the equipment in order to validate the guarantee.

The parts replaced under the terms of guarantee remain the property of KEMPPI.

Following the guarantee repair, the guarantee of the machine or equipment, repaired or replaced, will be continued to the end of the original guarantee period.

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Kempomat 150, coarse scheme for trouble shooting

