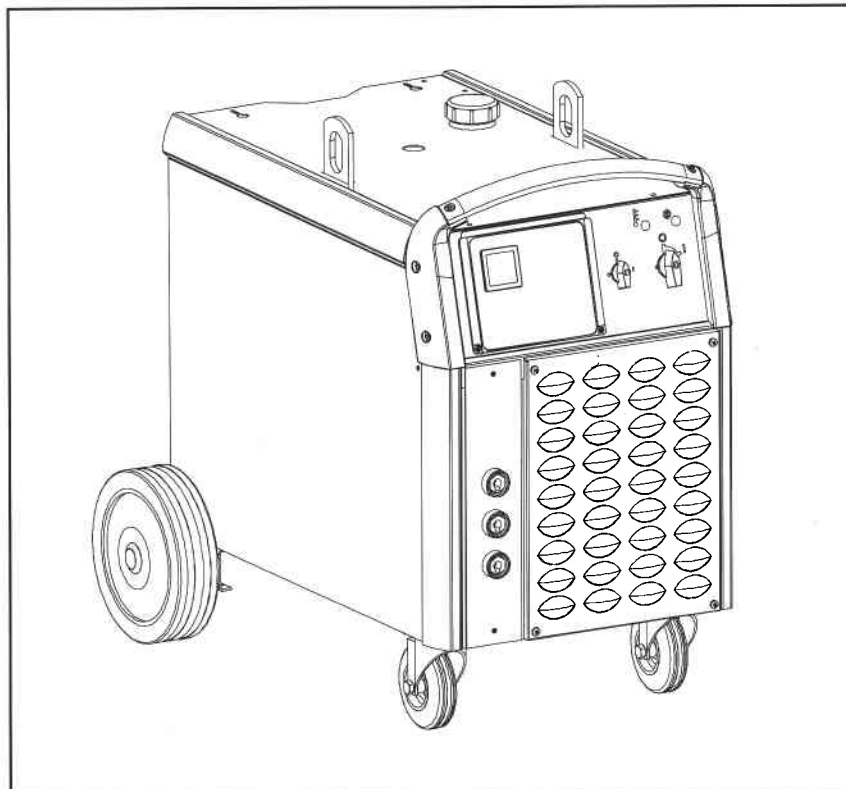




Operating Manual

Transmig 423S/423SW/523S/523SW



**Please ensure that this
Instruction Manual and Parts List
is made available to the user of
the equipment**



DECLARATION OF CONFORMITY

Murex Welding Products Ltd.

Declare hereby that:

Murex Transmig 423S/423SW/523S/523SW Power Source

Part no. 1416126/1416128/1416130/1416134

- conform with the requirements of Council Directive 72/23/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 EN60974-1 Safety Requirements for Arc Welding Equipment.
- are manufactured in accordance with EN50199 Electromagnetic Compatibility for Arc Welding Equipment.

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

A handwritten signature in black ink, appearing to read "P.G. Dodd".

P.G. Dodd
Managing Director
ESAB Group (UK) Ltd
March 2003

Manufactured by Esab Welding Equipment AB.



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WARNING



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.



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 work.
- Ensure your working position is secure.

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.

NOISE – Excessive noise can damage hearing

- Protect your ears. Use ear defenders or other hearing protection.
- Warn bystanders of the risks.

**READ AND UNDERSTAND THE INSTRUCTION MANUAL
BEFORE INSTALLING OR OPERATING AND SEE WMA PUBLICATION 237
'The arc welder at work' AVAILABLE FROM THE MANUFACTURER.**

PROTECT YOURSELF AND OTHERS

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 ultra-violet 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.

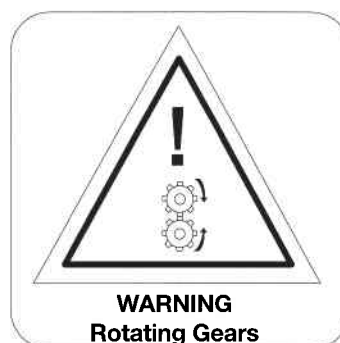
5 Fire

-  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.

7 Moving Parts



Switch off before accessing areas which contain moving parts. Particular care should be taken when accessing the wire feed mechanism.

INTRODUCTION

Murex Transmig 423S/423SW/523S/523SW are industrial 3 phase electronic thyristor-controlled flat characteristic power sources for MIG/MAG welding with solid or cored wires. They are normally used together with a Murex Transmatic Lynx 4 EHD or Suitcase wire feed unit for dip-through spray transfer processes. Transmig 423SW/523SW incorporates a MIG torch water-cooling unit.

Specification Transmig 423S/423SW

Standard delivery:

Power source. (Transmig 423SW includes inbuilt torch water-cooler).

Mains cable 3m (fitted).

Includes: Gas cylinder shelf (fitted with 2 screws).

Mounting post for wire feed unit. Work return lead.

Specification	Transmig 423S/SW
Voltage	400-415V, 3-50Hz
Permissible load at	
100% duty cycle	280A/28V
60% duty cycle	350A/32V
45% duty cycle	400A/34V
Setting range (DC)	50A/16V-420A/34V
Open circuit voltage	53-58V
Open circuit power	590/790W
Efficiency	0.74
Power factor	0.86
Control voltage	42V, 50/60Hz
Enclosure class	IP23
Weight	209/223kg
Dimensions lxbxh	800x640x835mm
Application classification	<input type="checkbox"/> S

Specification Transmig 523S/523SW

Standard delivery:

Power source. (Transmig 523SW includes inbuilt torch water-cooler).

Mains cable 3m (fitted).

Includes: Gas cylinder shelf (fitted with 2 screws).

Mounting post for wire feed unit. Work return lead.

Specification	Transmig 523S/SW
Voltage	400-415V, 3-50Hz
Permissible load at	
100% duty cycle	400A/34V
80% duty cycle	450A/37V
60% duty cycle	500A/39V
Setting range (DC)	50A/16.5V-520A/39V
Open circuit voltage	53-60V
Open circuit power	670/870W
Efficiency	0.78
Power factor	0.90
Control voltage	42V, 50/60Hz
Enclosure class	IP23
Weight	235/249kg
Dimensions lxbxh	800x640x835mm
Application classification	S

Cooling unit	
Cooling power	2500W at 40°C temp. difference and flow 1.5 l/min
Coolant	50% water/50% glygol
Coolant quantity	5.5 l
Maximum water flow	2 l/min

Duty cycle

The duty cycle refers to the time as a percentage of a ten-minute period that you can weld at a certain load without overloading.

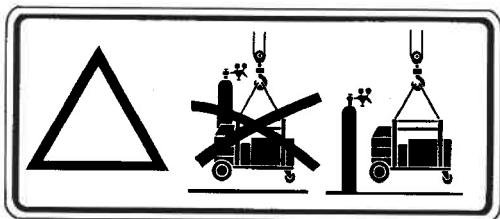
Enclosure class

The **IP** code indicates the enclosure class, ie. the degree of protection against penetration by solid objects or water. Equipment marked **IP23** is designed for indoor and outdoor use.

Application class

The symbol S indicates that the power source is designed for use in areas with increased electrical hazard.

INSTALLATION



Important

- Electrical installation must be carried out by a qualified electrician.
- Site the unit so that the ventilation grilles are clear of obstructions.
- Ensure all flammable materials are removed from the area.
- Ensure the gas cylinder retaining chain is installed when mounting the gas cylinder.
- This product is for industrial use. In a domestic environment it may cause electromagnetic interference.
- Check that the primary cable is of the correct cross-section for the mains supply.
- The front panel on/off switch does not isolate the mains electrical supply.

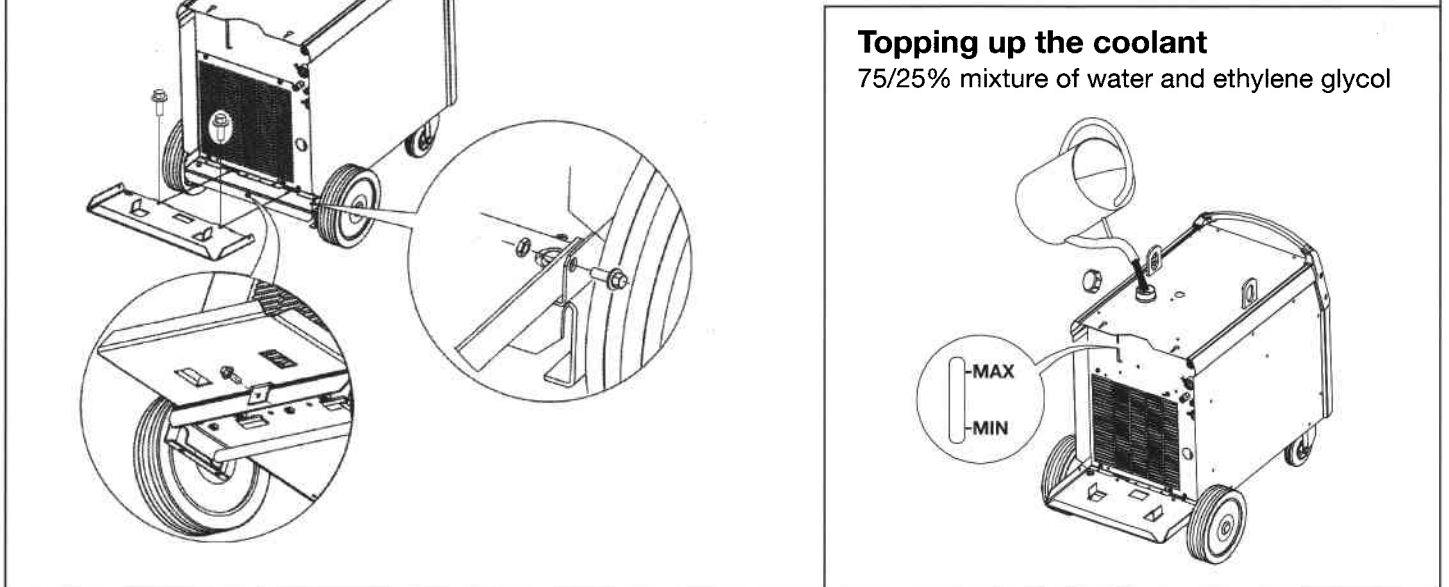
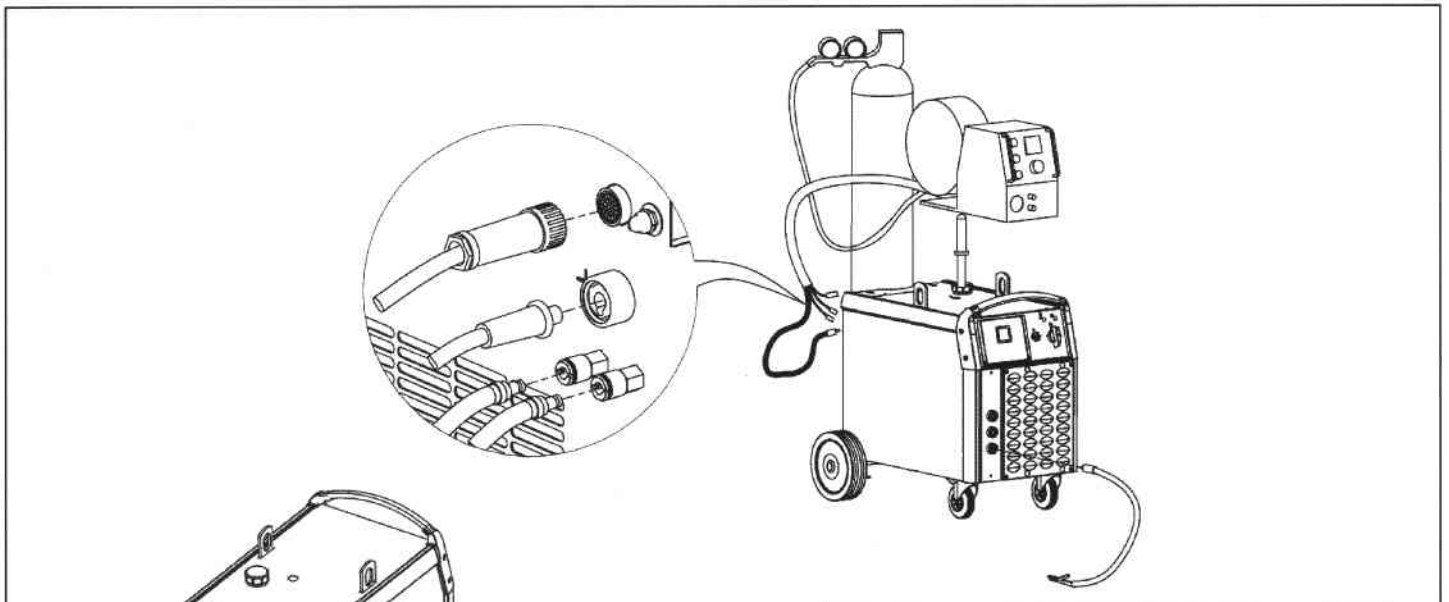
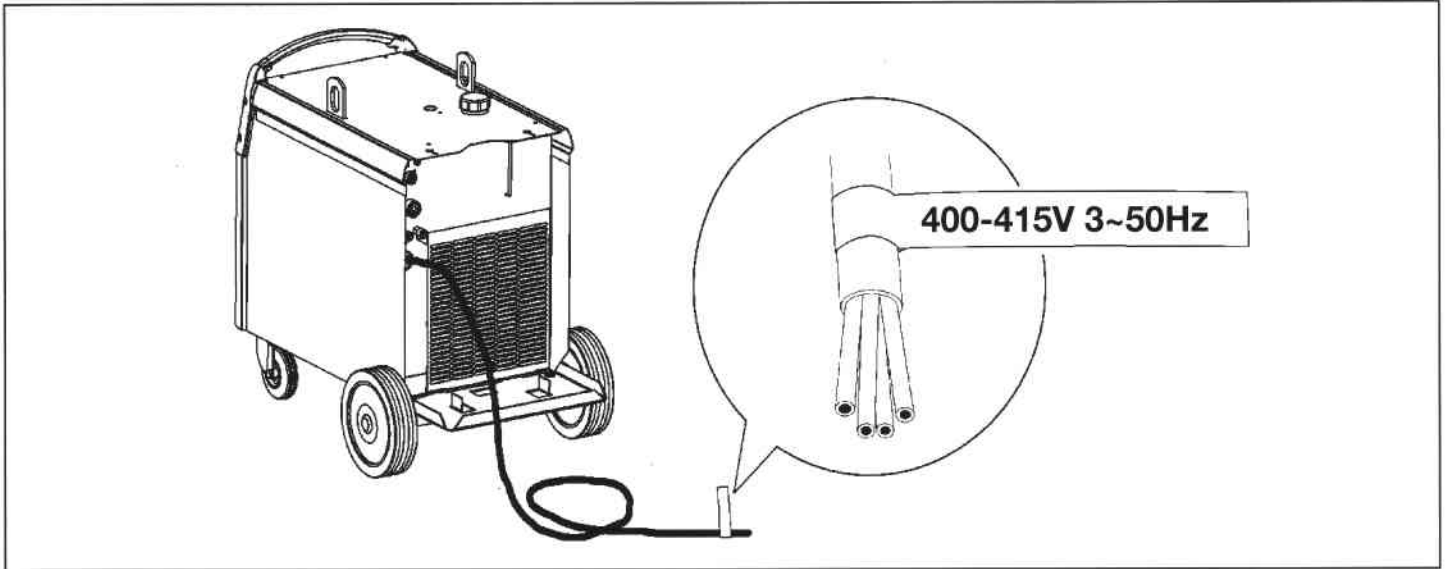
Mains supply Transmig 423S/423SW

	3-50Hz
Voltage	400/415V
Current 100%	23A
60%	28A
45%	31A
Mains lead	4x4mm ²
Fuse, slow	25A

Mains supply Transmig 523S/523SW

	3-50Hz
Voltage	400/415V
Current 100%	35A
60%	39A
45%	41A
Mains lead	4x6mm ²
Fuse, slow	35A

Assembly of components



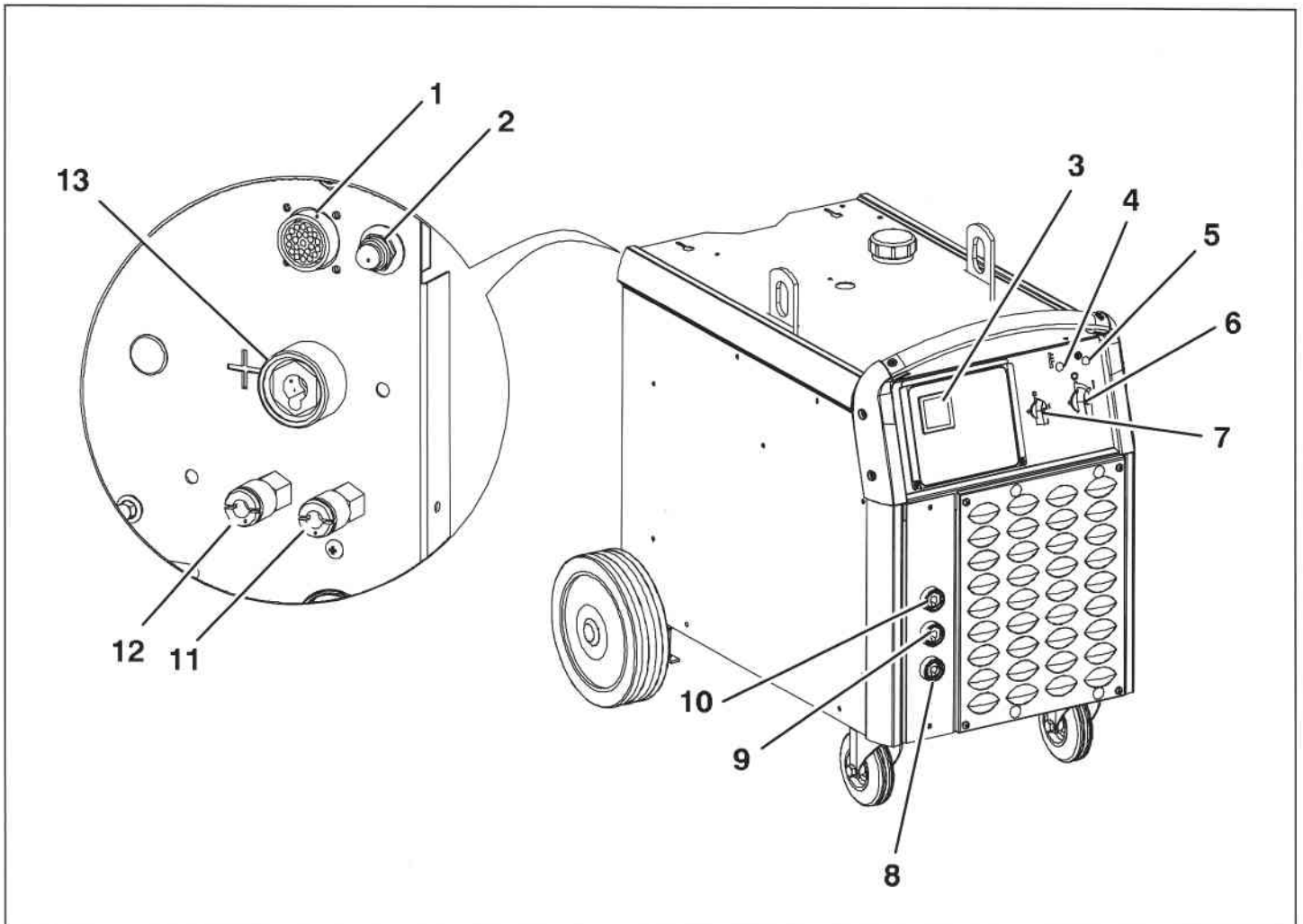
OPERATION

Transmig 423S/423SW/523S/523SW utilise thyristor-control providing electronic-controlled continuous/adjustment of welding voltage. In addition 3 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 leave the machine switched on with the fan running, resetting is automatic when the unit has cooled.

- | | |
|--|---|
| 1 Connection for control cable to the wire feed unit | 9 Connection for return cable (-), medium inductance |
| 2 10A circuit breaker | 10 Connection for return cable (-), high inductance |
| 3 Display (digital meters) | 11 Connection RED for cooling water from the wire feed unit |
| 4 Orange indicating lamp, overheating | 12 Connection BLUE for cooling water to the wire feed unit |
| 5 White indicating lamp, power supply ON | 13 Connection for welding current cable (+) |
| 6 Main supply switch | |
| 7 Main supply switch for cooling unit | |
| 8 Connection for return cable (-), low inductance | |

NOTE! Cooling water connections only available on certain models.



MAINTENANCE

- Regular maintenance is important for reliable and safe operation.

- **Daily**
 - Check all welding and electrical connections and cables for signs of deterioration
 - Check the gas supply, hoses and connectors
 - Check the water-cooling unit ('W' versions only) and top-up if necessary
 - Check the fan is operating normally

- **At least annually**
 - Disconnect the machine from the mains electrical supply
 - Remove the top and side covers
 - Blow out the inside of the unit with clean, dry compressed air at low pressure
 - Check the security of all wiring, connections and components
 - Refit the covers

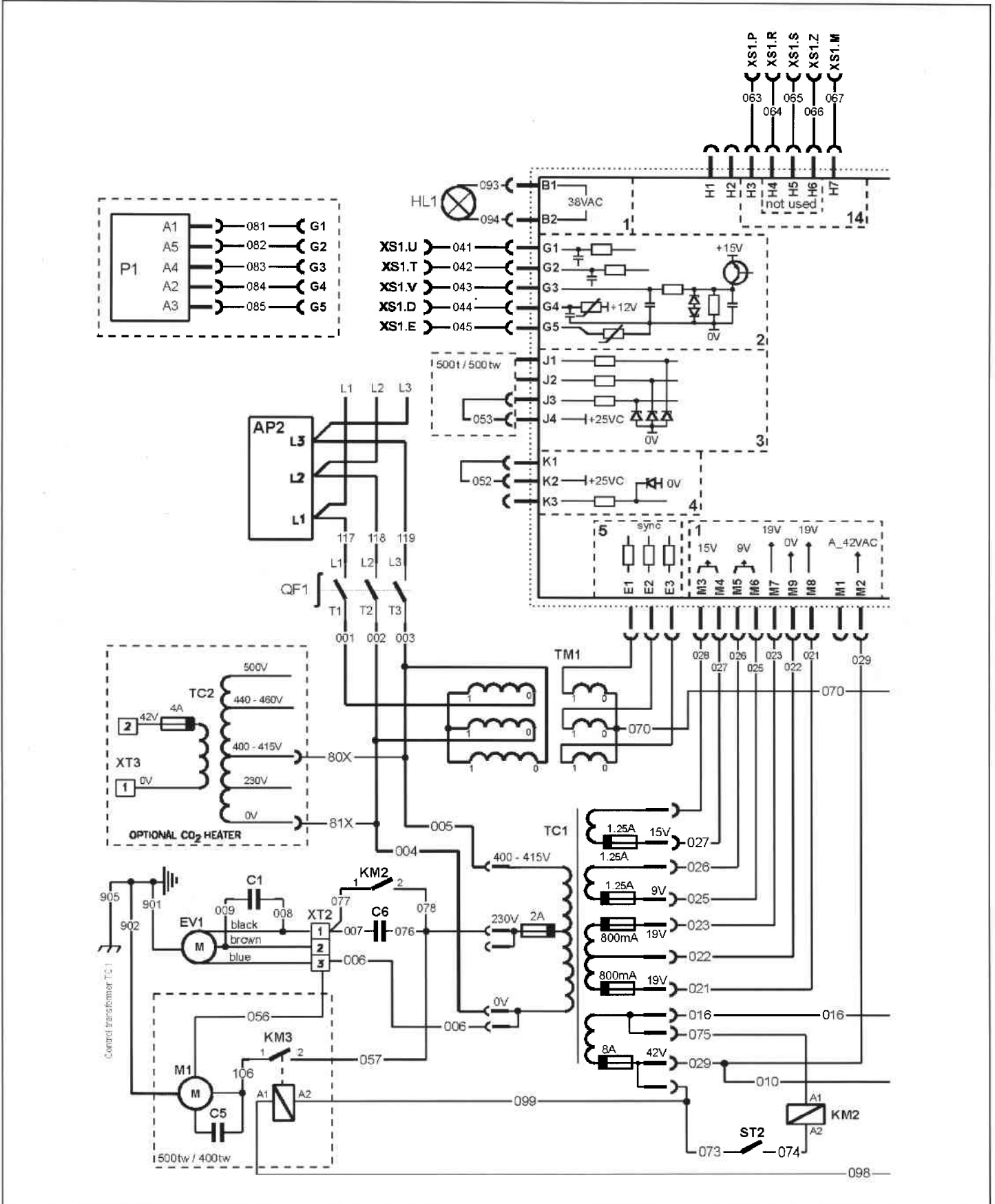
- **Annually**
 - Have an insulation and earth continuity test carried out by an approved service agent.

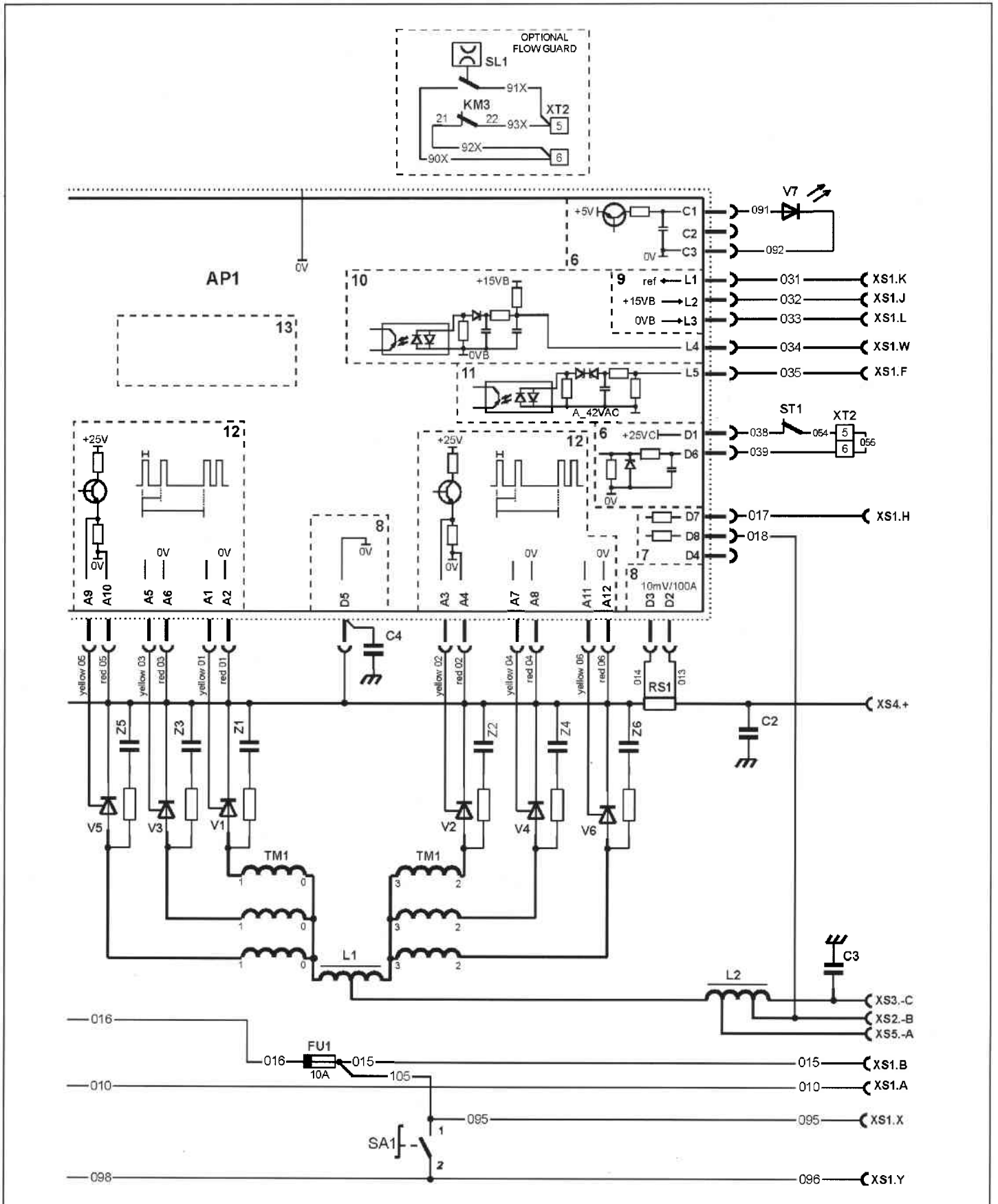
ACCESSORIES

1415335	5m Interconnection to Transmatic Lynx 4EHD feeder
1415336	12m Interconnection to Transmatic Lynx 4EHD feeder
1415337	20m Interconnection to Transmatic Lynx 4EHD feeder
1403219	5m Work return lead & clamp (Transmig 423S/423SW)
1414234	8m Work return lead & clamp (Transmig 523S/523SW)
1414015	Water hose 6.6m (2 required)
368541-005	Burndy plug 23 way (excl. pins)
323945-004	Burndy pin (8 required)

CIRCUIT DIAGRAM

Transmig 423S/423SW/523S/523SW (400-415V 50Hz)





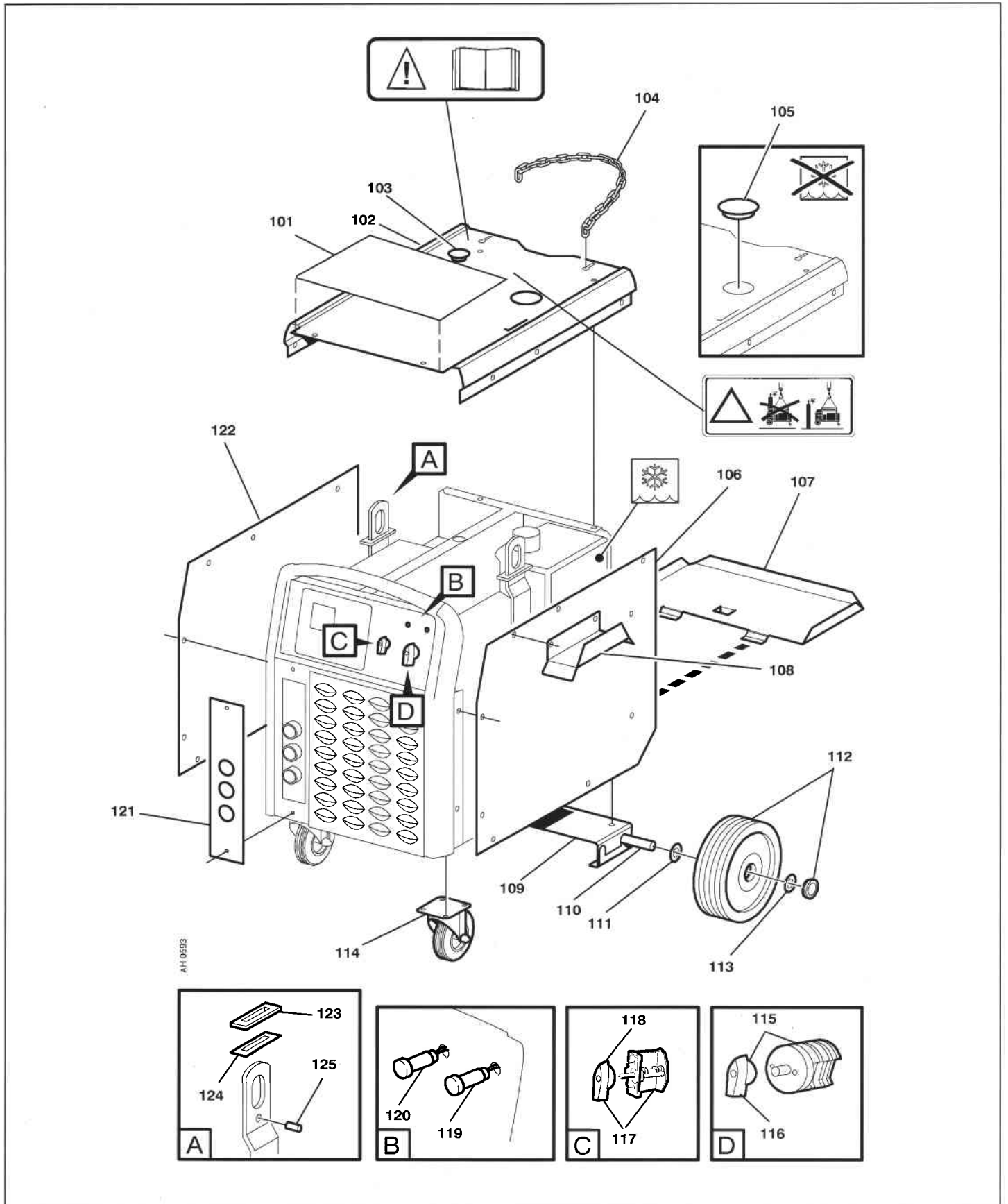
PARTS LISTS

Transmig 423S/523S(W)

C = component designation in the circuit diagram

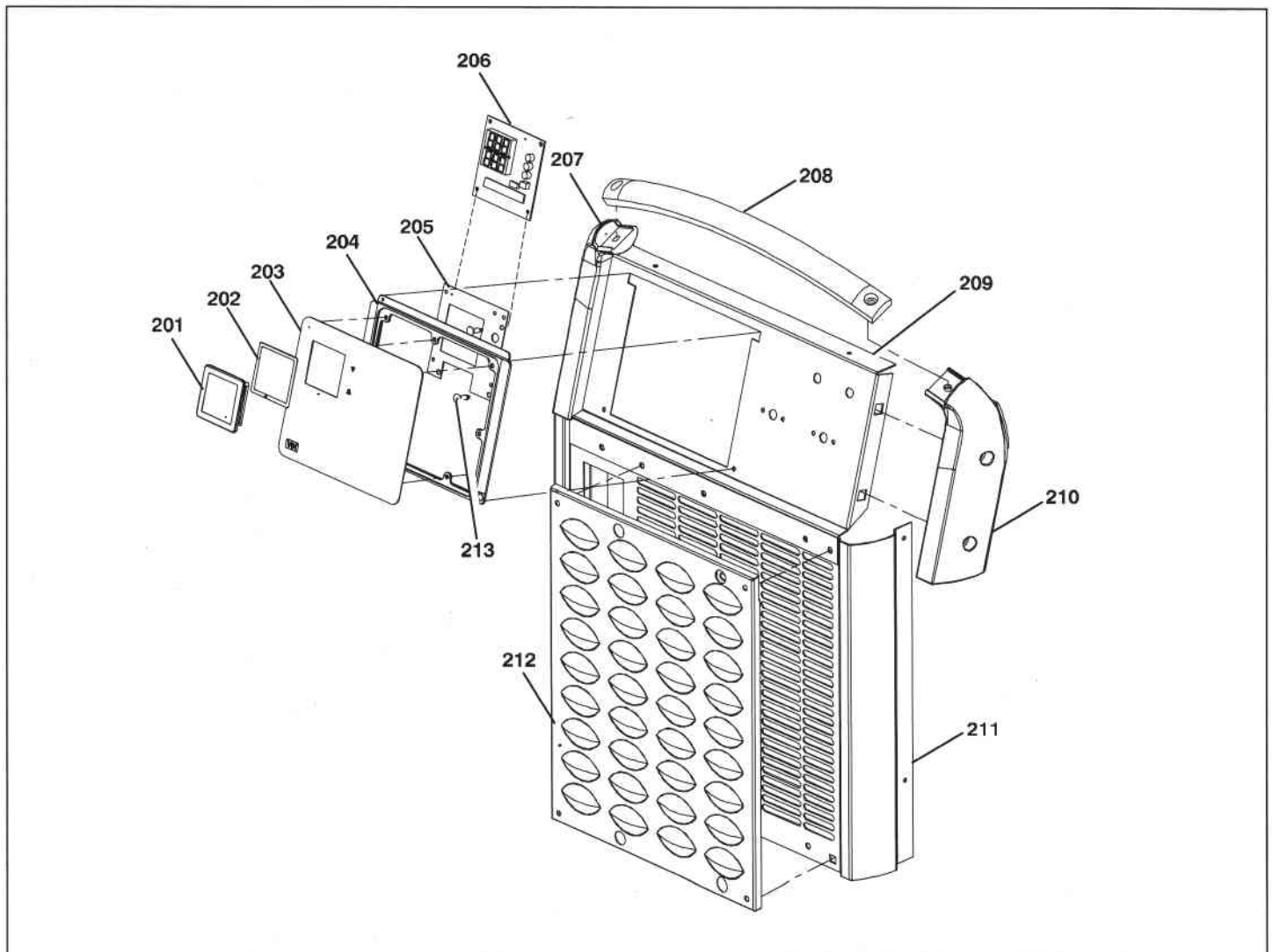
Item	Qty	Ordering no.	Denomination	Notes	C
101	1	0349 302 296	Rubber mat		
102	1	0349 302 264	Cover		
103	1	-	Blind plug	Ø 31	
104	1	0321 173 001	Securing chain	L=700	
105	1	-	Blind plug	Ø 66	
106	1	0349 493 359	Side panel with text	Right	
107	1	0349 302 267	Shelf		
108	1	-	Holder	For further information see page 199.	
109	2	0349 302 268	Clamp		
110	2	0469 516 005	Shaft		
111	2	0215 100 037	Washer	Ø 36/21x3mm	
112	2	0469 872 001	Wheel	Ø 250mm	
113	1	0192 859 126	Locking washer		
114	1	0469 873 001	Link wheel	Ø 125mm h=150mm	
115	1	0349 302 254	Switch	For 400-415V mains voltage	QF1
116	1	0349 302 306	Knob		
117	1	0349 302 305	Switch	Only 'W' versions	SA1
118	1	0349 302 253	Knob	Only 'W' versions	
119	1	0369 733 007	Signal lamp	42 VAC, white	HL1
120	1	0369 733 005	Signal lamp	Yellow	V7
121	1	0349 302 384	OKC plate		
122	1	0349 493 358	Side panel with text	Left	
123	1	0468 797 001	Seal		
124	1	0468 796 001	Support plate		
125	1	0211 103 005	Roll pin	Ø 8x28	

Transmig 423S/523S(W)



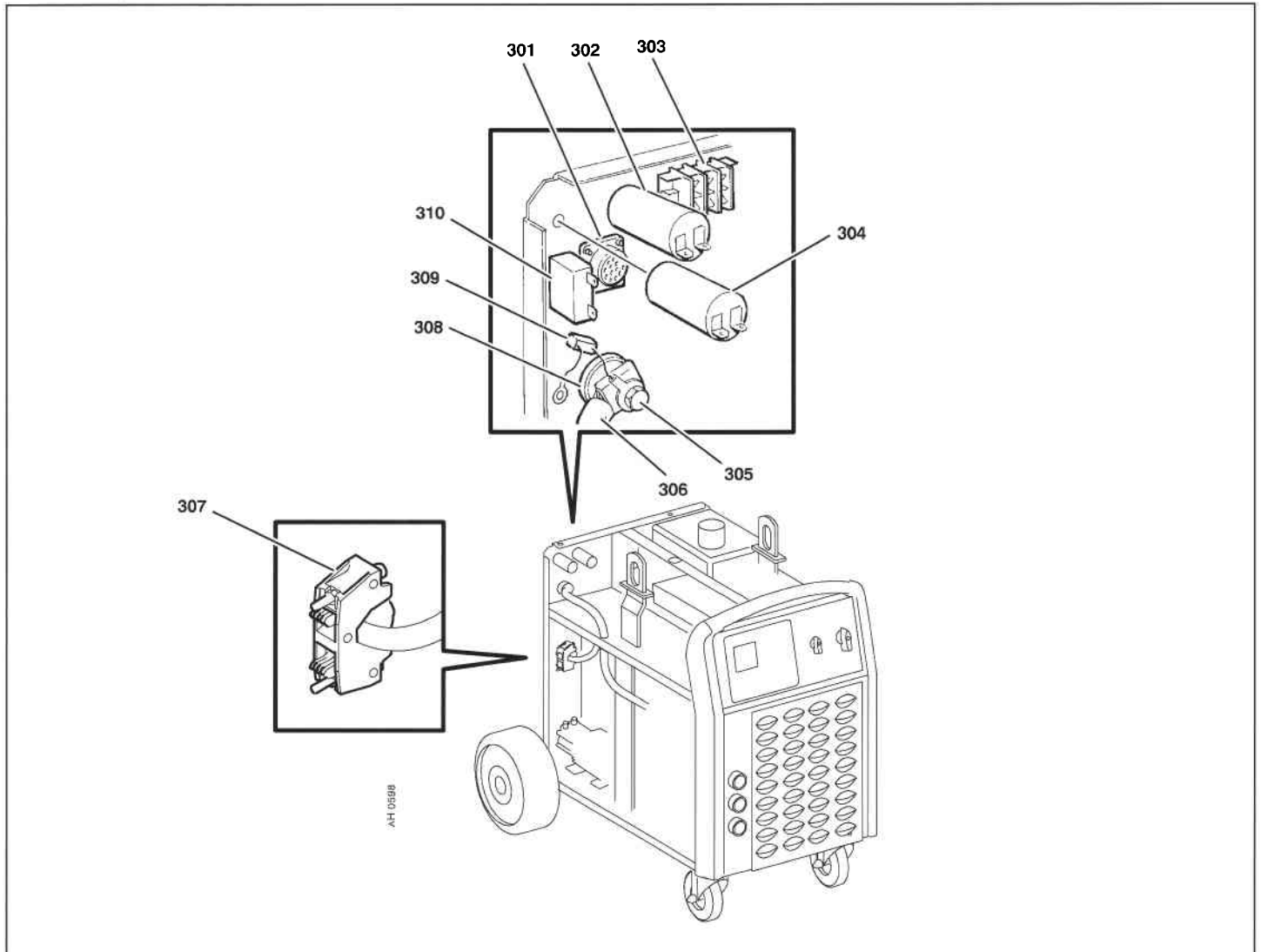
C = component designation in the circuit diagram

Item	Qty	Ordering no.	Denomination	Notes	C
201	1	0455 172 001	Glass		
202	1	0455 174 001	Seal		
203	1	0349 302 286	Panel		
204	1	0459 118 001	Protection frame		
205	1	0349 302 287	Plate		
206	1	-	Circuit-board	Included in Digital instrument. See page 198.	P1
207	1	0349 302 283	Plate right corner		
208	1	0349 302 284	Handle		
209	1	0349 302 281	Upper front panel	423S/523S	
	1	0349 302 288	Upper front panel	423SW/523SW	
210	1	0349 302 282	Plate left corner		
211	1	0349 302 280	Lower front plate		
212	1	0349 302 285	Grill		
213	3	0455 226 040	Spacer		



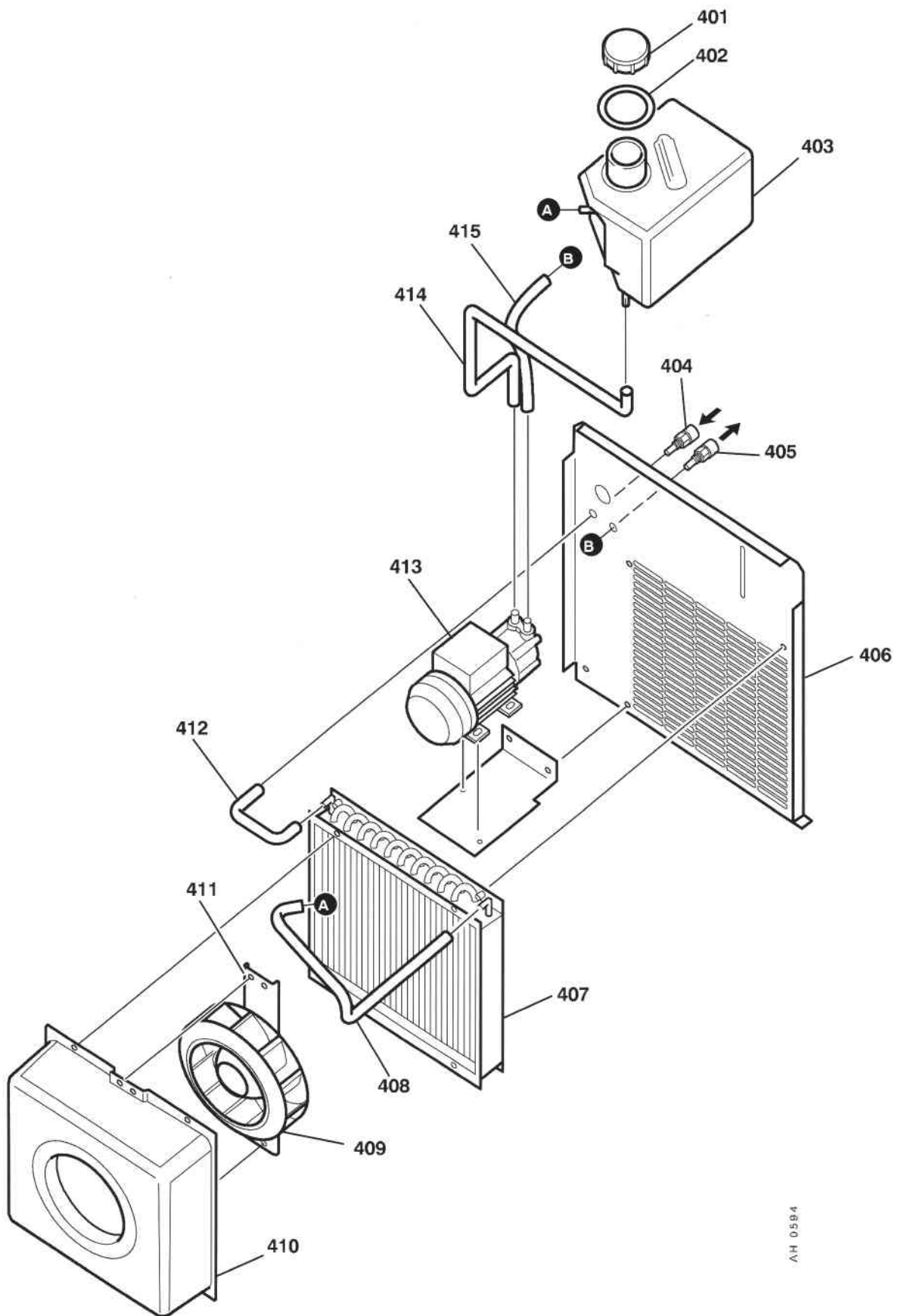
C = component designation in the circuit diagram

Item	Qty 423	Qty 523	Ordering no.	Denomination	Notes	C
301	1	1	0368 544 005	Sleeve socket	23 pole	XS1
			0323 945 003	Sleeve		
302	1	1	0191 085 206	Capacitor	6µf 400V	C6
303	1	1	0466 884 006	Connection block	6 pole	
304	1	1	0191 085 203	Capacitor	3µf 400V	C1
305	1	1		Screw	M10x30	
306	1	-	0469 879 880	Cable set	A=75mm ²	
-	1		0469 879 881	Cable set	A=95mm ²	
307	1	1	0469 950 880	Cable inlet		
308	4	4	0160 362 881	Current terminal	1 pole	XS2, XS3, XS4, X35
309	2	2	0467 911 882	Capacitor	0.1µf 250V, with cable lugs	C2, C3
310	1	1	0193 586 102	Circuit breaker	10A	FU1



C = component designation in the circuit diagram

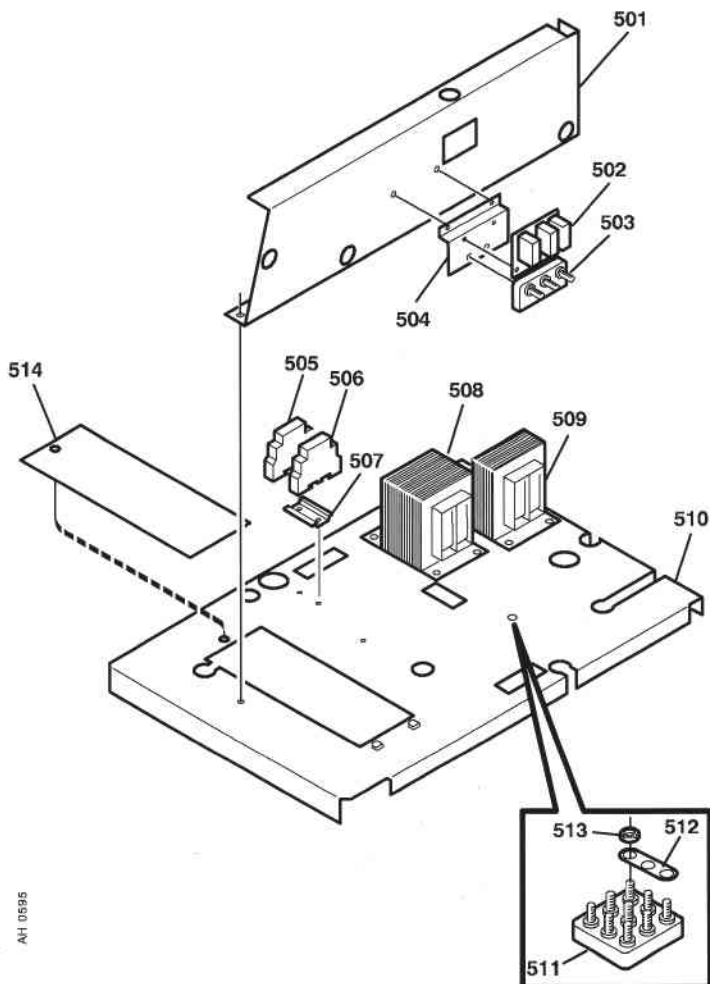
Item	Qty S	Qty SW	Ordering no.	Denomination	Notes
401	-	1	0469 689 002	Cover	
402	-	1	0366 481 004	Seal	
403	-	1	0469 689 001	Water tank	
404	-	1	0365 803 011	Quick connection	Female, red, with non-return valve
405	-	1	0365 803 012	Quick connection	Female, blue, with non-return valve
406	1	1	0349 302 275	Rear panel	
407	-	1	0469 688 001	Cooler	
408	-	1	0349 302 276	Hose	L = 530mm, to be ordered per metre
409	1	1	0369 827 001	Fan	
410	1	1	0469 893 001	Fan housing	
411	1	1	0455 165 001	Attachment	
412	-	1	0349 302 277	Hose	L = 350mm, to be ordered per metre
413	-	1	0469 692 001	Pump	
414	-	1	0349 302 279	Hose	L = 750mm, to be ordered per metre
415	-	1	0349 302 278	Hose	L = 450mm, to be ordered per metre



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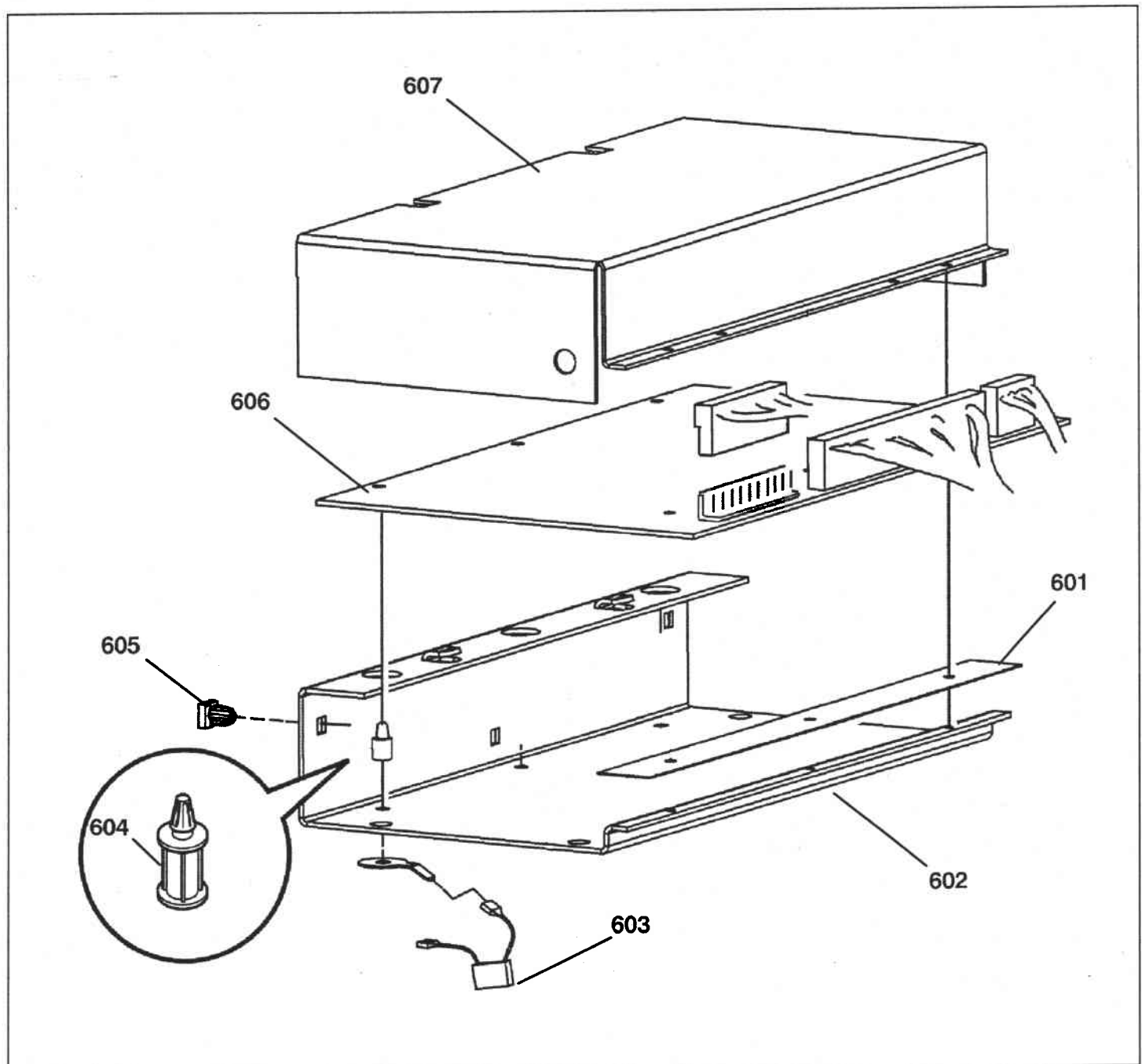
C = component designation in the circuit diagram

Item	Qty	Ordering no.	Denomination	Notes	C
501	1	0349 302 273	Centre plate		
502	1	0486 216 880	Suppressor board		AP2
503	1	0162 772 001	Connection block		
504	1	0469 701 001	Attachment		
505	1	0193 927 001	Contactor		KM2
506	1	0349 302 274	Contactor	Only 'W' versions	KM3
507	1	0349 302 308	Rail		
508	1	0469 882 001	Control transformer	400-415V mains voltage	TC1
509	1		Transformer (A)	For further information see page 199.	TC2
510	1	0349 302 272	Intermediate plate		
511	1	0469 899 001	Terminal	230-500V mains voltage	XT1
512	1	0457 908 001	Jumper		
513	24		Nut	M8	
514	1	0349 302 298	Cover		



C = component designation in the circuit diagram

Item	Qty	Ordering no.	Denomination	Notes	C
601	1	0191 193 118	Tape	To be ordered per metre, 0.31 metre as delivered.	
602	1	0349 302 299	Box		
603	1	0467 911 882	Capacitor	0.1µf 250V, with cable lugs	C4
604	3	0394 516 031	Spacer screw	M5	
605	3	0194 019 005	Insulating washer		
	2	0193 517 344	Screw		
606	1	0486 480 884	Circuit board		AP1
607	1	0349 302 300	Cover		



C = component designation in the circuit diagram

Item	Qty 423	Qty 523	Ordering no.	Denomination	Notes	C
701	1	1	0469 878 881	Shunt	60mV/600A	RS1
702	1	1	0469 861 884	Cable set		
703	3	3	0469 693 880	Suppressor	RC filter	Z1-Z6
704	3	3		Thyristor module	See item 750. For fitting instructions see the service manual.	V1-V6
				Thermal paste	For fitting of thyristor modules, see item 750.	
705	1	-	0349 302 260	Transformer	400-415V mains voltage	TM1
	-	1	0349 302 255	Transformer	400-415V mains voltage	TM1
706	1	-	0349 302 257	Inductor		L2
-	1	-	0349 302 292	Inductor		L2
707	1	1		Screw	M10x40	
708	4	4		Spring washer	Ø 20/10.2x2	
709	5	5		Washer	Ø 22/10.5x2	
710	1	-	0349 302 270	Inductor	Interphase transformer	L1
-	1		0349 302 271	Inductor	Interphase transformer	L1
711	1	1		Nut	M10	
712	3	3	0160 362 881	Current terminal	1 pole	XS2, XS3, XS5
713	3	3		Screw	M10x30	
714	1	1		Washer	With flat pin connection Ø 6.3x0.8, M10	
715	1	1	0349 302 352	Capacitor	0.1µf 250V, with cable lugs	
716	1	1	0349 302 289	Plate		
717	1	1	0455 217 001	Attachment		

Spare Parts Set

Item	Ordering no.	Denomination	Notes
750	0455 157 001	Thyristor modules	Includes a set of 3 thyristors with screws, washers, spring washers, thermal paste, roller and mounting instruction.
-	0458 910 002	Roller handle	For the roller in the spare parts set above.