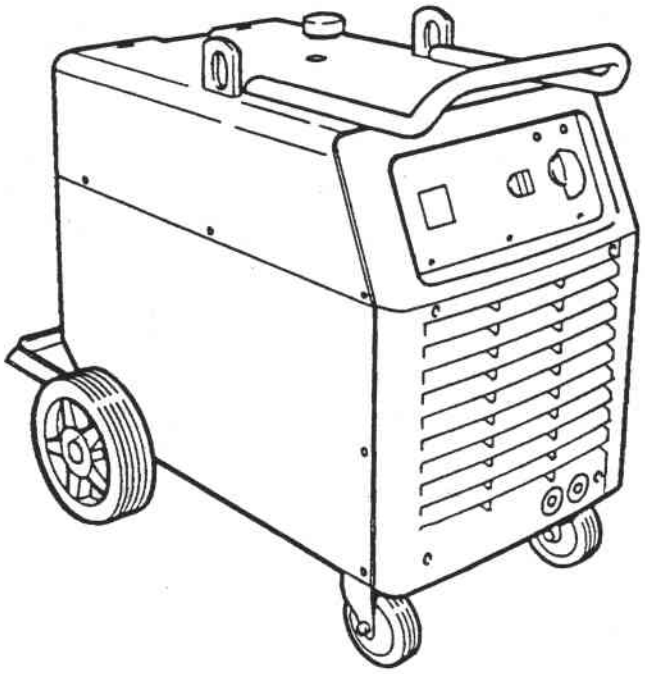
MUREX

Operating Manual

Transmig

403/403W/503/503W



Please ensure that this Operating Manual is made available to the user of the equipment.

456 452-001

Valid from machine no. 604-xxx-xxx

MUREX

Contents

DECLARATION OF CONFORMITY

Murex Welding Products Ltd.

Declare hereby that:

Murex Transmig 403/403W/503/503W Power Source

Part No.1415326/1415327/1415324/1415325

Manufactured after 1 st January 1996

- conform with the requirements of Council Directive 73/23/EEC,amended by Council Directive 93/68/EEC, relating to electrical equipment designed for use within certain voltage limits.

- conform with the requirements of Council Directive 89/336/EEC, amended by Council Directive 93/68/EEC, relating to electromagnetic compatibility.

- are manufactured in accordance with EN 60974–1 Safety Requirements for Arc Welding Equipment.

- are manufactured in accordance with EN 50199 Electromagnetic Compatibility for Arc Welding Equipment.

On behalf of Murex Welding Products Ltd.
Hertford Rd
Waltham Cross
Herts. EN8 7RP
England

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P.Karlsson
Managing Director.
Esab Welding Equipment AB
January 1996

Manufactured by Esab Welding Equipment AB.
S–695 81 Laxå Sweden

WARNING

ARC WELDING AND CUTTING CAN BE INJURIOUS TO YOURSELF AND OTHERS. TAKE PRECAUTIONS WHEN WELDING. ASK FOR YOUR EMPLOYER'S SAFETY PRACTICES WHICH SHOULD BE BASED ON MANUFACTURERS' HAZARD DATA.

ELECTRIC SHOCK – Can kill
- Install and earth the welding unit in accordance with applicable standards.
- Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing.
- Insulate yourself from earth and the workpiece.
- Ensure your working stance is safe.

FUMES AND GASES – Can be dangerous to health
- Keep your head out of the fumes.
- Use ventilation, extraction at the arc, or both, to keep fumes and gases from your breathing zone and the general area.

ARC RAYS – Can injure eyes and burn skin.
- Protect your eyes and body. Use the correct welding screen and filter lens and wear protective clothing.
- Protect bystanders with suitable screens or curtains.

FIRE HAZARD
- Sparks (spatter) can cause fire. Make sure therefore that there are no inflammable materials nearby.

NOISE – Excessive noise can damage hearing
- Protect your ears. Use ear defenders or other hearing protection.
- Warn bystanders of the risk.

MALFUNCTION – Call for expert assistance in the event of malfunction.

READ AND UNDERSTAND THE INSTRUCTION MANUAL BEFORE INSTALLING OR OPERATING.

PROTECT YOURSELF AND OTHERS!

MAINTENANCE

This welding equipment has been designed, manufactured and tested to the highest standards to ensure long and trouble free life. However, regular maintenance is an essential part of keeping the machine operating in a reliable and safe manner and your attention is drawn to any maintenance instructions that are contained in this manual.

In general all welding equipment should be thoroughly inspected, tested and serviced at least annually.

More frequent checking will be required when the equipment is heavily used.

Wear and tear, particularly in electro–mechanical and moving components, are gradual processes.

Caught in time, repair costs are small and the benefits in performance reliability and safety are significant.

Left alone they can put the equipment, and you, at risk.

Have this equipment regularly inspected and maintained by an approved service centre.

ELECTROMAGNETIC COMPATIBILITY

This product is intended for industrial use. In a domestic environment this product may cause radio interference. It is the users responsibility to take adequate precautions.

RISK OF TILTING

When moving the equipment on its wheels, the momentum should the wheels hit an obstruction (cable or scrap etc), could cause the machine to tilt.

When moving the equipment, do not pull on the torch.

Secure the equipment, especially if used on a sloping or uneven surface.

Ensure the feeder is prevented from suddenly swivelling to one side whilst moving or wheeling the machine.

SAFETY

In any arc welding or gouging operation, it is the responsibility of the user to observe certain safety rules to ensure his personal safety and to protect those working near him. Read all safety articles relevant to arc welding published by the WMA. Pay particular attention to any CAUTION or WARNING Notes included in this manual. CAUTION indicates possible equipment damage. WARNING indicates possible hazard to life.

WARNING

The ON/OFF switch on this equipment does not isolate the unit from the mains electrical supply. **AC POWER IS PRESENT ON THE ON/OFF SWITCH TERMINALS.**

The ON/OFF lamp is an indication that the supply is switched on and does not imply that the unit is isolated from the supply.

BEFORE REMOVING THE COVERS FOR MAINTENANCE, ISOLATE THE UNIT FROM THE MAINS ELECTRICAL SUPPLY.

1. **Electrical**
   - Treat electricity with respect. Even the open circuit voltage of this equipment can be dangerous. Adjustments to the torch or replacement of torch parts should be undertaken with the mains supply isolated from the unit. If damaged torch cables or torch components are found, the unit must be disconnected from the mains and defective parts must be replaced using only Murex spare parts.
   - Do not work on live circuits or cables. Disconnect the main power supply before checking the machine or performing any maintenance operation.
   - Be sure the case of the welding machine is properly connected to a good electrical earth.
   - Have the wiring for the welding machine installed by a qualified electrician. All connections must be made according to specifications in force and to general safety standards.
   - Do not stand in water or on damp floors while using an arc welder or cutter. Do not use in the rain.
   - Do not operate with worn or poorly connected cables. Inspect all cables frequently for insulation failure, exposed wires and loose connections.
   - Do not overload cables or continue to operate with overheating cables. Cables which are too small for the current carried will overheat, causing rapid deterioration of the insulation.
   - Pay attention that live parts of the torch do not touch any metal which is connected to the earth cable. Fix an insulated hook to hang the torch on when it is not in use.
2. **Ventilation**
   - Do not weld or cut on containers which have held combustible or flammable materials, or materials which give off flammable or toxic vapours when heated, without proper cleaning.
   - Locate the welding/cutting operation far enough from any vapour–type degreaser using trichlorethylene or other chlorinated hydrocarbons as solvents. The ultraviolet light from the arc can decompose these vapours into toxic gases at a considerable distance from the arc, even though the concentration of the gases is low enough to be undetectable by smell.
   - Be sure to provide adequate ventilation for removal and dilution of fume and gases. Fume exhaust facilities near the arc, or a ventilated helmet should be used when cutting in confined spaces or on toxic material.
3. **Glare**
   - Never look at the arc without wearing eye protection. Always use the proper protective clothing, filter glasses, and gloves. Be careful to avoid exposed skin areas. Do not use cracked or defective helmets or shields.
   - Never strike an arc when there is someone near who is not protected from the strong light of the arc.
   - Warn bystanders who are not aware of the dangers of ultraviolet light.
4. **General**
   - Take care when lifting the unit.
   - Ensure that cylinders are secured by chains.
   - Locate the unit so that there is adequate air flow to the ventilation louvres.
   - Always dress correctly to protect against glare, radiation and spatter.
5. **Fire**
   - Ensure that the correct type of fire extinguisher is available in the welding area.
   - Do not weld near flammable materials or liquids, in or near explosive atmospheres, or on pipes carrying explosive gases.
6. **Vehicle electrics**
   - When working on motor vehicles, remove the battery and any circuitry which may be damaged by the arc.
   - Whilst welding be aware of the possibility of 'hidden wires' behind panels or bulkheads.

INTRODUCTION

Murex Transmig 403/403W/503/503W are industrial 3 phase electronic thyristor controlled flat characteristic power sources for MIG/MAG welding with solid or cored wires.The are normally used together with a Murex Transmatic 4x4 EHD or Suitcase wire feed unit for dip through spray transfer processes.
Transmig 403W/503W incorporates a MIG torch water cooling unit.

Specification Transmig 403/403W

Standard delivery: Power source. (TM 403W includes inbuilt torch water cooler). Mains cable 3 m (fitted). Includes: Gas cylinder shelf (fitted with 2 screws). Mounting post for wire feed unit.

Part No.	1415326/1415327	1415360/1415361
Voltage	400–415V, 3~50 Hz	230/400–415/500V, 3~ 50Hz 230/440–460V,3~ 60 Hz
Permissible load at 100 % duty cycle	280 A/28 V	280 A/28 V
60 % duty cycle	350 A/32 V	350 A/32 V
45 % duty cycle	400 A/34 V	400 A/34 V
Setting range (DC)	60A/17(12)V–400A/34V	60A/17(12)V–400A/34V
Open circuit voltage	53–58 V	53–58 V
Open circuit power	590/790 W	640/840 W
Efficiency	0,74	0,76
Power factor	0,86	0,84
Control voltage	42 V, 50/60 Hz	42 V, 50/60 Hz
Enclosure class	IP 23	IP 23
Weight	200/214 kg	201/215 kg
Dimensions lxbxh	800x640x835	800x640x835
Application classification	S	S

Specification Transmig 503/503W

Standard delivery:
Power source. (TM 503W includes inbuilt torch water cooler).
Mains cable 3 m (fitted).
Includes: Gas cylinder shelf (fitted with 2 screws).
Mounting post for wire feed unit.

Part No.	**1415324/1415325**	**1415362/1415363**
Voltage	400–415V, 3~50 Hz	230/400–415/500V, 3~ 50Hz 230/440–460V,3~ 60 Hz
Permissible load at 100 % duty cycle	400 A/34 V	390 A/33,5 V
80 % duty cycle	450 A/37 V	435 A/36 V
60 % duty cycle	500 A/39 V	500 A/39 V
Setting range (DC)	60A/17(12)V–500A/39V	60A/17(12)V–500A/39V
Open circuit voltage	53–60 V	53–60 V
Open circuit power	670/870 W	720/920 W
Efficiency	0,78	0,78
Power factor	0,90	0,90
Control voltage	42 V, 50/60 Hz	42 V, 50/60 Hz
Enclosure class	IP 23	IP 23
Weight	225/239 kg	227/241 kg
Dimensions lxbxh	800x640x835	800x640x835
Application classification	S	S

These welding power sources conform to the requirements of
IEC 974–1 and **EN 50199.**

The symbol S indicates that the power source is designed for use in areas where there is an increased electrical hazard.
Equipment marked **IP 23** is designed for use indoors and outdoors.nstallation

INSTALLATION

Important

- Electrical installation must be carried out by a qualified electrician.
- Site the unit so that ventilation grilles are clear of obstructions.
- Ensure all flammable materials are removed from the area.
- Ensure the gas cylinder retaining strap is installed when mounting the gas cylinder.
- Check that the internal tappings are correctly set for the mains supply.
- Check that the primary cable is of the correct croos-section for the mains supply.
- The front panel on/off switch does not isolate the mains electrical supply.

Mains supply Transmig 403/403W

	3~50 Hz	3~50 Hz	3~50 Hz	3~60 Hz	3~60 Hz
Voltage V	230	400/415	500	230	450
Current A 100%	39	23	19	37	22
60%	47	28	22	45	27
45%	51	31	25	51	30
Mains lead rating	4x10	4x4	4x4	4x10	4x4
Fuse, slow A	35	25	20	35	20

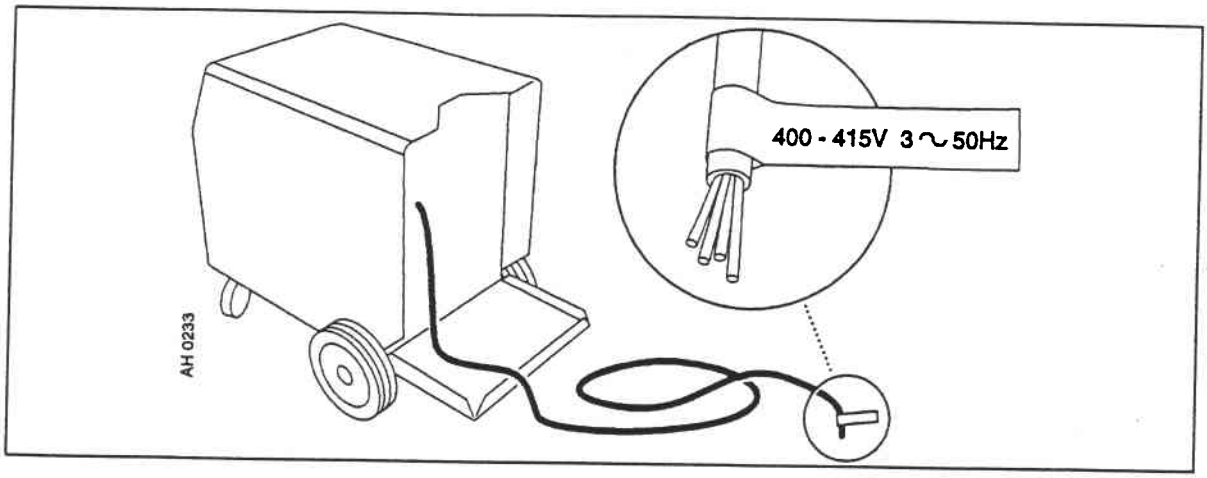
22KVA.

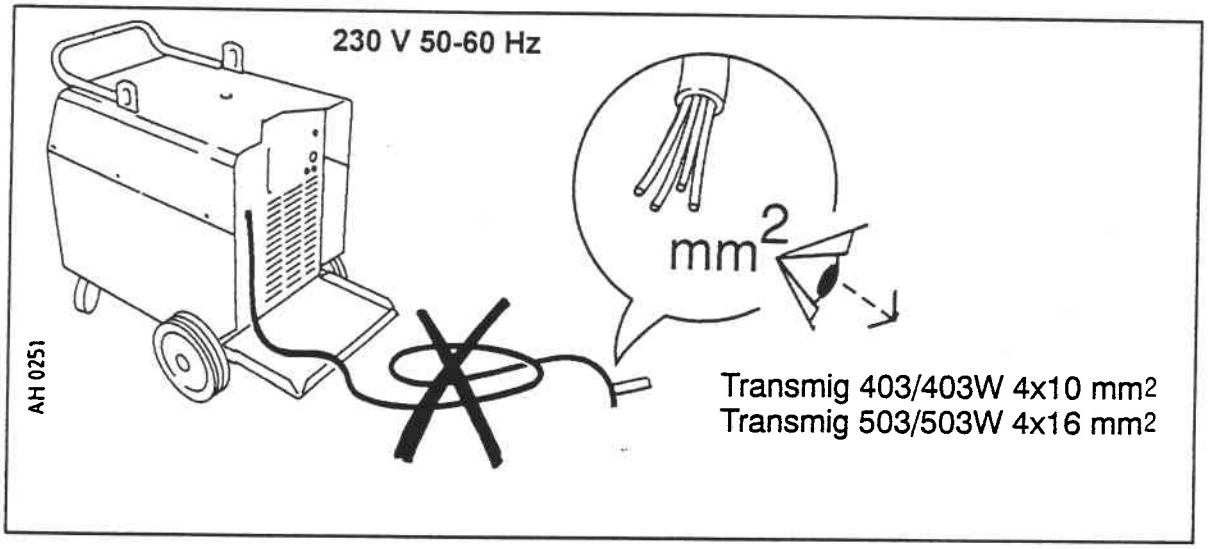
Mains supply Transmig 503/503W

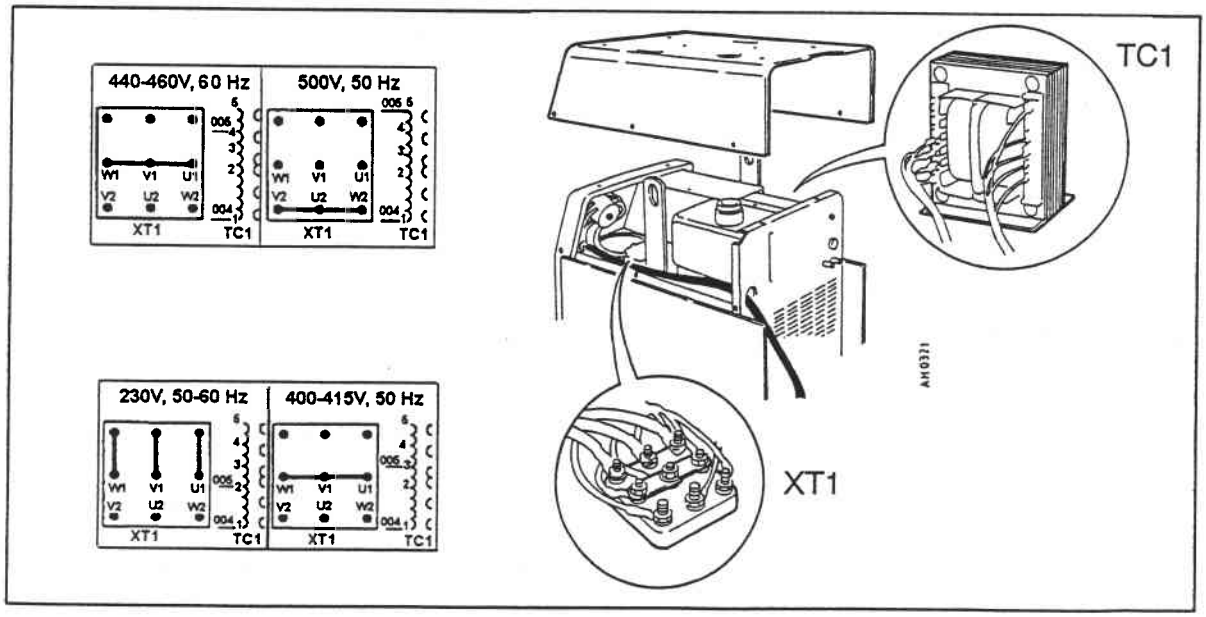
	3~50 Hz	3~50 Hz	3~50 Hz	3~60 Hz	3~60 Hz
Voltage V	230	400/415	500	230	450
Current A 100%	59	35	27	56	33
60%	63	39	29	61	37
45%	69	41	33	69	42
Mains lead rating	4x16	4x6	4x6	4x16	4x6
Fuse, slow A	63	35	35	50	25

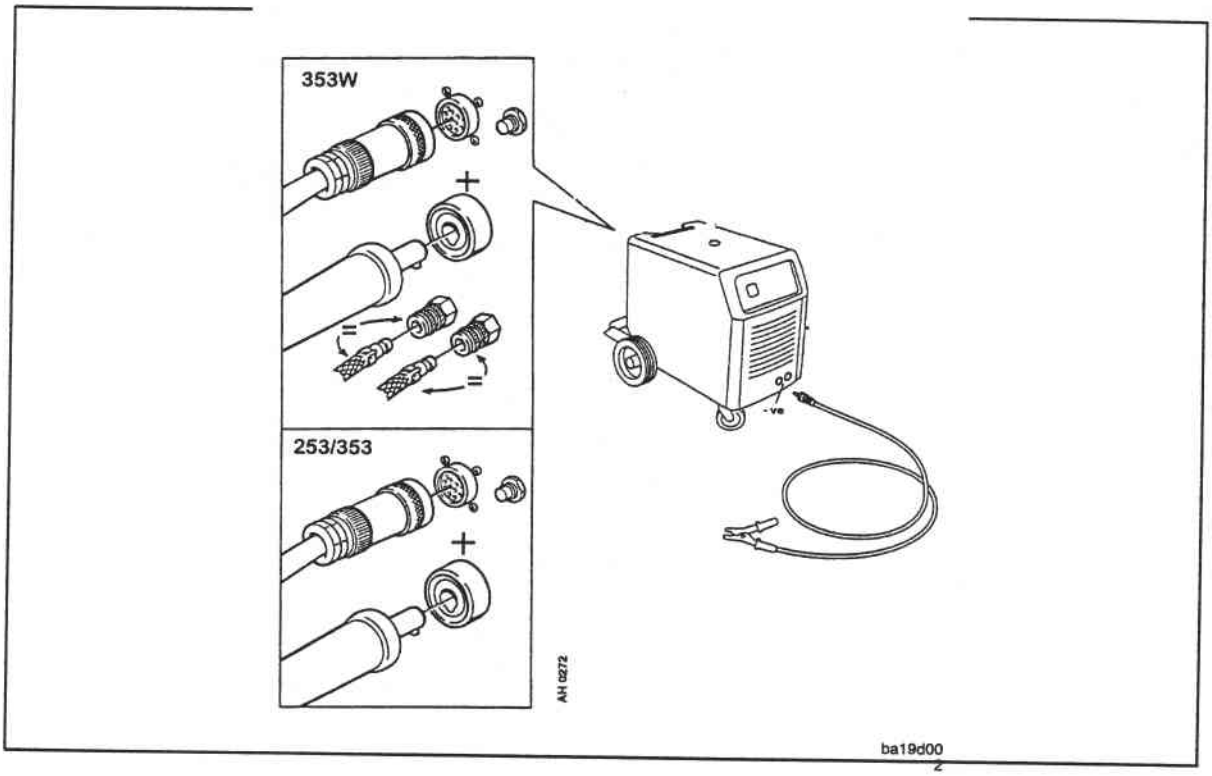
30KVA

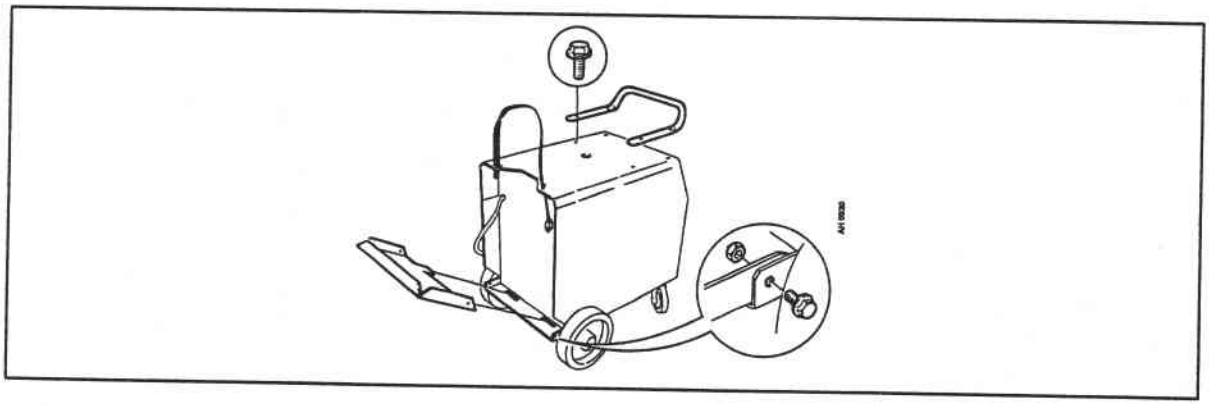
Assembly of components



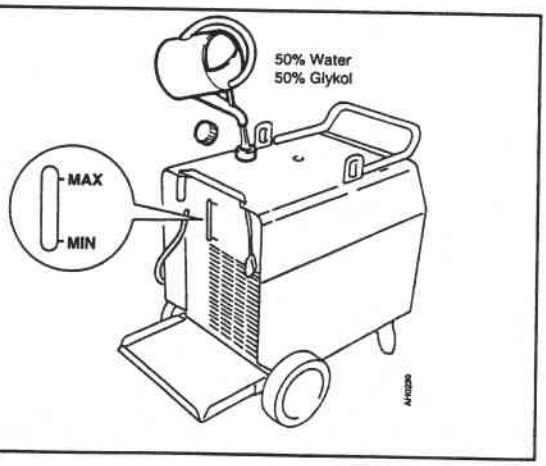








Recheck water level after fitting torch

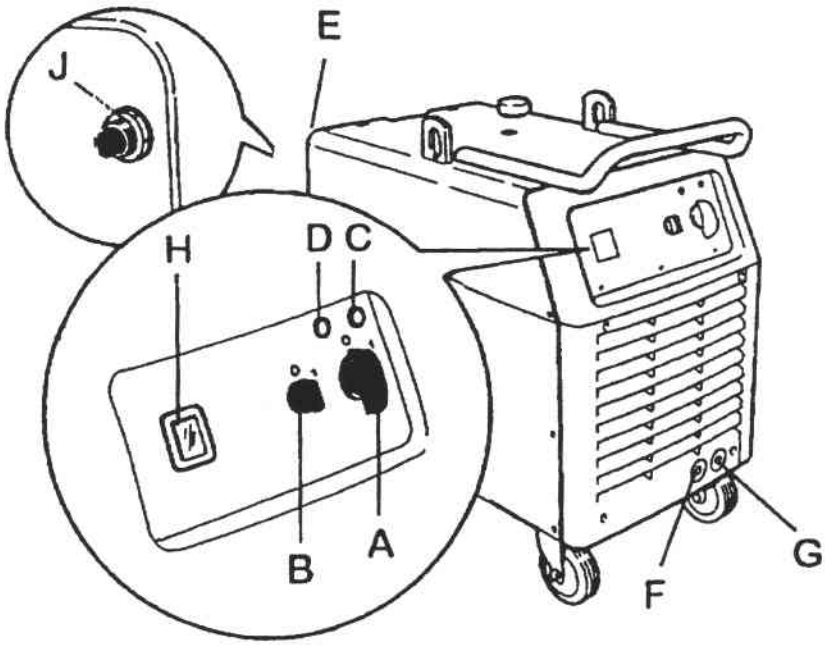


OPERATION

Transmig 403/403W/503/503W utilise Thyristor control providing electronic controlled continuous/adjustment of welding voltage.
In addition 2 different inductance levels can be selected at the – ve welding outlets (normally the work connection) on the lower front panel.

The machines are fan cooled (2 speed thermostatic) and incorporate thermal overload protection.
If the machine is overheated the orange warning light will illuminate and welding output will stop.
In this event have the machine switched on with the fan running, resetting is automatic when the unit has cooled.

- A – On/Off mains supply
- B – On/Off cooling unit (Transmig 403W/503W)
- C – Mains indicator lamp
- D – Thermal overload warning lamp, lights up in case of overheating
- E – Welding socket, + terminal
- F – Inductance socket, – terminal
- G – Inductance socket, – terminal
- H – Digital meters
- J – Automatic fuse 42 V AC–circuit



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