

MASTER

9904

Operation instructions
Gebrauchsanweisung
Gebruiksaanwijzing
Manuel d'utilisation

1913600E

MASTER 1500 MASTER 2200



Français Nederlands Deutsch English

Read carefully these instructions before you use the welding machine !

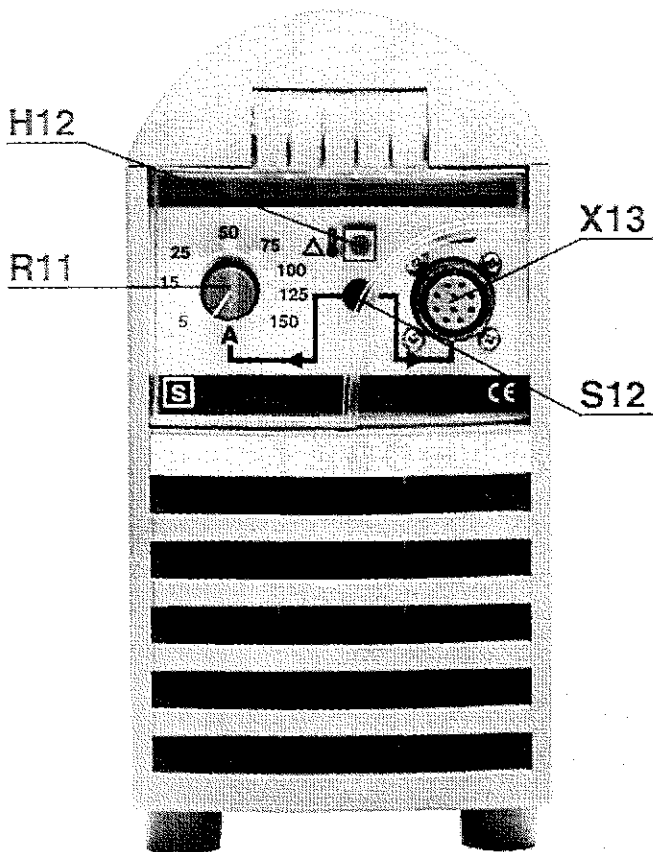
Bitte, lesen Sie diese Gebrauchsanweisungen vor Gebrauch der Schweißmaschine !

Lees deze gebruiksaanwijzing aandachtig door voor u de lasmachine in gebruik neemt !

Veuillez lire et appliquer ces instructions avant utilisation de la machine !

 **KEMPEI**

**OPERATION CONTROL AND CONNECTORS
 BEDIENUNGSELEMENTE UND ANSCHLÜSSE
 BEDIENING EN AANSLUITINGEN
 COMMANDES ET CONNECTEURS**



H11 Signal lamp I/O
 Signallampe I/O
 Signaallamp I/O
 Voyant lumineux I/O

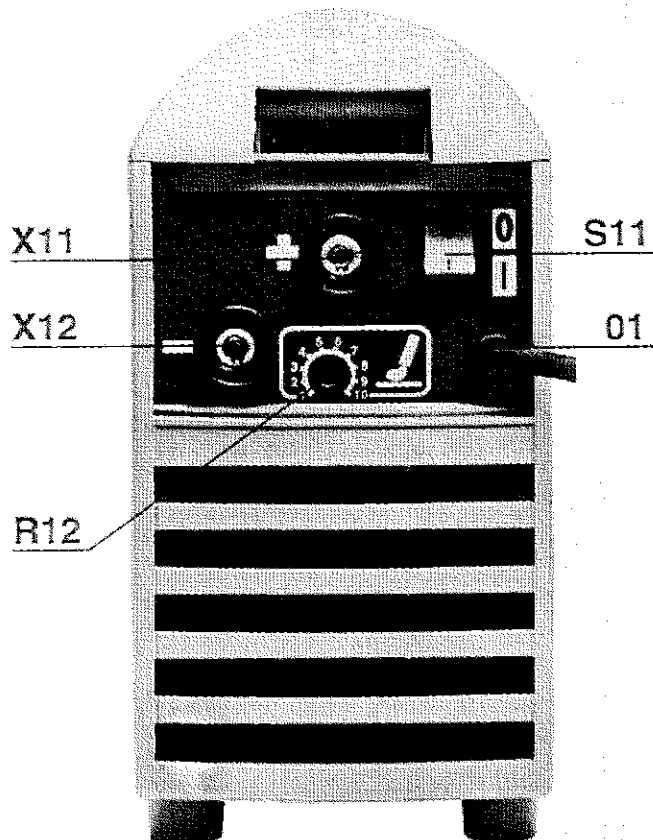
H12 Warning lamp for thermal shield
 Warnungslampe für Wärmeschutz
 Waarschuwinglicht voor warmteafvoerspiraal
 Feu indicateur pour écran thermique

R11 Adjustment of welding current
 Einstellung für Schweißstrom
 Regeling voor lasstroom
 Réglage du courant de soudage

R12 Adjustment of MMA welding dynamics
 Einstellung für Stabelektrodenschweiß-Dynamik
 Regeling voor elektrodenlassen-dynamiek
 Réglage pour dynamique du soudage electrode

S11 MASTER 1500
 I/O main switch with signal lamp
 I/O Hauptschalter mit Signallampe
 I/O hoofdschakelaar met signaallamp
 I/O interrupteur principal avec lampe témoin

S11 MASTER 2200
 Main switch I/O
 Hauptschalter I/O
 Hoofdschakelaar I/O
 Interrupteur principal I/O

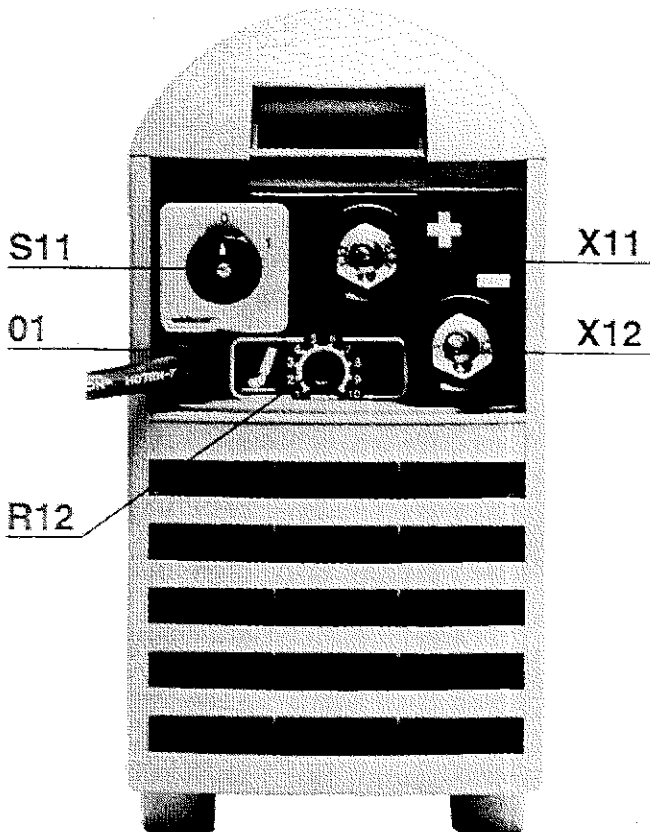
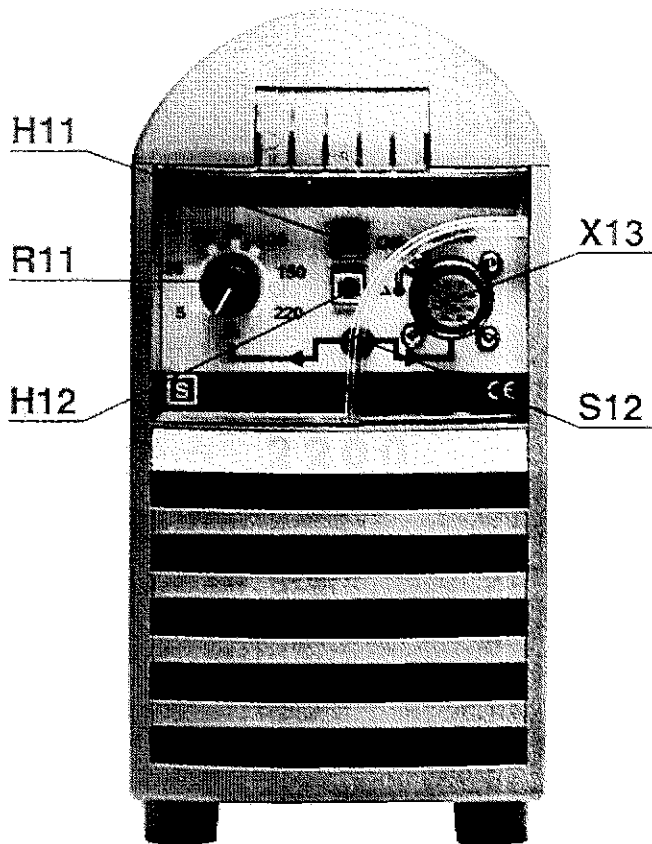


S12 Selection for local/remote control
 Wahl für Nah-/Fernregelung
 Keuze voor paneel-/afstandbediening
 Sélection commande locale/à distance

X11 Welding and return current connections
 Schweiß- und Rückleitungsanschlüsse
X12 Aansluiting voor las- en werkstuk kabel
 Connecteur courant de soudage et de masse

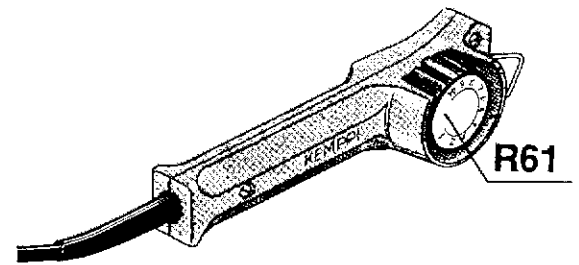
X13 Connection for remote control
 Anschluß für Fernregelung
 Aansluiting voor afstandbediening
 Connecteur commande à distance

01 Inlet of mains cable
 Durchführung des Netzkabels
 Doorvoer voor aansluitkabel
 Passe-câbles



**REMOTE CONTROL DEVICES
FERNREGLER
AFSTANDBEDIENINGEN
COMMANDE A DISTANCE**

C 100C



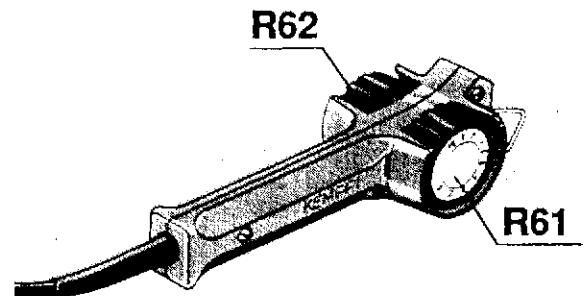
Control of MMA/TIG welding current (R61), memory scale 1-10.

Einstellung für Stabelektroden-/WIG-Schweißstrom (R61), Speicherskala 1-10.

Lasstroomregeling elektroden-/TIG-lassen (R61), schaal 1-10.

Réglage du courant de soudage Electrode/TIG (R61), échelle de mémoire 1-10.

C 100D



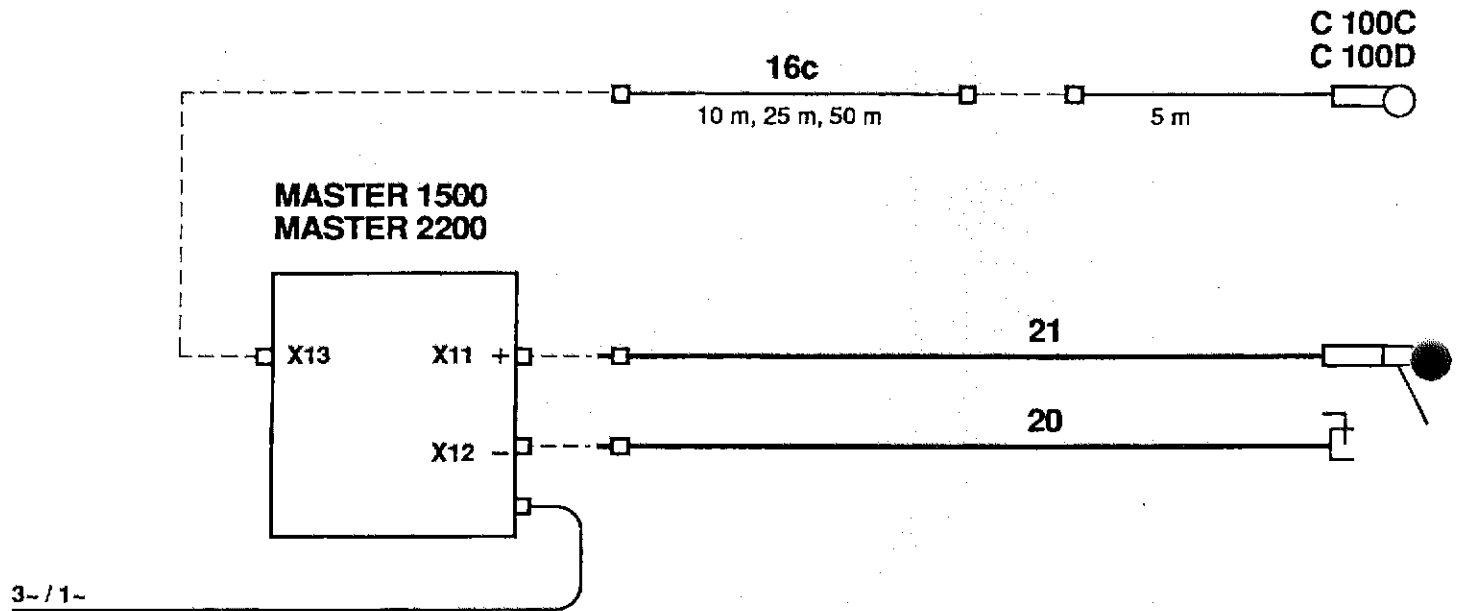
Rough control (R61), memory scale 1-10, and fine control +/- (R62) for MMA/TIG welding current.

Grobeinstellung (R61), Speicherskala 1-10, und Feineinstellung +/- (R62) für Stabelektroden-/WIG-Schweißstrom.

Grofregeling (R61), schaal 1-10, en fijnregeling +/- (R62) voor lasstroom elektroden-/TIG-lassen.

Réglage d'approche (R61), échelle de mémoire 1-10, et réglage fin +/- (R62) du courant de soudage Electrode/TIG.

CABLES
KABEL
KABELS
CABLES



T110 6185251
Transport unit
Fahrwagen
Onderwagen
Chariot

16c Extension cable for remote control
Verlängerungskabel für Fernregelung
Verlengkabel voor afstandbediening
Câble prolongateur pour commande à distance
4 poles
4-polig
4-polig
4 pôles

20 Return current cable
Stromrückleitungskabel
Werkstukkabel
Câble de masse

21 Cable for MMA welding
Kabel für Stabelektrodenschweißen
Kabel voor elektrodenlassen
Câble soudage Electrode

C 100C Remote control devices, see also pages 3 and 6
C 100D Fernregler, auch Seiten 3 und 10 sehen
Afstandbedieningen, zie ook pag. 3 en 13
Commandes à distance voir également pages 3 et 17

C 100C 6185410
C 100D 6185413
16c /10 m 6185451
/25 m 6185452
/50 m 6185453

MASTER 1500
20 /5 m – 16 mm² 6184015
21 /5 m – 16 mm² 6184005

MASTER 2200
20 /5 m – 25 mm² 6184211
/10 m – 25 mm² 6184212
21 /5 m – 25 mm² 6184201
/10 m – 25 mm² 6184202

ENGLISH

MASTER 1500		
Mains voltage	1~, 50/60 Hz	220 V -10 % ... 240 V +6 %
Rated power	20 % ED	150 A / 6,6 kVA
	60 % ED	105 A / 4,4 kVA
	100 % ED	75 A / 3,0 kVA
Connection cable / fuses		3 x 1,5S / 16 A delayed
Welding current range	MMA	15 A / 20,5 V ... 150 A / 26,0 V
Electrode sizes to be welded		ø 1,5 ... 3,25 mm
Welding current control		stepless
Open circuit voltage		80 V
Efficiency		80 % (150 A / 26,0 V)
Power factor		0,75 (150 A / 26,0 V)
Open circuit power		approx. 10 W
Storage temperature range		- 40 ... + 60 °C
Operation temperature range		- 20 ... + 40 °C
Temperature class		H (180 °C) / B (130 °C)
Degree of protection		IP 23C
External dimensions:	length	410 mm
	width	152 mm
	height	302 mm
Weight		10,5 kg
Suitable accessories:		remote control units C 100C, C 100D

The product meets conformity requirements for CE marking.

MASTER 2200		
Mains voltage	3~, 50/60 Hz	380 V -10 % ... 415 V +6 %
Rated power	25 % ED	220 A / 8,4 kVA
	60 % ED	145 A / 5,5 kVA
	100 % ED	110 A / 3,5 kVA
Connection cable / fuses		4 x 1,5S / 10 A delayed
Welding current range	MMA	15 A / 20,5 V ... 220 A / 28,8 V
Electrode sizes to be welded		ø 1,5 ... 4,0 (5,0) mm
Welding current control		stepless
Open circuit voltage		80 V
Efficiency		82 % (220 A / 28,8 V)
Power factor		0,9 (220 A / 28,8 V)
Open circuit power		approx. 10 W
Storage temperature range		- 40 ... + 60 °C
Operation temperature range		- 20 ... + 40 °C
Temperature class		H (180 °C) / B (130 °C)
Degree of protection		IP 23C
External dimensions:	length	472 mm
	width	152 mm
	height	302 mm
Weight		12,5 kg
Suitable accessories:		remote control units C 100C, C 100D

The product meets conformity requirements for CE marking.

MASTER is a MMA DC welding power source which is designed for demanding professional use.

There are two size classes of MASTER-inverter power sources: 1-phase 150 A and 3-phase 220 A. The MASTER-power sources are protected against overload with overcurrent protections and thermal releases. Operation of a thermal release is indicated with a signal lamp on the front wall of the machine.

To delivery equipment of the MASTER MMA welding power sources belong carrying strap and connection cable, in 1-phase machines a cable with a fixed schuko-plug and in 3-phase machines a 4-pole cable without plug.

Using comfort of MASTER can be added with remote control units which can be delivered as an accessory.

INSTALLATION

Siting the machine

By siting of the machine you should take into attention the following:

- Site the machine on a fixed dry base, from which there doesn't come any dust etc. into suction air.
SEE TO THAT THE MACHINE IS POSITIONED AWAY FROM THE LINE OF PARTICLE SPRAY, CREATED BY GRINDING TOOLS ETC.
- Preferably site the machine somewhat higher above the floor level.
- See to that in front of the machine as well as at the rear of the machine there is at least 20 cm (8.0 inches) free distance to allow good circulation of the cooling air through the machine.
- PROTECT THE MACHINE AGAINST HARD RAIN AND IN HOT CIRCUMSTANCES AGAINST DIRECT SUNSHINE. Ensure the free circulation of the cooling air.

Connection to the mains supply

CONNECTION OF THE MAINS CABLE AND MOUNTING AND CHANGE OF THE PLUG SHOULD ONLY BE CARRIED OUT BY A COMPETENT ELECTRICIAN.

FOR THE TIME OF THE MOUNTING OF THE MAINS CABLE REMOVE HANDLE AND CASING PLATE OF THE MACHINE

MASTER 1500

MASTER 1500 is delivered equipped with a schuko-plug mains cable for connection into the 220 V mains supply.


By change of the mains cable take into attention the following: The cable is entered into the machine through the inlet ring on the rear panel of the machine and fastened with a cable clamp (21). The phase lead of the cable is coupled to connection L, the blue N-lead is coupled to connection N and the earth protection coloured green-yellow is coupled to connection \perp .

Sizes of the mains cables and fuse ratings for the machine at 100 % duty cycle are specified in the table below:

Rated voltage	220 V 1~
Mains voltage range	220 V -10 % ... 240 V +6 %
Fuses	16 A delayed
Connection cable	3 x 1,5 mm ² S *) (16/3) max. 5 m
Extension conn. cables	3 x 2,5 mm ² S *)

MASTER 2200

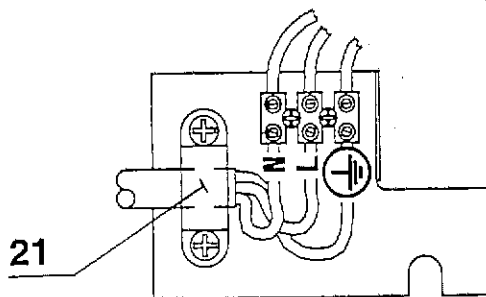
MASTER 2200 is delivered equipped with a mains cable without a plug.

By change of the mains cable take into attention the following:
The cable is entered into the machine through the inlet ring on the rear panel of the machine and fastened with a cable clamp (21). The phase leads of the cable are coupled to connections L1, L2 and L3. The earth protection coloured green-yellow is coupled to connection .

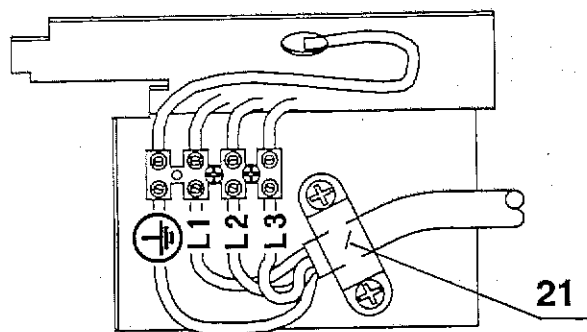
Sizes of the mains cable and fuse ratings for the machine at 100 % duty cycle are specified in the table below:

Rated voltage	380 V 3~
Mains voltage range	380 V -10 % ... 415 V +6 %
Fuses	10 A delayed
Connection cable	4 x 1,5 mm ² S *)

*) In cables of S type there is a protective grounding conductor coloured green-yellow.



MASTER 1500



MASTER 2200

Welding- and return current cables

Use only copper cables: MASTER 1500 16mm², MASTER 2200 25mm².

DON'T USE THINNER CABLES!

Fasten the earthing press of the return current cable carefully, preferably direct onto the piece to be welded. The contact surface of the press should always be as large as possible.

CLEAN THE FASTENING SURFACE FROM PAINT AND RUST!

OPERATION CONTROL SWITCHES AND POTENTIOMETERS AND THEIR USE

Main switch I/O

MASTER 1500

When you press the switch into the I-position, the pilot lamp of the switch is ignited and the machine is ready for use.

MASTER 2200

When you turn the switch into the I-position, the "ON" pilot lamp H11 on the front panel is ignited and the machine is ready for use.

Operation of the cooling fan

The cooling fan of the MASTER gets started only when welding

Local/remote control of welding current

You can control the welding current either from local control R11 of the machine or from a control which is connected to the remote control connector X13. When you use the remote control unit, the switch S12 should be in the remote control position. Suitable remote control units: C 100C, and C 100D, see page 3

Pilot lamps

The pilot lamps of the machine report about the electric operation:

ON

The green pilot lamp H11 for readiness for use is always on, when the machine is connected to mains supply and the main switch is in I-position. In the MASTER 1500 the pilot lamp (orange) is connected with the main switch



The yellow pilot lamp H12 of the thermal shield is on, when the thermostat has released due to overheating of the machine. The cooling fan is cooling down the machine and by blacking out of the pilot lamp the readiness for welding is automatically returned.

Adjustment for MMA dynamics

On the rear of the MASTER there is a tool-controlled adjustment for MMA dynamics.

With this control you can adjust behaviour of the arc according to electrode type and your own likings.

The adjustment has influence on behaviour of the machine in drop short circuits.

Adjustment in minimum: Welding at its softest, arc pressure low

Adjustment in maximum: Welding at its roughest, arc pressure high

Recommendable initial adjustment is in the middle of the scale.

Electrodes to be welded

By the MASTER power sources you can use all electrodes designed for DC or AC welding within the current limits of the machine in question.

The MASTER power sources are not suitable for carbon arc gouging or cutting.

OPERATION SAFETY

NEVER WATCH THE ARC WITHOUT A FACE SHIELD DESIGNED FOR ARC WELDING!

THE ARC DAMAGES UNPROTECTED EYES!
THE ARC BURNS UNPROTECTED SKIN!

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 IGNITION MANY HOURS AFTER COMPLETION OF WELDING.

WATCH 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 THE WELDING CABLES ON THE POWER SOURCE OR OTHER ELECTRICAL EQUIPMENT.

WATCH THE WELDING FUMES!

ENSURE THAT THERE IS SUFFICIENT VENTILATION. FOLLOW SPECIAL SAFETY MEASURES WHEN YOU WELD METALS WHICH CONTAIN LEAD, CADMIUM, ZINC, MERCURY AND BERYLLIUM.

NOTE THE DANGER CAUSED BY SPECIAL WELDING JOBS!

WATCH THE FIRE AND EXPLOSION DANGER WHEN WELDING CONTAINER TYPE WORK PIECES.

MAINTENANCE

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

Cables

Check the condition of welding and connection cables daily.

DO NOT USE FAULTY CABLES!

Make sure that the mains connection cables in use are safe and according to laid down regulations.

THE REPAIR OF MAINS CONNECTION CABLES MUST BE CARRIED OUT ONLY BY AN AUTHORISED ELECTRICIAN.

Power source

NOTE! ISOLATE THE PLUG OF THE MACHINE FROM THE MAINS SOCKET AND WAIT APPROX. 2 MINUTES (CAPACITOR CHARGING) BEFORE REMOVING THE CASING PLATE

Check at least every half year:

– Electric connections of the machine - clean the oxidized parts and tighten the loosened ones

NOTE! YOU MUST KNOW CORRECT TENSION TORQUES BEFORE STARTING THE REPARATION OF THE JOINTS.

– Clean the inner parts of the machine from dust and dirt e.g. with a soft brush and vacuum-cleaner.

DO NOT USE COMPRESSED AIR, THERE IS A RISK THAT DIRT IS PACKED EVEN MORE TIGHTLY INTO GAPS OF COOLING PROFILES!

ONLY AUTHORISED ELECTRICIAN MUST CARRY OUT REPAIRS TO THE MACHINES.

Regular maintenance

KEMPPI-SERVICE REPAIR SHOPS MAKE REGULAR MAINTENANCE ACCORDING TO AGREEMENT.

The major points in the maintenance procedure are listed as follows:

– Cleaning of the machine

– Checking and maintenance of the welding tools

– Checking of switches and potentiometers

– Checking of electric connections

– Checking of mains cable and plug

– Damaged parts or parts in bad connection are replaced by new ones

– Maintenance testing. Operation and performance values of the machine are checked, and adjusted when necessary by means of test equipment

OPERATION DISTURBANCES

IN CASE OF PROBLEMS CONTACT THE KEMPPI WORKS IN LAHTI, FINLAND OR YOUR KEMPPI-DEALER.

Check the maintenance objects before the machine is sent to the service repair shop

Operation of the overload protection

The overload protections (thermal protections) of the machine operate, if the machine is continuously loaded above the rated values or the circulation of the cooling air is blocked.

THE MACHINE IS AUTOMATICALLY RETURNED INTO OPERATION, AFTER IT HAS COOLED DOWN TO A LOWER TEMPERATURE.

Control fuses

As the machine protection there is on control card an 1,0 A slow-blow cartridge fuse in the safety voltage circuit.

– Reason for burning of a fuse might be a damaged control card.

Use same type and rating of fuse which is marked beside the fuse adapter.

DAMAGE CAUSED BY A WRONG TYPE FUSE, IS NOT COVERED BY THE GUARANTEE.

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 accomodation.

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.

DEUTSCH

MASTER 1500	
Anschlußspannung 1~, 50/60 Hz	220 V -10 % ... 240 V +6 %
Anschlußleistung	20 % ED 150 A / 6,6 kVA 60 % ED 105 A / 4,4 kVA 100 % ED 75 A / 3,0 kVA
Anschlußkabel / Sicherungen	3 x 1,5S / 16 A träge
Schweißstrombereich Elektrode	15 A / 20,5 V...150 A / 26,0 V
Elektrodengrößen die geschweißt werden	ø 1,5 ... 3,25 mm
Einstellung für Schweißleistung	stufenlos
Leerlaufspannung	80 V
Wirkungsgrad	80 % (150 A / 26,0 V)
Leistungsfaktor	0,75 (150 A / 26,0 V)
Leerlaufleistung	ca. 10 W
Lagertemperaturbereich	- 40 ... + 60 °C
Betriebstemperaturbereich	- 20 ... + 40 °C
Isolierstoffklasse	H (180 °C) / B (130 °C)
Schutzart	IP 23C
Abmessungen:	
Länge	410 mm
Breite	152 mm
Höhe	302 mm
Gewicht	10,5 kg
Geeignete Ausrüstungen	Fernregler C 100C, C 100D

Die Anlage erfüllt die Konformitätsansprüche des CE-Zeichens.

MASTER 2200	
Anschlußspannung 3~, 50/60 Hz	380 V -10 % ... 415 V +6 %
Anschlußleistung	25 % ED 220 A / 8,4 kVA 60 % ED 145 A / 5,5 kVA 100 % ED 110 A / 3,5 kVA
Anschlußkabel / Sicherungen	4 x 1,5S / 10 A träge
Schweißstrombereich Elektrode	15 A / 20,5 V... 220 A / 28,8 V
Elektrodengrößen die geschweißt werden	ø 1,5 ... 4,0 (5,0) mm
Einstellung für Schweißleistung	stufenlos
Leerlaufspannung	80 V
Wirkungsgrad	82 % (220 A / 28,8 V)
Leistungsfaktor	0,9 (220 A / 28,8 V)
Leerlaufleistung	ca. 10 W
Lagertemperaturbereich	- 40 ... + 60 °C
Betriebstemperaturbereich	- 20 ... + 40 °C
Isolierstoffklasse	H (180 °C) / B (130 °C)
Schutzart	IP 23C
Abmessungen:	
Länge	472 mm
Breite	152 mm
Höhe	302 mm
Gewicht	12,5 kg
Geeignete Ausrüstungen	Fernregler C 100C, C 100D

Die Anlage erfüllt die Konformitätsansprüche des CE-Zeichens.